

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.



The night sky in July is not much different to that in June. However, as the Earth continues its journey around the Sun, the brightest star in the sky, Sirius, is no longer visible and Altair appears for the first time close to the eastern horizon.

These seasonal changes do not

impact the visibility of circumpolar celestial objects (i.e. those that are located close to the south celestial pole, SCP in the star chart opposite). Examples of these, visible from New Zealand all year round, are the Crux (Southern Cross), Alpha and Beta Centauri (The Pointers) and the Clouds of Magellan (LMC and SMC). Earth's rotation makes these celestial objects appear to rotate around the south celestial pole and Image 1 illustrates star trails made by these celestial objects during the hours of a single night – captured through time lapse photography by island photographer, Blair Quax.



Photo Blair Quax

Image 1: Star trails around the South Celestial Pole, SCP.

When is the best time for viewing?

Astronomical twilight ends around 7pm 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 17 to 24 July the moon rises after midnight and sets before astronomical twilight, so from 7pm to midnight will be dark and free of moonlight and will offer the very best viewing.

Star chart

The Star Chart below 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 (appears soon after sunset on the north-west) and Saturn (north-east of the zenith i.e. the point directly overhead in the sky) still dominate the sky as two of the brightest star like objects.

Centauri and Beta Centauri (The Pointers), Antares (the orange star in Scorpius), Spica (the bright star close to Jupiter), Acturus (brightest orange star low in the northern sky), Achernar (orange in the lower south sky) and Altair (thirteenth brightest star in the night sky) can all still be observed.

Galaxies

The Milky Way has a strong winter presence and the Clouds of Magellan (LMC and SMC in the star chart) are visible on a dark night to the discerning eye.

July spotlight

The naked-eye objects, the Large Magellanic Cloud (LMC) and Small Magellanic cloud (SMC), are the envy of northern hemisphere stargazers as they are visible only in the southern hemisphere. They are easily visible at a dark site when you know what you are looking for and where. They are marked as LMC and SMC in the star chart above and appear as faint clouds which never move away – see Image 2 – SMC just above the trees to the left and LMC to the right between SMC and the bright star-like

object which was Jupiter when the image was taken (not today).

LMC is 160,000 light years away and the SMC, 200,000. They are irregular shaped dwarf galaxies that orbit the Milky Way. Being circumpolar, they are always in our skies and served as navigational markers for the Maori. Observed and recorded as a dim cluster of stars by Ferdinand Magellan during his circumnavigation of the globe from 1519-22, they have been named in his honour. The LMC contains the Tarantula Nebula (visible through a telescope) which is a highly active star-forming region.

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.

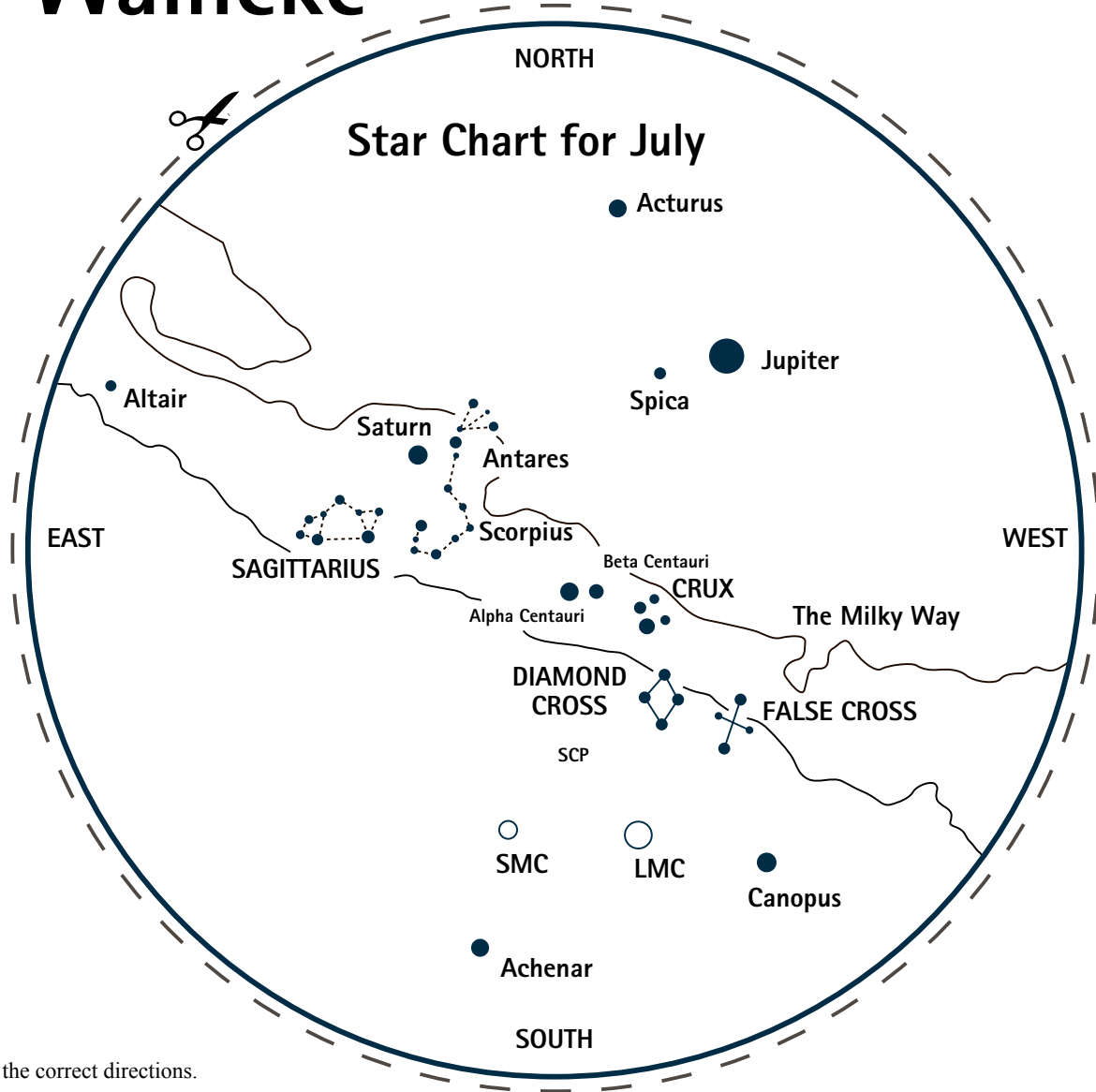


Photo N. Davies

Image 2: LMC and SMC.

Constellations (and asterisms)

Crux (the Southern Cross), Scorpius (S-shaped) and Sagittarius (teapot-shaped) are once again the main constellations. There are two asterisms (i.e. easy to recognise star patterns that are different to the 88 officially recognised constellations making up the entire night sky) worthy of note - the Diamond Cross and the False Cross sometimes mistaken for the Southern Cross by the inexperienced stargazer.

Bright stars

Previously introduced Canopus (the brightest object in the night sky after the moon, Jupiter and Saturn and low in the south-west), Alpha