

STAR WATCHING ON WAIHEKE

Welcome to the first of our regular monthly *Star Watching on Waiheke* columns which will highlight celestial objects (i.e. stars, planets, constellations, galaxies etc.) that are accessible for naked-eye or small binocular viewing each month. You will be introduced to a few celestial objects with information on where and when to observe them with one being placed under the spotlight each month. In addition, specific astronomical terms will be explained to improve your understanding and enjoyment of astronomy.

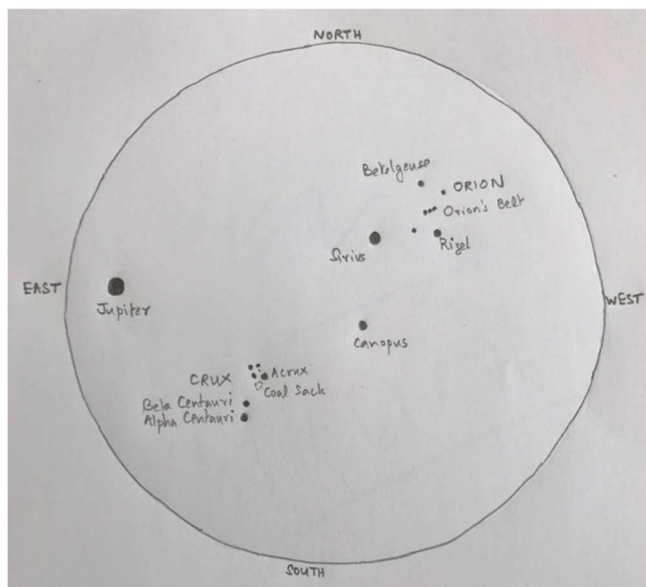
WHEN IS THE BEST TIME FOR VIEWING?

Clear, moonless nights are the best nights to see the stars. This month, 20 March to 28 March will be moonless and will provide the very best opportunity to enjoy the island's starry skies, though you will still be able to clearly view most objects before and after this period. The best time to start stargazing is when astronomical twilight ends i.e. when the sun is well below the horizon. To be precise, this is when the sun is 18° below the horizon. This will be around 9.30 pm at the start of the month and getting progressively earlier throughout the month (i.e. astronomical twilight will be at 8.45 pm by the end of the month).

STAR CHART

Image 1 below is a "Star Chart" (used by astronomers to show the location of various celestial objects) which represents this month's highlighted celestial objects. Compared to looking at a chart of the Earth, you will see that East and West are reversed. You will find however that this chart will point to the correct directions when you go outside at night and raise this page over your head with North pointing to the North.

Image 1: Star Chart for March



PLANETS

This month the brightest star-like object in the sky is the planet **Jupiter**. It rises in the east around 9.30 pm at the start of the month and then progressively earlier each day, rising at dusk by mid-March. To enjoy seeing Jupiter's four bright moons you will need to view it through a telescope or powerful binoculars.

CONSTELLATIONS AND BRIGHT STARS

To be able to identify stars on an ongoing basis our ancestors gave names to star patterns. Today, the night sky is divided into 88 star patterns we now call

"constellations".

A good example of a constellation is **Crux** (the Southern Cross) which is discussed later in this column and Centaurus constellation which includes "The Pointers" namely **Alpha Centauri** (the nearest naked-eye star to Earth at 4.3 light-years distance i.e. the time light takes to travel that distance at the speed of about 300,000 km/sec) and **Beta Centauri**.

New Zealand Summer is the season to observe another well-known constellation - **Orion**. It can be seen in the northwest part of the sky with its brightest stars being **Betelgeuse** (orange in colour) and **Rigel** (bluey-white in colour). The line of stars between these two bright stars is known as **Orion's Belt**.

The brightest star that you will see in the sky is **Sirius** and the second brightest is **Canopus** which is located close to the zenith i.e. the point in the sky that is directly overhead. They can easily be seen even when with a lot of moonlight.

MARCH SPOTLIGHT

Image 2: Crux with the Coalsack Nebula (Credit: ESO)



The most famous Southern Hemisphere constellation is Crux which we call the Southern Cross and which is featured on our flag. Crux (Latin for cross) is the smallest of the 88 constellations. It is a good place to commence naked-eye observing because it is very bright and therefore easily identifiable. It is visible in our skies throughout the year unlike Orion which is a seasonal constellation. In addition to Crux's four brightest stars, which form the shape of a kite, the fifth main star,

called Epsilon Crucis (which is featured on the Australian flag), is also just visible to the naked-eye observer in New Zealand. Close to the brightest star in Crux (known as **Acrux** or Alpha Crucis) and near The Pointers (Alpha Centauri and Beta Centauri) there is a noticeably dark area which is a "dark nebula" and is called **the Coalsack**. Dark Nebulae are regions of cold gas and dust that obscure background starlight and of these, the Coalsack is the most prominent and easily observed naked-eye.

I'll end this inaugural column ends with the traditional parting wish to all sky watchers:

Clear Skies!

Nalayini Davies



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.