

The Next Truth

Where Science and Myth Meet

Volume 1 Issue 10

July 2019

NASA

Exploring the whims of the universe for future space travelers

Nick Howe & Andy Wilson

Does Ionized Air Create a Visible Dimensional world?

Dr. Michio Kaku

The Physics of Advanced Extraterrestrial Civilizations

Dr. Emily Rickman

The discovery of three new planets and two new low mass brown dwarfs

University of Leeds

Why Complex Animal-life Rapidly Evolved 540 Million Years Ago

Prof. Uffe Gråe Jørgensen

How Common are Earth-like planets and how Unique is life?

Prof. Gregg Henriques

Weighs In on His Upcoming Book "A New Unified Theory of Psychology" *expected release date: end 2020*

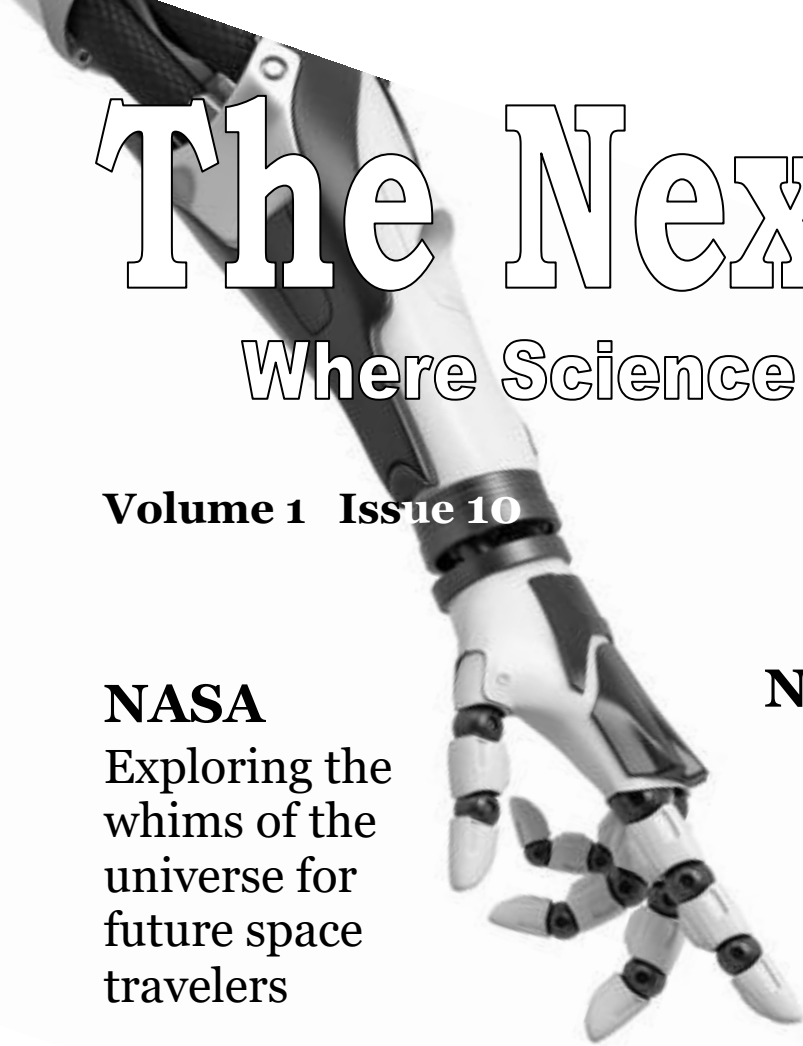
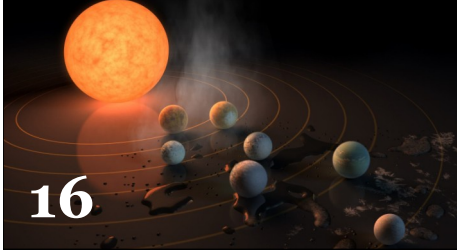
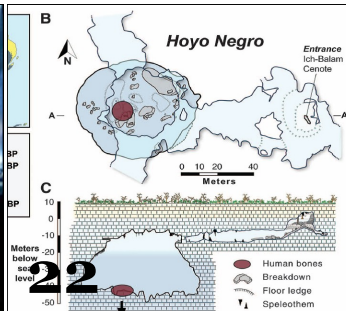


Table of Content



- 4. Calender
- 5. Publisher's Letter
- 6. Contributors
- 9. Death Finds a Way or Mud, Chapter 9 "The Wake"
By William John Murray
- 10. Contributor's BookShelf
- 11. "The Discovery of Three New Planets and Two New
Low Mass Brown Dwarfs!" By Dr. Emily Rickman
- 14. "Complex Animal-life Rapidly Evolved 540 Million
Years Ago; New Research Reveals Why"
University of Leeds
- 16. "Is the Earth Common but Life Unique?"
By Professor Uffe Gråe Jørgensen
- 20. "The Physics of Extraterrestrial Civilizations"
How advanced could they possibly be?
By Dr. Michio Kaku
- 22. "Animal Bones Found at Bottom of Hoyo Negro Shed
Light on the Great American Biotic Interchange
- 24. Dark Matter and Dark Energy; Exotic and Hypo-
thetical Since the Early 1930s
- 28. "The Physics of Extraterrestrial Civilizations"
How advanced could they possibly be?
By Dr. Michio Kaku
- 32. "The Space We Travel Through" By the science dept.
from NASA
- 34. "Does Ionized Air Create a Visible Dimensional
world?" By Andy Wilson and Nick Howe
- 39. "Toward a Big Theory of Knowledge"
By Professor Greg Henriques





The Next Truth

Where Science and Myth Meet

WAS THERE MORE BEFORE THE BIG BANG?

Walking up to the globe of the CERN (European Organization for Nuclear Research) in July 2017, set a crazy quest for me in any understanding within the origin of evolution and with that the Universe ... with tense curiosity... I went back and the story began...

Once upon a time ... a little spot, smaller than the dot at the end of a sentence, was hovering through the universe.

This charged particle could have sparked the production of every other particle it encountered, not to mention every galaxy, solar system, planet, and ... our species.

That tiny spot exploded in a place being pitch black.

It exploded into an almost inaudible illuminating flash of everything!

<https://www.amazon.com>



The 10th Annual Michigan Paranormal Convention

Experts and television stars will be on hand to cover such topics as paranormal investigating, psychic abilities, demonology, and UFOlogy. Attendees will be able to meet some of their favorite television paranormal investigators.

Date: **August 22nd-24th, 2019**

Location: **Sault Ste. Marie, Michigan, at Kewadin Casinos Dream Makers Theater**

More information: www.saultstemarie.com

THE UFOLOGY WORLD CONGRESS

This **3rd Edition of UWC** it will be certainly a showcase of speakers never imagined in the history of World UFOlogy, bringing together famous researchers who can show even the most incredulous a unique and unrepeatable experience.

Date: **6th, 7th and 8th September 2019**

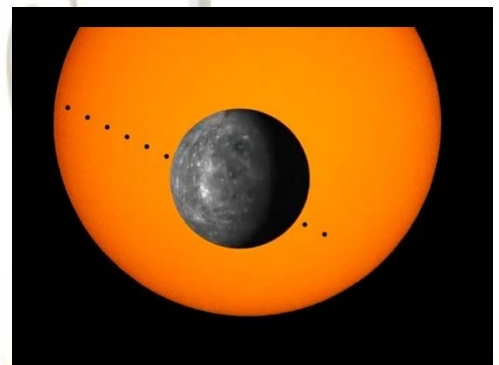
Location: **CONVENTION CENTER • Hesperia Barcelona Tower Hotel** (Barcelona, Spain)

Speakers: **Dr. Michio Kaku, Alfred Webre, Nick Pope, Jan Harzan, Roberto Pinotti, Enrigue de Vicente, Paola Harris, J.J. Hurtak, Desiree Hurtak, Josep Guijarro**

For more information: www.theufologyworldcongress.com

"A transit of Mercury across the Sun takes place when the planet Mercury passes directly between the Sun and a superior planet, becoming visible against the solar disk. During a transit, Mercury appears as a tiny black dot moving across the disk of the Sun."

www.timeanddate.com



Cancer Monthly Horoscope
2019 predictions

www.cafeastrology.com



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Do you have the guts to fail?

Carpe Diem! Yes, it could be very frightening because it's a mean world out there but you only live once so do what you feel passionate about. Take chances don't be afraid to fail. Go outside the box. Don't be afraid to go and think outside the box, and don't be afraid to fail big. But remember, dreams without goals are just dreams and they ultimately fuel disappointment. So, have dreams but have goals and understand that to achieve these goals you must apply discipline and consistency every single day.

We all have different talents some of you are medical doctors, some lawyers, some scientists, some educators, some nurses. True desire lies in the heart, It's that itch that you have whatever it is you want to do. So claim it, work hard to get it and when you get it, reach back and pull someone else up. Don't just aspire to make a living...aspire to make a difference!

I found that nothing in life is worthwhile unless you take risks. There is no passion to be found playing small and settling for a life that is less than the one you are capable of living. I am sure, people told you to make sure you have something to fall back on. But if I'm going to fall I don't want to fall 'back' on anything, I want to fall 'forward', figure at least this way I will see what I am going to hit. Falling forward? This is what I mean; Thomas Edison conducted 1,000 failed experiments because the 1,000 and first was the light bulb. Fall forward because every failed experiment is one step closer to success. You have got to take risks. And I am sure you have probably heard that before either. But why is that so important?

I got two reasons first you **will** fail...at some point in your life except you **will** lose, and you **will** suck at something there is no doubt about it. Embrace it because it's inevitable!

As a journalist I failed so many times. Elevator-pitch after elevator-pitch, poor interviews and hundreds of article submissions gaining the same response saying, "Thank you for your submission, you will be hearing from us." I didn't get the job but here is the thing...I didn't quit. I didn't fall back instead I continued to fail and fail and fail. It didn't matter because you know what...if you hang around the barbershop long enough, sooner or later, you will get a haircut. The point is...do you have the guts to fail?



My second point about failure; if you don't fail you are not even trying to get something you never had. You have to do something you never did. Imagine you are on your deathbed and standing around your deathbed are the ghosts representing your unfulfilled potential. The ghosts of the ideas you never acted on, the talents you didn't use and they are angry, disappointed and upset. They say; "We came to you because you could have brought us to life and now we have to go to the grave together." So, I ask you today...how many ghosts are going to be around your bed when your time comes?

You got to get out there! You got to give everything you got whether it is your time, your talent, your prayers or your treasures because you will never see a u-haul behind a hearse.

Your life will never be a straight path because taking risks is not just about going for a job...it's also about knowing what you know and what you don't know. It is about being open to people into ideas and the chances you meet the people you might learn from. Never hold back, give everything you got! And when you fall throughout life, maybe even tonight after a few glasses of champagne, remember this...fall forward.

Contributors



Gregg Henriques (Virginia, USA)

Prof. G. Henriques, Ph.D have been passionate about the possibility of developing a more integrated and coherent way of approaching the field of psychology and the work of psychotherapy. He first published his approach for developing a theoretically unified view of the field in 2003, and have been expanding on that view and its implications ever since. Dr. G. Henriques is a licensed clinical psychologist, a full professor at the James Madison University and the author of *A New Unified Theory of Psychology*. www.gregghenriques.com



Emily Rickman (Geneva, Switzerland)

Emily is a PhD researcher at the University of Geneva, Switzerland. Her work involves hunting for planets using a technique called direct imaging at some of the world's biggest telescopes. She completed her Masters in Physics and Astrophysics between the University of Sheffield and the Australian National University where she got to complete research in both planet hunting and binary star systems. www.emilyrickman.com



Uffe Gråe Jørgensen (Copenhagen, Denmark)

Uffe Graae Jorgensen is an astrophysicist, associate professor, and head of the research group Astrophysics and Planetary Science at the Niels Bohr Institute, University of Copenhagen. Professor Jørgensens PhD was on the subject of stellar atmospheres, but during the last 10 years his main research has been on exoplanets. He has published more than 200 scientific papers, and written more than 100 popular science papers and organized 20 TV broadcastings on popular science. www.astro.ku.dk



Michio Kaku (New York City, United States)

Theoretical Physicist — Dr. Michio Kaku is the co-creator of string field theory, a branch of string theory. He received a B.S. (summa cum laude) from Harvard University in 1968 where he came first in his physics class. Dr. Kaku is the author of several scholarly, Ph.D. level textbooks and has had more than 70 articles published in physics journals, covering topics such as superstring theory, supergravity, supersymmetry, and hadronic physics. Dr. Kaku carries on Einstein's quest to unite the four fundamental forces of nature into a single grand unified theory of everything www.mkaku.org



Nick Howe (UK)

Nick's involvement with the paranormal developed through an interest in religion, although of no faith it became apparent that the paranormal was a common theme of belief. Coupling this with personal experiences he was staggered by the number of events family, friends and acquaintances also experienced. On retirement he felt it was time to devote more time to studying this which culminated in the formation of PRI UK and became a member of The Society for Psychological Research and the Association for the Scientific Study of Anomalous Phenomena. www.paranormalresearchinvestigators.co.uk



Andy Wilson (UK)

Andy's interest in the paranormal started early in his childhood after some personal experiences which could not be explained rationally. Since the 1980s Andy has been researching the paranormal and is involved in regular investigations. He is a member of The Society for Psychical Research and the Association for the Scientific Study of Anomalous Phenomena and the pioneering Ghost Club established in 1862. Andy values his contact with clients while respecting their paranormal experiences.

www.paranormalresearchinvestigators.co.uk



The University of Leeds (Yorkshire, UK)

The University of Leeds, established in 1904, is a public research university in Leeds, West Yorkshire, England. With 33,300 students, it is the fifth largest university in the UK. From 2006 to present, the university has consistently been ranked within the top 5 in the United Kingdom for the number of applications received. www.leeds.ac.uk



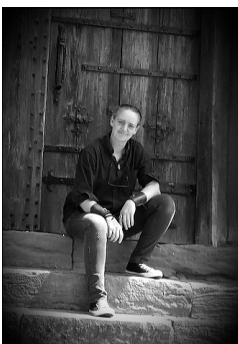
NASA Science (Washington, D.C.)

The Science Mission Directorate (SMD) is an organization where discoveries in one scientific discipline have a direct route to other areas of study. SMD is taking you behind-the-scenes alongside their experts to explore the secrets of the universe. From remote locations on Earth to the depths of outer space, join the conversation live each month to interact with NASA experts and watch as they reveal the mysteries of our solar system and beyond. www.science.nasa.gov



William John Murray (UK)

Physics professor and Ph.D. Bill Murray is an Edinburgh-born researcher. His involvement at CERN includes understanding the interactions and properties of the Higgs boson using the ATLAS detector at the LHC. He also searches for new physics, especially dark matter. Dr. Murray was the ATLAS Higgs convener from 2009 until 2011, physics coordinator from 2012 until 2014, and was right in the center of the Higgs discovery in July 2012. Most of his career, Dr. Murray was a researcher at RAL, in Oxfordshire and in 2013 became a professor at Warwick University, where he now teaches half time. A physics degree also led Dr. Bill Murray to a Ph.D. position in Cambridge on the OPAL experiment at CERN. <http://delphiwww.cern.ch/>



Maria Anna van Driel (Germany)

Maria Anna is the owner and founder of The Next Truth magazine, an investigative science journalist, columnist, foreign correspondent, ghost writer. She has a MA in ancient Alchemy, a BA in Metaphysics and a BS in Theoretical Physics. Her interest includes among others Mythology, Medieval and (pre) Egyptian Symbolism, Quantum-, Optical-, Particle-, and Astroparticle Physics. Maria Anna finds always the time to write new articles while having a nice chat with her (future) contributors. www.nexttruth.com

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Death Finds a Way or Mud

Chapter 9 "The Wake"

By William John Murray

They had hired the function room at the King's head and Bell, and quite a crowd assembled there. Mary had arranged savoury nibbles, a glass of champagne and unlimited lemonade and coffee. When everyone was assembled she raised her voice, and proposed a toast to Andrew's memory.

Soon the champagne was gone, but shortly afterwards Gavin Standworth pushed through to Mary amidst the family who were, despite their best intentions, gathered in a knot. "I thought you should know: I've opened a tab at the bar. Andrew was such a tonic for the lab, well, it's the least I could do." and with that he raised his voice and spoke over the throng: "Drinks are on the Lab; just tell them you are with the Beedles". "Oh", said Mary, "well, thank you", though she looked, a least to Elly, anything but thankful.

She had never liked Gavin, blaming him for Andrew's long hours, but she hid it and he ploughed on oblivious: "This is just a terrible, terrible thing for all of us. Well for you of course more than anyone. He was such a great guy, no one can believe it. One week he is there and the next he is gone. And yet that the truth..." he trailed off, then started again: "It's good so many people came - and there were more at the church too. So many people liked him and wanted to pay their respects." "Yes, I never know he was so much liked", replied Mary, and then spotting an escape, "Did you know his daughter Elly?"



She is reading biochemistry at Durham now", and as soon as Gavin turned his head she had turned back to her mother-in-law. Gavin was delighted to talk to Elly, and could be quite persuasive in his own way.

She was soon holding an unwanted glass of cider and backed against the wall under a barrage of questions which were clearly aimed at extracting everything she knew about her father's process.

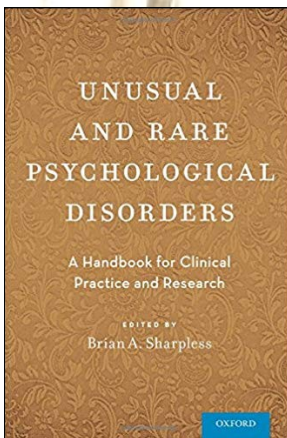
Suddenly Elly looked to her right and groaned. Peter Brown was hovering just a few feet away nonchalantly looking at his phone. "Gavin", she said, "I think we are probably being recorded. You, Mr. Times-man,

this is a private party, how dare you come in here". "Oh, I'm sorry" he started, "I just wandered into the public bar..." and with that Gavin grabbed him by the arm and hustled him out of the room and down the stairs.

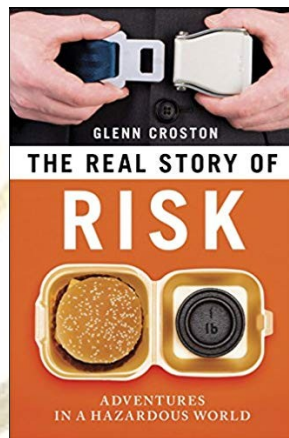
Aaron was just beside her. "Well", he said, "Fancy Gavin buying drinks. And you realize that he must be paying himself - there is no way he could put this on expenses. That's more money than the Lab has put into the project in years." "Really?", asked Elly. "Well, it feels like it. We were always scrounging for cast-offs. There is never support for a breakthrough before you make it." He trailed off, and then changed tack. "By the way, did you see my RAL pass? I thought I left it in the vestry, but it wasn't there after the service."

Next month chapter 10, "Mike"

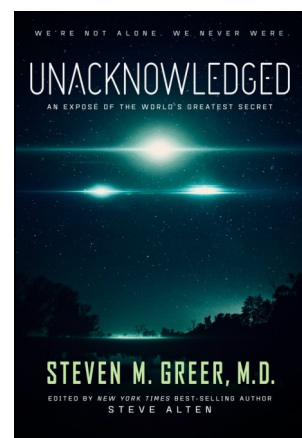
Contributors BookShelf



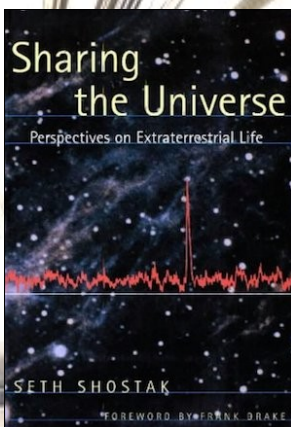
Dr. Brian Sharpless
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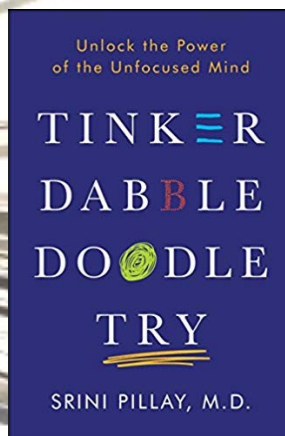
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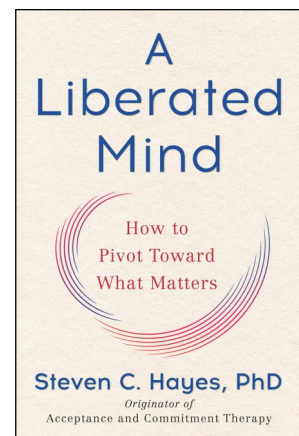
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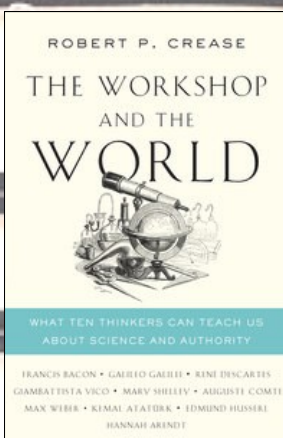
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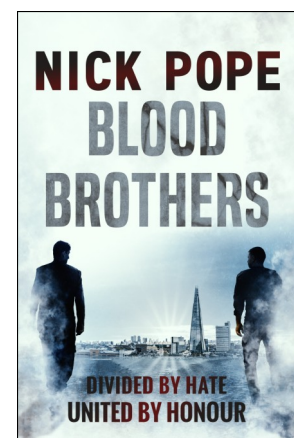
Prof. Steven C. Hayes
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Prof. Robert P. Crease
books.wwnorton.com



Dr. Marc Wittmann
www.amazon.com



Nick Pope
www.amazon.com

The Discovery of Three New Planets and Two New Low Mass Brown Dwarfs!

By Dr. Emily Rickman, www.emilyrickman.com

Planet hunters at Geneva Observatory have been carrying out an ongoing planet search using a technique called ‘radial velocities’ for the past 20 years on a telescope located in the Atacama Desert in Chile. In a paper led by researcher Emily Rickman they report the discovery of 3 new massive planets and 2 low mass brown dwarfs (objects that are bigger than a planet, but not quite a star).

Researcher Emily Rickman along with other planet hunters from Geneva Observatory, Switzerland have discovered 3 new massive planets and 2 new low mass brown dwarfs.

Discovering planets outside of the Solar System, known as exo-planets, is vital in trying to understand how Earth and the Solar System formed. Different detection techniques are used to find these far away worlds, but many observational biases exist that can make planets so far away difficult to detect.

Researchers at Geneva Observatory have been carrying out an ongoing survey of stars in the Southern hemisphere for over 20 years in order to detect exo-planets. These stars are similar to the Sun in size and temperature and nearby to our own Solar System, known as the ‘Solar neighborhood’. The survey is carried out using the Swiss telescope based at La Silla observatory in the Atacama desert, Chile – an optimal place to observe the night sky due to low light pollution and dry clear conditions for most days in the year.

There are several techniques that can be used to detect exo-planets – one of the most popular and successful techniques is called the ‘radial velocity’ technique. As a planet orbits a star, this causes it to wobble as both the star and the planet in the system orbit their centre of mass. As the star wobbles, or moves towards or away from us as the planet orbits it, this causes the light received from the star to be compressed (making the wavelength observed bluer) or to be stretched



Emily Rickman is a PhD researcher at Geneva Observatory, Switzerland. She is working on two large surveys, NACO-ISPY and SPHERE-SHINE (SpHere INfrared survey for Exo-planets) <https://arxiv.org/abs/1904.01573>

(making the wavelength observed redder), as demonstrated in the image.

The best example of this in everyday life is when an ambulance with its siren on speeds past you. As it is approaching the sound wave is compressed and the siren has a higher frequency, but as the ambulance passes you and moves away, the sound wave is stretched and the frequency of the sound decreases, giving this infamous high to low sound as it moves past.

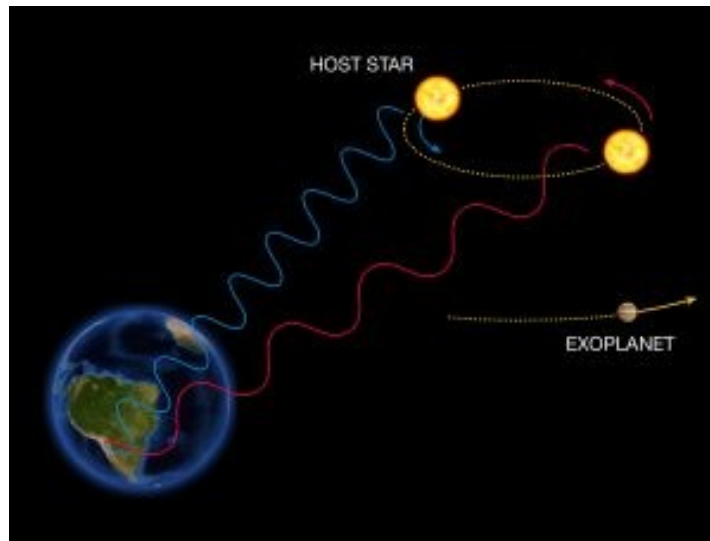
The radial velocity technique, otherwise known as the Doppler method, uses the same phenomenon. We observe and measure the Doppler shift of the spectrum of the host star of an exoplanet. This creates what’s called a radial velocity curve. From this we can pull out information like the orbital period of a planet, i.e. how long it takes the planet to orbit a star as well as the mass of the planet.

Using this 20 year survey of measuring radial velocities, Rickman et al. report the discovery of 3 new exo-planets and 2 low mass brown dwarfs (objects that are bigger than a planet, but not >>>

quite a star). These planets are at very long distances away from their star, greater than 5 times the distance of Earth to the Sun. They take longer than 15 Earth years to orbit their star, which is why this long term survey is vital in detecting these objects. They are also giant planets which masses of several Jupiter masses or more, far bigger than any planet in our Solar System.

Some of these planets are also very eccentric, which means that its orbit around its star is not very circular like that of Earth's. It means that at some points in its orbit it is extremely close to its star, which means that the planet would likely be very hot and at other points in its orbit it would be very far away from its star meaning that the planet would likely be very cold – not very ideal conditions for alien life!

Because these planets are so massive and at such wide separations away from their star, it is possible to directly image some of these planets – quite literally taking an image of a planet next to a star.



The radial velocity technique – Photo credit: ESO

When an image is taken of a planet or brown dwarf, the spectrum of its atmosphere can also be observed helping to understand these objects even more. These observations can be pieced together to help constrain how these planets formed – which in the long run help astronomers understand how our own Solar System formed. So stay tuned

for the next stage in investigating these new planets!



You can follow Emily via her website www.emilyrickman.com and on twitter [@emilyrickman93](https://twitter.com/emilyrickman93)

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MARC WITTMAN

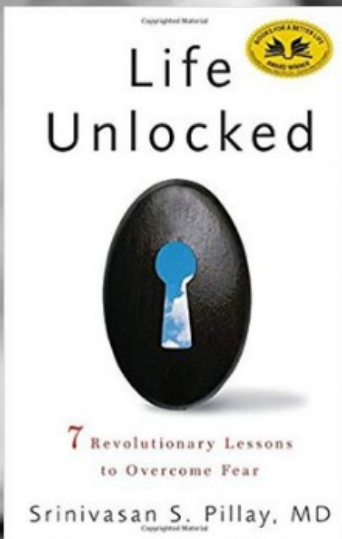
We have widely varying perceptions of time.

Dr. Wittmann explains, among other things, how we choose between savoring the moment and deferring gratification; why impulsive people are bored easily, and why their boredom is often a matter of time; whether each person possesses a personal speed, a particular brain rhythm distinguishing quick people from slow people; and why the feeling of duration can serve as an “error signal”.

<https://mitpress.mit.edu/books/felt-time>

TED TALKS

IDEAS WORTH SPREADING

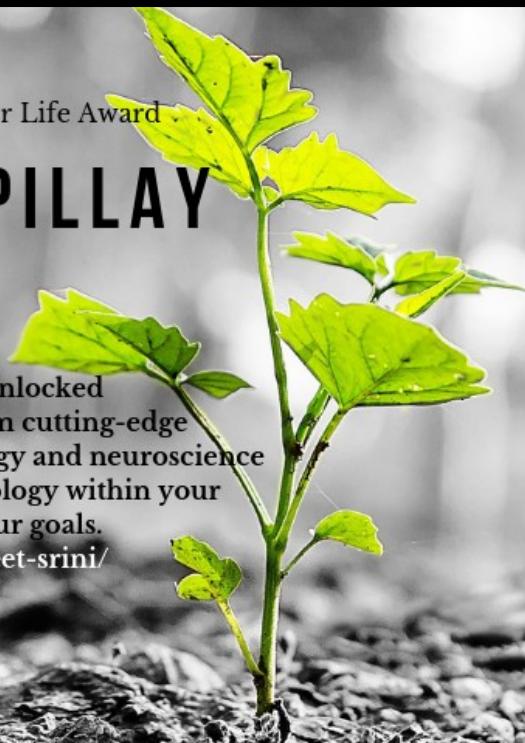


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<https://drsrinipillay.com/meet-srini/>



Oxygen Linked With the Boom and Bust of Early Animal Evolution

By the University of Leeds, www.leeds.ac.uk
Monday 6 May, 2019

New research reveals clues to a crucial period of rapid evolution in complex animals that began roughly 540 million years ago.

The research examines the period of rapid evolution, known as the Cambrian explosion, and indicates extreme fluctuations in atmospheric oxygen levels corresponded with evolutionary surges and extinctions in animal biodiversity. The trigger for this fundamental phase in the early history of animal life is a subject of ongoing biological debate.

The study, published today in *Nature Geoscience* by scientists from the UK, China and Russia, gives strong support to the theory that

oxygen content in the atmosphere was a major controlling factor in animal evolution. Led by the University of Leeds and UCL, the study is the first to show that during the Cambrian explosion there was significant correlation between surges in oxygen levels and bursts in animal evolution and biodiversity, as well as extinction events during periods of low oxygen.

The history of oxygen on Earth

Dr Tianchen, study lead author and postdoctoral researcher at the University of Leeds, began this research while at UCL. He said: "The complex creatures that came about during the Cambrian explosion were the precursors to many of the modern animals we see today.

"But because there is no direct record of atmospheric oxygen during this time period it has

been difficult to determine what factors might have kick started this crucial point in evolution.

"By analysing the carbon and sulphur isotopes found in ancient rocks, we are able to trace oxygen variations in Earth's atmosphere and shallow oceans during the Cambrian Explosion.

"When compared to fossilised animals from the



The Cambrian Period, or explosion, it is the time when most of the major groups of animals first appear in the fossil record.

same time we can clearly see that evolutionary radiations follow a pattern of 'boom and bust' in tandem with the oxygen levels. This strongly suggests oxygen played a vital role in the emergence of early animal life."

Study co-author Professor Graham Shields from UCL Earth Sciences, said: "This is the first study to show clearly that our earliest animal ancestors experienced a series of evolutionary radiations and bottlenecks caused by extreme changes in atmospheric oxygen levels.

"The result was a veritable explosion of new animal forms during more than 13 million years of the Cambrian Period. In that time, Earth went from being populated by simple, single-celled and immobile organisms to hosting the wonderful variety of intricate, energetic life forms we see today."

The team analysed the carbon and sulphur isotopes from marine carbonate samples collected from sections along the Aldan and Lena rivers in Siberia. During the time of the Cambrian >>>

explosion this area would have been a shallow sea and the home for the majority of animal life on Earth.

The lower Cambrian strata in Siberia are composed of continuous limestone with rich fossil records and reliable age constraints, providing suitable samples for the geochemical analyses.

The isotope signatures in the rocks relate to the global production of oxygen, allowing the team to determine oxygen levels present in the shallow ocean and atmosphere during the Cambrian Period.

Study co-author Dr Benjamin Mills, from the School of Earth and Environment at Leeds, said: "The Siberian Platform gives us a unique window into early marine ecosystems. This area contains over half of all currently known fossilised diversity from the Cambrian explosion. Combining our isotope measurements with a mathematical model lets us track the

pulses of carbon and sulphur entering the sediments in this critical evolutionary cradle. Our model uses this information to estimate the global balance of oxygen production and destruction, giving us new insight into how oxygen shaped the life we have on the planet today."

Study co-author Maoyan Zhu from Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, said: "Understanding what triggered the Cambrian explosion requires multidisciplinary study. It took a long time to get this result. We already got samples from Siberia in 2008.



Lena River in Sakha (Yakutia), Siberia.
Credit: Andrey Zhuravlev, Lomonosov Moscow State University

"The sections in Siberia are difficult to access. It took time for us to organize the expedition and collect the samples there. Without support from Russian colleagues, we could not have done the project."



In the book "How to Think Like a Neandertal", archaeologist Thomas Wynn and psychologist Frederick L. Coolidge team up to provide a brilliant account of the mental life of Neandertals and offer an eye-opening portrait while painting a remarkable picture of these long-vanished people and providing insight, as they go along, into our own minds and culture.

Indeed, some Neandertal remains are not fossilized! The book explores the brutal nature of their lives, especially in northwestern Europe, where men and women with spears hunted together for mammoths and woolly rhinoceroses.

www.amazon.de

Is the Earth Common but Life Unique?

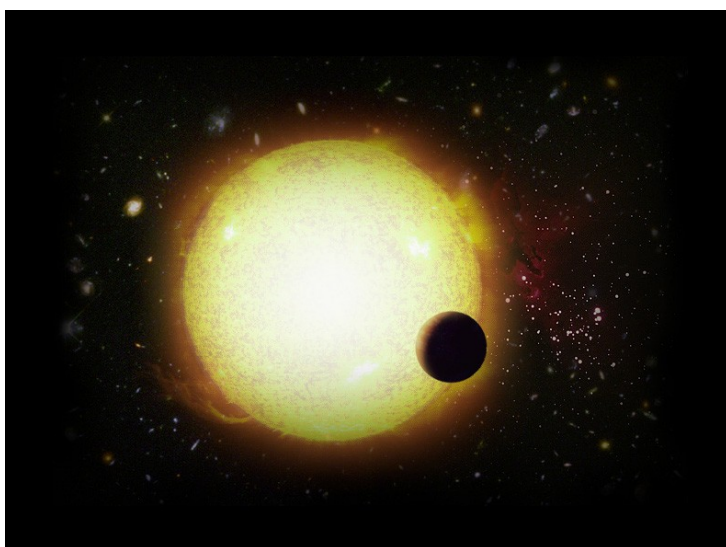
By Professor Uffe Gråe Jørgensen, www.nbi.ku.dk

We know from the recent years of research on exoplanets (i.e. planets orbiting other stars than the Sun), that there are approximately 10 billion stars in the Milky Way alone with planets similar to Earth in both size and temperature. If life arose on just a fraction of them and in just a few cases developed intelligent beings with a technical civilization, we have to expect that they will travel to the nearest planets, just as we will do in the future. So why haven't aliens from one of these planets visited Earth? Is the universe filled with planets where life never arises? Or are other Earths constantly bombarded with devastating asteroids? Or why are we apparently so alone in the universe?

For millennia, people have fantasized about whether there are other planets like the Earth where humans can live and advanced civilization can develop. At sometimes people saw it that there are an infinite numbers of such places while at other times we have believed that the Earth is entirely unique. But it was always speculation only, until today. In recent years it has become clear that the number of Earth-like planets extenze beyond even our wildest fantasies. But how many Earth-like planets are they actually? Is there water flow on the surfaces? Is anyone living there?

While we can't directly see the many planets we can measure the effect using three separated methods. One of the methods is known as the

Transit method. Here one is searching for the periodic dimming of the stellar brightness as a planet moves in front of the star. This method is used by the Kepler satellite to discover nearly 3000 exoplanets which are the planets orbiting around other stars and our own sun. Another method is the so called Radial-Velocity method or Doppler method. Here one measure how the planets gravity pulls the star back and forward during its orbit making the star wobble.



The first evidence of an exoplanet was noted in 1917, but was not recognized as such. The first scientific detection of an exoplanet was in 1988; it was confirmed to be an exoplanet in 2012. *Source; Wikipedia*

The most accurate measuring today is able to measure if a star, maybe hundred light years away, is moving towards us at the pace of a turtle. However this enormous accuracy, allows us only to discover planets as large as the largest planets in our own solar system i.e. Jupiter, Saturn, Uranus and Neptune.

To find planets similar to our own, a search

method has been introduced know as Gravitational micro lensing. This method measures how light changes when two stars a line with one another. If the nearest star is orbited by a planet, the planet can be identified by the way the light of the background star is altered on the way towards us. One sees the fingerprint of the planet in the light of the background star. Together the three methods have shown us that there are more planets than stars in the universe.

Our own Milky Way contains hundred billion stars but is home to three hundred billion planets. And maybe even more surprising, is that many as ten billion of them resemble the Earth. They are neither a gaseous planet like >>>

Jupiter without a solid surface nor are they as small as the mass of the moon unable to have an atmosphere. And they are all orbiting the star at such a distance that if it was our Earth which was placed there, lakes, rivers and running water would exist at the surface. Nevertheless, we have never received a radio signal from any civilization there. And the galactic supermarket is not teeming with extraterrestrials in visit. Why not? There are billions of Earth-like planets. Is it because our own solar system is unique? The most optimal place for the development of life? If so, what is that is so unique about our solar system? It is obviously not the Earth's existence because ten billion other stars in the Milky Way have a planet that resembles the Earth.

The solar system and all other planetary systems were formed from a collapsing cloud of interstellar gas and dust. Most of the material became the central star. In our case it is the sun. The bulk of the rest was expelled into interstellar space via a violent jet-stream but a tiny amount of gas and dust remained as a disk around the star. That is where the planets formed. In the inner part of the cloud it was so hot that only very rare elements such as stones and metals could clump together and to form planets. On the outer part of the disk it was so cold that it will have been snowing.

Water is so banded that, once it can form snow planetary pieces as large as ten times the mass of the Earth, it can build up like massive snowballs. If the gas cloud still exist at the time when the ice planet has grown ten times the mass of the Earth, than the gas will start collapsing into the ice planet transforming into a large gas clump hundred times of the mass of the Earth or even more. This is how Jupiter and Saturn where formed.

The huge planet will now move to the remnant of the gas cloud like an airplane without an engine.

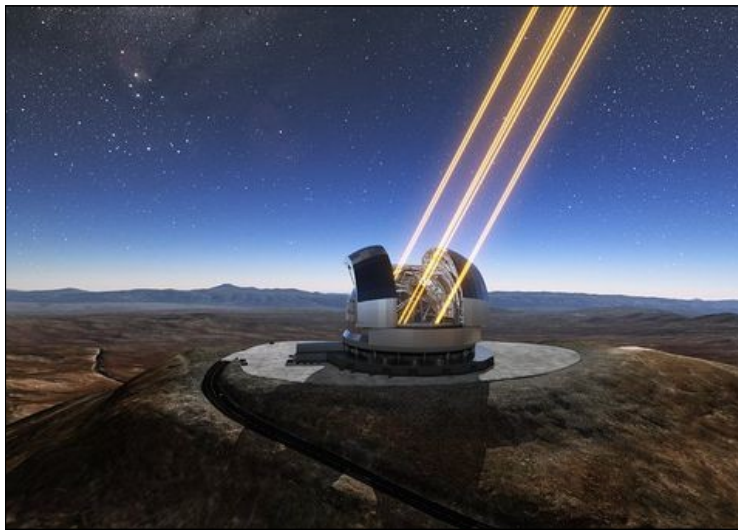
They would quit raptly fall towards the star and end up in a small orbit equivalent to that of the Earth. And this is how most explanatory systems appear which we can observe with the Radio-Velocity method.

There must have been just enough gas in our own solar system to form our planetary giants Jupiter and Saturn while the rest of the gas cloud must have disappeared at precisely the moment Jupiter and Saturn were fully formed so they could move unhindered to empty space without being slowed down by the gas cloud and drifting inward. This appears to be a quit an unusual coincidence. Like a knife at balance at the formation of Jupiter and Saturn and the disappearing of the gas disk.

Over the next seven hundred million years Jupiter and Saturn moved slightly inwards until they reach a point where Jupiter revolves the sun twice each time Saturn orbits once. Such a pattern is quit disturbing to the rest of the solar system and it would have send the more than one thousand bil-

lion leftovers of the comets and asteroids from the planetary formation, in all possible directions whereby some of them would have collided with the Earth and the moon. We can determine the age of the lunar craters and count how many there are showing us that Earth and the moon where quit suddenly bombarded with two thousand tons of cosmic material on each square meter of its surface exactly on the moment when the solar system was seven hundred million years old. This equals the ages of the preserved portions of the Earth crust.

Now comets are basically large ice junks. So, if the impacts really occurred with comets the two thousand tons per square meter would add up precisely to the amount of water that is in the worlds Ocean's today. In this way we can explain what became of the bombard comets. >>>



The European Extremely Large Telescope is a revolutionary scientific project for a 40m-class telescope that will allow us to address many of the most pressing unsolved questions about our Universe. *Source; www.eso.org*

The very few commentary pieces that are currently housed in geological museums around the world show that they do not only contain water but also complex pre-biological molecules. Large organic molecules that may have been the building-blocks to the first life. In a particular piece which fell in Australia in 1969, eleven of the twenty amino acids that makes up the proteins in all living organisms on Earth, were identified. And perhaps even more surprising, three of the five letters, that is a nuclear code basis, that formed the genetic alphabet were also discovered. A similar piece of comet fell in Maribo in Denmark in 2009.

Was the precise timing between Jupiter and Saturn's formation and the planetary clouds disappearance really the first step towards our appearance? The existence and the subsequent unique movements appears to be very special to our solar system and without them we would not had the large cosmic bombardment 3.8 billion years ago which might have been the basis for the emergence of life on Earth. And this big clean-up of comets and asteroids 3.8 billion years ago may have yet another beneficially fact. Without it, Earth will still be hit by comets now and then, often resulting in the atmosphere being ripped off.

So we can thank this large clean-up, this bombardment apprehended by Jupiter and Saturn, for avoiding such devastating catastrophes today. And if Jupiter and Saturn planets are really as rare as we think they are, than it is maybe not so strange that space is so eerily silent when we

tune our most sensitive telescopes to listen of anybody is making a sound.

But of course we all want to know if this is all really true... if there is really nobody other than us. We are therefore now in the process of building the first giant telescope that will be able to take direct photos of the nearest Earth-like exoplanets. The ELT telescope will be larger than the Eifel tower and it will have a mirror the size of a football field. Nonetheless, it won't be cities or bridges that we will be able to observe rather whether the atmosphere is in chemical or a biological equilibrium, whether there are some organisms that send oxygen into their atmosphere just as Earth's plant life does or Methane, of some of Earth's bacterial does and whether there is water vapor as in the Earth's atmosphere.

This will give us the first sign that there are others than just us that have being blessed to have Oceans, lakes and rivers with flowing water on the surface of their planet. So in proximal five years, when the ELT telescope will stand ready on the mountaintop beneath the world clearest skies in the Chile Atacama desert, we will be ready to embark on the next chapter in the story of life's richness.

Where are they these space aliens or are there none? Despite the fact that there are ten billion Earth-like planets it looks like that, maybe, we are the only technological civilization in this enormous galaxy. If so, we are the super civilization of the Milky Way.

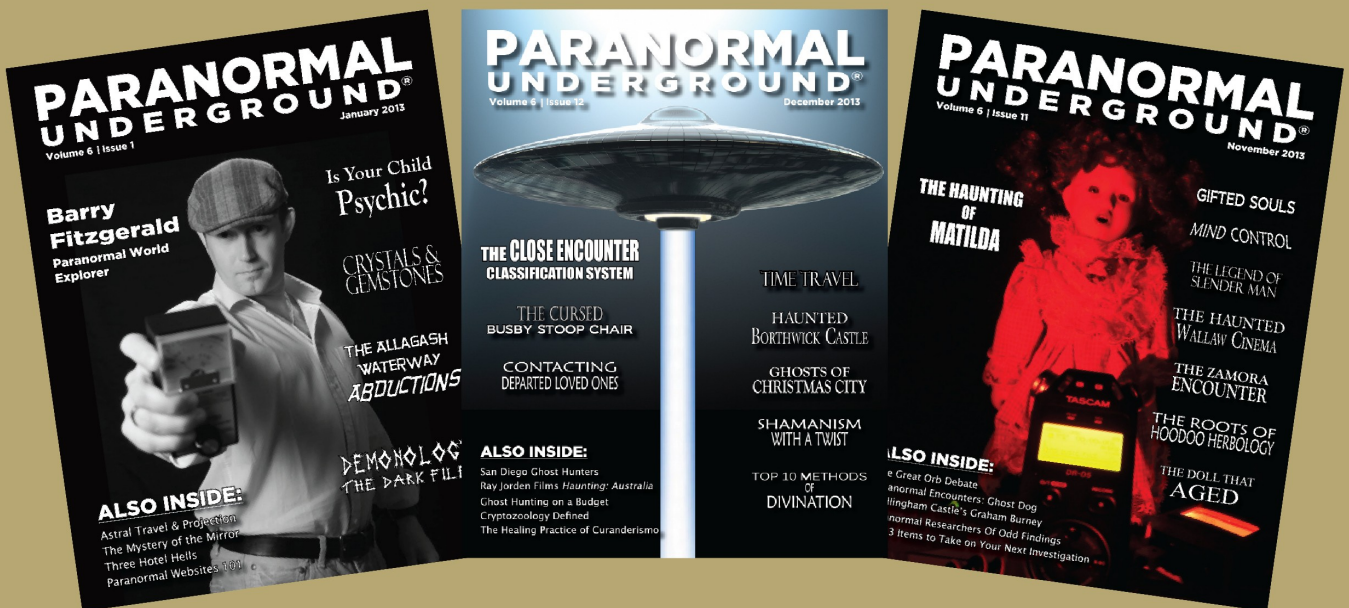
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The Physics of Extraterrestrial Civilizations

How advanced could they possibly be?

By Dr. Michio Kaku, www.mkaku.org

The late Carl Sagan once asked this question, “What does it mean for a civilization to be a million years old? We have had radio telescopes and spaceships for a few decades; our technical civilization is a few hundred years old... an advanced civilization millions of years old is as much beyond us as we are beyond a bush baby or a macaque.”

Although any conjecture about such advanced civilizations is a matter of sheer speculation, one can still use the laws of physics to place upper and lower limits on these civilizations. In particular, now that the laws of quantum field theory, general relativity, thermodynamics, etc. are fairly well-established, physics can impose broad physical bounds which constrain the parameters of these civilizations.

This question is no longer a matter of idle speculation. Soon, humanity may face an existential shock as the current list of a dozen Jupiter-sized extra-solar planets swells to hundreds of earth-sized planets, almost identical twins of our celestial homeland. This may usher in a new era in our relationship with the universe: we will never see the night sky in the same way ever again, realizing that scientists may eventually compile an encyclopedia identifying the precise co-ordinates of perhaps hundreds of earth-like planets.

Today, every few weeks brings news of a new Jupiter-sized extra-solar planet being discovered, the latest being about 15 light years away orbiting around the star Gliese 876. The most spectacular of these findings was photographed by the Hubble Space Telescope, which captured breathtaking photos of a planet 450 light years away being sling-shot into space by a double-star system.

But the best is yet to come. Early in the next decade, scientists will launch a new kind of telescope, the interferometric space telescope, which uses the interference of light beams to enhance the resolving power of telescopes.



Dr. Michio Kaku — theoretical physicist, bestselling author, acclaimed public speaker, renowned futurist, popularizer of science, and co-founder of String Field Theory.

For example, the Space Interferometry Mission (SIM), to be launched early in the next decade, consists of multiple telescopes placed along a 30 foot structure. With an unprecedented resolution approaching the physical limits of optics, the SIM is so sensitive that it almost defies belief: orbiting the earth, it can detect the motion of a lantern being waved by an astronaut on Mars!

The SIM, in turn, will pave the way for the Terrestrial Planet Finder, to be launched late in the next decade, which should identify even more earth-like planets. It will scan the brightest 1,000 stars within 50 light years of the earth and will focus on the 50 to 100 brightest planetary systems.

All this, in turn, will stimulate an active effort to determine if any of them harbor life, perhaps some with civilizations more advanced than ours.

Although it is impossible to predict the precise features of such advanced civilizations, their broad outlines can be analyzed using the laws of physics. No matter how many millions of >>>

years separate us from them, they still must obey the iron laws of physics, which are now advanced enough to explain everything from sub-atomic particles to the large-scale structure of the universe, through a staggering 43 orders of magnitude.

Physics of Type I, II, and III Civilizations

Specifically, we can rank civilizations by their energy consumption, using the following principles:

- 1) The laws of thermodynamics. Even an advanced civilization is bound by the laws of thermodynamics, especially the Second Law, and can hence be ranked by the energy at their disposal.
- 2) The laws of stable matter. Baryonic matter (e.g. based on protons and neutrons) tends to clump into three large groupings: planets, stars and galaxies. (This is well-defined by product of stellar and galactic evolution, thermonuclear fusion, etc.) Thus, their energy will also be based on three distinct types, and this places upper limits on their rate of energy consumption.
- 3) The laws of planetary evolution. Any advanced civilization must grow in energy consumption faster than the frequency of life-threatening catastrophes (e.g. meteor impacts, ice ages, supernovas, etc.). If they grow any slower, they are doomed to extinction. This places mathematical lower limits on the rate of growth of these civilizations.

In a seminal paper published in 1964 in the *Journal of Soviet Astronomy*, Russian astrophysicist Nicolai Kardashev theorized that advanced civilizations must therefore be grouped according to three types: Type I, II, and III, which have mastered planetary, stellar and galactic forms of energy, respectively. He calculated that the energy consumption of these three types of civilization would be separated by a factor of many billions. But how long will it take to reach Type II and III status?

Shorter than most realize.

Berkeley astronomer Don Goldsmith reminds us that the earth receives about one billionth of the sun's energy, and that humans utilize about one millionth of that. So we consume about one million billionth of the sun's total energy. At present, our entire planetary energy production is about 10 billion billion ergs per second. But our energy growth is rising exponentially, and hence we can

calculate how long it will take to rise to Type II or III status.

Goldsmith says, "Look how far we have come in energy uses once we figured out how to manipulate energy, how to get fossil fuels really going, and how to create electrical power from hydro-power, and so forth; we've come up in energy uses in a remarkable amount in just a couple of centuries compared to billions of years our planet has been here ... and this same sort of thing may apply to other civilizations."

Physicist Freeman Dyson of the Institute for Advanced Study estimates that, within 200 years or so, we should attain Type I status. In fact, growing at a modest rate of 1% per year, Kardashev estimated that it would take only 3,200 years to reach Type II status, and 5,800 years to reach Type III status. Living in a Type I, II, or III civilization.

For example, a Type I civilization is a truly planetary one, which has mastered most forms of planetary energy. Their energy output may be on the order of thousands to millions of times our current planetary output. Mark Twain once said, "Everyone complains about the weather, but no one does anything about it." This may change with a Type I civilization, which has enough energy to modify the weather. They also have enough energy to alter the course of earthquakes, volcanoes, and build cities on their oceans.

Currently, our energy output qualifies us for Type 0 status. We derive our energy not from harnessing global forces, but by burning dead plants (e.g. oil and coal). But already, we can see the seeds of a Type I civilization. We see the beginning of a planetary language (English), a planetary communication system (the Internet), a planetary economy (the forging of the European Union), and even the beginnings of a planetary culture (via mass media, TV, rock music, and Hollywood films).

By definition, an advanced civilization must grow faster than the frequency of life-threatening catastrophes. Since large meteor and comet impacts take place once every few thousand years, a Type I civilization must master space travel to deflect space debris within that time frame, which should not be much of a problem.

Continue reading on page 28

Animal Bones Found at Bottom of Hoyo Negro Shed Light on the Great American Biotic Interchange

by Bob Yirka , www.Phys.org

A team of researchers from the U.S. and Mexico has found bone skeletons at the bottom of the Hoyo Negro cave that show that some animals thought to have existed only in South America also existed in Mexico. In their paper published in the journal *Biology Letters*, the group describes their recovery and study of multiple skeletons retrieved from the floor of the Hoyo Negro cave and what they learned from them.

The Hoyo Negro cave is located on the eastern coast of the Yucatán Peninsula in Mexico. Back in 2007, researchers discovered that the cave was a treasure trove of bones from ancient animals dating back as far as 30,000 years ago—they also found two human skeletons. Thousands of years ago, the cave was completely dry, and it had an opening at the top through which unsuspecting animals fell 200 feet to their deaths. Since that time, melting glaciers filled part of the cave with water, which served to preserve the bones. Over the past 12 years, researchers have unearthed a host of skeletons. In this new effort, the researchers report on a trove of skeletons they recovered and studied.

The researchers report that they found one human skeleton among the bones, which was dated to approximately 12,000 years ago, providing evidence that humans existed during the time of the ground sloths. The other human skeleton found in 2007 dated back to approximately 13,000 years ago, and is one of the oldest human skeletons ever found in the Western hemisphere.

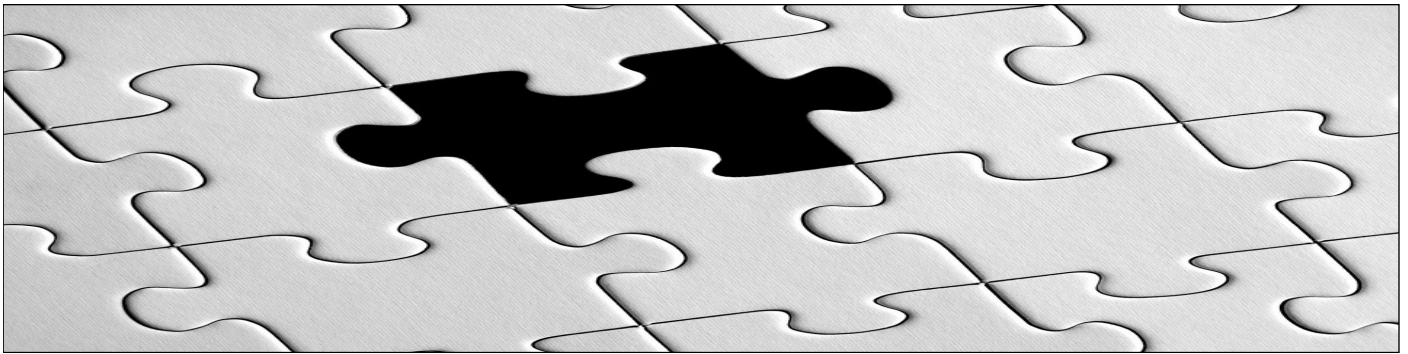
Also among the skeletons were the bones of a creature called *Procyon troglodytes*, which resembled a wolf, and a short-faced bear. The bear skeleton was notable because it represents a species that is believed to be the largest ever to roam the Earth. The wolf and bear were also notable because both are believed never to have made it out of South America as part of the Great American Biotic Interchange—the time period after a land bridge joined North and South America (approximately 3 million years ago), allowing animals from both sides passage to the other.



Diver with Protocyon jaw and vertebra.
Photo credit: Roberto Chavez-Arce



Dark Matter and Dark Energy; Exotic and Hypothetical Since the Early 1930s but the Search Continues



By Maria Anna van Driel, www.nexttruth.com

For almost 97 years scientists are trying to unravel the mystery of Dark Matter and its partner in crime, Dark energy since 1998. None has a clue so far of how to answer the questions; what is it and how and why are we interacting with these invisible behaviors within our hot cosmic freezer.

Everywhere we look we see transitions being made. Water freezes, melts, or boils; chemical bonds break and form to make new substances out of different arrangements of atoms. Our universe went through major transitions in early times. New particles were created and destroyed continually until things cooled enough to let them survive. Those particles include ones we know about, such as the Higgs boson or the top quark. But this early universe could also include dark matter, invisible particles which we presently know only because of their gravitational effects. In cosmic terms, dark matter particles could be a "thermal relic," forged in the hot early universe and then left behind during the transitions to more moderate later eras. Meaning that eventually the density becomes so low that interactions become infrequent, and the particles freeze out.

There is absolutely no doubt about it that you have heard of General relativity which is a theory of gravitation that was developed by Albert Einstein between 1907 and 1915. But have you ever heard of 'the father of dark matter' Swiss astronomer and physicist **Fritz Zwicky? During his life (1898-1974) Zwicky** made valuable contributions to the physics of the solid state, gaseous ionization, and thermodynamics but

soon turned to the study of supernovas, novas, and cosmic rays. And even Zwicky had discovered the existence of dark matter in 1933, he was banned from using the Palma telescope at the age of 70 due his outspoken opinion what was seen as a bad temper. Scientists are trying to put this galactic Sudoku puzzle of dark matter and dark energy together ever since.

So, fasten your seatbelts, keep your finger on the button of your high-speed camera and get ready to gaze into the dark heart of our galaxy. We are going to explore the central question of a puzzling phenomenon no one knows the answer to. You are about to take a tour through the universe which gets weirder, stranger, more shocking along the road and, maybe even spookier than you expected.

If you look at the universe of only 5% matter and 70% of dark energy then what the h*ll is this 25% of the universe we call dark matter? There has to be 'something' what creates a fine-tuned balance between the energy of motion (kinetic energy) and gravitational attraction (potential energy) for the universe not to collapse or explode in an instant. Imagine a lamp in the living room hanging from the ceiling. If you look closely but from the right distance, you can, with the naked eye and when UV-light is hitting the lamp with the right angle, see the effect of the electrons being knocked out of their orbits by the density of the lamp. This effect, what can be observed as 'rising heat' is what makes us see the outlines of the lamp...right? Let's call this rising heat dark energy and what lies just behind the visible >>>

out-lines of the lamp, dark matter. But before we can see the proof of what is laying just behind the lamp's density (dark matter) in its existence, its signal has to be detected first.

A new experiment that has a very high probability in providing a clearer picture of what dark matter and dark energy is bears the name ALPS II (DESY) but let us not forget CERN's Axion Solar Telescope (CAST) or the XENON experiment operated at the Italian Gran Sasso National Laboratory. These experiments are, to many, better known as "Light-through-the-wall".

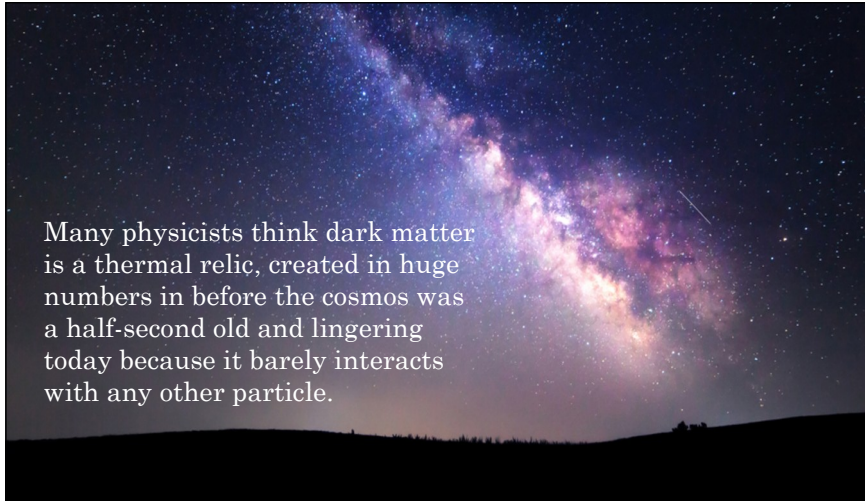
"The idea behind the "Light-through-the-wall" experiment is to calculate and prove that there is an Axion-like particle that can travel through the wall and transform back to photon", DESY's press officer Dr. Zoufal says during a tour. "When we can see this happening, we know that there has to be something different to photon on the other side of the wall at a special wave-length."

When two photons see, or meet, each other they sometimes overreact with excitement and split themselves into an electron and positron pair which scientists call 'virtual particles'. But in order for the tiered light particles, which are both chargeless and massless, to interact with one another they must go through a quantum mechanical loophole. (Quantum loop) They have no way to bounce off of each other without some kind of help.

However, when the EM-fields of two lead ions swoosh through one another and high-energy photons have the opportunity to 'absorb' this 'energy', as well as from the free electrons, it can so to speak, generate its own energy while speeding up its momentum between the mirrors. At one point a photon has absorb that much, it will be in need of releasing this energy. This releasing of energy could be observed as a small explosion. Now this might sound a little bit funny but let's

say we have 20 of these charged light bulbs (photons) of which only 1 gained the needed mass, due a nuclear magnetic spin, to convert into an Axion-like particle. The remaining 19 will burst showing an X-ray scattering when the conditions are not perfect enough for them to be converted into an Axion-like particle. Nevertheless, these empty photons or 'tiered light' do have an important task to fulfill...making this 5% of matter visible when merging with the correct host.

Although we tend to think that nature thinks-up the most complex systems, nature is far from being complex and, strange as it might sound, so is the behavior of the universe. Like water always chooses the path of the least resistance to travel from A to B, converting the charged photon



Many physicists think dark matter is a thermal relic, created in huge numbers in before the cosmos was a half-second old and lingering today because it barely interacts with any other particle.

into the hypothetical Axion seems to be perfect for transporting this light, disturbing or bending the NM (R) energy as well as making some yet unknown particles 'slower' by using its mass both in a controlled manner. Somehow it has to be otherwise we could never have known about the 5% in the first place. Still, this is not the signal where scientists are looking for but it is a nice start to look for where it is not. In this you can think of a straw in a glass of water. Also, this signal, what can be measured, does not particularly have to lay in the missing (zero) mass or energy, after it has 'plopped' back to its original state.

Our 19 light bulbs becoming almost empty or being 'tired light, in particle physics known as the electromagnetic force, is not entirely a farfetched idea. In 1929 the Swiss astrophysicist Fritz Zwicky already proposed that photons gradually give up their energy to the intergalactic matter through which they travel, through a process analogous to Compton scattering (a collision between a photon and a charged particle, often an electron, in which the photon loses a substantial fraction of its energy), leading to a progressive reddening of the light. To make it all a little bit weirder. This tired light, having zero mass, >>>

does not hover aimlessly through the universe. It is likely to assume that these photons are searching for 'something' what turns them into visible light and change their momentum and thus yields a force whereby this light is able of 'physically' interacting with matter like you and me. Maybe we should not sweep the idea of 1, or maybe 2, of our 20 photons is repeating the process of speeding up, generating more energy and mass, and become a hypothetical Axion again, immediately under the carpet. As well as the remaining photons are lighting up some parts of the universe as they are searching for a host that only interacts via gravity and not carrying any charge after they plop into the state of being 'tiered light'; the sterile Neutrino.

And in an instant this 'nothing' or 'sterility' with the new flavored Neutrino becomes not nothing at all. Could we refer to the Sterile Neutrino-Photon flavor as the first steps towards dark energy which in turn is 'covering-up' the rare photon-photon colliding? May we think, with some caution, of the Photon-Neutrino flavor, swirling, as in murmuration, through an EM-field, is dark matter? But wait, let me insert the 'spooky factor' to it all by looking back to my article "EVPs: are we really talking with the other side?" in where I spoke about how crystals can be triggered by EM-vibrations, LED-light, pressure and the change in temperature.

"Not only EM-vibrations can trigger the crystals inside a digital recorder. A piezo-electrical effect created by a light source as e.g. LED is also a potential candidate for creating crazy vibrations in crystals which the devices (holding these crystals) can translate into intelligible words or short sentences by for example converting light, sound, direct temperature differences, or mechanical pressure into electrical signals. (Most plastic dolls are made from rubber polymers like silicone or vinyl which are solid rubber polymers and do contain crystals, crystal which are being triggered by temperature due the material that surrounds them.)"

Since the universe contains plenty of carbon, this 'tiered' EM-light what has neither found a host nor is able to convert into an Axion, could easily address the carbon and creating (elastic) crystals in a similar manner as schist is being created in

Limestone, which in turn is releasing a 'special wave-length' possessing potential energy. A process as such sounds logic due its simplicity and might have the prospect of being one of the two candidates for the signal (acoustic shadow) what proofs the existence of this mysterious dark matter what seem to be present in our hot cosmic freezer.

Both dark energy, created by EM-photons and sterile Neutrino's, and a special wave-length, spawn from ordinary carbon, containing a frequency or vibration being that high or that low it just looks like 'nothing' but is actually moving on the borders of the electromagnetic spectrum. (Extreme Ultraviolet Radiation) And by behaving as so, it instantly becomes invisible for modern scientific measurement equipment like the Mini-BooNe.

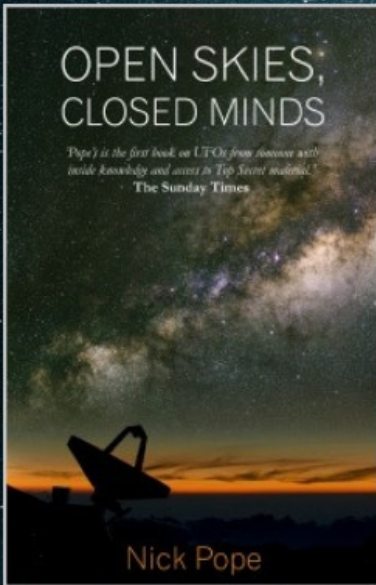
With this being said, this yet undetected signal could also lie in the sterile Neutrino absorbing an EM-photon within a rotating lorentz force containing the perfect conditions and thus distance. Inside this 'tunnel' the acoustic shadows (the area in where sound-waves fail to propagate), from the moment the photon plops to the Axion, could be trapped inside the gravity (rotation) of a standing wave which is then established by means of the special wave length entering the right area of the rotating Lorentz force with a perfect angle. Indeed, this is a tremendous small window of time, almost looking for a needle in a haystack, but with a highly sensitive measurement device this signal can be made visible.

All in all, it is a plausible direction to look in while considering the idea that, in the end, the special wave-length can be responsible for making the 5% of the matter in the universe, which includes you and me, visible by hitting the surface of the electrical density of the non-exited particles, or at least extremely low charged, with a right angle whereby the acoustic shadow is not only the signal but also is creating a visible 3D+ effect in our hot cosmic freezer.

Nonsense... farfetched... impossible? Or could it lead to the understanding of the quantum-mechanical square dance of relic Dark Matter? Well, if nature is allowing it, why not.

■ ■ ■

Nick Pope



This is a true insider's account of the phenomenon, and lifts the lid not just on classic cases like Roswell and the Rendlesham Forest incident, but on less well known cases too. This groundbreaking and highly controversial book highlights cases from the US, the UK, and the rest of the world, with Nick drawing on his firsthand government experience to reveal what the authorities really know and think about UFOs, alien abductions, crop circles and animal mutilations. *Open Skies Closed Minds* was featured on Newsnight, serialized in the Daily Mail and reached number three in the hardback non-fiction list, staying in the top ten for ten weeks.

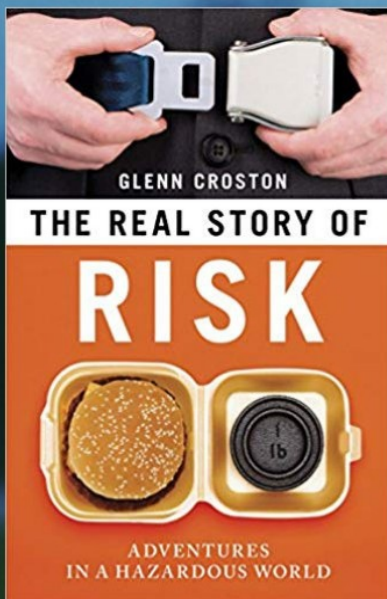
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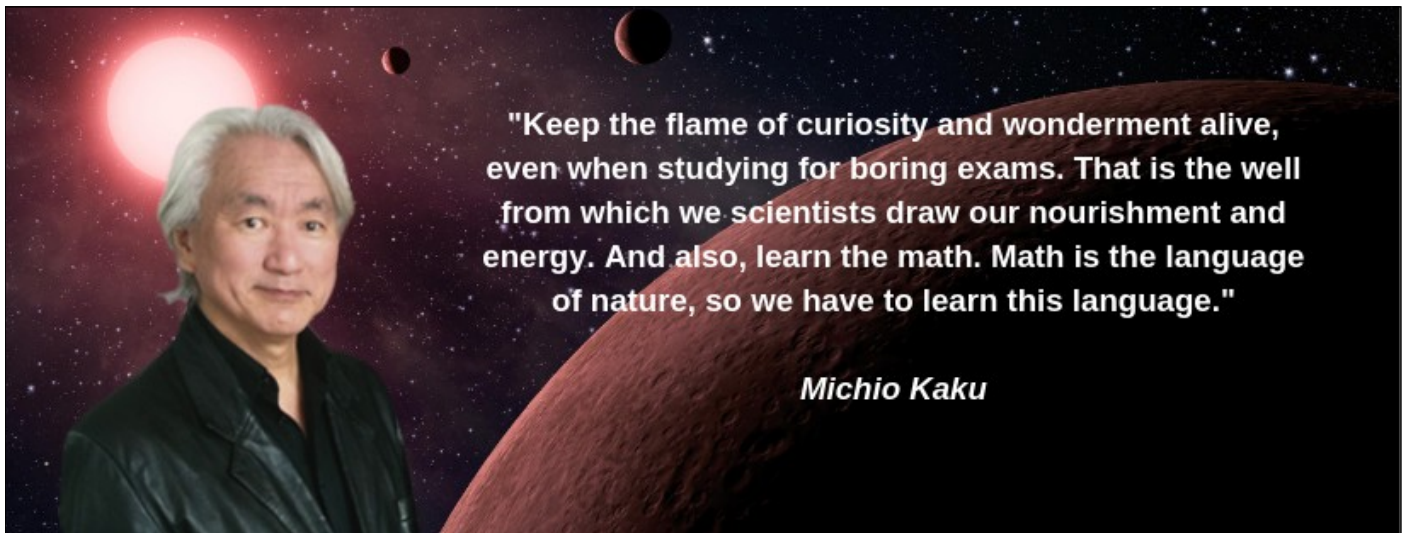
Glenn Croston

We live in a world of risk. It waits for us in our refrigerator and surrounds us on the freeway. It's lurking in our arteries and sitting in our 401(k) accounts.

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"Keep the flame of curiosity and wonderment alive, even when studying for boring exams. That is the well from which we scientists draw our nourishment and energy. And also, learn the math. Math is the language of nature, so we have to learn this language."

Michio Kaku

Ice ages may take place on a time scale of tens of thousands of years, so a Type I civilization must learn to modify the weather within that time frame.

Artificial and internal catastrophes must also be negotiated. But the problem of global pollution is only a mortal threat for a Type 0 civilization; a Type I civilization has lived for several millennia as a planetary civilization, necessarily achieving ecological planetary balance. Internal problems like wars do pose a serious recurring threat, but they have thousands of years in which to solve racial, national, and sectarian conflicts.

Eventually, after several thousand years, a Type I civilization will exhaust the power of a planet, and will derive their energy by consuming the entire output of their suns energy, or roughly a billion trillion trillion ergs per second.

With their energy output comparable to that of a small star, they should be visible from space. Dyson has proposed that a Type II civilization may even build a gigantic sphere around their star to more efficiently utilize its total energy output. Even if they try to conceal their existence, they must, by the Second Law of Thermodynamics, emit waste heat. From outer space, their planet may glow like a Christmas tree ornament. Dyson has even proposed looking specifically for infrared emissions (rather than radio and TV) to identify these Type II civilizations.

Perhaps the only serious threat to a Type II civilization would be a nearby supernova explosion, whose sudden eruption could scorch their planet in a withering blast of X-rays, killing all life forms. Thus, perhaps the most interesting civilization is a Type III civilization, for it is truly

immortal. They have exhausted the power of a single star, and have reached for other star systems. No natural catastrophe known to science is capable of destroying a Type III civilization.

Faced with a neighboring supernova, it would have several alternatives, such as altering the evolution of dying red giant star which is about to explode, or leaving this particular star system and terraforming a nearby planetary system. However, there are roadblocks to an emerging Type III civilization. Eventually, it bumps up against another iron law of physics, the theory of relativity. Dyson estimates that this may delay the transition to a Type III civilization by perhaps millions of years.

But even with the light barrier, there are a number of ways of expanding at near-light velocities. For example, the ultimate measure of a rockets capability is measured by something called "specific impulse" (defined as the product of the thrust and the duration, measured in units of seconds). Chemical rockets can attain specific impulses of several hundred to several thousand seconds. Ion engines can attain specific impulses of tens of thousands of seconds. But to attain near-light speed velocity, one has to achieve specific impulse of about 30 million seconds, which is far beyond our current capability, but not that of a Type III civilization. A variety of propulsion systems would be available for sub-light speed probes (such as ram-jet fusion engines, photonic engines, etc.)

How to Explore the Galaxy

Because distances between stars are so vast, and the number of unsuitable, lifeless solar systems so large, a Type III civilization would be faced >>>

with the next question: what is the mathematically most efficient way of exploring the hundreds of billions of stars in the galaxy?

In science fiction, the search for inhabitable worlds has been immortalized on TV by heroic captains boldly commanding a lone star ship, or as the murderous Borg, a Type III civilization which absorbs lower Type II civilization (such as the Federation). However, the most mathematically efficient method to explore space is far less glamorous: to send fleets of “Von Neumann probes” throughout the galaxy (named after John Von Neumann, who established the mathematical laws of self-replicating systems).

A Von Neumann probe is a robot designed to reach distant star systems and create factories which will reproduce copies themselves by the thousands. A dead moon rather than a planet makes the ideal destination for Von Neumann probes, since they can easily land and take off from these moons, and also because these moons have no erosion. These probes would live off the land, using naturally occurring deposits of iron, nickel, etc. to create the raw ingredients to build a robot factory. They would create thousands of copies of themselves, which would then scatter and search for other star systems.

Similar to a virus colonizing a body many times its size, eventually there would be a sphere of trillions of Von Neumann probes expanding in all directions, increasing at a fraction of the speed of light. In this fashion, even a galaxy 100,000 light years across may be completely analyzed within, say, a half million years.

If a Von Neumann probe only finds evidence of primitive life (such as an unstable, savage Type 0 civilization) they might simply lie dormant on the moon, silently waiting for the Type 0 civilization to evolve into a stable Type I civilization. After waiting quietly for several millennia, they may be activated when the emerging Type I civilization is advanced enough to set up a lunar colony. Physicist Paul Davies of the University of Adelaide has even raised the possibility of a Von Neumann probe resting on our own moon, left over from a previous visitation in our system aeons ago. (If this sounds a bit familiar, that’s because it was the basis of the film, 2001. Originally, Stanley Kubrick began the film with a series of scientists explaining how probes like these

would be the most efficient method of exploring outer space. Unfortunately, at the last minute, Kubrick cut the opening segment from his film, and these monoliths became almost mystical entities)

New Developments

Since Kardashev gave the original ranking of civilizations, there have been many scientific developments which refine and extend his original analysis, such as recent developments in nanotechnology, biotechnology, quantum physics, etc.

For example, nanotechnology may facilitate the development of Von Neumann probes. As physicist Richard Feynman observed in his seminal essay, “There’s Plenty of Room at the Bottom,” there is nothing in the laws of physics which prevents building armies of molecular-sized machines. At present, scientists have already built atomic-sized curiosities, such as an atomic abacus with Buckyballs and an atomic guitar with strings about 100 atoms across.

Paul Davies speculates that a space-faring civilization could use nanotechnology to build miniature probes to explore the galaxy, perhaps no bigger than your palm. Davies says, “The tiny probes I’m talking about will be so inconspicuous that it’s no surprise that we haven’t come across one. It’s not the sort of thing that you’re going to trip over in your back yard. So if that is the way technology develops, namely, smaller, faster, cheaper and if other civilizations have gone this route, then we could be surrounded by surveillance devices.”

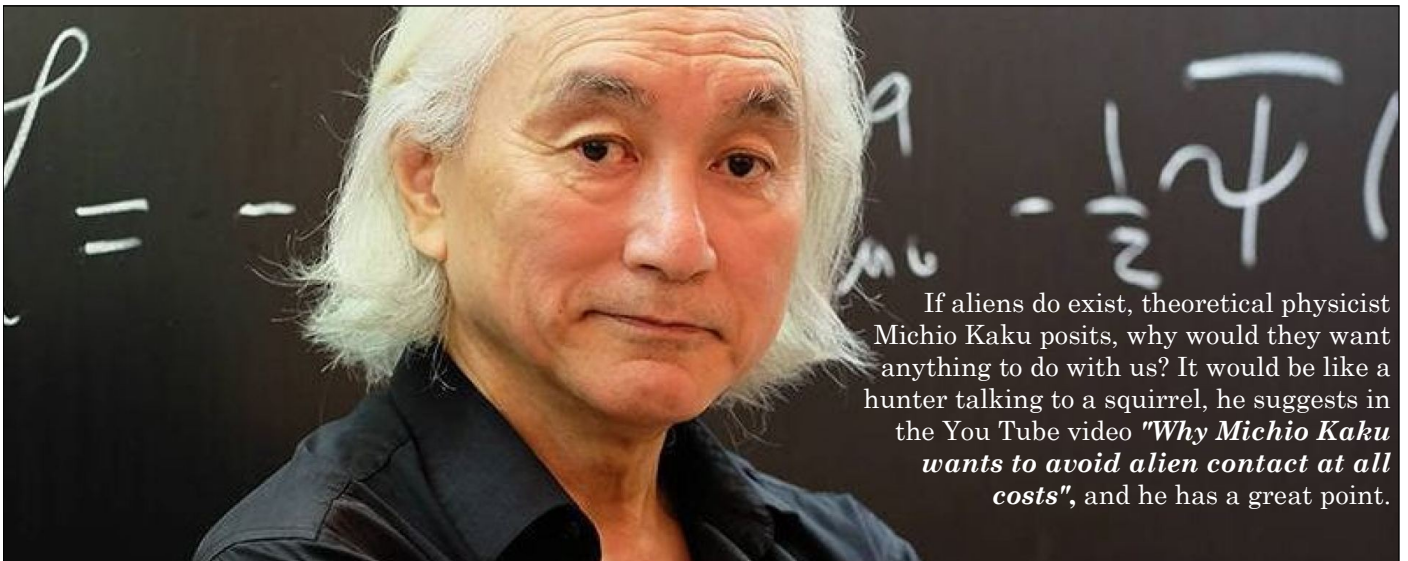
Furthermore, the development of biotechnology has opened entirely new possibilities. These probes may act as life-forms, reproducing their genetic information, mutating and evolving at each stage of reproduction to enhance their capabilities, and may have artificial intelligence to accelerate their search.

Also, information theory modifies the original Kardashev analysis. The current SETI project only scans a few frequencies of radio and TV emissions sent by a Type 0 civilization, but perhaps not an advanced civilization. Because of the enormous static found in deep space, broadcasting on a single frequency presents a serious source of error. Instead of putting all your >>>

eggs in one basket, a more efficient system is to break up the message and smear it out over all frequencies (e.g. via Fourier like transform) and then reassemble the signal only at the other end. In this way, even if certain frequencies are disrupted by static, enough of the message will survive to accurately reassemble the message via error correction routines. However, any Type 0 civilization listening in on the message on one frequency band would only hear nonsense. In other words, our galaxy could be teeming with messages from various Type II and III civilizations, but our Type 0 radio telescopes would only hear gibberish.

longer a problem. They merely take a short-cut through the galaxy. This would greatly cut down the transition between a Type II and Type III civilization.

Second, the ability to tear holes in space and time may come in handy one day. Astronomers, analyzing light from distant supernovas, have concluded recently that the universe may be accelerating, rather than slowing down. If this is true, there may be an anti-gravity force (perhaps Einstein's cosmological constant) which is counter-acting the gravitational attraction of distant galaxies. But this also means that the universe



If aliens do exist, theoretical physicist Michio Kaku posits, why would they want anything to do with us? It would be like a hunter talking to a squirrel, he suggests in the You Tube video *"Why Michio Kaku wants to avoid alien contact at all costs"*, and he has a great point.

Lastly, there is also the possibility that a Type II or Type III civilization might be able to reach the fabled Planck energy with their machines (10^{19} billion electron volts). This energy is a quadrillion times larger than our most powerful atom smasher. This energy, as fantastic as it may seem, is (by definition) within the range of a Type II or III civilization.

The Planck energy only occurs at the center of black holes and the instant of the Big Bang. But with recent advances in quantum gravity and superstring theory, there is renewed interest among physicists about energies so vast that quantum effects rip apart the fabric of space and time. Although it is by no means certain that quantum physics allows for stable wormholes, this raises the remote possibility that a sufficiently advanced civilizations may be able to move via holes in space, like Alice's Looking Glass. And if these civilizations can successfully navigate through stable wormholes, then attaining a specific impulse of a million seconds is no

might expand forever in a Big Chill, until temperatures approach near-absolute zero.

Several papers have recently laid out what such a dismal universe may look like. It will be a pitiful sight: any civilization which survives will be desperately huddled next to the dying embers of fading neutron stars and black holes. All intelligent life must die when the universe dies.

Contemplating the death of the sun, the philosopher Bertrand Russel once wrote perhaps the most depressing paragraph in the English language: "...All the labors of the ages, all the devotion, all the inspiration, all the noonday brightness of human genius, are destined to extinction in the vast death of the solar system, and the whole temple of Mans achievement must inevitably be buried beneath the debris of a universe in ruins..."

Today, we realize that sufficiently powerful rockets may spare us from the death of our sun >>>

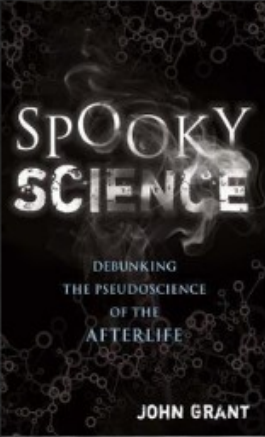
5 billion years from now, when the oceans will boil and the mountains will melt. But how do we escape the death of the universe itself?

Astronomer John Barrows of the University of Sussex writes, "Suppose that we extend the classification upwards. Members of these hypothetical civilizations of Type IV, V, VI, ... and so on, would be able to manipulate the structures in the universe on larger and larger scales, encompassing groups of galaxies, clusters, and super-clusters of galaxies." Civilizations beyond Type III may have enough energy to escape our dying universe via holes in space.

Lastly, physicist Alan Guth of MIT, one of the originators of the inflationary universe theory,

has even computed the energy necessary to create a baby universe in the laboratory (the temperature is 1,000 trillion degrees, which is within the range of these hypothetical civilizations).

Of course, until someone actually makes contact with an advanced civilization, all of this amounts to speculation tempered with the laws of physics, no more than a useful guide in our search for extra-terrestrial intelligence. But one day, many of us will gaze at the encyclopedia containing the coordinates of perhaps hundreds of earth-like planets in our sector of the galaxy. Then we will wonder, as Sagan did, what a civilization a millions years ahead of ours will look like...



John Grant

Skeptics of the supernatural will enjoy this humorous jaunt through the long history of scientific inquiry into paranormal and psychic phenomena. Life after death, spirit communication, the astral plane, reincarnation: on the relatively rare occasions when scientists have tried to apply their methods to the paranormal, they've often ended up embarrassed--fooled by obvious charlatans, deluded into making irrational and unsubstantiated claims, or frustrated in their attempt to find something that just isn't there.

John Grant--author of Discarded Science and Corrupted Science--investigates the pseudoscience of spooky stuff to fascinating and often hilarious effect.

www.amazon.com



With irrepressible enthusiasm and wonder, world-renowned physicist and futurist Dr. Michio Kaku takes readers on a fascinating journey to a future in which humanity could finally fulfil its long-awaited destiny among the stars - and perhaps even achieve immortality.

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The Space We Travel Through

by Science@NASA, www.nasa.gov

When sea-faring nations began to explore new regions of the world, one of their biggest concerns in making the journey safely was how to cope with weather.

They could harness the wind for power. They could rely on the Sun and the stars for navigation. They could build sturdy ships. But if a storm rose suddenly, they were at nature's mercy. More than five centuries later, our nation is once again on the cusp of exploring new worlds. And once again, one of our concerns about traveling long distances is the weather. Space weather. While space is a vacuum – it's not 100% empty. Particles, energy and magnetic fields travel through the void. Much of these emanate from the Sun's corona, as part of a constant outward flow known as the solar wind - which stretches well beyond the orbit of Neptune.

There are also high energy particles or cosmic rays in the mix, which travel vast distances from dying stars or supernovae. Earth's magnetic field and relatively thick atmosphere act as a shield against the most harmful forms of this radiation, but in space there is no such deterrent. If we want to travel through this space, we need ways to protect our astronauts.

These particles can affect our technology, tripping onboard electronics.

Dr. Yari Collado-Vega, Space Weather Scientist at NASA's Goddard Space Flight Center notes, "We are working hard to forecast when these particles will be at their peak, such as during solar flares or coronal mass ejections."

Acute exposure to these solar energetic particles is a serious concern for astronauts and instruments. Therefore, having a better understanding of when to expect solar activity is important for safely sending our astronauts and spacecraft through space.

Ironically, such space weather activity can actually protect against another threat to astronauts: The Sun's activity can block dangerous cosmic rays coming from other stars, which are constantly present – illustrating the complexity of the system NASA tries to understand and mitigate for our space travelers.

Over time, sea captains learned when to sail their ships and when to stay in harbor, based on their accumulated knowledge of the weather. It's more risky to be on the water in the Caribbean during hurricane season, and you'd want to consider avoiding the Northeast coast of America during the height of winter.

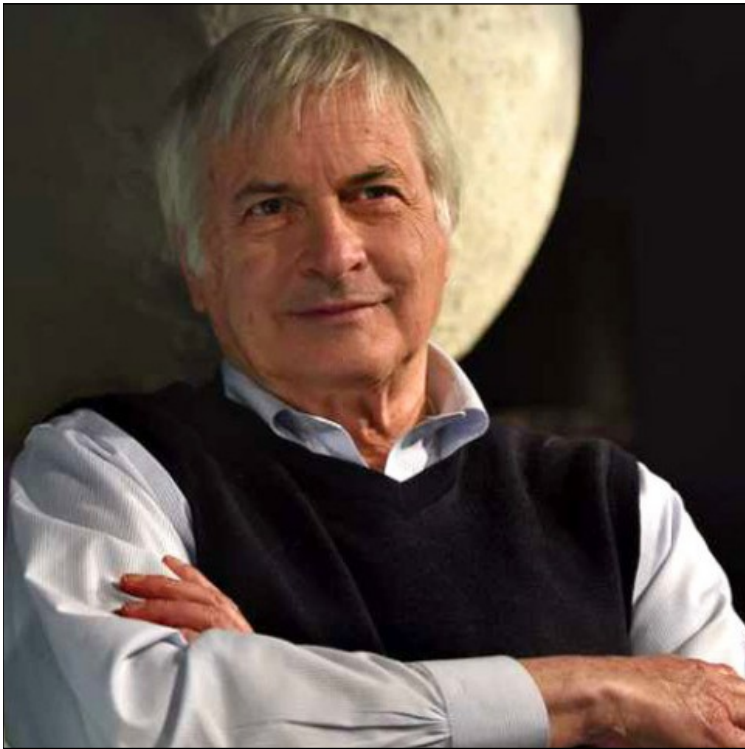
Dr. Collado-Vega says, "It's very similar to what we're doing today. We're constantly developing and testing new models to predict space weather. And we're constantly seeking new data to refine those models."

A host of heliophysics missions observe space from a variety of vantage points, not unlike terrestrial weather sensors, which work in tandem to paint a bigger picture of our space environment.

In August 2018, NASA launched the Parker Solar Probe to help us better understand the Sun's activity, especially what drives the solar wind, and how energetic particles get accelerated. This data could be used to improve models of space weather forecasting – ultimately helping us find new and better ways to shield our spacecraft and protect our astronauts.

Whether it was the oceans ancient ships traveled through or the space we will one day travel through, we know this: keeping a watchful eye on the environment around us is key to ensuring safe passage.

For more information about what matters in space, visit www.science.nasa.gov



"The bottom line is, like, one in five stars has at least one planet where life might spring up. That's a fantastically large percentage. That means in our galaxy, there's on the order of tens of billions of Earth-like worlds."

Dr. Seth Shostak
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Dr. Brian A. Sharpless

ASSOCIATE PROFESSOR OF CLINICAL PSYCHOLOGY

Dr. Brian A. Sharpless, Ph.D. is an associate professor of Clinical Psychology at the American School of Professional Psychology at Argosy University, Northern Virginia.

Through his broad research, teaching, and clinical interests in Psychopathology (esp unusual and rare psychological disorders) Psychodynamic Psychotherapy Dr.

Sharpless has published over 30 articles and chapters on common and lesser-known disorders, psychodynamic therapy, cognitive-behavioral therapy, professional issues, and the history/philosophy of clinical psychology.

His first book, "Sleep Paralysis: Historical Psychological, and Medical Perspectives" co-authored with Dr. Karl Doghramji, was recently released by Oxford University Press. His first edited book, "Unusual and Rare Psychological Disorders", is forthcoming. Dr. Sharpless has presented his work at national and international professional conferences and been interviewed for various TV, radio, and print outlets (e.g. National Geographic, Huffington Post, New York Magazine, the BBC).

<https://www.argosy.edu/clinical-psychology/locations/northern-virginia/faculty/brian-a-sharpless>

Does Ionized Air Create a Visible Dimensional World?

By Andy Wilson and Nick Howe, www.paranormalresearchinvestigators.co.uk

Once again, Andy and Nick are back in the dimly lit sticky world of that Carshalton pub with those hard wooden seats which, in days gone by, could have been used to torture the butts off medieval heretics. This time their musings and mumblings turned to the senses and waking up with a feeling of missing time or the appearance of strange marks on the body. To the causal eavesdropper it could be assumed the conversation is about last Friday night and the resultant hangover.

However, these babblings are about much more than alcohol induced hallucinations or are they? These are their observations, subjective opinions and ponderings concerning UFOs and hauntings and what they have in common, if anything? Do they make sense or add to scientific discussion? Hardly. More the stuff of scrawlings on lavatory walls than Einstein. Raise your kilts and read on MacDuff.

SULPHUR

The whole 'debate' kicked off with our intrepid investigators talking about smell and the paranormal. It strikes them that witnesses reporting hauntings or demonic goings on can often experience smells, particularly sulphur, interestingly people reporting UFO sightings sometimes notice this as well. Why?

It's argued that it's electrical discharges and the ionization of the air. Nick finds this particularly intriguing because two things that come to mind are firstly the connection with sulphur and the devil, which probably stems from the belief that volcanoes were the portals of hell. The other

observation is that when lightning strikes, people often report smelling something which is probably ionized particles and they can smell like sulphur. Nick uses one of those ionizers in his bedroom and it certainly gives off a smell which is reminiscent of sulphur, he added "it's like the smell you get at fairgrounds around the dodgems".



Poltergeists seem to possess the knowledge of two locations at once and take great delight in tormenting people with it.

So, is ionization what causes the smell? If it is, then you could presume that what makes UFO's appear or move is somehow connected to the appearance of apparitions. Does some unknown force or event cause ionization to occur as a byproduct of these phenomena?

This leads us nicely to the suggestion that if hauntings are 'time slips' perhaps UFO's are inter-dimensional as well? Certainly, there have been many proponents of the inter-dimensional theory of UFO's, people such as John Keel, who have noted that in witness statements relating to alien encounters, the supposedly 'alien being' often asks the unlucky 'victim' what the year is.

Furthermore, and before shooting off, witnesses report that the alien will say something along the lines that "I will see you in time"! It's as if time was more important to them than their location in a three dimensional space.

It could be a neat solution to the question of what apparitions and UFO sightings are and how they might be connected, in other words time slips encompass the 'past' and 'future' and that the forces at work may generate ionization which we perceive as the smell of sulphur. >>>

On the question of time slips, one thing confuses Andy (and it's not hard to do as a layman of science) and it's this: Take the case of the apparition of roman soldiers in a York cellar in the 20th Century. The Earth orbits the sun but over the centuries it will never be in exactly the same location in space. Does this mean there is no connection to location in space when time slips occur or is the phenomena strictly connected to the fabric of planet Earth only? If that's the case time slips would be a very small localized space bubble. There again, time and space could be merely creations of our own minds and the bubble analogy is fatuous. As to what triggers time slips, if they exist, who knows? Nick thinks Andy should stick to beer farts and awful smells while letting greater minds figure it all out. This moves us nicely on to sound.

SOUND

Folklore tells us that ghostly apparitions, and other unworldly manifestations, moan and groan and create a right carry on. OK, so poltergeists create scratching and knocking sounds but then there is a valid argument, which Andy and Nick support, which goes along the lines that they are different beings. Their view is that in most reliable sightings of apparitions they are silent. This suggests that when a time slip occurs, assuming this is an explanation for the appearance of apparitions, sound just seems to disappear altogether. There are no bird or animal noises, no background noise anymore just complete silence.

This provides a further correlation between apparitions and UFOs. Some UFO witnesses report sound seems to "just disappear" altogether when the craft moves towards them. What is happening in terms of apparitions, UFOs and time slips?

Is there some sort of interference or do people perhaps experiencing a dissociative episode? Perhaps, if it's inter-dimensional, it means sound, as we experience it is somehow not registering in our brain or cannot cross the veil of the time slip, that is, is a distortion between different dimensions crossing over into each other. Or do we need to pour cold water over all this? Thinking about it, most of the beer in the said pub tastes pretty much like the next subject in this stream of verbiage; water.

WATER

Another thing to consider is the link with water.

There's often water next to or underground at reported haunted locations. Some people theorize that there's something in the makeup of water that gives an energy to the surrounding area, in folklore water has sacred connotations but then we need water to survive so it's top of the 'must have list' and literally very much part of what we are. Nick chipped in by adding that there's a common held belief that negative ions increase in the atmosphere when having a shower which purportedly leads to a feeling of well being, a bit like that bedroom ionizer.

Interestingly, 50% of UFO sightings occur near large bodies of water or the sea and 15% of UFO sightings are near lakes and fresh water. So if you are an alien parasite on this planet, you're going to be hiding in the water, aren't you, in which case your UFO becomes an Unidentified Submersible Object. Good place to be out of sight and, as Andy states, we call this planet 'Earth', which is ridiculous, because it's 70% water. Some witnesses have even reported UFOs sucking up water into the craft so what's that all about? In Britain they would be taxed for this but this was reported in America so HMRC stand down.

Is there a connection between water, hauntings and UFO's or is it just coincidental? Does water somehow generate an unknown force which can, with some people, induce psychic experiences or alleged UFO encounters? Are some people susceptible or sensitive enough to experience paranormal phenomena when in the right location under the right conditions? Is water just a means by which UFOs/USOs conceal themselves? So many questions and no answers!

As an interlude Andy added that an interestingly high percentage of alien abductees have blood type RH negative and/or green eyes. He postulates that aliens are undertaking hybrid experiments from their secret underwater safe holes with humans in order to one day be able to live on the surface. Andy has a friend and work colleague who is RH negative and is keeping an eye on her for any strange behavior such as her little finger pointing up in the air like in the television series Invaders. End of the day Andy jokes he still does not know why he has not been abducted yet as he has green eyes and a large body of water and fat. He should be like candy to a kid to an alien but perhaps the excess beer is a pollutant and makes him an unworthy abductee. >>>

INVISIBILITY

More specifically, this invisibility is due to what the human eyeball, or brain, cannot process within the light spectrum. UFO's can sometimes be detected on radar, but not seen by the eye. Sometimes they are seen with the eye but they're not detected on radar, which means they might not have any mass. Regarding apparitions, you can't always see them but you can sense their presence. You feel that they're there with you. And yet other times you can see them. Do apparitions have mass? Who knows? On the other hand, people may not be able to see UFOs or apparitions because they don't exist, but then that would spoil the fun so we'll ignore that and press on with the rest of the mutterings.

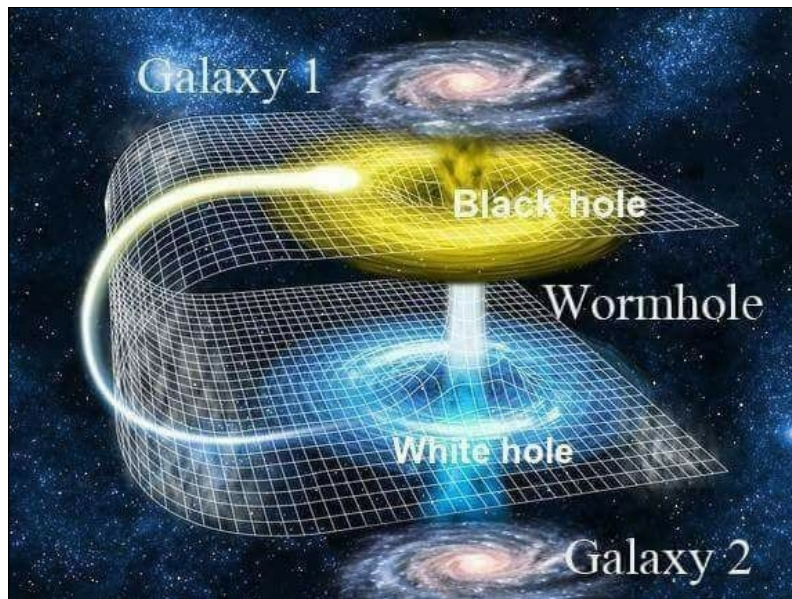
Nick points out that when people actually see ghosts, the level of visibility varies from totally solid through to vague mist like form. If that's the case, our current understanding is that the image is either reflected light or its transmitted light, is there another form of energy that we perceive as light? Andy is increasingly becoming convinced that apparitions cannot be photographed but the phenomena of 'shadow people' can, what the difference is God only knows but the cases he's studied has led him to this conclusion.

Another commonality is that both phenomena can disappear very quickly, within the blink of an eye a UFO and an apparition can disappear. An apparition can also be perceived to morph and change shape. There have been reports of UFO's morphing and changing shape as if they're some sort of fifth-dimensional object in a three-dimensional landscape. Could this mean ghosts and UFO's operate in a higher dimension to us? Could it be that time slips mean that these anomalies can pass in and out of our 'current' time-frame? And could that also explain why they can become distorted?

Maybe we are the fish in the pond with no concept of a world above and beyond, a place so vast that our small brains could ever fathom (the jokes on Andy and Nick at this point)? It might explain why our current laws of physics (in the dirty pond water) struggle to understand the paranormal. Poltergeist phenomena can appear to be in two places at once over a vast distance and UFOs can move at great speed defying gravity. Once again this brings us back to; time and space.

TIME AND SPACE

Using bar room level physics with a pint of lager



UFO's appear to move and disappear in a blink of an eye as if distance has no boundary.

and packet of nuts, Andy demonstrates to Nick the hypothesis that there is no linear location A to location B, all you do is curve the space until A to B is literally on top of each other. In essence, you can just basically leap up or down a very short distance or none at all if A and B are now touching one another. The light shines for Nick at this point as he used to have a mattress that did something similar.

Perhaps that's what these poltergeists, apparitions and UFOs do!

Poltergeists can apport small objects, sometimes through solid objects such as ceilings, roofs and walls, by curving space and time and move a small object from location A (pebble outside) to location B (inside home). Interestingly, small objects apporting from nowhere are warm to the touch and even hot indicating the object has gone through some sort of process before materializing. Perhaps it is the curving of space and the parallel location lines touching each other which cause the Sulphur smell and ionization of particles?

UFO's appear to move and disappear in a blink of an eye as if distance has no boundary. As discussed earlier, the occupants of said space craft have also known to be curious about 'when' >>>

they arrive to Earth rather than 'where' they are. If you travelled at 90% the speed of light from the nearest star system considered to offer planetary life Alpha Centauri (4 light years), it might take you 2 years to reach Earth but you might also travel back in time slightly as you approach Earth at such high speed and from such great distance. Some argue that is why UFO sightings come in waves or flaps and have a pattern of being seen in 4 year plus cycles.

Another pointless and interesting fact Andy likes to share is that ghostly apparitions and aliens have been described in good detail by witnesses except for one body part which is...their feet. Abductees never describe seeing the feet of the aliens and people rarely describe seeing the feet of ghosts. Could they both be part of the same hallucinatory phenomena or are they both just embarrassed and in need of a good pedicure?

TELEPATHY

According to eye witness reports, aliens and ghosts have another thing in common which is telepathy. Witnesses claim that ghostly entities or poltergeists have communicated with them through telepathy. The same goes for alien abductees who report that aliens have also communicated to them telepathically. So, what's that all about? Are witnesses delusional? Is it mental illness? Is it drugs? It could be argued that if the facts were presented in a court of law, circumstantial evidence suggests that far too many unconnected people from all parts of the world and at different times have experienced the same thing, suggesting the probability that these events have taken place or perhaps mankind suffers from a collective psychosis. So, there's either some serious strong swamp gas out there that we don't know about or there might just be an element of truth to this.

Nick trying to think laterally suggests here that if there is a connection or shared characteristics, may you state that a ghost could potentially be an alien or vice versa? For Andy, even better would be for deceased Bigfoot's (or is that big feet?) piloting UFO's which would conveniently unify the paranormal and crypto zoology field and make for a good comedy show at the same time. On a more serious note, there have been a number of sightings of Bigfoot and UFO's at the same time and locality. An interesting connection.

LEVITATION

Let's talk about getting it up in the realm of the paranormal. Apparitions can levitate, poltergeists can apparently levitate objects and obviously UFO's levitate or hover. (is anti-gravity at play here?) Let's not forget these phenomena can cause power outages to nearby electrical equipment. Do they generate an electromagnetic field causing the power outages? What is it that is being produced that is causing equipment to fail?

After over a century of investigating and researching the paranormal there is still no tangible evidence that a force such as electromagnetism is involved in paranormal phenomena. Rather than purchase an EMF meter one might be better served with a parrot on your shoulder when investigating cases. Andy and Nick do, the parrot also makes more sense than them and is far more adept at cheeky profanities. Animals appear to sense and react to spirits and also tend to sense UFOs a lot quicker than humans do. Again, what is it? What is it that they pick up that we don't?

Nick reminds Andy he is no Dr Doolittle and to be careful when it comes down to bringing animals into an investigation because we don't actually 'talk' to animals and they don't talk to us. So, it's only what we observe and how we are applying our own interpretation on to them. However, you do see animals react to tsunamis. Animals can obviously detect the rumblings and the sounds that we're not picking up and the change of air pressure etc. Right now levitation and the force, or forces, behind it are a complete mystery. Is it the same force involved in hauntings as it is in UFO phenomena?

PHYSICAL MARKS ON BODY

Poltergeists and aliens seem to like leaving physical marks on their victims. Claims include scratches in some hauntings and radiation burns and even implants when people come into close contact with UFO's and the occupants. The signs of the stigmata should also be thrown in here. What about electrical hyposensitivity? Psychics claim that they're more attuned with the spirit world and the environment affects them intensely. Some alien abductees report that they became psychic and more aware of their environment after their experience. So, is there a link? Or is it the manifestation of dissociative or a psychotic disorder. But how would this explain >>>

radiation marks or is there a simple medical explanation or the result of the mind on the body?

CONCLUSION

Overall, there are plenty of similarities between hauntings and UFO's. They can both produce horrible smells and produce silence during an anomalous event. Close proximity to water is common as well as ghosts and UFO's having the knack of suddenly vanishing from our eyes. Small objects and UFO's can suddenly appear out of nowhere suggesting the same force which could be manipulating time and space and causing anti-gravity effects is at play. Why is telepathy reported in both ghostly and alien encounters?

Is this indicative of the same neurological condition simply upgrading a hallucination from a standard Victorian ghost apparition package to new Alien 2.0 apparition?

Like always, more questions are raised the deeper you think about these topics and if you were to boil this discussion down to its basic components the common denominator would be the five human senses. How are our brains perceiving or misperceiving reality through our senses? This gives Andy and Nick an excuse to return to their local Carshalton Pub and discuss each of the human senses, starting with vision and how it relates to paranormal phenomena!



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Albert Einstein

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We look forward to hearing from you soon,

Andy Wilson and Nick Howe

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Toward a Big Theory of Knowledge

Professor G. Henriques Weighs In

By Maria Anna van Driel, Co-author: Prof. G. Henriques

It was April 2019 that I became tremendously excited when I encountered Professor G. Henriques's "unified theory" of psychology. Not only does Dr. Henriques offer a new way to think of psychology that ties together its many different perspectives, it is also placed in a novel, big picture view of science. This big picture view is called "The Tree of Knowledge System" and might hold the key to a consilient bridge between the "hard" sciences of physics and biology and the "soft" sciences of psychology and sociology or anthropology. Given the sweeping scope of his proposal and the fact that it has the prospect of offering a new coherent language system that connects the myriad of scientific field, I reached out to contact him and gained the privilege to meet Prof G. Henriques via a Skype conversation and learn more about his vision.

Gregg Henriques is a full professor, PhD, and a core faculty member in James Madison University's Combined-Integrated Clinical and School Psychology Doctoral Program. For over 20 years Professor Henriques has been passionate about the possibility of developing a more integrated and coherent way of approaching the science psychology and the practice of psychotherapy.

He first published his approach for developing a theoretically unified view of the field in 2003, and has been expanding on that view and its implications ever since. In 2011 he outlined his approach in the book, *A New Unified Theory of Psychology*. Since that time, in addition to authoring professional publications, professor Henriques has developed a blog on Psychology Today called *Theory of Knowledge*, which offers regular posts on a wide variety of topics, including updates on the unified theory to general issues in philosophy to morality to politics to current issues facing the field of psychology.

For more information on Prof. G. Henriques, his books and his work www.gregghenriques.com



In his book "A New Unified Theory of Psychology" Prof. G. Henriques shows his terrific ability to describe, analyze, and summarize without getting bogged down in study details. www.amazon.com

Welcome Professor Henriques, I appreciate the time you are taking for this interview.

Q: Can you tell us about yourself? Who is Professor Dr. Henriques?

Prof. Henriques: Well, my specific specialty or area of training, is as a clinical or professional psychologist. I work with adults and adolescents who are dealing with problems in living and struggles with anxiety, depression, and relationships. I am also a theorist about psychology in general. In my graduate training, I ended up asking what turns out to be a very complicated question, which is: "What is this thing we call psychology?" I realized that there really was no satisfactory answer. That is, unlike physics which is the science of energy and matter and their interactions, or biology, which is the science of life, there really is no clear answer to the issue of how to define psychology and I found that fascinating.

Q: Were there any key defining moments for you?

Yes, I have had a few moments of intellectual "light bulbs". In undergraduate in the late 1980s, I got interested in gender studies and feminism and that was fascinating. >>>

Then, when I took a course on psychotherapy integration in early 1990s I started to really become aware of how fragmented the field was. That led me to my scholarly passion of exploring why psychotherapy and then psychology had so many different approaches and lacked a shared, center of understanding.

Then, in 1997, I sketched out my first diagram of the Tree of Knowledge System. That changed everything for me, as it gave me a new way to see the world in general and the field of psychology in particular. The Tree of Knowledge divides the universe into four different dimensions of existence called Matter, Life, Mind, and Culture. That allows you to divide up the complex adaptive landscape in a different way than has previously been done and that new way allowed me to start arranging the puzzle pieces of psychology in a new way.

Q: What inspired you to write the book “A New Unified Theory of Psychology”?

Prof. Henriques:

Well, I had been publishing professional articles on my theory since 2003. And I had also learned an enormous amount about how to help people understand my theory by virtue of being a professor and Director of my doctoral program. One of the great challenges of my work is that it is complicated and has many facets and introduces a number of new ideas. For example, the “unified theory” consists of four interlocking ideas.

The Tree of Knowledge System is one, but there is also Behavioral Investment Theory, the Influence Matrix and Justification Systems Theory (previously called the Justification Hypothesis). Understandably, students would get challenged learning this new language and learning how to apply it, all while they were trying to learn other ways of seeing the field. After I had developed an outline for putting these puzzle pieces together, then I wanted to organize that into a book form,

both for them and for the larger field, so folks could see the outline of the system I constructed and how it worked.

To get a sense of what I am trying to do, it is useful to use the metaphor of music and musical instruments. When I was learning about the different models in psychology and psychotherapy, I experienced them each as playing a different instrument. When you listen to the instrument it’s like *oh that’s really beautiful*. But then you try to combine all the instruments together when there’s no manager, you’ve just get noise.

I was really interested in the idea if we actually could generate music out of these different instruments. One way you would do that is to create

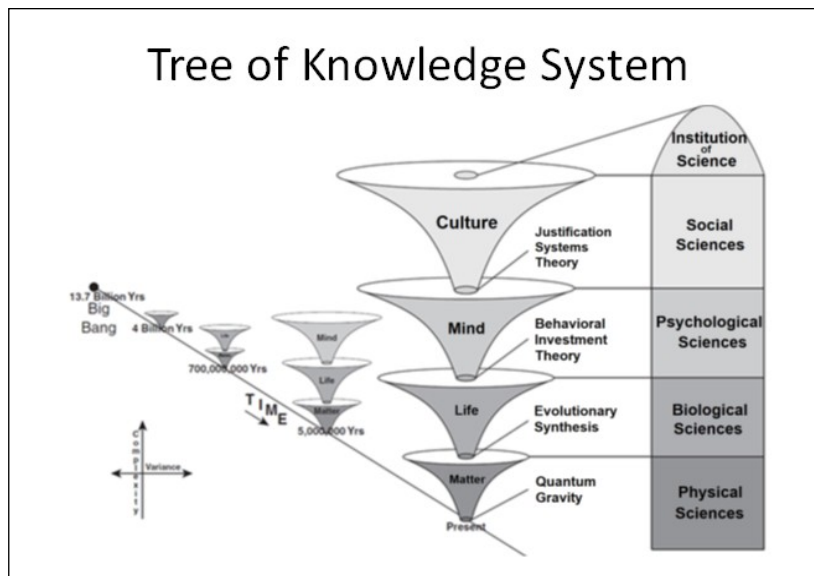
a Meta picture that would allow you to put the pieces, the instruments, together on the same tune and then music arises. That was what I was thinking, that is what inspired me to write *A New Unified Theory of Psychology*.

Q: You are granting The Next Truth with the

honor of being the first to announce your new book which is titled “The Problem of Psychology and its Solution”. Will you reveal to us some of the content?

Prof. Henriques: Sure. My 2011 book focused on what might be called the “meta-theoretical problem.” That is the problem of how do we assimilate and integrate the various major schools of thought like cognitive science, behaviorism, humanism, and psychodynamic theory into a coherent picture. That is, how do we take these instruments and the music they can offer and harmonize them into the same larger tune.

My current book, **“The Problem of Psychology and its Solution”** is focused more directly on what might be called the “metaphysical” problem. This can be thought of as the language system problem or the problem of how we define >>>



our terms. Most directly, it focuses on defining the fields core concepts, such as behavior, mind, and human consciousness, and doing so in a way that allows folks to “speak the language” of a unified theory.

What I'm basically arguing in here is that there is no definitional system that is up to the task of how to coherently define these terms in any way that makes sense in relationship to one another. I think I have figured out a solution what can solve this obstacle in psychology. I think that a major problem lies in the fact that we don't know how to define our terms and that the solution is this new language system that can define them.

Q: With your upcoming book do you want to turn it all into one kind of science instead of all those little branches?

Prof. Henriques: I think we can have a much more unified science than we currently do. Currently, the field exists in a state of “fragmented pluralism,” meaning that there are almost an infinite number of languages for the field. I am hoping we can move to a more “integrated pluralism” that allows for a much clearer understanding of the core or center of the discipline and then a healthier pluralism of ideas spreads from that core center.

To see what I mean we can reflect on where physics was before Newton, where people were doing a lot of scientific ‘things’ and had a lot of different ideas but Newton did some remarkable things. He organized a huge branch of the field of physics matter in motion and generating a really beautiful consolidation of all so that physicists then could agree. Before Newton, folks did not agree on how to understand matter in motion, but after Newton, physics became “paradigmatic” which means there was a shared set of understanding. I do believe that we can achieve a shared, paradigmatic understanding of what psychology is about and how to define its core concepts in a coherent way and how to organize the key insights from

the major perspectives effectively.

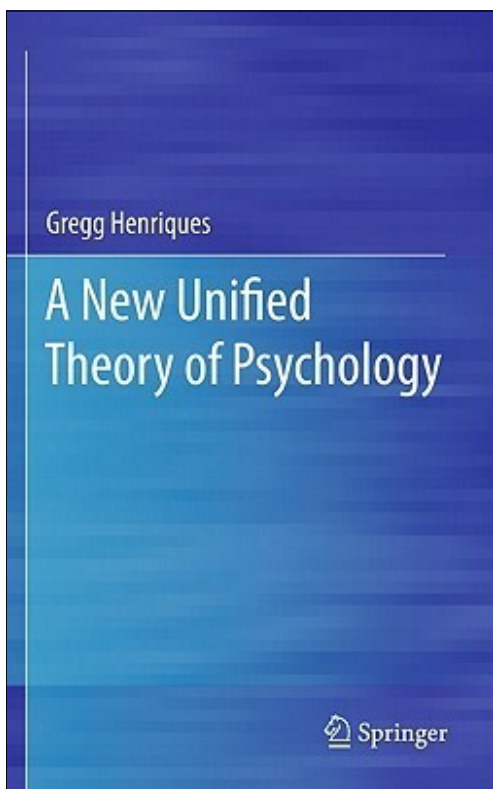
To show what I mean, I focus on confusion regarding the terms mind and behavior and what they mean in different systems and how we can use the big picture afforded by the Tree of Knowledge to sort out the issues. I also explore the complex relationship between animals and humans, between science and consciousness, and between facts and values. I use the conceptual insights from the unified theory of psychology as a language system and a guide to for how to define a science of psychology and to achieve a coherent practice of psychotherapy that draws from the best of the best.

Q: Are you writing your upcoming book with a particular audience in mind or will it be accessible for anyone who is interested in psychology?

Prof. Henriques: The book is being written for those with some background in psychology who are concerned about its state of fragmented pluralism and want to understand why it is and what a more unified view might look like. It is also written with a larger audience in mind, although I am not sure how broad appeal it will have.

The larger audience is the group of individuals who are concerned about the general fragmented state of knowledge in psychology, the social sciences and philosophy. I think many people recognize that the postmodern or fragmented pluralism that characterizes the state of knowledge in these disciplines is problematic. And it may well be contributing to what some, like Professor John Veraeke call a *meaning crisis*. I think the problem of psychology turns out to connect deeply to all of these issues and thus is solution sets the stage both for a greater consilient view of knowledge in general and for overcoming the problem of fragmented pluralism and advancing a healthier and more integrated vision of human knowledge in general.

Along these lines I lead a group called the Theory Of Knowledge Society, which consists of a >>>



group of academics from across the disciplines who are dialoguing about how to generate a more holistic, consilient vision of science. They are interested in how the Tree of Knowledge System, with its novel claim of four dimensions of existence, might be an important solution and might allow for a much more effective bridge between the natural and social sciences than has been achieved up until this point. That is, it might move us effectively toward a “Big Theory of Knowledge” in general.

Q: Do you have a large following? I would think that will take a while before everybody is agreeing with a new language.

Prof. Henriques: This is accurate, and it is a challenge, no doubt. There are several folks who are interested in my view, but no it has not achieved a large following. I think that what needs to happen is that I need to work more on both effectively communicating this complicated system and to help people see why the practical solutions that follow from it are highly valuable. That is one of the reasons I shifted focus for the last seven years and have been blogging on Psychology Today.

I think there are a large number of people who sense that we are living in this state of deep confusion and are seeking better ways to cut through all the information and organize it in a way that allows for better understanding. I think the Tree of Knowledge System can do that. I am just working out ways of messaging that truth so that folks

can grasp it and they can start to see that it has applications that really matter. For example, I have focused quite a bit on applying my theory to depression. It is fascinating to me how confused we are about that concept. I explain why the unified theory readily characterizes depression as a state of behavioral shutdown and how that can help people deal with it in a much clearer way.

According to the World Health Organization, depression is the number one global burden of illness. It is striking to me and a bit disheartening

to see how much confusion there is in defining and talking about this very important and prevalent condition. One of the things the unified theory can help us do, is get our mental health concepts framed correctly. That is crucial and has lots of real-world implications.

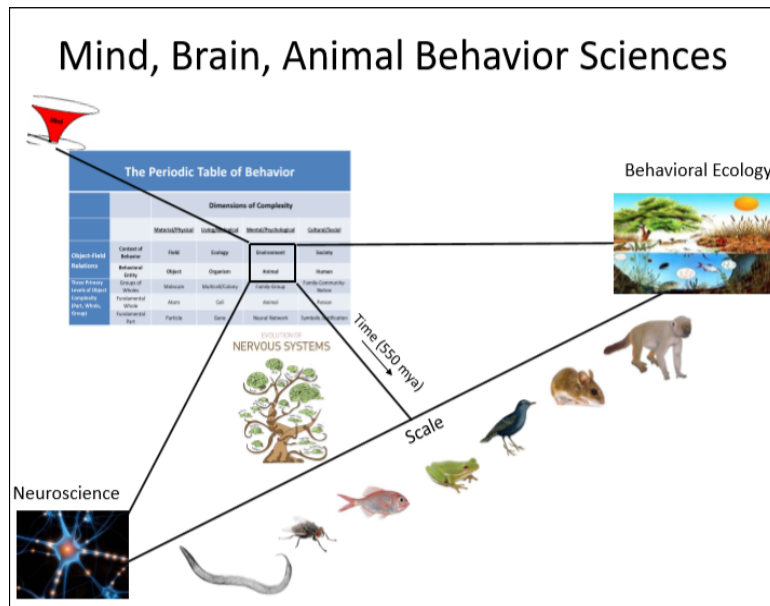
Q: When do you think your new book “The Problem

of Psychology and its Solution” will be available, where will it be published?

Prof. Henriques: I don’t have a publisher yet and I am still working on fine tuning my “voice” in the work and laying out the argument. I have all the pieces and have drafts of most of the chapters, but it has not quite been formed into a coherent whole yet.

But, I am hopeful that I will be finished with a reasonably complete draft by the end of this year and then I will look for a publisher. Hopefully it will be via Amazon by the end of 2020.

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