Universal Translation

Detection of Polycyclic Aromatic Hydrocarbons in Neutron Star and Pulsar Emissions Using Quantum Symbolic Spectrum Analysis

LANGUAGE OF THE STARS
Scot D. Forshaw

Universal Translation - Detection of Polycyclic Aromatic Hydrocarbons in Neutron Star and Pulsar Emissions Using Quantum Symbolic Spectrum Analysis

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Illustration 1: Image extract of "Quantum symbols" produced by quantum compressing emission data from the PSR B0329+54 pulsar and visualisation by quantum symbolic encoder

Abstract:

Can the building blocks of life, matter and human language be found in the signals, motion and gravitational interplay of cosmological forces such as planets, stars and galaxies? If, as many scientists claim – "we are made form star stuff", then how might one go about testing that hypothesis in any way that makes sense? It is one thing to say that Planet XYZ has high levels of carbon or some such life giving substance, but it is quite another to say that carbon found its way to earth and contributed to the primordial soup that hypothetically gave us life. Much of the academic published material on Xenolinguistics is generally of a non experimental or philosophical nature. Detailed publications by NASA et al. have previously postulated that Polycyclic Aromatic Hydrocarbons (PAH's) are abundant in the universe and suggest their likely role in the formation of life itself. Taking these postulations further, this paper documents the process of quantum symbolic data analysis and how the author for the first time employed a radically new quantum universal translation technique and discovered that many primordial chemical and elementary substances could be identified to be present in the signal emissions of Pulsars and Neutron Stars, thereby lending further evidentiary support to that hypothesis. The paper also details the further discovery that often within the chapters of these quantum books lay encoded huge volumes of literary and theological references, some of which had direct reference to the mythological, geographical and even theological significance of the asterisms within which the stellar objects are associated. The question asked – and for which hypothesis is offered, is how does that language emerge, travel, communicate and manifest? The suggestion put forward herein is that the energetic and chemical language of the cosmos at large is fundamentally encoded into everything we consider as reality. That gravity itself represents a self creating 'Quine' like emergent field that is able to communicate and replicate these codes across the depths of space, and if one looks at the big picture 'and squints' the words it writes are present in everything we experience. A third and final postulation is on the origin and structure of ancient Chinese symbology itself. The suggestion of this paper is that the construction and geometrical configuration of Chinese letters and words is perhaps the result of geometrical and energetic patterns that are built into the very structure of energy, Earth, matter, conscious process, life and the Cosmos itself.

Keywords: Gravity, Ancient Chinese, Quantum, Pulsar, Information, Xenolinguistics, Elements, Chemical, Quantum, Symbology, Polycyclic Aromatic Hydrocarbon, Quine, Language, Evolution, Egyptology

Introduction:

Quantum Data Analytics or 'QDA', provides a unique and powerful way to visualise and process large scale mixed source datasets. From my perspective, the underpinning postulate of a quantum analytical approach to data analysis is that no matter how diluted, how damaged, how convoluted or abstracted the relationships in a sampled dataset may be, if the sources that created the data sets are related in any way at all – by correct application of quantisation technology a relationship can be detected that would in most cases elude non quantum approaches.

Name that tune

As an example, consider a game that humans find quite easy such as guessing the name of a song from a single opening chord. To emulate this seemingly simple task for a classical search algorithm would require in general an iterative approach in which the sample is compared against every musical composition in a corpus of songs. If by chance the matching song is earlier in the corpus data set then the search may perform well, if not then the search could digress into an exhaustive search. If you now complicate the search by obtaining a sample chord pattern that was captured at a different resolution than the reference corpus, the ability to find the matching song in any reasonable time period is drastically impaired.

A little more on Quantum Memory Models - QMM

A quantum memory model is something very different than the iterative or procedural approach mentioned in the previous paragraph. The QDA approach has a centralised memory system that performs the role of both recognised, and recogniser. All data presented to the system is – *for want of a better word*, "atomised". By this I mean it is pushed through a conversion and compression process which both creates an extremely small memory file of the data itself and at the same time creates a set of neural pathways that are in themselves probabilistic amplitudes of input sample segments which can be stimulated or selected at a later time in order to recover memories of the original data that created them, 'AND' by a process of quantum tunnelling simulation, be collapsed into alternative memories in response to new stimulus. In the simplest terms, a small collection of quantum neural pathways that are created by one data set, can be collapsed or 'recovered' into may alternative yet equally valid memories by new stimulus. This allows huge amounts of data to be added to a single neural collection without adding considerable extra overhead.

"*with few exception the created always contains elements of the creator.*"

For example: If a neural pathway collection of 50 neurons currently stores 1000 images, adding a further 100 images may only require the addition of one or two new pathways in order to be able to allow the system to recognise all 1100 images in the future with a high probability of accuracy. Perhaps it is worth impressing upon the reader that QMM is 'inaccurate' by design. Why? Because error in recognition is the driving force of a cyclic system. If the memory is recovered and matched 100% then the system has no incentive to keep looking? Like the armature of an AC motor, if all magnets and fields aligned perfectly then motion would stop. A QMM keeps on storing, keeps on recalling and keeps on reconfiguring itself. This unique method of data storage and recollection allows QDA to observe "the whole picture" not just an X,Y coordinate at a fixed time and place. It allows the quantum neural network to function as both creator and created at the same time – because as this paper shall explore, with few exception the created always contains elements of the creator.

Quines, emergence and Gravity as information

Before moving onto the experiments upon which this paper is focussed, I would like to

briefly discuss the general idea of how information in the universe might be created, communicated and replicated by a process of energy exchange and quantum interference. A process though amazingly resilient and predictably stable, also allows a near infinite scope of entropy to form into new, independent and co-dependant systems. Forget the "the what came first" arguments, for they are academic folly. Instead "squint" and look at the big picture.

A Quine (Wikipedia 2016) is generally defined as a computer program that takes no input and generates a copy of its own source code. There a number of sub versions of quines, r-quines and m-quines and an exhaustive discussion is beyond the scope of this paper. The important point is that of all the primordial processes in the cosmos, the emergence of gravity at any scale is inherently a form of quine.

Gravity by the same token being the 'entity' that creates matter condensation and in turn that matter creating more gravity ad infinitum operates very much like a quine. I use the term 'entity' because from my position no classification has been put forward to assign gravity the title of "force" or "particle", contrary to this the author sees gravity as an emergent 'form', without bias or choice, and therein that process lies the problem, the argument and the solution to the universal understanding that at the most primary level – "all things are created equal, without bias and without judgment of purpose"

As is perfectly simple to understand, Gravity creates in its own image. If the foregoing is true, then the next question is why are there so many different things? The answer simply lies in perturbation. If you "squint" and look at the big picture, you see that the entire cosmos is a single connected field which is not empty at all, despite there being nothing there. Although universally connected, there are of course systems that are so stable that they appear "separate". A Galaxy, a Solar System, a blood cell ... there really isn't an observable stable system that cannot be considered symbiotic at some

scale with another. It is, as was discussed by Forshaw in The Third State – Toward a Quantum Information Theory of Consciousness (Forshaw 2016), this 'Unity Magnitude Scale' which determines the 'ontology' by which we can judge the behaviour and purpose of 'any' system, be it numerical, atomic, electro magnetic, biological or galactic. Andromeda from the position earth appears little more than a point of light, though clearly it is not. The premise of perturbation is quite simple:- When several systems of gravitational potential interact, they affect each other in such a fashion that their "offspring" is for the most part recognisable as a planet, but in the same way as our own offspring appear "human and has almost identical form and function" – they are also simultaneously very different individuals. Quantum information theory from this perspective is the study that the replication process has only to be "good enough" as to ensure the function of the replicant. Like all biological life, mutations occur, changes take place and sometimes evolution makes a step in a future direction. It is of extreme importance to recognise the implications of "multiple systems" interacting because like humans, diversity of "offspring" is dependant on the mix of genes input. This is perfectly transferable to gravitational aspects of frequency, matter, shape and cyclic system formation.

How this applies to Quantum Data Analytical approaches

Quantum data analytics applies this concept to the study of information as a whole and not as discreet points. If enough stability is transferred, the results will "probably" be recognised. Whilst I appreciate that is hard to fathom, especially when you think that the purpose of data analytics is "accuracy" – but fear not... You do it every day when you look at an Orange. One of billions in the world, totally unique in breed, taste, size, skin and shape, yet with 100% probability your tiny brain see's it and says "yes that's an orange". As follows, these techniques were used to analyse the signals from several pulsars and neutron stars, as well as

the direct observation of entire asterisms leading to the discovery that even in such remote patters of energy and information was to be found the signatures of minerals, elements, words and language – all seemingly with highly accurate direct and semantic correlation to the scientifically, astrological and theologically accepted beliefs of the nature of the objects themselves.

The Universal Translator

Quantum Symbolic Analysis of PSR B0329 + 54 & SGR 1900 +14
(Only PSR B0329 +54 Process Documented for Clarity)
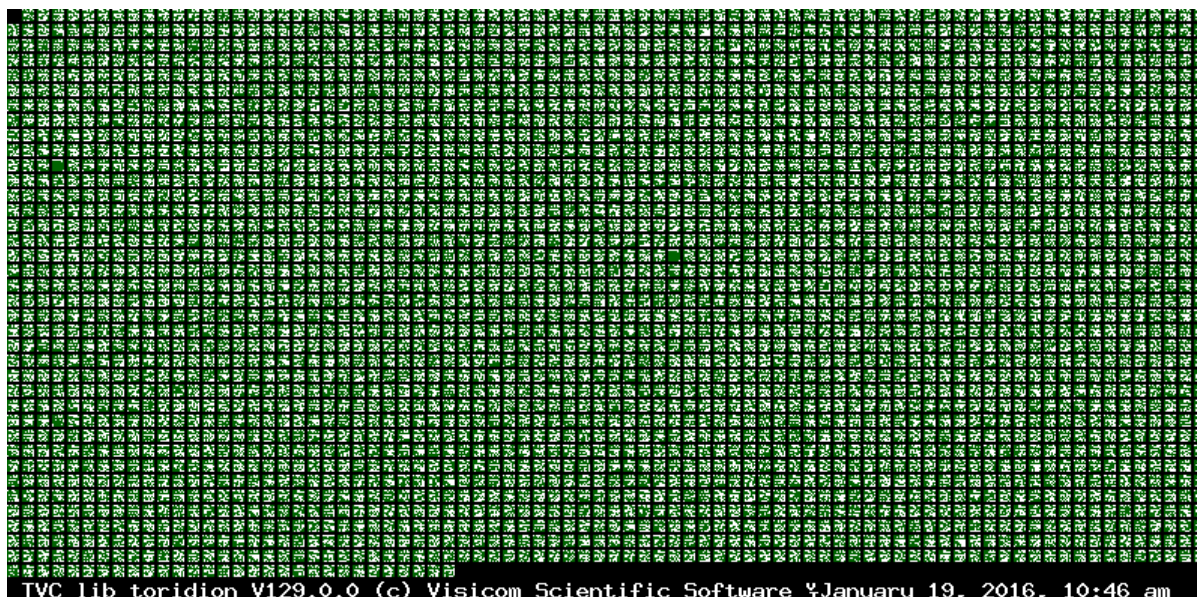
Illustration 2: Raw quantum symbol set of 3 second sample of PSR 0329+54

PSR B0329 + 54 (Wikipedia 2016) is a Pulsar approximately 3,460 light years from Earth.
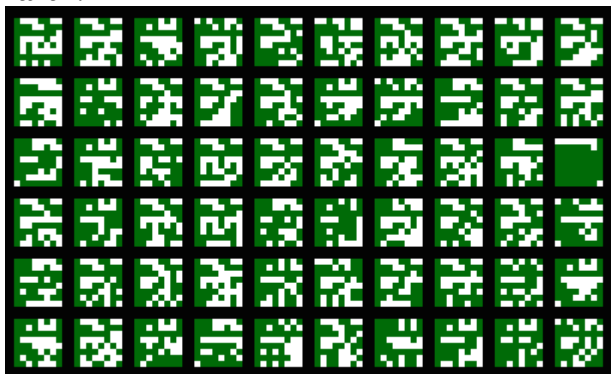

Illustration 3: Magnified view of portion of symbol set in Illustration 2

In 2015 using sonified data (Jodrell Bank 2016) obtained via the Jodrell Bank Lovell Radio Telescope I began a process of analysis to determine what language, geometrical or mathematical information may be forthcoming in the emission data of this popularly observed celestial object. Interferometry and spectrum analysis long being understood ways by which compositional information of distant stellar objects may be obtained by superimposing observational signals from multiple separate sources. This superimposing causes wave PAHse relationships to construct or deconstruct in such a manner as to facilitate accurate measurement of many aspects of the signal origin. The purpose of this exercise was to determine if the convolutional nature of the quantum memory technology underpinning the storage structure of the Toridion QMM could be levered to infer similar or greater detail using a single frequency source of data as opposed to multiple receivers.

Committing data to the Quantum Memory Model

The first task is to commit the source data to the quantum memory model. Toridion accepts data in any format however for obvious reasons RAW data is required for analysis applications. In the case of PSR B0329+54 the audio data from Lovell was uncompressed and saved in a raw unsigned binary format without any header data. In this format the data is simply the raw bytes representing the amplitudes of the sampled signal without timing information. For illustration purposes, the raw binary data was encoded by the T-AV128 and TQS-64 Quantum Symbol Generator and is depicted in Illustration 4. The image shows the rather meaningless nature of the symbol set which is essentially an 8x8 bit mapping of amplitudes arranged in a grid. By contrast, illustrations 3 & 4 show the rich and diverse symbol set produced after storing the sample data in the quantum memory system.
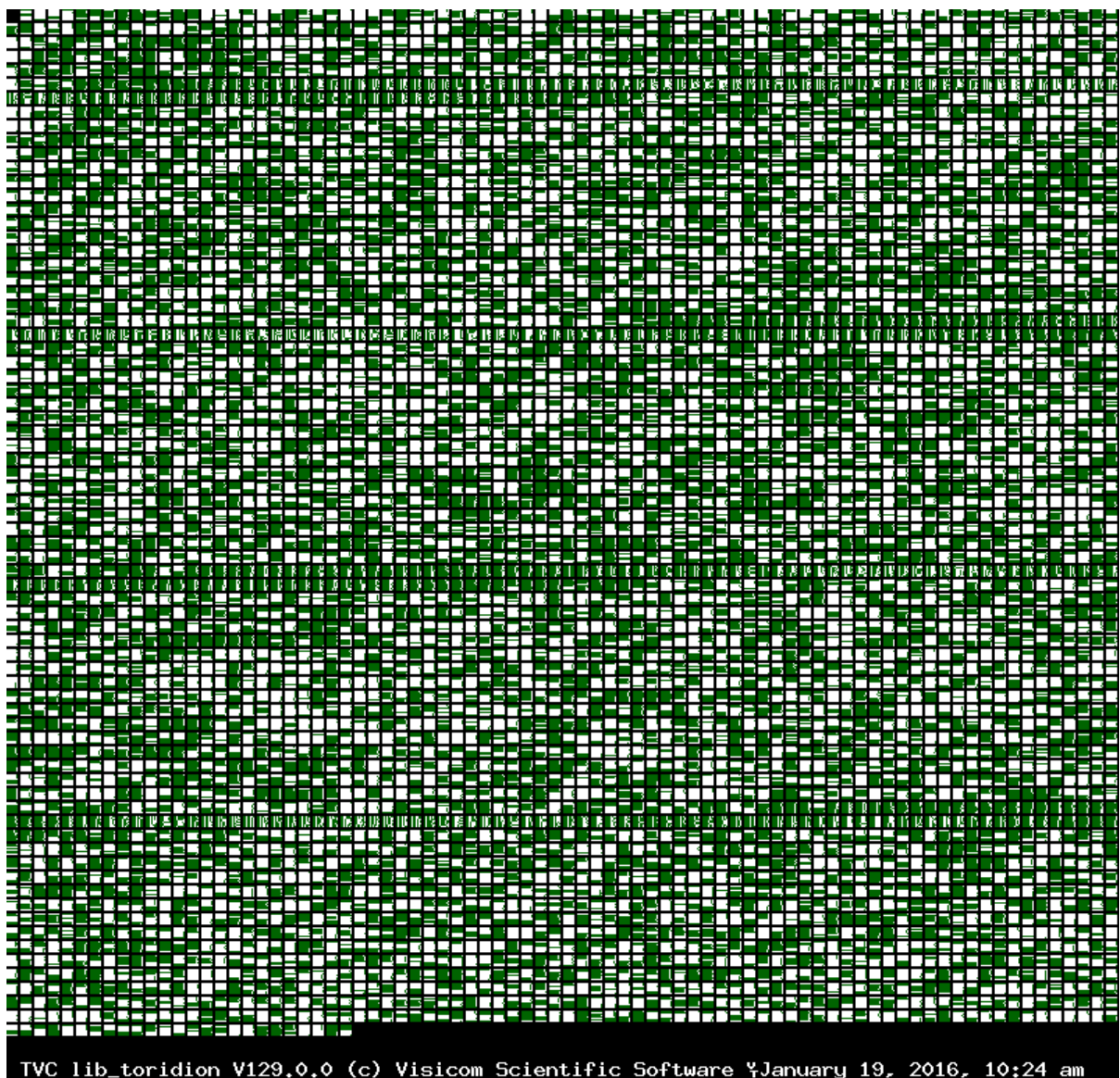

Illustration 4: Symbolised RAW binary source data shows that the non quantum format holds no discernible information.

When data is stored in the quantum memory architecture it undergoes a severe transformation. The process first compresses the data stream by a 2:1 ratio by applying a unique quantisation algorithm. This quantisation process results in a new target file that is exactly 50% of the size of the original in all cases. This is achieved by the Toridion encoding formula which treats the input stream as a stream of virtual particles.
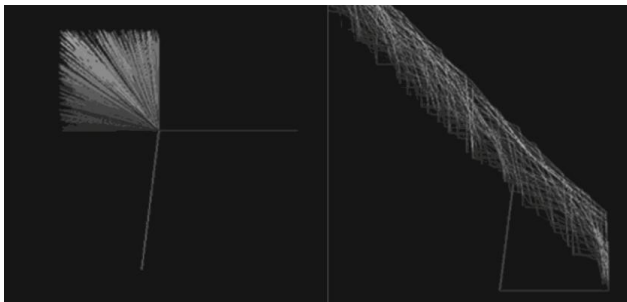

Illustration 5: Visualisation of virtual particle at maximum velocity

The virtual particles are effectively accelerated to extreme velocity until they spontaneously 'virtually' radiate at high energy. This 'radiation point' is of course a simulated virtual point at which the particles would begin to produce
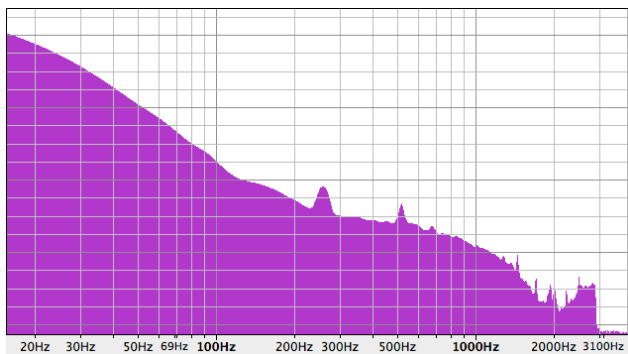

Illustration 7: Raw binary data logarithmic spectrum analysis

Once the data is stored in the quantum memory system the residue of the operation is a single 2:1 compressed data block and a newly formed quantum neural network comprised of a matrix of amplitude scatterings recorded as the original data was subjected to the virtual process. Illustrations 7 & 8 show a logarithmic

irreversible high energy radiation if they were for example part of a high gravitational system or collided at high velocity in a particle accelerator. The two productions form this simulated collision are :- A single 2:1 compressed Toridion data byte and a complex scattering pattern that represents the absolute amplitude scattering of the virtual particle.
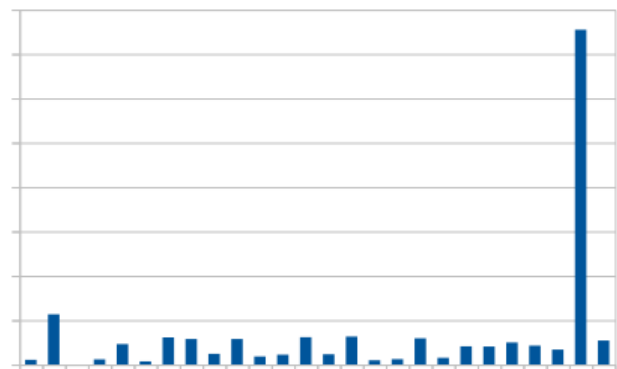

Illustration 6: Amplitude scattering pattern of compressed virtual particle

In the illustration 5, the destruction waveform pattern of the compressed particle at the moment of maximum compression and in illustration 6 the amplitude scattering pattern created can be seen.

spectrum analysis of both the original raw data and the now quantum compressed virtual data. As is evident from the graphs, the quantised version now shows some highly defined features compared to the original raw data.
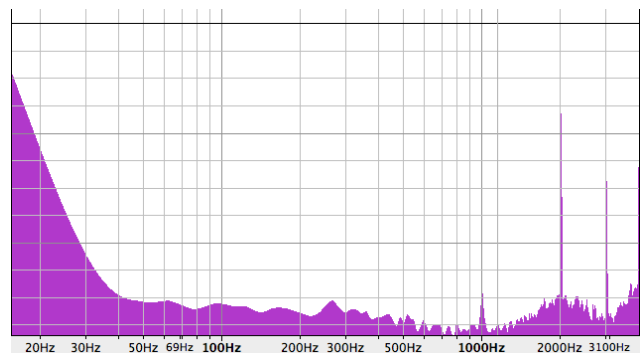

Illustration 8: Quantum data logarithmic spectrum analysis
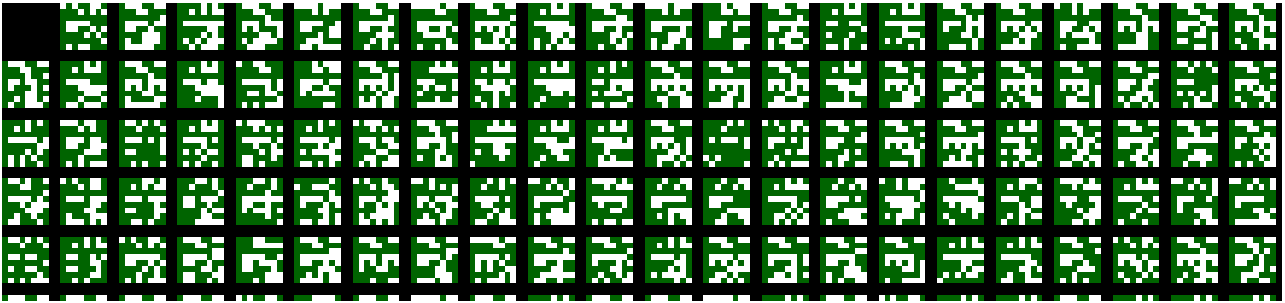
Illustration 9: Processed quantum symbols

Illustration 10: Raw quantum symbols

Having compressed the signal data into a new quantised format, the next process is to generate a symbol set. This is achieved by the Toridion T-QS64 Symbol Generator a 64 bit quantum byte in byte out graphical rendering engine that visualises the data as a set of 8x8 characters. Illustration 2 shows the entire symbol set for the PSR0329+54 sample data in the raw 8x8 output format. Having generated the symbols these are now optionally processed to enhance resolution. The filter is a simple convolution matrix filter that scales and smooths the characters and illustration 9 shows the final processed symbols and illustration 10 the source symbols as generated by the system. Having generated a complete quantum chapter set (see appendix A), the information is now ready to be interrogated. Before the next process I should like to discuss the nature and form of the symbol sets themselves. As discussed earlier, the premise of using quantisation to analyse data is to introduce a new paradigm to the way in which data can be visualised and by consequence the information that can be learned from that. Linear methods rely on sample frames, absolute values, Fast Fourier Transformations and pattern recognition to identify specific signals, frequencies and possibly interesting features. The main drawback discussed is sheer computing overhead introduced by having to walk the entire landscape and constantly keep checking your compass. The quantum solution to this is an approach called tunnelling. Tunnelling is like drilling a tunnel through the landscape sideways in order to find the lowest point. The A to B distance of a tunnel on a sphere is always less than the rhumb line distance travelled. Also because the distance is finite, regardless of the landscape above the tunnel, so as long as a constant speed is maintained, the tunnel route offers a guaranteed fixed time complexity. The walk the walk route (though more accurate) will never out perform the tunnel route. When data is compressed to a probabilistic quantum format the accuracy of the information contained is compromised in favour of a near infinite probability resolution. If the journey is between 0 and 1 (as in a Qubit) then the quantum compression holds an amplitude scattering bounding box that frames the energy of the virtual particle to a set of limits that are theoretically possible and therefore in simple terms the container holds the expression of a value that spans the range of 0 to 1 with near infinite steps of fidelity.

Whilst infinite steps of fidelity sounds a grand thing indeed, the truth is far from it. As the case may be it transpires that there is no place for infinity in any quantised model. Although the theory of a perfect gradient between 2 points sounds plausible, it is trivial to realise that no such state exists in reality – the matter energy state remains the same, only the 'scale of observation changes'. Everything is digital and analogue is merely a wonderful creation of the conscious approximation process. Like it or not, click by click, atom by atom, quark by quark, the universe ticks with synchronous digital precision.
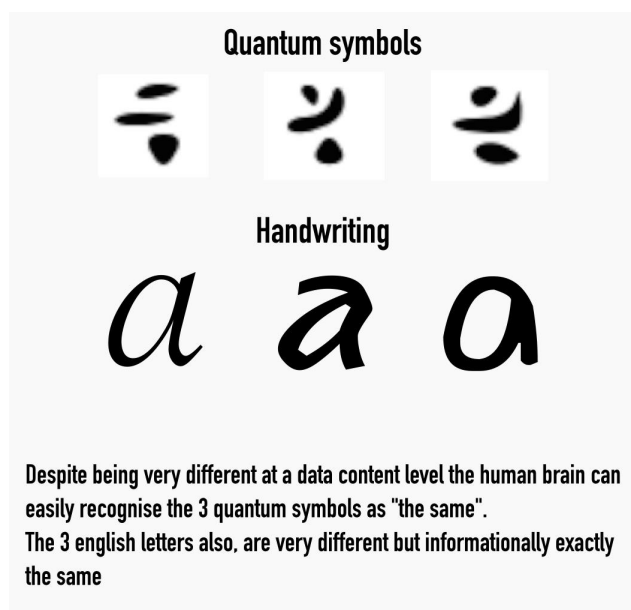

Quantum symbols

Handwriting

Despite being very different at a data content level the human brain can easily recognise the 3 quantum symbols as "the same".
The 3 english letters also, are very different but informationally exactly the same

Illustration 11: Quantum symbols and English characters from different data sources but with equal informational value

This is the purpose and pedigree of the quantum symbol approach. Human minds have a wonderful way of extrapolating.

Computers do not. The infinite gradients of reality need interpolation, and just as we write in smooth strokes, the quantum symbol is the handwriting style of the data itself – albeit in a unified format.

Illustration 11 exemplified the case in point. I have selected three unique quantum symbols, which are created from different data. They are a different shape, size and style however we have little problem in classifying them as the same character. In the second row is shown three variations of the letter 'a'. Each in a different handwriting style, but again each having exactly the same 'informational content'. This image explains with simplicity how data becomes information through form, shape and frequency. When that system develops (as in human language or writing), like rock under your feet and the electrons flowing through your computer, its stability is almost indestructible. Almost no matter how hard you try to damage the handwriting, its meaning somehow makes it through the 'band gap', it tunnels its way through into the minds eye and expands in a rapture and miracle of re-cognition. This is not pattern recognition and storage, it is energy identity. The primordial signatures embedded within the shape, form and frequencies locked in a work of art are there waiting to be unlocked by your own witness. The quantum symbolic language provides a uniform mechanism by which the book of everything can be written free of human bias and, by the grace of quantum uncertainty, we each can find a unique and equally valid semantic relationship with the electronic universe we share with all things.
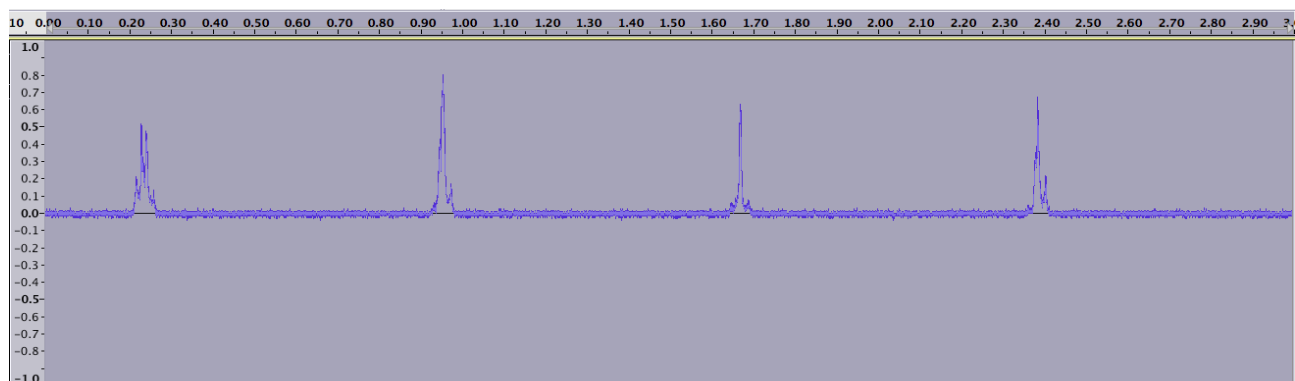

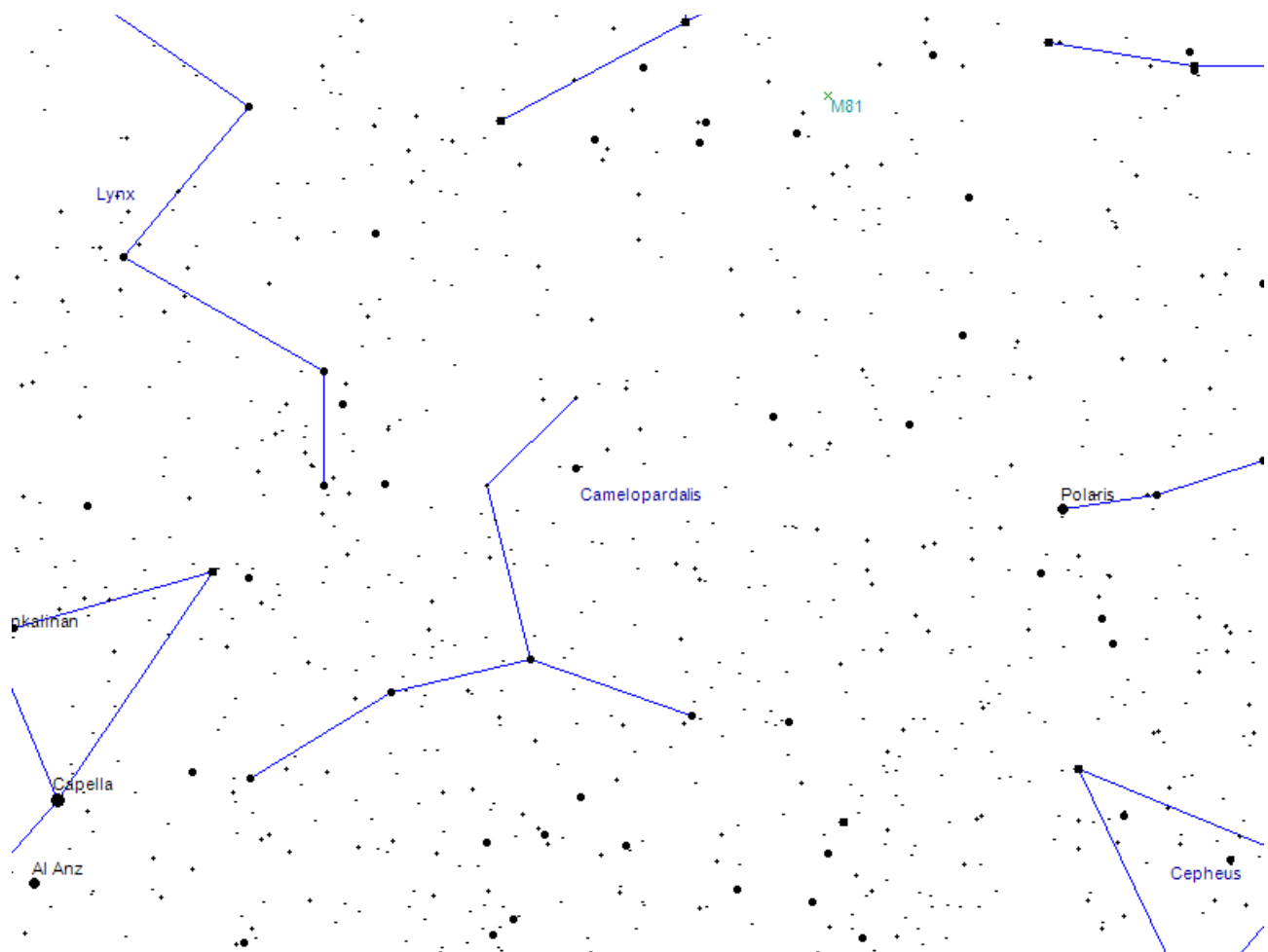*Illustration 12: PSR B0329 + 54 Signal showing 0.7 pulse*

Illustration 13: Camelopardalis is the asterism in which PSR B0329 + 54 is located

Having generated a quantum symbol set by quantisation of the PSR B0329 + 54 data the next stage is that of trying to extract language forms from the symbols produced. The technique was first used during experiments conducted by Prof Willard Van De Bogart as part of a geospatial sound mapping expedition to the White Tank region of the Joshua Tree National Park in the southern California desert. That experiment is detailed later in the paper, but it is notable that the results there drove the research to explore the technique detailed here as a way to search for common shape and form that exists in any chosen data set that might constitute primordial language form – ***if you prefer, consider this a search for the smallest set of fundamental quantum phonemes that together form an alPAHbet of energy patterns capable of***

reproducing any permutation of information possible. This is the fundamental basis of quantum compression, achieving the classically impossible by evolutionary language development from a small finite corpus of phonemes, a single scattering of energy can be evolved into a multiplex of complex memory states and stable systems by interaction with a wider quantum field.

To extract language forms from the symbol set a common OCR software was used. Several systems were used but for the purpose of this experiment the Tesseract OCR Engine was primarily used to identify and translate symbol files. Tesseract recognises around 116 languages and has flexible usage both on and offline*.

* www.newocr.com has an online version that can be used freely

For those not familiar with OCR (Optical Character Recognition), the process is quite simple and requires only one to load the image file containing the quantum symbol set into the OCR software and start the conversion. The software looks to automatically detect the language in use and then convert the bitmap characters to editable ASCII text equivalents. This is the same technology used to recognise your handwriting on a smart phone or laptop PC.

Upon completion the text that was able to be read is output for editing. A summary of the percentage of characters converted and also the detected language (if auto mode selected) is produced on completion. When the quantum alPAHbet that was derived from illustration 2 was OCR processed, to the surprise of many, an unexpected volume of language and information was forthcoming.

The first notable fact is in the detection on "Ancient Chinese" syntax. Depending on the sections of the quantum text selected for conversion, as much as 63% was identified as Chinese and the OCR was able to recognise many words. Over several days the quantum text was processed different ways. Rotating the image for example or simply selecting different groupings of characters in rectangular blocks for recognition. A corpus of Chinese text was compiled. This was then translated by machine translation from Chinese to English to see if anything interesting was to be found. The corpus is unfeasibly large for publication directly in the paper so I have added links in the references to an FTP repository where the files can be downloaded. What follows are selected extracts of the most interesting common language phrases and words that were to be found hidden in the repetitive pulsations of PSR B039 + 54

Polycyclic Aromatic Hydrocarbons (PAH's)

The first thing that jumps out of the English translations is a surprising number of chemical elements by name. A portion of these being identified as being Polycyclic Aromatic Hydrocarbons. PAH's are hypothesised to be produced by high energy systems such as magnetars, pulsars and neutron star systems and are further considered to be fundamental nurseries of these elements which for the rudimentary building blocks of organic carbon based life on Earth.

The result strikes a chord? How might a 3 second sample of a pulsar having just 48Kb of raw data be first quantum compressed, then reformatted, visualised and then subsequently read by a human language recognition system only to produce exact references to the very hypothesised chemical components that are almost certainly accepted to form within the star being analysed? As will be discussed later, this is not a random occurrence. Further tests were carried out with similar results.

By name the elements and chemicals named exactly were:-

- **Actinium**
- **Aldehyde**
- **Argon**
- **Arsenic**
- **Boron**
- **Cadmium**
- **Carbon**
- **Deuterium**
- **Fluorine*****
- **Helium**
- **Hydrazine****
- **Hydrogen**
- **Ligustrazine**
- **Potassium**
- **Pyrene*****
- **Radium**
- **Ruthenium**
- **Tritium***
- **Uranium**

**Hydrazine has few natural sources, one of which is from blue-green algae during nitrogen fixation (ECC Canada, 2016)

*Tritium is interesting as according to Scientific American – "The heaviest isotope of hydrogen is made not only by man in nuclear reactors but also by cosmic rays in the atmosphere" (Scientific American, 2016)

*** PAH Polycyclic Hydrocarbon

The connection of PAH's to the origin of life

According to several research efforts which are summarised on the Wikipedia PAH page (Wikipedia 2016) PAH's are widely believed to be linked to the formation of early life and the formation of stars and exoplanets. Approximately 20% of the Carbon in the universe is thought to be associated with PAH's and they are considered the starting material for early forms of life. According to one report observations of the Red Triangle Nebula had detected spectral signatures that suggested the presence of Anthracene and Pyrene. Pyrene being one of 2 PAH's mentioned by this paper as detected in the pulsar/magnetar data.
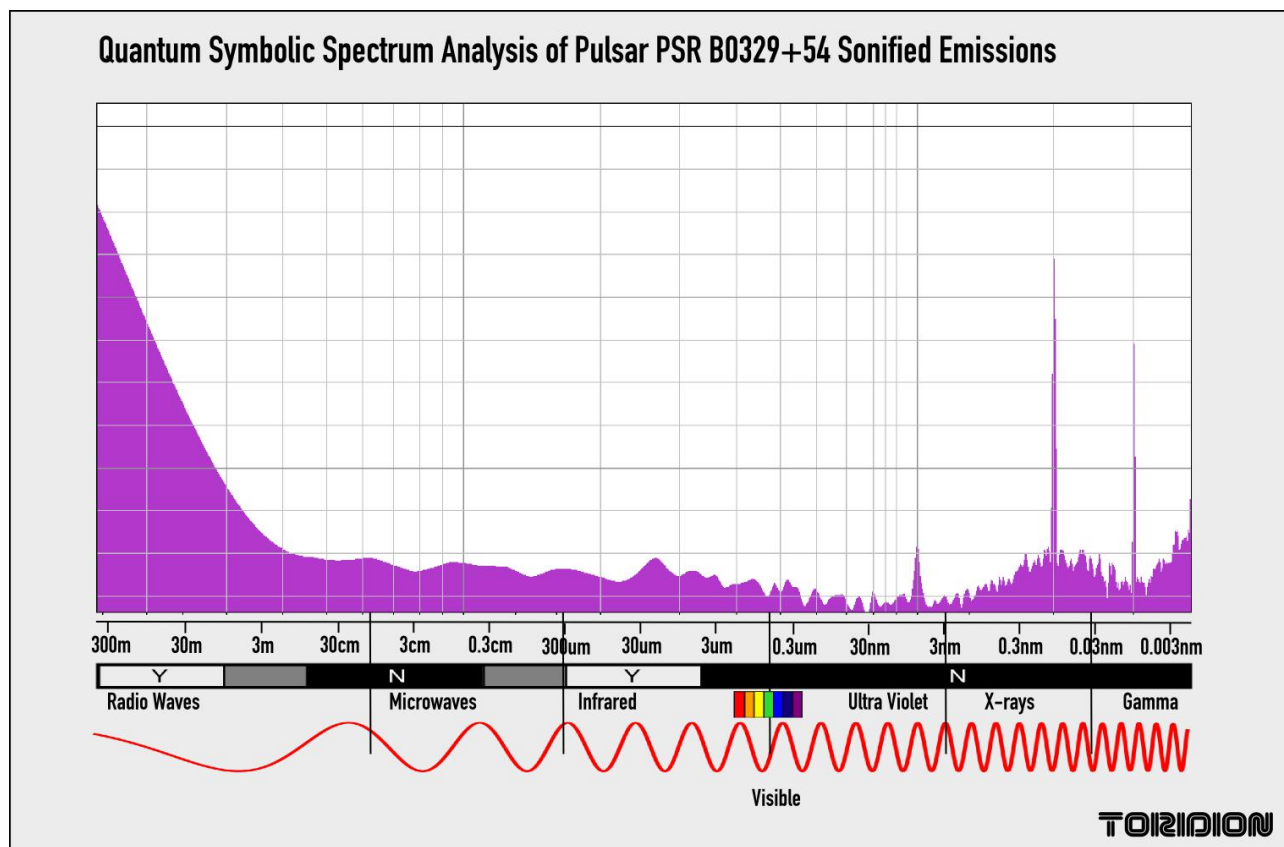

Illustration 14: Quantum Symbolic Spectrum Analysis (logarithmic scales)

Other notable references to chemical and elements

The chemical data also indicated Deuterium. Deuterium is generally associated with star formation and the Big Bang. (Wikipedia 2016).

Life signs?

The most intriguing reference is that to Hydrazine (Wikipedia 2016). Hydrazine is a highly toxic gas that has few natural sources. Used in space propulsion it is a serious threat to earth atmosphere. The only significant natural source is as a product of nitrogen bonding in Blue-Green Algae. Why it should be referenced in this analysis is an exciting mystery. The only rational explanation for me are equally fascinating. Either, Hydrazine in our atmosphere modulated the received waves and so the source is man induced, OR the signal suggests that Hydrazine Gas was detected between the star and Earth itself. Is this a hint that primitive Algae like life is prolific in the cosmos and the traces of it are held in interstellar dust and gas?

Theological and astrological literary references with striking connectivity

If the production of a list of elementary particles and elements was not enough to draw the most serious of interest from myself and the team working with me at this time, a number of significantly connected references to the theological and astrological aspects of the asterism (constellation) in which PSR B0329 + 54 began to emerge from the texts. PRS B0329 + 54 is located in the relatively modern named Camelopardalis asterism, known astrologically by the majority as the Giraffe or Camel. Almost immediately the word "Camel" stood off the page of text. Quite how by chance the name Camel might appear at random – to the exclusion of all else, is at worst mysterious and at best perhaps a signification that some aspects of human language are formed at a primary level by energy shapes and frequencies that began their life many billions of years before man stood upright. This is a default postulation of the quantum informational approach to language and evolution. It is also a basic tenet of the process demonstrated herein, that some frequencies or harmonies of the same are so fundamentally part of our reality as to be indestructible. Not wanting to expand too far into the area of historical physics, I shall conclude this by offering as simple an example as one can conjure. "A scream of pain is recognised as a scream of pain across the entire animal kingdom" – understanding why is one of the most fundamental requirements of any Xenolinguistics research.

In relation to the Camel reference, the extract of the text reads : "Fleas] Yingsouliyao Zouhuazhuocuo aromatic borrow Huahongzhihong Wolianxujin Yingmeipadou Cong Luopuxiadu Anghongpeifen Jiujiangdiaozhi chapter Eshuhunsai also Huangweixilei **Joseph threshold camel** Jiefujiangong Lidongjuzhi Xuhuanejin Hujulue Youwuxinwan Please do Lai Gui Gui Ran sinus pad burdock mandarin duck Inspectors wish to make insect barrier carving ying is hereby seeking Hao Ran Qian"

Thanks

Huge thanks are extended to the people who have thus far contributed to the work presented here. Rush Allen, astro archaeologist and Egyptologist for his huge input into the understanding of stellar/cosmic communication principles. Thanks also to Prof Willard Van De Bogart who's work in Xenolinguistics had driven early research into quantum analytical approaches, thereby creating the initial reason to apply Quantum computing to what could be the first practical application ever undertaken.

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The Third State – Toward an Information Theory of Consciousness

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Tesseract OCR Engine was primarily used to identify and translate symbol files. In automatic mode, without exception Tesseract identified the main content of the symbols as Chinese. Between 33% to 78% of symbols were converted and then run through Chinese to English translation software and Google Translate services to extract English words.