

A Look At The Wide Variety Of Telescopes Used To View Into Space

When most people think of telescopes, they think of the tube-shaped refractor or reflector telescopes used by amateur astronomer. Others think big and remember that the great Hubble Telescope is out there in space, instead. In fact, there are these and many other different types of telescopes. The visual, or optical, telescopes have been around the longest. The first refracting telescope was constructed in about 1570. Galileo did some work on it and made it better. He improved it so much in fact that he ended up with a 20-power telescope. With it, he could see some of the moons of Jupiter. Isaac Newton invented the first reflecting telescope about one hundred years after the first telescope, in 1671. In the 1930s, Karl Jansky was interested in the short-wave radio interference that people doing Trans-Atlantic communications noticed. After much study, he ended up building a rotating radio telescope. With it he discovered how many phenomenons on earth created the static. However, he also pulled in radio noise from the Milky Way. Radio telescopes need to be very large if they are going to override the earthly radio noise to capture astronomical radio signals. That is why the Very Large Array exists in New Mexico. Its 27 large antennas work together electronically to bring in cosmic information. Infrared and ultraviolet are other types of telescopes. Because the light used for these telescopes is affected by the Earth's atmosphere, you will often see them on mountaintops. They are sometimes also launched into space. The first X-ray telescope sent into space by NASA was the Uhuru, in 1970. To reflect the X-rays, paraboloidal mirrors and hyperboloidal mirrors are used. The mirrors are coated with metals, such as gold. They can only reflect at very shallow angles. Gamma ray telescopes are also used in space. These telescopes cannot use mirrors, because mirrors cannot deflect gamma rays. The way light is detected is through the electrons that are expelled by the gamma rays. Gamma ray detectors use crystals or liquids to accept this light, which is then recorded. The Hubble Telescope has been at the top of the size range for space-based telescopes. It has given thousands of fantastic images for scientists and the rest of the world to study and enjoy. Yet, astronomers are looking to build a telescope that would be 100 times more powerful than the Hubble Telescope. This telescope will be based on the earth instead of in space and will be a Giant Segmented Mirror Telescope. The reason there are so many different telescopes needed is that each covers a different part of the electromagnetic spectrum. There is no one telescope that will show both the radio frequencies and the higher X-ray frequencies. To get a clear observation of an object in space, it is important to see it in as many different wavelengths as possible. The future of the telescope is in the invention of scopes that can capture and record several wavelengths at once. Some work has been done in this direction, but as time goes by, it will become even more important.

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