

SOFIA science instruments: commissioning, upgrades and future opportunities

The Stratospheric Observatory for Infrared Astronomy (SOFIA) is the world's largest airborne observatory, featuring a 2.5 meter telescope housed in the aft section of a Boeing 747sp aircraft. SOFIA's current instrument suite includes: FORCAST (Faint Object InfraRed CAmera for the SOFIA Telescope), a 5–40 μm dual band imager/grism spectrometer developed at Cornell University; HIPO (High-speed Imaging Photometer for Occultations), a 0.3–1.1 μm imager built by Lowell Observatory; FLITECAM (First Light Infrared Test Experiment CAMera), a 1–5 μm wide-field imager/grism spectrometer developed at UCLA; FIFI-LS (Far-Infrared Field-Imaging Line Spectrometer), a 42–210 μm IFU grating spectrograph completed by University Stuttgart; and EXES (Echelon-Cross-Echelle Spectrograph), a 5–28 μm high-resolution spectrometer being completed by UC Davis and NASA Ames. A second generation instrument, HAWC+ (High-resolution Airborne Wideband Camera), is a 50–240 μm imager being upgraded at JPL to add polarimetry and new detectors developed at GSFC. SOFIA will continually update its instrument suite with new instrumentation, technology demonstration experiments and upgrades to the existing instrument suite. This paper details instrument capabilities and status as well as plans for future instrumentation, including the call for proposals for 3rd generation SOFIA science instruments.