(500-word abstract, 100-word summary)

**PICO - The Probe of Inflation and Cosmic Origins**

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The Probe of Inflation and Cosmic Origins (PICO) is a NASA-funded study of a Probe-class mission concept. The top-level science objectives are to probe the physics of the Big Bang by measuring the energy scale of inflation, probe fundamental physics by measuring the number of light particles in the Universe and the mass of the neutrino, to measure the reionization history of the Universe, and to understand the mechanisms of star formation, and the physics of the galactic magnetic field.

PICO would have multiple frequency bands between few tens and few hundred GHz, and would survey the entire sky, producing maps of the polarization of the cosmic microwave background radiation, of galactic dust, of synchrotron radiation, and of various populations of point sources.

Several instrument configurations, optical systems, cooling architectures, and detector and readout technologies were considered in the development of the mission concept. We will present the current baseline design of the mission and describe several of our trade studies leading to this design.

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