THE ORIGINS SPACE TELESCOPE: SCIENCE TRACEABILITY MATRIX M. Meixner[1,2], D. Leisawitz[3], A. Pope[4], E. Bergin[5], K. Stevenson[1], L. Armus[6], J. Vieira[7], K. Pontoppidan[1], S. Milam[3], T. Kataria[8], J. Fortney[9], A. Cooray[10], C.M. Bradford[5,7], J. Staguhn[2,3], T. Roellig[11], I. Sakon[12], and the *Origins* Study Team[13], [1]STScI/JHU, 3700 San Martin Dr., Baltimore, MD 21218, meixner@stsci.edu, [2]Johns Hopkins University, [3]NASA/GSFC, [4]University of Massachusetts, Amherst, [5]University of Michigan, Ann Arbor, [6]Caltech/IPAC, [7]University of Illinois, Urbana-Champaign, [8]JPL/NASA, [9]University of California, Santa Cruz, [10]University of California, Irvine, [11]NASA Ames, [12]University of Tokyo, JAXA, [13]study website: https://asd.gsfc.nasa.gov/firs/team/, https://origins.ipac.caltech.edu/page/team

The Origins Space Telescope (*Origins*) is a science and technology definition study for NASA Headquarters for the 2020 Astronomy and Astrophysics Decadal survey. *Origins*, operating from 2.8 to 590 microns, will have a factor of 1000 improved sensitivity over prior far-infrared missions, enabled by cold (4.5 K) optics and sensitive detectors. This poster will describe the science traceability matrix for the *Origins* Baseline Mission Concept. Three science themes are featured.

How does the Universe work?: How do galaxies form stars, make metals and dust, and grow their central supermassive black holes from reionization to today?

How did we get here?: How do the conditions for habitability develop during the process of planet formation?

Are we alone?: *Origins* will assess the habitability of nearby exoplanets and search for signs of life.

Origins is not only capable of addressing known questions, but has a vast discovery space that will enable astronomers in the 2030s to find new phenomena and address currently unknown questions. All science programs on *Origins* will be selected by the community via peer review. What science will you pursue with *Origins.*

We welcome you to contact the OST Science and Technology Definition Team (STDT) with your science questions and ideas by emailing us at ost_info@lists.ipac.caltech.edu.

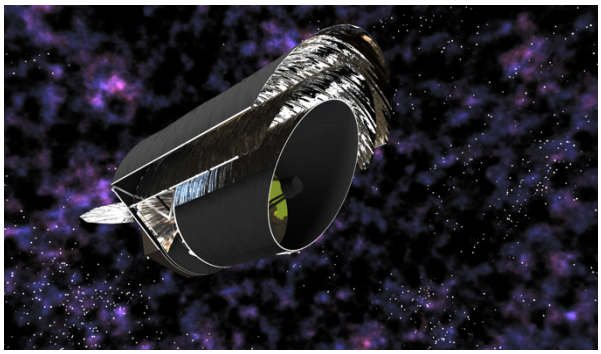

Figure 1: The Origins Space Telescope will enable high-impact science in all three of NASA's key astrophysics areas, and our concept for the mission is low-risk and executable in the decade ahead. We recommend a *Spitzer*-like architecture.

Additional Information:
https://origins.ipac.caltech.edu
https://asd.gsfc.nasa.gov/firs/