

On **May 27th**, humans will go into space (again). But what's different about this upcoming NASA launch is that it will be the first time **since 2011** that astronauts have left the surface of the Earth from the surface of the United States. And what's more, they'll be strapped on top of a rocket designed and built by the private company **SpaceX**.

Tune into Discovery Channel and use this companion discussion guide to spark meaningful conversation about the next era of space flight.

NASA & SPACEX: COUNTDOWN TO LAUNCH
Tuesday, May 26 at 10P ET

SPACE LAUNCH LIVE: AMERICA RETURNS TO SPACE
Wednesday, May 27 starting at 2P ET

Reusable Rockets are Awesome

- ☐ Why haven't we developed reusable rockets before?
- ☐ Are there limitations to reusable rockets?
- ☐ What makes a rocket "reusable" anyway?

TAKEAWAY: Reusable rockets require **extensive** automated control, something no human is capable of. By far, the most expensive part of the rocket is the engine, which is typically ditched in the ocean after every launch. By landing and retrieving the rocket after the main launch, the cost for access to space **drastically lowers**.

Human Spaceflight is Awesome

- ☐ Why has it been so long since astronauts launched from the United States?
- ☐ Can't robots do all this better?
- ☐ What will be the next goal in human spaceflight?

TAKEAWAY: The Space Shuttle was America's only vehicle for sending astronauts into space, and budget cuts and delays delayed its replacement to decades after it was needed. While we make extensive use of **robotic missions**, no probe can match the speed, intelligence, independence, and mobility of a real human exploring another world.

SPACE LAUNCH LIVE DISCUSSION GUIDE

Public/private Partnerships are Awesome

- ☐ Why are private companies so interested in space?
- ☐ Do private companies offer any advantages over government organizations?
- ☐ Is there a future in space for more private companies?

TAKEAWAY: Some private companies envision a future **business opportunity** in spaceflight, while others are purely in it for the fun (if you had a spare few billion dollars you just might do it too). Ironically, private companies can maintain long-term missions better than government agencies, since they are not beholden to congressional or administrative changeover.

Low Earth Orbit

- ☐ How are we taking advantage of space already?
- ☐ What will cheap access to space bring us in the future?
- ☐ Will I ever go to space?

TAKEAWAY: Communication satellites are a part of our everyday lives (in fact, you may have used one to read this), as well as putting the “S” in the GPS system. Companies like SpaceX are deploying **thousands** of satellites to provide broadband internet for...the whole world, while other companies like Bigelow Aerospace are investigating how to build **orbiting hotels**. Who knows what the future might bring when launching into space is as cheap as driving across town?

Exploring the Solar System

- ☐ Did Mars ever host life?
- ☐ What’s going on with the ocean worlds in the outer solar system?
- ☐ How did the Earth get here?

TAKEAWAY: We know so little about our home system. We know that **billions** of years ago Mars looked like Earth, with big oceans and gorgeous blue skies. Did life find a home there before all that water dried up? And the moons of the giant planets host more liquid water than the Earth does – but it’s locked under miles of rock-hard ice. What’s up with that? We don’t know, and only **continued exploration** can help us find the answers.