

## Today: Why Do We Explore Space?

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See class syllabus at:

<http://lunar.colorado.edu/~jaburns/astr2020/>

- Read: *Cosmic Perspective* textbook Section 4.1.
- E-mail me for Office hours Zoom call.
- Sign-up for *Space in the News*
- Astronomy Help Room opens next week: <https://cuboulder.zoom.us/j/99504535732>
- Complete Daily Health Form



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## Today's Class

- Why Do We Explore?
- The Elusive Why of Space Exploration.
- How do we explore?
- What Objects should we explore?
  - The Moon
  - Mars
  - Europa
  - Exoplanets

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## Space in the News: Blue Origin team delivers lunar lander mockup to NASA



A full-sized lunar lander mockup built by Blue Origin's "National Team" is now at the Johnson Space Center for testing by NASA engineers and astronauts. Credit: Blue Origin

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## Why Do We Explore Space?



President John F. Kennedy at Rice University, 1962

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## Why Do We Explore Space?



"The situation today is like Europe before 1492. Spreading out into space will completely change our future but won't solve immediate problems." *Stephen Hawking*

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## Why Do You Think We Explore Space Today?

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## Why not be inspirational?

- Humans are meant to explore. It is at our core. We explore to gain knowledge, satisfy our curiosity. Space is that next frontier. It is a simple answer to why we explore.
- **Next questions:**
  - ❖ How do we explore?
  - ❖ Where do we explore?
  - ❖ What are the tools for exploration?



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## How do we explore space?

### NASA's Orion + Space Launch System (SLS)



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## NASA's Lunar Gateway

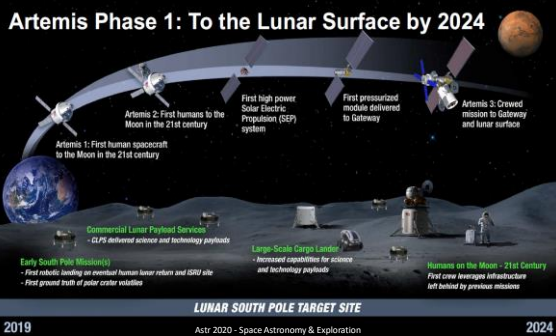


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## NASA's Human Mission to the Moon: Project Artemis

### Artemis Phase 1: To the Lunar Surface by 2024



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## What objects do we explore?

### The Moon AND Mars



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## How do we explore space?

### SpaceX's Starship

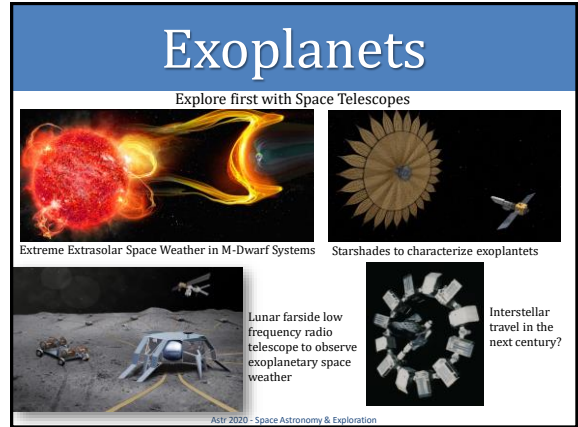


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## Closing Thoughts

**Ideally, a well-designed and executed, inspirational, sustainable space program will**

- Drive advances in science and technology;
- Expand opportunity for everyone, everywhere in space;
- Enhance and expand knowledge, education, innovation, and economic vitality;
- Advance our understanding of Earth and develop technologies to improve the quality of life on our home world.

We must begin with the *Why* which leads to the *How* and the *What* of space exploration. There is room for everyone!

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## What did we learn today?

- Why Do We Explore?
- The Elusive Why of Space Exploration.
- How do we explore?
- What Objects should we explore?
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