

Astrobiology News June 2021: Astrobiology, the Anthropocene, and Planetary Intelligence

If you were unable to catch David Grinspoon's CASIRAS webinar, *The Emergence of Planetary Intelligence: Astrobiology and the Anthropocene Earth*, earlier this month, I urge you to check it out on YouTube!¹ I'll try to summarize some of the highlights here, but I can't possibly do justice to David's wonderful delivery, or the breadth of content, in a few paragraphs. One of the central questions David posed was, "Could intelligence, like life, become a planetary property?"

In addressing this question, David noted four types of processes that result in major changes on a planet (in this case, we're speaking of Earth): (1) Random; (2) Biological; (3) Inadvertent; and (4) Intentional. Asteroid impacts - such as the one thought to have caused the extinction of the dinosaurs - fall under the first category. The rise of cyanobacteria, which produced mass extinctions before new life adapted to an oxygen atmosphere, is an example of the second category. Inadvertent changes involve agency - such as byproducts of human technology (e.g., rising carbon dioxide levels) that have produced "the Anthropocene Dilemma" - where the scale of agency exceeds the scale of awareness. The fourth type of change occurs when actions are guided by consequences, such as actively exploring ways to mitigate our harmful effects on the environment.

The term "Anthropocene" was coined to label the beginning of the epoch when human activity started to reshape our planet. The actual beginning of the Anthropocene has been debated by scientists, and David proposes the Anthropocene might better be thought of as an entry into a new eon, since epochs are associated with little changes and relatively short periods of time, while eons are long time periods that mark major transitions between life and our planet. He optimistically uses the term "Sapiezoic Eon" as an aspirational title meaning the "Age of Wisdom." He further suggests the transition be "the golden spike of Tranquility Base," marked by the first human mission to the Moon. A "golden spike" is what geologists call a unique timestamp associated with an event or transition. David notes that the signs of human presence on the Moon - which will remain for a very long time - could not have been made by a species without world-changing technology, and the "altered landscape also captures the moment we first looked back and saw the unity of our home and our common destiny with all life on our planet."²

The biggest challenge for us today is, how do we learn to live in a sustained way with our powerful technology? David suggests that our cognitive processes need to become deeply integrated into the functioning of our planet, which requires a different way of behaving. He defines sustainability in terms of an "awakened" planet in which both biosphere and civilization flourish in entirely new ways. Intelligence as an individual trait would seem to be necessary but not sufficient for long term survival with technology, so is it useful to think of defining intelligence as a global property? Might we associate planetary intelligence with more globally coordinated cognitive activity that can result in stabilizing behavior?

Jesuit priest Pierre Teilhard de Chardin first coined the term "noosphere" or "sphere of mind," setting the philosophical framework for thinking of a planetary consciousness. In thinking about all the ways we are connected across the globe today, David wonders, "Might such a planetary intelligence possess cognitive properties of which we are currently unaware?" Can we become "Terra Sapiens" (wise Earth), learning to live comfortably over the long term with world-changing technology? David's answer is optimistic, but he acknowledges this will require the widespread propagation of a worldview that is both global and multi-generational.

¹ <https://www.youtube.com/watch?v=axrIPrd-qWc>

² <https://skyandtelescope.org/astronomy-blogs/the-golden-spike-of-tranquility-base/>

Finally, I want to express my profound thanks to the many CLP members who have responded - and may continue to respond - to Michael's call for help in filling out one of the surveys associated with my Engaging Faith Communities with Zooniverse³ project! At this point, over 100 of you have participated in the pre-participation survey and two have responded to the post-participation survey, so I humbly ask that if there are more of you out there who've used Zooniverse, would you please consider filling out a post-participation survey? Perhaps some of you might want to try a Zooniverse project involving Earth's changing climate? How about checking out *Fossil Atmospheres*,⁴ where you can help scientists create a record of how Earth's atmosphere has changed through time by identifying two different types of cells in fossil leaves? This project will help quantify the effects of changing carbon dioxide levels on climate. By participating, you can contribute to the basic science underlying projections of future environmental change!

Until next month,

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³ <http://www.theclergyletterproject.org/Resources/Zooniverse.html>

⁴ <https://www.zooniverse.org/projects/laurasoul/fossil-atmospheres>