THE STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY (SOFIA)

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The joint U.S. and German Stratospheric Observatory for Infrared Astronomy (SOFIA) is a 2.5- meter infrared airborne telescope in a Boeing 747-SP. SOFIA can conduct photometric, spectroscopic, and imaging observations at wavelengths from 0.3 microns to 1.6 millimeters. At SOFIA's maximum service ceiling of 45,000 feet, the average transmission at these wavelengths is greater than 80 percent. SOFIA flys out of the NASA Dryden Flight Research Center aircraft operations facility at Palmdale, CA and the SOFIA Science Mission Operations (SMO) Center is located at NASA Ames Research Center, Moffett Field, CA. SOFIA's first-generation instrument complement includes broadband imagers and spectrographs that can resolve spectral features due to dust and large molecules, and high resolution spectrometers facilitating kinematic studies of molecular and atomic gas lines at km/s resolution. More than 30 science flights of 10 hours length (take-off to landing) were conducted in the past year. About 100 eight to ten hour flights per year are planned by 2014, and the observatory will operate until the mid-2030s.