

July 2, 2013

Senator Barbara Mikulski  
Chairman  
Senate Appropriations Committee  
Capitol Building, S-128  
Washington, DC 20510

Senator Richard Shelby  
Ranking Member  
Senate Appropriations Committee  
Capitol Building, S-146-A  
Washington, DC 20510

Senator Jay Rockefeller  
Chairman  
Senate Commerce, Science, and Transportation  
Russell Senate Building, SR-254  
Washington, DC 20510

Senator John Thune  
Ranking Member  
Senate Commerce, Science, and Transportation  
Capitol Building, S-146-A  
Washington, DC 20510

Senator Bill Nelson  
Chairman  
Subcommittee on Science and Space  
Hart Senate Office Building, SH-428  
Washington, DC 20510

Senator Ted Cruz  
Ranking Member  
Subcommittee on Science and Space  
Dirksen Senate Office Building, SD-188  
Washington, DC 20510

Representative Frank Wolf  
Chairman  
Subcommittee on Commerce, Justice, Science,  
and Related Agencies  
Capitol Building, H-310  
Washington, DC 20515

Representative Chaka Fattah  
Ranking Member  
Subcommittee on Commerce, Justice, Science,  
and Related Agencies  
1016 Longworth House Office Building  
Washington, DC 20515

Representative Lamar Smith  
Chairman  
House Committee on Science, Space, and  
Technology  
2321 Rayburn House Office Building  
Washington, DC 20515

Representative Eddie Bernice Johnson  
Ranking Member  
House Committee on Science, Space, and  
Technology  
394 Ford House Office Building  
Washington, DC 20515

Representative Steven Palazzo  
Chairman  
Subcommittee on Space  
B374 Rayburn House Office Building  
Washington, DC 20515

Representative Donna Edwards  
Ranking Member  
Subcommittee on Space  
394 Ford House Office Building  
Washington, DC 20515

On behalf of our nation's universities, small and large businesses in the aerospace industry, and those of us in the space-science research community, we write in support of the National Aeronautics and Space Administration (NASA) Space Technology account for FY 2014. Space Technology creates critical capabilities required for NASA's future science and exploration missions, enables a vibrant and competitive U.S. space industry, and forges technology-based partnerships across government agencies. To remain the leader in space exploration, space science and space commerce, we are convinced that NASA must invest in new technologies and capabilities. As such, we urge the Congress to provide \$740 million for the Space Technology account.

**Space Technology enhances U.S. economic competitiveness.** As recognized by Congress in the America COMPETES Act, our Nation's economic competitiveness and high standard of living are based on decades of investment in innovation, research, and technology. Through Space Technology, NASA will continue to stimulate the economy and build America's global economic competitiveness through creation of new products and services, new businesses and industries, and high-quality, sustainable jobs.

**Space Technology improves the quality of life on Earth.** Past benefits provided by America's investments in space technology include knowledge provided by weather and navigational spacecraft, telecommunications, increasing agricultural production, biomedical applications including blood flow monitoring devices, pacemakers, and Lasik eye surgery, and the protective armor that keeps our military, firefighters, and police safe. By investing in Space Technology, NASA will continue to improve our lives.

**Space Technology enables new missions and control costs.** NASA's Space Technology portfolio balances both the near-term mission-driven and long-range transformative technology required to meet our Nation's far-reaching science and exploration goals. America is setting out on an exciting new chapter in human space exploration. This chapter centers on full use of the International Space Station, maturation of multiple, American vehicles for delivering cargo and astronauts to low-Earth orbit, and development of a deep space crew vehicle and an evolvable heavy-lift rocket (two critical building blocks for our nation's human exploration future). Equally important is advancement of a suite of cutting-edge space technologies that will allow us to safely and efficiently send explorers to new destinations for the first time. Past experience has shown that adequate upfront investment in technology is required to control mission development costs.

**Space Technology fosters NASA's future workforce, enabling the Agency's long-term success.** Today, there are approximately 200 graduate students across our nation's universities who, as a result of the NASA Space Technology Research Fellows Program, have been able to align their research with NASA objectives, contributing to the Agency's future.

The National Research Council, in its February 2012 report entitled Restoring NASA's Technological Edge and Paving the Way for a New Era in Space strongly reaffirmed the importance of technology development to the Agency's future missions and the growth of the nation's economy. However, this report offered the following stark assessment, *"Success in executing future NASA space missions will depend on advanced technology developments that should already be underway. However, it has been years since NASA has had a vigorous, broad-based program in advanced space technology. NASA's technology base is largely depleted. Currently, available technology is insufficient to accomplish many intended space missions. Future U.S. leadership in space requires a foundation of sustained technology advances."*

NASA and the nation face a very different future if the Space Technology account is funded at the draft House Authorization Subcommittee level of \$500M in FY 2014 and FY 2015. This proposed reduction in funding for Space Technology, relative to that appropriated in FY 2012 (-13%) and FY 2013 (-22%), will not keep NASA on a path aligned with 21<sup>st</sup> century innovation and job creation. Because the Space Technology account accommodates the SBIR/STTR programs and approximately 1000 civil servants across the Agency, the proposed reduction in this account will force drastic procurement budget cuts (-43% relative to FY 2013) and terminations in NASA technology partnerships with U.S. industry and academia. Such cuts will dramatically curtail existing Space Technology projects including all of the higher TRL demonstrations presently planned. In such a scenario, NASA's present work towards flight

demonstration of solar electric propulsion, cryogenic propellant storage and transfer, optical communications, non-toxic propellants, solar sails, deep space navigation, robotic refueling, in-situ resource utilization, and supersonic aerodynamic decelerators would all terminate prematurely. Such cuts will effectively sever the connections Space Technology has built over the last few years with industry and academia.

Space Technology is a critical investment in NASA's future, our nation's future in space, and America's technology leadership position in the world. We urge you to support NASA's Space Technology program at a level of \$740 million in FY 2014 and FY 2015. A robustly funded Space Technology account will allow NASA to invest in technologies that yield the capability to efficiently reach new vistas and increase the societal benefits resulting from full utilization of space.

Thank you for your consideration.

Sincerely,

Altius Space Machines, Inc.  
ASME  
Association of American Universities  
Association of Public and Land-grant Universities  
Ball Aerospace & Technologies Corp.  
Boston University  
Blue Origin, LLC  
California Institute of Technology  
Commercial Spaceflight Federation  
Duke University  
Generation Orbit Launch Services, Inc.  
Georgia Institute of Technology  
ILC Dover, LP  
Massachusetts Institute of Technology  
Masten Space Systems  
National Institute of Aerospace  
Near Space Corporation  
NexGen Space LLC  
ORBITEC  
Pioneer Aerospace Corporation

Planet Labs, Inc.  
Southwest Research Institute  
Space Florida  
SpaceWorks Enterprises, Inc.  
Stanford University  
Task Force on American Innovation  
Terminal Velocity Aerospace, LLC  
The Ohio State University  
The Spaceship Company  
University of Arizona  
University of Colorado Boulder  
University of Illinois  
University of Maryland  
University of Southern California  
University of Virginia  
Vanderbilt University  
Virgin Galactic, LLC  
XCOR Aerospace  
Zero Gravity Corporation