



An Overview of the ExoPAG



Exoplanet Program Analysis Group (ExoPAG)

https://exoplanets.nasa.gov/exep/exopag/overview

- The ExoPAG is led by a Chairperson appointed from the exoplanet community to serve a 3-year term.
- The ExoPAG Chair is supported by a 10-12-member Executive Committee (EC)
 - o EC members are selected to reflect a cross-section of the exoplanet exploration stakeholder community;
 - o EC members are solicited annually and appointed to rotating 3-year terms.
- Together, the ExoPAG Chair and EC comprise a steering group that is responsible for keeping
 the community informed of ongoing activities and opportunities within the ExoPAG, capturing and
 organizing community input, and overseeing ExoPAG analyses.
- All members of the community are encouraged to consider nominating themselves or a colleague to serve on the ExoPAG EC. Service on the EC provides an excellent opportunity to:
 - Initiate a Science Analysis/Interest Group.
 - Review and contribute to the ExEP Science and Technology Development Gap Lists.
 - o Contribute to APD's efforts to increase diversity, equity, and inclusion at NASA and in the community.
 - o Interact with excellent colleagues.
 - Inspire the next generation.
 - Have an impact within our community.

The ExoPAG Executive Committee

Name	Home Institution
Michael Meyer (Chair)*	Univ. of Michigan
Natasha Batalha	NASA ARC
Jacob Bean	Univ. of Chicago
Michael Bottom	Univ. Hawaii
Knicole Colon	NASA GSFC
John Debes	STScl
Rebecca Jensen-Clem	Univ. of California, Santa Cruz
Tiffany Kataria*	JPL
Ilaria Pascucci	Univ. Arizona
Josh Pepper*	Lehigh Univ.
Dmitry Savransky*	Cornell Univ.
Laura Schaefer	Stanford Univ.

*indicates EC member whose term is expiring in 2022

Programmatic Support:

- Hannah Jang-Condell, NASA HQ Executive Secretary, NASA POC
- Doris Daou, NASA HQ Planetary Science Division Liaison
- Richard Eckman, NASA HQ Earth Science Division Liaison
- Galen Fowler, NASA HQ Heliophysics Division Liaison
- Exoplanet Exploration Program Office, JPL Logistics



Join the ExoPAG EC!

NASA anticipates making new appointments to the ExoPAG EC, replacing current members of the committee who have reached the end of their appointments. New appointments will start in the Spring of 2022 and will be for a period of three years.

See the recruitment letter for more details: https://exoplanets.nasa.gov/internal_resources/2064/

The deadline for nominations is **January 21**, **2022**

Questions? Contact Hannah Jang-Condell (hannah.jang-condell@nasa.gov)



NASA HQ Update



Director Division



Paul Hertz Astrophysics Division Director



Sandra Cauffman Astrophysics Division **Deputy Director**



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Rachele Cocks Operating MissionPioneers



E. Lucien Cox SOFIA, GUSTO, XRISM. ExEP



Ed Griego Roman CGI. APD Operating Missions Athena, Euclid, LISA,



Shahid Habib Janet PCOS/COR, ARIEL Letchworth Roman UltraSat





Mark Sistilli Explorers Program IXPE, SPHEREX, COSI Balloons

Cutting Cross

Scientists

Program



Eric Smith Chief Scientist Webb



Jeanne Davis Assoc Dir for Flight ASM Program Manager



Mario Perez Chief Technologist SAT, RTF, ISFM, Swift



Lisa Wainio Information Manager, Public Affairs Liaison

inistrative npport

Kelly Johnson Administrative Assistant



Maria Harriell Administrative Assistant



Ingrid Farrell Lina Carrington Program Support Program Support Specialist Specialist

Dominic Benford Roman APRA Lead



Terri Brandt COSI Dep APRA Dep Pioneers Dep



Valerie Connaughton APRA (High Energy) XRISM, UltraSat **PCOS Program**



Michael Garcia APRA (UV/Visible), SmallSats/Pioneers Hubble



Thomas Hams APRA (CR, Fund. Phys.) Rockets/Balloons GUSTO, LISA



Hashima Hasan Douglas Hudgins Education/Comms. Citizen Science, Archives. Advisory Committees, NuSTAR, Keck



ExEP Program ADAP Lead

TESS, ARIEL



Stefan Immler Astrophysics Research Program Mgr, Chandra, ART-XC



Hannah Jang-Condell XRP. TESS **DEIA** Lead



Patricia Knezek **Explorers Program** Astrophysics Probe SOFIA, Hubble **Fellows**



William Latter APRA (Lab Astro) SPHEREx. Fermi



Sangeeta Malhotra Roman Dep ATP/TCAN Dep



Roopesh Ojha Data Lead, Athena, NICER, HEC, AI/ML



Kartik Sheth On detail to OSTP



Linda Sparke 2021 MIDEX/MO. Archives, COSI



Eric Tollestrup APRA (IR/Submm) Euclid, IXPE, COR Program



Sanaz Vahidinia ATP/TCAN Lead



Future



Future

Not **Pictured**

Future

January 3, 2022

Division Director



Paul Hertz Astrophysics Division Director



Sandra Cauffman Astrophysics Division **Deputy Director**



New to APD

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Rachele Cocks Operating MissionPioneers



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Future

Director of Astrophysics Transition

Paul Hertz will be stepping down this year after more than 10 years as Director of Astrophysics (the best job at NASA)

Once the new Director of Astrophysics is in place, Hertz will move to the SMD Front Office as Senior Advisor to the SMD Associate Administrator

Who will lead NASA astrophysics in the upcoming era of increasing inclusion and diversity, growing R&A, Webb science, Roman development, exoplanet characterization, time domain and multi-messenger astrophysics, dark energy and dark matter, first Astrophysics Probe, more Explorers / Pioneers / cubesats, future great observatories, and realizing Astro2020 priorities?

The search for the next NASA Director of Astrophysics has begun

For the job advertisement, see https://www.usajobs.gov/job/628265700 or search for announcement number HQ-22-ES-11334214 on https://USAJOBS.gov

This is a Senior Executive Service (SES) position, which requires a resume and a <u>substantial</u> narrative job application addressing executive core qualifications and mandatory technical qualifications

The application period closes on March 21, 2022

Questions? Contact Dr. Daniel Evans (daniel.a.evans@nasa.gov)

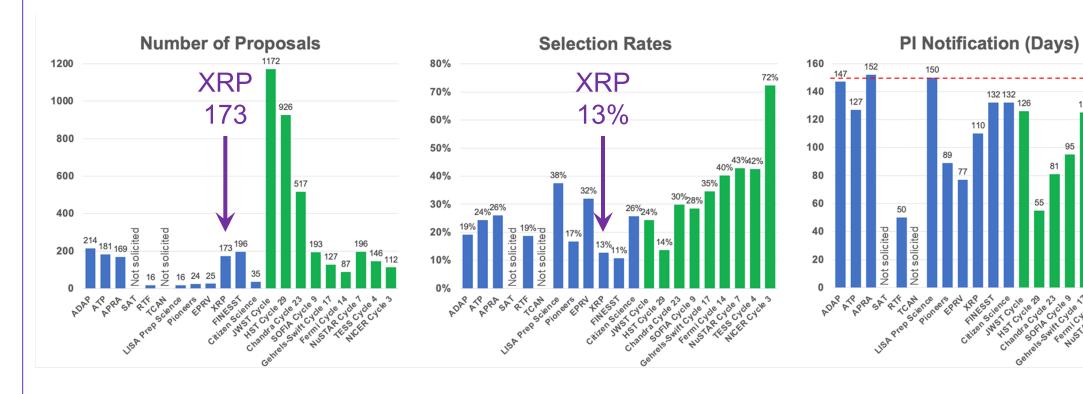


Research Program Update



Astrophysics R&A Proposal Status Update

December 2020-2021



R&A: 1,049 proposals GO/GI: 3,476 proposals Total: 4,525 proposals R&A: 19% GO/GI: 27% **Average: 25%**

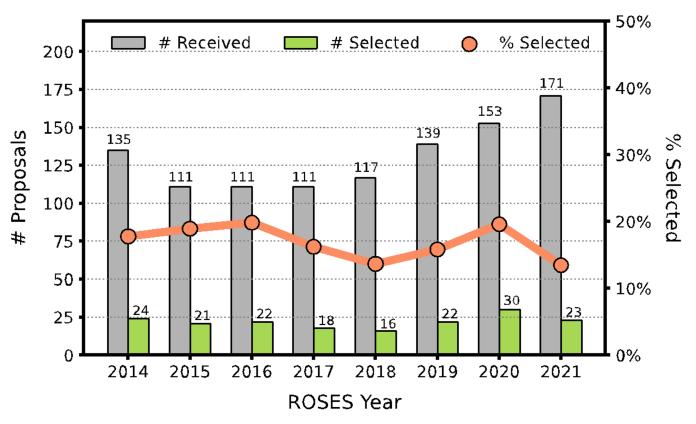
80% of notificationsR&A: 147 days
GO/GI: 126 days

150 days goal

Exoplanets Research Program (XRP) Updates

- Beginning with ROSES-2020, exoplanet research elements from ADAP, ATP, & APRA-Lab Astro have been moved into XRP. Exoplanet technology development remains in
- Beginning with ROSES-2021, XRP proposals are reviewed with Dual-Anonymous Peer Review (DAPR)
- The number of proposals submitted to XRP continues to grow despite COVID-19
- We were able to select more proposals in 2020, but not as many in 2021
- Growth of average proposal budget is outpacing portfolio budget growth

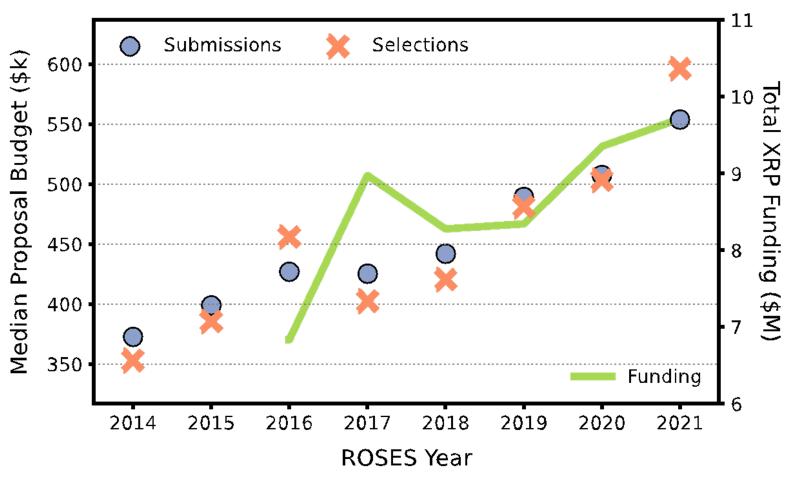




Exoplanets Research Program Budgets

Budgets of XRP proposals are growing faster than total XRP funding

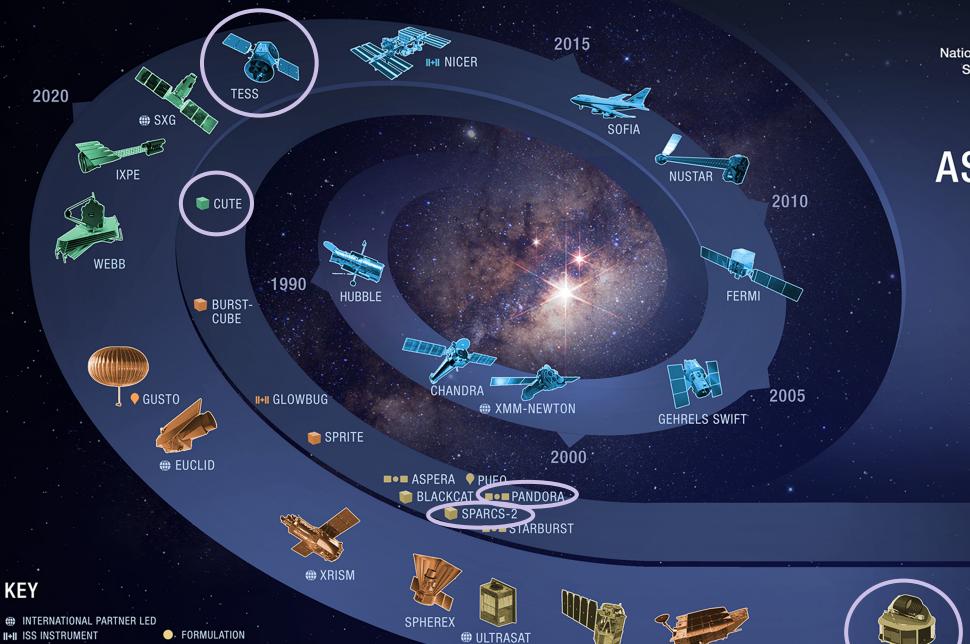
XRP Budgets & Funding Over Time





Mission Program Update





National Aeronautics and **Space Administration**

ASTROPHYSICS FLEET

PRE-FORMULATION

MIDEX/MO 2028 PROBE ~2030 **# ATHENA EARLY 2030s** #LISA MID 2030s

VERY SMALL MISSIONS



- ■●■ SMALLSAT
- **CUBESAT**
- BALLOON



EXTENDED



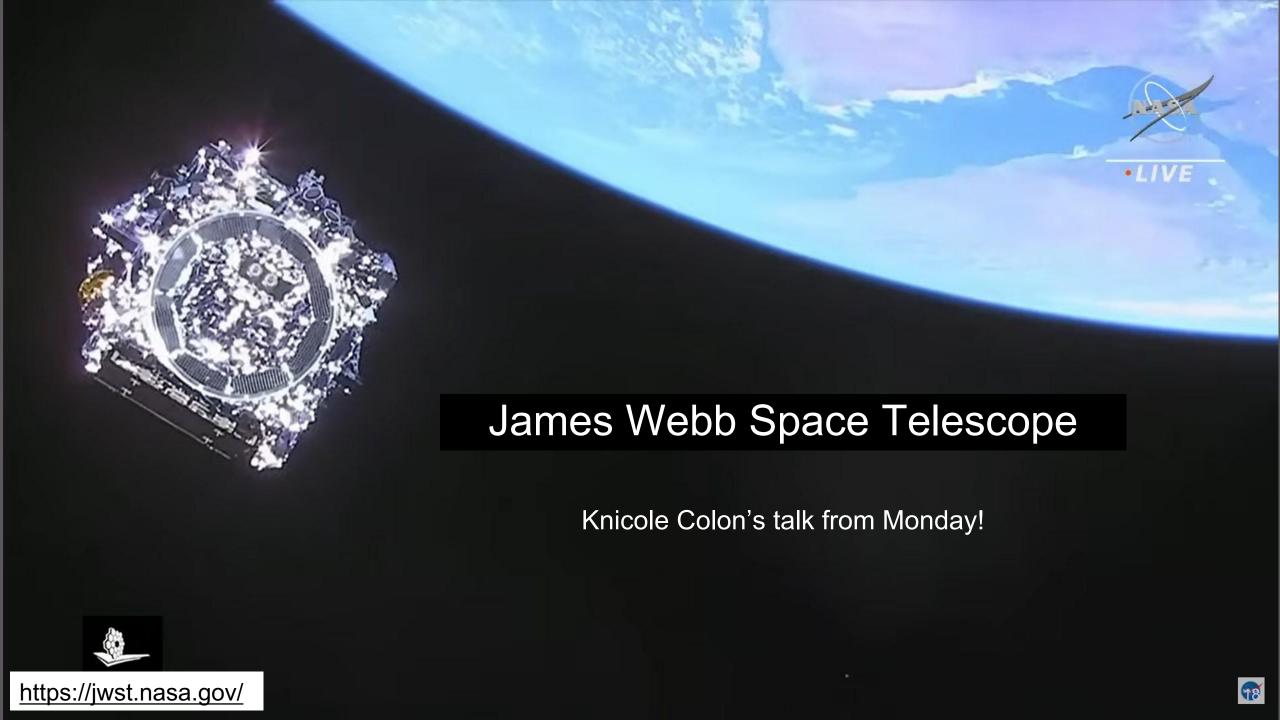
2025



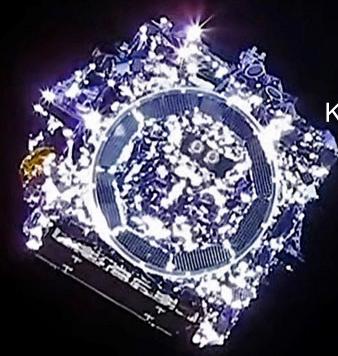




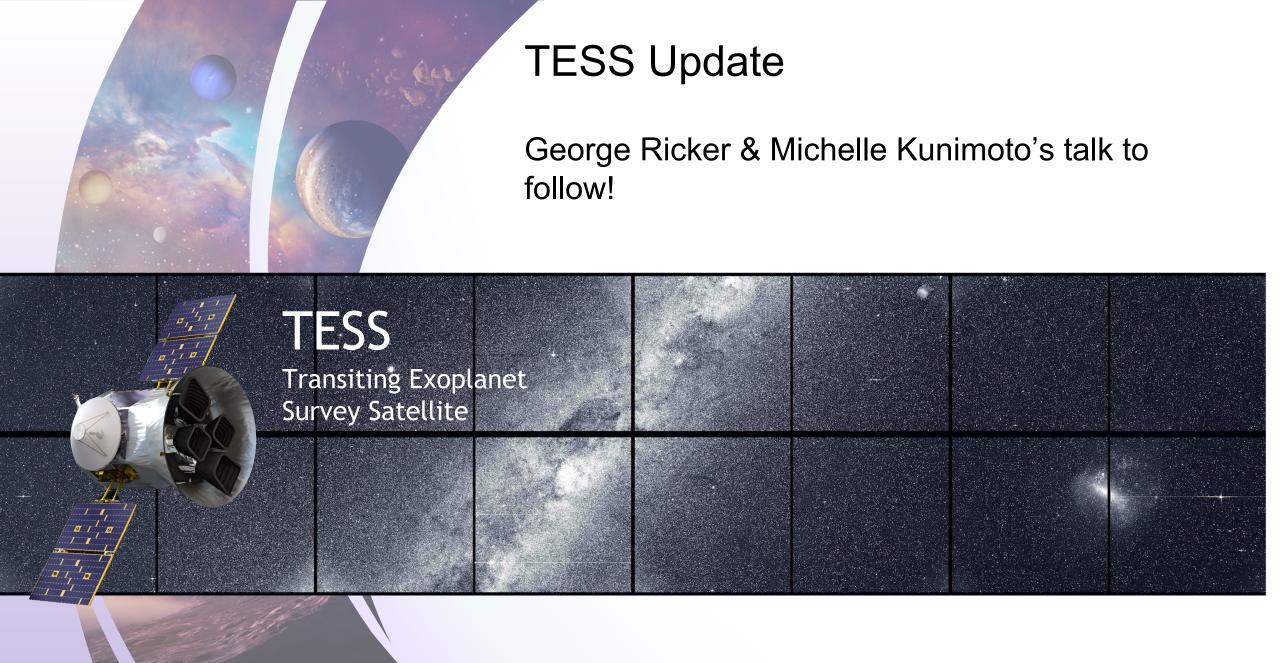
TRADITIONAL MISSIONS



James Webb Space Telescope



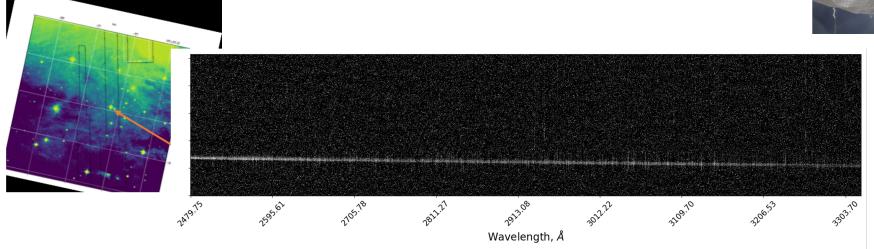
Knicole Colon's talk from Monday!



Colorado Ultraviolet Transit Experiment (CUTE)

- CUTE is a 6U cubesat with an NUV (255 330nm) telescope and spectrograph to study transiting planets around bright stars
- Launched Sep 27, 2021, as a secondary payload on the LANDSAT-9 mission. Spacecraft tracked and communications established within 2 days in coordination with amateur satellite community
- Spacecraft commissioning complete mid-Nov 2021, science payload commissioning to be complete by late-Jan 2022. Science operations to execute Feb 1 – Oct 31, 2022





Calibration spectrum from CUTE (K. France/University of Colorado)



NANCY GRACE ROMAN SPACE TELESCOPE



Project continues to make progress in spite of COVID inefficiencies and supply chain impacts; cost and schedule commitments have been adjusted to accommodate.

NASA launch commitment date is May 2027.

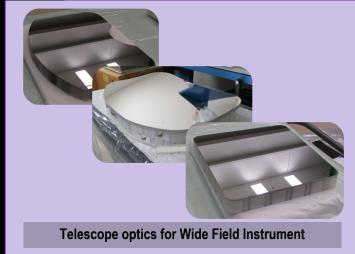
Significant flight hardware in testing or in fabrication. Full complement of flight detectors for Wide Field Instrument are already in hand. Most Coronagraph Instrument critical flight components expected to complete by spring 2022. Anticipate completing telescope in late 2022.

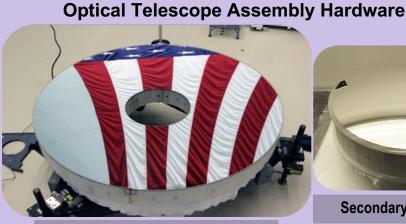
Opportunities for participation in Roman Space Telescope research and support are offered in ROSES-2021; draft solicitation out now.

https://roman.gsfc.nasa.gov/



NANCY GRACE ROMAN SPACE TELESCOPE





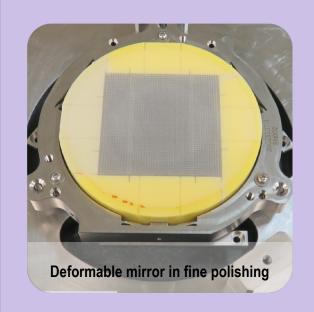


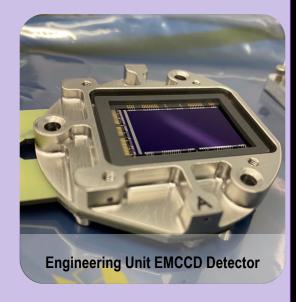


Primary Mirror (PM)

Wide Field Instrument Hardware Grism (T) and Prism (B) 300Mpixel Focal Plane Array completed **Engineering Unit**

Coronagraph Instrument Technology Demonstration Hardware





Roman Proposal Opportunities

- Nancy Grace Roman Space Telescope Research and Support Opportunities will be solicited as part of ROSES-2022 (deferred from ROSES-2021).
- Includes opportunities for Coronagraph community participation, Wide Field Instrument preparatory science, and key project infrastructure teams.
 - Coronagraph Community Participation Program: Investigators to work with the coronagraph instrument team to plan and execute tech demo observations
 - Wide Field Science: Investigators to work on science preparation activities related to mission performance verification and/or science operations preparation
 - Project Infrastructure Teams: Science teams to support scientific investigations using the data from the core community surveys

Roman Space Telescope Town Hall
Deferred to NET Jan 24
Details TBA



Astro 2020

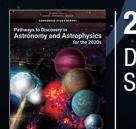


Astrophysics

Decadal Survey Missions







2021Decadal Survey



1972Decadal Survey
Hubble



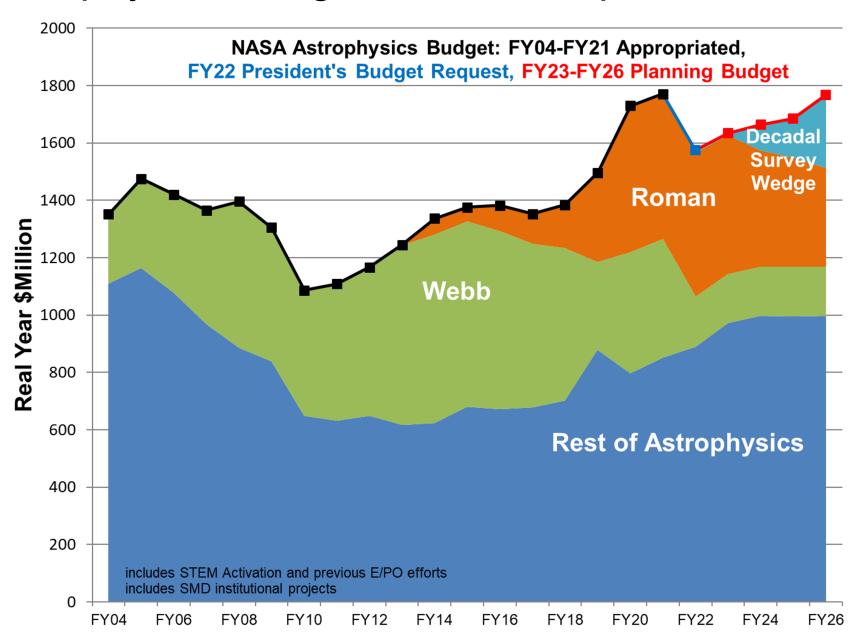
1982
Decadal
Survey
Chandra



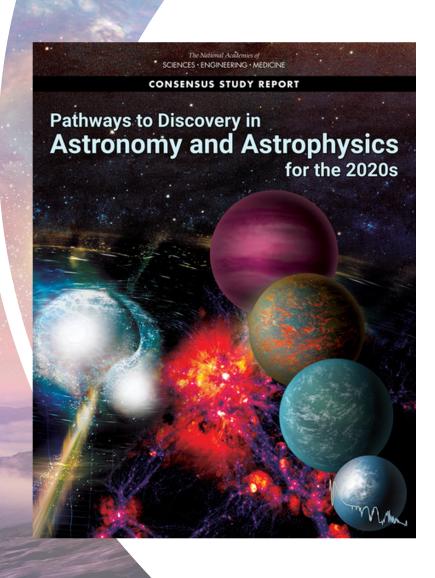
1991 Decadal Survey Spitzer



Astrophysics Budget – FY22 Request



NASA and Astro2020



- This is an exciting and ambitious plan for the next decade and beyond
 - Foundations of the Profession: Addressing inclusion, diversity, training, and the profession
 - Research Foundation: Improvements to research and analysis and data centers
 - Sustaining the Operating Portfolio: End SOFIA operations by 2023
 - Technological Foundation: Improvements to technology development programs and the balloon program
 - New Medium Initiative: Time Domain Astrophysics and Multi-Messenger Program
 - New Medium Initiative: Astrophysics Probes
 - New Large Initiative: Great Observatories Science, Mission and Technology Maturation Program for IR/O/UV, FIR, and X-ray Next Generation Great Observatories
 - New Large Initiative: Next Generation Great Observatories, starting with an IR/O/UV Large Mission optimized for exoplanets and astrophysics

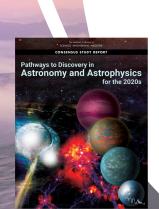
Foundations of the Profession

Actions already being taken by NASA that are responsive to recommendations of the 2020 Decadal Survey include

- Investment in Bridge Program starting in 2022
- Astrophysics mission design summer school, to help train new Pls, in 2023
- Expansion of the ROSES Inclusion Plan pilot in ROSES-22 with eventual incorporation into selection decisions
- Including diversity and inclusion of teams in evaluation of AO proposals starting in 2022
- Continuation of NASA Hubble Fellowship Program (NHFP), while encouraging development of scientific leaders who advance diversity and inclusive excellence, in accordance with external NHFP Review in 2022 [Community webinar planned for February]
- Keeping the option of virtual panels to reduce carbon footprint and increase accessibility
- Seeking access to demographic data and indicators pertaining to outcomes of proposal competitions
- Partnerships with NASA's Office of STEM Engagement to increase support of HBCUs, TCUs, and other MSIs
- NASA and NSF are beginning discussions on the state of the profession

Actions are being developed to address remaining Foundations of Profession recommendations





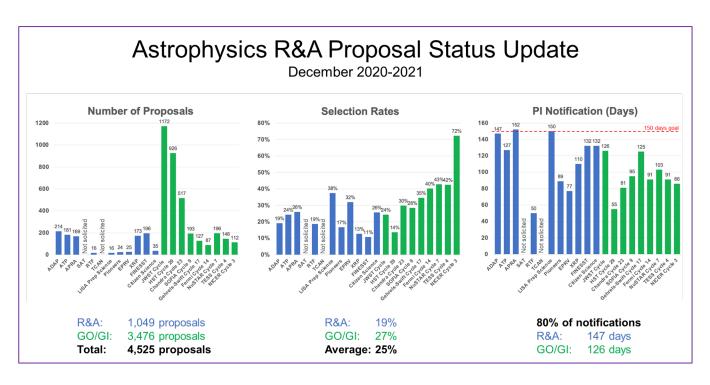
Research Foundation

Actions already being taken by NASA now that are responsive to recommendations of the

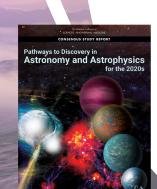
2020 Decadal Survey include

 NASA will continue to release data on proposal success rates at all AAS Town Halls and Astrophysics Advisory Committee meetings

 NASA will discuss options of returning to an annual solicitation in the Astrophysics Theory Program (ATP) with the Astrophysics Advisory Committee, recognizing the concerns about selection rates



- There will be no ATP call in ROSES-22, as all of the potential new start funding was awarded through the ROSES-21 ATP
- NASA and NSF have begun discussions on coordinating data archives



Sustaining the Operating Portfolio

Recommendation: NASA should end SOFIA operations by 2023, consistent with NASA's current plan.

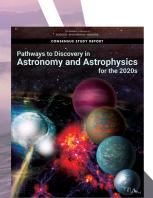
Response: NASA is developing a response to this recommendation.



Technological Foundation

Actions are being developed to address Technological Foundation recommendations of the 2020 Decadal Survey

- SAT recommendation: NASA has already modified the SAT call in ROSES-21 (and ROSES-22) to include technologies for identified future Great Observatories and identified future Probe missions (see ROSES-21, Amendment 37)
- Balloon Program recommendation: NASA will conduct an external review of the balloon program, possibly as a task force of the Astrophysics Advisory Committee (APAC)
- Explorers recommendation: NASA will maintain the established cadence of 4 AOs per decade, alternating between MIDEX and SMEX and including Missions of Opportunity, and Explorers will remain open to all areas of science
 - 2011 MIDEX AO: TESS and NICER
 - 2014 SMEX AO: IXPE and GUSTO
 - 2016 MIDEX AO: SPHEREx and ARIEL
 - 2019 SMEX AO: COSI
 - 2021 MIDEX AO: Received 20 MIDEX+MO proposals on December 9
 - o 2024 SMEX AO: planned AO
 - o 2026 MIDEX AO: planned AO



Future Great Observatories

Large observatories are a critical component of NASA's astrophysics portfolio

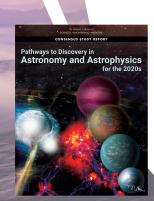
• The Decadal Survey recommends a compelling, feasible, timely portfolio of future great observatories that is part of a balanced Astrophysics program

Today NASA's priority is ensuring mission success for Webb and Roman

- Webb has been launched and has begun its 6-month commissioning phase
- Roman successfully passed its Critical Design Review (CDR) and has been replanned to account for COVID impacts; the new launch commitment date is mid-2027 (7 month delay due to COVID)

Now is not the time to start a Future Great Observatory; now is the time to prepare NASA will take a deliberate, multi-stage planning and strategy approach to the next large observatory mission

- Stage 1 Focus on enabling science and technology; begin Stage 1 now
- Stage 2 Begin the Decadal Survey recommended "Great Observatories Maturation Program"; conduct Analysis of Alternatives (AoA) and science / technology / architecture trades; begin Stage 2 in a few years (driven by planning and budget availability)
- Stage 3 Pre-formulation and decision to start the next Great Observatory; begin after Stage 2 AoA complete (Decadal Survey estimates 6 years for Stage 2)





Get involved



Keep Informed about NASA

NSPIRES mailing list – information about NASA solicitations

https://nspires.nasaprs.com/

Cosmic Origins mailing list, Exoplanet Exploration mailing list, Physics of the Cosmos mailing list – information about NASA missions and science

https://cor.gsfc.nasa.gov/cornews-mailing-list.php

https://exoplanets.nasa.gov/exep/exopag/announcementList/

https://pcos.gsfc.nasa.gov/pcosnews-mailing-list.php

NASA Astrophysics Federal Advisory Committees

Astrophysics Advisory Committee (APAC)

https://science.nasa.gov/researchers/nac/science-advisory-committees/apac

NASEM Committee on Astronomy and Astrophysics (CAA)

http://sites.nationalacademies.org/bpa/bpa_048755

Astronomy and Astrophysics Advisory Committee (AAAC)

https://www.nsf.gov/mps/ast/aaac.jsp

Sign up to be a panel reviewer:

https://science.nasa.gov/researchers/volunteer-review-panels

Why Volunteer to Serve on a NASA Peer Review Panel?

Personal professional development:

- See how the whole review process works
- Learn what constitutes excellent proposals
- Network with your professional colleagues and NASA scientific staff

Institutional achievement:

- Improve at competing for NASA money
- Increase knowledge of NASA's research and technology programs

Investment in the future:

- Help select the most transformative science
- Ensure that all proposals receive a fair and competent review

All reviewers receive an honorarium from NASA
All reviews through (at least) the end of 2021 are virtual
Sign up to be a panel reviewer:

https://science.nasa.gov/researchers/volunteer-review-panels or contact a NASA program officer (for contact info, see https://science.nasa.gov/researchers/sara/program-officers-list)



Questions?

