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Ms. Lori Garver
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Dear *Lori* _____

Our future as a Nation in the World Economy depends vitally on our expertise in Science and Technology. NASA promotes this expertise as well as providing a vision of the future through its Exploration programs.

Over it's 50 years of existence NASA has captured and inspired the imagination of at least three generations of Americans. Many young Americans chose careers in science and math because of the accomplishments of the space program. NASA succeeded in expanding our fundamental understanding of the Solar System and the Universe we live in. This is the only government agency that made fiction a reality, enhanced peaceful international cooperation and returned seven dollars on every taxpayer dollar invested in it. NASA represents the American spirit of exploration and scientific preeminence.

Unfortunately because of recent constrained budgets this preeminence is being eroded and challenged by other nations. Our concerns are that NASA, due to budgetary constraints, has been forced to go too far in curtailing aeronautics programs; severely reduced the earth science program; and introduced a dangerous gap between Shuttle retirement in 2010 and its replacement transportation system whose earliest availability will be 2016. We do not have a match between NASA's programs and its funding.

Even with expanded interagency and international collaboration, additional funding is needed now and in future budgets if we are to maintain our position as a World Leader in aerospace technology. This situation should be corrected.

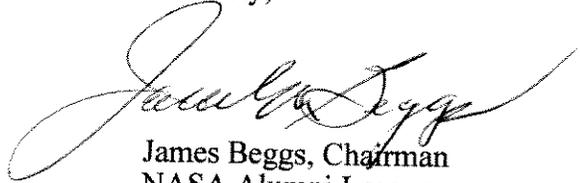
Our Nation needs to improve its image as an inspirational leader in high technology, improve our competitiveness and attract more U.S. students into Science and Technology. A newly invigorated and vibrant NASA is a very cost effective way to help make this happen.

The NASA Alumni League
is a private, nonprofit
organization and is not
affiliated with any agency
of the United States
Government.

We have created the attached "Recommendations for a Revitalized NASA Program" paper for your consideration.

We are eager to discuss these opportunities with you!

Sincerely,

A handwritten signature in cursive script, appearing to read "James Beggs".

James Beggs, Chairman
NASA Alumni League

Attachment: Recommendations for a Revitalized NASA Program paper, dated October 30, 2008

cc: Dr. Michael Griffin
NASA Administrator

NASA's Programs are Vital to our Nation's Future

The keys to our survival as a nation are: **Security; Safe Habitat; Adequate Resources for Future Generations; and the Will and Optimism to Invest in the Future.** NASA programs support these needs in the following ways:

1. **Security-** The Apollo program presented to the World a peaceful demonstration of our technological capability. NASA's current Exploration program will yield assets that will again enhance our national security. One aspect of security is to lead an international effort that serves to focus the assets of possible adversaries towards a peaceful endeavor. NASA's Space Operations Program including the International Space Station is doing that now and it can be expanded.
2. **Safe Habitat-** NASA's Earth Science Program provides the requisite scientific information to plan intelligently to cope with current and future environmental issues. The capability for accurate climate forecasting is a direct consequence of the development of weather satellites. Additionally, NASA has provided the capability to analyze the earth's agricultural resources via its Landsat satellite program and other more recent systems. This program also provided vital data following volcanic eruptions. e.g. Mt. St. Helene.
3. **Adequate Resources for Future Generations-** Future prosperity and well being are coupled to Science and Technology capability. NASA's Aeronautics program has provided the technology that enables us to access any part of the globe rapidly and economically. The very existence of satellites in space has generated the need for micro-miniaturized electronics. This demand resulted in the development of powerful computers that are becoming a fixture in every home.
4. **Will and Optimism to Invest in the Future-** The Apollo program created a vision that motivated youth to pursue careers in science and engineering. We will desperately need a science and technology educated electorate to provide the wherewithal for future generations. NASA's Exploration program, with the vision of establishing a permanent base on the moon, and exploring Mars will provide the impetus to fulfill this need. NASA's Space Science program has provided proof as to the "Big Bang" origin of the Universe, and tracked the evolution of the cosmos. NASA's future space science programs will provide the capability to detect earth-sized planets orbiting other suns, and perhaps determine if the human existence on earth is unique.

Specific Recommendations to Change Direction and Reinvigorate NASA

It is important that NASA fulfill all of its mission, not just part of it as they are doing now. It should be directed to meet current needs and serve as an inspiration for the American people. Some of the finest technical people and managers work at NASA. Congress should work with the Administration to focus these capabilities to inspire our country and help strengthen our country's position in aeronautics and space by meeting current needs.

Aeronautics

NASA's aeronautics program must be restored and maintained at a level sufficient for world leadership. Emphasis in the restored program must be on re-engaging U.S. industry and the nation's universities as vital partners in the effort. We should reintroduce Advanced Development in the NASA Aeronautics program without reducing their already thin Research Programs in order to support the aerospace industry in the face of international competition.

Continuing growth in domestic and international air transportation increases the importance of research toward greater safety, cost reduction, fuel conservation, system capacity and environmental protection.

The NASA Aeronautics Programs have suffered from underfunding for over a decade. One of the results is that NASA has retrenched, placing its remaining personnel in research, analysis and testing in order to at least maintain a capability to operate our Nation's wind tunnels and perform basic research. Advanced Development, which was frequently done by teams of NASA and civilian aircraft personnel, has been deleted. The result of this retrenchment is to greatly reduce the "hand-in-glove" relationship that used to exist between NASA and the U.S. aircraft industry. Aeronautics provides more than a half-million high-quality private-sector jobs, and it provides a major positive component of the U.S. balance of trade. Aerospace also has inspired a generation of science and engineering graduate students.

At the same time, countries in Europe, recognizing the importance of aircraft to their balance of payments, have increased their support of their aircraft companies. The past Aeronautics history, see Appendix A, is studded with remarkable achievements. Our future competitiveness will suffer greatly if these conditions are not changed and hundreds of thousands of U.S. jobs are at risk.

Climate Change

Understanding Climate Change is vital to our Nation and funds should be appropriated for NASA to provide the scientific evidence to make rational decisions.

NASA's Earth Remote Sensing programs should be accelerated to develop the space technology to help us understand Global Warming and Pollution issues. More capable spacecraft and sensors need to be developed and NASA is in the best position to perform the research and development of for these improved techniques. NASA should be funded to do this critical Climate Change work.

Space applications offer opportunities far beyond the already proven benefits in communication, navigation and weather forecasting. Greater emphasis on Earth observations and on solar-terrestrial science is essential to the long-term survival of human civilization by providing understanding of the threats and means to mitigate them.

As repeatedly stated by respected scientific, academic and industry advisory bodies, these research programs address critical national needs and, along with space exploration, fulfill the mandate of NASA's authorizing legislation.

Space Transportation (Launch Vehicle capability)

NASA's Space Transportation Program should be changed to provide continuous service of the Space Station with the lowest possible number of Russian flight vehicles. NASA is under direction to discontinue Space Shuttle flights in 2010. This is appropriate because the Space Shuttle is antiquated and risks of further fatal accidents grow greater with every year that it flies. NASA's plan is to replace it with a modern technology space transportation system (Ares 1 Launcher and Orion Crew Exploration Vehicle) which have equipment that is far more reliable and more advanced than the current Space Shuttle. The problem is that the new space transportation system is scheduled to go into service five years after the end of Shuttle flights. The reason for this gap is that NASA had to maintain a level Space Transportation System funding line and new system costs had to be kept at a low level until Shuttle flight costs came down. The flight gap is planned to be filled by Russian launch vehicles and their cost is part of the current NASA Future Years Budget Projection. Every effort should be made to close the five-year flight gap.

Increasing the NASA budget from 0.6% of the National Budget to 0.8% would remove most of the mismatch between on-going missions and their funding.

Space Exploration Plans need to be better Defined and Budgeted

NASA should develop a revamped Space Exploration plan that has a clear long-term objective of robotic and human exploration of Moon, Mars and other bodies. We should use the International Space Station (ISS), in which the U.S. has invested heavily, to conduct most of the space research experiments needed for the missions.

If we are serious about space exploration, we must face up to the cost and act responsibly to provide and sustain the needed support. And we must understand that it requires new additional investment and cannot be funded simply by curtailing effort in other areas of NASA responsibility.

Remarkably the current NASA International Space Station (ISS) utilization program is greatly reduced from previous plans and it can be argued that our foreign partners are now taking better advantage of the ISS than the U.S.

Our future prosperity and well being as a nation, is crucially dependent upon the existence of a science and technology-educated electorate. This capability enables us to pursue visions such as the expansion of the human presence beyond our natal planet. As stated by K.S. Tsiolkovsky, one of the architects of Space Exploration, "The Earth is the cradle of mankind, but man cannot stay in the cradle forever."

The U.S. president's vision of a settlement on the Moon and a human voyage to Mars revives a long-held hope of resuming our exploration of our universe. NASA has responded with program planning and initial development of launch and crew vehicles, but has not yet been given either the authorization or the budget for the overall program.

Such a Moon/Mars effort will be a huge undertaking. The full cost of the Apollo program, our most ambitious space venture to date, exceeded \$125 billion in today's dollars. A Moon settlement will require far more support and supply missions. Its considerably greater cost will require long-term commitment, dependable, sustained appropriations, and strong, patient public support based on appreciation of the expenditures and the benefits. A successful Moon mission may enhance the prospects for a more challenging Mars voyage.

The astronomical satellite missions that will satisfy the Exploration endeavor will identify whether other earth-size planets exist with the potential for life in other places in the Universe.

To support exploration without significant budget increases, NASA has been forced to make deep cuts in its science, space applications, Earth observations, astronomy and aeronautics research. The cuts not only impair ongoing work, but also in some instances threaten irreparable damage to long-term capability. These are areas in which private-sector investment is severely limited because of the high risk, high cost and little or no likelihood of proprietary commercial reward. Government support of aeronautics and space research is essential, and over the years has greatly strengthened the nation's position in a world increasingly dependent on scientific and technological progress. It has made possible advances in civil and military aviation, astronomy, communication, computational capabilities, Earth sciences, and navigation that would have been inconceivable less than half a century ago.

If Congress and the president agree on the goals and timing of lunar and planetary exploration, a clear national policy to that effect, based on realistic appreciation of total cost and thorough planning, should be established. Out-year budgets will of course be driven by evolving circumstances but, if the policy is to be at all meaningful, immediate funding should be significantly increased so that NASA can continue to prepare for the new mission without undue damage to its science and aeronautics research programs.

With such policy guidance and long-term commitment, we can look forward confidently to one of the greatest accomplishments in human history. Without them we risk having wasted large amounts of money on an aborted effort and having unjustifiably decimated vital aeronautics and space research.

We believe that a redirected and reinvigorated NASA program should be undertaken because of the especially great scientific, exploration, environmental, education and economic payoffs which result from relatively small investment.