



FY15 President's Budget Request for NASA Astrophysics

Astrophysics

Paul Hertz

**Director, Astrophysics Division
Science Mission Directorate**

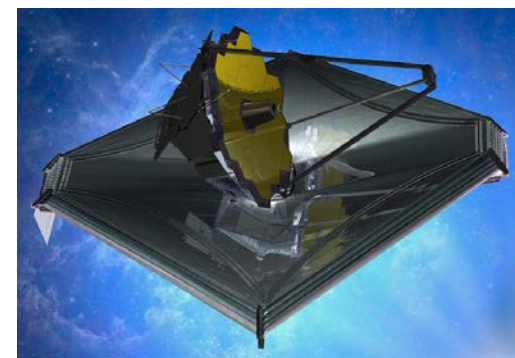
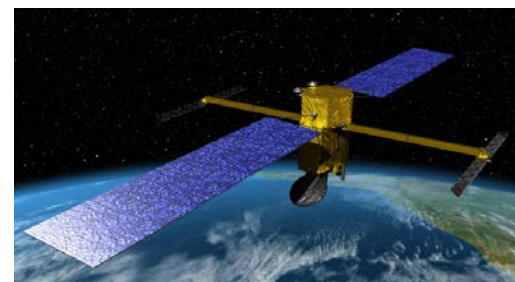


Science Mission Directorate

Outyears are notional

(\$M)	2013	2014	2015	2016	2017	2018	2019
Science	\$4,782	\$5,151	\$4,972	\$5,022	\$5,072	\$5,123	\$5,174

- Supports the 2018 launch of the James Webb Space Telescope and pre-formulation of WFIRST/AFTA, including technology development for detectors and coronagraph.
- Continues formulation and development of the InSight, Mars Rover 2020, and MOMA/ExoMars missions to Mars and the development of the robotic OSIRIS-REx mission to retrieve and return samples from an asteroid, as well as pre-formulation work for a mission to Jupiter's moon, Europa.
- Develops and implements plans for measurements of solar irradiance, ozone profiles, and Earth radiation budget, and maintains weather and climate change modeling capabilities to enhance forecast accuracy.
- Proposes placing SOFIA into storage due to its high operating cost and budget constraints, but funds about 35 missions currently preparing for launch, and sustains nearly 60 operating missions.

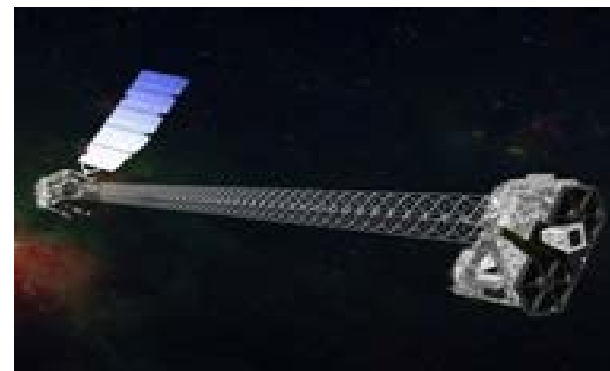
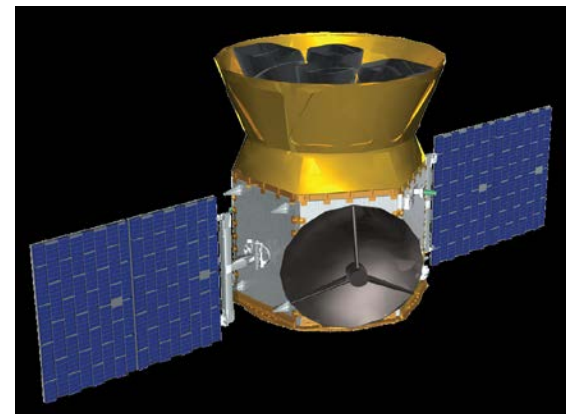




Astrophysics

Outyears are notional							
(\$M)	2013	2014	2015	2016	2017	2018	2019
Astrophysics	\$617	\$668	\$607	\$634	\$651	\$697	\$993

- Supports pre-formulation of WFIRST/AFTA, including technology development for detectors and coronagraph.
- Supports a growing Astrophysics Explorer program with continued development of ASTRO-H, NICER, and TESS, and initiation of the next Small Explorer mission. TESS will continue the search for exoplanets, scanning all of the sky for exoplanets closer to Earth than those found by Kepler.
- Supports operating missions: Hubble, Chandra, and other missions rated highly by the 2014 Senior Review.
- Continues a competed astrophysics research program and support of the balloon program.
- Seeks to work with our German partners to identify a path forward for SOFIA. SOFIA's high operating costs cannot be accommodated within the reduced Astrophysics budget request; SOFIA will be put into storage until the budget is less constrained.



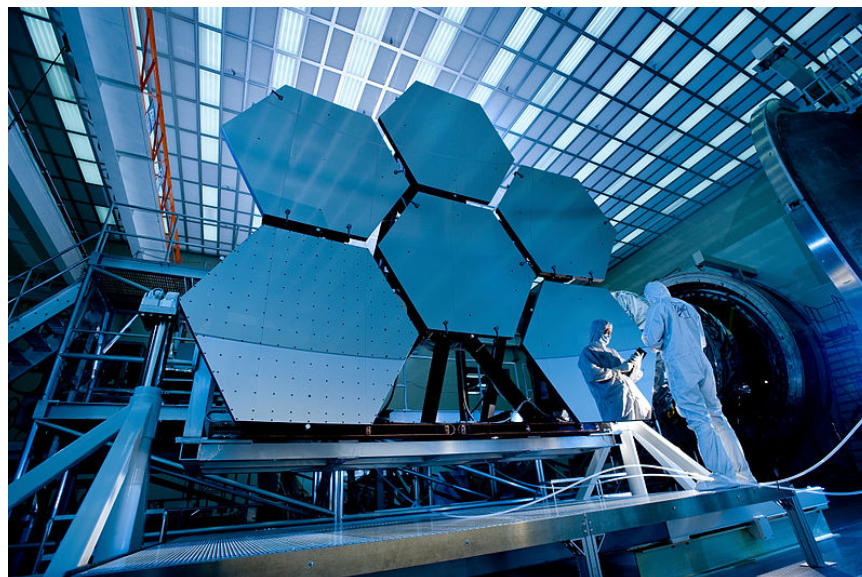


James Webb Space Telescope

Outyears are notional

(\$M)	2013	2014	2015	2016	2017	2018	2019
JWST	\$627	\$658	\$645	\$620	\$569	\$535	\$305

- Supports the commitment to an October 2018 launch date.
- Continues manufacturing of the flight sunshield structure and membranes.
- Completes and delivers the flight cryogenic cooler tower assembly.
- Delivers the Optical Telescope Element flight structure.
- Initiates integration of the 18 flight primary mirror segments.
- Conducts the final Integrated Science Instrument Module level cryo-vacuum test.





WFIRST/AFTA to continue Pre-Formulation

- Supports pre-formulation of WFIRST/AFTA, including technology development for detectors and coronagraph
- Continues efforts from FY14 such as
 - The WFIRST/AFTA Science Definition Team (SDT) report in early 2015 including a design reference mission and draft science requirements.
 - The WFIRST/AFTA Study Office including continued assessment of the 2.4m telescopes, mission design trades, payload accommodation studies, and observatory performance simulations
 - Technology development for H4RG detectors for the wide field camera
 - Technology development for the primary coronagraph architecture (occulting mask coronagraph) and the backup coronagraph architecture (phased induced amplitude apodization complex mask coronagraph)
- Supports Agency/Administration decision for formulation to begin NET FY 2017, should funding be available



SOFIA to be put into Storage

- SOFIA's high operating costs cannot be accommodated within the reduced Astrophysics budget request.
- NASA's FY 2015 budget request to Congress proposes to place SOFIA into storage by early FY 2015 until the budget is less constrained.
- NASA has informed our German partner of this proposal. NASA is working with our German partners to identify a path forward for SOFIA.
- NASA is not “throwing away” the development costs of SOFIA since it will be put into storage. The program can be restarted should the budget become less constrained, or should NASA's share of annual operating costs be reduced.

