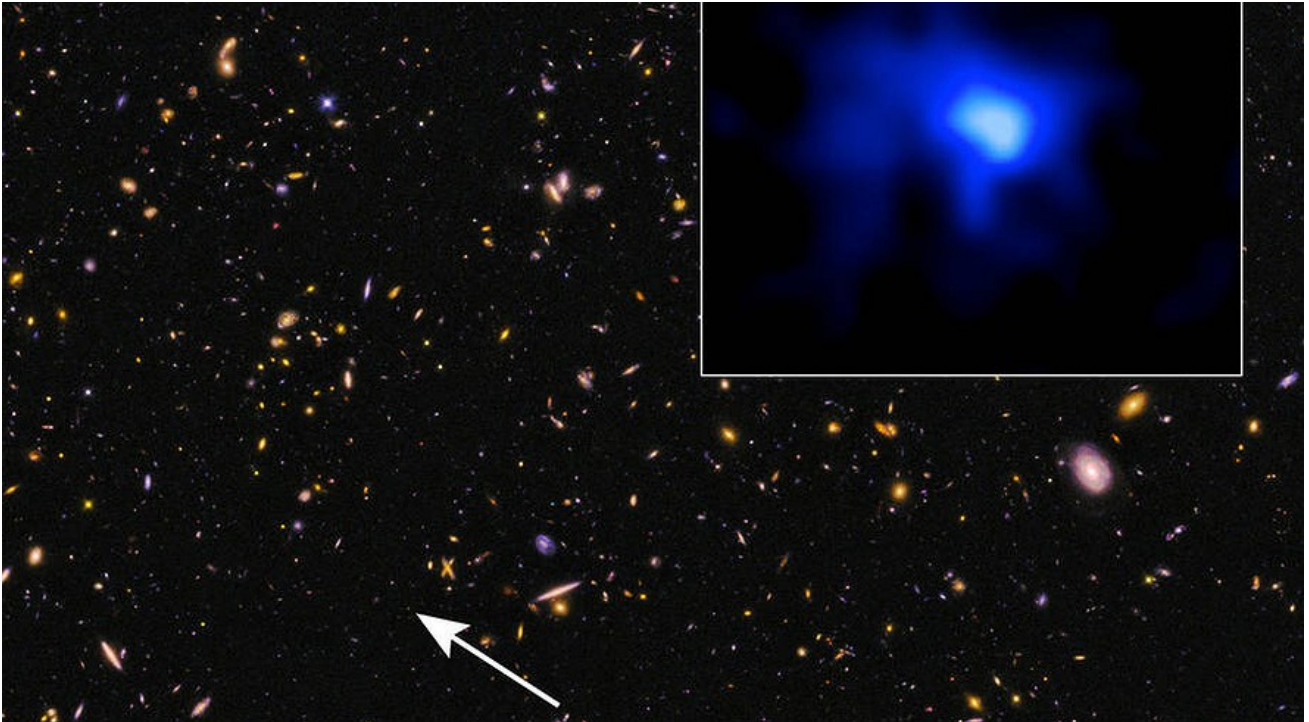


A bright, new galaxy might have answers to space questions

By Los Angeles Times, adapted by Newsela staff on 05.17.15

Word Count **604**



The galaxy EGS-zs8-1, the most distant galaxy yet seen, was discovered in images from the Hubble and Spitzer space telescopes. Photo: NASA

A team of scientists has discovered the oldest, most distant galaxy yet. A galaxy is a group of millions of stars and gas or dust. This one was spotted so far away that it broke a record.

This galaxy is surprisingly bright. It is located near the beginning of the universe. This could show us what the universe was really like when it was younger.

Since objects in space are so far away, distance is measured in light years. To see the new galaxy, we are looking back through almost all of time, said Garth Illingworth. He wrote a study about the newly discovered galaxy. He studies space and planets at a university in California. "It's really a galaxy in its infancy ... when the universe was in its infancy," he said.

It Has New Stars And It Is Bright

Looking at the universe is like looking back in time. When we look at the sun, we are seeing what it looked like eight minutes ago. The same thing applies for the light coming from the new galaxy. However, our snapshot of this distant galaxy is very old.

The galaxy is known as EGS-zs8-1. It is so far away that the light coming from it is very faint. Yet, compared with other distant galaxies, it is surprisingly alive and bright. It was forming new stars almost 80 times faster than the Milky Way, the galaxy that Earth is in. It had built up a lot of matter. It had built up mass equal to about 8 billion suns. That is more than 15 percent of the mass of the Milky Way. That was a lot for such a young galaxy. It had only been around for a few hundred million years. It had just been around for a fraction of the time that the Milky Way Galaxy has. The Milky Way is now more than 13 billion years old.

If it was a galaxy near the Milky Way today, it would be a bright blue color, Illingworth said. It would be blue from forming so many stars.

The Galaxy's Light

It's difficult to look for such faint galaxies. It is hard to tell if they are bright and far or dim and near. Scientists can usually figure out which one it is by measuring how much the light from its stars is stretched. When starlight is stretched it's called "redshifting." The universe is growing faster and faster right now. The farther away a galaxy is, the faster it is moving. As a result its light will be more stretched, or "redder."

Scientists studied the faint light from this galaxy using NASA's Hubble and Spitzer space telescopes. NASA is the U.S. space agency. The two telescopes are in space. They saw that EGS-zs8-1 is very bright. It seemed too bright. It was hard to believe it was coming from as far away as the telescopes showed.

Not Done Searching

To figure it out, they used another telescope in Hawaii. They searched for hydrogen, a type of gas. They looked in the starlight known as the Lyman-alpha line.

It is a line that helps scientists to guess distances, Illingworth said. It helped to prove how far away the galaxy is.

Scientists are doing more studies. Many are waiting for NASA's James Webb Space Telescope to be finished in 2018. Scientists may soon find galaxies even closer to the birth of the universe than this new record-breaker.

"You don't get to be record holder very long in this business," Illingworth said, "which is good because ultimately we are trying to learn about the universe. So more is better."

Quiz

- 1 Select the paragraph from the introduction [paragraphs 1-3] that would make a good summary of the article.
- 2 Which sentence from the section "Not Done Searching" helps explain the main idea of the article?
- (A) To figure it out, they used another telescope in Hawaii.
 - (B) They looked in the starlight known as the Lyman-alpha line.
 - (C) Many are waiting for NASA's James Webb Space Telescope to be finished in 2018.
 - (D) Scientists may soon find galaxies even closer to the birth of the universe than this new record-breaker.

- 3 Read the sentence from the section "It Has New Stars And It Is Bright."

It would be blue from forming so many stars.

Which word could replace "forming" in the sentence above?

- (A) including
 - (B) creating
 - (C) having
 - (D) showing
- 4 Read the selection from the article.

It's difficult to look for such faint galaxies. It is hard to tell if they are bright and far or dim and near.

Which word from the selection has a similar meaning to "faint"?

- (A) bright
- (B) far
- (C) dim
- (D) near

Answer Key

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Paragraph 0:

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