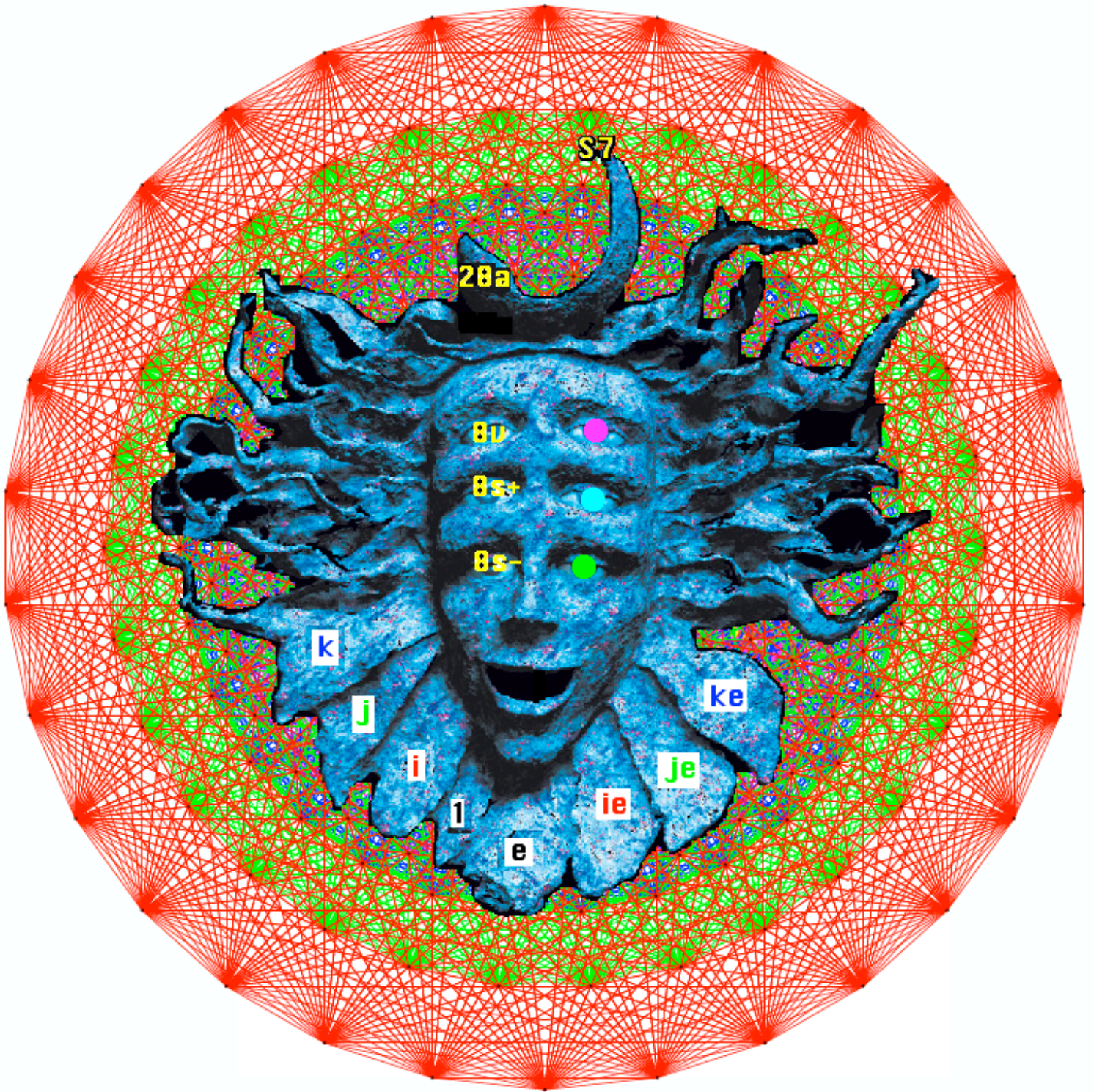


# sHpongIE8

Frank Dodd (Tony) Smith, Jr. - 2011



Lubos Motl on his blog showed a connection between the Mask of Shponge on the cover of the Shponge album "The God Particle" and the Higgs. I then looked on the web and saw:

from Wikipedia: "... ShpongIE is an English psychedelic ... music project formed in 1996. The group includes Simon Posford (aka Hallucinogen) and Raja Ram (one third of The Infinity Project). Their musical style combines eastern ethnic instruments and vocals with contemporary western ... psychedelic music. ..."

from loofybelalb.blogspot.com: "... ShpongIE ... The God Particle - 2010 (Single Track) ...

Deep underground in Switzerland ... in a tunnel 27k's long ... engineers and scientists from all over the world have constructed a circle which is an experiment ... firing Protons in opposite directions along the tunnel, they can analyse the information of the millions of collisions ... searching for what has been known to be called the God Particle.

ShpongIE, with Benji Vaughan by our side, have simulated the sound of this experiment to the music of ShpongIE ...

Speeds ranging from 23 BPM to 173 BPM ... hurl the listener into unfamiliar and unconventional sound voyages, where serious endorphinic changes happen to the listener, which results in a complete unusual physical and mental mind set ... one is never going to be the same or listen to music in the same way ever again. This is a breakthrough event...particles and atoms neutrons and other sounds result in weird highness and high weirdness ... This is not your normal cup of tea, and one will change while listening to this maelstrom of beauty and surprise ...".

In the image above I have put the ShpongIE Mask over a background of the E8 root vector diagram (from the Atlas of Lie Groups and Representations at [www.liegroups.org](http://www.liegroups.org)) in which 240 root vectors in 8-dimensional Octonionic space are projected to a 2-dimensional plane.

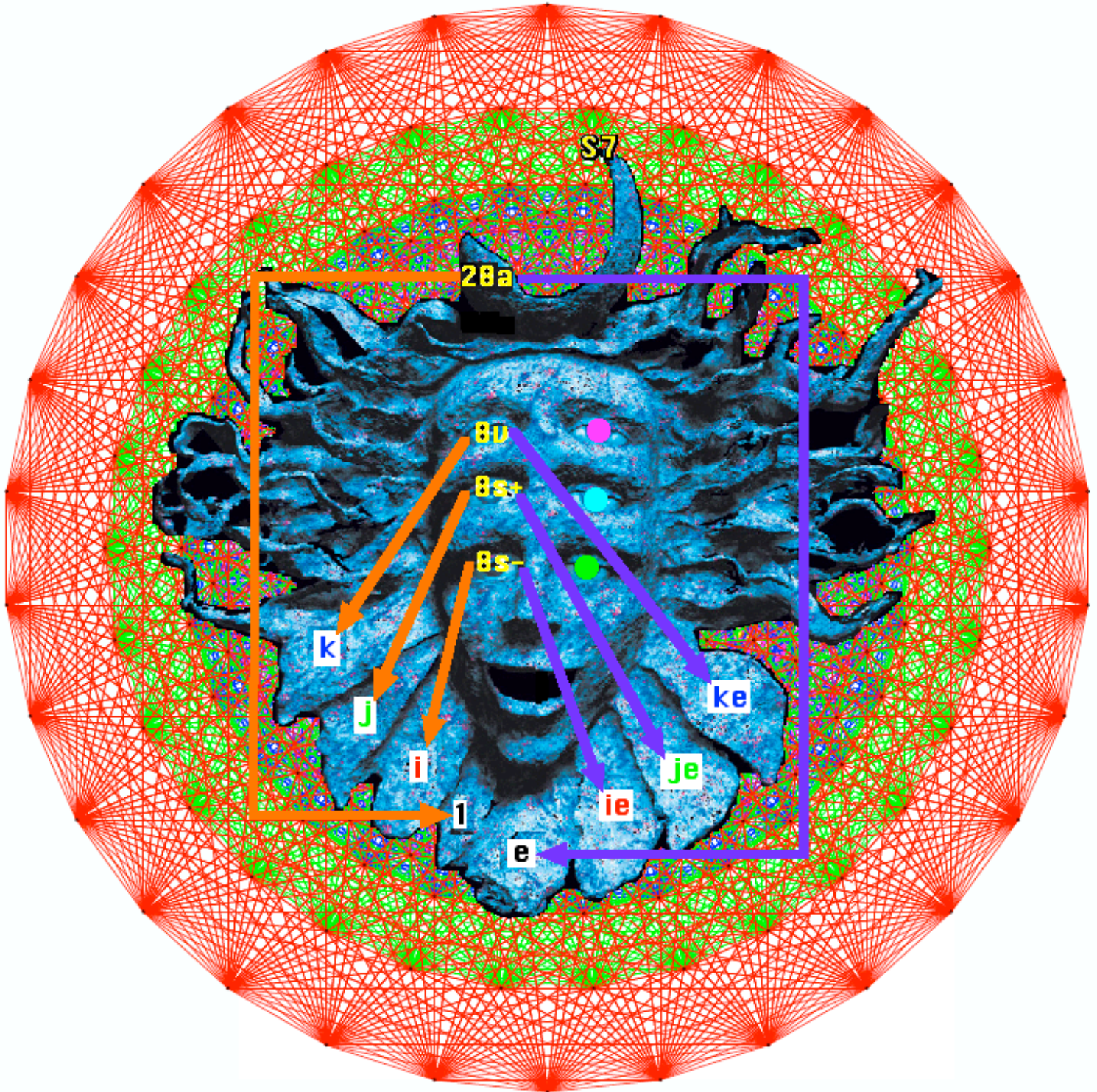
The Apex Point of the Cornucopia at the top of the ShpongIE Mask corresponds to a 7-sphere  $S^7$  in Octonionic space.

Although  $S^7$  is not by itself a Lie algebra, it expands into the 28-dimensional Adjoint Representation of the D4 Lie Algebra  $Spin(8)$  shown at the end of the Cornucopia as 28a.

One set of 3 Eyes of the Mask corresponds to the 3 Triality 8-dimensional Representations of  $Spin(8)$ : the Vector  $8_v$ , the +half-Spinor  $8_{s+}$ , and the -half-Spinor  $8_{s-}$ .

The 8 Lobes of the Mask correspond to the 8 Octonion Basis Elements  $\{ 1, i, j, k, e, ie, je, ke \}$ .

If you map the { 28a, 8v, 8s+, 8s- } to the 8 Octonion Basis Elements { 1, i, j, k, e, ie, je, ke }



by the Gold and Purple lines,

then you can see the Physics of E8 by constructing:

$$28a-1 + 28a-e = (16 \text{ Conformal Gravity} + 12) \text{ dimensions} + (12 \text{ SM Gauge Boson} + 16) \text{ dimensions} = 56 \text{ Bosonic dimensions}$$

$$8v-k \times 8v-ke = 8 \text{ spacetime dimensions} \times 8 \text{ momentum-space dimensions} = 64 \text{ Bosonic dimensions}$$

$$8v-j \times 8v-je = 8 \text{ First-Generation Fermion AntiParticles} \times 8 \text{ Covariant Components} = 64 \text{ Spinor dimensions}$$

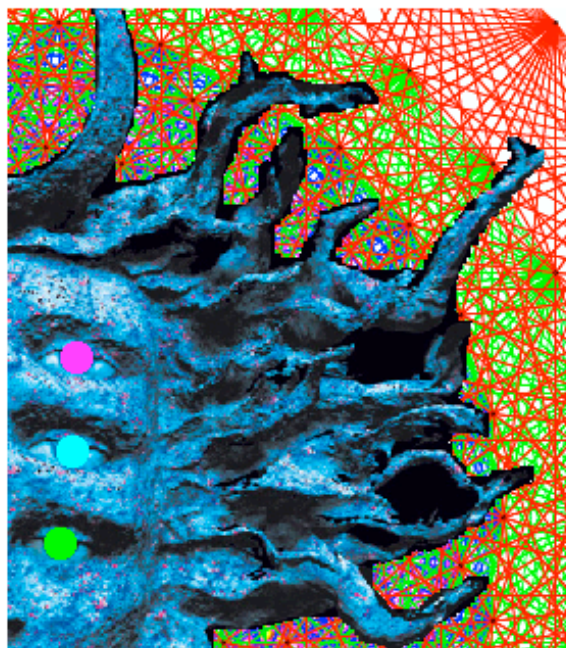
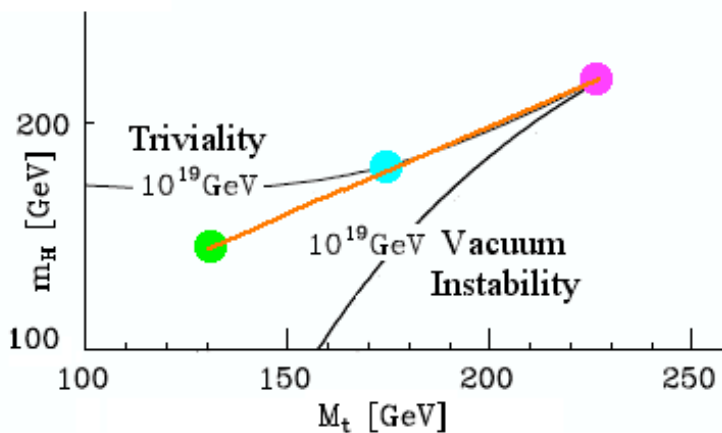
$$8v-i \times 8v-ie = 8 \text{ First-Generation Fermion Particles} \times 8 \text{ Covariant Components} = 64 \text{ Spinor dimensions}$$

The 56 + 64 Bosonic Dimensions represent the 120-dimensional adjoint Spin(16) D8 Lie Algebra.

The 64+64 Fermionic Spinor Dimensions represent the 128-dimensional +half-Spinor of the Spin(16) D8 Lie Algebra.

E8 = D8 adjoint + D8 +half-Spinor is 120 + 128 = 248-dimensional.

Now consider the other set of 3 Eyes of the Mask:



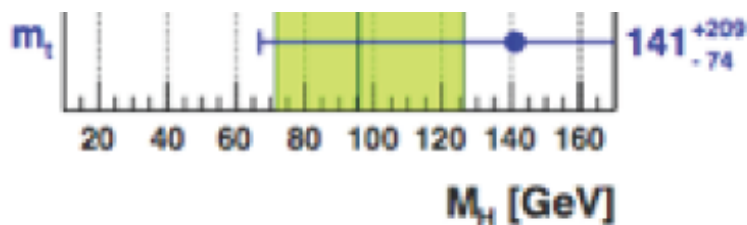
It corresponds to the 3 States of the Higgs-Tquark System in which the Higgs is seen as a condensate of Tquarks and Tanti-quarks. The 3 States are shown as Magenta, Cyan, and Green dots:

The Magenta Dot ● is the high-mass state of a 220 GeV Truth Quark and a 240 GeV Higgs. That high-mass Higgs is in the 210-260 GeV range of the Higgs Vacuum Instability Boundary which range includes the Higgs VEV. Physically, it is at the Unique Critical Point at the intersection of the Higgs Triviality Boundary and the Higgs Vacuum Instability Boundary.

The Cyan Dot ● is the middle-mass state of a 174 GeV Truth Quark and a 180 GeV Higgs.

That mid-mass Higgs is in the 160-210 GeV range of the Higgs Triviality Boundary at the point where the Renormalization Group of the Higgs-Tquark System running down from the Critical Point departs from the Triviality Boundary and goes into the Normal Non-Trivial Stable Vacuum Phase.

As to where the Higgs-Tquark Renormalization Group will stop when running down the line within the Normal Non-Trivial Stable Vacuum Phase, consider the Gfitter fit of the Higgs mass with respect to ElectroWeak phenomena in the cases in which the Tquark mass is NOT fixed, because it runs along the Higgs-Tquark Renormalization line. The Gfitter result is



that the stable point within the Normal Non-Trivial Stable Vacuum Phase has a preferred value around 141 GeV,

It is consistent with Higgs masses up to  $141 + 209 = 350$  GeV which includes the middle-mass and high-mass states.

Therefore, the Green Dot ● is set at the low-mass state of a 130 GeV Truth Quark and a 145 GeV Higgs, as calculated in my E8 Physics Model. That low-mass Higgs is in the Higgs mass range that allows the Standard Model to work all the way up to the Planck Scale.

Since the ShpongMask appeared on the 1998 cover of the album "Are You Shponged?" it is interesting to ask how the Mask came to be designed to so accurately represent Physics that is only now (2011) being experimentally confirmed. My guess is based on the Wikipedia statement about one of the 1998 album songs:

"... The track, "Divine Moments of Truth," ... contains a vocal sample of Raja Ram describing the effects of Dimethyltryptamine. ...".

As Terence McKenna said in a 1993 OMNI interview: "... Thirty seconds into the DMT flash ... shows you ... some kind of interdimensional nexus ... Something in an unseen dimension is acting as an attractor for our forward movement in understanding. ... It's a point in the future that affects us in the present. ... There are actual attractors ahead of us in time -- like the gravitational field of a planet. Once you fall under an attractor's influence, your trajectory is diverted. ...".

Perhaps ShpongMask in 1998 experienced a DMT attractor from the future (our 2011 present) diverting their trajectory to design their ShpongMask as a representation of the Physics of their Future (our 2011 present).