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# Reauthorize NASA to Explore Near and Far

&lt; JACK BURNS &gt;

From its founding days, NASA's mission has been exploration — human and robotic, scientific and technological, near Earth and the larger cosmos. As I recently recommended in testimony to the House Science and Technology space and aeronautics subcommittee, the Congress should reauthorize NASA to execute this mission on behalf of, and for the benefit of, our nation of explorers. The value of NASA to America is seen best via its pioneering outlook in exploring scientific frontiers, its human reach beyond Earth orbit, its inspiration to the next generation to study the STEM (science, technology, engineering and mathematics) fields, and its development of new technologies to grow America's innovation economy.

Most importantly, NASA should be reauthorized with a budget that reflects this bold mission and its value to the nation. Many of NASA's current problems in transitioning from the shuttle to the Orion crew exploration vehicle, in its aeronautics programs, and in its science research satellites and telescopes are caused by underfunding. The budget is simply too small for the mission. In my view, NASA should be reauthorized at a budgetary level sufficient to fulfill its

mission or the mission should be de-scoped to reflect a lower level of commitment. The current limbo cannot continue as it demoralizes a dedicated NASA work force and promises unachievable goals to the taxpayers.

I hope that the Congress and the next administration will choose the high road of investment and hold both NASA and its partners in the university and industry communities to high levels of efficiency, accountability and effectiveness. I believe that the scientific community is ready to step up and demonstrate an enhanced return on investment in NASA science missions for our fellow taxpayers.

The reauthorization should encourage NASA to move forward with the priorities developed in the community-wide decadal surveys, such as the one that the astrophysics community will soon commence under the auspices of the National Research Council. Congress also should authorize enough funding to execute the most important priorities in the decadal surveys. NASA must be able to accomplish its science mission, as well as those of the other directorates, in an adequate fashion.

There has always been a level of synergy between the science and the human

exploration programs within NASA. NASA's first satellite launch 50 years ago, Explorer 1, demonstrated new rocket technology that took Mercury astronauts into space and also discovered the Van Allen radiation belts surrounding the Earth. More recently, astronauts aboard the space shuttle have ventured four times, and will return for a fifth time this August, to service the Hubble Space Telescope and to install powerful new instruments such as the Cosmic Origins Spectrograph.

The Vision for Space Exploration promises some hopeful new synergy between human exploration of the Moon and science. For example, the NASA Advisory Council astrophysics subcommittee and the National Research Council's "Report on the Scientific Context for the Exploration of the Moon" concluded that the unique radio-quiet environment of the lunar far side is a good potential site for an array of low-frequency radio telescopes that could detect the first structures to form out of the early universe's "Dark Ages."

In addition, the Ares 5 heavy-launch vehicle designed to deliver payloads and astronauts to the Moon has exciting capability to place very large telescopes, with

apertures of 8-30 meters (compared to James Webb Space Telescope's 6.5-meter aperture mirror), into the L2 Earth-sun Lagrange point for extraordinarily deep viewing of the cosmos. NASA's reauthorization should promote further synergy between scientific and human exploration.

NASA must continue to explore in the broadest sense. Human explorations of the Moon and, in the future, near-Earth asteroids and Mars are exciting, fulfilling goals that will continue to define the United States as a great nation. Scientific exploration is equally fulfilling, contributes to the nation's high technology economy, adds to our intellectual development as a species, and inspires both young and old. NASA must continue to explore, in a balanced fashion, recognizing that all facets of exploration define the benefits of NASA to the nation. Human and scientific explorations produce excitement in equal measures and strong support for NASA.

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