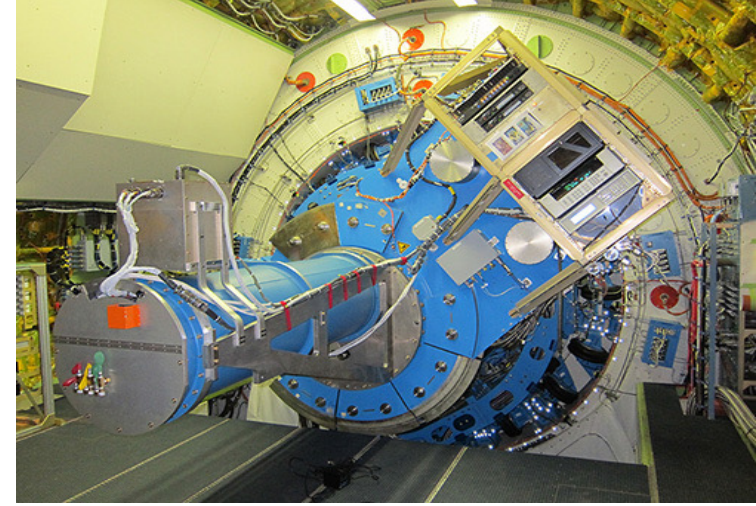


# SOFIA Instrument Status

- William T. Reach, Associate Director for Science Operations
- August 10, 2021 • SOFIA Users Group

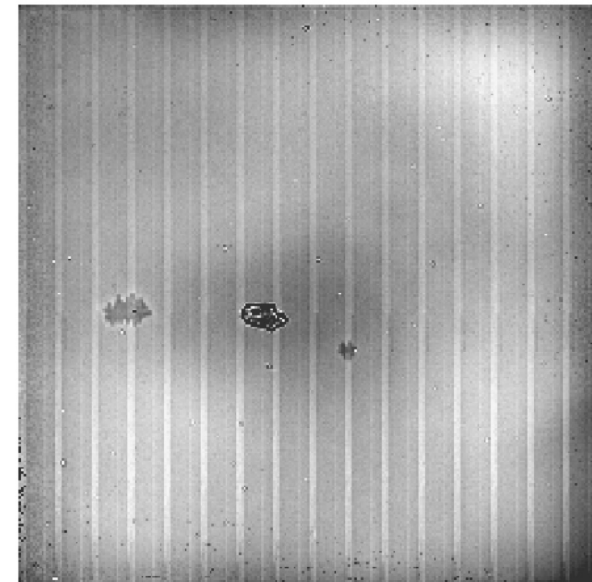
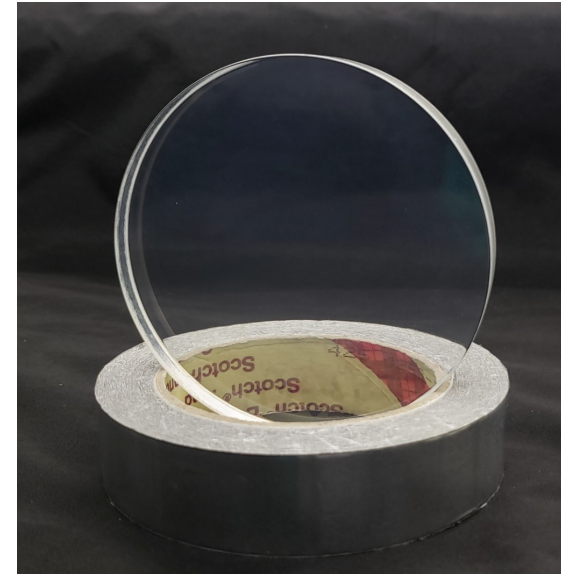
# EXES status

- EXES is warm in its lab in Armstrong B703
- EXES to become facility science instrument
  - Principal Investigator Matt Richter and UC Davis signed agreements with NASA to enable EXES to transition from PI to facility instrument
  - Operations acceptance review to occur 8/26/21, transition 9/30/21



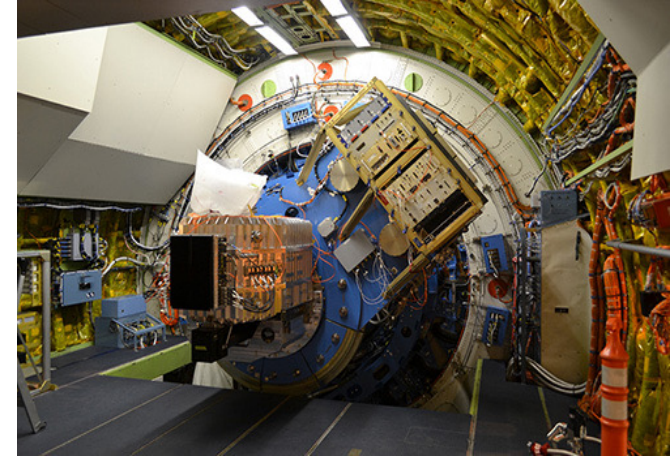
# FORCAST

- FORCAST is warm in its lab in B703
- New entrance window improved images
- Near-term plan to fully open and recoat interior where detector is located, to reduce debris on array
- Next flight series scheduled May 2022, but considering new series November 2021 for a single Cycle 7 “Will Do” observation
  - Weighing benefit of that P1 observation versus that of a clean detector for all future observations, plus displacement of a week of existing scheduled flights

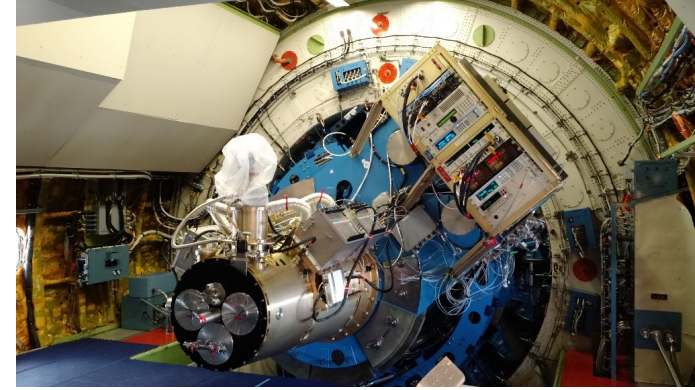


# FIFI-LS

- FIFI-LS is warm and open in its lab in B703
- After a January 2022 flight series, the next will be a “suitcase deployment” to the southern hemisphere in March 2022
  - Cycle 9 Call specified this opportunity
  - One pilot Legacy was accepted: LMC star forming region in [C II]



# HAWC+



- First substantial action of Instrument Roadmap to upgrade HAWC+
  - Currently 3 out of 4 detectors installed, one polarization pair
  - Install 4 new detectors
    - 2 polarization pairs doubles instantaneous field of view, mapping rate
    - Increase live pixels from present ~50% increase sensitivity/rate for mapping
  - Proposals were due from Goddard/NIST 7/30/21
- Instrument is in French Polynesia awaiting science flights scheduled to begin 8/24
- Close call when transporting from plane to building
  - Instrument appears nominal, being cooled down to verify functionality

# GREAT status

- GREAT is currently flying on missions from French Polynesia
  - Southern observing time is of highest value for GREAT
  - Primary objectives are FEEDBACK and HyGAL Legacy programs
    - As of 8/5/2021, FEEDBACK observed 40 out of 96 awarded hours; 30 scheduled
    - As of 8/5/2021, HyGAL observed 22 out of 81 hr; 14 scheduled

# GREAT continuation into Cycle 11

- Retirement of Principal Investigator leads to reduction in level of university support for GREAT
- Heterodyne spectroscopy remains highly relevant for SOFIA
  - Continued high productivity by and demand for GREAT
  - Instrument Roadmap community workshop strong support
- To continue operations, NASA authorized temporary hire of 2 hardware experts (1 year) and 2 visiting scientists (2 years)
  - GREAT will be offered in Cycle 10 (October 2022-September 2023)
  - GREAT will have some open time flights in first part of Cycle 11, TBD whether those are to complete backlog of existing programs or a limited open time offering
- Future of heterodyne spectroscopy encouraged as Terahertz Mapper

'20 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035

Cycle 8 9 10 11 12 13 14

### HAWC+ Fulfillment

Procure Detectors  
Installation  
Commissioning  
Science



### Mid/Far IR Spectrometer

Heterodyne Array  
Direct Detectors  
Call for Terahertz Mapper  
OR Direct Spectrometer  
Instrument Development  
Commissioning  
Science



### Instrument Call

Heterodyne Array  
Direct Detectors  
Call for Instrument  
Instrument Development  
Commissioning  
Science

