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May 3, 2022

Statement of
The Honorable Bill Nelson
Administrator
National Aeronautics and Space Administration

before the
Subcommittee on Commerce, Justice, Science, and Related Agencies
Committee on Appropriations
United States Senate

Chair Shaheen and Members of the Subcommittee, I am pleased to have this opportunity to discuss the President's \$26 billion budget request for NASA for Fiscal Year 2023. This budget will keep us at the forefront of exploration and discovery through daring and challenging missions like Artemis, which includes returning American astronauts to the Moon as early as 2025. This budget will help our Nation – and the world – address climate change. It provides opportunities in science, technology, engineering, and mathematics (STEM) education, and it promotes diversity, equity, inclusion, and accessibility (DEIA) throughout the Agency and with our partners. It's an investment to support good-paying jobs and the businesses and schools that partner with NASA in all 50 states. Finally, this budget reaffirms the Administration's confidence in the extraordinary NASA workforce that has dared to do the impossible for more than six decades. This year, we adopted the mission statement "NASA explores the unknown in air and space, innovates for the benefit of humanity, and inspires the world through discovery." This is a budget that will allow us to fulfill those goals and serve those ideals. While my five minutes doesn't allow me time to describe NASA's more than 100 missions in development and operation, I would like to highlight a few for you today.

Soon, the Space Launch System, the most powerful rocket NASA has ever built, topped by the Orion spacecraft, will lift off from historic Launch Complex 39B at the Kennedy Space Center for its maiden voyage around the Moon. This mission – Artemis I – will take the Orion spacecraft and science payloads around the Moon, as well as test out systems in preparation for Artemis II - the first crewed launch, scheduled for 2024. After these test flights and as early as 2025, NASA will launch Artemis III, returning U.S. astronauts to the surface of the Moon. The next generation of moonwalkers will more strongly reflect the diversity of the nation. During the Artemis campaign, NASA will land the first woman and the first person of color on the Moon – but the Moon is a steppingstone to further exploration. With annual missions to build out our lunar infrastructure, including the Gateway – a new international space station in lunar orbit – NASA astronauts will learn to live and work on and around the Moon in preparation for future exploration of Mars. This budget invests approximately \$7.5 billion in Exploration, including key elements for a robust and sustained presence at the Moon including an upgraded launch capability; sustained lunar lander capability; lunar robotic missions; lunar science; communications infrastructure; next-generation spacesuits; safe, reliable, and continuous surface power systems; and surface mobility systems. And, with projects to test technologies that would allow for human exploration of Mars, we are advancing toward the Red Planet.

The budget includes approximately \$4.3 billion for Space Operations, continuing support for the International Space Station, which the Administration has proposed extending through 2030, while stimulating the growth of the low-Earth orbit economy by working with industry to develop commercial space stations. These investments will pave the way for continuity of sustained U. S. presence in orbit and create scientific and economic opportunities.

This budget increases funding for NASA's Space Technology research and development portfolio to \$1.44 billion, to develop essential technologies that enable NASA's future missions to the Moon, Mars and beyond, while ensuring our technology investments also support the space economy. Space Technology has more than 1,400 technology projects and approximately 140 planned flight demonstrations. Soon, we will send the CAPSTONE CubeSat to the Moon as a pathfinder for the Artemis program. CAPSTONE will collect data and test navigation technologies in the unique orbit planned for Gateway. Other notable Space Technology investments that support exploration of the solar system include those in fission surface power and nuclear propulsion. Through this budget, NASA will continue working with academia, and form strategic commercial collaborations using joint investments with industry to develop important technology solutions that support new space economies in low-Earth orbit and at the Moon. This work increases the Nation's space capabilities, supports job creation, and enables NASA to focus on missions farther into the solar system than ever before.

This request emphasizes NASA's role in addressing climate change, as a leading provider of Earth systems science and data. With this budget, the Agency will start to build a future Earth System Observatory: an array of satellites, instruments, and missions that will generate a 3D, holistic view of the entire planet. From bedrock to atmosphere, the Earth is a system. As that system changes, NASA will help measure and understand the nature of that change. This request also reflects a renewed emphasis on providing actionable data and information to a broad range of users. NASA is planning an Earth Information Center that will make climate data and information more accessible and usable for Federal, state, and local government leaders, researchers, as well as the public. These efforts will be implemented in coordination with other agencies and partners.

The recent, remarkable launch of the James Webb Space Telescope demonstrated NASA's innovation alongside international partners and inspired the world. Faced with 344 single points of failure, the NASA team poured hard work and ingenuity into this project, and pulled it off flawlessly. This summer, we will see its first scientific images, revealing the stars and galaxies that formed more than 13 billion years ago, just after the beginning of the universe – a period of cosmic history never before observed. Again, we will bring the world together through the unique science from an ambitious NASA mission.

Building on this success, this request is the largest request for science funding in NASA history at nearly \$8.0 billion. The President's budget request enables NASA to explore solutions for bringing the samples of Martian rock and soil collected by the Perseverance rover to Earth through the Mars Sample Return mission. This budget supports over 100 science missions and 10,000 U.S. scientists through more than 4,000 research awards across astrophysics, heliophysics, Earth science, planetary science, and biological and physical science.

The budget provides more than \$971 million to advance U.S. leadership in the civil aviation manufacturing sector, with over half of that amount targeted to reduce the climate impacts of the aviation industry. This year, NASA will start test flights on our Low Boom Flight Demonstrator, which will enable environmentally and socially acceptable supersonic passenger flights, opening new markets for American companies and workers, and the X-57 Maxwell, an all-electric aircraft. This request also accelerates plans for a new experimental "X" plane focused on sustainability. Under the

Sustainable Flight National Partnership, NASA and U.S. companies will develop and fly a highly efficient, next-generation airliner prototype as early as 2026. NASA investments will result in safer skies, smoother passenger experiences, and faster, more sustainable aircraft.

NASA continues to invest in engaging students, educators, and educational institutions to attract diverse groups of students to Science, Technology, Engineering, and Mathematics (STEM). This includes funding that supports learning opportunities that spark interest and provide connections to NASA's mission and work; creating unique opportunities for a diverse set of students to contribute to NASA's work; and building a diverse future STEM workforce. The Office of STEM Engagement (OSTEM) leads NASA's STEM engagement function, providing strategic guidance and direction in partnership with the mission directorates. In FY 2023, the budget request includes \$150 million for OSTEM, supporting the National Space Grant College Fellowship Project (Space Grant); Minority University Research and Education Project (MUREP); Established Program to Stimulate Competitive Research (EPSCoR); and Next Generation STEM Project (Next Gen STEM).

NASA fully supports the Biden-Harris administration's vision to affirmatively advance equity, civil rights, racial justice, and equal opportunity for all. The Agency launched its Equity Action Plan in April 2022, a comprehensive effort to assess and examine the potential barriers and challenges that exist for communities that are historically underrepresented and underserved in the aerospace and STEM fields. NASA is assessing its programs, procurement processes and grant policies to identify systemic barriers that limit representation and participation of a diverse community of students and professionals. When we enable individuals to inclusively participate, we provide space for all possible talent, skills, knowledge, perspectives, ideas, thinking, problem-solving, and innovations. This empowers NASA to achieve the greatest success in discovering and expanding knowledge for the benefit of all humanity.

With each great step, NASA magnifies its presence as a unifying symbol of possibility and inspiration. At every opportunity, NASA endeavors to educate and inspire. With every breakthrough, we seek to generate more than incredible data – we help to create the next generation of scientists, engineers, and explorers who will be the innovators of the future. The American story is about discovery, innovation, and a relentless spirit to push forward – and upward. This budget allows NASA to continue our journey to enable a new era filled with boundless optimism and limitless possibilities for all humanity.