An Eye in Space

The Hubble telescope was launched into space in 1990 and began contributing a lot of information to several scientific fields, including astronomy and meteorology. Before Hubble, large and powerful telescopes had been located on Earth, so their view of the heavens was geocentric, or Earth-based. The atmosphere can cause many distortions to the images seen from a telescope on Earth. Observations from a satellite 569 kilometers above the Earth and outside the atmosphere offer much better views.

Telescopes like the Hubble work by collecting large quantities of light, much more than the human eye can collect. Large diameter mirrors inside bounce the light from the primary mirror to the secondary one. The secondary mirror then directs the light back through a hole in the center of the primary mirror. The hole leads to the scientific instruments.

One of the instruments is the Wide Field Camera, which sees three types of light. Looking at the different lights in space can help scientists figure out the origin of objects in the universe. Another instrument in the Hubble telescope is a spectrograph, a device that breaks light into its colors. This gives scientists several types of information about a body being studied. A third instrument is a spectrometer, which gives information about the thermal properties of objects in space. There is another type of specialized camera and an additional spectrograph on board, as well.

The Hubble telescope got off to a bumpy start, and astronauts have flown space shuttles on several repair missions over the lifetime of the satellite. But most agree that the telescope has been a huge success, collecting vast quantities of data and advancing our knowledge of the universe.