



## **Astrophysikalisches Seminar**

**Freitag, 03. Mai 2019**

um 10:00 Uhr in LS15 / R. 138

**Dr. Bernhard Schulz**

(Deutsches SOFIA Institut)

### **“Science with the Stratospheric Observatory For Infrared Astronomy (SOFIA)”**

The infrared is a key part of the electromagnetic spectrum for studying star formation and evolution, galaxies, planets, and the interstellar medium. As most infrared wavelengths are absorbed by the water vapor of our planet's atmosphere, except for a few narrow spectral windows, astronomical infrared observations have been limited to space-, balloon-, or aircraft-observatories. SOFIA is the last remaining observatory from a truly "Golden Age" for Mid- and Far-Infrared Astronomy, that included space missions like IRAS, ISO, Spitzer, and Herschel. At least for another decade or two SOFIA will be the only observatory that can regularly access the Mid- and Far-Infrared sky.

SOFIA consists of a 2.7m telescope (effective 2.5m), that is lifted by a heavily modified Boeing 747-SP into the stratosphere above more than 99% of the atmosphere's water vapor. A full complement of instruments provides imaging, spectroscopic, and polarimetric capabilities, to follow up and extend many discoveries of past infrared space missions that ended due to a limited supply of cryogen. In addition, it provides for more progress, as very new state of the art instrumentation can be used, returned to the lab, and further improved. The mobility of the facility gives rise to even more observational opportunities like stellar occultations and other targets of opportunity.

The presentation will give an overview over the capabilities of the observatory, including a few illustrative scientific applications. We will discuss the wavelength coverage, sensitivities, and observing modes, as well as limitations that arise from the specifics of an observational platform on-board of an aircraft. Particular emphasis will be given to the "Cycle 8 Call for Proposals" that will be released at the end of May 2019, the specific tools necessary for proposal generation, and how to successfully compete for observing time on SOFIA.