**SUMMER (Dec 2018 – Feb 2019)**

The warmer summer nights are an ideal time to start learning key landmarks of the night sky. First look north and find the three bright stars in a line, often called ‘The Pot’. These stars make up the ‘Belt of Orion’, one of the most distinctive guides of the night sky.

Extend the line of the Belt of Orion to the right (east) and you will find Sirius, the brightest star in the sky. Extend the line to the left (west) from the Belt and you will find the orange star, Aldebaran, the brightest star in the constellation Taurus. Continuing that line further to the left, you will find the beautiful star cluster, the Pleiades (Matariki).

Back at Orion’s Belt, identify the bright stars Rigel (white) and Betelgeuse (reddish) which are above and below the Belt, respectively. Those two bright stars, together with two slightly fainter ones, enclose most of Orion, with the Belt being in the middle. A small line of fainter stars above the Belt marks Orion’s sword. One of these ‘stars’ is the magnificent Orion Nebula (M42), the closest massive star-forming region to us. It is a stunning sight even in backyard telescopes.

Roughly overhead around 10pm there are two bright stars. The brightest of them is Canopus, the second brightest star in the sky. Canopus, Atutahi to the Māori, was a key guide star used by the Polynesian voyagers, while today it is used to guide interplanetary spacecraft.

The fainter of the two, lying west of Canopus, is Achernar, which marks the end of the meandering constellation of Eridanus (the River). Extending a line from Canopus past Achernar brings you to Fomalhaut, the brightest star in Pisces Austrinus (Southern Fish).

In the early evening, the brightest object in the northwest is the planet Mars, fading now as we leave it behind.

Near mid-December, Orion was setting in the west at dawn, while in the east, the dazzling bright object was Venus. In mid-February pre-dawn, Venus is close to Saturn, with Jupiter higher in the sky.

 From the Southern Hemisphere on dark nights you can see two galaxies with your naked eye. They are the Large and Small Magellanic Clouds (marked as LMC and SMC respectively on the star charts). The distance to the LMC is about 160,000 light years, while the SMC is about 200,000 light years away. These are dwarf galaxies, close neighbours to our much larger Milky Way Galaxy. They reach their highest point due south around early January. Each can be explored with binoculars or a telescope showing a myriad of star clusters and gaseous nebulae.

**Mercury**: Mercury was rising just before the Sun during December but, reappears in the western sky at sunset in February. It is very hard to spot.

**Venus**: Venus rises before the Sun and is very bright in the east before the dawn. In February it makes a fine sight with Jupiter and Saturn.

**Mars**: By late February Mars is low in the northeast and sets about two hours after the Sun.

**Jupiter**: On 28 February Jupiter and Venus are close to the moon.

**Saturn**: In February you should be able to spot Saturn low in the east during sunrise and on 19 February, it is close to the much brighter Venus. Watch them move from night to night.

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