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Why the Hubble Space Telescope?

.synonyms

Introduction article

.description

A short description of the telescope and its purpose.

.contents

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Imagine trying to see the clouds from the bottom of a muddy pond. That is how astronomers describe their view of the stars and planets through the Earth's atmosphere. As advanced as astronomical technology has become, our capabilities will be forever limited by the turbulence and brightness of our atmosphere. Even the finest ground observatories, such as the one at Mt. Palomar, California, are restricted by these conditions. In addition, the selective absorption of the atmosphere, which lets in visible light and radio waves emitted by stars and planets, but excludes most other forms of energy, limits our knowledge of celestial bodies.

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To open the universe to observation in infrared, ultraviolet, x-ray, gamma-ray, and cosmic ray energies, NASA launched numerous satellites, each helping to explain different processes behind astronomical phenomena. But, to date, the value of these orbiting observatories has been limited by their relatively small size and limited spectral capability.

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Now, for the first time, a ground-sized observatory will be placed in orbit to view the universe in visible and ultraviolet light unobscured by Earth's atmosphere.

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Called the .~ Edwin P. Hubble Space Telescope~, the new observatory is a NASA-wide and international .~ cooperative effort~. Its name honors Edwin P. Hubble (1889-1953), who discovered that the universe extends far beyond the Milky Way galaxy.

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The .~ Hubble Space Telescope~ will weigh about 25,000 pounds (11,300 kg) and will have a length of 43 feet (13.1 m) and a diameter of 14 feet (4.26 m). Its major components are an .~ optical telescope assembly~, five .~ scientific instruments~, and a .~ support systems module~.