

Going Over the Rainbow:

Bridges between human knowledge and patterns in nature

Art - Multi-disciplinary

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**Zachary Jones
1338 Roosevelt Road
Pittsburgh, PA 15237**

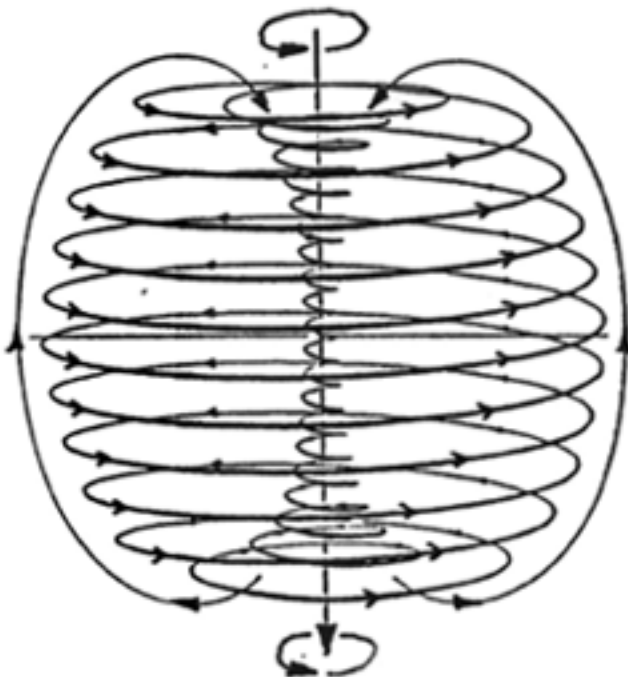
**zak@newalexandria.org
vox: 412.628.0954
fax: 412.761.8287**

As far back as we have recorded history, from inscriptions, drawings, stories and myths, the geometry and motion of the universe has always been the underlying influence which has shaped the human imagination. From the smallest phenomenon we can detect, to the largest things we can grasp, all of nature follows certain geometries which are consistent at any scale. These forms are efficient and conservative in their tendency toward being coherent and self-sustaining. This nature wroughts chaos into 'envelopes' which are understood as forms, patterns, geometry. From this humans have maintained themselves amidst this mechanism by propagating and cultivating information (agronomy, medicine, etc.) which acts as a catalyst for generation cycles in nature.

From ancient times peoples have passed down the knowledge of these forms. The Maya of Central America represented it in Hunab-Ku and the Tzolkin. Ancient Europeans carved elaborate knot-work and multi-spiraling symbols - close in resemblance to the Hindu "Om". All over the world megalithic rock formations illustrate geomagnetic fields, while sacred sites, mounds and buildings of native peoples of the Americas, Europeans, Chinese, Pacific Islanders, and African tribes bring light to planetary and celestial phenomenon. Even the movements of the stars were wrapped into legend and passed down as gods and other higher beings. Children's papers are marked with stars for academic success, the origins of which lie in the movement of Venus in the Earth's sky; the great serpent, Oroborus, is the stars of the galactic disk, which rotates over 26,000 year periods.

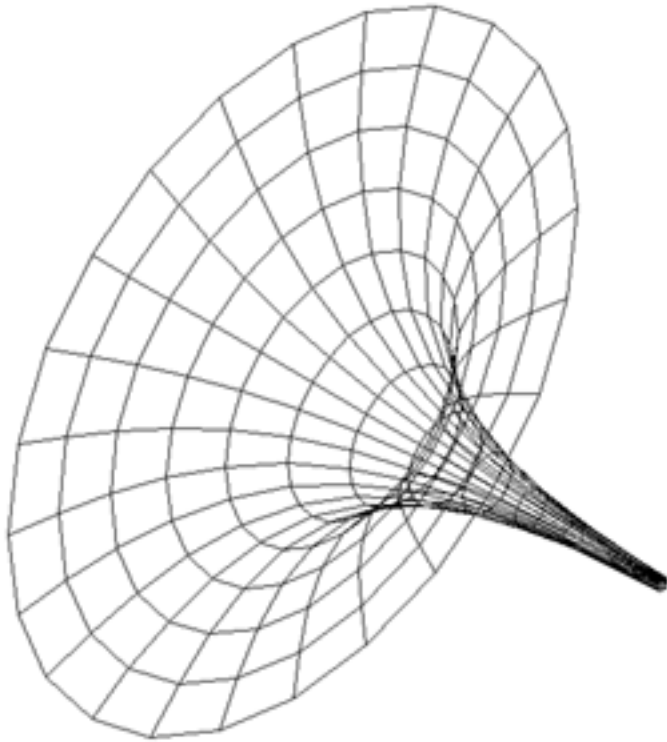


Perhaps the most persistent pattern in the universe is the curvature represented in mathematics as Phi. This is the curvature of maximum conservation of energy, and it underlies the vortexing and spiraling forms which are ubiquitous throughout the universe. Light itself, when traveling though the vacuum of space and in the atmosphere, moves as vortexing photons of electromagnetic radiation. All forms of electromagnetic radiation seem to take this form, from oscillation of planetary scales to extremely high-energy emissions produced in the laboratory. Our genetic code, too, wraps ups in spiraling coils of DNA, which form the basis of all protein functions and give rise to complex cellular activity, which in turn exhibits characteristics of the vortex. This continues even in more complex forms of life, which spiral as nautilus shells and antlers.



In the environment, these patterns emerge at all levels; air, water and soil each as liquids of varying viscosities. Rivers and streams meandering back and forth, the vortexing currents always inwinding away from the curve of the bank. Whirlpools arise and take the form with hurricanes and tornadoes, curling to the dynamic of Phi. These forms in themselves take shape perpendicular to the rotation of the gravito-magnetic field of the Earth, which manifests as two vortex forms sitting opposite each other, tip-to-tip.

This geometry is consistent across all celestial bodies and is at the heart of the fusion that occurs in stars. The knowledge of cultures all throughout the ages carry symbols which act as maps for these geometries. Many of these even push the edges of modern science by giving insight in hypercubes, tesseract and other multi-dimensional forms.



The spiral-motion principles of water have had their most recent scientific study by Victor Schauberger, a forest tender from Austria, during the first half of the 20th century. Schauberger began to take notice of this effect as he wandered about his family's lands and observed nature, particularly the motion of streams and whirlpools, and the ability of trout to quickly swim counter-current, and even climb *up* the flow of waterfalls.

He first put many of his ideas to test in dams and log flumes, the latter which were constructed to float timbered tree trunks downstream. Schauberger's log flumes carried larger, heavier logs than conventional flumes would allow, as well as allowing a faster rate of flow.

He later explored his natural energy theories

in a variety of areas from farming and ecology to the creation of engines, motors, and other methods of utilizing this dynamic as a power source. This work would lead him to discoveries that would later become the underpinnings of Schauberger's method.

He found that certain acoustics could hold particulate (sand, etc.) at discrete points in the funnel while the water flowed around it; he also found that areas of the vortex flow had differing electrical properties. This knowledge transferred to the field, where he would begin to practice agricultural techniques that mimic those which had been done by native cultures for thousands of years.

This phi-curved spiral motion is an implosive force which centripetally pushes inward toward the center of a flow, conserving the energy in the system instead of depleting it in explosions. The consistency which this spiraling pattern manifests suggests that there is an underlying energy which flows in this manner, and that matter is pulled in around it. This would suggest that the dynamic is *fundamental*, and not arising from matter itself.

The details of these phi-based vortex





A natural water vortex

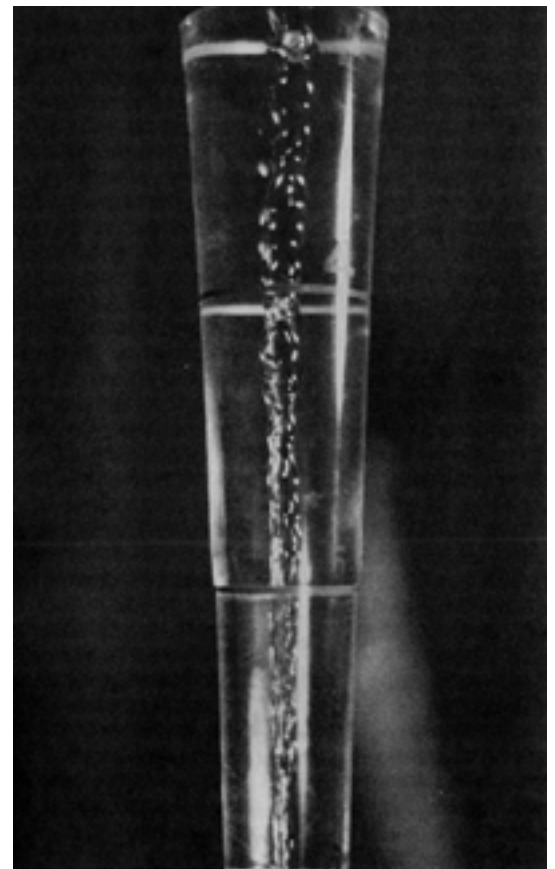
dynamics can be seen on a macroscopic level by allowing small gravity wells to form in a controlled manner, namely, in a vessel which is shaped to the flow. This form will reduce most of the drag that would normally cause turbulence in the system, allowing the flow dynamics to be studied without obstruction.

Further scientific study in this area should be highly applicable to telescopic since radiative energies, particularly light, striking the surface of the water should be uniformly compressed and focused as the water dynamics continue their centripetal implosion. This implosive dynamic exhibits a filtering effect by forcing all particulate to the center of the flow, and Schauburger had found that this effect could be varied through the application of resonant acoustics. Thus, specialized filtering and refinement processes may be possible. Magnets formed to the phi-curvature may also induce small gravitic phenomenon in low/zero-gravity environments, create the possibility of propulsion in space.

Work in this area has shown that these laboratory-scale vortex forms exhibit the same dynamic as the gravity wells of planetary scale. When flowing through a funnel shaped for the task, the visible tip of the water vortex begins to waiver as though it were interacting with another vortex tip flowing in the opposite direction. The image of this is two gravity wells, tip to tip, mirroring each other - and this is the model for the movement of the Earth's magnetic field.

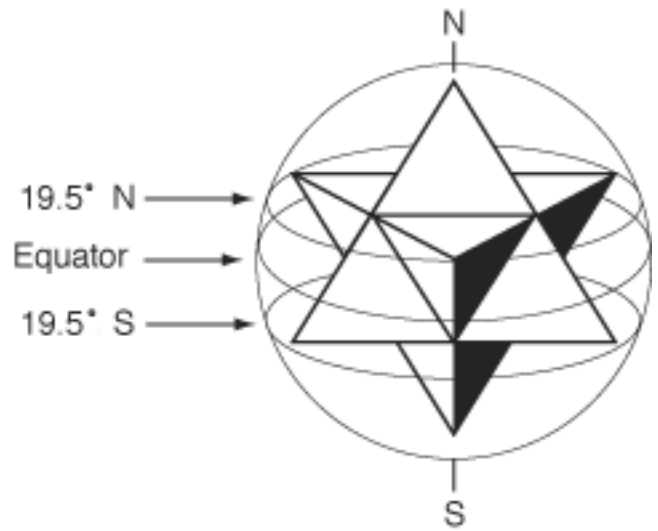
From this motion arises all weather phenomenon, as the Earth's magnetic field draws in highly charged debris from the ambient space and the solar wind. This solar activity (particularly sunspots) heavily influences the cycles of rains on the Earth, and most cultures, ancient and modern, have tracked these patterns for agricultural purposes.

Plants are further affected by geomagnetic lines of the Earth. More than plant-life, but also weather patterns and geological activity focuses around specific points on the Earth - generally, 19.5° above and below the line of the equator on specific longitudes.

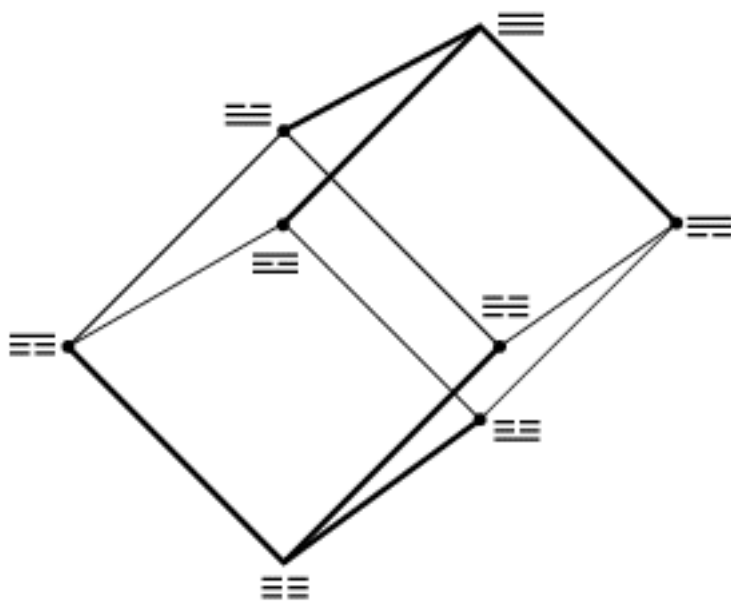


Counter-current flow

The nature of this pattern is seen as two tetrahedrons intersecting in opposite direction at their centers, also known as a star-tetrahedron. When oriented to a north-south axis, the six other corners sit 19.5° off the equator of a sphere. On earth, the volcano of Mauna Loa and other major geological activity occur on this latitude. This is also the region for major storms on Jupiter and Venus, and is where most sun-spot activity occurs on our sun - implying that this geometry is underlying all celestial bodies.

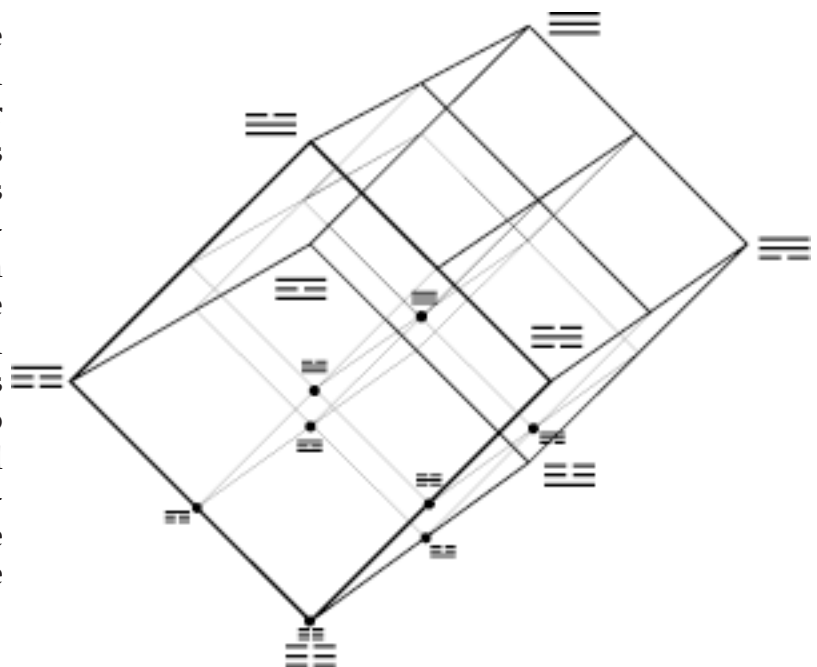


This geometry can also be expressed as a cube, where six sides are formed at the crossing of any two long edges (the "pluses" in the illustration to the right).



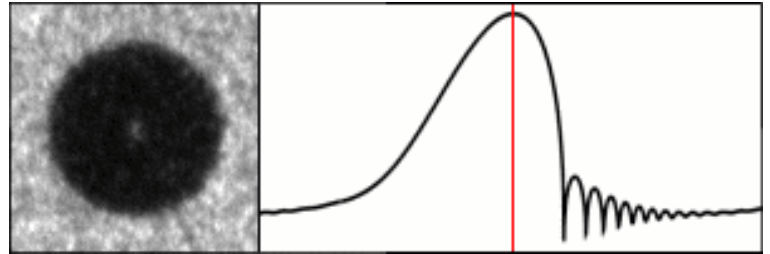
The Chinese developed a way of mapping cubic geometries using the I Ching, their system for interpreting the universe. The trigrams, binary symbols for the forces of nature, can be arranged around a cube in a mathematically balanced manner (illus. left). The two most divergent trigrams are heaven and earth, three breaks and three bars. These are set at two opposite corners of the cube. From each of heaven and earth, three edges run to three corners which can be seen as one order of magnitude away. At each of these corners one bar is changed to its opposite at high, medium, and low. The numeric and geometric characteristics of the trigrams at these points allows us to polarize their orientation to opposing corners.

This geometry is in line with the traditional Fu Hsi trigram arrangement and can be extrapolated to understand the order of the Kind Wen arrangement. Hypercubes and tesseracts, multi-dimensional structures that cannot easily be represented in three-dimensional space, can also be mapped with the I Ching. The eight corners of the cube are labeled, allowing the cube itself to be divided into octants and each of those divisions mapped with the same labeling system. Two trigrams, a hexagram in the I Ching, is all that is needed to define any point in a four-dimensional hypercube. In this fractal-like manner any n-dimensional wave or space can be mapped.



In the past several hundred years several methods for mapping this magnetic grid-work on the surface of the Earth have arisen, including the Piri Ries system and Earth-stars. These overlays often match precisely with stone circles and other earthworks, such as the mound at New Grange. Given that these magnetic lines are able to be located through dowsing, a technique for using the body as an antenna, it is very conceivable that ancient humans were aware of these Earth lines. The magnetic field of planets and stars also exhibit another phenomenon which the I Ching may give insight into: pole-reversal.

This flip, or inversion, of the magnetic poles turns up in geological evidence on the Earth, and has been observed in stars as well. This inversion also turns up in a laboratory phenomenon called sonoluminescence, which involves water and a bubble of air. Sonoluminescence occurs where a resonant harmonic wave causes a wave-envelope to oscillate and produce light at points of rhythmic inversion.



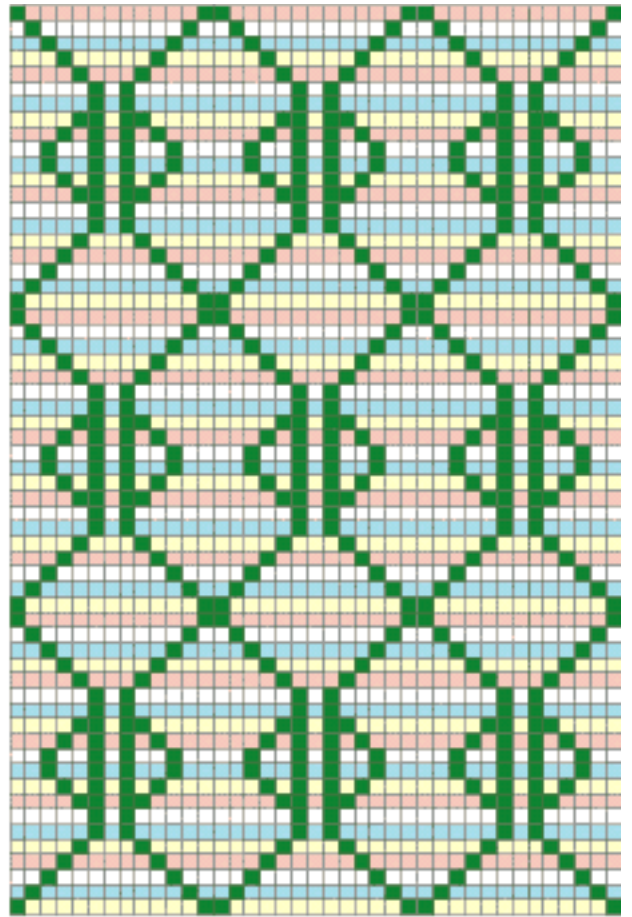
The exact process is disputed, but the wave form of the collapse takes on a spiraling characteristic which suggests that the phi dynamic is at the root of this phenomenon as well. Recent research has led to the theory that this process of rhythmic inversion is at the root of solar fusion, and may be the formative process for the universe. This can be allegorically seen as a notion of rebirth by passing through oneself, a concept which emerges in some native beliefs that humans, as a people, have passed through several worlds, and that this process will continue in our collective growth.



All of these celestial bodies are part of a large dance, as well. The universe (uni- *one*; verse- *song*) swirls and eddies into spiraling galaxies; the radiation from galaxies collects into solar systems, and the stars at their core act as a lens for this energy and distribute it to the planets in the system. Planets facilitate life, and life grows diverse; and each of these forms of life has its own unique signature, both in its own nature, and how it understands the rest of the universe.

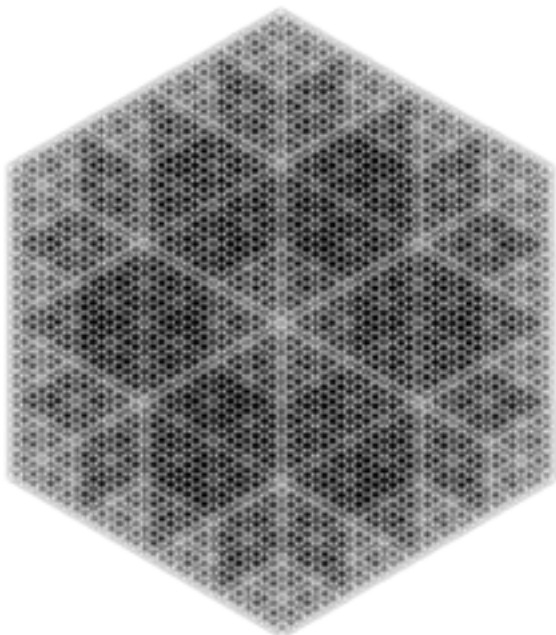
The Maya developed a methodology for understanding the place of humans within this web of life, and represented this through their calendar system. The Tzolkin is the sacred calendar of the Maya people of Central America and its intertwining pattern is meant to represent the divine union through which all things manifest. It remains one of the most accurate, and yet simple, systems of tracking celestial mechanics from the Earth. With its interlocking lunar and solar cycles it is capable of synchronization that even our more modern calendars are not capable of performing. The simplicity and completeness of it stands as a testament that delicate cosmological science can be performed at any level of technology. The Tzolkin's core unit is a period of 260 days (~9 months), which is the period of human gestation. This unit has an even periodicity with the synodic rotations of all the planets in our solar system, as well lunar phases and sunspot cycles. It interlocks with the Ha'ab, a solar/rain cycle, over 52 years periods, and connects with the cycles of Venus every 104 years.

Using this 'gear-work' the Tzolkin can be used to understand and synchronize with one of the largest cycles we are able to recognize on the Earth: the precession of the equinoxes. This period of nearly 26000 years is caused by the counter-clockwise rotation of the Earth's axis - a motion which causes the parallax rotation of the Great Ring, a line of stars that is the Milky Way galaxy. Myths behind the pole star, the Egyptian River of Souls and the Oroborus all are connected with this motion, and recent knowledge shows that ice ages occur in similar frequency. Because of the Tzolkin's ability to reconcile all of these cycles with the human gestation period, it stands as a unique fingerprint for human life on Earth. On no other celestial body, nor with any other species, would the Tzolkin be the same.



The Tzolkin acts as a fractal in its own accord, the beginnings of which come through repeated tiling of the pattern on all sides. This produce a mesh of waves which interlock with each other because they sit out of phase in several dimensions. The represented waveforms are mathematically considered to be complex cardioids, and entwining in multiple dimensions. The first iteration of this entwinement takes shape at the 'flower of life' pattern, which is sacred to many cultures.

The flower of life, whose geometry is composed of spheres, begins to describe a hexagon, and the hexagon is itself a 2D projection of a 3D cube. The hexagonal pattern of the flower of life is found ubiquitously throughout nature because it is the form of crystallized water. This can be seen in snowflakes, as well as water which flows in vortexing motions - a process which encourages crystallization. The pattern turns up in the phenomenon of crop circles as well, which seem to preference corn fields. Corn itself being of unique origin in that it was bred to its current state by Native Americans through a straining and selection process spanning thousands of years.



The poet will recognize that these patterns exist at all levels, and it is further testament to the muse that humans continue to pass down these forms from generation to generation. Humans grow and evolve, societies rise and fall, but certain knowledge continues to find the longest propagation of all - that which connects us to the web of life. These are the jewels of Indra's Net, which are the Art of a people. We pass this down through symbol and tradition, and in time we find that even our thoughts create a gravity which propels us toward our future. The dreams we hold on to come to pass and become memory, and that which benefits the greatest whole forms our cultural memory - the fabric of imagination. It is upon these titanic footsteps that we collectively move forward and come to know the nature of our own expression.