



The chart is oriented for  
 Feb. 15 at midnight NZDT  
 Mar. 1 at 11 p.m. "  
 Mar. 15 at 10 p.m. "  
 April 1 at 9 p.m. "

### Evening sky in March 2016

To use the chart, hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge. As the earth turns the sky appears to rotate clockwise around the south celestial pole (SCP on the chart). Stars rise in the east and set in the west, just like the sun. The sky makes a small extra westward shift each night as we orbit the sun.

Jupiter is the 'evening star', appearing in the east at dusk and crossing the north sky through the night. Sirius is the brightest true star, northwest of the zenith. Orion, containing 'The Pot', is below Sirius in the northwest sky. Canopus, the second brightest star, is southwest of overhead. The Southern Cross and Pointers are midway up the southeast sky. Nearby galaxies the Clouds of Magellan, LMC and SMC, are high in the southern sky. Mars and Saturn (not shown) rise in the late night sky. Venus, and Mercury in early March, are in the dawn sky.

## The Evening Sky in March 2016

Golden **Jupiter** appears in the east at dusk, the brightest 'star' in the sky. At midnight it is due north. By dawn it is low in the west. Bright stars are overhead and down into the southeast evening sky. Jupiter is the biggest planet by far. Its mass is greater than all the other planets put together. Any telescope shows Jupiter's disk with its four bright 'Galilean' moons lined up on either side. Sometimes one or two moons can be seen in binoculars, looking like faint stars close to the planet. Jupiter is 660 million km from us in March. The Moon is near Jupiter on the 21st and 22nd.

Northwest of overhead is **Sirius**. It is the brightest true star in the sky but fainter than Jupiter. Southwest of the zenith is **Canopus**, the second brightest star. Below Sirius are bluish **Rigel** and orange **Betelgeuse**, the brightest stars in **Orion**. Between them is a line of three stars: Orion's belt. To southern hemisphere star watchers, the line of stars makes the bottom of 'The Pot'. Orion's belt points down and left to a V-shaped pattern of stars. This makes the face of **Taurus** the Bull, upside down to us. The orange star **Aldebaran** is at one tip of the V. 'Aldebaran' is Arabic for the eye of the bull. Continuing the line from Orion down and left finds the **Pleiades** or **Matariki** star cluster. It is about 440 light-years away.

**Sirius** is the brightest star both because it is relatively close, nine light years\* away, and 23 times brighter than the sun. **Rigel** is a bluish supergiant star, 40 000 times brighter than the sun and much hotter. It is 800 light years away. Orange **Betelgeuse** is a red-giant star, cooler than the sun but much bigger and 9000 times brighter. It is 400 light years from us.

Near the north skyline are **Pollux** and **Castor** marking the heads of **Gemini** the twins. Above and right of them is the star cluster **Praesepe**, marking the shell of **Cancer** the crab. Praesepe is also called the Beehive cluster, the reason obvious when it is viewed in binoculars. It is some 500 light years from us.

**Crux**, the Southern Cross, is in the southeast. Below it are Beta and **Alpha Centauri**, often called 'The Pointers'. Alpha Centauri is the closest naked-eye star, 4.3 light years away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away. **Canopus** is also a very luminous distant star; 13 000 times brighter than the sun and 300 light years away.

The **Milky Way** is brightest in the southeast toward Crux. It becomes broader lower in the southeast toward **Scorpius**. Above Crux the Milky Way can be traced to nearly overhead where it fades. It becomes very faint in the north, right of Orion.

The Clouds of Magellan, **LMC** and **SMC** are high in the south sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away.

Mars and Saturn (not shown on the chart) appear in the late night sky. Mars rises after 11 pm, a little south of due east. It looks like an orange-red star. Well to its right is the star Antares, also orange but a bit fainter than Mars. 'Antares' is Greek for 'rival to Mars'. Now Mars is brighter than its rival and will continue to brighten as we catch up on it. Over the month Mars will move down and right as it passes Antares.

Saturn is directly below Antares, looking like an off-white star a little brighter than Antares. Saturn stays put through March, rising a little earlier each night. A telescope magnifying 20x shows Saturn's rings. By the end of the month Mars, Antares and Saturn make a large triangle in the east at 11p.m.

Venus, the brightest planet, rises due east around dawn. At the beginning of the month Mercury is below and right of Venus. Mercury slips lower as it moves to the other side of the sun. It disappears mid-month.

A total solar eclipse occurs on March 9 but is not seen from New Zealand. The moon's shadow crosses Indonesia and the western Pacific. On March 23-24 the full moon grazes the edge of the Earth's shadow. Around midnight the top edge of the Moon will look a little darker than the lower edge.

\*A **light year (l.y.)** is the distance that light travels in one year: nearly 10 million million km or  $10^{13}$  km. Sunlight takes eight minutes to get here; moonlight about one second. Sunlight reaches Neptune, the outermost major planet, in four hours. It takes four years to reach the nearest star, Alpha Centauri.