Alliance for Space Development 2019

Citizens' Space Agenda

WHO WE ARE:

- Private U.S. citizens who advocate at our own expense for a bold and well-reasoned space agenda worthy of the U.S.

NON-PROFIT SUPPORTING ORGANIZATIONS:

- National Space Society
- Space Frontier Foundation
- Lifeboat Foundation
- Mars Foundation
- Mars Society
- Moon Society
- Students for the Exploration and Development of Space
- Students on Capitol Hill
- Space Development Foundation
- Space Development Steering Committee
- Space for Humanity
- Space Renaissance USA
- Space Tourism Society
- Tea Party in Space
- Waypaver Foundation

Alliance for Space Development 2019 Objectives

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1. Make space development and settlement part of NASA's, the Department of Transportation's, and the Office of Space Commerce's official mission

2. Require the Office of Space Commerce to produce a Space Development Plan

3. Support planetary defense by moving NEOCam forward in fiscal year 2020

The Space Development and Settlement Act (SDSA)

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- Space offers extraordinary value to America and humanity at large.
- This value comes from accessing the enormous resources of space:
  - The energy budget of the solar system is about two billion times that of Earth.
  - Asteroids have sufficient materials to build land over a thousand times greater than the surface of Earth.
- This value can be realized by enabling as many people as possible to live, work, and raise families permanently in space.
- Settlement will require large-scale space economic, technical, artistic, and societal development; creating opportunities for every single person on Earth.
- The world is better off if the best of American values are the foundation of space development and settlement - freedom, open markets, opportunity creation, property rights, and human rights.
- SDSA gives American space policy a truly long-term goal worthy of a great civilization.

SDSA & Request

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- Given this, we believe that the time has come to publicly declare that space development and settlement is an important goal for our space activities.
  - *"Development and Settlement of Space.—The Congress declares that expanding permanent human presence beyond Earth to enable human settlement and a thriving space economy will enhance the general welfare of the whole of Earth and the United States in particular and requires the Administration to encourage and support the development of permanent space settlements."*
- The Space Development and Settlement Act (SDSA) bill would amend the law governing the activities of NASA, the Department of Transportation, and the Office of Space Commerce to include enabling space development and settlement as part of their mission
- **Request: Are you willing to sponsor, co-sponsor, or otherwise support the SDSA?**

Creating a Virtuous Circle for Space Development

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- Space development suffers from a chicken and egg problem
  - Investment in space business infrastructure projects is hampered by a lack of clear users *(Example – Space Stations and Zero-G Manufacturing)*
  - Investment in space product companies that require infrastructure is hampered by lack of infrastructure *(Example – Satellite Servicing and Propellant Depots)*
- Government has developed a series of tools that could address
  - Overseas Private Investment Corporation (OPIC) has helped to enable investment in infrastructure projects in developing markets
  - In-Q-Tel has helped to invest in the development of end product companies
- Given the increasing importance and value of space, we need to develop and implement a plan to use these tools to grow space development

Developing a Plan to Enable Space Development

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- Request – Require the Office of Space Commerce to develop a plan for enabling space development, and then have agencies respond and include plan items in their FY2021 planning budgets
- Key items to consider
  - What support do potential products made in space for Earth markets need?
  - What are the best mechanisms to enable the growth of necessary space infrastructure?
  - What are some of the various models, including OPIC and In-Q-Tel, that could be utilized in enabling space development?
  - How can other federal agencies support and help enable space development?
  - Which problems are financial vs technical?
- **Request: Will you support our report language request for the Office of Space Commerce FY2020 budget?**
- Reference: Paper calling for a space version of the OPIC - https://space.nss.org/media/NSS-Position-Paper-Outer-Space-Private-Investment-Corporation.pdf

Why is Planetary Defense Important?

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- In 2013 an asteroid struck near Chelyabinsk, Russia damaging buildings, collapsing a factory roof, shattering windows, and sending hundreds of people to the hospital
- About a million asteroids larger than the Chelyabinsk object (~60 ft) cross Earth's orbit. If we do nothing, roughly 20,000 of these objects are expected to eventually hit Earth
- Potential effects range from city or regional devastation to mass extinction
- The next major impact could be centuries or more in the future or just a few weeks from now
- Humanity has the technical capacity to discover and track the vast majority of objects that would cause significant damage on Earth at modest cost
- *A simple truth:* There will be no space development or settlement if our civilization lies in ruin due to an unanticipated impact

Why is JPL NEOCam the next critical step in protecting our planet?

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- Detection of a potential hazard is the essential first step in planetary defense

- Current NASA and international efforts to find dangerous Near Earth Objects (NEOs) using only ground-based instruments have inherent limitations:
  - Cannot see in direction of Sun, near the Moon, during daylight, or through clouds
  - The best frequency for detection (infra-red) is absorbed by the atmosphere
- An excellent solution is JPL's NEOCam space-based infra-red 0.5 meter telescope
  - Rated #3 of 28 proposals during the recent Discovery mission selection
  - JPL NEOCam will be located at the Earth-Sun L1 point, allowing it to detect football-field sized objects. near Earth, including potential impactors
  - Total procurement costs, including launch, is $568M spread over six years
- Objective is to find 2/3 of all objects larger than 140 meters in five years
  - Goal is to discover >90% of 140 meter and larger asteroids within 10 years

Request: Support appropriation of $60M in fiscal year 2019/20 to move NEOCam forward into Phase B, enabling it to be launched at low cost in 2024 together with the approved Interstellar Mapping and Acceleration Probe (IMAP) mission

- **House current number is $22M**
- **No funding in current Senate authorization**