Science a-z DEBATE

OUTSIDE THE SOLAR SYSTEM

New Space Telescope

Purpose

To debate whether NASA should build a new space telescope to replace the aging Hubble Space Telescope

Background

There are many powerful telescopes on Earth. But they have a drawback—they must look at objects in space through Earth's atmosphere. The atmosphere blocks some types of energy. This makes some objects in space invisible from the ground. Other objects are distorted or unclear.

NASA is the U.S. government's agency in charge of space science and exploration. In 1990, NASA launched the Hubble Space Telescope into orbit around Earth. An orbiting telescope is above the atmosphere, so it gives scientists clear images of deep space that are not possible to obtain from Earth.

The Hubble Space Telescope is one of the most powerful tools astronomers have. They have used Hubble to see stars and exoplanets not visible from Earth. The telescope has helped astronomers prove that black holes exist. They have also used Hubble to watch new planets forming, and to figure out the age of the universe.

Situation

Hubble was only built to last 10–15 years. Shuttle astronauts have performed several upgrades and repairs. But Hubble will reach the end of its usefulness soon.

NASA wants to replace Hubble with a more powerful telescope. It will detect infrared energy as well as visible light. Many objects in space emit infrared energy that telescopes like Hubble cannot pick up. The new space telescope could cost more than $8 billion.

Proposal NASA should build a new space telescope to replace Hubble.

Photo: © iStockphoto.com/James Benet

Proposal: NASA should build a new space telescope to replace Hubble.

Pro Card

Who I am:

What's important to me:

Why I like this idea:

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Con Card

Who I am:

What's important to me:

Why I do not like this idea:

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Pro Card

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DEBATE

Outside the Solar System—Space Telescope

Proposal: NASA should build a new space telescope to replace Hubble.

Pro Card

Who you are: Dr. Gilda Galaxy, an astronomer
What's important to you: The discoveries that a space telescopes makes possible
Why you like this idea:
1. A telescope in space is necessary to see objects in deep space.
2. Discoveries made with the new telescope will excite people about space and the universe.

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Con Card

Who you are: Dr. Deepak Deepspace, a NASA scientist
What's important to you: Funding many NASA projects
Why you do not like this idea:
1. NASA has many worthwhile projects. The telescope should not get all the support.
2. Other NASA projects might be shortchanged or cut in favor of the telescope.

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Pro Card

Who you are: Denise Discovery, a NASA administrator
What's important to you: Maintaining the mission of the space agency
Why you like this idea:
1. A new telescope would support NASA's mission of scientific discovery.
2. The telescope lets people learn about deep space without traveling there.

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Con Card

Who you are: Terrell Taxpayer, a citizen
What's important to you: Using the nation's money wisely
Why you do not like this idea:
1. This new space telescope will cost billions of dollars at a time when the nation already has huge budget deficits.
2. The money can be more wisely used on important projects here on Earth.

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Pro Card

Who you are: Pat Progress, a U.S. Congressman
What's important to you: Keeping the United States first in space technology
Why you like this idea:
1. Even though NASA would share the telescope with scientists of other nations, American scientists would have priority.
2. You want to maintain NASA's leadership position in space research and technology.

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Con Card

Who you are: Frieda Fiscal, a U.S. Senator
What's important to you: Reducing spending
Why you do not like this idea:
1. You want to save money by continuing to maintain Hubble and using it for several more years.
2. You think that looking at faraway stars and galaxies has no practical use on Earth.

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