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*Journey of the Universe:*  
**An Integration of Science and Humanities**

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In her article Lisa Sideris has lumped together a group of thinkers with quite different specializations and trainings and with widely divergent publications and teaching commitments. It is like putting together intellectuals from completely opposing disciplines and saying they all have the same agenda. Indeed, the group of scientists, scholars of religion, and popularizers whom she pulls together have diverse audiences and goals, styles of writing and speaking, and certainly varying hopes for their own work.

It is thus rather astonishing to be grouped together and told that we all privilege science in the same unacceptable way, and thus there is no hope for an environmental ethics or a sense of wonder to emerge from our life work. I would venture to guess (but certainly not wish to speak for the others named here) that these individuals have indeed had profound experiences in nature and care deeply about the future of the planet. Indeed, many are enhanced by a scientific understanding of nature's workings, as Ursula Goodenough illustrates in *Sacred Depths of Nature* (1998). Through their writings, some have also encouraged others to explore and to experience nature more deeply and directly. So Sideris's attempt to speak for all of us, to presume we all have similar views of science, and to conclude that this leads away from nature is not only inaccurate, it is a disservice to the complexity and richness of each person's work and their dedication to an ecologically vibrant future.

For example, there is the title of the so-called 'movement', 'New Genesis'. What does this mean with its close association with the first

book of the Hebrew Bible? How apt is this as a unifying name? Some of us have been trained in the world's religions and see such a title as limited in scope as well as descriptive power. Sideris suggests that she takes this title from J. Baird Callicott. However, he has at least studied the world's religions and their ecological perspectives and has acknowledged to me that this title is inadequate. And certainly there are those of us quite sympathetic to Callicott's suggestion of navigating between reductionist science and deconstructive postmodernism. He calls this a reconstructive post-Modernism, as John Cobb and David Griffin also named it some 30 years ago.

An example of lumping our varied approaches together is saying that we cede too much authority to science and 'understand scientific world-views...as the primary vehicle for *restoring* enchantment, wonder, meaning, and value to the natural world' (p. 137, original italics). Why would some of us have spent two decades with hundreds of other scholars in the Forum on Religion and Ecology illustrating through numerous conferences and books what the world's religions have to say about the wonder and meaning of nature (see, e.g., <http://fore.research.yale.edu/>)?

#### *Journey of the Universe: The Lineage of a New Story*

Perhaps it will be helpful to sketch out the background of the *Journey of the Universe* project so as to illustrate the limitations of Sideris's assumptions and the inaccuracy of her arguments. The *Journey of the Universe* project consists of an Emmy award-winning film; a book from Yale University Press; a series of 20 conversations with scientists, historians, and environmentalists; and a curriculum for teaching (<http://www.journeyoftheuniverse.org>). The film and book narrate the 14 billion-years story of the universe's development, from the great flaring forth at the universe's inception to the emergence of simple molecules and atoms, to the evolution of galaxies, stars, solar systems, and planetary life of greater complexity and consciousness. This is a story that inspires wonder as we begin to understand such complexity through science and appreciate such beauty through poetry, art, history, philosophy, and religion. It also awakens us to the dynamic processes of evolution that are chaotic and destructive, as well as creative and life-generating.

The *Journey of the Universe* is a cosmology, although not just in the scientific sense of the study of the early universe. Rather, it is a cosmology in the sense of being an integrated story that explains the origins of both humans and life forms. All cultures have had such stories. We now have the capacity to tell a comprehensive story drawing on astronomy and physics to explain the emergence of galaxies and stars, geology and

chemistry to understand the formation of Earth, biology, and botany in order to envision life's evolution, and anthropology and the humanities to trace the rise of humans. *Journey* draws on all these disciplines to narrate a story of universe, Earth, and human evolution that is widely accessible. This is the first such telling of the story in film form, and no doubt there will be other expressions, both scientific and artistic.

*Journey* weaves science and humanities in a new way that allows for a comprehensive sense of mystery and awe to arise. This is in alignment with the call of Callicott to 'reintegrate science and its epistemology into the wider culture by expressing the new nature of Nature as revealed by the sciences, in the grammar of the humanities' (2013: 171). Such an approach expands the human perspective beyond an anthropocentric worldview to one that values life's complexity and sees the role of humans as critical to the further flourishing of the Earth community.

Thus, *Journey* does not rely on reductionist scientism, which tends to see the universe and Earth as simply composed of mechanistic processes. *Journey*, however, recognizes that evolution is governed by natural laws discoverable by scientific methods and empirical observation. The self-organizing dynamics of evolutionary processes are part of the remarkable creativity of evolution, which humans are discovering. While humans are gifted with the creativity of symbolic consciousness, we know that different kinds of self-organizing creativity abound in the universe and Earth—the formation of galaxies and stars, the movement of tectonic plates, the chemistry of cells, the biological complexity of photosynthesis, the migrating patterns of birds, fish, turtles, and caribou. Creativity is also closely aligned with chaos and destruction as the universe unfolds on the edge of a knife.

*Journey*, then, is a cosmological story of the unfolding of the universe and Earth in which life and humans emerge. This story is told in a poetic manner while relying on our best knowledge from modern science. Scientific facts and poetic metaphors are interwoven so that viewers of the film or readers of the book can understand how they arose from these creative processes and participate in them. This weaving is in the spirit of Loren Eiseley, the American anthropologist and nature writer, whose books and voice are a major influence on *Journey of the Universe*.

Cosmology has ancient roots embedded in certain aspects of world philosophies and religions. It now has modern expressions in multiple tellings of the scientific story of the universe. Thus, science along with philosophy and religion help us to recognize ourselves as participating in a larger integrated whole. Humans are the microcosm of the macrocosm—they are the mind and heart of the vast, evolving universe.

In this spirit, images and metaphors from the wisdom traditions of the world religions and philosophies are woven into *Journey of the Universe*. Indeed, there are numerous affinities between the world religions and *Journey*, some of which are described in the talks that were delivered at the Chautauqua Institution conference on *Our Elegant Universe* in June 2013 (<http://www.journeyoftheuniverse.org/conference-at-chautauqua/>). Similarly, a conference at Yale in November 2014 drew over four hundred people to explore the topic of *Living Cosmology: Christian Responses to Journey of the Universe*. The papers from this conference will be published by Orbis Books.

Indeed, the extensive work of the Forum on Religion and Ecology at Yale (<http://fore.research.yale.edu/>) is a complement to *Journey of the Universe* as both these projects are concerned with our growing ecological crises. As such they are trying to awaken humans to recognize our dependence on nature's remarkable intricacy. The work of the Forum aims to assist in identifying environmental ethics that are culturally diverse in the world's religions, and *Journey of the Universe* provides a basis for an ecological ethics that is scientifically grounded in evolutionary biology.

The Forum's work began with ten conferences at Harvard, leading to ten published volumes in which hundreds of scholars demonstrated that the religions of the world have theoretical and practical contributions to make to environmental ethics. In this spirit, our culminating book, *Ecology and Religion* (2014), illustrates how religious ecologies and religious cosmologies have woven humans into nature and the cosmos both historically and at present. All of this work depends, as does *Journey*, on a profound appreciation for humans experiencing nature. It also points toward engagement toward wellbeing of both humans and the biosphere.

### *Functional Cosmology and the Great Work*

In this spirit, *Journey of the Universe* is more than an awe-inspiring story. It is a functional cosmology, as Thomas Berry suggested. This is because it harnesses the energy of awe and wonder for the multiple efforts of humans to contribute to the flourishing of the Earth Community. This is what Berry called the Great Work, in which humans may become a mutually enhancing presence for Earth's systems and societies. He felt this work would assist in the transition from the last 65 million years of the Cenozoic era to what he termed a life-sustaining Ecozoic era. (Many geologists, such as Paul Crutzen, are naming our present period the

‘Anthropocene’ because of the immense effect of humans on Earth’s ecosystems in this last 12,000 years.)

There are hundreds of thousands of people around the planet who are participating in this transformative work for the environment, energy, agriculture, economics, education, the arts, sustainable cities, and improved racial relations. Many of these specialists are inspired by the comprehensive perspective of *Journey of the Universe*, and some are interviewed on their work in the 20-part educational series of Journey Conversations (<http://www.journeyoftheuniverse.org/ed-series-previews/>).

To participate in this transformative work, we are not suggesting that it is necessary to be informed by the *Journey of the Universe*. We are, however, noting that numerous people are moved to action by seeing themselves as part of a larger whole, namely a vast, evolving universe. Indeed, some environmentalists, such as the Australian rain forest activist John Seed, have been reinvigorated because of the perspective found in the *Universe Story* and *Journey of the Universe*.

In the field of education, Montessori teachers draw extensively on this evolutionary story, relying on books by Jennifer Morgan, who learned from Berry. Both Berry and Brian Thomas Swimme have spoken at the Montessori teacher conferences and encouraged nature-based education as a way to tell the story. Berry was a major source of inspiration to Richard Louv in his environmental education for children, especially outdoors. This is because all of Berry’s writings reflect a profound understanding of the natural world and our participatory role in it.

### *History of Journey of the Universe*

*Journey of the Universe* is a project that is more than three decades in the making. It is in the lineage of Berry’s call for a ‘New Story’ that appeared in his article in 1978. Berry felt that we needed to bring science and humanities together in an integrated cosmology that would guide humans into the next period of human–Earth relations. Ten years later (1988), ‘The New Story’ was included in Berry’s book, *Dream of the Earth*. *The Universe Story*, published by Swimme and Berry in 1992, is the first book that narrates evolution as a story with a comprehensive vision of the role of humans in the narrative. *Journey of the Universe* is the first time this story is told in film. There will be many other narrations of this story as our perspectives—religious, cultural, racial, gender, class—are so varied around the planet.

Collaborating with scientists and scholars from the humanities for over a decade, Swimme and I wrote the *Journey* film script and book. We organized several week-long summer workshops with scientists and

humanists on Whidbey Island in Washington State to discuss these ideas. Scientists read the manuscript and helped vet the scientific ideas, which were presented in both the film and the book in a poetic manner, so as to have an appeal to a broad audience. The scientists engaged in this process saw the *Journey* film, book, and conversations as having great potential to awaken wonder and thus encourage a deep sense of care for Earth's ecosystems and the biodiversity of life forms.

The film was completed in 2011 and premiered at a conference in March at Yale University School of Forestry and Environmental Studies. This conference brought together scientists and humanists to reflect on the cosmological implications of *Journey*. Since that time, the film has been shown in film festivals, museums, and universities, as well as religious and community organizations. *Journey* premiered on KQED television in San Francisco in June 2011 and has since been broadcast on 77% of the national PBS stations. In June 2012 *Journey* won an Emmy in Northern California for best documentary film. It has been shown on every continent with further showings being planned in India, China, Europe, and Latin America. In one year on Netflix it was rated by over 64,000 people.

The accompanying *Journey of the Universe* book was published by Yale University Press in 2011. The *Journey Conversations* are a series of 20 interviews of scientists and environmentalists hosted by me. They were completed in 2012 and are intended to extend the implications of *Journey* for encouraging a broader ecological consciousness and ethics. A curriculum that unites the trilogy is posted on the *Journey* website (<http://www.journeyoftheuniverse.org/curriculum/>), along with an annotated bibliography (<http://www.journeyoftheuniverse.org/bibliography/>). These can be used for discussion or teaching. Further detailed curricula and workshops are being planned for secondary-school and college teachers. Translations of the film and book are underway, along with international distribution. The film has been translated into Spanish and the book into French, Italian, Korean, Turkish, and Russian.

*Journey of the Universe*, then, is in a thirty-five-year lineage of the New Story first expressed by Berry. It affirms the value of a science-based evolutionary narrative that is woven with philosophical and religious insights in a poetic style. It welcomes further reflection on this narrative as a means to activate a global ethics like the Earth Charter, as well as to encourage place-based environmental ethics in bioregions and watersheds around the world. The film and book certainly awaken awe and reverence in nature itself, as has been demonstrated in classrooms and in showings around the world.

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