



Argos.vu Projects 2019

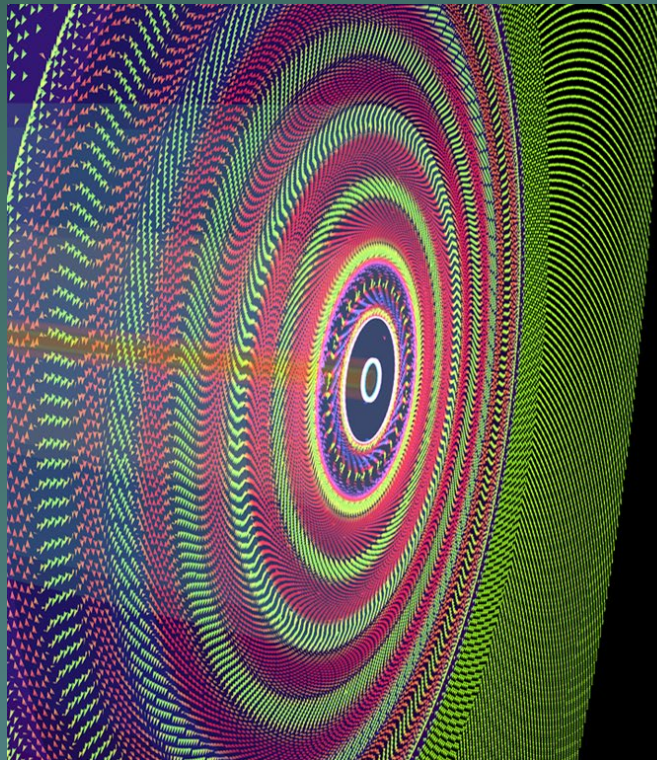
For Meeting with Natalie Fernandez February 8th 2019



The VU

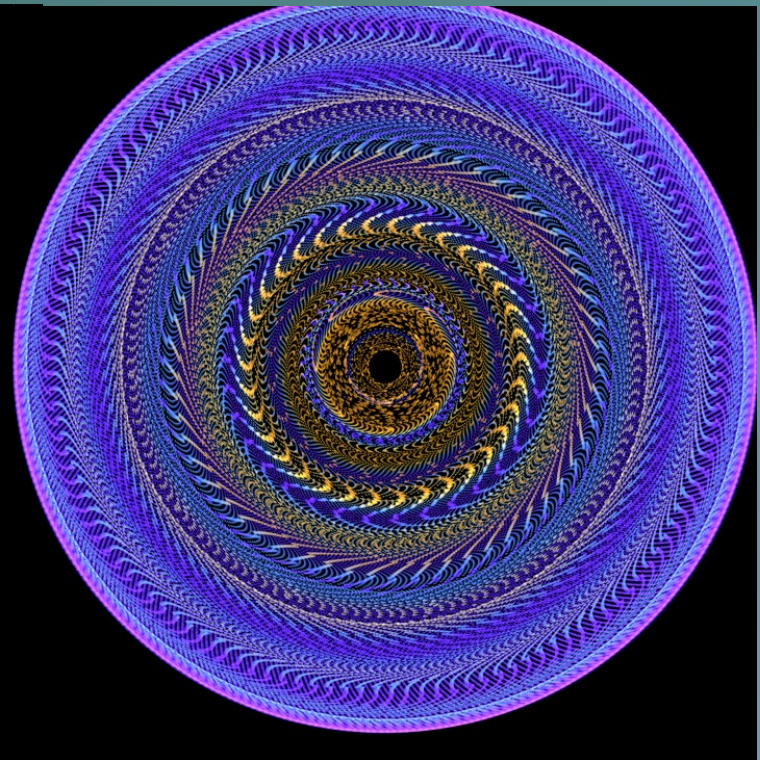


The VU



VR Applied to Scott's Model of Birkeland Currents

DAVID JOHNSON, LUKAS WOMACK,
JIM WENINGER, JUAN CALSIANO



Electric Universe and Thunderbolts

Issue 2 (April)

PROGRESS IN PHYSICS

Volume 11 (2015)

Birkeland Currents: A Force-Free Field-Aligned Model

Donald E. Scott

Department of Electrical Engineering (Retired), University of Massachusetts, Amherst, MA, USA.
e-mail: dascott3@cox.net

The fundamental vector calculus definition of a force-free, field-aligned current in space is expanded in cylindrical coordinates to directly obtain the Bessel partial differential equation that specifies the magnetic field created by such a current. This result is often called the Lundquist solution. A simple but detailed derivation is included here. The physical properties of the resulting intricate magnetic field structure are described. The cause of its characteristic counter-rotation and counter-flows are identified. The describing equations are put into state-variable form and a step-wise approximation is applied. This solution reveals the primary effect of the force-free parameter, α , as being a scale factor of radial distance. We show that: 1) both the axial and azimuthal magnetic and current density components cyclically reverse their directions with radial distance from the central axis of the current; 2) the magnetic field extends farther from the central axis within a force-free field than it would if produced by a current in a long straight conductor. The total magnetic field magnitude and current density are shown to vary inversely as the square root of r . For large r , outside the plasma, the azimuthal magnetic field is shown to vary as $1/r$. These results are shown to be consistent with laboratory and astronomical observations.

Electric Universe and Thunderbolts

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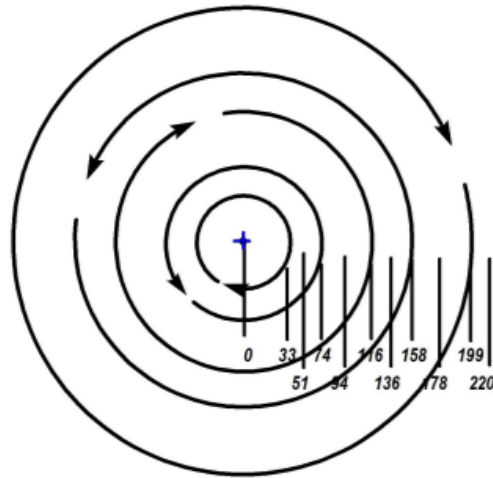


Fig. 3: Cross-section of a force-free current. In this view the reader is looking in the $+z$ -direction, in the direction of main current flow. The radius values shown are plotted as values of $r = x/\alpha$ ($\alpha = 0.075$), which were used in the Euler iterative solution of (36) and (37). At the radius values shown, the axial \mathbf{B} -field is zero-valued so the total field is only azimuthal (either clockwise or counter-clockwise circles).

From (23), there is no outward radiation of the magnetic field (nor its collinear \mathbf{j}) from inside the plasma where $\alpha \neq 0$. There is no non-zero B_r or j_r component anywhere. Thus no matter escapes from the plasma. This preserves the structural integrity of the FAC over large axial distances.

Both solutions (closed-form and Euler) demonstrate re-

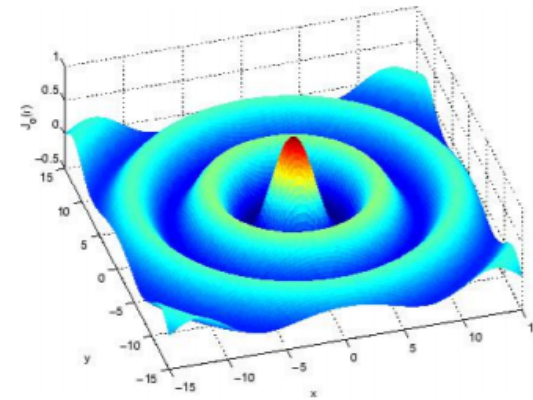
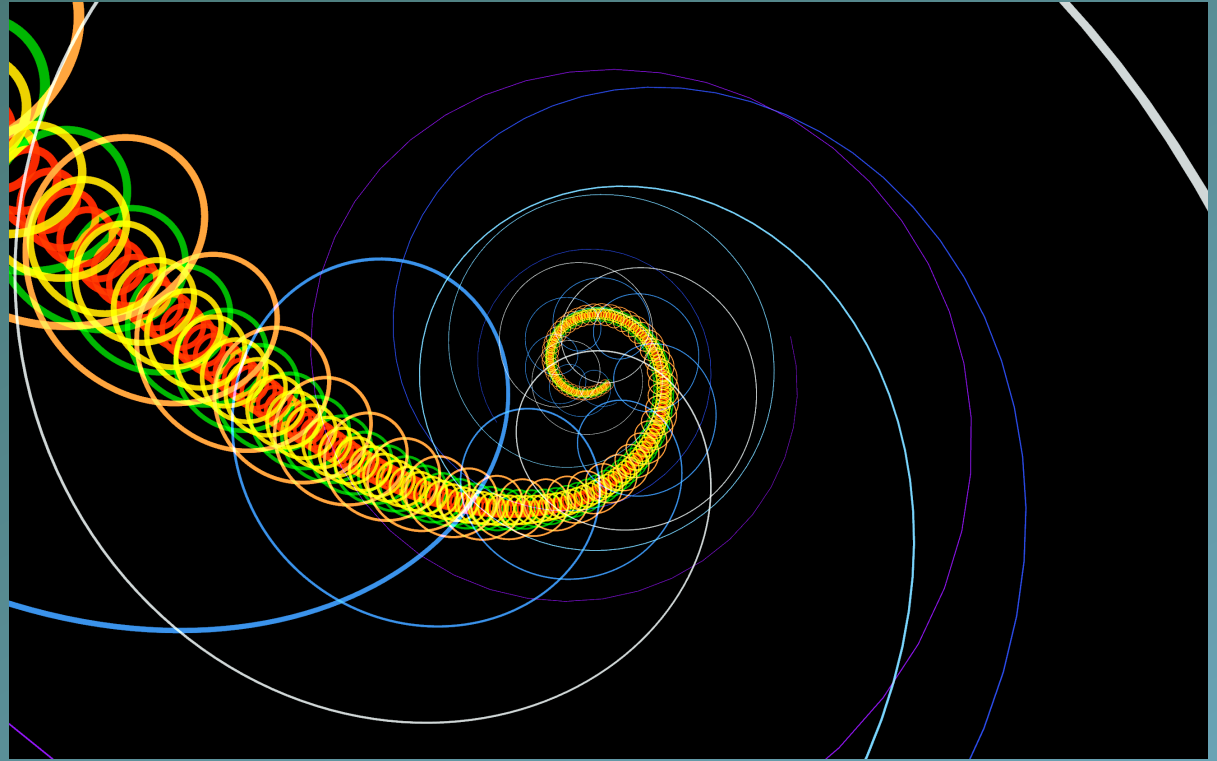
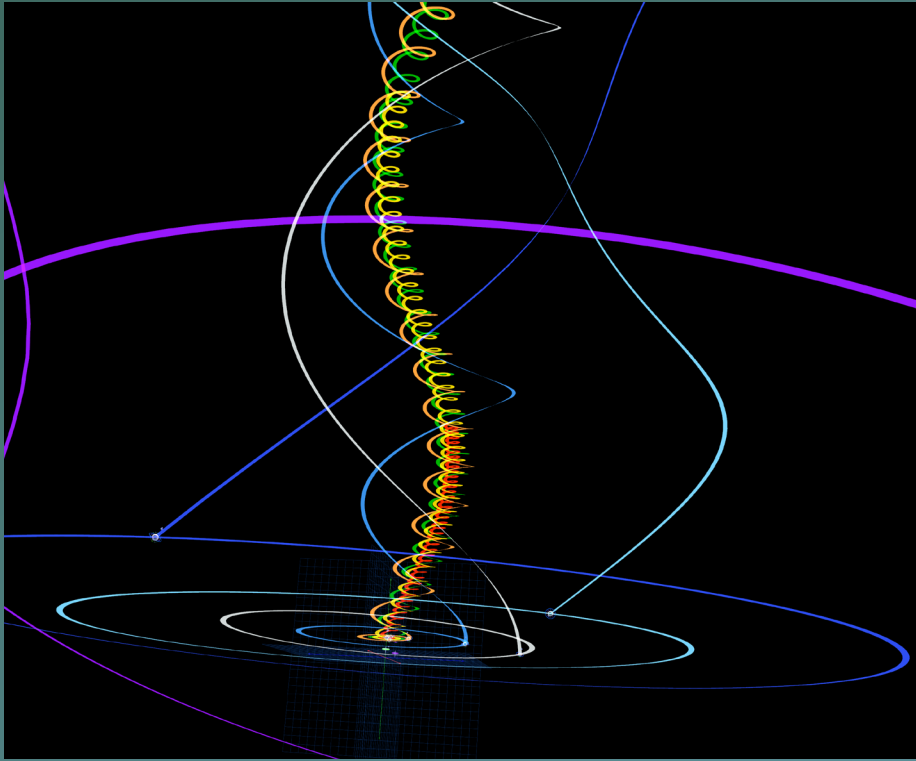


Fig. 4: Three-dimensional plot of the magnitude of the axial magnetic field component $B_z(r)$ and the current density $j_z(r)$. This demonstrates the relative strength of both those central (on-axis) fields. The magnitude scale of the horizontal axes used in this Figure are both x , the dimensionless arguments of the Bessel $J_0(x)$ and $J_1(x)$ functions.

In Figure 5, one cycle (0° – 360°) of the pitch angle is shown. The cycle is sketched at eleven incrementally increasing sample values of radius. The shaded arrows show the total magnetic field direction at each value of radius, r , and the white arrows show the field direction at an increment just below each of those values of radius. At every point in a stable force-free, field-aligned current, the current density \mathbf{j} is collinear with \mathbf{B} .

The Lundquist-Alfvén image shown in Figure 6, which is often used to describe the Birkeland current steady-state

Electric Universe and Thunderbolts



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Evidence the Solar System Exists Within a Galactic Current



Jim Weninger
Astro Physicist



Eugene Bagashov
Physicist

[Video Link](#)

Electric Universe and Thunderbolts



Electric Universe and Thunderbolts



The Thunderbolts Project holds popular yearly conferences presenting EU concepts.

Their YouTube channel has received more than 23,750,000 views since it's inception in 2008.



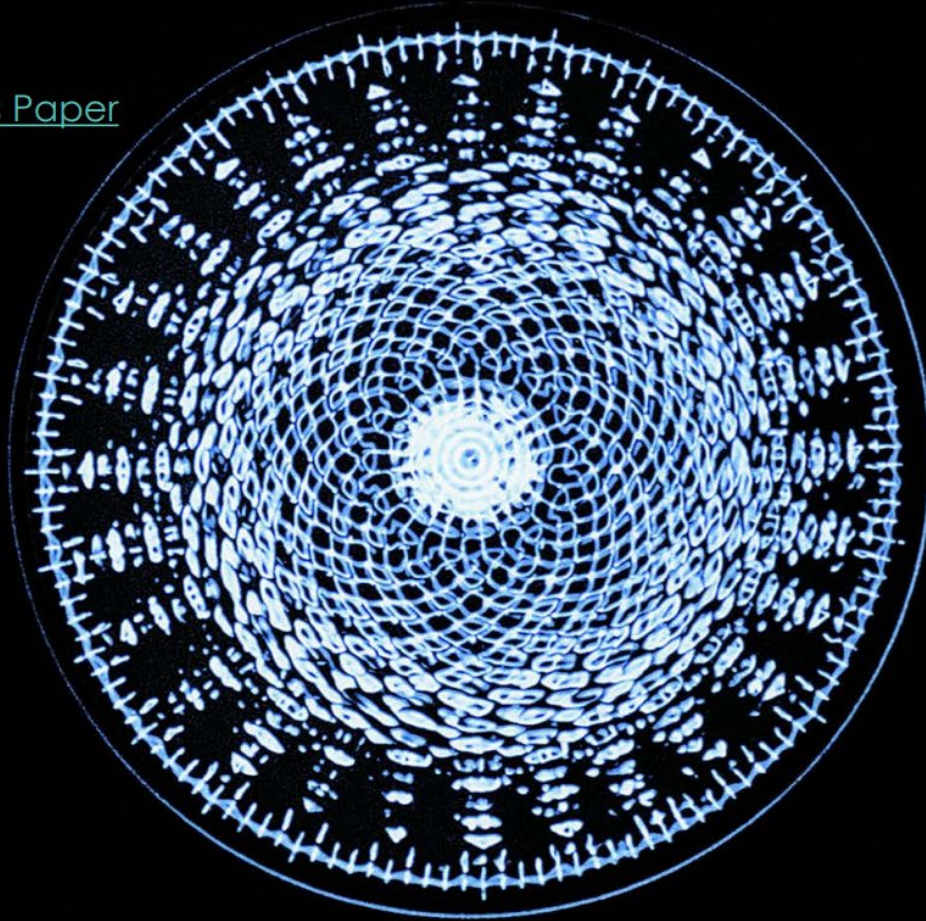
SpaceWeatherNews is supported by a collective of more than 300,000 active subscribers.

Eye of Africa



The Terrence Howard Project

Cymatics Paper



The Terrence Howard Project

Universal Heart Beat

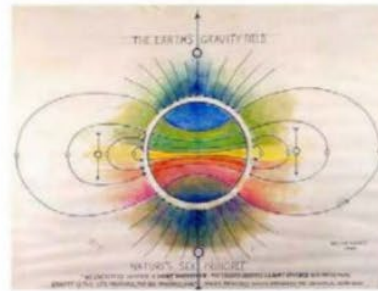


Figure 11.1: Universal Heartbeat

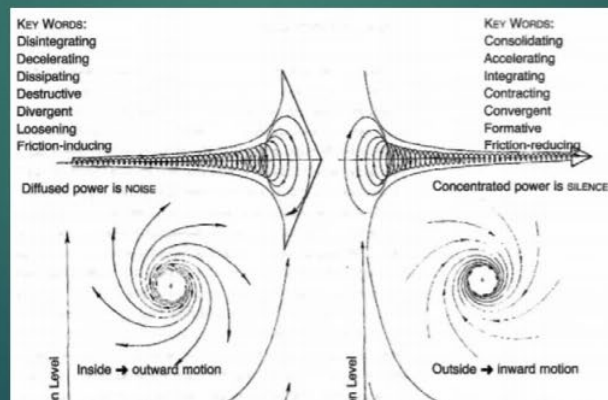
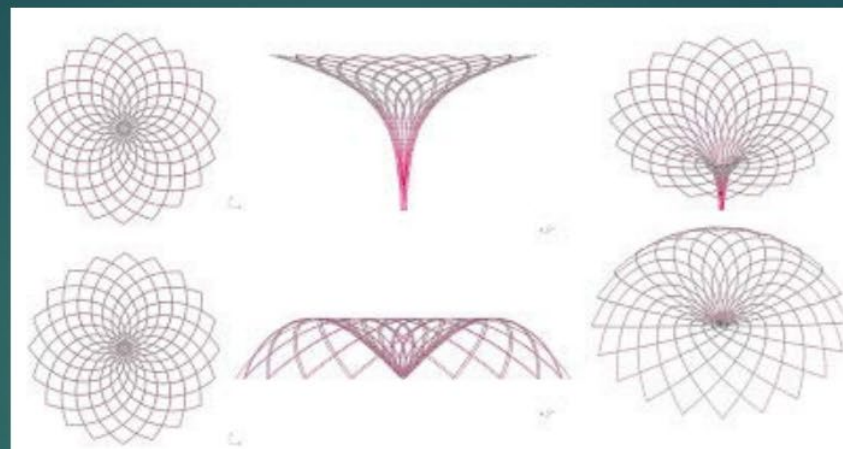
Image: <http://pondscienceinstitute.on-rev.com/images/NatDyn/heartbeat.jpg>
(courtesy University of Science and Philosophy)

Universal Heart Beat =
Dynaspheric Force¹ =
Rhythmic Balanced Interchange² =
Triune Polar Flows³

*"The eternally conscious entity - call it by whatever name we please - moves in cycles as eternal and infinite as itself; it oscillates and vibrates perpetually."*⁴

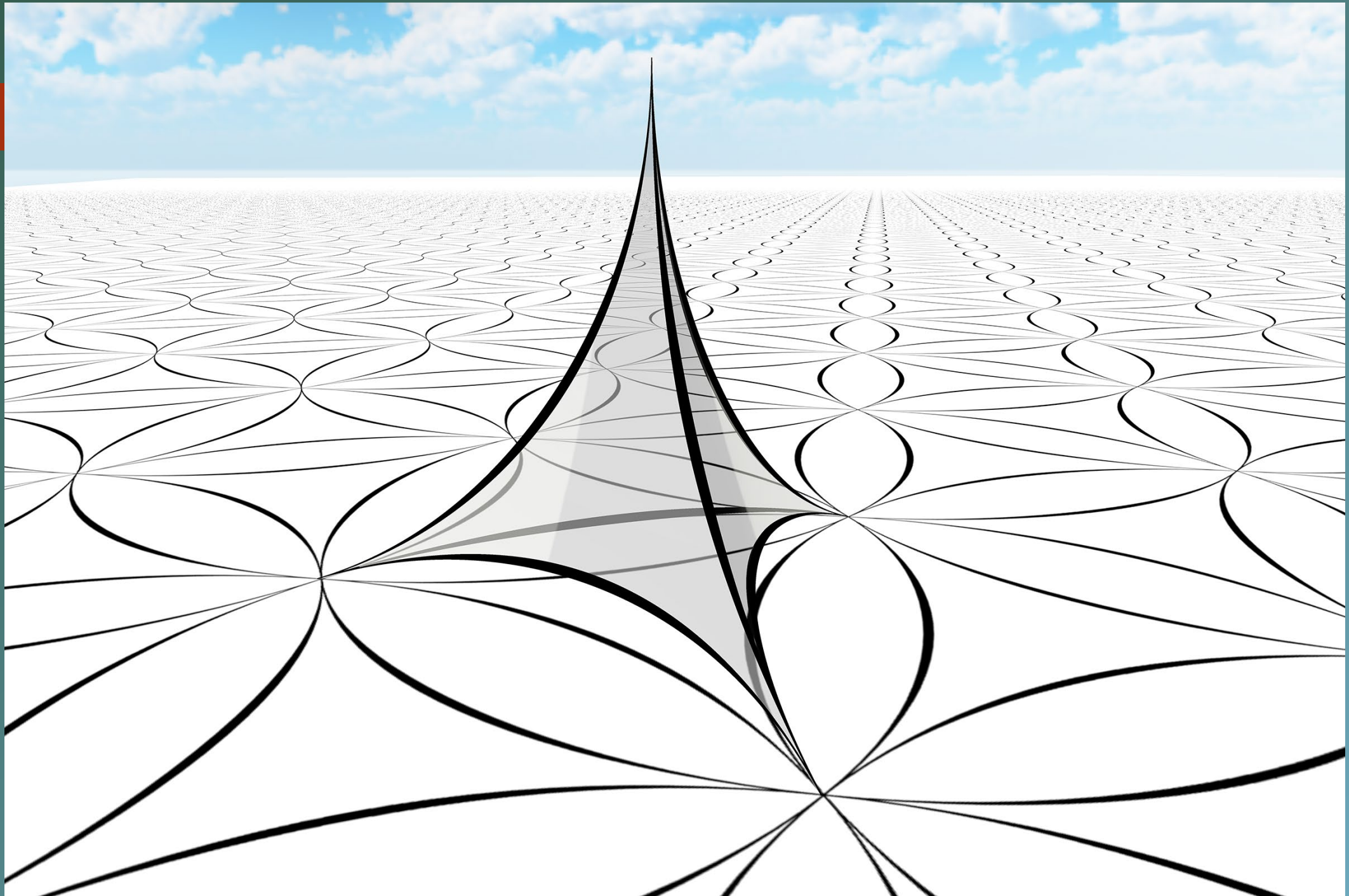
Dale Pond Meeting
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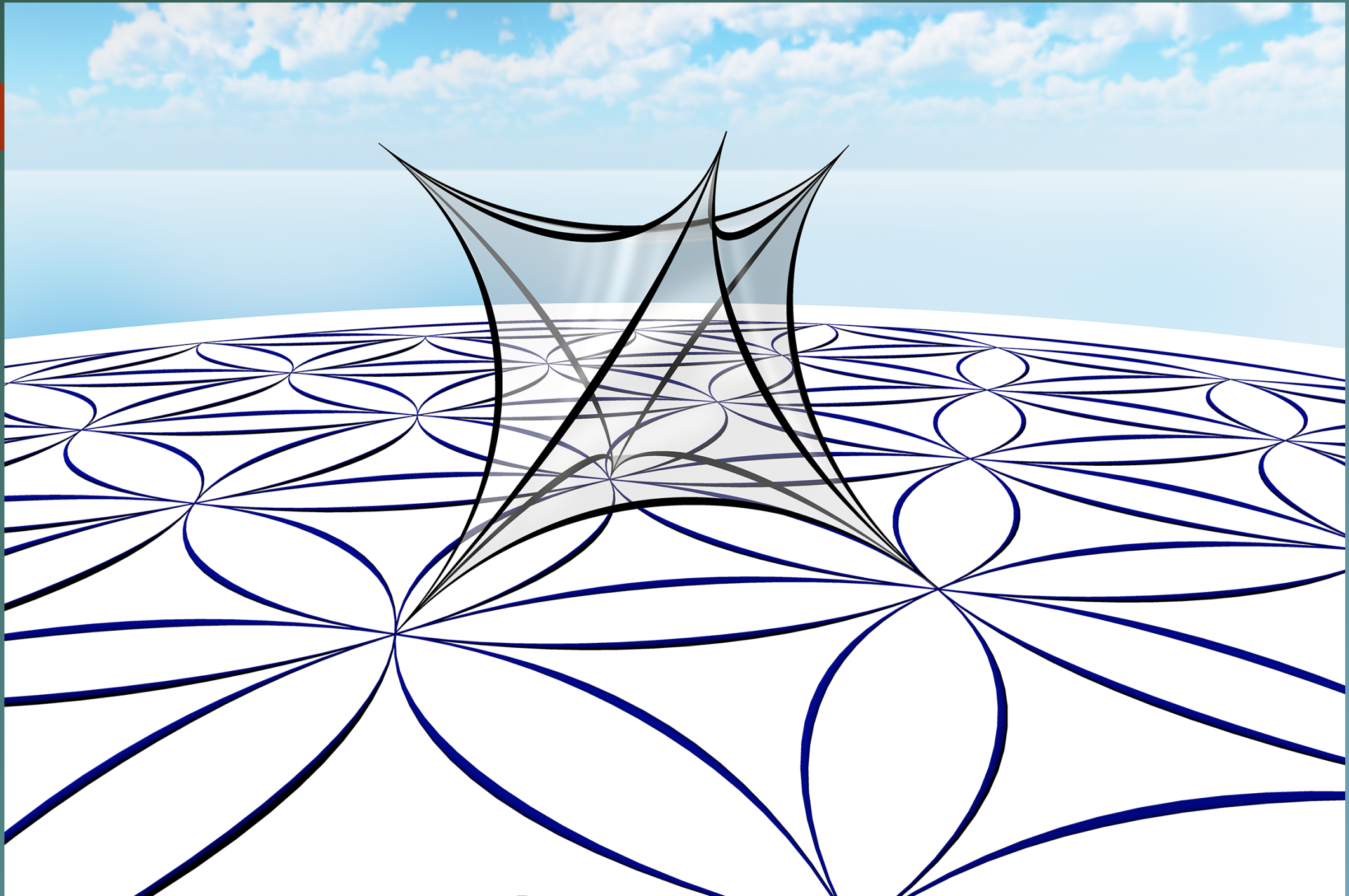
The Terrence Howard Project

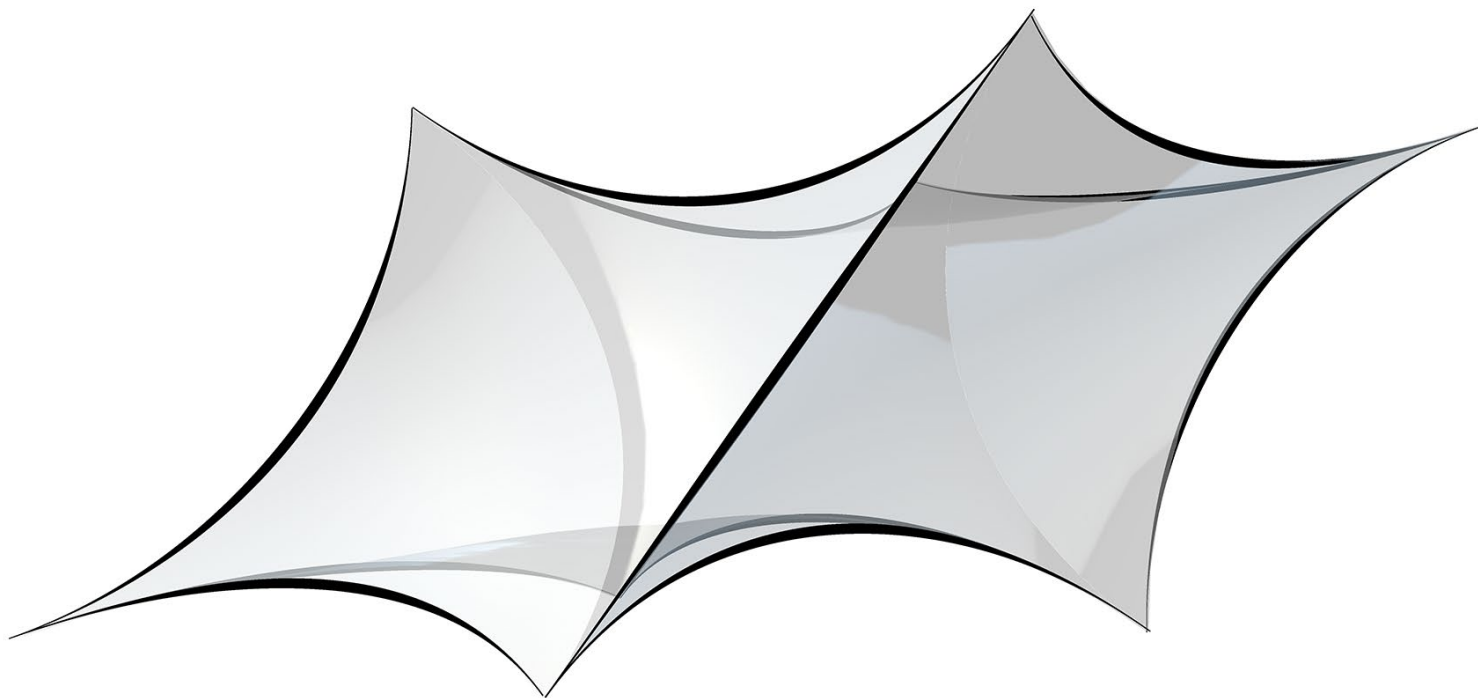


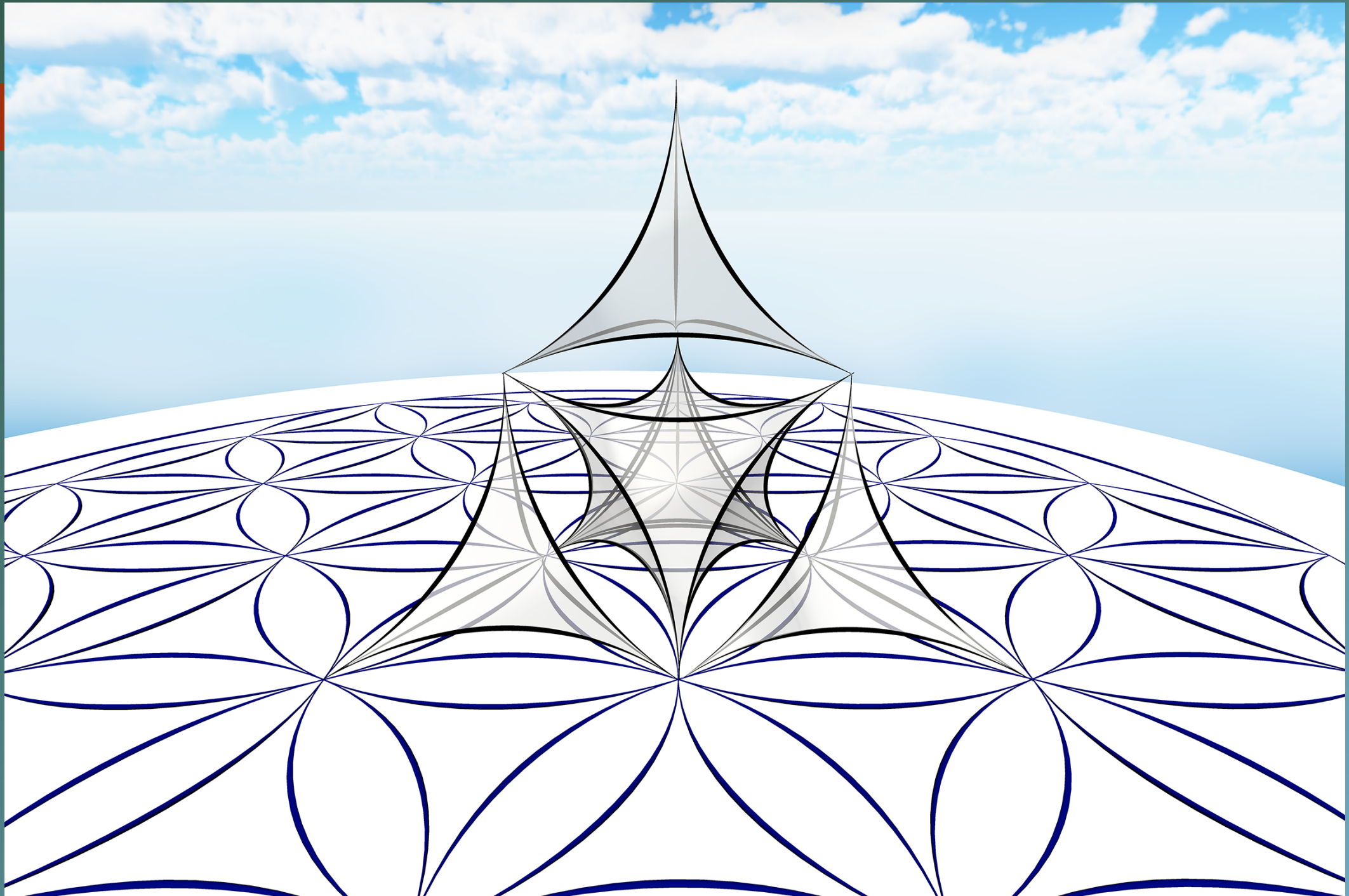
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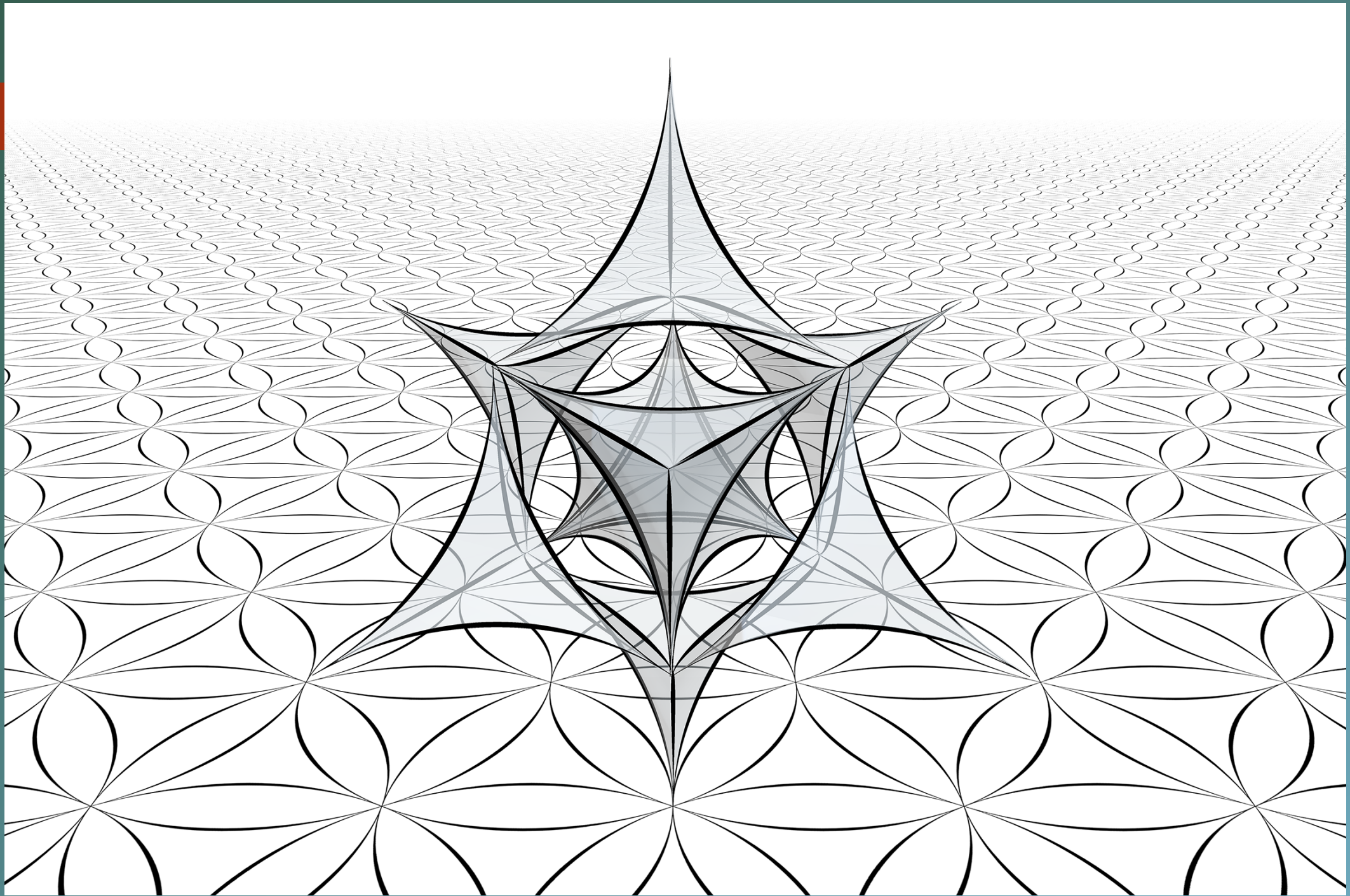












Electric Universe to Electric Geology



Obsession Stone



Obsession Stone

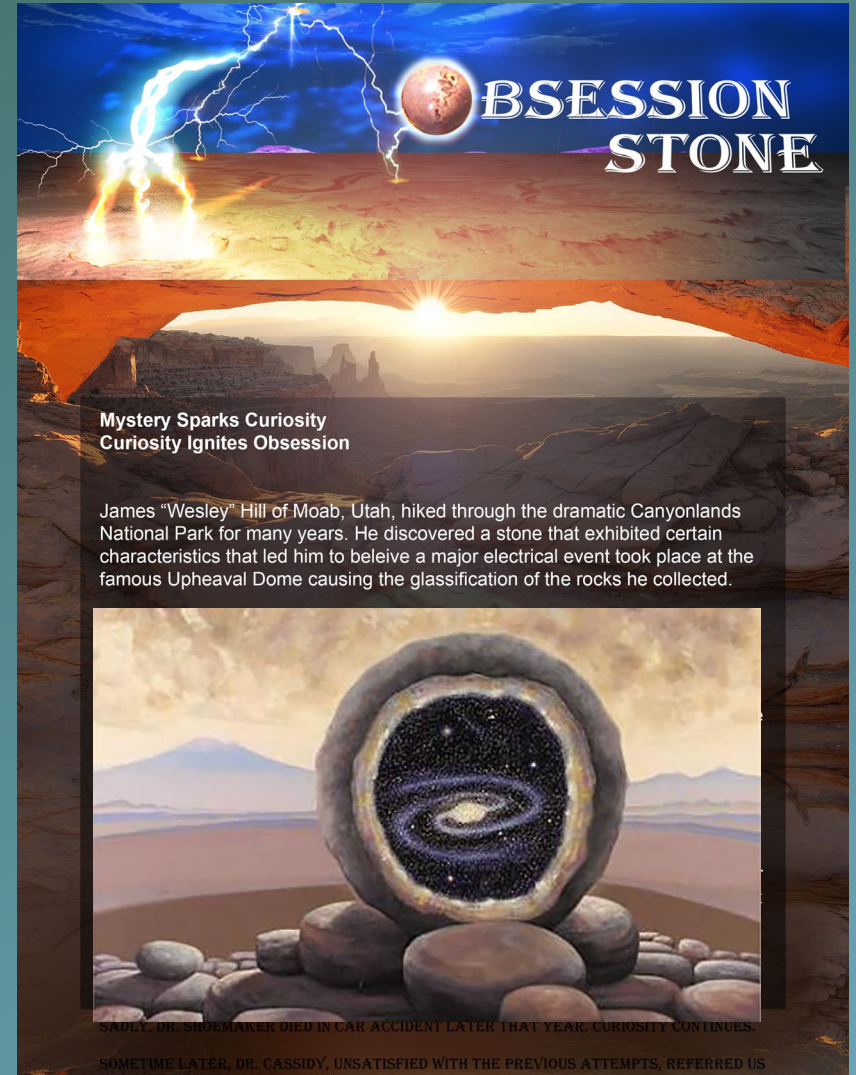
Electric Geology

Canyon Lands National Park

Wesley Hill and Robert Hawthorne

Dr. Jean Shoemaker

[Website](#)



TelePresence Tours



[Video Link](#)

[Volo Link](#)



The VU

VR
Plasma Dynamics



VR
Morphology

Spline/Stylus
Editing Tools
Harmonic
Resonance

VR
Cymatics

Voice Painting

Income Pipelines



Virtual
Geology Tours
See Geology with
new Eyes



Experimental
Modeling

Laboratory
Validation of Results

International
Conferences



The VU

The VU – Simulation Platform – 3D Charged Cloud Oscilloscope

Jim Weninger's Filamentary Model of the Solar System

Plasma Dynamics – Birkeland Current Model

Lattice Boltzman Method – GPU – Electro Hydro Dynamics

Edo Kahl's - Structured Atom Model

Terrence Howard – Vortex Dynamics – AllShape

Cymatics –Formants – Analysis and Visualization

