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JAMES WEBB TELESCOPE

Abstract

December 24, 2021 can be marked as the day the world changed. Why? Because on this date, the largest and most advanced telescope is sent to the sky. To understand how important this event is we must first look at the knowledge about space. Even on the clearest night, when we look at the sky we can see 5000 stars naked. And this continued until the 2000s. Because the human eye is small and the world's atmosphere reduces vision. Then a new eye was created that was 100 times larger than the human eye. This is Hubble. Hubble views an area the size of the moon in the sky and about 2000 galaxies are observed here. In 2003, an experiment was conducted and it was determined that there are hundreds of thousands of galaxies and millions of stars in each of galaxies. And a new telescope is being created to explore the galaxy deeper. James Webb Space Telescope. This new invention is much more advanced than the Hubble Space Telescope and provides more extensive information about space. The James Webb Space Telescope is a joint project of NASA, The European Space Agency (ESA) and The Canadian Space Agency (CSA). Let's talk about the external appearance. Although JWST has about half the mass of the Hubble Space Telescope, its main mirror, formed by the combination of 18 beryllium-coated hexagonal mirrors, is larger than Hubble's, with a diameter of 6.5 meters and a surface area of 25.4 square metres. This mirror must be driven by very sensitive motors. These mirrors are surrounded by shields. The shields consist of 5 layers as thin as a paper. These mirrors are about the size of a basketball court with shields. When it went to space, its outer layer reaches an enormous temperature of 110°C. In the part below 5 layers, the temperature drops below -200°C. Because the faintest lights in the farthest reaches of the universe must operate at -267°C to set up the waves. It is such a sensitive device that it can capture even the light it produces. These galaxies, described in a new study based on Webb's first data release, are so far away that they appear only as tiny reddish dots to the powerful telescope. By analyzing the light emitted by these galaxies, astronomers established that they were viewing them in our universe's infancy only 500 to 700 million years after the Big Bang. I think that this telescope is a new discovery for humanity. That is, it shows how far humanity has developed technology.