

# Cognitive Planetary Transitions: An Astrobiological Perspective on the “Sapiezoic Eon”.

**David Grinspoon**

Planetary Science Institute, Tucson, AZ USA, (grinspoon@psi.edu)

## Abstract

A powerful new dynamic is remaking Earth. Never before has a geological force become aware of its influence. A taxonomy of planetary catastrophes illuminates the unusual nature of the Anthropocene and reframes our current environmental predicaments as part of the narrative of planetary evolution. From a deep time perspective will the Anthropocene be an event, an interval, or something more significant? I propose that it is not simply an Epoch boundary, but the advent of Earth’s 5<sup>th</sup> Eon, the “Sapiezoic”.

The advent of self-aware cognitive/geological processes as a component of planetary systems is potentially as significant as the other three Eon boundaries, each of which represented a shift in relationship between life and the planet. Yet, an Eon implies a permanently changed planet. This puts our immediate challenges over the next century: (stabilizing population & devising an energy system that can provide for the needs of this population without wrecking the natural systems upon which we depend) against the backdrop of a larger challenge: Becoming a long-term stabilizing factor on the planet. This will include: Over the next several hundred years, asteroid defense; Over tens of thousands of years, preventing ice ages and natural episodes of dangerous warming; Over billions of years, preventing runaway warming from solar evolution. Global influence precedes global control, so the earliest stages of this transition are characterized by unstable positive feedbacks threatening catastrophe. However, conscious awareness and control can also provide negative feedback. Becoming a stable part of the Earth system will require deep understanding of nature and an ability to forestall natural disasters, as well as the self-understanding needed to avoid self-imposed disasters. It will require both technical and spiritual progress.

How we conduct ourselves on a global scale may affect the security and well-being of all future life. In the past when humans faced existential threats we survived through cooperation and innovation. Our current dilemmas require the same skills applied on larger temporal and spatial scales. Although right now we are initiating a mass extinction, in the long run by preventing future extinctions and prolonging the life of the biosphere we could be the best thing that ever happened to planet Earth.