



Engaging the cosmic perspective to address environmental and social issues

Conveners:

Raphaëlle Haywood and Paul Green

Photo: Phil Voystock

The background of the slide is a dense field of galaxies, known as the Hubble Ultra Deep Field. It features a vast array of galaxies in various colors, including blue, yellow, and red, scattered across a dark cosmic space. The galaxies vary in size and shape, from small, distant points of light to larger, more complex structures.

We are explorers of the origins of the universe and of life

We have:

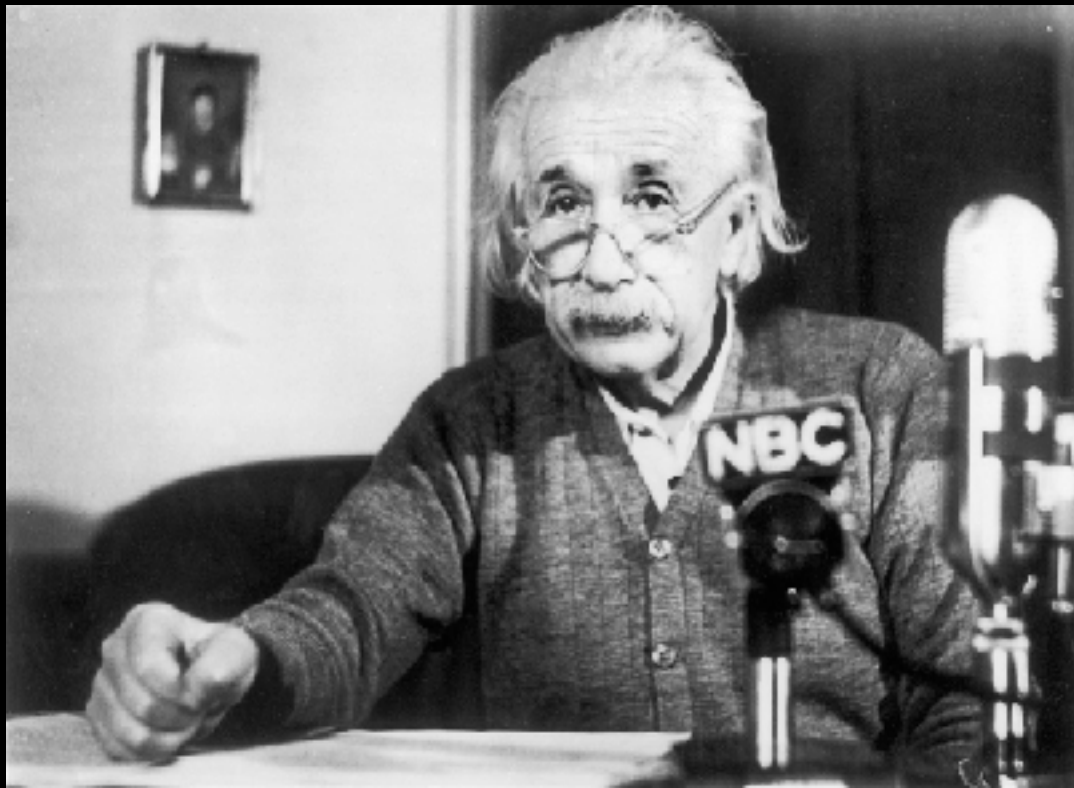
- **Scientific credibility**
- **Public fascination and trust**
- **Academic flexibility**

Einstein and Sagan both spoke out on the global issues of their day

Nuclear Winter: Global Consequences of Multiple Nuclear Explosions

R. P. Turco, O. B. Toon, T. P. Ackerman
J. B. Pollack, Carl Sagan

1983, Science, 222, 4630



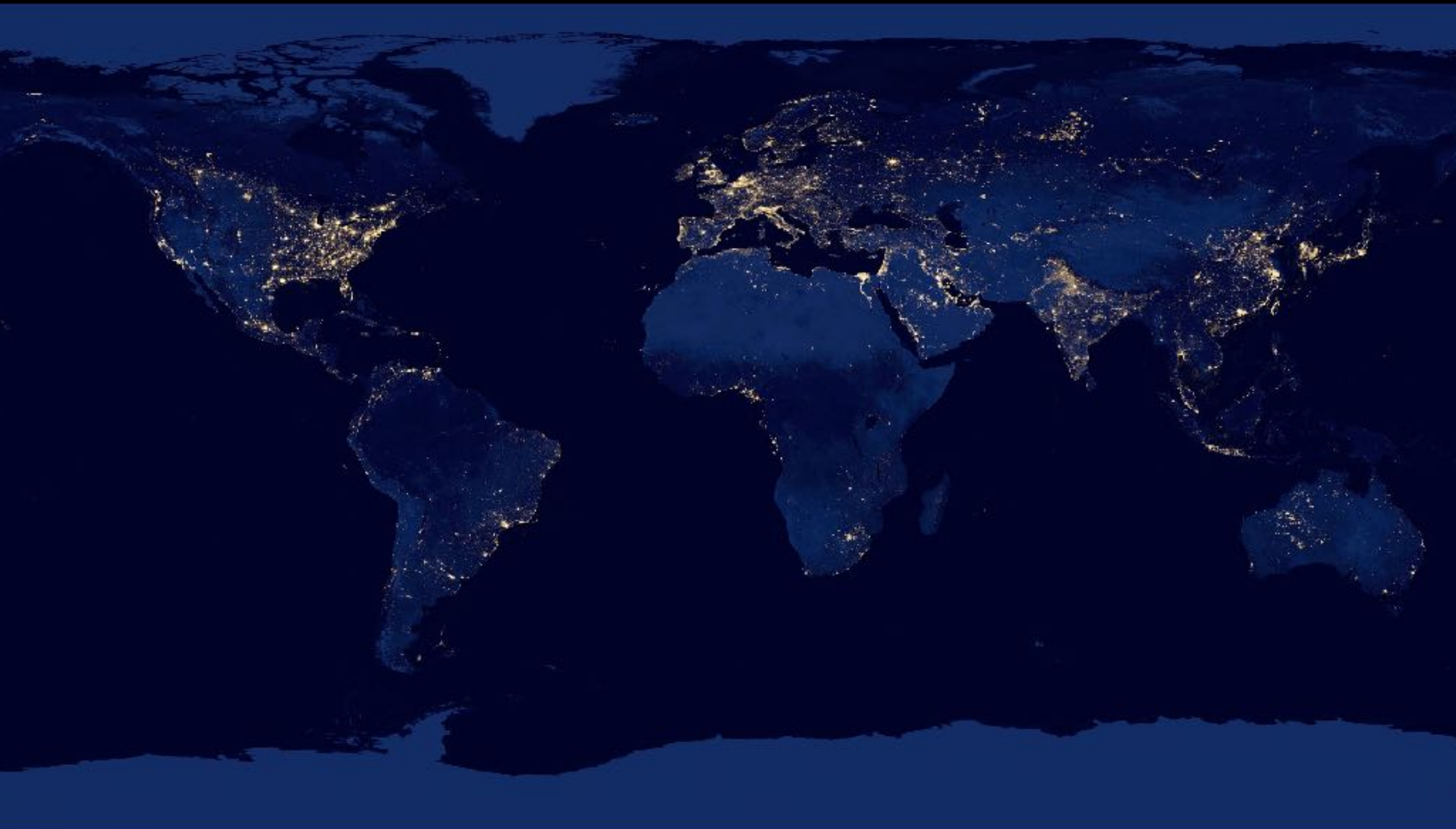
Russell-Einstein Manifesto, 1955

Einstein at the 1950 premiere of Eleanor Roosevelt's weekly TV program
Photo: Keystone-France/Getty Images file



Sagan at the Great Peace March in Washington, DC, 1986
Photo: Joseph Sohm/Visions of America/Corbis

Today, humanity is once again facing great challenges on a planetary scale



Example: I recently gave a colloquium at the University of São Paulo, Brazil (4 Sept. 2019)

Looking at Earth

in the cosmic perspective

Dr Raphaëlle D. Haywood

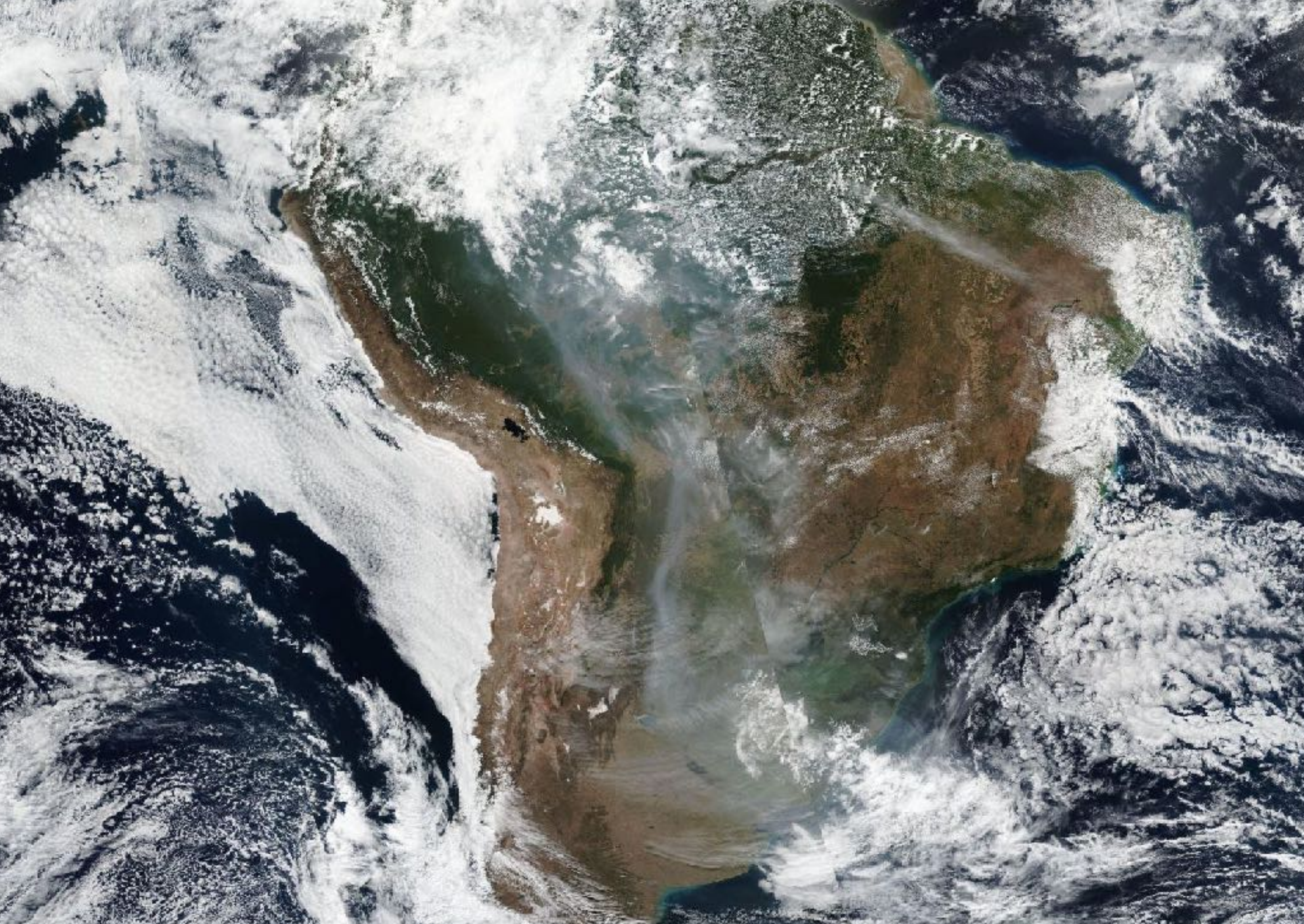
NASA Sagan Fellow

Harvard College Observatory

Left: Mergui Archipelago, Myanmar. Credit: NASA Landsat 5

Right: Witch Head Nebula. Credit: NASA/STScI Digitized Sky Survey/Noel

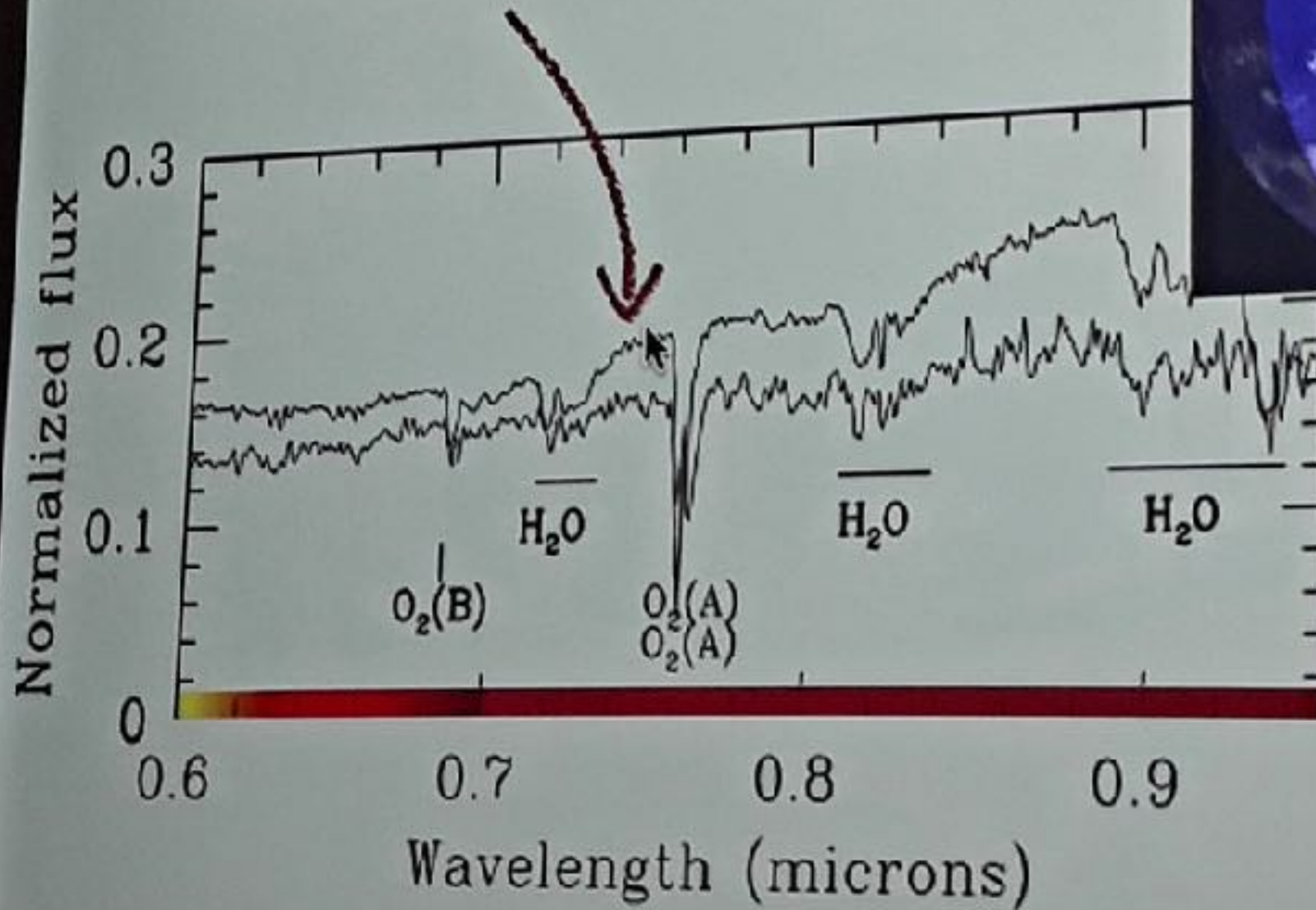
Left: Mergui Archipelago, Myanmar. Credit: NASA Landsat 5
Right: Witch Head Nebula. Credit: NASA/STScI Digitized Sky Survey/Noel



VIIRS & MODIS data. Available on NASA Worldview. | 6 August 2019

Saõ Paulo, Brazil (4 Sept. 2019)

The Amazon rainforest is part of Earth's cosmic identity



Seager et al. (2005). Earthshine observations from Apache Point Observatory.



Photo: Phil Voystock