



NSF Update to Astronomy & Astrophysics Advisory Committee

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MPS/AST Deputy Division Director

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Other Studies and Reports

- Decadal Surveys in addition to ASTRO2020
 - Planetary Science & Astrobiology; released in April 2022
 - Solar & Space Physics underway
 - Biological & Physical Science Research in Space underway
 - HEPAP/P5 underway
- Committee of Visitors being planned for summer 2023
- Senior Review/Portfolio Review planning underway
- MPS Advisory Committee; esp Subcommittee on Future Facilities
- AST Community workshops on 1) Data Infrastructure (Feb 2023) and 2) Instrumentation and Technology (later this year)



Early Career and Broadening Participation Programs

- REU Sites
- GRFP*
- AAPF
- CAREER

- MPS LEAPS*
- MPS ASCEND*

- Supplements: MPS-AGEP, MPS-GSRV, MPS-HI*, FASED, REU, RET, etc

- PAARE...



Partnerships in Astronomy & Astrophysics Research and Education (PAARE)

- Partnerships that
 - Strengthen education infrastructure
 - Strengthen research capacity
 - Create opportunities for student and faculty research
- Pathways into the research enterprise
 - Broaden participation in astronomy
 - Increase recruitment, retention, and success
 - Foster a diverse, inclusive, and equitable environment



Research, Instrumentation, and Technology Programs

Astronomy & Astrophysics Grants (AAG)

- Review underway

Advanced Technology & Instrumentation (ATI)

- Review underway

Major Research Infrastructure (MRI)*

- FY2023 Proposals received recently

Mid-Scale Innovations Program (MSIP)

- No new proposals solicited for FY2023 funds

Mid-Scale Research Infrastructure (MSRI)*

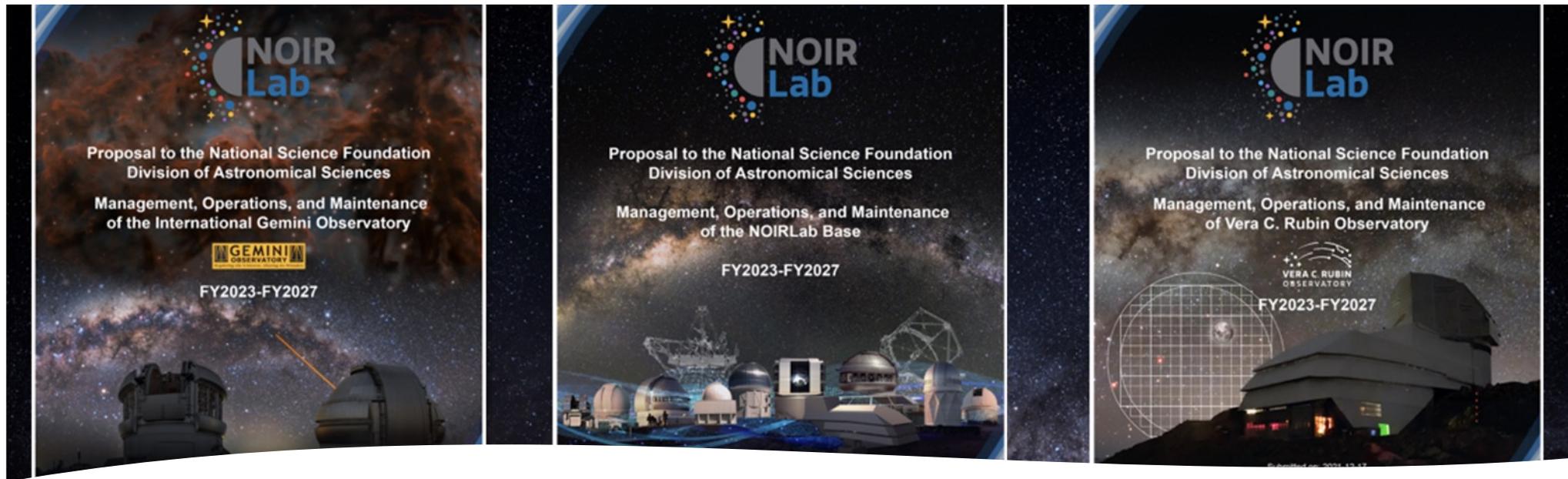
- MSRI-1 pre-proposals under review



New Partnerships and Centers

- GLOW: Geoscience Lessons for and from Other Worlds
NSF22-032 (GEO/EAR, GEO/AGS, MPS/AST)
- Astrophysics to be included in next AI Institute Solicitation (CISE)
- Arecibo Center for STEM Education and Research (EDU)
- Center for Advanced Radio Science and Engineering; Launched
March 2022 at the University of Puerto Rico Mayagüez





NOIRLab Renewal

(1 October 2022)

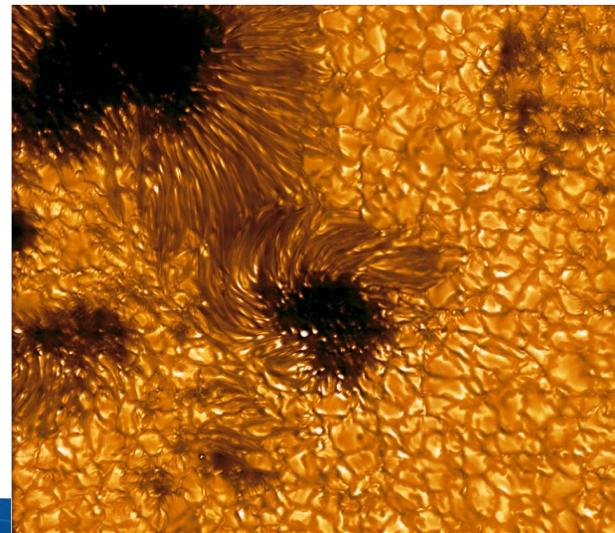
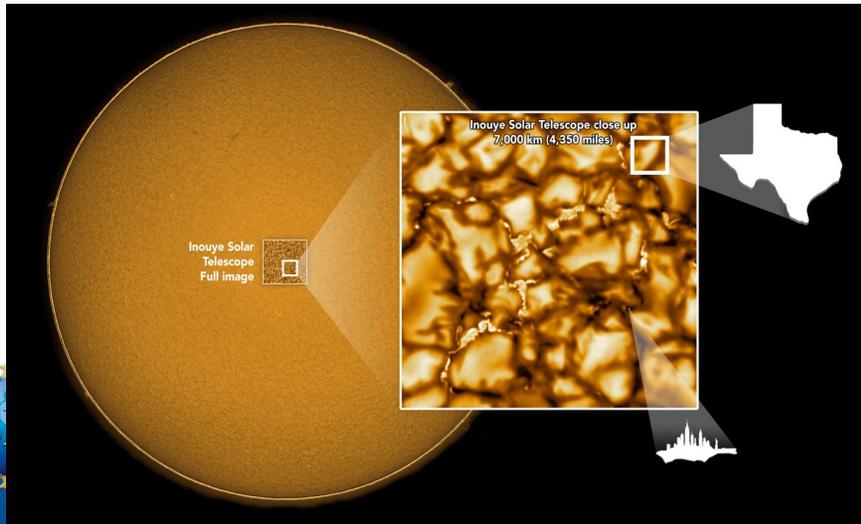
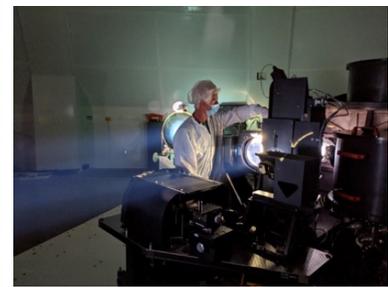
- NOIRLab Base
- Gemini N & S
- Rubin Operations





Daniel K. Inouye Solar Telescope

DKIST Inauguration Ceremony :
August 2022



Vera C. Rubin Observatory



- EPO Construction complete, now in Operations.
- Telescope mount assembly completion in March.
- LSSTCam is fully assembled at SLAC, with final pre-ship testing imminent using new pumped coolant system.
- Forecast construction completion in late 2024.
- All projected NSF funding needs already appropriated.
- Close NSF and DOE coordination on budget and schedule. <https://ls.st/dates>



Unexpected Disruptions Causing Significant Downtime

NOIRLab

- Fires on Kitt Peak
- Gemini N primary mirror slightly damaged during recoating

NRAO

- Cybersecurity event at ALMA

NSO

- Volcanic eruption on Mauna Loa

GBO

- Damage to azimuth wheel/track



CHALLENGES	OPPORTUNITIES
Maintain balanced portfolio, healthy grants programs, and sustainable operations and maintenance of facilities. All within our “base” AST budget	Crosscutting and NSF-wide programs; WoU-MMA; Existing programs, e.g. in CISE and TIP; External partnerships; GRANTED; EPSCOR. Chips and Science Act
Create pathways for major new investments; development, design, construction, and operations of new major facilities	Engagement with rest of NSF, NSB, etc to develop new paradigms for life-cycle costs; External partnerships
Relevance to changing federal and NSF-wide priorities. Growing awareness of astronomy’s impact on national security, but applied/commercial aspect is less clear.	Astronomy is an inspirational science. Strengths in data handling, archiving, interoperability; precision measurement technology
Demographic information; workforce and work environment	NSF/NCSES; Coordination with NASA, DoE, OSTP and across NSF.

