

Star watching on Waiheke

Our monthly star watching column highlights celestial objects accessible for naked eye or small binocular viewing. Nalayini Davies will shine a spotlight on a different celestial object each month and explain terminology to improve our enjoyment of astronomy.



As Earth continues its orbit of the Sun, another month passes and the sky shifts a little more to the west. Now it reveals Sagittarius, another new seasonal constellation, close to the eastern horizon, as Orion slips away in the west only to appear at dawn. The system of

calendars (for all cultures) is derived from the orbit of Earth around the Sun, and this month marks the start of the Maori New Year with the appearance of the Pleiades star cluster also known as Matariki (our spotlight this month), in the pre-dawn sky.

The June night sky is only a little different to the May night sky - the Milky Way dominates, Jupiter remains the brightest star-like object in the sky and many of the now familiar bright stars from previous columns are still present.

When is the best time for viewing?

Astronomical twilight ends around 6.45 pm this month. As we are viewing the sky from Waiheke, which is a dark sky location, almost all objects discussed here can be seen on any clear night. From 18 - 25 June the moon rises after midnight and sets before astronomical twilight, so this period will be free of moonlight and will offer the very best viewing.

Star chart

The Star Chart shows the celestial objects easily visible mid-month around 8 pm. When you go outside, raise this page over your head with North pointing to the north and you will find the chart points to the correct directions.

Planets

Jupiter (brightest in the sky) and Saturn (brightest in the east) appear star-like. A telescope will

easily reveal Jupiter's large moons and Saturn's rings and largest moon (Titan).

Constellations

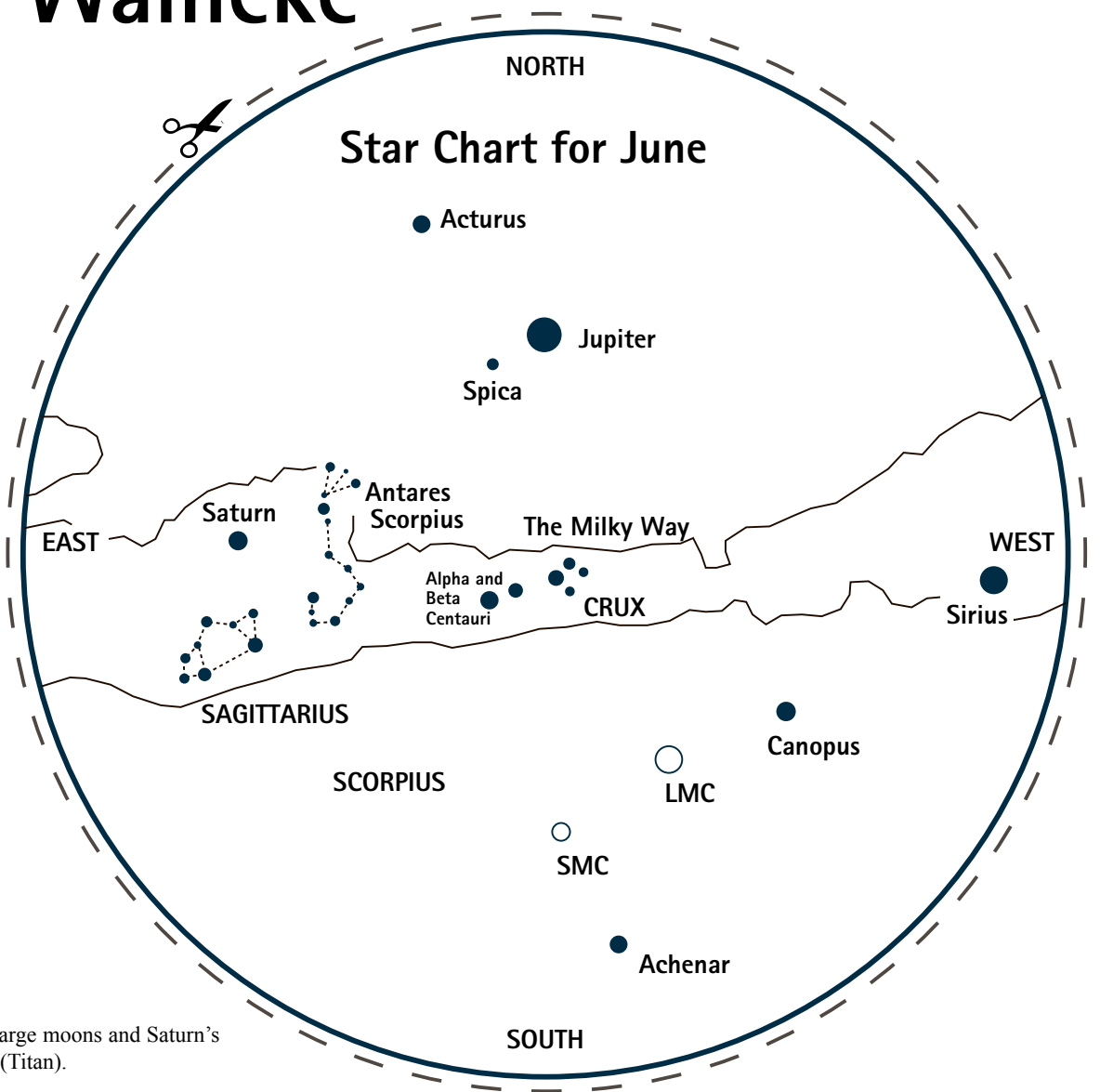
Crux (the Southern Cross), S-shaped Scorpius, and the newly prominent teapot-shaped Sagittarius are star patterns that are easy to recognise.

Bright stars

Naked-eye bright stars Sirius (the brightest); Canopus (second brightest); Alpha Centauri and Beta Centauri (The Pointers), Antares (the orange star in Scorpius), Spica (the bright star close to Jupiter) and Acturus (brightest orange star low in the northern sky) have all been introduced previously. Achenar now appears orange in the lower south sky, twinkling red and green when low.

Galaxies

The edge-on view of our Milky Way galaxy (the area in the star chart that contains constellations Crux, Scorpius and Sagittarius) is prominent in the sky, while the Clouds of Magellan (LMC and SMC in star chart) are also visible on a dark night.



Matariki rises on the 25 June, marking the start of the Maori New Year.



An image of the location of Pleiades or Matariki Cluster later this month.

June spotlight

The pre-dawn sighting of the Pleiades star cluster (Matariki in Maori) signals the start of the Maori New Year. This year, Matariki will begin on 25 June and its various observations and celebrations in Auckland are expected to span the period 10 June to 2 July.

The chart (Image 2, left) shows the pre-dawn sky at 6 am on 25 June with the Pleiades highlighted within brackets directly below Venus which looks like a bright star. Rigel (Puanga in Maori), a bright star in the constellation Orion, is visible in the east.

Pleiades has a long cultural and astronomical history globally. It is featured in the 20,000-year-old Paleolithic Lascaux Cave drawings, it is documented in Homer's The Iliad and Odyssey, recorded as Blossom Stars in China in 2,357 BC, mentioned three times in the Bible and known to European, Asian (called Subaru in Japan), American and Pacific/Polynesian civilisations.

Pleiades is a beautiful naked-eye star cluster containing over 1400 stars of which only about 6-11 of the brightest (surrounded by nebulae of dusty material reflecting their stellar light) are visible as a fuzzy group to the naked eye and is

a perfect object to enjoy through a small pair of binoculars (Image 3, above). "Glitter like a swarm of fire-flies tangled in a silver braid" is how the poet, Alfred Lord Tennyson, described it.

These gravitationally bound stars were all born together from the same cloud and are similar in age (125 million years young), distance from Earth (400+ light years) and initial chemical composition. Given that Matariki is an important symbol of NZ culture and identity as well as being a significant event in our astronomical calendar, it will be a worthwhile observing in the pre-dawn sky later this month and sharing in the experience across cultures and generations.

Clear Skies! ■

Nalayini is a member of the Royal New Zealand Astronomical Society and the Auckland Astronomical Society. She is Chairperson of Astronz, which was established to make astronomy more accessible to New Zealanders. Nalayini is an advocate of the Dark-Sky movement, a campaign to preserve sky quality and increase the visibility of stars through reducing light pollution. Nalayini has had a home in Rocky Bay for 30 years and continues to enjoy the dark skies on Waiheke.