

Our Universe, Our Place



Figure 1 - Hubble eXtreme Deep Field (XDF) [1]

“The cosmos is all that is or ever was or ever will be. Our contemplations of the cosmos stir us. There is a tingling in the spine, a catch in the voice, a faint sensation: as if a distant memory of falling from a great height. We know we are approaching the grandest of mysteries.

The size and age of the cosmos are beyond ordinary human understanding. Lost somewhere between immensity and eternity is our tiny planetary home, the Earth. For the first time, we have the power to decide the fate of our planet and ourselves. This is a time of great danger, but our species is young and curious and brave. It shows much promise. In the last few millennia, we’ve made the most astonishing and unexpected discoveries about the cosmos and our place within it. I believe our future depends powerfully on how well we understand this cosmos in which we float like a mote of dust in the morning sky.

We’re about to begin a journey through the cosmos. We’ll encounter galaxies, and suns, and planets, life and consciousness coming into being, evolving and perishing. Worlds of ice and stars of diamond. Atoms as massive as suns and universes smaller than atoms. But it’s also a story of our own planet, and the plants and animals that share it with us. And it’s a story about us: how we achieved our present understanding of the cosmos, how the cosmos has shaped our evolution and our culture, and what our fate may be.

We wish to pursue the truth, no matter where it leads. But to find the truth, we need imagination and skepticism both. We will not be afraid to speculate. But we will be careful to distinguish speculation from fact. The cosmos is full beyond measure of elegant truths of exquisite interrelationships of the awesome machinery of nature.

The surface of the Earth is the shore of the cosmic ocean. On this shore we have learned most of what we know. Recently, we’ve waded a little way out—maybe ankle-deep—and the water seems inviting. Some part of our being knows this is where we came from. We long to return. And we can. Because the cosmos is also within us. We’re made of star-stuff. We are a way for the cosmos to know itself.

The journey for each of us begins here.” – Carl Sagan [1]

During this cycle, you will explore your place in our universe. You will explore the science behind the creation of our universe, galaxies, stars and planets. You will experiment with technologies that changed history and art. At the end, you will travel to the planetarium and complete a culmination project to explore your place in our universe.

Guiding Questions:

1. What is my place in our universe?
2. What is my purpose in our universe?
3. What does my future hold?
4. How do I fulfill the cosmos' need to know itself?

What You Will Learn:

1. How our universe began and the science behind the theory?
2. How galaxies, stars, and the solar system were formed?
3. How light plays into the story of our universe?
4. What processes of our universe formed our earth?

What You Will Do:

1. Use technology and light to discover the birth of our universe.
2. Explore how galaxies, stars, solar systems and the earth was formed.
3. Create an art project in the style of the Dutch Master Vermeer.
4. Go to the planetarium to discover your place in our universe.

References

- [1] G. Illingworth, D. Magee, P. Oesch, R. Bouwens and HUDF09 Team, Artists, *Hubble eXtreme Deep Field (XDF)*. [Art]. Nasa, University of California, Santa Cruz and Leiden University, 09/25/2012.
- [2] A. Malone, Director, *Cosmos Ep1 The Shores of the Cosmic Ocean*. [Film]. Australian Broadcasting Commission (in association with) Carl Sagan Productions and KCET, 1980.