

## NEW GRAVITY & HISTORY HAS MASS.

### 28 SLIDES

#### **FIRST - Conclusions in pictures.**

This compilation of 20 years of articles from my ancient website and my more contemporary blogsite, courtesy of Google Blog, is presented with the most recent articles and conclusions at the beginning and the earliest dates at the end.

I was 15 years old when I bought the first edition of New Scientist, I have read it weekly ever since. Now at 78 years old I have just received Issue Number 3321. Divide that by 52 weeks and it tells me, ignoring publishing anomalies, that I have read nearly 64 years of their reporting of scientific news and comments. What stamina – on both our parts.

The weekly 30 or 40 pages of New Scientist, dismissed by some “real” scientists as no more than a flimsy, flippant comic, lured me into reading hundreds of other magazines and books – and eventually, at a late age, into attending particle and astro-physics evening classes for three years on Oxford Continuing Education courses. I was the oldest in the class. Despite a 50 year gap in grappling with mathematics – other than arithmetic for accountants – I did manage to successfully complete all the homework we were set. But don’t ask my aged brain to attempt such calculations today. You will not need maths to follow these articles; maths is here mostly translated into English.

Having absorbed and weighed 64 years of information, making these written notes for the last 20 years, I have impertinently formed heretical but interesting and perhaps credible opinions about gravity, dark-matter, dark-energy, and other scientific mysteries. No one can accuse me of acting with undue haste.

My earlier essays range across several background physics and science topics. Students dipping into them might find these interesting, informative and diverting.

For the convenience of busy and impatient readers, this text starts with 28 brief slides that sum-up, that conclude, my conclusions. The slides are later explained in the text. Some readers might like to track the logical path backwards – which is the rest of this collation. My reputation most certainly does not go before me, I have no academic status to lose – so if, like me, you need to know “who the hell is this guy” – on the next page is my short CV.

This document is a set of diary notes. It introduces an explanation, or an idea, of what Gravity is as contrasted with what Gravity does. And tracks back on my trail of information and thoughts that led me to that idea. In the process it skates across numerous scientific topics – which might be useful to students and inquisitive elders.

What the document lacks in authority, it makes up for with repetition. Readers can dip-in anywhere and probably find interesting news, old news, and texts from celebrated experts.

My current exploration of “Casimir” Gravity is about 12 years old. In the years before that, ten or fifteen years or more, I worked on the idea that gravity was caused by the Hubble expansion of the universe, “Expansion Is Gravity” or EIG. So, many of my older dairy notes relate to that concept. I now think EIG cannot work – but the articles explored are nevertheless valid in their own right – and

involve some interesting physics. Throughout these notes, I have reached the view that Einstein's Aether did and does exist. He did not deny the Aether – he said that he did not need it for his calculations.

Because I was writing a diary – not writing for publication – albeit that my website and blog are publicly accessible, over the 20 years I liberally quoted extracts and sometimes entire articles written by scientists or journalists. Often, I did not cite sources or references and it is too onerous a task, 20 years later, to now trace-back and provide them. But it is clear, I think, which lines of purple-prose are mine and which are the experts' texts.

Since starting my blog on October 2012 <https://noelhodson.blogspot.com/> it has had to date, 1st March 2021, 295,000 visitors. There are 586 blog posts, about 1/3rd being on science topics – say 98,000 visitors. Of those at a rough count and guesswork, about 20,000 visitors have looked at articles on gravity. My most visited single blog-essay is about tax-evasion for the super-rich. I was once an accountant, and once specialised in Tax-Back-Duty cases.

My website <http://www.noelhodson.com> vanishes back into the mists of time and cyberspace. There was never a visitor counter on the site. I think I designed it as a DiY project and started it in 1992'ish. The main topic in those early days was Telework (using advanced telecommunications to work from home or on the move). Science essays would be only 20% of the content. Prior to my website lurk the dark, lost days of pre-history; I didn't even keep all the back-copies of New Scientist. To reconstruct the dates, I would need to delve into rock-art on cave walls. The last of the coloured slides, Slide 28, below indicates the sources I was using; the list of sources is also shown in easy-read print on page 22 (or thereabouts, as decided by Microsoft Word.).

Noel Hodson – March 2021.

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Authors or owners of any texts used here or creators and owners of images, please contact me at [noel@noelHodson.com](mailto:noel@noelHodson.com) - This diary was written over a 20 year period – and not originally intended for publication but is now being made available to the public. I am happy to comply with the usual, normal copyright restrictions including credits. The anticipated audience for this compilation, in print and or electronic form, is below 50 persons per annum. – Noel Hodson 11<sup>th</sup> March 2021.

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March 2021

## Table of Contents

<b>NEW GRAVITY &amp; HISTORY HAS MASS.....</b>	<b>1</b>
28 SLIDES .....	1
FIRST - Conclusions in pictures.....	1
Noel Hodson Blog .....	13
<b>Monday, 18 January 2021 .....</b>	<b>29</b>
<b>MY T.O.E OR NEARLY EVERYTHING AND TIME TRAVEL.....</b>	<b>29</b>
<b>Saturday, 2 January 2021.....</b>	<b>30</b>
<b>GRAVITY - TIME - ELECTROMAGNETISM - WEAK NUCLEAR - STRONG NUCLEAR - LIFEFORCE.....</b>	<b>30</b>
Slide 28 of 28 - Sources and resources: .....	32
Friday, 23 October 2020 .....	33
GRAVITY ETC. - RECAP OCT 20 .....	33
Wednesday, 14 October 2020 .....	35
DARK MATTER, DARK ENERGY & SPOOKY ACTION AT A DISTANCE. ....	35
Sunday, 16 August 2020.....	38
EPR ENTANGLEMENT & DARK MATTER.....	38
Monday, 3 August 2020 .....	41
GRAVITY and BLACK HOLES .....	41
Tuesday, 16 June 2020.....	42
FISSION & FUSION ENERGY .....	42
Sunday, 17 May 2020.....	44
THE FIFTH FORCE & BEFORE WE GO.....	44
BEFORE WE GO .....	47
Sunday, 26 January 2020.....	49

NEW GRAVITY - UPDATE 2020.....	49
<b>Has physicist's gravity theory solved 'impossible' dark energy riddle? ....</b>	<b>49</b>
Brought forward from Thursday, 18 February 2016 .....	50
Monday, 25 November 2019 .....	50
OUTGROWING GOD by Richard Dawkins - A CONUNDRUM .....	50
Monday, 11 November 2019 .....	55
ENTANGLED PARTICLES - Spooky Action at a Distance - explained. ....	55
Friday, 11 October 2019 .....	58
LIFE, THE UNIVERSE, AND EVERYTHING (& GRAVITY) .....	58
Friday, 4 October 2019.....	63
GRAVITY & THE COSMIC WEB.....	63
Glowing filaments of the cosmic web.....	64
Friday, 30 November 2018 .....	64
Tuesday, 16 July 2019 .....	65
WAVICLES FORM DNA AND MATTER? .....	65
Wednesday, 30 January 2019 .....	67
FROM CHAOS THEORY TO ORGANISMS - TIME TRAVEL.....	67
Wednesday, 3 October 2018.....	70
NEW GRAVITY & DONNA STRICKLAND.....	70
There is a weird new state of matter that can't be stirred or pushed.....	70
HIGGS BOSON DIES.....	75
<b>Breakthrough Starshot.....</b>	<b>75</b>
Cosmic effects of radiation pressure[edit] .....	76
PROFESSOR STEPHEN HAWKING - WITH THE HEROES .....	77
<b>Monday, 22 May 2017 .....</b>	<b>79</b>



<b>GRAVITY &amp; LIGHT WITH MASS.....</b>	<b>79</b>
<b>Thursday, 18 February 2016.....</b>	<b>79</b>
<b>NEW GRAVITY &amp; PERPETUAL MOTION.....</b>	<b>79</b>
<b>Thursday, 18 February 2016.....</b>	<b>85</b>
<b>NEW GRAVITY &amp; LIFE.....</b>	<b>85</b>
Photon energy - Wikipedia .....	88
12 Oct 2017 - Shoulders of Giants.....	90
<b>3rd August 2017 - PERPETUAL MOTION: .....</b>	<b>91</b>
<b>Back to gravity:- .....</b>	<b>92</b>
<b>New note - 18th March 2017:.....</b>	<b>95</b>
Cosmic effects of radiation pressure[edit] .....	102
Monday, 9 March 2015.....	103
<b>GRAVITY - A NEW THEORY.....</b>	<b>103</b>
Monday, 10 November 2014 .....	118
<b>CASIMIR-GRAVITY .....</b>	<b>118</b>
<b>Meet the electric life forms that live on pure energy .....</b>	<b>129</b>
<b>Shocking breath .....</b>	<b>130</b>
<b>Wire in the mud.....</b>	<b>131</b>
<b>Flexible biocables .....</b>	<b>132</b>
<b>Wednesday, 19 March 2014.....</b>	<b>138</b>
<b>GRAVITY WAVES - WHAT'S THE FUSS? .....</b>	<b>138</b>
<b>Saturday, 15 February 2014 .....</b>	<b>144</b>
<b>DISSIPATIVE PHENOMENA (2).....</b>	<b>144</b>
<b>Friday, 29 November 2013 .....</b>	<b>147</b>
<b>THE FIFTH FUNDAMENTAL FORCE &amp; GRAVITY .....</b>	<b>147</b>

<b>NATURE MAGAZINE .....</b>	<b>151</b>
<b>Stephen Hawking: 'There are no black holes' .....</b>	<b>151</b>
<b>Wednesday, 9 October 2013 .....</b>	<b>151</b>
<b>SIMPLY THE HIGGS.....</b>	<b>151</b>
Saturday, 7 September 2013 .....	153
GRAVITY MASS HIGGS AND BABIES .....	153
Monday, 5 August 2013 .....	155
LIFE-FORCE - AETHER-MATRIX.....	155
<b>Friday, 28 June 2013 .....</b>	<b>157</b>
<b>THE DYNAMIC GAIA UNIVERSE .....</b>	<b>157</b>
THE LIGHT FANTASTIC – 20 MAY 2013.....	159
Massless particles [edit] .....	161
Massless particles contribute rest mass and invariant mass to systems [edit] .....	161
<b>Sunday, 12 May 2013 .....</b>	<b>162</b>
<b>PHOTONS - UNIVERSAL BUILDING BLOCKS.....</b>	<b>162</b>
<i>Voyagers Find Giant Jacuzzi-like Bubbles at Edge of Solar System .....</i>	<i>162</i>
<b>Which leads me to the vexed question of identity.....</b>	<b>163</b>
<b>Tuesday, 23 April 2013 .....</b>	<b>164</b>
<b>CREATURES OF LIGHT .....</b>	<b>164</b>
<b>OUBLECK UNIVERSE .....</b>	<b>164</b>
Friday, 29 March 2013 .....	166
EASTER BABIES & BIBLE TRUTHS .....	166
SCIENTIFIC SPECULATIONS .....	169
<b>Tuesday, 26 February 2013 .....</b>	<b>172</b>
<b>THAT OLD ELUSIVE HIGGS .....</b>	<b>172</b>

<b>News update – 3 September 04.....</b>	<b>172</b>
<b><a href="http://www.noelhodson.com/index_files/universal_model_v7_nov02.htm">http://www.noelhodson.com/index_files/universal_model_v7_nov02.htm</a>.....</b>	<b>172</b>
<b>Monday, 25 February 2013.....</b>	<b>173</b>
<b>THE SCIENCE DELUSION .....</b>	<b>173</b>
<b>Morphic Resonance and Habits: .....</b>	<b>174</b>
<b>Friday, 1 February 2013.....</b>	<b>175</b>
<b>WHAT IS GRAVITY? .....</b>	<b>175</b>
<b>Tuesday, 29 January 2013 .....</b>	<b>177</b>
<b>RECORD RECORDS - DNA PACKS IN DATA &amp; CHANGES .....</b>	<b>177</b>
<b>Monday, 28 January 2013 .....</b>	<b>179</b>
<b>BRIAN COX AND TALES OF DOOM.....</b>	<b>179</b>
<b>Monday, 21 January 2013 .....</b>	<b>180</b>
<b>FUSION, GRAVITY, INERTIA, LIFEFORCE. ....</b>	<b>180</b>
<b>BIG-BANGS, AND GENTLE, SENTIENT FORCES – THE FIFTH FUNDAMENTAL FORCE: .....</b>	<b>183</b>
<b>CHASE THE LIGHT .....</b>	<b>185</b>
<b>MORE ON BIRTH, EXISTENCE, LIFE AND DEATH. ....</b>	<b>185</b>
<b>Friday, 9 November 2012 .....</b>	<b>188</b>
<b>THAT PESKY HIGGS BOSON .....</b>	<b>188</b>
<b>Sunday, 4 November 2012.....</b>	<b>188</b>
<b>HAVE FAITH IN THE HIGGS BOSON .....</b>	<b>188</b>
<b>Friday, 19 October 2012 .....</b>	<b>191</b>
<b>HIGGS FIELD AND OLBERS PARADOX. ....</b>	<b>191</b>
<b>DO OLD LIGHT WAVES GROW TALLER? .....</b>	<b>191</b>
<b>Thursday, 18 October 2012 .....</b>	<b>193</b>

<b>WILL THE HIGGS FIELD SUFFER HEAT-DEATH?</b> .....	193
<b>THE DYNAMIC UNIVERSE</b> .....	193
<b>Monday, 15 October 2012</b> .....	194
<b>HIGGS FOR KIDS - MORE HIGGS BOSONS</b> .....	194
<b>HUG A MATHEMATICIAN - GLOBAL LEXICON</b> .....	196
<b>Saturday, 13 October 2012</b> .....	199
<b>FLYING SAUCERS - HIGGS BOSON FIELD</b> .....	199
<b>Thursday, 11 October 2012</b> .....	202
<b>HIGGS TO HOUSE-BRICKS</b> .....	202
<b>BOSONS TO BRICKS – FIELDS, THINGS AND PROCESSES.</b> .....	202
<b>Tuesday, 9 October 2012</b> .....	203
<b>HIGGS BOSON DIES</b> .....	203
<b>TRAGIC EARLY DEATH</b> .....	203
<b>Monday, 8 October 2012</b> .....	204
<b>HIGGS BOSON EXPLAINED - 2</b> .....	204
<b>Tuesday, 2 October 2012</b> .....	208
<b>GRAVITY AND IMMORTALITY</b> .....	208
<b>Thursday, 16 August 2012</b> .....	209
<b>HOW HEAVY IS THE HIGGS BOSON?</b> .....	210
<b>Thursday, 9 August 2012</b> .....	211
<b>CREATURES OF LIGHT – DYNAMIC UNIVERSE</b> .....	211
<b>Friday, 20 July 2012</b> .....	212
<b>WE DESIGN THE DYNAMIC UNIVERSE</b> .....	212
<b>Thursday, 19 July 2012</b> .....	213
<b>A PERSON OF UNIVERSAL CONSEQUENCE</b> .....	213

<b>Tuesday, 17 July 2012</b> .....	215
<b>I NEVER ASKED TO BE BORN - THE FIFTH FORCE</b> .....	215
<b>Wednesday, 11 July 2012</b> .....	216
<b>THE HIGGS BOSON &amp; MRS TRELIS OF NORTH WALES</b> .....	216
<b>Tuesday, 10 July 2012</b> .....	218
<b>GRAVITY AND MOONSHINE</b> .....	218
<b>Thursday, 5 July 2012</b> .....	219
<b>HIGGS BOSON AND CUSTARD</b> .....	219
<b>Sunday, 17 June 2012</b> .....	221
<b>GOD OR GRAVITY? - A QUESTION FOR SUNDAY.</b> .....	221
<b>Thursday, 7 June 2012</b> .....	222
<b>YOU ARE REALLY, REALLY, REALLY IMMENSELY POWERFUL.</b> .....	222
<b>Friday, 1 June 2012</b> .....	223
<b>HAPPY HUNT FOR THE HIGGS</b> .....	223
Measuring the distance to an astronomical object. ....	225
The End of Time .....	225
Opinion Letters, New Scientist 1 FEB 2001.....	227
Opinion Letters, New Scientist 8 April 2000.....	228
Opinion Letters, New Scientist 21 <sup>st</sup> April 2001 .....	229
Letters, Scientific American 12 May 2000. ....	230
The Creation .....	231
The Pulse of Life .....	231
Angels sacrifice unimpeded bliss for speed limits .....	232
Supra-Vacuums .....	232
Vortices of Light - the Fractals of the Universe .....	232

Bounded Creatures of Light.....	233
The Arrow of Time .....	233
The sensate undifferentiated Universe.....	233
Vibrating Atomic Particles.....	233
The Hubble Constant .....	234
Expansion is Gravity.....	234
Cold Dark Matter .....	235
Switching Off the Dynamo .....	235
Dark-Light.....	235
The End .....	236
"What do you believe?" .....	236
THE UNIVERSE EXPANDS EACH SECOND BY 0.000,000,000,000,000,26%.....	244
8 July 2000.....	245
Dear members of the Department of Mathematics. ....	245
Letters, Scientific American Magazine.....	246
<i>updated Tuesday 22<sup>nd</sup> DEC 2015</i> .....	251
GRAVITY - A NEW THEORY.....	251
What this website discusses – an executive summary.....	252
3 AUGUST 2011 – Music of the spheres – structure of the universe.....	254
26 JUNE 2011 – Photon Aether, solves spooky action at a distance. ....	254
9 May 2011 – Heretical physics.....	255
4 February 2011 – From physics to metaphysics and metaphors. ....	255
RYDBERG'S CONSTANT – IDIOT'S GUIDE.....	257
18 Jan 2011 – Immortality & the Power of Inertia .....	259
26 October 2010 – White Holes & Sinks .....	260

24 October 2010 – Alpha, Aether and Inertia.....	260
<a href="http://www.noelhodson.com/index_files/Creatures-of-Light-SEPT-2010-V1.xls">http://www.noelhodson.com/index_files/Creatures-of-Light-SEPT-2010-V1.xls</a> .....	261
BROOKHAVEN - ECHO OF EIG's VORTICES .....	262
22 February 2010 – Quark-Gluon plasma forms vortices.....	262
NOT NEARLY THERE – QUESTIONS TO EXPLORE? .....	263
25 January 2010 – Bouncing photons and constant in-falling. ....	263
1 DEC 09 – The Electric Universe - A dilemma: .....	265
Heavyweight empty space. 28 Sept 09. ....	266
Malevolent and Benevolent Viruses. Human DNA exchanges. 2 September 09 + later notes. (A brief aside from Gravity).....	267
Are there two causes of gravity? First Hubble Expansion, Second Casimir Exclusions? – 13 September 09. ....	268
Is the Casimir-Vacuum gravity? – 20 August 09.....	269
Melvyn Bragg & Co - vacuums or not? – 30 Apr 09 .....	271
“Ooops” Change to the expansion of the universe constant – 11 March 09 .....	271
“Spooky” action at a distance – 21 Feb. 09 .....	272
“All the world’s a hologram” – 17 Jan 09 & 19 Jan 09. ....	273
Three illuminated thoughts - 2 November 08. ....	274
Wikipedia - Massless particles .....	274
The sentient universe and how humans alter it. 15 July 08 .....	277
Is this the EUREKA moment? 28 March 2008. ....	279
Frank Close, The Void & that pesky Aether – 18 January 2008 .....	280
Particles or Waves – 24 March 2007 .....	281
(An unpublished) Letter to New Scientist – “Inflation” 1 March 2007 .....	281
Aether or Ether or neither – 12 <sup>th</sup> September 06 .....	283
Bubbles & Black Holes – 24 <sup>th</sup> July 06 .....	284

Making dark matter – 15 <sup>th</sup> July 06 .....	285
Water is the most likely laboratory to test EIG - 10 <sup>th</sup> April 06.....	286
Descriptive Essay on EIG – how it might work.....	287
Gravitational Repulsion at Long Range – Stephen Battersby NS 24 <sup>th</sup> Sept 05 .....	287
7 DEC 05 – A diversion into Intelligent Design & Is the LIFE FORCE the 5 <sup>th</sup> fundamental energy? .....	288
Instanton – reproduced from New Scientist 6 August 2005. ....	288
The holographic universe – thoughts on the Aether.....	290
Memo on 9am BBC Radio 4 discussion, Roger Penrose, Carolyn Crawford (sp?) Martin Rees, Chair, Melvyn Bragg - 17 March 05.....	290
Memo on March 05 Scientific American article, Misconceptions about the Big Bang. - 17 March 05 .....	291
Memo on the double-slit experiment – 15 March 05 .....	291
Memo on Matter and Anti-Matter – 25 <sup>th</sup> November 04.....	291
Note on the Music of the Primes – 27 October 04.....	292
News update – 3 September 04. ....	294
Introduction, pre-EIG .....	294
MAP, COBE and Some Astronomical EIG Numbers .....	295
Six foot man expands infinitely – says MAP and COBE.....	296
Casimir and EIG – gravity within dense matter. ....	298
Definitions.....	298
Letters to science magazines (not published) .....	298



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Founder & Managing Partner – McVeigh Hodson – Blackstone Franks Accountants  
Founder & Managing Director - Hodson & Associates – Morton Hodson & Co Business  
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**Founder and Principal Consultant:**

SW2000 – Telework Studies, SW2000 - Intelligent Transport, and SW2000 - Take-the-Plunge. (SW2000 = Strategic Workstyles looking ahead to the year 2000)

**Founder and Project Co-ordinator** - The Foodtubes Project. (Green freight transport).

**Directorships** – North Wales Supplies Ltd. - Mallalieu Cars & Mallalieu Engineering Ltd - Oxford Research Science Park Ltd - ITAC (International Telework Association and Council) – ISUFT (International Society for Underground Freight Transport) – West Midlands Tomorrow Ltd. - WISE (Work Information Society Employment) Vienna.

**“Green” Projects -Co-ordinator:** European Commission – €0.5M Experts Unlimited EXPUN T2012 and €2.3M The European Charter for Telework. 1987 Telework - 2006 The Foodtubes Project.

**Awards:** 2001 International Excellence in Telework – 2008 St Andrews Prize for the Environment.

**Publications:** Inventors to Investors 1/4ly Magazine – Strategic Workstyles Newspaper – Economics of Telework (BT) – Teleworking Explained (Wiley & Sons). Trainer & Tutor: to business consultants and at Kuwait Oil Industry College. Workshop Leader and Conference Speaker – Europe and USA.

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[Noel Hodson Blog](#)

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## EIG 0 of 24

### Expansion **IS** WAS Gravity

Dec 2020  
CASIMIR-GRAVITY. I now believe that this idea, Casimir Gravity, has merit. Go to my blog and follow the TAB "Gravity" to read the arguments for this theory.

**Monday, 9 March 2015**  
**GRAVITY - A NEW THEORY**

<https://noelhodson.blogspot.com/2015/03/gravity-new-theory.html>

DEC 2014: I am now exploring if shielding electro-magnetic waves, with layer on layer of matter, creates the "ever tightening knot" of gravity, evident in large masses. Is Casimir the primary pull of gravity, preceded by Hubble Expansion?

[Read Here.](#)

19 FEB 2016 - Read a new very short sum [NEW GRAVITY -SUMMARY](#)  
Link

**Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep.**

**Contemplate "The ever tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. NCH March 2015**

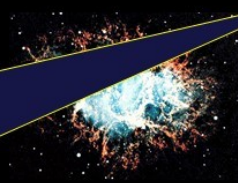
**Rather than deleting earlier ideas, Slides 0 to 24, I've added slides in Dec 2020 – the Covid-19 plague year – to expand on Life, The Universe & Everything.**

## EIG 1 of 23

### Expansion **IS** Gravity

Note - Dec 2014. CASIMIR-GRAVITY. I am now exploring if shielding electro-magnetic waves, with layer on layer of matter, creates the "ever tightening knot" of gravity, evident in large masses. Is Casimir the primary pull of gravity, preceded by Hubble Expansion?

[Read Here.](#)



Gravity \* Dark Matter \* Dark Energy

From  Light to Matter

The Aether \* The Life Force

Russian Dolls \* Enfolded Dimensions

The Sentient Universe

Our Eternal Legacy

Note - Oct 2014. 15 years after forming this EIG idea, I am being more & more persuaded by The Electric Universe theory, which may contradict the Big Bang and sabotage my EIG theory.

You should perhaps read it. [Click Here:](#)

[Author](#)  
[Noel Hodson CV](#)

Untested novel speculations – do **not** include in your exam answers.

**EIG 2 of 23     In the beginning was darkness**

Before space-time, a phrase which is a logical contradiction, there was No-thing.  
no universe, no energy, no material, no phenomena, no boundary - nothing.

Without reason or known cause,  
other than Richard Dawkin's and Stephen Hawking's capricious gods,  
physicists believe and mathematicians calculate  
that an energetic singularity, a dimensionless point, a white-hole, appeared  
in this inexplicable, indescribable, non-existent no-place and no-time.



Until the location of the white-hole is known, as nothing is knowable about the  
pre-existent No-thing, there might be many white-holes pouring infinite energy  
into the universe. But, unless Fred Hoyle resurrects and retracts his recantation,  
The scientific consensus is that just one singular white-hole existed or exists.

EIG 1991-2011 – copyright – Noel Hodson – Oxford

**EIG 3 of 23     In the beginning was darkness and potential.**

This singularity is the opposite to a black-hole that draws everything in.  
- It is a white-hole -  
from which everything flows outwards. It is the seed of the Big-Bang.  
The white-hole-singularity exists, or stands out, in No-thing.  
Space-Time does not yet exist. There is no universe.



This fabulous seed contains the potential energy,  
information and organisation  
for all phenomena, in all space, for all time;  
including every human birth, life and death.  
The universe gives birth to intelligence, which  
infers sentience, which in turn infers communication,  
within the stuff of this seed.

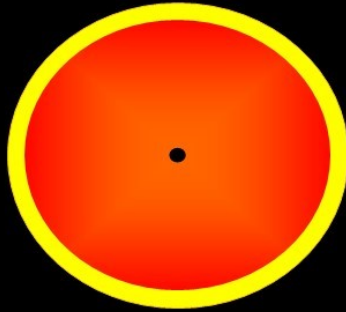
EIG 1991-2011 – copyright – Noel Hodson – Oxford

**EIG 4 of 23**

**In the beginning was darkness and expansion**

Energy explodes from the white-hole into the No-thing – THE BIG BANG!

The universe begins. The universe exists within a boundary.  
Inside the boundary there is energy. Outside the boundary there is No-thing.  
Inside and Outside are indefinable dimensions.



EIG 1991-2011 – copyright – Noel Hodson – Oxford

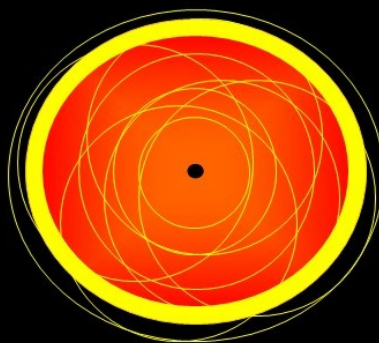
**EIG 5 of 23**

**In the beginning was darkness and heat.**

13.75 billion years ago - energy exploded from the white-hole into the No-thing.

**THE BIG BANG!**

There is no external resistance to the expansion of the energy.



The energy is light. It is very energetic – trillions of ° Kelvin.  
It is invisible, as no matter exists to reflect the light.  
And there are no observers to see the light.

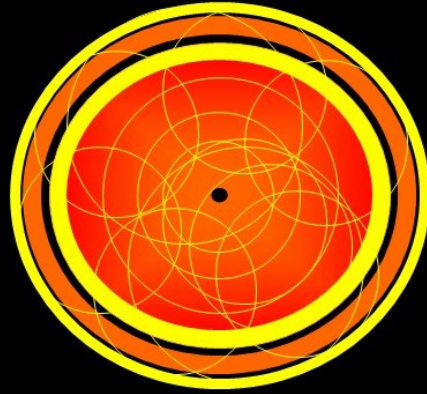
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**EIG 6 of 23 In the beginning was darkness and a field.**

Hubble expansion of the primordial energy meets no external resistance, but the expansion attenuates the energy which resists annihilation, resists infinite scattering into the No-thing, as an integrated coherent field.

The cohering field forces portend sentence in this universe, which will, after a time, give rise to human intelligence – which might one day lead to reason.

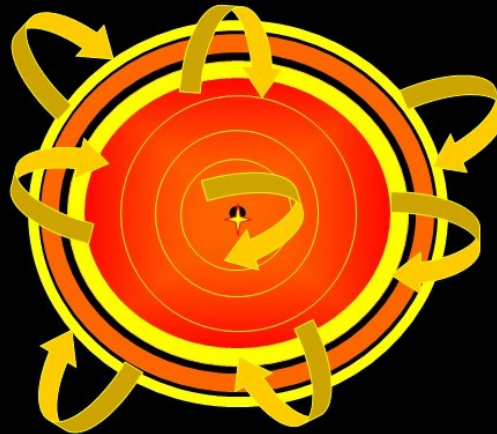


**It is still very, very hot. It is still utterly dark  
as no particles exist to reflect the light.**

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**EIG 7 of 23 In the beginning was darkness and Quanta.**

Hubble expansion continues. There were two short periods of hyper-inflation. This new idea, EIG, is that as the field flows outwards, its internal cohesion, its field forces, acted and still act as a brake on infinite acceleration, as attenuation of the hot, dense field creates momentary...



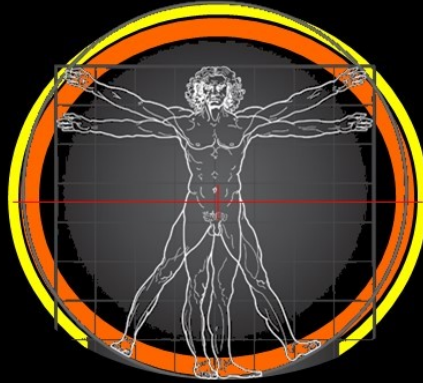
...regions of less density - partial vacuums - which attract energy, creating a pulse and restricting the rate of expansion to light-speed,  $C$ , 300,000 km per second. This expand-then-fill pulse, quantises the universe.

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**EIG 8 of 23    Let there be light!**

At every scale, immense to minuscule, Hubble expansion continues, today observable space-time expands at  $6.819\text{E-}19$  percent per second.

(If the diameter of the observable universe is 43.7 billion light years as recently calculated – or if based on the age of the universe, 13.75 billion light years, then at  $2.304\text{E-}18$  percent per second)



Imagine a sphere expanding at  $6.819\text{E-}19\%$  per second from a man-sized diameter of 2 metres.  
In one second it increases the volume of the sphere and attenuates the energy in the sphere by  $(4.19 \text{ cubic metres} \times 6.8\text{E-}19\%)$  or a tiny  $2.8\text{E-}20$  cubic metres. \_

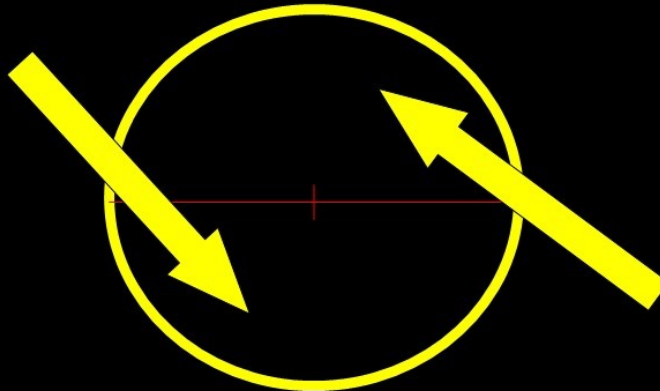
EIG 1991-2011 – copyright – Noel Hodson – Oxford

NB - Planck Min  $1.6\text{E-}36$  metres

**EIG 9 of 23    Let there be light and vacuums!**

At every scale, immense to minuscule, Hubble expansion continues.

Today it is expanding space-time at  $6.819\text{E-}19$  percent per second.



A minuscule sphere expanding at  $6.819\text{E-}19\%$  per second.  
In one second it increases the volume and attenuates the energy in the sphere.  
The surrounding energy field, light, rushes in to balance the field; at the speed of light. \_

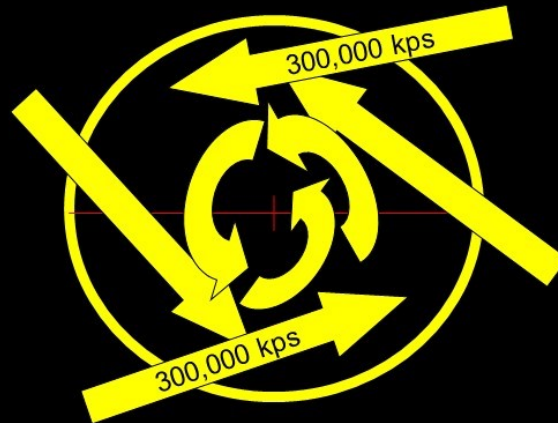
EIG 1991-2011 – copyright – Noel Hodson – Oxford

NB - Planck Min  $1.6\text{E-}36$  metres

**EIG 10 of 23**

**Let there be light collisions!**

In some instances, as light moves into an attenuated, partial vacuum region, waves collide at angles that create spin, making a vortex. Expansion is continuous, drawing in more energy. The spin increases, winding energy into matter – a primary-particle, a fractal, perhaps a quark, is born.



The primary vortex-particle, is a product of 3 vacuums or attenuated fields. First, the arching back as the primordial energy explodes into the No-Thing and attenuates. Second, the field attenuation from constant Hubble expansion, as above. Third, the spinning vortex draws in energy to its rotating surface, whose speed creates a material surface. Like a cyclone or tornado, immediately beyond the surface is a region of low-pressure.

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**EIG 11 of 23**

**Let there be light! - Vacuum Power.**

As particles/fractals precipitate or emerge from the energy-field, each fractal concentrates volumes of light, ( $E=MC^2$ ), depleting the energy field, reducing it's cohering forces. This allows acceleration of Hubble Expansion. The more matter is formed, the less dense the energy-field, then the faster space-time expands.

This letting-go is **Dark Energy**. It is everywhere, on every scale.



**Dark Matter** is Hubble Expansion, from the original Big Bang, everywhere at every scale, causing the field to attenuate; to partially evacuate, which causes a constant in-falling of light energy, onto a multitude of attenuating spheres - which is **Gravity**.

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EIG 12 of 23

Let there be light! Scintillation.

As trillions of particles/fractals come into existence, and combine, creating matter; the primordial expanding hot plasma clears and light reflects from objects. The universe gives birth to visible **light**, and to darkness within matter.

Light does not travel - it **propagates**. A source energises waves which energise contingent, in-situ fractals or "pre-photons" – ad infinitum. As in telephone & power cables where **in-situ** electrons are excited by a carrier-wave that propagates IN & OUTSIDE the cable. An energetic event causes an electro-magnetic (light) impulse; which propagates as a sphere through the **Aether** (next slides). Photons can be observed at ANY point in and on the sphere – as the energy intersects with the Aether; even if the energy is only equivalent to a "single" photon. Observed photons on one side of the sphere propagate at **C** from the centre as do those on the other side – they are "moving apart" at **2C**, - Einstein's "**Spooky action at a distance**".

Propagation also has implications for the double-slit "wavicles" demonstration. HOW do signals remain coherent across Light-Years?

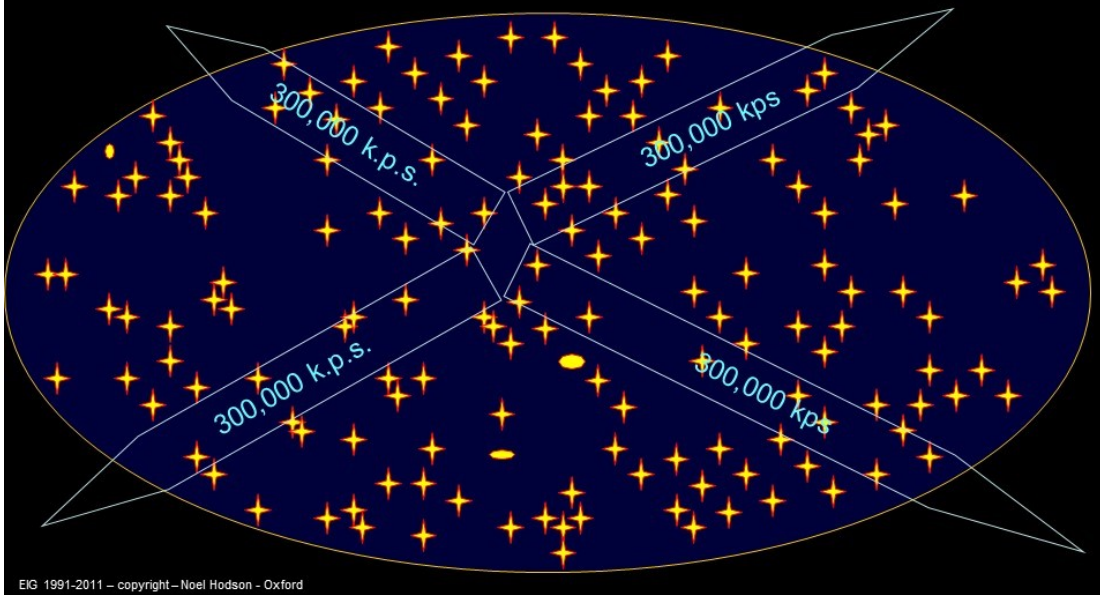
**C** is the usual symbol for light-speed 300,000 km a second.

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EIG 13 of 23

The Universe – One Turn

The primordial fractals spin. Initially chaotic, the fractals align. Their spinning surfaces repel each other while their surface partial-vacuums attract. This dynamic is the underlying **Inertia** of the universe. Hubble expansion continues.



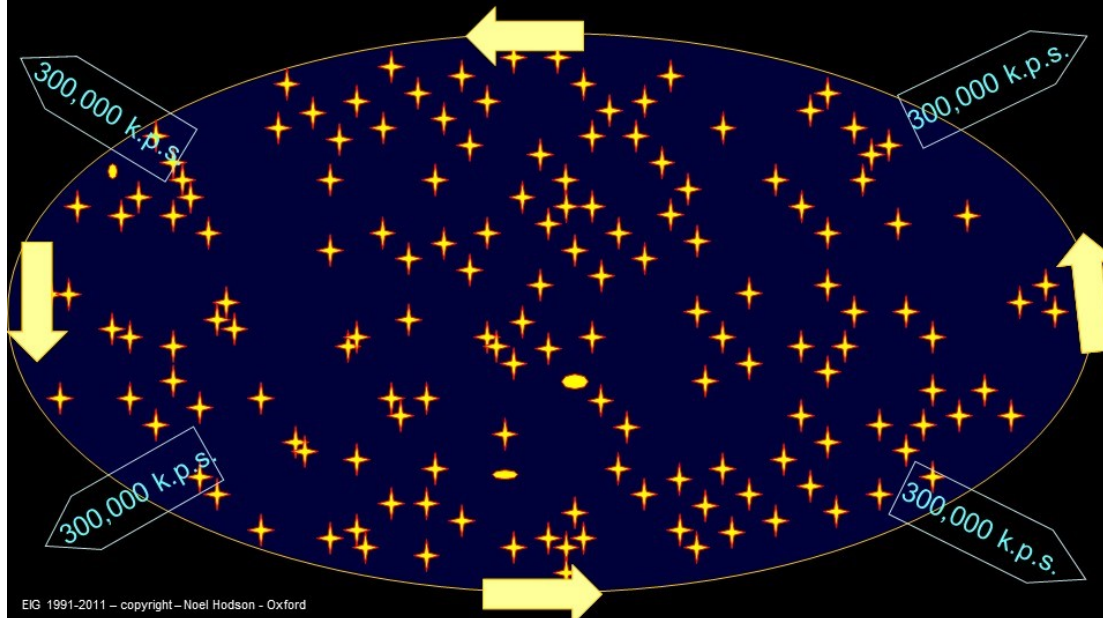
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EIG 14 of 23

The Universe – Revolution

The spinning fractals are identifiable but not separate from the field,  
in which they exist. They are both of the field and are particles.  
Everything revolves, at diverse rates.



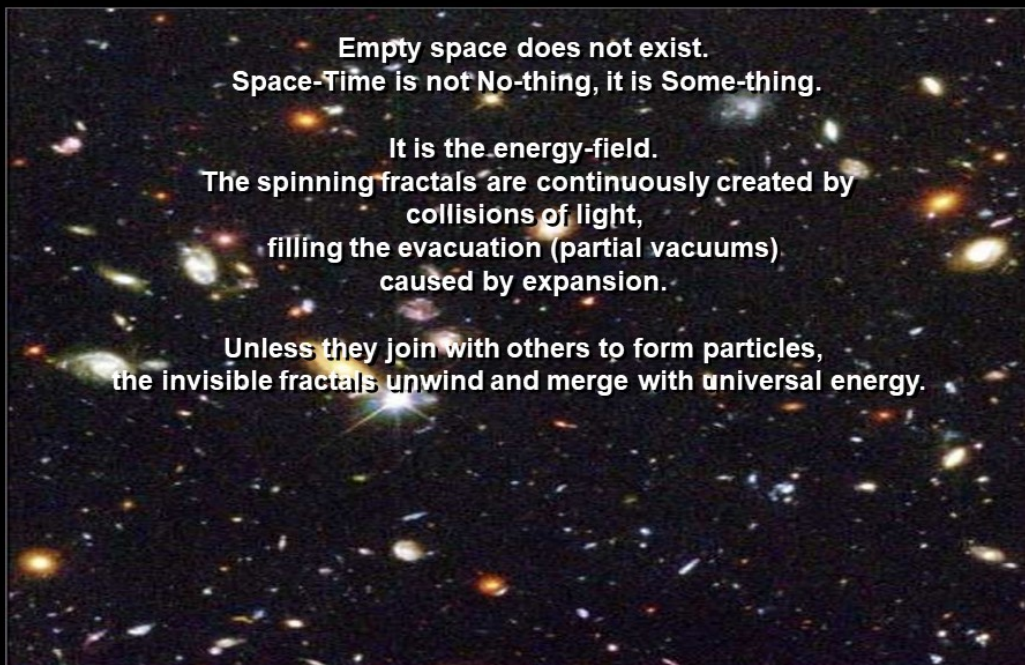
EIG 15 of 23

“Empty” Space.

Empty space does not exist.  
Space-Time is not No-thing, it is Some-thing.

It is the energy-field.  
The spinning fractals are continuously created by  
collisions of light,  
filling the evacuation (partial vacuums)  
caused by expansion.

Unless they join with others to form particles,  
the invisible fractals unwind and merge with universal energy.

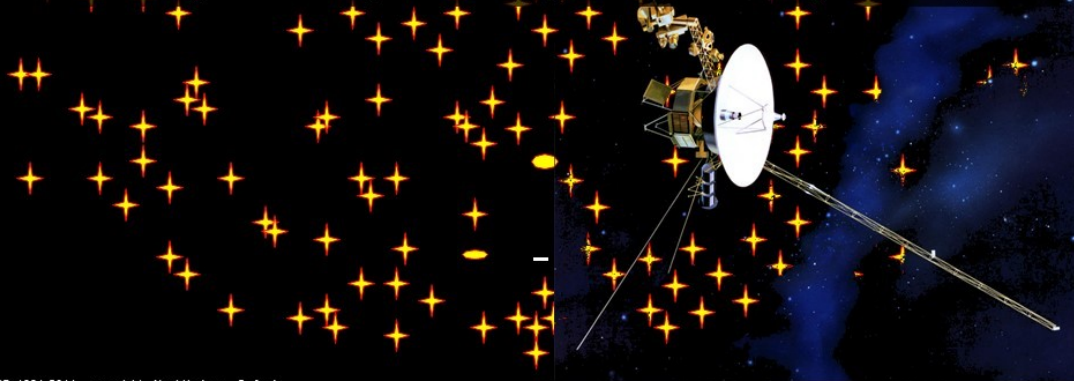


### EIG 16 of 23 “Empty” Space – The Aether

“Empty” space does not exist. Place an eye anywhere in the universe and it sees the whole universe – slightly but uniquely different from each location – except wave-lengths too long to fit the observing orb.

Every sphere on every scale “sees” the entire universe, as each sphere is criss-crossed by electro-magnetic waves and particles from all phenomena.

The spheres constitute the universal Aether. How a signal retains it’s identity as it crosses the Aether, to our telescopes – is a scientific mystery. For example, the extremely weak radio signals from 30 years old Voyager 1 & 2, now leaving our solar-system.



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### EIG 17 of 23 The Aether – a matrix of light

Mobile phone signal. “I’m on the bus – nearly home!”

Supernova. 9 billion light-years distant.

Brainwave from 1 of 6.7 billion Earthlings. “Is it lunchtime yet?”

All spheres in the universe, on all scales, are criss-crossed by trillions of electro-magnetic waves.

The wavelength (height) and frequency (how close waves are), energy (what propels it) and information (what forms it) are preserved across billions of light-years and eons of time. We can read messages from distant quasars and pulsars. The messages remain coherent for all time.

They comprise a tangible energy-field. This is the **Aether**.

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### EIG 18 of 23 The Aether – Matrix of light

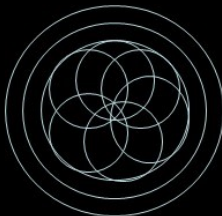
Wherever an eye or observer is located in space-time, it sees the whole universe. With precise instruments, every signal from every mobile phone is legible. Human brains emit more powerful signals than do mobile phones. An observing sphere will not detect wavelengths wider than its diameter.

The signals criss-cross to form an electro-magnetic matrix – the matrix is the Aether – the stuff of the universe, which is informed and reformed each moment by every signal.



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### EIG 19 of 23 Casimir's Glue – and Complex Expansion



(The vacuum arithmetic is complex. Reducing it to just one expanding sphere:- it's attenuation draws energy from it's surrounding larger sphere, which being larger, attenuates less:- drawing Energy from it's surrounding sphere etc. The attenuation or vacuum force diminishes with distance – meanwhile, internal small spheres are expanding.)

Every sphere contains an image (light waves) of the whole universe. Every smaller sphere within larger spheres “sees” the same image. Every larger sphere surrounding the spheres sees the same image. All the images/holograms are slightly differently angled and accommodate different wavelengths – each is unique. The largest sphere is the universe.

Minuscule spheres cannot contain large wavelengths – there is more light-pressure outside smaller spheres than inside (Casimir). This “Casimir-Glue” also underpins universal **Inertia** (see slide 13).

The sphere's expand at the Hubble Rate, which EIG calculates as  $6.819\text{E-}19$  percent per second.  
(i.e. circumference of the observable universe disappearing at light-speed).

Hubble Expansion attenuates the Aether or Energy Field.

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EIG 20 of 23

**Beyond price – the most complex thing in the known universe**

We search for alien life – and hope aliens will be at least as intelligent as we are.

We highly value the complex human brain; an astonishing product of the **Life-Force**.

We try to find or manufacture super-intelligence, but only the human brain, with its  $10^{11}$  neurons and  $10^{14}$  synapses, - as Douglas Adams tells us -

...can make a decent cup of tea.



The organising **LIFE-FORCE** – the dynamic patterns of all phenomena – is a primary, self-evident, ubiquitous, physical, universal force, which ranks with Gravity, the Electromagnetic, Weak & Strong Nuclear forces; not as a second-tier product of those 4 forces. It might become possible to rank and relate these 5 forces using the concepts in these slides.

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EIG 21 of 23

**Russian Dolls – The Long Body**



Infinite Implicate Dimensions.

**Looking back:-** Your mother carried you as a seed, from the time of her birth until your birth. Her mother, your grandmother, carried your mother as a seed. Her mother, your great-grandmother, carried your grandmother as a **seed**. This is scientific fact; implicit in the Long Body, back to the first life forms. Our body patterns come from inherited DNA - modified by the ever-changing electro-magnetic field of the Aether.


Do these enfolded multi-dimensions - a seed within a seed within a seed – emerge in the Many-Universes and String-Theory calculations?

**Looking forwards:-** Where next might your implicit enfolded life-force be manifest? Can instruments track your energy when you quit your present form? Will another seed or energy-field accommodate you?

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## EIG 22 of 23 Perpetual Presence – Informing the Universe

Creatures of Light: People are electrical generators of 10 to 75 watts (1AA battery = 5 watts). 

Every motion creates a magnetic field – which creates an electric current, ad infinitum. These waves broadcast into the Aether – every thought and action. We all broadcast and receive all these signals at all times.

Your electro-magnetic record is perpetual. It in-forms and re-forms the Aether. We are matter and light waves. Like the photons that make us – People are Wavicles.

All phenomena broadcast. The more integrated the source – the stronger the signals; which do not die and, like star-light from the edges of the observable universe, they retain identity.

(NB – power of coherent intelligent groups; *Simile: harmonious choirs*).

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## EIG 23 of 24 LIFE-FORCE AND THE AETHER-MATRIX IN CONCLUSION.

It seems inarguable (to me) that space-time is a matrix of light in a holographic universe. The Aether-Matrix is continuously informed and reformed by all changes in all phenomena, by legible, broadcast electro-magnetic signals.

We do not know where the coherent patterns of phenomenal existence reside, which govern the growth of galaxies, seeds and DNA. It is probable, that such fundamental, universal patterns are held and recorded in the Aether-Matrix.

Living creatures and all dynamic things broadcast signals, which in-form and re-form the Aether-Matrix. If so, then the material universe, embedded in the energetic universe, alters the patterns of energy, which in turn produce phenomena – and humans – from those energy patterns. We may indeed reap what we sow.

We exist in a dynamic feed-back system of patterned energy, which our thoughts and actions change and which in turn changes us, instantaneously and continually. Our personal broadcasts persist in the Aether-Matrix “Until the end of Days.”

END

The details behind these scientifically heretical speculations are at  
[http://www.noelhodson.com/index\\_files/universal\\_model\\_v7\\_nov02.htm](http://www.noelhodson.com/index_files/universal_model_v7_nov02.htm)  
Email: [noel@noelhodson.com](mailto:noel@noelhodson.com)

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25 of 28

Life, The Universe, Time & Everything

LIFEFORCE : The universe is intelligent. The instinctive, inherent intelligence of man, animals, and flora and fauna, arises from the interactions of energy, quarks, elements and all the chemicals. These fundamentals, forged in the furnaces of stars, co-operate to provide nurturing environments for delicate life. They act intelligently.

Some intelligent creatures might even decide to act reasonably.

Others might argue that building a cairn of rocks, with millions of rocks, will ultimately, miraculously become a living intelligent creature: is it placing rock



number 50,666,777 that switches on the lifeforce? Probably not.

The LIFEFORCE is an organising and integrating force that counter-balances the disintegrating effect of the [3<sup>rd</sup> Law of Thermodynamics](#). It confers cyclicity – even to Black Holes. How it (life - organisms) arises is not known, but there are probably clues in [Chaos Theory](#). Does this organising force exist in organisms? Ask a blade of grass; or a human brain.

(1) ELECTROMAGNETISM – (2) WEAK NUCLEAR – (3) STRONG NUCLEAR – (4) GRAVITY – (5) TIME – (6) LIFEFORCE.

26 of 28

TIME – DARK ENERGY – DARK MATTER

**From:** Noel Hodson <noel@noelhodson.com> **Sent:** 21 November 2020 11:41 **To:** 'jlevin@barnard.edu'  
[jlevin@barnard.edu](mailto:jlevin@barnard.edu) **Subject:** Black Hole Survival Guide



21 NOV 2020 - Dear Professor Levin, A friend gave me your Black Hole Survival Guide. It elucidates some of the most profound cosmic mysteries. An excellent short summary, with excellent metaphors and similes to illustrate your concepts - and convey them relatively painlessly into my thick-skull.

You might care to add to your information and thinking, ideas that have occurred to me over the past 60 years. See this link. Friday, 23 October 2020 [GRAVITY ETC. - RECAP OCT 20](#)

It is probable that all objects in the universe, including black-holes and ourselves, have an event horizon. Where these horizons meet wavelike are created that we name as particles. Thus, no object "sees" the reality of any other object. We "see" and exchange in-form-ation at the event horizons. These horizons are spheres emanating from the "real" object at the core within. When we humans (our spheres) observe or react with a particle/wavicle on the surface of another sphere – it affects the entire sphere and thus all particles on the sphere; action at a distance.  
Best wishes - (Mr) Noel Hodson

Everything we "see" in the universe is in the past. Whether it is 1 metre or 1 million light years away, its light takes time to reach us. The distance between it and us is filled with broadcast spheres of quantized propagating light. The space between is not empty. It is always full. Go halfway to the Sun and its light-waves will strike you in what we had thought to be empty-space. The broadcasts are dark-matter. Their expanding propagation is dark-energy. If the spheres, the event-horizons, stop broadcasting then the object disappears. It ceases to exist (stand-out). The history of the waves, over Time, is real energy. History has mass. Time is dark-matter.



27 of 28

GRAVITY – WHAT IT IS; NOT WHAT IT DOES



19 [NEW GRAVITY -SUMMARY](#)

[Link](#)

Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. *NCH March 2015*

This idea depends on light having some mass or pressure (it does) and the [Dutch physicist, Casimir](#). He demonstrated that between (inside) close objects large /long wavelengths cannot manifest so the full complement of (outside) wavelengths push the objects together. Tall sided ships at sea are similarly pushed together. If light has mass, ideas of curved space need to be revised.

[Photon energy](#) - Wikipedia

"However, the claim that photons are massless is based on the crisis arising with other theories in quantum mechanics. In order for other math, such as gauge invariance and so-called "renormalization" to survive without considerable revision, photons must be kept massless in the realm of current equations. <sup>[1]</sup> The claim is also contested by other circles."

(Maxwell: 0.0000047 Newtons (1 Newton = 102 gm) spread over one square-metre)

[Pressure of sunlight \(Maxwell-Bartoli\)](#) is 0.4 mg on a black surface and 0.8 mg on a mirror.

DETAILED WORK: [Link here](#) and follow the Gravity tag. Monday, 9 March 2015 [GRAVITY - A NEW THEORY](#)

28 of 28

Sources and resources:

New Scientist Issues 1 to 3312 – Scientific American 1958 to 1992 – University of Oxford Dept for Continuing Education, Particle & Astrophysics, Tutor David Chapple, Jan 2010 to Jan 2014. – BOOKS : Gravity, Brian Glegg – Nothing, New Scientist – Newton Never at Rest, Richard S Westfall – Paradoxes of Time Travel, Ryan Wasserman – Lightspeed, John C.H. Spence – Electric Universe, David Bodanis – The Quark and the Jaguar, Murray Gell-Mann – The Science Delusion, Rupert Sheldrake – The Ascent Of Gravity, Marcus Chown – The Order of Time, Carlo Rovelli – Seven Brief Lessons on Physics, Carlo Rovelli – Supersymmetry (Superposition), David Walton – Infinity in the palm of your hand, Marcus Chown – The Theory of Relativity: and other essays, Albert Einstein – The Quantum World, NS – QED, Richard Feynman – Elementary Particles and the Laws of Physics, Richard P Feynman – The speed of mass, Philip J Morgan – Everything is Physics, Andrew Worsley – What we cannot know: Marcus du Sautoy – Douglas Adams – The Great Mathematicians, Raymond Flood, Robin Wilson – The Stuff of the Universe, John Gribbin & Martin Rees – The Scientific Exploration of Mars, Frederic W. Taylor – Schrodinger's Kittens and the search for reality, John Gribbin – The Number Mysteries, Marcus du Sautoy – Chaos, James Gleick – The Tao of Physics, Fritjof Capra – The God Delusion, Richard Dawkins – About Time, Einstein's unfinished revolution, Paul Davies, - Einstein's Cosmos, Michio Kaku – The Music of the Primes, Marcus du Sautoy – Leonardo The First Scientist, Michael White – The Diversity of Life, Edward O Wilson – The Ghost in the Atom, PCW Davies & JR Brown – The Elegant Universe, Brian Greene – The Science of Genetics, Charlotte Auerbach – Richard Feynman and modern physics, James Gleick – Modern Science Writing, Richard Dawkins – The Dreams that Stuff is Made Of, Stephen Hawking – Inside the Centre, Oppenheimer, by Ray Monk – The Code Book, Simon Singh – Isaac Newton, James Gleick – The Void, Frank Close – INNUMERACY, John Allen Paulos – Einstein, Banesh Hoffman & Helen Dukas – What do you care what other people think? , Richard Feynman – The Dancing Wu Li Masters, Gary Zukav – Sustainable Energy without the hot air, David JC MacKay – The Goldilocks Enigma, Paul Davies – The Joy of Pi, David Blatner – Five Equations that changed the world, Michael Guillen – The Case of the Missing Neutrino, John Gribbin – Constructing Reality, John Marburger – Astronomy, Fred Hoyle – Viruses from Space, Fred Hoyle & Chandra Wikramahsinga & John Watkins – ASIMOV Guide to Science – Einstein for Beginners, Joseph Schwartz & Michael McGuinness – Before the Beginning, on Stephen Hawking by Martin Rees - A natural history of zero, Robert Kaplan – Catching the Light, Arthur Zajonc – In Search of Schrodinger's Cat, John Gribbin – QED The strange theory of light and matter, Richard P. Feynman – The End of Time, Julian Babour – The Last Three Minutes, Paul Davies – The Quantum Society, Danah Zohar & Ian Marshall – The Cosmic Blueprint, Paul Davies – The Trouble with Physics, Lee Smolin – The Astonishing Hypothesis, Francis Crick – The Birth of Time, John Gribbin – In Search of the Edge of Time, John Gribbin – Six Easy Lesson & Six Not so Easy Lessons, Feynman - A brief History of Time, and A Life in Science, Stephen Hawking – Lectures at The Royal Society. [Collected Works of Eugene Halliday](#) – Contact: [noel@noelhodson.com](mailto:noel@noelhodson.com)

[Author](#)  
[Noel Hodson CV](#)







Life-Universe-Everything-8Mar2011.pdf

Monday, 18 January 2021

## MY T.O.E OR NEARLY EVERYTHING AND TIME TRAVEL



[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

Following on from the above slides and my blogs on the six forces, Gravity, Electromagnetism, Strong Nuclear, Weak Nuclear, Time and Life force, this sketches the dim glimmer of an idea that might be developed, or not, as the case may be. I think that, as the slides conclude, history has mass, which is evident in the electromagnetic waves that emanate or propagate from all and any core object and fill the space from that core (the real object) to the outer, expanding periphery of the object's sphere. It is the sphere that we "see" and which enables us to locate and study the object. We also generate or reflect our own identifying sphere, which enables others to identify us by intercepting the data broadcast to the periphery of our sphere. Thus, everything we see is a historic image from the past, as far back in the past as the time it takes for the light to travel or propagate from the core object to the periphery or horizon on the expanding sphere. Note the inspiration from descriptions of Black Holes.

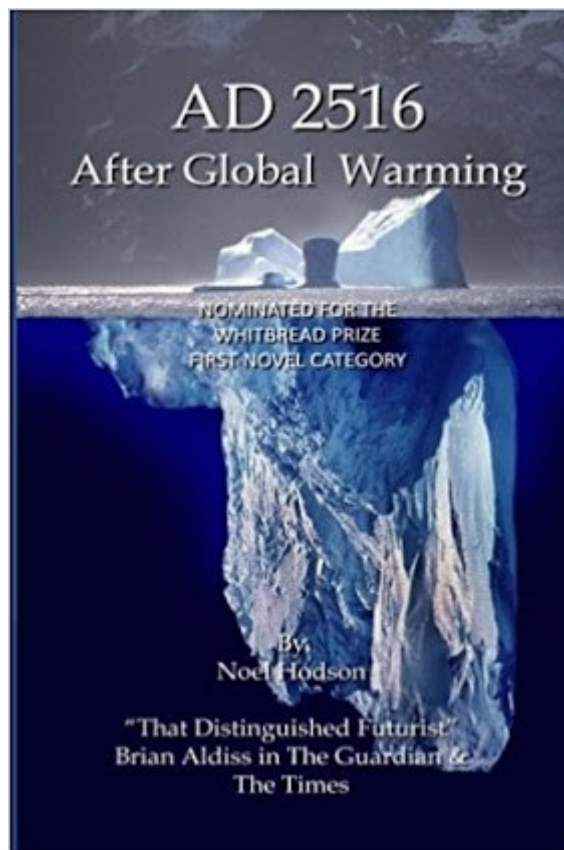
We "see" all objects where our own sphere and the object's sphere intercept. It might be that particles result at the points of interception. The data or information from the core is visible on every point of the sphere.

We can see an object from any position we take relative to the core, because the data is broadcast to the periphery. We are viewing history. At very close range, with split-second time elapsing, where the core and the viewer are simultaneous, they might merge their spheres and become one object.

The thought has been bugging me for months; so I here broadcast it to perplex other similarly stricken theorists or SF authors. Answers on a postcard please to [noel@noelhodson.com](mailto:noel@noelhodson.com) .

Saturday, 2 January 2021

## GRAVITY - TIME - ELECTROMAGNETISM - WEAK NUCLEAR - STRONG NUCLEAR - LIFEFORCE



This novel, AD2516 – After Global Warming, forecasts a Utopian future for 11 billion souls on Earth. It contains my ideas as to how science and society will develop – without money. And it is a good yarn. Very readable.

2nd January 2021:

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

26 of 28 TIME – DARK ENERGY – DARK MATTER From: Noel Hodson Sent: 21 November 2020 11:41

To: 'jlevin@barnard.edu' jlevin@barnard.edu Subject: Black Hole Survival Guide

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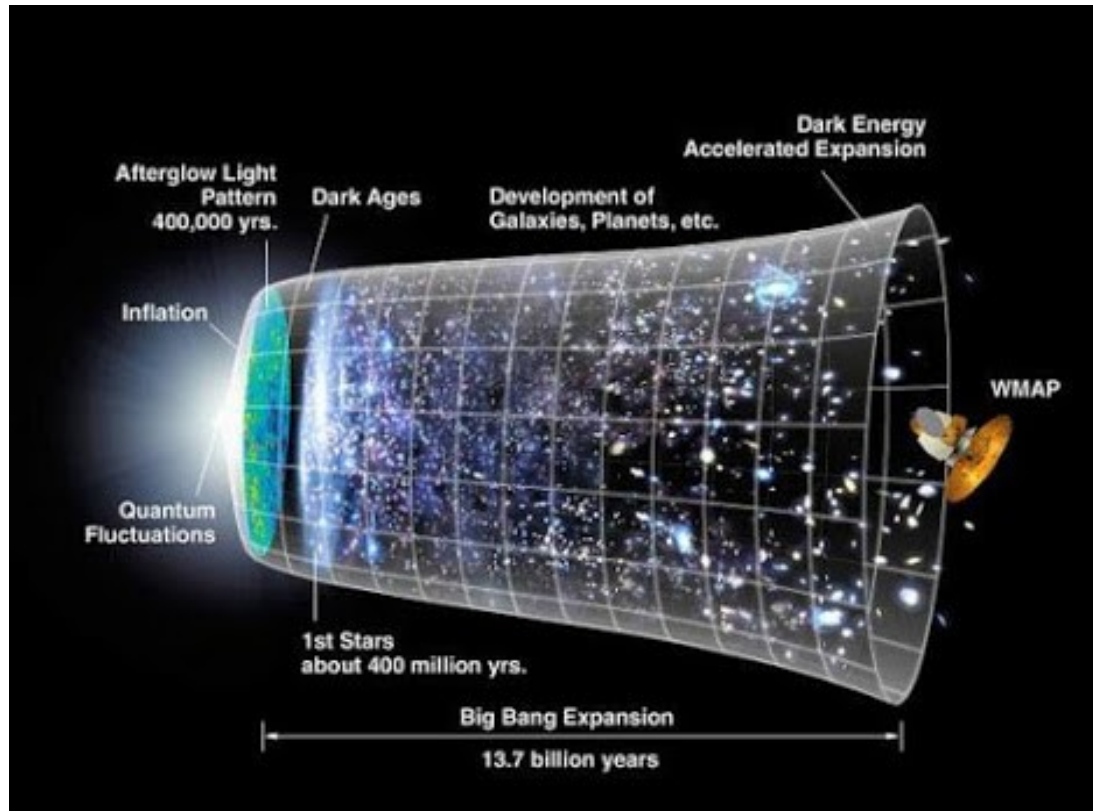
Everything we “see” in the universe is in the past. Whether it is 1 metre or 1 million light years away, its light takes time to reach us. The distance between it and us is filled with broadcast spheres of quantized propagating light. The space between is not empty. It is always full. Go halfway to the Sun and its light-waves will strike you in what we had thought to be empty-space. The broadcasts are dark-matter. Their expanding propagation is dark-energy. If the spheres, the event-horizons, stop broadcasting then the object disappears. It ceases to exist (stand-out). The history of the waves, over Time, is real energy. History has mass. Time is dark-matter.

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

**Slide 28 of 28 - Sources and resources:** New Scientist Issues 1 to 3312 – Scientific American 1958 to 1992 – University of Oxford Dept for Continuing Education, Particle & Astrophysics, Tutor David Chapple, Jan 2010 to Jan 2014. – BOOKS : Gravity, Brian Glegg – Nothing, New Scientist – Newton Never at Rest, Richard S Westfall – Paradoxes of Time Travel, Ryan Wasserman – Lightspeed, John C.H. Spence – Electric Universe, David Bodanis – The Quark and the Jaguar, Murray Gell-Mann – The Science Delusion, Rupert Sheldrake – The Ascent Of Gravity, Marcus Chown – The Order of Time, Carlo Rovelli – Seven Brief Lessons on Physics, Carlo Rovelli – Supersymmetry (Superposition), David Walton – Infinity in the palm of your hand, Marcus Chown – The Theory of Relativity: and other essays, Albert Einstein – The Quantum World, NS – QED, Richard Feynman – Elementary Particles and the Laws of Physics, Richard P Feynman – The speed of mass, Philip J Morgan – Everything is Physics, Andrew Worsley – What we cannot know: Marcus du Sautoy – Douglas Adams – The Great Mathematicians, Raymond Flood, Robin Wilson – The Stuff of the Universe, John Gribben & Martin Rees – The Scientific Exploration of Mars, Frederic W. Taylor – Schrodinger's Kittens and the search for reality, John Gribbin – The Number Mysteries, Marcus du Sautoy – Chaos, James Gleick – The Tao of Physics, Fritjof Capra – The God Delusion, Richard Dawkins – About Time, Einstein's unfinished revolution, Paul Davies, - Einstein's Cosmos, Michio Kaku – The Music of the Primes, Marcus du Sautoy – Leonardo The First Scientist, Michael White – The Diversity of Life, Edward O Wilson – The Ghost in the Atom, PCW Davies & JR Brown – The Elegant Universe, Brian Greene – The Science of Genetics, Charlotte Auerbach – Richard Feynman and modern physics, James Gleick – Modern Science Writing, Richard Dawkins – The Dreams that Stuff is Made Of, Stephen Hawking – Inside the Centre, Oppenheimer, by Ray Monk – The Code Book, Simon Singh – Isaac Newton, James Gleick – The Void, Frank Close – INNUMERACY, John Allen Paulos – Einstein, Banesh Hoffman & Helen Dukas – What do you care what other people think? , Richard Feynman – The Dancing Wu Li Masters, Gary Zukav – Sustainable Energy without the hot air, David JC MacKay – The Goldilocks Enigma, Paul Davies – The Joy of Pi, David Blatner – Five Equatios that changed the world, Michael Guillen – The Case of the Missing Neutrino, John Gribbin – Constructing Reality, John Marburger – Astronomy, Fred Hoyle – Viruses from Space, Fred Hoyle & Chandra Wikramahsinga & John Watkins – ASIMOV Guide to Science – Einstein for Beginners, Joseph Schwartz & Michael McGuinness – Before the Beginning, on Stephen Hawking by Martin Rees - A natural history of zero, Robert Kaplan – Catching the Light, Arthur Zajonc – In Search of Schrodinger's Cat, John Gribbin – QED The strange theory of light and matter, Richard P. Feynman – The End of Time, Julian Babour – The Last Three Minutes, Paul Davies – The Quantum Society, Danah Zohar & Ian Marshall – The Cosmic Blueprint, Paul Davies – The Trouble with Physics, Lee Smolin – The Astonishing Hypothesis, Francis Crick – The Birth of Time, John Gribbin – In Search of the Edge of Time, John Gribbin – Six Easy Lesson & Six Not so Easy Lessons, Feynman - A brief History of Time, and A Life in Science, Stephen Hawking – Lectures at The Royal Society

Friday, 23 October 2020

## GRAVITY ETC. - RECAP OCT 20



GRAVITY - I have read very little in the past 20 years to dissuade me from this idea of what gravity is, as contrasted with what gravity does.

19 FEB 2016 - Read a new very short summary at [NEW GRAVITY - SUMMARY](#)

**Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. NCH March 2015**

DARK MATTER - No one yet claims to know what constitutes the missing mass or gravity, required to hold spinning galaxies together. [NASA says of galaxies](#) that measurements indicate that 80 to 90 percent of the matter is

either missing or hidden from view. My [previous post](#) in this blog, speculates that this invisible matter /mass is held in the electromagnetic waves radiating between the "real" core of an object and its spherical and constantly expanding periphery (its image). I now suppose that the amount of energy manifesting in the "empty" space between core and event-horizon depends on the scale and the age of the object. e.g. The sun's outer sphere (we observe this outer sphere) is, say, 10 billion years old. It has been pumping out energy from its core to its current horizon for 10 billion years. Waves of energy have mass.

**DARK ENERGY** - Is a close relation of dark-matter, except that instead of merely adding to gravitational mass, dark energy is postulated as being the force that makes the observable universe (43.7 b.l.y.) continually expand. This makes sense as all objects, all matter, in the universe have energy and all energy radiates or expands to infinity. The horizon of the observable universe at 43.7 b.l.y is as far as we can "see" - a vast distance (which I'm calling infinite). Beyond that horizon, objects are moving away faster than light, so we cannot observe them. Dark Energy and Dark Matter together are imagined to be 95% of the mass of the universe - meaning that what we detect as real matter is only 5% of the total mass.

**LIFEFORCE** - Is, I think, the fifth fundamental force. GRAVITY, THE WEAK FORCE, THE STRONG FORCE, ELECTROMAGNETISM and... the LIFEFORCE.

On Earth we are surrounded by life. Science doesn't like it and doesn't acknowledge that it is a fundamental natural force that organises energy and ourselves. It makes and organises organisms.

Wiki-Answers say a strand of DNA, weighs 6.5 picograms (one trillionth of a gram) per cell and we humans have 6 grams to 60 grams of DNA each. The Harvard scientists calculate one gram of DNA can hold 455 billion gigabytes of data. A modern laptop or desktop PC holds about 500 gigabytes – on a 4 sq. inch disk metal-coating weighing 2.4 micrograms (2.4 millionths of a gram) or 208 gigabytes per gram; So – in gigabytes per gram – DNA 455,000,000,000 /PC 208 = 2,187,500,000 or **DNA is 2.1 billion times more efficient**. And when dormant it lasts for 3.5 billion years.

The patterns of DNA are in turn forged by and stored in the energetic waves that fill the universe. Such patterns are re-formed and in-formed by every event in the universe. Life is a result of these dynamic patterns. I think.

**LIGHT** - Light has mass. Several demonstrations of this are contained in these blogs on GRAVITY - follow the tabs.



Wednesday, 14 October 2020

## DARK MATTER, DARK ENERGY & SPOOKY ACTION AT A DISTANCE.



Today, I want to further explore the concept that we observe or detect all material objects, all things, large and small, by seeing their electromagnetic signals. Everything in the universe generates or reflects light or radio waves and we "see" the waves, then analyse and interpret them.

We also signal our own existence and presence by emitting or broadcasting electromagnetic waves or light and radio. Every atom in our bodies can be detected by electron-scanning-microscopes from the radiation the atoms emit. The trillions of atoms in our bodies combine to create our unique signature signal - our entire selves - our identities. And so, we can see each other as complete organisms.

Similarly, we see the sun as a complete cosmic object, and, on closer observation we can see its constituent elements. Ditto the Earth, and the planets and all objects.

All "things" radiate or reflect as globes, albeit that the globes become distorted into a myriad of shapes as the radiation contacts and accommodates other objects. But a powerful globe such as the sun retains its obviously globular shape for billions of miles. Hence, we can "see" stars and galaxies that are many light years from us, from us the observers, often using machines to make or boost the observations.

What is actually happening is that our personal globe, of whatever shape, is emitting waves that meet, or collide, or intercept the waves from the thing we are observing - be it a mouse, a stone, or a galaxy, or a black hole. However near or far the objects are - they rarely meet, other than at the event-horizon of their globular radiations. If they interpenetrate - and cores actually meet - a new object is formed and it combines the two radio signals into one.

Where these globes of radiating waves intercept, waves denoting a "real" object at the centre of the radio globe, sub-atomic particles are formed. Sub-atomic particles are ephemeral energies, not solid, but they are the building blocks of all material and mass. They are sometimes referred to as wavicles, or wave-particles.

Thus, separate objects rarely meet the reality core of other objects. What they experience is, or are, the emanations from each other as their event-horizons meet. If, for example, we take an atom as being material - solid mass - it is surrounded by electrons and other particles which prevent or obscure material collisions.

Thus, every object has a "real" core centre, radiating globes of signals. The periphery of the globe is in most cases what we see, detect or encounter. The space between the periphery and the core is apparently "empty" space but is in fact full of radio waves (dark matter?). These energies are only detectable when an observer-globe meets an object-globe and at the interception point a particle is formed (perhaps like a typhoon in the atmosphere). If we act on the particle e.g. by measuring it, we act on the entire globe of which it is part. Thus, a particle on the other side of the globe of radio broadcasts, or the myriad of intercepts (particles) at any point on the globe, will be altered by our one action (observation). This, I imagine, is "spooky action at a distance".

For example: Light from the sun pours out, or broadcasts continually, fuelled by atomic fusion as hydrogen converts to helium (mostly). There is a real material core which communicates its presence by its invisible electromagnetic waves. They are invisible until the waves strike, collide with, intersect or interact with other objects, dust, gas, planets, our telescopes, etc. in space. It is that interaction which, I aver, creates particles such as photons, on the surface of the sun's ever expanding, ever energised, broadcasting sphere. We, as observers, are objects in space, also broadcasting our presence (fuelled by food and sunshine) in waves of globes or spheres and reflected light, which intersect with the sun's energetic outpouring. Where the spheres meet, "Here be Particles." We humans are the real material core of our broadcasts. The core of the sun does not meet our core. The meeting is between wavicles from the two objects; the sun very large, the human very small. The sun's expanding sphere meets our expanding sphere, this meeting creates particles on the surface



(event horizon) of the spheres. If we clever humans tweak one of those particles, which is part of the energetic sphere, the action alters the particle and thus alters the sphere; so, particles anywhere on the sphere/s are altered. This alteration might be instantaneous - and thus be "spooky action at a distance."

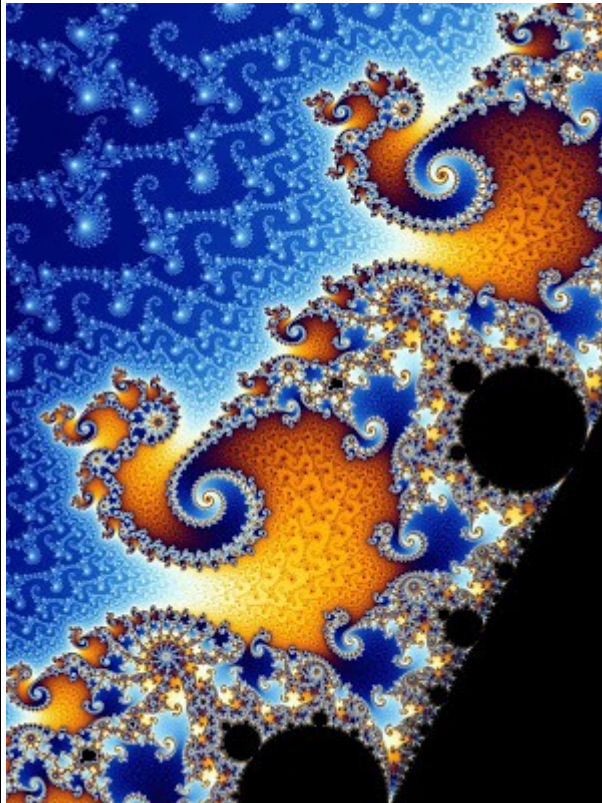
If the sun were located billions of light years from any other object, the core would still broadcast spherically continuously, but the broadcast waves would be invisible. The space between the material core and the surface of the expanding sphere or globe would appear "empty" but would in fact be filled with electromagnetic energy waves (light). As demonstrated recently, light does have mass<sup>\*</sup>; masses of light have energy; energy equals mass multiplied by C squared. If we now create dust or say, hydrogen clouds encasing and surrounding where the light has expanded to - b.l.y.s from the core - and continues to expand, so that we can see the light and measure it, we will find that the continuously expanding globe is now visible; as it lights up the hydrogen. Thus, we have a mechanism that fills "empty" space with mass, and that continuously expands. For this mass to be both Dark Matter and Dark Energy that explains the "missing" 80% of galactic gravity and the ceaseless expansion of the universe - the mass has to be additional to the known weight /mass of the "real" core.

If so, where does the new, extra mass come from? The sun's core, which is pouring out masses of energy has to be replaced and added to; to explain the missing 80%. If the universe exists in an ocean of infinite energy, that has mass, that is attracted by the sun's gravity, and so falls into the sun and continually replaces the broadcast light and heat - that would suffice. But we are back to unscientific infinite creation - and so, I'm afraid, back to God.

**\* Light has mass - track back on the Gravity tab to previous essays.**

Sunday, 16 August 2020

## EPR ENTANGLEMENT & DARK MATTER



IT IS COMPLICATED

Quantum particle entanglement as investigated and debated by Einstein, Podolsky and Rosen (EPR) a century ago and by hundreds of physicists ever since, is now generally accepted by science. But it remains a deep mystery. When a photon or other primary particle is split and the twin particles zoom off to different parts of the universe, they keep in touch. How they do this is unknown. Einstein didn't like Entanglement because it requires the two particles to communicate instantaneously - faster than the speed of light. Einstein proved that "nothing can act faster than the speed of light".

Was he wrong?

Hundreds of highly sophisticated and accurate practical experiments have been conducted which demonstrate that entanglement is real. Change one of the twins and the other, no matter how distant, instantly changes. They are in

touch. Computer companies are investing millions in "quantum entanglement machines": it is real.

Entanglement is often cited in the Double-Slit experiment where light (photons) is shone through very tiny slits, onto a screen; they manifest wave-like behaviour; even a single photon as it reaches the screen breaks down into wave patterns instead of remaining as a quantum spot of light. There is no explanation.

After one-hundred years or so of speculations, my speculation is that ALL objects in the universe, from galaxies to sub-atomic particles signal their existence by radiating or reflecting electromagnetic signals (light, radio), which we or our instruments detect. This is how we know the objects exist; their waves communicate universally, and we read them. This radiation, these waves expand from the object in spheres; even a laser beam eventually will spread into a sphere. A laser beam shining up into deep space is visible as it encounters and reflects from particles in our atmosphere and then in space. It is visible from whatever location we look. It is radiating its existence - otherwise we could not detect it.

I am now speculating that how we see objects is a function of the expanding sphere it radiates. We encounter the energetic data-rich waves as they expand to infinity and we recognise the central object. We are actually seeing or intercepting an image on the surface of the expanding sphere; somewhat like an event horizon.

Take this fact further: as the (real) object radiates or reflects, waves propagate continuously from the centre. It is fact that we and the universe only detect the object when the waves encounter and are intercepted by another energetic data-rich sphere - or our instruments. The merging of the different waves - propagating say from a planet and a star or a person, at the surface of the two spheres, create a particle /photon etc. which we see. We cannot ever see the "real" object; we can only see the signals it broadcasts as waves - and when we do so, we inevitably "collapse the wave-forms" as our waves interfere with those of the observed object.

Between the centre of the object and the peripheral surface, the waves exist but are invisible to us. We cannot /do not see the energy propagating in the space between the object and the expanding sphere; unless and until it meets another sphere where a particle (spinning pure energy?) manifests. The inner-space is however not empty (there is no "empty" space in the universe), it is full of the waves of data about the central object. If we look into that inner-space, we can only do so by intercepting the propagating waves and thus introducing spheres of energy from our instruments or ourselves; we too are objects that signal our existence by radiating information (in-form-ation).

So, we detect entanglement as we measure (intercept) points on the outer sphere. It is the sphere, which is a field (I prefer ocean) that we interfere with. Our interference affects the whole sphere (shell) and thus changes the particles that exist on the surface of the sphere. All such particles on every point of the shell are affected simultaneously. Entanglement is not limited to twin particles - there can be any number of identical particles that alter as we interfere with the expanding shell.

The universe is filled with such energetic shells. There is no place where they do not exist. We can see the data broadcast by the inner-objects onto their shells from any location in the universe.

A further thought is that the invisible waves of energy propagating between the centres of all object and their shells (which inform us the objects exist) is many times more mass than the particles that become visible at interception points - though such points are as near infinite as maths will allow. The space between centre and shell-surface is dark-matter; we (any other radiating object) cannot detect the dark-matter without our shells

interfering and thus creating particles. I speculate that particles of matter are whorls or whirlpools of pure-energy where shells meet (i.e. everywhere).

I've addressed dark-energy and its alleged expansion power elsewhere.

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

### **P.S. A wild speculation – an off-the-wall exploration**

So far, so good. I think the above notes makes scientific sense.

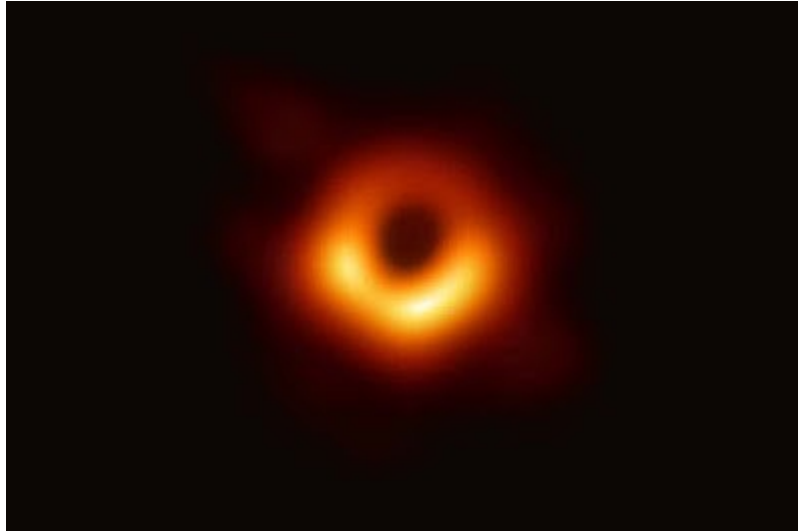
What probably doesn't make any sense, again borrowing from Black Hole event horizon essays, is: am I the viewer, or my two-dimensional image, captured on the expanding sphere of the distant object? I am now confused and cannot explain how such a 2D image might form. But let's continue. The data /information from the object, say the Sun, is definitely visible at any point on its sphere. I speculate in previous essays that Spooky Action at A Distance from "entanglement" occurs when we intercept and interfere with the particle/s where our sphere's meet; where our energy changes the particle on the Sun's expanding sphere; and so alter the characteristics of the sphere - and so alter all the particles on that sphere, at every point on the sphere. Thus, nearby particles having travelled for 8 minutes (history) and 93 million miles, which I affect, equally affect, say an entangled particle, 93 million miles on the far side from my position. My observational reach is now 186 million miles.

We have entered the realms of Science Fiction. My 2D photographic image is perhaps also present on the far side of the Sun's sphere, 186 million miles from my core, which is the real me. I am having an impact on the electromagnetic waves that propagate from the Sun and form a radio sphere at a radius of 93 million miles. I alter the sphere. That impact will affect every point on the Sun's broadcasting sphere. Now, let's be bold and switch from gazing at the Sun to studying the Milky Way, which I also see only because the galaxy also broadcasts its presence, its existence (stands out) via an expanding sphere - until it arrives at my eyeballs and fevered brain. Can my holographic 2D-self happily roam about on the far side of the galaxy?

**THUS ENDETH THE LESSON - Sunday 16th August 2020**

Monday, 3 August 2020

## GRAVITY and BLACK HOLES



M87 - All attentive students of Magnetohydrodynamics, and General Relativity will instantly recognise this picture as the black-hole M87 - about 55 million light years from Earth, whose mass is 6.5 billion times the Sun.

Stephen Battersby writes, with his usual clarity and insights, of M87, in New Scientist 1 August 2020.

<https://www.newscientist.com/article/mg24732930-700-black-holes-are-hiding-movies-of-the-universe-in-their-glowing-rings/>

It is conjectured that the bright ring consists of countless numbers of orbiting (globes of) distinct photon rings separated by mere picometres or even less distance. If we could focus sufficiently well, each ring/globe would reveal its history - and thus the history of the universe - back 55 million light-years. Mankind is far from making such telescopes.

I theorise or guess, in my theory of gravity, that photons do have mass, and so can be attracted to a gravitational object. This might obviate the need for curved-space-time. It is merely a far "heavier" object attracting lighter objects. What I think is happening is that as the mass of M87 shrinks it does so layer by layer by compressing the (remaining) Casimir radiation between the shells of its mass. The most inner core of M87 is being compressed from mass to plasma - or pure-energy. The object was built layer by layer, each one locking out more electromagnetic-radiation (light), and so it converts layer by layer back to plasma; from the inner rings to the outer shell.

This compression - with the weight of the entire universal ocean of radiation pressing in from 43.7 b.l.y. - ultimately ejects the plasma; often and long observed as "jets of positrons and electrons". Or, perhaps as even more fundamental quantum units - say quarks or just pure-

energy. Stephen Battersby writes here of space-time being dragged around spinning black-holes. That implies friction and mass that can be dragged in "empty" space. As I've speculated for 30 years or so, there is no empty space - and light has mass.

If so, black-holes are a "natural" necessary event in our perpetually cycling universe - in which Big-Bang pure energy forms mass, which forms galaxies, which collapse to black holes, which shoot out jets of pure energy. If so, do we need the Big-Bang? Probably not. If so, all objects - including ourselves - can be categorised as long or short lived bubbles in the ocean of pure energy. All bubbles implode - not explode. They implode as the mass of electromagnetic energy presses on them. Within matter, layers are formed between which Casimir exclusion occurs, which ultimately results in black-holes.

The greatest mystery is how does life occur? What is the life-force?

"There's a way to go before we rest."

Tuesday, 16 June 2020

## FISSION & FUSION ENERGY



The quest to generate limitless clean energy from atomic-fusion, such as the Sun produces, has spanned at least fifty-years. The Sun, our star, warms the solar system by fusing two hydrogen atoms to make one helium atom; in the process surplus energy is shed, which radiates and brings life-energy to Earth, and maybe life to our neighbouring planets. To date, despite huge budgets and hundreds of brave attempts, science has not managed to get more energy out of fusion experiments than it puts in.

Basically, the aim is to create and control a plasma - hot, pure energy - by firing lasers at elements, or by other processes, that force atoms together. This "forcing" uses a lot of energy. The sun-like plasma is very, very hot. It can only be contained in a magnetic-bottle. Making such "bottles" to contain the heat of the sun requires a lot of energy and precise control. So far, plasma has been manufactured that lasts just parts of a second, requiring more energy input

than the output. When, or if, fusion is achieved in our laboratories, harvesting useful heat from the plasma, to drive turbines, is another major technical hurdle.

Why bother - when we have fully mastered atomic-fission? Atomic energy reactors have been contributing electric power since the Atom-Bomb and H-Bomb were invented. The major difference between fission and fusion is that fission explodes the energy locked into atoms and sub-atomic particles - while fusion builds new atoms and sub-atomic particles. The human race has not yet managed to fuse the bases of mass or matter together, moulding elements or parts of elements from "pure-energy". Pure energy pervades the whole universe as fields - that I prefer to envisage as oceans. Fields are flat and two dimensional - Oceans are deep and three dimensional.

Either way - we don't know how to compress or precipitate objects /mass/ material /stuff from plasma. Creation of fundamental particles is still a mystery.

We bother? - Because fission is a dirty, dangerous, poisonous process that releases lethal or wounding and disruptive radiation of wavicles/particles with half-lives of hundreds, sometimes thousands of years. It is said that fusion produces no such harmful debris.

To assist the human-race to harness atomic fusion, I suggest we rethink gravity. The most plentiful element in the universe is hydrogen. Wherever we look in the cosmos, we see immense wispy clouds of hydrogen. They drift together, they make oceans, the oceans get deeper and deeper. They coalesce. In the depths of the cloud-oceans stars form. The stars form galaxies, of billions of stars. Each star is a sun, radiating immense energies (light) from atomic-fusion. This act of galaxy creation is caused mainly by gravity.

With the risk of being repetitive, I speculate that the outer-force of gravity is the universal ocean of radiation that is 43.7 b.l.y. deep (to the horizon of the observable universe). It is now known that light and electromagnetic energy are not mass-less. Light exerts pressure. I guess this almost infinite ocean presses almost eternally on every-thing, including the hydrogen clouds - which coalesce.

Professor Casimir demonstrated that between masses that become matter, some wavelengths of radiation, the universal radiation, cannot manifest. The radiation between masses is less than the outside radiation. Between masses is a shadow of exclusion. As mass piles upon mass, the more shells of matter are formed, the deeper the Casimir Shadow (I think) becomes. This inner partial vacuum is the pull of gravity. At its most extreme the inner vacuum becomes a black-hole. Black Holes do recycle their trapped energy.

It takes these two forces - Outer and Inner - to power fusion in stars. Our fusion-energy researchers might collaborate with physicists who want to make black-holes (vacuums), compressed by 43.7 b.l.y. of radiation (pressure) - to create useful fusion-plasma. Then all they have to do is find a way to contain and direct it.

It is just a thought. But it is a new thought. Fusionable material perhaps?



Sunday, 17 May 2020

## THE FIFTH FORCE & BEFORE WE GO

NEW SCIENTIST 16 May 2020. The front cover displays "A FIFTH FORCE OF NATURE, Momentous hints emerge of a whole new world of physics". Page 30 carries the article "May the fifth force be with you". The author, Daniel Cossins, rehearses today's consensus physics and recent history leading to the familiar four fundamental forces:

(1) Electromagnetism; (2) The Strong Nuclear Force - binding protons & neutrons; which is 1 million times stronger than (3) The Weak Nuclear Force - which governs changes in subatomic particles and thus radio-activity, e.g. Hydrogen converting to Helium; and finally (4) Gravity - both Newton's and Einstein's gravity.

These four fundamentals are the pillars of The Standard Model, which is the basis of our understanding of all physics. And it works. The model works well enough to enable humans to make atomic bombs, mobile-phones, microwave ovens, supercomputers, space-flights



and all of today's most advanced machines and products. But - gravity refuses to fit into the model because as yet no one has discovered a "quantum" or particle of gravity. The other three forces can be understood by analyses of their quanta, their tiny particles, and by their fields.

Fields are the influences the particles broadcast (without known distance limits). The particles and fields are sometimes called "wavicles"

because they appear to us as particles and simultaneously as "pure-energy" wavelengths. The broadcasts from or to the particles, their energetic signals, are how we are able to observe them and prove their existence, to ourselves.

All except gravity. So far, no "gravitons" have been found. The field of gravity, which I think of as an ocean to denote its three dimensions, is self-evident from Newton's apple (A Newton is 100 grams - the weight /mass of a small apple), to the huge swirling Milky Way Galaxy - billions of stars orbiting the galactic centre (a black-hole?) thought to be held together by gravity. Swirling galaxies baffle physicists. They should clearly and obviously accord with our common-sense and fly apart. The gravitational mass of the Milky Way is too small to hold onto the billions of stars that spin around it. Centripetal/Centrifugal force (think of Wall-of-Death motorbikes or a ball whirling round on the end of a piece of string) demands that the stars should fly away into outer space. But they don't.

Many theories have been advanced to explain both the lack of enough mass to cement galaxies and the lack of gravitons. Imaginary Dark Matter (27% of the universe) might exist in all galaxies, adding huge amounts of gravity; but no one knows what it is. Its



opposite, Dark Energy, (68% of the universe) is also imagined to exist. Equally invisible and undetectable, this imaginary "stuff" is allegedly the energy that drives the expansion of the entire universe, making immense galaxies disappear from our sight at light-speed, over the universal horizon **46.5 billion.light.years\*\*\*** (b.l.y.) away. Ordinary matter - like us - is just 5% of the mass of the universe.

*(\*\*\*NB - the universe is only 13.7 b.l.y old. The observed horizon is 46.5 b.l.y. distant This is impossible if, as Einstein proved "Nothing travels faster than light". Somebody has got their sums or rules wrong. Not to be defeated, "Science" has invented "Inflation" complete with force-particles, "inflatons", which sophistry enables a 13.7 b.l.y. old universe that started as a dot at The Big Bang to expand at 3.4 times the speed of light - to its present horizon. Strange; and probably not both can be true.)*

Thus, we have reached the limits of our present understanding. And we haven't even started on Life and Consciousness.

In the same New Scientist issue Roger Penrose's marvellous essay The Nature of Reality is re-printed under the headline What Is Reality?

I am also currently reading Marcus Chown's book The Ascent of Gravity, probably the 50th or so summary of physics that I've read since 1958. This one is recent, comprehensive, very readable, and up to date.

All of these authors are brilliant physicists and mathematicians - and masters of clear English. From their essays I have formed a vague understanding of the works of Newton, Einstein, Maxwell, Faraday and many other geniuses (genii?). I've written an amusing Time-Travel [novel with Newton](#) as the central character.

And thus I have formed ideas about [Life, The Universe and Everything](#) that might trigger new directions out of the cul-de-sac that science has arrived in. About 20 years ago I produced a set of slides that wrestle with the Big-Questions; and then get tied in knots.

Briefly, we humans are so far as we know, the pinnacle of creation - forged by the four fundamental forces. We are made of the stuff of the universe, which in turn is made of electromagnetic energy /plasma, which in shorthand is "Light". We are creatures of light. We are dissipative creatures who consume and process 70 tons of food (made with sunshine) and manifest intelligence, which occasionally produces reason, during our blink-of-an-eye allotted lifespan. In the past 20 years, since compiling those slides, I have considered gravity, and come up with a novel idea.

It seems to me that the universe is full, full to bursting, with electromagnetic energy - with "light". There is nowhere in the universe that is not criss-crossed by light waves. They propagate or reflect from every speck of matter and every filament of plasma. We detect them with our eyes and astrophysical instruments. They enable us, with our receptive brains (made from light) to see all of creation. Wherever we locate such instruments - even in the most remote and emptiest space-time - we see the entire universe, thanks to the ever-present criss-crossing light waves. The sources constantly change - stars explode, galaxies migrate, TV channels broadcast new programs and mobile-phone conversations evolve; but the light-waves-particles fill the universe.

The consensus up to about 1970 was that light "C" is mass-less, though Einstein ascribed energy (and so mass) to photons, and always propagates, in a vacuum, at 300,000 km per second. We cannot catch light ever travelling at a different speed. It attempts to travel the shortest distance between two points - which logically is a straight-line. That shortest-

route, in our universe, transpires to be a curved path through space-time around gravitational masses, such as the Sun or the Earth.

But, since 1970 there are more and more discoveries that light has some slight mass, and that it's "speed" varies through different mediums. Follow the Label "Gravity" at the end of this essay to see these examples. If, if, if, light has some mass, however slight, it does not need to be explained as following curved-space-time; it can be more simply explained as being attracted by matter/mass (or regions of energy).

If a tiny mote of energy, a photon, has mass, it will act like all other matter and obey the laws of gravity. As a beam of photons passes a large body, it will bend towards it. Huge masses, like stars or black-holes will attract photon-beams, even passing at the 300,000 km /sec, into orbit.

So, if gravity is not curved-space-time, what is it?

Empty-space is not empty. It is chock full of radiation /electromagnetism /light waves and particles / thousands of diverse particles and fields (oceans). All these entities are moving at great speed. They cross, collide, deflect, bounce off each other. This constant activity creates heat and pressure. Light fills the universe with immense pressure.

Where might we look to avoid the pressure of light? The answer is, it is dark inside matter. [Professor Casimir](#) found that between matter, some wavelengths and so particles are missing. He demonstrated this with flat porcelain plates and found that the pressure from outside the plates is greater than the pressure between (inside) the plates. The plates stuck together. The same phenomenon happens when two tall sided ships get close on a choppy sea. The waves between the ships are small; the waves outside are large - and push the ships together. Matter can shield its "inside" from all the wavelengths of light. Taken layer by layer, the light is cumulatively blocked by ever denser matter. The universal pressure outside is immense and ubiquitous. The pressure inside is reduced by each layer. The heart of a planet is very dark. It tends to become a vacuum. Ultimately, as layers of matter are added, the object becomes a black-hole.

I think this is the driving force of gravity. It operates between all objects, large and small. The external pressure from all the electromagnetic and other forces that propagate in the universe - which we can and do detect and study - the shorthand being the pressure of light - is what provides the "weight" of gravity. The larger an object, the deeper the darkness, the stronger the inner vacuum, the stronger the gravity. It works quite well - theoretically.

The fifth-force is, I conjecture, The Life Force. We humans including scientists are surrounded by life-forms. We are life-forms. They form mysteriously. No one knows how. They, and we, are made from light and particles and atoms and molecules and cells etc. Trillions of minuscule organised things cooperating with sufficient intelligence to form a human - and so create the mobile-phone. These forms are intelligent. The cooperation is intelligent. The motes and particles are probably intelligent. We are faced with the Life-Force at all times - but we deny that a force brings stuff together to make these organisms. We much prefer the 2nd Law of Thermodynamics, extrapolated from a cooling iron stove, that tells us we are all doomed to a cold dark soup at the end of the universe. May I say, in the light of the evidence of 7 billion active humans and trillions of living cells, and after 60 years of following the science - Bullshit. We and our universe are not doomed to disintegrate; we move towards greater integration. There is a Life-Force, that organises energy in a myriad of ways and countless forms.

Similarly black-holes suck in energy - and then recycle it. The universe is a dynamic system. Just as we gobble down food, made from sunshine, invent things, excrete the

food re-formed, and create babies to ensure our legacy - so all the objects in the universe are cyclical.

Dark Matter, is I guess, another vacuum force - in galaxies. The basic stuff of the universe, plasma, light etc, forms particles and atoms. We don't know how. It does however form matter. My guess is that as Einstein proved it takes a vast amount of energy to form an atom ( $E=mc^2$ ) and that energy is gathered from space-time; as this happens (continually) there is a momentary partial vacuum in the stuff of the universe; which rushes to fill the vacuum - and so pulls on all matter. Dark Matter is the lack of stuff - not a new particle. It helps glue galaxies together.

Dark Energy, is I guess, a similar mechanism in reverse. In inter-galactic space as virtual particles form for milliseconds, (Fred Hoyle) they deplete the ocean of light (electromagnetic field) and reduce the ocean's gravitational force and the three other forces that might otherwise form matter. This creates a letting-go of the cohering forces in inter-galactic space-time and expands space-time. We observe this as expanding the horizon of the observable universe. It could of course be merely a trick of the light.

What mystery have I neglected to address? Watch this Space-Time.

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Coincidentally - Or as Jung would have it, synchronistically, my friend Michael asked me to contribute to an initiative for people becoming aware of their mortality, to put their lifetime conclusions on record. Mine include the Fifth-Force. Is this the last word in physics? The biggest, deepest scientific mystery is the existence of consciousness, intelligence and life.

### **BEFORE WE GO**

“Brain damage aside, most of us grow in awareness and consciousness as we age. An infant dying in hospital or at home knows little of it and has no fear. A child, such as me aged six, miraculously saved by penicillin, is more aware of pain, briefly, but has no fear of death. Teenagers are far too busy and self-assured of immortality to be afraid at their sudden or lingering demise; they simply resent the interruption to their headlong flight and mating opportunities. As young parents we are far too responsible, important, overworked, and still immortal, to register any emotion other than impatience when facing a premature end. After middle-age, say sixty-five, we have the haunting suspicion that we are “like other men” and might, just might be destined to meet-our-maker in the next decade or two – or three. It is in this phase that I personally consider the afterlife, based of course on the evidence of this present life. Not as a clever academic exercise for a debate nor guided by “faith” and rituals contrived by shepherds and philosophers thousands of years ago – but as a serious, unavoidable, personal evolution that will shut down my incredible autonomous bodily processes – hopefully the senses and mind last - and liberate my life-force to embark on its next journey.

So, Yes, I do believe we each are a manifestation of the intelligent energy that powers the limitless universe. We are animated by The Fifth Force; the Life-Force, which is immortal. The other four forces are the ones that science explores and puzzles over, from which we design and construct our wholly extraordinary and brilliant bodies. The wailing protest “I never asked to be born!” is an error.

So, what of the others – you lot? We are all connected. We all communicate all the time. We all influence all events – but as Obama says, “It is the ones who turn up who make the policies”. We are all guilty, to coin a 1960’s mantra; and we are all mightily, hugely praiseworthy. We affect and join to the whole world, past, present and future, through love. This is sometimes scrambled and perverted by horrible experiences into hate; which quickly destroys itself. From seventy-seven years of reflection, I find that true love is founded on, is based on, is immortalised by – friendship. Deeper than love, with all of love’s overlying confusing biological imperatives, is friendship. Friendship endures. Friendship transcends time. My wife, Pauline, and I are friends and have been since we met, aged fifteen. I am friends with my children. I am friends with my friends. My friends know beyond doubt that in need I will help. The majority of the human race – all seven billion of us, will and do help in emergencies. Without love and friendship, we none of us would exist. When I shuffle off this, rather admirable, some might say handsome, mortal coil, I will see you all in the next dimension.

Noel Hodson – 18<sup>th</sup> May 2020.”

Sunday, 26 January 2020

## NEW GRAVITY - UPDATE 2020

### Has physicist's gravity theory solved 'impossible' dark energy riddle?

<https://www.theguardian.com/science/2020/jan/25/has-physicists-gravity-theory-solved-impossible-dark-energy-riddle>

Prof Claudia de Rham's 'massive gravity' theory could explain why universe expansion is accelerating - Guardian 25th January 2020.

**Hannah Devlin** *Science correspondent*

@hannahdev



Claudia de Rham at Imperial College London.

Photograph: Linda Nylind/The Guardian

Cosmologists don't enter their profession to tackle the easy questions, but there is one paradox that has reached staggering proportions.

Since the big bang, the universe has been expanding, but the known laws of physics suggest that the inward tug of gravity should be slowing down this expansion. In reality, though, the universe is ballooning at an accelerating rate.

Scientists have come up with a name – dark energy – for the mysterious agent that is allowing the cosmos to expand so rapidly and which is estimated to account for 70% of the contents of the universe. But ultimately nobody knows what the stuff actually is.

"It's the big elephant in the room," says Prof Claudia de Rham, a theoretical physicist at Imperial College. "It's very frustrating." - GUARDIAN

The Guardian reports that Professor de Rham is theorising about "Massive Gravity". This proposes that gravity /gravitons / gravity waves have mass and are slowed or accelerated by the medium they travel through. Apparently, this novel concept



mathematically explains Dark Energy, which theoretically drives the ever-accelerating expansion of the observable universe. I prefer my idea that light /photons/ wavicles have slight mass which explains gravity.

**Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity.** *NCH March 2015* e-mail noel@noelhodson.com

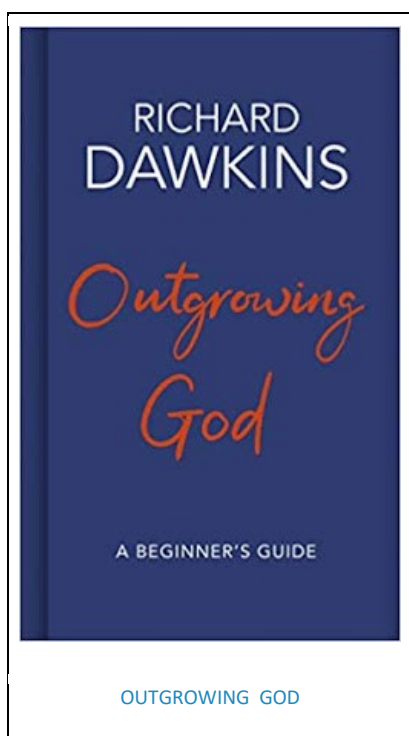
The radiation of the observable universe, comprises all wavelengths of radiation - or light. in matter, where a shadow is cast, some wavelengths are excluded. The universal external pressure is greater than the internal pressure, the precipitated matter coalesces, a gravitational object forms. The force or energy of gravity emerges. (***Search the GRAVITY label at the end of this page*** to read the emergence and logic of this theory).

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

Brought forward from Thursday, 18 February 2016

Monday, 25 November 2019

## OUTGROWING GOD by Richard Dawkins - A CONUNDRUM



To: Richard Dawkins Foundation For Reason And Science,  
1012 14th St Nw, Washington, DC 20005-3403  
25th November 2019

Dear Professor Dawkins,

OUTGROWING GOD - my question.

I wholly support your central message in OUTGROWING GOD. For mankind's (and woman kind's) next evolutionary phase, primitive assumptions and practices need to be outgrown. We do need to grow up.

Your book, however, consciously leaves a void that purpose and reason might fill. For example, the chapter 'Bottom Up or Top Down' is a robust re-assertion of Darwinian evolution. It particularly stresses the random nature of nature and the universe, evolving over billions of years; allowing plenty of time for everything and anything to happen randomly and accidentally.

The chapter asserts that individual and collective termites are not aware of any design for their mud-built intricate and efficient termite hills. We cannot really know the minds of termites unless we become one of them. But from my lofty position as an individual human and part of the collective human species, I can accept that humans are capable of "knowing"

more than termites and other Earthly species. When I design and build a human home, I like to imagine I have a conscious plan and a purpose. Am I deluded?

Religion and science both tell us that we are, as far as we and our scientific instruments know, the pinnacle of universal evolution. As one of the 7 billion surviving humans, however flawed in design I may be, I have more insight and information about my state of being than into any other species or objects. So, logically I should first examine my own being.

My conundrum concerning the philosophy in your book is: Where is the threshold between the vast majority of randomly evolved creatures and objects, deemed to be unconscious and not designed; and our purposely, intelligently designed human tools and objects?

For example, the computer and internet I am using to create and send this message, has not, you might agree, come into being by a series of random, purposeless events, even over billions of years. It is a product of our human-collective intelligence and consciousness. Nor is its existence purposeless; we have purposes for our tools. Our aeroplanes, electronics, vehicles and thousands of other complex tools are designed by us.

We are deliberate and purposeful inventors, designers and makers. If we, as natural products of Earth, are the resulting survivors of random and accidental events, of selfish genes, particle-collisions, brainless fertilised eggs, multiplying cells, Blastula and Gastrula, at what stage or threshold in our evolution did we acquire, by random-selection, the abilities to invent, design and manufacture purposeful objects? If the threshold is indefinable, an alternative is to propose that the materials from which I am constructed - which can be backward-engineered to the plasma at the (alleged) Big-Bang - might have those qualities.

This is a genuine query, not a mischievous trap, a cunning-plan, to bring you to God. (Unless you'd like to buy from me a £1 million, guaranteed passport to Heaven). [I am not a believer](#). I am a lapsed Roman Catholic. I read and embrace science. Like you, I questioned and rejected my religious brain-washing from the age of 6 to 16. Some religions do include some profound wisdom and valid social guidance. Now, at 77 next, as the insurance companies put it, I have no "faith" but I still search for sensible answers to the big-questions. Your provocative books, papers and lectures offer signposts on my road to enlightenment.

PS - I have a tentative concept about how gravity works, as contrasted with what gravity does. Gravity etc: [LIFE, THE UNIVERSE, AND EVERYTHING](#)

Regards - Noel Hodson

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Dear Noel,

Your email to Richard Dawkins provoked me to pen the thoughts below:

I too rejected religion during my formative years. I saw through the humbug.

I have long been an avid reader of Richard Dawkins, and agree with much of what he says. On religion, I side with him in denying the very basis of what is preached, seeing myth, superstition and often powerfully-enforced persuasion at the core.

I cannot ignore –

- the stifling authoritarian approach: such as the Inquisition and Papal infallibility (a mid-nineteenth century invention, this latter one),
- the many grand-scale cruelties inflicted in the name of religion: such as genocide, crusade, jihad, auto-da-fé, torture and imprisonment (not that such activities are limited to religious groups),
- the grabbing of temporal as well as spiritual power if and when the situation permits: permitting control over mind as well as body – such as the Holy Roman Empire, the Caliphates, and (one might add) Communism: and on a small scale, the many weird modern sects founded by money-, power- and sex-seeking maniacs,
- the intolerance of many, if not all, competing religions or sects,
- the stifling of knowledge outside the teachings of the religion or sect: such as restricting the right of reading or interpreting holy books to the priesthood, and the burning of “unholy” books,
- the unnecessary intrusions into people’s lives, such as controlling the rights to marry, to divorce, to procreate, to prevent procreation, to abort an unwanted pregnancy, to decide which foods can or cannot be eaten, and even to switch a light bulb on or off on a holy day.
- the uncaring rigidity of approach, such as refusing blood transfusions to a dying person or abortion in a case of rape
- the child abuses and similar egregious betrayals of trust by the priesthoods, which in many cases could be attributed to restricting the priesthood to men.
- the apparent ease with which religion can be taken to excess, either by individual priests or laypersons. All religions and sects seem to provide a fertile breeding ground (usually, but not always, limited to a fringe of extremists) for outrageous and even violent speech and actions. I have not yet come across an extreme atheist, someone who will rant or kill in the name of atheism. As to agnostics, I’m not sure.

And, let’s not forget –

- the patent idiocies: such as denial of the earth’s roundness and insistence of its central place in the universe, etc. And the belief in miracles, saints, angels, cherubs, walking on water, riding up to heaven on a white horse (from the principal revered site of another religion) ... the list is long and risible. One could

only wish that all religions could admit that many of their “truths” are mere storytelling like the Nibelungenlied, tales of the Olympian gods or Tolkien’s Middle Earth. Ah, for the intellectual honesty of David Jenkins, former Bishop of Durham, who admitted not to believe in the Virgin Birth!

On the other hand:

- there have been and undoubtedly still are, many leaders and practitioners of religion who have acted in humility, possessed an open mind, were considerate of other people, gave of themselves, and who have been/are remarkable and admirable individuals.
- significant benefits can arise from the act of people coming together in communal activities, of which a religious service is merely one type.
- people who possess the right personal qualities and attitudes can indeed dispense wisdom and compassion (although members of religious sects are not the only ones qualified to do so).

But none of these require the existence of religion. A person does not need to be a follower of a religion to be kind, considerate, and helpful to those in need, or to be personally at peace in the knowledge of his or her ultimate fate: just being the right type of human being is sufficient to permit these attitudes and actions.

Wrapping advice on social and personal issues in shrouds of mystery, as well as controlling believers with earthly punishments and post-life threats, seem to be the way that most religions control their followers. Individuals may like these things, but others should be free to choose not to.

The problem boils down to this:

A spiritual aspect to our lives can be uplifting and helpful to us human beings, with our need for psychological and emotional stability in the face of the constant threats of war, famine, poverty, illness, loneliness, and, above all, the one certainty of life: its inevitable end. But organised religions have not proved they can be trusted to deliver the uplifting aspects of life without also bringing in the negative, temporal aspects of their organisations.

It is a truth universally acknowledged (certainly by me) that religions tend to seek temporal as well as spiritual influence. They need to organise, they need hierarchies to a lesser or greater extent, they need to teach/indoctrinate their members about the beliefs and practices of their sect, they need to show that they are superior to competing religions, they need money, they need

properties, they need to engage in marketing (confirmatory messages to believers and proselytising messages to others). In short, they are in many respects no different from other large organisations, be they state, commercial or philanthropic. One could go further and say that much of the teaching of each sect is aimed at denigrating other sects in order to bolster support for their own, and this bleeds into the purity of their essential messages (which, at their best, would be simple messages of harmony, peace, kindness, etc).

But it is the temporal aspects of religions that are the greatest problems associated with them, the cause of their usual failure to achieve their primary purpose of improving the lot of mankind, and the reason they need to be restricted in their right and ability to impose themselves on the unbelieving and the unwilling.

BEN

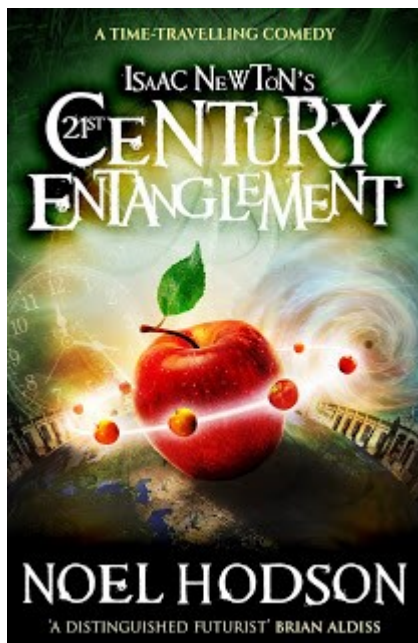


Monday, 11 November 2019

## ENTANGLED PARTICLES - Spooky Action at a Distance - explained.

My new, amusing novel 'Isaac Newton's 21<sup>st</sup> Century Entanglement' is in the process of being published. (Now available at All Good Bookshops) It is humorous but is based on the serious physics of particle entanglement - Einstein's "Spooky Action at a Distance."

This consensus science avers that two subatomic particles, usually created from a single particle or energetic event, might fly apart but remain in communication and affect each other over distances. In experiments, Entangled Particles are often two photons, which separate at the speed of light, and even if they go to opposite sides of the universe, they are always in contact - and affect, mirror, each other's state or behaviour.



The novel takes this proven process and employs it as a mechanism for time-travel. After all, it is a Sci-Fi novel.

Over the past year, the physics of entanglement has particularly occupied my attention. Theoretically, if two photons fly to the opposite horizons of the universe, both at the "speed" of light, they separate at twice the speed of light. We all know that such speed is banned and deemed impossible by Einstein's Relativity and Feynman's QED. "Nothing travels faster than light". However, experiments in PE, Particle Entanglement, demonstrate that PE is real; they do affect each other, seemingly instantaneously, via a mysterious communication; Einstein's spooky action at a distance i.e. faster than light.

I've proposed a mechanism that causes gravity - an equally mysterious force that operates between objects, it seems, over any distance. Science does not propose that gravity operates faster than light. But are there common factors? I take the question back to the primary particles - photons. My gravity idea requires that photons have slight mass.

A photon is a quantum particle of light which "travels" or more correctly which propagates, at 300,000 km per second in particles and waves (wavicles). I think that photons are never alone. When energy creates or releases a photon, at the location of creation, at the energetic event, is a globe - not a gun that fires a photon bullet. On a larger scale - e.g. The North Star, the radiation that tells us the star exists is a globe. Fly around the star, North, South, East or West, and it will be seen as a globe. The radiation is emanating in globular rings - spheres, moving towards our eyes or instruments. A single, none globular photon does not exist. What is created is a wave. Even at the power of just one-photon, it is a wavicle, moving out into space as a globe. Wherever our eyes intercept that sphere, or vice-verse, we "see" a particle, a photon - a quantum packet of energy. But it is not a separate minuscule ball of light. It is an energetic wave broadcasting the presence of the object, be it a star or a sub-atomic event.

Let's take a single small light-bulb. The filament is heated by pumping through electricity. It glows and radiates a sphere. I'm thinking that where the outer-sphere touches any object there is an electron exchange/ reaction, be it with a dust particle or a substantial object. Where the sphere touches /intercepts - Here-Be-Photons. The sphere is the wave - propagating at light-speed - it does not consist of photons, it is "pure" energy; but at any point that collides with any foreign body - the collision focuses or draws the energy to that point. So, the sphere appears to be made of photons. But it is not - until it intercepts.

To account for the quantum (a precise quantity of stuff - usually very tiny), imagine the filament emanates continuous light, in waves, in peaks and troughs, in spheres. These spheres are propagating a quantum distance apart - maybe the Planck length and time.

Touch or examine the spheres - perhaps with another sphere of radiation or with your finger - and at the intersection we find a photon. Rather like those toy-globes of static electricity, full of lightning, that responds to your fingers moving over the glass. So, any interception on any point on the sphere is a photon.

We, the experimenters, want to see twin photons moving apart? We generate an event with the power of a single-photon in a black, blank space. A sphere forms at the event. It expands. It is an expanding sphere. We test the right-hand-side and find a photon. We test the left hand-side and find another photon. We see two photons, very close together, generated from one-event. We track both photons. Unknown to us, they are focuses of the pure-energy of the expanding sphere. The sphere is the permanent energy, the photons are ephemeral. They manifest only when we look. They manifest every-time we look /intercept /examine them.

We cannot see the sphere - we only see the photons. They each move apart (as the sphere expands) at the speed of light. There is nothing in science we know of that can communicate on the straight line between the twins. They appear to be separate but are actually products of the same expanding sphere. They are moving apart at the speed of light - or (heresy) even faster. We spin or charge or otherwise affect one of the twins; it isn't real and permanent, the sphere is the reality. We are affecting the entire sphere.

The 2<sup>nd</sup> twin we have identified is altered by our impact on the 1<sup>st</sup> photon. It probably shows an equal and opposite reaction to maintain the integrity and energy-balance of the sphere. We are playing with Entangled Particles. The same causes and outcomes would be true for other entangled sub-atomic particles. Where we identify twins - there are in fact multitudes. The particles are legion. They are everywhere we care to look. ALL the particles on a sphere are entangled. Tweak one and the sphere changes - and changes all the particles we can find on that sphere.

It gets a little complicated when we consider the endless procession of quantum separated spheres - generated from a light-bulb by the energy input, usually electricity. It is easier to have just one sphere - but there are in fact trillions, broadcasting from every object of every size. That is how we detect them, how we detect all "things" - by their reflected or internally generated energy.

Now - Choose a spot of intergalactic "empty" space. Many light years outside the Milky Way Galaxy - a lonely black empty sphere - of, say, the size of Earth's Moon. But empty. Nothing there. However - set up detecting instruments and point them at the centre of the galaxy. The instruments will detect trillions of energetic events - from particle collisions to collisions of solar-systems. They all broadcast their activities as energetic

spheres. All the sphere's intersect. At the myriad intersections we see particles. Our instruments - say, the human eye, can see the whole of the universe - communicated via the expanding spheres - separated by quantum distances and times. What we cannot "see" yet, is the medium that supports or builds the sphere's. We are blind to the spheres, which are the structure of the universe. We do not know what they are made of (Dark Matter? - Dark Energy?). But they are there. There is no such thing as Empty-Space. We are, I'm afraid, back to the Victorian's Aether. I call it the Aether-Matrix.

This idea ties into my theory of what gravity is - as distinct from what gravity does.

<http://noelhodson.blogspot.com/2019/10/gravity-cosmic-web.html>

Friday, 11 October 2019

## LIFE, THE UNIVERSE, AND EVERYTHING (& GRAVITY)

UPDATE 23rd DEC 2019

My concept of what gravity is rather than what it does, relies on (1) light having slight mass, pressing in from a horizon or surface of 32.7 .b.l.y, the external force; and (2) the Casimir Effect, reducing light or electromagnetic waves within objects, the internal pull or vacuum.

**Hendrik Casimir** 1909 - 2000, got hardly a mention or any support in his lifetime. Few scientists have evaluated his theories and experiments. This New Scientist article raises his reputation - and spells out the exclusion of wavelengths within masses. "Without whom, none of this would have been possible." Follow the tab "gravity" to track my concept back to its roots.

<https://www.newscientist.com/article/2226783-heat-can-quantum-leap-across-a-totally-empty-vacuum/>

By Leah Crane, New Scientist 21/28 December 2019.

In a strange sort of quantum leap, heat can move across an area of complete vacuum without being carried by any particles at all. Instead, minuscule quantum fluctuations in the vacuum allow heat to leap between two objects that aren't touching each other or emitting any form of light.

A layer of vacuum is normally a very good insulator, as anyone with a drinks flask knows, but at the quantum level, even a total vacuum isn't completely empty: it is roiling with [quantum fluctuations](#) of energy.

**In 1948, Dutch physicist Hendrik Casimir predicted that those fluctuations could create a force that pulls two objects in a vacuum towards one another in what is now called the Casimir effect.** It was theorised that this effect could also cause heat to jump across a vacuum, but that was expected to take place at such small scales that it has never been measured before.

Hao-Kun Li at the University of California, Berkeley, and his colleagues used the Casimir effect to demonstrate heat leaping between two [tiny drum-like membranes](#). The two membranes were placed, in a vacuum, just about 300 nanometres apart – separated by less than 5 per cent the width of the average red blood cell – and each was attached to a reservoir of a different temperature.

The heat from the reservoirs caused the two drums to vibrate, the hotter one faster than the colder one. Because of the Casimir effect, those two sets of vibrations became coupled together at a quantum level, so the hotter membrane transferred heat to the cooler one until both were vibrating at a similar rate. This meant they had a similar temperature.

According to classical physics, there is no way to transfer vibrations from one membrane to the other without some sort of particle, like a photon, but with quantum fluctuations and [the Casimir effect](#) it is possible, says Li. "So the vibration of one object can affect the vibration of another object."

This could be a useful tool in computing, says John Pendry at Imperial College London. "Heat is a big issue in nanotechnology," he says, because it limits the number of computations a circuit can do, and how fast.

Now that this effect has been demonstrated, it could be used to cool circuit boards thousands of times faster than simply waiting for them to radiate the heat away, says Pendry, which could allow us to build faster computers.

Journal reference: *Nature*, DOI: [10.1038/s41586-019-1800-4](https://doi.org/10.1038/s41586-019-1800-4)

Read more: <https://www.newscientist.com/article/2226783-heat-can-quantum-leap-across-a-totally-empty-vacuum/#ixzz68v4aWqR3>

Read more: <https://www.newscientist.com/article/2226783-heat-can-quantum-leap-across-a-totally-empty-vacuum/#ixzz68v4MUW1J>

#### UPDATE 17th Dec 2019

My concept of gravity (below) needs a mechanism to create the first particles, to spin straw into gold, and to kick-start the formation of mass from pure energy (whatever pure energy is). From such minuscule dusty particles, the first gravitational bodies might grow.

This New Scientist article, 14th December 2019, could be about one such mechanism.

STATIC ELECTRICITY MAY PULL DUST TOGETHER TO MAKE PLANETS. Tobias Steinplitz, University of Duisberg-Essen in Germany, dropped a container of glass-beads of 0.4 millimetres each, down a 120 metres vacuum tower. The beads gained charge from static electricity and clumped together. Planets, forming from dust, encounter "the bouncing barrier" at the transition from "fluffy" masses to solid masses. These millimetre sized masses formed in this Glass-Bead-Game experiment indicate that that the bouncing barrier might be overcome - and enable planets to coalesce from dust. My idea then follows - Casimir Glue and Universal Pressure of the entire electromagnetic spectrum (light) is the gravitational force.

#### UPDATE 6 DEC 2019:

<https://www.newscientist.com/article/2226326-black-holes-formed-from-dark-matter-could-be-making-dead-stars-explode/>

...The pair modelled what could happen when dark matter meets a [white dwarf weighing between 1 and 1.4 times the mass of the sun](#). White dwarfs are mostly made of electrons held apart by the rules of quantum physics, and a dwarf this large should have enough internal pressure that a black hole could form within it.\*\*

Bramante and Acevedo suggest that when dark matter falls into the white dwarf at about 1 per cent of the speed of light, it is much hotter than the material that makes up the star. As the dark matter interacts with the star, it cools down and collects at the centre.

If enough of it clumps together, it will collapse under its own gravity into a tiny black hole nestled within the heart of the star.

"It would be something like the size of a proton, but it's still extremely massive," says Bramante, meaning it would have a lot of mass. Depending on the size of the black hole and of the white dwarf, it could suck in the star's material within a millisecond.

....need to understand how to meld the rules of quantum physics and general relativity into a theory of [quantum gravity](#), which is one of the biggest challenges in physics today. (Leah Crane NS)



\*\* I see this another way. Following my idea of "what is gravity", the central black-hole forms from an absence of (vacuum of) electromagnetic energy - an outer mantle of matter that excludes most wavelengths - pressed in by the ocean of the full range of universal electromagnetism (light). It is interesting that "the star's material could be sucked in within a millisecond". That's a lot of mass or energy being sucked-in; surely, what goes in must come out? Out via an associated or entangled white-hole perhaps?

NB: Planck temperature / Absolute Hot. Contemporary models of physical cosmology postulate that the **highest possible temperature is the Planck temperature**, which has the value  $1.416785(71) \times 10^{32}$  kelvins. Wikipedia.

**UPDATE 30 NOV 2019:**

**Mystery of the mass of the neutrino could soon be solved.** New Scientist 30 November 2019. Loyal Liverpool reports on the work of Christian Weinheimer & team, at the Karlsruhe Tritium Neutrino Experiment, University of Munster, Germany; who says that mass of a neutrino is 500,000 times less than an electron. It weighs in at 1.1 electronvolts (with a limit of 1.1 EVs). "Neutrinos are a billion times more abundant in the universe than atoms, so even tiny neutrino masses would make a big contribution to the mass in the universe." ([arxiv.org/abs/1909.06048](https://arxiv.org/abs/1909.06048)) -

My idea for gravity requires that light, the electromagnetic spectrum, has mass. For the past 100 years, popular science has claimed it is massless /weightless. Light is not nothing; it is something. It has mass; across the 32.4 bly observable universe the ocean of light, and neutrinos, have sufficient mass to power gravity. The neutrino was also described as massless. This measurement adds to the possibility of the existence of the Luminiferous Aether.

**Update - 1 NOV 2019 The Luminiferous Aether lives! Possibly.**

"[Einstein killed the aether. Now the idea is back to save relativity](https://www.newscientist.com/article/mg24432543-300-einstein-killed-the-aether-now-the-idea-is-back-to-save-relativity/) - The luminiferous aether has become a byword for failed ideas. Now it is being revived to explain dark matter and dark energy, and potentially unify physics." <https://www.newscientist.com/article/mg24432543-300-einstein-killed-the-aether-now-the-idea-is-back-to-save-relativity/>

Freelance writer, Brendan Foster, St Paul, Minnesota, writes in New Scientist 2 Nov 2019, of renewed if somewhat embarrassed, interest from physicists thinking of resurrecting the Aether. Victorians imagined this fixed energy-ocean of light-bearing and light-transmitting material. Einstein said he didn't need it - so science has dismissed it (wrongly) for nearly 100 years. Being a non-scientist with no reputation to protect, I have long included The Aether in my ideas - and have concluded my overview of Life The Universe and Everything with a slide (see 23 of 23 below) that claims that the Aether is informed and re-formed by every event in the universe - and that this ocean of energy communicates the constant changes to all locations. I think the Aether comprises all the light & radio signals from all phenomena. How an individual signal surfs this ocean and retains its identity is a mystery. But, we have millions of examples of such transmitted robust identities.

[and - THAT SPOOKY ACTION AT A DISTANCE explained - in theory.](#)

I now suppose that patterns such as DNA are "recorded" as light-waves-particles in the Aether. That series of slides, together with my idea of gravity (on this page), also include speculations on the elusive Dark Energy & Dark Matter.

It is worth reading. There is possibly, even probably, the germs of ideas that will break the present log-jam and lead to The Theory of Everything.

**Update - 28 OCT 2019.** In the beginning was radiation, then hydrogen, then helium. An article in New Scientist 13th July 2013, No Laughing Matter, by Chanda Prescod-Weinstein, assistant professor of physics and astronomy, University of New Hampshire - on the shortage of Earthly helium; reminds me that the current consensus is that the Big-Bang came first. Most scientists concur that it emerged or exploded from an unknowable, indefinable point of infinite density (infinite is non-scientific), as a minuscule globe (we have no idea of the shape or size) of intensely hot radiation. As the radiation

expanded and cooled (eventually cooling down to the Cosmic Microwave Background radiation of - 273 Celsius that pervades the observable universe), Hydrogen formed or precipitated, the hydrogen clouds cooled and clouds of helium precipitated. Then those clouds coalesced and formed elements, then stars etc - and the still expanding universe emerged - driven and formed mostly by gravity.

This consensus does not rule out my theory of gravity.

**Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity.** *NCH March 2015* e-mail noel@noelhodson.com

The radiation of the observable universe comprises all wavelengths of radiation - or light. in matter, where a shadow is cast, some wavelengths are excluded. The universal external pressure is greater than the internal pressure, the precipitated matter coalesces, a gravitational object forms. The force or energy of gravity emerges. (Search the GRAVITY label at the end of this page to read the emergence and logic of this theory).


Now: back to the beginning:

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

**EIG 2 of 23    In the beginning was darkness**

Before space-time, a phrase which is a logical contradiction, there was No-thing.  
no universe, no energy, no material, no phenomena, no boundary - nothing.

Without reason or known cause,  
other than Richard Dawkin's and Stephen Hawking's capricious gods,  
physicists believe and mathematicians calculate  
that an energetic singularity, a dimensionless point, a white-hole, appeared  
in this inexplicable, indescribable, non-existent no-place and no-time.



Until the location of the white-hole is known, as nothing is knowable about the  
pre-existent No-thing, there might be many white-holes pouring infinite energy  
into the universe. But, unless Fred Hoyle resurrects and retracts his recantation,  
The scientific consensus is that just one singular white-hole existed or exists.

EIG 1991-2011 – copyright – Noel Hodson - Oxford

**EIG 23 of 23    LIFE-FORCE AND THE AETHER-MATRIX  
IN CONCLUSION.**

It seems inarguable (to me) that space-time is a matrix of light in a holographic universe. The Aether-Matrix is continuously informed and reformed by all changes in all phenomena, by legible, broadcast electro-magnetic signals.

We do not know where the coherent patterns of phenomenal existence reside, which govern the growth of galaxies, seeds and DNA. It is probable, that such fundamental, universal patterns are held and recorded in the Aether-Matrix.

Living creatures and all dynamic things broadcast signals, which in-form and re-form the Aether-Matrix. If so, then the material universe, embedded in the energetic universe, alters the patterns of energy, which in turn produce phenomena – and humans – from those energy patterns. We may indeed reap what we sow.

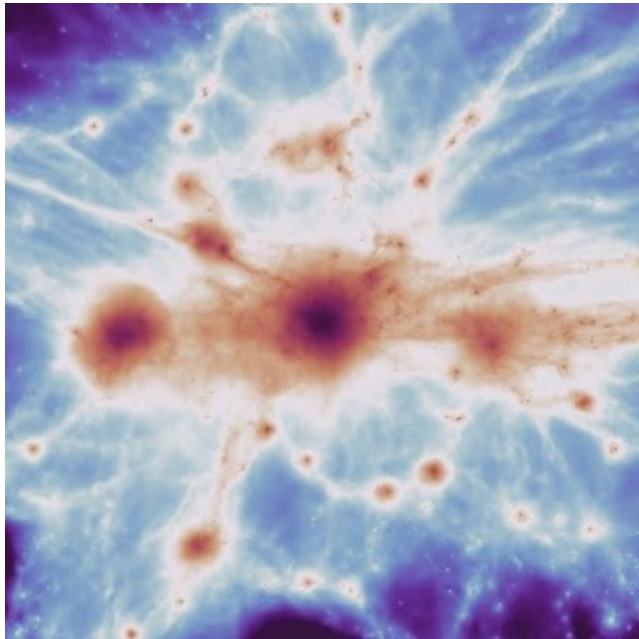
We exist in a dynamic feed-back system of patterned energy, which our thoughts and actions change and which in turn changes us, instantaneously and continually. Our personal broadcasts persist in the Aether-Matrix "Until the end of Days."

END

The details behind these scientifically heretical speculations are at  
[http://www.noelhodson.com/index\\_files/universal\\_model\\_v7\\_nov02.htm](http://www.noelhodson.com/index_files/universal_model_v7_nov02.htm)  
Email: [noel@noelhodson.com](mailto:noel@noelhodson.com)

Friday, 4 October 2019

## GRAVITY & THE COSMIC WEB



ARTIST'S IMPRESSION OF HYDROGEN FILAMENTS  
CONNECTING GALACTIC-CLUSTERS

9 Oct 2019 - NB - An analogy: Like at the lip of a waterfall, the pull and push of gravity on wavicles of light (electromagnetic particles and radiation) is becalmed until they are very close to the object (planet, star, asteroid etc.) then they cascade inwards/downwards.

4 October 2019

"THE COSMIC WEB" - Recent observations indicate that there is no such thing as empty space. Space, even the most remote, oldest and darkest "empty space" between clusters of galaxies, is filled with wispy filaments of hydrogen gas. These filaments connect galaxies and clusters of galaxies. Where the filaments cross each other, the hydrogen

coalesces and forms or precipitates heavier matter. Over billions of years the specks of matter get together and form galaxies. It is speculated that such immense filaments of hydrogen are (or were, as we are seeing them as they were 10 billion years ago) constantly forming and feeding new galaxies.

<https://theconversation.com/scientists-start-mapping-the-hidden-web-that-scaffolds-the-universe-124616>

The Cosmic Web theory tends to affirm or at least to not contradict the concepts that, over 20 or 30 years, have led to my ideas of how particles form, how mass forms and ultimately what gravity is. (Follow label "Gravity" at the end of this page).

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

This old set of presentation slides (originally circa 1990) shows the basis of my speculations of how mass is formed (go to slide 10) which paints a picture of light waves colliding and spiraling inwards. It was puzzling over these concepts that triggered my "What is Gravity?" theory. I still think the theory has merit. So, perhaps science should also be looking for the absence of mass, or "Casimir Glue" inside the shells of mass; as well as looking for new sub-atomic-particles or gravitons.

The existence of inter-galactic-cluster filaments also supports Fred Hoyle's and Chandra Wickramasinghe's concepts - which once proposed that particles and atoms and molecules are continuously created in "empty space". They extrapolated these



ides to propose their "Viruses in/from Space" and [Panspermia](#) ideas. The tireless and constantly derided proponents of [The Electric Universe](#) - Wallace Thornhill & David Talbott, who have for decades argued that galaxies are formed and connected by electric currents - will perhaps welcome The Cosmic Web; and justifiably say "I told you so."

[SCIENCE MAGAZINE 4TH OCTOBER 2019:](#)

## Glowing filaments of the cosmic web

Most gas in the Universe lies in the intergalactic medium, where it forms into sheets and filaments of the cosmic web. Clusters of galaxies form at the intersection of these filaments, fed by gas pulled along them by gravity. Although this picture is well established by cosmological simulations, it has been difficult to demonstrate observationally. Umehata *et al.* mapped emission from the intergalactic medium in an area around galaxies that are starting to form a cluster (see the Perspective by Hamden). They found that the gas is arranged into filaments, whose position and velocity correlate with star-forming galaxies, supporting the theoretical picture.

*Science*, this issue p. **97**; see also p. **31**

Friday, 30 November 2018

## GRAVITY & PHOTONS - BLACK HOLES - APRIL 2019

### NEW GRAVITY & PERPETUAL CIRCULAR MOTION



Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. *NCH March 2015* e-mail [noel@noelhodson.com](mailto:noel@noelhodson.com)



Tuesday, 16 July 2019

## WAVICLES FORM DNA AND MATTER?

I am hi-jacking this article by Sally Adee, in New Scientist, 6th July 2019, as I think it hints at clues for one of my long-held science-beliefs; that all life-forms and ultimately all matter are formed by persistent and coherent patterns of electro-magnetic energy. It is not a new concept that sub-atomic



particles manifest both as particles and as radiating wave-forms - dubbed WAVICLES. It is a well proven fundamental feature of our universe that all matter radiates legible radio signals. Science identifies distant clouds of gases, and the bodies lying beyond them, by analyzing and categorizing the elements causing energetic sources of radio waves. e.g. from active stars, and as these radio signals pass through dust clouds, science analyzes the elements in the dust cloud. Such signals might originate hundreds of light

years away - yet the information remains coherent and legible to our instruments. The universe is crisscrossed by trillions of wavicles. My thought is that the patterns for all matter are inherent in these wavicles - including for example the templates or blue-prints for DNA. All matter can be deconstructed back to electromagnetic waves. This medical research studies electrons - which are waves.

[NewScientist 6 July 2019 - By Sally Adee](#)

Can you kill cancer cells by cutting off their electricity supply? That's the implication of a new look at how cells swap electrons. It could herald devices that assemble inside tumours to switch off their electric current and starve them to death.

Frankie Rawson at the University of Nottingham, UK, and his colleagues have detected subtle changes in the currents emanating from different types of cancer cells. These changes hint at what metabolic changes have happened in the cells that is characteristic of cancer.

All biological cells use electrons to power themselves. In the early 2000s, however, it was discovered that cells can also send electrons outside their membranes along biological "relays" made of proteins and other molecules. But we didn't know the significance of this trans-plasma membrane electron transfer (tPMET). "I think we're only just starting to realise the importance," says Rawson.

People have long suspected that there is a link between the way cancer cells change their metabolism and changes to the way the cells do this trans-plasma electron transfer.

Normal cells produce almost all of their energy in their internal "power stations". But mitochondria can't power the aggressive demands of a rapidly dividing cancer cell, so cancer cells dial down their mitochondria, and ramp up a metabolic pathway known as glycolysis, which converts sugar into energy.

Reducing the output from the mitochondria creates a problem, because free electrons build up inside the cell, clogging up the glycolysis process. To keep from starving, the cancer cells eject those extra electrons using tPMET.

"tPMET is like a safety valve," says Patries Herst at the University of Otago, New Zealand. Indeed, the more invasive and aggressive a cancer, the more heavily it relies on glycolysis and then tPMET to get rid of the electrons. There are several different types of tPMET with different

functions, however, which has made it hard to study how they are involved in tumour growth. “There have been a lot of good investigations,” says Lars Jeuken at the University of Leeds, UK, “but no one had ever figured out how to directly measure the electron current.”

Rawson’s team suspected that the strength of these electron currents could reveal when a cell had turned cancerous.

“If there is a lot of voltage going through a cell’s membrane,” says Herst, “then that means they are using this system a lot, which could have implications for the level of aggressiveness and invasiveness of the cancer.”

Rawson and his colleagues looked at the strength of the electrical current for three different lung cancer cell lines, and it showed clear differences, allowing them tell which cancer cells were metastatic, or capable of spreading, and which were still non-invasive.

As the team suspected, when they engineered the cells to reduce the number of tPMET relays, their mitochondria were no longer able to produce enough energy and became overtaxed. But a surprise was in store: instead of the expected slowdown in electron transmission, they saw a “marked increase” in current, Rawson says, as the cells used any remaining tPMETs to fling out as many electrons as possible.

“This was a major, major finding for us,” says Rawson. “Because if you can inhibit that external electron transfer, the cells have limited ways to sustain energy, so they’ll either be unable to proliferate, or they’ll die.”

It also raises another possibility: if we could inhibit the electron transfer, we could starve cancer cells. No drugs are available that can interfere with tPMET, but the new research suggests that we could do it another way.

<https://www.newscientist.com/article/2208106-we-could-kill-cancer-cells-by-hijacking-their-odd-electrical-current/>

Paola Sanjuan-Alberte, also at the University of Nottingham, and Rawson have been working on self-assembling nano-electrodes that could interface with cancerous cells to tweak their electrical signalling. These devices apply an electrical field to prevent a cell’s relays from shedding the electrons.

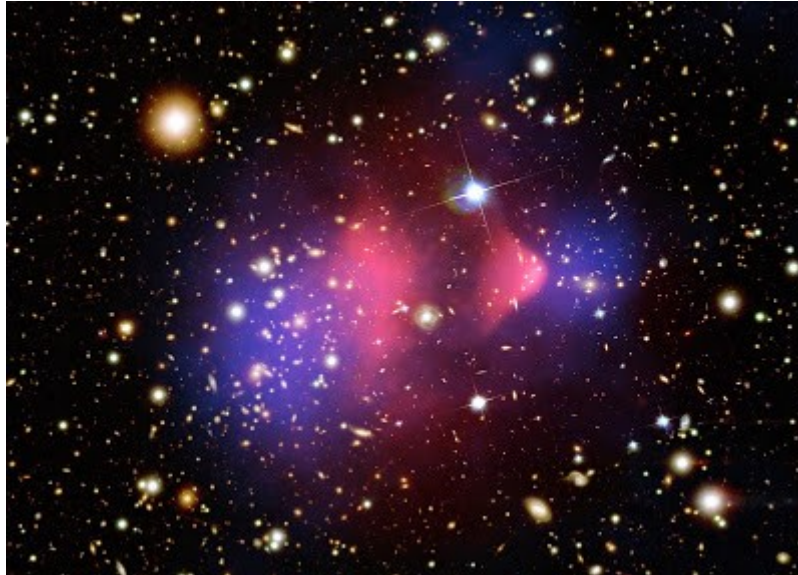
However, Herst and Jeuken both caution that more studies need to be done to gain a deeper understanding of the role this electron transfer plays in normal and in healthy cells.

Journal reference: *Biochimica et Biophysica Acta (BBA)* –

Bioenergetics, <https://doi.org/10.1016/j.bbabbio.2019.06.012>

Wednesday, 30 January 2019

## FROM CHAOS THEORY TO ORGANISMS - TIME TRAVEL



I have just finished the draft of a new time-travel novel, *Isaac Newton & The Alchemist's Lad - The Perils of Entanglement*, featuring Isaac Newton from 1666 and present-day ten year old Fred - who tells Isaac "My teacher says you were quite bright - in your day." The book is a very readable adventure for young-adults and the young at heart, which has the added bonus of introducing and explaining particle and astrophysics. It misstates two new-physicists' howlers - that you can no doubt spot and untangle as you read.

The means by which they travel through time from 1666 to 2018, then back again, is based on the well attested and fully accepted sub-atomic or quantum theory of entanglement. Einstein at first refused to accept the theory of entanglement, dubbing it "spooky action at a distance." Not only did the spooky action spook Albert but the theory also allows - or requires - that particles communicate over these spooky, sometimes long, distances, at faster than the speed-of-light. This, as you all know is impossible because Einstein proved that "Nothing travels faster than Light!"

His theories have been subjected to hundreds of experimental tests over the past one-hundred years and have been conclusively proved to be correct.

Basically, when two photons are created from the splitting of another particle - often from electrons - the two new photons waste no time and zip off at the speed of light in opposite directions. Though they might journey to the horizon of the Observable Universe, forty-three-point-seven billion light years distant (so you can double that distance if they go to opposite horizons) - the photons, entangled photons, are in communication at all times. They are like identical-twins who are separated at birth and taken to different continents without any communication - yet still look the same, wear the same clothes, have the same hairstyles and both like pistachio ice-cream. They are mysteriously in touch. They are communicating - somehow. They are spookily "entangled".

What irked Einstein even more about these impertinent photons, was and is the fact that they were separating at the speed of light, three-hundred-thousand kilometres per second; and so it was and is impossible for them to receive messages from each other - because "Nothing travels faster than Light". No signal could ever catch up with the flighty photons. But, science proves and has proved time after time, that they are in touch. They chat to each other all the time.

All objects in the universe, all things, are made of compressed photons. You, me, your parents and pebbles on the beach are all made from photons. An atomic explosion of, say just 100 lbs of uranium releases and reveals all the photons it contains in an instant, immense explosion as the light and heat locked in there for eons is freed and made visible. The photons are entangled - then blow apart - but still communicating. So - I used this as a time travel mechanism. I teased out of Isaac Newton, with a radio beam, a few of his entangled photons. Because each was in communication, all the photons, trillions of photons, followed each other along the beam "Beam me up Scottie!"

By esoteric methods and science that I must keep secret - at the end of their journey from 1666 to 2018, the photons reassembled themselves in the right order and relationships - and re-made Isaac Newton - and he met Fred. The entangled photons knew their precise positions and functions to re-create Isaac. Time travel is made possible - without magic.

It occurred to me this morning that this power to disassemble and reassemble must also be true for the several trillion cells in the human body. They know their functions; they cooperate; they communicate; new cells know their roles in the business of life; trillions of these immensely complex little factories know what to do - to make an organism that functions - that has a brain - has will and that can sometimes think. BUT HOW?

Whether it is photons making a kilogram of uranium, or cells making a human; how do they know when there are enough? How do they know when to stop adding units to the object? How do they know how to confer a particular identity to the object - or to us?

Like Goldilocks and the Three Bears - these minuscule packets of energy know when the object is too hot, too cold or, miraculously, is just right. A new human baby grows from one, a single cell, to [two-trillion cells in nine months](#). How does it know when it has assembled enough units to trigger birth? This sweet little baby then grows into a 17 stone football player - of about 56 trillion cells; all communicating and swapping information - in a very spooky manner. But how does this hairy heavyweight know where its boundaries are. Why not keep adding cells - randomly? Where does the template - the governing pattern reside? We think we know it is governed by DNA, by inherited DNA, but where is the template, the controller, to assemble trillions of tiny particles into functioning DNA? My guess is that it is in the Aether, in Space-Time, in patterns of electromagnetic light and radio waves.

Is it therefore possible, as I've imagined in my book, to dis-integrate, transport, and re-integrate the constituent parts of an object - of a human being - in full working order? Could we, one day in the future, use photon-entanglement at microscopic levels thousands of times smaller than a human cell, to separate the photons, persuade them to ride on a carefully calibrated radio beam - travelling or propagating even faster than light (in a timeless fashion) - and have them utilize their entanglement to bring all their chums with them, and re-form elsewhere in exactly the same relationships and functions as when they started the journey? Carefully managed - we could be immortal, as envisaged in SF movies where humans upload into computers - but without the need for computers.

"Beam me up Scotty" indeed.

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The extraordinary, precise communications between cells, molecules, atoms, sub-atomic particles and templates which enable organisms to transcend the sum of their parts, to function - and aspire to act intelligently, are the mysterious mechanisms or force of life.

I want to explore the concept of a fully functioning human - whose parts are self-evidently communicating correctly, as nature intends - and who is communicating with his/her community; the community without which we would certainly die or never come to life - going into outer or "deep" space, progressively losing the communications with family, tribe, race and planet. Will this super-lonely body also lose the inner communications between all the particles - and thus disintegrate? Do our inner communications depend on our environment, the teeming electromagnetic ocean in which we swim, with, currently, seven billion other humans?

The "Isaac" time-travel novel above, imagines that if entangled particles communicate, then teasing a single particle to hitch-hike on a radio-beam will trigger the adjacent particle to follow, then the next, and the next - ad-infinitum. The proven, demonstrable spooky quantum-entanglement might, could, or should inform each particle of its unique place - in its ordained and accepted order - in the original body (mass). On arrival, at the target of the radio-beam, the second (entangled) particle will attach to the first, then the third will find its position, then the fourth, then the cascade of trillions of communicating particles will take their places - and rebuild the original body, in the new location.

Our bodies do not have a definitive "edge". The trillions of mutually dependent cells, each happily playing its appointed role, if examined under an electron-microscope, viewing the alleged boundary, skin or integument, are seen to be loosely attached. A few drift away from our skin at all times. If rubbed, millions fall away and scatter. Most house dust consists of discarded human skin cells. The skin is bombarded with incoming particles, rays, beams, light. Where our skin meets the universe there is a zone of constant interchange. There is no thin red line - or brown, black, yellow line of demarcation which says "This person stops here." But somehow, we know where we end. We know our permitted shape and size - and in turn all the cells know. And if they know their function and place, then so do the molecules, made of atoms, made of sub-atomic-particles, made of light - within our supposedly private person. They all know their place. All parts are communicating: i.e. communicating vital data and energy. If they get it wrong we die. We disintegrate, we fall apart.

For seventy or a hundred years or so - they get it right. From our entangled photons to our factory-like cells, all the bits get it right. And we live. We are the product of all these communications. "We" ourselves - our unique identities - exist as an intelligent organism (with some notable exceptions) only because "our" sub-atomic-particles, which in isolation we might regard as dead or inert packets of energy, constantly, tirelessly, persistently communicate - with meaning and purpose. We integrate these countless trillions of communications and make sense of them. We are brilliant examples of the Life-Force.

However, we are not alone. Counting only our seven-billion or so living primate relatives and leaving aside the billions of other living creatures - and assuming that only the Earth produces life, we are forever receiving and broadcasting electromagnetic signals to each other. Such signals alter our DNA. We are changed by everyone and by everything we encounter. These communications are possibly the energy and organisation that create the Life-Force.

If one of us drifts into deep-space, far from such life-giving communications and energies - too far to receive and send - momentarily happy to get away from it all, because as Sartre told us "Hell is other People" - would we survive?

In the vast ocean of life, we are bombarded with waves of coherent data and information. We are literally "informed" by the signals we receive (and send). Our skin passes on the electromagnetic data to our (entangled) inner cells and down to our entangled-photons. Without this maelstrom of information, of vital communication from the entire universe - would we cease to exist?

When we do eventually succumb, as our number is called, as our three-score-years-and-ten, with added time for good behaviour, runs out - and our personal identity communications cease - is the pattern of all our communications on record, still broadcasting out to the 43.7 b.l.y. horizon of the observable universe? Is our essential self still entangled? Do our very personal entangled photons bounce back from the edge of time and reassemble, reintegrate and form another, quite similar creation?

Wednesday, 3 October 2018

## NEW GRAVITY & DONNA STRICKLAND

\*\*\*\*\*

UPDATE - 9th November 2018 - Rigid light.

My theory posits Light pressing down on an object from 32.7 b.l.y. distance - and an absence of Light within the object. The outside pressure assumes that Light has mass. The internal absence assumes the Casimir effect. Does this New Scientist article on Rigid Light hint at a mechanism for the external pressure?

### [LINK DAILY NEWS](#)

29 October 2018

#### [There is a weird new state of matter that can't be stirred or pushed](#)

By **Leah Crane**

There's a new state of matter — and it's weird. It's made from light and is somewhere between a solid and a [superfluid](#). It can't be stirred, rotated, or even pushed.

"If you have some water in a pipe and you start pushing it, it will flow a little faster," says Marzena Szymańska at University College London. "Whereas this fluid is so rigid that even pushing it will not change its velocity."

The new state is made from "liquid light". This is a fluid consisting of light trapped in another material, where each photon is coupled with another particle. These particles, called polaritons, can flow and interact with one another in a way that photons alone cannot.

In the last decade or so, experiments have shown that liquid light can become a superfluid — a fluid which flows with no viscosity or friction. Because of the lack of friction, superfluids cannot be stirred or rotated. If you put a superfluid in a bucket and rotate the bucket, the fluid itself will remain stationary.

**Read more:** [Physics adventures down the superfluid supersonic black hole](#)

But Marzena Szymańska and her colleagues calculated that, in certain situations, a fluid made of polaritons takes things one step further: not only can it not be rotated, its flow cannot be changed at all. They call this new phase of matter and light a rigid state.

That's because of how a polariton fluid is created. Some photons are always leaking out of the trap, so researchers constantly replace them using a [laser](#). The team found that the laser sets the properties of the fluid from the outside, so they cannot be changed.

It's not yet clear what this strange rigid light could be used for, but could one day find a use in [optical communications](#), says David Snoke at the University of Pittsburgh in Pennsylvania. "Even if it's not good for anything, it's interesting because it's different," says Snoke. "It really is a new phase of matter."





The second hope I infer from the explanations of this laser-science is that it might lend credibility to my Space-Chimney-Drive as described in my book AD2506-After Global Warming (extract below).

Didn't CERN prove last week that [women cannot do science](#)? Or was that just a lone misogynist knuckle-dragging halfwit who mops the washrooms at CERN? Are we at an evolutionary socio-scientific turning point?



I apologize for linking my wild speculations on gravity and light to Nobel winner Professor Strickland - without her knowledge, permission or notification.

UPDATE - 1st Sept 2018. Heavy Light. [New Scientist No. 3193](#)

**Asteroids get spun so fast by the force of sunlight they fall apart.**  
By Leah Crane

MOST small asteroids are just piles of rubble in space, held together by gravity and weak molecular forces. Even the slight touch of sunlight can make them break up. Now we know how asteroids of different shapes crumble, which might help us if one ever heads straight for Earth.

Photons of light carry a tiny amount of momentum, so when sunlight hits an asteroid it can send the space rock spinning, in what is known as the Yarkovsky–O'Keefe–Radzievskii–Paddack (YORP) effect.

"The magnitude of forces acting on these asteroids is like the weight of three grapes sitting on a mountain," says Masatoshi Hirabayashi at Auburn University in Alabama. "They are negligible in the short term, but if you wait a couple of million years, these three-grape forces can be significant."

\*\*\*\*\*

LIGHT HAS MASS: I have observed a Crookes Radiometer on my office windowsill since January 2015. Its varying speed turning paddle wheel motion, I conclude, is not driven by temperature as some theories aver - but is driven by light.

The 4 paddles are black on one side and silver on the other, attached by wires to a hollow central axle made of glass, which is balanced on a steel-needle. Inside the bulb is a vacuum - in theory - but how could I test this? Probably, variations in temperature do expand and contract the materials and so affect the speed of rotation - but the affect is undetectable to my eye, even for wide variations in temperature - from near freezing to +20C.

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The new theory of gravity:

GRAVITY - I was given a Crookes Radiometer after explaining my theory of gravity to a friend. My theory depends on light having mass. There are several experiments that do ascribe very slight mass to light - and my Crookes Radiometer affirms this.

*New Scientist - 17 June 2017 - page 33. "Right to silence" by Stephen Battersby.*

An article on bandwidths and the whole electromagnetic - light spectrum. I still, after 60 years of puzzling, cannot visualise radio waves - wavelengths - odd little photons, electrons and so on. But, the evidence is with the experts, who in this article are the folk who divvy out the bandwidths for hundreds of practical applications - from 10 KHz (kilohertz) which have wavelengths measured in kilometres (between the tops of the waves) up to 100 GHz, which are tiny little wavelengths emitted by such things as water and carbon monoxide molecules - which enable measurements of immense galactic gas clouds, which form galaxies. From TV signals & phone signals to intergalactic Quasar signals to brainwaves in a brain scanner - ALL that we "see" and know is carried to us by these waves. And it is carried coherently, faithfully, accurately through millions of diverse mediums, across sub-atomic and universal distances - in data rich transmissions - across BLYs (billions of light-years). Read the article - its very informative. It suddenly dawned on me that that, yet again, these signals fill the universe. They are the "stuff of the universe" which inform and reform the Aether, every split-second. They have identity. They have substance. They carry the patterns of atoms and molecules. They have data. They have mass. Light has mass. As the signals attempt to penetrate the Earth - they get blocked. The deeper we delve, the fewer wavelengths we can see or hear. This is Casimir's exclusion of wavelengths (between plates). The lack of EM waves within the Earth, within the planet, while ALL waves surround our planet and solar system, and come to us from "the edge of the observable universe" (13.7 to 42.7 bly) and fill the entire universe. The pressure of such waves outside our planet is greater than the lack of pressure inside our planet. It is the push and the pull of gravity.

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I guess that the waves can only be seen and heard and measured when they resonate with the crystalline or complex structures of the elements which form matter. A crystal-set radio needs a crystal structure and tuning whisker that matches the broadcast in order to tune in to its wavelength. Does the signal exist without its receiver? I think this theory of gravity is correct.

## HIGGS - Where and how does it "confer" mass to massless particles? Does it explain gravity?

Some purple prose. A new, equally incomprehensible article by Jon Cartwright, THE HIGGS BANG, in *New Scientist magazine 10 June 2017*, advances my Higgs knowledge - not at all.

<https://physics.aps.org/articles/v6/111>

"Subsequent work showed that the Brout-Englert-Higgs mechanism (or "Higgs mechanism," for short) could give mass not only to weak particles, but also to electrons, quarks, and other fundamental particles. The more strongly a particle interacts with the Higgs field, the more massive it is. It's important to note, however, that most of the mass in composite particles, like protons, nuclei, and atoms, does not come from the Higgs mechanism, but from the binding energy that holds these particles together."

MAY 2016 - CERN EXPLAINS :

On 4 July 2012, the *ATLAS* and *CMS* experiments at CERN's *Large Hadron Collider* announced they had each observed a new particle in the mass region around 126 GeV. This particle is consistent with the Higgs boson predicted by the

Standard Model. The Higgs boson, as proposed within the [Standard Model](#), is the simplest manifestation of the [Brout-Englert-Higgs mechanism](#). Other types of Higgs bosons are predicted by other theories that go beyond the Standard Model.

On 8 October 2013 the [Nobel prize in physics \(link is external\)](#) was awarded jointly to François Englert and Peter Higgs "for the theoretical discovery of a mechanism that contributes to our understanding of the origin of mass of subatomic particles, and which recently was confirmed through the discovery of the predicted fundamental particle, by the ATLAS and CMS experiments at CERN's Large Hadron Collider."

I have read about 100 explanations and descriptions of The Higgs, attended a lecture at the Royal Society given by 4 CERN professors, and exchanged emails with the speakers. None of this has conveyed to me how it works. I am tempted to quote Einstein "If you cannot explain it simply - you have not understood it well enough". The Physics Forum tutor below destroys any hope that understanding of the Higgs might be accessible to ordinary humble bumbling humans, telling us that we must first learn to speak pure-physics-mathematics, which takes decades. From 2008 I attended 3 years of particle and astrophysics evening classes - and just about copped with the maths homework - and I have read about these topics for more than 50 years. I am beginning to suspect that The Higgs and other impenetrable "Standard Model" descriptions might fall into the group of topics which my arithmetically astute, cynical father defined as "Bullshit Baffles Brains".

At what point does immersing a student in incomprehensible maths-language, used by a handful of highly specialised isolated souls who cannot put their ideas into words, become a cult that employs intensive brain-washing?

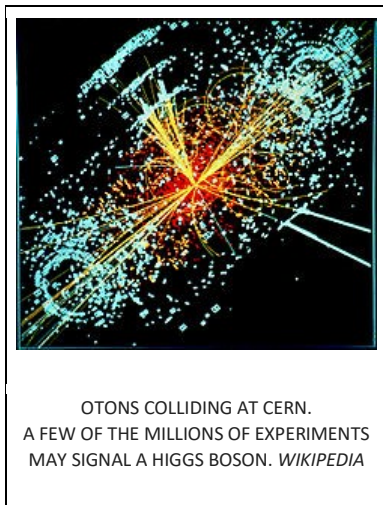
From what I have gleaned about The Higgs Boson, The Higgs Field and The Higgs Mechanism - they do not create or explain mass or gravity. They do not explain how "straw is spun into gold" to make matter.

## PHYSICS FORUM

I don't feel like you'll make much headway into this just by asking a few questions about random topics that you've read concerning the higgs field and mass. So far, it seems like members are spending more time correcting your misunderstandings than explaining the subject. You need to learn a lot more of the very basics of quantum mechanics, quantum field theory, and several other topics before you'll be able to grasp exactly what is happening. Most importantly, remember that our theories are primarily math based and any attempt to "translate" it into common language is almost certain to fail. Without knowing how to read the math, it's unlikely you'll get very far. Unfortunately this is not an easy task. People spend years in college learning both the math and the theories.

Reference <https://www.physicsforums.com/threads/higgs-field-and-mass.773664/>

## HIGGS BOSON DIES



UPDATE - 29 May 2014. - **"THE HIGGS FIELD DOES NOT CREATE GRAVITY"**

### NEW GRAVITY - SUMMARY (& VORTEXES)

THE MOST FUNDAMENTAL REQUIREMENT FOR THIS THEORY IS THAT LIGHT HAS MASS.

13 April 2016 - Propelled by light from a laser beam on Earth, a feather-weight Breakthrough Starshot craft is being designed to go on a 40 trillion km, 20 year flight to Alpha Centauri, at 1/5th light-speed; 60,000 km per second. BREAKTHROUGH FOUNDATION

## Breakthrough Starshot

2013 - Plan to use solar sails.

In 1901, various labs measured light-pressure <http://dujs.dartmouth.edu/2002S/pressureoflight.pdf>

LIGHT HAS MASS - "...The final measurement was the most accurate ever recorded, and the calculated pressure deviated just ten percent from Maxwell's theoretical value of  $4.7 \times 10^{-6}$  N/m<sup>2</sup>. This disparity was well within the experimental error"

(N stands for Newtons, used in gravity calculations – being 102 grams, the weight of a small apple – 0.0000047N spread over one square-metre is pretty small).

**More about mass for light.** My Crookes Radiometer is on a north facing window-sill, which also gets reflected light from a south facing white wall of a house about 50 metres distant. Last night I left the window open when the temperature dropped to 1C. The windowsill, room and Radiometer were chilled. Yet, as the sun rose the Radiometer revolved as it usually does in this room when heated to 20C. After 4 months of such observations, I conclude that the spinning paddle is driven by light, not heat, and the spin speeds up and slows down immediately with the intensity of the light; irrespective of temperature. The Radiometer paddle is being moved by the mass of light, with the black side driving. Light has mass.

*(PS - I have just read this might be a Nichols Radiometer, driven by light. It is argued that Crookes Radiometer is driven by bouncing gas molecules - i.e. heat)*

MASS OF LIGHT - WIKIPEDIA SAYS:

[https://en.wikipedia.org/wiki/Radiation\\_pressure](https://en.wikipedia.org/wiki/Radiation_pressure)



**Radiation pressure** is the **pressure** exerted upon any surface exposed to **electromagnetic radiation**. Radiation pressure implies an interaction between electromagnetic radiation and bodies of various types, including clouds of particles or gases. The interactions can be **absorption**, **reflection**, or some of both (the common case). Bodies also emit radiation and thereby experience a resulting pressure.

The forces generated by radiation pressure are generally too small to be detected under everyday circumstances; however, they do play a crucial role in some settings, such as [astronomy](#) and [astrodynamics](#). For example, had the effects of the sun's radiation pressure on the spacecraft of the [Viking program](#) been ignored, the spacecraft would have missed Mars orbit by about 15,000 kilometers.<sup>[1]</sup>

This article addresses the macroscopic aspects of radiation pressure. Detailed quantum mechanical aspects of interactions are addressed in specialized articles on the subject. The details of how photons of various wavelengths interact with atoms can be explored through links in the *See also* section.

## Solar sails[\[edit\]](#)

*Main article: [Solar sail](#)*

Solar sailing, an experimental method of [spacecraft propulsion](#), uses radiation pressure from the Sun as a motive force. The idea of interplanetary travel by light was mentioned by [Jules Verne](#) in *From the Earth to the Moon*.

A sail reflects about 90% of the incident radiation. The 10% that is absorbed is radiated away from both surfaces, with the proportion radiated from the unlit surface depending on the thermal conductivity of the sail. A sail has curvature, surface irregularities, and other minor factors that affect its performance.

The Japan Aerospace Exploration Agency ([JAXA](#)) has successfully unfurled a solar sail in space which has already succeeded in propelling its payload with the [IKAROS](#) project.

Cosmic effects of radiation pressure[\[edit\]](#)

\*\*\*\*\*

The misapprehension is the statement *light has no mass*. The true statement is "*a photon has no mass*".

Two photons can very well carry a mass, the measure of the added four vectors. There exists an invariant mass even for [mass less particles](#), this is for two photons with an angle theta in their direction of motion:

And this is just for two photons. An electromagnetic wave will [always diverge](#), there is a  $1/r^2$  ([laser light diverges less](#)) fall in the energy density of the wave, and there will be angles between the multitude of photons. Thus an electromagnetic wave can be characterized by a total mass, but that has nothing to do with information of course. The Heisenberg uncertainty principle will also ensure that there will always be some divergence.

SPACE SHIP DRIVE - There are several space vehicles being built that will be driven by solar-winds adding energy to giant ultra-lightweight sails; including the Starshot Spacecraft (see link above).

FINALLY - Science fiction has often inspired, predated and predicted breakthroughs in science fact. So I leave you with my Space Chimney Drive, also using light, that drives a "flying saucer" from Earth to the edge of our solar system. It is based on today's science - and it is useful to remind ourselves that such emerging science-ideas or fantasy could lead Mankind to Boldly Go.



Thursday, 15 March 2018

## PROFESSOR STEPHEN HAWKING - WITH THE HEROES

### PROFESSOR STEPHEN HAWKING ([Wikipedia](#))



Stephen William Hawking CH CBE FRS FRSA was an English theoretical physicist, cosmologist, author and Director of Research at the Centre for Theoretical Cosmology within the University of Cambridge. [Wikipedia](#)

(Though a bumbling academic, who would at first glance be assumed by the right thinking Manchester business community where I was spawned, to be clueless about money - his books sold in the tens of millions and his broadcasts and lectures were packed. He was a self-made multi-millionaire - from a wheelchair.)

**Born:** 8 January 1942, [Oxford](#)

**Died:** 14 March 2018, [Cambridge](#)

**Books:** [A Brief History of Time](#), [The Grand Design](#), [MORE](#)

**Spouse:** [Elaine Mason](#) (m. 1995–2006), [Jane Hawking](#) (m. 1965–1995)

#### [Quotes](#)

*Intelligence is the ability to adapt to change.*

*The greatest enemy of knowledge is not ignorance, it is the illusion of knowledge.*

*I have noticed even people who claim everything is predestined, and that we can do nothing to change it, look before they cross the road.*

**END**

*15 March 2018 - Professor Hawking is undoubtedly one of the most inspiring people who have decided to spend at least one lifetime on Planet Earth. He is, and will continue to be, ranked among the Heroes and The Greats as his life-force follows his life's work, and is broadcast and resounds for eons to come throughout the cosmos. His most notable achievement is that when medical science and all common-sense gave him "but a short time to live" to the age of 22, he laughed in the face of the unrelenting grim-reaper for another 54 years. We, humans, I believe, and Stephen is a case in point, choose the manner and the time of our departures.*

*His example to all humans, and in particular to all with disabilities, to everyone who finds their personal problems overwhelming and might be tempted to end it all, echoes Winston Churchill's advice "KBO ! Keep Buggering On". Despite being paralyzed by Motor-Neurone Disease, unable to even speak, he persisted with his family life and his work and his demanding social and media life. He bore all the humiliations of being unable to tend to his own bodily functions - or breathe without mechanical aid. Stephen intelligently adapted and applied technology to allow himself to live. Science, intellect and utter determination overcame his almost, to many of us, unbearable fate as a completely disabled man.*

*Years ago, at the Sheldonian Theatre in Oxford, UK, a University Don put a question to The Dalai Lama who had spoken of reincarnation. "I have a friend who is very depressed..." the several hundred members of the academic audience all suppressed knowing smiles "...and he has several times said he would commit suicide. ...In the light of reincarnation - should he end this life and be reborn?" After a suitable pause, The Dalai Lama replied, cautiously, "Although my faith in reincarnation is total - I haven't met anyone who has actually claimed to recall having died and been reborn - with one-hundred percent certainty. ...I would therefore suggest to your friend that he does not take that risk. He should perhaps let nature and life take its course."*



*Stephen Hawking was a humanist. He expressed no belief in an afterlife. But just in case he was not one-hundred-percent correct about Life The Universe and Everything, his extra-special and extraordinary energy just might be recycled - leaving the Motor-Neurone Disease behind - via a Black Hole, emerging appropriately as Hawking Radiation - at which time his theory will have practically demonstrated his predicted phenomena, and he could*

*collect his Nobel Prize. As he reassembles his organism from the stream of radiation, ready for another stint on Earth - he will also know the answer to the conundrum he posed "is information destroyed or preserved as it enters and eventually leaves a Black Hole". But it could take more than a Brief History of Time to recycle the brilliant and brave Professor Hawking.*

*In the meantime, while we wait and see, his insights, science and mathematics will help to move Physics on from Newton and Einstein and The Standard Model. The current and coming generations of scientists will benefit from standing on the shoulders of all the giants who precede them.*

Monday, 22 May 2017

## GRAVITY & LIGHT WITH MASS.

UPDATE - 1st Sept 2018. Heavy Light. [New Scientist No. 3193](#)



### **Asteroids get spun so fast by the force of sunlight they fall apart.**

By Leah Crane

MOST small asteroids are just piles of rubble in space, held together by gravity and weak molecular forces. Even the slight touch of sunlight can make them break up. Now we know how asteroids of different shapes crumble, which might help us if one ever heads straight for Earth.

Photons of light carry a tiny amount of momentum, so when sunlight hits an asteroid it can send the space rock spinning, in what is known as the Yarkovsky–O'Keefe–Radzievskii–Paddack (YORP) effect.

“The magnitude of forces acting on these asteroids is like the weight of three grapes sitting on a mountain,” says Masatoshi Hirabayashi at Auburn University in Alabama. “They are negligible in the short term, but if you wait a couple of million years, these three-grape forces can be significant.”

Thursday, 18 February 2016

## NEW GRAVITY & PERPETUAL MOTION



Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. NCH March 2015 e-

mail [noel@noelhodson.com](mailto:noel@noelhodson.com)

I am once again repeating myself – this is a recap to introduce a second article:

**LIGHT HAS MASS:** I have observed a Crookes Radiometer on my office windowsill since January 2015. Its varying speed turning paddle wheel motion, I conclude, is not driven by temperature as some theories aver - but is driven by light.

The 4 paddles are black on one side and silver on the other, attached by wires to a hollow central axle made of glass, which is balanced on a steel-needle. Inside the bulb is a vacuum - in theory - but how could I test this? Probably, variations in temperature do expand and contract the materials and so affect the speed of rotation - but the affect is undetectable to my eye, even for wide variations in temperature - from near freezing to +20C.

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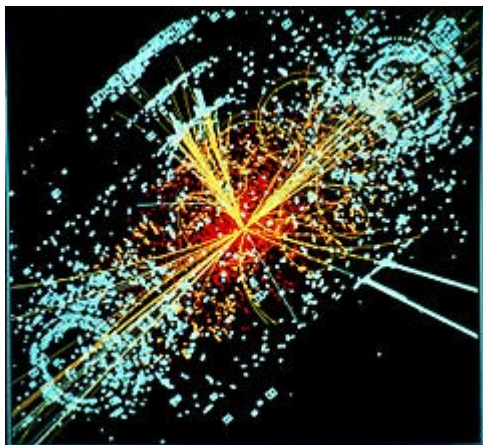
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UPDATE - 29 May 2014. - **"THE HIGGS FIELD DOES NOT CREATE GRAVITY"**

### NEW GRAVITY - SUMMARY (& VORTEXES)

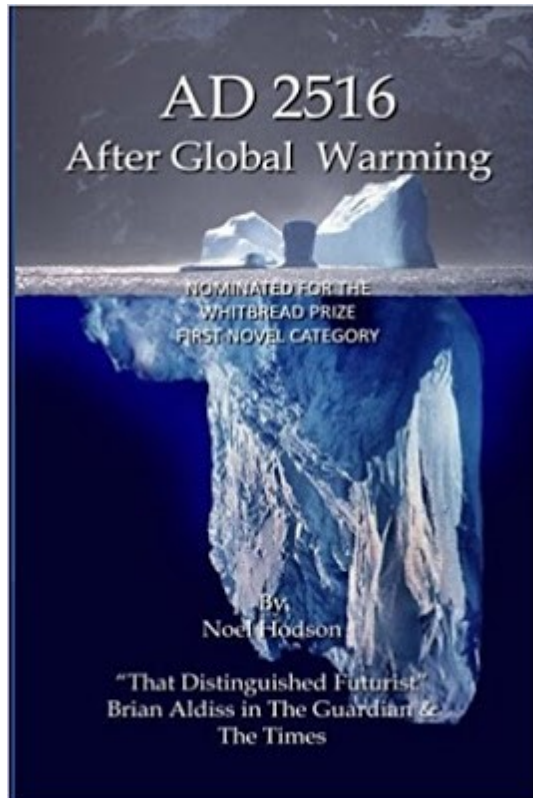
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## AD2516 - After Global Warming

<https://www.amazon.co.uk/AD2516-Global-Warming-Mankinds-Future/dp/1516853547>



### CHAPTER 29: Journey into Space.

The Citizens were herded to a circular seating area with viewing screens.

“Very briefly” announced a young woman who had taken over from Samba who was now fifty yards away huddled with a group around bafflingly complex control panels, “...I’ll give you an outline of the flight we’re taking together and – very, very briefly – how The Queen works.”

As she started speaking the clearest pictures they had yet experienced flashed up on the guests’ inner PC screens – and on the display screens.

“...The Queen is solar powered. Powered by starlight. Every square centimetre of surface absorbs light, the electromagnetic field, and converts it to electricity...”

Illustrations of light being captured by solar cells converting at eighty-two percent efficiency accompanied the lecture.

“...the craft is a Space-Chimney... For the Concorde Survivor’s understanding I’ll describe it...”

EmmSon nodded at Sebastian, confirming that he was right and Sebastian wrong.

“...The rim of the Queen spins on frictionless vacuum bearings at sixty-thousand kilometres a second...”

The illustration showed the fat outside rim starting to rotate and getting up to speed so rapidly that it moved faster than the eye could follow and became a blur.

“In the atmosphere, with variable geometry blades, it acts like a helicopter wing. The rotation lifts the Queen upwards – not of course strong enough to get her off the ground at any speed, but you’ll see its ability to effectively make the craft weightless and lift it in Earth’s lower atmosphere...”

Complicated wind tunnel tests showed the rim sprouting short turbine blades and spinning in smoky spirals, which any flight engineer would recognise as evidencing lift. Joe was interested to see that the Citizens were fascinated. They obviously hadn’t seen this before.

The young woman continued at a fast pace “...The rim is also the main space drive – when we switch the chimney on...”

“...on the top of the rim are laser beams placed close together so that when its rotating a seamless column of coherent light – the chimney – beams upwards...”

A graphic of a disk with separate lights at its rim shining fiercely out into space was flashed on screen.



“...The beams are magnetically polarised to attract all and any particles within the chimney to the “walls” of light. This creates an internal vacuum relative to the external pressure and the chimney effect is created.”

“...under The Queen, the rim has lasers that form a cone of light which is polarised the opposite way – to attract particles making the zone beneath the ship of a higher pressure than the ambient external pressure – and far higher than the vacuum in the chimney above.”

“The Chimney reaches out without losing its focus or polarity for a quarter of a million miles. So the “top” of the chimney is about as far away as the Moon. Any questions so far?” she challenged her audience, impatient to get this over with. No-one dared to delay the presentation.

“Good!”

“...Hence the concept of a smoke-stack chimney which joins the high pressure ground air with the lower pressure air at its top, creating an upward flow. Burning fuel at the bottom increases the flow as the warmed air is less dense. The Queen’s lasers do the same job but instead of air flow, what sits in the chimney is the space-craft itself...”

She surveyed her small audience waiting, impatiently, for the penny to drop. She made minute hand movements indicating they should as soon as possible, as soon as their limited intellects caught up, see the point. All around them people were bustling and making ready – and she, a co-pilot, was anxious to get to her station.

“Ah!” rejoined David AA, to everyone’s relief, “The Queen herself is equivalent to the airflow and rises up the chimney...” “Low pressure above and high below... But...” he added with some bravery as their rapid fire tutor was not inviting any detours, “...how do you steer it? The Queen, doesn’t it just go straight up The ...Chimney ... In Smoke... as it were?” and he grinned sheepishly in case he had asked a totally dumb question.

His momentary fear was quickly alleviated, “Good question...” she praised him – and more graphics flashed onto the screens, “A very good question. Now you see why The Queen is saucer shaped. We point the laser-chimney at our destination, which can be near or far. Wherever we point the lasers, the craft must follow...”

David AA looked pleased with himself and all his colleagues gave themselves a pat on the back for concentration and alertness.

“...The Queen has to be shaped so that when the laser-chimney is fired at an acute angle it doesn’t intersect the ship’s superstructure – otherwise BOOM! It would disintegrate all the particles within the chimney – and end of story! end of us all and end of The Queen. ...So its saucer shaped.”

Sebastian smiled triumphantly at EmmSon in an utterly childish “I-told-you-so” retaliation.

“...And finally,” said the young tutor already moving away from them “...once in the chimney we are subject to constant acceleration – so, as Einstein figured out, we get gravity beneath our feet...until we decelerate. When we approach a planet, we reverse the polarities above and below; and it slows us down. Now I really must go. Enjoy your flight – see you later.”

Though the latter was so obviously not her intention they ignored it.

EmmSon, less cowed than the rest by this fast talking, dismissive informant, called after her “But – hey! Hey Miss – But where are we going?”

She stopped and turned, with a look which would make a lesser man tremble. This co-pilot was not to be trifled with. Without taking a single step back to them she flashed up a diagram on the screens,

“There. We’re going there. And then we’re coming back again – all in thirty-six hours... ...If we ever get off the ground” she admonished. “Got it?”

They all nodded obediently. Eloise had to admire the mind-power of this young woman and wondered if she might one day decide to train in the Mind-Warrior art.

The diagrams and recorded explanations showed that The Queen was about to take them ten to the power of six Earth-radii – sixty-billion kilometres, to the Kuiper Belts at the edge of the Solar System. Light from the Sun would take an hour to reach those frozen wastes, just beyond the orbits of Pluto and Neptune. The Queen would travel there, taking the long route, sling-shotting round the Sun, to rendezvous with the Earth’s most distant scientific satellite, in fifteen hours, at an average speed of twenty-thousand kilometres a second or seventy-two million kilometres an hour; its maximum speed being almost twice that to allow for acceleration and deceleration to align with the satellite’s speed.

QED.

Thursday, 18 February 2016

## NEW GRAVITY & LIFE



Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB

between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. NCH March 2015 e-mail

noel@noelhodson.com

LETTER TO NEW SCIENTIST - 12th April 2018 - In his article Law & disorder (NS 7 April 2018) on Quantum-thermodynamics, Vlatko Vedral risks scientific heresy saying "Living things constantly strive against the second law of thermodynamics, sucking in energy to maintain the order within". He could be bolder and say that there is much evidence that all life forms persistently organise energy; as do all galaxies, stars, planets, molecules, atoms - indeed all objects. Might we today imagine that order and disorder are circular - linked by a feed-back system - and that the cold, dark, featureless, soup death of the universe, following the 2<sup>nd</sup> Law is not necessarily so? I've read that several scientists have committed suicide through brooding about the 2<sup>nd</sup> Law and thus our pointless existence. Is it time to move on from the lessons of the steam-engine? Perhaps there are five fundamental forces: Gravity, Electromagnetism, Weak-nuclear, Strong nuclear and the Lifeforce, which is the 5th Law of Thermodynamics.

Noel HODSON - Author

4th April 2018: [NATURE](#) Dark Matter Disappears: Studies of galaxy surveys in the context of the cold dark matter paradigm have shown that the mass of the dark matter halo and the total stellar mass are coupled through a function that varies smoothly

with mass. Their average ratio  $M_{\text{halo}}/M_{\text{stars}}$  has a minimum of about 30 for galaxies with stellar masses near that of the Milky Way (approximately  $5 \times 10^{10}$  solar masses) and increases both towards lower masses and towards higher masses<sup>1,2</sup>. The scatter in this relation is not well known; it is generally thought to be less than a factor of two for massive galaxies but much larger for dwarf galaxies<sup>3,4</sup>. Here we report the radial velocities of ten luminous globular-cluster-like objects in the **ultra-diffuse** galaxy<sup>5</sup> NGC1052–DF2, which has a stellar mass of approximately  $2 \times 10^8$  solar masses. We infer that its velocity dispersion is less than 10.5 kilometres per second with 90 per cent confidence, and we determine from this that its total mass within a radius of 7.6 kiloparsecs is less than  $3.4 \times 10^8$  solar masses. This implies that the ratio  $M_{\text{halo}}/M_{\text{stars}}$  is of order unity (and consistent with zero), a factor of at least 400 lower than expected<sup>2</sup>. NGC1052–DF2 demonstrates that dark matter is not always coupled with baryonic matter on galactic scales.

**As Dark Matter and Dark Energy have been calculated to comprise 80% to 90% of mass and therefore of Gravity, this "missing" Dark Matter is relevant to theories of gravity. Several times in these gravity essays I have suggested that physicists should look for the lack of something - rather than extra mass - in my idea that lack is the Casimir Shadow cast by matter. The matter is illuminated by the radiation of the entire Universe on the "outside" and the shadow is "inside" matter where some wavelengths cannot manifest. This galaxy is described as Ultra-Diffuse, which may fit with my thought experiment (below) of expanding the Earth into millions of jigsaw pieces spread over a globe radius of 500,000 km; each jigsaw piece would have very little gravity - because, I conjecture, the universal radiation (all wavelengths) is able to fully manifest "behind" or around each small jigsaw piece. Each piece is supported or impacted by almost all wavelengths, in the universal ocean of light /electromagnetic radiation - so the gravity of each piece is far less than on our non-expanded compact Earth. I would like to think that this Ultra-Diffuse galaxy is demonstrating the same characteristic; where the total mass remains the same but the diffuse matter lacks Dark Matter. (is this logic correct?)**

29 Jan 2018: THE AETHER: I am undoubtedly repeating myself but for my current WiP book, **The Alchemist's Lad - The Perils of Entanglement**, I need to figure out how radio waves (electromagnetic waves) propagate across the universe, and, however weak they become, how they transmit coherent, consistent data from sender to receiver. Part of the mechanical answer is the use of the Deep Space Network, all the largest radio-dishes on Earth working together to send and receive radio signals,

and NASA's latest signal boosting tools that use super-cooled combinations of metals to multiply the energy of signals without distorting them. Hence, we can still communicate with Voyager 1, more than a trillion miles away, whose signals reach us with the power of one millionth of a billionth of one watt - yet remain legible. ("For their amplifier, NASA researchers at JPL are using titanium nitride and niobium titanium nitride, which have just the right properties to allow the pump signal to amplify the weak signal.")

My idea of how this can be goes right back, or down, to the mystery of how the universe spins straw into gold - or more prosaically - how "pure" energy is compressed to form matter. One of my earlier TOEs, [Expansion is Gravity](#), sketches out a theory of light colliding with light forming a spinning vortex, being the smallest particle; from which several particles combine to form quarks, then up the chain to atoms, etc. These vortices exist in our limitless space-time which in turn at every point, e.g. the size of an eyeball, contain images of the whole universe. These myriad images each contains immense amounts of data - energy and mass are interchangeable - thus space is not empty, but crowded with mass-energy-data. Thus we resurrect the Aether; capable of carrying signals across space. So - back to wavelengths. A very old idea I had was that from an energetic event/source a signal radiates outwards in waves (waves in the Aether) and each wave rolls in situ, say head over heels - it triggers another wave to roll heels over head, in situ, etc. and thus propagates across the universe; but nothing "travels". These waves consist of the very smallest vortices (equivalent to drops of water in ocean waves). The waves do diminish as they distance themselves from the source - which has imparted their level of energy and wavelength. Where waves intersect in the complex ocean of waves, we detect photons, electrons etc. being packets of the fundamental vortices. These movements are vibrations that we measure in Hertz and wavelengths and/or wave-height. The energy and data is held in the number and size of vortices - which are nearly impossible to disrupt due to their minuscule size. So data is maintained.

BUT - with all this activity, from every object in the universe, in the "void" of space, I cannot conceive of how a particular wave, e.g. from Voyager 1, maintains its identity and its data. Or, do we only "see" or detect a tiny percentage of waves that survive the turbulence. Perhaps of all the events that occur, we detect a minute percentage - we detect the ones that get through to us?

*"AETHER: Einstein eventually published a complete explanation that would reconcile his apparently contradictory perspectives on the Aether, first by asserting that Special Relativity does not explicitly negate the existence of an Aether, suggesting only that it didn't explicitly need an Aether to explain the relative properties of electromagnetism and movement. He then clarified and explained the essential importance of the Aether (ether) to General Relativity:*

“To deny the ether is ultimately to assume that empty space has no physical qualities whatever. The fundamental facts of mechanics do not harmonize with this view. For the mechanical behaviour of a corporeal system hovering freely in empty space depends not only on relative positions (distances) and relative velocities, but also on its state of rotation, which physically may be taken as a characteristic not appertaining to the system in itself. In order to be able to look upon the rotation of the system, at least formally, as something real, Newton objectivises space. Since he classes his absolute space together with real things, for him rotation relative to an absolute space is also something real. Newton might no less well have called his absolute space "Ether"; what is essential is merely that besides observable objects, another thing, which is not perceptible, must be looked upon as real, to enable acceleration or rotation to be looked upon as something real.”<sup>15</sup>

*This description, and the rest of his paper published in 1920, suggests that Einstein saw spacetime itself as the “new Aether.” However, this perspective was never popularized and the Aether was slowly forgotten as a “metaphysical” artifact of a previous scientific era.*

*To clarify Einstein’s meaning further, he is basically suggesting that if an object rotates, there must be a source for that rotation. If the source propelling an object to spin is not the object itself, then it must be the space around the object.*

*In reviewing this brief history of the Aether, we might inquire as to whether it was appropriate to completely remove it from science and all subsequent science education.”*

9 Jan 2018 - To date there have been 5,426 page views to this article and the previous linked article. There is probably a similar number of visitors to the other ten or so linked articles. One day I will count them accurately. So, say, 10,000 page views, so far. Only one, a single one, email discussion has ensued. Is the concept utterly risible, or perhaps too complex? Is there anybody out there - noel@noelhodson.com.

## Photon energy - Wikipedia

"However, the claim that photons are massless is based on the crisis arising with other theories in quantum mechanics. In order for other math, such as gauge invariance and so-called "renormalization" to survive without considerable revision, photons must be kept massless in the realm of current equations. <sup>[u]</sup> The claim is also contested by other circles."

(Maxwell: 0.0000047 Newtons (1 Newton = 102 gm) spread over one square-metre)

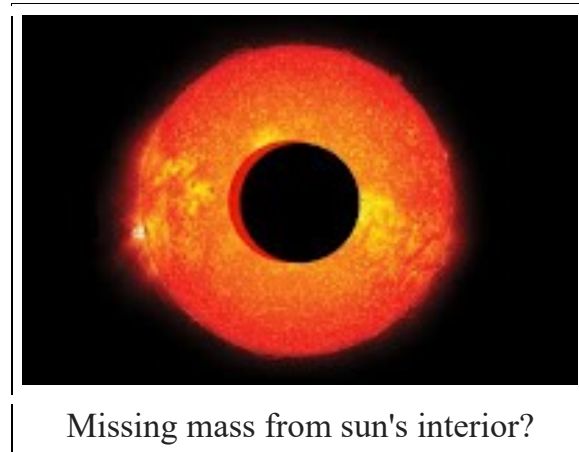
Pressure of sunlight (Maxwell-Bartoli) is 0.4 mg on a black surface and 0.8 mg on a mirror.

**19 DEC 2017:** A little more thought on **Dark Matter**, which, according to some theories based on observations and calculations, outweighs ordinary matter, and ordinary gravity by 4 to 5 times, or more; but no-one has found any of it. At a Carol Concert last week, at New College, Oxford, UK, it again occurred to me that each second that ticked by added another layer of history to that ancient chapel, and to all of us and to all objects in the chapel. The analogy of a 3D-Printer again came to mind, building fine layer upon layer each millisecond; adding to our history. As the familiar robust singing and orchestrations rang through the atmosphere in sound waves, then left the planet as electromagnetic vibrations, to be broadcast at the speed of light to the perimeter of the observable universe; despite Feynman's diagrams, we cannot yet go back through time, even for,





21 Oct 2017 - DARK SUN New Scientist No. 3148, [What's wrong with the sun? by Shannon Palus](#), reports that  $9 \times 10$  to the power of 24 tonnes of "metals" are missing from the interior of the sun. This recent controversial theory perhaps provides an argument for my statement above "...the centre of the Sun is very dark." In turn, this dark interior might be an example of



Casimir Exclusion of part of the electromagnetic spectrum between masses, "the pull" which my idea of gravity relies on. How Helioseismologists and Spectroscopists measure the "sound" and light-spectrum from the sun, and calculate "missing" mass is beyond my understanding - but several notable observers agree that something is wrong with our analyses of how the sun (and all stars) function. Is my new gravity theory correct? Perhaps.

## 12 Oct 2017 - Shoulders of Giants

In my years of astro- and particle- physics evening classes, I was always running to catch up on self-evident scientific truths that the other, experienced students "knew", and which underpinned the tuition. Misunderstanding one or another of these obvious "facts" or formulations could mislead me for weeks. Readers of this idea for gravity might not "know" what I have read and absorbed over 70 years - and that I take for granted - which I assume you all know. But you might not understand how I got here - and so cannot evaluate if what I am saying has any merit (it has). To recap:

What gravity does, was set out in Isaac Newton's arithmetic, which is astonishingly accurate. His equations reliably measure the force of gravity between objects, in fact between the very centres of objects, between what we now know to be the centres-of-gravity, with astonishing accuracy. Newton studied the tables drawn by earlier observers of planetary movements and studied the tables of experiments of dropped and rolling weights and fired canon balls, and he took the earlier theories of the orbits of planets (around the sun) - and he calculated their masses and motions. Look him up on Wikipedia and plug-in numbers to his algorithms - and you can work out the precise orbit or crash-landing of say, a cricket ball, fired around or at the sun - measuring precisely from the centres of those two objects. He worked with the three dimensions of height, length and breadth

(Euclid's geometry) and co-invented calculus (e.g. measuring and using tiny slices of a curve of an orbit). Newton wasn't alone in such speculations and calculations - but he was by far the best. Newton told us what gravity does.

Einstein (and others of his time) noted from the observations of astro-physics that certain planets did not exactly match Newton's equations. There were and are slight distortions in the orbits of some planets which buck the Newton system.

Einstein had earlier constructed his theory of **Special Relativity** which proved that the three dimensions of height, length and breadth were not fixed in immutable time, as was then the scientific consensus, but were relative to each other when considered as four dimensions - height, length, breadth and time. At very, very high speeds, near light-speed, time might perceptibly shrink or grow and as it does so, the "fixed" geometry dimensions also change. They are relative to each other. What is fixed, he assumed, is the speed of light (usually named "C" - about 300,000 km per second in a vacuum). So light-speed became the fixed measure of Relativity. It was and is essential to the arithmetic that light (photons) always propagate at "C" without acceleration; as soon as created photons move at C. They are always moving at C. To move like this, they must be weightless (no mass). We use C to measure the size of the universe (BLY Billion-Light-Years).

Einstein solved the anomalies in observed planetary orbits in his next theory, **General Relativity**. Measures that work on the Earth's surface are perfectly sufficient to use to make precision instruments and machines and "flat" surfaces. In fact the curvature of the Earth means that all flat surfaces, with say, a stationary ball-bearing at the middle of a tile, are in fact curved. Basic geometry and gravity work well enough to build safe vertical skyscrapers and heavy bridges. But as we leave the Earth, gravity changes and at a distance, gravity almost entirely disappears - we can space-walk out in "space". Actually "weightless" astronauts are suspended between centres of gravity and forces of motion. But gravity is never entirely absent, so in considering universal theories, Einstein had to grapple with it. He retained mass-less light at light-speed, as his fixed dimension, factor or measure and realised that in his four-dimension space, Space-Time, gravity's role is to curve the flight of light and curve Space-Time. His calculations predicted that light, which until then was agreed by science to always travel in straight lines, would be found to curve around large objects. This was proved by observing light from distant stars in total lunar-solar eclipses. Light does bend around gravitational objects. This curve precisely corrected Newton's Three Laws of Gravity, to fit the observed paths of planets. Space-Time and General Relativity heralded the reliable navigation of space-ships.

What Newton and Einstein did not explain is why, say, a cricket ball, falling onto the Earth, then spends the rest of its existence trying to reach Earth's centre of gravity. See my perpetual-motion below. I pondered that allegedly massless (weightless) light is probably not massless, and that a large amount of it, collected into a sphere, will form a black-hole. Could "curved-space" be a work-around necessary to retain the alleged weightlessness of light? If light has mass, we don't need to cite curved-space. The bending of light is then simply a very small object, a photon (or other electromagnetic particle) being attracted to a very large object by Newtonian Gravity. And so... onto my theory of what gravity is... or might be.

**3rd August 2017 - PERPETUAL MOTION:**

Last night at a piano concert at Merton College, Oxford, UK, I again contemplated that all of us gathered in Merton Chapel, the grey, elderly and young music lovers alike were whirling around the Sun on a blue-green planet, for three-score-years-and-ten, to who knows where or why. It also struck me, aged 74, that before I leave I should pass-on to my silent, assumed, possibly non-existent audience, what triggered this theory of gravity.

It was perpetual motion. Not the perpetual motion of mad inventors but the tangible, demonstrable perpetual motion of gravity. Einstein gave us the analogy of a man in a rising lift feeling the same pressure under his feet as he does standing on the surface of our planet - being pulled down by gravity. That pull never ceases. It is a perpetual motion. Or as perpetual as science definitions will allow.

We and every object on our planet, and on every celestial body in the universe, are relentlessly, ceaselessly and eternally pulled towards the or a centre of gravity. To cut a many years-long story short, the idea came to me that this downwards force is caused by an equally infinite, perpetual energy; which has to be the "stuff of the universe"; which another very long story persuades me is "light" or electromagnetic energy. This stuff surrounds us to a scientifically calculated depth of 43.7 b.l.y. (billion light years) being the horizon of the "visible universe". This horizon is as near infinity as we humans need to know of. From perpetual-motion and the infinite Ocean-of-Light, I had to ascribe a slight mass to light - and then add-in the Casimir-Shadow where light does not reach, inside every gravitational object. The light presses and the absence of light, the shadow, pulls.

The idea still hangs together, after several years of keeping up to date with scientific ideas and discoveries. So - there it is. ...And we keep being pulled towards the centre - in eternal, perpetual-motion. Black Holes beckon us all - and beyond the black-holes...?

My previous 2,000 words note is at: [GRAVITY - A NEW THEORY](#)  
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## Back to gravity:-

In the simplest terms, gravity is the shadow of matter cast by light - the electromagnetic spectrum. The deepest such shadow is a Black Hole. Sail a few million light years from our galaxy, the Milky Way, into "empty" space. Give yourself plenty of elbow room. Take telescopes of every sort. Observe the universe that surrounds you, communicating its majesty and complexity to your new location. Set about building a sphere in which all of that information is excluded, a sphere that excludes all electromagnetic waves, particles and signals. Make the surface of the sphere of the most perfect mirror - that will turn away and exclude photons. But inside it will be full of other waves. Fill it with iron, one of the most plentiful heavy elements; that will rid it of many more wavelengths, unable to penetrate the sphere. In the centre of the sphere, the shadow deepens. But iron transmits electricity - your sphere is full of buzzing electrons. add internal coats of non-magnetic materials, such as ubiquitous silicon. That will cut out more wavelengths and further deepen the shadow. Keep going. I'm sure you are getting the picture ...as the shadow

deepens. At some point in your sphere building, the external pressure from the universal waves of the electromagnetic spectrum will suddenly collapse the structure - in the blink of an eye. You have created a black-hole. It is very heavy and very dense. The pressure inside is zero. The external pressure of the ocean of the stuff of the universe is immense - almost infinite. Your sphere has been crushed by light.

The universal ocean, the stuff of the universe, is light - the electromagnetic spectrum.

Electromagnetic (light), and nuclear forces come first and form matter.

Gravity acts between matter. Gravity cannot be shielded but is countered by energy.

The entire universe is visible from any point. The light we see is data-rich & coherent.

Light is some-thing, not no-thing; it has information, mass and exerts pressure.

The Casimir-effect excludes some light-waves from between objects.

All gravitational bodies (objects) are externally pressed on every point by light.

All objects have internal "Casimir-Shadows", zones with reduced wavelengths.

The external pressure & internal shadows cause, indeed are, gravity.

These combined forces push & pull all particles to the centre of gravity.

This is the "ever-tightening knot" of gravity.

The shadows increase, the deeper particles delve, & so density increases.

The relentless push & pull to the centre tends to form Black-Holes.

The centres of gravity change continuously as mass joins or quits objects.

All clusters of objects have common centres of gravity, which continually shift.

The multitude of centres of gravity constitute universal inertia.

The pressure in a black hole equals the 43.7 b.l.y. or infinite universal pressure of light.

All objects tend to implode not explode. They are "bubbles" in the ocean of light.

We read data-rich light from 43.7 b.l.y away; light & its broadcast data are stable.

The broadcast light signals are informed & reformed by every event, large or small.

Our thoughts and actions are events, as broadcast & persistent as radio signals.

Every observation point in the universe gives a unique view of the universe.

The largest observation point/sphere is the whole universe, which allows the largest waves.

Smaller observation points or spheres exclude waves larger than the sphere. (Also Casimir).

The data-rich ocean (field) of light is coherent energy. It coheres.

Matter is formed from very large spheres of coherent light condensing into an object.

We do not know how this condensation ( $E=mc^2$ ) happens. It is not the Higgs.

We do know how to reverse the condensation & release the light, in nuclear explosions.

As condensation makes matter, the supplying light sphere experiences a brief partial vacuum.

These ephemeral vacuums in the coherent light occur continuously, ([unreformed Hoyle](#)).

[Do light waves have mass](#) that accumulates with "depth"? implying a "rigid" medium.

Light waves are persistently coherent and stable data carriers, even across 43.7 b.l.y.

Hubble Expansion is queried by some physicists. Is it a trick of the propagation of light?

All light propagates as spheres of waves from energetic events. Where spheres intersect, we detect bullet-like photons /electrons etc. moving away from the event. Thus photons are whorls of waves, moving apart on the surface of spheres. Affect the spherical wave-surface and it simultaneously affects all the photons; **Action at a distance**.

CMB consistency is queried by some cosmologists. Is the 3 Kelvin temperature patchy?

But light condensing to matter is proved - not least by exploding matter back to light.

Matter exists - and it is made from light - hence nuclear bomb electromagnetic flashes.

Pre-Big Bang, Hoyle thought energy condensed to make particles - throughout space.

Condensing light to matter attenuates the ocean and reduces the cohering force; this is **dark-energy**.

Hubble expansion continuously causes universal virtual partial vacuums at every point.

This expansion attenuates the coherent ocean, (infinite) light rushes in. This is **dark-matter**.

Nowhere is shielded from the universal light energy (CMB).

QED

February 2016 - GRAVITY WAVES discovered at last.

***On the other hand.... a contrary view from [Wal Thornhill](#). [Einstein was wrong](#).***

**NEW GRAVITY - PROOF OF CONCEPT**



Expand planet Earth into thousands of jigsaw pieces spaced across a 500,000 km sphere.

The whole would have the same mass, orbits and spin, and a centre of gravity..

Each piece would have very little gravity. So what has changed?

The separation and expansion has allowed most light waves to surround each piece.

These waves between objects reduces the Casimir Effect.

Each piece is floating in the 43.7 b.l.y. deep ocean of electromagnetism.

Will starlight bend around this expanded gravitational mass or object?

Probably not.

Is "curved space" a work-around to explain massless light?

(This expansion analogy is detailed in the [previous longer article](#))

#### THE UNDERLYING PRINCIPLES

All objects are dissipative; most of what goes in comes out. Humans absorb 50 tonnes in 70 years.

The Earth is a dissipative gravitational object. Space dust and light continuously fall onto it.

All the mass tries to reach the centre of gravity. Dense masses reach the centre.

Why does the additional mass tend to the centre? How is most of it dissipated?

We can answer the second question but not the first, which we call gravity.

Light has mass. As do neutrinos and all particles.

<http://dujs.dartmouth.edu/2002S/pressureoflight.pdf>

#### **New note - 18th March 2017:**

<https://astrobites.org/2016/11/04/the-bullet-cluster-a-smoking-gun-for-dark-matter/>

BULLET CLUSTER - NS-18 March 2017 - New thoughts.

Mark Anderson writes in New Scientist 18 Mar 2017 **"Strangely attractive - Fresh suspicions have reopened the case for a radical rethink of gravity"**



Bullet Cluster - two galaxies colliding - NASA

Anderson re-visits the conundrum of galaxies and clusters of galaxies revolving at their perimeters more rapidly than Newton's and Einstein's gravity calculations for visible matter allow. Hence - invoking theories of Dark Matter and Dark Energy to add the "missing" mass; which is calculated at about 90% of the whole. In other words, we can only "see" about 10% of the gravitational mass of these astronomical bodies. How might this fit with my New Gravity?

These objects rotate and congregate as do wagon wheels, the hubs move round slowly, the end of the "spokes" on the outer rim move quickly. It is this speed at the extremities which puzzles astrophysics. Given the mass we can measure and therefore the gravity of the mass, the centripetal force outwards (like motor bikes on the Wall of Death) from the centre should throw off the outer objects - into the void. The galaxies rotate as if they are solid objects (wagon wheels or dinner plates) bonded together. Science "knows" them to be clusters of billions of independent, individual stars, bound together and held in place by the mysterious force of gravity. "Mysterious" because, while science knows what gravity **does** - we don't know what it **is** - except of course for my new theory - which is difficult to fit with the observations. Could Dark Matter be electrical forces?

Studying the NASA photograph of the Bullet Cluster shows dozens of visible and hundreds of almost invisible galaxies. We know they all rotate - individually, and rotate when they cluster. I think they rotate, from rotating primary particles upwards, when light-beams (which have mass) collide at light-speed, at angles. What this marvellous photograph tells me is that stars and galaxies are formed as proposed by my New Gravity theory and that they and all objects are formed from light - in the case of stars by massive amounts of light concentrated into dense bright stars. This concentration is drawn from the vicinity of the star ( $E=MC^2$ ), reducing the density of light (which has mass) around the star, or galaxy, etc.

This reduction of density allows the outer perimeter to move more rapidly than matter nearer the centre of the star - which is slowed by inertia; this coherence is the counter equivalent of pulling yourself up by your bootstraps. The common flying-saucer shape of

the galaxies indicates to me that they are rotating in a medium which has friction - light has mass and it coheres - which shapes them. The galaxies appear to have random orientations - yet most assume the same shape. This indicates equal pressure from the universal medium at every point, regardless of orientation. The 43.7 b.l.y. deep ocean of light pressing in from every horizon.

We think we know that each galaxy has a Black-Hole at its centre. The shape of galaxies certainly indicates forces that look like swirling liquid going down a plughole (on Earth, very clearly an effect of gravity on Earth's rotation). Black Holes almost certainly suck in matter and ultimately spew out energy - which, I guess, recycles as sub-atomic particles are formed from the energy. These multitudes of massive black-holes, galaxies and clusters of galaxies will have common centres of gravity, which we might one day discern on astronomical scales. If the alleged Big-Bang theory holds, all the centres of gravity have a single centre of gravity - the centre of the universe. These or this centre are, I think, universal inertia. The similarly shaped wagon-wheel or plate shaped galaxies relate to universal inertia, which might confer their apparent rigidity (as wagon wheels or plates).

I set out a sketchy idea for dark-energy and dark matter in my original slides [www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf), which eventually gave rise to this New Gravity idea.

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Note - from a conversation with Marilyn B 24 OCT 2017. The Aether-Matrix carries and **is** the totality of broadcasts of the energetic, coherent, data-rich waves and particles (*in a hexagonal field/ocean EH*) which are focused (in-tension) to form objects from "pure" energy (i.e. light) - e.g. formation of a planet or a star, or a human. All objects, all things, are such focused waves cohering. The objects tend to implode, not to explode, from the external, focused pressure of the ocean of light (e.g. black-holes). The diameter of the object dictates the size of waves any object or sphere can contain. The location of the object/sphere dictates the precise "view", angle of view, it has, or can record, of the universe. The wavelengths and locations are thus unique. Thus, every possible sphere is unique. The waves in the Aether-Matrix impart information (we can read them) of past, present (and future?) events. All such waves are changed moment-by-moment by every energetic event which re-form and in-form the Aether-Matrix; from which all things, objects, and next-events emerge.

31 Jan 2017 - A diversion into dark-matter & dark energy. A note for later expansion. I am speculating that the 80% to 90% missing mass is the history of the object. e.g. A man is the sum of sub-atomic, atomic, molecular and chemical parts; but is also informed by his life and experience to date. This track record is visible to all who care to look. We refer to it as character, or charisma, or authority - and a thousand other terms. A man's history comes with him and immediately determines his status the moment he meets other humans. We can and do all read this information - First impressions count and are made by us in a micro-second. So we are made of mass and energy and our unique time-line or history. We are organisms on time-lines that date back to the earliest organisms, billions of years ago. I will resist the temptation to expand our past and present into the future.

The past, history is real energy which has identifiable presence and impact which can be scientifically analysed.

Our histories add gravity, or the opposite, to our person. Most other humans can read the signals that our histories broadcast. History carries mass and energy.

Similarly, all objects have history. It is worth revisiting the fact that all particles are unique and occupy a unique location in the universe. The long lived, almost eternal, (I know that's a scientific heresy) average proton carries a very long history, of many billions of years. In theory, we could track back from this moment to the previous moment etc and understand a proton's life-story. It does bring its history with it to the present moment. *More later*

17 FEB 2017 - Later. - Last night at the Sheldonian, I watched and heard The Oxford Philharmonic Orchestra, soloist Janice Jansen, play Brahms Violin concerto - and play it brilliantly. Examining humans, which we all know and that we are (apart from DJ Trump), and using one-second as a popular handy historic time unit, confirms for me that history, the past, accumulates with each passing second. Janice Jansen's skills have been acquired from inheritance, honed by practice, to produce a superior, integrated organism; which can be tracked back to the first life forms on this planet - and earlier, back to the formation of the solar system etc. Second by second, time knits another layer of organised (chaotic layers would evaporate) entangled particles, which includes the life-time-line of the remarkable violinist. Each layer incorporates the entanglement of the electromagnetic presence of all particles - the entire universe - one second ago, laid on two seconds ago, laid on three seconds ago - etc. These organised layers (fields) are cumulatively organised - for example evolving to enable intelligence - and cumulatively energetic. Certainly the immediate visible presence of the particles (and underlying electromagnetism and nuclear energies) which we recognise as the present form - the NOW - of Ms Jansen, which is communicating itself to us and to the universe, is an energetic ephemeral ghost, a feeble fading phantom, if the accumulated history is ignored. We are incapable of relating to the NOW surface - look! its gone already - but we do relate to the highly organised organism that is built from, that evolves from, whose foundations depend on, the beginning of time. These past layers have energy; energy is equivalent to mass. We recognise and admire the power and depths of that organised and wilfully directed energy. e.g. "Shallow" people, lacking coherence and depth, unwind and fade away. The same is true of all phenomena in the universe. Protons have great historic depths. The analogy is 3D printers, laying down atoms and molecules in organised patterns skin upon skin - second by second; they evolve into useful forms. Each layer is energetic, each layers depends on history, each communicates across the entire surface (visible universe). What we "see" is a surface image - containing 5% of the mass-energy, built on the very real 95% mass of the past. This might be what mathematics discovers when it finds multiple - even infinite - dimensions; and missing mass. Gravity probably runs deep. *Earlier speculation on the same theme:* [DISSIPATIVE PHENOMENA \(2\)](#)

27 Feb 2017 - Another note. FERMI'S PARADOX. If the universe is so old and so big there must be many advanced civilisations. So, Where Are all the Aliens? I would turn the question around. We are the only civilisation we know; we evolved over about 2 billion years; When will we be able to visit other civilisations and how? On the how question - given the light-years distances we can't travel there but might be able to scatter our hardened DNA which when it lands recruits elements and recreates us. But more effectively - the DNA is an expression of electromagnetic patterns (all things broadcast their

presence via electromagnetic waves) so broadcast the patterns, programmed to re-create us upon landing on fertile planets. Or we can sit and wait for flying saucers.

**25 Oct 2016 - 2 notes: NS 22nd Oct 2016:**

1) Ulf Meissner, University of Bonn, shows that certain light (light in mass) nuclei exist in a quantum transition state, similar to the phase transition state between e.g. liquid water - steam - ice. "State One being a strange gas-like state of matter, in which the particles hardly interact, and the other, more like a liquid, in which they do (interact)."

**Is Ulf Meissner "seeing" the transition from waves to particles and back again; as discussed in the paragraph below?**

2) Fluffy ducky: "Rosetta's comet is as weak as fluffy snow. Images from the probe show comet 67P is cracking under seismic stresses. That suggests its tensile strength is very low, and its distinctive duck shape will probably change in a few hundred years."

**I visited and part predicted this lightweight-comets factoid a year or two ago in these blog essays on gravity, after puzzling about all matter being determined to reach the centre of gravity of a large object. "The ever-tightening knot of gravity, ultimately resulting in black-holes". I wondered if new objects, forming from Fred Hoyle's creation of particles throughout space, i.e. my vortexes of light; (unreformed pre-big-bang Hoyle); would simply link loosely together as atoms in gas do, impelled by electromagnetism and nuclear forces, and form lace-like networks (in the almost infinite ocean of light). As the loose networks grow, the matter has more Casimir-Shadows on the "inside", compared to the full glare of light on the "outside"; which is gravity. If so, then it makes sense that gas in space forms shapeless "fluffy" comets, which eventually combine until the mass is 700 km diameter and becomes ball-shaped (I think, due to Casimir forces) - on its way to becoming planet or star like (see Mike Follows, NS Letters, below)**

(13 Oct 16 NB - Sunlight crosses space in an ocean of coherent electromagnetic waves (light). Whenever and wherever the waves encounter matter or resistance, however dense or ephemeral, the waves break into (quanta) particles. Simile - water trickling onto a dry dusty surface forming droplets through surface tension. Think about telephone and electric cables transmitting energy, propagating, within and around (magnetic field) the cables. We can never "see" light waves without our physicality "interfering with the waves; which causes the particles - photons. - Think on it - 20th Oct 16 - Science likes to isolate elements and study them individually. So, for example, we might study only visible light arriving from the Sun and striking the Earth's atmosphere and magnetic field. However, the universe is very complex and from the complexity emerge baffling and delicate organisations, such as the human brain and consciousness. So, in considering light waves crossing the space between the Sun and Earth and striking, say, human skin as photons, it is sensible to consider the whole of sunlight - which has many constituent parts, including for example neutrinos. We define neutrinos as particles, almost massless, propagating at near the speed of light, which penetrate not merely our bodies but the whole planet, without colliding with existing atoms or sub-atomic particles. Do neutrinos carry data? It is reasonable to suppose that neutrinos "travel" in waves, which at the slightest interference break into particles. We cannot "see" neutrinos in their wave state, because the act of looking interferes and creates the particle "foam" or particles that we do occasionally detect. The point of this paragraph is to relate it to Casimir and the blocking by matter of sunlight, starlight, galaxy-light etc, creating greater pressure on the outside than on the inside - which is gravity. The waves and particles pressure and absence, is complex. It is conceivable that gravitational objects, formed in "pure" streams of parts of the electromagnetic spectrum, vary from the gravitational-constant. Such "pure" streams or beams might occur from specialised regions of space - e.g. from extraordinary galaxies, black-holes, or other astrophysical phenomena - NB Light waves divide into photons, light-quanta, like water molecules; what sticks the photons together to make a wave?).

**What I did on my holidays: August 2016** - I observed inflatable toys and balls on an absolutely still swimming pool. They were propelled by the slightest breeze, making interesting wakes that were magnified visually on the bottom of the pool, as in Hockney - and more pertinently, as in Casimir (fully exposed behind, sheltered in complex patterns ahead, thus with a partial vacuum ahead). The large and small objects always clustered to one spot, usually one of the corners of the pool. It occurred to me that given the Big Bang theory, and Hubble expansion and the CMB of 3 Kelvin, then those energetic events might constitute a wind or current, within the universal ocean (3 dimensional) which could be the driver of objects of any size into clusters. And thus the beginning of the formation of a gravitational body.

The gravity analogy is that the sailing of real objects, of any size across the surface are planets, stars, molecules and atoms etc. are the real moving things we experience. The wakes on the water surface are the, almost impossible to see, signs of the (endless almost eternal) push and pull of gravity. The magnification of the wakes that we can readily see, though ephemeral, on the bottom of the pool, are tantamount to our measuring instruments, which enable us to know what gravity does (not what it is); as is the clustering of the objects as they form larger gravitational bodies (analogous to the Casimir effect). The invisible, light breeze is the cosmic wind, as near as damn it eternal, driven by the Big Bang (which here is taken as fact not theory), which has multiple causes and which is greatly more complicated than Earth's weather systems. It is the cosmic wind that pushes (pressure on the windward side) and pulls (partial vacuum on the leeward side) all objects. Now imagine the cosmic wind as undersea currents – in three dimensions. Does the cosmic wind/ current exist? Light – Electromagnetic energy – has mass and is ubiquitous – and is everywhere. It is the stuff of the universe. This is what gravity is – not what it does.

[\(pressure required to overcome repulsion between protons\)](#)

NS The last word *Mike Follows* 10 Sep 16 - NB - Density of asteroids etc "Any rocky object with a diameter of more than 700 kilometres, should be spherical" low gravity/density allows taller structures; hence Olympus Mons on Mars is twice the height of Mount Everest. - This fits with the thought that small asteroids are bits clinging together in irregular shapes with spaces between that allow light to penetrate - so, less push and pull, less gravity, less density. As objects grow by accretion, more and more light is excluded until the parts collapse into all the spaces, and increase the density and the gravity.

NS 10 Sep 16 - NB - Phonons, Magnons, Excitons, Majoranas, Weyl Fermions: Holes in Reality. Particles that don't exist but do affect other particles. Relevant to my thought that all particles are whirlpools /tornados on spherical waves of globes moving to or from energetic events. These ephemeral particles are too small to be interfered with - thus they persist as does the Jovian Red Spot; they appear to be moving apart faster than light (being on opposite sides of the spheres whose waves propagate at C).

THE MOST FUNDAMENTAL REQUIREMENT FOR THIS THEORY IS THAT [LIGHT HAS MASS](#).

13 April 2016 - Propelled by light from a laser beam on Earth, a feather-weight [Breakthrough Starshot](#) craft is being designed to go on a 40 trillion km, 20 year flight to Alpha Centauri, at 1/5th light-speed; 60,000 km per second. [BREAKTHROUGH FOUNDATION](#)

[2013 - Plan to use solar sails.](#)

In 1901, various labs measured light-pressure  
<http://dujs.dartmouth.edu/2002S/pressureoflight.pdf>



[LIGHT HAS MASS](#) - "...The final measurement was the most accurate ever recorded, and the calculated pressure deviated just ten percent from Maxwell's theoretical value of  $4.7 \times 10^{-6} \text{ N/m}^2$ . This disparity was well within the experimental error"

(N stands for Newtons, used in gravity calculations – being 102 grams, the weight of a small apple – 0.0000047N spread over one square-metre is pretty small)

**More about mass for light.** My Crookes Radiometer is on a north facing window-sill, which also gets reflected light from a south facing white wall of a house about 50 metres distant. Last night I left the window open when the temperature dropped to 1C. The windowsill, room and Radiometer were chilled. Yet, as the sun rose the Radiometer revolved as it usually does in this room when heated to 20C. After 4 months of such observations, I conclude that the spinning paddle is driven by light, not heat, and the spin speeds up and slows down immediately with the intensity of the light; irrespective of temperature. The Radiometer paddle is being moved by the mass of light, with the black side driving. Light has mass.

*(PS - I have just read this might be a Nichols Radiometer, driven by light. It is argued that Crookes Radiometer is driven by bouncing gas molecules - i.e. heat)*

MASS OF LIGHT - WIKIPEDIA SAYS:

[https://en.wikipedia.org/wiki/Radiation\\_pressure](https://en.wikipedia.org/wiki/Radiation_pressure)

**Radiation pressure** is the [pressure](#) exerted upon any surface exposed to [electromagnetic radiation](#). Radiation pressure implies an interaction between electromagnetic radiation and bodies of various types, including clouds of particles or gases. The interactions can



be [absorption](#), [reflection](#), or some of both (the common case). Bodies also emit radiation and thereby experience a resulting pressure.

The forces generated by radiation pressure are generally too small to be detected under everyday circumstances; however, they do play a crucial role in some settings, such as [astronomy](#) and [astrodynamics](#). For example, had the effects of the sun's radiation pressure on the spacecraft of the [Viking program](#) been ignored, the spacecraft would have missed Mars orbit by about 15,000 kilometers.<sup>[1]</sup>

This article addresses the macroscopic aspects of radiation pressure.

Detailed quantum mechanical aspects of interactions are addressed in specialized articles on the subject. The details of how photons of various wavelengths interact with atoms can be explored through links in the *See also* section.

## Solar sails[\[edit\]](#)

*Main article:* [Solar sail](#)

Solar sailing, an experimental method of [spacecraft propulsion](#), uses radiation pressure from the Sun as a motive force. The idea of interplanetary travel by light was mentioned by [Jules Verne](#) in *From the Earth to the Moon*.

A sail reflects about 90% of the incident radiation. The 10% that is absorbed is radiated away from both surfaces, with the proportion radiated from the unlit surface depending on the thermal conductivity of the sail. A sail has curvature, surface irregularities, and other minor factors that affect its performance.

The Japan Aerospace Exploration Agency ([JAXA](#)) has successfully unfurled a solar sail in space which has already succeeded in propelling its payload with the [IKAROS](#) project.

Cosmic effects of radiation pressure[[edit](#)]

\*\*\*\*\*

The misapprehension is the statement *light has no mass*. The true statement is "*a photon has no mass*".

Two photons can very well carry a mass, the measure of the added four vectors. There exists an invariant mass even for [mass less particles](#), this is for two photons with an angle theta in their direction of motion:

And this is just for two photons. An electromagnetic wave will [always diverge](#), there is a  $1/r^2$  ([laser light diverges less](#)) fall in the energy density of the wave, and there will be angles between the multitude of photons. Thus an electromagnetic wave can be characterized by a total mass, but that has nothing to do with information of course. The Heisenberg uncertainty principle will also ensure that there will always be some divergence.

(16 Jun 2016 - AN ALTERNATIVE IMAGE OF THE ATOMIC MODEL)

All electromagnetic waves are globe shaped emissions from or to an energetic event. If all sub-atomic particles, e.g. Quarks, are vortexes in or on a wave and the vortexes are spinning (real spin) at C or C squared then: Disturbing the wave will affect all particles on that wave (action at a distance); Collisions will either merge, break or bounce the vortexes /Quarks /particles depending on the direction of their spinning surfaces and speed of impact (as in Rutherford's and CERN's collisions): As all particles are made of the same stuff, some more tightly wound than others, there is no contradiction with the observed "billiard ball" concepts of the atomic structure: The direction of spin and angle of collision might confer positive or negative charge: Particular combinations of spinning vortexes, such as say three Quarks up and down, might form almost indestructible groups, such as protons, which we can only probe or collide with other similarly constructed particles, thus we perceive almost impenetrable "solid" surfaces: Given wave-forms, such vortexes could be formed where waves cross: Once formed, only another particle /vortex could disturb the complex (inertia and permanence): To form a "particle" from a wave, the vortexes would wind-in large amounts of energy  $E=MC^2$ . Because the EM waves intersect at all points as their globes expand and rebound, it seems likely that all information is exchanged continuously. Particles would manifest a multitude of different wavelengths: This idea does not contradict observations of The Standard Model.)

\*\*\*\*\*

16th July 2016 - OBJECTIVE COLLAPSE MODELS - NS "Quantum of Solitude" Volume 231 No 3082. by Jon Cartwright.

Still puzzling about Schrodinger's Cat, and the Double-Slit conundrum, and whether human or other observation is a fundamental requirement for wave-function-"collapse"(collapse into our reality) at sub-atomic scales, this New Scientist article puts Daniel Sudarsky, National Autonomous University of Mexico, and team in the frame for continuing with 1970's work to circumvent the need for an observer to trigger fuzzy, indeterminate wave forms into "choosing" a role or identity in the macroscopic world - and thus to make the real world as we know it. The idea is **Random Objective Collapse**; i.e. without an observer, or without the fantastic idea of multiverses, wavering wave forms naturally collapse into

the firm reality that we experience. The alternative Copenhagen convention, human observer idea is here justified as a person's billion, billion, billion atoms, multiplied by their number of sub-atomic particles, each of which is a waveform or wave-particle, becoming entangled with the particle-wave under observation and causing the "collapse".

What is not addressed here, the missing piece of the puzzle, is the sentient life-force, which we animals and blades of grass indisputably possess, which logically must emerge from the universal collapsing wave-forms, alongside the physical forces, and which counteracts the ever-increasing entropy of the 2nd Law of Thermodynamics (the cold dark soup allegedly at the end of our doomed universe - Doom, Doom, Doom). Our billion, billion, billion atoms are somehow organised to form organisms that collect, concentrate, utilize and channel energy and to occasionally produce sentience and intelligence, sufficient to write articles in the New Scientist - and transmit them across the Internet - defying inevitable entropy.

Put more simply, my idea is that the Lifeforce creates our brains and nervous systems being "the most complex object we know of" which operates on about 10 watts, which transmits coherent data-rich readable brain-waves; and which we intentionally concentrate and direct at puzzling, fuzzy waveforms; either discerning their reality or with sufficient power to determine their reality. I guess it is a dynamic, ceaseless, two way relationship - between random creation of subatomic particles from "collapsing" energy waves (light) and deliberate, willful, sentient, unconscious, receiving and broadcasting life-energy waveforms.

Would objects exist without life to observe them? Probably, for a time, but without sentient feed-back and constant re-organisation, the objects would become barren and would indeed end in the cold dark soup of perpetual oblivion under the 2nd Law. Fortunately - the universe is organised by the Lifeforce which confers purpose, identity and meaning - and possibly eternal life.

Monday, 9 March 2015

## GRAVITY - A NEW THEORY



GRAVITY - HOW IT WORKS.

Noel Hodson, Oxford. 8 Mar 15.

19 FEB 2016 - Read a new very short summary at [NEW GRAVITY - SUMMARY](#)

Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or protected from or excludes the universal radiation. (NB between masses as per Casimir). The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. NCH March 2015

12 Feb 2016.

LIGO & Gravity Waves - How does the demonstration of gravitational waves affect this theory?

*Having slept on it, some points occur to me:*

*My theory envisages every gravitational object, all things, being pressed on every point of their surface by the ocean of light, which is the "stuff of the universe". It is fundamental to my theory that light has some mass (see below). The surfaces include all areas that light can penetrate; many surfaces being to our eyes "inside" objects e.g the spaces within atoms. This pressure is ubiquitous and surrounds all objects. Gravity starts when there are two objects in close proximity where the Casimir Effect excludes some wavelengths, creating a "shadow" or partial vacuum of wavelengths, between the objects. The two forces, the push of the external pressure and the pull of the internal shadow, combine to create a gravitational object.*

*Applying this to planet Earth, I visualize the external pressure as an infinite number of very long spines across space, bearing down at right-angles to the centre of gravity of the planet. Think of a curled hedgehog with regular spines. If Earth was the only gravitational object in the probably infinite ocean of light, the spines would connect the horizon, 43.7 billion light years distant, of the observable universe, with the surfaces of the planet. The single object, Earth, formed from the contents of a large surrounding globe of the energy of the stuff of the universe, would be held in place by these spines - which is inertia.*

*But the universe has trillions of stars and planets and our solar system has numbers of gravitational objects, so the imagined spines to or from each object cross and intermingle. Each object also broadcasts its presence with light (electromagnetic) and nuclear waves emitted or reflected in perfect spheres, which forces also intermingle and distort the perfect spheres. This infinite ocean is riddled with near-light-speed waves of neutrinos, billions per square metre which pass through all matter with barely any interaction - but which are now thought to have slight mass. So, the ocean of light is complex, with many currents and is very, very deep. This possibly infinite complex ocean of light is the Aether-Matrix.*

*So, what have the exceptionally brilliant, exceptionally cooperative, exceptionally persistent, 1,000 theorists and engineers measured with the LIGO and earlier instruments, created over the past 45 years to demonstrate the validity of the 100 year old predictions of Einstein? It seems they have seen and heard the collision and merging of two black-holes, massive objects, 1.3 billion light years distant - and, as gravity signals travel at the speed of light, the event is deemed to have happened 1.3 billion light years ago.*

*Falling back on analogy, I liken the gravity waves to the ringing of two great bells. Their music fills the universe. The waves broadcast the presence of the two black holes and the energetic event of their merger, through a medium, called Space-Time. This morning, I hope that Einsteins' Space-Time is my, and the Victorian's, Aether-Matrix ocean. I suspect that it is. " A rose by any other name would smell*

as sweet".

*Imagine if it were two Earth size planets colliding, nearby. We would see, feel and "hear" through space the energetic event. After a few hundred million years the core/s and the debris would be pulled and pushed by gravity into an orb to create a double sized planet, orbiting the sun. The net force of gravity would not change much (bits would probably be rendered to plasma and race away as heat and radio signals). Compared to the Sept 2015 LIGO event, of merging 60 times the mass of the sun, our two little planets would not distort Space-Time much. The gravitational waves would be barely detectable and would distort the space around the Earth hardly at all.*

*But the very small distortion is distorting what? In my theory the imagined spines (light neatly stacked up 43.7 billion light years deep) to and from the Earth's centre of gravity are being vibrated by the passing gravitational waves. These waves move the Aether-Matrix. All such movements cause the centre of gravity, of all affected objects to shift, and so all the spines, intermingled across space, shift their orientation to be at right-angles to the new centres. These shifts are occurring in all locations at all times.*

*From my knee-jerk reaction this morning, to the LIGO discovery of gravitational waves, I think I can shoe-horn my theory of what causes gravity to marry-up with gravitational waves ringing out across the universe and throughout all time.*

*Exciting times ! I need to live another 100 years to see what comes next.*

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*11 Feb 2016. 3.30pm London time. PRESS CONFERENCE - LIGO has detected gravity waves from 2 black holes each of about 150 km diameter and 30 solar masses, merging 1.3 billion years ago, at half the speed of light. The process of the black holes colliding took billions of years, the moment of collision sent a gravity wave signal lasting 20 milliseconds, which has been translated into a sound within our hearing range. The distortion or stretching (strain in space-time) of the LIGO interferometers was measured as less than 1/1,000th of the size of a proton (see next para.) As an aside, the data might confirm the mass of a graviton as 10-55 grams - if gravitons exist. LIGO directors said it has taken 45 years of science to detect gravity waves and that LIGO and other detectors will "see" many more gravity wave producing collisions per year. This collision is not a rare event. It opens up an entirely new 4th window on observing the universe - alongside visual light, X-Rays and radio waves - that will bring a new perspective. LIGO is currently operating at 1/3rd of its sensitivity. This confirms Einstein's theory of General Relativity & gravity published in 1915. The signal was calculated theoretically on super-computers using Einstein's equations - and the real signal mapped on top; and they matched. The panel does not think LIGO has taken us nearer to understanding quantum-gravity. So - how does this affect my theory? I'll go away and think about it. Watch this space. (NB [from Q & A s on physics](#) 1 photon might have a mass of 10-33 grams)*

*10 Feb 2016 - And LIGO again. A press release will be issued tomorrow - 11th February. [New Scientist on this finding](#) says: This time its probably real. "The [LIGO detectors](#), located 3000 kilometres apart in Hanford, Washington and Livingston, Louisiana, can pick up passing gravitational waves by measuring how space-time stretches and contracts – by as little as one ten-thousandth the diameter of a proton." Or, again, maybe not.*

Science has pegged the proton at 0.8768 femtometers in radius (a femtometer is a millionth of a billionth of a meter) A diameter is double a radius, so 1.7 femtometers. LIGO is measuring one or two ten-thousandth-of-



one-millionth-of-one-billionth of a meter; of events billions of light-years distant. That's pretty small.

What will LIGO success mean for this New-Theory? LIGO is measuring an effect of gravity - not the cause/s. So, this theory of the main cause will remain valid. Until gravity waves are validated, have LIGO folk factored in a mass for photons/light? Watch this space.

*11 Jan 2016 - [LIGO waves again](#). Perhaps. Maybe. Possibly. Could be. Or maybe not. They must need more funding. (This theory makes more sense of the mechanism of gravity, black holes, dark matter and dark energy).*

<http://www.theguardian.com/science/2016/jan/12/gravitation-waves-signal-rumoured-science>

5 Jan 2016 - Happy New Year.

NS "[\*Primordial black holes are generally tiny, isolated objects\*](#), *their size fixed at their birth, shortly after the big bang... ..will explode earlier in cosmic history*" (if the theory that black holes explode into white holes is OK). Applicable to my theory of gravity is that the very, very early universe was, science still assumes, minuscule - hence the ocean of light would be small, hence the pressure of light would be small, hence any gravitational black holes formed would have to mirror the smallness of the then observable universe - and be small. Hence tiny black holes at the beginning of time.

NB - next note. I was given a [Crookes Radiometer](#) for Christmas. Is it driven by light-with-mass - or by heat fluctuations in the partial vacuum. I'll keep an eye on it...

17 DEC 2015: This month, there is a surfeit of media coverage about space travel - presumably it is an anniversary of the first manned space-station or moon-landing. It includes films of men doing space-walks, extra-vehicular-activity, floating in black space not very far above the Earth. Also, I watched THE HIDDEN UNIVERSE on IMAX at The Science Museum, London - which wonderfully illustrates the inconceivable immensity of the observable universe. There are thousands of billions of galaxies, each with thousands of billions of stars, each star having planets - needing so many noughts that most of us - who have difficulty assessing numbers over 7 of people standing at a bus-stop - cannot conceive of the numbers. All these gravitational objects are in turn made from trillions of trillions of photons, which are whorls in all the wavelengths that occupy the entire electromagnetic spectrum, which we refer to as "light". It is the pressure of this light that causes gravity.

Analogy - We all know that a sail on a yacht fills with wind (concave), tugs on the mast and drags the boat across the water. What we think less about is that on the convex side of the sail, the pressure of air has to be lower. If both sides are the same pressure, the boat won't move - it will have flat sails. In this theory of gravity, the convex side is in "shadow" from the push of the wind. The shadow is the pull. This is equally valid for light.

We now know that sunlight, for example, has mass and can propel objects. In the universe, far out in deep space, the light from all galaxies acts equally on all objects or things. There is little or no "shadow" and the object is defined as free-floating. This equal pressure of light eventually makes all objects into globes. It is also a force that pushes all objects away from each other (dark energy?). Other forces pull them back together.

If I were a brave space-walking astronaut, in say, geosynchronous Earth orbit, about 33,000 km above the surface and orbiting at about 11,000 kph (staying above the same spot on Earth), I would be free-floating and, with a slight shove, I might fly off into deep-space, never to be seen again. The



gravitational pull between me and the Earth would be very small. I would have to get very much closer to Earth before its gravity would "grab" me and condemn me to re-entry and being burned to a cinder by air friction. What is actually happening here?



My theory is that out in deep-space, I am surrounded equally by the pressure of the ocean of light, which is the stuff of the universe. Nowhere, except perhaps in black-holes, is without these waves and particles, which impinge on my surface and in which I "float". I have very little electromagnetic shadow. Left floating for a few million millennia, the equal pressure would make me globular.

As I move closer to the Earth, the light, which travels in straight lines (curved space and multitudinous complex reflections and refraction excepted) is intercepted by the bulk of the planet (line-of-sight-transmission) and part of the spectrum of wavelengths between me and Earth is diminished. On my deep-space side (concave) I am subject to the universal-ocean-of-light-pressure (43.7 billion light years deep) while on my Earth side (convex) there is relative electromagnetic shadow following the vertical lines of force to the centre of gravity. Some wavelengths are excluded (Casimir) and I start to "fall" to Earth. The planet is a conglomerate of matter, say atoms or molecules, which also have a light and dark side. The dark side is in shadow which excludes some wavelengths, and the deeper we look into the Earth, the darker the shadow of each particle becomes. The globe, formed by the equal pressure from the 43.7 billion light years deep ocean, is tending to become a black-hole; whose nearly infinite density mirrors the nearly infinite pressure of the universal light. All things, all objects in the universe are potential black-holes, or gravity sinks.

Centre of Earth to the surface (radius) is 6,371 kilometers (3,959 mi) : A person weighing 62.5 kilograms on the surface, who moves 19,013 kilometres from the surface (4 radii from the planet's centre) will weigh the equivalent of [7 kilograms \(science converts this weight into units of 39 Newtons\)](http://www.astronomynotes.com/gravappl/s5.htm) (one Newton is the weight of a small apple - Yes, really). His or her MASS doesn't change, but our Earth weight is mass x distance from the center of Earth x change of speed. (or substitute Moon, Mars, other planet etc). So, at only 7kg, a small push will send the space-walker into deep space - probably never to be seen again. I guess that although the space-walker is relatively near the huge Earth, he is now surrounded by and separated from the planet by most of the universal electromagnetic spectrum of waves (light); which now press in on him from all directions.  
<http://www.astronomynotes.com/gravappl/s5.htm> -

Finally, for this note, the lines of force towards the centre of the Earth from deep-space come in straight lines. They are all "vertical" to the centre of gravity of the planet. As I race at 11,000 km per hour at an angle (orbit) through these invisible lines of force, I will experience G-Forces or inertia. Let's remove the hot-air which would burn me up, and, say, do this on the airless Moon at 17% of Earth gravity; because I am defying nature and orbiting through the lines of force, I experience the universal inertia of the ocean of light, which in-tends, in straight lines, to the centre of gravity of the Moon. However, Newton's laws about the force changing by the square of distance (very feeble even at short distances) allows me to live at the required orbital speed - the inertia I feel is very slight. If I speed up a million times, in the same orbit, my defiance of the vertical lines of force will give me great discomfort, probably dismemberment - unless, which is most likely, I spin away from the gravitational body and its lines of force (light) making for its centre.

26 November 2015. INERTIA - Does it fit with this theory?

I was recently struck by reports of fighter pilots, astronauts and Wall-of-Death riders experiencing G-forces, as they accelerate, decelerate and take curves and bends. The G-force stress on humans caused by such manoeuvres mostly occur within the Earth's atmosphere and gravitational field; both of which are hardly detectable a few miles up from the surface. Leave the planet's gravity and you all but escape the G-force. We primates, water based life-forms, inside our thin skins, creatures formed by and in Earth's gravity, intuitively understand G-force and its companion, the Center of Gravity. Simply swinging ourselves at the end of a rope tied to a high branch, informs us that countering the direct vertical downward pull of gravity, even slightly off 90 degrees, requires much energy. The most stable stance using least energy is to stay on one spot on the surface and stand straight - that is to stand at 90 degrees to the planet's center of gravity. Or, to adopt our most natural stance and shape as a sphere resting on the surface.

Giant Californian Redwoods do the vertical stance very well. Our tall buildings also stand straight - one brick precisely and directly above the other (Pisa excepted). When we playful humans defy the straight up and down force; when we swing at an angle through the gravity field - we could be, and I suspect we are, crossing the columns of light (waves, particles or wavicles, as you like) that press down on every square centimeter of surface, the pressure from the light of the observable universe, and are also pulled in equally straight vertical lines, by the partial vacuum, caused by the dark side of light, beneath our feet, down to the center of the Earth. This is "the relentless ever-tightening knot of gravity" that ultimately creates black holes. These precisely vertical columns of dynamic light-force, above and below us manifest in an organised field - like infinitely long straws - the energy and inertia of which we and our machines challenge when we go for the G-force. Few, if any machines rise exactly vertically from the surface, but even if they do, they have to counter the ever in-falling light from above and the ever suicidal urge of every particle, every thing, to follow its shadow and reach the dark (less light pressure) center below. QED

***17 September 2015: TESTING, TESTING, TESTING. IF there is any merit in this idea of the mass of the universal ocean of light causing gravity - then it should be possible, by applying the Laws of Gravity and working from known gravitational masses - The Earth for example - to measure the depth of the ocean and thus the size of the universe. For example: if Black Holes are thought***

*to have infinite gravity, then the pressure of the ocean of light which causes the Black Holes is likely to also be infinite. At the other end of the scale, a tiny atomic or sub-atomic particle will always be surrounded by and subject to the ocean of light, pressing equally on its circumference, casting little or no gravitational "shadow" and will thus have hardly any discernible mass. I am daily increasingly inclined to believe that this idea does have merit.*

A SHORT SUMMARY OF HOW GRAVITY WORKS AND WHAT IT IS:

20 July 2015. - What you need to believe or know the science of to grasp this novel theory.

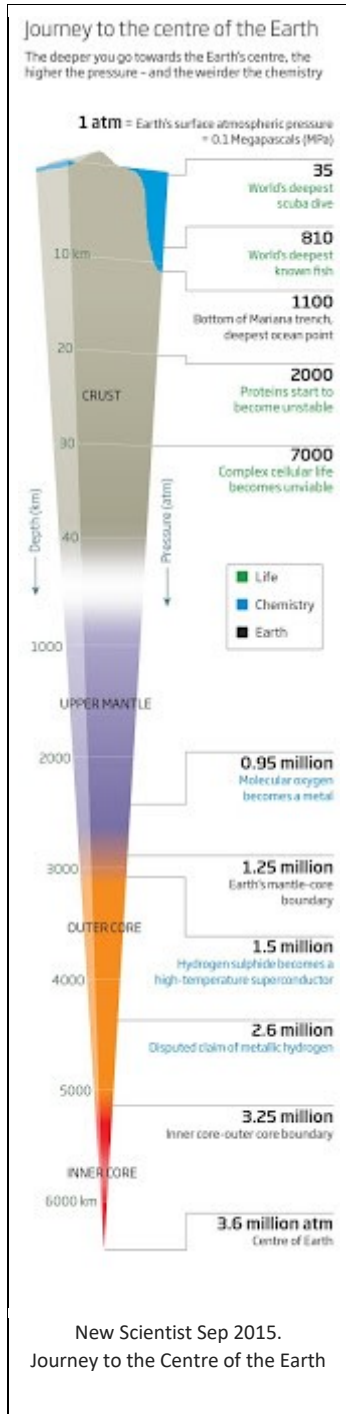
Firstly, that the stuff of the universe is light (the electromagnetic spectrum) which propagates at every possible wavelength throughout the entire universe at a maximum rate of 300,000 km per second. These intersecting waves or particles comprise the Aether-Matrix or deep ocean of cross-hatched light that is the fundamental-material of the universe. The energetic broadcast of these waves enable us to see or detect all the phenomena that we know of, from sub-atomic particles, to people, to galaxies.

Secondly, that light is not weightless; it has a slight but perceptible mass. This is a fairly recent scientific discovery; previously science believed that light had no mass. Thus, in the ocean of light that fills our immense "observable" universe (as far as we can see or reliably calculate), the mass of light creates pressure. Gravitational bodies (all things large & small) are congregations of light. These congregations of waves /particles (matter) are compressed by the pressure of the deep ocean of light on the "outside" while the matter shields or casts a shadow on the "inside" of the gravitational body. **"Counter-intuitively the centre of the Sun is very dark"**

Thirdly, that the well observed Hubble Expansion is most probably real and is a primary driver of cosmic events.

Fourthly, that the universally detected Cosmic Microwave Background (CMB) which manifests at 3 degrees above absolute zero, is most probably real and demonstrates that nowhere in the observable universe is there "empty space". Light is some-thing not no-thing. There is no empty space.

Fifthly, that the geniuses Isaac Newton and Albert Einstein, and the hundreds of brilliant mathematicians and engineers who have and do accurately apply their formulas, are reliable and correct; that the Laws of Gravity and our observations of how gravity behaves, are correct.



NB 1 - note to self - Is time the dimension that holds the 80% of missing mass from protons, neutrons etc; the past & future energetic activity as in [DISSIPATIVE PHENOMENA \(2\)](#)

NB 2 - Bubbles in liquids form by energetic events, and after a time they implode as the universe presses in. Do bubbles form in "pure" energy? How? Bubbles have an inside and outside dimension, which mirrors this theory of gravity. Are they precursors of the so far unknown process of creating matter from energy - spinning straw into gold? If so, then gravity could be the fundamental, subtle and gentle force that makes matter. From ephemeral, delicate bubbles to destroyers of galaxies - Black Holes. The inexorable "ever-tightening knot". Think on't.

NB 3 - If the first particles precipitated from "the searing hot plasma of the Big Bang" as it spread out and cooled, would light waves passing today through - CMB "empty" space at 3 degrees Kelvin - still precipitate such particles? Nowhere in the universe is shielded from the light from all universal phenomena; we can "see" the entire universe from anywhere.

NB 4 - [Wireless Flyte lightbulbs](#) float on magnets. Does such a human constructed magnetic field insert wavelengths otherwise excluded by this theory's Casimir type effect?

<https://www.newscientist.com/article/mg22730371-200-is-the-universe-infinite-or-just-very-big/>

[Infinite Universe? New Scientist 12 Sep 2015](#)

<https://www.newscientist.com/article/mg22730380-500-modern-day-alchemy-is-putting-the-periodic-table-under-pressure/>

NB 5 - [Immense Pressure at Earth's Centre - The centre of gravity - New Scientist 12 Sep 2015.](#)

Why do ALL particles drill down to the centre of all gravitational objects - even to their own destruction?

NB 6 - [Neutrinos - 2015 Nobel Prize awarded](#) for experiments that discovered the "flips" across the three types, demonstrating neutrinos have mass. (?? are the 3 types related to the 3 quarks? Are they quarks in free flight?). This adds weight to the idea of the pressure of

light.

## 9th March 2015 - What is Gravity?

The basic stuff of the universe is an energy field of electro-magnetic waves, radio waves, or in brief, light. By, reverse-engineering Hubble Expansion, the age of the universe is calculated to be 13.7 billion years. However, from astronomy observations, the horizon of the sphere of the visible or observable universe is calculated as 43.7 billion light years - which implies that the horizon has expanded faster than the speed

of light; otherwise the horizon would be 13.7 billion light years away. If the calculations are awry or incomplete, the universe might be infinite in size and in age.

The calculations are possible because we can see to the edge of the "observable" universe by looking at the light being broadcast by distant and near objects, such as galaxies and planets. We can see objects in our immediate vicinity, and see each other, because all objects broadcast their presence. We infer the existence of non-visible objects such as the alleged black holes, from the behaviour of nearby visible objects - such as atomic particles, gas clouds or whole galaxies "falling into" black holes. All phenomena, on every scale, of every size and time duration, broadcasts its presence - and thus we see them.

These light broadcasts are spherical waves which propagate from the phenomena at the speed of light "*C*" which is about 300,000 km per second (*300,000 km /sec in a vacuum. Light is slowed in denser media*). We are able to see and understand the phenomena because the expanding spherical light waves, or radio waves if you prefer, carry coherent and stable data to us. Wherever we position ourselves in the universe, we can see the entire universe as the multitude of light waves carry data to us. If we move our location, we see the entire universe from a different angle. The largest sphere is the visible universe, which contains the longest possible wavelengths. I envision that where the almost infinite number of electromagnetic (light) waves intersect, turbulence occurs which we see as photons or other particles.

Such intersections occur at every point in the universal field; an energetic event, such as a source of light, vibrates the intersection particles, as the light waves propagate through the field, at the speed of light. We interpret what we see as moving "bullet like" particles - but just as in electric and telephone cables the in-cable-electrons do not travel but are excited in-situ - hence power sockets do not "leak" electricity - so the photons are not travelling; the waves are propagating. All broadcasts are natural spheres of waves - even laser-light, once it escapes far enough from the restricting confines of its crystalline source. Every thing, item, object, phenomena we "see" or detect is broadcasting its presence, its existence as a sphere of waves, either by internal or reflected energy.

Each viewing sphere we might occupy is filled with the coherent data from the entire universe, excluding light waves that are too large to fit into our viewing sphere. Every possible viewing sphere in the universe contains all the information about the universe, except wavelengths too large to fit the sphere. I call these spheres holograms. The data in the holograms is real, is unique, is perceptible, and is stable. The broadcast data changes moment by moment, mirroring all the events in the universe from sub-atomic to galactic. But, on human time scales, the appearance of the whole universe, of the visible universe, remains reassuringly stable. I believe this overall stability in the light field where at a detailed level everything is changing, is inertia.

The almost infinite in number, spherical, coherent, data-rich broadcasts of waves intersect each other in the light field, and yet retain their unique information and identities, creating a matrix of interwoven, cross-hatched light waves. I believe this is The Aether, proposed in Victorian times as the medium that carries light. Einstein did not deny the existence of The Aether, he said that he didn't need it in his calculations. I call it the Aether-Matrix.

It is the essence of the universe and it is a field. There are now several discoveries about light that demonstrate that light has some mass - in contradiction to long-held scientific dogma that light is weightless /massless. Light does exert slight pressure on matter.

We know with a high degree of probability that Hubble Expansion is real. The light-field is continuously expanding, marked by the movements of galaxies. This expansion might be attenuating the basic energy field, which in turn seeks homogeneity and balance and so moves, at the speed of light, to balance the attenuated zones. Thus, at every point in the universe there is movement and a pulse, driven by expansion.

Equally probable is that CMB, the cosmic microwave background, is ubiquitous, it is everywhere, between the galaxies, manifesting a bitterly cold temperature of just 3 degrees above absolute zero; three degrees Kelvin which is -270 degrees Celsius or Centigrade. This extreme cold, which is close to freezing even the movement of all subatomic particles, nevertheless signals its existence to us, as the "snow" on old TV screens. The nearly frozen CMB light-waves are still energetic enough to jiggle the electrons in the cathode-ray tubes of old TV screens on Earth. Light has some mass.

Light is not "no-thing" it is "something". Scientists are planning to use light's momentum to power solar sails through outer-space. Light has mass. The Aether-Matrix has mass.

Conceiving the Aether-Matrix as an ocean of active, data-rich waves of light; a spherical ocean that is at least 43.7 billion light years deep, the total amount of light in the ocean is heavy - light is some-thing not no-thing. If a person could be placed at the "bottom" of this ocean, the almost infinite weight of the light would crush them out of existence. Fortunately, oceans of light don't behave towards humans as a very deep ocean of water does to frail air breathing creatures. The light, and therefore the pressure it exerts is everywhere. It surrounds us; it is within us e.g. we can see through a human with X-Rays, a child can see through its finger with a bright torch, we are not impervious to light; it forms the most fundamental particles which form matter. The infinite pressure of light is in balance in all universal phenomena. And thus it does not crush objects out of existence, except perhaps the alleged black-holes.

When younger and more arithmetically adept, I applied the infamous  $E=MC^2$  and other algorithms to explore why light is limited to 300,000 km per sec. Even a gram of



matter, approaching or at the speed of propagation of light becomes "infinitely" heavy. And so is impenetrable to light waves or particles. Waves of light hit a brick wall at light-speed. They cannot go faster. This limit demonstrates the pressure of the ocean of light.

[Casimir](#) 1909 - 2000, a Dutch scientist, is famous for placing two entirely flat, non-magnetic plates together side by side, separated by tiny wedges, where the plates stuck together. He found that the light waves between the plates were less energetic than the waves outside, because the tiny space inside and between the plates was less than some wavelengths of light and so excluded those waves.

The same Casimir effect occurs between two tall-sided ships close together at sea. The gap between the ships imposes a size restriction on the waves in the gap, while the waves outside are those of the whole ocean and are larger. The ships are pushed together. The space between the ships or plates is shaded from some of the external waves; the external waves "cast a shadow" in the gap.

Instead of plates, imagine atoms of hydrogen, "floating" in a vast cloud in space. Each atom is equally surrounded by the deep ocean of light waves, and the light pressure, measured from the horizon of the universe, is the same on every point of an atom's circumference. Forces, such as the Hubble Expansion "stirring" (above), along with chemical and atomic bonds, bring atoms into close proximity. Between the atoms, the Casimir Effect operates and casts a shadow "inside", as compared to "outside". There is less light pressure inside than outside as one or more wavelengths of light are excluded from the gaps. Inside is sheltered, is in shadow; is a subtle, partial vacuum. Outside is the full pressure of all the universal light waves stacked up to a depth of 43.7 billion light-years. Just as with the plates and the ships, the atoms are pressed together and pulled together. This is gravity.

I arrived at this concept by puzzling about "**The ever-tightening knot** at the centre of gravitational objects - which all particles and mass seem intent to reach, even at the cost of their existence, in cases where they disappear into Black Holes."

As atoms, or primary sub-atomic particles, clump, through the same processes as in the previous paragraph, the shadow between them deepens as more longer light waves are excluded. The largest waves cannot manifest or exist between the atoms. Initially, the pressure differential is almost undetectable. Other forces will break the delicate hold exercised between the masses of the phenomena, and they will drift apart. But in time, masses do clump together and are joined by other masses. The cloud of trillions of 3 degrees Kelvin freezing cold hydrogen atoms starts to coalesce. The masses cast deeper shadows, excluding more light waves from the "inside", creating a relative low pressure zone internally, compared to the inexorable, almost infinite external pressure. A gravitational object is forming.

As it forms, the particles inside are pulled closer by the partial inner vacuum and are pressed together by the full force of all the light waves in the universal field. Each minute particle is observed or calculated, by us, to be trying to make its way to the centre, to the region of maximum shadow, minimum pressure and the centre of gravity.

If enough matter is continually attracted to the gravitational object, it grows large enough for the ever increasing pressure differential to create enough heat to ignite the previously freezing hydrogen. It becomes a star. Counter-intuitively, it becomes a bright star because in its centre some light waves are excluded, compared to the universal pressure from all light waves. The centre of the Sun is very dark.

All gravitational objects, all masses are dissipative. The mass and energy that is added to them, that continually "falls" onto an object, is mostly dissipated in heat, light and surface eruptions. But the processes of in-falling and outgoing energy are not always equal; and objects do retain in-falling mass and do grow.

Unchecked growth makes ever larger objects, with an ever greater pressure differential; until a black hole is formed. Does a black hole exert such external pressure on gravitational matter that the matter implodes back to its original electromagnetic non-material wave form. Think of the immense, powerful jets of radiation observed escaping from some astronomical objects. (nb spinning quasars etc).

Noel Hodson – Oxford – An original concept created from 1992 to 2015.

As far as I know, from my reading of science magazines and books since 1959, this is an original idea. Plagiarize this work at your greatest peril.

(NB - 3 June 2015. Can this idea be tested? Take many thousands of Casimir plates into gravity-free space - Lagrange points will do well enough - and bring two together so they stick. Introduce a pressure gauge & a wavelength reading sensor between the plates. These two plates might demonstrate the principle that excluding light waves creates a wavelength partial vacuum compared to the external pressure from the universal ocean of light. If so, add plates to the stack. Logically they should also stick. Add plates to the sides of the stack (square plates make this easier). If this theory has any merit, as thousands of plates are added to this growing structure - the internal pressure will increase; the internal "shadow" will grow darker; more wavelengths will be excluded. A gravitational object will have started to form.)

( NB - 29 May 2015. New Scientist Page 12. Spacecraft may fly on graphene wings by Jacob Aron. This is another indication that light has mass; evidence for the "weight" of the universal ocean of light (electromagnetic radiation) stacked up to 43.7 billion light years - which I see as the the force for the "ever-tightening knot of gravity".

<http://www.newscientist.com/article/mg22630235.400-spacecraft-built-from-graphene-could-run-on-nothing-but-sunlight.html#.VWiTONJvHw> )

(NB - 23 June 2015 - A lot of material but low gravity "18 NOV 14 - If we reverse-engineer a large gravitational body, say The Earth, by imagining it has 10,000 shells that make its 8,000 mile - 12,700 km diameter; each shell is 1.27 km deep. Ignoring all forces & factors except gravity - if we carefully separated the shells by 50 km - breaking them as necessary to retain a globe like shape, like widely scattered, curved jig-saw pieces - the outer shell of widely separated pieces would be 51.27 km x 10,000 shells = 512,700 km (radius)" This scenario - from [Casimir Gravity](#) - could be applied to The Oort Cloud of rocks, ice and pebbles orbiting at the outer perimeter of the solar system. Logic tells us that each rock will have low gravity, each pebble will have almost undetectable gravity, and yet the total mass is ...massive. Each individual piece is separated far enough from others to not have a significant Casimir Shadow. The universal light presses equally on all points of their surfaces. Imagine the pebbles replaced by sub-atomic particles - it is understandable that particle-physicists ignore gravity, which will have almost zero effect at that scale. But, pack them together, Casimir Shadows form - and the whole mass would make a sizeable planet; a solid, heavy gravitational body. I think this idea /theory has wings.)

\*\*\*\*\*

100 Years of General Relativity - New Scientist 10 October 2015.

<https://www.newscientist.com/round-up/general-relativity-100/>

19 Oct 2015 - Generally, relatively speaking, this is a good round up of the major factors in astro- and particle- physics from 1915 to 2015 - in accessible language. Well worth reading. I'll come back to this note again at a later date; for now I want to comment on information in Matthew Chalmers' The Missing Piece (page 40) in which he tracks Gravitational Waves. If my theory here has merit, then Gravity Waves as described by Einstein and searched for in the Cosmos don't exist. Science needs to search for the absence of something - Casimir Shadows as above - rather than the presence of as yet undetected waves. One clue to the existence of Gravity Waves cited by Chalmers is the observation of the precisely predicted slowing of the spin of binary pulsars - a reduction in speed of spin ascribed to gravity waves. This slowing is assumed to be due to loss of energy as the binary pulsars broadcast gravitational waves - a process that requires energy. If the observed slowing is real, if confirmed, then it is surely only to be expected of all and any object with mass in the universe. Our planet Earth is slowing. Our moon tugs on the oceans and slows our rotation. Without invoking gravity waves, my Casimir Shadow and the weight and depth of 43.7 billion light years of light, which causes Inertia and Gravity, is an oceanic medium with measurable mass that will slow any speeding object. To maintain a rate of spin, the object needs to receive a kick of energy from time to time. It is likely that all universal phenomena spin or speed through the ocean of light, which however ephemeral slows the object. New propulsive forces such as imploding stars and galaxies (not exploding but imploding as proposed here) will accelerate objects - Inertia, the ocean of light, will slow them. We may be saying the same thing in two languages but we do not need to invoke gravitational waves to explain the slowing of binary pulsars; which might be slowed by the slightest of friction from the ocean of light. General Relativity isn't so much explaining what gravity is - but observes what gravity does. Yes - it attracts and bends light - but give light

some slight mass, which recent science allows - and light becomes another object that gravity pulls down to earth. - Not my clearest thoughts - at the end of a long day - so I'll return to it another time.

17 Jan 2016 - *LIGHT PRESSURE*. My Crookes Radiometer is a wonderfully crafted delicate glass instrument. The inner 4 paddles attach to a glass tube which is their axle. The axle balances over a steel pin. Another larger tube depends from the top without touching the axle - but close enough to prevent the axle and paddles from falling off their steel point if the instrument is turned upside down. I'm told, and must believe, that the surrounding globe is partially evacuated, is a partial vacuum. I've observed that the glass axle finds its center of gravity on its steel fulcrum after the instrument is moved - this can take a few minutes during which the paddles might turn clockwise.

Otherwise, in any light, whether from a 100 watt bulb, a small LED (cool) torch, direct sunlight or the dreary winter daylight that filters through the Oxford clouds, the paddles turn anti-clockwise. The speed of the paddles is directly dictated by the power of the light. The temperature around the globe seems to have no effect on the rotation speed; in today's dreary northern daylight, the paddles move slowly anti-clockwise on my centrally heated warm office window sill. With the window open, admitting winter air at 2C, the rotation speed does not change (these measurements are by eye - I have no scientific measures). Using a small LED torch, which seems to have little or no heat, placed directly above the paddles it speeds the rotation a little; directed from the side onto the paddles, they speed up significantly (if there were no friction or gases in the globe would the rotation reach the speed of light?). Turning on my old fashioned 100 watt incandescent desk lamp set within six inches of the globe - the paddles whiz around at great speed. By various stealthy sneak attacks from this light and cold winter air, I think I have ascertained that it is the light and not the heat that drives the paddles.

My observations seem to inform me that the black side of the four paddles push the paddles around. Or, do the silver sides of the paddles pull them round? This seems to me to be counter intuitive; I had assumed the light bouncing off the silvered side would drive the paddles. But it is definitely not so. As several frustrated teachers of particle physics have long tried to drive into my thick skull, it seems that the black sides absorb photons (hence we see black) and this adds energy to the black side which in turn push the paddle-wheel anti-clockwise.

However, this **Gravity - a New Theory**, does not depend on the dark versus reflective sides of matter joining and adhering to a gravitational body; but on the Casimir effect of some of the universal wavelengths being excluded on the "inside" between the Casimir Plates (or atoms or molecules etc.) PHEW!

It does however heavily depend on light (the entire electromagnetic spectrum) having mass. If light has mass it can drive solar sails - and Crookes Radiometer paddle-wheels. If light has mass - stacked up in an ocean 43.7 billion light years deep, it has the mass to create a black hole. It is this weight x acceleration or mass, which I conjecture is the mechanism that creates gravitational bodies (all objects in the universe); as ultimately imploding, inverted "bubbles" in the vast universal ocean.

I will keep an eye on the paddle-wheel and report any aberrant behavior. Watch this space.

I think that turning clockwise only happens when it has been still and a large human hand moves the instrument from one place to another – when it tends to get tilted and the paddles turn any-which-way. After settling and with any light source from any direction the paddles only turn anti-clockwise – so far. However – freezing the instrument allegedly creates clockwise rotation:

[https://en.wikipedia.org/wiki/Crookes\\_radiometer](https://en.wikipedia.org/wiki/Crookes_radiometer)

“If the glass is cooled quickly in the absence of a strong light source by putting ice on the glass or placing it in the freezer with the door almost closed, it turns backwards (i.e. the silver sides trail). This demonstrates black-body radiation from the black sides of the vanes rather than black-body absorption. The wheel turns backwards because the net exchange of heat between the black sides and the environment initially cools the black sides faster than the white sides. Upon reaching equilibrium, typically after a minute or two, reverse rotation ceases. This contrasts with sunlight, with which forward rotation can be maintained all day.” (PS – I don’t mind which way it turns as long as light is shown to have slight mass)

A later version allowed the internal vacuum to be altered:

[https://en.wikipedia.org/wiki/Nichols\\_radiometer](https://en.wikipedia.org/wiki/Nichols_radiometer)

The scientific consensus is not yet conclusive though it has been studied by some of the most famous physicists. Despite every effort to avoid saying that light has mass; and to conform with the establishment view that light is massless, authors find it difficult to report results without saying “the pressure of photons” etc. In the meantime, my radiometer is sitting quietly on my north facing windowsill, turning very, very slowly anti-clockwise – driven by what we optimistically call daylight, filtering through miles of Oxford winter clouds. And, however, ...space scientists are designing solar sails to be driven billions of miles by sunlight through “empty” space. I suppose it depends on how we define “light” – because sunlight comprises all sorts of particles, neutrinos and waves.

In 1901, various labs measured light-pressure.

<http://dujs.dartmouth.edu/2002S/pressureoflight.pdf>

“...The final measurement was the most accurate ever recorded, and the calculated pressure deviated just ten percent from Maxwell’s theoretical value of  $4.7 \times 10^{-6} \text{ N/m}^2$ . This disparity was well within the experimental error” (*N stands for Newtons, used in gravity calcs – being 102 grams, the weight of a small apple – 0.0000047N spread over one square metre is pretty small*)

For my Gravity theory, it requires only that the entire electromagnetic spectrum has some mass, and that a small part of that spectrum is excluded from the “inside” (centre of gravity facing) and “between” particles and pieces or plates (Casimir) that comprise gravitational bodies.

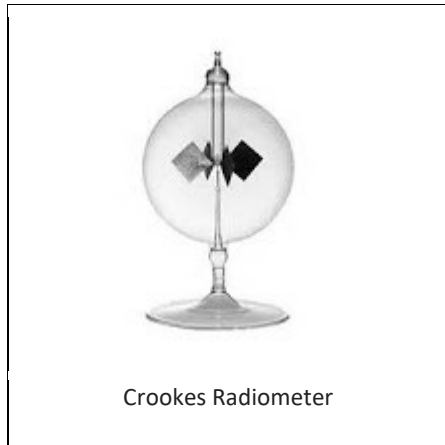
More examples of “light” making an impact are needed to persuade the cynics.

PPS - 19 Jan 2016. This very cold bright morning, the paddles were not turning. I cupped my hands around the bowl, shading it but warming it - and the paddles started to turn (anti-clockwise). Since, they have been turning due to the light through the window. What does this “warming” tell us?

14 Jan 2016

Hi John - LIGO

I’m not wholly convinced that “gravity waves” in “space-time” exist. The LIGO experiments have prematurely announced signs, of shadows, of ghosts, of vague patterns, of 13.7 billion year old gravity-waves - several times in the last 15 years - and then withdrawn.



My theory does not contradict the known effects of gravity - both Newton's and Einstein's observations and predictions. Newton did not attempt to find the source of gravity - It seems to me that Einstein created a complex route to forecast (correctly) that light would be bent by large gravitational objects such as the Sun and the Earth; which he ascribed to "curved space-time" (the infamous stretched rubber sheet with a cannonball in the centre) because, I think, it was then believed that light was massless (no weight x no acceleration) and so could not

be affected by ordinary gravity. Curved-Space-Time explained how massless light could be affected by gravitational masses.

Both these geniuses figured out what gravity does - but not how it does it.

BUT - since then, there is growing practical evidence that light has some mass (it is some-thing, not no-thing). If so, then light itself, not gravity, will be the primary energy and wave form of the universe. I think gravity is a secondary effect of light. I'm unwell today - but tomorrow I'll continue my observations of my Crookes Radiometer, which so far seems to move/spin from the impact of light - not heat molecules dashing about (which is an alternative explanation).

Monday, 10 November 2014

## CASIMIR-GRAVITY

EIG 1 of 23

### Expansion IS Gravity

Gravity \* Dark Matter \* Dark Energy

From Light to Matter

The Aether \* The Life Force

Russian Dolls \* Enfolded Dimensions

The Sentient Universe

Our Eternal Legacy

Untested novel speculations – do **not** include in your exam answers.

EIG 1991-2011 – copyright – Noel Hodson – Oxford email: noel@noelhodson.com

Casimir-Gravity continued - 3 Jan 2015. A summary of the summary.

1) The Aether exists; it is the electromagnetic ocean of legible waves broadcast by every phenomenon.



2) Hubble Expansion exists; it continually attenuates the Aether.

3) The Casimir effect exists. This is the primary driver of gravity.

**LATEST CONCEPT - THE ONE, AND SO FAR, THE ONLY "GRAVITY - A NEW THEORY"** It takes just a few minutes to read and to contemptuously (and erroneously) scientifically dismiss.

<http://noelhodson.blogspot.co.uk/2015/03/gravity-new-theory.html>

**18 FEB 2015. Is this how light becomes matter & so acquires gravity?**

• **ABSTRACT**

Möbius strips are three-dimensional geometrical structures, fascinating for their peculiar property of being surfaces with only one "side" - or, more technically, being "non-orientable" surfaces. Despite being easily realized artificially, the spontaneous emergence of these structures in nature is exceedingly rare. Here, we generate Möbius strips of optical polarization by tightly focusing the light beam emerging from a *q*-plate, a liquid crystal device that modifies the polarization of light in a space-variant manner. Using a recently developed method for the three-dimensional nano-tomography of optical vector fields, we fully reconstruct the light polarization structure in the focal region, confirming the appearance of Möbius polarization structures. The preparation of such structured light modes may be important for complex light beam engineering and optical micro- and nano-fabrication. <http://www.sciencemag.org/content/early/2015/01/30/science.1260635>



**New Scientist FEB 2015:** ...Ten years on, Peter Banzer of the Max Planck Institute in Erlangen, Germany, and his colleagues have shown Freund was right. The team scattered two polarised green laser beams off a gold bead\* that was smaller than the wavelength of the light. The resulting interference introduced a polarisation pattern with either three or five twists, giving it a Möbius-like structure (*Science*, [doi.org/zsn](https://doi.org/10.1126/science.1260635)).

"This is the first [experimental] proof that polarisation Möbius strips really exist, which has been a decade-long question in the community," Banzer says. The finding could pave the way for fundamental studies of how light and matter interact, such as using light to trap tiny particles for biomedical purposes.

\*I think the light is scattered using a "hohlraum". <http://en.wikipedia.org/wiki/Hohlraum>

**29 Jan 2015 - Quick update. Reading Paul Davies again (and other respected science authors) I am again struck by the mystery of observers changing the behaviour of photons in the paradoxical Double Slit experiment. All top physicists accept this. My insight this morning takes me back to my Aether-Matrix, where all phenomena on every scale, broadcast their presence to us/**

**observers and we detect them at all and every point in the universe (excepting wavelengths too large to fit the observation sphere /orb). When you or I look out at the universe, into our eyes flow the electromagnetic signals from the entire universe. Everything in the universe is being observed at all times. And - If the energy of the Aether-Matrix is sentient (ultimately spawning intelligence and eventually reason), then the universe might be the self-observer that never sleeps.**

26 Jan 2015 - Plagiarism or Synchronicity: A web search reveals another amateur, like me, speculating [back in 2006](#) about Casimir & Gravity. And since then, 5 or six other posts address the same issue. There is nothing new under the Sun. I think my articles move us on from "...Could it possibly be?" to "Yes, it is and here's how it is done". Not scientific, but its nice to have company. I don't yet see a massive black hole in my theorizing. It's worth pursuing the concept to its logical self-destruction - or triumph. But if so, the victor's laurels belong to Casimir.

**NB - 23 Jan 2015 - The Aether-Matrix. An excellent BBC documentary on the Voyager spacecraft was screened again last night. And again I heard that when Voyager 1 left the planetary plane, above the solar system, and turned its cameras to photograph all the planets and the sun; it transmitted a picture that included The Earth, which occupied just half-a-pixel, famously explained by Carl Sagan. The documentary commentary said that the image was received on Earth with the power of only one-millionth of a billionth of a Watt. If so, what does the persistent homing wave signal tell us about the aether it travelled through /in /across. 0.000,000,000,000,000,1 Watts is incredibly feeble and yet the signal carried reliable legible data to a radio dish. It crossed 6 billion kilometres filled at every point with all the signals from all the phenomena in the universe. There is nowhere on its route that is shielded from a unique view of the entire universe; and yet the transmission retained its information and integrity. The human brain ticks over on less than 10 watts coursing through 100,000,000,000 (a hundred billion) brain cells, each with 1,000 connections. Say, 10 billionths of a Watt per cell. 10 Watts is ten-million-billion times stronger than the Voyager signal received on Earth - so will the radio dish read a human's brain waves? Which are sometimes coherent. How on earth (or off-earth) do radio waves retain their identity? Do our brain-waves fill space? (Check my aged maths).**

**Wikipedia - Pale Blue Dot** is a photograph of planet [Earth](#) taken on February 14, 1990, by the [Voyager 1 space probe](#) from a record distance of about 6 billion kilometers (3.7 billion miles, 40.5 AU), as part of the [Family Portrait](#) series of images of the [Solar System](#).

The Aether-Matrix, of universal electromagnetic energies, or light, is traditionally described as a "Field". Fields are flat and two dimensional, bounded by hedges, so it should be more accurately depicted as an Ocean; which implies depth and immensity. As stated several times below, wherever we go to observe the universe, at any point in the universe, we and our instruments see a unique view of the whole universe. Move 2 metres to the side and we get another slightly different unique view. Every "hologram" of the universe is unique. We see it all, only excluding wavelengths too large to fit our observatory (say, eyeball), because all objects and phenomena broadcast their presence. Thus we live in an ocean of data-rich, coherent, legible, continuous and largely persistent (inertia) light waves. Observe from, say, Jupiter, take a record, return to that observation post 10,000 years later, and the picture will be about the same - even though it changes second by

second. Every gravitational body is at "the deepest bottom" of the ocean - they all feel all the pressure from the light-ocean. There is nowhere that escapes this pressure (this assumes that light has some mass).

Gravity is the pressure the light-ocean exerts on all and any phenomena or object (on matter or mass). It creates in "empty" space-time, objects with an inside and an outside - which tend to form energy efficient spheres. The oceanic pressure presses on the outside, the pressing wavelengths are excluded on the inside, which is darker and in "shadow" from the universal ocean. Thus is the push (outside) and pull (inside) of the Casimir effect evident. Each and every point of space-time is cross hatched, really and factually and demonstrably, with all the universal broadcasts - from sub-atomic atoms to stella-novae to humans. Each point is unique.

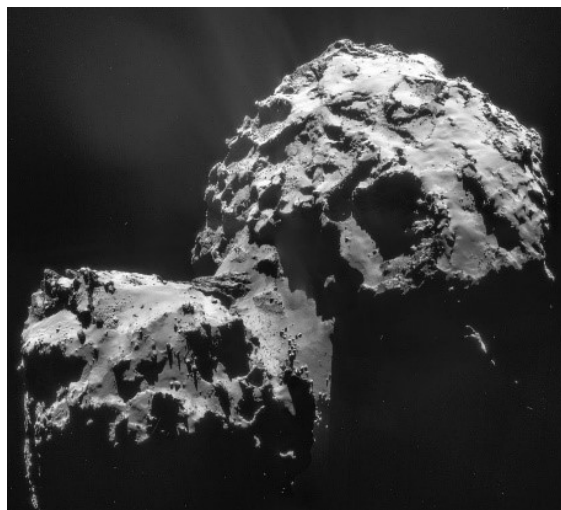
Gravity is the differential between the outside and inside pressure in the light-ocean. Where energetic wavelengths are shielded, blocked or create shadows; such as on and in large objects, gravity is stronger. Where sub-atomic particles "float" in the light-ocean, they are surrounded by 99.9% of all the wavelengths, and have almost no shadow - and thus have hardly detectable gravity.

We humans have an intuitive knowledge of these forces because we are made (or make ourselves) from them. We instinctively understand Centres of Gravity. We know that a Giant Californian Redwood grows to a pattern that complies with the Earth's centre of gravity. If not, it would topple over. Plant a Redwood in the four corners of the planet - take plumb lines from each and extrapolate down - and the centre of gravity will be located. They "know" where the centre is.

But, gravity also forms horizontal objects, particularly lifeforms. It helps them to define an inside and an outside and thus obtain and retain identity.

NB - 1 quark = 612 electrons x 3 for Protons. & Giant Californian Redwoods.

NNB - Existence of Aether Matrix is inarguable except by perverse scientists who are as two short planks. Continual evolution of the AM from new radio /light events - implies continual new matter formation (Hoyle was right). The structure of the AM (powerful inertia) is the DNA of matter.



"Fluffy" Comet **67P/Churyumov-Gerasimenko** *"is built from fluffy layers of dust and ice with half the density of water."* *Guardian* 23 Jan 2015. This news report about the Rosetta mission's latest findings, seems to accord with the idea that matter is initially attracted into loose relationship "a lattice of molecules" - with low density - until the ever-tightening knot of gravity, caused by the Casimir effect, increases the density, eventually forming compact planets. More Rosetta flights to diverse sized and aged comets are required; to measure the density of large and small bodies in space.

**16 DEC 2014** - A bit more. The whole universe of electromagnetic radiation presses "down" on any and all matter - as if the matter were at the bottom of the deepest ocean trench, under pressure from the water above and surrounding it. We know that "light" exerts pressure (and must therefore have some slight mass - it is some-thing, not no-thing); all matter has been formed from the light around it ( $E=MC^2$ ) creating a partial momentary void in the surrounding space; the basic stuff of the universe - pure energy - "falls" into the partial void and is followed by all light as it balances the pressures. In that sense all matter is "under" the pressure of the immeasurable ocean of all the light in the universe. Casimir effects shield the "shadow" in-side of congregating matter - and thus create the "ever-tightening knot", the relentless pressure of gravity on the inside of layers of matter - until black-holes form. Then what?

**9 DEC 14** - The Casimir-Gravity effect is a shadow. Light on the "outside" and dark on the "inside". The ambient light is the entire Aether-Matrix, at the very least being the CMB (Cosmic Microwave Background) of 3 degrees Kelvin above absolute zero. I repeat that the Aether-Matrix is a field of coherent radio or light waves, which carry to every point in the universe, all the information there is in the universe (except long wavelengths too large to fit into the observing sphere). This ubiquitous field is constantly in-formed and re-formed by every event in the universe; yet over time retains powerful inertia and perpetuates identity. (Time: all events on every scale broadcast their presence, which propagate at 300,000 km/sec across the universe. Every event is detectable at some place in the universe, at any time).

Thus there is coherent, data-rich, ambient pressure in the Aether-Matrix; introduce matter, say a film of soap, and it will experience an outside and inside from turbulence in the Aether-Matrix, which in this case will form spherical bubbles. Crookes Radiometer or Light Mill, with paddles driven by strong (sun) light, illustrates the effect of pressure from light. The deeper the material is inside a gravitational body, then the stronger the minute differential between the ambient electromagnetic waves on the outside and the dark shadow inside. I repeat; that counter-intuitively, deep inside the Sun is a profound darkness, a lack of most ambient electromagnetic waves, which creates a relative difference in pressure; where the outside waves are pressing in (down) on material that has an outer light side, and a darker inside.



Crookes Radiometer.  
Paddles driven by light.  
In a vacuum

**18 NOV 14** - If we reverse-engineer a large gravitational body, say The Earth, by imagining it has 10,000 shells that make its 8,000 mile - 12,700 km diameter; each shell is 1.27 km deep. Ignoring all forces & factors except gravity - if we carefully separated the shells by 50 km - breaking them as necessary to retain a globe like shape, like widely scattered, curved jig-saw pieces - the outer shell of widely separated pieces would be 51.27 km x 10,000 shells = 512,700 km (radius) out from the center. The pieces would each retain The Earth's 1,007 mph or 1,670 kph rotation. The mass would be the same as our compact Earth, but the gravity of each piece would be very small. The center of gravity would be the same as before. Presumably, the Expanded Earth pieces en-masse (forgetting the Moon) would have the same gravitational relationship with The Sun, as does the Compact Earth. So, the planetary system of gravity would not be significantly different. I don't

know how many hundreds of millions of years it would take for the pieces to clump and eventually reform a Compact Earth, but in the meantime each piece would not be visibly, quickly drawn to the center. The ever-tightening knot of large body gravity, where every atom and sub-atomic particle is ever more compressed and appears to be suicidally intent on reaching the center and disappearing up or down its own Black Hole - is here strung out in an open lattice of peacefully co-existing, circling asteroids. What would be very different would be the Casimir Effect. This force would be barely detectable between the millions of spaced-out asteroids. The data-rich\* electromagnetic waves, photons and electrons that fill the universe would envelope each piece, almost equally, and exert approximately equal forces on each piece - keeping them in place (inertia). The imperceptible tug of Casimir shadows does have many of the characteristics of gravity.

\* These waves & particles enable us to identify every phenomenon in the universe. Each "thing" broadcasts its presence and essence via electromagnetic or light signals or waves, which we receive and interpret or read. The waves are data-rich and legible and are coherent in every location in space-time.

\*\*\*\*\*

**10 NOV 14** - Discovering the causes, sources and mechanisms of gravity, after 50 years of casual science reading, has been such a shock to my system that I've had a streaming cold and cough since which has inhibited my concentration and clarity of text. So, I have brought forward the paragraph and now, here, intend to summarize the summary.

Here in 3 simple steps is how it works:

1) THE AETHER-MATRIX. The essence and basic stuff of the universe is light - the electromagnetic field - "pure" energy, initially with no bits in it. According to the alleged Big-Bang theory, the bits, matter, mass come a few micro-seconds later. This light exists in coherent patterns which persist for eons. Examine any sphere of any size in the universe and within that sphere you will "see" the entire universe, made visible by the cross



hatching of waves of electromagnetic broadcasts: this broadcasting by all phenomena, of every size and energy level, is how we identify "things" and people. What is missing from your chosen viewing-sphere, are wavelengths too large to fit into the sphere. Apart from those, you can, with suitable instruments, examine the entire contents of the whole universe, in the comfort of your own sphere (e.g. The Earth or way out in the so called "void"). Every viewing sphere has a unique holographic image of the universe; unique due to variations in size and location. Inertia tells us that the patterns are robust and persistent, not ephemeral. You can re-visit any sphere, a thousand years later, and you will see pretty much the same universe. However, every energetic event, second by second, on every scale, changes the information in the universal field because the broadcasts in-form and re-form the energy field. We can analyse the newly in-formed and re-formed aether-matrix in our chosen sphere - and find it changed; for example by the coherent TV wireless signals from the latest episode of Coronation Street. These myriad holographic spheres of coherent and inertia-locked waves of the whole universe - are indisputable. Unless a reader can find somewhere in space where the universe is invisible.

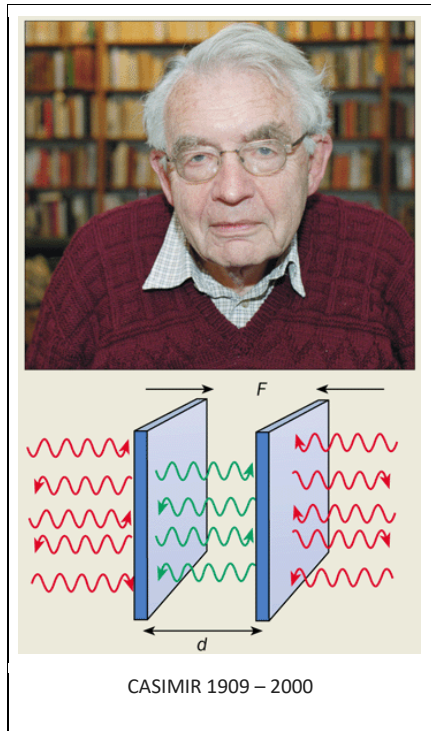
2) HUBBLE-EXPANSION. I need the Aether-Matrix as a tangible, patterned, coherent field of electromagnetic energy - containing waves and lines of magnetic and electric force - because the first step after "pure" energy, I think may be caused by Hubble-Expansion (of the observable universe). The "light" energy is real, it is tangible, it carries information, it is some-thing not no-thing. It is this universal field that Hubble-Expansion (**6.819E-19 percent/sec/sec**) expands. No sphere in the Light field can become a vacuum. Compared to pre-existence (before the Big-Bang if you like) when there may have been no-thing, in the universe all zones are some-thing, not no-thing. Even the "vacuum of space" is everywhere cross hatched with the coherent, energetic and information-rich light field. Expansion of this field by Hubble Expansion, attenuates the field forces. The attenuation of any defined sphere is immediately filled or balanced by the field. This "in-falling" of electromagnetic energy - and by any bits of mass in the vicinity - is perhaps the underlying, very weak, constant precursor of gravity. It may also be the mechanism where quarks or the most fundamental particles are forged - whereby energy converts to matter, where straw is spun into gold. I have recently read that today not all cosmologists and physicists are convinced that Hubble -Expansion is proven - but it has been analysed and accepted as scientific fact for nearly a hundred years; so I'll leave it in here as a slight contribution to gravity; as a force that cannot be shielded.

3) CASIMIR-GRAVITY. The Casimir effect is well tested and confirmed. It seems an interesting but rather inconsequential fact of the universe - that between two very close, perfectly machined flat plates, long wavelengths (of electromagnetism) are excluded - while all the wavelengths act "outside" the plates, creating greater pressure outside than inside - and pushing (and/or pulling) the plates together. The analogy of two large ships side by side at sea very well illustrates the effect; the ships are pushed together (see below). It occurred to me that a large object, say The Sun, would also cast a wavelength "shadow" of some shape (curved space-time) in its vicinity; or at least would alter the pattern of the universal energy field, and could cause a Casimir effect. At the smallest scale of matter, I thought of tiny particles, initially drifting in the eddies of electromagnetic currents in the Aether-Matrix, perhaps drawn to a momentarily attenuated Hubble-Expansion sphere; meeting, and between them experiencing a Casimir effect - alongside their magnetic and nuclear forces. It was not a convincing image to explain why, in large masses, all the bits seem to want to reach the centre - the centre of gravity. And thus why we must measure gravity arithmetic, for, say, space flights, from the exact centres of planets and suns. But, start adding millions of bits and within this initially loose conglomeration, and the Casimir effect, the wavelength shadow or wave exclusion, increases. Outside the pressure is constant (waves of the whole universe) while inside the slowly forming loose mass, the pressure of waves is ever reducing. Here, it seems to me,



is the ever-tightening knot of gravity - ultimately creating a black-hole. The centre of gravity is constantly shifting as mass and energy in-fall onto the central mass.

Both the forces, of Hubble Expansion (see my EIG TOE) and the Casimir Effect, are very weak, barely detectable in small masses. Neither needs a further energetic sources or trigger. Neither can be shielded. The Casimir Effect grows with every addition to the mass - shielding the interior from long wavelengths. Both forces of in-falling energy/mass are dissipative (see previous notes). The three phenomena above - Light-Field, Hubble and Casimir are well attested and accepted by science.



The above paragraphs are more coherent (information-rich?) and complete than my notes below. In writing them, I am becoming more convinced that they contain the seed of an expandable and eventually testable theory. Is the mystery of gravity about to be solved? Would it have cheered Casimir to know that he may have inspired a new trend in physics - and made him smile?

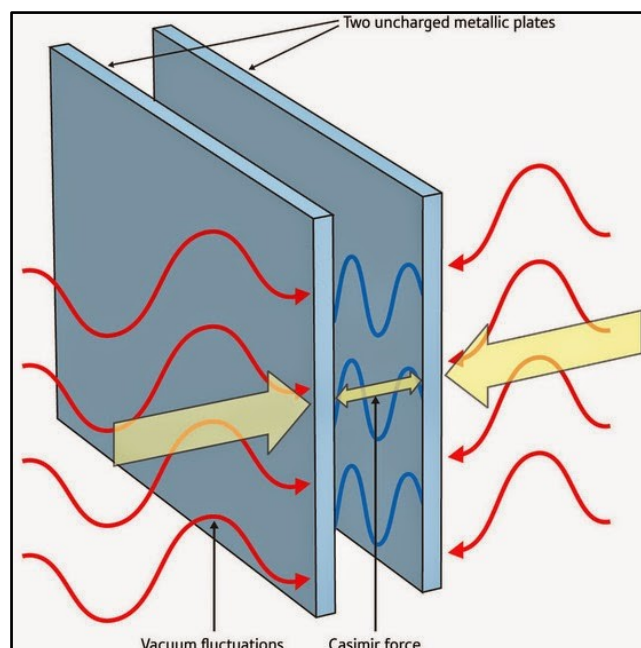
First outline of Casimir-Gravity - notes:

7 NOV 14. CASIMIR-GRAVITY. I think the major part of gravity is due to the Casimir effect. I wrote out the logic of this an hour ago, on this blog, where I had several tabs open. I was asked to "quit" a tab - with no option to cancel - and my new text disappeared. Will the world ever see my conclusive theory on gravity?

...So - after a short rest; here it is again.

Casimir 1909-2000 noted that two totally flat plates brought together, stuck together. He introduced tiny

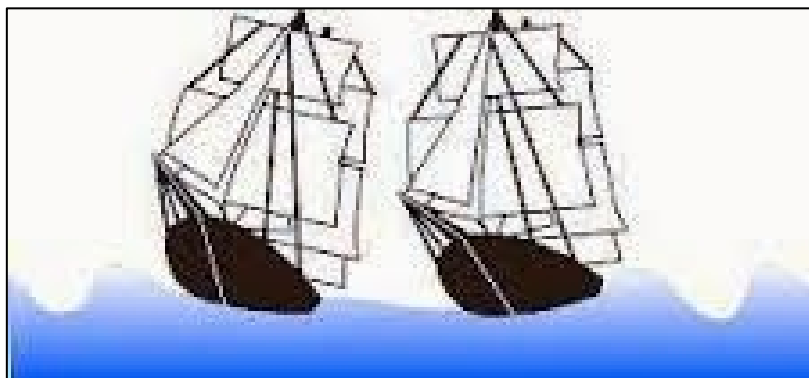
studs between the plates and they continued to stick together. (The separation is very, very small - so don't try this at home).



The Dutch scientist, Casimir concluded that the glue was in fact the force of the universal electromagnetic field waves outside the plates being stronger than the waves between the plates. They were being pressed together by "light" waves because the tiny space between them excludes larger waves, thus there is more pressure outside, than inside.

In the above diagram, you can ignore the nonsense phrase "vacuum fluctuations", which comes from stubborn old physicists who still insist that the universe is mostly "empty" space. It isn't. Having realized that there is no such thing as empty space they dreamt up miraculous non-existent waves and particles that pop-in and pop-out of nothing. What they are really referring to is the basic stuff of the universe - the pure energy field of electromagnetism in which matter emerges. The waves are electromagnetic waves (and particles) that exert force in so called "empty" space. The waves are everywhere, at every scale, and their field is the universal energy, which is continually in-formed and re-formed by every energetic event in the universe - however large or small. It is the persistently coherent (inertia) broadcasts of all events that enables us to "see" phenomena - from sub-atomic particles, to each-other, to the observable-universe. Every-thing broadcasts its identifiable existence:

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)



This same Casimir effect can be seen acting between two large ships alongside each other at sea. The ocean waves outside the ships are far larger than the waves in the calm area between the ships. The pressure outside pushes the ships together, overcoming the weaker waves between the ships. Casimir Glue is in fact a force that pushes rather than pulls - although both forces occur.

If we take two pieces of matter, say hydrogen or carbon molecules, drifting in space, the pressure of electromagnetic light waves acts on them equally. But when they drift close to each other, the Casimir effect acts to exclude long /large wavelengths between them, reducing the separating forces. They are pushed together by the universal "outside" waves.

Now add many millions more molecules or pieces; as they come together they exclude more light, creating interior darkness - smaller internal waves and less internal pressure. The pressure outside remains at full force. As new pieces of matter "fall" onto the conglomeration, the surface grows while the interior blocks more wavelengths - and darkness reigns internally. The deeper inside the material - the more waves are excluded - the more insistent the outside pressure seems.

If we anthropomorphise the process, it seems that all particles are wilful creatures intent on getting to the centre (of gravity). The centre is constantly changing as the masses move and more matter "falls" on the surface. At a certain size of mass, matter and energy join the incessant "in falling"; the centre gets ever darker - and we enter the mathematics of Black Holes. Counter-intuitively, large masses, such as the Sun, which blaze into radiating light and heat, are in their centres very dark, excluding most wavelengths.

Around such large shining stars, both particles and energy waves are pressed and pulled to the surface by the Casimir forces and we observe light "bending" close to the objects. This is Einstein's curved space-time.

My realisation that gravity could or might be, mostly, Casimir forces, does not preclude the logic that the matter and energy that "falls" onto a planet, star, or galaxy is either matched by growth of the object or by an equal outflow. All material objects are dissipative phenomena.

Between large, well separated objects such as planets, the electromagnetic waves manifest equal pressure - and the objects stay separate for eons. But, for example the Sun, a massive object compared to its planets, does shield the planets' orbital areas from universal waves - and exercises a push-pull Casimir force. The other 3 fundamental forces almost certainly are woven into the congregations of matter, and add to the cohesion - but those 3 can be shielded, whereas gravity cannot be shielded.

What this implies is that there are no gravitons and no gravity waves, other than the familiar electromagnetic /light waves - which is the basic stuff or pure energy of the universe.

My previous essay, lost in Google space, was more elegant - but this will have to do for now. I think it is shaping up to be THE answer to many of gravity's mysteries. But - I would say that, wouldn't I?

#### DOES CASIMIR-GRAVITY MEET THE CRITERIA?

1) Newton's laws - including force diminishes by the square of the distance. There is no reason why these rules would not apply. Casimir-Gravity may show how this happens. 1a) Force acts from centre to centre of planets etc - This is what triggered my attention to Casimir - why do all the particles seem intent on getting to the centre? The cloaking effect inside as pieces of matter aggregate, and the constant external, universal pressure outside, will act like an ever self-tightening knot. The centre will become ever denser. It has always baffled me why all the bits make for the centre instead of loosely holding hands in a lattice - Casimir cloaking provides a mechanism - I think.

2) Curved Space-Time - I touch on curved light above. I think this theory can explain Einstein's construct - in due course. More on this.

3) The smaller the particles of matter, the more homogenous and equal will be the the "sea" of electromagnetic waves around and between the particles - reducing the attraction between them.

4) This Casimir-Gravity force cannot be shielded. It is the shielding of electromagnetic waves that manifests the force.

(I am (still) sneezing & coughing badly this morning - my usual November reaction to the onset of winter. So will take a break and return to this in a day or so. More to follow).

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4 NOV 14 - ELECTRON SPIN - My EIG TOE presumes that light rushes "in" to partially evacuated spheres which are being expanded by Hubble Expansion, which is attenuating the basic stuff of the universe, requiring energy (light) to move in (at the speed of light) to balance the momentary partial void created by Hubble Expansion. I speculate that the light moves in from all directions; that some in-falling light waves sometimes collide in the attenuated sphere; that the collisions sometimes are at such wavelengths and angles to create a spinning vortex; that the vortex is a primary particle - perhaps a quark; that there is no-thing to inhibit the spin of the vortex; and that two colliding light waves meeting in a frictionless medium multiply their momentums to spin at  $C^2$  (the speed of light squared)  $300,000 \times 300,000$  km per second = 90 billion km per second; that this immense, forbidden speed creates a surface and a particle with mass within the surface;  $E=MC^2$ . Thus are primary particles or fractals with mass formed from pure massless energy. They do spin straw into gold.

HOWEVER - investigating the Spin of electrons and other sub-atomic particles, the obscure  $1, 1/2, 1/3$  or  $2/3$  "spin" which rarely specify any units, I read that it is not a "real" spin and is not intended to convey any real properties of real particles. BUT, digging down into less obscurantist, less reverent and more radical websites,

e.g. <http://www.relativitydomains.com/Physics/MechSpin/QuantSpin.htm>

I see that to account for its electro-magnetic charge the electron must have a real spin, like a spinning top, of  $1.117967846C$  or 1.1 times the speed of light.

This is then taken as a standard - ascribed as  $1/2$  spin, implying that 1 spin is 2.2 times the speed of light. BUT, all physicists know that nothing exceeds the speed of light - so the measured spinning electron is said to be measured incorrectly and cannot be spinning at 2.2 times light speed. This must be one of the **rare instances** when oft repeated observational data is deemed to be less reliable than man-made mathematical rules. If a dot painted on the equator of an electron passes by at  $1.1C$  - then the rule that nothing moves faster than light is, in these particular, peculiar spinning circumstances, not applicable.

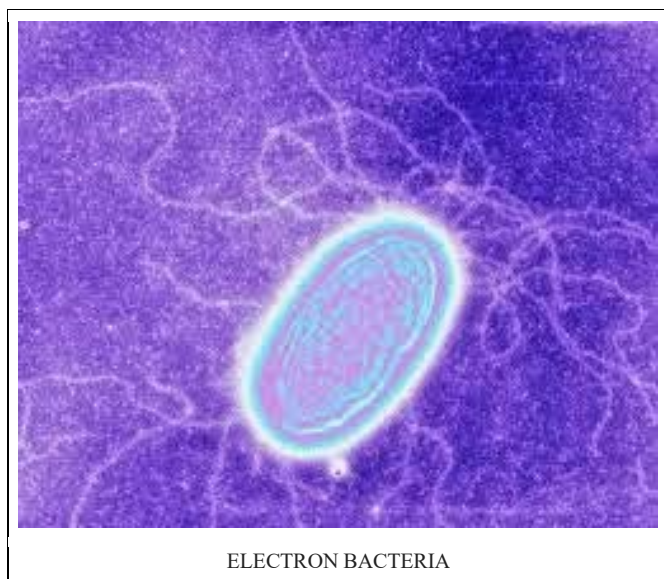
It is fundamentally important because if primary particles /quarks are spinning vortices of the basic stuff or energy of the universe, like whirlwinds and typhoons, then such spinning entities can be UP or DOWN and can attract or repel each other depending on orientation. They are too small and fundamental for any other particle to disturb their spin - except disturbance by another of their kind. The real spin creates the familiar electro-magnetic properties; the necessary constant winding in of "free, pure" energy creates an endless in-falling akin to gravity (the in-falling energy being balanced dissipatively by the outgoing magnetic field); and these vortices can combine to manifest the other sub-atomic forces - and to form stable long-lived protons. It is written (by Paul Davies) that quarks are never found alone, outside of protons and neutrons, Maybe, if they are not in combinations of say, 2 UP and 1 DOWN or vice-versa, these vortices of pure energy unwind and disappear from our sight.

NB - Space or space-time is never empty, it is never no-thing; it is always some-thing. No-thing may have existed before the alleged Big-Bang. Bring back the Aether!

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NB - 31 JULY 14 - Is gravity the ability to compress energy (& gain & retain identity)? Continuing the dissipative phenomena idea - does the continuous inflow, the falling in, of mass/ energy equate to the faint tug of gravity? Matter somehow emerges from "pure" energy (light) and makes particles - which fall onto or into each other (gravity) and form objects. These objects, every-thing in the universe, by definition are identifiable, they have identity - and thus we can name and study them. To have identity they presumably form following rules, patterns, templates. To maintain an identifiable shape and size (even if size changes) the inflow must be balanced by an equivalent measurable storage and/or outflow - as in humans - or stars - or trees. Given the extraordinary example below of a bacteria "eating" electrons, is that eating/ absorbing process the basis of gravity? If so - there is nothing "dead" in our universe of identifiable things; all are busy eating or being eaten - at a rate which defines their gravity? Maybe?

UPDATE 30 JULY 2014



ELECTRON BACTERIA

This article below, copied (my apologies) from the excellent New Scientist magazine, of 16 July 2014, interests me. It seems very important to my musings about Life, The Universe & Everything in general, and to puzzling over Gravity in particular. The link to gravity is via my thought that all phenomena are dissipative entities. We humans and everything that manifests in the universe, absorb energy and excrete it, over our very short (humans) or very long (protons) lifetimes. In the process everything retains identity, though changes occur throughout their lives. It seems that matter that manifests gravity may have energy and mass "falling" into it continuously. If so, to maintain identity, the mass that falls in must be expelled equivalently.

I am also fascinated by the idea of templates, which order the energy into the shape and identity of the phenomena. Human templates have been tracked back to DNA, but non-living (as defined by us) objects also form into predictable shapes - and sizes; while the dissipative processes continue. The Sun is such an object - which inarguably has gravity and which is probably continually dissipative. Is gravity the same force as absorption? These electron "eating" bacteria absorb energy which we can measure in electrons - are they mini-Suns? Could we measure their gravitational attraction? Would it match the mass of the consumed electrons?

More information on these immaterial bacteria and more pondering is required.

<http://www.newscientist.com/article/dn25894-meet-the-electric-life-forms-that-live-on-pure-energy.html#.U8kpupRdXh4>

## Meet the electric life forms that live on pure energy

- 17:08 16 July 2014 by [Catherine Brahic](#)
- Magazine issue [2978](#). [Subscribe and save](#)
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*Unlike any other life on Earth, these extraordinary bacteria use energy in its purest form – they eat and breathe electrons – and they are everywhere*

STICK an electrode in the ground, pump electrons down it, and they will come: living cells that eat electricity. We have known bacteria to survive on a variety of energy sources, but none as weird as this. Think of Frankenstein's monster, brought to life by galvanic energy, except these "electric bacteria" are very real and are popping up all over the place.

Unlike any other living thing on Earth, electric bacteria use energy in its purest form – naked electricity in the shape of electrons harvested from rocks and metals. We already knew about two types, *Shewanella* and *Geobacter*. Now, biologists are showing that they can entice many more out of rocks and marine mud by tempting them with a bit of electrical juice. Experiments growing bacteria on battery electrodes demonstrate that these novel, mind-boggling forms of life are essentially eating and excreting electricity.

That should not come as a complete surprise, says [Kenneth Nealson](#) at the University of Southern California, Los Angeles. We know that life, when you boil it right down, is a flow of electrons: "You eat sugars that have excess electrons, and you breathe in oxygen that willingly takes them." Our cells break



down the sugars, and the electrons flow through them in a complex set of chemical reactions until they are passed on to electron-hungry oxygen.

In the process, cells make ATP, a molecule that acts as an energy storage unit for almost all living things. Moving electrons around is a key part of making ATP. "Life's very clever," says Nealson. "It figures out how to suck electrons out of everything we eat and keep them under control." In most living things, the body packages the electrons up into molecules that can safely carry them through the cells until they are dumped on to oxygen.

"That's the way we make all our energy and it's the same for every organism on this planet," says Nealson. "Electrons must flow in order for energy to be gained. This is why when someone suffocates another person they are dead within minutes. You have stopped the supply of oxygen, so the electrons can no longer flow."

The discovery of electric bacteria shows that some very basic forms of life can do away with sugary middlemen and handle the energy in its purest form – electrons, harvested from the surface of minerals. "It is truly foreign, you know," says Nealson. "In a sense, alien."

Nealson's team is one of a handful that is now growing these bacteria directly on electrodes, keeping them alive with electricity and nothing else – neither sugars nor any other kind of nutrient. The highly dangerous equivalent in humans, he says, would be for us to power up by shoving our fingers in a DC electrical socket.

To grow these bacteria, the team collects sediment from the seabed, brings it back to the lab, and inserts electrodes into it.

First they measure the natural voltage across the sediment, before applying a slightly different one. A slightly higher voltage offers an excess of electrons; a slightly lower voltage means the electrode will readily accept electrons from anything willing to pass them off. Bugs in the sediments can either "eat" electrons from the higher voltage, or "breathe" electrons on to the lower-voltage electrode, generating a current. That current is picked up by the researchers as a signal of the type of life they have captured.

"Basically, the idea is to take sediment, stick electrodes inside and then ask 'OK, who likes this?'," says Nealson.

### Shocking breath

At the Goldschmidt geoscience conference in Sacramento, California, last month, [Shiue-lin Li of Nealson's lab](#) presented results of experiments growing electricity breathers in sediment collected from Santa Catalina harbour in California. Yamini Jangir, also from the University of Southern California, presented separate experiments which grew electricity breathers collected from a well in Death Valley in the Mojave Desert in California.

Over at the University of Minnesota in St Paul, Daniel Bond and his colleagues have published experiments showing that they could grow a type of bacteria that harvested electrons from an iron electrode ([mBio](#), [doi.org/tqg](#)). That research, says Jangir's supervisor [Moh El-Naggar](#), may be the most convincing example we have so far of electricity eaters grown on a supply of electrons with no added food.

But Nealson says there is much more to come. His PhD student Annette Rowe has identified up to eight different kinds of bacteria that consume electricity. Those results are being submitted for publication.

Nealson is particularly excited that Rowe has found so many types of electric bacteria, all very different to one another, and none of them anything like *Shewanella* or *Geobacter*. "This is huge. What it means is that there's a whole part of the microbial world that we don't know about."



Discovering this hidden biosphere is precisely why Jangir and El-Naggar want to cultivate electric bacteria. "We're using electrodes to mimic their interactions," says El-Naggar. "Culturing the 'unculturables', if you will." The researchers plan to install a battery inside a gold mine in South Dakota to see what they can find living down there.

### [Read full article](#)

Continue reading page |1|2

NASA is also interested in [things that live deep underground](#) because such organisms often survive on very little energy and they may suggest modes of life in other parts of the solar system.

Electric bacteria could have practical uses here on Earth, however, such as creating biomachines that do useful things like clean up sewage or contaminated groundwater while drawing their own power from their surroundings. Nealson calls them self-powered useful devices, or SPUDs.

Practicality aside, another exciting prospect is to use electric bacteria to probe fundamental questions about life, such as what is the bare minimum of energy needed to maintain life.

For that we need the next stage of experiments, says [Yuri Gorby](#), a microbiologist at the Rensselaer Polytechnic Institute in Troy, New York: bacteria should be grown not on a single electrode but between two. These bacteria would effectively eat electrons from one electrode, use them as a source of energy, and discard them on to the other electrode.

Gorby believes bacterial cells that both eat and breathe electrons will soon be discovered. "An electric bacterium grown between two electrodes could maintain itself virtually forever," says Gorby. "If nothing is going to eat it or destroy it then, theoretically, we should be able to maintain that organism indefinitely."

It may also be possible to vary the voltage applied to the electrodes, putting the energetic squeeze on cells to the point at which they are just doing the absolute minimum to stay alive. In this state, the cells may not be able to reproduce or grow, but they would still be able to run repairs on cell machinery. "For them, the work that energy does would be maintaining life – maintaining viability," says Gorby.

How much juice do you need to keep a living electric bacterium going? Answer that question, and you've answered one of the most fundamental existential questions there is.

*This article appeared in print under the headline "The electricity eaters"*

**Leader:** ["Spark of life revisited thanks to electric bacteria"](#)

### **Wire in the mud**

Electric bacteria come in all shapes and sizes. A few years ago, biologists discovered that some produce hair-like filaments that act as wires, [ferrying electrons back and forth between the cells and their wider environment](#). They dubbed them microbial nanowires.

Lars Peter Nielsen and his colleagues at Aarhus University in Denmark have found that tens of thousands of electric bacteria can join together to form daisy chains that carry electrons over several centimetres – a huge distance for a bacterium only 3 or 4 micrometres long. It means that bacteria living in, say, seabed mud where no oxygen penetrates, can access oxygen dissolved in the seawater simply by holding hands with their friends.

Such bacteria are showing up everywhere we look, says Nielsen. One way to find out if you're in the presence of these electron munchers is to put clumps of dirt in a shallow dish full of water, and gently swirl it. The dirt should fall apart. If it doesn't, it's likely that cables made of bacteria are holding it together.

Nielsen can spot the glimmer of the cables when he pulls soil apart and holds it up to sunlight (see video).

### Flexible biocables

It's more than just a bit of fun. Early work shows that such cables conduct electricity about as well as the wires that connect your toaster to the mains. That could open up interesting research avenues involving flexible, lab-grown biocables.

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UPDATE 8 JULY 2014.

My holiday reading: Both these books claim to have found a new Standard Model and the fundamental building blocks of the universe:

In THE SPEED OF MASS - A new look at relativity - Philip J Morgan claims to create a new Standard Model and says among his other ideas that (7) Gravity is the same as the electromagnetic force that holds an electron around the nucleus of an atom; it is not caused by the bending of space time. (8) Black holes far from being the mass eating monsters of current theory are the mothers of galaxies. Galaxies are formed from vacuum fluctuations in pairs of matter and anti-matter galaxies (9) I paraphrase - Hubble expansion is actually galaxies shrinking as they lose mass, thus increasing the distance between them. I had great difficulty following the author's logic and in dealing with the lack of punctuation.

In EVERYTHING IS PHYSICS - Book 3 - Particle physics and the quarks revealed - the author Dr Andrew Worsley, Fellow of the Royal Astronomical Society, is lyrical about the beauty, elegance, obviousness and natural symmetry of the mathematics underlying the aesthetic universe and particle physics. He lifts "the shrouds of mystery" which surrounds his subjects, by taking us back to "first principles" and by positing a fundamental unit /particle that is 100 billion-billion times smaller than Planck's smallest unit. Dr Worsley then multiplies this tiniest of units by a **"harmonic quintessence"** of the speed of light - and with clear mathematical logic, printed throughout the book, he shows that all phenomena are built with these tiniest of units, dubbed **"Quintessential Mass Quantum"**. Sadly, my maths is not up to the standard required to assess his workings, but I soldiered on through the book which I found quite readable and it has some neat histories of physics - including of quarks - with interesting quotations and anecdotes. He links his harmonics and quintessence to musical scales and hence to String Theory (which he sees as failing). All is focused on the electron as the central and primary particle - from which all other matter is made or derived (I think). All is harmonics and wavelengths. Although unable to follow his arguments I quite liked the idea of his tiny Quintessential Mass Quantum, which at times seem to be behaving like the fundamental particles that I speculate about in my EIG concept, where colliding light waves spin into vortexes to form matter - perhaps quarks. He devotes chapter 8, Vortex Harmonics, to this topic. It would help, as it is the foundation of the book, if I knew what a "harmonic quintessence of the speed of light" means.

I was not able to comprehend either of these two radical books sufficiently to amend my own theory. I might re-visit some paragraphs in Dr Worsley's well informed, wide ranging work.

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UPDATE - 29 May 2014. - "THE HIGGS FIELD DOES NOT CREATE GRAVITY"

Picking the bones out of the Royal Society, Pall Mall, UK - Lecture 20th May 2014 - Professors Ben Allanach, John Ellis, Tara Shears, Terry Watts - Chairman Alok Jha.

Reply 21 May - Dear Noel

Thanks a lot, and we're really glad you enjoyed the event last night. I've tried to answer your questions briefly below.

Q1 - I assume that Higgs Bosons do not exist today and only existed briefly just after The Big Bang?

Yes

Q2 - So there were no Higgs Bosons (snowflakes) with us in the hall last night?

Basically no, only insofar as they are popping in and out of the "seething vacuum"

Q3 - But the Higgs Field (snowfield) did and does suffuse the hall and the entire universe - somewhat like the CMB?

Yes.

About F4 below:

Strictly, it's going up from 8 thousand billion electronvolts to 14 thousand billion... so not quite a doubling (but roughly)

All the best,  
Ben

What I thought I heard last night that was new to me was:

F1). The colliding protons impact at about 280,00 kps

F2). Vacuum quantum fluctuations might add mass to the CERN-made Higgs Bosons (and other particles).

F3). The LHC has collected only 1% of the available (now or in the near future) data.

F4). You are doubling the power of CERN.

F5). Proposed - Super symmetric particles probably decay into dark matter.

F6). **The Higgs Field does not create gravity.**

F7). Dark Matter and Dark Energy most probably do exist.

F8). The Higgs field adds mass only to the force carrier particles. Human mass includes a "fingernail-full" of Higgs-enhanced particles.

F9). An uneasy cooperative symbiotic truce exists between airy theorists and solid engineers.

You most probably know of the Imperial College 2014 plan to collide high power lasers to create matter - electrons and positrons; originally postulated in 1934? For me this could resurrect that great free radical, Professor Fred Hoyle and his Steady State Theory.

## MORE ON GRAVITY - 4

In the early 90's I met (now Sir) Tim Berners Lee on the Oxford-Heathrow bus and he told me of his hyper-links project at CERN.

Finally - do you take turns to pedal the CERN dynamos to power the LHC?

Thank you again for a most illuminating, stimulating and enjoyable lecture.

Regards

Noel Hodson

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UPDATE - 19 May 2014. **WOW!** - HOW ON EARTH DID I MISS THIS VITAL EIG MATTER? - in 1934 Gregory Breit and John Wheeler worked out that photons could collide with sufficient energy to make electron-positron pairs, which have mass and are therefore matter. In 1997 the idea was tested using powerful lasers at the Stanford Linear Accelerator, albeit including a massive beam of electrons from "outside" the creation zone that collided with "green laser light" and changed its nature. And this year it is being re-tested at Imperial College, London by a team led by Oliver Pike, using very much more powerful colliding lasers - and a speck of prepared gold - called a Hohlraum (German for empty space). It seems that a Hohlraum is a man-made tiny tube or perhaps a sphere, with a tiny opening that focuses the beam/s. Such devices were used in the first A-Bombs to direct the initial forces that triggered the secondary stage/s. This gives a mechanism for my EIG colliding photons (which I was not previously aware of) that in turn make primary particles - fractals of matter - spinning straw into gold - that form quarks - that form protons and neutrons - that form stable atoms. **EIG - Expansion is Gravity**

If photons can be spun into electrons-positrons, it begs the question "are electrons material? do they have mass?" It seems that science is unanimous in agreeing that electrons have mass and are particles and emit waves of energy - electrons are wavicles. This modest, anonymous scientific commentator, argues that quarks are not merely constructed from electrons-positrons but indeed are electron-positrons - and make protons. He speculates that his construct explains the missing mass-energy from protons and neutrons. Protons are the solid building blocks of atoms that have a lifetime far longer than we think and calculate (by winding back Hubble Expansion) that the universe has existed. In human terms we can regard protons as (almost) immortal spheres-waves of matter. It would seem, as I have long puzzled over and suspected - that electrons are photons within matter. Release electrons from the grip of matter and they fly off as photons (or propagate at the "speed" of light).

And what about the disgraced, despised, silenced, gagged theories of the Electric Universe? Coming round full circle to gravity, at the macro level - in our search for the theory of gravity; it is calculated from astronomical observations and measurements that galaxies are missing 80% to 90% of the mass /gravity required to hold them together. And we do not of course know what causes gravity or how it is transmitted. Is it indeed, an unshielded aspect of the electrical forces that we know so well - and which the bound, gagged and expelled scientists who dare raise the possibility that weak and feeble gravity is a minor factor in creating galaxies etc. compared to electromagnetic forces.

And wherefore The Impenetrable Higgs Boson? Isn't it dubbed the God Particle that "confers mass" onto particles? More explanation please Professor Higgs.

And what does this imply for Hoyle's Steady State Theory? For his idea that particles are constantly created in the vast empty vacuums of space? Can we revive Fred Hoyle from his premature sleep and ask him to comment? Did the Big Bang really bang?

Any road up - you can imagine how pleased I am as a non-scientist observer of science to find that one of my central speculations - how to spin straw into gold - to compress energy into matter has since 1935 been on the respectable scientific agenda and been demonstrated by applying one of our new fangled inventions - lasers (once called a technology looking for an application). Having been ignorant of these 80 years old developments, in spite of looking diligently for such information, my suggestion to scientists is do more for "intelligent cooperation".

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UPDATE - 17 May 2014. **BOOM!** - New Scientist 17 May 2014 "There at the birth" ...of the Big Bang Theory - Jim Peebles recounts witnessing the formation of the Big Bang Theory from 1964. It eventually replaced Fred Hoyle's Steady State Theory - demonstrating a single point of matter creation (a single White Hole) and energy dispersal instead of Hoyle's idea that particles of matter are created in the voids in all locations at all times - in a Hubble expanding universe. The Big Bang Theory - supplemented by the

necessary theory of "Inflation" was largely driven by the discovery of the ubiquitous Cosmic Microwave Background (CMB) at 2 degrees Kelvin (*2 degrees above absolute zero - minus 232 degrees Celsius - TV screen snow*).

Although not crucial either way - Big Bang or Steady State Continual Creation - to my EIG theory, my suspicious, doubting and cynical nature which was triggered aged 6 by resisting illogical but infallible Catholic indoctrination, still leaves room for Hoyle and questions The Big Bang (with Inflation). Perhaps when science finds a sense of direction pointing to The Universal Center, whence the Big Bang emerged, I will be more believing of the impenetrable, reverse engineered Big Bang mathematics and be able to join the One True Faith. Until then - we should keep open minds.

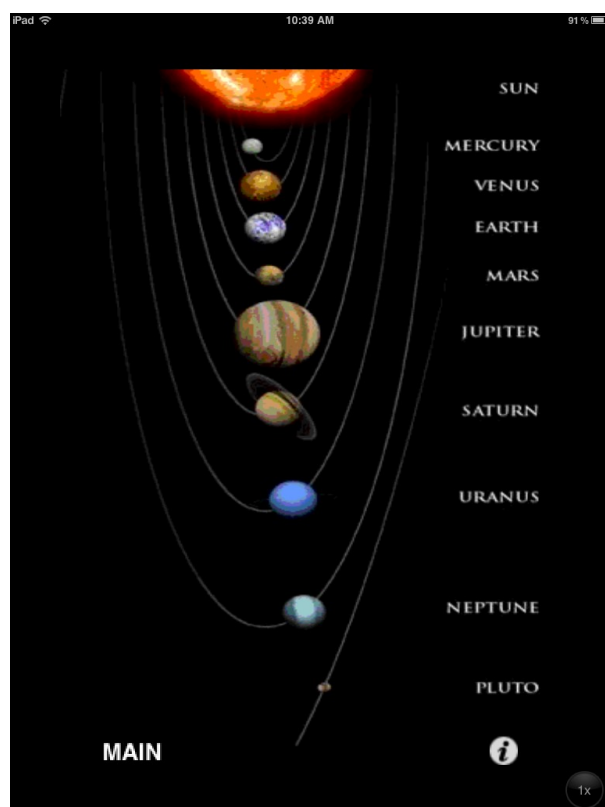
If, as in my EIG, the universal essence suffusing all space-time is the Aether-Matrix - holographic spheres at every point, scale and location that mirror the entire universe (intersecting light-waves reflecting the whole universe wherever we place an eye or an observing instrument), then the Aether-Matrix would also glow with a background temperature. Philosophers of science, like 1950's Jesuits, "must work harder" to prove they are infallible.

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More thoughts in the endless search for the causes of gravity. I've been reading GRAVITY by Brian Clegg, 2012 (links below), a book for non-scientists which I can almost completely follow - with an unaccustomed stretch of my concentration.

(Previous article in this series [GRAVITY WAVES - WHAT'S THE FUSS?](#) )

In GRAVITY, an excellent book, Brian Clegg mentions in Chapter 2, only to dismiss, Mark McCutcheon, *The Final Theory: Re-Thinking Our Scientific Legacy*, (see Notes) in which Mark



apparently bases gravity on the expansion of matter. Not having access to that book, I assume from Clegg's brief comments that Mark's idea is that surfaces of matter, such as the Earth's surface, accelerate "upwards" due to expansion, which silly Earth creatures, such as ourselves, feel as gravity - and that the same is true for all matter, however large or small. A few calculations, even at my low level of teenage school arithmetic, show the theory to be impractical and such effect wholly detectable, if Earth were expanding and accelerating at 32 feet (say 10 meters) per second - per second.

I stress that my [EIG - Expansion is Gravity](#), is quite a different concept to what I suppose is Mark's theory. EIG proposes that Hubble expansion expands space-time or "pure energy" the basic fabric of the observable universe, at -

**6.819E-19**

**percent** (0.000,000,000,000,000,000,068,19%), of any specified sphere, per second per second: which is a minuscule rate of change, more fitting for the observed subtle power of gravity. This is the rate at which the Hubble Universe expands. My EIG idea dates from 1992 and has been disseminated via the internet since 1998. It is this

tiny, persistent, universal attenuation of space-time that I imagine "attracts" energy - light - to balance

the energy field; everywhere, perpetually, on every scale, which causes gravity and creates fundamental particles of matter (maybe quarks).

Brian Clegg also comments (Page 95) on a question I put to a senior physicist a couple of years ago *"If I dug a vacuumed tunnel from North Pole to South Pole on the Moon and jumped down it; what would occur? When would I turn to go up instead of down?"* and Clegg gives the same professorial answer, but applied to the Earth; a sort of bungee rope see-saw oscillation would happen, until minor frictions brought me to a halt. On reflection, Clegg's answer triggers other questions. As I fall down towards the center of the planet, the mass of the planet would relatively move around me; at the center - the bottom, there would be far more mass "above" me than immediately below. In falling, would not the gravity of the mass around me pull me back up - be a brake on my plummeting to the center?

Is THE CENTER, from and to which all Newtonian gravity is calculated, actually the center of gravity? Surely not - the center of gravity, any center of gravity, must eternally oscillate; the moment it is located, it will attract matter or energy which will move towards it, which movement will re-locate the center of gravity - ad-infinitum. It is easier to envisage the effect in the molten center of the Earth. In our turbulent, cycling Solar System, all centers of gravity of all things must perpetually oscillate - creating additional energy /mass and tidal forces, on all scales, at all points.

This unavoidable **oscillation of centers of gravity** at the heart of every mass, of any size, mirrors, perhaps, the unstoppable sub-atomic quivering at Absolute Zero (-273 Centigrade) which otherwise freezes atoms and all matter, in its tracks.

On page 150, Brian Clegg kindly explains to me (at last - and about time too) why non-scientists find "simple and beautiful" maths formulas impossible. Quite simply the authors never cite the units of anything - and behind, say  $(x-y = x+abc)$  lie vast sheets of hidden calculations that underlie the 'x' and the 'y' etc. The academic purpose, I assume, is pure bloody-minded obscurantism. I once wrote to Oxford's top maths professor, Marcus du Sautoy, suggesting a common global maths alphabet and dictionary to make formulas accessible to say, 5 billion people, instead of today's handful of, often mad, specialists; would get all unresolved maths problems solved in a week - or so.

Clegg clearly explains and illuminates Special Relativity with new metaphors and similes - and introduces, to me, **gravitomagnetism** (What's that? Read the book) and explains Frame Dragging. He also corrects my understanding of the weak nuclear force, which I imagined I knew holds the electrons/cloud in orbit; it transpires that the weak nuclear force acts on sub-atomic particles to keep them a fraction of the diameter of a proton apart - and - is the trigger that flips quarks inside protons to convert protons to neutrons. Clegg also reminds me throughout that it is NOT Space that is distorted by mass to 'make' gravity - but Space-Time. Movements in any of these 4 space-time dimensions can trigger mass moving towards mass - and all things are moving through Time.

In all - GRAVITY is an accessible book which brings for me several new factors - in the hunt for gravity. Well worth the risibly low price for such a useful and scholarly work. It does not yet cause me to reach for my EIG Theory and amend it.

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THE UNIVERSE IS ONLY SPACETIME by John Archibald Wheeler.

The next paper I read is of a different order. The Universe is Only Space Time - by John Archibald Wheeler (2012) races along the extreme outer edge of my ability to follow the logic. Wheeler sprinkles his dense, taut text with mathematics, which helpfully do state the units of measure and which he explains in English words - and which therefore with great effort I can just about grasp, at least sufficiently to not lose track of his arguments.

This challenging paper might give me cause to revise and update EIG. Excitingly - if I interpret it accurately - Wheeler produces arguments in favour of what I call the **Aether-Matrix**; harking back two centuries to when science decided that space must be a medium that carries light. The Aether was abandoned finally when it was misreported that Einstein said it didn't exist. What he actually said was that he didn't need the Aether for his calculations. We now summon it back from the past for another incarnation.



My EIG supposes that the Aether-Matrix is formed by the intersecting of all the light signals (electromagnetic waves) from all phenomena from the whole observable universe, which are visible to observers on every scale at all points in the universe and which are dynamically informed and reformed by every event in the universe. It is these undeniably present energy waves and fields that collide in Hubble attenuated spaces /spheres to form fundamental primary particles (Spin straw into gold / Higgs Boson ). We humans, ephemeral creatures of light, existing for a meagre three score years and ten, broadcast our every movement and thought into the Aether-Matrix and thus constantly re-form it. The data thus created, a record of everything, and holographically reproduced across the entire universe on every scale, may hold the data-dense templates that inform delicate complex structures such as DNA.

Wheeler calculates the "stiffness" of such a medium and compares the energy content of space-time (energy density of a vacuum) when calculated from the Quantum Electrodynamics theories (particle physics) or from General Relativity (astrophysics). He finds that answers from the two systems differ by  $10E+122$  (1 followed by 122 zeros) joules per cubic meter - an unimaginably enormous number. (Read the Book)

This, I think, and the first time I have heard the detail of it, is the heart of the irreconcilable disparity between the brilliant and wholly tested and proven Standard Model (of atoms etc) and the equally brilliant, wholly observed theories of cosmology /astrophysics. It is hoped that coming to understand gravity and its equally mysterious partner, inertia (centers of gravity?), will bridge the two sets of theories and enable science to figure out a TOE - a Theory of Everything.

I will re-read both these texts and think on it. More, later. In the meantime - we have here sketched out Oscillating-Centers-of-Gravity, which might prove to be important. I must also read Stuart Clarke in [New Scientist 26 April 14](#) - Page 32, "The end of the beginning"...

...Done that. Stuart Clark further explains what the BICEP2 Polar instruments data might mean for "Gravity Waves" and he raises more doubts about the basis assumptions. Did the Big Bang happen? If so - when? Do gravity waves exist?

My EIG ascribes gravity to attenuation of the stuff of the universe due to constant Hubble expansion, which in turn allows or enables or attracts light to fill the attenuated spheres. As such, science should be searching for the absence of something, not for ghostly waves and "carrier" particles labelled "gravitons". Though such partially evacuated spheres would perhaps draw universal energy inwards, in waves. EIG also sketches explanations for Dark Matter and Dark Energy. Three for the price of one. Buy now to avoid disappointment.

I will revisit this blog after re-reading the books below.

GRAVITY - by Brian Clegg <http://www.brianclegg.net/gravity.html>

Everything we know is governed by four physical forces, but there is only one of them that is immediately obvious - gravity. Although ludicrously weak compared to the other forces (a tiny magnet can hold up a piece of metal against the gravitational attraction of the whole Earth), gravity permeates our everyday life and being. We begin with humanity's earliest ideas of how we remain stuck to the ground - a significant consideration when you realize that despite the myths, educated people have known the Earth was a sphere since the time of the Ancient Greeks.

Along the way we'll see how the Arabic scholars explained the force of gravity, why Galileo didn't need to drop balls off the tower of Pisa, exactly how Newton came to his conclusions and why he refused to 'frame hypotheses' about gravity.

We will explore the concept of action at a distance, and see how Einstein transformed our understanding of gravitation with general relativity and consider whether the graviton will ever be discovered. We will see how birds, bees and rockets seem to defy gravity, and whether the concept of anti-gravity can move from pure science fiction to possible fact.

Gravity never fails to fascinate...

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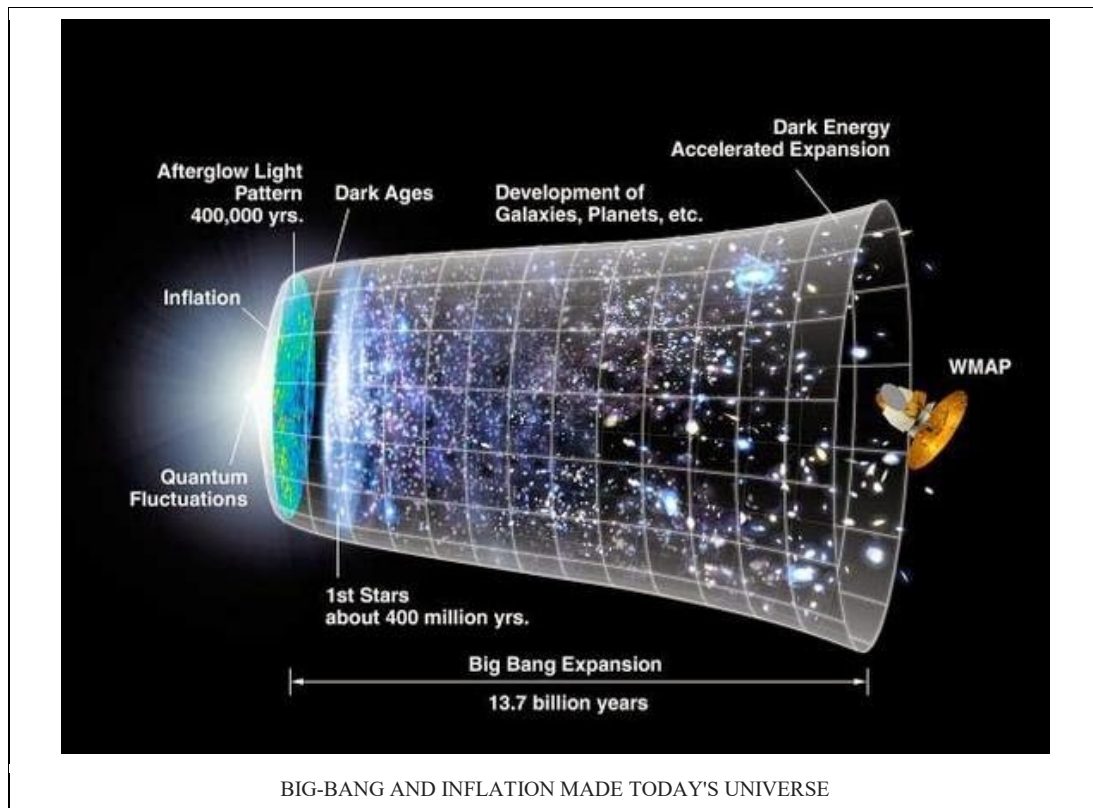
"If spacetime can propagate waves such as gravitational waves or dipole waves, it implies that spacetime must have elasticity. This elasticity requires the ability to store and return energy as the wave propagates. The medium itself must have energy density. The quantum mechanical model of space is filled with a sea of energetic fluctuations dipole waves. If these are visualized as energetic waves in spacetime, then a new wave can be visualized as compressing and expanding these pre-existing waves. If this new wave causes the pre-existing waves to slightly change their frequency and dimensions as they are being compressed and expanded, then this picture provides the necessary elasticity and energy storage to spacetime. "This book proposes a quantum mechanical model of spacetime where the energy density of dipole waves in spacetime is  $10$  to the power of  $113$  J/m<sup>3</sup> and the implied pressure is  $10$  to the power of  $113$  N/m<sup>2</sup>.

Therefore, the picture that emerges is that the quantum mechanical model of spacetime not only has a tremendous energy density, but it also is capable of exerting any pressure up to Planck pressure of about  $10$  to the power of  $113$  N/m<sup>3</sup>. If the pressure is unequal on opposite sides of an object, then this unequal pressure would be considered a force. Furthermore, this force could be considered either an attractive or repulsive force depending on the direction of the object "causing" the mysterious force. Later in this chapter it will be shown that the maximum pressure that spacetime can exert for a particular size object is the limiting factor for the size radius of a black hole. Also, all fundamental particles will be shown to possess energy density and pressure that is stabilized by an interaction with the energy density and pressure of the dipole waves in spacetime. "

[john@onlyspacetime.com](mailto:john@onlyspacetime.com) John Archibald Wheeler 2012.  
[http://onlyspacetime.com/Chapter\\_4.pdf](http://onlyspacetime.com/Chapter_4.pdf)

Wednesday, 19 March 2014

## GRAVITY WAVES - WHAT'S THE FUSS?



Scientist [Sean Carroll](#), has written a professionally well received summation of the possible and alleged discovery of gravitational waves at the moment of the Big-Bang. His article (link below) acts as a transformer between the utterly incomprehensible mathematics and logic of pre-particle physics - and non-scientific observers such as me. I very much hope to here further simplify and transform his article down into language that more people, and I, can better understand.

Here is a try at saying it in a few words: "Supporting the [INFLATION](#) theory that the early universe expanded from a dot to immensity in a nanosecond - [BICEP2](#) scientists find ancient light 13.75 billion years old, distinctively polarized into a "swirly pattern" by the **first ever gravity-waves**; waves that alter the detector's length by 1 in ten thousand billion billion:

10,000,000,000,000,000,000,000,000 ([LIGO](#))."

\* BICEP2 - The Background Imaging of Cosmic Extragalactic Polarization 2.

Let us not forget The Infamous Higgs Boson, discovered last year by the Large Hadron Collider. I have not read any comprehensible claim by Professor Higgs or other experts that The Higgs Field is the primary and first mechanism that converted or converts "pure" energy into matter - spins straw into gold. But, all the journalistic metaphors indicate that that is precisely what it does - so somebody is selling that message. They say The Higgs "confers mass" onto sub-atomic particles "like an ant wading through thick custard" etc. What "they" are trying to not say is that at the very beginning of space-time, at the Big-Bang in the above picture, The Higgs Boson or something like it, acted as a catalyst before disintegrating into photons (light), to give birth to the first particles of matter - possibly Quarks (rhymes with Corks) - by somehow compressing energy. If this did happen, it would have been at the time of "Inflation", trillionths of seconds after the birth of the universe. If this extrapolation and interpretation is entirely wrong; Professor Higgs or CERN will undoubtedly say so. My [EIG](#) theory incorporates the idea that as energy was and is compressed into matter ( $E=MC^2$ ) the cohering, probably sentient, energy field forces "let go" allowing inflation; via what science calls Dark Energy.

To have any chance of incorporating the scientific information and encompassing it logically, needs a framework, a universal theory, however flawed, to hang it all on. My theory, my T.O.E. is called [Expansion is Gravity - EIG](#), which is extremely simple, written in a thousand words on 23 slides,

and is undoubtedly deeply flawed. But it provides me with a reference point for trying to comprehend this week's news and fit it into common understanding. It might help other non-scientists, who use words not mathematics, to comprehend the major questions. (NB - Inertia).

**WHAT IS REAL - WHAT DO WE ACTUALLY OBSERVE?** Current knowledge of The (observable/ see-able) Universe is mainly based on just two proven and fully accepted scientific astronomical observations of light waves (the electromagnetic spectrum):

Firstly [Hubble Red Shift Expansion](#) - American astronomer Edwin Hubble (1889 - 1953) noted that most galaxies are moving apart, by measuring the "red-shift" of the light ([the red part of the rainbow from distant objects, propagates differently from the blue part of the spectrum](#)). It is from the rate of Hubble Expansion that the Age of the Universe is calculated as about [13.798 billion years](#).

And secondly, we observed The [Cosmic Microwave Background \(CMB\)](#) when in 1964/65 astronomers, Arno Penzias & Robert Wilson at Bell Labs in New Jersey realized after thorough cleaning that interference in the signals from space was not pigeon crap on the radar dish, nor traffic on the nearby motorway, but was the "snow" displayed by all cathode-ray analogue (not digital <sup>\*</sup>) TV screens that are not tuned to a man-made broadcast frequency. The snow-signal turned out to be everywhere in the observable universe (including the space surrounding you as you read this - and in the remotest empty spaces we can "see") and was found to be the signal from a background temperature of a freezing 3 degrees Kelvin (minus 270 degrees centigrade /Celsius); at zero degrees Kelvin everything stops, frozen to death, except tiny "quantum" jiggling inside atoms. (<sup>\*</sup> "digital" or "binary" signals are real "analogue" radio signals re-organised by computers as dot-dash Morse Code or 0s and 1s packaged in Bytes, transmitted from e.g. a TV studio to your TV set computer-chip which reads the Code. It is this reading that causes the pause in long-distance digital TV interviews.)

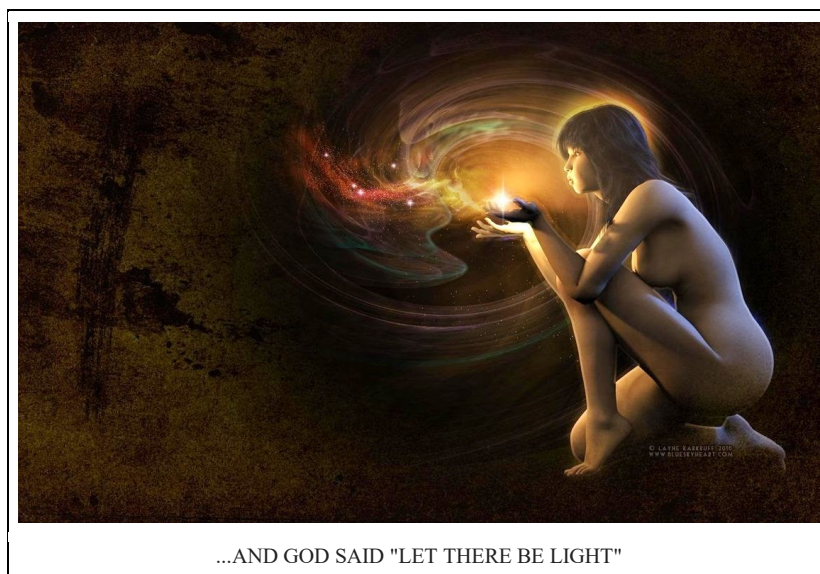


**WHAT DO WE EXTRAPOLATE FROM HUBBLE-EXPANSION AND CMB?** Because this Cosmic Microwave Background is the same in every direction and distance, science logically demonstrates that the light, this minuscule 3 degrees of heat above absolute zero, ([all heat is light and vice-versa. All light is radio signals](#)) was created (cause and effect) at the Big-Bang, the propagation (light does not speed it propagates) and expansion of which (Hubble Expansion) spread the CMB microwaves everywhere evenly - hence "background". The Big-Bang, the alleged moment of creation from a "White-Hole" is assumed, by relying on Hubble-Expansion measurements, and on Newton's and Einstein's measurements of Gravity (and from millions of other brilliant scientific discoveries), to tell us how far away is the edge of our observable-universe. Then by mathematically winding universal observed expansion backwards in time - the mathematicians compress the expanding universe back into its



original box - where it disappears. Strangely, for the sake of balance and tidiness, science assumes that everything came from nothing - "In the beginning was darkness and the void".

**WHAT DON'T WE KNOW - AND WHY "OBSERVABLE UNIVERSE"?** We do not know what gravity is. Einstein and others predicted that "gravity waves" will be detected by looking on very, very large scales across the universe - but nobody knows what a gravity wave is. We talk of the observable universe because, so far, no center or any hint of the direction or location of a center has been found - the distribution of matter (galaxies, hydrogen clouds etc) and radio signals in the universe are almost the same in every direction. Taking Earth as the precise center, we can see with astronomical telescopes to a horizon - about 13.75 billion light years away (to get the distance in kilometers, multiply seconds in a year by 13.75 billion by "the speed of light "C", the assumption being that light always has, does and always will travel at the currently observed and measured rate of propagation of about 300,000 km per second). But science has had to cheat and vary the sacrosanct "speed of light" to fit the mathematics of the assumed Big-Bang with observations of CMB and the even spread of universal matter. They do this by inserting "Inflation" in the first seconds of The Big Bang, which assumes the universe expanded faster than the speed of light from a pin-prick of infinitely dense hot energy (scalding light) to an enormous size in the blink of an eye. So, due to inflation, the horizon of what we can "see" - [the observable universe - is thought to be 47.5 billion light years](#) distant - instead of the age of the universe (if light always propagates at 300,000 km per second) of 13.75 billion (slow) light years distant. ["Inflation"](#) allegedly gave us a horizon 3.5 times more distant than the current speed of light could have given us. Science thinks that the universe might be infinite but we humans like to define and confine subjects of study - so we study only that which we can detect; in this case the immense Observable Universe.



## WHAT IS THE CURRENT GRAVITY WAVES FUSS ALL ABOUT?

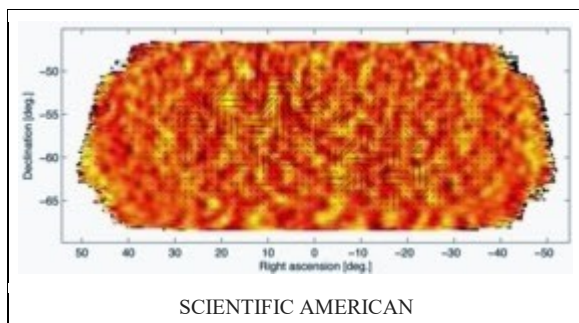
["A team of astronomers led by John M. Kovac of the Harvard-Smithsonian Center for Astrophysics detected ripples in the fabric of space-time — so-called gravitational waves"](#)

The kernel of the conundrum being investigated, as reported in March 2014, is the physical history of the entire universe.

Science based on observations, interpretations of the observations and mathematical modelling of the interpretations, currently theorizes that God (God is the bit we don't have any theory for), in the dimensionless void of no-where and no-thing before space-time existed (stood out), did his-her-or-its miracle with the creative finger and triggered a speck of energy, even smaller than the smallest thing that [Max Planck 1858-1947](#) figured out could exist.

Planck minimum Length is 0.00000000000000000000000000000001 meters - Max Planck discovered "quantum leaps" or energy changing not smoothly as expected but in measurable steps or jumps, by experimenting with the heat (light) from his iron cooking stove - see [Black Body Radiation](#) - a speck that contained the potential for the entire universe and all events, such as you and me, that would follow. Some scientists refer to the primordial speck as a "white hole" - a place without dimensions that produced (may still be producing) infinite energy and density; containing all of space-time for all of existence.

**WHY IS THE TELESCOPE AT THE SOUTH POLE?** The astronomers and cosmologists are searching for gravity waves, which cannot be seen directly. Instead they look for peculiar patterns of light, affected by gravity waves. These patterns are of very particular polarized light - the same sort of polarizing used by sunglasses to shield eyes from glare - polarized by passing through gravity waves. The light, which like all light is of the electromagnetic spectrum and thus detectable like radio waves, is allegedly from the very first trillionth, trillionth, trillionth of a second after the Big-Bang. The entire universe was then very small so the first light waves and gravity waves were in every part of the universe, which then expanded, spreading the wave signals to every part of the universe. Thus, the strange ancient light that is being looked for is everywhere, as is the Cosmic Microwave Background (CMB) light, described above. What the scientists seek is here, all around us and in all parts of the universe. But these 13.75 billion years old signals are faint and obscured by all the events between then and now. Siting the telescope at the South Pole and focusing it at the emptiest possible space helps to eliminate interference from all the other universal phenomena. The scientists have sifted years of data; hope to have eliminated all other phenomena; and claim to have found polarized light patterns that are or were affected by gravity waves. Gravity waves are supposedly like light waves but more elusive - and they cannot be stopped by anything we know of. The faint polarized light patterns look as if they are part of spirals. Similar to and contained in the CMB light, these traces will have a signature temperature. The discovery is the ghost of a ghost of a ghost of a 13.75 billion year old ghost.



Proof of gravitational waves created by cosmic inflation is shown here in this image of the cosmic microwave background radiation collected by the BICEP2 experiment at the South Pole. The proof comes in the form of a signature called B-mode polarization, a curling of the orientation, or polarization, of the light, denoted by the black lines on the image. The color indicates small temperature fluctuations in the cosmic microwave background that correspond to density fluctuations in the early universe.

BICEP2 Collaboration

## WHY ARE GRAVITY WAVES SO IMPORTANT AND WHAT IS A T.O.E.?

The universe is built with 4 fundamental forces (1) Strong nuclear force that compresses light into the nucleus of atoms and holds it tight - hence nuclear explosions of blinding light when we prise them open (2) Weak nuclear force that holds electrons in orbit or clouds around the nucleus - where we observe electrons doing "quantum leaps" (3) Electromagnetic force that binds or joins separate atoms into molecules and makes all chemical connectors (4) Gravity that pulls all matter and energy into clumps and makes stars, planets, alleged black-holes and us. Energy, or light, was observed to be subject to gravity as predicted and precisely calculated by Einstein when beams of distant starlight were bent as they passed by The Sun and were measured by [Eddington during an eclipse](#) in 1919.

BUT, only the first three forces, which we largely understand and can manipulate to make our TVs and mobile phones operate, are integrated into [The Standard Model](#) of atoms and sub-atomic (smaller than atoms) particles. We do not understand how gravity works and we have so far failed to create **A Theory of Everything (TOE)** that will make a model of the 4 forces working together. It seems that Gravity - which we assume holds the universe together (Astrophysics & Cosmology) cannot yet be reconciled with the sub-atomic forces (Particle-physics). A Theory of Everything, the bridge between macro and



micro events, is the Holy Grail for all scientists. Understanding gravity is a necessary cornerstone of any T.O.E. That is why science is so excited by the news released this month.

Read this for a quantum leap forward in understanding the science:

[Gravitational Waves in the Cosmic Microwave Background](#)

Posted on [March 16, 2014](#) by [Sean Carroll](#)

Saturday, 15 February 2014

## DISSIPATIVE PHENOMENA (2)



SHELDONIAN THEATRE OXFORD: A MUSIC-ATOM

All objects/ matter/ things/ systems/ phenomena on every scale and of every complexity in the Universe are dissipative systems in an ocean of "pure" energy that continually absorb and dissipate energy while acquiring and retaining identity - which identity implies a template for each and every phenomena. (Continued from 29th Nov 2013 [THE FIFTH FUNDAMENTAL FORCE & GRAVITY](#) ).

Thinking of complex phenomena, I draw an analogy with an orchestra. Last night we attended The Sheldonian Theatre, for an excellent concert by Oxford Philomusica, of Rachmaninov Piano Concerto No 2 in C Minor, Op. 18 - with a superlative pianist [Tatiana Kolesova](#), and of Prokofiev Suite No. 2 from Romeo and Juliet, Op 64. Both pieces are often used in films and so their themes are well known to millions - including me. In universal terms it was an event; it was an energetic event; it had identity; it was complex; it manifested organisation, purpose and intelligence.

Including the (very skilled) Conductor and the Concert Pianist, there were 74 musicians. To create this event they came together, played in harmony and in concert, orchestrated by the conductor, made music for about 2 hours; and dispersed. Scientifically, the music vibrated the air and subtle electrical and atomic forces in the theatre, which in turn vibrated the planet's atmosphere and created electromagnetic waves, which in turn broadcast the event in spherical waves, out into space; into the universe. An identifiable event, a physical phenomena, which might well baffle distant alien radio astronomers with instruments delicate enough to detect the concert, was broadcast from The Sheldonian and is even now streaming across the universe; in-forming and re-forming the stuff of the universe - the "pure" energy of the universe.

Like an atom, examined by our most powerful microscopes and recently photographed (see previous article), the waves of this energetic event in a small building, on a small planet, in an average galaxy, do not die, and they broadcast and remain identifiable for all time.

I began to imagine the 74 music makers as sub-atomic particles of a single vibrant atom (all atoms vibrate continuously). This music-atom though short lived (two hours) emits its signal, location and scale of coherent energy, which travels or propagates at light-speed, in human terms - forever - until the end of days. Theoretically, the music could be detected in, say 22 billion light years, on the horizon of this observable universe.

This music-atom dissipated energy that signalled its existence - as music, to our ears, and to infinity. The musicians provided the energy and gave it identity by their disparate and then collective intent and will.

But the music-atom is not only energized by 74 players. Each of them brought an instrument, made and honed by instrument makers and played for tens or hundreds of years, adding to the characteristics of the instruments. The artisans' energies and previous players are also in the music-atom - but invisible. The 800 or so audience also bring energy and intent to the music-atom, energy which they energetically multiply as their enjoyment and empathy increases - and each brings a history of the universe. The event is contained in an historic building, designed for human gatherings by Christopher Wren, and built with skill and intent by hundreds of craftsmen and women. The coherent, organised energies of all these people in turn relied on their antecedents, back to the first life forms. All parts ultimately cohere and manifest intent by dancing to the tune of the composers.

This entire music-atom for this short event is created by contemporary and historic energetic forces. It absorbs all these sources and strands of incoming energy and organizes and compresses them into an identifiable phenomena - which throughout all the complex interactions between the multitude of sub-atomic particles over time, retains its clear identity. The signals it sends are unmistakably and uniquely communicating the music-atom's existence. It is absorbing and dissipating energy via an identity pattern, a template which though shifting and altering split second by split second with every movement of every participant - is a persistent object /phenomena in the universe. It is extended in space and in time - almost infinitely (as far as humans can judge infinity).

Which lastly brings me to neutrinos. You will know that one USA university is creating a beam of neutrinos, described as the ghost of the ghost of a particle, and will fire trillions of them through 800 miles of rock to another university - which will measure changes in the neutrinos. Very little change is expected because of the trillions of trillions of trillions of neutrinos that the Sun emits (dissipates) which pass through planet Earth every split second, hardly any strike any other atom, sub-atomic particle, photon or electromagnetic wave. The music-atom in its most extended and complex existence is at all times experiencing neutrinos passing through. Perhaps the barely detectable collisions that do occur also carry data about the music-atom into the Aether-Matrix (which I insist exists) just as sunlight casts ephemeral shadows.

Imagine viewing this event telescopically from, say, Mars, and detecting the broadcast music; from which distance the Sheldonian might be compared to the size of an atom examined under a microscope in a laboratory. The whole would be fuzzy but with a distinguishable signature - the music. The individual orchestra players might be logically inferred from their interactions - each unique but very similar to each other; analogous to sub-atomic particles (the particle zoo). The audience would be a fuzzy but stable, larger but individually less energetic presence set in precise quantum orbits (electrons) around the nucleus of players. The two body's present mass/energy alone would not add up to the broadcast energy - would not be enough to explain the whole. The far larger number of past historic contributors, now dispersed, would be invisible but their energies as instrument makers, previous players and audiences, builders, composers etc. would inform the vibrations being broadcast in this 120 minute performance - the lifetime of the phenomena being observed. Additionally, adding to the mass/energy equation, the performance broadcasts into the future, as described above. And it is written of, remembered, recorded and replayed. All these actions are part of the total mass/energy of the music-atom.

A brilliant mathematician could compare the inflow of energy with the outflow of energy, which would perhaps balance. The phenomena would exist in a stream of smaller and less identifiable merging past, present and future events - where the players have learned the music; are drawn together to play; are organized by the music; and produce the music; in a unique performance.

GRAVITY - It is the balance of inflow and outflow, over time, while maintaining identity, stability and inertia within clearly defined variables and activities - say of the planet Earth or of one's own body that is my conundrum at the base of this orchestral analogy. I guess that all gravitating bodies (science assumes all things have gravity) are attractive due to a constant in-falling and equivalent out-flowing or broadcasting of energy, onto, and so from, their centres (centres from where we very accurately measure and calculate gravitational mechanics). [The in-falling could be caused by Hubble expansion.](#)

IF, this is true then a body such as the Sun, is maximally compressed at its centre - from which mass/energy must be emitted. We are fully aware of the out-flowing heat and light, presumed to mostly be caused by in-falling pressure; we know of neutrinos, emitted in their trillions every second. We know the Sun broadcasts its identity as a star across the visible universe - in the past, present and future (perhaps in all three time zones simultaneously), which requires huge amounts of energy. Do the energies and masses falling into the Sun, balance with those emitted? Is there an energy emitter at the heart of the Sun that draws in and expels mass/energy, constantly compressing down and pumping up mass/energy. Is this, manifest in all matter from atoms to galaxies, the pulse of the universe?

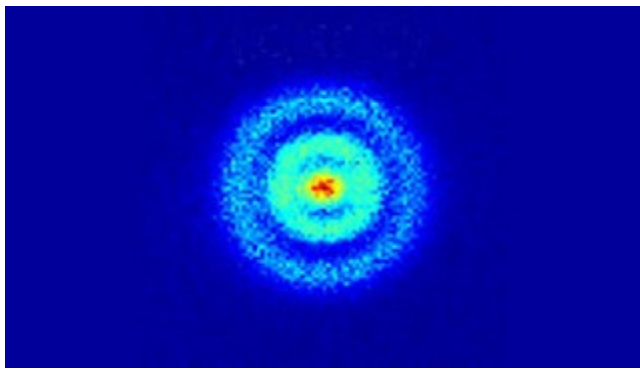
And ...from where does the Sun acquire its characteristic identity? Where do our bodies acquire their identity? Where are the invisible, Past, Present and Future energetic seeds and templates that confer shape, size, dynamic pulse, purpose, activities, inertia and lifespan to all things; ...and enable all things to exist, with identity, in the flow of pure energy. Each human is an organisation originating from the

first pulse of life (where ever it might have emerged) through the long past, to the present and into the far future, standing - or lying if you prefer to be horizontal - in a containing pipeline of pure energy, dynamically moulded by a template for our (unique) existence.

(Continued from 29th Nov 2013 [THE FIFTH FUNDAMENTAL FORCE & GRAVITY](#) ).

Friday, 29 November 2013

## THE FIFTH FUNDAMENTAL FORCE & GRAVITY



THE FIRST "PHOTO" OF A HYDROGEN ATOM  
NASA

Continuing the concept that all identifiable entities - from galaxies to humans to atomic particles - are dissipative bodies ( [GRAVITY MASS HIGGS AND BABIES](#) ) that throughout their existence draw in and send out energy; and which at base are formed as nodes in the waves of the as-near-to-infinite electromagnetic field (light), the essential stuff of the universe; I am exploring how this idea maps onto what I know of the almost-eternal, almost indestructible proton.

[Protons](#) are deemed to have lifetimes of billions of billions of years. Far longer lives than the puny [13.82 billion light years](#) age of our universe. Smashing protons together in cyclotrons such as at CERN, Geneva and analyzing the debris using ferociously complex mathematics, assumptions and physical Laws, indicates that the protons are made of 3 quarks (rhyme with corks) - 2 Up Quarks and 1 Down Quark (depending on which way up you are). Protons are electrically positive - stable, dependable and attractive. They are as near to the primary building blocks of matter as the ancient Greeks once did, and we do, imagine.

Most protons live at the centre of atoms, in the nucleus. Their positive charms and weight (mass /energy) are neatly counter balanced by equal numbers (often equal - sometimes not) of [neutrons](#) - which are electrically neutral - together with an outer cloud of negatively charged, almost but not quite mass-less [electrons](#) - which together balance the [nucleus](#) (nuclei are very difficult to break - hence "Nuclear" Bombs) and the whizzing nearly-speed-of-light electrons - to make an elemental atom - such as [hydrogen](#), [iron](#) etc. (there are about 130 elements in the Periodic Table).

Neutrons are also made of 3 quarks, but, free neutrons, outside nuclei, only exist or live for 10 to 15 minutes; compare this to the proton's eternity. Maybe neutrons are a stage in the dissipative expulsion of mass from protons.

HOWEVER - We digress. Neutrons will be revisited another time.

We "see" all things - we detect their presence and learn about them - through their broadcasts. All phenomena (things) radio their presence to us via waves of the electromagnetic spectrum (light). "Real" matter; planets, chairs, humans, grass, trees, gas, water; is made of atoms which rely on "heavy" protons. Due to such broadcasts of energetic, coherent, identifiable, data-packed waves, we know that all phenomena are dynamic - they pulse, they change, they are not fixed and static. Matter is calculated to be 4.9% of the universe. Matter is what we are made of and what we relate to. The other 95.1% is made of allegedly mass-less light /radio waves and mysterious stuff we do not understand, dubbed Dark Matter and Dark Energy.

(NB - THESE BROADCASTS, THESE ELECTROMAGNETIC EXPANDING SPHERES, THESE CROSS-HATCHED, INTERPENETRATING, DATA-RICH, LEGIBLE, IDENTIFIABLE, DYNAMIC, TIME-PERSISTENT, ENERGETIC, "VISIBLE" SIGNALS OR WAVES - COMPRISE THE BASIC STUFF OF THE UNIVERSE. THEY ARE "SPACE-TIME". THEY ARE THE VICTORIAN SCIENTISTS' AETHER. WHERE THE SPHERES CROSS, WHICH IS EVERYWHERE IN THE

UNIVERSE ON EVERY SCALE, WE DETECT PARTICLES WHICH ARE CHARACTERIZED BY THE FEATURES OF THE SPHERES. BY EXAMINING OR INTERFERING WITH ANY SUCH SPHERE, WE SIMULTANEOUSLY ALTER ALL THE PARTICLES DEPENDENT ON THAT SPHERE; AND EVERYTHING THE OBSERVED SPHERE RELATES TO.)

In terms of human existence - the universe is 95% empty space (though it is full of criss-crossing signals and energy - my Aether-Matrix [LIFE-FORCE - AETHER-MATRIX](#) ).

On this basis, protons are quite rare; they are a small part of the universe.

The protons in turn are made of [quarks](#) - which are the most primary, the most indivisible, the most fundamental particles we yet know. So, let's say quarks are the transition from "pure" energy (allegedly mass-less) to particles.

Weighing protons, it is found that the 3 quarks make up only 20% of the mass - 80% or more is missing; science ascribes this 80% to the energetic activity of the quarks on the basis that energy=mass ( $E=MC^2$ ). The quarks are dynamic. I think they are also dissipative.

So, completely stable, for billions and billions of years, detectable, measurable protons - being the majority of all matter - are made of dissipative, dynamic quarks. We detect the protons from their broadcasts. We isolate these pebble-like protons and fire them around cyclotrons. When they collide we find quarks. It is the quarks, I suspect, that continually receive and convert energy - the energy that protons and ultimately atoms broadcast to alert us to their existence (exist = stand out).

It is inarguable that atoms do broadcast signals - and yet might remain unchanged for millions or billions of years. What intrigues me is how the atoms - their constituent quarks - obtain or capture that energy to give them and maintain identity and to broadcast their presence. I think they wind it in from the field. ([See Expansion is Gravity](#)). If so, the quarks are at all times connected to the field and receive or commandeer the energy they require - and ultimately dissipate. They capture electromagnetic waves (light) and use it to build and maintain identity and to broadcast. In that sense, quarks are at the nodes of energy/light waves and reach out into the field - which being a field, fills the universe - connecting all quarks via the field to all other quarks.

I have not quite captured the concept I started to set down here. More thought and inspiration needed.

(NB - YOU AND I ARE ALSO DISSIPATIVE ENTITIES. SCIENTIFICALLY, WE SHOULD BE KNOWN AND MEASURED BY OUR UNIQUE COMPLEX IDENTITIES, WHICH PERSIST (INERTIA) DYNAMICALLY AND BROADCAST OUR PRESENCE, FOR OUR LIFETIMES. WE ARE MORE OR LESS INTELLIGENT AND FREE-WILLED; WE CHOOSE TO ABSORB ENERGY (OR WE DIE), SHAPE IT AND INTEGRATE IT TO REFLECT OUR UNIQUE IDENTITY, ALTER THE ENERGY'S FORM, DISCARD THE ENERGY (FOOD, LIQUIDS, AIR, SUNLIGHT, INFORMATION, IDEAS, OTHER PEOPLE'S DNA ETC) AND DO THIS MORE OR LESS EFFICIENTLY FOR 70 YEARS OR SO; UNTIL WE GET BORED AND DISINTEGRATE. EACH PERSON SHOULD BE THE MULTIPLE OF HEIGHT X LENGTH X BREADTH X WEIGHT X PROCESSED-ENERGY X RETAINED-ENERGY X TIME X UNIQUE PATTERN. THE UNIQUE PATTERN IS CURRENTLY BELIEVED TO BE DICTATED BY OUR DNA. I THINK OUR DNA IS IN TURN DICTATED BY OUR UNIQUE ELECTROMAGNETIC PATTERN - HELD IN THE AETHER-MATRIX. SO, SEEING US AS TIME-PERSISTENT ENERGY "TUBES", WHERE DO WE BEGIN AND WHERE DO WE END? IS THERE A CORRELATION OR AN ENERGY QUOTIENT THAT COULD DRAW A COMPARISON BETWEEN OUR ENERGY-EXISTENCE AND, SAY, THE ENERGY-EXISTENCE OF A PROTON? IS THERE AN INTEGRATIVE IDENTITY PATTERN FOR EACH AND EVERY PHENOMENAL EXISTENT, OVER TIME. IS THE INTEGRATIVE LIFEFORCE THE FIFTH FORCE, RANKING EQUALLY WITH THE FOUR FUNDAMENTAL FORCES?)



These connections between energetic nodes remind me of the connections between brain cells. I am also reminded by the concept of broadcasts - outwards from an energetic event, of Einstein's gravitational waves gradient where dimensions shrink exponentially as an object falls and accelerates through the gradients to, for example, a planet or star.

22 DEC 13 - I think primary particles might be formed as the successive horizons of the spherical expanding universe, "pure" energy expanding at light speed, or the waves of the electromagnetic spectrum (light for short) expanding (in 3 dimensions; think of being submerged), encounter the "edge" of the universe and thus the unimaginable non-space-non-time beyond and - being some-thing rather than no-thing the light waves cohere with themselves (do NOT expand limitlessly at infinite speed) and pause as they are drawn back by momentary partial vacuums in the "material energy field" behind. The drawing back creates the vibration and waves we know as the speed of light. The turbulence caused by this drawing back and expanding forwards, in an ever-expanding universe, creates complex 3- dimensional sheets or currents in the light-field. These vast ephemeral field currents act in a similar fashion to deep water (3 dimensional) currents. Where currents collide, vortices form - initially almost un-detectible but as they rotate (in an expanding field), the currents draw in more field energy and the "dancers' arms" system operates - thus the rotation accelerates, drawing in more energy (in an almost infinitely energetic light-field). There is no-thing to slow the rotation, which accelerates until a critical threshold is reached when what we recognize as a "surface" forms - an event horizon caused by expansion and rotation (pre-gravity) and inside the event horizon a primary particle is formed. It needs no "seed" around which to form, other than the minuscule ephemeral partial temporary (but persistent) "vacuum" of (proven) Hubble expansion. Thus a particle, perhaps a quark, is formed. It rotates at  $C^2$  and continuously winds in energy from a wide sphere  $E=MC^2$ ). So, we have a primary particle that spins straw into gold - But how does it dissipate??

25 DEC 13 - The dissipation, the outflow of energy, is evident from the fact that we detect such primary particles (this applies to the smallest detectable particles upwards) and from the fact that such particles interact or communicate with their surroundings. This requires energy to be emitted by the entity.

My guess is that all entities, from quarks to long lived protons to short lived humans, to stars are dissipative; existing, and manifesting identity, in a stream of energy. All are works-in-progress and all are dynamic. Particle physicists have "seen" or infer from cyclotrons that a proton is formed from 3 quarks - that somehow, we know not how, the combination of 3 quarks confers a half-life of billions of years on (on average on a collection of) protons. This immense inertia; this intent to survive with identity is not understood - or even addressed. However - when defining and analyzing phenomena of any size, science might include the lifelong-dissipative-stream of energy which the entities organize. Thus, a person is say, six feet tall, mostly water and carbon, with an occasionally engaged brain, plus a continuous stream of about 50 tonnes of food, liquids, gases and electromagnetic energy - that maintains their identity for, say, 80 years. The organization of the stream of energy is also a mystery; I call it the Lifeforce and rank it with the fundamental forces as the fifth force. I guess that the patterns, the templates for the diverse forms of existence are imprinted in the electromagnetic field and are ever changing - they are dynamic. Every detectable action and interaction broadcasts across the universal field, my Aether-Matrix - which is thus in-formed and re-formed. If a "thing" did not broadcast its presence - we could not detect it.

So - every entity, from proton to human, exists for what seems to us to be a finite lifetime, during which time it has identity. We can name it. Does the identifiable-lifelong-dissipative-stream of organised energy equate to the multi-dimensions discovered by mathematicians in their equations?

I am summoned to enjoin and enjoy Christmas day. Hubble expansion is still Gravity and as we have not found any centre for the universe - as Fred Hoyle once maintained, the single Big Bang remains a question not a fact. Happy Christmas.

(NB - MY ORIGINAL THOUGHT FOR THIS ARTICLE WAS TO INVESTIGATE GRAVITY AS A DISSIPATIVE PROCESS WHEREBY ALL MATTER COLLECTS ENERGY AND BROADCASTS (OTHERWISE WE CANNOT DETECT IT) THE ENERGY, IN A CONTINUAL (IF QUANTISED) STREAM OF IN-FALLING AND OUT-GOING ENERGY AND MATTER, WHILE THE GRAVITATIONAL OBJECT - SAY THE SUN, THE EARTH OR OURSELVES, RETAINS IDENTITY - FOR A TIME, FOR THE OBJECT'S LIFETIME. FOR THIS TO BE SO - ALL OBJECTS, ALL PHENOMENA MUST HAVE AN "ENTRANCE" AND AN "EXIT" FOR THE ENERGY FLOW. WE KNOW FROM NEWTON AND OUR CALCULATIONS FOR SPACE FLIGHTS THAT THIS FLOW TAKES ALL THE IN-FALLING ENERGY TO (PERHAPS THROUGH) THE CENTRE OF THE OBJECT. THIS IMPLIES A SINK HOLE AT THE CENTRE THAT CHANNELS THE ENERGY AND CONNECTS TO THE EXTERIOR (WHERE WE DETECT THE BROADCAST AND THUS RECOGNIZE THAT SOMETHING IS THERE). TO PURSUE THIS IDEA, WE COULD FOR EXAMPLE USE THE CALCULATIONS OF WHAT FALLS INTO THE SUN AND WHAT THE SUN DISCARDS - WHILE RETAINING ITS DYNAMIC IDENTITY - OVER TIME (FROM THE FIRST CONGREGATION OF SAY A COUPLE OF HYDROGEN ATOMS TO THE FINAL DISPERSAL OF ALL THE SUN'S ENERGY). I DO NOT IMAGINE THAT WE NEED TO INVOKE OTHER UNIVERSES OR OTHER EXOTIC CREATIONS TO TRACK THIS FLOW. WE DO NEED TO UNDERSTAND WHERE THE UNIQUE BLUEPRINT OR PATTERN OR IDENTITY FOR AN OBJECT IS HELD AND HOW IT IS INVOKED, WHILE ALL EVENTS AND ACTIVITIES IN-FORM AND RE-FORM THE ENTIRE AETHER-MATRIX).

(IMAGINE HAVING TUNNELED DOWN AND BEING AT THE CENTRE OF THE MOON OR ANOTHER INERT PLANET. WE THINK THAT WE KNOW FOR CERTAIN THAT THE ROCK WILL BE HIGHLY COMPRESSED AT THIS CENTRE - FAR MORE COMPRESSED THAN ON THE SURFACE. GRAVITY COMPRESSES STUFF. YOU ARE "DOWN" AND EVERY WAY OUT IS "UP". BUT AT THIS CENTRE OF GRAVITY IS THERE A BALANCED WEIGHTLESS ZONE WHERE ALL THE MASS OF THE SURROUNDING PLANET IS EVENLY DISTRIBUTED "ABOVE" YOU? AND THUS WILL THE MASS EXERT AN UPWARD PULL ON YOU? IS THERE A PLUGHOLE AT THE CENTRE WHERE ALL THE MATTER THAT MAKES THE PLANET IS TRYING TO FALL DOWN TO, TO SQUEEZE OUT /AWAY /TO LEAVE - A PLUGHOLE THAT DRAWS ALL THE MASS TO ITSELF; WHERE ALL MASS IGNORES ALL THE SURROUNDING MATTER AND SINGLE-MINDEDLY INTENDS TO THE VERY CENTRE (WHY?)? AND, IN THE IMPOSSIBLE PROCESS, COMPRESSES IT? IN THIS TUNNEL-CENTRE-SPACE, ARE YOU HEAVIER THAN ON THE SURFACE? THE SAME? OR LIGHTER? ARE YOU COMPELLED TO SEEK THE WAY OUT?)

Space-Time - 16 January 2014 - Stuart Clark, Warning Light, page 31, [New Scientist](#), 4 Jan 2014, ponders the make up of space-time. I think it is the Aether-Matrix, which is or are spheres of all sizes from the Planck minimum to the Observable Universe, each structured by a unique rendition of all the signals in the universe; signals small enough to register in that size of sphere. Imagine the first such signal was a single bland wavelength of light, the potential electromagnetic spectrum, expanding from the Big-Bang into the pre-universe "No-Thing". This single type of light was Space-Time. It developed complexity (as I've described elsewhere) and matter ([as I've set out elsewhere](#) - Straw into Gold). These complex diverse phenomena made their existence known by broadcasting signals - now in various wavelengths and strengths.

**Proof?** Wherever we set up an observatory anywhere in the universe, from a single eyeball to infra-red radar microwave arrays, the observatories see the entire universe, drawn by cross-hatched wavelengths from all the phenomena. With sufficiently sensitive instruments, in every such sphere we can "see" or detect immense galaxies on the horizon of the universe down to mobile phone messages. All these broadcasts are detectable, decipherable and coherent in all the imaginable spheres - and each set is unique, due to

scale and angles of observation. These immensely complex and robust light waves are, I think, Space-Time. They are the essential "stuff of the universe" from which, in which and upon which all matter and information bestrides the firmament. The universe is made of light which manifests in every possible form, including the Aether-Matrix which supports or builds gravity and inertia.

The Event Horizon concept was partly created, along with the Big Bang, by Prof. Fred Hoyle, after he reneged on his stoutly defended idea of particles of matter constantly emerging in every part of the universe. Is Prof Stephen Hawking now, at last, seeing The Light and will Fred Hoyle's coherent shade, now and forever after wandering the electromagnetic field, recant his recantation and allow science to free itself from the intellectual constraints imposed by the reductionist logic of The Big Bang?

## NATURE MAGAZINE

### Stephen Hawking: 'There are no black holes'

Notion of an 'event horizon', from which nothing can escape, is incompatible with quantum theory, physicist claims. [Zeeya Merali](#) 24 January 2014

Wednesday, 9 October 2013

## SIMPLY THE HIGGS



### Death of the Higgs.

SADLY:- [The HIGGS does not confer mass, says CERN](#); at least not much mass "approximately a fingernail of mass compared to the whole human body"

★ ★ ★ ★ ★

Higgs boson scientists win Nobel prize in physics [By James Morgan Science reporter, BBC News.](#)

Two scientists have won the Nobel prize in physics for their work on the theory of the Higgs boson. Peter Higgs, from the UK, and Francois Englert from Belgium, share the \$1.2 M prize. In the 1960s, they were among several physicists who proposed a mechanism to explain why the most basic building blocks of the Universe have mass. The mechanism predicts a particle - the

Higgs boson - which was [finally discovered in 2012](#) at the Large Hadron Collider (LHC) at Cern, in Switzerland.

I have written several articles on The Higgs Boson and the Higgs Field and read many others, but I still have no grasp on what it does or how it is alleged to work "adding mass to massless particles"; particles that combine to make atoms, that make the universe. [HIGGS BOSON ARCHIVE UPDATE SEPT 2013](#)

For example, here from Huff Post is one of the more accessible descriptions: By: Natalie Wolchover Published: 07/03/2012 07:58 AM EDT on Life's Little Mysteries [Huffington Post July 2012 explanation of The Higgs](#)

I do not find it comprehensible or clear, but it is slightly clearer than other explanations I've read.

As a hobby - over the last 50 years I have been reading popular science and slotting the information into my own TOE or Theory of Everything. In the 50 year process I have become wary of theoretical mathematical physics - including I am afraid being now suspicious of The Big Bang, Inflation, Multiverses, String theories with limitless dimensions, Branes, and doom laden extrapolations from thermodynamics of our inevitable Universal Heat-Death.

The Standard Model (of the atom) even with The Higgs Particle, is still missing 80% to 90% of its mass (weight /energy). Galaxies, such as The Milky Way, are missing 90% of their mass. The foundations of our measurements and calculations, The Universal Constants, are probably not constant. We do not understand gravity, inertia (what keeps things in place), Blackholes (if they exist) or how your mobile phone waves /signals retain their coherence, data and identity in a universe seething with powerful radio signals. We have no understanding of Life - and science still treats life as an inconvenient truth; an anomaly. The Higgs Boson lives for a billionth of a billionth etc of a second before disintegrating into two (allegedly massless) photons. So, in constructing theories of everything, there is still everything to play for. It is as valid to describe The Universe in words as mathematically.

I picture an evolving, so ever-changing universe, which emerges and exists (stands out) in a field (no parts) of light waves. Light is a visible small part of the complex electro-magnetic spectrum. Everything, including ourselves, is made of light; we see this when we explode uranium - in a brilliant flash of light. We can explode material things but the deepest mystery is how is light compressed to make particles. Did matter emerge only once, at the beginning, or is it a continuing process? I hope The Higgs addresses this question - but so far, I haven't found a description that makes the link, in terms I can understand. Now that the two main Higgs theorists have found their particle - and deservedly received their prize - would they be so kind as to take up Einstein's mantra **"If you cannot explain it simply - You haven't understood it well enough"** and simply explain the life and times of the elusive Higgs Boson and its invisible, undetectable field.

On the other hand an equally famous physicist and teacher said: [If I could explain it to the average person, I wouldn't have been worth the Nobel Prize. Richard P. Feynman](#)

[HIGGS BOSON ARCHIVE UPDATE SEPT 2013](#)

PS - Article from New Scientist Magazine - This accords with [my TOE](#), as it might be part of the answer as how light is compacted into primary particles - requiring minimal energy. I emailed it to an expert on atmospheric refraction.

*2 OCT 13 NO GRAVITY REQUIRED: This experiment bends light into a black-hole-equivalent, via refraction. As black holes have masses of gravity (and thus matter), is this how light converts to matter? Or is it still the job of the Higgs Boson /Field? Is refraction a cause of star light bending as it skims the Sun's "atmosphere" - traditionally ascribed to gravity? Best wishes - Noel*

[Light-bending black hole mimic is first you can watch](#)

Saturday, 7 September 2013

## GRAVITY MASS HIGGS AND BABIES

Death of the Higgs.

SADLY:- The HIGGS does not confer mass, says CERN; at least not much mass "approximately a fingernail of mass compared to the whole human body"

Letter to New Scientist - 7th September 2013.

Jon Butterworth's Instant Expert -The Higgs Boson, New Scientist, 7 Sept 2013, is the clearest article I have read on The Higgs; and gives a good short summary of The Standard Model. He asks "What makes matter"?

My view is that there is no unbridgeable divide between energy and matter, micro and macro, there is a single universe and an organising principle which manifests in life forms and all phenomena - The LifeForce.



34 WEEKS, 2 TRILLION CELLS  
AN ENERGY DISSIPATIVE ORGANISM  
DO WE IGNORE "THE LIFEFORCE"?

Our daughter had a 34 weeks - premature baby 11 days ago, which reminded me that a single fertilized ovum or cell, the size of a typed full-stop, drew energy from the mother to create and organize 2 trillion more cells and make a (very beautiful) new 4 lbs 10 oz life-form. He will grow into a 100 trillion celled, hairy 6ft 2in rugby prop forward and then an old man, like me; in the process of, say, 80 years, consuming 70 tons of food (energy) and several tons of air (energy) and an allegedly weightless amount of sunlight (which logically is not weightless). But, he will remain identifiable, as his template concentrates and dissipates these tons of energy.

It seems to me that all phenomena of every size, from Quarks to galaxies, are similarly dissipative organisations, governed by ever evolving universal templates. Where are these templates? I now think they exist and persist as data-dense (far more data-dense than DNA), legible radio (electromagnetic /light) waves in what pre-Einstein science called the Aether and which I now refer to as the Aether-Matrix.

The sentient baby "confers mass" on the energy it collects and integrates (all food is compressed sunlight) and dissipates, retaining enough energy to maintain its identity and integrity for 80 years – while every event in its body

and brain, from quantum events, to thoughts, to punching the referee, are broadcast into the Aether-Matrix. These broadcasts are as legible and coherent as cell-phone signals, as TV and radio signals, as supernova signals. As they expand as globes from the site of any energetic event, these waves intersect with each other and with existing (older) waves in the universal energy field. These waves enable us to "see" the underlying event, the phenomena that caused the waves – from blazing Suns, quarks or so-called single photons – we do not "see" the object, we detect/ receive its signal.

There is nowhere in space-time, in the entire universe, however apparently empty it may be, where we cannot see the entire universe, to the limits of our instruments. In any space sphere, from Planck's minimum to the Observable Universe, each sphere is filled with a unique, "holographic", radio-wave, data-dense "picture" of the whole, limited only by the size of sphere compared to the wavelengths observed. These holographs of cross hatched electromagnetic waves, constitute the Aether-Matrix,



and, I think, hold the templates that govern and in-form phenomena. Where the waves intersect, sub-atomic particles are formed; the type of particle we find at any such node depends on the characteristics of the waves. By following the creation by propagation of such particles, we trace a path and "see" a speeding particle - which is in fact a wave front. It is the gaps between waves and thus between nodes, that we define as the black-body quantum leap.

As the baby broadcasts its presence, its signals in-form and re-form the dynamic, ever evolving Aether-Matrix. These radio forms reach to the limits of the universe and in human terms are eternal and remain legible "until the end of days".

To complicate our view of the holographic Aether-Matrix and phenomenal universe, the whole is subject to Hubble-Expansion at every scale. If The Standard Model is, more realistically, re-imagined as consisting of broadcast electromagnetic spheres intersecting, instead of as particles, then Einstein's spooky action at a distance, entangled particles, and our inability to observe without altering the particles, is perhaps explicable as the data-dense waves propagate at light speed and illuminate the intersections (make particles) which we currently interpret as particle paths. Observe (interfere with) any part of the wave-sphere, perhaps just "one-photon" strong, and the entangled particles will instantly change on each side (at any point) of the propagating sphere as we alter the wave form.

If all phenomena are collections of ephemeral nodes of intersecting energy waves, how is a screwdriver constructed and made to retain its hard fixed form, identity and integrity for, say, 10,000 years? Tangible, macro "real" objects, such as ourselves, have inertia (and gravity). They and their constituents resist change, despite inevitably slowly changing moment by moment - inertia resists rapid change. The observable universe resists change; despite constant change the night sky is reliably pretty much the same night after night, millennium after millennium. How pure energy (light) converts to, say, uranium, is THE central mystery for the Standard Model; how is straw spun into gold? Experiment tells us that uranium is made of light - we see it when we blow up the element in atomic bombs. We can disintegrate elements - elements as small as protons, in the LHC, but we are not able to integrate them. [My view is that at the base of all sub-atomic](#) particles, maybe quarks or even smaller, are the primary particles "fractals" which are revolving, tornado-like vortices; throughout all space. A primary vortex is formed by Hubble expansion, drawing light into a partially evacuated sphere. The light waves collide, spin and create matter - a vortex of matter is formed by in-falling light maintaining a partial vacuum (gravity) whose spin creates a revolving surface that repels other fractals; between these two forces inertia is created. [Thus straw is spun into gold.](#) The fractals spin, align, pull, push, integrate and disintegrate to form, maybe quarks (currently thought to make protons etc). Science proves that protons persist for tens of billions of years - and from them we make screwdrivers; which on human time-scales appear to be solid, unchanging and permanent. But, the (data-dense) energy waves, that make the fractals, are moment by moment re-formed and in-formed by all events in the universe. We sentient beings are all also re-formed and in-formed moment by moment by these forces. Inertia is subject to evolution and it is in the underlying dynamic energy field (Higgs field?) that we can seek the templates that hold the data to make stuff - such as DNA - that makes the blueprints for babies.

It seems to me that like my grandson, all phenomena are dissipative systems, absorbing and emitting energy, organized and governed by universal data-dense templates (maybe Higgs Field) which confer mass and persistent identity. These templates are intersecting electromagnetic broadcasting spheres which science can detect. We humans are built from or by these forces, as are sub-atomic and all phenomena. Because we are made from "the stuff of the universe" and are sentient – we have the capacity to eventually understand it.

I think that The Standard Model needs to be considered in the context of Hubble-expansion, the Lifeforce, the wave formed Aether-Matrix, and babies (who do choose to be born), whose brains, as far as we know, are the most complex entities in the universe.

Noel Hodson, Oxford.



Monday, 5 August 2013

## LIFE-FORCE - AETHER-MATRIX

To Letters at New Scientist 5 Aug 2013.

REALITY CHECKED – MICHAEL BROOKS – NS 3 AUG 13.

### Quantum weirdness: The battle for the basis of reality

- 05 August 2013 by [Michael Brooks](#)
- Magazine issue [2928](#). [Subscribe and save](#)
- For similar stories, visit the [Quantum World](#) Topic Guide

As for the past 50 years, I am most grateful to New Scientist's excellent contributors who translate, condense and interpret the impenetrable papers of deep science and render it accessible to me; as does Michael Brooks on 3<sup>rd</sup> August, writing on entangled photons and quantum conundrums.



THE LIFE-FORCE CONDENSES & ORGANIZES HEAT.

Starting, as Michael Brooks does, with half-mirrors or beam-splitters, which create two entangled outgoing photons from one incoming photon; it is surely time for a new perspective of the 100 year old puzzle of "spooky action at a distance". It is explicable if the energetic causation event is, as we know it in fact is, a radio broadcast which creates an expanding sphere of identifiable, thus data carrying, waves which expand into a pre-existing structured Aether-Space-Time energy field (Aether-Matrix). Similar to the telephone and electricity carrier waves along wires exciting in-situ electrons, the expanding sphere (say one photon power) excites in-situ nodes in the Aether-Matrix, which like stem cells can be moulded to a variety of identities; depending on the information in the expanding, energetic wave-form sphere – in this case forming those virgin nodes into what we observe as photons. Thus, at any point on or in the

expanding sphere, when we look, we see photons. We find photons on one side of the sphere apparently moving but in fact propagating and illuminating nodes in situ at the speed of light; and equally find photons on the opposite side of the expanding sphere propagating at the speed of light in the opposite direction. These photons are in fact apparently moving apart at twice the speed of light, though what is moving are the broadcast waves from the original event. The broadcast is what we observe - the broadcast is what we "see" that informs us about the particle (or of any phenomena in the universe).

When we observe or measure a "photon", or any similar sub-atomic particle, we are actually intercepting and impacting the radio (light) broadcasting sphere. Our interception changes the characteristics of the expanding waves - and thus of the equal and opposite "entangled" particle that is racing away from its twin at twice the speed of light. They are both travelling in opposite directions at the speed of light. We

alter the wave on one side of the sphere - a field - which immediately changes the waves on the other side. - QED.

For virgin nodes to exist in the Aether-Matrix, in the “pure and formless” energy that most physics insist underlies all phenomena, we can imagine, and find in fact, intersecting broadcast spheres of waves from all phenomena, from every energetic event, from sub-atomic to super novae to human thoughts. It is these almost infinite numbers of intersecting waveforms that structure the universal Aether-Matrix fundamental energy field – which science has omitted to factor in since Einstein. The Aether-Matrix is constantly in-formed and re-formed by all events – and because it is a field, not bounded, the information is available in all zones of the field. Let’s celebrate the not so dumb Victorian’s Aether.

Because the Aether-Matrix irrefutably exists – it must, to conduct the propagation of your favourite episode of Coronation Street to the horizon of the observable universe; and all the great thoughts of the whole human race and our vitally important mobile phone messages – and because of Hubble Expansion - the mathematics of an original energetic event impacting on eagerly anticipatory virgin-nodes as spherical broadcasts passing at (propagating at) the speed of light spin the nodes on their axis as the universe constantly expands; are complicated. Not hidden, not unknowable to we humans who are ourselves woven from this stuff; not requiring an infinite number of universes and indefinable dimensions, but very complicated. But then, so are our brains very complicated – and there are billions of us - so we are probably up to the task. More thought is required.

Michael Brooks’s report on non-causality using the deceptively simple but logic-maze-like Bob and Alice interactions, simply panics me as did; *3 men with two buckets fill a bath in 4 days how long will it take... etc* when I was five years old. So I will simply rely for now on human common sense – reliable because we are made of the mysterious stuff of the universe - that time flows forwards and events do have causes, and that we act wilfully and sometimes consciously and occasionally intelligently.

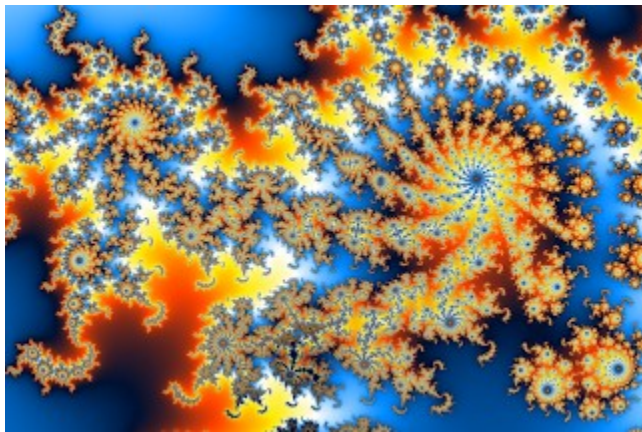
In between the spooky photons and the time travelling non-causal random sub-atomic world, Michael Brooks slips in a piece of utterly reliable, rock solid science – The Laws of Thermodynamics. I have no difficulty accepting that heat always flows from hot things to cold things everywhere in our extraordinary universe (let’s exclude black-holes for the moment). What is missing from these heat-flow theories however is the most obvious and most ignored fundamental force in the universe – The Life Force. We see it everywhere, but we dismiss it as an anomalous exception, an embarrassing temporary interloper that science has pitched out into the Exterior Darkness Where There Will Be Weeping and Gnashing of Teeth. We have told the messy, intrusive Life-Force to Go to Hell. I recently looked at human conception and birth: a single fertilized cell multiplies itself in nine months into 2 trillion cells and organises itself into a human baby. Apart from the mind-boggling organisation involved – making 2 trillion cells requires collecting a lot of heat. Life condenses heat. The heat flows from cooler environments into warmer ones. In space, vast clouds of freezing cold gases comprised of shivering isolated little atoms drift together to make enormous stars that burst into flames, plasma and super-novae at temperatures beyond our imaginations. There is no scientific evidence that the “natural” or end state of our universe is a cold featureless soup – as allegedly forecast by the Laws of Thermodynamics. There is a mass of evidence to the contrary. Stuff in the universe from the merest wisps of quarks to colliding galaxies and at all stages between organise into structures and condense heat. The conditions for creation are the natural order of our universe. From these ever occurring hot-spots Life emerges. The Life Force is not factored into quantum theories. It is time it was.

There are other forces and phenomena that science chooses to bone-headedly exclude. Perhaps we humans are limited in the speed of our cooperative intellectual processing and absorption of and manipulation of new information and comprehension. The Greeks knew a thing or two; including that the Sun orbited the Earth – then 2,000 years later Renaissance thinkers risked burning at the stake to say the Planets go round the Sun; Isaac Newton figured out gravity and 400 years on we found the ancient Greeks were a bit right about atoms. Pause for breath, rest and reflection – and the next phase will come. But for now, to work our way through the blockade that The Quantum Theory posits – at least factor in **The Aether-Matrix** and **The Life Force**. They are both logically undeniable and scientifically testable. We need these new perspectives. PS - My big TOE, my Theory of Everything, is a speculation based on another largely ignored major factor that is probably a universal constant, **Hubble Expansion**.

Named EIG - Expansion is Gravity; it is a theory to tackle the riddles of Gravity, Dark Energy and Dark Matter. [http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

Friday, 28 June 2013

## THE DYNAMIC GAIA UNIVERSE



ORDER - FROM CHAOS THEORY  
MANDELBROT SET

28 JUNE 2013. HOW THE UNIVERSE WORKS – “Dynamic” comes from the Greek for power and energy and is now understood as being energy in motion – energy at work. “Dynamic” is attached to dozens of concepts including many scientific disciplines, such as [Quantum electrodynamics](#), [a description of how matter and light interact](#); a definition which also cites “quantum”, possibly the most overused, abused and misunderstood word in the Sci-Fi dictionary.

“Constants” – particularly universal constants, in science refer to the most

reliable factors underlying or governing the 4 fundamental forces and their interactions. Mathematicians brew their magic potions based on the main constants and the fine-constants that seem to magically exist in Nature’s or God’s Universe and to equally magically interrelate and interact to provide “The Goldilocks Conditions” which are precisely just right to create the universe and living conditions for the very fragile human race. Constants are claimed to be just that – constant, unchanging, reliable, unquestionable and, for lazy thinkers, God Given.

But, they are not. Constants are neither constant nor mystically ordained. All scientific and mathematical constants are measurements made by humans.

E.G. Constants:

Pi, the endless number  $\pi$  results from dividing the circumference (outline) of a circle by its diameter (centre edge to edge line) which is  $22/7 = 3.142...$  receding endlessly as far as anyone or our computers can calculate. Magically inspired? No. Ancient Greek scientists drew hundreds of circles, drew lines through their centres and measured. Eventually they agreed that the ratio between the lines in all circles is 22 divided by 7 – and unfathomably ascribed the 16<sup>th</sup> letter of their alphabet “P”, written  $\pi$  which also means the number 80.

Other ancient Greeks measured thousands of triangles and concluded the 3 angles always add to  $180^\circ$  – except that they don’t; other than on flat surfaces which don’t exist on curved planets.

The universal gravitational constant was famously discovered by the genius Isaac Newton (1642-1727) who arrived at it by measurement and calculation – the force of gravity is now counted in “Newtons” which is the weight of a small apple.

Max Planck (1858-1947) – who we can blame for the word “quantum” and who from measuring heat from lumps of iron (black body radiation) discovered or defined the smallest possible object in the universe,  $1.61619926 \times 10^{-35}$  metres (0.0 with 34 zeros before the 16161 etc) across, when measuring heat flying off hot irons. He realized the heat came in steps or chunks, not in a smooth gradient as

expected, and said the steps were quantities or “quanta” which became quantum – and then the smallest quantum became the energy of a single photon.

The fantastically accurate atomic clocks, used to coordinate telecoms satellites and to demonstrate Einstein’s General Relativity postulate that time mysteriously slows on accelerating objects and in heavier gravitational fields (acceleration = gravity), evolved from ancient timekeepers, which in turn were matched to observations of the Earth orbiting the Sun in 366 days, amended to 360 degrees /divisions of a circle and The Globe for arithmetical convenience. Most globes have 36 lines of Longitude, 360/10. Clocks and maps both use units of minutes and seconds – atomic clocks use nano-seconds and smaller units, all evolved from counting the days and hours. A “second” is currently agreed to be [9,192,631,770 of atomic transitions in caesium](#) – which is not a universal constant, as time is proved to be relative – but it is a mathematical constant – man made as are all constants.

FLAT, OPEN, CLOSED, EXANDING, SHRINKING, SADDLE-SHAPED, INFINITE UNIVERSES – Science debates all the possible beginnings, ends, shapes, sizes and possibly infinite numbers of universes. Applying the Universal Constants to their sums, most scientists gloomily believe, with religious fervour, in the ultimate death of the universe, citing the 2<sup>nd</sup> Law of Thermodynamics (based on Victorian steam engines) as inevitably leading to all things and all energy spreading out into a featureless cold soup of evenly spaced zero temperature (-273C) inert particles. *“All is vanity. All is futile. It is all for nought”*. They are wrong. 13.7 billion years of experience ought to tell them that dynamic energy and electromagnetic gravitational particles don’t follow their mathematical constructs; particularly calculations based on 80% to 90% unknown “missing” matter at both the sub-atomic and the galactic levels.

As Einstein demonstrated in his now proven Relativity theories, and as Lovelock theorises about Gaia’s feedback mechanisms here on Earth, it seems to me that all factors – at the micro and macro ends of the scale – are related. All energies and objects are relative and as the relationships change, so do the Universal Constants. Press one Universal Constant down hard – and another one rises. There is, I think, only one single universe which contains all phenomena from house bricks to Higgs to heaven and hell – and all things ephemeral. The Universal Constants shift as the universe evolves. It evolves through feedback from all emergent phenomena, all interactions and all data signals. Just as DNA has recently been discovered to be incredibly data-dense, far more so, I believe, are all the radio, electro-magnetic signals (Light) by which we know the universe. From the tiniest photons to the greatest supernovas to our neighbour’s brain, we would have no knowledge of them unless they electro-magnetically broadcast their presence. In that sense, everything has life, everything is evolving and, I aver, everything has meaning.

Whatever the universe does – expands, shrinks, turns somersaults, the Universal Constants alter, interact and manifest in the next generation universe. Energy, by its nature, does not do nothing. The fundamental “pure” energy of the universe is restless, probably sentient and has proved, for 13.7 billion years to be highly creative. To scotch the depressed heat-death prediction, science needs to ask itself about the unacknowledged force or forces that create life. Where does the organising Lifeforce, which creates organisms such as the human brain – and scientists – fit with the recognised four fundamental forces – Gravity, Electro-Magnetic, Weak Nuclear and Strong Nuclear forces?

What part do we humans play in the evolution of our one and only universe, where as far as we know, we produce the most complex thing in the universe, the human brain – which is the organisation of 10 billion brain cells, 10 trillion brain connections and 100 trillion body cells – which all purposefully functions? While our weak and feeble bodies only last for 70 years or so, I conjecture that from conception to disintegration we broadcast our presence – otherwise how could we be seen by others – by emitting light waves /radio broadcasts that like all radio waves propagate across the whole universe – and, logically, in-form and re-form the universal energy field/s. Our data broadcasts are almost eternal – like all such signals. We will not be eradicated by faulty extrapolation of the 2<sup>nd</sup> Law of Thermodynamics. It is a dynamic universe.

## THE LIGHT FANTASTIC – 20 MAY 2013

I badly need light beams /light waves /photons to have rest-mass; which all of respected and accepted science denies.

Maybe the conundrum is in the way we express ourselves. Since rejecting **The Aether** around 1900, science has determinedly talked of “empty-space” /the void /the space-time vacuum and made fabulously correct calculations on that assumption. But space is not empty. There is nowhere, no location large or small, in this or any other imagined universe that is not criss-crossed, cross-hatched with ever changing, legible electro-magnetic light radio waves. Every possible sphere, large or small, seethes with data-carrying, energetic, stable, permanent, visible and legible signals, broadcast by every phenomenon, large or small, from single electrons to brain-waves to colliding galaxies. It is these signals that enable us via our instruments to see the universe. I think these waves and photons have energy /mass and create the dynamic structures that create dynamic inertia. I think the Victorians were not wrong; I now call it [The Aether-Matrix](#).



COMING SOON - SUNJAMMER 2014  
NASA'S SOLAR SAIL DRIVEN BY SUNLIGHT.

If “weightless” photons are the primary particles - they are not massless – they must have rest-mass. Many articles state that gravity has no effect on photons /Wavicles – but the famous observation of a solar eclipse, to prove Einstein’s theories, was of light from distant stars being curved by the gravity of the sun. Was that solar gravity tugging light beams or were they merely massless photons travelling through “curved space-time”?

But, the “weight” of sunlight has been demonstrated: (e.g. **The difference**

between Lebedev's contraption, called a Nichols Radiometer, and the failed Crookes' set up was Lebedev's panels twisted on their string even in a complete vacuum. When the other contraption was totally evacuated of air, the paddles stopped. In the absence of any other force on the paddles (including heat), Lebedev finally proved that it was light pushing the paddles around.)

Four years ago while attending physics classes, I thought I read on the internet (and made notes of it) that Mathematician [Mitchell Feigenbaum](#) ascribed a rest mass to the photon of  $10E-49$  grams. I cannot now find the article I read – nor any mention of  $10E-49$  grams. Contrariwise, internet searches now tell me, a thousand times over, that photons have no rest mass. I might even start to believe it.

The solar wind does however have weight, often referred to as the pressure of sunlight. This “wind” that streams the tails of meteors and comets away from the sun does contain particles other than “massless”



photons, such as neutrinos – and presumably hydrogen and helium atoms expelled from the sun. But it is mostly photons. NASA has announced the [\*“2014 Sunjammer mission which will deploy a sail that measures approximately 38 metres along one side with a total surface area of around 1,200 square metres, or a third of an acre. That’s seven times larger than any solar sail tested in space to date.”\*](#)

Citing, yet again,  $E=MC^2$  each gram of photons must compress or empty or attract energy from the ever Hubble expanding, basic, all pervasive electromagnetic field; in today’s values (2013) clearing a volume of a sphere in “empty” space with a diameter of 500,000,000 meters or 500,000 kilometres (**575,805,138.9118680 meters**) and compacting the light to make a rest mass of 1 gram.

1 gram of photons at my imaginary rest mass represents ten-thousand-billion-billion-billion-billion photons. So a single photon needs to collect the energy from a sphere of  $6E-38$  metres diameter; at current 2013 values (as my universe is dynamic not static and changes with time) of the energy that “empty” space contains. That is a surprisingly small sphere – so I wonder if my arithmetic is awry?

The essential search here is for the mechanism that turns pure energy into matter – and confers a reliable life span on the matter and the things it builds – say three-score-years-and-ten on a not totally repellent, complex walking sack of saline solution, such as me, for example. We are searching for the magic that converts ephemeral, insubstantial straw into solid, long lasting gold. Every subatomic action in every passing micro-second in every one of my 100 trillion cells – and all of the cells’ interchanges and co-operations – and the signature signals from the whole (person) broadcasts into the field of the Aether-Matrix and thus informs and reforms the energy field.

If a photon is the product of intersecting light/ radio waves at a place or focus that compacts energy from the surrounding field, such entities subsist everywhere. Each photon draws and holds the energy of a measurable sphere which logically must for a time contain less free-energy – the existence of a photon attenuates the space around it – it exists in a partial vacuum. I envisage the particle as a spinning vortex, a whirlwind, winding in the light field, creating a surface, with compression within and relative vacuum without. The relative vacuums “attract” and the spinning surfaces “repel” – creating dynamic inertia.

The orientations of such transitional phenomena, as they combine, may account for magnetic dipoles and monopoles.

Light does not “travel”. Light does not “speed”. Light propagates. The energetic event we observe as light is an event that passes energy from light wave to light wave – at 300,000 KPS which is (so far) a basic quantum of our universe. This is the medium that propagates light, in wave formations that we do intuitively understand (because we are made from this stuff) and see in water, gases and all materials – even in rock. As the energy travels or spherically broadcasts it stimulates in-situ photons that we can then see – whatever the carrier wavelength. Thus the photons, in spheres surrounding an energetic event, might appear to be travelling faster than  $C$  300,000 kilometres per second.

As the spinning entities we name as photons combine, they make other particles, a myriad of particles to which we ascribe a myriad of new names and properties. And the photons disappear into the transformation.

That’s it for now; I have written down part of what was in my head – until I realise how wrong this article is and revisit to correct it.

[PHOTONS - UNIVERSAL BUILDING BLOCKS](#)



## CREATURES OF LIGHT

### Massless particles [\[edit\]](#)

Massless particles have zero rest mass. Their relativistic mass is simply their relativistic energy, divided by  $c^2$ , or  $m(\text{relativistic}) = E/c^2$ .<sup>[25][26]</sup> The energy for photons is  $E = hf$  where  $h$  is [Planck's constant](#) and  $f$  is the photon frequency. This frequency and thus the relativistic energy are frame-dependent.

If an observer runs away from a photon in the direction it travels from a source, having it catch up with the observer, then when the photon catches up it will be seen as having less energy than it had at the source. The faster the observer is traveling with regard to the source when the photon catches up, the less energy the photon will have. As an observer approaches the speed of light with regard to the source, the photon looks redder and redder, by [relativistic Doppler effect](#) (the Doppler shift is the relativistic formula), and **the energy of a very long-wavelength photon approaches zero**. This is why a photon is *massless*; this means that the rest mass of a photon is zero.

### Massless particles contribute rest mass and invariant mass to systems [\[edit\]](#)

Two photons moving in different directions cannot both be made to have arbitrarily small total energy by changing frames, or by moving toward or away from them. The reason is that in a two-photon system, the energy of one photon is decreased by chasing after it, but the energy of the other will increase with the same shift in observer motion. Two photons not moving in the same direction will exhibit an [inertial frame](#) where the combined energy is smallest, but not zero. This is called the [center of mass](#) frame or the [center of momentum](#) frame; these terms are almost synonyms (the center of mass frame is the special case of a center of momentum frame where the center of mass is put at the origin). The most that chasing a pair of photons can accomplish to decrease their energy is to put the observer in frame where the photons have equal energy and are moving directly away from each other. In this frame, the observer is now moving in the same direction and speed as the center of mass of the two photons. The total momentum of the photons is now zero, since their momentums are equal and opposite. In this frame the two photons, as a system, have a mass equal to their total energy divided by  $c^2$ . This mass is called the [invariant mass](#) of the pair of photons together. It is the smallest mass and energy the system may be seen to have, by any observer. It is only the invariant mass of a two-photon system that can be used to make a single particle with the same rest mass.

Since sunlight has energy, it also has a mass associated with it as indicated by Einstein's famous equation  $E = mc^2$  or  $m = E/(c^2)$ .

An elementary textbook says the sun converts  $4.2 \times 10^9$  kg of mass to energy every second. Using this number, we can estimate the amount of energy (mass) from the sun hitting the earth by calculating the fraction of the entire solid angle the earth intercepts as seen by the sun. Since the diameter of the earth is about  $1.3 \times 10^7$  m and it is  $1.5 \times 10^{11}$  m from the sun, it subtends an angle of about  $8.7 \times 10^{-5}$  radians. If we square this angle and divide by  $4\pi = 12.6$ , we get the solid angle fraction subtended by the earth, which I calculate to be about  $6 \times 10^{-10}$  of the entire solid angle. Multiplying this by the  $4.2 \times 10^9$  kg burned by the sun every second and we obtain 2.5 kg/s as the mass of the photons (light) from the sun striking the earth every second.

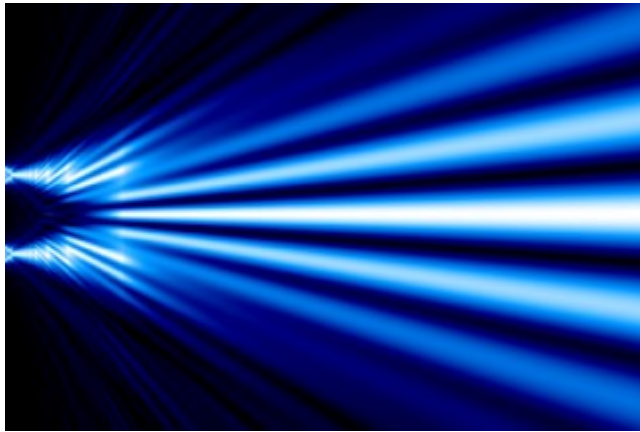
There is another way to guesstimate this number using the rough estimate of 1 kW/m<sup>2</sup> as the energy of the sunlight striking the earth. Multiplying this by the area of a disk with the area of the cross section of the earth ( $\pi \times R^2 = 1.3 \times 10^{14}$  m<sup>2</sup>) gives  $1.3 \times 10^{17}$  J/s. Dividing this by the velocity of light squared ( $c^2 = 9 \times 10^{16}$ ) gives 1.4 kg/s. I consider this to be in excellent agreement with the figure of 2.5 kg/s obtained above.

Please let me know if you find this less than clear or would like more information or explanation.

Best, Dick Plano, Professor of Physics emeritus, Rutgers University

Sunday, 12 May 2013

## PHOTONS - UNIVERSAL BUILDING BLOCKS



THE DOUBLE SLIT EXPERIMENT SHOWS  
LIGHT IS WAVES AND PARTICLES.  
DO THESE WAVICLES FOLLOW THE UNIVERSAL  
AETHER-MATRIX, THE FUNDAMENTAL STRUCTURE  
AND "PULSE" OF THE UNIVERSE?

Wrestling again with the mystery of how the "pure energy" at the Big Bang is converted into matter, I now think that the light wave particle duality paradox is a basic characteristic of the universe. It has recently occurred to me that there is 100 years of experimental demonstration of the electromagnetic wave < - > particle existing, not least as shown by the double-slit experiment. We do not understand it - but we do regularly and repeatedly observe it. It is time to accept it as a proven scientific fact. There are many fundamental things that we observe but do not understand - and which we accept as facts.

Light most probably can exist in several forms, between "pure" waves of energy and "solid" matter. I now think that the photon

has some mass - it is not mass-less (weightless) and it is the primary building block of all matter.

**( NB 16 May 2013 - Important thoughts:**

***The process of light expanding from the alleged Big-Bang, attenuating the dense, sentient light-field, and drawing back from the edge of annihilation as it "meets" the no-thing "outside" the universe - is perhaps the mechanism that limits and governs "the speed of light" - and is the mechanism that dictates light quanta, which we call light waves and photons. Are these processes partly mirrored and to be found by studying the local heliosphere/ heliopause, where the solar wind reaches the circumference or edge of our Solar System?***

[Voyagers Find Giant Jacuzzi-like Bubbles at Edge of Solar System](http://www.universetoday.com/.../voyagers-find-giant-jacuzzi-like-bu...)

[www.universetoday.com/.../voyagers-find-giant-jacuzzi-like-bu...](http://www.universetoday.com/.../voyagers-find-giant-jacuzzi-like-bu...)

[by Nancy Atkinson - in 16,936 Google+ circles](#)

*Jun 10, 2011 – The barrier at the edge of our Solar System may not be the smooth shield that ... At a briefing today, scientists said the finding is significant as "we now will .... here is a thought: The "shield" and or bow wave of our solar system ... )*

If so, if light particles/ photons are fundamental entities of the universe, then I guess they occur at all points where light waves intersect. There are so many intersections of light waves in our observable universe (which is allegedly about 42 billion light years radius - from Earth - and 13.7 billion years old) that photons can be considered to be almost infinite in number (I know that "almost infinite" is illogical). They occur everywhere, [even in the deepest, darkest, coldest, emptiest space](#) - and, I now suppose, are activated and made visible by old and new energetic events, such as switching on a light - or a supernova - beaming out TV's Dallas - or having a brainwave - broadcast from all phenomena, from the smallest sub atomic particle to colliding galaxies - and from every part of every life form. Life forms such as our minuscule but complex selves.

The universe is filled with electromagnetic, light, radio waves - which convey their own separate, legible, concrete, detailed data across the universe, for many billions of years. This dynamic, ever changing, ever expanding, energy field or set of fields is the basic stuff of the universe. Some mechanism, which might be the Higgs, compresses or compressed the energy to make primary particles.

Given the unique intersections between all wavelengths - at unique angles, unique colours/wavelengths, unique data, - at every point in the universe, every photon is unique. Each is different, with at the least a unique location.

### **Which leads me to the vexed question of identity.**

In such a very large universe, stuffed full of very small things such as ourselves and atoms - how can we, or anything, have a unique identity? Speculative higher mathematics as applied to particle physics and cosmology may give us clues. The extraordinary and rare practitioners of the art offer us multi-verses, string-theory, theorems with 10 or more, even infinite, dimensions and other extravaganzas. But perhaps all things do indeed have multiple dimensions and multiple existences. How, for example, might you or I be identified?

**What are our personal universal co-ordinates?** How could we be located and defined by a super-intelligent alien? We have 1. Length, 2. Breadth, 3. Height and 4. Weight/Mass; we have 4. antecedents stretching back to the beginning of time; we have personal unique 5. pasts and 6. futures; we exist for a 7. span of time; we 8. walk and jet about on the Earth; we spin fast with the 9. Earth's spin; we hurtle round the 10. Sun, which hurtles round the 11. galaxy, which hurtles round the 12. universal disc; we consume 13. information, 14. energy, 15. air, 16. water and 17. food woven from sunshine, processing about 40 tonnes per lifetime; we 18. age and change in reliably predictable ways; we 19. receive, 20. repackage and publish or 21. broadcast data from our brains - as electromagnetic waves; and last but not least - we 22. reproduce; NOT ourselves and not by ourselves alone but in cooperation with a mate we produce another unique human or humans. We have 23. names. **At a quick glance we each have 23 dimensions or identifiers** - and there are many more. 23 variables allow up to 26,000 billion billion individuals. We are probably unique things in this vast universe.

I also think we make and leave a unique and permanent record in the universal energy field.

We have very complex identities and locations. Photons also have their unique characteristics. They are the building block of all things, and each photon is demonstrably unique.

Tuesday, 23 April 2013

## CREATURES OF LIGHT



### OUBLECK UNIVERSE

**“How is pure energy converted to matter?”**

Oobleck is corn starch mixed with water. It is a strange Non-Newtonian Fluid mixture that when hit with force, say by a hand or a foot slapping down on it, instantly hardens. It stiffens so rapidly that Oobleck is being investigated as a liquid armour – to stop bullets and bomb blasts. Scientists speculate that a fast runner could run across the surface of a pool of Oobleck water, as long as the downward slap of feet is fast enough to cause the stiffening reaction.

<http://www.scientificamerican.com/article.cfm?id=oobleck-bring-science-home>

“Ordinary” pure water is legendary for its almost unique counter-intuitive diverse forms – ice, liquid, structured water, steam and as super-cooled water climbing glass walls; manifesting strange properties, which most of us are familiar with – and thus take for granted. Water also becomes rigid (when cooled) and thick old ice is as capable of stopping bullets as is Oobleck.

We are aware that most if not all materials exist in different states depending on temperature and pressure – from lava to quicksand to diamond to liquid nitrogen to black holes to clay and so on.

We are less aware that **Light** – the entire electro-magnetic spectrum - also may exist in different forms. Light has been slowed down and even stopped - or at least slowed a million fold - and re-started.

<http://www.news.harvard.edu/gazette/2001/01.24/01-stoplight.html>

There is a 2007 theory that Light could become a solid.

[http://en.wikipedia.org/wiki/Solid\\_light](http://en.wikipedia.org/wiki/Solid_light)

But to date solid light remains a theory – if we exclude the photon /wave paradox. Are photons “solid” light? However, it is axiomatic and so self-evident that it is rarely stated, that light is the fundamental stuff of the universe. Everything is made of light and this can be clearly demonstrated in clean nuclear explosions, where uranium and other fissionable materials are completely released to return to their light form – with an  $E=MC^2$  flash and sound wave that destroys every structure within range. As the fundamental building block, light must logically (1) have some mass and (2) act as a Non-Newtonian fluid does in order to take forms such as the almost eternal proton.

**Light is the ultimate ephemeral gaseous unbounded penetrable, permeable field – and - is the most rigid structured element in the universe.**

Do the light waves form the infinite field? Are photons the particles of matter that can link to become impenetrable crystalline structures?

Accepting “C” 300,000 KPS, as the limit of propagation of light – and the speed limit of all else in the universe; applying  $E=MC^2$  to a gram of matter which is attempting to reach and exceed “C” resolves to the answer that the gram of matter has acquired infinite mass and cannot be accelerated any faster than light-speed.

To the accelerating gram, the universe has become an impenetrable, immovable, infinitely heavy field which cannot permit anything to move through it. Is this “wall”, which is encountered at 300,000 KPS, the equivalent of the hand slap on the surface of a pool of Oobleck? Does “C” applied to the universal field of light convert the light, this most mysterious fluid, into one of its many characteristic forms and functions?

I think we ought to accept for the next phase of scientific speculation that light is both waves and particles – we have no understanding of how or why but the wavicle theory has been rigorously tested and observed for 100 years and not yet disproved. So, it could be taken, at least for the next hundred years, as an axiom, a fundamental fact of nature. Regarding light as the basic stuff and fluid of the universe and allowing it to manifest as waves and as particles, it becomes a fluid ocean in which all things swim. We happily accept the five or six diverse forms of water or hydrogen or iron, how much more easily should we accept that light has different forms? If so, light could be the Aether-Matrix, fluid enough to be an oceanic field which enables and permits all radio communications – which emit from and are absorbed by all phenomena – and rigid enough to record all broadcast data (from all phenomena at all times) and rigid enough to create the structure and permanence, the inertia of the world around us, which we all undeniably experience, from stars and galaxies to abandoned beer bottles.

Taking light as the Aether-Matrix, we can speculate that an energetic event, the alleged Big-Bang for example, creates and propels a perfect sphere of light waves – which expands in accordance with Hubble observations. The massless, spherical wave races out towards the terrifying oblivion of the Dimensionless No-Thing “outside” of our universe – stretching and attenuating its own, probably sentient, energy field as it propagates. The edge of oblivion, of non-existence, and its “internal” partial vacuum of attenuation, causes the wave to pause or slow its headlong flight. This pause limits the rate of propagation to the now familiar 300,000 KPS. God, or Richard Dawkins, who has initiated the first wave, now sends or triggers a second wave which follows the first at infinite speed, until the second wave collides with the hesitant first wave and it too slows to the universal speed limit. In this collision, the front wave and following wave intermingle and where they cross, vortices form and where the vortices form, there are made photons. In no time at all, the (expanding) universe is full of energy waves propagating or vibrating at 300,000 KPS – and is full of photons that do have slight mass.

As the (sentient) endless nested energy spheres expand from the centre of the energetic event (God or Dawkins) to create the basic universal electro-magnetic field, the vast numbers of photons gain new impetus and more energy as the waves pass by. The photons are essentially, relatively static fundamental indestructible particles (of slight mass) which are illuminated by the expanding waves. When examined in laboratory experiments, new energetic events, expanding as spheres, energise in-situ photons in the existent Aether-Matrix, on all sides of the central event, e.g. heating a filament in a light bulb – and thus the photons appear to be moving apart at twice the “speed of light”. Einstein's “*Spooky action at a Distance*”. QED

Friday, 29 March 2013

## EASTER BABIES & BIBLE TRUTHS





FROM A SINGLE FERTILISED CELL - IN 9 MONTHS  
THE MOTHER NOURISHES 2 TRILLION MORE CELLS.

As Easter Sunday 31st March 2013 approaches, with its magical eggs, New Testament Resurrection, Jewish

Passover, seeds, planting, Moon and Sun driven Spring tides, Spring Solstice, vernal equinox (20th March 2013), parades, celebrations and global ancient legends and archetypes - we might contemplate the miracle of the creation of new life - particularly intelligent, human life.

While Christmas, the birth of Christ, the Messiah, The Saviour, The Anointed One, is the archetype for the beginning of life for mankind - The Easter story as related by the the Gospels (diaries) of the Apostles, who lived at the time of Jesus, is the cornerstone of Christian Philosophy - being evidence of God's new testament (contract with humans) offering us redemption of our "sins" (sins are willful acts that cut us off from the congregation - "grace" joins us to humanity), the fortitude to bear pain, suffering and death (The Crucifixion), and the promise of Resurrection (eternal life with God in Heaven, after a time, and after some complex journeys - such as Descending Into Hell. Nobody said it would be easy).

Books from all the world's religions and hundreds of historians argue about the facts, fiction, life, death and meaning of Jesus Christ. One of the [clearest histories](#) I have read is by atheist A N Wilson. There are thousands of others. [http://en.wikipedia.org/wiki/Historical\\_Jesus](http://en.wikipedia.org/wiki/Historical_Jesus)

The Old Testament - mankind's history from God's Creation of the Universe up to the first Christmas, prophesied the coming Messiah. Christians argue that Jesus fulfilled all the prophecies - ancient Judaism, the desert race that wrote the history in the Old Testament, disagrees. Their Messiah, rescuer, leader, hero is still to come. Perhaps both are right. It is a very complex universe.

Is THE BIBLE a reliable history and moral guide? Only Hollywood can say.

<http://www.bibleseries.tv/>

However, humanity's Christmas (BIRTH) and Easter (REBIRTH) myths and celebrations, based on the movements of stars, planets, moons, asteroids and seasons, predate all written history by hundreds of thousands of years. Birth, Death and Resurrection are not entirely new topics for thought and discussion in the hallowed places where humans congregate.

### SCIENCE HAS GATHERED SOME DATA AND FORMED A FEW THEORIES.

We adult humans are very, very, very complex; being an organised organism of, it is rumoured, up to 100 trillion cells (brain, skin, hair, teeth, blood, nerve etc) each cell containing 2 inch spiral ladders or helices of DNA with 220 million spokes; all carefully placed; all magically operating and co-operating. Let me do the maths for you – it calculates as 22,000,000,000,000,000,000 or twenty-two thousand, billion, billion well-ordered molecules, all doing what they are supposed to do – integrated to keep us alive and amused for seventy or more years – before we give up the ghost and disintegrate.

Crick and Watson and colleagues have given us deep insights into what babies are made of - DNA, genes, cells and so on. The greatest and abiding scientific mystery is - what pattern, what template is the embryo following as it converts its mother's energy into millions, billions and trillions of stem-cells; unspecified cells that can become any type of cell, anywhere in the human body, and slots them into its mind boggling jigsaw? How is the template known to the baby? Where is the template stored or where does it exist?

A human ovum or egg is the size of a full-stop in this text. An enthusiastic tail wagging spermatozoa is about 100 times smaller. When they combine, conception begins, the universe announces another miracle well beyond our comprehension, the full stop divides into two full stops – or a colon: and then into a cluster, in which a heartbeat, the pulse of the universe, spontaneously begins – and a wilful child starts its determined journey into a sensational period of "life" in this solar system, for three score years and ten.

This wilful, intentional cluster embeds itself into the safe haven of its mother's womb and grows from the nourishment, information and care she provides. She in turn is often protected by the father – who brings food, furs and digital TVs, and lights fires to keep her and her embryo warm and fed.

We, the clever human race, conjecture that all the unique characteristics of this emerging new life form, a dissipative organism that takes, shapes and discards energy, are dictated by the merest wisp of an invisible string of chemicals called [DNA](#).



YOUR BABY GROWN-UP AND  
CARRYING AN EGG TO VICTORY

Over nine months the baby will be given the energy to grow from the size of a full-stop, a single fertilised cell, to about seven pounds, 3,175 grams, 3.2 kilograms, estimated to be at least 2 trillion cells. So, while mum and dad jointly and almost equally (100 to 1) kick-start the process – mum thereafter contributes about 2 trillion times more via her womb and via the umbilical cord and placenta that she shares with the baby. The baby grows by about 55 billion (55,000,000,000) new cells a week - for 36 weeks; and it organises them all to be in the right place at the right time doing the right thing. Isn't that miraculous - the Easter miracle?

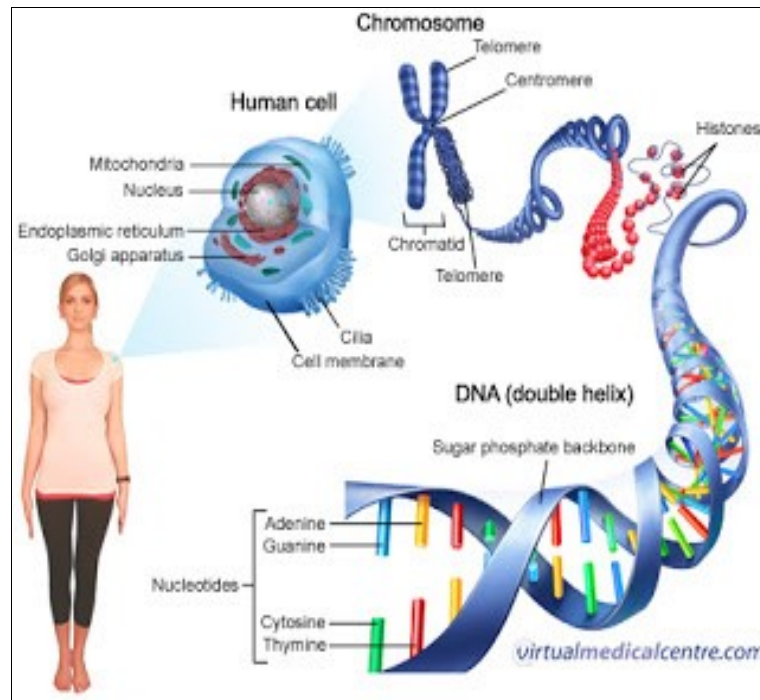
Contrary to most opinions to date, which deemed the placenta and amniotic fluid inviolable; in this process, in this nutritious stream, science has recently learned that

the mother's DNA, genes, memes (cultural and traumatic experiences), immune responses – and harmful drugs, alcohol, nicotine and other pollutants – are passed to the baby. Equally, the baby passes DNA back to the mother.

[Mothers always have their children in the back of their minds – now it seems that this is quite literally true. Fetal DNA can enter a mother's brain and remain there for decades, according to autopsies of female brains.](#)

During a pregnancy, cells from mother and fetus can [cross the placenta and survive for decades in the skin, liver and spleen](#) – a phenomenon called fetal microchimerism.

MIXING IT WITH MOTHER



**Natural transformation between mothers and foetuses.** As its name implies, it is a natural mechanism used by some bacterial cells to take up DNA from the environment. This environmental DNA was, at one point, located in other bacteria. For instance, when bacteria die and disintegrate, their chromosomal DNA is released. Fragments of this DNA remain in the environment and are freely available to other living cells, including other bacteria. These naturally occurring DNA fragments can enter a living bacterium through its cell membrane, after contact with that membrane. If the DNA is double stranded, one of the strands will pass across the cell membrane into the cell, and the other strand will be dissolved, or hydrolyzed. Parts of the newly introduced single-stranded DNA molecule may then recombine with similar regions on the bacterial chromosome and become incorporated into the bacterium's genome.

Transcending the **Placental Barrier** - "It shows just how ubiquitous the exchange of these cells is," says **Hilary Gammill** of the Fred Hutchinson Cancer Research Center in Seattle. "We used to think of the placenta as a complete barrier."

#### SCIENTIFIC SPECULATIONS

Humans have found that the templates for life-forms are not fixed but are dynamic and change moment by moment. One implication is that species evolution happens far faster than Darwin supposed. Many scientists are looking for new templates that shape life – **DNA** is central to the research. My own view is that these Templates are functions of The Aether-Matrix; Prof Rupert Sheldrake names the template medium "Morphic Resonance" in his book *The Science Delusion*. **THE SCIENCE DELUSION**

Most scientists look to DNA as the basic template of organisms. However, recent biology, **Epigenetics**, medicine and science has adjusted and updated the consensus about what DNA (deoxyribonucleic acid) does and how it does it.

The discovery, announced on 25<sup>th</sup> April 1953, of the **DNA double-helix string** in every living cell, by Crick, Watson and molecular biologist Rosalind Franklin – who, without a Y chromosome and lacking a penis, was barred from Nobel Prizes – revolutionised our understanding of the templates of life, sentience, intelligence and consciousness.

From 1953 to 2011, the scientific convention had been that the 4 DNA bases, adenine (abbreviated A), cytosine (C), guanine (G) and thymine (T) – that make the millions of rungs of the DNA spiral ladder - were created at conception and thereafter "What God hath joined together, let no man put asunder"

they remained in fixed order – obligingly fixed so that we could study them. This is no longer the consensus belief.

Richard Dawkins in his 1976 book *The Selfish Gene*, so fervently believed in this fixity that he built an entire upside down philosophy, a new religion, stating that humans are complex robots propelled by the anthropogenic, intelligent, godlike desires of DNA assembled into 46 packets of (selfish) genes – 23 from each parent; an erroneous if ingenious concept that he zealously impressed on most of science for several decades.

Post Dawkins, recent discoveries show that DNA in living cells changes continuously in response to internal and external forces - while DNA in dead cells such as old teeth, hair and bones is indeed fixed and legible for thousands of years. DNA analysis now tracks [Homo-Sapiens back 340,000 years](#). Last year Harvard University Medical School recorded an illustrated book by coding inert, lab-made DNA, mailed it to another lab, and played it back. DNA packs a very high data-density punch.

[Goldman and colleagues claim to have achieved a density of 2 petabytes \( \$10^{15}\$  bytes\) per gram of DNA which, they calculate, would allow at least 100 million hours of high-definition video to be stored in a teacup](#)

THE TEMPLATES? Electro-magnetic broadcasts /radio waves /Light is far more data-dense than DNA. Today – what does science know about the templates of living organisms? Focusing on allegedly conscious intelligent human life - we need a sense of order and scale:

Scale and Size:

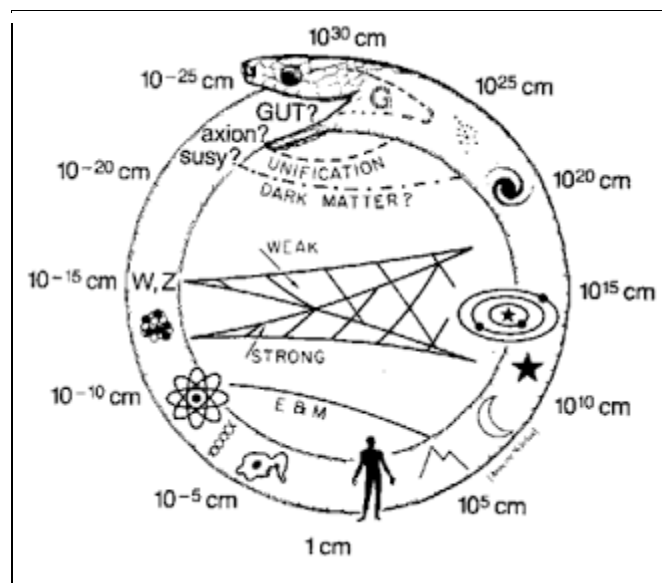
An atom is approximately 0.2 nanometers in diameter. A nanometer equals 0.000000001 meters. The smallest molecule in nature is the diatomic hydrogen molecule ( $H_2$ ) which is 0.74 angstrom in length. An angstrom is equal to 0.1 nanometers or  $1.0 \times 10^{-10}$  meters.

Read more:

[What Is the Comparison Between Atoms & Molecules? | eHow.com](#) [http://www.ehow.com/about\\_6382556\\_comparison-between-atoms-\\_amp\\_molecules\\_.html#ixzz2NEb4W9JX](http://www.ehow.com/about_6382556_comparison-between-atoms-_amp_molecules_.html#ixzz2NEb4W9JX)

WHICH CAME FIRST – LIGHT OR DNA? My theory is that the templates for all phenomena exist in space-time, in the universe, formed of light /electro-magnetic /radio waves, which in turn have been formed by the events and movements of all phenomena (material things as contrasted with no-things) and are dynamic signals or data that change constantly.

[www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)



HUMANS ARE HALFWAY BETWEEN THE  
LARGEST & SMALLEST THINGS WE KNOW.

Electro-magnetic broadcasts – weightless/massless but permanent universal dense-date carriers (e.g. Videos from Mars – light from distant galaxies).

Epigenetic chemical switches – molecules or atomic elements known to activate or deactivate sequences of DNA code, which may be set in the DNA but may not be operative.

[DNA strand](http://en.wikipedia.org/wiki/DNA), Nucleotides – Complex molecules – 220 million base pairs about 2 inches long per cell. <http://en.wikipedia.org/wiki/DNA>

Proteins – Larger complex molecules such as sugars

<http://en.wikipedia.org/wiki/DNA>

Genes – Ordered packets of DNA and proteins

Chromosomes - collections of genes

Cells – about 100 trillion per person - [http://en.wikipedia.org/wiki/Cell\\_\(biology\)](http://en.wikipedia.org/wiki/Cell_(biology))

In conclusion, it seems that Rugby Forwards, with several hundred trillion cells, start as a single fertilised cell the size of a full stop, designed by the universe, with 23 genes from each parent – then spend nine months in their mother's womb, where she multiplies the cells by 2 trillion to make a baby – before it fights its pugnacious way out into the world – to score in the All Nations Rugby Union matches – sharing DNA with its team-mates in the hot baths and having significant bits of his anatomy ripped off, in the name of sport. That's Life.



DISSIPATIVE CREATURES:



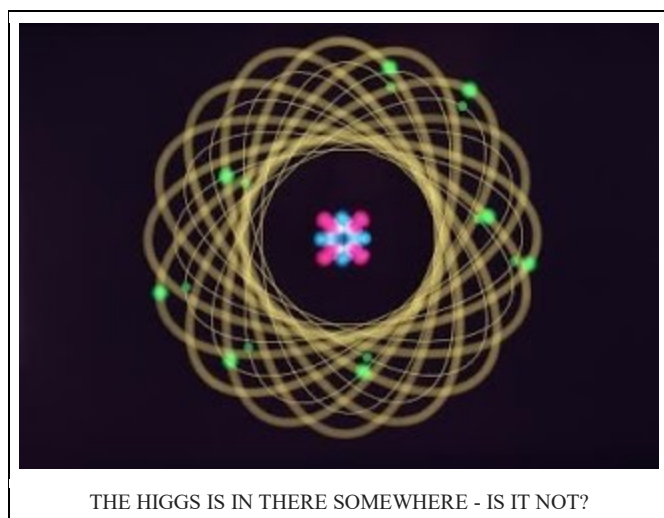
<http://noelhodson.blogspot.co.uk/2012/11/you-chose-to-be-born.html> (\*An average person consumes and converts 30 tonnes of nourishment, which, like us, is 70% water. We also convert a few tonnes of oxygen and other fuels. Imagine the seventy-year process speeded up on film as we extract energy from these flows, convert the organisations we absorb into our higher organisation - our template - renew most of our trillions of cells every seven years - and yet stay recognisably in shape, remain identifiable as our unique selves. We are constantly changing our building blocks, but always stay the same; just a little worn at the edges and older.)

TEMPLATES:

<http://noelhodson.blogspot.co.uk/2013/02/what-is-gravity.html> My guess is that the in-falling energy is balanced by the out-flowing energy – and that the differential in the rate of in-flow and out-flow and the time differences between integration and disintegration of mass enables the existence, for a time, of the body or phenomena (phenomena or “things” include pebbles, trees and thoughts – thoughts are tangible packets of energy).

Tuesday, 26 February 2013

## THAT OLD ELUSIVE HIGGS



THE HIGGS IS IN THERE SOMEWHERE - IS IT NOT?

[Death of the Higgs.](#)

SADLY:- [The HIGGS does not confer mass, says CERN](#); at least not much mass "approximately a fingernail of mass compared to the whole human body"

Where now is the Higgs Boson? I was tracking back my own amateur theories of physics and found this item I wrote in 2004, nearly nine-years ago. The search for the relatively unsung Higgs was already in full swing - and CERN assures us they found it in 2012. But what now? Where has it gone? Why the long silence?

### News update – 3 September 04.

[http://www.noelhodson.com/index\\_files/universal\\_model\\_v7\\_nov02.htm](http://www.noelhodson.com/index_files/universal_model_v7_nov02.htm)

The search for the Higgs Boson – an alleged massive particle which would account for Dark Matter and Energy (96% of the universe) – continues as does the search for anti-neutrinos. An anti-neutrino is NOT the antiparticle of a neutrino in the way that positrons are the anti-matter antiparticles of electrons – electrons reversed as it were. An antineutrino, if any exist, would be a sort of shadow neutrino, which has already been defined, at only 0.44 electron volts, as a “ghostly particle” so an antineutrino would be the ghost of a ghost. Scientists from the Max Planck Institute for Nuclear Physics in Heidelberg, Germany have a laboratory deep below an Italian mountain range at Gran Sasso where the decay of enriched Germanium 76, shielded from all known sources of radiation, to Selenium 76 is observed. They claim to have seen 29 events in 10 years which they claim makes it 99.997% certain that these are real events, which as the decay process occurs do produce a neutrino and an antineutrino. Steven Elliot at the University of Washington State, Seattle, disputes the findings as does Ron Brodzinski at the Pacific Northwest National Laboratory in Richland, Washington and as do the Russian physicists who supplied the enriched germanium from the Kurchatov Institute. The import of finding antineutrinos is that it would help explain how the universe evolved from the Big-Bang to contain matter not anti-matter or a neutral balance of pure light without any matter. Dave Wark of



the University of Sussex, UK says “We now know that we must look beyond the standard model to explain dark matter. (New Scientist 4 Sept. 04.) – Back to this EIG theory perhaps?

Monday, 25 February 2013

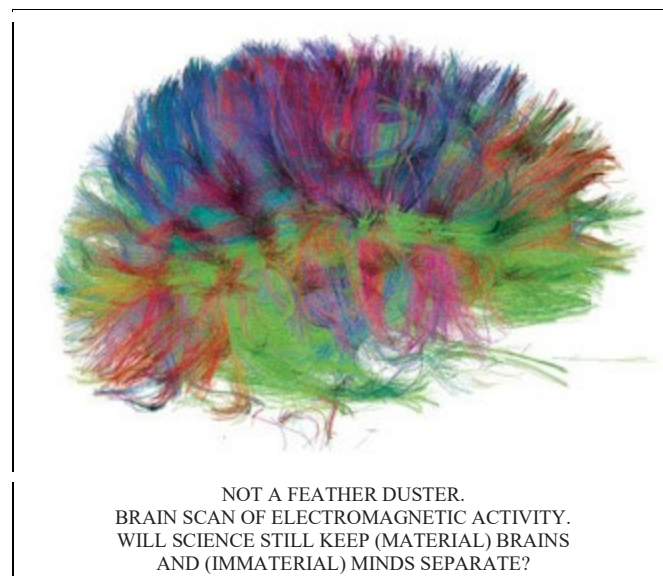
## THE SCIENCE DELUSION

THE SCIENCE DELUSION – by Rupert Sheldrake – Hodder & Stoughton - 2012

Bravely, heroically and largely uncomplainingly, for the past seven days I have laughed in the face of death and personal oblivion, from my sick-bed, laid low by man-flu. To coerce me into at least peeking from the covers – and maybe into sitting up unaided – my wife went to Blackwell's Bookshop and bought The Science Delusion by the celebrated scientist, biologist and author, Rupert Sheldrake.

<http://www.sheldrake.org/homepage.html>

THE BOOK HAS REVITALIZED ME - I have found it easy to read, so far, firstly because it is well written and secondly because I largely agree with its principle tenets and have had no need to wrestle with every idea and factoid in every sentence. As I continue to cruise through the author's habit forming pathways, as he treads a virgin path confidently through the chaos of the universe towards understanding and sanity that others will more easily follow, it occurs to me that he must have been reading my e-notes on Life, The Universe and Everything and been inspired by my ideas. Or, contrariwise, could it possibly be that I have read some of Professor Sheldrake's many books, papers, articles or their reviews – and that I have been influenced by him?



The book is searching for scientific consciousness, continuity, meaning, sanity and balance in disciplines that have, in my words, dreamed up eccentric, desperate and non-demonstrable ideas such as: genes that allegedly run humans (and all life-forms) instead of being co-ordinated and employed by us; robot life-forms, allegedly without Will, volition, intelligence

or purpose; the heat-death universe, illogically extrapolated from Victorian steam engines, supposedly rendering everything and all actions meaningless; bizarre Strings, Branes and Multiverses (as many as 10 followed by 500 zero's) extrapolated from runaway, feverish, mathematical algorithms that could never be tested in any universe however many eternities they offer; studies by self-professed intelligent humans that deny the existence of intelligent humans – etc. Theory has lost its way. The scientific consensus - immersed in one hundred and fifty year old paradigms about materialism, atheism, dead matter, ultimate entropy (no more heat, everything dead and useless), the non-existence of life forms (look out behind you!) and much other nonsense - needs to find new directions.

I see the book as systematically restraining the outmoded mad scientists and mopping up their soggy, overflowing minds - however influential they currently are - and as seeking ways out of the blind canyons and impasses into which they have blindly herded thought. The author says that he is putting forward scientific heresies which only those who have won their Nobel Prizes and are fully retired dare to explore and (my words) face the maniacal wrath of the censorious consensus. I have both received all the Nobel Prizes I will ever win - and am so old and irrelevant as to be immune from peer-group bullying in science. *(NB - Zero Nobel Prizes and I've never been a scientist)*

It is a most readable book that all scientists, thinkers and observers will benefit from. I recommend it.

You will have to read the book to know where this fits in – but responding to Prof, Sheldrake's plea for the shortest possible communications, I have written:

**Dear Professor Rupert Sheldrake,**

**I am enjoying your book, *The Science Delusion*, and have reviewed it on my blog.**

**Morphic Resonance and Habits:**

**My testable ideas about legible recorded patterns or templates for seeds, souls and eggs, rely on the “The Aether-Matrix” which physically, demonstrably consists of “holographic” electro-magnetic reproductions of the entire universe and all processes, reproduced in, for example, spheres, on all scales – excluding only wavelengths too large for a chosen sphere. We are able to see or detect things, ourselves, others, thoughts and processes, only because they all broadcast their location, identity and activity in legible waves. There is no sphere or zone in “empty” space where, with suitable instruments, we cannot observe a unique view of the entire universe, its parts and all relationships. Such accurate “holographs” of the whole are constantly re-formed and informed by all universal activity. The electro-magnetic signals are thought to expand to the limits of the observable universe. Your thoughts at this second are broadcasting across the universe and are altering The Aether-Matrix. These broadcasts theoretically never die. I suspect that Inertia is the sum of relationships between all existing (Habits) and new broadcasts. Other forces and measures, including universal constants, are adjusted by their interactions.**

**We now (Feb 2013.) know that DNA alters continually, hour by hour, through epigenetics, and those chemical drivers are in turn subject to magnetic fields; and we know that a spec of DNA can record and replay the Bible, Shakespeare and the Collected Works of Richard Dawkins, for millennia. We also know that we all swim in a communal soup of DNA swapping and splicing – irrespective of sexual congress, gender or species. (By the way – I wound back the 2012 ovum within the ovum within the ovum to find it shrinks beyond the Planck minimum in 1770 – Did the universe start in 1770 - do you think?).**

**I suspect that your Morphic Resonance manifests as a set of structured matrices within the Aether-Matrix that hold the ever evolving templates for Forms. And that the Morphic Resonance creates and holds structured waveforms which are the electrical scaffolding for simple and complex emergent forms – including people.**

Friday, 1 February 2013

## **WHAT IS GRAVITY?**

WHAT GRAVITY IS AND HOW IT WORKS – A NEW IDEA.

DYNAMIC EVOLVING UNIVERSE



Please read this essay with empty space, outer space, in mind. It ought to be a dark sphere of space, extremely cold – just a few degrees above absolute zero (  $-273^{\circ}\text{C}$  is zero degrees Kelvin) of any size, far from Earth, and as empty of matter as space can be; which is approximately five hydrogen molecules per cubic metre. Now, travel to the centre of that lonely, cold, lifeless, empty space – open your eyes and look around the sphere – and you will see the whole astonishing, magnificent, shining Universe. Your empty space is filled with Light, broadcast by all the galaxies, stars and phenomena that exist. You can see them because they broadcast, they send out, sphere's of light waves; some in your visible spectrum, others as X-rays, infra-red, ultra-violet, radio, long-waves, short-waves and every type of waves imaginable. Your empty space is criss-crossed, cross-hatched with trillions of energetic light or electro-magnetic waves. The whole universe presents itself to you in that sphere. The only waves you cannot detect are those too large to fit into your sphere or into your viewing equipment. Casimir found that when a gap between two flat plates excludes large wavelengths, it causes a pressure deficit and the outer complete wavelengths press the plates together; the Casimir effect may stabilise the large and small spheres of the holographic Aether Matrix; and add to gravity within matter. The majority of the images you detect are accurate, reliable and repeatable. The signals retain their unique identities, their special information, across billions of light-years and trillions of trillions of kilometres. You are occupying a holographic image of the universe made from waves of pure energy that illuminate you and any other objects in that "empty" sphere.

**FEB 2016 - UPDATE - NEW GRAVITY (or in fact a new explanation. The gravity remains unchanged). I think this idea is starting to have merit - and there are no others out there.**

Now, quit that zone. Zip through hyperspace for a few million light years to another empty space; stop and look at the Universe. It's the same Universe you are seeing, but from a different angle. The holographic images of the same objects are different. Each viewing zone differs; each is unique. You have discovered that empty space is not empty. You are experiencing the universal Aether-Matrix, made of Light. Now read on:

#### WHAT'S NEW? THE HOW AND WHY OF GRAVITY

As explored in my previous speculative essays, why and how all matter and energy attempts to "fall" to the centre of mass – be it The Sun, the Earth, the Galaxy, or yourself, is not understood, but is the fundamental proven, observed fact of gravity. This constant in-falling, compelled by the weakest force (gravity is a billion, billion, billion, billion times weaker than magnetism) is an unsolved scientific mystery; until today.

Although very weak, gravity is persistent, cannot be shielded and reaches to infinity. Magnetism is very strong, can be shielded, with lead for example, and has a short reach. We all experience these two forces, are created by them and we use them at every moment of every day. Nuclear binding forces are very, very powerful, can be shielded, and act at very, very short distances across atoms.

I think that perhaps: Light waves are forged into the primary fundamental particles "Fractals" that revolve as vortices in the light field, the Aether-Matrix. Fractals concentrate a large sphere of pure energy dictated by  $E=MC^2$  (energy = mass x light-speed x light-speed) Einstein's famous equation to demonstrate that matter and energy are opposite sides of the same coin and that light cannot go faster than 300,000 km/s. We do not know how Light is concentrated into particles but we have often converted particles back into Light – in atom and hydrogen bombs – with truly spectacularly bright results that show in reverse just how much Light was locked up in the uranium or other fissionable material. Matter is compressed Light (electro-magnetic waves). These tiny Fractals combine to make particles, atoms, stars and planets – that have gravity.

Fractals have a surface revolving at 90 billion k/s, have cleared a huge area of the energy field around them, which is re-filled by in-falling energy, and are expanding due to Hubble expansion at the minuscule rate of  $6.819E^{-19}$  % per second (0.000,000,000,000,000,000,681,9 %). The spinning surfaces repel each other, the in-falling energy attracts each other – which create the underlying dynamic Inertia of the material Universe – where things, phenomena, are robust and persist.

Two revolving Fractals meeting in the partial, Hubble-expanding void, caused by their creation from energy, revolve around each other. They have a common centre of revolution and their orientation or Inertia, aligns. A third Fractal joins and the focal point of revolution shifts; then a fourth and fifth join - and so on. To exist, the Fractals need to draw in energy, which is freely available in our almost infinite Universe. As Fractals congregate, they block each other's access to the energy – but their Space continues to expand, creating voids which are filled by other in-falling Fractals. We have Gravity. Expansion IS Gravity.

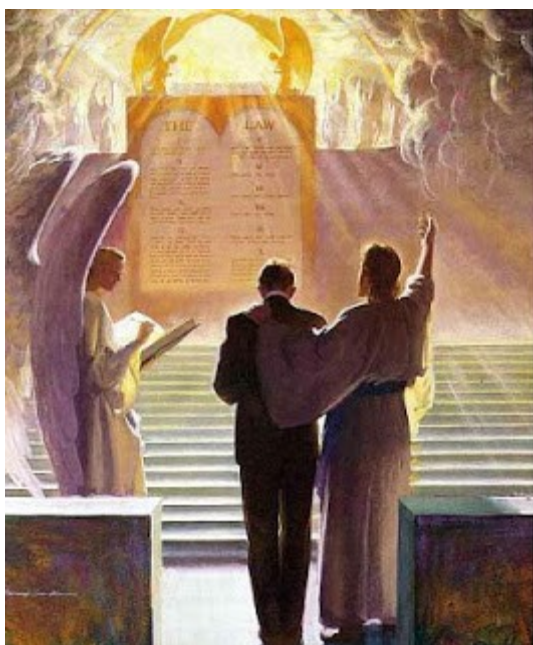
For a body such as a Star, a Planet or a simple rock to continue to have gravity, where all particles seek to fall to the centre (of gravity), Hubble Expansion must be continuous, which it is; and for the cycle to persist the in-falling mass (material and energy) must have an outlet. The gravitating body must be a dissipative system – otherwise gravity stops; it seizes up. My new idea is that all gravitating bodies do expel mass. We detect this reverse flow as energy waves and dust – from the Sun, from all stellar bodies and from ourselves; we broadcast legible unique identifiable radio waves and emit heat, as long as we are alive.

My guess is that the in-falling energy is balanced by the out-flowing energy – and that the differential in the rate of in-flow and out-flow and the time differences between integration and disintegration of mass enables the existence, for a time, of the body or phenomena (phenomena or “things” include pebbles, trees and thoughts – thoughts are tangible packets of energy). This reverse flow manifests as energetic events, which broadcast their presence as waves in expanding spheres; Light waves, that fill the Aether-Matrix with holograms of the entire Universe, even in the so-called “empty” space of outer-space.

Thus, the cycle of gravitation is continuous. The Aether-Matrix of Light, which is the fundamental stuff of the Universe, evolves continuously as the reverse flow of energy from integrated phenomena in-forms and re-forms the Aether-Matrix. Like that most unlikely minuscule recording material, DNA, the blueprint for weak and feeble creatures such as we humans, which can retain legible data for millions of years, science knows that the broadcast radio signals from all things – from atoms to worms to black-holes (Hawking radiation) – are indestructible and fill the entire universe. This dynamic energetic feedback creates new templates, which create new forms, which evolve constantly.

Tuesday, 29 January 2013

## RECORD RECORDS - DNA PACKS IN DATA & CHANGES



"You'd be going in, if only you hadn't stolen the tarts when you were 7 years old. But... Sorry!  
THE RECORDING ANGEL HAS GOT  
YOUR NUMBER AND KNOWS  
WHERE YOU LIVED

UPDATE - 22 AUG 2015.

*I have often said and often been derided for saying that our DNA changes continuously. It becomes fixed when we die; and that is what science has been studying, concluding that DNA is fixed forever.*

*Previously it was found that lab animals inherited fear and trauma, now a [New York study of Holocaust descendants](#) shows that we also inherit our parents and grandparents terrors. We can be born fearful. I believe that we exchange DNA continuously in normal life - and it should be possible to receive healing DNA, say from spending time with The Dalai Lama. So keep good company. The same applies to malevolent and benevolent viruses and bacteria (packets of DNA). We readily identify malevolent viruses but ignore benevolent ones. Maybe its time for your, and my, next pilgrimage or retreat.*

29 JAN 2013.

Ian Sample writes in The Guardian 24 Jan 13, about the remarkable feat in Cambridge UK, of compiling Shakespeare's poems, Martin Luther King's speech and Watson & Crick's paper on DNA, in the code G,T,C,A the four bases that form all DNA strands, and reducing the texts to a tiny speck

of DNA. The article is short on dates, but finishes with “A similar feat was achieved by ...George Church, Harvard Geneticist ...last year”. So it seems George Church did it first.

I wrote a detailed account in August 2012 21 Aug 12. [DNA STORES YOUR LIFE](#)

As DNA makes the code for all life forms and reproduces the code in precise copies over about 3.5 billion years before significant “errors” are made – and as functioning DNA in old bones and teeth has been found intact after several million years – scientists claim it is a very long lived, reliable digital recording material; either stored in an inert form or perhaps, in the future, stored as part of an active, reproducing live DNA chain in life-forms.

Perhaps a full analysis of your DNA with its 80% “unknown function”, previously dismissed as “junk DNA” would reveal the full text of War and Peace, Titbits, The Beano and all the publications in the British Library. Perhaps all these texts could be recorded and inserted into your DNA, making you an information genius. Should we re-think reincarnation theories of child prodigies?

Such reliable, permanent and accurate minuscule DNA recordings, in chemical life forms that have measurable mass, are surpassed by the almost massless radio (light) signals broadcast from all things. Astronomers focus scanners on stars and galaxies 13.75 billion light years distant, and can read their broadcast information; or they focus on a star a mere 4.2 light years away and its signals reveal not only what it is made of and where it is going but what the intervening interstellar dust is made of. As far as science now knows, your vital mobile phone signals informing your Mum you are on the bus and nearly home, broadcast infinitely across the universe in legible form – for eternity. All these signals can be re-read; they occupy no measurable space; they criss-cross each other; they propagate in waves at 300,000 km per second; your favourite TV soap, with all its adverts, races out to the horizon of the observable universe and probably amuses very distant little green persons. Our brains also broadcast radio signals – all the time. We are on universal perpetual record, with every other thing and event in the universe.

This relieves Saint Peter of the onerous eternal task of writing our deeds and misdeeds in a great book – he just presses “replay” as we apply for our entry visas. “Thank God...” he says as he dispatches wailing souls down to The Burning Fires of Hell forever “...for the electronic revolution.”



Monday, 28 January 2013

## BRIAN COX AND TALES OF DOOM



Last night I looked forward to watching Manchester University's popular physicist, Professor Brian Cox, explain the miraculous existence of Life in our universe. Having very much enjoyed his previous TV series, I optimistically assumed he had either read my blog or benefitted from synchronicity, and had decided to make a documentary that included the integrative **Lifeforce** as the fifth universal force – alongside the accepted four foundations of physics and chemistry: Gravity, Electro-Magnetism, Weak Nuclear and Strong Nuclear forces.

I was disappointed. He did indeed, with his usual élan and clarity, present DNA and the roots of living cells from which all life on Earth springs – and boldly said that today's physics and chemistry can explain it all. But he then laboured the point, with heat photographs of animals and humans, that Life absorbs well ordered "high level" energy (light) and dissipates it as "low level" less orderly energy (heat); which he regretfully, sadly, morosely concluded yet again proves The Second Law of Thermo-Dynamics or Entropy (increasing disorder), which in turn proves that the entire universe will inevitably, irrevocably and irreversibly experience (*a sentient universe that grows brains as big as Prof. Cox's can logically have experiences*) Heat Death – which actually means cold-death, as the universe drifts down to Absolute Zero temperature.

Everything is falling apart and going cold – and nothing can stop it - Really?

I think the Heat Death conclusion is flawed. Human beings are creatures that integrate trillions of molecules in efficient warm cooperative conglomerations that build brains, sentience and intelligence. Blades of grass are almost as amazing. Stars condense bitterly cold gas clouds and set them on fire. Solar systems hold orbiting planets that support Life and attract and capture passing asteroids. Galaxies attract and hold solar systems in orbit – and grow by collecting inter-galactic dust. Galaxies collide and merge – and make new solar systems and Black Holes – which shoot out streams of energy. Things explode spectacularly and all the materials are recycled. Most scientists now believe that Life exists in millions or billions of locations across the universe. The universe is alleged to have formed from a limitless expanding field of "pure energy" that somehow (via Higgs?) condensed energy into matter. There is ample scientific evidence of natural forces in our universe that combine

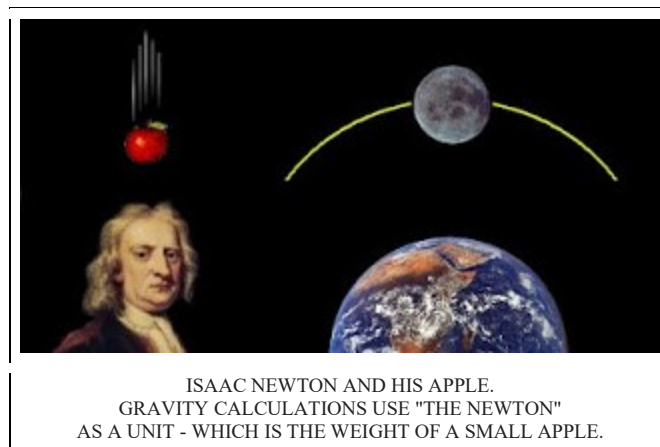
and integrate energy and organise (give rise to sentient organisms) matter and energy into vital and identifiable phenomena with scientifically predictable life cycles, lifetimes and half-lives. All these events laugh in the face of today's scientific conclusions of doom, extrapolated from The Second Law of Thermodynamics. Again, science applies double-speak: "thermodynamics" implies a dynamic universe that responds, evolves and changes with events. But, what the Doom, Doom, Doom mongers believe is that our universe is static – Open, Closed, Saddle-Shaped or Megaphone shaped – they believe it is set on a fatal static course that will not change.

Today's science largely relies on The Standard Model – built with logic, experiments, interpretations and brilliance over the past hundred years. Science advises us that the standard model is incomplete – hence the hunt for The Higgs and a hundred other sub-atomic bits and pieces – and advises that 80% to 90% of mass is "missing" both from Galaxies and from the nucleus of atoms. Science does not know what Gravity is – or its anti-force, Inertia. All these mysteries are being pursued by science. What is not being addressed by science is; where does the integrating, organising, sentience-creating power come from.

I am sorry to contradict your current view, Professor Cox, but in reality, and observably, Life and the Universe are evolving and are dynamic – not predestined. We and they are not doomed to evolve to Heat Death. Every action and event in the universe, even thought, feeds back as coherent radio waves, into and is accurately recorded by the universal energy, which thus re-formed and in-formed creates the matrices for the next time-second of eternity. Science should now focus on complex integrated systems - more than on disintegration.

Monday, 21 January 2013

## FUSION, GRAVITY, INERTIA, LIFEFORCE.



[CASIMIR-GRAVITY](http://noelhodson.blogspot.co.uk/2014/11/casimir-gravity.html) - DEC 2014  
<http://noelhodson.blogspot.co.uk/2014/11/casimir-gravity.html>

JANUARY 2013

Listening last week to a brilliant young physicist, who is working to bring us unlimited clean energy from atomic nuclear fusion at Culham Laboratories, UK, struggling on an annual budget of just a few hundred million dollars; I learned that his team uses electricity to heat a fissionable, or fusion-able, element to 10 million degrees, which forms a plasma hotter than the centre of the Sun, which they capture in a magnetic "bottle". The powerful magnetic fields of the bottle retain the very slippery few

grams of hot plasma for a few minutes before it “leaks” away, while 50% of the energy used to make the plasma is now, triumphantly, recovered in useful form – to heat water – to drive turbines – to make electricity – to energise our society. One day in the future, fusion power will be contained, controlled and channelled; and all our energy problems will be solved.

How? I asked ...does the Sun, a fusion star, make and maintain its scaldingly hot plasma? – The Sun, I was told, is rather good at holding in the energy. I assumed it does so by applying Gravity. Which brings me back to asking myself – **What the devil is Gravity?**

**PS - 16 May 2013 - [This horizontal gravity](http://www.newscientist.com/article/dn17134-flood-risk-from-antarctic-ice-overestimated.html) has implications for my earlier question, "why does all matter crowd to the centre of any object, planet or star?" And, "what happens to me if I jump into a hole dug through, say the inert Moon, from north to south poles?" Horizontal mass such as the polar ice will affect such a fall /climb. Answers on a postcard please. <http://www.newscientist.com/article/dn17134-flood-risk-from-antarctic-ice-overestimated.html>**

Newton's maths, and our everyday engineering experience, proves that gravity works from the centre of any massive (small or large) body. Thus, when rocket scientists calculate the path of a rocket from moving Earth to moving Mars, influenced by the gravity of the Sun, their calculations are from the very centres of the planets, the exact centre of the Sun and the centre of the moving rocket. And the maths, Newton's formulae, work precisely, and the rocket gets to Mars.

The urge of sub-atomic particles, atoms, molecules, gases and lumps of metal and us to “fall” to the centre of any body (mass) they happen to meet, is a mystery. Why make for the centre? It is this determination for all things to go to the center of mass that creates the pressure, that creates the heat, that creates the plasma, that creates, expels and propels Light, that warms and enables life on Earth - and probably elsewhere.

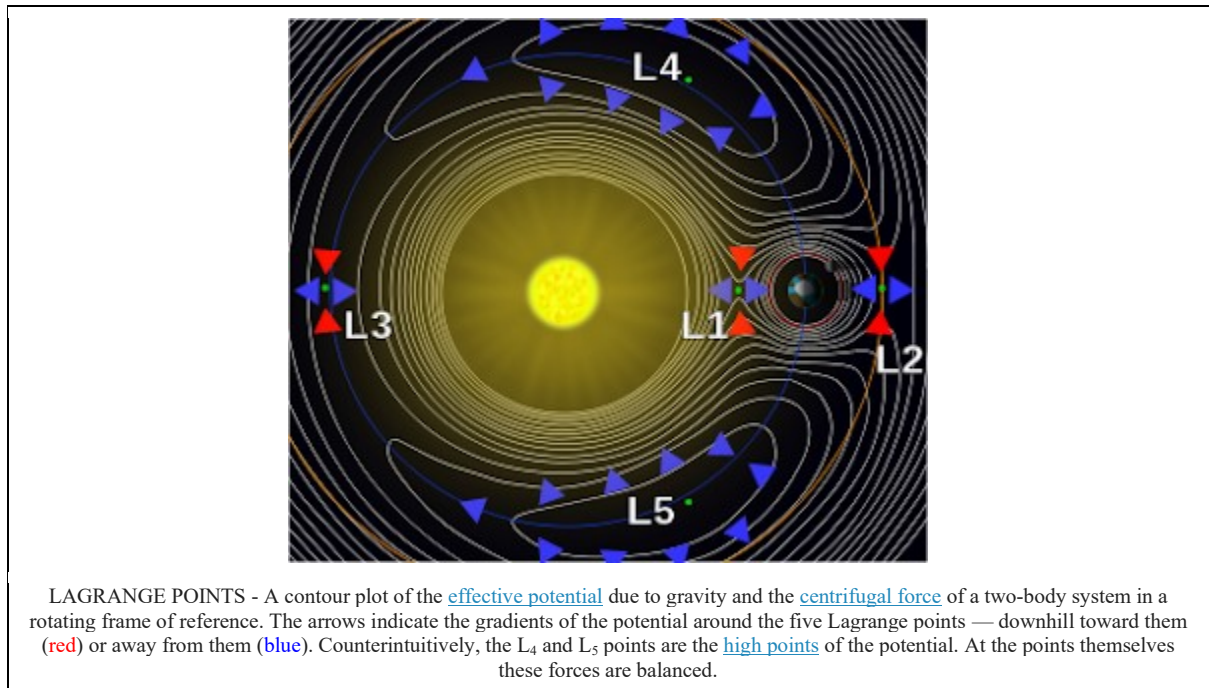
If we empty the entire Universe for a moment's thought, and revert it to pure massless energy, Light, which is currently deemed to have no mass at all, and thus no Gravity (but as some-thing rather than no-thing it must have a very slight mass) – and in this empty space we allow the creation of a single particle, using the Light collision method in my TOE - ...then the mass of the spinning particle, collects pure energy from a large sphere around it ( $E=MC^2$ ), continues to spin (like a tornado – not a virtual mathematician's spin) and continues to exist in a dynamic, not static Universe, as the product of three forces: **Attraction** (as the sphere of pure energy “falls” onto and into the mass), **Repulsion** (as the spinning surface repel each other) and **Expansion** (as Hubble expansion operates continually – NB. Hubble Expansion is not theoretical; it is known from decades of scientific observation, backed up with impeccable maths). However, when particles meet in empty, free space to form atoms and planets etc. we can realistically imagine them congregating in a lattice – as equal partners – not in a compressed mass, such as the Sun. It is the unexpected (self) compression of mass jostling to reach the centre that heats the material that forms the plasma in the process of nuclear fusion. (If we dismiss theories of The Electric Universe).

So, what is so damn attractive about the centre? What is Gravity? Einstein's is a circular explanation to say that mass sits at the bottom of a space-time bowl into which other mass falls. Newton offers no explanation, he simply accepts Gravity. I now see Gravity as a continuation and product of the tornado spin that, I imagine without evidence, forms the primary particles from colliding light beams.

#### INERTIA AND CENTRES OF GRAVITY.

Imagine two such primary particles meeting. They are both dynamic entities, not static, and both are emptying large spheres of energy, which makes the mass and accords with Newton's calculation, of attraction reducing with the square of the distance etc. They are the smallest things in the Universe, so only they can act on or interfere with each other. They thus are “permanent” masses. Hubble Expansion enlarges them continuously and so they continue to draw in energy to momentary, partial vacuums. When they touch, their surface vacuums pull them together but the surfaces rotating at 300,000x300,000 kps or C squared (tornado like), keep them apart. The two are now in a dynamic push-pull relationship; their twin-system is expanding. These two primary particles orbit each other with no external impedance – between them is a real and a mathematically calculable, centre of gravity.

We humans naturally understand and utilise centres of gravity. When we clothe ourselves in a leopard skin leotard and swing on liana vines through the trees with a loud whooping sound, we control and balance the ever-changing centre of gravity between our bronzed muscular bodies and planet Earth. When we miscalculate just where the centre of gravity is or will be in the next second, we overbalance and probably plunge unwillingly to the new centre of gravity, face down on the planetary surface. Our two primary particles are in a similar relationship – and together they are whirling round in their own private world.



Now let us add a multitude of primary particles, all spinning, all dynamic, all growing second by second. As they interact, they make large congregations, each of which has a dynamically changing centre of gravity – their own centre. They are oriented by these centres to THE centre of gravity which forms and can be found between all the congregations. All the spinning entities of groups of primary particles are in dynamic relationship with all other particles, through the mechanism of winding pure energy or light into matter or mass. These centres of gravity relationships constitute the Inertia of the Universe. All matter or masses are in relationship to and are fixed in place, subject to their dynamic spins, by Inertia. Inertia provides the capacity of orientation. (LAGRANGE POINTS are the counter-balances to centres of gravity. They are locations between planets and the Sun where gravity from all the masses is balanced and so has no gravitational pull in a particular direction. We are parking observation satellites in such non-gravity locations. Lagrange points move if other masses enter the region. [http://en.wikipedia.org/wiki/Lagrangian\\_point](http://en.wikipedia.org/wiki/Lagrangian_point)

A very large congregation, such as the Sun, in which the primary particles have been forged into Hydrogen, Helium and trace metals, comprises googolplexes of primary particles in such relationships, all spinning, all continually attracting energy to themselves and all expanding in size, courtesy of Hubble. They jointly and severally clear a large space around the mass (the Sun) which space, in turn, is being constantly refilled by in-falling pure energy from The Field. This never-cleared space surrounding masses is Einstein's bowl, his bending of space time. The Sun has a centre of gravity, which shifts dynamically with every addition and subtraction of mass to and from the Sun. Every primary particle also has its own centre of gravity and all groups have centres of gravity. All entities are spinning and all are Hubble-expanding. As primary particles are crowded by others, they are limited in drawing in only pure massless energy and their surface vacuums and emptying spheres are refilled, not by pure energy, but by neighbouring particles. The particles are continuously falling into each others' Hubble expanding spheres – irrespective of size or scale. This in-falling is centralised by the many centres of gravity throughout the mass – and ultimately by the single centre of gravity at or near the heart of the Sun – which is also expanding.



But, as we experience in our daily lives, this jostling and crowding of primary particles squeezes out particles, with mass, at very high speeds – and thus with very high energies; which we experience as heat and solar radiation – the solar wind. Thus, the Sun and all masses, large or small, dynamically grow, compress and expel energy and matter. Thus, large masses attract matter and energy (which are interchangeable) that falls onto or into the mass, and then the compression forces matter and energy to be expelled as dust and radiation. In this way, the Sun and all large masses have a pulse - like living organisms, they are dissipative entities - dynamic, never static.

All masses are held in place or orbits by Inertia, the combined centres of gravity of the entire Universe, until immensely energetic changes occur in matter or in the pure energy field that are powerful enough to shift Inertia and enable new forms.

This is not a circular argument – its basic given assumptions (axioms) are just two – First that the Universe exists as a field (infinite and perpetual if you like) of pure energy (from God or by accident as you like) and Second that pure energy or Light, is the building material of particles which compress the Light.

How these particles are made and behave is my unproven speculation, my concept, my imagination fuelled by decades of reading popular science. This blog might trigger ideas that will illuminate the Standard Model and will assist in capturing applicable fusion power. A key point is that gravity requires a continuous and regular in-falling of matter, however diffuse, onto the centre of the gravitating phenomena. I guess the mechanism that causes the in-falling is Hubble expansion - which is constant throughout the Universe. Centres of gravity and Lagrange points may appear to vary gravitational forces.

Perhaps a mini-black-hole at the heart of every fusion-plasma holding “bottle” will replicate the effects of Hubble expansion in a laboratory and will create controllable in-falling gravity to maintain 10 million degrees of heat, with minimal electricity input.

## BIG-BANGS, AND GENTLE, SENTIENT FORCES – THE FIFTH FUNDAMENTAL FORCE:

We humans are of a size that is approximately halfway between the smallest and the largest phenomena that we know of. Perhaps our size dictates the upper and lower scales we can explore. Our Universe has massive, walloping, crashing, searing energies of terrifying inter-galactic power – but it also grows tadpoles, daises, blades of grass and babies. These latter water-based life-forms are both subtle and vulnerable, and they are sentient – they can feel their environment – and they need gentle environments safe from all the shouting, burning and banging. All phenomena emerge and are organised, somehow, from the universal field of pure energy (Light). It is logical to search for the subtle energies that enable short lived bags of sea water to acquire brains, occasionally act intelligently, reproduce and to wonder at the Universe. This organising, sentient energy, is, I believe, the Life-Force; a fundamental force ranked alongside Gravity, Electro-Magnetic, Strong and Weak Nuclear forces. The organising, sentient Life-force is the fifth fundamental force of our Universe.

My calculation of Hubble Expansion is that the Universe (Space-Time-Continuum) expands at **6.819E-19 percent per second**. My maths is not great, so check it out – *the circumference of the observable universe, disappearing at light speed*. I have not read any reasonable arguments that say that some parts of Space are shielded from this expansion.

This minuscule, gentle rate is almost undetectable on a human or even on a Solar System scale, but is observed by astronomers between galaxies. IF, Hubble Expansion does drive gravity, then several of the mysterious universal forces, such as Dark Matter and Dark Energy can be investigated in the light of this new factor. Gravity would be seen as Hubble Expansion acting on every sphere from the smallest (Planck Minimum) to the largest (the entire Universe). Inertia would be the balance and dynamic tension, on every scale, between centres of gravity (foremost at the centres of large objects) of groups of orbiting and spinning masses – and Lagrange points. At the sub-atomic scale, human-scale investigations of particles will unavoidably and continually alter the centres of gravity under observation.

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For a Theory of Everything, many fundamental matters remain to be understood and slotted into the jigsaw. The Standard Model of atoms and sub-atomic particles appears to be bogged down. Several top scientists say a new model or breakthrough is needed.

**ENERGY CONVERTED INTO MATTER** - The Higgs Boson and Higgs Field is a dubious discovery; first credited with “conferring mass” on other sub-atomic particles, its role and existence is now uncertain and debateable. No scientist has claimed that it was or is the mechanism that converts “pure energy” (Light) into “real” things (fundamental particles).

**EQUIVALENCE** – Einstein is credited with explaining Gravity. Part of what he proposed was to assume that Gravity and Inertia, the mysterious force that keeps everything in its place, are equivalent – and therefore perhaps equal and opposite sides of the same coin. This fundamental assumption is now being re-examined. Neither Gravity or Inertia are understood.

**GRAVITY** – Einstein pictured Gravity by comparing it to the force under the feet of a person being whisked up in an accelerating elevator or lift, far from any gravitational mass such as Earth, but experiencing the same downward pressure, as if standing on the Earth, due to the acceleration of the rising floor. The passenger would actually be experiencing the Inertia or fixed masses of the entire universe – relative to the floor’s acceleration compared to the relatively static universe. He also pictured Gravity as an infinitely large deep bowl at the bottom of which is the attractive object, such as Earth; any-thing with mass, including massless light, that enters the Earth’s bowl, no matter how distant, will eventually slide down it, to the Earth. If the falling thing is dense enough, far denser than our planet, it will continue going down until its centre (of gravity) gets to the Earth’s centre of gravity – in the centre of our planet. Einstein saw this falling object as **appearing to** accelerate as it falls through spheres within spheres of what I will call The Aether-Matrix surrounding the planet, each sphere equidistant from all others but those nearest the planet being shrunk (by gravity) so that the object takes less time to pass. You either need to read more about this – or need to get out more.

## HIGGS BOSON AND PARTICLE PHYSICS

It is just about 100 years since the current Standard Model of atoms and particles was envisaged and defined. The Higgs Boson is one of the many missing pieces from this most complex of all jigsaw puzzles. Within 5 years, entirely different propositions and theories will be published, funded and explored to explain how the Universe works. The new models will offer to explain Gravity, Dark Matter, Dark Energy and the organising Lifeforce. I guess that electricity will be given a far greater and wider role in the story. It will take many minds many centuries to create a new Standard Model – and then science might have a reliable foundation from which to start afresh.

Here is my contribution to new ideas:



## CHASE THE LIGHT



### **MORE ON BIRTH, EXISTENCE, LIFE AND DEATH.**

Response to an email discussing the previous Blog - I NEVER ASKED TO BE BORN.

My ideas are based on science. It is scientifically true that:

(1) A 90 kilo man or woman is made of:

889,041,045,200,000,000,000,000,000,000,000,000,000,000,000 photons

889 thousand, billion, billion, billion, billion, billion photons.

(2) If the 90 kilo man collected the photons from "empty" space, he would have to gather them from a sphere or ball with a diameter of 25 million kilometres. BUT, he collects the photons on the Earth, which is already very compact, so in the process of growing from a seed, he gathers them from a sphere or ball in the Earth's atmosphere of only 12 metres diameter. A human egg or ovum is about the size of a full-stop or period on this page.

(3) Every particle of matter, and every sub-atomic particle, does broadcast its presence and activity as radio waves. Radio waves (Light waves) do go out in spheres for billions of years and maybe for eternity, scientifically, to the edge of the Universe. It is from these "broadcasts" that CERN etc can detect the particles (particle physics) and the Hubble Telescope can detect (see) very distant galaxies (astrophysics).

(4) The human brain and all organised forms (organisms) do also broadcast identifiable, legible radio (light) signals, all the time, from their thoughts. E.g. "I am hungry, I must eat" - "I am angry, I will kill" etc. We do operate on a 10 to 75 watt electrical circuit, depending how physically active we are. We create the electricity from our food. These radio broadcasts are probably received by all sentient life (Jung's collective unconscious). An average person funnels or channels and processes 25 tonnes of nourishment - plus several tonnes of air - in their lifetime. We are indeed "dissipative" creatures.

(5) IF, the 90 kilo man exploded in a nuclear blast (nuclear = centre of the atoms), it would be similar to several Hiroshima atom bombs exploding; as the photons of light let go and revealed their compacted energy.

Not yet fully scientifically accepted but demonstrably true:

(6) "Empty Space" is not empty. Most scientists now accept it is not empty. My analysis is that because we can "see" the whole universe, from anywhere in the universe, that the light waves we see make light images of the whole universe (holograms) on every scale, everywhere. This is logically true and will be accepted one day. These light waves include ALL our broadcasts from every second - that do scientifically last "for-ever". This universal sub-structure made from organised light from all phenomena is what I call The Aether-Matrix. Einstein did not say the Aether doesn't exist - he said he didn't need it for his calculations.

(7) The LIFEFORCE is real, as a fundamental, natural, organising force. Science currently turns itself inside-out and through painful quasi-logic contortions to try (and so far to fail) to explain how the scientifically inexplicable "four fundamental natural forces" Gravity, Electro-Magnetism, Weak Nuclear and Strong Nuclear forces become accidentally organised to make Galaxies, Stars, Planets, etc AND very delicate, subtle Sentient and Intelligent life-forms. While science reluctantly accepts from undeniable experimental observations and measurements that the Four-Fundamental Forces (and the Fifty Universal Constants) exist; science is stubbornly blind to blades of grass, trees and walking, talking humans as scientific fundamental factual demonstrations of the natural combination and organisation of energies. I predict that someday the Lifeforce will be ranked with the Four Fundamental Forces, as The Fifth Fundamental Force.

(8) If and When the Lifeforce is accepted as The Fifth Force - it will be seen as the balance of and counter to the gloomy laws of Thermodynamics including Entropy that imagines all energy is expanding (cooling) and will eventually (in a few trillion years) turn the entire universe into a cold, dark, inert, featureless soup. We humans, all 7 billion of us - and our spectacular universe - are living testaments to an organising principle of nature that continues to combine energy in interesting and novel ways. The universe is dynamic; not simply and irrevocably flat, expanding or contracting.

(9) The human seed, within a seed, within a seed does make us (we who are alive in 2012) scientifically "disappear" when traced back down the ancestral line to about 1760 when the enfolded seed (you and me) was too small to exist. It logically was smaller than "The Planck Length" which is the smallest thing permitted by science.

Completely and entirely unscientific:

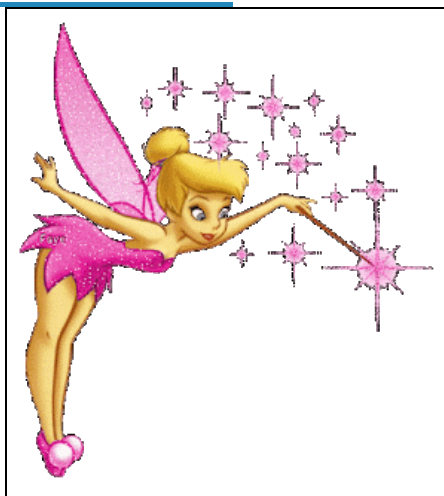
(10) It is pure speculation that our personal broadcasts are imprinted on the Aether-Matrix and are somehow retained or recorded for all time, and that they then create the templates for new life. But it is a neat theory and accords nicely with many religious insights and philosophies.

(11) It is not scientifically investigated or proved that "we" choose to be born, live and die". Free will and self-determination is at the very fuzzy edge of the study and science of consciousness. It is part of my "faith" from esoteric reading and works that I believe we unconsciously understand the universe - because we are made of the same stuff as the universe - and that we have free-will.

Do continue to chase the light - and we will find that elusive spirit.

Friday, 9 November 2012

## THAT PESKY HIGGS BOSON



Death of the Higgs.

SADLY:- The HIGGS does not confer mass, says CERN; at least not much mass "approximately a fingernail of mass compared to the whole human body"

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I wrote a Higgs update recently, before the excitement of the US Presidential election, and wondered what the news is after 4 months since CERN found it. HAVE FAITH IN THE HIGGS BOSON  
This week's New Scientist, Mathew Chalmers, page 34, 10 Nov 12, prints an article THE HIGGS? DAMN... which, in the language of theoretical particle physics, states the uncertainty and puzzlement of scientists about that **damned elusive particle** and its Field.

The bad news is that CERN will shut down for a refit later this year, for 2 years. Barring a surprise result from current data analyses, it is likely that confirmation of the existence of THE HIGGS will have to wait for CERN 2 to be fired up.

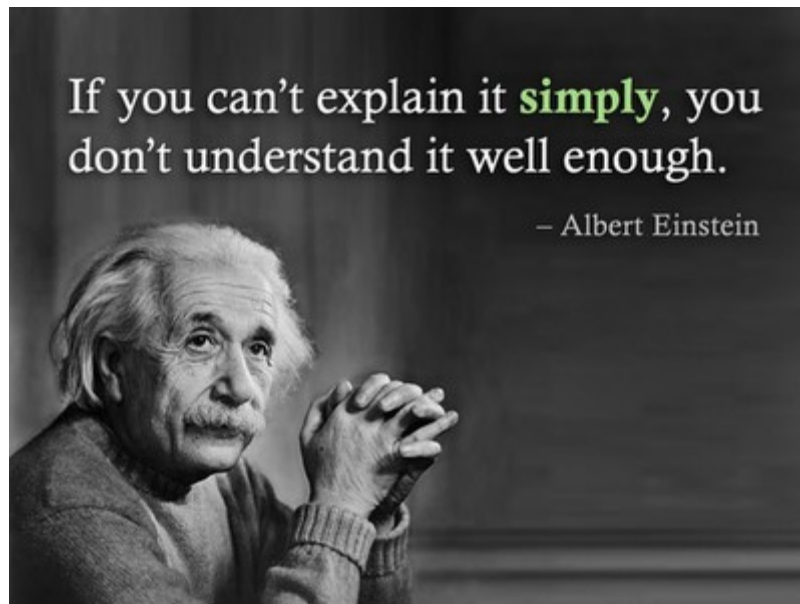
There is no good news. Out of five tests of whether the Higgs fits the required profile, only one is positive and the other four are either NO or DON'T KNOW. Scientists are questioning all the measurements of what CERN found in July 2012 and are revising whether the spin offs (literally) from The Higgs, namely 2 photons, are indeed evidence that the Higgs interacted with The Top Quark (found inside Protons and Neutrons) as theory predicted.

I will try to translate their CERN SPEAK into English, next week. In the meantime we must dwell on the uncertainty. Maybe the Higgs is dying. Maybe if we all clap our hands and shout "I believe in Fairies" it will shine again in the firmament.

HIGGS BOSON - BLOG ARCHIVE

Sunday, 4 November 2012

## HAVE FAITH IN THE HIGGS BOSON



**Oh Where, tell me Where; has my true Higgs Boson gone?**

A GOOGLE search on 4th November 2012, 4 months after CERN spotted something that looked very like the Higgs Boson (and thus the Higgs Field), brings little or no updated news. It did turn up this Huffington Post video "explaining" the Higgs, which does feature the prettiest Higgs presenter to date, somewhat like a youthful Sarah Palin with a brain, eclipsing even the charisma and enthusiasm of the handsome Professor Brian Cox.

[http://www.huffingtonpost.com/2012/09/11/higgs-boson-cern-discovery-peer-review\\_n\\_1871862.html](http://www.huffingtonpost.com/2012/09/11/higgs-boson-cern-discovery-peer-review_n_1871862.html)

But I can find little or nothing new from July to November that advances common-sense understanding.

New Scientist, 3 November 2012, reviews a hastily published book *The Particle at the End of the Universe* by Sean Carroll, California Institute of Technology, but the review gives no explanation of what the author may have concluded, other than it is NOT the source of mass but might add some mass to the electron - but not really. We are essentially being told that "it is complicated" so we non-theoretical-particle-physicists should firstly support the massive CERN budget requests and then secondly, hurry away and get on with our humdrum lives and not bother our limited confused hot little brains with trying to grasp the lofty principles that our intellectual betters wrestle with in smoke filled cloud chambers and alternative universes.

We are admonished by Carroll thus: **"It's not supposed to be easy, we're talking about discoveries that resulted in multiple Nobel prizes"**. To which I respond with Albert Einstein telling lecturers **"If you cannot explain it simply, you don't understand it well enough"**.

I recall that as a grubby and suspicious Roman Catholic child at primary school, my penetrating heathen analyses of Jesuitical philosophical mazes such as the Transfiguration of the Blessed Virgin Mary (taken up body and soul, still alive and kicking, into Heaven) were rebuffed by a priest with long hairs springing from his nostrils and a strong Irish brogue: **"Ah! Tis a holy mystery of faith"** that was beyond common, sinful, pedestrian minds to grasp. What I did grasp, aged six, was that the guy hadn't the faintest clue of what he was talking about - and was wriggling like a latter day politician in the crushing jaws of my inescapable logic. We can only hope that today's particle physicists are not all covert Jesuits in lab coats.

So where does it leave us? I must still assume, humbly and relying only on a deep faith and chanting the CERN Catechism, that the instantly evaporating Higgs Boson and its persistent universe filling Higgs Field is or are or were the "missing" piece or process of the sub-atomic particle zoo that does indeed confer mass (weight) to other particles, probably to the ubiquitous electron, maybe to quarks, and is thus the process or trigger or gateway or (for heaven's sake) the journalists' "custard" that turns light

into matter - spins straw into gold - compresses the pure energy from the alleged Big Bang into particles - that make the phenomena we observe all around us - on every scale. If the GOD PARTICLE does not miraculously enable the energy to convert to mass - then what does? And can we please have more views, more metaphors, more understanding from the experts. (Remember the Italian Earthquake scientists - And Tremble).



Friday, 19 October 2012

## HIGGS FIELD AND OLBERS PARADOX.

### DO OLD LIGHT WAVES GROW TALLER?



THE DARKNESS OF OUTER-SPACE.  
WHO SWITCHED OFF THE LIGHTS?

#### Death of the Higgs.

SADLY:- The HIGGS does not confer mass, says CERN; at least not much mass "approximately a fingernail of mass compared to the whole human body"

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The as yet unconfirmed sighting of the very short-lived Higgs Boson and therefore also of the Higgs Field, may cast new light on old conundrums. If the Higgs Field was broadcasted throughout the universe shortly after the Big-Bang and if the field is constituted so as to confer mass – to spin straw into gold or

light into matter – then The Higgs Field is the basic stuff of the universe. This may not be so. We may be running far ahead of CERN and cautious science; but if the Higgs is truly the “God Particle” then the particle’s Field is logically the source of all things, of all phenomena that have mass and reality in our macro-world.

I am convinced there is such a field, which I have named The Aether-Matrix, but will happily rename The Higgs Field if it fits the requirements. One of the many mysteries of the primordial field, as observed from Earth, is expressed in Olbers’ Paradox.

The energy field, a field of light, creates sub-atomic particles and it creates moons, planets, stars and galaxies. The field is expanding according to the Hubble Red Shift, which is based on the speed at which galaxies are seen to move away from each other.

Most commentaries on The Higgs Boson assume that it appeared 13.7 billion years ago, compressed light into particles ( $E=MC^2$ ) and immediately decayed within milliseconds; leaving the universe without any Higgs Bosons but with the enduring Higgs Field? In this scenario, which is traditional Big-Bang philosophy, all primary matter was made at an early stage then the mechanism switched off. (I am beginning to think that it is a simplistic and erroneous model).

However, let us accept it for this article and restate Olbers’ Paradox in that structure.

[http://en.wikipedia.org/wiki/Olbers'\\_paradox](http://en.wikipedia.org/wiki/Olbers'_paradox)

The observable universe is an expanding Higgs field, with galaxies 13.7 billion years old; the farthest are 43 billion light-years away from us – at our observational horizon. There has been time for millions of “shells” of universal nested spheres bearing galaxies and stars to become populated with bright objects – along every line of sight we may take from Earth. In other words, wherever we gaze into space, our line of sight should see a star either far or near. Stars are suns and shine brightly.

Kepler first posed the problem in 1610 and Heinrich Olbers correctly concluded in 1823 that we should see a uniformly bright night sky – an illuminated sheet of stars in every direction. The paradox is that we see mostly vast areas of darkness, pierced with dots of light. Why?

Immensely clever people have confirmed the paradox and proposed different solutions. In the light of the Higgs Field, and the Hubble expanding “open” universe, with a fixed amount of created matter, is there a new potential solution?

As I have written here before, it is inarguably self-evident that wherever in space we set a telescope, or an eye, it sees the entire universe. There is no empty space. Any observing sphere of any size sees, in that sphere, the electro-magnetic signals of the entire universe, criss-crossing the sphere. These are “holographic” images; each has a unique size and angle on the whole universe; they are limited by their diameter as to what wave heights or amplitude they can see in a particular sphere. If the Higgs mechanism fixed the universal matter 13.7 billion years ago, no new matter is being created today – so we need only concern ourselves with the disintegration and reintegration of particles and macro-objects. We have some understanding of galactic explosions and implosions and signals; and it is therefore likely that the distant horizon stars and galaxies are indeed very old and that we see very old light arriving on Earth from them.

One proposed solution is that with so many stellar objects propagating and broadcasting waves – exact but opposite wavelengths cancel each other – leaving darkness. My thought today is, do the light waves, travelling so far and for so long, change their wavelengths and their wave-heights or amplitude? Do the signals spread out as we observe does happen with narrow laser-beams fired at, say, the Moon? If the amplitude increases, if the wave grows taller like a spreading beam of light, it could become larger than the observing spheres we employ to gaze into outer-space. If the waves are too tall for our eyes and instruments to encompass – we will see ...darkness.

Does the Hubble expanding Higgs Field enable light waves to grow in height?

QED – Answers on a postcard please.

Thursday, 18 October 2012

## WILL THE HIGGS FIELD SUFFER HEAT-DEATH?

### THE DYNAMIC UNIVERSE



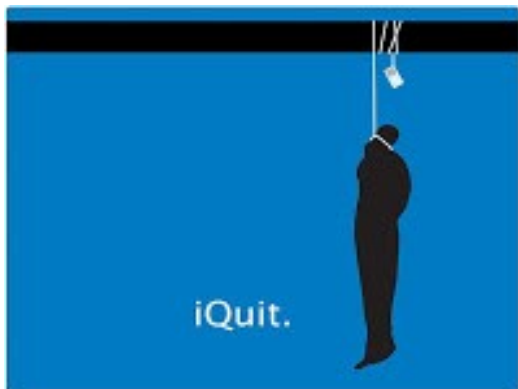
PROFESSOR BRIAN COX - FORECASTS  
THE HEAT DEATH OF EVERYTHING.

Entropy is the flow of heat from hot to cold. The almost infinite universe, outer space, is very, very cold.

All recognised scientists accept that the 2<sup>nd</sup> Law of Thermodynamics, proving and supplying the calculations that heat always flows from hot to cold places, is irrefutable and inevitably leads to the heat death of the entire universe. They actually mean the cold death, as "entropy" disperses and dissipates all heat, heat sources and all congregations of matter.

The entropic end of the universe, albeit in many billions of years' time, is a cold dispersed soup of lifeless particles, evenly distributed throughout the infinity of space-time, at or near the minimum possible temperature of -273 degrees Centigrade ( zero degrees Kelvin). These are the coldest of cold ashes after all stars, and we, have burned away. The proposed Higgs Field, the source of all concentrated matter and thus of heat, would also lose its powers, if heat death visits. There will be no more phenomena.

Numbers of great Victorian geniuses arrived at the logical mathematics of entropy. The later discoveries, mathematics and definitions of the four fundamental forces: Gravity, Electromagnetism, Weak Nuclear and Strong Nuclear forces have confirmed that the end of all things does indeed lie in Entropy. The theorists who discovered The Big Bang, from the ultimate congregation of energy and matter at the Beginning of Time, which exploded from a White Hole to create our Universe, and the thousands of physicists who apply Quantum Theory and particle physics to work in real life, including Professor Higgs, all believe in the heat death. Even the handsome professor, Dr Brian Cox, happily informs his TV audiences that the entire universe is doomed, doomed, doomed by the 2<sup>nd</sup> Law of Thermodynamics.



NIL DESPARANDUM

The 2<sup>nd</sup> Law of Thermodynamics remorselessly extrapolated to the whole universe; is a theory of ultimate despair.

***"Ludwig Boltzmann, who spent much of his life studying statistical mechanics, died in 1906, by his own hand. Paul Ehrenfest, carrying on the work, died similarly in 1933. Now it is our turn to study statistical mechanics. Perhaps it will be wise to approach the subject cautiously." In sum, thermodynamics, what many consider to be the most intellectually difficult subjects of all, is noted for its prevalence of suicides***

***and suicide attempts by a large percentage of its founders, including German physicist and physician Robert Mayer, Austrian physicist Ludwig Boltzmann, American physical chemist Gilbert Lewis, among others.***

But, I think applying entropy to everything, forever is wrong. It is incomplete. It is based on flawed evidence and the conclusions of suicidal depressed thinkers. The counter-evidence is all around us, everywhere, all the time; but science chooses to ignore it. Energy and matter do congregate, counter to entropic flows.

The basic theories and arguments depend on how we define the universe. Is it OPEN, which means it is ever expanding and will end in heat death? Is it CLOSED, which takes us back to The Big Crunch, annihilating all matter and energy? Or is it FLAT, which means it trundles on quietly regenerating itself as old galaxies fly off beyond our sight?

My view, recently arrived at, is that it is DYNAMIC. The universe is a "living" cyclic and regenerating field.

I think the universe is a coherent pattern of energy, of electro-magnetic energy or light that forms the "Aether-Matrix" from the intercepting light waves that demonstrably, irrefutably and conclusively occupy every imaginable "holographic" sphere of all sizes on every scale throughout the universe. These spheres, each filled with a unique picture of the entire universe, consist of light waves. The diverse images of the whole universe that the spheres contain are limited by their diameters as compared to the wavelengths of the light signals. Long waves do not fit into short spheres.

This Aether-Matrix, equivalent to The Higgs Field, is continually re-formed and in-formed by every event in the universe, including human activity. We can detect and measure these changes with our present radio receivers and radio telescopes. For example, our mobile phone and TV signals are broadcast into the Aether-Matrix and they re-form and in-form the holographs in the spheres. To most thoughtful persons, this matrix is incontrovertible as radio signals fill the universe. Where I introduce controversy is that I conjecture, along with 0.00001% of respected scientists, that light has a very slight mass, it has weight, it is capable of making matter. This conversion is what The Higgs Boson allegedly does. I also think, heretically, that the DYNAMIC universe alters its hallowed Constants; by mutually adjusting feedback, mitigated by the mysterious force of Inertia.

The most obvious evidence against the rule of endless entropy is ourselves; the human being. We are warm congregations of atoms, molecules, DNA and cells full of seawater. We are dissipative creatures who collect sunlight and trace elements and mould them into a pattern, a pattern we do not know the source of. It is not simply DNA, which, if traced back via ovum within ovum within ovum vanishes into a sphere smaller than the Planck length in about 1760. Nothing can be smaller than Planck's length – other than maybe a black hole. Size matters.

Life is ubiquitous. Wherever science looks it finds life and organisation. Life is counter to entropy. There is a Lifeforce that organises random energies and particles. And, if you are of the odd eccentric mind that classifies life as an aberration, as a random accident, or as unproven – look at the original dust from the Big Bang, which has formed organised particles, atoms, molecules, planets, stars, galaxies, and galactic groups. At the stage of our present knowledge; with 80% of matter "missing" and the Higgs Boson whizzing in and out of existence before you can say "light" – there is no solid argument for an OPEN universe, ever expanding to its ultimate entropic doom, doom, doom.

Scientists have no need to commit suicide. We live and thrive in a DYNAMIC universe, infinitely capable of regenerating life, organisation, heat and power; Higgs may just have found the source of organisation - for quantum physics. There is a great future ahead of us. Nil Desparandum.

Monday, 15 October 2012

## HIGGS FOR KIDS - MORE HIGGS BOSONS



#### Death of the Higgs.

SADLY:- The HIGGS does not confer mass, says CERN; at least not much mass  
"approximately a fingernail of mass compared to the whole human body"

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#### THE A.B.C. OF THE HIGGS BOSON

**If you can't explain it simply, you don't understand it well enough.**

Albert Einstein

*'oops - Atoms in your body correction; a trillion is 1,000 billion, I meant a billion-billion and then another billion.*

<http://www.brainyquote.com/quotes/quotes/a/alberteins383803.html#d3MpZIPVzkGD4tbX.99>.

I have read twenty or so texts and written six or seven paragraphs about The Higgs Boson and Higgs Field. Could I explain them to my two bright grandchildren aged 12 and 10 years old?

**ABC** – Professor Peter Higgs is an Englishman who lives in Yorkshire. About 40 years ago he and a host of scientists worked out that one day science would find a “missing” fundamental “field” and particle that would explain the mass (weight) of atoms. That day may have come in July 2012.

**“A” is for ATOM** – that since the classical Greeks, 2,500 years ago, was thought to be the smallest possible thing in the world. An atom was defined as a tiny unbreakable “pebble”, which in great numbers make the world and the universe.

*Wiki.Answers.com: According to Jefferson Lab, an average 70 Kg person, that's about 150 lbs, will have approximately 7\*10 to the 27th atoms in their body. That's 7 followed by 27 zeros (7,000,000,000,000,000,000,000,000,000).*

So in English: You are made of Seven-Billion-Billion-Billion atoms. Each atom is just  $10^{-10}$  metres wide, 0.000,000,000,01 metres, or a ball Ten-Billionths of a metre wide. A metre is about 3 feet long – Americans misspell it ‘meter’. All these atoms cooperate to make you the shape you are and what you are; how they coordinate is a mystery.

**“B” is for BOSON:** Lord Rutherford an English Baron from New Zealand with a large moustache, in 1915 discovered the atom was not the smallest thing; it was made of even smaller parts. Since 1915, scientists have found hundreds of different ‘sub-atomic’ particles that are classed into 3 main “families”; all are either inside, or are revolving round, the centre or nucleus.

[http://en.wikipedia.org/wiki/List\\_of\\_particles#Bosons](http://en.wikipedia.org/wiki/List_of_particles#Bosons) - [Particles described by Bose.E2.80.93Einstein statistics](#)

The nucleus is made of (heavy) protons and neutrons. The outer satellites are almost weightless electrons, which cause electricity and magnetism. Each of the 120 or so different types of atom listed in Mendeleev's Periodic Table - Iron, Carbon, Oxygen etc - have different numbers of electrons, protons and neutrons.

Most of the particles change into each other (“decay”) all the time and have very, very short ‘lives’ of milliseconds.

**BOSONS** – are one of the three main “families” of particles which include massless photons – which “carry” light from one place to another. Bosons include the Graviton which “carries” gravity; though it has not been found and gravity remains a mystery. It seems that Bosons themselves are massless but they transmit mass. Bosons have a spin of 1 - the Higgs has a spin of zero. The calculations and assumptions and “spin” that predict The Higgs Boson are beyond the comprehension of 99.99% of ordinarily intelligent people. To join in, inherit the mathematic gene and start aged ten or so.

**C is for CERN:** The **C**onseil **E**uropeen pour la **R**echerche **N**ucleaire designed a 17 mile long tunnel at Geneva, Switzerland in 1952, in a perfect circle, big enough to run buses through; equipped it with particle accelerators and huge magnets to guide the particles, and installed photographic chambers where the speeding particles collide, or crash into each other – at almost light-speed, the universal limit of speed 300,000 kilometres per second. The latest rebuild of this very costly complicated cyclotron equipment is designed to isolate PROTONS from the nucleus (centre) of atoms, usually Helium Atoms, and accelerate trillions of them in opposite directions and crash them into each other. Protons are in the HADRON family of sub-atomic particles, so the big piece of kit at CERN is called the Large (because it is big) Hadron Collider - LHC.

As the protons, at millions of crashes per second, collide they split and scatter into hundreds of very short lived particles, demonstrating that they are NOT elementary particles; but are composite particles, made from other smaller particles (n.b. size is misleading because a dense smaller particle can have far more MASS than a larger “weightless” particle – think of: “which is heavier; a ton of lead or a ton of feathers?”). With a bit of faith, luck and a lot of skill, one of the bits exploded from the crashed protons will be The Higgs Boson.

It, The Higgs, is 134 times heavier than a proton and only survives for one-hundred-and-fifty-six-thousand-billion-billionths of a second before it sadly “decays” into, usually, two photons; but its brief existence warms the hearts and souls of the scientists and brings smiles to their faces.

**F is for FIELD:** What matters more than the vanished Higgs particle is The Higgs Field. All particles, in fact all things that exist (stand-out), continually broadcast their existence in light and radio waves. This is how we can see distant stars, in the visible light range, and in invisible light such as Infra-Red, X-Rays and at all frequencies. All things broadcast electromagnetically (light), including sub-atomic particles. The broadcasts travel or propagate at the speed of light in waves, the waves have no mass, they are weightless, and the spheres they create or travel through are “fields.”

My interpretation of what Professor Peter Higgs and pals are looking for, an interpretation they may well disagree with and so will explain to us further, is the magic moment, conditions, times and places when and where such energy “fields” condense into matter – in this case into fundamental or elementary sub-atomic particles that are the building blocks, the bricks, of all things. The Higgs Field and its carrier particle may be the process whereby straw is spun into gold.

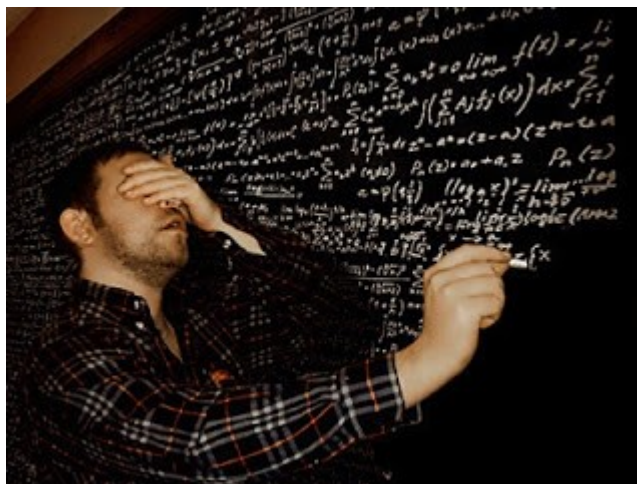
Is that clear? Will children understand it? Questions on a postcard please.

More boson blogs later – another time.

Sunday, 14 October 2012

[HUG A MATHEMATICIAN - GLOBAL LEXICON](#)





HIGGS FOR KIDS? – BUT FIRST... WE NEED TO INVOLVE THE OTHER 7 BILLION PEOPLE.

**"AUTHORITATIVE GLOBAL LEXICON OF MATHEMATICAL TERMS AND SYMBOLS". CLEAN UP MUDDY, MURKY MATHS:** My next Blog will attempt to explain The Higgs Boson to children.

**BUT FIRST:** The mysteries of micro and macro physics, the study of the smallest and the largest things we know of, would be solved far faster if scientists translated their cryptic Maths-Speak into a common language; for the rest of the world to work with and think about.

**Babel and Gobbledygook:** At present, the vast majority of research, speculations and conclusions are communicated in a language written and understood by a few thousand people out of 7 billion human souls. Among these few thousand mathematicians there are hundreds of dialects. With difficulty, and only if they can be bothered to communicate rather than mumbling and staring at their own feet at Oxford cocktail parties, mathematicians can sometimes translate others' dialects back into their own peculiar alphabet of self-selected, secret, arcane symbols and terms, a muddled lexicon which has evolved haphazardly through history and across geography since Lucy, Adam and Eve scratched the height of their children on a rockface with a flint.

Not only do mathematicians simply adopt any alphabetic symbol, from any ancient or modern language they happen across, to substitute for normal words and numbers, they use punctuation marks stuck above and below their numbers, brackets, nested brackets, vague wavy lines, and all manner of odd shapes in formulas and algorithms that they claim are masterpieces of brevity, clarity and communication. What self-deception and mass illusion.

**Poles, Perches, Rods, Ergs, Horse-Power, Metres, Litres and US Gallons:** What their dense, esoteric, scribbled symbols are intended to represent (to us ordinary folk) are incomprehensible jumbled Units of Measure. Likewise, these units have been acquired, stolen and borrowed from every civilization that has ever measured anything, anywhere at any time. No unit is ever rationalized or discarded; and all are whimsically pressed into service by isolated obscurantists, neurotically hiding their light under a bushel. Take a look at Energy:

[http://en.wikipedia.org/wiki/Category:Units\\_of\\_energy](http://en.wikipedia.org/wiki/Category:Units_of_energy)

There are thousands of different units; hundreds in any scientific discipline or craft you care to examine. AND THERE IS NO STANDARD DICTIONARY. Mathematics is the ultimate example of the blind leading the blind – and the deaf dumb and brain damaged too. And we haven't even touched on computer languages.

Astonishingly, NASA is still (2012) struggling, having lost space craft due to conversion errors, with trying to convert US gallons - to Imperial gallons etc - to Metric litres (which they misspell liters).

With the recent advent of computers and a bit more international cooperation – it is time that mathematics and scientific terms were tidied up, rationalized, pruned and subjected to a standard dictionary.

**GET A LOGICAL GRIP, JOIN THE GLOBAL COMMUNITY AND TIDY UP YOUR ACT:** All science, including the search for the Higgs Boson, would greatly benefit from being expressed in widely understood languages using as few common units as possible. If all 7 billion people on the planet were able to understand and comment on the problems – the problems would be rapidly solved.

The present mathematics system is akin to rendering **Shakespeare into Medieval-Icelandic-Finnish written in Runic Symbols**, sharing the plays only with the four other people on Earth who claim to understand the language; then despising the other 7 billion souls for not appreciating The Bard. Obscurantist terms do create jobs-for-life in secret hermetic covens – but are not in the spirit of the modern age and do not get the job done.

Saturday, 13 October 2012

## FLYING SAUCERS - HIGGS BOSON FIELD



[http://www.amazon.co.uk/AD2516-Global-Warming-Future-ebook/dp/B007N2H9JI/ref=tmm\\_kin\\_title\\_0#](http://www.amazon.co.uk/AD2516-Global-Warming-Future-ebook/dp/B007N2H9JI/ref=tmm_kin_title_0#)

EIG - My own theory of everything, my TOE, speculates that every part of the universe, from the smallest Planck sphere to the largest sphere of the Observable Universe, are dynamic ever-changing unique holographic copies of the entire universe - and all things in the universe, including ourselves. These holographs are at every scale and are real spheres of real energy - light waves energy - constantly expanding due to Hubble Red-Shift Expansion. In this Field of Light, my Aether-Matrix (which is undeniably demonstrable), I speculate that the expansion creates attenuation, slight vacuums, that attract or allow light to flow in, where some waves collide and combine to make fundamental particles, the primary particles of matter. This field is hugely energetic, made as it is from the signals or waves from all observable phenomena and activity in the whole universe, at every scale, that in-form and re-form the field from moment to moment. It may be the same field that Professor Higgs and Co seek at CERN. Are the primary particles Higgs Bosons? It is energetic enough to power space flight. (Read more Expansion is Gravity, EIG, on my website.

### FLYING SAUCERS OR SPACE-CHIMNEYS?

“Where’s the Sci-Fi?” one of my uncountable numbers of readers demands of this Future Fact and Fiction blog. So, here’s some seriously hard Sci-Fi or, as **AD2516 - After Global Warming** claims to be realistically based on today’s science, it might actually be Future Fact.

The heroes of AD2516 embark on a thirty-six hour, sixty billion kilometer journey to the Kuiper Belts at the edge of the solar-system. As they walk towards the ship, Queen Yamoussaka the Third, The Queen to her friends - Sebastian Huggins, a New Yorker from 1999, defrosted after 500 years suspension in an Arctic glacier, argues with a modern young Citizen, Michael Michael Michaelson known as “EmmSon”:

“It’s a flying-saucer. It’s damn well a flying-saucer!” exclaimed Sebastian; the first of the astonished three to find words.

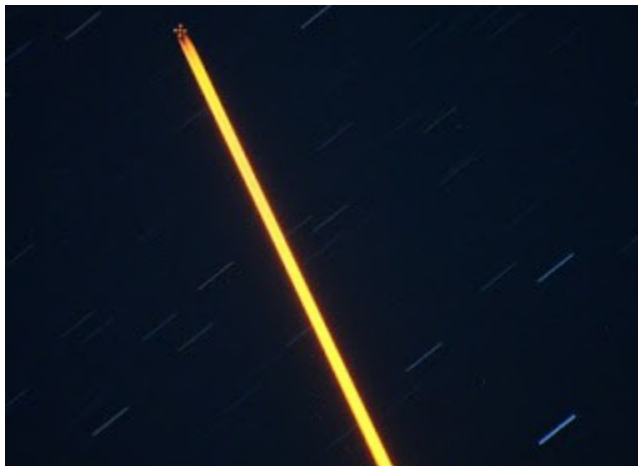
“No. No. Not a flying saucer. It’s a Space-Chimney...” called EmmSon over his shoulder, hurrying towards it.

Ahead of them was a seriously large, seriously heavy, seriously expensive, serious piece of very serious high-technology. It was definitely round and very, very like an upturned saucer with a five-metre deep, rounded rim. Its surface was neither metal nor carbonate. It was seamless; try as he might, Joe, with all his engineering experience, couldn't see the joins. It was slightly domed in the centre. It rested its immense weight on ten short legs with fat padded feet, precisely positioned on perfectly level piles, each polished and ground to reflective brilliance. Under the shadow of the craft dozens of cables and tubes snaked up, or down, from or into the ground. It hummed with power. They could feel energetic vibrations coursing through them as they came nearer and nearer; and found they had to look upwards the closer they came.

"...It's immense!" gasped Sebastian, still the spokesman. His eyes were wide and staring.

Even the Citizens were awe-struck and silent. The machine had a presence. It had a life and identity of its own. It felt as if it was watching them approach. Even in the bright morning sun it did not reflect the light. The sunbeams seemed to be absorbed into the surface, which consequently was difficult to see with clarity. The machine opened underneath and extended a wide staircase towards its guests, now huddled like tiny ants in the shade of a resting discus. The stairs rolled invitingly upwards. Their feeling of being observed by a very big and very conscious entity increased.

"The danged thing's alive," whispered Joe, "And as big as a goddamned aircraft carrier." He absently took Sarah's hand into protective custody – and she was very pleased to comply with the arrest.



One of the crew explains how The Queen crosses the solar-system at such great speed:

...The young woman continued at a fast pace  
 "...The rim is also the main space drive – when we switch the chimney on..."

"...on the top of the rim are laser beams placed close together so that when its rotating a seamless column of coherent light – the chimney – beams upwards..."

A graphic of a disk with separate lights at its rim shining fiercely out into space was flashed on screen.

"...The beams are magnetically polarised to attract all and any particles within the chimney to the "walls" of light. This creates an internal vacuum relative to the external pressure and the chimney effect is created."

"...under The Queen, the rim has lasers that form a cone of light which is polarised the opposite way – to attract particles making the zone beneath the ship of a higher pressure than the ambient external pressure – and far higher than the vacuum in the chimney above."

"The Chimney reaches out without losing its focus or polarity for a quarter of a million miles. So the "top" of the chimney is about as far away as the Moon. Any questions so far?" she challenged her audience, impatient to get this over with. No-one dared to delay the presentation.

"Good!"

"...Hence the concept of a smoke-stack chimney which joins the high pressure ground air with the lower pressure air at its top, creating an upward flow. Burning fuel at the bottom increases the flow as the warmed air is less dense. The Queen's lasers do the same job but instead of air flow, what sits in the chimney is the space-craft itself..."

And, sceptical though you may be, gentle reader, this Space-Chimney-Drive is based on current techniques to ionise and positively or negatively charge a laser beam. The rest, as they say, is history; just mere mechanical details – and a little real Sci-Fi.

<http://www.laserfocusworld.com/articles/print/volume-43/issue-9/features/photonic-frontiers-laser-filamentation-femtosecond-pulses-create-self-guiding-filaments.html>

Thursday, 11 October 2012

## HIGGS TO HOUSE-BRICKS

BOSONS TO BRICKS – FIELDS, THINGS AND PROCESSES.



AN IMMENSE FIELD OF LIGHT EXPLODES  
FROM 75 POUNDS OF METAL ATOMS NUCLEI

### Death of the Higgs.

SADLY:- The HIGGS does not confer mass, says CERN; at least not much mass "approximately a fingernail of mass compared to the whole human body"

\*\*\*\*\*

A lone communicant asks for more data on connecting Higgs Bosons to Bricks.

My current understanding is that house bricks are hard, solid and semi-permanent – even though every ‘thing’, all phenomena, inevitably change.

**Bricks** are made of **molecules** of various clays, rocks, sands, moisture and so on. Molecular structures, crystals, can be rigid – as in metals, diamonds, wood and skulls.

The molecules are made of **atoms**, which seem to be full of space, orbiting electrons and “wavicles” - but we know that matrices of atoms can also be rigid.

This rigid atomic-scale material, which we rely on to make bricks, is in turn perhaps built with **protons**, which nest alongside neutrons in the nucleus of every atom. We know from observation and calculation that an average proton can exist for  $10^{33}$  years; which is: one million, billion, billion, billion years. The Universe is a mere infant of 14.3 billion years – so our reliable protons are likely to long outlive it – unless it is eternal. From a human perspective, protons are immortal. Neutrons, which partner protons, live on average for just 10 minutes.

However, we think we know, from crashing protons together head-on at near light-speed, that protons are made of 3 **Quarks** and a host of minor particles – all mixed up with the mysterious 80% “missing” nucleus mass /energy. This mirrors the “missing” mass/ energy, Dark Matter, at the other end of the scale that mathematically and gravitationally we think ought to exist in galaxies such as The Milky Way.

At some stage in the evolution of the emergence of the Universe, the non-material **field** of the Universe, which we know to be **Light** – the electro-magnetic spectrum – fields of radio waves, photons, plasma, currents and forces, gave birth to, precipitated, created or formed primary hard little sub-atomic particles, maybe Quarks, that have weight, mass and the ability to make things, like Protons, that underpin the real world.

So, from no-thing to micro-particle to macro-object the trail is: an energy FIELD, LIGHT, QUARKS, PROTONS, ATOMS, MOLECULES, BRICKS – with 80% missing, dubbed DARK MATTER / DARK ENERGY.

The Higgs Boson is actually a **Higgs Field**. That is to say, while there might be a short lived sub-atomic particle called Higgs in the mass-less-photon family, it is infinitely more important that there was, perhaps still is, a Higgs Field. It is the Higgs Field, a field of energy that the LHC Large **Hadron** Collider at CERN, Geneva, so energetically seeks.



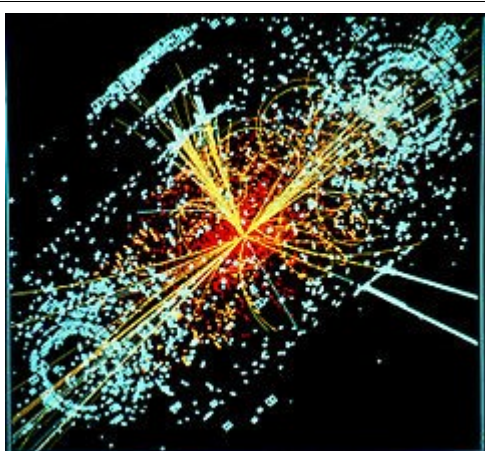
**HADRONS** are a family of about **140 Mesons** and **120 Baryons** - and among the 120 Baryons are those solid, long lived protons. Somewhere between LIGHT (a field) and possibly QUARKS (the first mass-particles) a process occurred or occurs that compresses the light into objects with mass.

We know that when we explode atoms, the nucleus of atoms, in nuclear bombs, they expand back into light – they make a massive flash of brilliant, previously cloaked, light. What Higgs might lead to is an understanding of how the light was compressed. How the field became /becomes a particle. What was or is the process?

More boson blogs later – another time.

Tuesday, 9 October 2012

## HIGGS BOSON DIES



PROTONS COLLIDING AT CERN.  
A FEW OF THE MILLIONS OF EXPERIMENTS  
MAY SIGNAL A HIGGS BOSON. WIKIPEDIA

UPDATE - 29 May 2014. - **"THE HIGGS FIELD DOES NOT CREATE GRAVITY"**

Picking the bones out of the Royal Society, Pall Mall, UK  
- Lecture 20th May 2014 - CERN Professors Ben Allanach, John Ellis, Tara Shears, Terry Watts - Chairman Alok Jha.

(The speakers used the analogy of the Higgs Field being a ski-slope, a snowfield. Massless particles such as photons skim rapidly across it with little resistance (mass); heavier particles stomp across it on snowshoes, slowed by the snow; very heavy particles wade through the snow without skis or snowshoes picking up snow as they go. The sticking snow is the extra mass added by the Higgs Field - which only adds mass to a small class of particles whose mass, for example, represent a single fingernail of

the whole mass of a human body. In other words a very tiny percentage of the mass of matter is attributed to the Higgs Boson and Higgs Field. It does not create gravity, nor explain the "missing" mass in protons, neutrons and galaxies; and does not explain Dark Matter or Dark Energy). I emailed the learned Professors, who all work at CERN - and they replied - see the colored ARIAL text inserted:

**CORRECTION - FOR THE SAKE OF CLARITY - THE HIGGS MASS IS ABOUT 125GeV NOT 125MeV.** That is 125 Giga (Billion) Electron Volts - not 125 Million Electron Volts. Where I have mistakenly used MeV - please replace it. GeV is 1,000 times greater than MeV. My difficulty is that I cannot envisage either quantity - and have no clue as to what they might do, or look like. What is usually left off **INFORMATION ABOUT MeVs and GeVs in particle physics** is that to convert them to kilograms of mass, they have to be divided by the speed of light squared, 90 billion (kilometres per second) - which minimises the error gap.

We amateurs can be forgiven from all that has been reported, for believing that the Universe is joyously teeming with Higgs Bosons that attach themselves to atoms and parts of atoms to add weight to otherwise almost weightless or mass-less matter. Our belief is further fuelled by The Higgs Boson being dubbed "The God Particle" – without which, we are told, none of the Universe would have been possible.

But: our faith that the God Particle builds Universal reality is misplaced. None survive in nature.

**TRAGIC EARLY DEATH**

One reason The Higgs Boson is difficult to spot is that it exists only for 156 thousandth, billionth, billionth of a second or, in mathematical terms: a Decimal Point followed by 22 zeros, ending in 156. This short life makes it difficult – in fact utterly impossible – to see. As yesterday's blog relates; its existence is inferred from the slight and elusive radio signals it leaves behind after it dies.

(I think, by the way, that all phenomena including we humans all leave behind a permanent radio broadcast in the minutest detail of our entire brief existences – and that the signals continuously in-form and re-form the “stuff of the Universe”, the Victorians' Aether, my Aether-Matrix; and, as I currently interpret it, Professor Higgs' Field. We all go on record and cannot delete it.)

The Higgs Boson dies tragically young and “decays” into two photons or other sub-atomic particles. ‘Sub-atomic’ means smaller than the atom. To make any common-sense of **The Tragic Tale of The Higgs Boson**, we have to surface into the reality of the macroscopic world, your own house for example. It is worth repeating that in size people are about half-way between the smallest things and the largest things we know of; between the tiniest, the Planck Length and the most immense, the Observable Universe. Philosophical sophistry aside, we are real. The bricks our homes are made of are real, are hard, are heavy, are relatively permanent – and live longer than The Higgs. Macroscopic objects have gravity and inertia – neither of which we understand. Many objects combine to make planets and stars and galaxies that exist in reality and reliably for billions of years.

The wondrous function of the Higgs Boson and Higgs Field is to bridge the ephemeral, wispy, non-material Stuff of the Universe, pure formless energy or light, with bricks. How can we (or God) make house-bricks from light? The Higgs Boson purports to do just that. If it can convert the immaterial into substance, spin straw into gold, it could be the “missing” Dark Matter required to glue the Milky Way Galaxy together and could reveal the mysterious mechanics of gravity. This is the Holy Grail that The Higgs Boson might lead to.

My own theory of the original particles, the transition from light into phenomena; and the (probably sentient) field of the entire universe; differs. I am now more and more inclined to revert to Prof. Fred Hoyle's earlier (pre Big-Bang) Steady State universe, in fact a Dynamic and ever Evolving universe that does not require the currently fashionable gigantic collisions, explosions, implosions, huffing and puffing and banging about insisted on by mathematicians who theoretically wind us back, by reversing Hubble-Expansion and with gravity, to the Big Bang. The ubiquitous, probably universal, much neglected, undeniable Lifeforce is far too gentle, complex, vulnerable, sentient, evolutionary and subtle for all that Thundering, Shuddering, Juddering and Ranting. Time will tell.

In the meantime – we need to get to know The Higgs.

[HIGGS BOSON EXPLAINED - 2](#)

Monday, 8 October 2012

## **HIGGS BOSON EXPLAINED - 2**

NB - The Higgs boson does not create mass - at least not very much mass. It only affects 5% of particles - says CERN. [HIGGS BOSON DIES](#)

HIGGS BOSON SIMPLIFIED FOR OTHER NON-MATHEMATICIANS



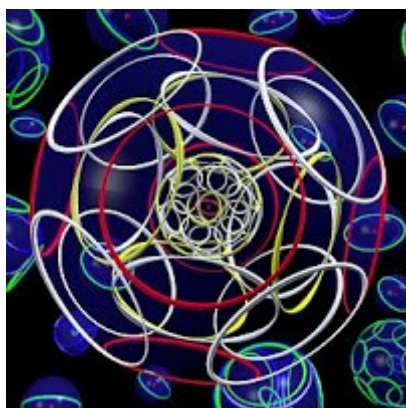
CERN - HIGGS SEARCH.  
PROTONS /HADRONS  
COLLIDING

My most visited blogs are about the Higgs Boson and Physics. Many readers must share my amateur, non-mathematical-language interest in the science and physics of the Higgs Boson.

Since the Higgs Boson was “found” in July 2012 in the 27km (17 mile) circumference Large Hadron Collider at CERN, Geneva, by firing protons (large hadrons) at each other to smash them to bits, other “atom smashers” have been attempting to reproduce the results and so confirm that the Higgs Boson does indeed exist and is a fundamental part of the atom and that they collectively

form the Higgs Field, which we amateurs might equate to the Victorian’s Aether, the basic stuff that forms matter and objects (phenomena) in the Universe.

How do they, the scientists at CERN, find a Higgs Boson?



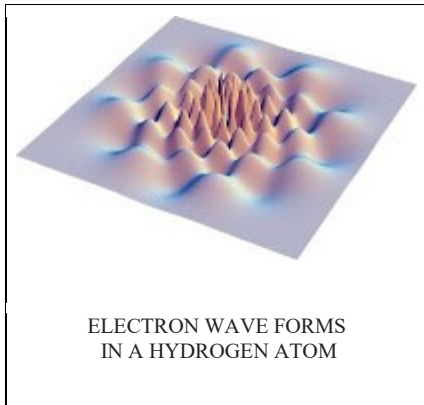
[KENNETH EDWARD/BIOGRAFX/SCIENCE  
PHOTO LIBRARY](#)

Computer graphic of an atom of Helium.  
The nucleus of Helium contains two protons  
(red) and two neutrons (blue).  
An electron cloud surrounds the nucleus,  
which in Helium contains two electrons  
orbiting in a single energy level.

Sub-atomic, particle or quantum physics, the study of the exceedingly small, cannot yet “see” an atom. There are two recent (2012) photographs that are the first ever visuals using the visible light range – the first is an atom, the second is the shadow of a Ytterbium atom (atomic number 70 on the Periodic Table). Atoms have been imaged before, using other wavelengths of the light or electromagnetic spectrum to generate computer images. These extraordinary pictures are necessarily fuzzy. We are unlikely to be able to photograph any subatomic particles because the available light wavelengths are too large and too disruptive of the particles to give us usable images.

Particles such as the Higgs are inferred from the particle trails seen (and photographed) in the gas or liquid in the collision (originally “cloud”) chamber, where the accelerated Protons meet head-on and break apart. What science sees are the impact trails of the particles. Through a hundred years of delving deep into the atom, science can recognise and have named many of the particles, their trails, recombinations, secondary collisions and outcomes. In the previous two centuries – from alchemy to chemistry to Dmitri Mendeleev’s

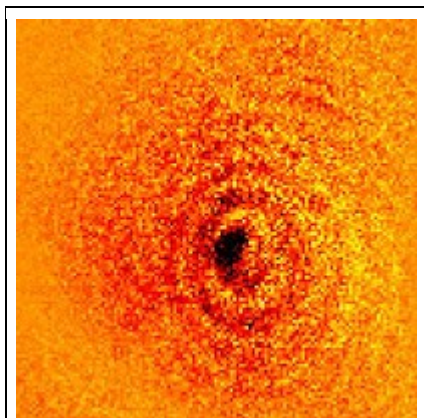
neat Periodic Table of the elements, science came to know different atoms from observing their interactions in our macroscopic human sized world. The most accurate understanding and identification, however, comes from our ever growing knowledge and use of electro-magnetism and its radio signature wavelengths. These waves and assumed particles (Wavicles) come only in standard units, first measured by Max Planck in 1901 studying black-body-radiation (heating and cooling of lumps of metal) who found the energy changed or radiated not in smooth gradients but in jumps or steps, now called Quanta; the Quantum/s in particle physics.



ELECTRON WAVE FORMS  
IN A HYDROGEN ATOM

The tiny jumps, or Quanta, of electrons inside atoms radiate photons and electrons as particles and waves that we harness for our radio, TV and mobile phone signals – among many other uses. Without Max Planck studying his cast iron stove 112 years ago, we would not have our cell-phones or TV. The sub-microscopic quantum world is real. To communicate the absolute precision of this realm, science prefers to talk in Mathematical-Language rather than in the less exact English-Language (or French, German, Chinese etc).

Every particle of the atom broadcasts its own electro-magnetic signal. Every atom has a unique radio signature. Every molecule has its own radio signature. And so, indeed, does every human being. Every phenomena (thing/ object) in the Universe, thus broadcasts its presence as a boundless field of waves; waves that propagate in recognisable patterns. Our understanding of the interior of atoms largely relies on these particle broadcasts. Our understanding is incomplete – but we do know for example that the Quarks (rhyme with “corks) that make Protons and Neutrons in the nucleus of an atom fail to account for 80% or so of the energy /mass of the Protons. We know that galaxies like the Milky Way lack 80% to 90% of the gravity (material) to hold them together. Most of the micro and macro Universe is missing ...from our models. So enter, stage left, the Higgs Boson.



VISIBLE LIGHT PHOTO OF  
SHADOW OF A SINGLE  
YTTERBIUM ATOM - 2012  
National Geographic

The Quantum radio-electro-magnetic jigsaw that physicists have assembled or modelled is translated in Mathematical-Language into the unique Wavicles of each particle. By a process of mathematical elimination, Professor Peter Higgs calculated, more decades ago than he cares to recall, that a major missing atomic piece is his Boson.

My other hyperlinked articles explain The Higg's signature energy/ mass/ weight (in both GeVs and Grams)\* and The Higgs also HAS to be simultaneously thought of as the fundamental FIELD that enables pure energy (light) to gain mass and give rise to objects in the electro-magnetic spectrum.

To physically find the Higgs sub-atomic particle, the LHC cyclotron (it cycles or goes round and round) at CERN, has to detect large numbers of Higgs among the collision debris (in fact the scientists detect the consequences or after-effects of instantly created and disintegrated Higgs - not the Higgs itself). The collisions have to make as much energy as the universal energy, the original field of light, did just after the Big-Bang; to recreate the fundamental point and temperatures when matter (Higgs Bosons) precipitated from the allegedly original searing hot energy field that poured out of the primordial "White Hole" at the beginning of space-time.

<http://www.youtube.com/watch?v=7dmvCsQly2c>

A single Higgs Boson has 134 times the mass /energy of a Proton so it takes that many Protons to collide to match the energy signature of one Higgs. As the Higgs instantly decays into other particles, the observers have to repeat the experiment many times to ensure that the radiating signal they briefly detected was from a Higgs Boson. Nobody ever said it would be easy.

The world awaits confirmation that CERN has found this important piece of the jigsaw.

There are also many other major mysteries to solve.

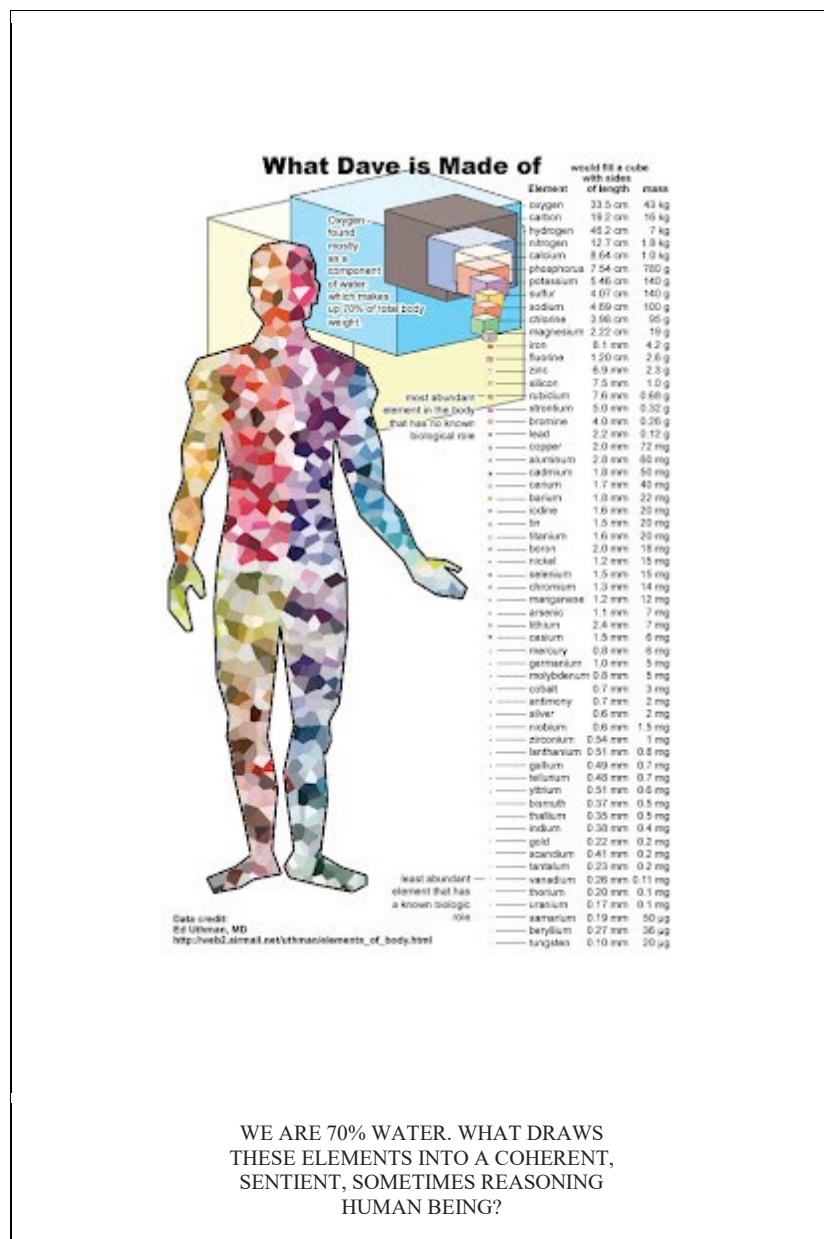
\* Mass and energy are interchangeable, as in  $E=MC^2$





Tuesday, 2 October 2012

## GRAVITY AND IMMORTALITY



[Latest on GRAVITY - go to Apr 2017.](#)

2nd October 2012 - Taking a well-earned break from the awful depressing machinations about tax, money and power, my thoughts revert to the BIG QUESTIONS about life, the universe and everything.

<http://www.youtube.com/watch?v=7dmvCsQly2c>

For your education and delight, I have already solved the mysteries of Gravity, Dark Matter, Dark Energy, Liferforce and our eternal lives, but traditional science is taking a



little time to catch on. They will get there in the end. My slides also show that we all become immortal and persist in the Universe "Until the end of days" by broadcasting our thoughts and actions. So, think good thoughts.

In the meantime, to continue my mission to "Speak now or forever hold thy peace" - in other words, to say what I think about the few subjects I have studied in my nearly 70 years of experience on this planet - here is the definitive answer or at least some new leading questions to **"What is Gravity?"**

Newton accepted gravity as a given. It existed and so he studied it. He found that all matter attracts all other matter with a very slight tug or force that links their centres (centre of gravity). And Newton's brilliant, genius formulas allow us to work out the force and direction required to, for example, send a rocket to Mars and land Curiosity, the mobile auto-explorer. Einstein had a bash by saying that all matter makes a dint in Space-Time (in the Aether or primary energy field or Higgs Field which he half denied existed, so he called it Space-Time. Many top experts do this to hi-jack the terminology and obscure the logic trail but Einstein had just eliminated fixed dimensions and found Time to be flexible, so in this case he was justified to coin new terms). So Einstein's idea is that, say, a cricket ball floating in space far enough away from big objects to be independent, sits in a kind of hollow or at the bottom of a hole, down which other (logically smaller) objects fall to meet the cricket ball. It adds nothing to Newton's simple acceptance of the phenomenon but it did enable Einstein to do some even cleverer maths and predict light beams from stars bending around the Sun - that has a lot of gravity. So the two cleverest scientists to date did/do not know what gravity is.

In my [GRAVITY AND MOONSHINE](#) article below, I wonder what happens if we dig a tunnel right through the centre of the Moon, from surface to surface, and jump down it. What happens at the very middle where we stop falling down and start climbing up. At this centre, we are surrounded by a lot of matter which has a lot of gravity. Will it pull us up towards it? Why are all the bits of Moon-matter trying to get to the centre? They are surrounded by other gravity bits in all directions, so why huddle up to the ones nearest the middle? Has any scientist ever seen twenty or thirty atoms drift together and stick - and then all try to get to the centre? I think not. But Newton's maths work absolutely accurately on a centre to centre basis. If we fall down a deep hole on Earth, we do fall towards the centre. But if the hole is deep enough we must stop falling at some point. Where is that point?

Do all objects, regardless of size have a black-hole at their centre, into which all the matter is continually trying to fall? Or, to shoehorn in my Expansion is Gravity idea, is continuous Hubble Expansion creating a partial vacuum or attenuation at the centre which the matter is constantly trying but failing to fill?

More data is needed. In the meantime, my theory that Expansion is Gravity EIG is as good as it gets. See the slides via the link. (AS .PDF WEB-FILES MYSTERIOUSLY COLLAPSE - IT IS ALSO ON YOUTUBE, WITH MUSIC, WHICH WORKS. MY PDFs WILL HAVE TO BE CONVERTED BACK TO html)

And finally, why are we classed as a Carbon Based Life Form when we are 70% water? Surely we are a Water-Based form.

Thursday, 16 August 2012

## HOW HEAVY IS THE HIGGS BOSON?



## THE HIGGS BOSON

I have been asked several times "What does a Higgs weigh?" Here's my attempt to measure it in normal, everyday terms.

**HOW SCIENCE SEES IT** - The Higgs Boson is thought to be the unit of energy in an approximately atom sized sphere of 70 trillionths of a meter.

The Higgs boson weighs about  $115\text{MeV}/c^2$  to  $125\text{MeV}/c^2$ . In English, these are 115 million electron volts to 125 million electron volts each divided by 90 thousand trillion (the speed of light squared).

**HOW COOKS SEE IT** - In ordinary kitchen units, grams, each Higgs Boson weighs:

From 0.000,000,000,000,000,000,000,205,010,000 **grams**

Up to 0.000,000,000,000,000,000,000,222,830,000 **grams**

(about 2 thousand, billion, billionths of one gram)

...so not very large or heavy. In fact, very, very, very small. But the Higgs are about 134 times as large as protons (which are at the heart /nucleus of atoms alongside neutrons). All the “Higgs Bosons” in the entire universe link with each other to make “The Higgs Field”. A field has no parts so each Higgs Boson permeates the whole universe. Remember that a boson is in the super-light-weight photon and electron family. Remember that light (photons) and electricity (electrons) are of the same **electro-magnetic spectrum**, along with Infra-Red, X-Rays and Microwaves etc - all of which we amateurs refer to as LIGHT. Visible light (rainbows) is a small part of the whole spectrum.

IN ORDINARY MEASURES - Let's say to make some sugared donuts to eat weighing 125 grams (about 1/4lb, 4.5 ounces, of delicious, deep-fried and sugar coated carbohydrates) would need the equivalent weight of

560,965,758,650,092,000,000,000 Higgs Bosons. That's 561-Thousand-Billion-Billion Higgs Bosons will weigh the same as your plate of donuts. And, YES, the Higgs would be in there, making up the weight of the donuts. If it is confirmed to

exist, The Higgs is in or around every atom.



Thursday, 9 August 2012

## CREATURES OF LIGHT – DYNAMIC UNIVERSE

It is little wonder that friends tell me to get a life and get out more. For our vacation I took five popular science books on the physics of the universe, including an old cartoon ABC

version of Einstein's Special & General Relativity in which I had once managed to scribble the maths of  $E=MC^2$  ...and understand it. Einstein's “Special” theory shows that the speed of light is the only fixed “dimension”, whereas height, length, breadth and Time vary. And his later “General” theory shows that gravity bends space-time around massive (and presumably small) stellar objects.

I also re-read Professor Frank Close's book *The Void*, which brilliantly explores vacuums, waves and the basic stuff of the universe. Closest to my heart however is *The Goldilocks Enigma* by Paul Davies, who starts by berating scientists who hold that the universe is ultimately pointless and meaningless. He explores the great mystery of how the universe on micro and macro scales is right for life, those ubiquitous delicate, complex, vulnerable, sentient creatures, including humans, usually mixed with water, that survive and emerge from cauldrons of exploding supernovae, zero temperatures (-273 degrees Kelvin), and survive crooked bankers and politicians.


This holiday reading confirmed that my speculations on Life, The Universe and Everything are still consistent with mainstream scientific thinking. It is still viable to assume that we are Creatures of Light, literally made from compressed light, immersed in an expanding sea of perpetual but dynamic electromagnetic holograms of the entire universe – The Aether-Matrix – and that all things, life and we broadcast our every motion, including brainwaves, into the Aether-Matrix, which in turn is informed and reformed by this feedback. We are literally and scientifically, Creatures of Light in an ocean of light. And, judging from Evolution, school leaver's achievements and ever improving Olympic performances, we incrementally grow in ability. Whatever will become of us?

And ...our personal brief life electromagnetic broadcasts, scientifically speaking, persist until the end of days; and affect the entire universe. So – let us make them count.

Friday, 20 July 2012

## WE DESIGN THE DYNAMIC UNIVERSE

EIG 21 of 23      Russian Dolls – The Long Body



Infinite Implicate Dimensions.

**Looking back:-** Your mother carried you as a seed, from the time of her birth until your birth. Her mother, your grandmother, carried your mother as a seed. Her mother, your great-grandmother, carried your grandmother as a seed. This is scientific fact; implicit in the Long Body, back to the first life forms. Our body patterns come from inherited DNA - modified by the ever-changing electro-magnetic field of the Aether.

Do these enfolded multi-dimensions - a seed within a seed within a seed – emerge in the Many-Universes and String-Theory calculations?

**Looking forwards:-** Where next might your implicit enfolded life-force be manifest? Can instruments track your energy when you quit your present form? Will another seed or energy-field accommodate you?

EIG 1991-2011 – copyright – Noel Hodson - Oxford

Mrs Trellis of North Wales writes: “My grandson, Owen Llewellyn-Jones is a tutor in particle-physics, at The Great Orme University of Llandudno, and he’s never heard of a **Dynamic** Universe; at least not affecting Wales. He says it is either steady-state, **Flat**; or contracting, **Closed**; or expanding, **Open**; – like that lovely Dr Brian Cox says.” She challenges... “And my Owen says the Universal Constants are constant. Can you really, really, really explain yourself this time.”

Well, just before my summer Blogging-Break – this blog will resume in August – here goes.

The Universe, our mutual home, is an infinite (as far as science can measure) energy field. The energy field is The Aether, or my Aether-Matrix, or the Higgs Field. Everything, including ourselves with our intelligence and sentience (ability to feel), emerges from the field. Logically, the field is endowed with the seeds of all the characteristics of all phenomena, including human intelligence. The field is Light. It must be sentient to give rise to sentience. A field has no parts – it “feels” all activity across the whole field.

Logically, and scientifically demonstrably, the field changes as stars, galaxies, planets, atoms, black-holes and people precipitate from the energy and become matter (though still of and in the field). Matter is highly compressed light. We are highly compressed light. We are creatures of light. Light includes all radio frequencies and waves; it carries information, light is a data carrier. Ask your Optic-Fibre broadband salesman.

Just as we are precipitates from the field, our actions, every minute action, make radio waves that broadcast data and information back into the field. Your every thought is on permanent record and cannot be deleted from the universe. This data in-forms and re-forms the field. As far as science knows, radio broadcasts are perpetual – hence we can still see (light from) the first galaxies broadcast 13.7 billion light-years ago. All things in the field broadcast their activity back into the field at all times. The first episodes of TV's Coronation Street now impact a sphere of 50 light years radius.

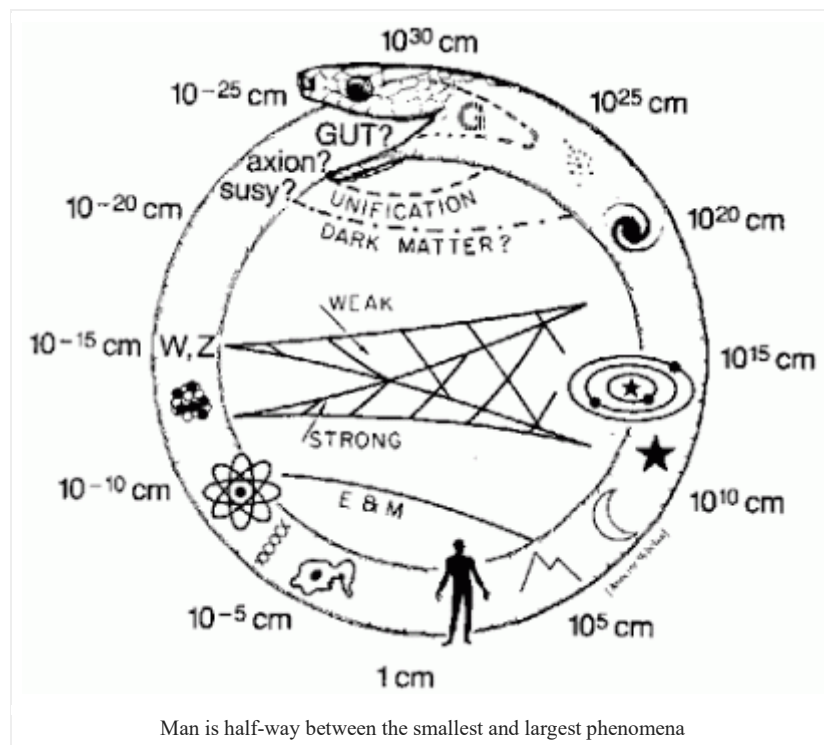
Thus the field, the stuff of the universe, from which we are made or make ourselves, is constantly changing. As new phenomena emerge (say, a new baby) they come from the re-formed and in-formed field. The universe evolves. It is dynamic not inert; not clockwork; not fixed by immutable laws. Just as the universe makes us – we make the universe. As we are wilful creatures and have intent, we can most probably make our future, not have it dictated by mindless wandering cosmic pebbles and casual particle collisions in deep-space.

The Universal Constants that science brilliantly discovers, do not govern the universe, they are characteristics of the universe. As the universe changes, the Constants change; but stay in balance. From our time perspective, in our really, really, really short lives, the changes are interminably slow – and barely detectable. We are blessed with mysterious Gravity that makes things happen, and with mysterious Intertia that stops things changing. We, collectively, have time to think in our Dynamic Universe.

As the pinnacle of creation (as far as we know), as the most complex thing in the universe (so far), our feedback is particularly influential. Think good thoughts.

Thursday, 19 July 2012

## A PERSON OF UNIVERSAL CONSEQUENCE



Does what you think and do matter? As an individual, are you of any consequence at all? Will your brief birth, life and death on our bejewelled blue planet, one of a billion, billion globes in infinite space-time, have any impact or meaning?

Such questions are beyond the remit of today's science. Science regards life and humans as messy, confused and confusing. Until little green men invade Earth in their starships and then are followed by

a scientifically forecasted and anticipated second alien invasion of life forms, science sees living forms, life, as an accidental, one-off aberration. To science, life is no more than a mix of chemicals, usually with a bit of water, which will, one day, be created in test-tubes – shaken not stirred, into life. Even the divine Professor Brian Cox, dream pinup of all the women in my physics class, tells us smilingly that the universe, and all of life, will scientifically and inevitably and unstoppably end in Heat Death; when all matter will spread out into the lightless, limitless void and no phenomena will exist. Doom, Doom, meaningless, purposeless Doom.

Such thinking is utter scientific nonsense. It is based and extrapolated from the understandable desire of scientists to pin things down, to fractionise, atomise and analyse using universal laws that do not change in the middle of their calculations. Such doom-laden Heat-Death prophecies are conceived from juggling with the same rules and regulations that lead us back to The Big Bang. Physics relies utterly on The Universal Constants – and scientists pray fervently that while they are engrossed for ten years in fiendishly difficult calculations, say to weigh the observable universe, the damn Constants will damn well stay constant. But they do not.

The missing ingredient in today's scientific models is the obvious, demonstrable scientific fact that the entire observable universe is suffused with radio signals – with electro-magnetic fields – with light in all its manifestations. We, and everything, are made of compressed light, which vibrates at millions, probably billions, of diverse wavelengths and manifests particles such as photons and electrons (and The Higgs). We, and everything, broadcast electro-magnetic signals; either originating the signals from primary energetic events, or, as in interstellar clouds of hydrogen gas for example, altering the signals as they pass through. All these signals are scientifically detectable – even from the edge of the observable universe, more than 40 billion light years away. This is the universal field of energy and its manifest phenomena. So where do you and I come in?

As far as science knows today, we humans are the most complex (and intelligent – though that's sometimes hard to credit) product of the universal field and its mathematical Constants. We choose to gather energy, to collect photons, to compress them, to integrate into a well tested pattern, to be born, to walk, talk and watch TV, and to die and disintegrate and shuffle-off this mortal coil – all in the blink of an eye. Our brains, which extend throughout our bodies via the nervous system, are fantastically complex, run on a 10 to 75 watt circuit fuelled by food, and they ceaselessly broadcast radio signals – some of consequence – whether we are playing football or translating hieroglyphics. Everything you, and we, do and think and say is broadcast and recorded, till the end of time, in the universal field, by the field being altered. Your tiniest movement and thought makes an impact. You are of consequence to the universe. It remembers you.

These signals, like all radio, stream into the universe at almost the speed of light and they scientifically, undeniably, demonstrably alter the existing energy field (now perhaps The Higgs Field – my Aether-Matrix). What science currently lacks is to hold in mind that these “new” phenomenal signals constitute a feed-back mechanism into the field, which have to be accommodated by the field. Recognition that the field is sentient not inert and dumb, and that the field in turn gives birth to all phenomena, will illustrate the circular nature of nature. The natural laws, the Universal Constants, change as the field evolves through all the events and experiences in the universe. The wonderment of scientists at the incredible precision of the Universal Constants and how they create the exacting Goldilocks conditions necessary for matter and life to exist is more readily understood when such circular feedback is accepted.

We do not live in a Flat, or Open, or Closed universe (“Open” means ever expanding unto the Heat Death), we live in a Dynamic Universe which adjusts its parameters and Constants micro-second by microsecond. “Nil Desparandum” Professor Cox and Co. You, and we all, are immortal – as broadcasting stars.





Tuesday, 17 July 2012

## I NEVER ASKED TO BE BORN - THE FIFTH FORCE

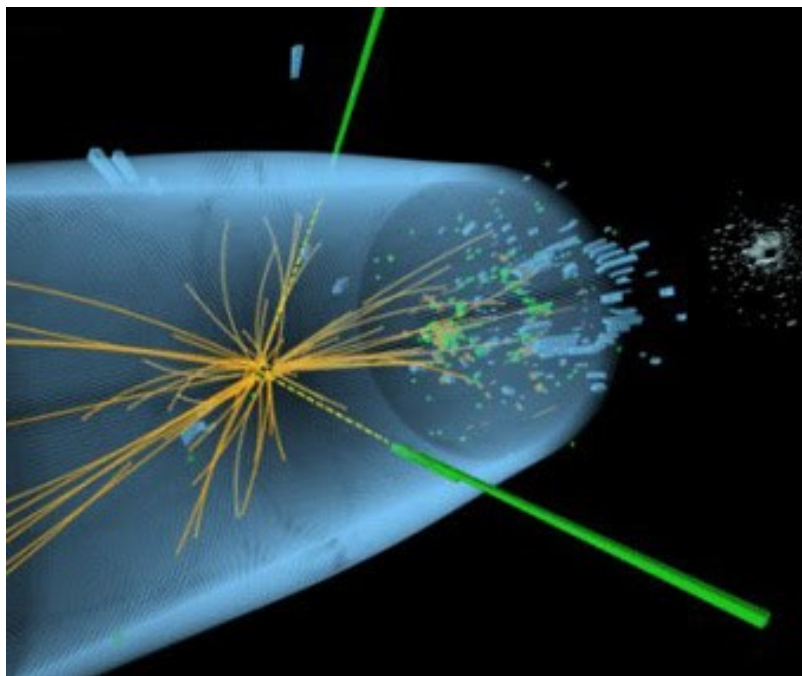
This morning I was struck by a crossword clue involving genes and genetics - the governing patterns of our bodies. We all have them. We are all the same. We are all made of the same stuff. But all are subtly different. Most living

forms have genes; simpler forms have DNA or RNA or just fantastically complex arrangements of molecules. Our DNA is made of four chemicals - molecules. The molecules are made of atoms. The atoms are made of sub-atomic particles, including the now notorious and infamous Higgs. The sub-atomic particles are made of Light (electro-magnetic spectrum). Suns, planets, moons and asteroids are made of chemicals and atoms. There are about 130 different atoms in the Periodic Table of Elements. All this energy and matter is organised by just four fundamental physical forces - **Gravity** (which we do not understand), **Electricity** (with magnetism), the **Weak Nuclear** (holds electrons in atomic orbits) and the **Strong Nuclear** (compacts atomic nuclei and explodes in atom bombs). Science likes to regard these four forces that sculpt the universe as non-sentient, essentially unchanging and reliably inert. Though there are some very big pieces missing from the scientific jig-saw, the four fundamental forces can be calculated, juggled, juggled, confined in test-tubes and extrapolated from. They always behave as expected; expected by us; expected by our intellects; intellects powered by our fleshy brains with 100 billion brain cells and 100,000 billion connections - which are made of atoms, organised by the four fundamental forces we study.

But, if all things are made of the same stuff, and patterned by the same forces, what makes them different? What power gives them separate identities? What force injects identity and sentience into matter? My pitch is that there is a Fifth Force, the **Lifeforce**, a force that organises; a force that creates, that modifies by dynamic feed-back, and that records and holds the templates, the blueprints, the designs of all phenomena in the entire universe. Such a force is magical - we conjure it into existence with our imaginations - and it is ever-changing the essential templates, applying information from the universal field that I call the Aether-Matrix. Such universal fields are old scientific concepts - rejected through lack of instruments that can detect them. This **Lifeforce**, this bringer of identity and recorder of experiences, would be the very essence of energy and matter; it would be essential. And implies that the entire universe is a living, sentient entity - not an inert mass of stuff, mindlessly, unconsciously, unintentionally pushed and pulled, gathered and dissipated by Gravity, Electricity, The Weak & the Strong Nuclear forces. I guess that the universe has intention, has purpose, has sentience, has intelligence; and we are a vital, intentional part of its magical matrix. We humans emerge from the Aether-Matrix through self-intention. We do choose to be born.

Wednesday, 11 July 2012

## THE HIGGS BOSON & MRS TRELLIS OF NORTH WALES



An actual decay of a suspected Higgs boson into two gamma rays (thick green lines) in the CMS detector recorded in 2012.  
Image credit: CERN

Our indefatigable, critical correspondent - Mrs Trellis of North Wales - writes "Your description of the Higgs Boson and Custard is not in accord with my recipe for Welsh Custard, nor with Einstein's Cosmological Constant!". And Mrs Trellis suggests I try to explain The Higgs again, correctly.

So here we go again, The Higgs!

Physics tackles the very small, Quantum /Sub-Atomic Physics – and the very large, Cosmology. Among the many mysteries is the moment when energy was (or is) turned into matter. In  $E=MC^2$  Einstein proved that mass is compressed light. Since then particles are measured as electrical energy. (See earlier articles). The Higgs might link the minuscule and gigantic.

Science believes that Matter was created from Pure Energy or Light a micro-second after the beginning of the universe – in the alleged Big Bang. How did it do it?

**THE STANDARD MODEL**, dissecting the workings of the atom, dates from about 1920 and has been added to and applied in the real world so often by so many scientists that it is accepted as utterly reliable. However, it does not bridge the gap from sub-atomic to astronomic, nor explain gravity, nor why 80% of the energy of the nucleus (protons and neutrons made of Quarks) of atoms is "missing", nor why cosmologists need to assume that, never detected, Dark Matter and Dark Energy make up the 90% "missing" mass of galaxies like the Milky Way. Defining The Higgs might answer "How was Matter Made? How was Straw spun into Gold? How did Pure Energy get its Mass?

**THE CUSTARD IS THE HIGGS FIELD:** Einstein dismissed the Aether as unnecessary. Earlier scientists had conjectured that a matrix that conducted light filled the universe. I have long thought that the Aether does indeed exist. My Aether-Matrix, made of the intersecting light from all phenomena from

galaxies to brain-waves, detectable everywhere by eye (visible light) or instruments (radio waves) and reproducing “holographic” images of the universe at all scales, is scientifically undeniable, if little known. It does indeed conduct Light.

**THE HIGGS BOSON** is deemed to be the unit of energy in an approximately atom sized sphere of 70 pm - 70 trillionths of a meter). The boson weighs about  $115\text{MeV}/c^2$  to  $125\text{MeV}/c^2$ . In English, these are 115 million electron volts to 125 million electron volts each divided by 90 thousand trillion - and in ordinary arithmetic grocery units the Higgs Bosons weigh:

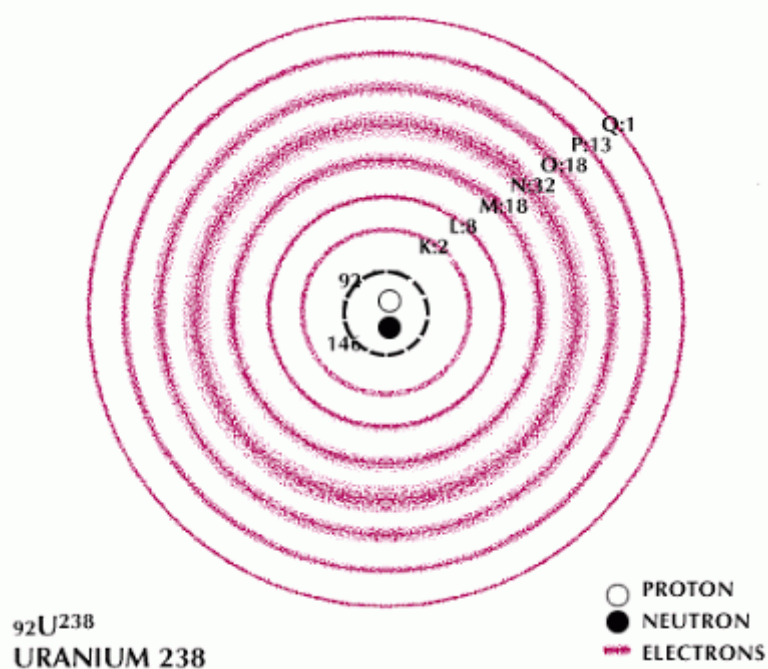
From 0.000,000,000,000,000,000,000,205,010,000 **grams**

Up to 0.000,000,000,000,000,000,000,222,830,000 **grams**

(about 2 thousand, billion, billionths of one gram)

so not very large or heavy. But they are about 134 times as large as protons (which are at the heart /nucleus of atoms alongside neutrons). All the “Higgs Bosons” in the entire universe link with each other to make “The Higgs Field”. By definition a field has no parts so each Higgs Boson (remember a boson is in the photon /electron family) permeates the whole universe. {For me, this logically implies that the Higgs Field, or Aether, or Aether Matrix has the capacity for instantaneous communication, across a sentient medium; logical because sentience and intelligence (our brains for example) emerge from this field.}

**PUTTING ON WEIGHT:** Atoms are often depicted as shells within shells as in this uranium 238 atom (92 Protons + 146 Neutrons).



Science cannot “see” these shells but experiment shows how they act and we can apply that knowledge in practical machines. This is The Standard Model in daily use. The different particles are never static but in constant flux, as if pulsating. Even at Absolute Zero temperature, when everything freezes, they still slightly pulsate.

Pre-Higgs, where and how the particles acquire their weights /mass is not clear. If we imagine this atom swimming in the Higgs Field, the ubiquitous journalists’ Custard, the particles are getting their mass – their energy (remember mass and energy are interchangeable) from the Higgs Bosons that “carry” or “confer” or “transmit” the mass to the particles (which are not particles but Wavicles). So, The Higgs field of Higgs Bosons might be thought of as an all permeating shell around each atomic particle.

In my EIG Theory, the different masses expected of diverse Higgs Bosons accords with the differing vacuums spheres created in the field by the unceasing expansion of the universe. It is in those spheres that I speculate matter is created from light.

Will Mrs Trellis award this her peer review stamp of approval for clarity?

Tuesday, 10 July 2012

## GRAVITY AND MOONSHINE



Resisting the powerful temptation to comment on The City of London spending £92 million a year to change UK government policies, I lift my eyes to the heavens and turn to the most powerful and most mysterious force in the universe, gravity.

Isaac Newton discovered and encoded the Laws of Gravity, which work perfectly for cricket balls, birds, planes, the solar system and interplanetary rockets. All mainstream universal models are based on gravity, the calculations of which wind-back to the Big-Bang. We all experience gravity, all the time; even in “gravity-free” space flight where we know we are balancing the tug of gravity by “falling” towards the Earth (but managing to miss and continue in orbit).

In current theory, “empty” space contains 6 (six) hydrogen atoms (the air around us has millions of billions of hydrogen atoms) per cubic metre; gravity did or will over eons draw them together, find a few more, continue to aggregate atoms and form a star. This is how all life began. But nobody knows what gravity is.

IMAGINE that on the allegedly solid Moon, we dig a 3,475 km tunnel straight through the middle, from South Pole to North Pole. It's a wide tunnel fitted with a lift /elevator. You and I go down 1,737 km in the elevator from the South Pole, assisted by gravity, to the centre of the Moon. Experience tells us, we will indeed go “down” and Newton's maths highly accurately inform us that gravity is measured from the centre of masses – from planet centre to centre or from Moon centre to Earth centre. Common sense tells us we will go down to the centre. What next?

At the centre we intuitively know we must climb up to the surface to the North Pole. It's helpful to have an elevator. But how do we make the transition from “down” to “up”. Is there a weird fuzzy field, a gravitational gateway, we go through head-first, heads down, to find on the other side we are heads up? Is the transition abrupt or gradual, in Calculus slices? Do we encounter a gravity-free zone where all the rock and iron in the Moon exert perfectly balanced tugs on us?

Does the force of gravity that we feel on the surface, with 1,737 km of material beneath us, diminish as we near the centre? Imagine having only 5 km of rock and iron between us and the centre and 1,732



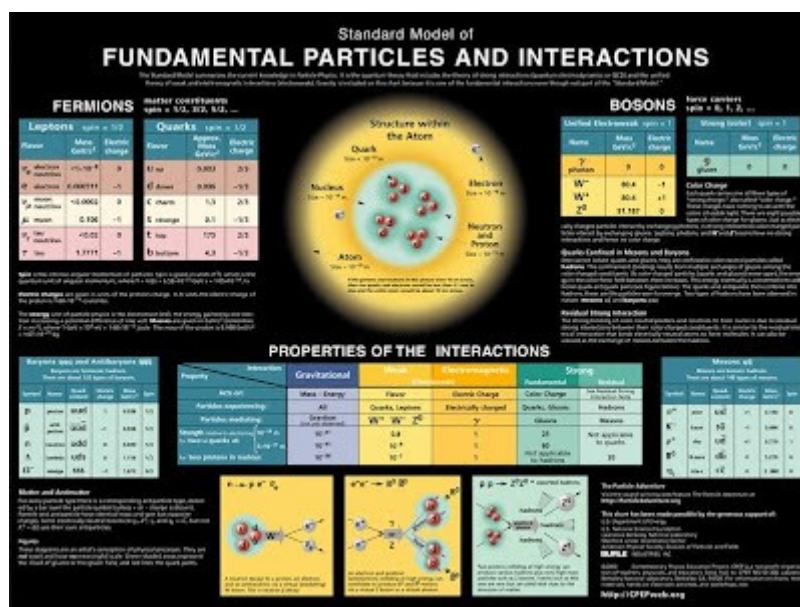
km above. It could be thought that the far greater mass above us will draw us up and hinder us from going down.

Discounting any centripetal /centrifugal effect of the spinning Earth, Do Everest climbers experience more or less gravity at the 5 miles high peak – with more “stuff” below them?

Mountaineers, Cavers, MOND, Dark Matter, Dark Energy experts, Solar System and Galactic Astronomers – answers on a postcard please.

Thursday, 5 July 2012

## HIGGS BOSON AND CUSTARD



### Death of the Higgs.

SADLY:- [The HIGGS does not confer mass, says CERN](#); at least not much mass "approximately a fingernail of mass compared to the whole human body"

March 2013 - In happier times for the Higgs –

The Guardian newspaper today patiently explains that the hugely celebrated Higgs Boson, tentatively formally identified by scientists at the LHC - Large Hadron Collider, at CERN, Geneva - “confers” mass on empty space thus converting Space-Time into the Higgs-Field; illustrating it with *“...if space (formerly empty, now the Higgs-Field) were custard, some sub-atomic particles have to wade through the custard which sticks to them, which makes them heavy. Others, such as Photons, pass through it without any stickiness and are not slowed down...”*

Are you, gentle reader, any the wiser?

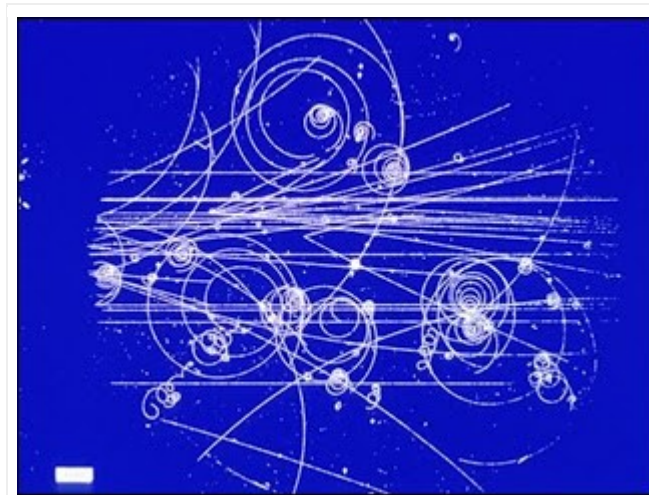
The chart may help to understand the Particle-Zoo that the Higgs belongs to.

I tried to unravel the myths, metaphors and similes a few weeks ago, with my text:

HIGGS BOSON: The Higgs (*Prof Higgs'*) Boson (*photons and other ephemeral tiny parts of the atom*) is an alleged relatively large, tiny sub-atomic (*smaller than an atom but 133 times bigger than a proton*) photonic particle that Prof Higgs (*an English physicist*) mathematically calculates (*Prof. Higgs still lives*) to be the particle that is missing from the “particle zoo” that constitute The Standard Model (*of the atom etc*). Most

other particles that have been calculated to exist have actually been found at research centres like the Large Hadron Collider or LHC at CERN. (*“Large” means big; “Hadrons” are found at the centre or Nucleus of an atom – made of Quarks (the tiniest of all particles. Rhymes with ‘corks’) and include many types including pions and kaons; “Collider” means the Hadrons are bashed together at CERN at high speed*). The very expensive collisions smash the Hadrons into bits. Scientists hope that one of the bits will be the elusive Higgs Boson.

I have just alienated all scientists and given Richard Dawkins terminal apoplexy by using English, magic, God and inappropriate Caps for emphasis, instead of maths-physics-obscure-language, which is vitally necessary to secure their budgets.



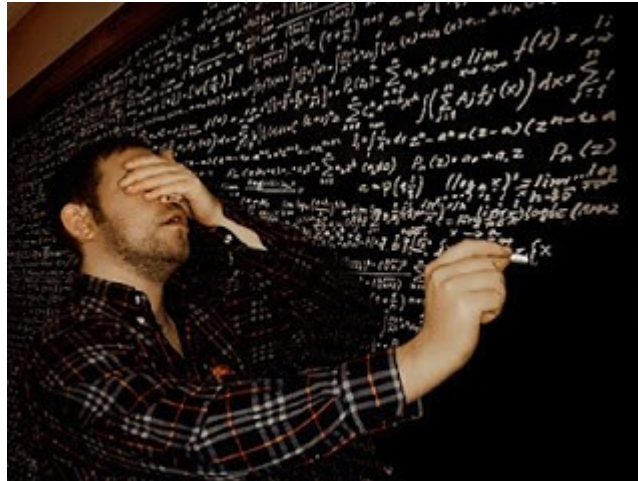
Sub-Atomic particles colliding in a particle accelerator.

Scientists explain that the Higgs Boson confers mass on matter, on the other sub-atomic particles such as photons and electrons that are otherwise weightless. It weighs - or compresses light-energy of about 125 Giga (a billion) electron volts. (*WikiP - data hints at a possibility the Higgs may exist with a mass around 125  $\text{GeV}/c^2$  (about 133 proton masses, on the order of  $10^{-25}$  kg).*)

The evidence that the Higgs is indeed missing, or not yet found, is in the calculation that in the centre of atoms, where the Quarks are, about 80% of mass is missing and that at the other end of the scale, galaxies are “missing” up to 90% of the mass needed to glue them together. The Higgs would provide the glue in the form of more gravity. Gravity is also a scientific mystery.

Now you might have a little more understanding. If not – do not despair – as to really understand what Professor Higgs and his fellow particle-physicists are presenting requires being one of about one hundred mathematical-physicists in the world who can confidently perform, follow and correct the mathematics.





Even the genius Albert Einstein needed expert help with the maths for his celebrated theories. So don't feel badly about yourself.

Real science relies on repeatable, predicted experimental results. CERN needs to check their recent findings and the wider scientific community at other particle accelerators need to reproduce the results. This may give me time to build up my understanding of the Higgs – and find words to describe it. So far, my own amateur ideas (EIG, Expansion is Gravity) of how the universe works and what that “custard” might be (i.e. my Aether-Matrix); still accord with currently accepted knowledge.

Sunday, 17 June 2012

## GOD OR GRAVITY? - A QUESTION FOR SUNDAY.

Is there an educated adult on Earth who does not know that the fundamental building force in the universe is Newtonian Gravity? Science does not know what gravity is but knows what it does. It sticks us to the ground, prevents us from flying off the spinning planet, and makes rising from bed into a vertical stance more difficult.

The force of gravity acts centre to centre e.g. from the centre of the Earth to the centre of the Moon. The calculations have been made so often, so accurately by so many, that they must be correct. Newton's laws calculate the flights of cannon balls, cricket balls, arrows and inter-planetary space craft, in the real world, with great precision. NASA's spaceships do get to Mars.

When I descend a shaft dug from London to Sydney, I will fall to the Earth's centre. However, “All particles of matter attract each other via gravity”; this is how hydrogen gas atoms, the most plentiful universal material, allegedly drift together, compress, and form stars or suns, which, spinning and cooling eventually precipitate planets – like our Solar System. At the centre of the Earth there is a lot of matter above me in every direction. Will it tug me upwards towards it? No, it won't - because the surrounding forces are equally balanced. I will have to use energy to climb up to London or Sydney. But all matter attracts in all directions – so why does it all insist on trying to fall to the centre? What is attracting it to the centre point?

My idea, Expansion is Gravity (EiG), [www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf) cites unceasing Hubble Expansion of the Universe as the primary driver. Worked backwards by mathematicians, Hubble Expansion is contraction and leads inexorably back to the Big Bang, when at the beginning of Time gravity had compressed (let's not argue tenses here) the whole universe to a pin-point – a Black Hole - which on expansion became a White Hole (physics has these) which exploded infinite Light, which became today's universe. Before the Big Bang was God.

Is there a Mini Black Hole at the centre of all masses (like planets)? Where is all Earth's rock and iron trying to get to? Science knows that highly compressed matter gets hot – magma and volcanoes – and,

even hotter, it changes from matter into super, super heated, super energetic plasma – partway between a gas of stripped down atoms and pure “formless” energy (Light). Does the matter of massive suns and planets strive to exit its tediously long existence via the minuscule event horizon of a Black Hole to return to pure light? Can it only do so by sacrificing its form, through almost infinite pressure? If so, Black Holes convert matter back to energy, to electro-magnetic fields (Light), which, stripped of all previous identity, might broadcast a pure, standard, unvarying, universal radio signal?

Thursday, 7 June 2012

## YOU ARE REALLY, REALLY, REALLY IMMENSELY POWERFUL.

Blogwise – I woke thinking of Maureen Jones, the foundation stone of North Wales Supplies, Bangor; a tiny, dying company I managed back to life in 1966. Like priests and politicians Maureen replaced need for evidence with repetition; as in “He’s a really, really, really nice man” – or “It’s really, really, really true – honest to God”. But I embrace the scientific method, so, when my blog-follower, Mrs Trellis of North Wales, challenged the concept that if you or I exploded in nuclear fission we would destroy Britain, I felt compelled to explain the most famous formula on Earth, namely  $E = M \times C^2$ , and show it is really, really, really true.

E is for Energy – Energy does work. It moves things. It lifts, pushes, grunts and heaves at things. There are dozens of diverse, bewildering units for energy. Early motor car engines were ranked in horsepower or HP – an 8 horsepower engine would whisk a small half-tonne car along at a brisk 60 mph, 96 kph (27 mps) – equivalent pulling power to eight large horses, but fuelled not with kilos of grass per day but with the convenient essence of that grass, compressed in rock for millennia – and released like a Genie from its bottle as inflammable rock-oil, petr-oil, or petrol; that Americans insist on calling “gas”. That is a store of Energy. Scientists usually render this formula into “Joules”

### = (equals)

M is for Mass – We could write books about defining mass – but suffice it to mean here our body weight; say a neat, young, healthy 12 stones, 168 pounds, 76 kilograms. This is mostly water,  $H_2O$ , about 80% water or two hydrogen atoms & one oxygen atom, mixed with carbon and trace chemicals. Science does not know how these stick together or stay together, in the pattern necessary to make a human – but facts outweigh the shaky theory – of Inertia. We are “dissipative” systems. We absorb sunlight, air, water and food, add it to our structure, and excrete what we don’t need. We are what we eat – absolutely literally; we really, really, really are. Before bananas flew a thousand miles to our kitchens, we ate and drank locally, we absorbed sun and star light locally at particular angles of incidence – and, thanks to sub-atomic entanglement, we are scientifically, eternally in contact with the long-body that begat us, the soil our food grew in, the hills our water flowed down. We are embedded in the Earth. Think of that next time you feel homesick. And we are intimately connected, forever, with every other person and thing on the planet, with whom we share DNA, air, water and excreted molecules, via sub-atomic (quantum) entanglement.

### X (multiplied by)

C is the Speed of Light – It is the fastest thing in the universe. Try as we endlessly do, we cannot find anything that moves faster. It does not speed like a bullet – that is a really, really, really poor concept that leads to poor theory. Light spreads out from an energetic event – say a light bulb or flame – spherically. Light “propagates” in spheres, like globes. These spheres expand at the misnamed “speed” of light 300,000 kps, 300,000,000 (three-hundred-million) metres per second or 186,000 mph. Nothing moves faster. Light propagates in waves, like ripples on a pond – but a little faster.  $C^2$  means C squared – or  $C \times C$ , the speed of light multiplied by itself. In kilometres per second, kps, that is 300,000 x 300,000 or 90,000,000,000 kps, or 90 billion kps. It’s a long, long way to go in one-second.

Finally, to a crib from the WWW - ...from 1kg of matter, *any* matter, we can get out  $9 \times 10^{16}$  joules of energy. Writing that out fully we get: **90,000,000,000,000,000 joules**. That is a *lot* of energy! For example, if we converted 1 kg of mass into energy and used it all to power a 100 watt light bulb how long could we keep it lit for? The first thing to do is divide the result by watts (remember that 1 watt is 1 joule per second):  $9 \times 10^{16} \text{ J} / 100\text{W} = 9 \times 10^{14} \text{ seconds}$ . ( NB 1 hp = 745.699 871 582 J/sec)

So, one kilogram of matter is 90 million billion joules. Our 76 kilo body mass has  $76 \times 90 \text{ mbj}$  or 6,840 million billion joules – which is, according to Bill Gates' MSoft marvellous Excel:

**1 hp = 745.699 871 582 J/sec**

6.84E+18      746    9,168,900,804,289,540

Or in the common tongue – it is 9 million, billion HORSE POWER per second. As an atomic explosion takes about one second, all the light (heat) we have compressed into our structure to make ourselves – all our in-tension or intention to be, rather than Not to Be, - expands outwards in one second – which would do considerable damage to North Wales. Maureen, Mrs Trellis, you and I are all incredibly, potentially, really, really, really powerful; much more powerful than any atom bomb exploded to date.

Do you feel like letting go, like expanding – and returning to the field of light you have contained, constrained and bottled up to make yourself?

**Friday, 1 June 2012**

## **HAPPY HUNT FOR THE HIGGS**

Several irate friends ask yet again “What the hell **is** the Higgs?” and my wife reading my doom-mongering economics blogs, said “For heaven’s sake, lighten up!”

I can do both in one article. This is incredibly light and explains The Higgs.

STRAW INTO GOLD: The Higgs Boson, hunted by CERN, is the magical, miraculous, momentous moment and particle created when pure-energy turned or turns into matter. Hence it is dubbed “The God Particle”. Pure-energy is the Electro-Magnetic (magnetism and electricity) field which is Light. Light is the basic stuff of the universe. It includes the light we can see, plus X-rays, Infra-red, radio-waves, TV rays, rainbows and the whole Light spectrum, most of which we cannot see but our instruments detect.

BIG-BANG: Light filled the universe after the alleged Big-Bang that allegedly started the universe. In science, Light is not a “Thing”. It is no-thing. It is pure energy. It is a field force in wave form though it has no form. It cannot be bottled. It has no existence (does not “stand-out”). So, although the entire universe is literally filled with Light, in every place and at every point, science calls it “empty” space – the Void. But it is scientifically, really and actually full of Light; which is how we can see distant galaxies, TV shows, and the whole universe.

CREATURES OF LIGHT: Nobody knows how Light turned or turns into particles that make the atoms that make the molecules that make the elements that make us (and other large or “macro” things). We are made of nothing but Light. We are all Creatures of Light. An atomic bomb turns most of the

uranium/ plutonium / hydrogen etc back into Light – hence the light-flash and monstrous explosion. If you or I exploded atomically, we'd destroy all of England and probably Wales as well.

HIGGS BOSON: The Higgs (*Prof Higgs'*) Boson (*photons and other ephemeral tiny parts of the atom*) is an alleged relatively large tiny sub-atomic (*smaller than an atom*) photonic particle that Prof Higgs (*an English physicist*) mathematically calculates (*Prof. Higgs still lives*) to be the particle that is missing from the “particle zoo” that constitute The Standard Model (*of the atom etc*). Most other particles that have been calculated to exist have actually been found at research centres like the Large Hadron Collider or LHC at CERN. (*“Large” means big; “Hadrons” are found at the centre or Nucleus of an atom – made of Quarks (the tiniest of all particles. Rhymes with ‘corks’) and include many types including pions and kaons; “Collider” means the Hadrons are bashed together at CERN at high speed*). The very expensive collisions smash the Hadrons into bits. Scientists hope that one of the bits will be the elusive Higgs Boson.

I have just alienated all scientists and given Richard Dawkins terminal apoplexy by using English, magic, God and inappropriate Caps for emphasis, instead of maths-physics-obscure-language, which is vitally necessary to secure their budgets.

Scientists explain that the Higgs Boson confers mass on matter, on the other sub-atomic particles such as photons and electrons that are otherwise weightless. It weighs - or compresses light-energy of about 125 Giga (a billion) electron volts. (*WikiP - data hints at a possibility the Higgs may exist with a mass around 125 GeV/c<sup>2</sup> (about 133 proton masses, on the order of 10<sup>-25</sup> kg).*)

The evidence that the Higgs is indeed missing, or not yet found, is in the calculation that in the centre of atoms, where the Quarks are, about 80% of mass is missing and that at the other end of the scale, galaxies are “missing” up to 90% of the mass needed to glue them together. The Higgs would provide the glue in the form of more gravity. Gravity is also a scientific mystery.

Another way to think of the Higgs is as the boundary process between God and Creation; between Angels and Humans; between Spirit and Mind and between Sentience and Consciousness. On that scientifically heretical note, I will cease. TEST<sup>30</sup>

After reading science as an amateur observer for more than 50 years, I have, as you might expect, a complete theory of how it all works – A TOE or Theory of Everything – which has yet to be scientifically tested or even noted.

[www.noelhodson.com/index\\_files/universal\\_model\\_v7\\_nov02.htm](http://www.noelhodson.com/index_files/universal_model_v7_nov02.htm)

...And a short visual version for busy executives at:

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

11 OCT 2000

Far Star

## **Measuring the distance to an astronomical object.**

An alternative to red-shift and to triangulation.

A light source propagates a globe of light waves that constantly increases in size. By measuring the curvature of the globe the circumference of the globe's circle can be calculated and then its radius, or distance to the source at the centre.

For example; a light source in a dark room is surrounded by a flexible strip, at say, about 3 metres from the source. The flexible strip is studded with light sensors at regular intervals. The positions of the sensors are adjusted until all the readings are equal to each other. The strip will now be aligned with the globe of light waves being propagated by the source. The arc of the strip can be measured, the circumference calculated and the radius. A mathematical table can be drawn-up relating arcs to distance.

On a large, astronomical scale the strip can be replaced by rigid links or arms between a series of a large number of cone or rod shaped telescopes. The links are attached to the cones to enable the angles of attachment to be transmitted and read automatically. Each cone or rod telescope is then focused on the distant object. The angles formed by the arms or links are measured, calculus is applied to measure the arc, the circumference is calculated and the radius is calculated. The cones or rods telescopes point their narrow ends at the object to eliminate all other objects. The alignment is achieved first visually by sighting on the object and then fine tuned by light sensors at the wide, inside end of the cones or rods. By rods is intended a telescope that looks like a long rifle barrel or fishing rod that can be sighted on the object. Its aperture should be capable of being narrowed to see only the single object being measured.

The arc measurement is being made effectively on the surface of a globe of propagated light. The orientation of the linked array of rod or cone telescopes (LACTR) can be in any plane. Such an array could be on the ground, where each LACTR point could be aligned by manually; or strung on pylons; or be placed in orbit around the planet.

## **The End of Time**

11 DEC 1999

Dear Julian Barbour

I found your book **The End of Time** fascinating and I'm still trying to absorb and understand it – is it a startling advance in the philosophy of science or a clever and intricate play on the human definitions of Time? Your convincing leaping cat metaphor resonated with thoughts I had recently of neutrino's streaming through the Earth and leaving a NOW by NOW shadow/screen suspended in Space recording

the state of every particle. By viewing these shadows we could reconstruct past events.

I also have a radical theory you might find interesting that does not contradict your view of non-Time, namely that Expansion is Gravity. I do not write in green ink and you may find my short speculation interesting. I set out the skeleton here as briefly as I can (just 800 words) and believe it is consistent with commonly reported physical knowledge.

If Hubble Expansion is proved to exist then I believe that expansion is gravity and is the fundamental and unifying force that drives all forces in the universe.

#### How expansion might drive the universe:

The universe is energy. Erect a vast screen in the darkest, most remote, emptiest region and it will reflect light/energy of some sort. Expansion makes that energy attenuate at every scale. The attenuation causes momentary vacuums.

There are supra and super vacuums. Supra-vacuums open onto the pre-universe and create primal, fractal vortices of energy spinning at  $C^2$ . These primaries have a boundary within which there is enclosed (dark) light, outside of which there is a local super-vacuum caused by the concentration of energy into the primaries. The speed of spin of a primary creates a surface. The local super-vacuums draw primaries together – the surface spin bounces them apart like spinning-tops.

Thus the primaries exist at a regular quantum space from each another in a dynamic and fluid relationship. Primaries clump as expansion continually creates momentary super-vacuums (within the universe). These groups are the smallest detected particles (photons, quarks, electrons etc.) The expansion is continuous at all scales affecting "matter" and energy fields alike. The primaries themselves expand. The space between the primaries expands. The particles, atoms, molecules and visible matter expand continually. Energy and matter rush to fill the super-vacuums. Inside material bodies the expansion occurs within surfaces that momentarily block in-falling energy and matter and create a stronger or longer momentary vacuum. The larger the massing the more expanding primary zones are gathered there, creating more vacuums that together exert a stronger pull than in free energy fields. Each super-vacuum draws energy or matter in from all directions.

A useful visual metaphor is the holes of a large sponge that draws-in and fills with water – the whole ocean of water moves towards that sponge until it is full. Deeper holes inside the sponge take a discernible moment longer to fill. The universal sponge is however continually expanding and so continually exerting a pull on the surrounding water. Human observers, ourselves expanding, along with all our measuring rods, interpret this dynamic process of expansion and filling as a pulse of expansion and contraction, as a vibration.



I have read your recent book and other books on particle and astro-physics and space and time. I have read popular science for 40 years without finding any reference to Hubble Expansion being factored in to calculations. If Expansion is Gravity then does it fit with scientific observations? Here are six areas:

- 1) If the Earth's surface is expanding by a fixed percentage then it is continually accelerating outwards (the closed lift/elevator concept). At least part of Earth's gravity is due to its expansion. What percentage of the whole sphere of the universe is the Hubble rate of expansion. Does this percentage translate simply back to small zones like the Earth – and the atom.
- 2) Masses of galaxies and the search for gravitons. There are no gravitons. There is no need for cold dark matter (CDM). The "missing" mass is in fact vacuums.
- 3) Curved Space. Hubble expansion of the whole universe at every scale would make a straight line (say a laser beam) projected into space curve as the far zones it reaches expand with Time. This may be a measurable effect.
- 4) The Expansion is Gravity theory requires an infinity of energy to fill the continually created super-vacuums.
- 5) If expansion ceased the universe would gently un-pick itself leaving the primaries in perfect quantum spaced equilibrium as a featureless soup.
- 6) One or many initial singularities or Big Bangs are permitted by this theory. There need not be a single "centre" to the universe. As we are each at the centre of our own observable universe, the many singularities seems fitting.

I hope you find this idea worth thinking through and in the meantime I will enjoy re-reading the End of Time and try to fully understand the diagrams and calculations.

Best wishes for a Great New Millennium.

PS – I'm intrigued by the thought that Light propagates and does not travel and whether the speed of propagation of light is a fundamental dimension (quantum) of the ever expanding universe.

Noel Hodson

31<sup>st</sup> December 1999.

[Opinion Letters, New Scientist 1 FEB 2001](#)

1<sup>st</sup> Feb 2001. By Fax 020 7 331 2777 and Email [letters@newscientist.com](mailto:letters@newscientist.com).

GRAVITY AND THE COX'S PIPPIN.

The article, Medium Mass, by Marcus Chown 3<sup>rd</sup> Feb 2001, on Mass, Inertia and Gravity, reviewing the work of Haisch, Rueda, Wesson and Puthoff prompted me to contemplate my own agreeable mass and inertia. On Earth I weigh 13.5 stone of perfectly formed, but aging bone and muscle, leavened with a few ounces of brain cells. I daily fight the heroic fight to remain vertical against the forces of gravity. To stop the fight I would need to travel 250,000 miles from Earth where I could bob about in space weighing just 0.5 Newtons or half the weight of a Cox's Pippin. But this easeful existence would not last. As the article hints, the quantum vacuum of the space immediately next to me, Earth-side, would appear for a virtual instant and suck me into it. Quantum here refers to the smallest spheres, zones or quantum jumps at the base of the fabric of the universe. A moment later the next minuscule vacuum would open, I would fill it and be two quanta nearer the Earth. This gentle process would continue at an accelerating rate until one fateful day my mass would be sucked back into the Earth's atmosphere and either burnt to a crisp or flattened onto the surface in a futile attempt to reach the ultimate (local) vacuum at the centre of the Earth. According to Einstein it would be impossible for me to know if I had indeed fallen to Earth or if the Earth's surface had expanded upwards to thwack me at 32 feet per second per second, or at a barely detectable  $1.8\text{E}-06\%$  expansion per second of its circumference. As Marcus Chown avers, the concept of vacuums in space is just lazy terminology. There are no vacuums in space as it is filled with energy, mostly electro-magnetic energy (light) that can be seen anywhere in the universe – just erect a large screen in the darkest region of space and it will glow, however faintly, with starlight. Outside the energy field is true void or no-thing, an annihilation of existence that is better not to contemplate. Should the energy field open onto the void, a terrible prospect, it would create what I call a supra-vacuum, that would be instantly filled with energy or matter. As the universe expands at Hubble's rate or even at the infinitesimal rate of  $2.6\text{E}-18\%$  of its circumference per second (as measured at a radius and light-horizon of 12B light years), the energy field may attenuate and form super-vacuums. These real vacuums would multi-directionally attract light (energy) and some perfect collisions would occur where light collides with light at light speed, forming vortices spinning at 90 billion kilometres per second or  $C^2$ . The surface tension of these vortices is, I believe, the basis of matter and mass. They are the universal fractals of matter. As the vortices draw energy from their immediate surroundings, they create a margin of slight vacuum just beyond the surface. These near-surface-vacuums attract the fractals one to another. The spinning surfaces repel one another. This push-pull dynamic is stable matter. However, if Hubble is right, the universe is also expanding and logically this occurs at every scale. It is the space-time continuum that expands. The virtual vacuums that Marcus Chown writes about, are likely to be the result of expansion. Because we and all our measures also expand, and because the rate is so small ( $2.6\text{E}-18\%$  per second at the universe horizon), we experience an endless expansion, void, fill and collapse (in fact not a collapse but a new expansion) – in other words a pulse or vibration. I believe, as Marcus Chown alludes, that what we call gravity, the gentle tug across space, is the result of energy and matter flowing from expansion vacuum to vacuum, drawn to the stronger, longer lasting vacuums protected in the heart of compacted mass. Thus matter is being continuously, but rarely, created across the universe and the force of gravity is being created, both by the force of Hubble expansion. Gravity is Expansion.

Noel Hodson

## Opinion Letters, New Scientist 8 April 2000

8 April 2000. By Fax and Email.

The three articles on black-holes in New Scientist 1<sup>st</sup> April 2000; by Marcus Chown, on atom sized black holes and by Nigel Henbest and by Stephen Battersby on quasars, radio jets and galactic sized

black holes tacitly assume that black-holes are collapsed very large objects, compressed by gravity – a force that, as Newton’s apple demonstrated, is self-evident but, as the continuing search for gravitons and CDM illustrate, is not yet understood. The observed and theoretical characteristics of black-holes, particularly the emission of immensely energetic radio jets, might better fit with Hubbles’s expanding universe than with the concept of matter crushing itself into the total annihilation of a singularity and quitting the universe.

Einstein demonstrated in his constantly accelerating windowless elevator thought experiment that gravity and constant acceleration are indistinguishable from each other. If Hubble expansion is to be incorporated into universal theories then every zone (e.g. sphere), at every scale, sub-atomic through galactic to universal, must logically be expanding at a constant (or variable) rate of acceleration. Einstein tells us that we would not know whether our experience of weight were due to gravity or expansion – if we were to stand on the surface of a sphere in Hubble’s ever expanding universe. We must ask ourselves just what is expanding in Hubble’s universe – just what is the fabric of the universe that stretches and grows infinitely; and what local effect does such expansion have on attenuating energy and matter.

The existence of galactic and atomic black holes implies that black holes may exist at any scale in any part of the universe. If, as Fred Hoyle postulated many years ago (before recanting), the universe is being constantly created at all points and if, as Einstein demonstrated, we cannot distinguish between expansion (acceleration) and gravity and if Hubble’s interpretation of red-shift being evidence for universal expansion is correct, the ubiquitous black holes could be caused by expansion – and they could be spawning not destroying matter.

Thought of as vacuums created by the attenuation of the stuff of the universe as it expands, black holes would exhibit exactly the same behaviour and characteristics as collapsed gravitational objects. The power of expansion would attenuate the universal fabric and nature, abhorring a vacuum would rush to fill the void – with energy and matter. As the void of a black hole was filled, bearing in mind that the zone is constantly expanding, a pulse would occur of expansion, void, fill, expansion. The in-rushing or in-falling energy and matter would collide, become plasma due to the impact and recoil. It may be postulated that the collisions of energy in these zones created and still create primary particles.

Thus paradoxically, zones of Hubble expansion would attract matter and energy as the zones push out their boundaries. This expansive, attractive force would in all ways be indistinguishable from gravity. CDM would be explained by the existence of innumerable, invisible black holes. Black holes rather than being The Great Annihilators of Nigel Henbest’s article, would in fact be the fundamental unifying force and the creators of the universe.

Noel Hodson

[Opinion Letters, New Scientist 21<sup>st</sup> April 2001](#)

21st April 2001. By Fax and Email.

Stuart Clark’s article Chasing Shadows (NS2287 21s April 2001), updates reports on the cosmologists’ search for CDM, WIMPS and dark galaxies. These phenomena may or may not be found to exist. However, the fundamental factor for measuring the universe and for making many of the calculations that trigger the searches for missing “dark” matter is Hubble’s Constant for the expansion of the universe. The application of Hubble’s Constant necessarily creates a set of circular arguments, but it has been widely accepted and is the basis for the Big Bang theory. The implications of expansion

seem to be not factored into the search for the alleged missing mass that, for example, holds galaxies together. If scientists rely on the Big Bang theory they should also accept expansion. The effects of expansion are, it seems, ignored. However tenuous the, in practical terms, infinite fabric of the universe and its energy fields may be, if the whole is constantly expanding then those elements must also be expanding and must for a short, virtual moment of expansion become even more tenuous. This attenuation must occur on every scale and in every zone or sphere of the universe, however large or small. It may vary with mass and other features and forces. Such attenuation would, logically, create an attractive, binding force. The most reliable data about the rate of expansion (though again a circular argument), is that the visible perimeter, circumference or horizon of the visible universe accelerates away from us, the observers, at the speed of light. As a percentage of the universe, it is a small effect – but then so is gravity. And if as the Americans say, we do the Math, it may be seen as a significant part of the solution to missing matter. Perhaps not matter at all, but rather the absence of it.

Noel Hodson

*ΣWe believe the radius (age) of the visible universe to be about 12 billion light years, receding at 300,000 kilometres per second. Adding 300,000 kilometres to the radius and calculating the change in the circumference gives a factor of  $2.642482665314E^{-18}$  (0.00000000000000264% per second).*

Letters, Scientific American 12 May 2000.

#### Expansion is Gravity.

George Musser's article What's the Matter (SCIAM May 2000) theorises that Cold Dark Matter (CDM) comprises undetected particles hidden in galaxies that cause up to 80% of galactic gravity – a force that, as Newton's apple demonstrated, is self-evident but, as the continuing search for gravitons and CDM illustrate, is not yet understood. The missing mass calculations from surveys like MACHO and EROS are, I think, better explained by Hubble's expanding universe than by undetectable CDM. My theory, consistent with a flat universe, is that Expansion **is** Gravity.

Einstein demonstrated in his constantly accelerating windowless elevator thought experiment that gravity and constant acceleration are indistinguishable from each other. If Hubble expansion is to be incorporated into universal theories then every zone (e.g. sphere), at every scale, sub-atomic through galactic to universal, must be expanding at a rate of acceleration. Einstein tells us that we would not know whether our experience of weight were due to gravity or expansion – if we were to stand on the surface of a sphere in Hubble's ever expanding universe. We must ask ourselves just what is expanding in Hubble's universe – just what is the fabric of the universe that stretches and grows infinitely; and what local effect does such expansion have on attenuating energy and matter.

If, as Fred Hoyle postulated many years ago (before recanting), the universe is being constantly created at all points and if, as Einstein demonstrated, we cannot distinguish between expansion (acceleration) and gravity and if Hubble's interpretation of red-shift being evidence for universal expansion is correct, the ubiquitous CDM (and black holes) could be caused by expansion – and they could be spawning primary particles of matter.

Thought of as vacuums created by the attenuation of the stuff of the universe as it expands, CDM vacuums would impart exactly the same behaviour and characteristics as we observe in overweight galaxies. The power of expansion would attenuate the universal fabric and nature, abhorring a vacuum would rush to fill the void – attracting energy and matter. As the void was filled, bearing in mind that the zone is constantly expanding, a pulse would occur of expansion, void, fill, expansion.

Thus paradoxically, zones of Hubble expansion would attract matter and energy as the zones push out their boundaries. This expansive, attractive force would in all ways be indistinguishable from gravity. CDM would be explained by the existence of innumerable, minuscule vacuums, that would in fact be the fundamental unifying force and the creator of the universe.

Noel Hodson



## The Creation

In the beginning was darkness. Absolute utter timeless blackness, with nobody or nothing to observe it. A pinprick of light appears, a dimensionless singularity. There might have been innumerable singularities but a single one will do. There is no radiance and no reflection as no matter exists; just the pinprick of light in an infinity of blackness. Like a fabulous seed, this first timeless, dimensionless singularity contains all the information the universe will need for its entire existence and its diverse manifestations - logically including human and other intelligence. Some might name it God. It is the beginning of everything. Time is born and the cosmic clock starts ticking.

The singularity explodes into Time, spouting the limitless energy of the electromagnetic field into existence. Existence means "to stand out". This energy, light, stands out in an infinity of non-being. The light streams out into the darkness, but no rays can be seen as there is no dust, no moisture, no-thing, no impedance at all to reflect the light and render it visible - and no observer to note its brilliance. As the energy pours forth, its wave-front meets no resistance; the light, the dark unseen light, will perhaps race out endlessly and be lost in the limitless black infinity of pre-existence.

## The Pulse of Life

There is no outer resistance but in the explosion there is attenuation. As the light field expands to fill the universe of time, it attenuates, it stretches the field. Every trillionth of a trillionth of a human second, the onrush pauses as the attenuation brakes and resists the headlong expansion. The field is conditioned by these pauses as the stretched field pulls itself back. Ripples of light result and make a regular pattern throughout the universal expanding globe; a pulse is born;

the pulse of the universe that will ultimately infuse all life. It conditions the energy field creating the primary quantum of wavelength, of measurement and the dimensions for what we call the speed of light. The Energy pouring out into Time brings the potential for dimensions; the Space/Time continuum is born. It will eventually give rise to the majesty and complexity of the vast universe we inhabit, observe and marvel at today.

Still all is darkness except for the source, the bright seed of the singularity bridging non-existence and the universe, across which streams limitless energy. Boundless new energy pours through the singularity into existence - but now there is some slight resistance. The energy field has been ploughed in fractal quanta creating an impedance, a pre-conditioning of the field that defines movement. The first parameters of matter - bound and defined and limited matter - are being hinted at. This new universe will become a universe with material objects.

### **Angels sacrifice unimpeded bliss for speed limits**

Still the explosion continues unabated and the attenuation in the field now channels the ever in-flowing energy, which also repeatedly attenuates as it streams into the measuring bowl of space/time. This unlimited flow of unruly primal energy, emerging without boundaries or definition or rules of any kind, finds the universe already relatively crowded and already governed by primitive physical laws. The existing dark field of electromagnetic energy quivers to the pulse of the first quantum wavelength and speeding restrictions are rigorously enforced.

## **Supra-Vacuums**

As the field stretches and reaches out limitlessly, so behind its front line the attenuation is more greatly stressed by the limits of space-time. Supra-vacuums, glimpses into non-existence, open momentarily. The field responds to the supra-vacuums, arching back on itself to fill the vacuums. Where the speeding light collides at the supra-vacuums sites, it spins in fierce tornado like vortices. As the vortices are formed, they draw in energy from the surrounding field. These are the first and most fundamental particles, their uniform size dictated by the quantised field.

Each vortex of spinning light encloses and highly condenses energy. It is therefore permanently bounded by an area of low density. It spins at a speed equivalent to the square of the speed of light. The speed is imparted by the collision of two beams of light drawn to a virtual supra-vacuum; neither impeded by any matter and by only the slightest energy resistance.

### **Vortices of Light - the Fractals of the Universe**

Once spinning, surrounded by a low-density shell, the vortices gain definition. The boundary between the low and high density defines a surface. Their orientation is random at this stage. Their rapidly spinning surfaces repel each other while their low-density shells attract each other. There is no friction in the energy field so



there is nothing yet in existence that can interfere with their initial inertial characteristics. These primary particles are untouchable and indestructible except by each another. As the low-density shells attract them to each other, the high-density, high speed surfaces repel them if they touch. Groups rapidly form of mutually tolerant, evenly spaced and generically orientated particles. The conforming orientation results from myriad collisions that align the fractal particles of light. Non-aligned spinning particles are bounced out of the groups and may crash into and scatter other groups.

## **Bounded Creatures of Light**

Resistance increases as the field precipitates myriad particles. Without resistance there would be no creation, just unimpeded, limitless, eternal, undefined energy flow. Billions of Earth years later, humans will explore the limits of their material bodies, precipitated from light, and some will feel and lament the loss of that blissful unbounded flight across the infinite. But without the light arcing back on itself, creating the first boundaries and the first surfaces and the first restrictions and rules, no phenomena could or would exist

## **The Arrow of Time**

The universe now scintillates with sparkling light that a celestial observer might see and marvel at. Unconstrained electromagnetic energy continues to pour across the bridging singularity to be conditioned, channelled and shaped for existence by the first laws of our universe. Fractal light particles, the building blocks of all matter, proliferate throughout the energy field. The arrow of time is set, pointing irrevocably from its singular start out into the continuity of expansion.

## **The sensate undifferentiated Universe**

The universe, the space-time universe, continues to expand, restrained slightly now by the limitations of the pulse of the speed or transmission of light and by the low-density tug between the shells of light particles. A gentle braking and releasing process arises in the barely existent matter permeating the soup of the early universe. The substratum of the soup is an energy field. A field of energy has no parts. It is not particulate. Thus no region of the field is separate from any other region. This field, this seed of the universe, will eventually give rise to sensation, sensate objects and sensitive organisms. It logically must contain the information for sensation. Any event in any region of the field is sensed immediately in every other region, except where the field has arced back and enclosed itself into particulate matter. Inside the surfaces of such self-defining, self-absorbed material objects, events in the field will be only dimly registered, as the information take time to penetrate the enclosures.

## **Vibrating Atomic Particles**

In the constantly expanding universe of electromagnetic energy, each region expands. No scale exists. Every and any region we humans, products of the universal forces and the measurers of the universe, care to define on any scale,

expands endlessly. The field expands, space-time expands, the field within particles expands, the space-time locked into particles expands. The particles expand. As the field expands, it attenuates. It stretches thin and creates a partial virtual vacuum, instantly filled by surrounding energy. Within particles the instant of time is longer. The condensed energy, the condensed space-time responds, as does the rest of the field, to the power of expansion. It responds proportionally to its energy content, to the number of quantised zones condensed from the energy field. The vacuum, within a relatively impenetrable particle surface, survives a brief moment longer before being filled. This particle expansion, in condensed energy objects, is thus more powerful and more persistent than it would be if the condensed energy were unbounded. A particle pulse or vibration is set in motion, of expansion, stretch, emptiness, and refill. It does not contract, but humans, expanding on the same scale, perceive it as expanding and contracting, as it refills from the limitless ubiquitous energy field.

## The Hubble Constant

The fundamental, primary power of the universe is the universal expansion which we to date observe only by inference from the red shift of light from cosmic very distant objects. The known rate of expansion in 1997 is still uncertain but is agreed to be within narrow fluctuations of the calculation of the Hubble Constant - sadly not yet constant. These cosmic observations allow astrophysicists to sketch a horizon on their celestial maps, and to observe that horizon receding from them and us at a constant rate, thus demonstrating that the whole universe is expanding. The millions of galaxies containing billions of stars and other objects at the limits of our powers of observation, such as Quasars, are moving apart from each other.

This expansion occurs in every direction, wherever the telescopes are trained, and the central focus for the movement, the source of the Big-Bang, is earnestly sought but not yet identified. This lack of a central point for the location of the prime singularity allows for theories of many singularities (naked or unmasked black-holes) pouring energy into this universe. Multiple singularities, creating many colliding wave fronts, would simplify the theories of the formation of the first particles; but as we saw in the beginning, one singularity will do.

## Expansion is Gravity

The endlessly attenuating energy field and primary particles open momentary vesicles or vacuums throughout space-time that tug persistently on the field surrounding them. Where particles gather, the vacuums are marginally stronger and the pull is also relatively stronger. Space-Time acts like a giant sponge, but with the holes opening then closing as they fill. There is no limit to the act of opening as long as the universe expands. There is an endless need for unfettered energy to fill the vacuums. Where there are primary particles, spun from light, they are carried on the eddies and currents of energy towards the vacuums. They fall through the expanding sponge-like field, from temporary hole to temporary hole, always drawn towards the strongest vacuums, deep in the heart of the massed particles with the most impermeable surfaces. Thus particles are drawn

together and form larger groups, that create stronger surfaces, that maintain the vacuums of expansion, that draw the energy and free particles to their centre. Mass and density are created in numberless locations throughout the space-time continuum. One of the powers inherent in gravity is in operation.

## **Cold Dark Matter**

Wherever the field can be detected, and more particularly where mass and density exist, the expansion of the universe creates virtual vacuums, that pull on the surrounding energy and material. Viewed from afar, a galaxy of a billion suns manifests its visible light, reflected and radiant from myriad surfaces, and broadcasts information about its mass, its scale, its spin and its drift. At every point in the galaxy the power of expansion pulls energy from energy and matter from matter. The denser the materials, the more points they contain and the longer the surfaces resist incoming matter and energy. The pull, or force this phenomenon causes is measured as gravity and is currently interpreted as Cold Dark Matter (CDM) to account for the force over and above the pull of gravity expected from the visible matter. The ratio of unseen "mass" to seen is about 80:20. The eighty percent indicates the ubiquitous and universal power of the expanding universe on sub-atomic scales.

Gravity is caused by the expansion of the universe. The power of expansion is the underlying, primary and unifying force in the universe from which all forces arise.

## **Switching Off the Dynamo**

If the expansion were to stop and reverse, what might be the consequences.

First, the micro supra and super vacuums would no longer occur. The power of gravity would be switched off. The holes drawing energy and matter towards dense centres would not open. The flow through the sponge would cease. Matter would hold together while electrical and nuclear forces persisted, but as these in turn are generated by the expanding universe, they would dissipate as the primary generator remained inactive. Slowly, energy and matter would un-pick itself. Maximum entropy would ultimately occur as the stuff of the universe jostled into the lowest energy state. The universe would become an inert soup of primary particles, neatly distanced from each other, each keeping to its place and space. Interaction, collision, relationships and dynamic activity would stop. The unimpeded bliss of a formless universe would be eternally boring.

## **Dark-Light**

With the dynamo of expansion switched off, the universe would no longer have the energy to create matter and clump it together in dissipative systems - that all of life depends on. All materials are dissipative systems. They absorb, shape and mould and then dissipate energy. Animals mostly do this by eating. Plants directly absorb light as well as drawing food and moisture through their roots and dissipating it through their leaves. Rocks absorb heat and attract dust particles, dissipating nuclear energy over aeons of time. All life would cease. As surfaces of

atomic particles and as primary light vortices dissolved back to energy, the light of the electromagnetic field would have nothing to reflect from, nothing on which to create radiance and scintillation. The light would become dark-light, unobserved and unobservable

## The End

### "What do you believe?"

2nd October 1999.

Brookside, OXFORD

Dear Ros,

You asked me on Friday last "What do you believe". Perhaps, like asking "How are you", the last thing you expect or want is a full answer. So, you don't have to read this.

But your question challenged me. At 56 years and 9 months old, after a lifetime of spiritual exploration and life experience, I should be able to articulate in clear language, what I have come to believe. Join me, if you wish, on this visit to my fundamental beliefs. In front of every statement, where I may have omitted the phrase, put the words "I believe"; as these are my personal understandings, not truths chiselled in stone and handed to me, privately by God at the back of Woolworth's in Oxford.

QUALIFICATION: What I write here is the simple summarised version. It is an attempt to list a catechism, expressed as unambiguously as possible. If we were to discuss any one of these ideas, I would undoubtedly introduce variations, paradoxes, contradictions and compromises into my belief system. The Universe is infinitely complex and subtle and Life and Death are possibly the most complex, mysterious and wondrous events in this infinite universe. I do not, will not and could not claim to have acquired certain knowledge - I have only glimpses. This uncertainty is, I believe, a necessary and healthy part of the human condition.

#### CREATURES OF LIGHT

I believe that we are creatures of light. The entire universe and everything in it is made of compressed light. This is scientific fact. I believe that the energy we call light (the electro-magnetic spectrum) is God.

Because we are sentient and find sentience elsewhere, the light from which we are built must contain the quality of sentience. I believe therefore that we exist (stand out) in an infinite field of light, that is God, that is sentient, that is intelligent.

I believe that, like it or like it not, we are of God and in God at all times and that being part of the infinite, sentient field of energy, we are all interconnected, all the time. I believe the light field is a precursor of the space/time continuum that physicists define as the basic stuff of the universe. Thus the light energy is prior to, or outside, the time process. Hence time transcending accurate prophecies, dreams and visions about the

human condition, can sometimes emerge in our human minds, that are made of compressed light, that itself transcends time.

I believe that there is no separateness (no duality). That God is light, that we are of that light, and that the entire universe is of that light. Matter, energy, soul, mind, thought and spirit are of the light. All are interconnected and all have equal validity in creation. (Jesus said - In as much as you do it to the least of these (people), you do it also to me). There is nothing we think or do that is not known to the whole universe. There is no "magic" that we cannot, at some stage, gain access to through the skills and talents and creativity of normal human beings - blessed with the divine spark from God.

Without duality - the birth and death of galaxies stars and people are merely perpetual changes of the state of the light energy field. The average human life span is one-one-hundredth-millionth part of the time that scientists estimate have passed since the Big Bang that formed this universe. A mere blink in infinity. I have no problem with the Big Bang theory - God is not separate from us, and has to forge things somehow. Science is the human hobby of trying to understand the forces and intelligence of God. When we do start to understand - and change our actions to co-operate rather than carrying out puny acts of sabotage - then we will start to know of our own divine natures.

Why do we exist? I believe we exist as manifestations of God's creation that are precipitates of energy into matter and that are capable of observing, marvelling at and acting upon the universe of phenomena. Like all material phenomena, we carry within us a spark of God's divinity. Happiness or satisfaction comes from being aware of that divinity, of realising the power of our own creativity bequeathed from God. As many, many histories of admirable and holy people relate, such realisation often arrives when the human animal is sorely pressed - almost always the oppression is by other people - and the human spirit emerges.

I believe that as we are created; as we dream ourselves into physical existence; as our Wills compress and shape the ephemeral light and mould it for the blink of a cosmic eye into a human body, that the process of compression inevitably and necessarily creates Dark Light.

### DARK LIGHT

Dark Light is not negative or un-Godly. Dark Light is matter, where light has turned upon itself, to compress and wind itself into spinning quarks, leptons, electrons, atoms, molecules and all the other building blocks of the material world. Inside the surface of the compressed light, within matter, the infinite knowledge and indubitable interconnectedness is dimmed. We (our Wills and Souls) are born into matter and the bliss of free flowing energy, of being without question of the body of God, becomes hidden from us.

The universal paradox is that without matter, in the form of dust, ice particles, planets, stars and etc. that is formed by light enclosing itself thus creating inner darkness; no light would manifest itself. We only detect or see light when its energy strikes an object and scatters, reflects, scintillates and sparkles. Without the resistance of matter,

perfect light would be in perfect darkness - unseen and undetectable. The pure energy that is God needs the resistance of matter to manifest.

Having precipitated from pure energy, we then have an inner yearning for that blissful state of pre-existence which battles with our original willed intent to exist. In existence we occupy a zone that allows an ego to call a place its own. We concentrate pure energy into that zone and we mould and hold it in a unique pattern. This is our body, and brain; without which we cannot act upon the universe. Both are good states, the non-material sensate energy field and the locked in, pulsating material state, that we call life. Yet, without inner knowledge, they appear to be in conflict as we strive with our ego's to maintain our precious, individual identities, while at the same time our souls yearn for the bliss of free energy and limitless interconnectedness.

What is to be done? As this is God's universe, of which our material bodies are but a tiny part, we do what God intends us to do - all the time from birth. But we do not always do it well. We search, from our Dark Light selves, for the bright light of pre-existence. Most of us search outside. Many give up the search. But the answer and the spark of divinity we seek is, I believe, to be found within - not without.

As we exercise our God given Wills and will ourselves into existence, and hold ourselves in existence, we necessarily must experience being cut-off from God and infinity. While our divine selves are aware of the totality and can remain indifferent to the temporary, temporal human state, our predominant humanity is thrust into the maelstrom of life. Bewildered and alone we rely on our relatives, neighbours and friends to nurture us through childhood and to educate us to the meaning of life. They often do this poorly and sometimes cruelly.

The experience of coming to exist, of violent birth and of exercising our animal instincts and struggling intellects usually puts such stress on the elements of our beings, that those elements may fracture and disintegrate. The way back into a relationship with God and the universe, and of recognising (re-knowing) the spark of divinity within us, is through re-integration of the constituent fractured parts of ourselves. We seek the wholeness or holiness of self and community.

"Know thyself". This imperative is the foundation of the religious life and is the compass pointing the way to integrity and spiritual wholeness. To integrate the complex and mysterious forces that comprise our beings is a task fraught with difficulties and diversions. Many authors over the millennia have written of "The Path" or "The Way", using every form of narrative and metaphor. Sin, is a word that means separate or cut-off. The spiritual purpose is to re-join the community. Having ego driven, secret, selfish purposes cuts us off from the community, makes us miserable and compounds our dis-integration.

I believe that the universal inner drive towards integration operates at every level in the human being. We wish for well-functioning co-ordinated bodies that can run, jump, swim and be universally attractive and desired. We would like to have control over our feelings - enjoying them but not being taken over by them in uncontrolled emotions. We like to think our intellects are finely honed and accurately informed, so that we can think straight and make sensible decisions. We lament the difficulty of releasing our



creative imagination, that wonderful bridge between matter and spirit. At the fifth level, our Will, the initiating spirit and divine resident of the infinite, overlooks the struggles of the earthbound ego.

But while the spirit is infinitely willing, the flesh is almost always weak. The work we would do to integrate ourselves and liberate our full powers as human-beings, challenges the powerful and marvellous economic animal instincts that cleave to minimum effort for maximum reward - and incidentally, keep us alive. Lions sleep for 18 hours of the 24-hour day. It is economic to do so. All animals seek the shade on hot days - to conserve energy. Crocodiles may hunt to eat only once in 8 weeks; that is very economic.

The economic animal part of us persuades us of the intelligence of always acting economically. There is no percentage in spiritual disciplines or in embarking on The Path. The spiritual insistence that we re-connect with and come to know God, by working on self-integration, clashes with the down to earth, common sense of the animal world. And the animal world has been around for millions more era's than we have - so it must be getting something right.

#### LOVE MAKES THE WORLD GO ROUND.

I believe that self-knowledge, with spiritual intent, mixed with the most powerful force in the universe - love, can bring each human being to a state of integration that in turn attunes the person on every level and enables them to act and to be, at full power. I believe that a few such integrated persons who we call prophets, saints and hero's, shine like stars in the dark firmament of human history. Love is best defined as "working for the development of the other person".

I believe that integrated people act with integrity and that acting with integrity automatically precludes sin and evil (evil is liv(f)e reversed - its anti-life). I believe that integrated people naturally act with love and compassion towards everybody else - and that the sooner the majority of humanity reach a greater level of integration - the happier the world will be. And I believe that such increased integrity is what is happening in this very, very, very, young human race.

#### ORGANISED RELIGIONS

Organised religions the world over are founded on bodies of esoteric knowledge that when properly applied with love, assist us to act with integrity, to become integrated and to tap into our creativity - the bridge between the gross and subtle worlds. All religious movements were originally inspired by the imperative to educate the world in techniques and actions that enable individuals to integrate and find the God within.

Most organised religions rapidly become political bodies, lose their main purpose and bury the true message under centuries and millennia of egotistical opinion - claimed, until contested by intelligent enquiry, as laws of God or of an Infallible Pope or other religious leader. Most long-established religions feed into the primitive tribal identities required by early mankind and cultivate fear and hatred for other religions and tribes - the very opposite of love and compassion. If they but paused from political strife and murder and the acquisition of power for dominion, and examined the roots of their

beliefs, they would see that all religions at core, advocate exercises, prayer, sacraments, meditation, contemplation, right actions, studies and education that if properly applied to people's lives would remind and encourage them to live with integrity. And thus to become integrated.

The Holy Grail of integrity, to find and empower creativity, is pursued by writers, artists and most of mankind, with varying degrees of success. Give up that search and depression sets in. The creative spark is a manifestation of the divinity of God that informs every particle of matter and every swirl of the indivisible field of light energy. Creativity is mysterious and is treated with deep superstition, not least by those who are deemed most creative. Few creative people will subject themselves to analysis, lest the magic is lost. Many artists take drugs or drink to excess, fearing that if they break such habits their all-important creativity, more valuable to them than any "thing", may evaporate, never to be recovered. The drugs may suppress other levels of life forces that are then bypassed for a time. But without complete integration at every level the power unleashed by creativity can literally disintegrate the body and soul of any person. Creativity, or creativeness, is the preserve of God. As part of God's creation, with free will, we can legitimately tap into this power that is inherent in the fabric of our beings. We can recognise the divine spark in ourselves and in every human being. But unleashed without integrity, it can destroy the user.

Integrated human beings can be compared to a functioning magnet. A lump of common iron, with its atoms chaotically arranged, has little power. Heat the iron, beat it into a bar, and align it carefully with the magnetic field of the Earth as it cools, and the atoms align North-South. The iron bar becomes magnetic - it is able to channel electrical (light) energies through its body in a coherent way. It becomes attractive, powerful and useful.

It is this beating and heating, metaphorically speaking, that I believe we impose on ourselves from our lofty, divine will; that the poor body and mind finds so painful and frightening. We dream our future lives and the spiritually ambitious dream up the ideal conditions for greater integration. How to act with integrity, in trying circumstances, so as to reach into the stubborn centre of our earthly beings. Such self-imposed trials, such as Job gladly suffered, make us ever stronger and bring us closer to God.

To be fully tested, we must be unconscious during the tests or exercises we devise - life is not a rehearsal and the trails must be real. For the most useful exercises we summon up powerful enemies to cause us maximum discomfort and fear, or to bring subtle temptations that we enjoy giving in to. In this sense "our worst enemies are our best friends". I do believe that we (our dispassionate souls) choose such trails, and go on to choose our illnesses and our way of dying. We are self-willed manifestations of God's power. If we need enemies to help us grow - are those enemies evil or good?

The rewards for integrity are sadly not primarily money and power. For if we gain power, with love and compassion, it can only be power for service, not power for dominion. We would gain power over ourselves; we would become authorities over ourselves; and we would become authors of our own lives; with nobody to blame but ourselves. Our values would change and play-things we desired earlier lose their lustre - when you might at last have them, you don't really want them. The rewards offered

are greater knowledge, including greater knowledge of the sufferings of humanity, greater satisfaction from the exercise of your creativity, greater connection with the world population and a convincing glimpse from the material into the subtle world.

### OTHER PEOPLE

Finally - what does this philosophy bring me to understand of my fellow humans on this planet? I believe we are all equally equipped for life's journey. I believe we are all potential geniuses who need first to overcome our fear of our fellow passengers in order to develop. I think 99% of the human race is oppressed by fear and unable to be creative or speak out or enjoy the world; fear that is either inherited at birth or learned in our own early years.

The next major task is to relieve our fears and enable people throughout the world to blossom. I believe, like Lord Seif of Mark's and Spencer's, that 95% of the human race is essentially honest and trustworthy - they are sane. Why we persist in investing demonstrable lunatics like Hitler with power over our lives, or why we give any person power over us, is a puzzle to me. I believe we have only just started on this work and that the story of the human race will run and run for millions of years to come. I believe we are all locked into life's journey together and that nobody can race on ahead and nobody can be left behind - I think we are all in it together. We proceed at the pace of the slowest - and so must spread the word and the knowledge to the whole human race. I believe, and when life is going my way I think can see, that every human being, just born or about to die, "good" or "bad", carries the divine spark within them. Most of the time, particularly in a traffic jam, I perceive the rest of humanity as obstacles to my God given right to race through the world without opposition or impedance - and wrathfully reach for my laser cannon to blow them out of my way.

### WORKING FOR HEAVEN ON EARTH

I believe that when a majority of human beings are integrated and find their creativity that the creative power of humankind will start to be realised and we will start to build heaven on earth. I do not believe it is God's intent to reach down one day and fix everything. God has given us the powers to do that - we just have to work at it. As we are in God and of God and as "God is Man writ large", we have between us enough creative power to mend our own world and make it good (make it god). I believe this will happen - one day.

For example, while I strongly believe that individuals can exercise their wills in exceptional circumstances to cure themselves, and maybe others, of illness, by what appears to be miraculous or magical powers, I even more strongly believe that through utilising the power of our intellects, our curiosity, by applying our physical energy and with love, devoting our precious time to medical science - and engaging our creativity; that we can and do find cures for disease. Those strange boffins who spend their time isolated in laboratories dedicated to improving aspirin or penicillin - are actually loving the human race - even if they are not conscious of it. Similarly, I believe we can quite easily abolish poverty, ignorance, and mental anguish - through our own efforts by applying our God given talents and skills. I believe we are only just started on this path and have many millions of years to get it right.

So, what of evil and evil men? I believe that we do have free will and that we test our own strength of will and energy in many ways, including negative ways. We have the gift and burden of a dawning self-consciousness; we are not unconscious, innocent large primates, we are capable of self-awareness, self-examination, self-criticism and self-determination. Yet we perforce choose to be born into a stream of primate-life, a long body of creation that carries forward instincts, intelligence and manoeuvres that, as active economic, sexual animals, do pay-off. Becoming an integrated human being requires re-shaping and re-directing our immensely powerful inherited instincts towards intelligent co-operation. I believe we are just on the brink of realising we are intelligent large primates, who can, if we will, predict consequences, plan our actions and improve our lives - for all the generations to come. I believe we are just embarking on the era of knowing how to think, how to share and how to count. We are trying to emerge from the infantile period of fighting, fearing, hating and wrecking that destroys our common-welfare as primitive men (it is mostly men) vie to acquire power for dominion - which they cannot have unless the community invests them with such power over their lives.

But as Isaac Asimov wrote "Violence is the last resort of the incompetent". I understand his words to mean that when the endless attempts of our higher selves to act with integrity, to co-operate to make a better world and to channel our egotistical and our primate energies to the good fail - and we become incompetent; that we revert, in an instant, to the violence of unconscious, frustrated beasts. We give vent to violent thoughts, words and deeds and promote leaders into power who best express our shared infantile rage. And then we require them to act without integrity to steal from, kill and subjugate others on our behalf.

Some of us get so primitively angry at the frustration of re-shaping ourselves that we start wars, become homicidal, psychopathic, paranoid and downright unpleasant. When our frustration reaches its deepest rage - we resent God, The Universe and everything in it and decide it would be better destroyed than that we (the primate in us) should be forced to learn about it. This anti-life urge is evil. But like a child in a rage banging on a wall, the energy becomes chaotic and is dissipated to no long-term effect. Evil is always temporary while creativity makes permanent gains.

#### WHAT I LIKE TO IMAGINE ABOUT THE AFTERLIFE:

I do not know enough of the afterlife to hold strong beliefs. As stressed above, the universe is indivisible, there is no duality. I believe we bridge and are in touch now with the subtle world and the material world at all times.

I find the idea of re-incarnation attractive - reap what we sow etc. And I would like to see how some of the trees I've planted mature in 200 years' time. I play around with the statistics of the numbers of people on the planet - and the population curve over the last 25,000 years does allow for us all to be coming back regularly. I believe all life is interconnected and that a blade of grass is as mysterious and magical as a human being - and is a close relative built on the same physical principles. I think that life is infinitely adaptable and that the life-force is ubiquitous and indestructible. It sometimes is pleasant to contemplate returning as a tree, rather than a person - but it would be a backward step and perhaps a little dull.

I find the idea of a final reckoning and universal justice being dished out by a vengeful God rather attractive. But I have a logistical problem with sinners and saints, cowards and hero's, villains and noble policemen and all other opposites. They do appear to need each other to behave as they do, in order for the other to show how virtuous they are. I cannot believe, for one second, that God is concerned with our petty ideas of religious good and bad behaviour, thought up by some dim-witted primitives thousands of years ago. "Naughty, naughty human - eating fish on Friday while lusting after your neighbour's wife - I'll fling you in hell for all eternity" (or merely burn off your hands or impose some other punishment that is mild by Biblical standards). No, I cannot see God in that role - so I can't believe in Judgement Day. I think it's our problem to sort out Pinochet, Stalin, Hitler and all the other psychopaths we harbour, promote and empower instead of treating in lunatic asylums. We let them do it - and often help them do it; so we must fix the problems here on this good earth.

My best bet is that there is some form of continuity for those humans who are brave enough to integrate and act with integrity and die well. Their right actions may be powerful enough to inform the divine soul, in a manner that is remembered when that soul decides to once again gather enough energy together, to compress enough light, to focus on a minute spot in this vast universe, and spin another body into existence for one-one-hundredth-millionth of elapsed time (since the Big Bang). Perhaps the truly great prophets and hero's are such souls - and perhaps we all strive to become like them.

**Whatever state we may enter after death, with or without the identity we like to think of as "me", I believe that being a ghostly spirit, floating around in God's ambit, in the infinite field of light energy, is not the heaven we like to imagine when we are cold hungry and frightened here on Earth. I believe that if we are existing in a cycle of birth, life, death and re-birth, that the best part of the cycle is here. That life is interesting, compelling and attractive - and that death is not nearly as much fun. Every soul seeks a body. Incarnation is where it is all at.**

You may not have enjoyed this or even read it - or agreed with any of it. But thanks for stimulating me to write it down. Re-reading it, I realise how incomplete my thoughts are - but it is the best I can do. I'd be happy to discuss it with you both.

Love and Best wishes

Noel

## THE UNIVERSE EXPANDS EACH SECOND BY 0.000,000,000,000,000,26%

Noel Hodson - Oxford OX3  
7PJ

These calcs depend on M/soft Excel which is limited.

THE UNIVERSE EXPANDS EACH SECOND BY 0.000,000,000,000,000,26%

2.64E-16

### UNIVERSE

If the Universe is 12 billion years old then the Radius of the  
observable universe is 12 billion light years and the circumference is  
713,614,628,571,429,000,000 kilometres

This horizon expands at the speed of light or 300,000 kilometres per second  
After one second the new circumference is 1,887,714 kilometres longer  
The difference between the base circumference and the plus one second  
circumference is 0.000000000000000264248247000000 percent

### EARTH

IF IF earth gravity of 33ft/sec/sec were due to the surface expanding  
then the comparable percent of expansion is  
0.000188613143335604000000000000 percent

This vast difference between Earth with 3 trailing zero's and Universe with  
15 trailing zero's percentage expansion is narrowed if it is assumed that Earth  
as condensed matter expands at a rate commensurate with the density of matter  
compared to "free" energy - there is a rationale for this. To convert matter to  
energy apply  $E=MC^2$  or simply divide the Earth percentage by 90Billion.

This gives	0.00000000000000000546781070000000	%
Universe is	0.00000000000000000264248267000000	%

The difference is small	0.00000000000000002095701600000000	%
Does this correlate with the % of matter in the Universe?		

Which is a close correlation.

This does not appear to work for the published Hubble factor of 40-75  
kilometers per second per KPC. Maybe I misunderstand the kpc horizon.  
Or the calculator is not up to the job.



8 July 2000.

Dear members of the Department of Mathematics.

Would you spare a few minutes from your labours to assist with some simple (to you but not to me) arithmetic required to explore the idea that Expansion is Gravity – or Gravity is Expansion (see letter and spreadsheet below).

Q1. If Hubble expansion is occurring everywhere in the universe and if the expansion is the cause of gravity, or is gravity, then every sphere of any size should be expanding. For example, if what we feel as gravity on Earth were due to expansion (read the letter below) then the surface of the Earth is expanding at 33ft per sec/sec. The only reliable data I have is that at the periphery of the observable universe the expansion occurs at the speed of light. In other words, the horizon of the observable universe moves away from us at 300,000km/sec/sec.

#### THE SUMS

The radius of Universe is thought to be 12Billion light years.

In one second – what is the percentage change to the length of the periphery or circumference of the observed universe?

The Earth is about 24,000 miles in circumference (see exact figure in spreadsheet below). What is the radius. If the radius grows by 33ft/sec after one second what is the new length of the circumference? What is the percentage change in one second?

If you have the percentage change (Hubble Expansion) for the Universe and for the Earth they need to be standardised (for reasons I could explain from my 6 pages of amateur logic) as to DENSITY. I have used  $E=MC^2$  to convert both to “free” energy.

Do you find any correlation between the two percentages – by which these spheres are expanding i.e. the Hubble Constant.

The published data on the Hubble Constant states it as 45-75. Forty-Five to seventy what? as my primary school teacher used to insist – “hens-teeth or puddings”? It seems that it is 45-75 kilometres per second per megaparsec. In other words, it is measured at a one-megaparsec horizon from the observer. My (primary school) arithmetic fails to make any sense of this information. A megaparsec is 3.26 million light years. If there is any merit whatsoever in the idea that expansion drives gravity then there should be a correlation between the published Hubble Constant, at the megaparsec horizon, and the Universal Edge constant – the speed of light – as that distant horizon recedes at the speed of light beyond our view.

And adjust all for the density of matter in universe. The density adjustments are because I believe that as matter is condensed its power to attract (like gravity) increases with its density due to stronger and stronger surface tensions.

Answers:- 1 minute on your Kray Computer.

Thanks: Noel Hodson

## Letters, Scientific American Magazine

12 May 2000. By Post and Email.

### Expansion is Gravity.

George Musser's article What's the Matter (SCIAM May 2000) theorises that Cold Dark Matter (CDM) comprises undetected particles hidden in galaxies that cause up to 80% of galactic gravity – a force that, as Newton's apple demonstrated, is self-evident but, as the continuing search for gravitons and CDM illustrate, is not yet understood. The missing mass calculations from surveys like MACHO and EROS are, I think, better explained by Hubble's expanding universe than by undetectable CDM. My theory, consistent with a flat universe, is that Expansion *is* Gravity.

Einstein demonstrated in his constantly accelerating windowless elevator thought experiment that gravity and constant acceleration are indistinguishable from each other. If Hubble expansion is to be incorporated into universal theories then every zone (e.g. sphere), at every scale, sub-atomic through galactic to universal, must be expanding at a rate of acceleration. Einstein tells us that we would not know whether our experience of weight were due to gravity or expansion – if we were to stand on the surface of a sphere in Hubble's ever expanding universe. We must ask ourselves just what is expanding in Hubble's universe – just what is the fabric of the universe that stretches and grows infinitely; and what local effect does such expansion have on attenuating energy and matter.

If, as Fred Hoyle postulated many years ago (before recanting), the universe is being constantly created at all points and if, as Einstein demonstrated, we cannot distinguish between expansion (acceleration) and gravity and if Hubble's interpretation of red-shift being evidence for universal expansion is correct, the ubiquitous CDM (and black holes) could be caused by expansion – and they could be spawning primary particles of matter.

Thought of as vacuums created by the attenuation of the stuff of the universe as it expands, CDM vacuums would impart exactly the same behaviour and characteristics as we observe in overweight galaxies. The power of expansion would attenuate the universal fabric and nature, abhorring a vacuum would rush to fill the void – attracting energy and matter. As the void was filled, bearing in mind that the zone is constantly expanding, a pulse would occur of expansion, void, fill, expansion.

Thus paradoxically, zones of Hubble expansion would attract matter and energy as the zones push out their boundaries. This expansive, attractive force would in all ways be indistinguishable from gravity. CDM would be explained by the existence of innumerable, minuscule vacuums, that would in fact be the fundamental unifying force and the creator of the universe.

Noel Hodson

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Noel Hodson - Oxford OX3 7PJ **These calcs depend on M/soft Excel which is limited.**

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IF IF earth gravity of 33ft/sec/sec were due to the surface expanding then the comparable percent of expansion is  
0.000188613143335604000000000000 percent

This vast difference between Earth with 3 trailing zero's and Universe with 15 trailing zero's percentage expansion is narrowed if it is assumed that Earth as condensed matter expands at a rate comensurate with the density of matter compared to "free" energy - there is a rationale for this. To convert matter to energy apply  $E=MC^2$  or simply divide the Earth percentage by 90Billion.

This gives	0.0000000000000000054678107000000 %
Universe is	0.000000000000000264248267000000 %

The difference is small	<b>0.000000000000000209570160000000 %</b>
-------------------------	---

Does this correlate with the % of matter in the Universe?

Which is a close correlation.

This does not appear to work for the published Hubble factor of 40-75 kilometers per second per KPC. Maybe I misunderstand the kpc horizon.  
Or the claculator is not up to the job.

FROM MY OLD WEBSITE

[http://www.noelhodson.com/index\\_files/universal\\_model\\_v7\\_nov02.htm](http://www.noelhodson.com/index_files/universal_model_v7_nov02.htm)

Short, pictorial, overview of these speculations

[http://www.noelhodson.com/index\\_files/Life-Universe-Everything-8Mar2011.pdf](http://www.noelhodson.com/index_files/Life-Universe-Everything-8Mar2011.pdf)

**Updated**

**22 December 2015**

PRESESENCE & ABSENCE

Higgs Bosons & Vacuums.

Look for the presence of matter

AND for the absence of energy.

**TOE Theory of Everything TOE**

**EIG Expansion is Gravity**

**&**

**THE SENTIENT UNIVERSE**

**Email: [noel@noelhodson.com](mailto:noel@noelhodson.com)**

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## **CONTENTS**

[MONDAY, 9 MARCH 2015](#)

[GRAVITY - A NEW THEORY](#)

[GRAVITY - A NEW THEORY - Monday, 9 March 2015](#)

[MONDAY, 9 MARCH 2015](#)

[GRAVITY - A NEW THEORY](#)

**CASIMIR-GRAVITY. THE CASE FOR CASIMIR IS GROWING – 16 DEC 14**

MONDAY, 10 NOVEMBER 2014

CASIMIR-GRAVITY

**MORE ON GRAVITY 4 – 26 APR 14.**

SATURDAY, 26 APRIL 2014

SATURDAY, 26 APRIL 2014

GRAVITY - IS IT AS SIMPLE AS CASIMIR?

**MEET THE ELECTRIC LIFE FORMS THAT LIVE ON PURE ENERGY**

Shocking breath

Wire in the mud

Flexible biocables

MORE ON GRAVITY - 4

**FUSION, GRAVITY, INERTIA, LIFEFORCE 21 JAN 2013.**

MONDAY, 21 JANUARY 2013

FUSION, GRAVITY, INERTIA, LIFEFORCE.

BIG-BANGS, AND GENTLE, SENTIENT FORCES – THE FIFTH FUNDAMENTAL FORCE:

3 comments:

**HIGGS AND BABIES – 9 SEPT 2013.**

**THE LIGHT FANTASTIC – 20 MAY 2013**

Massless particles [edit]

Massless particles contribute rest mass and invariant mass to systems [edit]

**IN MY 70<sup>TH</sup> YEAR – SO FAR, HOW DO I THINK THE UNIVERSE WORKS?**

**WHAT THIS WEBSITE DISCUSSES – AN EXECUTIVE SUMMARY.**

**EXPANSION IS GRAVITY - 2007 – THE EIG MODEL**

FRIDAY, 1 FEBRUARY 2013

WHAT IS GRAVITY?

TUESDAY, 29 JANUARY 2013

RECORD RECORDS - DNA PACKS IN DATA.

MONDAY, 28 JANUARY 2013

BRIAN COX AND TALES OF DOOM

MONDAY, 21 JANUARY 2013

FUSION, GRAVITY, INERTIA, LIFEFORCE.

BIG-BANGS, AND GENTLE, SENTIENT FORCES – THE FIFTH FUNDAMENTAL FORCE:

CHASE THE LIGHT

**MORE ON BIRTH, EXISTENCE, LIFE AND DEATH.**

11<sup>th</sup> July 2012 The Higgs Boson & Higgs Field – The Aether.

23 FEB 2012 To Melvyn Bragg BBC 4 discussion - Conductors & semiconductors.

4 January 2012 – Structure of the universe - Aether-Matrix & Pauli.

3 DEC 2011 – A short, horrified anthropological diversion.

3 AUGUST 2011 – Music of the spheres – structure of the universe.

26 JUNE 2011 – Photon Aether, solves spooky action at a distance.

9 May 2011 – Heretical physics.

4 February 2011 – From physics to metaphysics and metaphors.

**RYDBERG'S CONSTANT – IDIOT'S GUIDE**

[22 Jan 2011 – Spinning on their axis?](#)

[18 Jan 2011 – Immortality & the Power of Inertia](#)

[26 October 2010 – White Holes & Sinks](#)

[24 October 2010 – Alpha, Aether and Inertia.](#)

[10 Sept 2010 - How Many Photons make you? What is your sphere of influence? Click the link...](#)

[http://www.noelhodson.com/index\\_files/Creatures-of-Light-SEPT-2010-V1.xls](http://www.noelhodson.com/index_files/Creatures-of-Light-SEPT-2010-V1.xls)

[12 April 2010 – Quarks – Rest Mass – Protons – Neutrons – EIG still works, OK !](#)

## **BROOKHAVEN - ECHO OF EIG'S VORTICES**

[22 February 2010 – Quark-Gluon plasma forms vortices.](#)

## **NOT NEARLY THERE – QUESTIONS TO EXPLORE?**

[25 January 2010 – Bouncing photons and constant in-falling.](#)

[1 DEC 09 – The Electric Universe - A dilemma:](#)

[The Electric Universe by Wallace Thornhill & David Talbot - 3 Nov 09.](#)

[Heavyweight empty space. 28 Sept 09.](#)

[Malevolent and Benevolent Viruses. Human DNA exchanges. 2 September 09 + later notes. \(A brief aside from Gravity\).](#)

[DNA – 4 September 2009.](#)

[DNA – 5 September 2009.](#)

[Are there two causes of gravity? First Hubble Expansion, Second Casimir Exclusions? – 13 September 09.](#)

[Is the Casimir-Vacuum gravity? – 20 August 09.](#)

[Crab Nebula explosion expands to the edges of the universe; and the Life Force, ranked with Gravity, Nuclear and Electrical Forces – 7 Jul 09.](#)

[Melvyn Bragg & Co - vacuums or not? – 30 Apr 09](#)

[“Ooops” Change to the expansion of the universe constant – 11 March 09](#)

[“Spooky” action at a distance – 21 Feb. 09](#)

[“All the world’s a hologram” – 17 Jan 09 & 19 Jan 09.](#)

[Three illuminated thoughts - 2 November 08.](#)

[Wikipedia - Massless particles](#)

[The LHC and a contradiction - 12 September 08.](#)

[The sentient universe and how humans alter it. 15 July 08](#)

[More rough notes: on Russian Dolls, Multiverse, String Theory, Genes, Memes and me – Maybe synthesis later: 13 April 08](#)

[Is this the EUREKA moment? 28 March 2008.](#)

[Frank Close, The Void & that pesky Aether – 18 January 2008](#)

[Particles or Waves – 24 March 2007](#)

[\(An unpublished\) Letter to New Scientist – “Inflation” 1 March 2007](#)

[Dark Energy – Cosmological Constant – Quintessence – 15<sup>th</sup> February 07](#)

[Reconciliation – mathematical task – 25<sup>th</sup> September 06](#)

[Aether or Ether or neither – 12<sup>th</sup> September 06](#)

[Bubbles & Black Holes – 24<sup>th</sup> July 06](#)

[Making dark matter – 15<sup>th</sup> July 06](#)

[Musing on Light – 22<sup>nd</sup> May 06](#)

[Water is the most likely laboratory to test EIG - 10<sup>th</sup> April 06](#)

[Descriptive Essay on EIG – how it might work](#)

[Gravitational Repulsion at Long Range – Stephen Battersby NS 24<sup>th</sup> Sept 05](#)



[7 DEC 05 – A diversion into Intelligent Design & Is the LIFE FORCE the 5<sup>th</sup> fundamental energy?](#)

[Instanton – reproduced from New Scientist 6 August 2005.](#)

[The holographic universe – thoughts on the Aether.](#)

[Memo on 9am BBC Radio 4 discussion, Roger Penrose, Carolyn Crawford \(sp?\) Martin Rees, Chair, Melvyn Bragg - 17 March 05](#)

[Memo on March 05 Scientific American article, Misconceptions about the Big Bang. - 17 March 05](#)

[Memo on the double-slit experiment – 15 March 05](#)

[Memo on Matter and Anti-Matter – 25<sup>th</sup> November 04](#)

[Note on the Music of the Primes – 27 October 04](#)

[News update – 3 September 04.](#)

[Introduction, pre-EIG](#)

[MAP, COBE and Some Astronomical EIG Numbers](#)

[Six foot man expands infinitely – says MAP and COBE](#)

[Sloan Digital Sky Survey \(SDSS\)](#)

[Radio and TV signals – permanent patterns in Space - inertia](#)

[Casimir and EIG – gravity within dense matter.](#)

[Definitions](#)

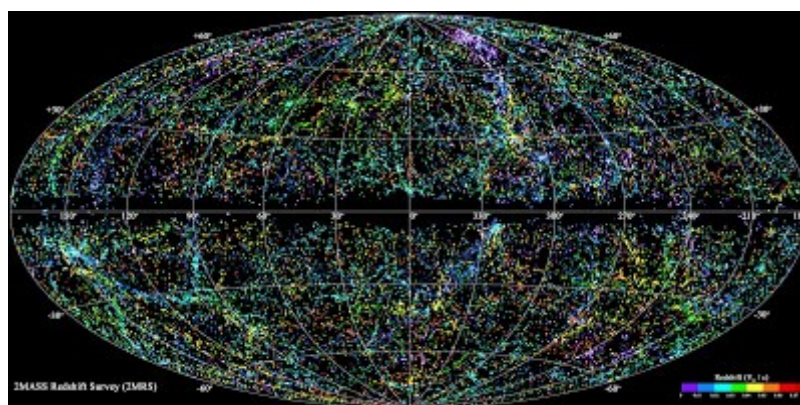
[Letters to science magazines \(not published\)](#)

**updated Tuesday 22<sup>nd</sup> DEC 2015**

## GRAVITY - A NEW THEORY

GRAVITY - HOW IT WORKS.

Noel Hodson, Oxford. 8 Mar 15.



Gravity is the relative absence or reduction of the pressure of the radiation that fills the universal ocean of radiation, which is from 13.7 to 43.7 billion-light-years deep. Contemplate "The ever-tightening knot of gravity, ultimately resulting in black-holes" and "Counter-intuitively, the centre of the Sun is very dark" because the centre is most "shaded" or

protected from or excludes the universal radiation. The external radiation is the PUSH and the internal partial absence of radiation is the PULL of gravity. NCH March 2015

## What this website discusses – an executive summary.

- 1) That gravity is due to Hubble Expansion of the universe – a stretching or attenuation of the universal energy fields at 6.819E<sup>-19</sup>% per second that creates diverse vacuums which attract matter and energy on every scale, everywhere.
- 2) That the Aether exists – being a structure made by the criss-crossing of fields and waves and particles, everywhere. The Aether connects everything to everything. Any change requires “permission” or accommodation from everything else that exists. (NB – I want to marry this to Inertia, which keeps the universe as it is).
- 3) Dark Matter is the combined pull from the momentary vacuums.
- 4) Dark Energy is the depletion, reduction of field power, mutual letting go which occurs in the electromagnetic field when matter is formed and precipitates out of the field at  $E=MC^2$ .
- 5) That the momentary vacuums, of diverse strengths, attract field energies (light) which collide in the vacuums and sometimes make a fundamental particle, quark or basic fractal which are spinning tornado like entities binding the energy. These are too small to be disrupted by most of the other phenomena in the universe; and they bind together through mutual vacuum and Casimir type forces – maintained by Hubble Expansion. This contributes to Inertia.
- 6) That the universe, the Aether, is holographic and these holograms, being complete globular models of the whole etched by light, at every scale from the size of the whole universe down to the minimum Planck scale, contribute to Inertia.
- 7) That all sub-atomic particles act in a similar way to electrons in a telephone wire, converting from electric current to magnetic wave and back again, infinitely. This implies that every particle coalesces onto a centre at a density of  $E=MC^2$ , and expands back to field-energy, to at least fill the space occupied by that amount of energy and probably to the edges of the universe – and then reforms. This is the pulse of the universe, organised by we know not what; acting on all matter including us humans. We, and all phenomena, re-posit ourselves continuously.
- 8) That consideration ought to be given to a new force in physics alongside the nuclear, gravitational and electrical forces – the Life-Force - which organises complex systems and energies (Chaos Theory) up to and including intelligence and sentience, wherever we look in the universe.

### Expansion is Gravity - 2007 – the EIG model

(NB - This concept is NOT following the Einstein thought-experiment that if the surface of, for example, the Earth is expanding, that the upward or outward movement of the surface under our feet would be indistinguishable from gravity; however valid that thought may be. Nor is it String-Theory or Multiverse or Curled-up-Hidden-Dimensions theory).

As the universe expands, as found by Hubble, the omni-present electro-magnetic spectrum or light, the observable boundary of the universe, and every imaginable sphere therein, attenuates at ~~2.304E<sup>-48</sup>%~~ 6.819E<sup>-19</sup>% per second, and creates a total (supra) or partial (super)

vacuum. Light moves in to the vacuum – at the speed of light – and in some zones or spheres the light waves collide or merge at angles and at wave frequencies that reinforce the “speed” and cause colliding waves to spin in a vortex, at perhaps 90 Billion Kilometres per Second (KPS). This immense “speed”,  $C^2$ , creates a surface between the vortex and its surroundings, and a fractal of primary matter (perhaps a Quark) is created or spun from the energy; following Einstein’s formula Energy=Matter X Light-Speed Squared ( $E=MC^2$ ). All zones or spheres of every size, attenuating with the “quantum-pulse” of expansion-and-pause, create the subtle and minuscule force of gravity – everywhere.

The Hubble universe constantly expands (all zones or spheres, some of which might be as small as the Planck length, do not necessarily contract after expansion) and inrushing energy feeds the spinning fractal. As in the vortex of a tornado, the spin draws in surrounding energy leaving a depleted zone around the vortex-sphere. This third vacuum, a surface-vacuum, attracts other fractals, while the constantly expanding (Hubble expansion) spinning surface repels them. The dynamic thus created between repulsive and attractive forces is the dynamic tension that underlies all matter. At this pre-particle, fractal level no thing exists that can interfere with the expanding and spinning vortex. Stability and permanence and inertia are created by Hubble expansion. Dark matter, and its theoretic “extra” gravity, may not be matter – but the temporary attenuation of the every part of the field.

This event is the moment when energy from the energy field (light) becomes matter. As it requires a great deal of energy to make a small amount of matter, the immediate impact on the energy field is to deplete or partially reduce the energy of the field. This reduction of and locking-up of power in matter weakens the inter-attraction of the electro-magnetic field, which then further expands. The more matter that is created the more the field expands locally. Thus Dark Energy – the mysterious repulsive force - is in fact the releasing of the brake as the field, which is or which contains the universe, is depleted and its mutual attraction is weakened.

The rapidly spinning fractals thus created, throughout the universe, may initially be spinning on any axis of orientation, until their surface vacuums draw them together and from many collisions they harmonise their spins. Solo fractals may spontaneously unwind and revert to energy. Fractals in stable and mutually reinforcing relationships may persist for long periods. I would like to explore the neat thought that clumps of fractals (say Quarks) which are made of prime numbers of fractals, persist.

A single fractal made or held in, say, a single Planck sized sphere is in contingent relationship with all adjoining (empty) spheres which are expanding-pausing with the quantum pulse. The solo fractal may unwind – or be drawn in any direction at the speed of light into any adjoining sphere, as it expands. Thus, to fit the Heisenberg Uncertainty Principle, fractals of matter may appear and disappear, or may move in any direction at any time – but, one can imagine a preferred direction being created from sphere to sphere by the original orientation of the field – which the fractal is likely to follow.

To complicate the calculation “quantum-expansion-pause” arithmetic further, each (imaginary) Planck sphere is not only surrounded by interpenetrating spheres of the same size, but each sphere is also at the centre of an infinite (imaginary) set of ever larger nested spheres, like Russian Dolls, expanding out to the extremity of the universe. The calculations of the vacuum powers of these ever expanding zones, of every size, are truly bewildering.

### **3 AUGUST 2011 – Music of the spheres – structure of the universe.**

Waves in water, air, rock, magma, electromagnetic fields, and I suspect in molecules, atoms and atomic particles share a common pattern in that they all strive to be expanding spheres. Planets, moons, stars and perhaps galaxies also tend to be spherical. Why many galaxies are plate and saucer-shaped needs might perhaps be accounted for by their environment. Most life forms are spherical albeit with wilful protrusions into their environment; cells, curled up DNA, seeds, embryos, etc. Light, sound, material vibrations, planets, solar systems and energy, all propagate as spheres. If uninterrupted, they would be perfect spheres – so perhaps the ancient Greeks were right. But they, all phenomena, and we the people, are not alone and unimpeded. All phenomena in the universe have to accommodate all other phenomena. We, and everything, are in contingent relationships in an existing field; which we may as well call The Aether. Every energetic event, whether massively obviously explosive or minutely covertly static, whether persisting for eons or milliseconds, is in fact a dynamic system in motion, propagating as a sphere. Much of what we observe in science is the intersection of these (would-be) expanding spheres with the in-situ universe or Aether. Thus, we look at any part of the sphere, expanding in waves from a central event, and find a particle, which, we then observe, propagates along a line dictated by the expansion. Reminding ourselves that everything we observe is of, on or in an expanding sphere, albeit often not able to expand, or remain spherical and therefore quivering in-situ, shifts our perception and thus the basic models of the universe. This structural law, the music of the spheres, could account for so many westerners becoming as near spherical as possible – with their limbs protruding just and only sufficiently to allow locomotion to the next full-fat meal.

### **26 JUNE 2011 – Photon Aether, solves spooky action at a distance.**

Anil Ananthaswamy writes in New Scientist 25 June 2011, page 13, of spooky action at a distance and quantum entanglement; citing recent experiments where “a single photon exists in three locations”. I am reminded that light, or a single photon, does not actually travel as might a bullet from a gun. Light propagates. It is stimulated from/by an energetic event and it illuminates the surrounding space as a sphere. Just as electrons in a telephone cable do not travel along the wire but excite electrons in-situ via a carrier wave, and just as a shout or call does not propel a stream of air from mouth to ear across a ravine, and just as electricity does not push electrons from a dynamo through wires to the socket in your home, but excites in-situ electrons; light moves outwards in spheres and propagates by contingent relationships with in-situ photons. The energy wave energises in-situ photons and moves on at 300,000 KPS. This spherical radiation of light is ubiquitous, obvious and self-evident. Most current thinking has difficulty with the concept of in-situ photons, everywhere, which implies the Aether. However, current thinking is probably wrong (See my holographic notes below). The implications of spheres of light include the light being detectable, after one second, from any compass point or observers’ locations, simultaneously, even if the locations are each 300,000 km from the centre of the energetic event – thus being 600,000 km apart. If the energetic event, the stimulus, is just one-photon-power and can be classified as a single photon, it nevertheless could be detected at all points on the sphere, which expands at 300,000 KPS. The photons pre-exist everywhere.

## 9 May 2011 – Heretical physics.

I have been reading science magazines and popular books for 52 years. There seem to be more questions unanswered than answered, which is a sign of a healthy collective scientific psyche. But some Big questions have lingered for so long that they threaten to outlive me – which is untenable. So I have set out the Big answers – while attempting to respect all the information I have been exposed to – by filling in the gaps that have nagged away at my sense of logic and perspective for many decades. It is not science as you (or I) know it – but the ideas may jog or jolt some enquiries into new directions. It is also posted on You Tube – search for “Eternal Life, The Universe and Everything”. One of the largest scientific gaps or omissions is the lack of understanding of or even acknowledgment of the Life Force as a primary organising force that we see all around us and that should rank with the basic forces of physics.

## 4 February 2011 – From physics to metaphysics and metaphors.

Many scientists purport to be focused and objective with no interest in “non-scientific” distractions, such as The Meaning of Life, God, Life-Force, Soul and Spirit. I suspect that some of these scientists are not being entirely objective about their inner motivations. I suspect that many are in fact deeply curious about the big questions that religions attempt to answer: Why we are born; Where do we come from; Why do we die; Where (the hell) are we going?

Here is my current, plastic, debateable view on how we, and our souls, might exist in and relate to the universe.

I read in Electric Universe – How Electricity Switched on the Modern World, by David Bodanis ISBN 0-316-72972-8 Page 74:

***“...Lift your finger and this slightly stronger field spreads outwards, like the light from the Statue of Liberty’s lamp. ...The streaming field that stretches from you begins to wobble. ...But Maxwell realised that there was also a magnetic part to Faraday’s invisible force fields. As the electric part started rippling, it would power up this second, invisible magnetic part. (Why? Because changing electric fields produce magnetic fields...) ...just by jostling an electric charge will make an electric field begin to sway, and when those first ripples die down, they will make a fresh magnetic field appear. As that magnetic field dies down in turn, the change in intensity makes a fresh electric field appear.”***

This basic information is fundamental, first year stuff to all physicists – and it is how a low powered, comprehensible telephone conversation travels thousands of miles along undersea cables – electricity > magnetic field > electricity > magnetic field and so on. These energies are perpetual, unending, infinite, immortal and as eternal as the universe itself. We, we humans, generate such fields from every movement we make and with every thought in our electrically powered brains. Perhaps a similar set of forces and fields generated by electrons in motion also operate and oscillate between all other subatomic particles and their fields.

Putting these facts together with my stubborn insistence on reviving a structured universal energy field, such as the Aether and with Inertia and in a Holographic (see my description of a holographic universe below) energetic universe, I propose that every action and thought we

generate, from birth to death, and perhaps from pre-birth to after-death, is broadcast out as electric -> magnetic -> electric fields etc, as clearly and coherently as telephone signals, to blend into, subtly change and add to the sum total of information in the universe. The subtle changes do, in scientific fact, alter the energy patterns of the universe, which in turn affects all phenomena. As fields have no parts, such changes to the energy field might be instantaneously known or recognised by the whole field – and feed back to the whole universe, including to us, ourselves, the conscious, intelligent generators of these particular subtle field forces.

Thus, the universe evolves with every action and thought (which are actions) made by all existent phenomena in the universe. And, thus, we are born into a world pre-stressed, pre-formed, pre-pared and pre-packaged and pre-ordained by all that has occurred since the beginning of time. And thus our arrival has an impact on the world. And thus our subtle data, information and electrical signals, our essence, our soul – does live on, in a coherent form – forever.

And if such signals can be generated by humans – maybe the obverse is true – that we humans take our physical form, we are informed, from such persistent signals, such energies, modified by our immediate environment – such as parental DNA, geography, diet, events, weather etc.

Heaven Forfend! We might even receive information from an earlier life history – not necessarily in our own genetic family line.

QED



## RYDBERG'S CONSTANT – IDIOT'S GUIDE

14-May-11  
Rydberg Constant - calculation. Rydberg arrived at this formula empirically, from experiments, mainly on Hydrogen, in 1898-1900.

**If the calculation doesn't work out - Try, try and try again:**  
**Value of the Rydberg Constant and Rydberg unit of energy**

Making use of the simplifying assumption that the mass of the atomic nucleus is infinite compared to the mass of the electron [2] so that the center of mass of the system lies at the barycenter of the nucleus, according to the 2006 CODATA the constant is:

$$R_{\infty} = \frac{m_e e^4}{8 \epsilon_0^2 h^3 c} = 1.097\,373\,156\,852\,5(73) \times 10^7 \text{ m}^{-1}$$

This equation and the Values below, found on the Web - mainly via Wikipedia.

where  $m_e$  is the rest mass of the electron, 9.109382E-31 kg (NOT 0.511MeV - which really screws it up )  
(Rydberg pre-dates the use of MeV as rest-mass)

$e$  is the elementary charge, 1.602176E-19 coulombs (joules)

$\epsilon_0$  is the permittivity of free space, 8.854188E-12 farads per metre

$h$  is the Planck constant, 6.626069E-34 joules

and  $c$  is the speed of light in a vacuum, 2.997925E+08 metres per second

Top line	9.109382E-31	x	6.589332E-76			Totals	6.002475E-106
Divide by Bottom Line	8	x	7.839664E-23	x	2.909162E-100	x	2.997925E+08
							5.469857E-113
						<b>Result</b>	1.097373E+07 wavelengths per metre. or 10,973,731.57 wavelengths per metre.

Heretical physics - Do Not try this at college: [http://www.noelhodson.com/index\\_files/In-Universe-Everything-3Mar2011.pdf](http://www.noelhodson.com/index_files/In-Universe-Everything-3Mar2011.pdf)

In 1786 you were a Black-Hole: [http://www.noelhodson.com/index\\_files/Seed-within-a-seed-4Feb2011.pdf](http://www.noelhodson.com/index_files/Seed-within-a-seed-4Feb2011.pdf)

## 22 Jan 2011 – Spinning on their axis?

New Scientist 22 January 2011 page 16 briefly reports that the Planck spacecraft and an "instrument" in the Canary Isles have detected microwaves from interstellar dust clouds which are interpreted as coming from charged dust grains, small enough to be set spinning on their axis by collisions with photons, turning at "tens of billions of times per second". (arxiv.org/abs/1101.2031).

No researchers' names or organisations are given by NS and there are no explanations as to how this startling conclusion is reached. Startling because, depending on how many tens of billions of turns the grains are making & what circumference they have, the surfaces of the spinning grains might be moving at more than light-speed, which is a mere 300,000 km per second or 1/3<sup>rd</sup> of one billion km per second. And startling because such whirling dervishes caused by photon collisions are similar to the basis of EIG (this website's theory) where energy is spun into matter through photon collisions. Also startling because such speed raises the question of how the grains remain intact and do not fly apart. Do they rely on dark-matter for their integrity? Or do they rely, as EIG avers, on the vacuums caused by Hubble expansion? We need to know more, so:-

**(24<sup>th</sup> Jan 2011 – Addendum – Sadly, the arithmetic doesn't indicate a spin anywhere near the speed of light, which EIG is looking for. If the Grains have, say, a 10<sup>-6</sup> metres circumference (compare to an atom at 10<sup>-10</sup> metres) then a Grain would have to spin a million-billion times per second to be equivalent to light speed. The analysts' reports below only speak of tens of billions of turns per second – 100,000 times less than light-speed. The remaining relevance to EIG is that it seems that photons can impact Grains and set them spinning rapidly. Can photons impact each other and create spinning vortexes?)**

Cornell Library - seems to be the primary source:

<http://arxiv.org/abs/1101.2031>

# **Planck Early Results: New Light on Anomalous Microwave Emission from Spinning Dust Grains**

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(Submitted on 11 Jan 2011)

**Abstract:** Anomalous microwave emission (AME) has been observed by numerous experiments in the frequency range  $\sim 10$ -60 GHz. Using Planck maps and multi-frequency ancillary data, we have constructed spectra for two known AME regions: the Perseus and Rho Ophiuchus molecular clouds. The spectra are well fitted by a combination of free-free radiation, cosmic microwave background, thermal dust, and electric dipole radiation from small spinning dust grains. The spinning dust spectra are the most precisely measured to date, and show the high frequency side clearly for the first time. The spectra have a peak in the range 20-40 GHz and are detected at high significances of  $17.1\sigma$  and  $10.4\sigma$ , respectively. In Perseus, spinning dust in the dense molecular gas can account for most of the AME; the low density neutral gas appears to play a minor role. In Rho Ophiuchus, the  $\sim 30$  GHz peak is dominated by dense molecular gas, but there is an indication of an extended tail at frequencies 50-100 GHz, which can be accounted for by irradiated low density atomic gas. The dust parameters are consistent with those derived from other measurements. We have also searched the Planck map at 28.5 GHz for candidate AME regions, by subtracting a simple model of the synchrotron, free-free, and thermal dust. We present spectra for two of the candidates: bright HII regions that show evidence for AME, and are well fitted by spinning dust models.

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and the above report is explained as:

<http://www.technologyreview.com/blog/arxiv/26261/>

**Technology Review - kfc 01/13/2011 - from MIT – tells us:**

#### **Planck Space Observatory Begins To Reveal Its Secrets**

*The first data from one of the most important space observatories is set to change the way we understand at the Universe*

It's a big week for astronomers, who have an exciting new dataset to play with courtesy of the Planck Space Observatory, which is currently surveying the skies while orbiting the L2 Lagrangian Point some 1.5 million kilometres from Earth.

Planck's most important goal is to measure the cosmic microwave background, the echo of the Big Bang, in unprecedented detail. In fact, it's unlikely that any future spacecraft will do better. That's because the quality of the final data depends on how well astronomers can subtract nearer objects from the background rather than on the inherent resolution of Planck's instruments themselves. Whatever picture emerges is likely to be as good as it gets.

But the Planck mission has other goals too. Astronomers want to use it to build up a map of galaxy clusters on huge scales, to spot instances of gravitational lensing of the CMB and to look at the Milky Way, the planets and the Sun.

Planck has been collecting data continuously since 13 August 2009 and has almost completed three surveys of the entire sky.

This week, the Planck Collaboration of over 200 scientists from around the world release a first set of data early. They're doing this so astronomers can train other instruments on any objects of interest.

In particular, they want to give the Herschel infrared space observatory a chance to peak at any goodies Planck uncovers. Herschel was launched with Planck and is also orbiting L2 cooled by liquid helium which is gradually boiling away. Consequently, Herschel has a limited lifespan of only 3 years, which it is already more than half-way through.

The Planck Collaboration has released its data in 23 papers placed on the arXiv this week. It's clear the data is beginning to throw new light on mysteries such as the strange emissions from dust in the Magellanic Clouds and the properties of the interstellar medium in our galaxy.

But it's also clear that we're going to hear a lot more about Planck in the coming years. I've placed links to all the new papers below, in case you want to get a head start.

### **18 Jan 2011 – Immortality & the Power of Inertia**

We, and all phenomena, transmit our presence, identity and actions from birth to death. The transmission signals broadcast themselves across the universe "until the end of time" as do signals from quasars, pulsars, etc that reach us from the horizon of the early universe.

Thus we contribute to the inertia of space-time, to the patterns, energy and structure of the universe. And thus our entire lives, every trivial and important thought and act is integrated to build the universe as it manifests today and continues into the far future. The signals we transmit do not die or diminish, just as signals from the "edge" of the universe, from 13.5 billion years ago, are still

detectable and coherent, so do our signals persist. From our first stirrings in the womb, to our last breath, all is transmitted out into the cosmos to form part of the patterns of electro-magnetic energy or light that is the basic stuff of the universe. Just as the faintest traces of messages from our spaceships, after decades of flight, remain coherent even though sent from the edge of the solar system with a final whisper of electric power, so do our, and all, phenomenal signals, retain their identity.

This is equally so for each and every atom, electron, photon and quark as they evolve from pure energy, into matter, into action, and ultimately decay back to pure energy. The holographic nature of the universe (see below) where the whole can be “seen” in spheres at every scale – just as we see, with our eyes and telescopes, the whole image concentrated on the minuscule retina of our eyes; implies that the whole electro-magnetic field and its detailed history is detectable, identifiable and analysable on many scales – scales dictated by the observing instruments. The patterns of the histories of the universe never dissipate and die – they are as immortal as the universe itself.

## **26 October 2010 – White Holes & Sinks**

A theoretical white hole is the opposite of a black hole (New Scientist 23 October 2010 – page 13) where everything comes out and nothing can get in. The simple analogy given is water from a tap pouring down onto a flat sink. As the water hits the surface it spills outwards in a bow wave, “creating a ring-like ridge” before the ridge collapses and the outward movement continues. The nearest to a white hole I can imagine is the singularity at the start and centre of The Big Bang – where infinite energy exploded and poured out into the no-thing that became space and time. I used a similar analogy when conceiving EIG to theorise on how the original Big Bang matter-less energy, even though meeting no resistance in the no-thing, might through attenuation arch back on itself to create ripples in the energy and ultimately to create closed, arched-back globes of matter – the first particles. Was or is the Big-Bang a white-hole?

## **24 October 2010 – Alpha, Aether and Inertia.**

Michael Brooks, whose book 13 Things That Don't Make Sense, I enjoyed reading, writes in New Scientist 23 October 2010 (page 33) about the work of Australian professor, John Webb, which threatens the consensus view held since 1916 of the universal sub-atomic particle, fine-structure-constant Alpha, one (Wikipedia) definition being the  $1/137$  ratio between The Elementary Charge and the Planck Charge; another being the ratio, or coupling constant between electrons and photons – and there are 3 or 4 more relationships which are “determined by” Alpha. As Alpha is calculated and measured empirically, I think “determined by” is a misnomer. John Webb has found through observation of light passing through clouds of magnesium and iron, from Quasars, billions of light years away (and thus observed back in time) that Alpha varies very slightly, one part in a million, being smaller looking North from Earth and larger looking South – at light from Quasars.

One Constant varying will vary all Constants. This in turn seems to threaten the unified theory and raises a question of faith for scientists. ...Do you believe in varying Constants?

My view is, YES, Constants do vary. The speed of light varies in various mediums and light can now even be stopped and re-started. Where would we find the perfect vacuum in which light travels unvaryingly at 300 kps? - which in a leap of illogic brings me back to the Aether

and Inertia. In the texts below are a few arguments for the Aether and a Holographic universe, which seem more realistic with each new report. And I think the definition of Inertia, the force that holds everything in its place, should be strengthened to include "...the existing relationships on every scale of all things and energies in the universe, which change only when sufficient force is applied..." One of the fundamental forces left out is the Life-Force, the implicit capability for energy and matter to form complex, living and sentient entities; which may prove to be **the** most fundamental, yet flexible, of the basic physical forces.

Multiverses and String-theory may be concoctions and confections of mathematics which in their brilliant machinations detect but do not define or explain the implicit dimensions and environments apparent, for example, in a historical family chain – where a woman contains all the patterns and energies necessary to produce the next, say 200, generations (with a little input from males along the line). The implicit universes in that woman's present existence – and of her ancestors – provide enough new dimensions and universes to gratify the most persistent String-Theorist. It requires us to embrace the reality of the Life-Force as a fundamental force, as a causal force, as a primary organising force; not merely as a complex of phenomena resulting from the four traditional fundamental forces. ...And the point is?

The Life Force is known to be evolvable, variable, adaptable, probably universal, yet constant. If the universe around us is so astonishingly varied – why might we think that (mathematical) Universal Constants cannot also vary? For the iron rule of Inertia to adjust all the component, interrelated parts, Constants and energies of the universe to admit a new, or exploding, or evolving, or shrinking or expanding phenomenon, requires the whole universe to shift, to evolve and change. It seems that the Constants can and do change, revisited by Inertia and communicated by the Aether.

EIG still holds.

10 Sept 2010 - How Many Photons make you? What is your sphere of influence? Click the link...

[http://www.noelhodson.com/index\\_files/Creatures-of-Light-SEPT-2010-V1.xls](http://www.noelhodson.com/index_files/Creatures-of-Light-SEPT-2010-V1.xls)

12 April 2010 – Quarks – Rest Mass – Protons – Neutrons – EIG still works, OK !

As I have just completed 10 weeks learning about particle physics and The Big Bang, and before I take up the post offered to me, as CEO of CERN, I am in an authoritative position to further speculate on the moment that and the process whereby straw is spun into gold – or energy becomes matter ...and how  $C^2$  is possible, in contradiction to the law that nothing can travel faster than light-speed. One of the factors that leapt out of my student's notes was that the rest-mass of the 3 Quarks, 2 Up Quarks and 1 Down Quark, that reside inside a proton are a small part, less than 15%, of the rest-mass of the proton. This mirrors the equally baffling mystery of the missing mass, Dark Matter, in the star-studded universe.

Protons are very reliable bits of atoms which last for almost all time – as near to an infinite (half)-life as we humans can imagine. If the Quarks are, or themselves consist of, my rapidly spinning fractals – which EIG claims as the fundamental building blocks of matter (see below) – then I can imagine that the 85% of missing mass of the proton is the energy created by their spinning at  $C$  squared – which is 90 billion kilometers per second – and the consequent attraction between the fractals as the spins continuously wind-in and lock-up energy (see the three vacuums below) – and as the Casimir Effect further binds them together. The dynamic between (1) the inertial forces that would tear apart the spinning fractals and (2) the depleted energy field surrounding them, which by its nature must reach out infinitely; is the very essence of matter. Even after 10 weeks of particle-physics, EIG could still be a viable idea; or am I a blindly stubborn student.

## BROOKHAVEN - ECHO OF EIG's VORTICES

### 22 February 2010 – Quark-Gluon plasma forms vortices.

This New Scientist article and the useful visual video (complete with commercial sponsor) has several similarities with the basic physical theory expressed in EIG (*as to how energy is converted to matter and how  $C^2$  is possible, in contradiction to the law that nothing can travel faster than light-speed*). It is worth duplicating in full. I will consider the implications when time allows.

BROOKHAVEN VIDEO - Quark Gluon Vortices FEB 2010

<http://www.newscientist.com/articlevideo/dn18526/66623156001-atom-smasher-shows-vacuum-of-space-in-a-twist.html>

Atom smasher shows vacuum of space in a twist

17:27 15 February 2010 by [Rachel Courtland](#)

Magazine issue [2748](#).

Ephemeral vortices that form in the vacuum of space may have been spotted for the first time. They could help to explain how matter gets much of its mass.

Most of the mass of ordinary matter comes from nucleons – protons and neutrons. Each nucleon, in turn, is made of three quarks. But the quarks themselves account for only about 1 per cent of the mass of a nucleon. The remainder of the mass comes from the force that holds the quarks together. This force is mediated by particles called gluons.

A theory called [quantum chromodynamics](#) is used to calculate how quarks and gluons combine to give mass to nucleons, but exactly how this phenomenon works is not fully understood.

One possibility is that the fields created by gluons can twist, forming vortex-like structures in the all-pervasive vacuum of space, and when quarks loop through these vortices, they gain energy, making them heavier.

### STAR find

Now the [Relativistic Heavy Ion Collider](#) (RHIC) at the Brookhaven National Laboratory (BNL) in Upton, New York, has seen signs of such vortices in fireballs that mimic conditions when the universe was just a few microseconds old.



To find the vortices, a team used a detector called STAR to analyse the particles created when the collider smashes gold or copper ions head-on at high energies. This process creates a fireball that is about 4 trillion kelvin at its core, a temperature high enough to form what's known as a quark-gluon plasma.

So what has this got to do with vortices created by gluons in the vacuum of space? If two ions collide off-centre, the ensuing fireball starts rotating, creating a powerful magnetic field. If gluon-created vortices exist, this magnetic field should cause quarks in the plasma to separate in accordance with their electric charge, says [Dmitri Kharzeev](#), a theorist at BNL who predicted the effect.

That is exactly what the STAR collaboration saw: more positively charged quarks moving in one direction and more negatively charged quarks moving in another, says [Nu Xu](#), spokesman for STAR. The findings were presented on Monday at a [meeting of the American Physical Society](#) in Washington DC.

## Direct manifestation

"It's a direct experimental manifestation of a property of quantum chromodynamics that has never been seen in the laboratory before," says [Krishna Rajagopal](#) of the Massachusetts Institute of Technology. "It confirms our understanding that gluon fields can have twists."

The evidence of the vortices in the vacuum of space is best seen in a quark-gluon plasma, which requires high energy collisions. The effect can be confirmed by studying the extent of quark separation at lower energies, so later this year the RHIC team plans to begin smashing ions together at lower and lower energies (*Physical Review Letters*, DOI: 10.1103/PhysRevLett.103.251601).

But it's not yet clear whether gluon-created vortices – also called [instantons](#) – appear frequently enough to account for most of the mass of nucleons.

The key lies in measuring with greater precision the separation of charged quarks in the fireball seen at the RHIC. The more vortices created by gluons, the more the charged quarks should separate. This measurement could help pin down exactly how prevalent these instantons are in the present-day universe, says Kharzeev.

## NOT NEARLY THERE – QUESTIONS TO EXPLORE?

### 25 January 2010 – Bouncing photons and constant in-falling.

Last week at my first evening class on particle physics I asked what space is occupied by the “pure energy” which results when two particles collide and annihilate each other; and I asked what the pure energy is.

Pure energy is photons or electromagnetic radiation or light. Where the energy is in space-time was more problematical and did not elicit a simple answer. At first the lecturer said that the liberated energy did not exist in space and time, before saying it was more complicated than that – and moving on.

We also learned about Rutherford bouncing Alpha Particles **4** (helium nuclei) off gold nuclei **196**.

Recently (Oct-Dec 09) I read in New Scientist or Scientific American that some physicists now ascribe a mass to the mass-less photon.

Thinking about these matters leads me to an extension of EIG:

- 1) The gravitational force is an ever-present ubiquitous force of matter tugging on matter, which EIG has so far explained as due to Hubble Expansion.
- 2) Very recent articles speculate that weightless photons do in fact have rest-mass of the photon divided by the speed of light  $C^2$  (some say it is  $1.8 \times 10^{-42}$  grams). See photon-mass below at [Three illuminated thoughts - 2 November 08](#).

But photons are never at rest. I want to explore the idea that  $E=MC^2$  actually means what it says – and that a particle or an entire atom is indeed made of light compressed onto centres (by the original EIG mechanics below). The space/sphere which the light occupied before compression (or precipitation like a crystal forming) is calculable by a variant of  $E=MC^2$ , requiring a certain number of photons or light waves to make up the mass of the particle. Thus the particle of matter is at the centre of a system where photons in-fall and congregate and come to an uneasy resting place (NB quantum fluctuations). But to be a gravitational effect the in-falling must be continuous. This could be caused by Hubble Expansion continually expanding the space occupied by the particle AND by the photons compacting down over the lifetime of the particle due to the continual bombardment by incoming photons. Ultimately the compacting mass, like cosmic black holes, explodes, liberating the photons.

THE BIG BOUNCE – just as Rutherford demonstrated that helium nuclei can bounce off gold nuclei, then in-falling photons might bounce off nuclei and as they bounce, fluctuate from waves to particles like electrons to magnetic fields (the essential conversion of energy to matter), bouncing out to the margins of the (relatively empty, vacuum) space previously occupied by photons, now congregated at the centre of the particle. This bounce and in-falling process is the characteristic wave-length of the atom (or of the particle) and it creates the electron orbit/s diameter/s of the atom /particle. An implication is that the bouncing process might apply to all the photons (each in turn, leaving an attractive mass at the centre) which expand in waves out to the margins of the space from whence they came – to collapse back again into a singularity (photon) within the mass. The space affected by a single particle is limitless as an emptying sphere would draw in energy from neighbouring regions to infinity – but definition and boundaries would be defined by neighbouring matter. However, the signal would theoretically reach to the edge of the universe.

THE BIG SPACE – DARK ENERGY – DARK MATTER –  $C$  squared, is 90 billion kilometres per second and expressed in metres is 90 trillion metres per second. Even in fractions of a second, e.g. the half-life of a particle, the radius from the centre of mass of the sphere of electromagnetic energy which in-fall to create the particle – is large. As speculated below, this emptying, or partial depletion, of a space of its light energy, reduces the mass of that space – which counter intuitively could let-go-of and allow the faster expansion of space-time – the Dark-Energy of astrophysicists. The in-falling process, initiated by Hubble Expansion, is the missing Dark Matter which some astrophysicists seek to hold galaxies together.

3) NB – The photon as a wave/particle is almost certainly the basic transition phase between pure energy and matter. It is true that all matter is made of light and the EIG concept could indeed be a mechanism for spinning the straw (energy fields) in to gold (particles of matter).

Will Microsoft Office EXCEL cope with  $10^{-42}$ ? I doubt it, but it's worth a try.

Let's see if we can calculate how many photons make the mass of a quark, a person etc – and the size of the energy sphere which needs to be compressed. It will surely show that I have a commandingly large presence in the universe.

### 1 DEC 09 – The Electric Universe - A dilemma:

25 Jan 2010 NB – New Scientist 23rd Jan 2010 reports confirmation of an electric-magnetic field on the outskirts of our solar-system – which is a basic claim of the Electric Universe. **Magnetic mirror** A mysterious "ribbon" of particles at the edge of the solar system has been explained. The ribbon, spotted by NASA's Interstellar Boundary Explorer spacecraft last year, is the reflection of the solar wind in a giant magnetic field in the interstellar space next to the solar system (*The Astrophysical Journal Letters*, DOI: 10.1088/2041-8205/708/2/L126).

The Electric Universe, by the self-professed scientific heretics Wallace Thornhill and David Talbot, makes very large claims for electricity as the primary universal force, "...a thousand, trillion, trillion, trillion times more powerful than gravity" (page 8). 1,000,000,000,000,000,000,000,000,000. ( $10^{30}$ )

One of the major components that the established Big Bang gravitational theories lack (in my view), is the Aether – a universally connected field. I surmise that the Aether does exist as holographic spheres / zones on every scale, each one unique due to the differing angles of interception, from each of which the whole universe can be seen – courtesy of light / electromagnetic waves and particles – and the spheres have substance, due to the pressure of the waves and particles exert on each another as they cross or collide. (See more on Holographic Universe below). This holographic matrix may underpin Inertia.

As I read The Electric Universe my Aether starts to look like their all pervasive plasma. Traditional physics demands absolute vacuums of space, with one or two stray hydrogen atoms etc per cubic metre, but incapable of transmitting anything other than gravity – a force which nobody understands. Thornhill & Talbot claim that electric currents fill the universe and link all celestial bodies. I thought about the Earth, with its known magnetic-field, and thought about it hurtling round the Sun, through the heliosphere and other planetary forces and fields and realised that a moving magnetic field should create an electric current – and vice-versa.

So, I will read on and reconsider 40 years of received Big Bang wisdom.

I am probably a good subject to be on the horns of the Big Bang or Electric Universe dilemma – two theories which may of course not be mutually exclusive. I have never seen an atom smasher, a cloud chamber, a cyclotron – and must trust the reports and interpretations published in popular science magazines and books. On the other hand, I have never seen a plasma chamber, alive with coloured electricity, doing amazing things – and must trust the reports and interpretations I read about those events.

My EIG paradigm, on which this webpage rests, may have to change.

More - later.

The Electric Universe by Wallace Thornhill & David Talbot - 3 Nov 09.

I am reading The Electric Universe ([www.thunderbolts.info](http://www.thunderbolts.info)) which popped-up as I was searching for "Physics, Oxford" – an interesting interpolation of foreign matter. This well illustrated book (TEU) is not to be

confused with another excellent book, *Electric Universe* by David Bodanis, which tells the very human stories of the historic roots and discoveries of Earthly electricity. Talbot, Thornhill and their colleagues, state that the premiere universal motive force is electricity, instead of gravity. Electricity (electric currents) has to be differentiated from interplanetary and interstellar magnetic fields and plasma, which are fully acknowledged by astrophysicists; the major theoretical distinction being that “the Standard Model physics establishment” regards such plasma and fields as electrically neutral, without electric currents – while TEU claims electrical connections and interactions between all comets, asteroids, moons, planets, stars and galaxies. In our solar system the Sun is the positive anode, contained in a Langmuir Sheath, the planets are negatively charged and the major circuit is completed by a plasma field-cathode at the magnetopause and heliosphere where the Sun’s influence ends and interstellar deep-space begins. TEU reminds readers that sub-atomic electrical-forces are a thousand, trillion, trillion, trillion, trillion times more powerful than gravity. (1,000 : 1) which I have no reason to doubt.

I am reading these theories and looking at the accompanying videos with great interest not least because my thinking (see Heavyweight empty space 28 Sept 09 etc - below) has led me to a ‘dynamic interpenetrating electromagnetic holographic universal matrix at every scale (DIEHUMES)’ – which could be the long lost pre-Einstein Aether – a universal field which in my view ought to exist to account for Inertia.

TEU theory might solve or dispose of several mysteries including Hubble Expansion & the Size of the Universe, Dark Matter, Dark Energy, Anachronistic Stars and Galaxies, Life Cycles of Stars, Scalding Hot Solar Corona on our Cool Sun, Dirty-Snowball Asteroids, Lost Spacecraft, String-Mathematics, Math-a-mystic Multiverses, Aurora Borealis and Self-Cleaning Solar Panels on Mars Landers.

However, good old gravitational calculations and quantum & celestial mechanics have accurately put men on the moon and satellites in orbit round planets – without being electrocuted, yet, - so they must be a bit right.

I am drawn to read more of TEU by my natural inclinations towards the familiar – we all know what a lightning bolt looks like but we do not know what gravity is – and towards conspiracy theories, where noble geniuses are silenced by sinister great powers – which every child has suffered sometime – and by TEU certainty in the face of wishy-washy incomplete hesitant speculations – we deserve to know it all – Now!. And I like the central idea that the whole universe is interactive and self-regenerating – maybe not doomed to Heat Death after all. And, TEU aside, I like the role of electricity in the Life-Force, where I imagine it perhaps builds the templates that tissue cells follow as they develop into organisms. TEU does of course highlight other unsolvable mysteries, including how and why does magnetism create electric currents and how and why do electric currents create magnetic fields.

Deeper reading – deeper thinking and perhaps deep editing of EIG - to come.

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NB – for next time. Light does not travel – it propagates; the implication being that like electricity it agitates something that is already there waiting to be agitated. Could this be so for all particles??? Back to the Aether and Inertia.

## Heavyweight empty space. 28 Sept 09.

The virtual spheres of empty space which accommodate the holographic universe (see below) do have weight or mass. Erect a globe shaped screen in any sphere and it will reflect or capture a picture of the surrounding universe. The picture is formed from electromagnetic radiation or light, which does create pressure (mass). Think of the principles of “solar sails” capturing sunlight. The radiation propagates or in-falls from every direction; if the imaginary screen is removed, the radiation from one direction will criss-cross with and impact on the radiation from another – such collisions might create fundamental motes of matter (maybe quarks); Tenuous, yes, but non-existent, no. To recapitulate the characteristics of the spheres:

1) They are expanding with Hubble expansion. This attenuates the field and attracts (allows in-falling) like a vacuum.

2) The smaller the sphere, the more wavelengths are excluded and thus the less dense the internal energy field. The lower density inside a small sphere is surrounded by higher density – which will form “bubbles” in the field. This is similar to the Casimir effect – which has a more energetic role to play later as matter forms.

3) The contents of the spheres have some mass.

4) The spheres nest inside each another like Russian Dolls. And the spheres interpenetrate each other.

We are back to the Aether - I am afraid – which enables Inertia.

## **Malevolent and Benevolent Viruses. Human DNA exchanges. 2 September 09 + later notes. (A brief aside from Gravity).**

17 Sept 09

To: Professor Chandra Wickramasinghe,  
Cardiff Centre for Astrobiology,  
Cardiff University.  
Mobile: 07778 389243  
Email: [Wickramasinghe@cardiff.ac.uk](mailto:Wickramasinghe@cardiff.ac.uk)

Dear Professor Wickramasinghe,

### Harmful Viruses – Helpful Viruses

I have been a fan of your published work for several decades; so I apologise for burdening your in-tray with the following speculation – I hope it interests you enough to consider it:

Most people accept that a person infected with a flu' virus, a cunning packet of DNA, may walk into a crowded room and within an hour, all will be exposed to the virus and many will become ill. Science can test for the presence of such harmful viruses or mark their past visits.

Given the virus/DNA soup around us; is it not just as logical that helpful viruses spread just as rapidly as harmful ones? Are we simply too masochistic, paranoid and depressive to allow that helpful viruses, or other packets of DNA, can affect us positively? I think this is scientifically testable.

Below are my rambling notes on the topic.

I am building a Dawkins proof bunker.

Best wishes

Noel Hodson

17 Sept 09 – Another note: We know where to look for malevolent viruses, such as the search for the 1918 Spanish Flu' virus by digging through frozen corpses in graves and bone-yards in Greenland. And we are skilled at isolating these nasty little DNA packages in laboratories; on which we then wage war. Where would one look for benevolent viruses? There may be clues in popular history – miracles, sacred places, saints and healers, shaman, priests, witchdoctors, charismatic heroes, and etc. The first step would be to note a mass cure or betterment affecting a large group – and then look for stray, new, DNA packs, and analyse their impact. If some viruses can kill – maybe some can also

cure? Viruses....I go further. Is it the task of post-menopausal wise aging men and women to generate benevolent viruses and memes – to inform (in-form) the rest of the human race? There must be several mechanisms for passing on good genes and good ideas.

13 Sept 09 – And another note: This speculation could be tested by looking for benevolent viruses. Also – malevolent viruses such as flu’ do spread through populations at amazing speed – and so might benevolent viruses. Can we rapidly cure large numbers of people by releasing a benevolent virus?

Another note: this time to think about DNA in the context of the Life Force, having watched a TV programme “The Cell”. A “seriously clever” heavily bearded, Harvard scientist, intent on making the 2<sup>nd</sup> Genesis – a new lab created living cell different from THE CELL which spawned all life on Earth, was filmed mixing, with a simple swish of the merged solutions, DNA strands, which make glow-flies glow, with animal cells. When the cells multiplied, the mixture glowed green showing that the introduced strands had attached to the cell’s DNA and were multiplying with the cells.

Another interview was with a Cambridge scientist analysing 6 billion year old meteorites, older than our planet, which she found contain viable, complex protein molecules “from outer space”. I am reminded of Viruses from Space, by Sir Fred Hoyle and Prof Chandra Wickramasinghe, who proposed that common illnesses are sometimes such star struck strands, arriving in Earth’s upper atmosphere, eventually swept to the ground by rainfalls and snowfalls, where they immediately attach to the DNA in our cells – and multiply – and make us ill en-masse. They speculated that life may have come here that way and that evolutionary jumps can occur as the new material joins our DNA. This 1970’s theory looks all the more plausible today. IF snips and scraps of foreign DNA can attach to our own precious and unique DNA – which they can – then humans are even less immutable than supposed. It is possible that in human society, we are all shedding and receiving one another’s snips, and being subtly changed as they join our own. Hence, long term couples grow alike and grow to look their pets – or vice versa. It supports the lunacy of cults and Howard Hughes, who isolate themselves from pernicious influences. And “judge a man by the company he keeps”. But it does not, as yet, throw more light on the organising life-force, which battles throughout the universe, moment by moment with the 2<sup>nd</sup> Law of Thermodynamics.

DNA – 4 September 2009. We accept the fact that complex, e.g. flu, viruses are manufactured in our cells, escape when we sneeze and cough, and insert themselves into the cells of other people. Let’s class them as malevolent strands of DNA. It is testable by experiment and equally probable that “benevolent” strands are passed from person to person. When listening to the Dalai Lama at the crowded Sheldonian in Oxford for 3 hours – if he had flu’ I and others would likely get a dose of it; does he similarly pass on benevolent strands? Is this a mechanism for the transmission of “charisma” good and bad and for mass adulation – and unconscious influences on others?

DNA – 5 September 2009. ....and we accept that mumps, measles, scarlet fever etc, in fact all communicable diseases, are passed from person to person or beast to beast as prions, viruses, bacteria etc – which have been reproduced with their DNA in others’ cells. We do not know what “junk DNA” which is 80% of the genome, does or why it exists (just as we don’t know what 80% of the universe is made of). My speculation is that the entire history and evolution of the life form is recorded in the Junk DNA, and may be reactivated by extreme pressures. Does the transmission of non-malevolent DNA enable the carrying of Dawkin’s Memes from person to person? Is our DNA changing from moment to moment? And do we pass it around the human race – thus all share in the new DNA patterns? If so, it makes more sense of our longevity, well after our allotted reproductive cycles decline.

**Are there two causes of gravity? First Hubble Expansion, Second Casimir Exclusions? – 13 September 09.**



On reading *Black Stars, Not Holes*, by Carlos Barcello, Stefano Liberti, Sebastiana Sonego and Matt Visser, *SCIAM*, October 2009; and revisiting my own thoughts below, here's another crack at a synthesis.

**Holographic:** I envisage the universe as a set of boxes or interpenetrating spheres, each informed by criss-crossing electro-magnetic radiation from the entire universe, apart from wavelengths too small to impact a smaller sphere – down to Planck's minimum (n.b. Casimir Effect). The original, matterless, universe consisted of energy, and it expanded and continues to expand as per Hubble.

**GRAVITY ONE - Attenuation:** The expansion of what can be imagined as a featureless energy field creates a universal attenuation of the field of  $6.819\text{E-}19\%$  per second. This is the underlying tug of gravity ascribed to **Dark Matter**.

**Matter:** As matter is formed (see below), massive "volumes" of the energy field are crystallised onto points, subatomic particles, thus depleting the energy field. The removal of these immense volumes creates a letting-go of the energy field, which drives expansion in the manner ascribed to **Dark Energy**.

**GRAVITY TWO - Casimir:** I asked below what could create the walls or plates to bring the Casimir Effect into being. The tamed, small waves between two large ships on a stormy sea are often given as a Casimir analogy. The exclusion space between the ships is only closed from 2 of six sides/planes. The answer to forming the excluding plates may be simply – matter. Matter could shield areas inside matter formation from wavelengths. Below is a *SCIAM* report that Casimir does operate inside atoms. We thus have two ways in which wavelengths are excluded. Firstly, long wavelengths by-pass smaller, holographic spheres, which may cause the spheres to form as bubbles in the whole (stronger / heavier) energy field. This would give the holographic universe a real rather than merely theoretical structure, which would give us the **Aether**.

Secondly, as matter forms, the matter acts like the sides of the ships to exclude certain wavelengths and creates the Casimir effect. While Casimir is the in-pressing of more (heavier) wavelengths on the outside of the plates as compared to the inside wavelengths, and is not strictly a vacuum, it nevertheless is a persistent and relentless in-pressing force which must logically, in a field, reach back infinitely – until lost in the complicated forces of surrounding spheres and matter.

Thus, when calculating gravity, there would be two vectors to apply; the first, Hubble, immensely subtle and barely detectable (and probably not testable); the second, Casimir, stronger and more measurable. These two forces, might explain the anomalies discovered in the speeds of space-vehicle flights.  
QED. (For now).

## Is the Casimir-Vacuum gravity? – 20 August 09.

A self-reminder to think more about The Casimir Effect and the holographic universe (see paragraphs below). In the smallest Planck space of  $10^{-33}\text{M}$ , most wavelengths are excluded as they are too large to impinge. The criss-crossing effect (read below) will be limited to the smallest possible waves and thus the Planck space, say a sphere, will be relatively empty and its "sides" will be compressed together by the denser, larger spheres (accommodating

more and longer waves) around it. ...And so on up the wavelength scale. But what on Earth could the “sides” of the spheres be made of? Would the relative vacuum inside a Casimir-Planck sphere tug on surrounding energy and matter – or are these simply excluded without any forceful effects?

### Crab Nebula explosion expands to the edges of the universe; and the Life Force, ranked with Gravity, Nuclear and Electrical Forces – 7 Jul 09.

More thoughts on energy fields crystallising matter at the rate of  $E=MC^2$ , and thus about inertia with, perhaps, particles continually, rhythmically expanding back to energy and then contracting back to matter – perhaps expanding to the limits of the universe; lead to thinking about reversing the process.

An exploding atom bomb converts matter to energy, which manifests in heat, light, radiation and sub-atomic particles. The explosion makes room for its expansion by pushing other stuff aside. In this sense it demands to be accommodated in its new form – expanding from matter to energy – and the universe has to adjust – despite the reluctance and resistance of inertia. Does this liberated energy add mass to the electro-magnetic energy field and does such extra mass have the counter-intuitive effect of increasing mutual attractions within the energy field and thus, momentarily, slowing the expansion of the universe? How far from the centre of the event is it felt? Is there a limit to the effect of the explosion?

In the case of a supernova such as the Crab Nebula, we can see that the explosion is occupying an ever increasing volume of space. The fact that we can see it, millions of light-years away, demonstrates that some of the liberated energy has travelled as far as our Solar System and – as the supernova occurred a long time ago – we could figure out the distance limits of its visibility. Does the effect eventually reach the boundary of the universe – if a boundary exists?

From thoughts about dispersal and contraction of energy and the inertia which provides stability, arise more thoughts about organisation, sentience and life – which is evident everywhere we look. Chaos Theory with its compelling Mandelbrot fractal pictures, had its popular day a couple of decades back and no heathen Richard Dawkins types rose up in anger – or even to now look back in anger – to scoff and scold. Basically, if enough energy is poured into a system, Chaos Theory predicts points of bifurcation where the system spontaneously re-organises itself into what humans recognise as meaningful patterns and “strange attractors” around which matter and energy swirl in artistic mathematical forms. In direct contrast to the allegedly immutable laws of thermodynamics, it seems that the stuff of the universe does not even itself out to become a bland soup or cold dead planets drifting in a dark universe – but it continually takes new forms and creates or produces new organised phenomena – including intelligent life such as humans and tadpoles and grass-seed. Such self-organisation, of energy processing systems, seems to occur at every level, from energy fields to sub-atomic particles, to matter. Is the basic stuff of the universe sentient? Is it not now an appropriate time, in the evolution of the recently born field of “the scientific method” that the Life Force was elevated to a fundamental force worthy of being ranked with and studied alongside the physical forces? Life is all around us and as yet there is no evidence that, or how, physics creates life – perhaps the reverse is true.

## Melvyn Bragg & Co - vacuums or not? – 30 Apr 09

Melvyn Bragg on BBC Radio 4 at 9am this morning asked his panel of particle and astrophysicists if there is such a thing as a vacuum, either in the vastness of space or within atoms. Several interesting metaphors and clarifications emerged in the conversation.

- 1) The Aether has been recently replaced by “the Higgs Field” which is deemed to wobble as electromagnetic waves pass through. I knew we would get the Aether back eventually, but why ascribe it to Higgs instead of Hertz or Maxwell or Faraday or Thomson & Co?
- 2) The inverse square law of gravity works at a lesser rate inside atoms, which is due to the Casimir effect. Casimir (1950's) figured out that waves inside boundaries can only be as large as the boundaries allow, e.g. small waves between two large ships on a stormy sea.
- 3) It was said that the Red Shift of light travelling across large distances of space is due to the Hubble Expansion of space stretching the light. This is a new thought for me; I have always understood the red-shift to be because the source of light is moving away from the observer – and a blue-shift when the source is moving towards us. I suppose it amounts to the same thing. But does it have implications for the speed of light?
- 4) Dark Energy – the force pushing galaxies etc apart – is happening and is a mystery. I have my ideas about this.
- 5) As electromagnetic wavelengths get shorter the energy in them increases. I suppose this is another way of saying that if a long-wave signal is sent with say 10 tonnes/second of energy, then shortening the wavelength does not reduce the overall energy – thus each peak & trough has greater energy from the point of view of a target of a particular size (a human for example) which may not notice, be affected by, a long wave.

The talk was around the idea of a cubic meter of black empty space. Is it a vacuum or is there something there? And ditto about the relatively huge empty spaces inside an atom – the size of St Andrew's golf course with the nucleus the size of a golf-hole; what connects the “orbiting” electrons and is the space empty? The consensus was that the cubic meter of empty space is filled with electromagnetic waves (they are getting there), virtual particles which pop in and out of existence in defiance of the laws of conservation (borrow Friday and Payback Monday and no-one notices) and a very few resident atoms (hydrogen etc).

The radio discussion inspires me to write a “what this site discusses” summary – for busy executives.

## “Ooops” Change to the expansion of the universe constant – 11 March 09

Various recent 2009 articles in New Scientist & SCIAM have quietly introduced the data that while the Age of the Universe is indeed about 13.7 Billion years old, and that at the speed of light it might therefore be assumed that the edge of the Observable Universe is also 13.7 Billion Light Years distant – making that the radius of the observable universe – in fact, due to factors beyond our control, the radius of the observable (not necessarily the greatest

distance we can currently see to the edge of the universe, but somewhat further) is 47.5 billion light years, which is therefore the radius.

This buggers-up the constant for the percentage per second that the universe expands, which I have calculated and have been using since 2002. You will find it below, cited as **2.304E<sup>-180</sup>% per second**. The new number is **6.819E<sup>-190</sup>% per second**, which is a far smaller percentage and rate of expansion. I apply this rate of expansion to all, any and every sphere of whatever dimensions. What this change might mean to all the ideas set out below – if anything – I will have to take time to consider. The most immediate thought is that this even smaller rate of expansion (which through attenuation/momentary vacuum IS gravity) makes the process even more subtle and difficult to detect.

## **“Spooky” action at a distance – 21 Feb. 09**

Letter to the Editor

Scientific American

21 FEB 09

THE PULSE OF THE UNIVERSE.

The article by David Z Albert and Rivka Galchen, A Quantum Threat to Special Relativity, SCIAM March 2009, discussing locality, leads me to speculate on and to reflect that a telephone signal travelling via the undersea cables from, say, England to America, is a series of "travelling" electrons, creating magnetic fields, creating electrons, creating magnetic fields, and so on. The magnetic fields exist outside of the cable but are guided by it. This endless pulsing is highly accurate in re-creating the data carrying electrons from the re-condensing magnetic field, as demonstrated by the communications they carry. There must be a powerful force of inertia maintaining such accurate pulsating between matter and energy field states. If all particles of matter similarly fluctuate or pulse, which accords with matter condensing energy as in  $E=MC^2$ , and if magnetic fields pulse outwards to fill the universe, it would provide a mechanism for particles to be, by our time reckoning, in both states simultaneously; and would make accurate measurement of particles impossible.

Such a pulse, governed by inertia, would not necessarily always re-create the expanded energy field when it condenses back to matter, precisely as it was before. This potential evolution from moment to moment allows for the mathematicians' findings of multi-verses, not existing simultaneously but from micro-second to micro-second, exploring all possible universes sequentially. If the expansion of particles into energy fields is a momentary return to pre-matter existence, the state before the Big-Bang when matter is deemed to have been created, then the expanded energy fields perhaps exist in a timeless dimension and as such their communications are not time limited, allowing action at a distance or non-locality. Fields are inherently non-local as they have no parts.

The inertia which so accurately recreates the particles from energy might come from the energy of the magnetic fields interpenetrating across the universe, forming a matrix which is robust in that every field and re-condensing particle has its place in the universe, as every other place is occupied; every particle and field is nudged into its proper place by every other particle & field. This matrix, which we might for example call the Aether, would also allow for a holographic universe, in which every sphere of all sizes, from the sphere of the whole universe (if it is bounded and not infinite) down to an eyeball sized and down to minimum Planck sized spheres, are criss-crossed by electromagnetic pulses from every physical object in the universe and from every immaterial force field. Place a recording screen or an eyeball anywhere in the universe and its screen will see the whole universe at whatever size the screen allows. Each holographic sphere image, made of real electromagnetic forces, will differ and is unique due to the different angles from the positions of "fixed" matter and due to the exclusion of long wavelengths from smaller spheres. Is this the source of inertia? The philosophical

implications and the responsibility for our personal actions in such an instantly evolving, interconnected, interdependent universe are truly terrible.

Noel Hodson (Mr)

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## **“All the world’s a hologram” – 17 Jan 09 & 19 Jan 09.**

This headline, on an article by Marcus Chown, New Scientist, 17 Jan 09, promised to echo or at least straighten-up my thoughts on a holographic universe (below 28 March 08 & 18 Jan 08). But it seems that Craig Hogan, Director of the centre for particle astrophysics at Fermilab, of whom Chown writes, is using “holographic” differently to me. Hogan speculates that interference or “jitter” detected by the gravitational wave detector GEO600 at Hanover, may be due to buffeting by “the quantum convulsions of space-time”. I find the explanation of holographic – making a three-dimensional thing, or even a five dimensional pretzel shaped thing, from two dimensional images on the event horizon of our universe – a horizon we are inside – and a three dimensional thing that might be as small as Planck Space divided by the Speed of Light, or far larger “graininess” at  $10^{-16}$  metres, – is well beyond my imagination.

What I do imagine is that in or from any given sphere of space, every body in the visible universe can be “seen” – imagine the sphere as a head with eyes looking in all directions, feeding the images to one retina. And that if that sphere had some physical defining characteristics such as gas or dust or a glass marble, the whole universe would be seen within it. In that sense the sphere would be a holographic image of the universe. I now go on to imagine that in the absence of any screen, marble, gas or dust, what else might reflect or fix the minuscule image of the great universe? The unending stream of particles and waves, including tiny neutrinos, criss-crossing the universe could be the ephemeral spherical screens on all scales which capture images (or are informed by) of galaxies, supernovae, stars, planets, and even smaller phenomena. In fact, there is no logical reason to limit the sensitivity until the spheres are so small that wavelengths pass them by and will not fit into the space. And this imagining of an infinite number of images, at all scales, made of light (just as the source bodies are made of light) leads me back to the pesky Aether – which in turn supports the wavelengths. And the whole complex is growing with Hubble expansion at my calculation of  $2.304E^{-18}\%$  per second. (now  $6.819E^{-19}\%$  per second)

Yes, I am so old fashioned, stubborn and traditional that I will not yet ditch the Aether.

The matrix of the holographic Aether will depend partly on the size of the nominal viewing-spheres compared to the wavelengths of electromagnetic forces and partly on the angles of intersection as the waves criss-cross. For example, if there exists a wavelength as large as the known universe then only a viewing-sphere as large as the whole universe can contain that wavelength. Take an imagined quantum step down to a wavelength that is half the size of the known universe, then two holographic viewing-spheres can be contained in the universe, which contain this half-length and all smaller wavelengths; the two viewing-spheres differ due to their different angles of intersection of all the wavelengths of signals from all the universal bodies (bodies of every size from galaxies to atomic particles). Another halving of wavelengths excludes all longer wavelengths and allows four viewing-spheres containing all smaller wavelengths; the four will be different and unique due to the angles of intersection. This scaling will continue downwards until a minuscule viewing-sphere size is reached that excludes even the shortest wavelengths – is that the Planck Length? Within each of the larger viewing-spheres are smaller viewing-spheres whose perimeters are governed or defined by



wavelengths. Thus, the universe can be depicted as one all encompassing reality, of material objects, made from compressed lights as it happens, which contains zones, bubbles or viewing-spheres of invariably regular dimensions dictated by included and excluded criss-crossing wavelengths. The sizes of these viewing-spheres are quantum jumps in scale, though the quantum may vary with wavelengths. Each viewing-sphere has unique characteristics. A major and fundamental question is, do the criss-crossing signals of electromagnetic forces create a tangible stable matrix – however ephemeral, insubstantial, shadowy, ghostly and fluid it may be? If so, it could be the Aether. This entire complex is rescued from being eternally static by Hubble Expansion – and ...according to EIG, the expansion of the stuff of the universe attenuates the matrix, everywhere, at all times and that attenuation or momentary vacuum is gravity. Another thought; the viewing-sphere ethereal matrix, if it has any substantiality, will in its turn, influence the “real” matter in the universe either by containment, wavelength reflection and deflection, or both. Given the regularity of this holographic matrix, it should be possible for real mathematicians to calculate the numbers of viewing-spheres.

### Three illuminated thoughts - 2 November 08.

1) Is everything quantum? Are ALL physical things at every level and size, built in quantum steps – or phase changes; emergence out of chaos etc. It would make sense if this were so. Even at the massive scale of lumbering animals – say human beings – evolution seems to proceed in leaps and bounds, not smooth gradients. Are these leaps and bounds of a standard size if observed over particular time scales?

2) The New Scientist 1 November 08 article by Mark Buchanan, Shedding light, says that Mitchell Feigenbaum, Rockefeller University, New York, has published mathematics arriving at the same conclusions as Einstein but without invoking light. The article also says this new maths makes it possible to allow that photons have mass – albeit a minute  $10^{-49}$  grams per photon. If they do have mass, and travel in waves – the (rigid framework) Aether once again rears its useful head – and it is a step nearer claiming that all matter is made from light. Spinning straw into gold or light into material looks more logical and adds credence to the vital step between energy and matter postulated in this EIG theory. If photons do have some mass – does this explain dark matter?

NS 2002 - Now the researchers, along with Richard Woodard at the University of Florida, have come up with a way photons could, after all, have mass (Physical Review Letters, vol 89, p 101301). They say the secret lies in the vacuum energy that permeates all of space.

According to quantum theory, a vacuum is not really empty: instead it's full of pairs of particles created from nothing. Normally these particles collide and annihilate each other immediately after they form. But in the first fraction of a second after the big bang, the Universe is thought to have exploded outwards incredibly fast, a period called inflation. For pairs of particles that can feel the pull of inflation, the rapid expansion of space would have pulled them so far apart they wouldn't have been able to annihilate each other, and would have filled space.

The Higgs boson can't affect photons, but these charged particles can. It would have taken more energy than normal to create a photon amid this sea of particles. And the particles would have dragged on the photons. In effect, the photons had a mass of about a hundred-billionth of a gram each. After inflation stopped, the extra energy associated with this mass would have created magnetic fields that evolved into the fields that exist today.

### Wikipedia - Massless particles



<http://en.wikipedia.org/wiki/Photon>

...Instead, physicists generally accept the second-quantized theory of photons described below, [quantum electrodynamics](#), in which photons are quantized excitations of electromagnetic modes.

\*\*\*\*\*

In relativity, all energy moving along with a body adds up to the total energy, which is exactly proportional to the relativistic mass. Even a single [photon](#), [graviton](#), or [neutrino](#) traveling in empty space has a relativistic mass, which is its energy divided by  $c^2$ . But the rest mass of a photon is slightly subtler to define in terms of physical measurements, because a photon is always moving at the speed of light—it is never at rest.

If you run away from a photon in the direction it travels, having it chase you, when the photon catches up to you the photon will be seen as having less energy. The faster you were traveling when it catches you, the less energy it will have. As you approach the speed of light, the photon looks redder and redder, by [Doppler shift](#) (the Doppler shift is the relativistic formula), and the energy of a very long-wavelength photon approaches zero. This is why a photon is *massless*; this means that the rest mass of a photon is zero.

Two photons moving in different directions can't both be made to have arbitrarily small total energy by changing frames, or by chasing them. The reason is that in a two-photon system, the energy of one photon is decreased by chasing it, but the energy of the other will increase. Two photons not moving in the same direction have an [inertial frame](#) where the combined energy is smallest, but not zero. This is called the [center of mass](#) frame or the [center of momentum](#) frame; these terms are almost synonyms (the center of mass frame is the special case of a center of momentum frame where the center of mass is put at the origin). The most that chasing a pair of photons can accomplish to decrease their energy is to put the observer in frame where the photons have equal energy and are moving directly away from each other. In this frame, the observer is now moving in the same direction and speed as the center of mass of the two photons. The total momentum of the photons is now zero, since their momentums are equal and opposite. In this frame the two photons, as a system, have a mass equal to their total energy divided by  $c^2$ . This mass is called the [invariant mass](#) of the pair of photons together. It is the smallest mass and energy the system may be seen to have, by any observer. It is only the invariant mass of a two-photon system that can be used to make a single particle with the same rest mass.

If the photons formed by the collision of a particle and an antiparticle, the invariant mass is the same as the total energy of the particle and antiparticle (their rest energy plus the kinetic energy), in the center of mass frame, where they will automatically be moving in equal and opposite directions (since they have equal momentum in this frame). If the photons are formed by the disintegration of

a *single* particle with a well-defined rest mass, like the neutral [pion](#), the invariant mass of the photons is equal to rest mass of the pion. In this case, the center of mass frame for the pion is just the frame where the pion is at rest, and the center of mass doesn't change after it disintegrates into two photons. After the two photons are formed, their center of mass is still moving the same way the pion did, and their total energy in this frame adds up to the mass energy of the pion. Thus, by calculating the [invariant mass](#) of pairs of photons in a particle detector, pairs can be identified that were probably produced by pion disintegration.

3) Referring to paragraph 2 immediately above, and to the thoughts below about the holographic universe being in every place, on every scale: Is light already there; everywhere? And so does it simply get activated when we measure its “speed” – activated like twanging or vibrating a taut string (not string theory) between the point of measurement and the source – and activated at the rate of 300,000 KPS? If light criss-crosses all zones at all times – and has weight – then it could serve as the ubiquitous, now you need it, now you don't, Aether. And thus be the carrier of Inertia. This would not contradict the essential point of this website, that Hubble expansion causes gravity – and that light flowing into momentary-mini-vacuums collides with light to create fundamental particles.

**How many photons are there in a cubic centimetre of “empty”, “dark” space;** what do they weigh and how do they retain their content of information about their source and their journey – which we can analyse – and how do they allow another electromagnetic beam to pass through the (already crowded as it contains an image of the entire universe) cubic centimetre, without mutual annihilation? Maybe the beams thread their way past each other by taking the paths of least resistance – e.g. circumnavigating a minimum Planck sphere or a larger sphere. The beam that we suppose to be straight would thus disappear and then reappear from our view, breaking up a continuous stream of energy into quanta. Maybe there are so many photons - infinite numbers - that billions of mutual annihilations do not detract from the information the infinite number of survivors carry.

## The LHC and a contradiction - 12 September 08.

CERN switched on the Large Hadron Collider (LHC) yesterday morning at around 9.30am UK time. Those who believed the LHC would create Black-Holes which would suck the Earth and possibly the solar system into their event-horizons, may have felt a slight tug towards Geneva; but most of mankind did not.

ONE OR BOTH OF THESE PROPOSITIONS IS/ARE WRONG:

By coincidence, or perhaps by Intelligent Design, a week earlier I travelled with a renowned physicist who analyses data from probes on distant planets. How, I asked, could such very feeble electro-magnetic signals with less power than an AA battery, cross the millions of miles of space between Mars and the Earth, suffer interference from the Sun, from stellar-novae, from many billions of galaxies, and 300 million vital mobile phone conversations and TV shows, penetrate the Earth's magnetic field and atmosphere and maintain their coherence and legible data? I was given a wave-particle answer; from which I formulated my own excuse for the feeble yet coherent signals; inasmuch as the billions of diverse particles/waves signals are so very, very small that even criss-crossing in space they have plenty of room to avoid collision and annihilating each other. Space is very large and all electro-magnetic signals are very small. I did not press the point by citing minuscule Planck spaces and holographic universes; as explored below.

But here is the contradiction. Anil Ananthaswamy, writing in *The New Scientist*, tells us that the LHC will crash two contra-flow beams of proton bearing laser light and produce 600 million collisions per second. Suddenly space, albeit inside the CERN tunnel, seems very crowded, with barely any room for wave/particles to avoid each other. And, some of those collisions will smash the protons into each other and produce firework displays of primary particles from their debris. So it seems that space isn't so large after all and that the coherence of data flows from Venus et al remains a puzzle – invoking incompatible thoughts of The Holographic Universe, of that damned Aether and of Inertia. And taking us no nearer to answering how (pure) energy turns itself into solid matter and maintains its diverse characteristics and shapes – in relationship to all the other matter and energy in the universe. How does the universe spin straw into gold? How does a tadpole remain tadpole shaped? How does a table's surface prevent teapots falling through it?

The undefined and indefinable Higgs Boson doesn't provide a satisfactory theoretical answer. But at 79 years old, Professor Higgs may mercifully learn of all the universal truths from other worldly, forgiving dimensions, before the \$9B LHC fails to find his boson. It seems to me that the colliding wave/particle beams may well be drawn to each other by the Expansion is Gravity mechanism (EIG) imagined here (below) and that the resulting fractals (quarks?) then attract each other and cluster to form the many different particles identified in the "particle zoo". The Higgs Boson will be found to be Hubble-Expansion vacuums – a temporary partial absence or attenuation of energy.

## **The sentient universe and how humans alter it. 15 July 08**

I have been re-reading *The Goldilocks Enigma* (2006) by Paul Davies, taking particular interest in his final chapters where he draws on the ideas of John Wheeler, who with other theorists posited 'meaning circuits' in the 'participatory universe'. How might such feedback from intelligent observers function?

Given the architecture or scaffolding of interwoven light, the Aether, the ubiquitous, highly robust, energetic holograms on every scale, which inhabit the entire universe, as sketched out below; and given the observed inertia of the universe, which enables material objects to retain their characteristics, despite innumerable hugely energetic events such as supernovas etc, which might be supposed to be powerful enough to disrupt the holograms and destroy all lesser electro-magnetic signals, but do not in fact obliterate even the most feeble information streams reaching our observatories; then how does the inertia of the universe become flexible enough to accommodate changes, including the emergence and destruction of matter?

There may be a feedback mechanism in the holographic universe which, for example, reports the emergence of a particle of matter (or a supernova), created from the energetic field, to the entire electro-magnetic field – and, as a field has no parts, the feedback is instantaneous, so that the necessary warping or bending of space-time around the particle is allowed by inertia; and the holographic scaffolding adjusts instantaneously, everywhere. If this feedback mechanism is allowed; it means that every particle or cluster of particles of matter and their behaviour and impact on the universe are felt, or known by the entire universe, simultaneously – across the energy field which has no parts. Thus the robust, holographic, stable light and matter fields adjust the holographic architecture for each and every material event.

Some such clusters of matter and energy are gathered together in such subtle patterns and interactions as to generate life, sentience and human intelligence - ourselves. In the holographic universe the activities of these complex life-nodes also feedback into the all encompassing energy

field, just as the existence of a massive planet bends light and so alters the architecture of the entire universe (every light-woven holographic bubble changes, as it must to allow for inertia), so does the universe alter due to the information (can I be pedantic here and type “in-form-ation”) which flows from the sentient cells in the universe.

As we are referring to the characteristics of space-time adjusting to the presence of sentience – then such changes might well be timeless; and so affect the past, present and future. Do we, after all, make our own universe and our own heaven and hell? What an awesome self-responsibility.

**More rough notes: on Russian Dolls, Multiverse, String Theory, Genes, Memes and me – Maybe synthesis later: 13 April 08**

Russian Dolls, implicate dimensions: With thanks to mad String Theorists. I am alive, I exist. In DNA terms I may even be unique. I am as real as any test of reality requires. I was just as scientifically real as an embryo in my mother’s womb. I was partially but still scientifically real as an unfertilised egg in my mother’s fallopian tubes/egg sac. That half-me was just as scientifically detectable inside my mother as an unfertilised egg in my grandmother’s egg sac. The scale is already becoming so tiny as to defeat human instruments – but the reality is logical. And we are only two generations (and a couple of determined spermatozoa) back in the sequence – historically back to about 1897. And so on into endless regress – the Russian Dolls getting ever smaller but the “long body” that results in me, in reality, is undeniable. These many implicate dimensions seem to be analogous to the many (from ten up to infinite) curled-up dimensions of String-Theorists.

Many Worlds – Multiverse – Probability: However, in following the eggs, within eggs, within eggs, within eggs back to Eve, we are conveniently ignoring the equally real existence of Adam and his spermatozoa at each juncture. And now it gets really complicated for Adam was implicit in his mother’s egg sac etc. as were his numberless male descendants in their mother’s egg sacs. And many of these nameless mothers and fathers would have been the same parents of many sons and daughters. (We are all linked). Because males produce vast quantities of sperm, much of which is sinfully and biblically “spilled on the ground”, my direct line of descent cannot be deduced by reference to specific spermatozoa. So we enter the fields of probability. If a mathematician were unconsciously grappling with this ancestral complexity, he/she might start to spin out Other Universes in which to accommodate all the possibilities, all the in-potentia, unique persons or DNA that might have emerged in the present – in my place. BUT, the reality is that I am here, the probability fields and equations have collapsed and my unique DNA rules – OK! So this ancestral search, blending the maternal and paternal probabilities, is analogous at any moment of fertilisation to the many universes theorems of the Multiverse lobby. Maybe.

As I have two daughters, from ova fertilized 40 and 37 years ago respectively, they now carry these probabilities and Russian Dolls on to the next generations. As my DNA was passed on decades ago and yet I still exist and persist, I am reminded of the joke about the tourist asking the way in Ireland ...after complicated up hill and down dale instructions the Irishman says, “...and 3 miles **before** you get to the pub, turn right”. My DNA has already passed the turning three miles back – but what about Time Dimensions and Dawkin’s Memes? – for another time perhaps.

So – here below we have the fact of a holographic universe with representations in light at every possible scale and every possible focal point of the whole universe, observed from different angles.

And above we have the fact of implicate multi-dimensions conjured by String Theory and finally the many Universe/probability theory beloved by Multiverse proponents.

The logic of the historic existence of me in my Russian Dolls form and half-form is inescapable – back unto the Nth generation. And I have absolutely no memory of those earlier forms of me and can barely imagine them beyond the moment of my recent birth. However, the scale of matter, atomic, particle etc, it seems would remain the same throughout. If we reverse the process and look forward into my personal future – is there an equally unimaginable dimension or dimensions ahead in time which the essence of me might emerge into? This is more than mere intellectual speculation as I have passed the age of 65 and I am making my final turn for landing. Richard Dawkins – your comments on a postcard please.

Needs more thought and synthesis - and we must not omit the Hubble expansion. But at least I have got these notes down before they drifted away to some other reality.

## **Is this the EUREKA moment? 28 March 2008.**

28 March 2008 - NB – From a recent New Scientist article I find I am a Bohmian. The NS report explained the double slit experiment Bohmian style as the (visible) light being a carrier-wave and centre (particle or photon) – and it is the wave that creates the characteristic shadows and light patterns.

However, even accepting this idea, the essential mystery for me remains; how does energy convert to matter and how does matter take and retain its form in a tumultuous universe (inertia).

A 5 minute look at articles about Bohm's holographic and wave theories give me confidence to now speculate:

Yes – the energy waves in the universe extend as effectively-infinite spheres, which criss-cross at every point in the universe (see paragraphs below). Thus large and minuscule holograms of the universe are created on every scale and every location throughout the space-time continuum. One paper on Bohm says he believed the material of the human brain was also such a holographic organisation – and that therefore we (some of us) can, in theory, access knowledge of the universe.

These carrier waves pulse and fill the universe one moment then congregate at their centres as what we perceive as particles. This makes, say a human eyeball, eye-crossingly complicated with billions of particles expanding to the edge of the universe in wave form and coalescing back to points (black-hole-like) while retaining a coherent, relational and functioning form – but some such inertial mechanism must exist to enable the eye to have its continuous existence and stability. And think of an infinite progression of future human babies implicit in a single human egg – it is very complicated.

I think the inertial matrix of these criss-cross energies, where every thing and non-thing are connected an infinite number of times and locations, creates the stability and information that confers form. We creations of this process can change the universal inertia by feedback or reprocessing the energy - but only rarely – but shifts in the energy patterns underlying our DNA are possible and we can and do adjust to our energy-wave environment.

The HOW – how does matter emerge from the energy field/s? still seems to me to give EIG a fighting chance of being one of the ways of explaining the transition from energy fields to particles.

I'll tidy this up next visit.

6 Feb 08 – NB – Do all primary particles constantly fluctuate between point like and wave like states? Just as the electric signals, electrons, along a telephone wire, such as an undersea cable, create a magnetic field “at right angles to the wire” which then in turn generates a current, which generates a field and so on, ad-infinitum, so do ALL primary particles. What the electrons are doing is pulsing from a point (particle) of matter to a globe (halo) of field energy (non-matter) and back again to matter. In fact the definition of a primary particle must be that it has this property, this pulse or flux. Photons, Electrons, Neutrinos, Quarks etc and of course my primary fractals have this characteristic or capability. This solves the wave-particle double-slit conundrum; the electron “shells” surrounding the nucleus of an atom are fluctuating. Each outburst into a globe-halo energy field fills the (extremely large) space of the energy required to make that particle and, as it re-condenses, the space is momentarily depleted of energy and is a void. To expand into a halo-globe the energy must come into a contingent relationship with the existing all pervading universal field and affect the whole field. Are all primary particles in effect “tunnelling” at the speed of light through the wavelength-matrix of the “Aether” (see Void 18 Jan 08 below) and to do this do they dissolve and re-condense endlessly? IF electrons, photons, quarks etc are assemblies of my vortex created fractals, then the halo-globe could be a cloud of fractals (still matter) or could unwind back to pure energy. HOWEVER, the implications for inertia – the power that (accurately) restores the status-quo – are fantastic (is the universal field sensate?). – Read more and re-visit and write-up.

## Frank Close, The Void & that pesky Aether – 18 January 2008

Professor Frank Close, Oxford University, has written The Void (University Press), which is one of the clearest analyses of the stuff that makes the universe that I have read. As I struggle to comprehend, absorb and encompass all the information in his book, subtitled “This is an exploration of nothing” I want to note my own ideas inspired by The Void, possibly key ideas, – and perhaps later to update my poetic description of The Theory of Everything for the first time in 4 years – linked below.

[CLICK A descriptive overview. How EIG might operate](#)

Is the Void - empty, matter-less space - empty? Frank Close says it is not and I agree. I gather that Professor Close contends that empty space is a seething ocean of quivering zero-point-energies, short-lived quantum particles and energy fluctuations – which mathematically can be demonstrated to cancel each other, indicating that the entire universe emerged from nothing and nowhere.

I cannot disagree with the science, the reported findings and interpretations from cyclotrons, or the mathematics; all of which are entirely beyond me. But, it does seem that The Void as described is closely skirting previous speculations about the Aether – an Aether which seems to come and go with the fashions of physicists’ training and thought-experiments.

Space or The Void is not empty. Take an emptied, evacuated, particle-free cube of any size and at any place in the known universe, erect a screen or an aerial or a human eye ball and it will “see” or record the whole of creation. How does it see the universe? The cube is criss-crossed by light travelling from all the galaxies, stars, planets, comets, dust and magnetic storms etc which are capable of emitting an electro-magnetic signal, beam, wave, photon, electron or any other energy. In our cube, passively receiving information from every direction in the form of wave-particles (light); as the electromagnetic beams zip through the cube, say from north to south, they do so in the same manner as electricity travels, generating magnetic-



fields at right-angles to their routes – which in turn re-create electric current at right angles to the magnetic-fields. Thus, our cube is literally criss-crossed with energy and, astonishingly, the energy is coherent. This complex multi-directional pre-matter matrix forms, I imagine, the inertia of the universe. The energy (signals, information, wave-particles) persists, perseveres, retains discrete identity, etc across 14 billion light-years, across trillions of other space cubes, wriggling through potentially massively disrupting signals from quasars, black-holes, supernova, whiffs of hydrogen, wisps of helium, TV soaps, mobile-phones, human brain signals and a host of other universal events, and can still be detected and accurately analysed when they reach Earth. Is this coherent, robust matrix anything other than The Aether?

EIG posits that within such a matter-less cube – note that the smaller the imagined cube the more wavelengths will be excluded from the observing screens (Casimir) - the miracle of transforming energy to matter occurs. A very large “volume” of energy spirals into a minute particle. This precipitation is triggered by the ubiquitous Hubble Expansion, which extenuates the field-forces, thus “cools” those energies, creates mass (primary-fractals, quarks etc) which combine to form “the particle zoo” and ultimately form human scale elements and molecules.

Dark Matter is the continual Hubble Expansion of every zone (sphere or cube) of space – which we measure as background gravity.

Dark Energy (the expansive force) is the release of mutual attraction in an energy field as matter precipitates from the energy (light). The remaining energy attenuates and expands. (Is there a reverse of this when matter reverts to energy, as in an atomic explosion?)

Inertia (stable universe) is initially from the light-matrix described in the imagined space-cubes, above.

Inertia of matter (and surfaces) result from the binding forces between the EIG primary particles, as described in other paragraphs in this paper.

Sorry, Richard Dawkins, but we still need God to kick-start it all.

## **Particles or Waves – 24 March 2007**

Are photons and electrons particles or waves and what is the speed and direction of travel? EIG would explain this at the Fractal level (a primary Fractal of matter) as waves of electromagnetic energy being drawn to an expanding Planck sphere where it collides with another incoming wave, spins and forms a Fractal which fills the vacuum and is then drawn to another vacuum in a contingent expanding sphere. The second sphere can be in any direction from the first. The just formed solo Fractal only stabilises when it joins with other Fractals; alone it may remain as matter, with a spinning surface, or it may unravel in sphere 2 and return to wave form. Thus any observed Fractal may appear in one millisecond to be matter (a primary particle) and in the next millisecond as energy – and it may travel with equal facility in any direction. All this occurs at the speed of propagation of light. “Quantum” is created as Fractals combine to form larger particles. These conglomerations of Fractals rely on their surface vacuums to hold them together. Small sets may be dissolved back to energy but larger sets may gain or lose specific numbers of Fractals – creating the quantum effect.

## **(An unpublished) Letter to New Scientist – “Inflation” 1 March 2007**

Inflation of the early universe, as reviewed in "Boomtime - NS, 3 March 07, by Peter Coles" and Dark Energy as explored by Stuart Clarke in NS, 17 Feb 07, might be explained if

Hubble expansion and gravity are thought of as opposite sides of the same coin. From the first moment of the Big Bang an energy field containing the whole universe started to expand. This matterless field, in which all zones were/are interconnected, as a field has no parts, has a wave front. As the wave front advances it attenuates the field, creating partial, momentary, Planck-sized vacuums that tug on the field and check the advance of the wave front. Within some of the Planck spheres energy collides and forms the first particles of matter - I call them Fractals. The Hubble-Expansion of the ubiquitous, momentarily attenuated, Planck spheres is the basic power of gravity - and thus along with the non-radiating material Fractals, is interpreted as Dark Matter. As Fractals (or Quarks) are formed, they compress great amounts of energy ( $E=MC^2$ ) and thus deplete the energy field, further attenuating the remaining energy; causing first a brief vacuum-induced pause in the advance of the wave front and then, as the matter-formation attenuation spreads throughout the field, the binding strength of the remaining energy is lessened and the wave front expands more rapidly. Thus Dark Energy, the expansionary force or Einstein's Cosmological Constant, may be the counter effect of Fractals of matter being formed, locking away energy from the field - allowing the attenuated field to accelerate. The Fractals are also centres of gravitation but behave differently to gravity-like Planck-spheres in the energy-field.

In a very small, early universe, compressed, cooling energy would, logically, precipitate more Fractals than would a widespread field and would lock-up a significant amount of the total energy. The sudden weakening of the binding forces of the remaining field might account for rapid-inflation. I refer to this concept on my website as EIG.

### Dark Energy – Cosmological Constant – Quintessence – 15<sup>th</sup> February 07

EIG came into being to attempt to account for Dark Matter; hoping to avoid tangling with Dark Energy. But as Stuart Clark in New Scientist describes Dark Energy as the biggest problem in cosmology (NS 17 FEB 07), it will somehow have to be knitted into trying to build a Theory of Everything such as EIG.

The Big-Bang still needs a God factor to kick it into life from the original singularity, which miraculously manifested in the No-Thing prior to Time & Space. Given that the fabric and energy field of the universe then leapt into Hubble expansion and expanded into the pre-existing No-Thing, EIG proposes that the expanding energy field had and still has a wave front, which as it expands attenuates or stretches the energy-field. This attenuation acts as a momentary brake on the expansion and, as an energy field has no parts and is a continuum, the attenuation acts on all zones of whatever size, simultaneously. At a quantum level, probably in spheres of Planck size, the attenuation creates vacuums in the energy field, which is the electro-magnetic or light field. It is these vast numbers of Planck zone vacuums that we register as the force of gravity and as Dark Matter.

As light rushes in to fill the vacuums and in rare instances makes a primary particle of matter – maybe a quark – the process concentrates light from the surrounding field and locks it into matter.  $E=MC^2$  informs us that a very large amount of light (energy) is locked into a very tiny piece of material.

It is this continuous precipitation of energy into matter at a quantum level which may be interpreted as Dark Energy. Each particle of matter is a massive amount of energy – permanently (as far as human time scales are concerned) depleting the energy field – and

locking into the store of material vast numbers of minuscule, previously freely expanding, Planck Spheres of energy. The energy field adjusts to the creation of matter by diluting the mass of the non-material field. The combined affects of fewer Planck Spheres; which are no longer expanding, creating vacuums and thus gravitational pull – together with the depletion or dilution of the everywhere-connected energy-field, reduces the moment by moment check on the out-rushing, expanding wave front. Thus the wave front, the edge of the observable universe, will expand more quickly and constantly accelerate. Thus Dark Energy is in fact the letting off of the braking effect of gravity (vacuums) allowing the universe to more and more respond to the original impetus that we read as Hubble Expansion. QED and QED.

The “expansive force” of Dark Energy is also known as Quintessence (a neat label) and is Einstein’s Cosmological Constant that he invented in his calculations to stop the then static pre-Hubble universe from being crushed by its own gravity back into a black-hole or singularity; and later, post Hubble, lamented as “my greatest mistake”.

This EIG explanation of Dark Energy seems to imply that the energy-field is finite – not infinite. But that needs some more thought.

### Reconciliation – mathematical task – 25<sup>th</sup> September 06

I need to calculate the partial vacuum force created within a Planck sphere (or any sphere?) as it expands via Hubble Expansion at  $2.304E^{-18}\%$  per second; and compare it with the Gravitational Constant applied to that sphere.

Notes: Vacuums “Do not Suck” they allow particles to spread out.

Cellular Automata theory, so far gets closest to my own picture of the fundamental structure. Authors calculate a 3D sphere has 26 (presumably identical) neighbours – how? Do these neighbours touch (or interpenetrate) the focus-sphere?

Light speed – is this constant a function of the (changing) size of the universe? It seems to be as utterly fundamental to QED as to Relativity.

### Aether or Ether or neither – 12<sup>th</sup> September 06

**From:** Noel Hodson [noel@noelhodson.com]

**Sent:** Friday, August 25, 2006 10:46 AM

**To:** 'letters@newscientist.com'

**Subject:** The Aether

Glenn Starkman's search for the ether (Ether returns in bid to oust dark matter - NS 26 August 06) as a field force, "not of light" but as "something that boosts gravitational pull" is interesting. Space-time and the universe logically is something rather than nothing.

'Nothing' may have preceded the universe. The most remote and empty spaces, wherever we may imagine placing a telescope, detector or screen, are criss-crossed by field forces, including electromagnetic radiation that we can, or may attempt to, interpret; from hot-regions, cold-regions, galaxies, super-novae, stars, planets, NASA space probes, mobile-phones, atoms, particles, molecules and Fred Hoyle's wandering viruses. We can observe the whole universe, on our minuscule retinas, from any point in the universe. In this sense every location is a holographic representation of the whole\*\*. The fact that the signals, weak and strong, remain reasonably coherent across vast distances and billions of years is astonishing

but undeniable. Therefore any zone, a cube or sphere, in space, however empty it may seem and of any scale, is perhaps "conditioned" by such intersecting fields. Matching and intersecting wavelengths result in blank spots. Such persistent intersections may be the underlying structure, or ether, of the universe and the source of the inertia we experience in the material universe. Given such a universal matrix - imagined as spheres of Planck Length diameter - where intersections occur may be points in 'empty' space at which fundamental particles of matter, quarks or photons, are created, as a proportion of field waves collide rather than co-exist. The unexplained given force that pulls the signals into collision - the God factor in this idea - is Hubble expansion, which, in expanding and attenuating every zone in the ether at  $2.304 \times 10^{-18}$  percent per second generates the extra gravity which astrophysicists detect everywhere. Speculating on EIG (expansion is gravity), the mathematics become fiendishly impossible as the (rare, new) fundamental particle moves randomly into any neighbouring, expanding Planck sphere, which are each themselves at the heart of a Russian Doll set of expanding spheres, ultimately as large as the accelerating Hubble universe. If the ether is resurrected by Starkman, and is a field, then as a field has no parts, all regions of a field are connected, which may allow for 'spooky' action at a distance.

**\*\*PS – 2 Oct 06** – Each holographic representation of the universe is in fact unique. Imagine a 10metre diameter screen on one side of the universe capturing all the electromagnetic signals and thus displaying a picture of the entire (visible) universe; then imagine another screen billions of light-years away on the “other side” of the universe. The 2<sup>nd</sup> screen will also capture a picture of the whole universe but the angles to objects will be quite different. There will be two different pictures of the whole. Similarly, every hologram will be different from every other – and thus unique. If each DNA pattern were to be influenced by “The Stars” then those DNA patterns will also be unique.

Noel Hodson

## Bubbles & Black Holes – 24<sup>th</sup> July 06

Zeeya Meralis reports in New Scientist magazine 22nd July 06, on the work of physicist, Anatoly Svidzinsky, at Texas A&M University, who speculates that galactic Black Holes may be mistaken identity, being in fact axions (see next item below) that have formed bubbles at the heart of the Milky Way and other galaxies. If axions exist, Svidzinsky calculates they would expand in the centre of the galaxy to weigh between 1 million and 2.5 billion solar masses – masses predicted for galactic black holes. He also assumes that very strong gravitational fields form a surface tension that repels rather than attracts. Periodically its expanding surface pulls the bubble back. Thus he imagines a period of attraction, then repulsion, then attraction – and speculates that this occurs every 20 minutes – the pattern of X-ray flares as observed at the centre of the Milky Way and previously thought to be from a black hole.

If such bubbles and surface-tensions can theoretically exist; the information adds significant support to the basic EIG idea. Perhaps EIG would complete Svidzinsky's theory.

(PS - An Aspergers-savant, **Daniel Tammet**, reports that Prime Numbers are like large “smooth pebbles”. (His book ‘Born on a Blue Day’, Hodder & Stoughton) .This may tie in with the report below – imagining primes numbers of fractals/quarks as stable primary particles. [Note on the Music of the Primes – 27 October 04](#))

## Making dark matter – 15<sup>th</sup> July 06

New Scientist magazine 15 July 06, reports the efforts of Giovanni Cantatore at the Italian institute for nuclear physics, to manufacture particles which might be the missing mass in the universe. They fire a laser beam across a magnetic field which is 100,000 time stronger than the Earth's, and bounce the laser beam 44,000 times back and forth. This creates an anomaly in the calculations for the expected polarisation of the light – and in turn the mathematical anomaly may be caused by some of the light being converted to 1 millielectronvolt 'axions' – thought to be the missing dark matter required to glue the universe together. To test the theory a laser will be fired through a polarising magnetic field at a wall, with a receiving polarising magnet on the other side. Some of the photons will convert into axions, cross the impenetrable, opaque wall, be reconverted to photons and recreate the original laser beam.

Apart from the imagined particle, the axion, this speculation fits well with EIG.

In the expanding universe a sphere of Planck Space, the smallest zone possible, expands, creates a vacuum that is filled by light, at the speed of light – formed as, say, a photon, some of which are polarised as expected. The photon may quit the first sphere, at the speed of light, by one of 6 exits (into one of the next interpenetrating zones or spheres). If the photon is energised as part of a laser beam it is more probable to exit the sphere on the continuation of its straight-line trajectory – but the beam may be dissipated by photons taking one of the other five routes. The one-sixth, say, of the original photons that continue in a straight line through the wall, being drawn by vacuums from Planck Sphere to Planck Sphere, will be reduced by 5/6ths at each layer of spheres, but some will get all the way through the wall; travelling while in the wall as electrons. They then encounter the re-polarising magnetic field, which gives the electrons enough energy to convert back to photons – and re-polarises them in accord with the original polarisation. At the wall interface, some will escape as electrons before reaching the magnet. A very few photons will collide in Planck Spheres with other photons and a few of such collisions will result in a primary fractal of matter being formed by EIG. So, a tiny fraction of the units emerging from the wall will be such fractals of matter (maybe Quarks).

The missing Dark Matter with gravitational pull is of course the combined affect of the Planck Spheres nominally existing for human mathematical convenience in the electromagnetic field, expanding due to Hubble Expansion and attenuating the stuff of the universe, thus creating vacuums and therefore “pull” in every direction, at all times, which cannot be shielded.

## Musing on Light – 22<sup>nd</sup> May 06

1) Awareness exceeds the speed of light – the anthropic principle again: If I can claim to be a representative sentient being, and if I stand between two light sources – say two stars, each one-light-year distant, the light from both stars reaches me simultaneously. Both are propagating light at 300,000 kilometres per second – and nothing can travel faster than light – but I know beyond all reasonable doubt that my awareness is seeing light from sources 2 light years apart, in one light year. I “know” what is happening to both stars at double the speed of light.

2) The photons and/or wave fronts of the propagating light meet at the place I am situated as an observer. Photons are mass-less; as entities in the electro-magnetic field they have energy – gained through their rate of propagation but no weight and no substance. They are not “matter” they are not material. Let us assume that two photons from these distant stars collide at my location. Their impact “speed” is 600,000 KPS



but as nothing can exceed 300,000 KPS and as photons are more than “nothing”, as they are “something”, then at the instant of collision they must halve their speed to stay within the laws of physics; or put another way, one of the photons must lose all momentum just before the collision. Does the halted photon become matter at that moment? Or maybe their electro-magnetic charges repel each other and they swerve to avoid the collision. Or maybe they embrace and enter mutual orbits – travelling at 300 KPS. Is this the spin that creates a surface that matter requires to exist?

- 3) Light structures – An article in New Scientist last week told of organising nano-particles of polystyrene beads into crystal like structures by shining laser beams on them. Depending on the type of laser, the beads formed into hexagonal or square lattice formations which collapsed as soon as the light switched off. The experimenter cannot explain what is happening – and nor can anyone. Is this a visible manifestation of underlying structures in the electro-magnetic field? Or are these structures perhaps mega-examples of the self-organising capabilities of the EIG fundamental particles? Can it contribute to the explanation of how the merest beam of power from, say a fading mobile phone, retains its coherence over vast distances – in the Bedlam created by 60 million mobile phones in the UK alone and despite existing in the same milieu as solar flares, Stella-novae and other hugely energetic events.?

## **Water is the most likely laboratory to test EIG - 10<sup>th</sup> April 06**

An article last week in New Scientist revisited the claims that water has “memory” and that pure water, with no residue of diluted medicines, not even a single molecule, can nevertheless homeopathically cure patients. While on behalf of the respectable scientific community the article dismisses such far-fetched claims as unworthy of study, it expounds on the quantum mysteries and memory capacity of water, describing it as the “magic ingredient that transforms chemistry into biology”. DNA is inert without water and what has been found is that water approaching life-chemistry such as proteins and DNA, responds to the shape and conditions of the DNA, selects “good” DNA and catalytically enables the bases to bind (e.g. in the double helix). The recipe to create life seems to be ‘Take a bunch of dried up old elements and molecules, add water and shake’. The shaking (succussion) may configure the water to undertake its catalytic tasks.

All of this life enabling magic is in turn enabled by the strange properties of water, including – easily formed and easily broken bonds; expanding into its solid state which is less dense than as a liquid; becoming a gas with very little heat added; and etc. These odd properties are enabled by the “quantum-zero-point-vibrating energies (virtual-particles)” which bind the hydrogen atoms.

What are these zero point energies? They may include virtual neutrinos and gravitons (if gravitons exist). They persist in popping in and out of existence, according to Heisenberg, even if Hell Freezes Over and the Universe grinds to a dead halt at absolute-zero temperature.

You can no doubt see where I am taking this.

EIG addresses the conversion of field energies into matter and postulates that the driving force is Hubble Expansion. The first element created that we humans can apply any tests to, is the most common and simplest element – hydrogen. Hydrogen is the visible bridge between energy and matter. Hydrogen is the product when straw is spun into gold – by Princess Hubble.



As the most fundamental particles, the form of and links between these tornado like sub-quantum EIG entities may, by the most outrageous and unsubstantiated application of wild imagination, be dictated by minuscule, the smallest possible, Planck spaces (spherical zones) accommodating the wavelength/s of various energies in the electromagnetic field. Imagine there are six such EIG vortices positioned around a Planck sphere. They each spin at C2, repelling their neighbours, and each have a local, surface vacuum, attracting their neighbours. The six will be packed as closely as the dynamics allow – cheek by jowl but not touching. In the centre of the six is the highest vacuum, where a seventh vortex is trapped; this 7<sup>th</sup> vortex is the corner of another hexagonal group – and so on ad-infinity. How many such entities are needed to make a hydrogen proton? And to finally make a stable hydrogen nucleus?

The zero-point-quantum-vibrations are of course, in this EIG concept, caused by Hubble Expansion, constantly creating the tiny vacuums, at all Planck spheres, which first attenuate and then draw light to the attenuated vacuum; where a virtual particle emerges and then disappears (or vice-versa) even at absolute-zero. Warm it all up a little and we get hydrogen. Clouds of hydrogen beget stars and galaxies and spawn the heavy elements – which are more stable than gases. Mix these heavier elements together and we get life-giving DNA chemicals – which function only in the presence of water (and not the chemically identical heavy water, deuterium, which poisons all but some very primitive life forms).

Water, being 2 parts hydrogen and 1 part oxygen, manifests in the macro world the underlying fluidity of our EIG vortices, with bonds that are easily forged and just as easily broken. The heavy elements pack the vortices in such combinations and such quantities (n.b. prime numbers) as to be difficult to separate. As such, perhaps water is the laboratory in which to devise experiments to test the EIG proposition.

EIG – QED. 10 April 06.

## **Descriptive Essay on EIG – how it might work**

[CLICK](#)

[A descriptive overview.](#)

[How EIG might operate.](#)

## **Gravitational Repulsion at Long Range – Stephen Battersby NS 24<sup>th</sup> Sept 05**

“Oh, for a theory of everything” writes Stephen Battersby, in an article revisiting Cold Dark Matter (CDM) and WIMPS (Weakly Interacting Massive Particles) In particular he raises “What’s more the LSST (large synoptic survey telescope) could reveal whether gravity becomes repulsive at long range.” That much debated effect which pre-dates Einstein.

My paper, here, explores whether EIG could account for gravity and CDM and it should further follow the line of logic of nested spheres, expanding and attenuating the stuff of the universe. Does some flip occur as the field effect from any one centre of expansion (say from Planck size) travels out to spheres of galactic size and bigger? It could be in the form of a reaction to the ever weaker vacuum created – or as energy rushes in to fill the attenuated space? For later.

## 7 DEC 05 – A diversion into Intelligent Design & Is the LIFE FORCE the 5<sup>th</sup> fundamental energy?

From my NEWS page. The media has recently given a lot of time and space to the debate of Darwinism-V-Intelligent Design. At the extremes of the arguments, on the one hand wild-eyed, Godless, white coated scientists insist that the universe is accidental and evolution is chaotic, while on the other hand, rabid, thundering preachers claim every word in the Bible is true and, as the Bishop of Armagh calculated in 1630-odd, God made the universe sometime in 4000BC – or thereabouts – and seeded the ground with fossils just to confuse us. As a brainwashed lapsed Catholic, once top of the class in Religious Studies, what do I believe?

The universe does give rise to intelligence, as defined and typified by our own intelligence, so intelligence has existed, in potential, from the outset. The laws of physics (and chemistry & mathematics etc), which we have so far discovered, are capable of intelligent extrapolation and application; these laws and their interactions we would define as intelligently, or at least logically, structured. So insofar as intelligence and logic are defined by us merely mortal humans, I believe the fundamental structure of the universe does manifest intelligent design. However, Intelligent Design as preached by the most committed bibliophiles comes perilously close to a belief in predestination – which is a heresy. Predestination assumes that God not only made everything as it now is, but avers that what will happen in the next moment, hour, day, week, year etc. is also designed by God. It is God's Will. As such predestination denies mankind's free-will, denying our ability and responsibility to choose good or evil or change ourselves or our environment; it thus denies sin and, if the logic is followed through, leads inevitably to despair. "Despair" is one of the Cardinal Sins which condemns Catholics to the burning fires of Hell for All Eternity – whoops. So, to compromise as we enter the new epoch of intelligent cooperation, my position is that the universe is based on vastly intelligent and immeasurably powerful principles, but that these interact in extraordinarily complex ways to manifest, animate and give existence and life to all the phenomena we observe. In summary, the universe and all things in it, does evolve, split second by split second, governed by fundamental laws – which can be interpreted as laws of science or laws of God or both.

And finally, why isn't the organising principle of the Life Force, so much in evidence wherever we care to look, defined as one of the fundamental laws of physics alongside Gravity, Electromagnetism, The Weak Nuclear Force and the Strong Nuclear Force?

### Instanton – reproduced from New Scientist 6 August 2005.

This article is so close to the language and to at least one of the elements of EIG that I have typed it out in full. The journalist is not identified (copyright - NS 6-8-05 page 50 THE WORD).

Nothing is not what it seems. Or rather, the vacuum that exists throughout space and inside every atom is not empty at all. It has an intricate structure that determines how matter is built.

Sounds bizarre? Blame it on the fact that the vacuum is permeated by a gluon field, which is the glue that binds quarks – the fundamental units of matter – into protons and neutrons. This gluon field can stick to itself like sticky tape, curling up into knots called instantons. These four-dimensional vortices are distant relatives of wormholes the space-time

"tunnels" that could act as short cuts through the universe. Instantons create the distorted vacuum-scape that quarks have to navigate.

I cannot directly observe all this; so how do we know instantons exist? So far, they've only been seen in computer simulations. But new findings from Brookhaven National Laboratory in Upton, New York, hint at their ghostly existence (Physical Review Letters, DOI:10.1103/PhysRevLett.94.102302). In Brookhaven's particle accelerator, a fireball 300 million times hotter than the surface of the sun melts the vacuum. As a result, the gluon field loses its stickiness, quarks break free from one another and the instantons unfurl and disappear.

At least, the researchers assume this is happening, because a major effect that instantons have on the quarks suddenly disappears.

What else do we know about instantons? They got their name because they blink in and out of existence, like twinkling stars or bubbles in soapy water. But despite their elusive nature, they have a powerful influence on quarks. Quarks have a property called spin; some spin to the left, others to the right. The equations that govern them stipulates that a left-handed quark can never turn into a right-handed quark, and vice-versa - a rule called chiral symmetry. When a quark that's spinning one way passes through an instanton, it swirls around in the vortex and becomes so disoriented that it emerges spinning the other way round: imagine a right-handed glove swirling through a tornado so twisted that it comes out left-handed.

Why is this so important? Well, the result of all that twisting is that the quark gains mass. Quarks start out virtually massless, but when they loop through an instanton they gain energy, making them up to 60 times more massive. Since quarks make up the mass of protons and neutrons, which in turn comprise most of the mass of atoms, that means that more than 95 per cent of visible matter owes its mass to instantons. **End**

**What might instantons mean in the EIG construct?** EIG asks how matter (inertial "permanent" matter) is formed from energy. EIG posits zones or spheres in the electromagnetic energy field - perhaps equivalent to the gluons in the gluon-field cited above. Hubble expansion attenuates these zones at the rate of Hubble-Expansion, momentarily reducing the internal vacuum and attracting (the glue) an inflow of light (at the speed of light). In most instances the light energy simply fills the partial vacuum, the zone disappears and no further event follows. The blinking into and out of existence of these fallow zones, creating momentary partial vacuums, could account for gravity, dark matter and dark energy. In a few cases the inflowing light arrives from different directions and collides in the zone (gluons). In collision the energy spins at 300kps x 300kps or 90billion kps. It is this spin which spins straw into gold and forges the particle from energy (is this energy equivalent to the 300 million times the heat of the surface of the sun as above?). The spinning "quark" or swirling energy meets no resistance and gains inertia and permanence as a particle because once spinning its "surface" repels other "quarks" - which are the only particles small enough to interfere with each other - while a surface vacuum, as exists at the "surface" of a tornado, attracts other "quarks" which are thus "glued" together in groups, spaced apart by their spin, creating a push/pull dynamic - which ultimately form "permanent" matter. Only an equivalent energy - maybe 300 million times hotter than the sun, can "melt" these spinning structures and return the matter to pure energy. The article above says that quarks start out virtually massless then in an instanton they gain 60 times more energy and

become real quarks. This seems to me to be a very similar description as EIG, where the Hubble-expansion zones suck in light – which, in the right conditions – creates a particle of matter. Will Brookhaven factor the Hubble Expansion rate into their maths – just to see what it says?

PS – once formed the tiny particles e.g. neutrinos or photons, will move through space attracted by the infinity of expanding Hubble zones. Each zone they enter, they fill and kill the vacuum nullifying the attraction, then the particles may leave in any direction – I like to think they have 8 alternative routes out of a zone/sphere – which neatly accounts for probability and the difficulty of predicting their paths. Hey Ho!

### **The holographic universe – thoughts on the Aether.**

Wherever I position myself in the universe the retina of my eye – of both eyes – will capture images of near and distant objects, large and small. If I make a larger or smaller screen and erect it anywhere in the universe it too will reflect or record such images. What is actually happening is that the light, electro-magnetic radiance from stars and planets – and the relative darkness of “empty” space, is transmitted across the sphere occupied by the retina or screen – no matter where I turn my gaze. If I move a few hundred yards or a few hundred light years, light will be found crossing the new zone I have decided to occupy. Every zone or sphere, of any size, greater than the shortest wavelength, is criss-crossed with light – which my eyes or brain see as coherent. This implies that every sphere is a holographic representation of the whole universe. How real is this representation – has it the characteristics of energy and perhaps matter? It certainly means that no zone exists where the radiation is not visible. How does the electromagnetic energy retain its original information despite many collisions and impedances across vast distances? The Aether it seems is extant – even if Einstein didn’t need it.

### **Memo on 9am BBC Radio 4 discussion, Roger Penrose, Carolyn Crawford (sp?) Martin Rees, Chair, Melvyn Bragg - 17 March 05**

Dark Energy – is not energy and not necessarily dark. Martin Rees prefers to call it lambda the Cosmological Constant, which isn’t constant. Scientific thought progresses through; Ideas, Speculation, Conjecture, Theories, Calculation, Observation; Experiment, and into Technologies (does it work?). We learned that vacuum energy is not a vacuum; the background radiation, shadow of the Big Bang is 3K above absolute zero (I speculate that this might be the “heat” created by the movement of energy into a depleted zone which has expanded – expanded due to Hubble expansion – but see next item below.). Mostly they focused on the “force” – is it a force – that is causing the expansion of the universe to accelerate, namely Dark Energy. As I am taking Hubble Expansion as an observed given fact, what might be driving the expansion is not directly relevant; it could be angels pulling on the circumference. We need a repulsive force.

In EIG, what acts as a repulsive force? It is the surfaces of the spinning fractals or basic entities of matter. Inside the vortex is dense energy – so dense as to be matter, at the surface the  $C^2$  spin repulses other fractals (think of spinning tops bouncing off each other), just beyond the surface is a “constant” partial vacuum from where energy is taken to feed the

vortex – a kind of meniscus of energy. It is the dynamic balance between the forces that brings inertia. And thus stabilises the universe.

These and other scientists seem never to picture the universe as teeming with energy, everywhere. Hold up a mirror or radar dish anywhere in our (visible) universe and it will record or reflect energy – light – electromagnetic spectrum energy. It is undeniably there. It could be seen with the naked eye crossing that area of space. What EIG addresses is how that energy, that infinite (as far as we know) field, produces matter. Did it only do so in the BB or does the process continue when light beams collide? Either will work for EIG – but space is NOT empty. Are scientists hung up on being labelled as believing in, the aether which Einstein found no need for in his equations?

### **Memo on March 05 Scientific American article, Misconceptions about the Big Bang. - 17 March 05**

Very clear article by Charles H. Lineweaver and Tamara M. Davis which is worth archiving for EIG. New to me is the statement that “objects inside the expanding universe do not expand.” They cite as an example of an object, a Galaxy. This is perturbing as I have to date assumed that everything, every spheroid zone, in the universe expands at the same rate  $2.304E^{-18}\%$  per second. However, EIG still works if a fractal of matter, formed in the  $C^2$  vortex from pure energy, ceases to expand once it has been formed. The “extra” gravity in dense matter would then have to be explained – not by the surface shell of the vacuum holding out to create a stronger vacuum – but perhaps that to feed a collection of fractal vortex’s which have come together in a stable union – billions of them to make a particle – the shared or merged halo of depleted energy at the surface of the fractals, is a stronger vacuum relative to the number of fractals – Thus denser matter = more fractals = more pull.

In some ways this is neater than my earlier idea as the energy is spun into matter (straw into gold) by the  $C^2$  spin and as it is transformed, it passes a threshold which makes it permanently matter; reassuring if you don’t want your universe to evaporate one day. This none expansion of material objects also removes the need for me to work out how much a six foot man expands in his lifetime – a compound interest formula of a very small number that my EXCEL can’t cope with.

### **Memo on the double-slit experiment – 15 March 05**

See article in NS 5 March 05, Page 14, Peter Rodgers, on the double slit experiment, demonstrated across a time lapse. Consider and revisit.

### **Memo on Matter and Anti-Matter – 25<sup>th</sup> November 04**

There is renewed speculation about anti-matter, whether it exists, where it exists and what it is; alongside ideas that diverse forms of matter might have different forms of gravity. This EIG idea has also posited that matter may behave differently when it is compacted – yet still expanding. On my next visit to this EIG theory I want to think about a “Matter Line” like the Number-Line in maths (does a matter-line already exist? R Feynman maybe?). At one end would be the densest of materials – down to the merest wisp of ephemeral forms – then extending beyond zero (pure energy) into negative particles and anti-matter. EIG indicates that anti-matter will be shown to be vacuums in the stuff of the universe – which has an attractive logical simplicity to it. (NB which math formulas deal with expanding

spheres?? Pressure, gases, liquids?? And particularly the sphere/s surrounding an object sphere of low pressure – Weather systems perhaps).

## Note on the Music of the Primes – 27 October 04

**The Music of the Primes** by Marcus du Sautoy is almost completely incomprehensible to a non-mathematician such as me. But it triggers a vague thought that I want to write down and thus crystallise.

The book is about prime numbers (numbers that can only be divided by themselves or one without a remainder – thus they are the indivisible building blocks of all other numbers) and The Riemann Hypothesis. Bernhard Riemann (1826-66), conceived a “Zeta Landscape” being a four-dimensional model of mathematical functions based on the zeta-function, created “in Euler’s day” (1707-1783) into which Bernhard Riemann inputted real numbers (numbers on the mathematicians’ “number-line”) and, as his innovative new step, he also inputted imaginary numbers (denoted by “i” of which the most usual example is the square root of minus one).

Four dimensions can be more pictorially thought of as four consequences – or four impacts – of a changing number. For example, as the author explains by reference to the economists’ Interest Rate, changes in the birth-rate have impacts on a large number of factors or dimensions of society – total population, housing required, schools, hospitals, transport, clothing etc. and some of these factors have consequences for the future on a time-line that is mathematically infinite. To draw the reality of all such “dimensions” on a single graph or with a three dimensional model, from a single function or formula, is impossible – but they are nevertheless real effects or dimensions.

Riemann bridged fields of mathematics that had not before been linked and saw or conceived with the inner vision of a mathematician and geometrician that his zeta-landscape map could be extrapolated from peaks and valleys, including a single peak that rose to infinity (for the number one), down to “sea-level” where the outcome was always zero.

Here I am completely lost. But I read and can only believe that from this sea-shore of zero results, stretching north and south as far as imagination allows, these sea-level or zero results for any and all numbers (East & West or positive and negative numbers) fed into the zeta-landscape-function allow us to count – by counting the zero’s – the occurrences of prime-numbers between values, say from 0 to 10 or from 0 to 100,000,000. And it seems that Carl Gauss (1772-1855) had earlier estimated this same occurrence up to 100 million and his logarithmic based calculation Gauss’s Prime Number Conjecture, checked in modern times by actually identifying each prime-number on a computer (5,761,455 primes up to 100M – excluding the number one), showed only 754 more primes than reality – a tiny error of 100<sup>th</sup> of 1%.

Riemann did the same estimate on his zeta-landscape and reduced the error to 97 extra primes – just 1000<sup>th</sup> of one percent wrong.

Riemann then plotted where the “significant” zeros lay on his map or landscape and found that they lined up – on what has been termed a magical-ley-line. Not only do the zeros, representing primes, line up but they occur in patterns that come close to predicting what the next prime number will be. So far no recurring pattern has been identified in the sequence of prime-numbers that allows the next prime-number to be calculated from the sequence.



Riemann then hypothesised that all the zeros, however many primes there are to infinity, would line up. That is the **Riemann Hypothesis** – with a million dollars still waiting for the mathematical proof.

What has this to do with music and what is my point? Part of the basis underlying Riemann's zeta-landscape is the discovery by Pythagoras (ancient Greece) that musical harmony requires sound vibrations that are related to each other by whole number divisions – not parts of whole numbers. i.e. If the first pleasing note is played on a 20 pint jug of water, harmonious notes will be found at 10 pints, 5 pints, 4 pints, 40 pints etc. whereas discordant notes occur at 19 pints, 3 pints and all numbers that when divided into 20 leave a remainder. These whole number relationships find parallels with prime-numbers, the building blocks of all numbers.

Whole, indivisible numbers put me in mind of the primary particles, the fractals and building blocks of the universe – that EIG – Expansion is Gravity, speculates about.

Marcus du Sautoy continues his narrative to include Probability Theory, Quantum Drums and Chaos Theory (which is actually order-out-of-chaos theory). Many brilliant modern mathematicians have and are contributing to the processes that bring progress – Marcus du Sautoy particularly cites the work of Hugh Montgomery (Princeton, Michigan and Cambridge) who followed Riemann's zeros along the ley-line and found in 1971 that they would repel each other (space out) whereas primes tend to cluster or attract each other. And he observed that the zeros distribution was not random. His distribution graphs uncannily mirrored similar graphs being drawn from experiments for the quantum energy calculations of the 68<sup>th</sup> element in the periodic tables Erbium. Montgomery's thought was that perhaps the reality of quantum energies in atoms was the pattern that underlies the sequence of Riemann's zeros. The hugely complex quantum energy sequences are mapped as if on a vibrating drum-skin – not as if they are a planetary system.

What is fundamental to quantum physics starting with black-body radiation and, as yet, not understood is the quantum leap – the discrete changes – as if in sudden and not smooth steps – between energy levels. Similar steps occur at a very detailed level in prime number sequences “the prime number staircase”. On a Cray computer Andrew Odlyzko at AT&T looked for Riemann zeros up to 10 trillion and found 100,000 zeros. A not entirely convincing pattern started to emerge. Odlyzko took the computations up to  $10^{20}$  and found that plotting the sequence of Riemann zeros almost exactly matched similar patterns – quantum probability energies – found in the heavy nuclei of complex atoms – as if “being produced by some complicated mathematical drum”.

### **Here at last is my NB.**

EIG posits an idea as to how matter (particles) is created from pure energy (light - the electromagnetic field) - namely by Hubble expansion sucking in energy and spinning it to form a surface. These primary fractals, as in string-theory, may be no larger than Planck's Length which is  $10^{-35}$  metres. These universal fractals are, like prime numbers, by definition indivisible – any division renders them back to pure energy. Like Riemann's zeros they repel each other and they seek even spacing – but, like the prime number sequences, they are subject to forces that draw them together in patterns, like quantum energies, and clump them together. Do these universal fractals bind together in prime-number units? Are other numbers, non-prime numbers, of universal fractals inherently unstable?

The most recently calculated primes are 100 digits long. They are immense numbers; but even such vast numbers of universal fractals clumped together – say in the heart of a super-

massive star or black-hole (but still Hubble expanding) – are not inconceivable. Just how many universal fractals can we fit on the head of a pin?

Think on't Lad !

## News update – 3 September 04.

The search for the Higgs Boson – an alleged massive particle which would account for Dark Matter and Energy (85% of the universe) – continues as does the search for anti-neutrinos. An anti-neutrino is NOT the antiparticle of a neutrino in the way that positrons are the anti-matter antiparticles of electrons – electrons reversed as it were. An antineutrino, if any exist, would be a sort of shadow neutrino, which has already been defined, at only 0.44 electron volts, as a “ghostly particle” so an antineutrino would be the ghost of a ghost. Scientists from the Max Planck Institute for Nuclear Physics in Heidelberg, Germany have a laboratory deep below an Italian mountain range at Gran Sasso where the decay of enriched Germanium 76, shielded from all known sources of radiation, to Selenium 76 is observed. They claim to have seen 29 events in 10 years which they claim makes it 99.997% certain that these are real events, which as the decay process occurs do produce a neutrino and an antineutrino. Steven Elliot at the University of Washington State, Seattle, disputes the findings as does Ron Brodzinski at the Pacific Northwest National Laboratory in Richland, Washington and as do the Russian physicists who supplied the enriched germanium from the Kurchatov Institute. The import of finding antineutrinos is that it would help explain how the universe evolved from the Big-Bang to contain matter not anti-matter or a neutral balance of pure light without any matter. Dave Wark of the University of Sussex, UK says “We now know that we must look beyond the standard model to explain dark matter. (New Scientist 4 Sept. 04.) – Back to this **EIG** theory perhaps?

## Introduction, pre-EIG

The Universe is made of light, the electro-magnetic spectrum. Light is the basic “stuff” of the Universe and all things in the Universe are a manifestation of light. The serious gaze of the new born child, a creature, as we all are, made of light, constantly reminds us that the greatest mystery of physics is how life, intelligence, sentience and consciousness emerge from the electro-magnetic spectrum.

Paul Davies, writing in New Scientist on the 21 September 2002, sets out “seven wonders” of physics and his current preferred theories:

- (1) What makes the Universe Tick? (The Big Bang & Superstrings)
- (2) What's the Universe made of? (Cold Dark Matter - CDM)
- (3) Was Einstein's antigravity really a mistake? (An assumed repulsive force to balance gravity)
- (4) Why do we live in three dimensions? (Mathematicians assume there are many dimensions)
- (5) Is time travel possible? (Probably not)
- (6) Are we living in a cosmic colander? (Of black holes)

(7) How come I can ask these questions? (Consciousness.)

I would add to his list:

(8) What is Inertia?

(9) How are surfaces and objects formed and sustained?

(10) What is the organising principle and the power of Life?

And finally,

(11) Will Professor Stephen Hawking ever find his God?

Everyone would have their own list of universal wonders, each would be different and all would be valid. The wonders of the universe are probably infinite – there are certainly many times more questions than we have answers for. The way we answer such questions depends entirely on the accurate or inaccurate information we have and on the models we use to organise the information.

## **EIG Diagram**

### **MAP, COBE and Some Astronomical EIG Numbers**

Stephen Battersby reported in New Scientist on 15<sup>th</sup> February 2003 that data from the Microwave Anisotropy Probe has been analysed providing an accurate age for the universe. He also takes the trouble to define the factors he cites which is unusual and refreshing. For future reference:

Age of the universe is 13.7 billion years

Shape is Flat

Age when light first appeared is 200 million years.

Contents include:

4% ordinary matter

23% dark matter Nature unknown

73% dark energy Nature unknown

Hubble constant (expansion rate) is 71km/sec/megaparsec

Stephen Battersby also tells us that a megaparsec is 3.26 light years.

The MAP data supports the theory of INFLATION that imagines a period of very rapid expansion shortly after the creation/appearance of the universe.

If you work all this out and reduce it to a layman's terms it accords closely with the factor I had set out (below) based on the reports that the edges of the visible universe recede from us at the speed of light.

The Hubble constant as stated above works out as the universe expanding at a minuscule percentage every second – of 0.0000000000000002303633783% or in handy mathematical format

It is  $2.304\text{E}^{-18}\%$  per second.

My figure was  $2.348\text{E}^{-18}\%$  per second.

If expansion is gravity – it must occur everywhere at all times. EIG proposes that the rate of refilling the attenuated energy vacuums that occur in matter, inside planets, for example, is held back momentarily and strengthened by the shells or surfaces around the fractals of matter (perhaps quarks) but such delay aside, let us apply Hubble to a six foot man.

### **Six foot man expands infinitely – says MAP and COBE**

To get down to small enough units required to allow EXCEL to show the calculation, the man's height, in his six foot high and six foot wide bubble of expanding space, had to be converted into millionths of millimetres – which are pretty small. Using the Hubble factor I extracted from the MAP report,  $2.304\text{E}^{-18}\%$  per second, our man would expand in a year by just 1.32 millionths of one millimetre – ignoring the cumulative effect. This would be unnoticeable to most of us and in fact is undetectable by normal measuring techniques as all the measures also expand at precisely the same rate. Is this rate enough to make him universally attractive?

Bear in mind the mechanism that would be at work: The trillions of spaces – say Planck lengths (Planck's Length is  $10^{-35}$  metres, Hubble expansion is  $10^{-18}$  metres per second, or nearly twice the decimal scale; about a billion, billion times larger – but to squeeze that amount of expansion into Planck space, we can reduce the time to a billion. Billionth of a second) – occupied by the man's material body, expand by this trivial amount. The QED or light energy attenuates creating virtual vacuums, attracting energy (light) to flow into the vacuums. These in turn partially evacuate the larger spheres around the space occupied by the man – partially because the surrounding sphere is larger than the inner sphere or spheres.

As sphere two goes into a partial vacuum state the surrounding sphere/s, sphere three, transfers energy inwards, itself attenuating but less than sphere two. This gives rise to the laws of gravity where the pull lessens by the square of the distance. This rate of in-falling of energy takes a second; the next second it occurs again. The process is inexorable and occurs throughout space. Therefore any one zone, say a sphere of Planck length, is a continuous conduit and pump for energy – from all directions and at the speed of light (or gravity). Would this multi-directional factor account for the MOND theory that proposes that at large distances gravity diminishes more rapidly than the law allows?

Any reader following this paper will by now have realised that the 23% Dark Matter and 73% Dark Energy – “Nature Unknown” – are explained by EIG as vacuums caused by expansion. They are holes not matter - QED and QED.

The MAP or more properly WMAP (W for Wilkinson) is a satellite positioned 1.5 million kilometres further away from the Sun than the Earth. It looks outwards into the blackness of space. If it looked at the Earth or the Sun or even into the centre of the Milky Way, it would be blinded by the microwave energy from those bodies. It reads microwave energies

between 20 and 90 gigahertz and is sensitive to variations down to  $1/25^{\text{th}}$  millionth of 1 degree of temperature. What WMAP is measuring is the echo from the Big Bang that fills the universe with a back-ground microwave energy of 2.7 degrees above absolute zero (2.7 degrees Kelvin). How it does this I haven't the faintest idea – but we just have to believe the astrophysicists.

### Sloan Digital Sky Survey (SDSS)

200 astronomers from 13 countries collaborate in the SDSS project. They report in November 2003 that from drawing a Galactic Map of 200,000 galaxies, about 6% of the observable universe, their calculations confirm the existence of dark energy. They find:

70% is Dark Energy

25% is Dark Matter

5% is Ordinary Matter

This theory proposes that both dark matter and dark energy are manifestations of the temporary weak vacuums created by Hubble Expansion.

#### PRE-MAP REPORT Calculations.

The sphere's or zones that expand, range in size down from the whole universe, with a radius of 12 to 15 billion light years, (at 12 Billion light years being 113,451,059,465,856,000,000,000 kilometres or  $1.E+23$  kilometres from me or you, at the centre of our known universe to the visible edge.) and zones can have as small a diameter as Planck's Length of  $10^{-35}$  metres or (0.000,000,000,000,000,000,000,000,000,001 metres). Measured at the farthest horizon, using 12 billion light years, the universe is thought to be expanding at the speed of light, hence the invisibility of matter beyond that horizon. The percentage per second of this expansion is 0.0000000000000000264248267% or  $2.6E-18$  % per second. This minuscule constant rate of expansion attenuates the fabric of the universe and underlies the all pervasive, eternal tug of gravity. The super-vacuums so formed are filled at the speed of light from the immediate surroundings that leaves a gap to be filled, that tugs on the adjacent spheres ad infinitum, in all directions at all times. This is at least part of the force we call gravity.

If expansion is a major cause of or contributor to gravity, then winding back or shrinking the universe would switch off that factor – and remove the need to imagine an Inflationary Period to account for the homogeneity of temperatures (background radiation) across the universe.

### Radio and TV signals – permanent patterns in Space - inertia

Radio signals persist in intelligible form for decades – in principle for ever, if we have sufficiently sensitive receivers. How can this be? It implies that once patterned the electromagnetic spectrum holds that pattern across vast distances and across eons of time – How? It implies that radio wave patterns are not interfered with as they cross air and space by uncountable numbers of other patterned waves – How? It is not due to immense power of transmission as this applies to the faintest signals from the early Voyager etc space craft now at the edge of the solar system and beaming out decipherable data with the millionth power of an ordinary torch battery – How? How does the EM spectrum record and carry and preserve all the messages, all the TV programmes, all the radio, all the satellite phone messages ??? Discuss.

## Casimir and EIG – gravity within dense matter.

The Casimir effect can be illustrated by two completely flat machined plates – say of a relatively inert material such as pot electrical insulator material – brought together to within the wavelength of at least part of the electromagnetic spectrum. The plates are drawn to each other, or more accurately they are both drawn to the partial vacuum between them caused by the exclusion of some wavelengths. Imagine the plates being held apart by inert washers inserted in the gap. The vacuum force will continue to pull and the washers will deny the pull, holding the plates in stasis – apart. From the EIG perspective this is very interesting as for EIG it is necessary to explain why dense matter, say within a planet, exerts a stronger attraction (gravity) than do spheres of expanding space. If all are expanding at the same Hubble rate it would seem logical that the temporary vacuums would be consistent. However, if the Casimir Effect operates between particles or even molecules of matter that is dense (in close proximity) then just as with the experimental Casimir plates, some energy wavelengths will (always) be excluded and the relative vacuum between or within such particles will not be refilled by the whole electromagnetic spectrum of wavelengths in the way that occurs in open space, or as quickly. It can be imagined that the Casimir Effect creates a “permanent” stronger vacuum within dense matter – say in the heart of a star. Such “permanent” differentials between the ambient energy fields (the stuff of the universe) and matter will be stronger attractors and could be part of an explanation for Hubble expansion acting more strongly within dense matter. It might even be scientifically testable in a laboratory.

It is interesting that the Casimir Effect exists at all as in the popularised explanations there is no mention of sealing the edges of the gap between the two plates so as to preserve any partial vacuum. Presumably the Casimir experiment takes place in an air-vacuum chamber? It must simply be that longer wavelengths cannot exist between the plates and that the lack of these makes the density of the energy field between the plates less than the ambient density of the surrounding (complete) field. If so, this is exactly the type of phenomena that EIG needs for its credibility.

## Definitions

**Supra-Vacuum** – a glimpse from the space-time continuum to the No-thing that existed “before” the universe. These supra-vacuums would occur in the first few moments of expansion from a Big-Bang singularity and would cause the expanding energy to arc back on itself to fill the vacuums; causing many collisions between rays of energy (light) and creating the majority of matter fractals.

**Super-Vacuums** – are vacuums caused by Hubble expansion of the universe when the electromagnetic spectrum, the “stuff” of the universe, expands momentarily and Light rushes in, at the speed of light, to fill the vacuum.

**Surface-Vacuum** - the zone around a fractal of matter that is depleted as the energy is utilised and drawn into the spinning fractal. Surface Vacuums create an attraction between fractals while the spinning surfaces repel each another, thus creating a dynamic tension.

## Letters to science magazines (not published)



### GRAVITY MATTERS – my letter to Scientific American 17<sup>th</sup> August 2002.

Mordehai Milgrom's excellent article Does Dark Matter Really Exist (SA V287No2 Aug02), together with the panel by Anthony Aguirre, clearly informs me, an amateur, for the first time, of the factors that stimulate CDM theories and Professor Milgrom's 20 year old alternative theory MOND that arises from the observation that a space shuttle falls to Earth at one hundred billion times the acceleration that Earth and its Solar System fall towards the centre of the Milky Way. I can only speculate, as I have not the training to calculate, that the Hubble constant for the expansion of the universe (extrapolated from observed Red Shift, not light-speed, thus mitigating the wholly circular arguments that universal expansion might otherwise be reliant on) is, while mentioned in the article, not given as prominent a place in these theories as it may deserve. Hubble expansion measured at the visible horizon of the universe, a horizon that recedes from us at the speed of light, is approximately  $2.64 \times 10^{-18}$  or in laymen's terms 0.00000000000000264% per second. This endless, minuscule expansion of every sphere, large or small, represents a constant acceleration of the surface or horizon of that sphere. Einstein postulated that constant acceleration is indistinguishable from gravity. It is therefore worth spending some thought on the idea that gravity may be partially driven by Hubble expansion. Professor Milgrom cites as an exciting possibility, *"The vacuum. The vacuum is what is left when one annihilates all matter (or equivalently energy) that can be annihilated ..... the interaction of the vacuum with particles might contribute to the inertia of objects ..... the vacuum also enters cosmology as an explanation for cold dark matter."* I believe that the vacuum of any sphere in the universe is momentarily increased by Hubble, as the stuff inside that sphere (radiation, plasma or particles) attenuates, before being refilled from the omni-present background radiation. I have further speculated that sphere's of matter – say at the centre of large planets or stars – or in any element, have formed surfaces that hold back the incoming radiation for fractionally longer, and thus have a stronger, attractive vacuum for a microcosm of time. It is these ubiquitous Hubble vacuums, varying with the density of matter, I believe, that are the reality behind CDM as they pull on each another.

## Opinion Letters, New Scientist Magazine

..... and an earlier letter to New Scientist. ....

8 April 2000. By Fax and Email.

The three articles on black-holes in New Scientist 1<sup>st</sup> April 2000; by Marcus Chown, on atom sized black holes and by Nigel Henbest and by Stephen Battersby on quasars, radio jets and galactic sized black holes tacitly assume that black-holes are collapsed very large objects, compressed by gravity – a force that, as Newton's apple demonstrated, is self-evident but, as the continuing search for gravitons and CDM illustrate, is not yet understood. The observed and theoretical characteristics of black-holes, particularly the emission of immensely energetic radio jets, might better fit with Hubbles's expanding universe than with the concept of matter crushing itself into the total annihilation of a singularity and quitting the universe.

Einstein demonstrated in his constantly accelerating windowless elevator thought experiment that gravity and constant acceleration are indistinguishable from each other. If Hubble expansion is to be incorporated into universal theories then every zone (e.g. sphere), at every scale, sub-atomic through galactic to universal, must logically be expanding at a constant (or variable) rate of acceleration. Einstein tells us that we would not know whether our experience of weight was due to gravity or expansion – if we were to stand on the surface of a sphere in Hubble's ever expanding universe. We must ask ourselves just what is expanding in Hubble's universe – just what is the fabric of the universe that stretches and grows infinitely; and what local effect does such expansion have on attenuating energy and matter.

The existence of galactic and atomic black holes implies that black holes may exist at any scale in any part of the universe. If, as Fred Hoyle postulated many years ago (before recanting), the universe is being constantly created at all points and if, as Einstein demonstrated, we cannot distinguish between expansion (acceleration) and gravity and if Hubble's interpretation of red-shift being evidence for universal expansion is correct, the ubiquitous black holes could be caused by expansion – and they could be spawning not destroying matter.

Thought of as vacuums created by the attenuation of the stuff of the universe as it expands, black holes would exhibit exactly the same behaviour and characteristics as collapsed gravitational objects. The power of expansion would attenuate the universal fabric and nature, abhorring a vacuum would rush to fill the void – with energy and matter. As the void of a black hole was filled, bearing in mind that the zone is constantly expanding, a pulse would occur of expansion, void, fill, expansion. The in-rushing or in-falling energy and matter would collide, become plasma due to the impact and recoil. It may be postulated that the collisions of energy in these zones created and still create primary particles.

Thus paradoxically, zones of Hubble expansion would attract matter and energy as the zones push out their boundaries. This expansive, attractive force would in all ways be indistinguishable from gravity. CDM would be explained by the existence of innumerable, invisible black holes. Black holes, rather than being The Great Annihilators of Nigel Henbest's article, would in fact be the fundamental unifying force and the creators of the universe.

Noel Hodson

To Letters@newscientist.com

### **Expansion is Gravity (EIG)**

**18th April 2003**

**The continued searches for Gravity Waves (First results on gravity waves; New Scientist 19th April 2003) and for the missing Cold Dark Matter and Dark Energy - being 96% of the mass of the universe, still leaves room for other hypothesis such as, Expansion Is Gravity (EIG). A "hypothesis" as your reader Brian Myers correctly points out, is not advanced as a "theory".**

**The Hubble universal expansion constant calculates as a minuscule 3.0336E-18% per second. Applied to a six foot person, he or she, ignoring the compound effect, grows by an undetectable 1.328 millionths of a millimeter per year. If Earth's 16ft per second gravity field were to be due to the expanding globe it would represent a rate of growth of 9.1448E-07% per second; still very small but an immense 11 decimal places difference from the universal percentage; but perhaps dense matter develops different expansion properties than do zones in open space. As the search is for a tiny, ubiquitous field force that cannot be shielded and that acts in every direction, on every scale, simultaneously, Hubble expansion could be the culprit.**

Noel Hodson

**PS - if NS editors (or readers) would like to check the fairly simple arithmetic, I'd be happy to forward my EXCEL calcs. The sums above are however correct. The EIG hypothesis is expanded on my web site -<http://www.noelhodson.com>**

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31 May 03

New Scientist Letters

Dump Quarks

From Tom Lockyer

Los Altos, California, USA

Your article on protons shows quite clearly that the standard model, after 40 years, still has not revealed the structure of these subatomic particles (3 May, P34). When is science going to give up on quarks as a lost cause? In retrospect, the quark model never has had any results to recommend it. The quark has failed miserably to answer the simplest questions about the proton, such as its mass, charge or magnetic moment. Worse, the theory has had to postulate unprecedented fractional charges, and envision proton quarks as three things in a bag. Following the discovery of a third "strange" quark, someone noticed that the bagged three quarks violated the Pauli exclusion principle. Theorists got around this by postulating quark colour forces called red, blue and green that combine instantaneously to form a colourless combination. The fact that the quark model consistently failed has resulted in the postulation of many crazy "patches" to shore up the theory. For example to hold the quarks together, gluons were postulated and given the unprecedented ability to be stronger at large distances and "asymptotically" free at short distances. And to explain our failure to detect quarks, it was postulated that if you break the gluon "strings", quarks form on the free ends.

The sad fact is that particle physicists are stuck with a very bad model, and seem content to maintain the status quo, just to feed their wives and kiddies.

This letter, I assume written by an expert, Tom Lockyer, points up the great difficulties of creating a model that works and passes the peer pressure test. And it leaves hope that new ideas might be explored as not all the answers are known yet.

"Quark" is the name currently given to the "fractals" of matter from which all matter is thought to be made. In the EIG concept these fractals are formed by colliding fields of light (electromagnetic spectrum) that spin to form basic particles. The colliding light waves or beams reinforce the rate of spin and wind-in or pack-in energy to the point where it becomes dense. These spinning fractals have surfaces formed by the immense spin rate of the energy and a depleted outer zone, a local vacuum, created by the inner pull, due to Hubble expansion, and the inward spin of energy – the syndrome of the ballet dancer drawing in her arms and spinning all the faster - similar to vortices that can be studied in the macro environment. The rotating surface repels other fractals while the local vacuum holds them together. This dynamic tension between push and pull is, I imagine, the fundamental glue of the universe, constantly reapplied as long as Hubble expansion continues.