

# Summary

## Citizens' Space Agenda

**WHO WE ARE:** We are private U.S. citizens who have travelled to Washington, DC on our own time, with our own resources, to advocate for a “Citizens’ Space Agenda”

### **NON-PROFIT SPONSORING ORGANIZATIONS:**

1. The “Citizens’ Space Agenda” is a project of the Alliance for Space Development (ASD), and is sponsored by the Space Frontier Foundation and National Space Society
2. It is supported by Students for the Exploration and Development of Space, Students on Capitol Hill, Lifeboat Foundation, The Mars Foundation, The Mars Society, The Space Development Steering Committee, The Space Tourism Society, Tea Party in Space, the Space Development Foundation, and the Texas Space Alliance

### **OUR SPECIFIC REQUESTS:**

1. Establish an Ultra Low Cost Access to Space (ULCATS) program based on public-private partnership
2. Ensure a gapless transition from ISS to private space stations in LEO (Low Earth Orbit), with NASA assisting with development and serving as an early customer
3. Enable the development of a robust cis-Lunar economy based on commercial purchase of:
  - A. Transportation services for crew and cargo
  - B. Fuel and Consumables derived from Lunar and asteroid resources
  - C. Goods manufactured in space
4. Make space development and settlement part of NASA’s official mission

**QUESTIONS AND ADDITIONAL INFORMATION:** Contact Jeremy Wainscott, ASD Director of Communications, at [jwainscott@allianceforspacedevelopment.org](mailto:jwainscott@allianceforspacedevelopment.org)

# Six Reasons *Ultra-Low Cost Access To Space (ULCATS)* is Critically Important

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- **National Security** — Currently, America is vulnerable to a Pearl Harbor style attack in space. Commercial high-flight-rate, rapid-turnaround reusable launch vehicles (RLVs) developed by ULCATS could enable a surge capability that can rapidly replenish space assets. The existence of RLVs would be a deterrent to a surprise
- **Economic Growth** — Space is currently a \$300+ Billion per year revenue industry. With Ultra-Low Cost Access to Space (ULCATS), space development will accelerate, markets will grow, new industries and many thousands of jobs will be created
- **Civil Space** — Today, our national human space agenda is struggling. With ULCATS, America can lead the large-scale movement of humanity to space, including the Moon, Mars, and other locations throughout the Solar System, affordably & permanently
- **Imagination & Inspiration** — If ULCATS reusable space vehicles lead to thousands of people orbiting the Earth every year, the world will be inspired by American leadership, ingenuity, and entrepreneurship
- **Environment** — ULCATS will enable affordable low Earth orbit constellations of satellites that can deliver 24-7, 365-day-per-year high-resolution measurements of the entire planet enabling, among other things, improved border monitoring, weather prediction, storm tracking, and understanding of our home
- **American Leadership** — With the success of ULCATS, America has the potential to become the undisputed leader of the world in space well into the 21<sup>st</sup> Century, providing significant soft power benefits for American diplomacy and influence in the world

# Why ULCATS Development Makes Good Economic & Policy Sense

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- **The ULCATS Act** directs the U.S. Government to develop supportive relationships with American companies developing high-flight-rate, rapid-turnaround, surge-capable fully reusable launch vehicles (RLVs)
- **Nature of the Support:** This support should include, but not be limited to, facilities, expertise, software, databases and partial funding for development delivered on the achievement of clearly defined milestones. Successful companies could also receive a contract for a number of launches using the same vehicle
- **If Successful, It Quickly Pays for Itself:** The U.S. Government currently spends billions per year on space launch. ULCATS could save U.S. taxpayers a significant part of this large amount
- **Even if Unsuccessful Valuable Technology Will be Developed:** The American aircraft industry's global success was and is due, in no small part, to NACA and later NASA supporting industry with technology development and other assistance. There is every reason to believe that similar support for space launch will lead to important innovation
- **We Have the Technology:** In 2017 we have the technology to build fully-reusable two-stage-to-orbit RLVs. A number of commercial companies are working ULCATS. There are relatively inexpensive activities that can assist them and speed development
- **Draft text can be found at:** [www.allianceforspacedevelopment.org](http://www.allianceforspacedevelopment.org)
- **REQUEST:** Will you be an original co-sponsor of the ULCATS Act?

# Ensure Gapless transition from ISS to Private Commercial Stations in LEO

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- **BACKGROUND:** The U.S. and our partners have invested over \$100B building and operating the International Space Station (ISS). The ISS is the foundation of American human spaceflight
- **PROBLEM:**
  1. The White House and NASA have announced America will transition to commercially-owned and –operated stations after ISS in 2024, but NASA has no plan for managing this transition. Without a clear and viable transition plan, the U.S. risks foreign powers becoming world leaders in LEO, and losing the foundation we have for viable BEO exploration
    - Other nations are on course for Mir-class LEO stations by 2024. Consider the global impact if the ISS burns up in 2024 and countries flock to the stations of other nations to carry out research
  2. How can we expect scientists and commercial entities to invest in using the ISS when it has no assured future/transition plan? A gap interval like post-Apollo or post-Shuttle will be a disaster for US-led LEO commercialization and science
    - Without a credible transition plan, America will have yet another gap in human spaceflight, and many of the accumulated skills and capabilities generated by three decades of investment could be lost

- **SOLUTION:**

1. Commit the U.S. government to continuing its basic research on using, and human adaptation to, the microgravity environment in low Earth orbit (LEO) as a customer of commercial LEO station providers, ensuring that no “gap” will exist in this critical research and development
2. Encourage NASA to use the proven public/private partnership approach to stimulate rapid development of next-generation commercial application, propulsion, and habitation capabilities for LEO, including testing and demonstration of those capabilities at the ISS before transition to commercial stations

- **REQUEST: Please consider being the primary signer of our letter to the Administration requesting the 2019 budget submission include a transition plan.**

# Why *Cis-lunar Commercialization* is Critically Important

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- **cis-Lunar space includes:**
  - The area between the Earth and Moon including Earth orbit, Lunar surface, Lunar orbits, L-points
  - Transport of asteroid material to cis-Lunar space for processing extends reach to NEO asteroids
- **What is cis-Lunar Commercialization?**
  - The usage of public/private partnerships to supply cargo and crews to cis-Lunar government stations, including those on the Lunar surface
  - The purchase and storage in cis-Lunar of vital resources from commercial entities, including rocket fuel, oxygen, and water
  - Enabling both lunar mining and asteroid mining on an equal basis
  - The in-space manufacture of goods for use in space or on Earth
  - A way of enlisting the private sector in lowering the cost of a journey to Mars
- **Why Now is the Time for cis-Lunar Commercialization:**
  - Companies are seriously pursuing asteroid and lunar mining
  - NASA has begun the process via NASA's **Next Step** of developing a cis-Lunar base in the vicinity of the Moon
  - The cost of access to LEO is being addressed by multiple companies, but the cost of access to cis-Lunar space remains high
  - The experience base of LEO COTS/CRS is available as a foundation
  - The prospective availability of new vehicles for reaching cis-Lunar space
    - SLS/Orion, Falcon Heavy, New Glenn, Vulcan

# Making *Cis-Lunar Commercialization* a Reality

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- **Benefits of Cis-Lunar Commercialization (CLC):**
  - **Economic Growth** — has the potential to support massive growth in the space economy
  - **Civil Space** — Today, our national space agenda is struggling. With CLC, America has the opportunity to lead the way to the development of Lunar and asteroidal resources while building the foundation of an affordable journey to Mars
  - **Imagination & Inspiration** — If CLC leads to profitable companies mining the Moon and asteroids, the world will be inspired by American leadership, ingenuity, and entrepreneurship
  - **American Leadership** — With the success of CLC, America has the potential to become the undisputed leader of the world in space well into the 21<sup>st</sup> Century, providing significant soft power benefits for American diplomacy and influence in the world. CLC is more affordable for international participants with more short term practical returns than efforts focused on more distant goals
- **Cis-Lunar Commercialization Heritage**
  - The draft Bill is based on the Launch Services Purchase Act of 1990 and the 1998 Commercial Space Act, but extended into Cis-Lunar Space
- **REQUEST** Are you willing to be the primary sponsor of Cis-Lunar Commercialization Act of 2017 draft legislation?
- **DRAFT legislation can be found at:** [www.allianceforspacedevelopment.org](http://www.allianceforspacedevelopment.org)

- It gives American space policy a truly long-term goal
- Permanent human space settlement is an idea that inspires — from Jeff Bezos, to Elon Musk, to many other private citizens — and so it will inspire a new generation to go into STEM related fields
- It will drive an exponentially growing space-based economy, and lead to economic growth and abundant resources for people on and off planet Earth
- It will provide humanity with a better chance for long-term survival
- **Space settlement is in the long-term strategic interest of America, and will influence the future of human freedom**
  1. Consider how the U.S. role in the world could be altered if other countries lead in mining lunar resources and dominate the development and settlement of the Moon
  2. Consider the impact of such a loss of American leadership on the long-term values of human civilization far into the future

# SEDS Act & Request

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- The Space Exploration, Development and Settlement Act (SEDS) bill would amend the law governing the activities of NASA, known as the NASA Act of 1958, to include this statement:
  - *“Exploration, Development and Settlement of Space.—The Congress declares that expanding permanent human presence beyond low-Earth orbit in a way that enables human settlement and a thriving space economy will enhance the general welfare of the United States and requires the Administration to encourage and support the development of permanent space settlements.”*
- The SEDS Act was introduced as H.R. 4752 by Rep. Dana Rohrabacher (R-CA) in the House in 2016:
  - See text at: <https://www.congress.gov/bill/114th-congress/house-bill/4752/text>
- Rep. Rohrabacher will be re-introducing the SEDS act in the current session:
  - **REQUEST (United States House of Representatives)**
    - Are you willing to a co-sponsor of H.R. 4752?
  - **REQUEST (United States Senate)**
    - Are you willing to sponsor the SEDS Bill in the Senate?