**The November Night Sky**

Star groups and single stars are coloured at 1st mention

Takurua Sirius, the brightest true star, is low in the east twinkling colourfully. By the end of the month, it is rising at sunset. Atutahi Canopus, the second-brightest star, is in the southeast. The 2 stars twinkle like diamonds as the air disperses their white light. Both Canopus and Sirius are brighter than our sun – Sirius 23 times brighter and Canopus 13 000 times brighter. Sirius appears brighter than Canopus because it is closer (9 light years compared with 300 LY).

Left of Sirius is the constellation of **Orion**, with 'The Pot' at its centre. Puanga Rigel, a bluish supergiant star, is directly above the line of three stars; orange Pūtara Betelgeuse, a red-giant star, is straight below. Left again is orange Taumatakuku Aldebaran. It is at one tip of a triangular group called the Matakaheru or the Hyades cluster. The Hyades and Aldebaran make the upside-down face of Taurus the bull. Still further left is the Matariki Pleiades star cluster, also called the Seven Sisters and Subaru. Pleiades is linked to Halloween in the Northern Hemisphere but here, on the other side of the world, we prepare for summer. Six stars are visible to most eyes. Dozens are seen in binoculars.

Te Māngōroa The Milky Way is low in the sky, visible around the horizon from the northwest, through south into the eastern sky. The broadest, brightest part is in the constellation of Kaikōpere Sagittarius, to the right of the Scorpion's sting. The Milky Way is our edgewise view of the galaxy we are part of. Low in the south are the Pointers, Ranginui Beta and Hakihea Alpha Centauri, and Māhutonga Crux the Southern Cross, now upside down. Alpha Centauri is the closest naked-eye star; 4.3 LY away.

In some Māori 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 Scorpion's tail can be the canoe's prow and the Clouds of Magellan are the sails.

The winter constellation of Scorpius is low in the sky with Rehua Antares disappearing below the horizon as the group starts to move out of sight. At this time of year Scorpius is known as te tauihu the prow of the waka of Tamarereti. The Milky Way is the canoe, with Orion the stern & Matariki the feathers & the wake left behind. From the bow, the anchor rope is marked by the Pointers and the Southern Cross represents the great stone anchor or Te Punga that keeps the canoe of Tamarereti in its place. [PTO]

Ngā Pātari The Clouds of Magellan, Large and Small (LMC and SMC**)**, high in the southern sky, are two small galaxies about 180 000 LY away. They are easily seen by eye on a dark moonless night. The globular star cluster 47 Tucanae looks like a slightly fuzzy star near the top-right edge of the SMC. Globular clusters are spherical clouds of ancient stars.

Very low in the north is the Andromeda Galaxy, easily seen in binoculars in a dark sky, and faintly visible to the eye. It is like our Milky Way Galaxy and nearly three million LY away.

Comet C/2023 A3 (Tsuchinshan–ATLAS) lived up to expectations last month and still lingers in the evening sky. Look for the comet in the western horizon just after sunset: find the bright planet Venus, then look below and to the right for a fuzzy patch. Best seen with binoculars from a west coast beach.

Visible planets all rise in the east & set in the west:

KŌPŪ VENUS appears soon after sunset (or before, if you know where to look) as the bright evening star. It sets in the southwest around 11:20 pm at the beginning of the month and near midnight at the end. The crescent Moon will be near Venus on the 4th and 5th.

WHIRO MERCURY is below and left of Venus and the brightest object in that area (you can tell it is not a star because it doesn’t twinkle). It sets around 10 pm at the beginning of the month and 10:20 at mid-month. A thin Moon will be near Mercury on the 3rd. Mercury fades and slips lower in the twilight at the end of November. Antares, the heart of the scorpion, will be left of Mercury on the 11th .

MATAWHERO MARS rises in the northeast around 2 a.m. at the beginning of the month and 12:30 at the end. It is reddish-orange and the brightest object in that part of the sky.

KŌPŪNUI JUPITER rises in the northeast at the beginning of the month, around 11:20 pm as Venus is setting in the southwest and by dawn Jupiter is low in the northwest sky. It is the brightest object in the late-night sky and shines with a steady golden light. Any telescope will show its disk and four Galilean moons lined up on each side. By the end of the month, it will be in the sky at dusk. The Moon is near Jupiter on the 17th.

RONGO SATURN is northwest of the zenith at dusk looking like a medium-bright star with a cream tint. In a telescope it looks like a ball with a spike through it as the ring is nearly edge-on to our view. The Moon will be near Saturn on the 10th and 11th.

Refs

Notes from Alan Gilmore at Mt St John observatory <https://milky-way.kiwi/the-night-sky/november-2019/>

<https://cosmicpursuits.com/night-sky-this-month/> <http://www.pixieplots.co.nz/Maori-Star-Names>



<https://www.facebook.com/photo.php?fbid=2723412844541788&id=1983483878534692&set=a.2014271958789217&locale=te_IN> Christchurch astro tours

The pūrakau of Te Waka o Tamarereti <https://milky-way.kiwi/the-night-sky/the-night-sky-for-november-and-te-waka-o-tamarereti/>