

17 October 2022

Rep. Matt Cartwright
Chair, House Appropriations Commerce, Justice,
Science Subcommittee
2102 Rayburn House Office Building
Washington, DC 20515-3808

Sen. Jeanne Shaheen
Chair, Senate Appropriations Commerce,
Justice, Science Subcommittee
506 Hart Senate Office Building
Washington, DC 20510

Rep. Robert Aderholt
Ranking Member, House Appropriations
Commerce, Justice, Science Subcommittee
266 Cannon House Office Building
Washington, DC 20515-0104

Sen. Jerry Moran
Ranking Member, Senate Appropriations
Commerce, Justice, Science Subcommittee
521 Dirksen Senate Office Building
Washington, DC 20510

Dear Senators Shaheen and Moran and Representatives Cartwright and Aderholt:

On behalf of the over 8,000 members of the American Astronomical Society (AAS), thank you for your past strong support for the astronomical sciences. As you conference the FY 2023 House and Senate appropriation bills, **the AAS respectfully requests that the conference fund NASA and NSF at the highest levels possible with at least the Senate funding levels of \$26 billion for NASA and \$10.4 billion for the National Science Foundation (NSF).**

The last year has been full of exceptional successes for the astronomical sciences. With the flawless deployment of the James Webb Space Telescope (JWST), we demonstrated that America is still a world-leading scientific power. With the Double Asteroid Redirect Test (DART) mission, we took a major step towards more robust planetary defense by successfully impacting an asteroid to deflect its course. From the ground, the NSF-funded Event Horizon Telescope revealed the first ever image of our own galaxy's central supermassive black hole, and the Daniel K. Inouye Solar Telescope (DKIST), also funded by NSF, recently delivered the most-detailed-ever images of the Sun. Each of these achievements was made possible through Congressional support, for which we extend our sincere gratitude.

Our science agencies and workforce continue to demonstrate excellence, and there are big plans for how we will reach for new discoveries and maintain scientific leadership in the coming years. As acknowledged in your report language, the new decadal surveys for both Astronomy & Astrophysics and Planetary Science & Astrobiology are out, and the survey for Solar and Space Physics has just begun. These planning documents outline ambitious goals that will keep America at the forefront of discovery in ground- and space-based astronomical sciences. They include a program to mature technologies for the next big space observatories, two new "extremely large" telescopes on the ground, and exciting missions to further explore the Sun, Mars, moons around other planets, and the outer solar system. Of course, support for the engineers and scientists themselves is also crucial. The decadal surveys chart a course for broader participation in STEM, better support for scientists and their students, and a healthier, more diverse work environment for all. Continuing this legacy of excellence and pushing the frontiers of science forward requires continued Congressional support.

At NASA, the Senate appropriations to the Science Mission Directorate allow for some growth in Planetary Science and Heliophysics compared to FY 2022. However, we are especially concerned about the proposed funding decrease in Astrophysics. This summer, President Biden met with astronomers

and NASA officials to introduce the first images from the James Webb Space Telescope to the world. He asked what was next for NASA science, and Administrator Nelson told him NASA needs help to accomplish our next steps—budget help.

The proposed decrease in funding for Astrophysics means delays, both for small Explorer class missions and for decadal priorities like the Great Observatories Mission and Technology Maturation Program. **These delays cascade, increasing total mission costs and bleeding talent.** The community of engineers and scientists who carry the expertise and lessons learned from Webb are a resource we risk losing if we don't start the work on the next generation of facilities soon.

At NSF, the Senate-proposed funding still does not bring the budget to the [Coalition for National Science Funding-backed request of \\$11 billion](#)—the minimum to carry out the increasingly diverse and challenging missions assigned to the Foundation and to set a trajectory towards the funding levels authorized at \$11.9 billion in the CHIPS and Science Act. At NSF, growth in the topline has not matched growth in what the nation demands of the agency, and the situation for astronomy is particularly dire. The appropriations report states “As NSF determines the appropriate levels of support for astronomy research...the Committee expects NSF to continue its support of world-class scientific research facilities and instrumentation to maximize its investments in research while preparing for facility upgrades and activities associated with supporting the recommendations from Astro2020.” While we agree that NSF should continue being a global leader in building world-class scientific facilities, this entails support for both these facilities and the community of scientists who use them. DKIST is now operating, and the Vera Rubin Observatory is about to; these research facilities have huge scientific promise but require additional funds for both their operations and for the individual investigator grants program to maximize their scientific return.

Without growth, we will cede US leadership in ground-based astronomy and damage a pipeline for STEM talent. Europe stands to seize the next decade of ground-based discovery with their own large telescope programs. The shrinking pool of grant funding means less support for undergraduate students who take skills gained in astronomy into the wider high-tech workforce, less support for graduate students who represent the future of the field, and stressed scientists who spend more time applying for grants than doing their innovative research. If, as stated in your report, “the Committee supports infrastructure investments that expand our understanding of the universe and inspire students to pursue careers in the sciences,” then there must be more investment in NSF.

Thank you for your continued bipartisan support for the astronomical sciences at both NASA and NSF. The American Astronomical Society looks forward to working with you in the future to accomplish the priorities laid out in the decadal surveys.

Sincerely,



Kelsey Johnson, Ph.D.
President, American Astronomical Society