



NATIONAL SPACE COUNCIL



USERS' ADVISORY GROUP

AN INTRODUCTION

WHAT IS THE NATIONAL SPACE COUNCIL (NSpC)?

- An advisory body chaired by the Vice President consisting of several key Cabinet officials
- Previously existed from 1958-73, and 1989-93; reestablished on 6/30/2017

OBJECTIVE:

To coordinate U.S. national space policy across all relevant agencies and in all segments (civil, commercial, national security, international, etc.) and strengthen U.S. leadership in space

SUMMARY OF NSpC ACTIVITIES TO DATE

- **The NSpC meetings:**
 - 1st meeting 10/5/2017 at Steven F. Udvar-Hazy near Washington, D.C.
 - 2nd meeting 2/21/2018 at Space Station Processing Facility in Cape Canaveral, FL
 - 3rd meeting 6/18/2018 at White House in Washington, D.C.
 - 4th meeting 10/23/2018 at National War College near Washington, D.C.
 - 5th meeting 3/26/2019 at U.S. Space & Rocket Center in Huntsville, AL
 - 6th meeting 8/20/2019 at Udvar-Hazy Center near Washington, DC
 - 7th meeting 5/19/20 at NASA Headquarters in Washington, D.C.
- **Space Policy Directives (SPDs) issued:**
 - SPD-1 (12/11/2017): Calls for U.S.-led integrated program with commercial partners to return humans to the Moon with missions to Mars and beyond to follow
 - SPD-2 (5/24/2018): Calls for regulatory reform for commercial launch and reentry, commercial remote sensing, and spectrum use
 - SPD-3 (6/18/2018): Directs the development of a national space traffic management policy to preserve the space environment for future use
 - SPD-4 (2/19/2019): Establishes U.S. Space Force as a sixth military department, subordinate to the Air Force
 - SPD-5 (9/04/2020): Establishes cybersecurity principles for space systems
- **Directive to return U.S. astronauts to the surface of the Moon by 2024, establish a sustainable presence, and prepare for Mars issued in March 2019**
- **Additional recommendations on low Earth orbit, lunar surface, Mars, international cooperation, and space nuclear power issued in August 2019**

UAG MEETINGS TO-DATE

- 1st Meeting: June 19, 2018, NASA Headquarters, Washington, DC
- 2nd Meeting: November 15, 2018, NASA Headquarters Washington, DC
- 3rd Meeting: April 8, 2019, Broadmoor Hotel International Center, Colorado Springs, CO
- 4th Meeting: October 21, 2019, Courtyard by Marriott, Washington, DC
- 5th Meeting: July 30, 2020





But our determination — our determination is to capture the imagination of the American people — of men and women, and boys and girls all across this country — and, really, to inspire the world.

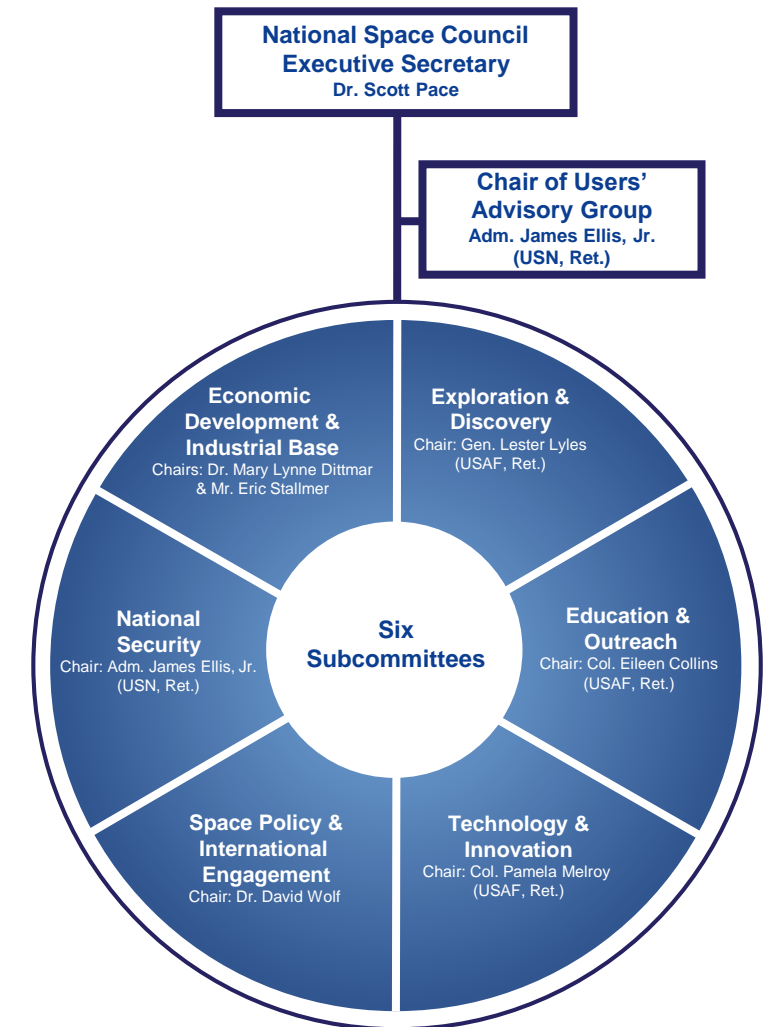


Vice President Mike Pence
Addressing the National Space Council
August 20, 2019



WHAT IS THE USERS' ADVISORY GROUP (UAG)?

- The UAG is a Federal Advisory Committee governed by the Federal Advisory Committee Act (FACA)
- Charter signed 12/6/2017 and runs for two years unless renewed
- Intended to be industry and other non-Federal stakeholders' voice to the White House National Space Council (NSpC)
- Tasked with advising the NSpC with any and all space policy issues relevant to these stakeholders
- Will meet 3-4 times annually; first meeting held 6/19/2018



USERS' ADVISORY GROUP CHARTER: OBJECTIVES AND SCOPE

Charter up for renewal
with potential changes by
the end of 2019

The function of the UAG is solely advisory and shall be to ensure that the interests of industry, other non-Federal entities, and other persons involved in aeronautical and space activities are adequately represented.

The UAG shall provide advice and recommendations on matters including, but not limited to:

- The effect of existing and potential U.S. and foreign government policies, laws, regulations, treaties and other international instruments, programs and practices on national security, civil, and private sector space activities;
- National security space priorities, including those affecting Homeland Security, the Nation's defense, and intelligence activities, as they relate to coordination, cooperation, and technology and information exchange among the civil, national security, and commercial space sectors;
- Human and robotic exploration priorities;
- Strategies to increase innovation, efficiency, and effectiveness in public and private space activities that benefit the American people and reduce the burden on the taxpayer;
- Strategies to increase public, academic, commercial, and international support for U.S. space policies and programs; and
- Strategies to ensure U.S. leadership in the economic development of outer space.





The UAG's duties shall include, but are not limited to:

- Seek to ensure that the interests of industry, other non-Federal entities and other persons involved in aeronautical and space activities are adequately represented on the National Space Council;
- Provide subject matter expertise to the council;
- Submit reports with findings and recommendations to the Council;
- Conduct studies, reviews, and evaluations, as requested by the Council;
- and Submit an annual report to the Council on its activities, as requested by the Council.



UAG SUBCOMMITTEE MEMBERSHIP

ECONOMIC DEVELOPMENT AND INDUSTRIAL BASE

Dr. Mary Lynne Dittmar, Co-Chair
Eric Stallmer, Co-Chair

Tory Bruno
Eileen Drake
Tim Ellis
Homer Hickam
Fred Klipsch
Lt. Gov. Jeanette Nuñez
Gwynne Shotwell
Dr. Bob Smith
Stuart Witt

EDUCATION & OUTREACH

Col. Eileen Collins (USAF, Ret.), Chair

Homer Hickam
Dr. Bruce Jakosky
Fred Klipsch
Lt. Gov. Jeanette Nuñez
Pamela Vaughan
Mandy Vaughn
Stuart Witt

EXPLORATION AND DISCOVERY

Gen. Lester Lyles (USAF, Ret.), Chair

Col. Buzz Aldrin (USAF, Ret.)
Tory Bruno
David Calhoun
The Hon. John Culberson
Dr. Mary Lynne Dittmar
Eileen Drake
Homer Hickam
The Hon. Kay Ivey
Dr. Bruce Jakosky
Fatih Ozmen
Gwynne Shotwell
Eric Stallmer
James D. Taiclet
Pamela Vaughan
Kathy Warden
Stuart Witt

NATIONAL SECURITY

Adm. James Ellis, Jr. (USN, Ret.), Chair

Tory Bruno
David Calhoun
Dean Cheng
Tim Ellis
Gen. Lester Lyles (USAF, Ret.)
Col. Pamela Melroy (USAF, Ret.)
Fatih Ozmen
Eric Schmidt
Harrison Schmitt
Gwynne Shotwell
Dr. Bob Smith
James D. Taiclet
Mandy Vaughn
Kathy Warden
Stuart Witt

SPACE POLICY AND INTERNATIONAL ENGAGEMENT

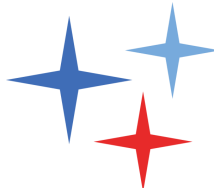
Dr. David Wolf, Chair

Col. Buzz Aldrin (USAF, Ret.)
David Calhoun
Dean Cheng
Dr. Mary Lynne Dittmar
Adm. James Ellis, Jr. (USN, Ret.)
Homer Hickam
Fred Klipsch
Col. Pamela Melroy (USAF, Ret.)
Eric Stallmer

TECHNOLOGY AND INNOVATION

Col. Pamela Melroy (USAF, Ret.), Chair

Dean Cheng
The Hon. John Culberson
Tim Ellis
The Hon. Kay Ivey
Gen. Lester Lyles (USAF, Ret.)
Fatih Ozmen
Harrison Schmitt
Dr. David Wolf

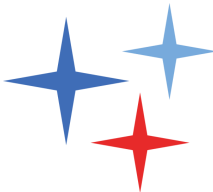


SUBCOMMITTEE WORK

Broad remit in assigned areas; examples of current topics being explored: LEO economic development, SSA/STM, STEM workforce development

Subcommittees also given five tasks to prioritize by the VP:

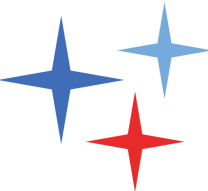
1. Review current lunar exploration architecture and identify any areas for improvement.
2. Assess and recommend options for the organizational structure of the uniformed Space Force.
3. Provide findings and recommendations on how the United States can most effectively continue to lead international space efforts.
4. Prioritize technologies necessary for sustainable lunar exploration and that feed forward to Mars exploration. Including potential National Academies roadmap update.
5. Review the Department of Commerce's report on spectrum management and improving the competitiveness of the U.S. space sector. Make recommendations for implementation and improvement of U.S. competitiveness.



FORMAL FIFTH MEETING UAG RECOMMENDATIONS

July 30, 2020

1. The Departments of Defense and Commerce should work to create an interoperable approach on multi sourced space data modeling, data sharing, and curation architectures. Both departments should study lessons learned and fund studies and research around technical solutions and processes that allow incorporation of properly vetted international and commercial data into the space object catalog for military, civil and commercial uses. We further recommend that the Departments should report to the National Space Council regularly on their progress.
2. The Department of Defense, Department of Commerce, and NASA should work to jointly develop standards for space data protection and security plans, space data verification, and space data uncertainty quantification.



FORMAL FOURTH MEETING UAG RECOMMENDATIONS

October 21, 2019

1. The NSpC should write a Space Policy Directive concerning STEM education in the United States (U.S.) with the intent to prepare the future space industry workforce.
2. The NSpC should direct the UAG to develop a white paper, outlining and scoping a study of the means to establish and maintain a U.S. Strategic Space Propellant Reserve modeled on the U.S. Strategic Petroleum Reserve (SPR). The white paper should identify variables important to establish reference requirements, such as: (a) the size and location of initial reserves needed to stimulate sufficient infrastructure to support an eventual \$1T space economy; (b) technical means; (c) identification of markets that could be enabled; and (d) models for funding, and others. It is anticipated that a detailed study undertaken by the National Academies of Sciences, Engineering and Medicine would follow initial scoping by the UAG.



FORMAL FOURTH MEETING UAG RECOMMENDATIONS

October 21, 2019

3. The NSpC should direct the UAG to define the scope of a study to be conducted by the National Academy of Public Administration, reviewing U.S. regulatory jurisdiction and governance (domestic) v. a goal of technology leadership across spectrum related technology sectors. The study should also address an assessment of the current U.S. governance model for spectrum v. alignment with multiple national technological leadership and capabilities priorities.
4. NASA should update their technology roadmap and brief the UAG in light of the Artemis and Moon and to Mars program, provide a briefing to the UAG and, if necessary, fund a brief external review. [Note: (1) the roadmap does not need to also be published; and (2) we don't need roadmap across entire NASA enterprise, just key technologies for Artemis and going onto Mars.]



THIRD MEETING UAG FINDINGS

April 8, 2019

1. Gen. Lyles (Chair, Exploration and Discovery Subcommittee) recommended that the UAG form a task force to act as a “red team” to assess the revised lunar exploration plan and develop potential alternatives. Adm. Ellis proposed refinement of Gen. Lyles’ task force proposal, followed by submission of that proposal to the UAG for discussion and final approval. Noting that the initial concepts are promising, he reiterated the need to precisely define both the goals of the task force and the processes to be used to achieve those goals
2. As chair of the National Security subcommittee of the UAG, Adm. Ellis noted they received a request from the National Space Council that the subcommittee examine the organizational construct of the newly defined Space Force. Specifically, the subcommittee has been asked to assess and to recommend options for the organizational structure of the uniformed Space Force, including a future Department of the Space Force. The subcommittee has been promised access to the Department of Defense (DoD) and other relevant organizations to facilitate completion of this task. The goals of the Space Force are ambitious and wide-ranging, and there is much work to be done to create from its general goals an efficient and effective functioning entity, including resolving the special challenges of massive organizational change. In order to provide appropriate and useful advice, it will be important for subcommittee members to have access to, and continuing conversations with, those staff members at DoD and elsewhere who are doing the hard job of bring these ambitious goals to fruition.



SECOND MEETING UAG FINDINGS

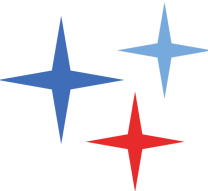
November 15, 2018

1. Adm. Allen (Chair, UAG) identified the priorities for each of the six subcommittees.
2. Some UAG members and attendees expressed concerns about the pace of progress in the Lunar to Mars initiative, including: (1) The vehicle design and program design do not seem sufficiently innovative; (2) Smart people are involved, but that they may be trapped in a system that does not appear to facilitate efficient progress; (3) There may be an excessive number of overly large goals. These should be subdivided and prioritized; and (4) We should persuade the administration and NASA to consider alternate approaches. Adm. Ellis noted these opinions transmitted to the National Space Council.

FIRST MEETING UAG FINDINGS

June 19, 2018

1. Organized the six subcommittees

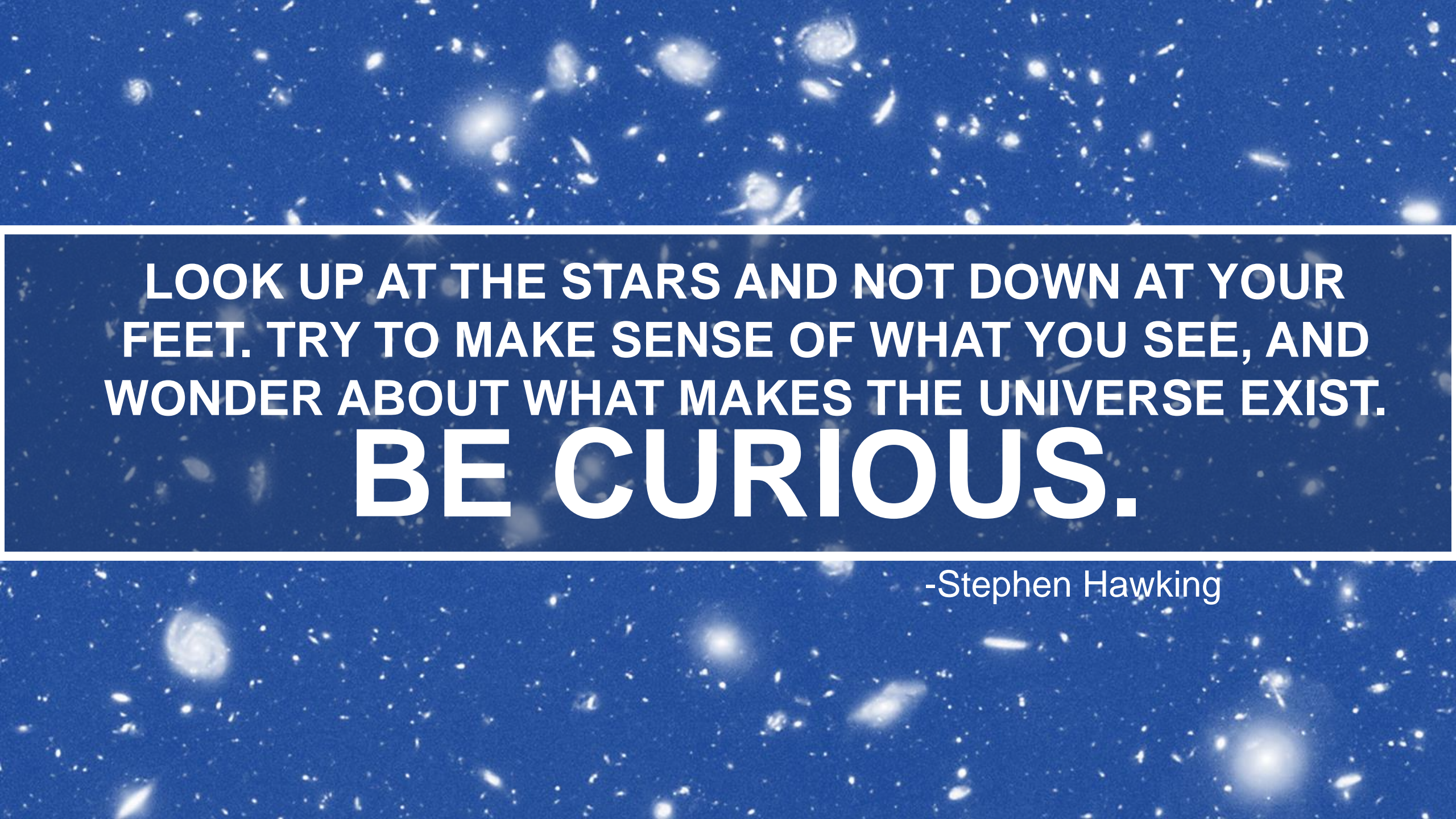




WE WANT TO IMPROVE

Submit your inputs to:
contact@spacecounciluag.org

- What new partnership constructs should we look at?
- Future areas of exploration and scientific research
- Bureaucratic and regulatory hurdles that need attention
- Innovative technologies with potential space applications
- Big ideas for advancing American leadership in space



**LOOK UP AT THE STARS AND NOT DOWN AT YOUR
FEET. TRY TO MAKE SENSE OF WHAT YOU SEE, AND
WONDER ABOUT WHAT MAKES THE UNIVERSE EXIST.
BE CURIOUS.**

-Stephen Hawking