

Becoming a Planetary Presence

Curricular Materials Prepared by
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Index:

- *Journey of the Universe Book*: Chapter 9: Becoming a Planetary Presence.
- *Journey of the Universe Film*: Scene 11: The Irony of Control.
- *Journey of the Universe Conversations*: Disc 2 – Program 9: Becoming a Planetary Presence.

Scientific Summary:

The migration of humans into Asia, Europe, and the Americas was both an exciting era of exploration as well as a time of great biological loss. The arrival of humans in North America more than eighteen thousand years ago, for example, was accompanied by the loss of the majority of the large land mammals there. We cannot say with certainty that this extinction of species was anthropogenic, but the overlap between the expansion of humans and the concomitant destruction of so many species is worth noting.

Aided by their symbolic consciousness, humans adapted to, and flourished within, new biomes. After a long period of living as hunter-gatherers, a time span of roughly two hundred thousand years, humans established long-term settlements in the great river valleys of the world. Within a relatively short period of time, cities and civilizations emerged. These cultures developed architecture, ceremonial art, literature, an impressive array of yearly cycles and rites, and complex legal and ethical codes. With the aid of language and symbolic thinking our ancestors also cultivated new foods through agriculture and learned to sail and navigate the worlds' oceans and seas.

Perhaps one of the most significant achievements of humanity came in the form of mathematics and science. Luminaries such as Pythagoras and Newton harnessed the power of symbols to bring our understanding of the universe to new levels of complexity and precision. This recognition of the regularity and patterns observable in the universe that came from the development mathematics and physics was, like our great migration out of Africa, both a source of great possibility and great loss. On the one hand, this allowed us the means to attempt to alleviate poverty, to cure illness, and to feed more people than was previously possible. On the other hand, this ability to measure and predict also led to the development of machines that granted us the power to reshape and commodify our world. For the first time in history, the decisions of humans rather than the power of natural processes are the primary movers of the evolutionary process. Human actions are causing the ice caps to melt. Anthropogenic climate change is killing the coral reefs and pushing thousands of species to extinction each year. We are at a transition point in history as we leave behind the Cenozoic era of the past sixty five

million years and enter into the Anthropocene. Human decisions, amplified enormously by the power of symbolic consciousness, will be the primary shaper of life's future.

Discussion Questions:

1. In *The Journey of the Universe* book, Swimme and Tucker write that “[e]very place we went, we became that place” (93). How are humans shaped by the place that they live in? Think of at least one instance where you “became” a place. How does that place continue to shape you, even today?
2. During her interview with Mary Evelyn Tucker in the *Conversations*, Melissa Nelson describes the stories of indigenous peoples and the ways in which they remind us that we are part of a larger cosmos. Based on her interview, and on *The Journey of the Universe* book, how would you describe the ways in which we have lost that sense of belonging? What other ways have we lost our sense of place and belonging that were not described in the films or book?
3. For the first time in history, we are aware of the ways in which our decisions and actions are profoundly shaping our environment. Create an illustration, a song, a poem, a ritual, or another appropriate artistic representation that depicts or enacts the journey of humans across the globe and through time as we have become a planetary presence. Share this creation with a partner and discuss the differences and similarities of your interpretations of humanity's growing presence.
4. In the *Conversations*, Cynthia Brown uses “Big History” to describe the formation of the universe in terms of “thresholds.” Although change can be a moment of great destruction, how might it also be a period of discovery, joy, and celebration? What might the future look like for humans and for other forms of life on Earth if we were to reorient ourselves with the universe in a way that is mutually enhancing for all? Imagine that you had to describe this future to a family member or a close friend. How would you describe this future for them and what would the journey be like in order for us to arrive there?

Online Resources:

- The [Intergovernmental Panel on Climate Change](#) (IPCC) is the leading international body for monitoring and assessing climate change. Their annual climate [report](#) is one of the most comprehensive and reliable reports of its kind for accurately assessing and reporting climate change.
- The [Worldwatch Institute](#) gathers data and insights from all over the world on matters ranging from climate change, to population growth, to the anthropogenic extinction of species. Their [reports](#) are expansive and useful resources for educators and students at all levels.
- The [Earth Charter](#) is a global, multi-cultural set of ethical principles for a just and sustainable world. Read the [Earth Charter](#) here before visiting their [Education page](#).

- The [Union of Concerned Scientists](#) is a multi-disciplinary group of top scientists and Nobel Prize laureates who disseminate information on climate change and strategies for sustainability. Their [1992 World Scientists' Warning to Humanity](#) was signed by over 17,000 scientists including the majority of Nobel Prize laureates in the sciences.
- Visit the [Smithsonian National Museum of Natural History's website](#) for [news](#) and [videos](#) on human origins, for information on [the latest research in human evolution](#), and for useful [lesson plans and teacher resources](#).
- Visit the [American Museum of Natural History's website](#) for a wide variety of useful links.
- The [National Geographic website](#) can be an exciting introduction to the development of early hominids. The [education](#) portion of the website is an excellent resources for both students and teachers. Also be sure to explore and search the National Geographic website for articles such as the discovery of a 1.8 million year old [jawbone](#) or the fossilized remains of “[Lucy's baby](#),” a member of the early human species *Australopithecus afarensis*.
- Looking for multi-media and articles on human origins published for a general audience? The BBC has a page on [human beginnings](#) that offers introductory articles and links to various images and other media on early humans. Or, try the [Discovery News website](#) for articles such as this one on the [relationship between modern humans and Neanderthals](#).
- Go to the Yale Forum on Religion and Ecology's website for a [comprehensive list](#) of links to scientific organizations and educational resources. Highlights from this extensive list include: [NASA's Earth Science](#) website, the [National Science Foundation](#) website, the [Ecological Society of America](#) website, and the [National Oceanic and Atmospheric Administration](#) website.
- The [TED](#) series can be an excellent source of information from top scientists. This talk by [Al Gore](#), for example, takes listeners through a slide show and talk on climate change.

Print Resources:

- [Journey of the Universe Bibliography](#).
- [Science Bibliography from the Yale Forum on Religion and Ecology](#).

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