

# Our Cosmic History\*

Lecture #6 - May 13, 2010

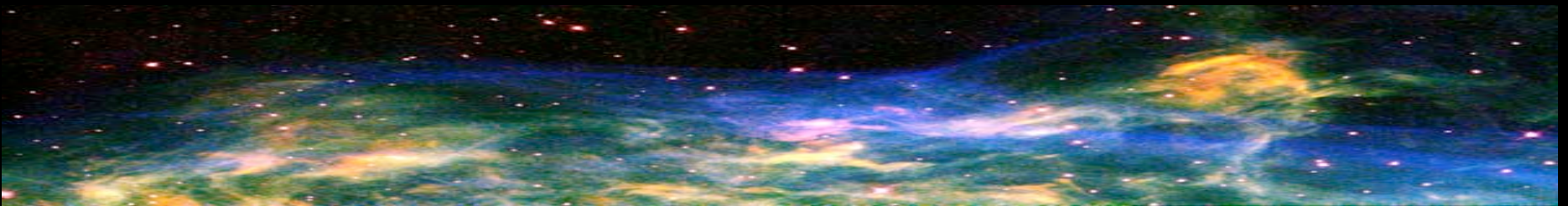
“Connecting to Your Cosmic Context”

Todd Duncan

[duncan@scienceintegration.org](mailto:duncan@scienceintegration.org)

<http://sites.google.com/site/toddstardust/>

*\* Lecture series sponsored by the PSU Center for Science Education & the Science Integration Institute, and made possible by a generous grant from the Oregon Dept. of Education*



# Themes of the series...

- Reflecting on what it means to be *you*, in this moment, within the context of the universe as we currently understand it.
- Gaining perspective on how we connect to the universe: we are children of the *whole cosmos*, not just our immediate surroundings
- Framework for teachers and students to see how the details of science fit into a big picture that gives meaning and context to those details



# Series Web Site...

...for schedule, resources, & continuing discussion...

<http://oregonteacherscholars.pbwiki.com/Our-Cosmic-History>

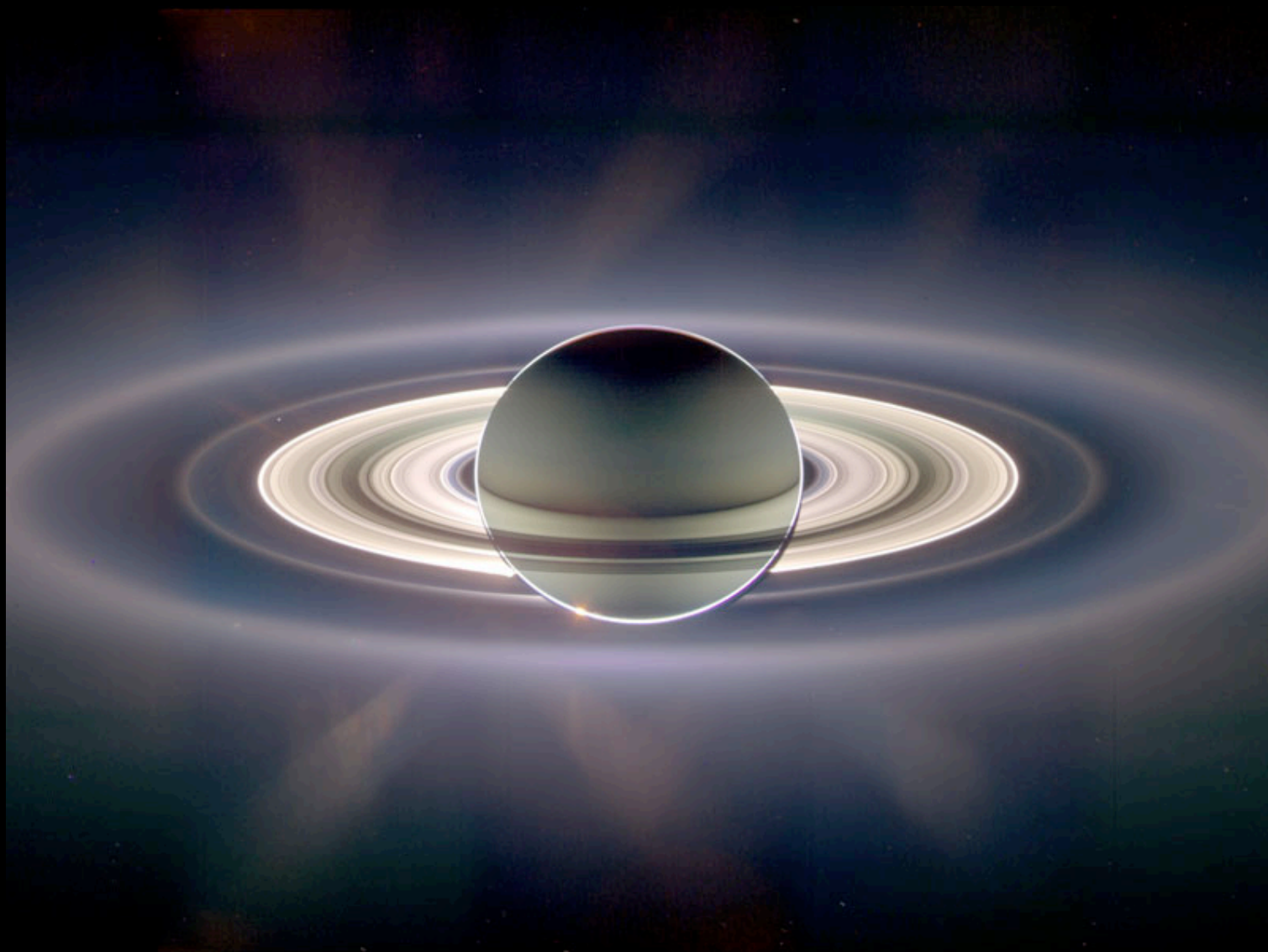
(or link from [www.scienceintegration.org](http://www.scienceintegration.org))

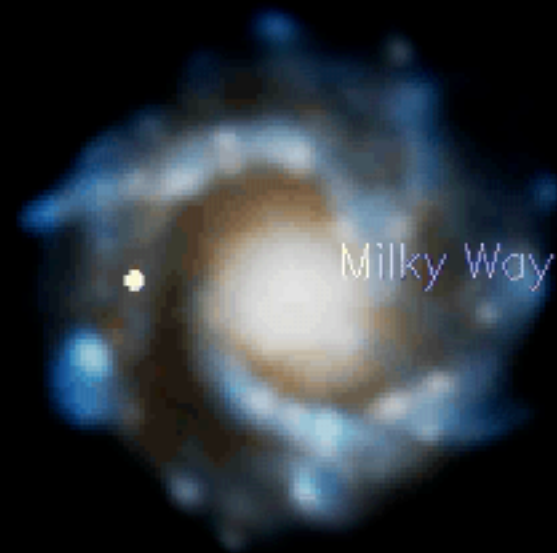
# What's the point?

Why have we bothered to take this 13.7 billion year journey through time and 100 billion light year journey through space, to survey our cosmic context?

Where do we humans fit into this whole picture??













# Appreciating Timelines

“Four thinkers since Galileo, each informing his successor of what discoveries his own lifetime had seen achieved, might have passed the torch of science into our hands as we sit here in this room. Indeed, for the matter of that, an audience much smaller than the present one, an audience of some five or six score people, if each person in it could speak for his own generation, would carry us away to the unknown of the human species, to days without a document or monument to tell their tale.” ~ William James (writing ~ 1900 CE)

# Timeline Activity

Think back and identify the oldest person you can remember talking to as a young child. Imagine a conversation in which you are ten years old and this person from a previous generation passes on to you a sense of what the world was like when she was ten. For example, if you were ten when your great grandmother was ninety, then go back eighty years from the date when you turned ten. Now continue the chain backward, imagining successive eighty-year intervals and a great-grandparent talking to a child in this way. Imagine handing off a “torch of knowledge” representing the experience passed from one person to the next.

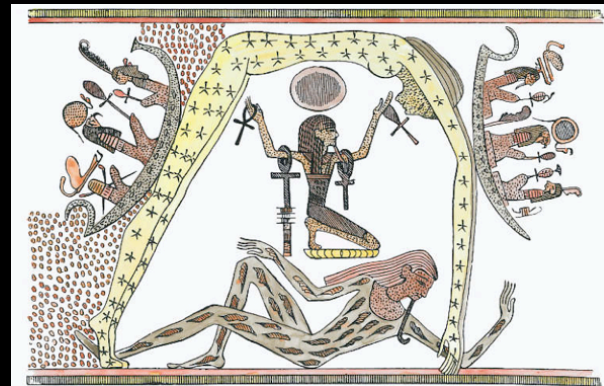
How many intervals like this would you need to get to the time of the first written language? The first humans? The first dinosaurs? The first life on Earth? The birth of the solar system? The birth of the universe?

# Timeline of human events

What key events should we include on a timeline of human history?

“This story of the universe, and all of our separate meta-narratives within it, are woven together on a cosmic loom, each of us a thread in a greater tapestry of unfolding truth. If we listen carefully to each other and to nature, ... then our common future may also be a self-transcending process leading to greater truth, beauty, and goodness.”

~ William Grassie





A deep-field astronomical image, likely from the Hubble Space Telescope, showing a vast field of galaxies and distant stars. The image is filled with numerous galaxies of various shapes and sizes, including spiral, elliptical, and irregular forms. Some galaxies are bright and clear, while others are faint and distant. The background is a deep black, punctuated by the light of these celestial objects. The text "Questions and Discussion..." is overlaid in the center in a yellow, sans-serif font.

Questions and Discussion...

# Thanks to...

- Oregon Dept. of Education Math/Science Partners Grant  
(primary funding for this lecture series)
- Portland State University Center for Science Education
- Beaverton and Hillsboro School Districts
- Pacific University
- Science Integration Institute



# References/Suggested Reading

- Christian, *Maps of Time*, chs 6 - 15 (2004)
- Duncan & Tyler, *Your Cosmic Context*, ch 14 (2009)
- Greene, “Put a Little Science in Your Life” (NY Times opinion essay, June 1, 2008)
- Grassie, “A Teachable Moment: Our Common Story”  
[http://www.grassie.net/articles/2009\\_Teachable\\_Moment.html](http://www.grassie.net/articles/2009_Teachable_Moment.html) (2009)
- \* Collected resources: <http://www.scienceintegration.org>