The November Night Sky

As spring proceeds the sun sets later, giving shorter and warmer nights for observing the night sky.

Bright planets, Venus, Jupiter and Saturn (see below), light up the western evening sky while bright stars appear in the east.

Canopus, the second brightest 'true' star is well up the southeast sky at dusk. Sirius, the brightest star, rises a little south of east. It appears in the later evening at the beginning of the month. By month's end it is in the sky at dusk, twinkling like a diamond as the air disperses its white light. Right of Sirius is the triangle of bright stars that make the big dog's hind quarters.

Left of Sirius the constellation of Orion rises late in the evening and dominates our night sky after midnight. 'The Pot' is at its centre, with bluish supergiant Rigel above and orange red-giant Betelgeuse below. Left again is orange Aldebaran, at one tip of a triangular group called the Hyades cluster. Hyades and Aldebaran make the upside down face of Taurus the bull. Still further left is the star cluster Matariki, also called Pleiades, The Seven Sisters, Subaru … . Most eyes see 6 stars; binoculars show many more. The cluster is 440 light years\* away and around 70 million years old.

The Milky Way is seen low in the sky, visible around the horizon from the northwest, through west and south and around into the eastern sky. It is our edgewise view of the galaxy, the pancake of billions of stars of which the Sun is just one. The broadest, brightest hub of the galaxy lies in the west, 30 000 light years away, mostly hidden by clouds of smoke-like dust. The thin nearby edge of the Milky Way is below Orion on the opposite side of the sky.

Low in the south are the Pointers, Beta and Alpha Centauri, and Crux the Southern Cross, upside down. In some Maori star lore the bright southern Milky Way makes the canoe of Maui with Crux being the canoe's anchor hanging off the side. In this picture the hook of the Scorpion's tail, left of Venus, is the canoe's prow and the Clouds of Magellan are its sails.

The Clouds of Magellan, (Large, LMC and Small, SMC), high in the southern sky, are two small galaxies about 160 000 and 200 000 light years away, respectively. They are easily seen by eye on a dark moonless night. The larger Cloud is about a quarter of the mass of the Milky Way galaxy and SMC somewhat less – but that's still billions of stars in each. The globular star cluster 47 Tucanae looks like a slightly fuzzy star near the top-right edge of the SMC. It is 'only' 16 000 light years away and merely on the line of sight to the SMC. Globular clusters are spherical clouds of stars many billions of years old.

Around the end of November, as soon as the sky is dark, the constellation of Pegasus is readily identified. Its notable feature is its large square shape, commonly called the ‘Great Square of Pegasus’. Off the lower right-hand corner of the Great Square you may pick out the famous Andromeda Galaxy (M31), very low in the north. It appears as a spindle of light, faintly visible to the eye in a dark sky and easily seen in binoculars. It is similar in shape to our galaxy but is a little bigger and nearly three million light years away. Unfortunately, it never rises high in the New Zealand sky and it’s a challenge to see from Southland.

An eclipse of the Moon occurs on November 19. While it’s technically a partial eclipse, about 97% of the Moon’s face will lie in the Earth’s shadow at peak eclipse.. The Moon will be edging into Earth's inner shadow at moonrise. It will be mostly in the shadow at 10 p.m., just the top edge will still be bright. It leaves the inner shadow, the umbra, at 11:47. It is clear of the outer shadow, the penumbra, at 1:04 a.m.

The Taurid meteor showers peak until mid-November. They’re sometimes called the [Halloween Fireballs](https://cosmicpursuits.com/381/the-halloween-fireballs/). You can see these bright, slow-moving fireballs at essentially any time of night. Expect a modest 5-10 meteors an hour.

And auroral activity has been picking up as the Sun grows more active in its 11-year cycle.

**MERCURY**: Mercury makes a brief appearance in the pre-dawn sky, very low in the east, but very hard to see.

**VENUS**: Soon after sunset brilliant Venus appears in the west and is visible for up to 3 hours each evening. Venus will be close to the Moon on 08 November (conjunction). Venus isn't much in a telescope - it looks like a featureless crescent Moon.

**MARS**: Mars returns to the dawn twilight in late November. Very low, south of east, Mars is difficult to see.

**JUPITER & SATURN**: In November Jupiter & Saturn are firmly in the west and lining up above dazzling Venus. Jupiter is brighter and red, Saturn is paler and yellow, Saturn below Jupiter. Jupiter's four bright moons can be seen in a telescope. The Moon is close to Saturn and Jupiter 10-12 November.

<https://www.rasnz.org.nz/in-the-sky/the-evening-sky>

<https://cosmicpursuits.com/night-sky-this-month/>

<https://www.stardome.org.nz/astronomy/star-charts/>