

SOFIA

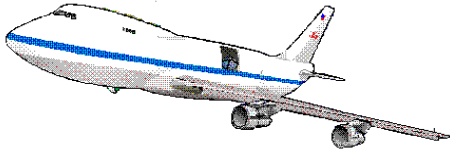
Stratospheric Observatory for Infrared Astronomy

SOFIA Facility Instrument Program: HAWC delta-PDR

USRA Science Support Group

Sean Casey

Senior Scientist

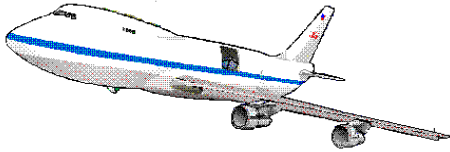


SOFIA

Stratospheric Observatory for Infrared Astronomy

HAWC Review Committee

- Gene Serabyn - CalTech/JPL (lead)
- Dan McCammon - Univ. of WI
- Terry Herter - Cornell Univ.
- Dale Fixsen - Raytheon ITSS
- Bob Hovde - USRA



SOFIA

Stratospheric Observatory for Infrared Astronomy

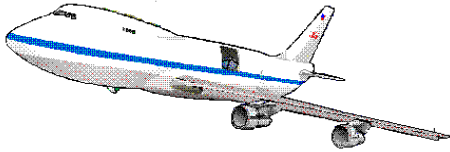
Review Policy

SOFIA science support review policy is to facilitate the development of world class instruments. The review policy is guided by past experiences of other ground based and space based facilities.

The review board is responsible for making judgments and recommendations concerning the review content. The board chairman is responsible for supervising the review, mediating discussions, meeting the review objectives, and maximizing the value-added contribution of the review board.

Following the review, the board meets to discuss findings, review and assign RFAs, and prepare a draft report. The board rejects or adopts either in part or in full all submitted RFAs from the review. The chairman prepares a final report of concerns and recommendations.

The review board chairman prepares a final report of the review and delivers the report to the observatory directory within two weeks of the review. The final report is distributed to all the meeting attendees by the observatory director following receipt from the board chairman.

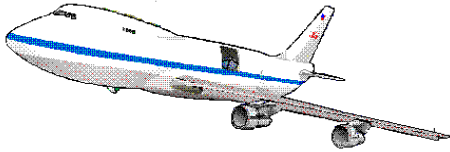


SOFIA

Stratospheric Observatory for Infrared Astronomy

SOFIA FSI Review Process

- Required of all SOFIA facility instruments
 - Independent review panel
- Review board submits recommendations to observatory director
- Director and Instrument PI derive agreement
- Science Support follows up on agreement

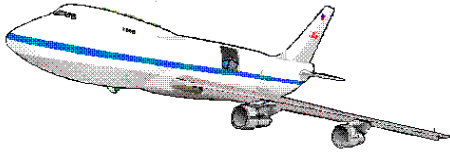


SOFIA

Stratospheric Observatory for Infrared Astronomy

HAWC Preliminary Design Review

- Held Oct 1, 1998 at GSFC
 - Same review committee
 - D. Fixsen replacing J. Kastner
- Summary recommendations
 - Top level requirements document
 - Schedule and re-baseline budgets
 - Detectors and fall back position
 - Agreement with GSFC

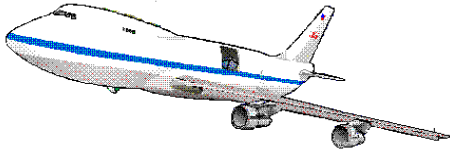


SOFIA

Stratospheric Observatory for Infrared Astronomy

Responses to Action Items

- Management
 - Top level Requirements
 - flowdown
 - MOU
 - Airworthiness milestones
 - SOFIA/HAWC ICD definitions
 - Critical path
- Focal Plane Assembly
 - Fall back
 - Assembly/Component issues
 - Background limited performance
 - Noise limitations
- Optics
 - Layout, tolerances
 - Filter selection
 - Calibration
- Mechanical
 - Microphonics
 - Motors, position sensing
 - Lifecycle testing
- Cryogenics
 - Salt pill temperature limits
 - Vapor cooling
- Electronics
 - Chopper control modes
 - FET temperatures
 - Analog and digital signal mixing
- Software
 - Requirements specification
 - Remote diagnostics
 - Processing

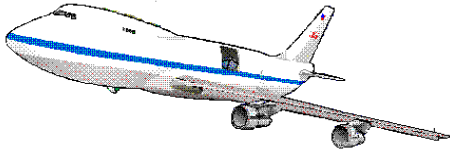


SOFIA

Stratospheric Observatory for Infrared Astronomy

Observatory Director's Instructions

- Complete Project Implementation Plan
 - Complete schedule and budget
- Complete GSFC MOU
- Track bolometer development
 - Instrument watch list
- Address post-doc science positions

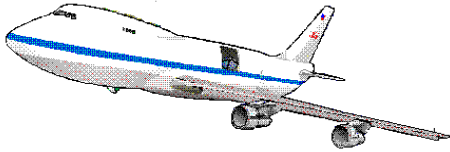


SOFIA

Stratospheric Observatory for Infrared Astronomy

Prepared Material for HAWC delta-PDR

- HAWC Project Implementation Plan
 - Requirements, schedule, budget
- HAWC response to action items
 - Science, engineering, and management responses
- HAWC delta-PDR viewgraphs
 - Presentation material

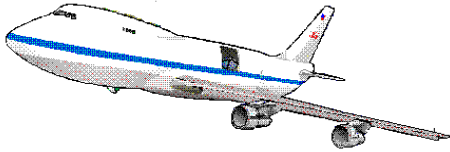


SOFIA

Stratospheric Observatory for Infrared Astronomy

Goal of HAWC delta-PDR

- Complete FSI PDR process
 - Approve the current approach and design
 - Receive a favorable review from the committee
 - Move HAWC forward to CDR

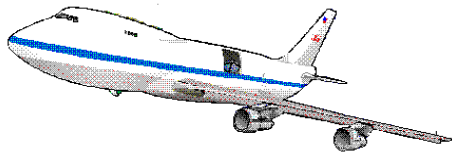


SOFIA

Stratospheric Observatory for Infrared Astronomy

FSI Critical Design Review Charter

- Operational requirements and verification compliance
- Summary of major derived design specifications and constraints
- Major changes since PDR
- Interface details and status of agreements
- Selected design details
- Critical component status
- Selected manufacturing details and plans
- Configuration control plan (HW/SW)
- Maintenance plans (HW/SW)
- Documentation status
- Breadboard and prototype test status and results
- Test plans for the deliverable units
- Operational features and constraints
- Spare provisions
- Support equipment requirements, provisions, and plans
- Schedule, budget, and flow plan status
- Major concerns, open items, and plans for resolution



SOFIA

Stratospheric Observatory for Infrared Astronomy

Request for Action Item

Presenter:

Date:

Comments:

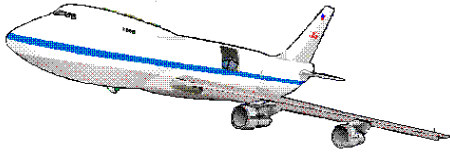
Request for Action:

Author:

Dec. 1, 1999

Yerkes Observatory, Univ. of Chicago

11



SOFIA

Stratospheric Observatory for Infrared Astronomy

Yerkes Observatory

- Observatory phone number:
 - Ph#: 262-245-5555
 - Fax#: 262-245-9805

- Wrap up meeting by 4pm