NSF Astronomy (AST)
Changes: MPS Directorate and AST Division

• Anne Kinney, Assistant Director (AD) for MPS, left NSF May 1, to become the GSFC Deputy Director – May 2020

• Sean Jones, named MPS AD – Sept. 15, 2020
  – Served as Deputy AD since August 2019
  – Served as acting AD since May 2020

• Tie Luo is the Acting Deputy AD since May 2020

• AST has two new Program Directors
  – Dr. Alison Peck, Arecibo
  – Dr. Carrie Black, NSO
FY19-21 Appropriation and AST

• NSF top line
  – FY18 $7.818B
  – FY19 $8.075B
  – FY20 $8.278B

• Research and Related Activities (R&RA):
  – FY18 $6,380M
  – FY19 $6,151M
  – FY20 $6,737M (enacted)

• AST:
  – FY18 Actual $311M
  – FY19 Actual $287M
  – FY20 enacted not released yet
Appropriations Worth Noting

• Continued Support for NSF 10 Big Ideas
  • WoU-MMA relevant to AST
• Currently Under a CR

<table>
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<tr>
<th>Account</th>
<th>FY19 Actual</th>
<th>FY20 Enacted</th>
<th>FY21 Request</th>
<th>Change 20-21</th>
<th>House Change 20-21</th>
<th>Senate Change 20-21</th>
<th>Final Change 20-21</th>
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<td>NSF</td>
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<td>1,448</td>
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</table>

¹ Includes Mathematical and Physical Sciences, Social Science, and Biological and Environmental Research.
Space Weather (PROSWIFT) Act

• Sponsored by Reps. Perlmutter (D-CO) and Brooks (R-AL); and Sens. Gardener (R-CO) and Peters (D-MI)

• Directs NSF, NASA & NOAA to:
  – Continue to support basic research in disciplines relevant to space weather
  – Co-sponsor a National Academies “Space Weather Government-Academic-Commercial Roundtable to facilitate communication and knowledge transfer among Government participants in the space weather interagency working group”
  – Establish a 15-member Space Weather Advisory Group under the Federal Advisory Committee Act (FACA)
    • 5 from academia, 5 commercial sector, 5 non-governmental end-user community

• Directs NSF specifically to
  – “maintain and improve ground-based observations of the Sun”
  – “continue to provide space weather data through ground-based facilities”

• Good news for NISP and ngGONG, AGS instrumentation
AST Grants Programs

**INDIVIDUAL INVESTIGATORS**
- AAG
- CAREER
- AAPF
- ATI
- MRI
- REU
- ESP

**RESEARCH**
- MSIP

**TECHNOLOGY/ INSTRUMENTATION**

**EDUCATION & SPECIAL PROGRAMS**

**OBSERVATORIES**
- National Radio Astronomy Observatory (NRAO)
- Green Bank Observatory
- Arecibo Observatory
- National Solar Observatory (NSO)
- National Optical-Infrared Astronomy Research Laboratory (NOIRLab)

**MREFC (CONSTRUCTION)**
- DKIST
- VRO

* NSF-wide

12/14/2020

AGU SPA Agency Town Hall
Astronomy and Astrophysics Grants

Astronomy and Astrophysics Research Grants (AAG)

PROGRAM SOLICITATION
NSF 18-575

REPLACES DOCUMENT(S):
NSF 16-574

Submission Window Date(s) (due by 5 p.m. submitter's local time):
October 01, 2018 - November 15, 2018
October 1 - November 15, Annually Thereafter

Program Officers:
Lead: Hans Krimm – hkrimm@nsf.gov
Solar: Luke Sollitt – lsollitt@nsf.gov
Carrie Black – cblack@nsf.gov

Advanced Technologies and Instrumentation (ATI)

PROGRAM SOLICITATION
NSF 18-576

REPLACES DOCUMENT(S):
PD 08-1218

Submission Window Date(s) (due by 5 p.m. submitter's local time):
October 1, 2018 - November 15, 2018
October 1 - November 15, Annually Thereafter

Program Officer:
Zoran Ninkov – zninkov@nsf.gov
NSF Astronomy and Astrophysics Postdoctoral Fellowships

• Now in it’s 20th Year
• $100k/yr for 3 years ($69k Stipend, $31k Research and Benefits Allowance)
• Research fellowship has a significant education component (10-25%)
• For individuals within 5 years of PhD
• All Areas of Astronomy and Astrophysics
  – MUST Demonstrate Astronomical Context
• Program Solicitation NSF 18-574
• Fellows Page (non-NSF) www.aapf-fellows.org
• Program Officer: Harshal Gupta Hgupta@nsf.gov
Era of Multi-Messenger Solar Physics

- AST facilities encouraged to submit supplement proposals to the NSF-wide WoU-MMA opportunity
  - NSO submitted a proposal for upgrades to the DKIST distribution optics and Cryo-NIRSP to enhance spectral coverage and efficiency for joint observations with PSP and SoI0
  - Truly MMA proposal
  - Awarded $481K – Sept. 17, 2020

- NSF-AST discussing joint (MMA) opportunities with NASA Heliophysics
COVID-19 Impacts: NSF Major Facilities

• AST facilities
  – Observing: NRAO (VLA, VLBA), GBO, GONG, Gemini (N), Gemini (S), CTIO, Rubin Obs., KPNO
  – Restarted Construction/Commissioning: DKIST
  – Not Observing:
    • ALMA: ramping up from Caretaker to Extended Caretaker
    • Arecibo
  – Restart risks/costs, re-plan of MREFC programs.
NSO Operations & Maintenance

- FY 2019 O&M = $16.4M
  - DKIST Level-2 Data Products = $3.5M
  - Legacy facilities = $400K
- FY 2020 O&M = $21.4M (planned)
  - Sac Peak ops = $300K
  - Relocatable houses = $350K
  - WoU-MMA = $480K
GONG measures sunspot for Thanksgiving. (NOAA AR12786)

DKIST First Sunspot
See Rimele et al.
Solar Physics
volume 295, issue 12, 2020

Sac Peak relocatable housing units to be transferred to White Sands Habitat for Humanity
DKIST in the NSF Facility Lifecycle

Initial Development
Conceptual Design
Preliminary Design
Final Design
Construction
Operations
Termination

MREFC Panel Review
Conceptual Design Review (CDR)
Preliminary Design Review (PDR)
Final Design Review (FDR)
Operations Review
Termination Review

NSB Authorization

Readiness

Total MREFC awarded $344.13M

We Are Here; 98% Complete

Research & Related Activity (R&RA)
MREFC
R&RA

Review Decision by OD

12/14/2020
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Construction Site - September 2020
Recent Construction Pics - Instruments

Cryo-NIRSP

DL-NIRSP

VTF

NCSP
Plan for DKIST Operations Commissioning

- 1-year Operations Commissioning Phase (OCP)
  - Cycle 1 call for proposals – May 1, 2020
  - Shared-risk observations
    - Limited instruments/modes
- Schedule likely pushed out by ~6 months due to COVID-19
- Anticipating start of Steady-state observations – April 2022
Questions?