

The Fantasy of Space Colonization: The Spaceship We're Already On

with Tom Murphy & DJ White | Reality Roundtable 24

Show Notes and Links to Learn More

The TGS team puts together these brief references and show notes for the learning and convenience of our listeners. However, most of the points made in episodes hold more nuance than one link can address, and we encourage you to dig deeper into any of these topics and come to your own informed conclusions.

00:00 -

➤ **Tom Murphy:**

- Blog: [Do the Math](#)
- Book: [Energy and Human Ambitions on a Finite Planet](#)
- Video series: [Metastatic Modernity](#)
- [Selected publications](#)

➤ **DJ White:**

- [EarthTrust: Impossible Missions, Dolphin Lab \(Project Delphis\), The Bottleneck Foundation](#)
- Books with Nate Hagens: [Reality Blind vol. 1](#) & [The Bottlenecks of the 21st Century](#)
- Contact DJ here: dj@effectivist.org

➤ Previous TGS episodes:

- DJ: [Ocean Effectivism](#)
- Tom: [The Simple Story of Civilization, Physics and Planetary Ambitions](#)
- Both together: [Tales from the Carbon Pulse](#)

03:20 - [More-than-human predicament](#)

03:48 - [Techno-optimism](#)

04:25 - [APOLLO \(the Apache Point Observatory Lunar Laser-ranging Operation\)](#)

05:37 - [Mars Laser Ranging mission concept study](#)

04:41 - [General relativity](#)

06:30 - [U.S. Space & Rocket Center in Huntsville, AL](#)

08:10 - [Past moon missions](#)

08:30 - [Saturn V](#)

09:37 - [John C. Lilly](#)

11:40 - [Sir Arthur C. Clarke, 2001: A Space Odyssey, The Fountains of Paradise](#)

13:05 - [Human capacity for abstract, fantastical, and wrong thinking](#)

The Great Simplification

- 13:50 - [Space resource extraction](#)
- 14:05 - [Jeff Bezos presentation on space colonization](#)
- 15:05 - [How much is an asteroid really worth?](#)
- 15:32 - [Gold in the ocean](#)
- 15:48 - [Energy returned on energy invested \(EROI\)](#)
- 16:30 - [M-type asteroid](#)
- 16:43 - [Don't Look Up](#)
- 17:08 - [Ideal rocket equation, 90% of the weight of a rocket going to orbit is propellant weight](#)
- 17:52 - [Corn ethanol EROI](#)
- 18:00 - [The environmental and moral implications of human space travel](#)
- 18:58 - [Asteroid return mission - OSIRIS-REx](#)
- 21:10 - [The Role of the Media in the Construction of Public Belief and Social Change](#)
- 21:42 - Fossil fuel boom: [The Carbon Pulse](#), [The Many Shapes of the Carbon Pulse](#)
- 22:20 - [Religious people have been found to be happier and healthier](#)
- 23:00 - [Technological singularity](#)
- 23:15 - [Dyson sphere](#)
- 23:30 - [Energetic remoteness \(Join our Hylo channel to discuss "fwuh" with DJ\), Through an alien Lens \(TaaL\), Receding horizons](#)
- 23:40 - [Entropy](#)
- 24:17 - [Titan \(Saturn's largest moon\) has seas of liquid methane](#)
- 26:15 - [Blind faith in human ingenuity, Concept of religion](#)
- 27:50 - Growing into more mature beliefs: [Stages of faith \(Moving up the stages\)](#), [Ego development and growing through it](#)
- 28:39 - [Moon](#) and [Mars](#) colonization
- 29:00 - [Moon landing](#)
- 29:40 - [Cost of Apollo program](#)
- 30:00 - [Cost per year of International Space Station](#)
- 31:00 - Mars' [atmosphere](#) and [radiation exposure](#)
- 31:10 - [Effect of spaceflight on the human body](#)
- 31:20 - [Recovery after time on the International Space Station](#)
- 32:50 - [Mars' soil is toxic, Potatoes in *The Martian*](#)
- 35:00 - [Tom's analogy - "The Cost of Ignorance"](#)
- 36:20 - [Becoming ecoliterate](#),
 - TGS episodes on such: [RR#17](#), [#146](#), [#138](#)
- 36:35 - [Effective altruism movement](#) and its [views on space](#)
- 37:25 - [Neoclassical economics](#) and [its myths](#)
- 38:20 - [500 billion* human equivalents' worth of fossil fuels annually added to the economy](#)
- 38:50 - [The Great Simplification](#)
- 39:25 - [Bread and circuses](#)
- 40:25 - [EcoSpheres](#) don't work ([More info](#))
- 41:35 - [Spaceship Earth](#)

The Great Simplification

- 41:50 – Recent* moon mission: [Artemis II](#)
- 42:05 – [Pale Blue Dot](#)
- 43:40 – [Earth’s atmosphere protects us from radiation](#)
- 44:15 – [Radiation sources and doses on Earth](#)
- 44:40 – Radiation exposure on [the ISS](#), [Moon](#) and [Mars](#) surfaces, and during [space travel](#)
- 47:05 – [Sievert unit](#)
- 48:00 – [Psychological effects of isolation](#)
- 50:10 – Fanciful technologies: [Interstellar travel](#), [Generation ship](#), [Warp drive](#), [Nuclear propulsion](#), [Dilithium crystals](#)
- 54:30 – [Star Trek](#)
- 55:40 – [Antimatter](#) and [medical imaging](#)
- 55:55 – Tom Murphy survey: [Futuristic Physicists?](#)
- 58:15 – [Terraforming](#)
- 58:55 – [Solar system probes](#)
- 1:00:25 – [Sixth mass extinction \(More info\)](#)
- 1:01:30 – [James Webb Space Telescope: Jupiter cloud band picture](#)
- 1:01:50 – [Space Race](#)
- 1:02:45 – [O’Neill cylinder](#)
- 1:05:05 – [Dolphins learning to use computers](#)
- 1:05:55 – [Baiji dolphin functionally extinct](#)
- 1:07:03 – [Cetaceans Have Complex Brains for Complex Cognition, Culture and Communication among Cetaceans](#)
- 1:09:15 – [Social comparison](#)
- 1:11:20 – [Animistic belief systems were the primary human “religions” for most of human history](#)
- 1:12:20 – [Abrahamic Religions and the Environment](#)
- 1:13:25 – [Drake equation](#)
- 1:13:35 – [The evolution of general intelligence](#)
- 1:14:15 – Naia: [trillionth human child](#)
- 1:14:55 – [Holocene](#)
- 1:16:40 – [Supersonic commercial flight failure](#)
- 1:19:35 – [Technofeudalism](#)
- 1:19:50 – [Why are billionaires obsessed with going to space?](#)
- 1:22:00 – [Joseph Smith’s “spectacles”](#)
- 1:23:25 – [Tom Murphy’s Aircraft Avoidance Systems](#)
- 1:24:11 – [Endocrine-disrupting chemicals, 2/3 of countries are below replacement rate](#), Tom Murphy: [Peak Population Projections](#)
 - TGS Episodes on endocrine disruptors: [RR#23](#), [#104](#), [#99](#), [#37](#), [#2](#)
 - TGS Episodes on human population: [#136](#), [#9](#)
- 1:32:10 – [Cetacean hunting](#)