

Highlight

SOFIA IN THE ERA OF JWST AND ALMA

Harold W. Yorke

*SOFIA Science Center, NASA Ames Research Center, M/S 232-12, Moffett Field,
CA, USA 94035*

The Stratospheric Observatory For Infrared Astronomy (SOFIA) combines a Hubble-sized telescope with a modified 747SP aircraft. At an altitude of up to 45,000 feet, SOFIA can observe astrophysical phenomena above over 99% of the atmosphere's water vapor. This feature allows access to frequency ranges in the Terahertz regime and mid-infrared wavelengths inaccessible from the ground. The fact that SOFIA generally returns to its home base after every flight allows upgrades and repairs to its instrumentation not possible for space missions. As SOFIA has evolved from a development project into a fully functional observatory, important advances have been made in several areas of topical astrophysical and solar system research: star formation, stellar evolution, astrochemistry, the structure and evolution of the interstellar medium in our Galaxy and external galaxies, astrophysical processes near supermassive black holes, planetary atmospheres, and moons and small bodies in the solar system science. In this talk, rather than giving a general overview of what SOFIA has accomplished in these fields, I will focus on the role and importance of SOFIA in providing unique contributions for understanding these phenomena. Particular emphasis will be placed on current and future capabilities in high resolution spectroscopy in the wavelength range 28 – 320 micron (0.95 – 10.7 THz), thus bridging the gap between JWST and ALMA.