

Congress of the United States

House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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November 28, 2022

The Honorable Bill Nelson
Administrator
National Aeronautics and Space Administration
300 E. Street, SW
Washington, D.C. 20546

Dear Administrator Nelson:

Congratulations on the recent success of the Double Asteroid Redirection Test (DART). Mitigating the threats posed by Potentially Hazardous Objects (PHOs) is critical, and in order to do that we first must identify and characterize near-Earth objects (NEOs). Despite a congressional mandate, NASA has failed to adequately survey these threats and is once again attempting to delay the NEO Surveyor mission, which will detect potential hazards. Now, with the collapse of the Arecibo Observatory, we've also lost critical radio astronomy data. Tracking near-earth objects is not a meaningless exercise: Recent press reports indicated that a "planet killer" asteroid was identified that could pose a distant risk to Earth.¹ So it is troubling that the Administration's recent budget and spending plans have significantly cut funding for the NEO Surveyor. To better understand the status of this work, we write you today seeking information about NASA's efforts to identify and characterize PHOs, including the status of the NEO Surveyor and plans to mitigate the loss of data derived from Arecibo.

Congress passed the George E. Brown Jr. Near-Earth Object Survey Act as part of the National Aeronautics and Space Administration (NASA) Authorization Act of 2005. This act directed NASA to detect, track, catalogue, and characterize the physical characteristics of 90 percent of near-Earth objects equal to or greater than 140 meters in diameter by 2020.² NASA failed to plan, develop, and implement a program to achieve this goal.

In 2019, the National Academies of Sciences, Engineering, and Medicine report on "Finding Hazardous Asteroids Using Infrared and Visible Wavelength Telescopes," stated that, "NASA should develop and launch a dedicated space-based infrared survey telescope to meet the requirements of section 321(d)(1) of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155; 119 Stat. 2922; 51 U.S.C. 71101 note prec.); and (B) the early detection of potentially hazardous near-Earth objects enabled by a space based infrared survey telescope is important to enable deflection of a dangerous asteroid."

¹ Robin Georger Andrews; "'Planet Killer' Asteroid Spotted That Poses Distant Risk to Earth;" New York Times; October 31, 2022; accessed at <https://www.nytimes.com/2022/10/31/science/asteroid-planet-killer.html>

² Public Law 109-155; 119 Stat. 2922; 51 U.S.C. 71101.

Around this time, NASA initiated the NEO Surveyor space telescope project to make significant progress towards the congressional mandate. After years of conceptual studies, the NEO Surveyor project was finally approved to enter formulation in June of 2020 and began the preliminary design and technology completion phase in June of 2021. The mission's priority was re-affirmed by the National Academy of Sciences Planetary Science and Astrobiology Decadal Survey released in April 2022, which recommended that,

“NASA should fully support the development, timely launch, and subsequent operation of NEO Surveyor to achieve the highest priority planetary defense near-Earth object survey goals.”

With Congressional direction, the recommendation of several advisory groups, and NASA approval to develop the NEO Surveyor project, it appeared as though progress was being made to complete the required NEO survey. Unfortunately, the president's budget request for fiscal year 2023 (FY23) planned to significantly cut the NEO Surveyor project from \$174.2 million in 2023 to \$39.9 million in 2023. As the same time, NASA sought approval for a FY22 spending plan to reduce funding for the project even earlier. The FY22 request for NEO Surveyor was \$143 million³, which the House approved⁴, and the Senate did not specify. Nevertheless, NASA sought a reduction from the \$143 million FY22 request to \$110 million⁵ that was eventually agreed to in the official FY22 Spending Plan in late July 2022.

On August 9, 2022, the President signed the “CHIPS and Science Act,” which directed you to, “...continue the development of a dedicated space based infrared survey telescope mission, known as the “Near-Earth Object Surveyor”, on a schedule to achieve a launch-readiness date not later than March 30, 2026, or the earliest practicable date...”

This statutory direction is clear - NASA must prioritize funding the NEO Surveyor project to achieve a 2026 launch within levels appropriated to planetary science.

While finding NEOs is critical, characterizing them is also important. Ground-based planetary radar involves using radar to precisely track and determine orbits and determine the shapes and physical characteristics of NEOs. NASA historically relied on ground-based observatories like the Arecibo Planetary Radar and the Goldstone Solar System Radar to conduct these observations. With the collapse of the Arecibo Observatory in 2020, NASA's current options for NEO radar observations appear limited.

In order for Congress to conduct its legislative and oversight responsibilities, please provide the following information:

- 1) How much funding the NEO Surveyor project needs in FY23 to maintain the statutorily required schedule of “March 30, 2026, or the earliest practicable date...”;
- 2) The estimated lifecycle costs of the project, as well as the schedule impacts, as a result of the NEO Surveyor project receiving \$110 million in the FY22 NASA Spending Plan rather than the \$143.2 million in FY22 as originally requested by the President and directed in the FY22 House Commerce, Science, and Justice Appropriation Act report;

³ https://www.nasa.gov/sites/default/files/atoms/files/fy2022_congressional_justification_nasa_budget_request.pdf

⁴ <https://www.congress.gov/117/crpt/hrpt97/CRPT-117hrpt97.pdf>

⁵ https://www.nasa.gov/sites/default/files/atoms/files/fy_2022_spend_plan_july_2022.pdf

- 3) The estimated lifecycle costs of the project, and the estimated schedule delays, if the NEO Surveyor project were to receive \$90 million in FY23 versus \$140 million in FY23;
- 4) All correspondence between NASA and NEO Surveyor project management related to planned budget profiles for the NEO Surveyor mission over the last 18 months;
- 5) The annual Near-Earth Object Survey report required by Section 511(f) of the NASA Transition Authorization Act of 2017 (P.L. 115-10);
- 6) NASA's current plans to mitigate the loss of the Arecibo Observatory for NEO observations.

Thank you for your leadership of our nation's civil space enterprise and your prompt attention to these matters. In order to inform near-term legislative activity, please provide your responses by Friday, December 9, 2022. If you have any questions, please contact Tom Hammond of the Committee staff.

Sincerely,



Rep. Frank Lucas
Ranking Member



Rep. Brian Babin
Ranking Member
Subcommittee on Space and
Aeronautics



Rep. Jay Obernolte
Ranking Member
Subcommittee on Oversight and
Investigations



Rep. Young Kim



Rep. Michael Waltz

CC: Rep. Eddie Bernice Johnson
Chair

Rep. Don Beyer
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Space Subcommittee