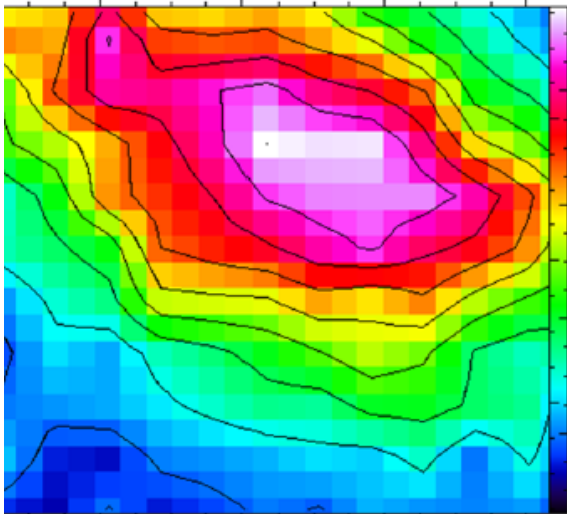
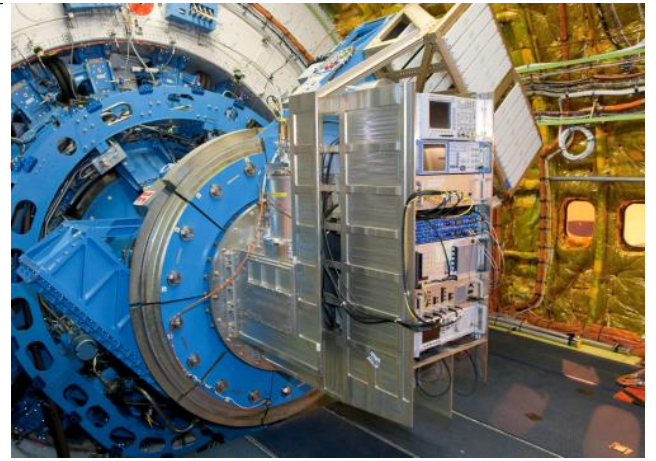


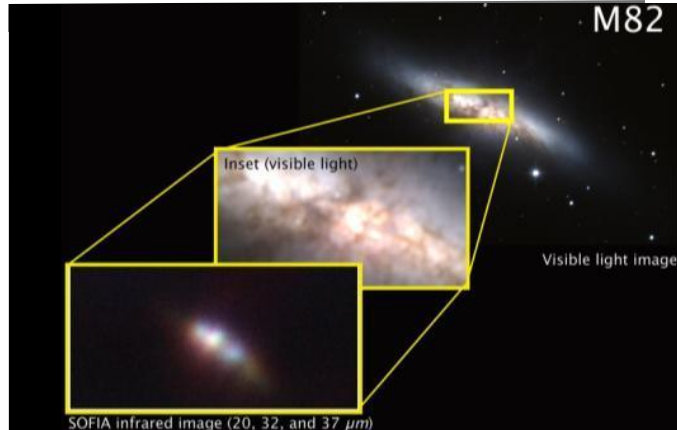
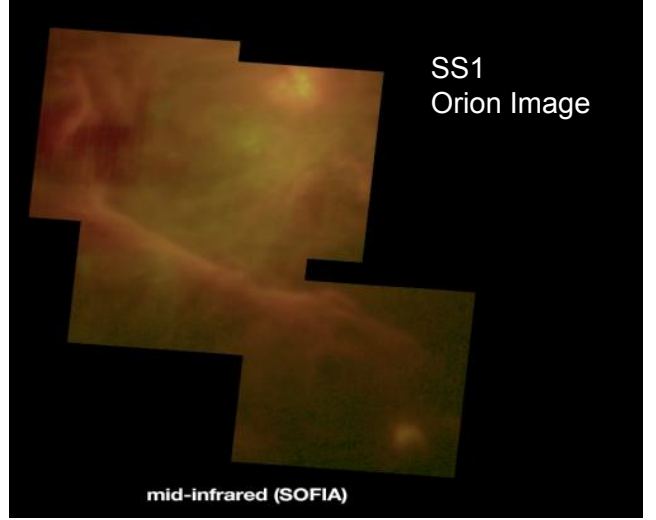
SOFIA infrared image
(5.4, 24, and 37 μm)

Visible light image



SOFIA Program Status

Pamela Marcum
Project Scientist
AAS SOFIA Splinter Session
May 23, 2011



M82

Visible light image

SOFIA infrared image (20, 32, and 37 μm)





SOFIA Unique Advantages

- SOFIA has a unique wavelength coverage for imaging and spectroscopy from 28 to 60 microns over the next 10 to 15 years. **SOFIA will produce the sharpest images ever obtained at these wavelengths.**
- SOFIA can observe objects seen close to the Sun, such as comets and Venus.
- The 20 year operational life will enable unique long-term monitoring programs.
- Through a robust new instrument program, the Observatory will reinvent itself every few years and take advantage of technology improvements
- Observations from SOFIA can be done globally and SOFIA can be deployed for unique events, e.g. occultations.
- SOFIA will enable hands-on educational opportunities and promote public outreach.



SOFIA “Science Vision” Themes



Galaxies and the Galactic Center

- The ISM and the Star Formation
- History of External Galaxies



The Interstellar Medium of the Milky Way

- The physical processes that regulate the interaction of massive stars and their environment
- The origin of dust in the Milky Way and other galaxies
- The role of large and complex molecules, such as PAH's in the interstellar medium



The Formation of Stars and Planets

- Massive stars, protoplanetary disks, & astrochemistry in star forming regions
- What physical, chemical, and dynamic processes are at work in the formation of stars and planets?



Planetary Science

- Primitive Bodies
- Giant Planets
- Small Worlds of our Solar System: Venus and Titan



Significant Progress!

- First and second science flight series, using FORCAST and GREAT, resp., completed on schedule
- Media participation:
 - German journalist and BBC reporter flew on flights
 - NBC reporter, Tom Costello, toured SOFIA
- RVSM (Reduced Vertical Separation Minimum) certification achieved
 - can now fly in National Airspace System (NAS)
 - Considerably fewer constraints on future flight planning!
- Third science flight series, “Basic Science I”, started ahead of schedule (May 5, ‘11)
 - Are first series of “community” observations awarded through a peer-reviewed process.
 - Uses FORCAST instrument
- 2nd-generation science instrument final AO to be released in June 2011
 - Issued as an amendment to SALMON AO (Stand Alone Mission of Opportunity Notice)
 - A few minor changes between the final AO and the draft released in Dec 2010.
 - Proposal deadline will be the standard 90 days following the AO release
 - AO: <http://nspires.nasaprs.com/> (“future” solicitations link)
 - Library: <http://soma.larc.nasa.gov/SOFIA/>
- Airborne Ambassador program accelerated → first teachers fly this summer
- 11 micron FWHM measured at ~3.0 arcsec, exceeds early science requirement



Near-Term Activities:

- Working on initial pre-cooling (LN2) for late in Basic Science I
 - Cooling to about 0 deg C
- Start of series of competed observations, using GREAT, to begin early July.
- First international deployment (Germany) scheduled for mid September.
- Active mass dampers will be ground tested this summer and flown in Fall
- Accelerated HIPO & FLITECAM commissioning; to be used this fall for observatory characterization and V&V flights
- Planning for a significant upgrade phase scheduled to start in mid-November is progressing well
- Call for Cycle 1 GO proposals this Fall, Cycle 1 observations in 2012

**Program making excellent progress,
full summer of science flights!**



First-Generation Instruments





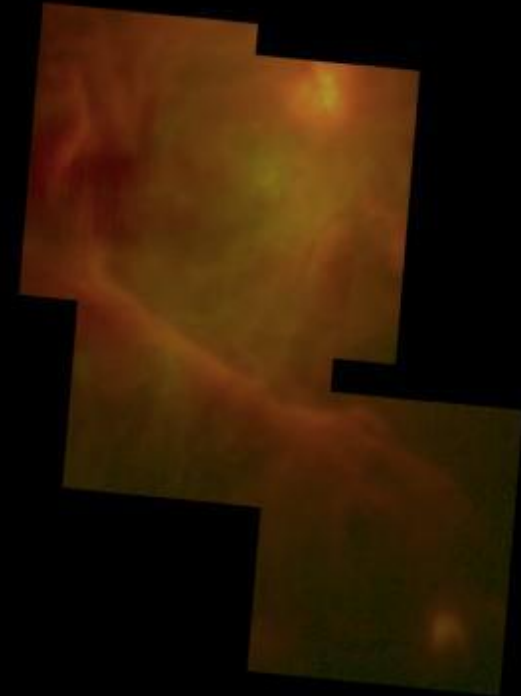
FORCAST SCIENCE Dec 2010



visible light (HST)



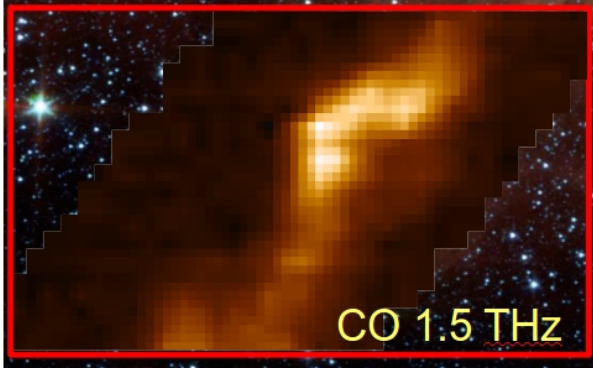
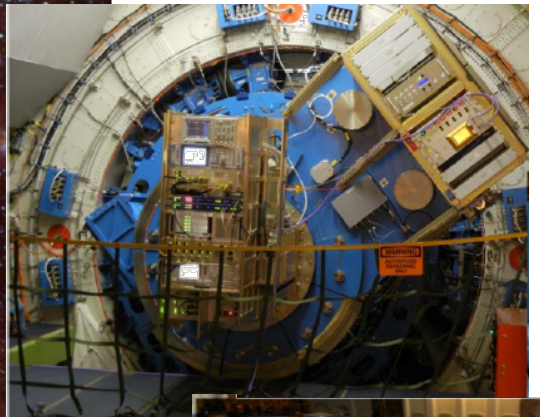
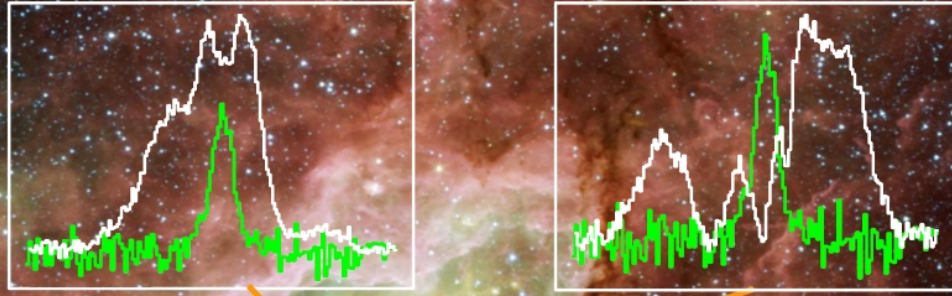
near-infrared (ESO)



mid-infrared (SOFIA)



GREAT collects first photons from M17 SW





SOFIA – Go For Science!

