

THE NIGHT SKY

MARCH 2010

What a beautiful sight it is to walk out on a March evening and see the Milky Way directly overhead. From a dark corner of the backyard, it really does resemble a river of stars.

As we look up we see some of the brightest stars in the sky. Rigel, Sirius, Canopus have been with us throughout summer. In the south, the Southern Cross is rising higher in the sky with each passing day, whilst the constellations that will share the autumn nights with us, like Leo and Corvus, are starting to make their presence felt in the east.

You can find Hydra, the water snake, slithering across the eastern sky. It's the longest constellation in the heavens; so big that it takes more than seven hours for the whole snake to rise.

In Greek mythology, Hydra was the nine-headed serpent that Hercules killed as one of his 12 labors. Even earlier, the Babylonians knew these stars as a dragon, while the Egyptians saw it as a celestial reflection of the Nile River.

Hydra is a long, skinny, twisting constellation. Even with dark skies and a good star chart, it's tough to follow, because its stars are faint.

Even its brightest star, Alphard, isn't much to brag about. Alphard is a red-giant star, about 175 light-years away. Once, it was much like our own Sun. But it's nearing the end of its life, so it's undergoing some changes. It's puffed up to many times its former size, so its outer layers are thin, cool, and red. Eventually, the outer layers will puff away, leaving behind only its dense, hot core. The Sun will go through the same changes, in about five billion years.

The two brightest stars in all the night sky line up high in the sky during March. The brighter star is Sirius. It's known as the Dog Star because it's in the constellation Canis Major, the big dog. The other star is Canopus, in the constellation Carina. Sirius and Canopus are quite different kinds of stars.

Sirius is similar to our own Sun. It's bigger and hotter than the Sun, but it's in the same phase of life; it's a sedate, middle-aged star that's "burning" its vast reserves of hydrogen. It appears so bright mainly because it's one of our closest stellar neighbours, at a distance of less than nine light-years.

Canopus, on the other hand, is quite different from the Sun. It's a supergiant; it is many times bigger and heavier than the Sun. It's also more than 10,000 times brighter than the Sun, so it's easily visible across more than 300 light-years of space. It's nearing the end of its life, and within the next few million years should explode as a supernova. When that happens, Canopus will briefly outshine everything else in the sky except the Sun.

Over in the south-eastern sky, the Southern Cross (Crux) is easy to see, as are the two Pointers, just below it. The lower, and slightly brighter of the two, Alpha Centauri is the closest star to the Earth other than our Sun. Its light, travelling at 300,000 kms/sec, takes approx 4.25 years to complete its journey. Alpha Centauri is a spectacular sight in a telescope. It is in fact made up of two beautiful yellow suns, just like ours, that rotate around a common centre of gravity over a period of approx 80 years. In a telescope they sparkle just like a pair of diamonds against the inkiness of space. A third, but much fainter companion to these two, lies about a degree away in the sky, and is impossible to see without a reasonably large telescope.

A very bright red "star" shines in the northern sky. Only, it's not a star. It's the planet Mars. The red planet, with an equatorial diameter of a little more than 6,500 kms, is just over half the size of the Earth. Mars has long been a part of human history, thought, and fiction. Observed from the earliest days of astronomy as a wandering star in the sky, Mars was a god to many civilizations, its menacing red colour associated with blood and war.

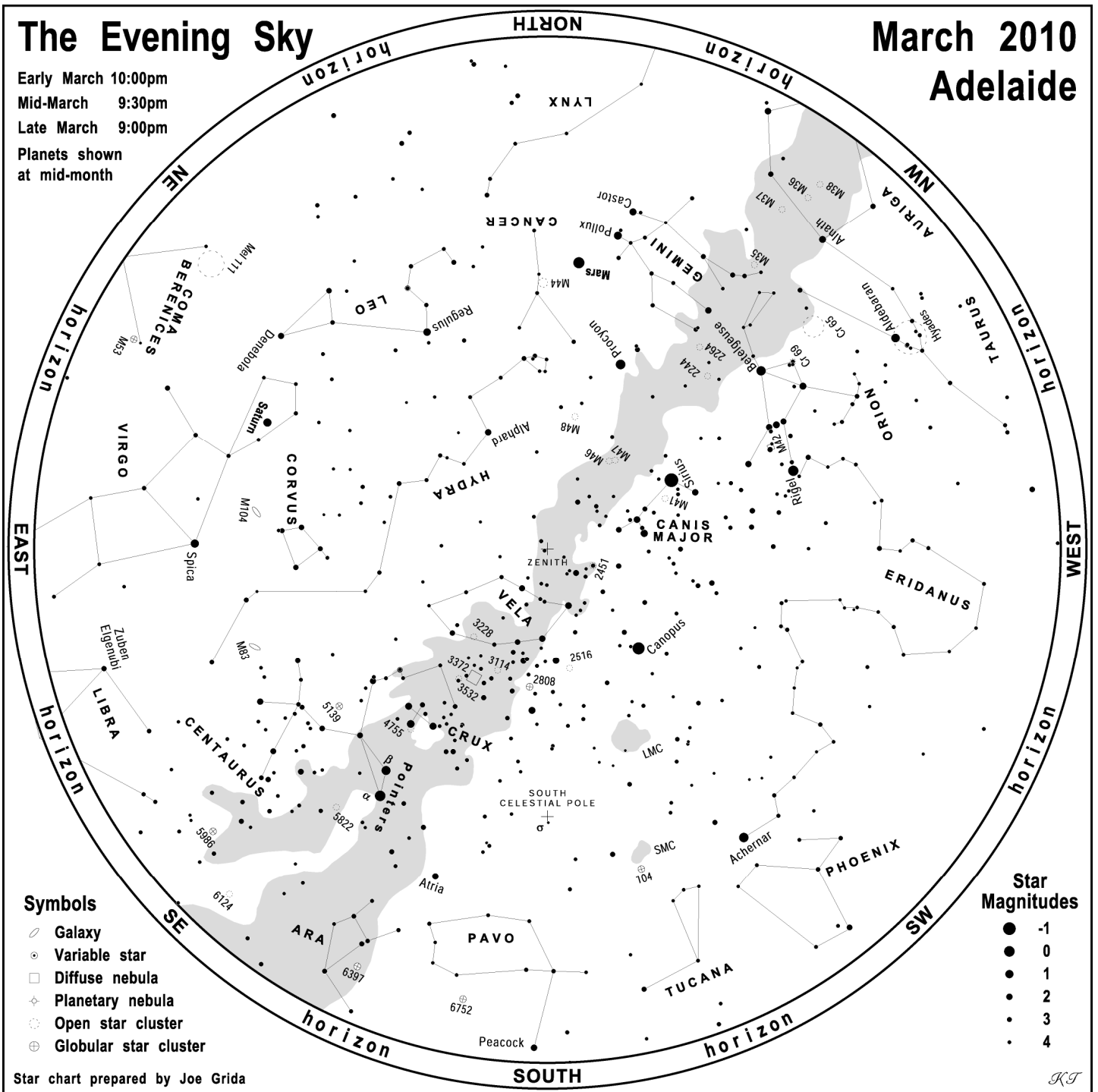
Other than our own Moon, Mars has attracted more exploration than any other object in the solar system. And you can perform your own exploration of the red planet. The backyard astronomer with a medium sized telescope will be able to discern quite a bit of detail on the surface of Mars. The progress of howling dust storms around the equatorial regions, or the shrinking of the polar ice cap as summer advances, can all be seen with a telescope.

The Moon is Full on the 1st of March, at Last Quarter on the 8th, New on the 16th, at First Quarter on the 23rd, and Full again on the 30th of March.

The Evening Sky

March 2010
Adelaide

Early March 10:00pm
Mid-March 9:30pm
Late March 9:00pm
Planets shown
at mid-month



The Pleiades (M45) (Seven Sisters) Distance: 435 Light Years

The rich blue clouds and delicate tendrils of reflection nebulae surrounding the brightest members have their origin in an unrelated molecular cloud and do not represent the ancestral cloud which gave rise to the Pleiades. The proximity of this great cluster allows a close up view of a young open cluster and the fascinating interplay of a moving star cluster with the interstellar medium.

Although the core of the cluster contains some 100 bright stars, mostly hot A and B types, the total number of stars may be closer to 400 as many lower mass members have been identified recently. The central core radius of the cluster is only about 4.5 light years but the remote outer regions of the cluster may extend out as far as 52 light years from the centre. The brighter members of the cluster are blue stars with surface temperatures of about 20,000 degrees.