More detailed information can be found on the Gaia web site: http://sci.esa.int/Gaia

Hipparcos and Gaia

In 1989, the European Space Agency launched Hipparcos, a satellite that has revolutionised our knowledge of the Galaxy to which we belong, the Milky Way. It measured very precise distances and positions of stars near the Sun to create a three-dimensional picture of that region of the Galaxy. The stereoscopic images shown here have been created using data from the Hipparcos mission. ESA plans to launch, in spring 2012, a satellite called Gaia which will also measure distances and positions of stars, but now to much higher accuracy and including stars right across our Milky Way and beyond.

How to view the 3-D images

Each pair of images in this booklet represents a star field of about 6 by 6 degrees. For viewing these images in three dimensions with the "fused" free-eye imaging method, the following recommendations may help. View the page from a distance of about 30-50 cm under good and uniform lighting conditions. Focus on the images, but "relax" the eyes so that they converge at infinity (imagine that you are staring through the paper at a distant point, so that the left eye observes and focuses on the left image, while the right eye focuses on the right image). Fix on a particular object until the depth effect appears: when it does, the results are dramatic.

Arcturus

Arcturus lies at a distance of about 36 light years. It is the brightest star of the northern hemisphere and the fourth brightest star in the entire sky. In Greek, Arcturus means "Guardian of the Bear", a name given to this star because of its proximity to the Ursa Major (Great Bear) constellation. Arcturus belongs to the Boötes constellation, which forms a kite-shaped pattern in the sky.

The easiest way to find Arcturus is to start with the Big Dipper (the Plough). Follow the handle of the Big Dipper as it arcs and keep the arc until you come to a bright star: that's Arcturus. "Follow the arc to Arcturus", as the old stargazer's saying goes.

The Praesepe cluster lies at about 557 light years and has an estimated age of 5.6 million years. The Praesepe cluster is a group of relatively bright stars that are located in the constellation Cancer. It is commonly referred to as the Beehive cluster because of its fuzzy, round appearance.

The Pleiades cluster lies at about 375 light years and is around 100 million years old. This is very young as far as star ages are concerned. Our Earth is much older, with an estimated age of 4.5 billion years. The Pleiades cluster is located in the constellation Taurus and is known for its bright, young stars.

In Greek mythology, the Pleiades were 7 sisters (Alcyone, Maia, Electra, Merope, Taygete, Celaeno, and Sterope), daughters of Atlas and Pleione. The great hunter Orion was in love with the young women and pursued them for many years. Zeus, Envoy of the Gods, created a star cluster in their honor and transformed them into doves to help them escape. They flew into the sky forming a cluster of stars.