

Astronomical Search for Origins



THEME UPDATE

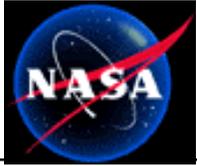
Philippe Crane
ORIGINS THEME SCIENTIST

COCOA BEACH, FL
December 3, 2001

Astronomical Search for Origins Mission Status



	Launch	STATUS	Comments		
HST	Jan '02	GRN	Launch date now Feb. 02. JIS 1 & 2 completed. Majority of flight h/w has been shipped to KSC. ACS alignment revalidated.		
NGST	June '09	GRN	AO to be released Nov 30. Prime Phase 2 proposal evaluations ongoing. STScI proposals due Nov 30. JPL selected for MIRI center.		
SIRTF	TBE	RED	Launch slip will require additional funds. Awaiting proposed replan from JPL. Completed CTA performance (Brutus) test - focus exceeds level 1 reqts. Dedication of new SSC facility on 10/22/01.		
SOFIA	Dec '04	GRN	Progress continues on 747 skin replacement. Tom Greene report tomorrow.		
Starlight	June '06	GRN	Independent cost estimate by Langley within 10% of JPL estimate. FIT milestones making progress again. Documentation for Phase B approval lagging, but in work.		
SIM	Dec '09	GRN	Nanometer stabilization technology milestone met 2 months early, exceeded requirements (>60 DB vs 50dB disturbance attenuation required)		
TPF	NET 2014	GRN	Release of draft cry cooler solicitation (11-7-01) to support TPF, NGST, & Con-X. Sent draft LOA (programmatic portion only) to ESA for comment. Awaiting response.		
Keck Int.	2003	YEL	Draft MOA for Outrigger Telescope Project has been sent to all consulting parties for comment. They have 45 days to comment.		
Fame	Oct '04	RED	Phase C/D confirmation review on 12/18/01 :Confirmation assessment shows high probability of not making its cost and schedule requirements.		
		GRN	Proceeding on Plan, only normal, minor problems		
		YEL	Significant Problems or Concerns but feasible plan to resolve		
		RED	Major Problems; Solution path unclear		
		*	As shown in the FY02 President's Budget Request		



SIRTF

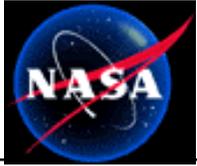


ISSUE (Reason for **Red** Status)

- Project cannot meet 7/15/02 launch date due to late deliveries of:
 - spacecraft to ATLO (reaction control system delays)
 - CTA to ATLO (thermal vacuum retest required)
 - flight software to ATLO
- Launch delay of 4-6 months probable.
- Project cannot meet development budget cap due to slipped launch date.

OSS PLAN OF ACTION

- IRT confirmed probable delay of 4-6 months with an increased development cost.
- JPL required to present plan how to fund the SIRTF increased costs from existing JPL Origins programs.
- Code S will make an assessment and decision what to do based upon the above two inputs.



KECK Intferometer

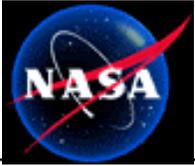


ISSUE (Reason for **YELLOW** Status)

- Project still does not have land use permits:
 - Conservation District Usage Application submitted Oct 23; permit expected by March
 - John Lee, the HQ program executive has moved to Code R
- Vibration still constraining fringe visibilities although successful mitigation likely.
- Outrigger telescope secondaries are out of specification but can be accomodated.
- New contracts with CARA need to be negotiated in FY 2002.

OSS PLAN OF ACTION

- Carl Pilcher has taken on Program Scientist duties and is acting Program Exec.
- John Lee will be available for interactions in Hawaii until permits are acquired.



FAME



ISSUE (Reason for **Red** Status)

- Cost estimate exceeds allowable funding:
 - Cost exceeds caps even when adjusted for NIAT and other additional requirements
 - Previous approved reserve percentage does not meet new Code S reserve requirements

OSS PLAN OF ACTION

- Confirmation Assessment completed during October. Formal report pending. Cost and design maturity issues identified.
- Hold Confirmation Review (Dec '01). Project will request an extension of Phase B to retire cost and design maturity issues at the confirmation review.
- At the Confirmation Review, OSS will then decide whether to cancel or extend Phase B.

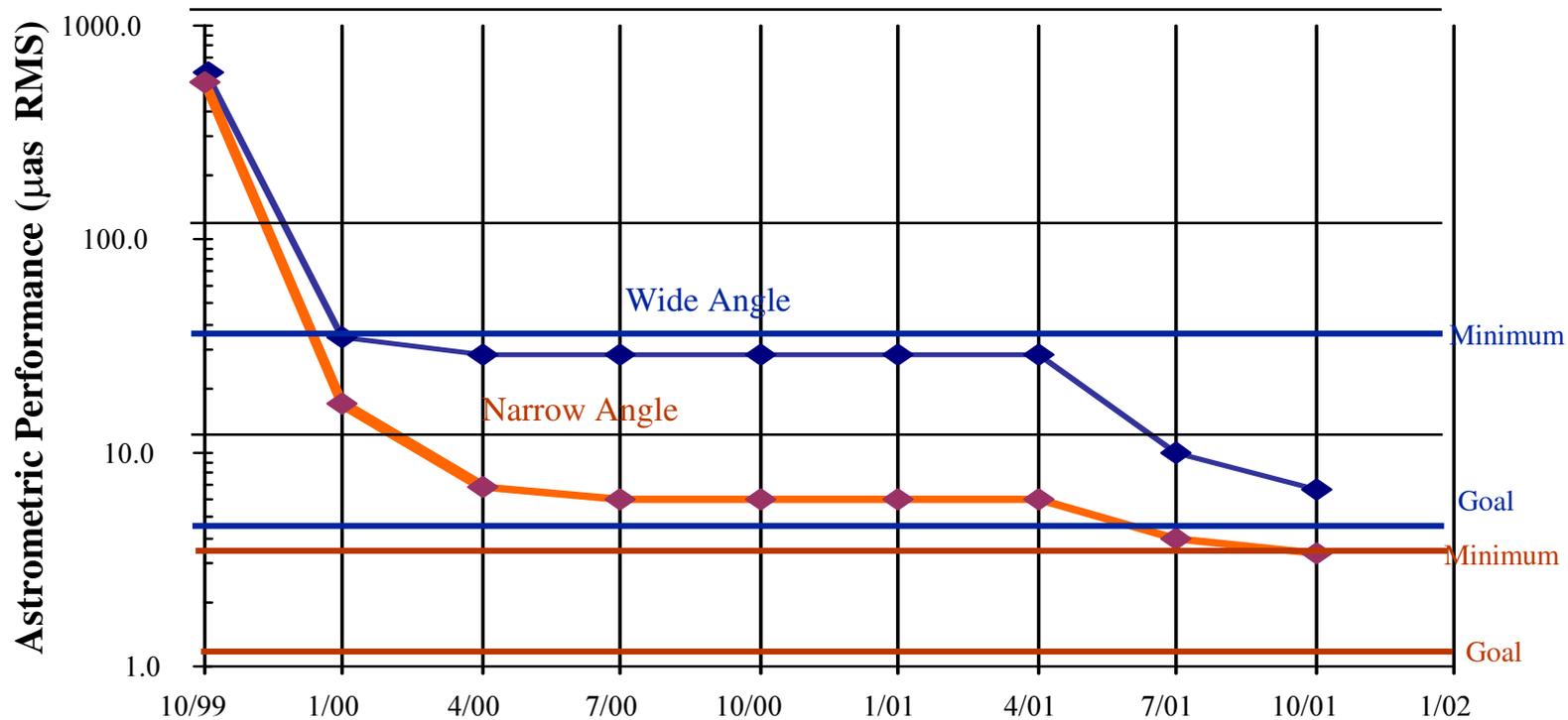
SIM Astrometric Performance



-Based on "today's" component Technology

Calculated Wide Angle based on Component Performance

Calculated Narrow Angle based on Component Performance



SIM Astrometric Performance



Parameters	Parameter Performance Today	Parameter Performance Needed by SIM
Beam launcher thermal sensitivity (bulk)	4 pm/mk	2 pm/mk
Cyclic averaging residual error per gauge	60 pm	10 pm
Pointing dither error per gauge	750 mas	75 mas
Corner cube surface quality	lamda/500	lamda/500
Wide angle error due to beam diffraction	200 pm	100 pm
Narrow angle error due to beam diffraction	13 pm	2.7 pm
Wide angle error due to polarization effects on corner cubes	75 pm	15 pm
Narrow angle error due to polarization effects on corner cubes	5pm	1 pm
1-D absolute metrology accuracy	30 μm	3 μm
Wide angle PSS end-to-end thermal deformation	100 μm	10 μm
Narrow angle PSS end-to-end thermal deformation	10 μm	1 μm
Systematic fringe measurement error	30 pm	30 pm
Wide Angle Performance (General Astrophysics) 4 μas (goal); 30 μas (basic)	6.9 μas	4.0 μas
Narrow Angle Performance (Planet Detection) 1 μas (goal); 3 μas (basic)	3.4 μ as	1.0 μas