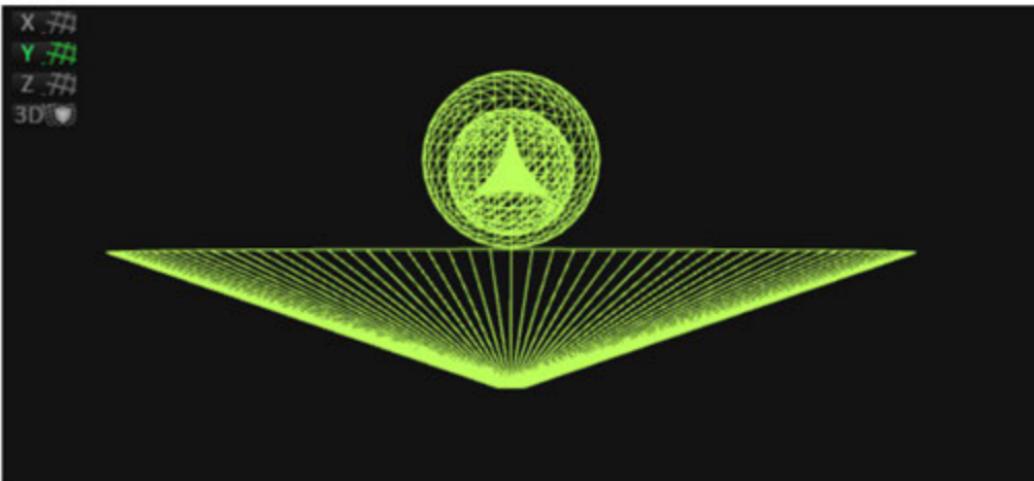


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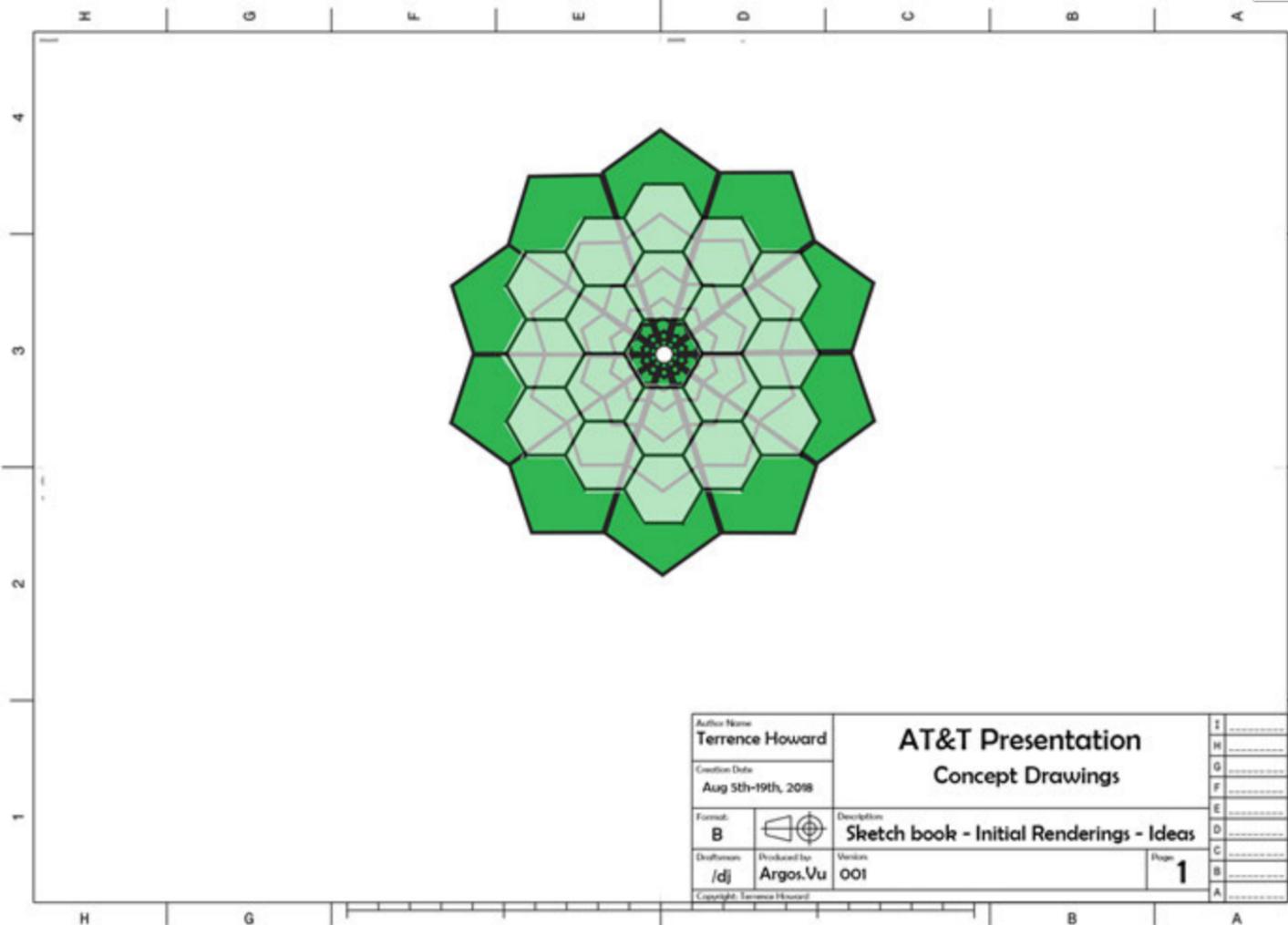
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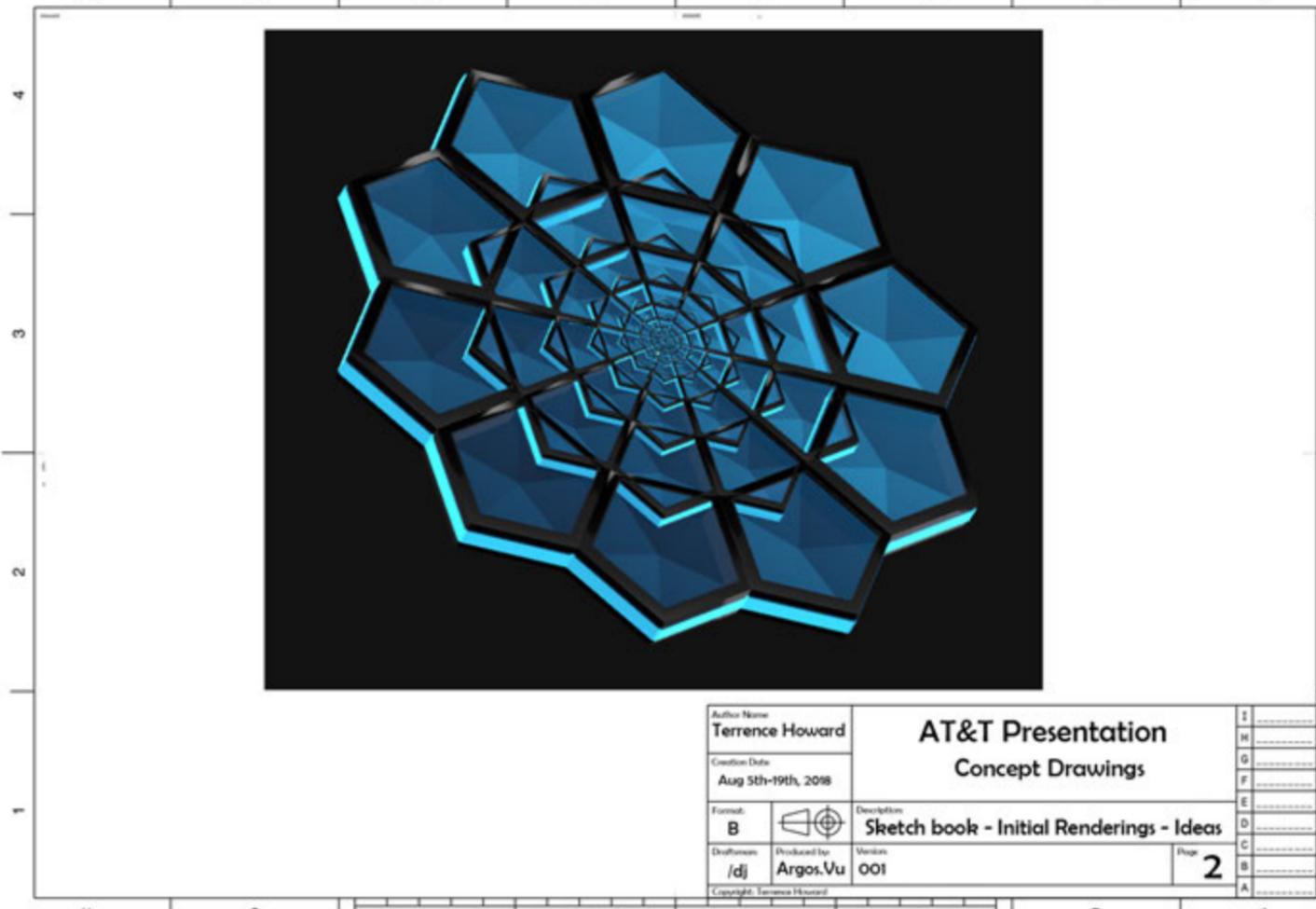
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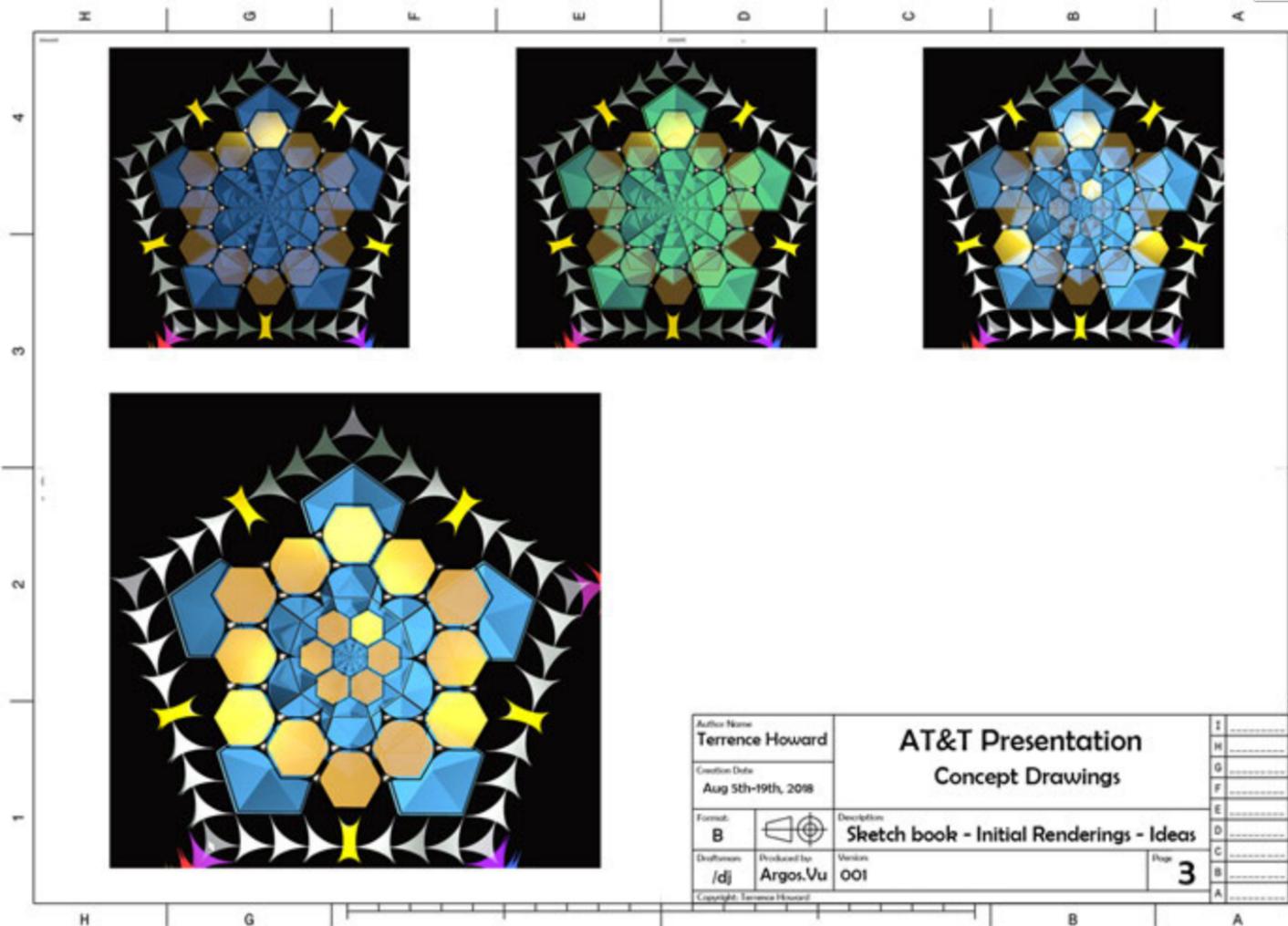
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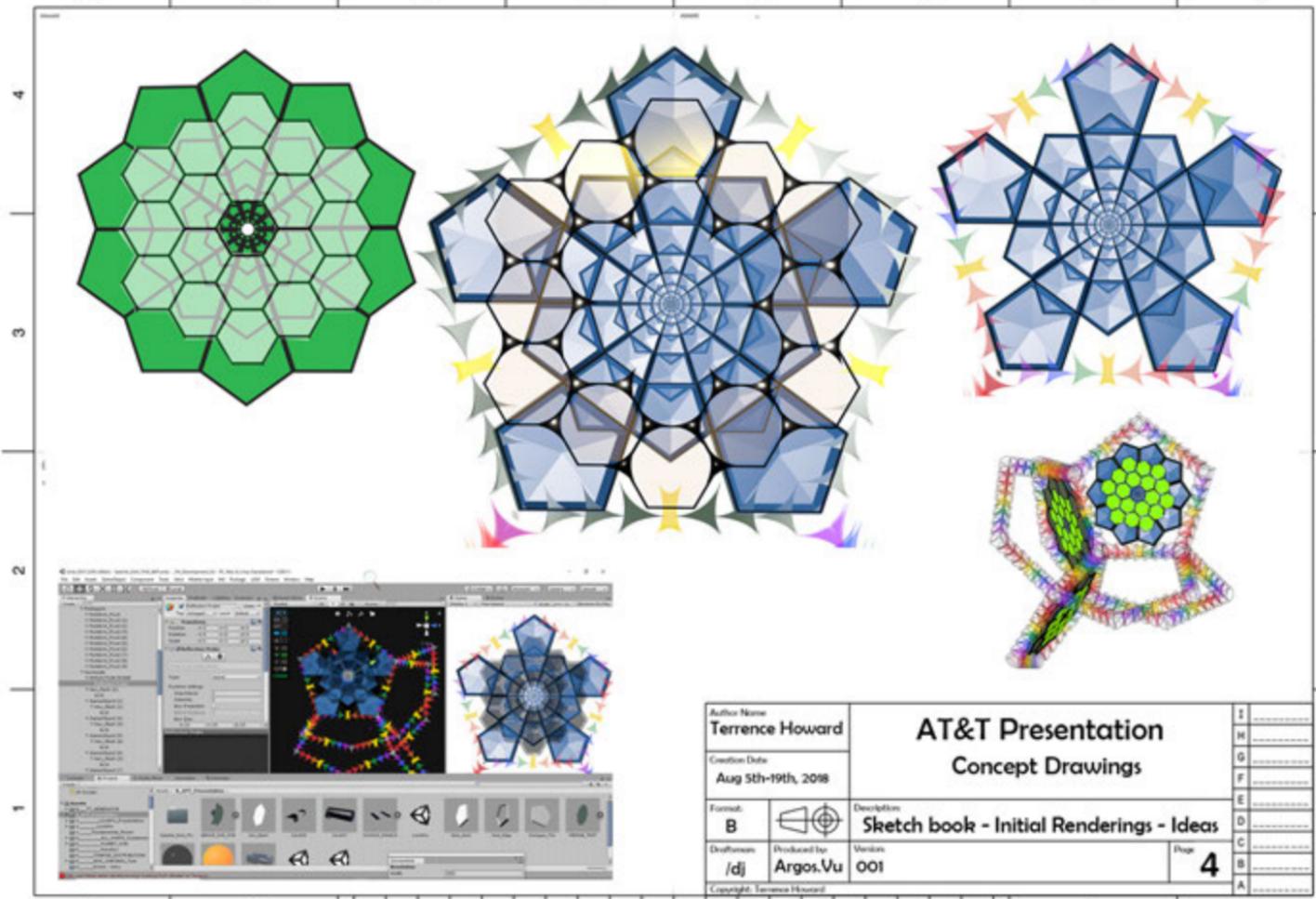
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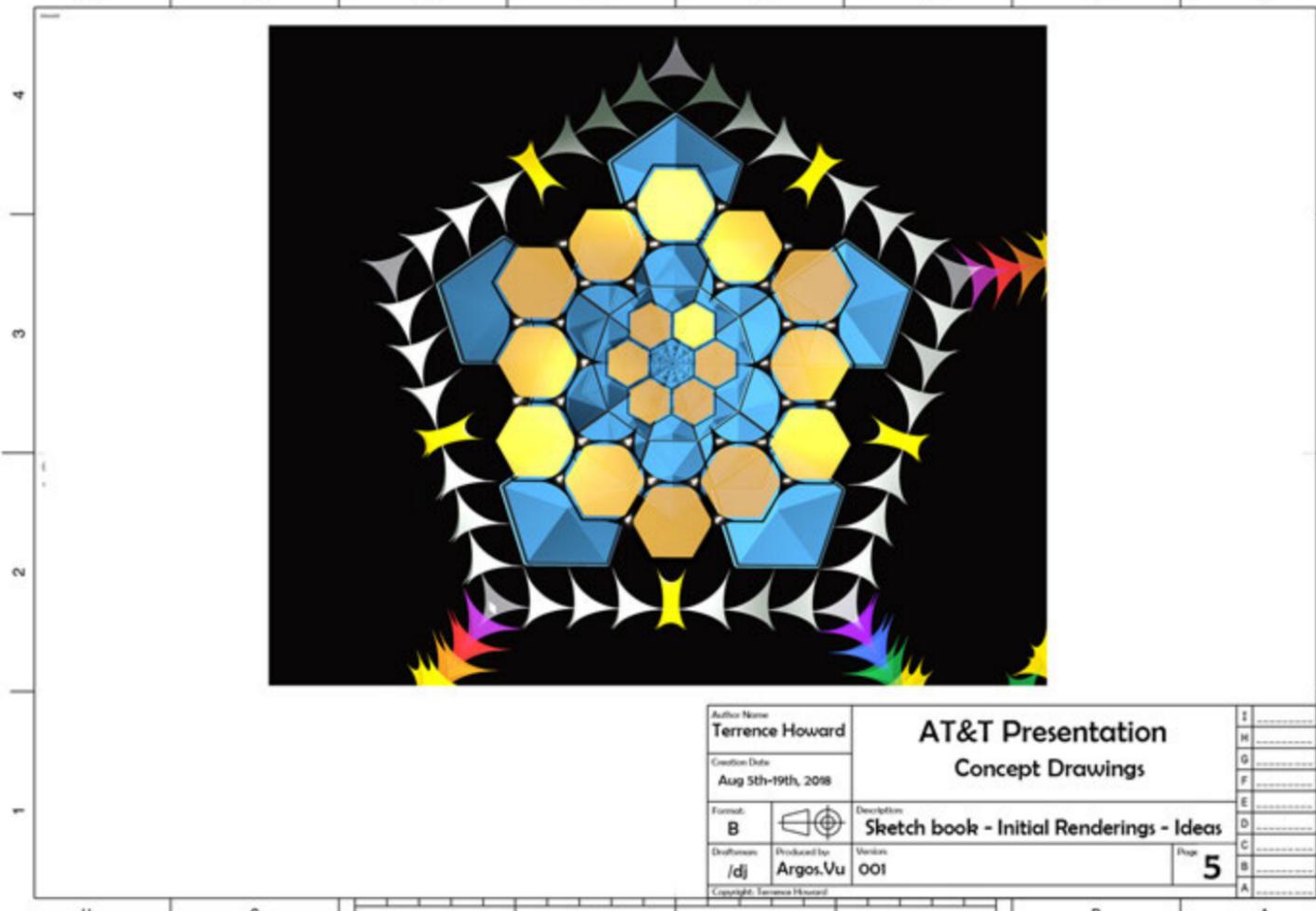
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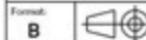




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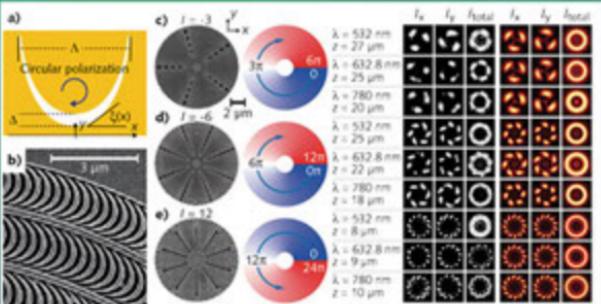
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Wave Congurations - Orbital Angular Momentum



Electron Vortex Beams with High Quanta of Orbital Angular Momentum

Benjamin J. McMorran¹, Amit Agrawal^{1,2}, Ian M. Anderson³, Andrew A. Hezinger⁴, Henri J. Lezec¹, Jabe...

See all authors and affiliations

Science 14 Jan 2011;
Vol. 331, Issue 6014, pp. 193-195
DOI: 10.1126/science.1198854

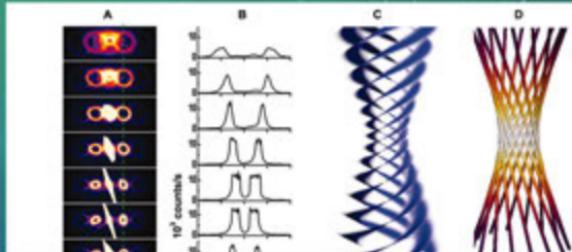


Fig. 4
Evolution of electron vortex beams going through focus. (A) A focal series of images shows multiple diffracted electron vortex beams going through a beam waist. The beams are produced using a grating with a dislocation of $b = 15$. The slanted elongation of the intense central beam near the beam waist is an artifact resulting from saturation of the CCD camera. (B) Line profiles through the first diffraction order [indicated by the dashed green line in (A)] clearly show the presence of a persistent central intensity node that expands from the beam waist, indicating a phase vortex and therefore OAM. (C) A simulation of the wavefronts and transverse amplitude of an $m = 5$ Laguerre-Gaussian beam going through focus illustrates the helical structure of the wavefields. (D) A geometric optics model reveals that the electron vortex beam can be understood as a superposition of semiclassical straight-line trajectories.

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Determinants of Faraday Wave-Patterns in Water Samples Oscillated Vertically at a Range of Frequencies from 50-200 Hz

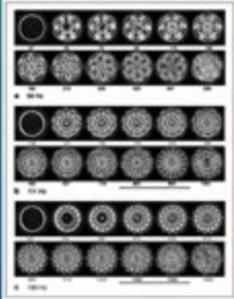
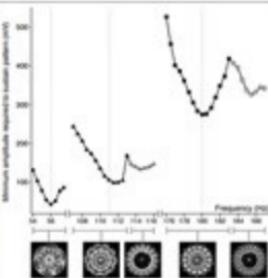
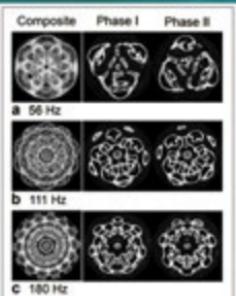
Merlin Sheldrake* & Rupert Sheldrake

*Corresponding author: merlinsheldrake@gmail.com

Keywords: Faraday wave, pattern formation, vibrational mode, catastrophe theory, bifurcation, analogue model, morphogenesis, parametric oscillation, nonlinear dynamic system

Received: July 13, 2017; Revised: September 6, 2017; Accepted: September 15, 2017; Published: October 25, 2017;
Available Online: October 25, 2017

DOI: [10.14294/WATER.2017.6](https://doi.org/10.14294/WATER.2017.6)



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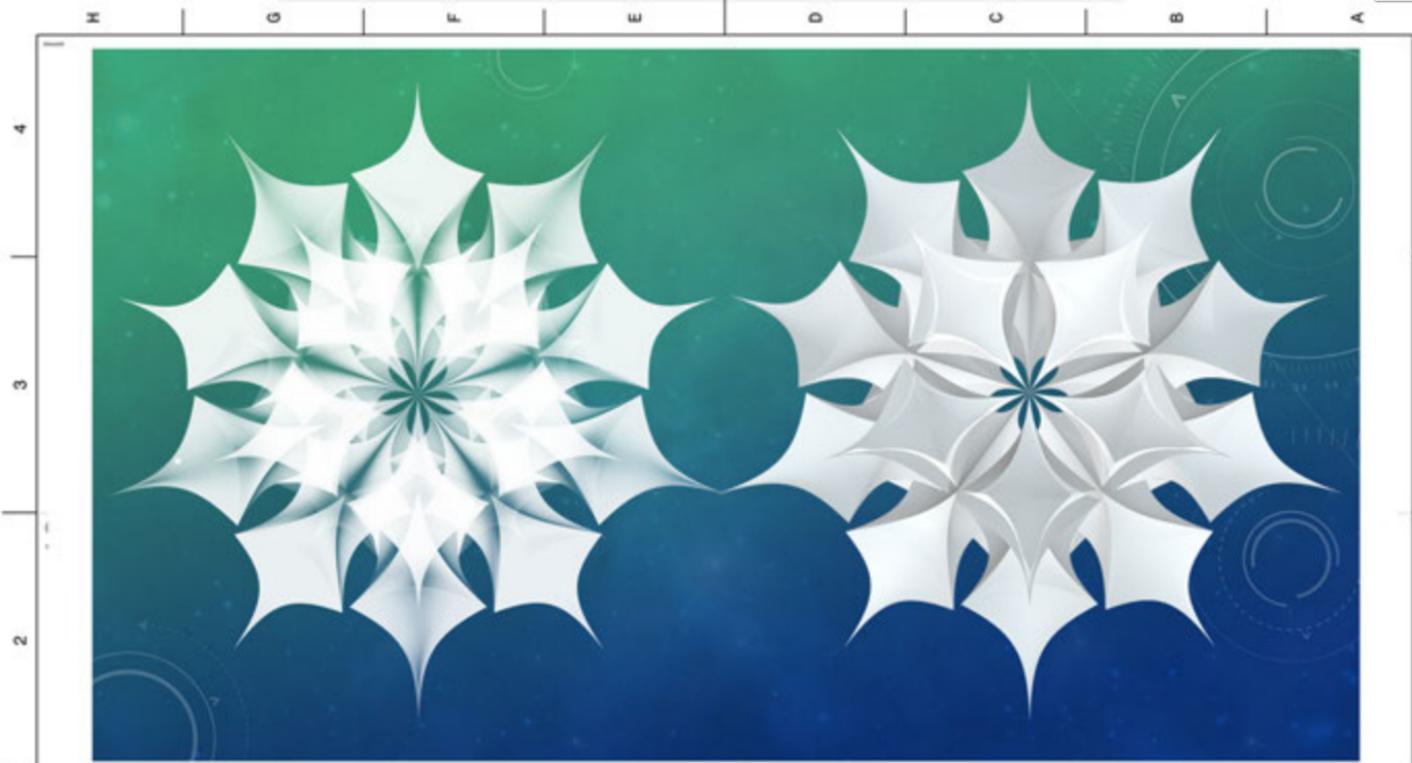
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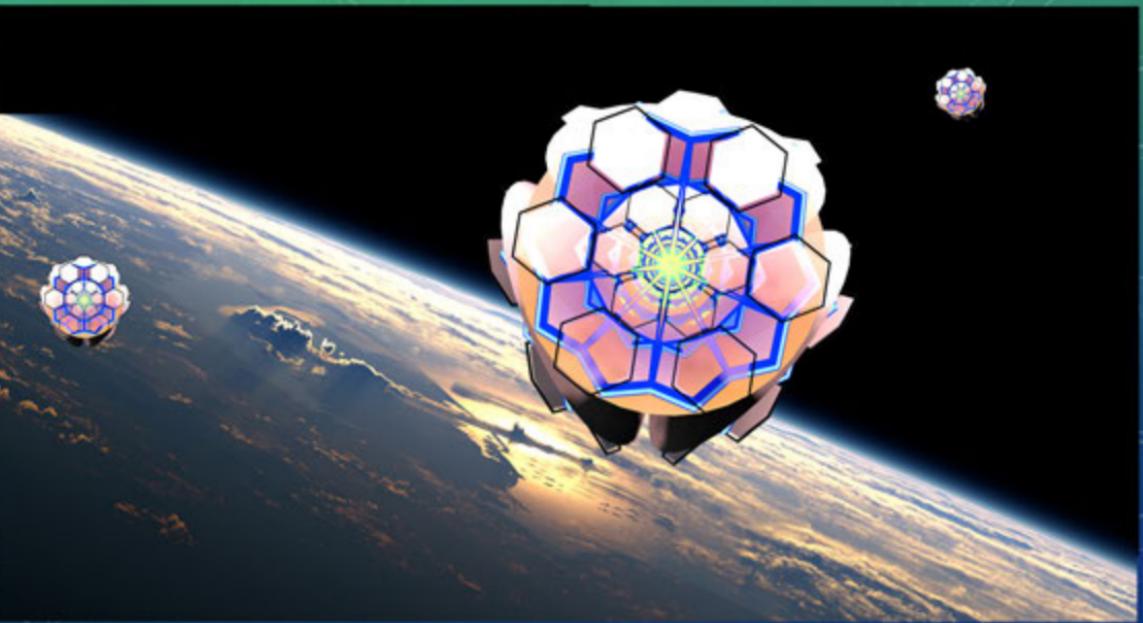
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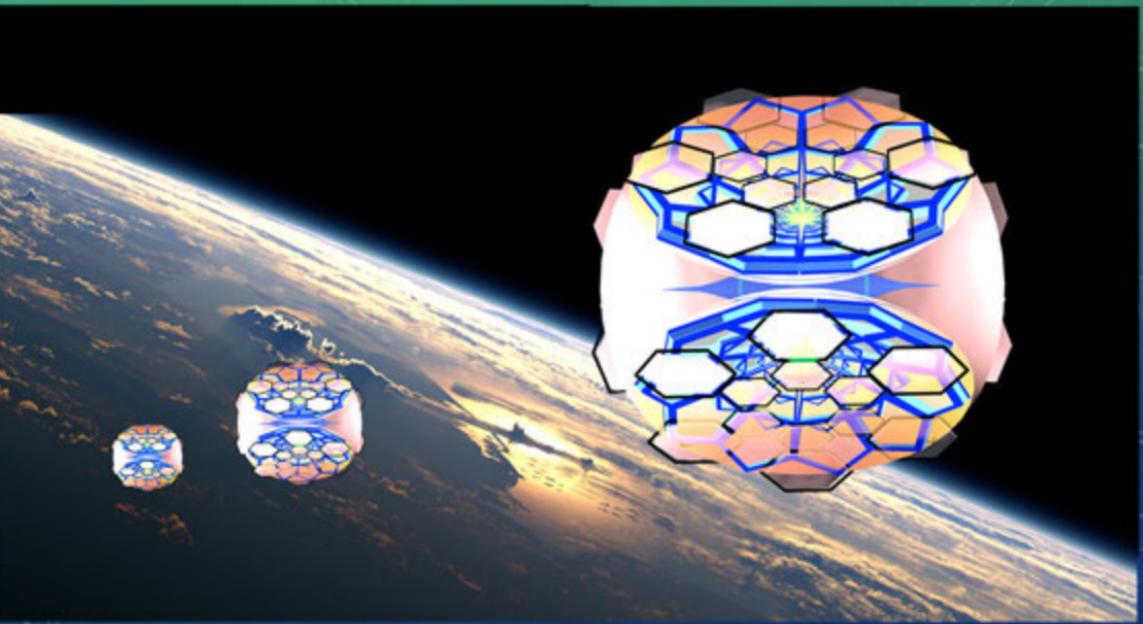
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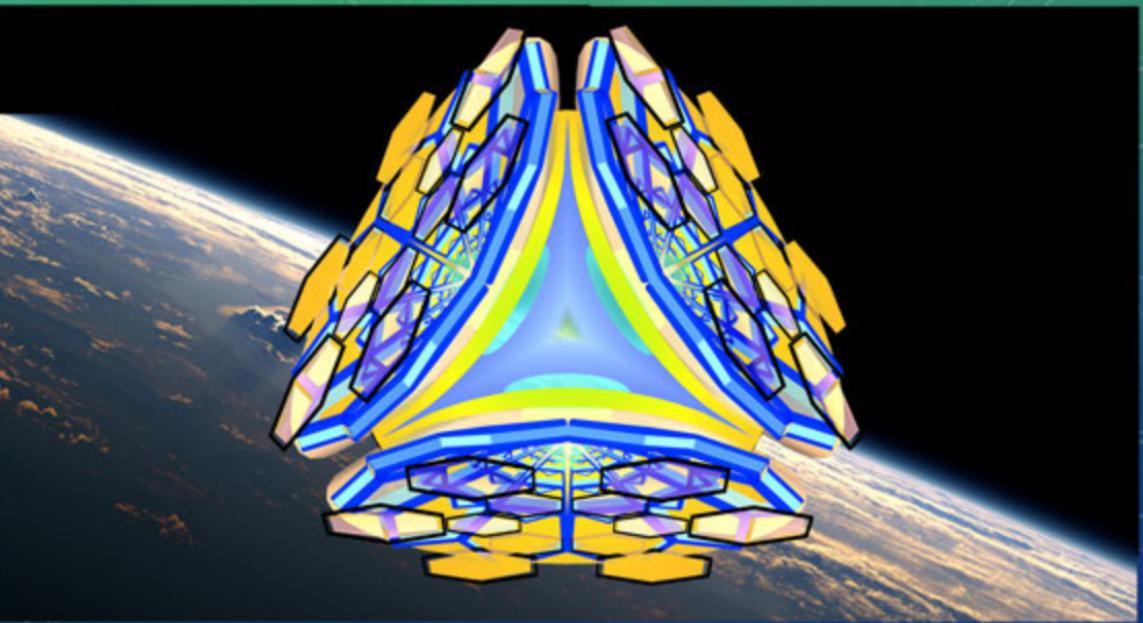
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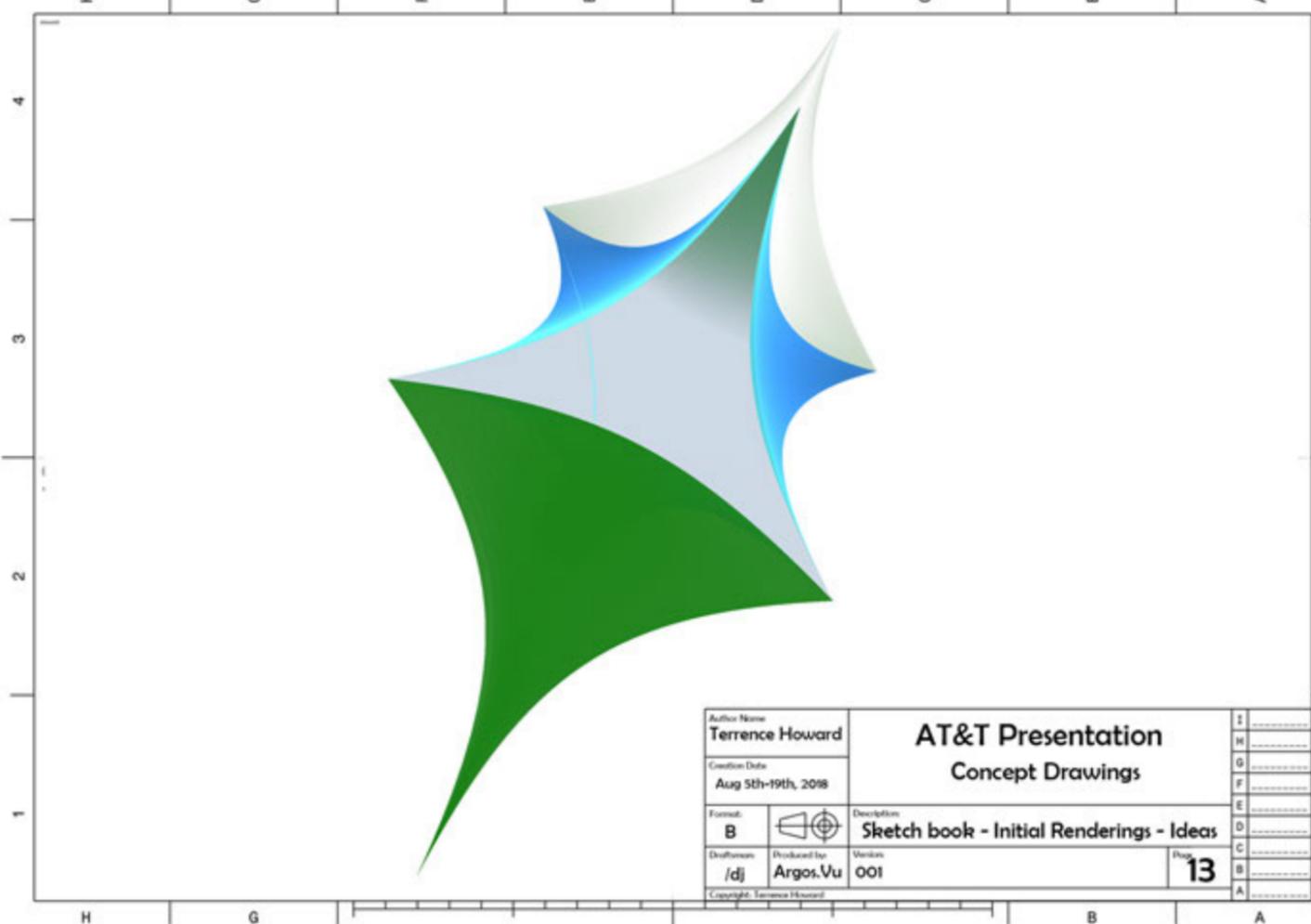
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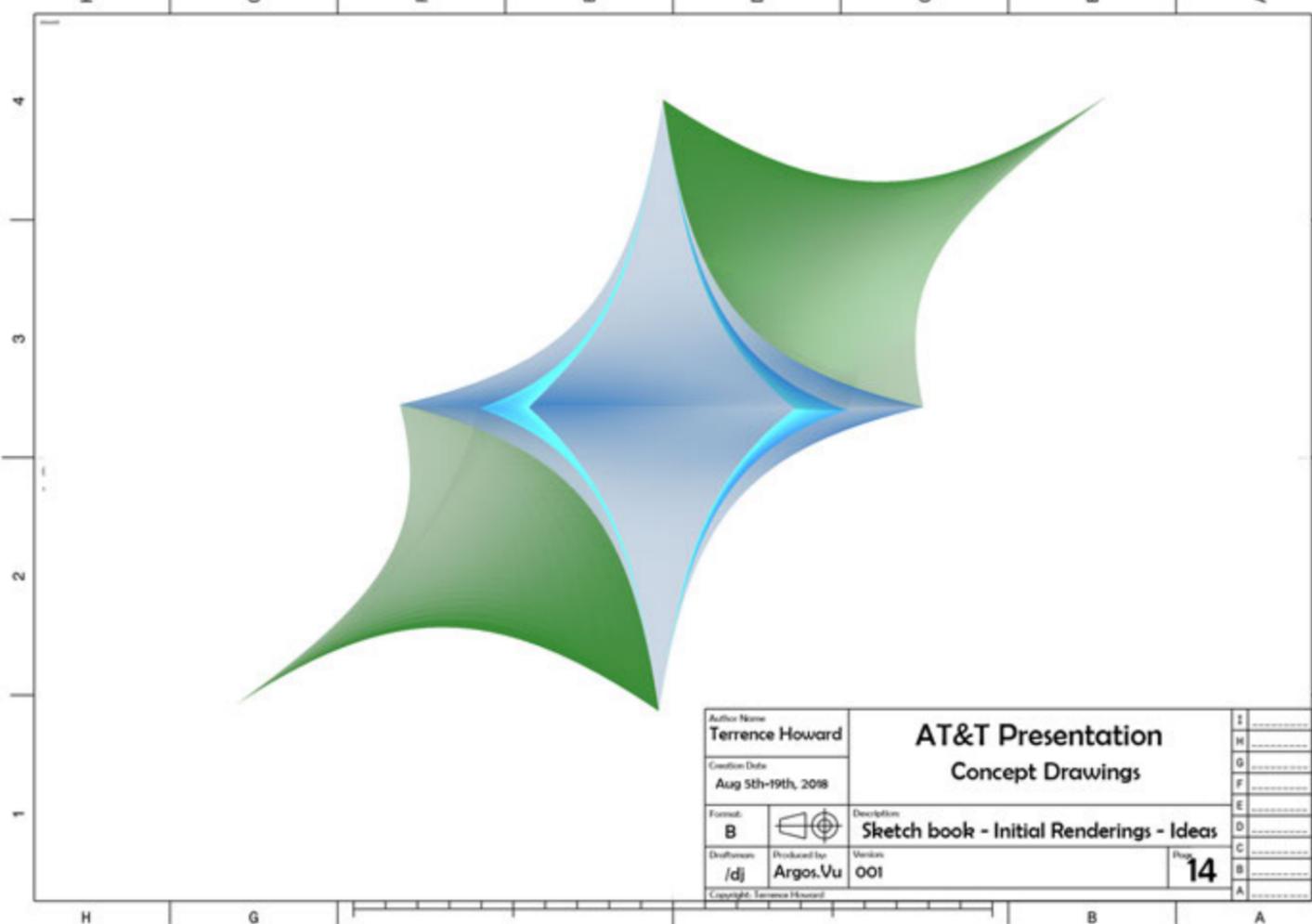
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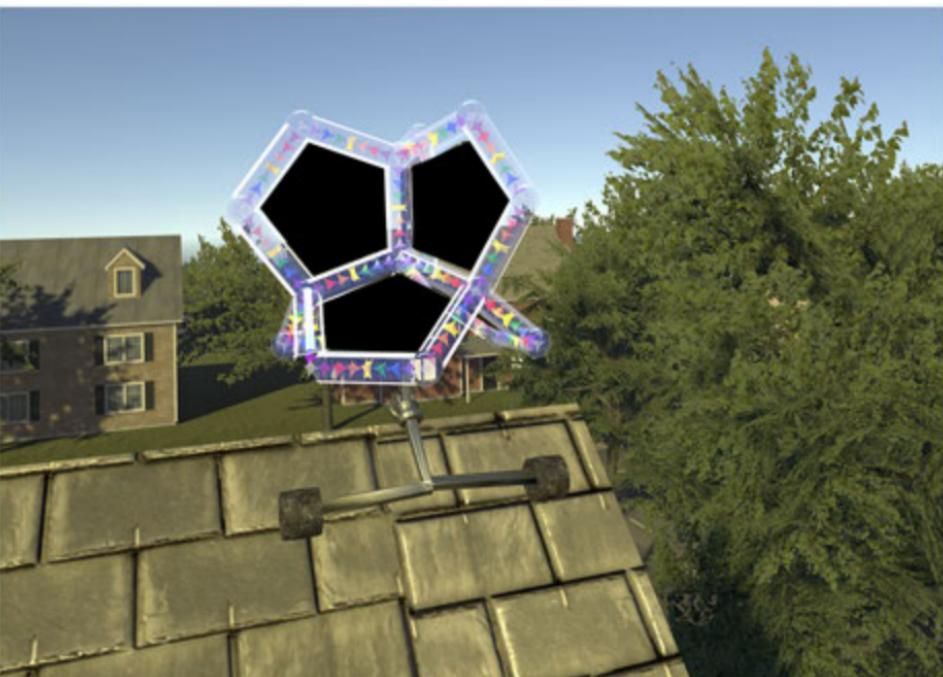
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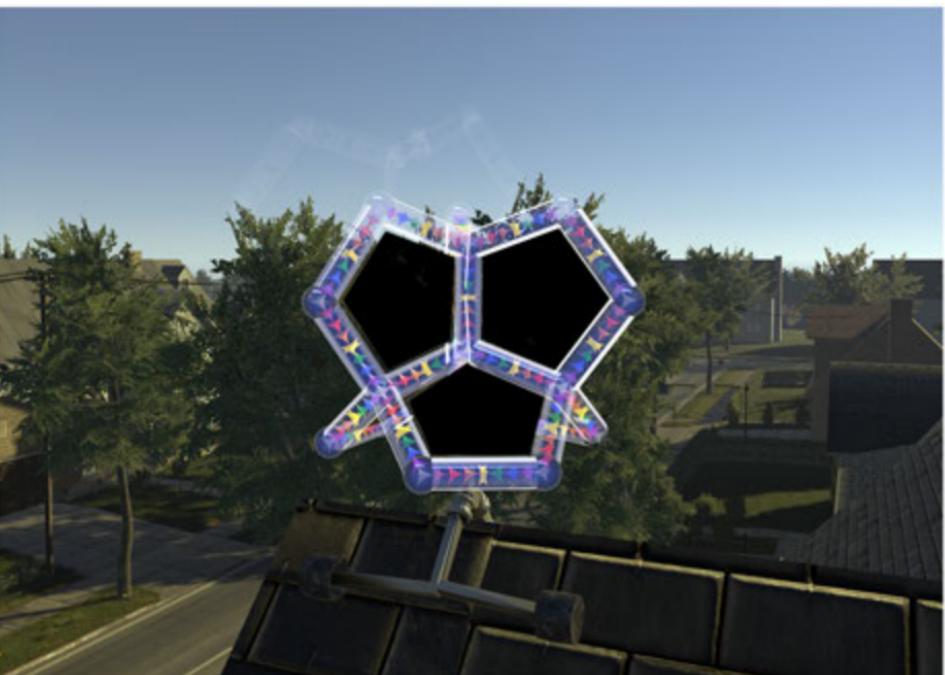
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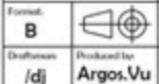
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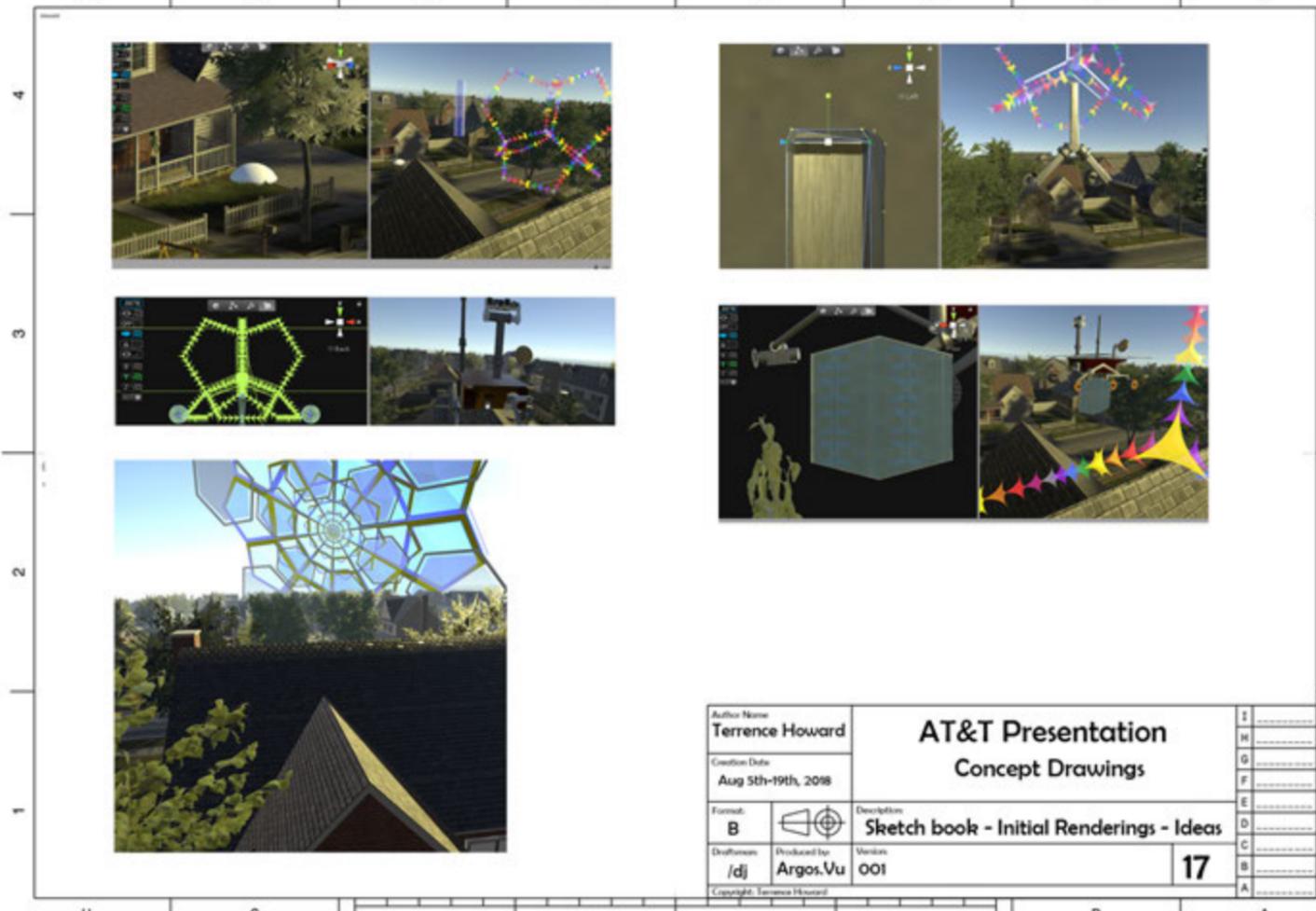
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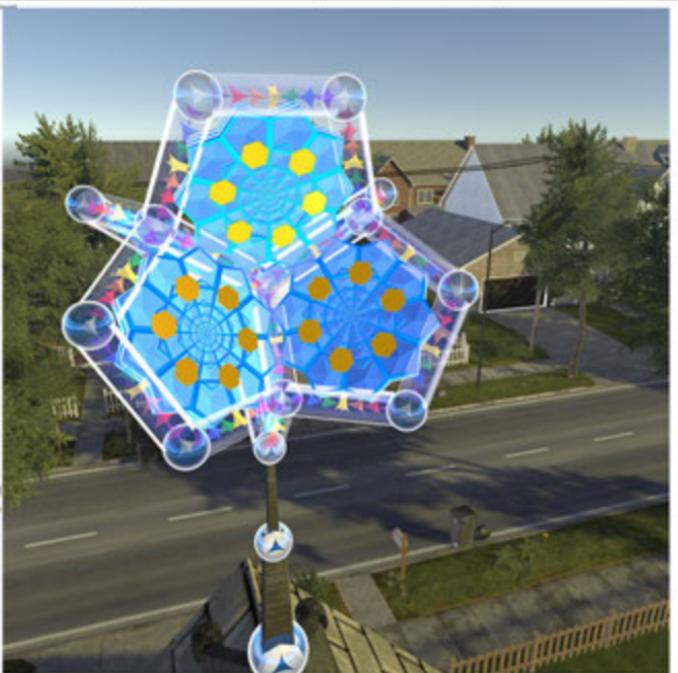
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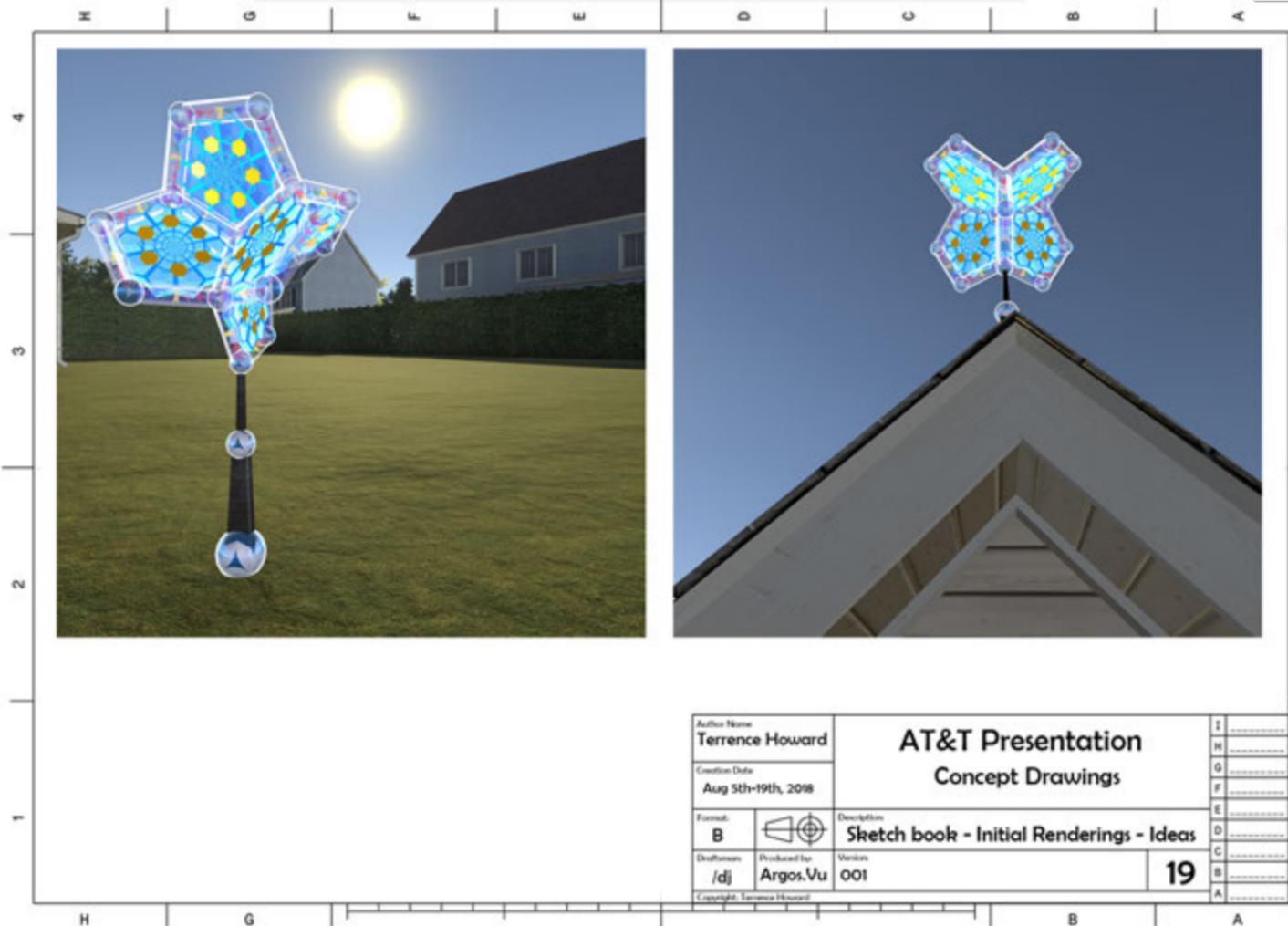
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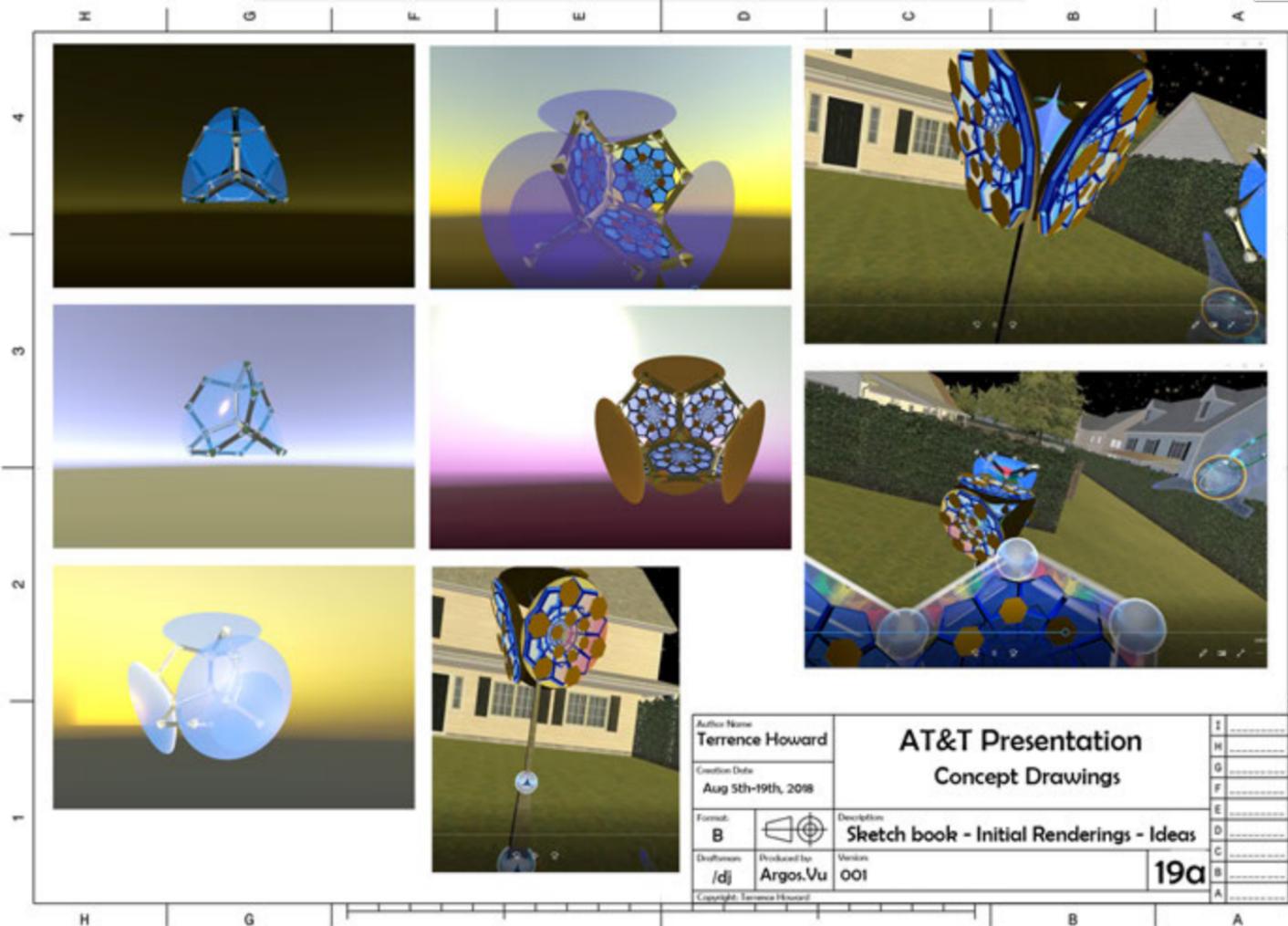
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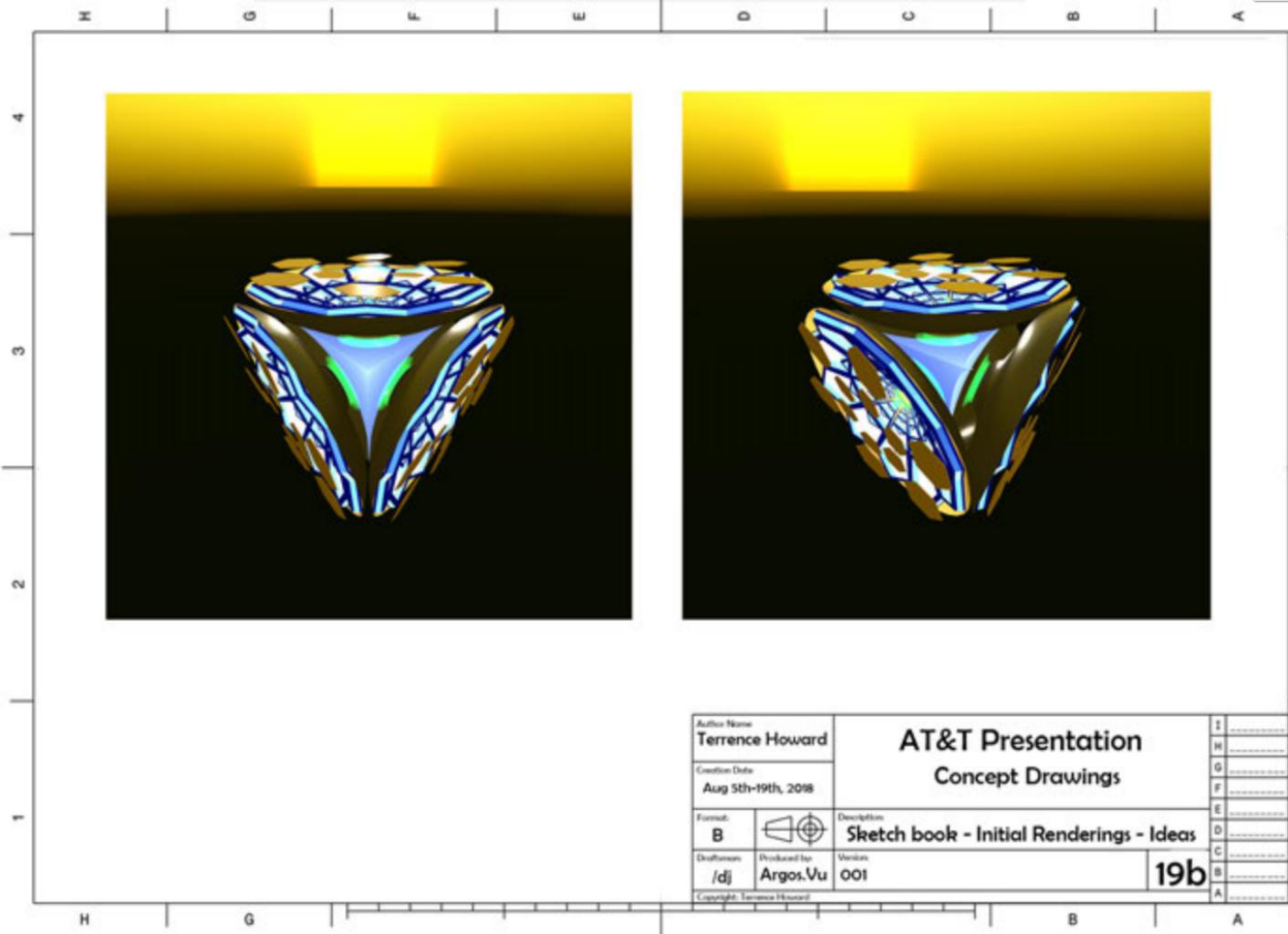
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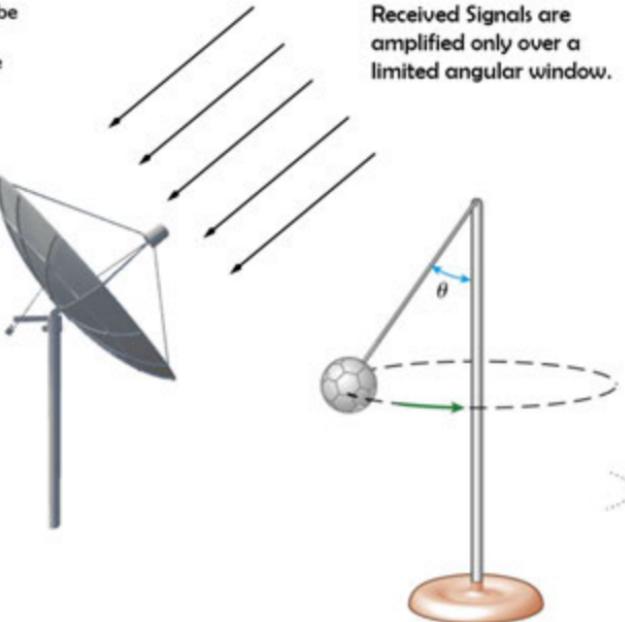
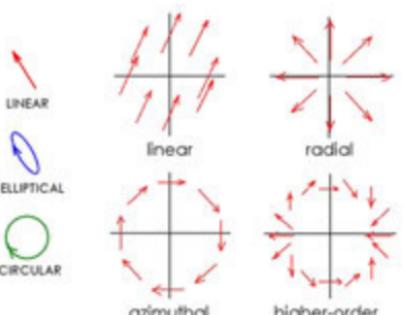
Parabolic Reflector

A1
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Wavefront must be
In-Phase across
Antenna Aperture

Only "linear"
signals are
processed

Received Signals are
amplified only over a
limited angular window.



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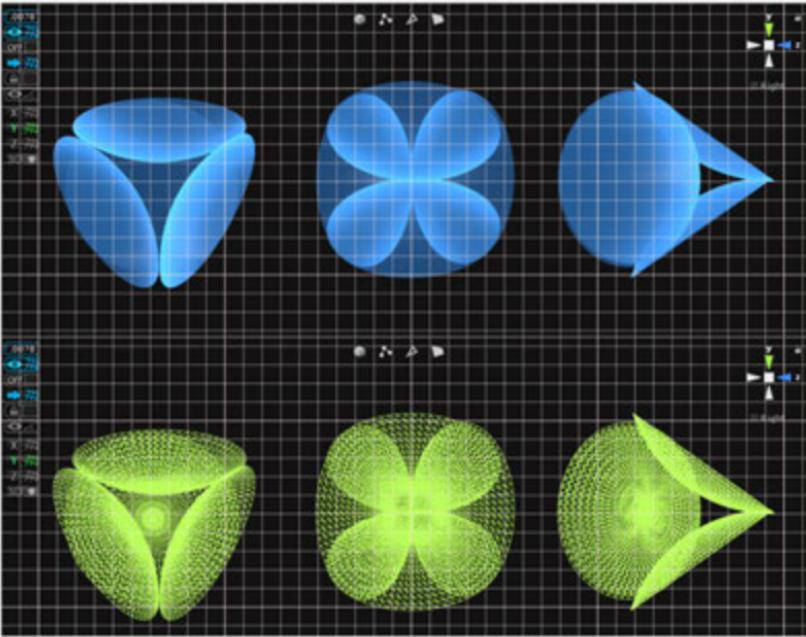
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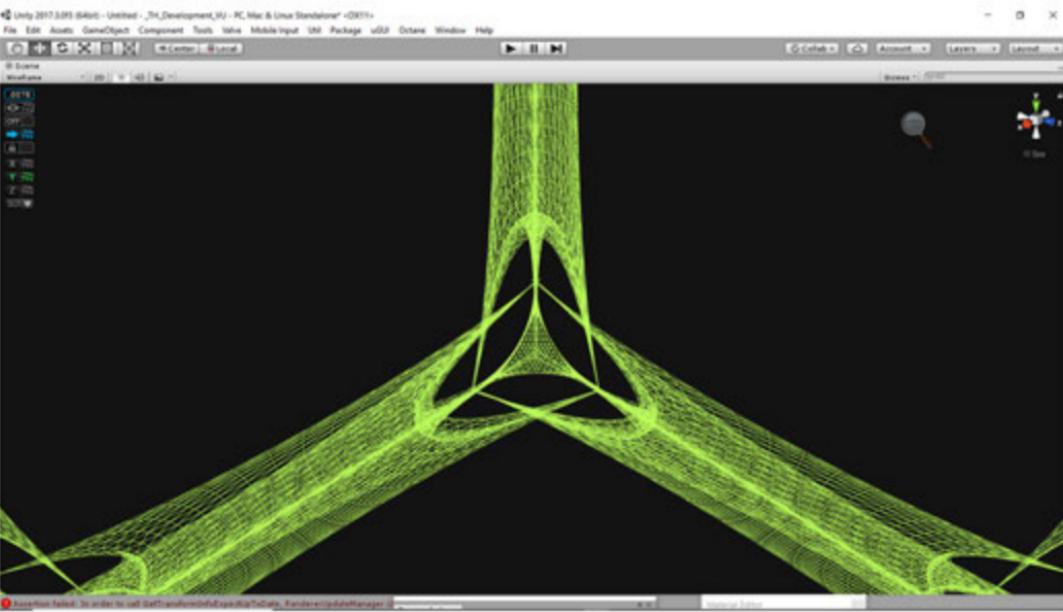
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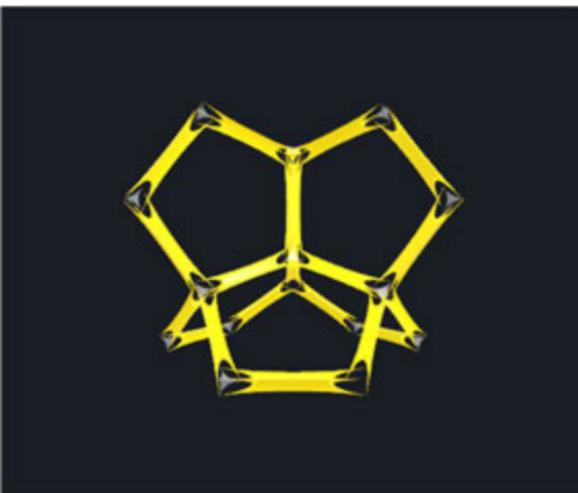
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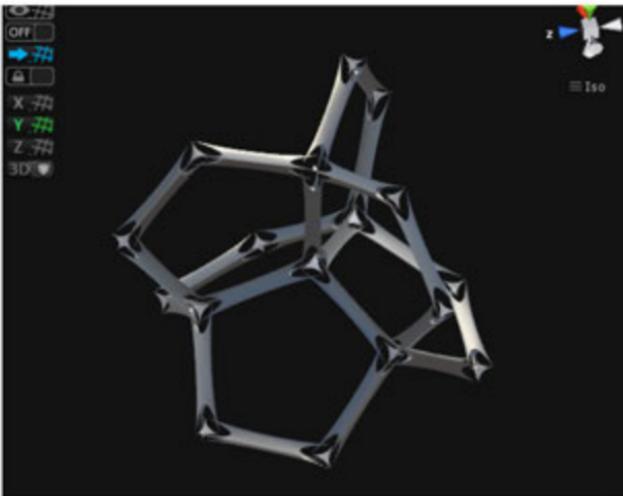
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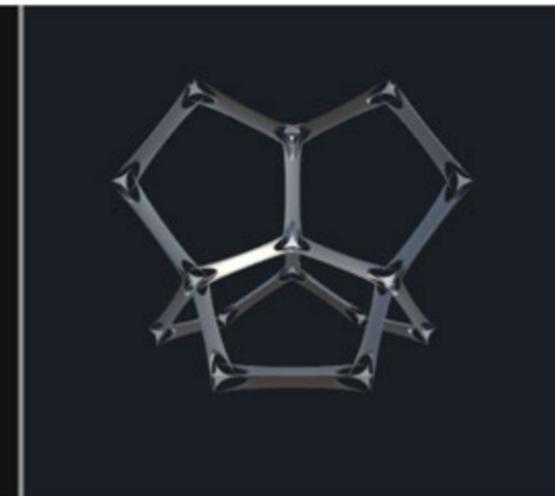
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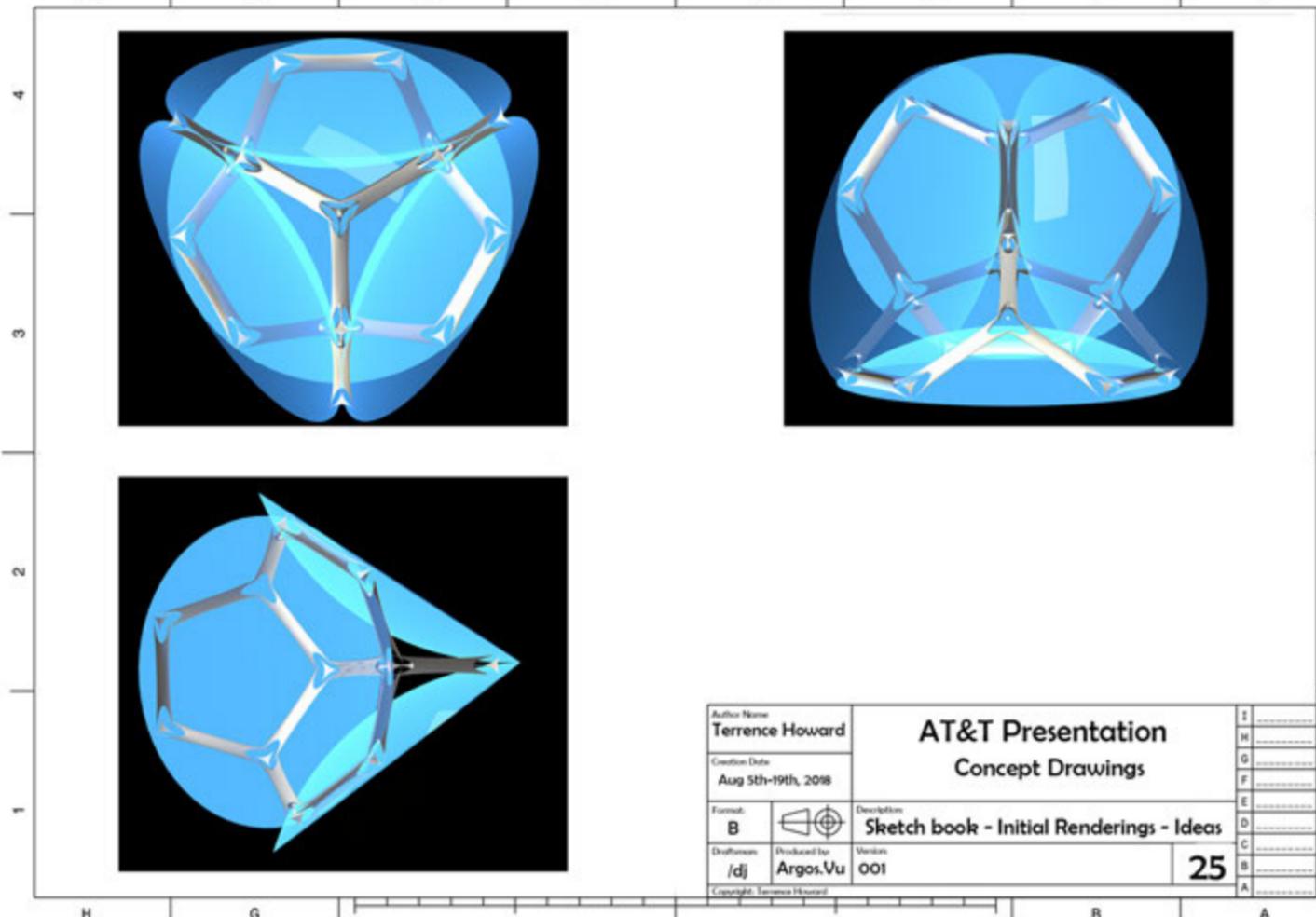
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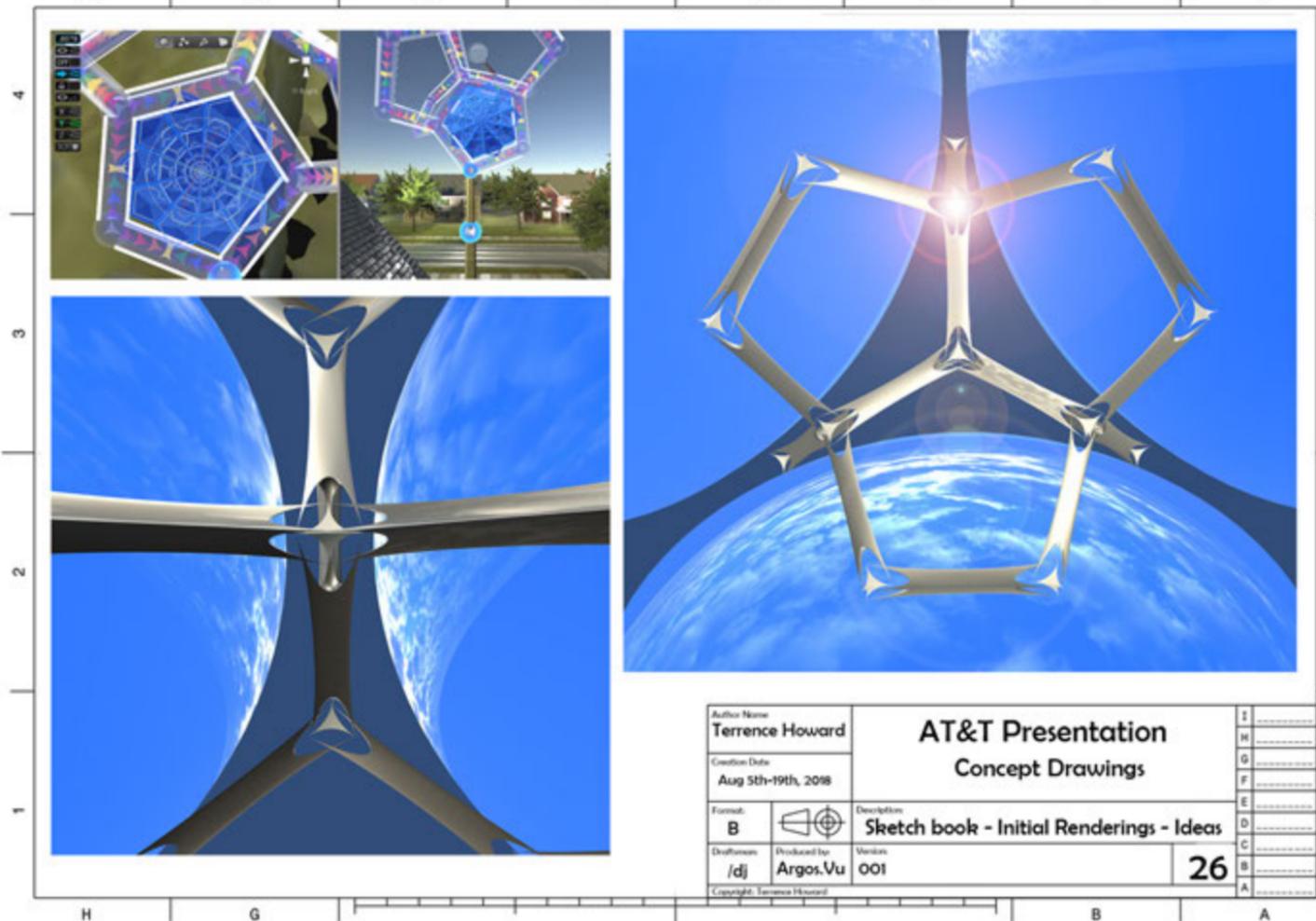
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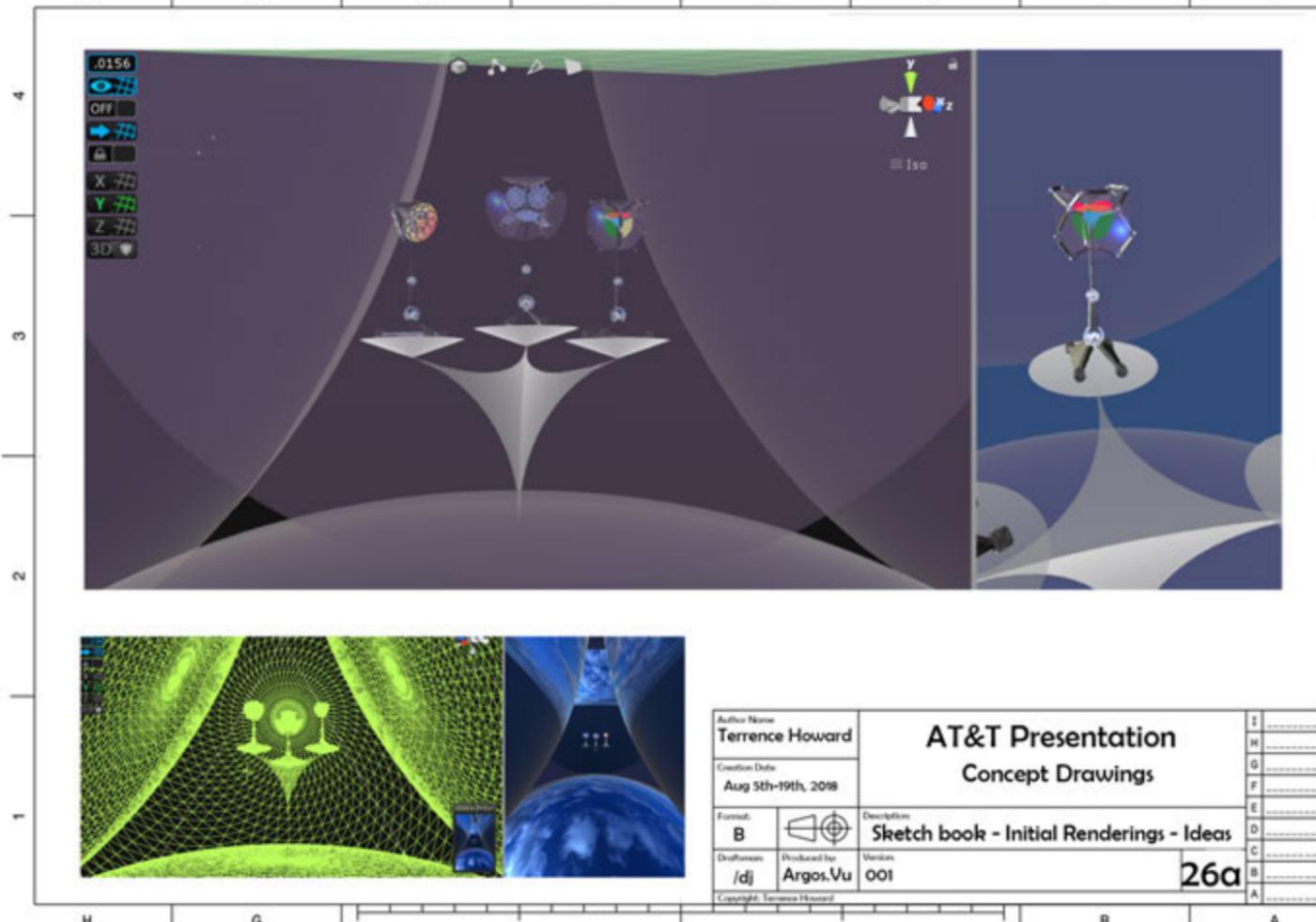
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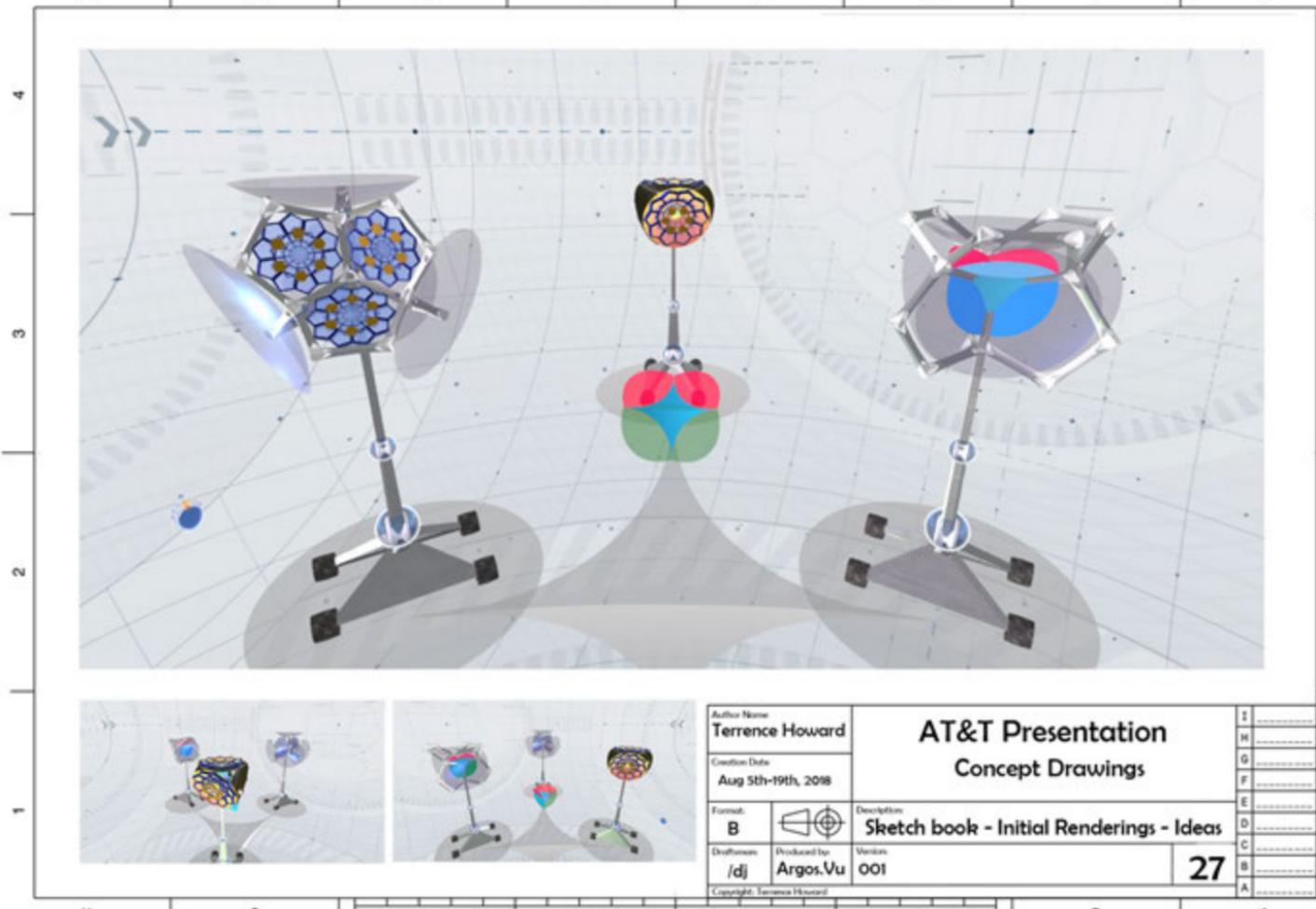
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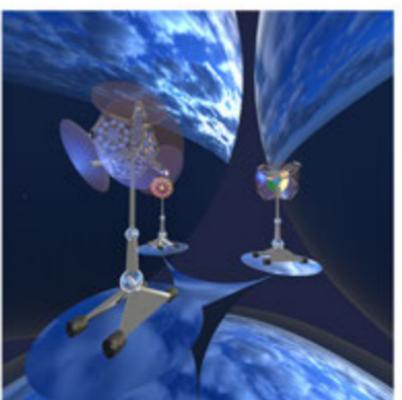
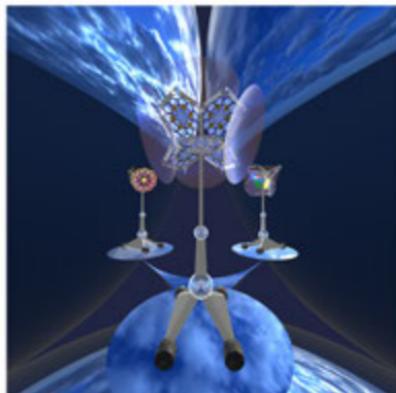
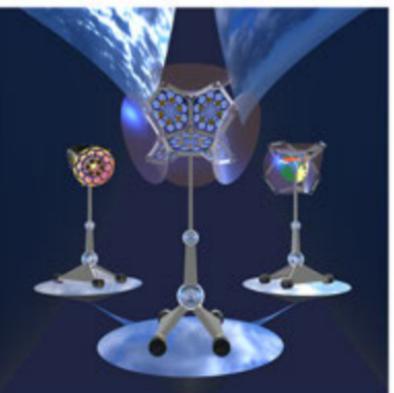
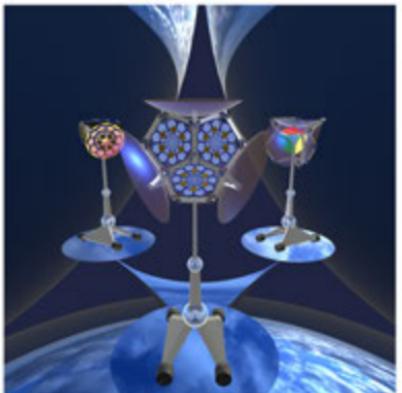
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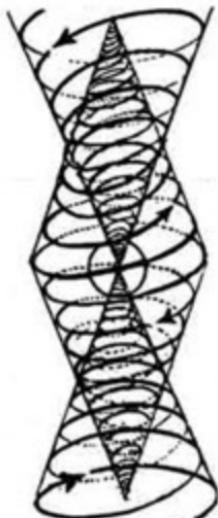
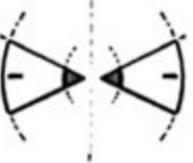
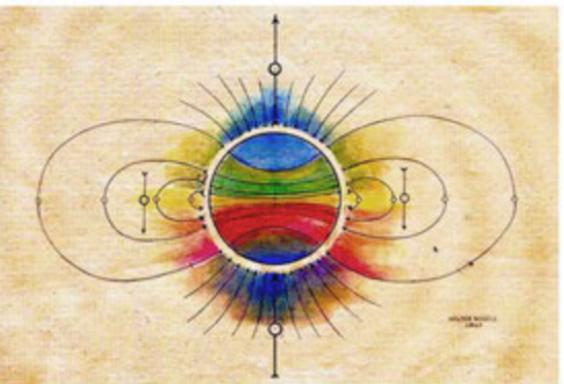
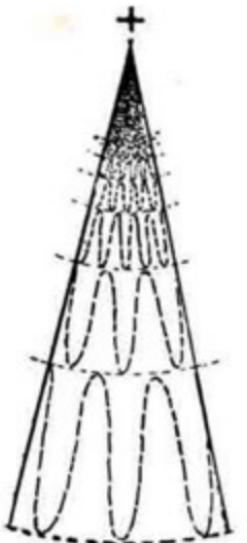
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Universal Heartbeat

Equilibrium
Movement



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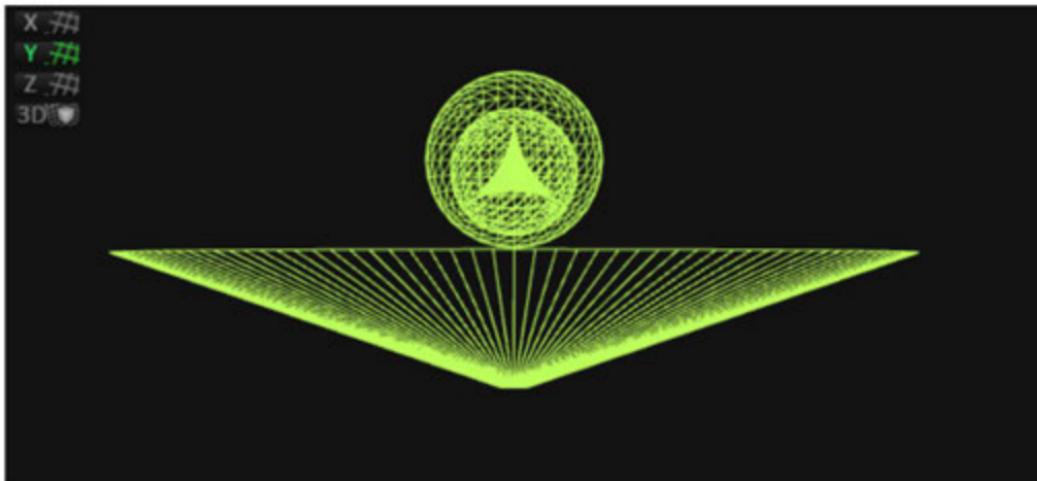
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