

# Decadal Survey

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# Points from Decadal Survey

- Recognition of importance of far-infrared wavelength to astronomy
- A potential Far-IR probe may happen by 2033; but in competition with X-ray probe.
- Great Observatories program includes a series of 3 large missions following the Large Mission Study reports: LUVOIR/Habex, Lynx and Origins
- A technology maturation plan for GREAT Observatories is recommended:
  - UV/Opt/IR mission technology is first, starting now
  - Far-IR and X-ray technology maturation plan starts mid decade
  - Decision points after technology development is evaluated

# Decadal on SOFIA

- Recommends ending SOFIA operations at end of 2023.
- Facts noted in the Decadal are out of date.
  - E.g. now at 270 publications and 3152 citations
  - SOFIA is experiencing science pay back for NASA's investment
  - Annual publication rates have doubled over the past 3 years
  - SOFIA has addressed all FMR recommendations
  - I reached out twice to inform chairs of progress but no response.
  - APAC applauded SOFIA's transformation in March 2021 meeting
- SOFIA has an advanced draft of its senior review proposal (next talk) that outlines many new initiatives (more flights, archival calls, education of community) that improve performance, efficiency and science productivity

# Decadal on SOFIA

- Direct Comparison of SOFIA with Hubble and Chandra.
  - Apples and oranges comparison
  - Compares only operational costs not total life cycle cost where differences are substantial
- Suborbital platforms are traditionally seen by NASA as in support of the more challenging and complex space missions; not to be compared directly to them.
- SOFIA is a human crewed mission and by nature will have limited hours but it has advantages
  - easy repair and update of instruments
  - hands on training of instrumentalist

# Decadal on SOFIA

- SOFIA is the only FIR observatory in the world for at least the next decade, maybe more
- The only other way to get this data is via balloons, which are PI projects, and do not have time or user support for astronomers
- SOFIA has superior science productivity in comparison to balloons and is essential to training the next generation of astronomers who will build and use future space FIR missions.
- SOFIA science does map to the Decadal science questions and priorities – our SMO scientists are working on a traceability matrix mapping our science case to the decadal.

# Decadal on SOFIA

- SOFIA can support Decadal recommendations for technical maturation in the FIR
- SOFIA can be accessed during flight and upgraded for the newest technology
  - A factor of 10 in performance could be achieved in SOFIA capabilities
- SOFIA instrument roadmap outlines the path to improved instrumentation that will open science discovery space.

# SOFIA's importance to the user community

- We are most interested in supporting the user community's access to this unique observatory
- The community is allowed to express its interests
  
- Questions?
- Comments?

