



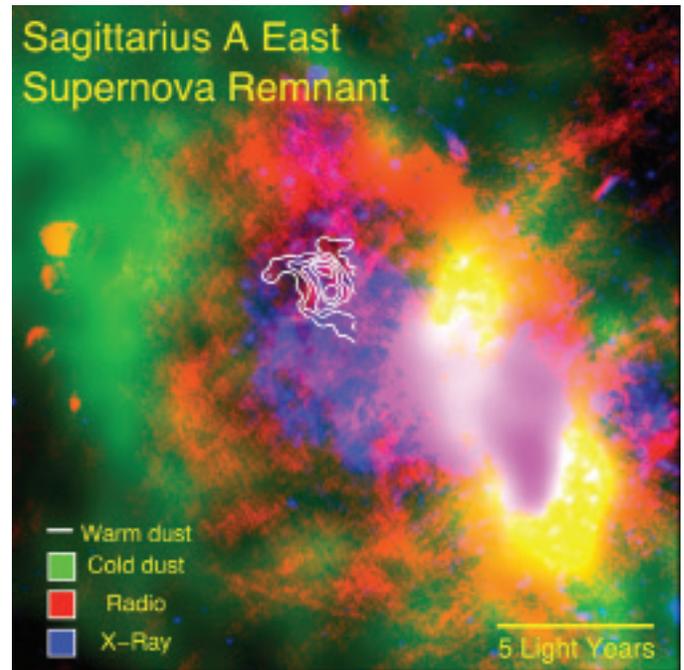
## PARTNERSHIP OPPORTUNITIES WITH THE STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY (SOFIA)

NASA is looking for partners to expand science opportunities for international and domestic users of the world's largest airborne observatory. SOFIA is a partnership between NASA (USA) and DLR (Germany) featuring an infrared astronomy telescope mounted in a highly modified Boeing 747SP aircraft. SOFIA conducts approximately 100 night flights per year at altitudes of 39,000–45,000 feet (12–14 kilometers), above the opaque properties of the atmosphere, and in both the northern and southern hemispheres.

NASA is seeking to identify two types of additional partners to maximize the use of SOFIA's capabilities:

1. International Astronomy Partners, and
2. Ride-Along Partners

SOFIA Observatory Instruments	
Telescope	2.5 meter effective aperture, diffraction limited at $\lambda > 20\mu\text{m}$ , optics temperature 240K
FORCAST	Simultaneous Dual Channel Imaging and Grism Spectroscopy (5–25 $\mu\text{m}$ and 25–40 $\mu\text{m}$ )
upGREAT	High Resolution ( $R > 10^6$ ) Heterodyne Array Spectrometer (1.6–1.9 THz; 4.7 THz)
HIPO	Visible Light High-Speed Camera (0.3–1.1 $\mu\text{m}$ )
FLITECAM	Near Infrared Imaging and Grism Spectroscopy (1–5.5 $\mu\text{m}$ ); can be used in combination with HIPO
FIFI-LS	Dual Channel Integral Field Grating Spectrometer (50–110 $\mu\text{m}$ ; 100–200 $\mu\text{m}$ )
EXES	High Resolution ( $R = 10^5$ ) Echelle Spectrometer (5–28 $\mu\text{m}$ )
HAWC+	High-Angular Resolution Wide-Band Camera/Polarimeter with 5 Channels (53 $\mu\text{m}$ , 62 $\mu\text{m}$ , 88 $\mu\text{m}$ , 155 $\mu\text{m}$ , 215 $\mu\text{m}$ )



Example of SOFIA data revealing warm dust (white contours) surviving inside a supernova remnant (NASA/CXO/Herschel/VLA/SOFIA-FOCAST/Lau et al.).

**1: INTERNATIONAL ASTRONOMY PARTNERS** are allocated flight observation hours—in addition to the existing flight schedule—to use existing SOFIA instruments or an instrument that the partner provides.

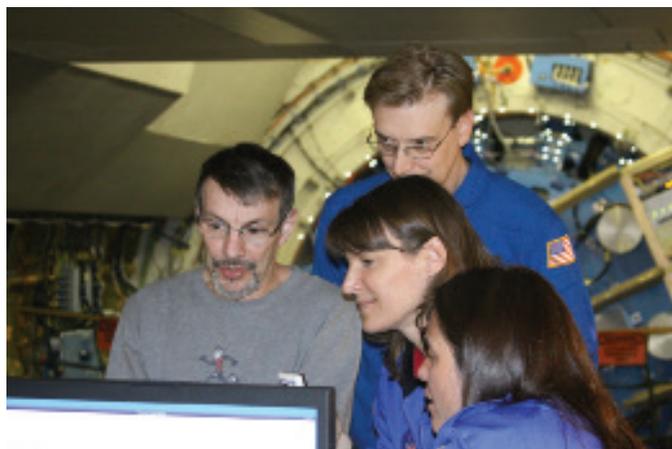
**Limited Partners** can be allocated as little as two hours of flight observation time using existing SOFIA instruments.

**Full Partners** can be allocated from 20 to 100 hours annually of flight observation time using existing SOFIA instruments. They may also develop and fly their own unique science instruments.

These observation hours would expand SOFIA's science program by supplementing the existing flight schedule or adding new instruments.

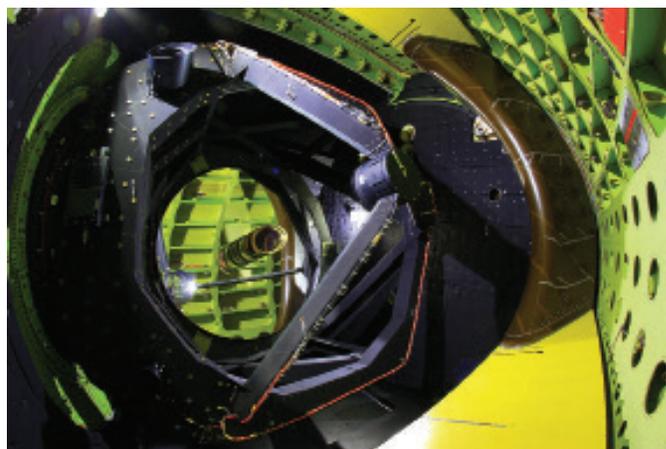
**2: SOFIA RIDE-ALONG PARTNERS** can take advantage of SOFIA and its unique airborne capabilities for educational and non-astronomical purposes, on a non-interference basis with science observations. Three possible ride-along options are listed below:

**International Educational Community Partner.** Much like those participating in the existing SOFIA Airborne Astronomy Ambassadors Program for U.S. and German educators, eligible international educators chosen by the Partner can ride along on SOFIA flights to engage students and advance science education globally. Partners will have access to existing SOFIA educational materials and will have opportunities to conduct in-flight classes that can be filmed.



SOFIA FORCAST instrument Principal Investigator Terry Herter (left), examines an observation target with Instrument Scientist Jim De Buizer (above), and educators Theresa Paulsen (third from left), and Marita Beard (far right) during a SOFIA flight. (NASA/SOFIA)

**Bio-fuel Industry.** Partners from the bio-fuel industry can work with NASA to test and monitor bio-fuels during SOFIA scheduled flights.



The SOFIA telescope inside the aircraft with the upper rigid door closed. (NASA/SOFIA/USRA/Greg Perryman)

**International, Domestic, and Other U.S. Government Agency Research Partners.** The SOFIA aircraft and its ~100 flight annual schedule is a platform suitable for supporting long term, in situ measurements. Researchers from various organizations worldwide can partner with NASA to certify, install, and operate equipment on SOFIA during scheduled flights.



The Boeing 747SP SOFIA aircraft. (NASA/USRA/Greg Perryman)

*NASA makes no guarantee as to the availability of SOFIA partnerships. NASA, at its own discretion, will partner with organizations through Space Act Agreements or other instruments. Partner agencies or organizations will offset NASA's operating costs and coordinate with NASA on the selection of investigators, educators, astronomical targets, and other variables. For more information about SOFIA partnership opportunities or to contact us, please go to [www.nasa.gov/sofia/partnerships](http://www.nasa.gov/sofia/partnerships).*