

regular enquiry into the Universe. He theorised that the Earth was the centre of the Universe and that the Sun and other heavenly bodies revolved around it. There have been several theories since then. In 1543, Polish astronomer Copernicus argued that the Sun, and not the Earth was the centre of the Universe. Though the Copernican theory changed the centre of the Universe it did not change the extent which was still equated with the solar system. It took another three and half centuries before our ideas changed further.

By 1805 telescopic studies made by the British astronomer William Herschel (1738-1822), made it clear that the Universe was not confined to the solar system. The solar system itself was only a part of a much vaster star system called the galaxy. The Universe thus became quite extensive comprising

millions of stars scattered about the Milky Way. But our vision of the Universe did not end there.

As the 20th century began, it seemed that the Milky Way galaxy with its cluster of over a hundred billion stars, planets, their attendant satellites, the Magellanic clouds, was the Universe. In 1925 American astronomer Edwin P. Hubble (1889-1953) pointed out that there are other galaxies in the Universe and that the Universe actually consists of millions of galaxies like the Milky Way. In 1929 Hubble proved that these galaxies are flying away from each other and that the farther they are, the faster they fly.

The movement of a star or a galaxy affects its light as seen by an observer.

If the star is moving towards the observer, its light will be shifted towards