



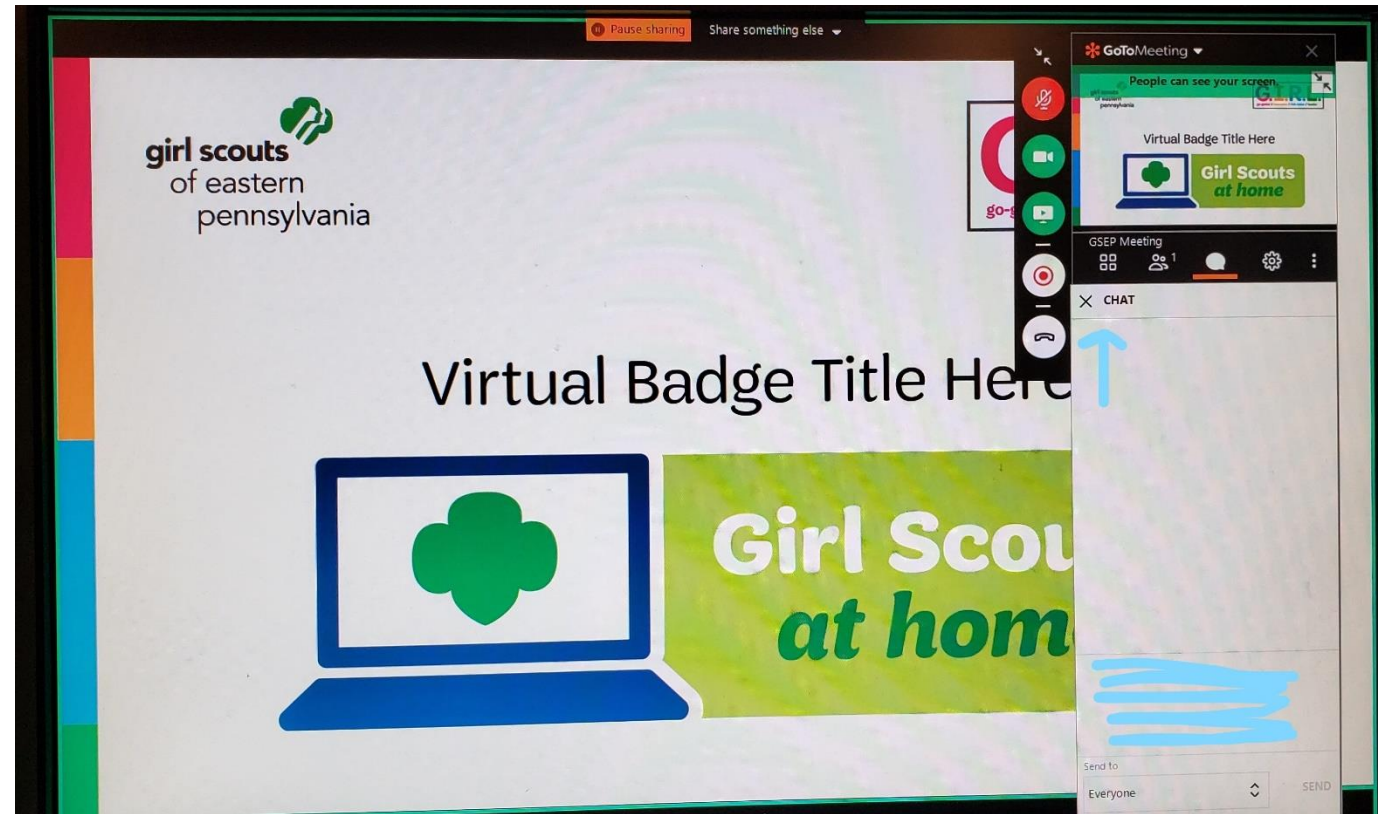
Ambassador “Space Science Master” Badge



Girl Scouts
at home

How will this Virtual Troop Meeting work?

- On the right side of your screen, there is a control panel. You should see a microphone, a video camera, and a chat bubble.
- When you are called on to talk, you will need to click on your microphone so it is green. Then everyone will be able to hear you.
- If you have a webcam, clicking on it will let everyone else in the meeting see you too.
- The Chat Log looks like a cartoon thought bubble...see it underlined in red? You can type questions or comments into the chat log and everyone will be able to see what you write!



The Girl Scout Promise & Law

**On my honor, I will try:
to serve God
& my country,
to help people
at all times,
& to live by the
Girl Scout Law.**

Promise

**I will do my best to be
honest & fair, friendly & helpful,
considerate & caring,
courageous & strong,
& responsible for what I say & do,
& to respect myself & others,
respect authority,
use resources wisely,
make the world a better place,
& be a sister to every Girl Scout.**

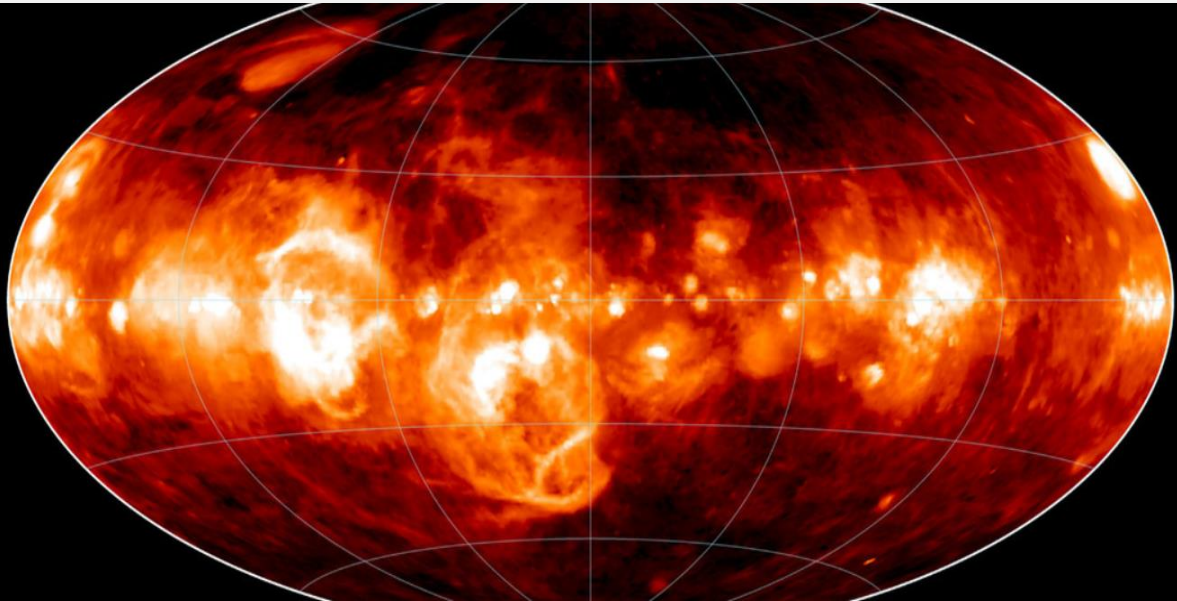
Law



Girl Scouts
at home



**Space Science
Master**



Purpose of this Badge

To understand more about science and ways that you can be a part of NASA now and in the future.



Space Science Master

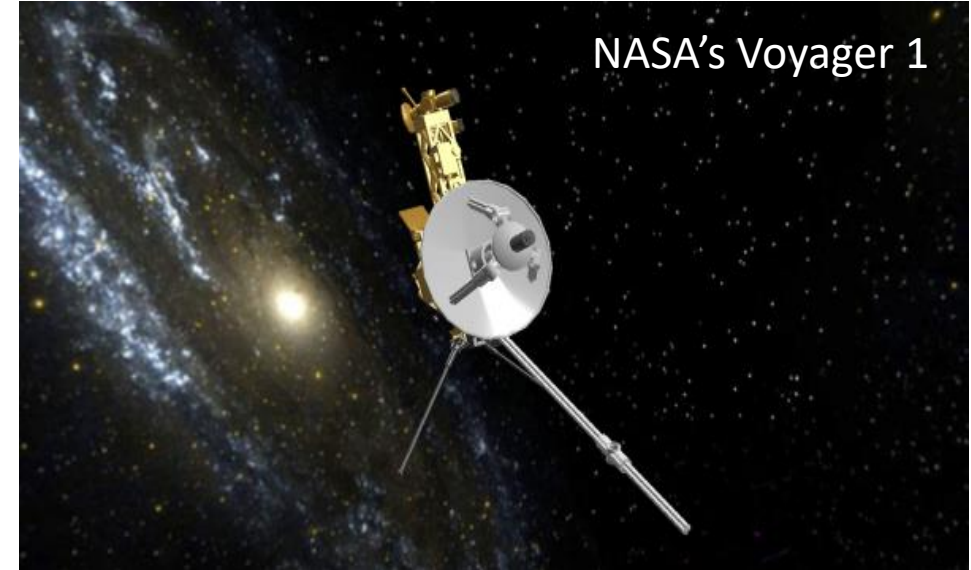
Badge Requirements

1. Discover worlds beyond Earth
2. Dive into NASA science
3. Explore your interests
4. Dig deeper
(put new knowledge into practice)
5. Share what you've learned

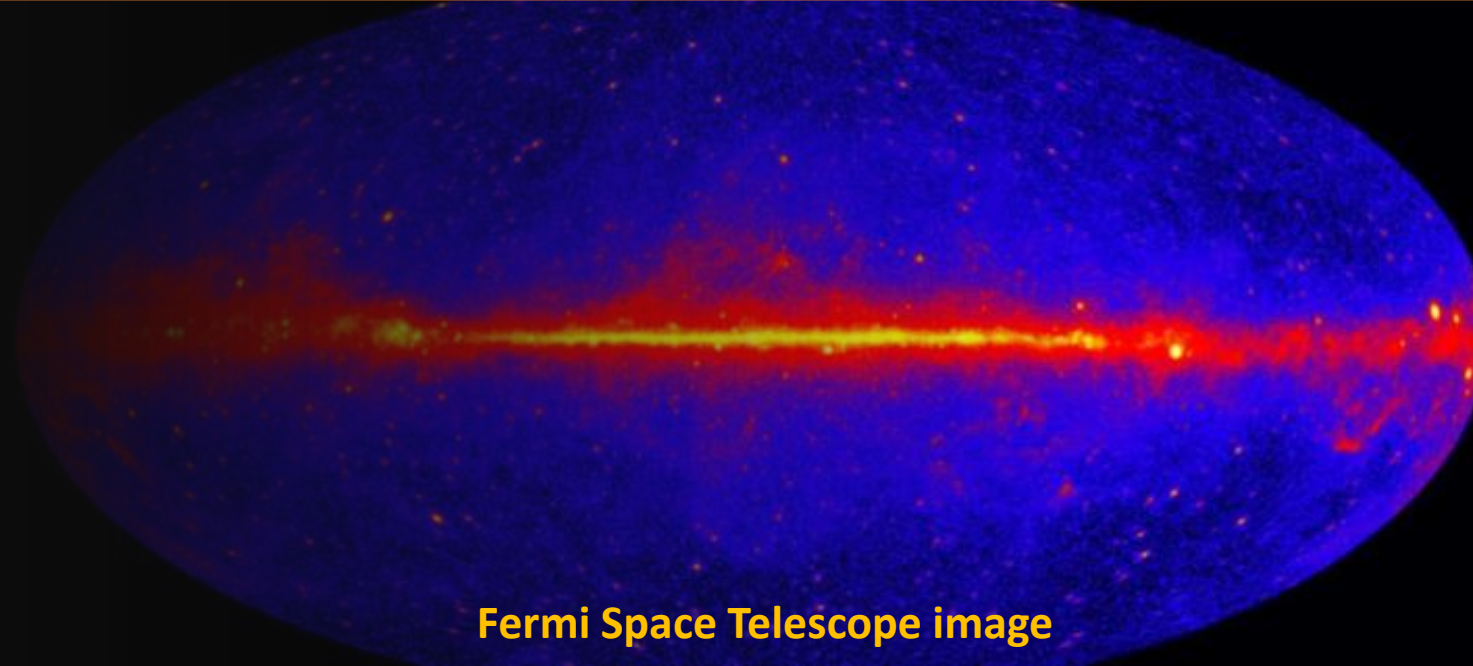
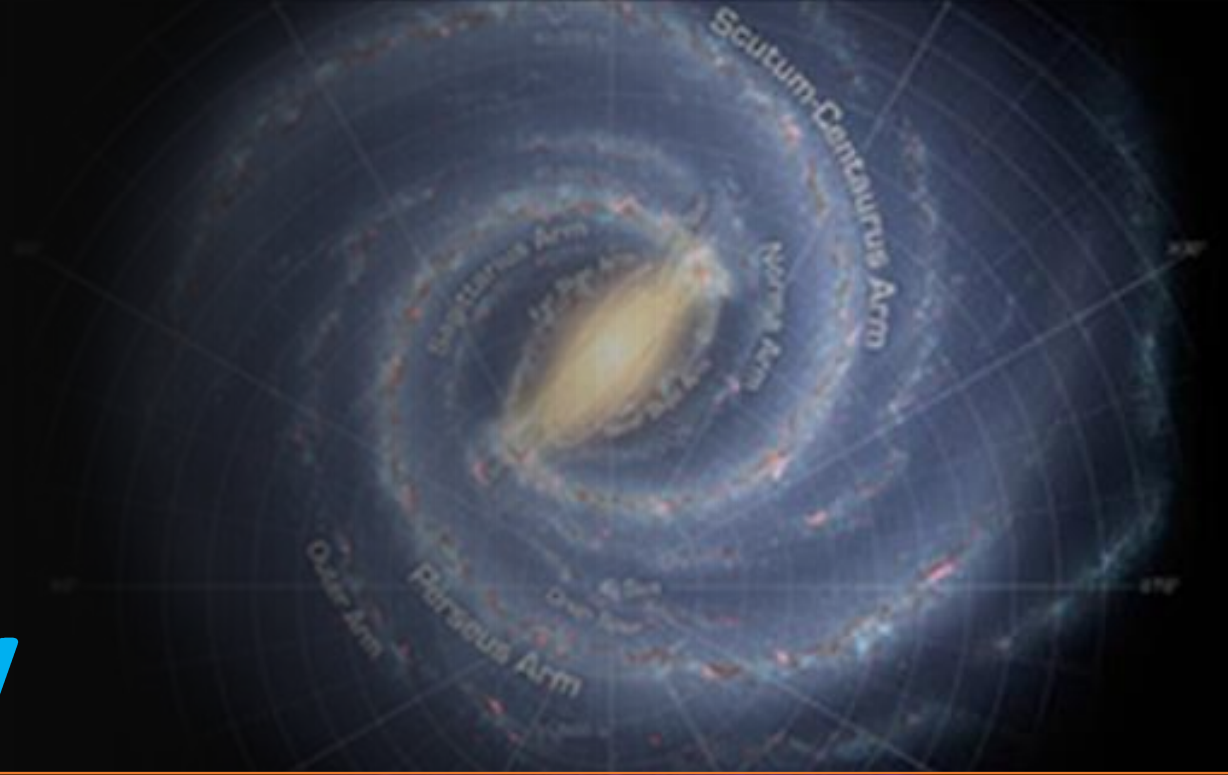
Step 1: Discover Worlds Beyond Earth

NEW
EXPLORE **WORLDS**

Earth



Milky Way Galaxy

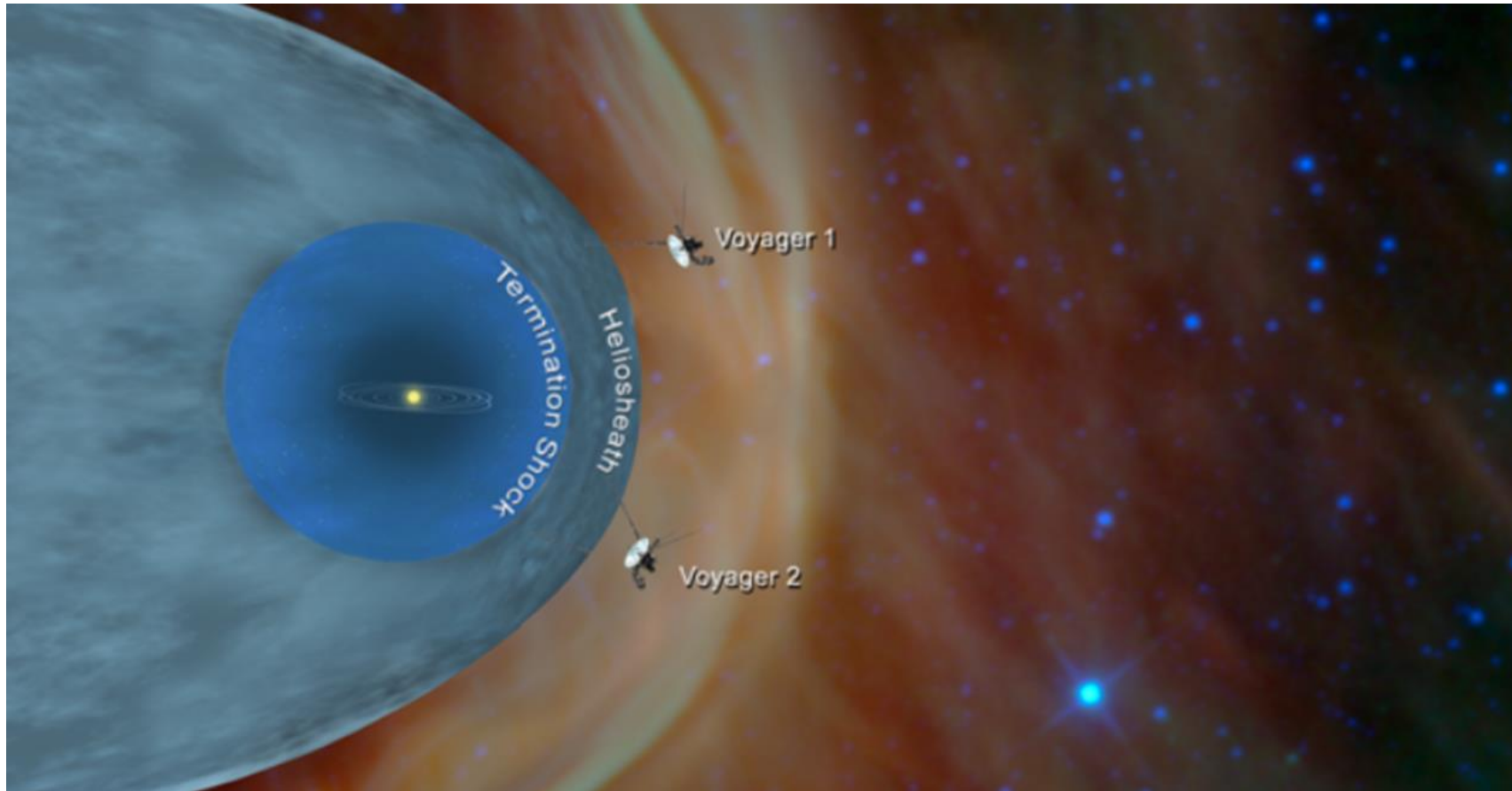


Fermi Space Telescope image

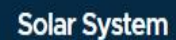


NASA Science

SOLAR SYSTEM EXPLORATION



NASA's robotic spacecraft have embarked on numerous missions, which have reached and explored a variety of solar system bodies – including moons, planets, asteroids, and comets.



Planets

Moons

Asteroids, Comets & Meteors

MORE



PLANETS | DWARF PLANETS

8 | 5

MOONS

200+

ASTEROIDS

957,734

COMETS

3,617

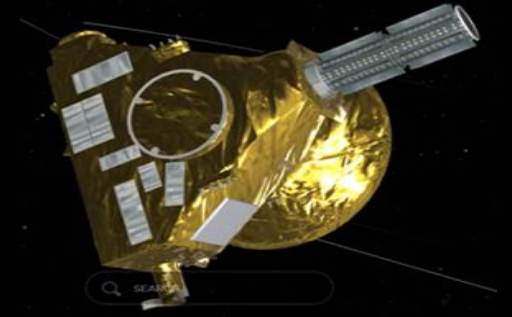


NASA Science

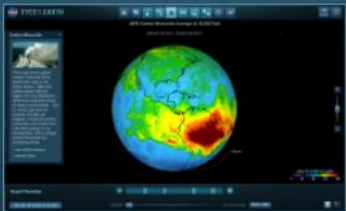
SOLAR SYSTEM EXPLORATION

NASA's Eyes

New Horizons



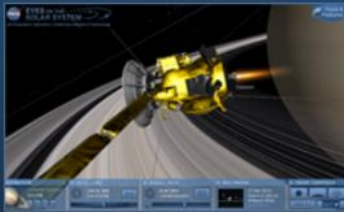
EYES ON THE EARTH



Explore Earth's Vital Signs and fly along with NASA satellites

START

EYES ON THE SOLAR SYSTEM

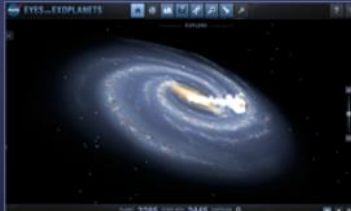


Explore our solar system and the spacecraft exploring it

SIMPLE

ADVANCED

EYES ON EXOPLANETS



Explore the planets around other stars in our galactic neighborhood

START



Eyes on Pluto

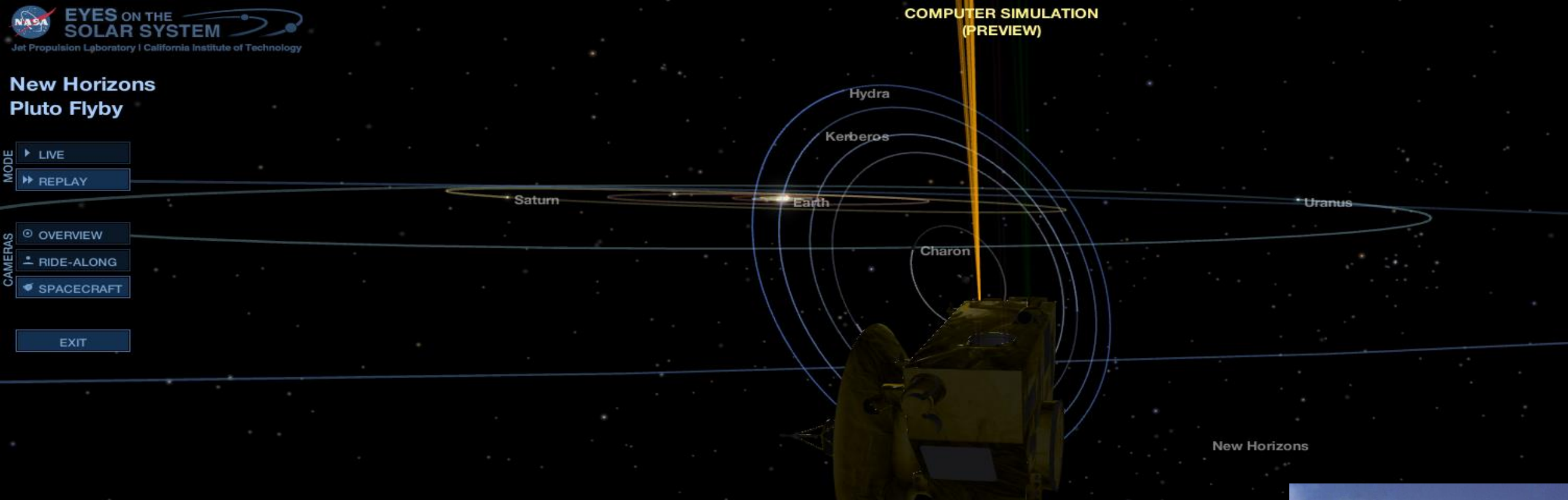
New Horizons Pluto Flyby

MODE
▶ LIVE
▶▶ REPLAY

CAMERAS
○ OVERVIEW
▮ RIDE-ALONG
♥ SPACECRAFT

EXIT

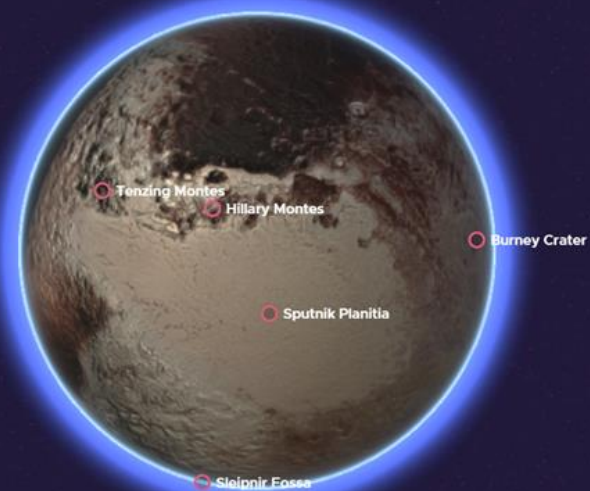
COMPUTER SIMULATION
(PREVIEW)



New Horizons

Pluto

Dwarf Planet



DISTANCE FROM SUN
3,161,445,403 MI KM

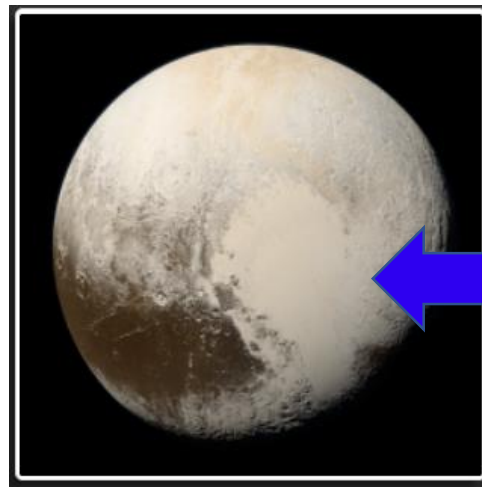
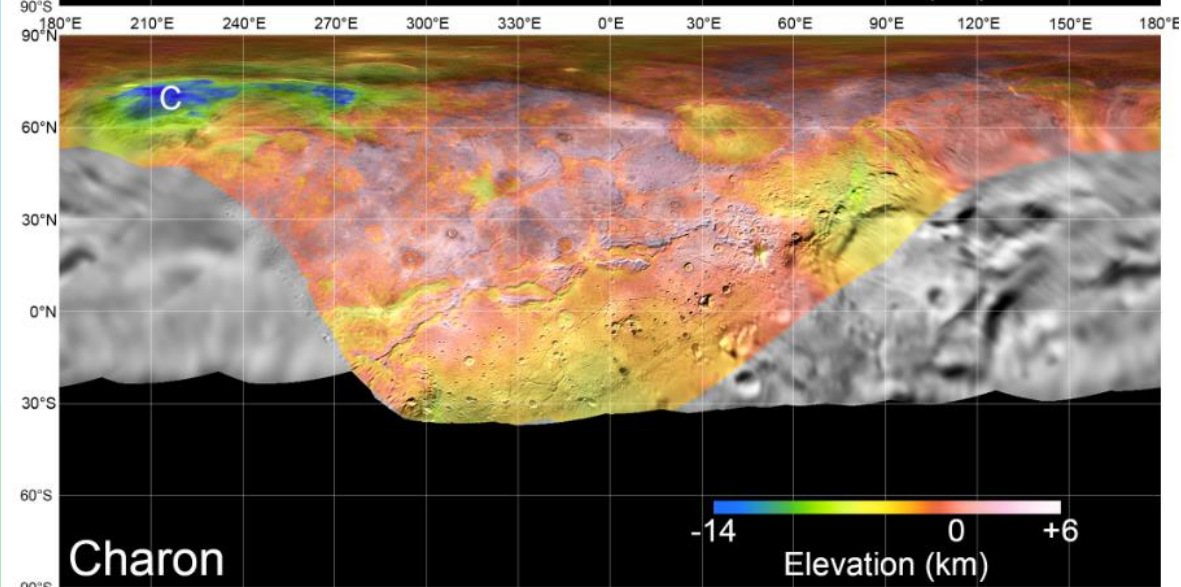
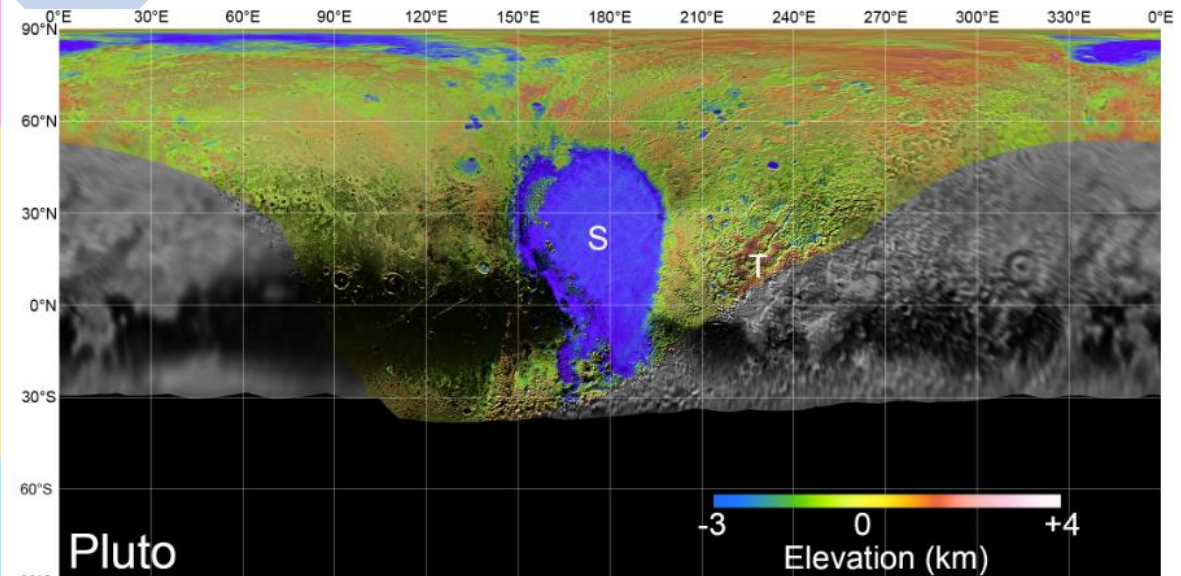
ONE WAY LIGHT TIME TO THE SUN
282.854278 mins

LENGTH OF YEAR
90,530 Earth Days

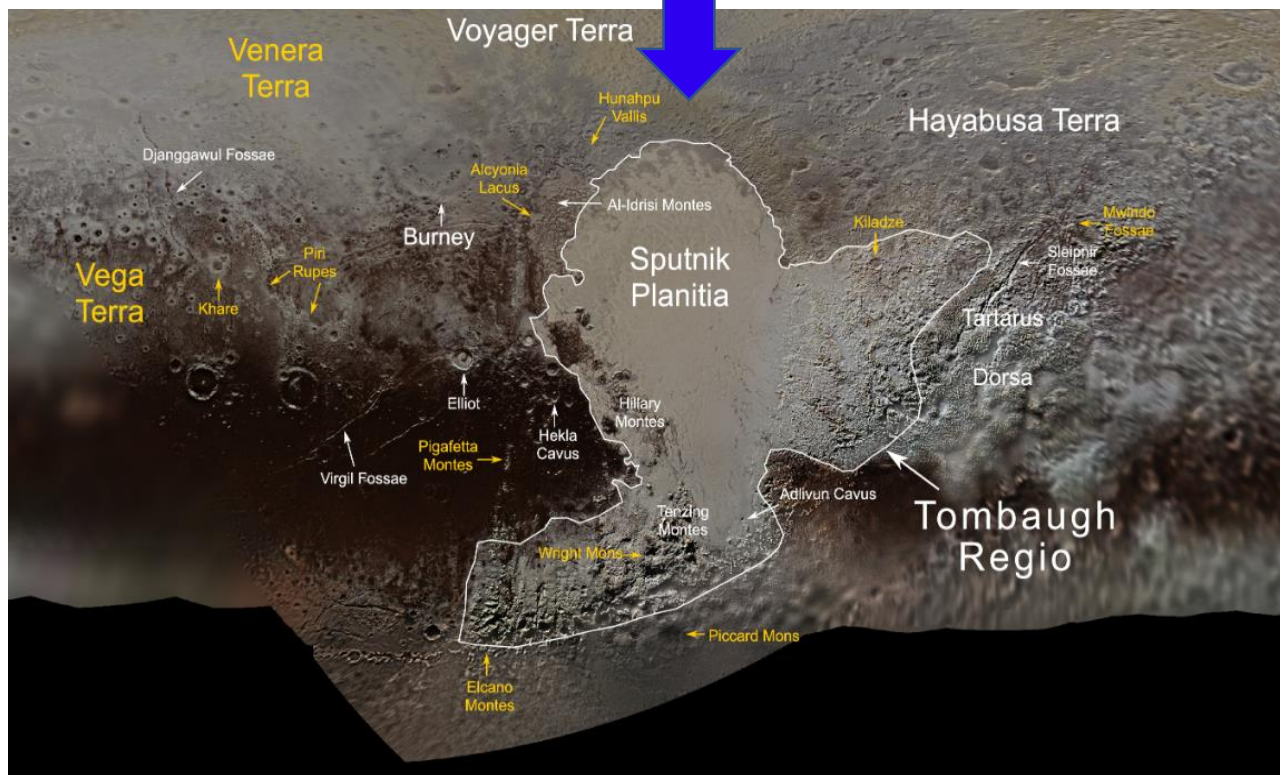
PLANET TYPE
Dwarf Planet

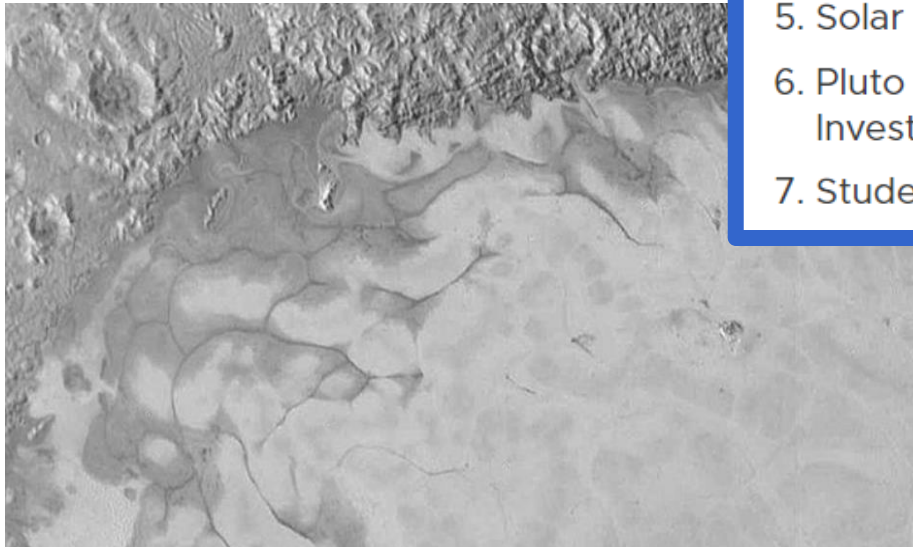
− TIME RATE 10 MIN/SEC + ||



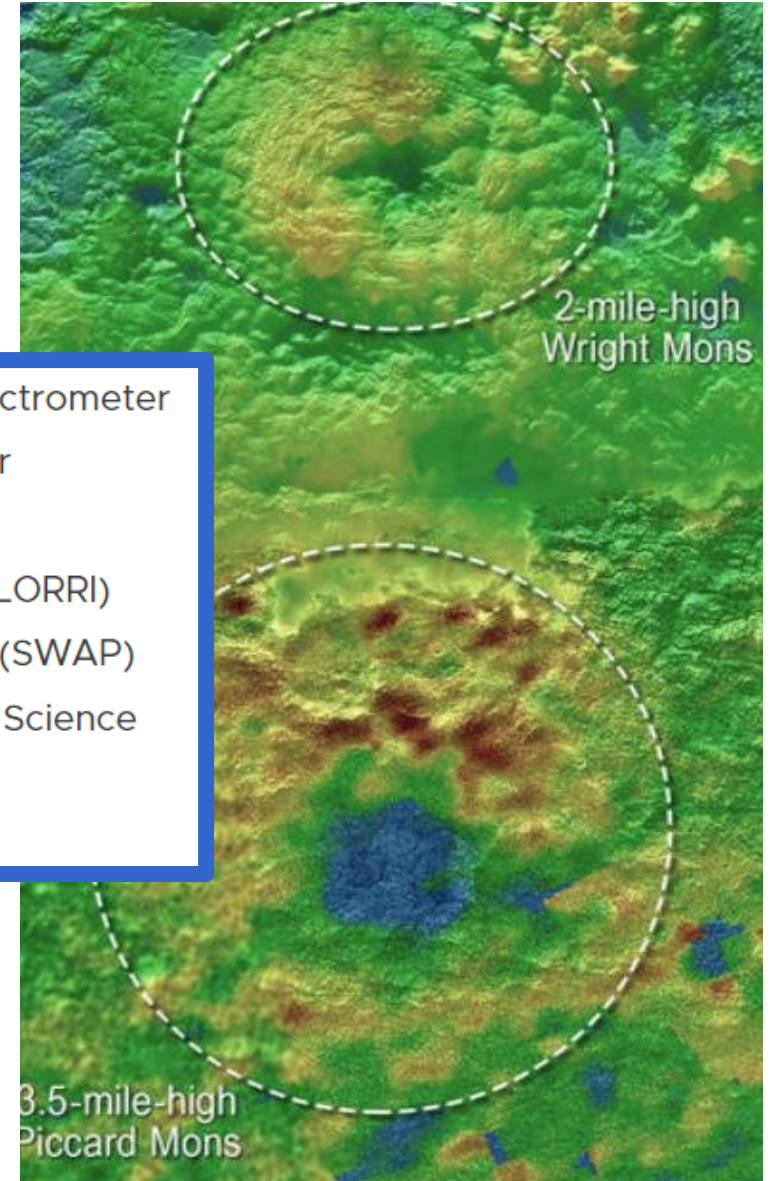


Pluto

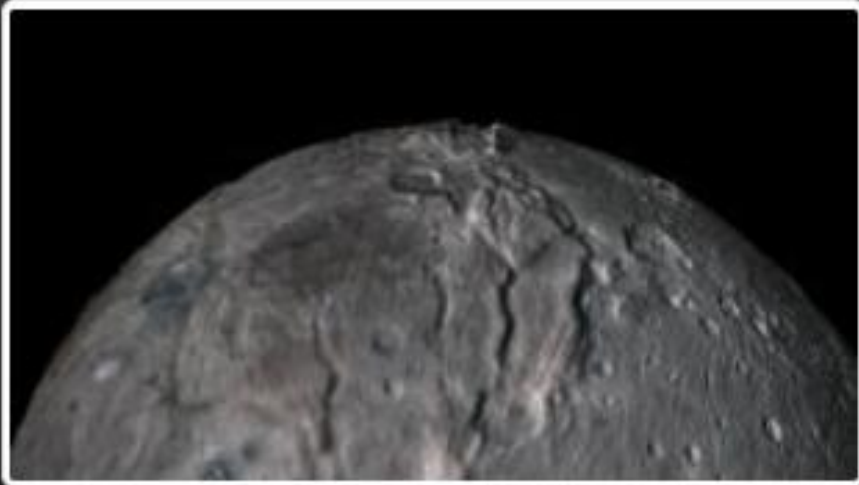




1. Ralph-Visible and Infrared Imager/Spectrometer
2. Alice-Ultraviolet Imaging Spectrometer
3. Radio-Science Experiment (REX)
4. Long-Range Reconnaissance Imager (LORRI)
5. Solar Wind and Plasma Spectrometer (SWAP)
6. Pluto Energetic Particle Spectrometer Science Investigation (PEPSSI)
7. Student Dust Counter (SDC)



New Horizons Mission: <http://www.nasa.gov/newhorizons>



Charon in 'Plutoshine'

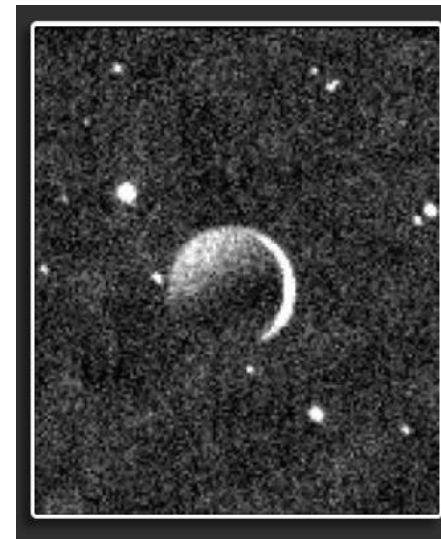
Release Date: January 19, 2017

Keywords: Charon, MVIC, Ralph

This beautiful image obtained with the Ralph/Multispectral Visible Imaging Camera aboard NASA's New Horizons spacecraft shows the night side of Pluto's large, Texas-sized moon Charon, against a star field, lit by faint, reflected light from Pluto itself. The bright crescent on Charon's right side is a sliver of sunlit terrain; it is overexposed. New Horizons was already about 100,000 miles (150,000 kilometers) beyond Pluto when the image was taken on July 15, 2015.

Credit: NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute

Charon



Step 1: Discover Worlds Beyond Earth

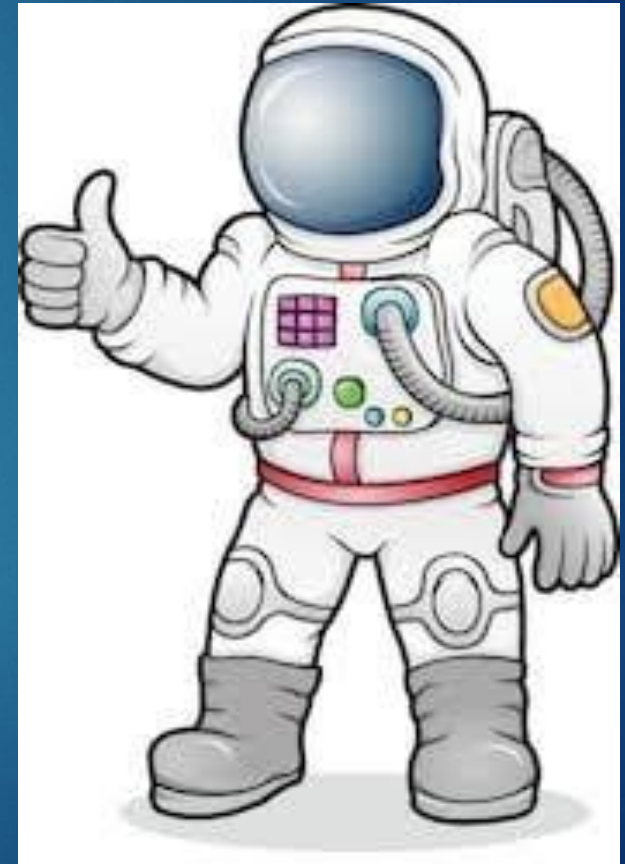
WRAP UP



Step 2: Dive into NASA Science

DISCOVER CAREERS

When someone
says, “career with
NASA,” do you
think of the figure
on the right???



What does it take to work at NASA??

► Basic Requirements:

- A bachelor's degree from an accredited institution in one or more of the following: mathematics, engineering, biological science or physical science.

► Requirements to become an Astronaut:

- Bachelor's degree in engineering, biological science, physical science, computer science or mathematics.
- Three years of professional experience (or 1,000 hours of pilot-in-command time in jet aircraft).
- Must be able to pass NASA's astronaut physical examination.
- Must be able to speak another language but especially Russian, which all astronauts are required to learn today.

Top Five Colleges for Aeronautics

MIT – Massachusetts Institute of Technology – Cambridge, MA

▶ Current Enrollment – 4,602 Tuition; \$53,790

Georgia Institute of Technology – Atlanta, GA

▶ Current Enrollment – 16,049 Tuition: \$33,794

California Institute of Technology – Pasadena, CA

▶ Current Enrollment - 948 Tuition: \$54,600

Embry-Riddle Aeronautical University - Daytona Beach, FL

▶ Current Enrollment – 5,984 Tuition - \$36,898

Purdue University--West Lafayette - West Lafayette, IN

Current Enrollment – 32,672 Tuition - \$28,794

Engineering Opportunities while in High School

▶ MIT Makes engineering open to everyone:

▶ Lemelson-MIT Program

The Lemelson-MIT Program inspires a new generation of inventors. Comprised of high school students, educators, and mentors,

▶ InvenTeams receive grants to invent technological solutions to real-world problems.

The JV InvenTeams, which are comprised of students in grades 7–10, hone their hands-on skills and enrich their STEM education through invention-based design activities.

▶ Office of Engineering Outreach Programs

▶ The Office of Engineering Outreach Programs seeks to diversify the science and engineering community by serving students from underrepresented and underserved backgrounds through three national programs and one local program.

▶ Minority Introduction to Engineering and Science

▶ A six-week, residential program, MITES provides rising high school seniors from across the country with the opportunity to learn what it takes to study at the highest level. The program is highly selective, and those who are accepted get to live and work (really hard) on campus with MIT students and faculty for six weeks during the summer.

▶ MIT Online Science, Technology, and Engineering Community

▶ MOSTEC is a six-month online program for rising high school seniors. The program provides students with a glimpse at the fundamental competencies needed to pursue a career in STEM. Participants collaborate online on a team project then come to campus for a weeklong conference to present their results. The program is offered free of charge to those accepted.



Aerospace Careers in the Private Sector

► Virgin Orbit, a private firm owned by Sir Richard Branson that launches satellites into space, has secured a \$35 million contract with the U.S. Space Force, the company announced Friday.

► The contract was awarded to VOX Space, a subsidiary of Virgin Orbit that conducts satellite launches for U.S. military and national security branches. VOX Space will conduct three missions for the U.S. Space Force, launching dozens of small satellites that the newly formed sixth U.S. military branch will use to enable “advancements in space domain awareness and communications and informing future developments of the USSF space architecture.”

The Race in Space

Mr. Musk is known by many as the man that plans to travel to Mars!

Musk plans to send a SpaceX rocket to Mars with cargo only by 2022.

A second mission, which would carry more cargo and crew, is targeted for 2024. Musk has also said that he plans to send a million people to Mars by 2050.



Step 3: Explore Your Interests

CITIZEN SCIENCE

NASA's Space Science Mission Directorate

NASA scientists and engineers explore the Earth, Solar System, and beyond to the farthest reaches of the Universe. There are four divisions:

- **Heliophysics:** the study of the Sun and space weather
- **Earth Science:** the study of our home planet, Earth, from space
- **Planetary Science:** the study of our Solar System—planets, moons, asteroids, comets, and more
- **Astrophysics:** the study of stars and exoplanets, galaxies, dark matter and energy as well as the origins of the Universe

DISCOVER CITIZEN SCIENCE

Discover citizen science and NASA. You can be a citizen scientist right now, no degree required! Scientists and engineers worldwide collect an immense amount of data—this is the first step to making discoveries about our natural world. You can join them as a citizen scientist and contribute by collecting data and helping to analyze what's already been amassed. All it takes is your computer, an internet connection, time, and your willingness to explore. Find out how you can get involved: www.girlscouts.org/NASACitizenScientists or www.girlscouts.org/GSCitizenScientists. Once you've begun making contributions, share what you've learned with your friends and family.

Citizen Science

Citizen scientists—like you—can dive into space science data online. Here are some sample projects:

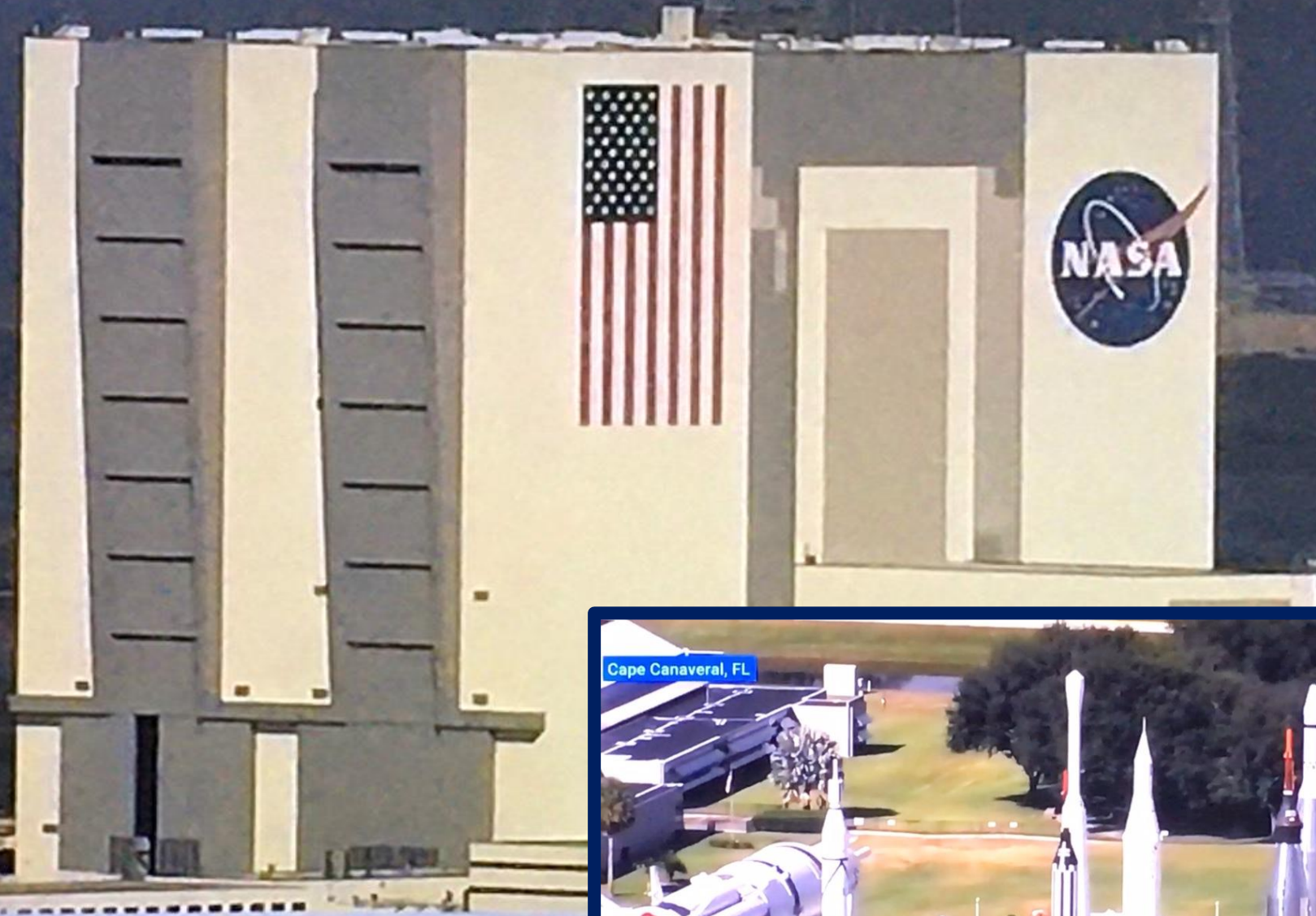
Heliophysics: Aurorasaurus—report auroras from your location.
www.girlscouts.org/AuroraSaurus

Planetary Science: Backyard Worlds—help find planet nine or ten or . . . www.girlscouts.org/BackyardWorlds

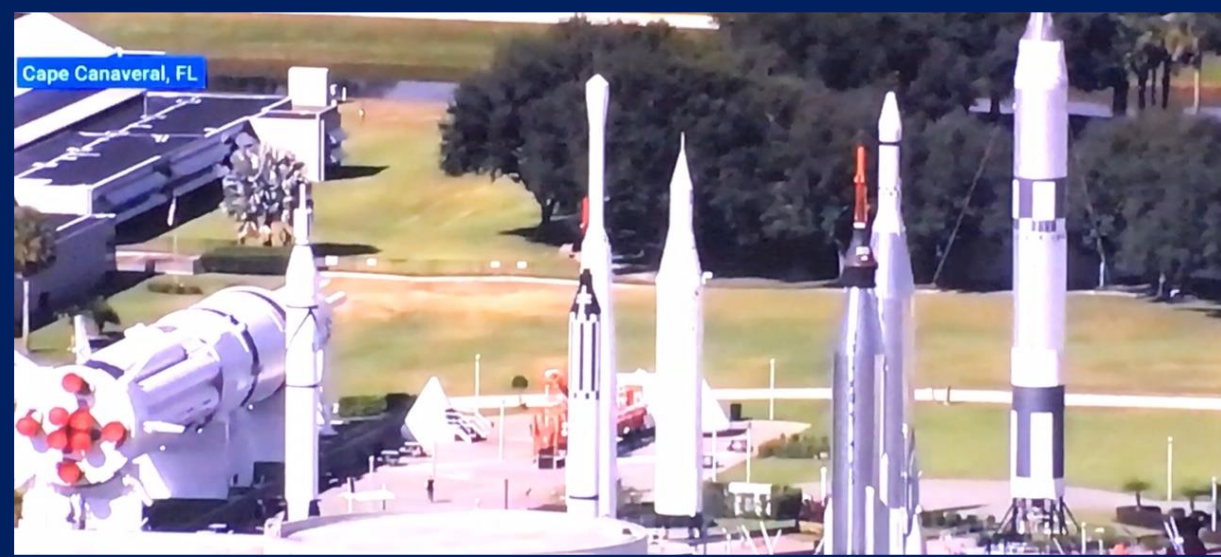
Earth Science: Globe Observer—photograph clouds and compare your observations with NASA's. www.girlscouts.org/GlobeObserver

Astrophysics: Galaxy Zoo—help classify galaxies.
www.girlscouts.org/GalaxyZoo

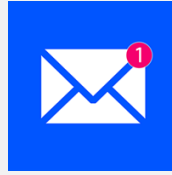
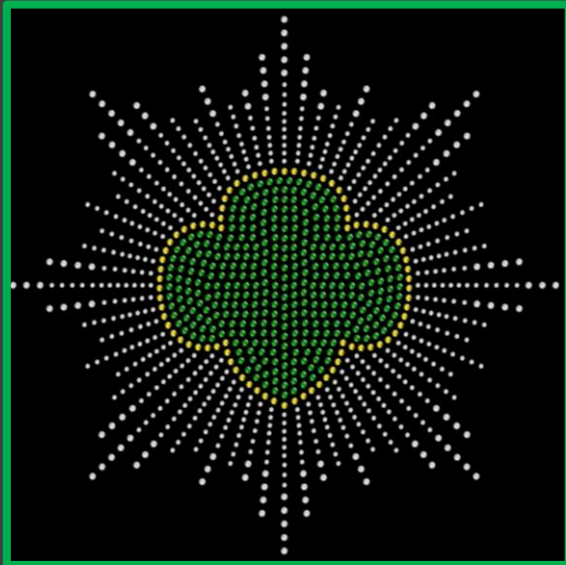
Cape Canaveral, FL



NASA IS HIRING ASTRONAUTS



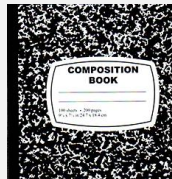
YOUR NEXT STEPS



Check out resources in post meeting email



Download NASA's Eyes app to learn more



Continue to journal in observation notebook



Dig deeper by exploring what interests you most
(STEP 4)



Share what you've learned

(STEP 5)

Virtual Telescope Project: <https://www.virtualtelescope.eu/webtv/>