**SKY GUIDE SUMMER December 2019  - February 2020. Stardome Observatory**

There are some key landmarks to find to begin learning about the summer sky in the Southern Hemisphere. First look north and find the three bright stars in a line, often called The Pot. These stars make up Orion’s Belt, one of the most distinctive guides in the night sky.

Below Orion’s Belt is the bright orange-coloured star Betelgeuse, a massive star that is a supernova in waiting. Directly above the Belt is Rigel, another luminous supergiant star, which is much hotter and tinted blue. Both these stars are much more massive and luminous than our Sun. Below Orion near the horizon you will see the Gemini Twins, Castor and Pollux.

Extend the line of the Belt stars to the right (east) to find Sirius, the brightest star in the sky and a celestial neighbour at only eight light-years distant. Now extending the Belt line to the left (west) you will find the orange star, Aldebaran, the brightest star in the constellation of Taurus marking the bull’s eye. Continue that line further to the left and you will find the beautiful star cluster, the Pleiades (Matariki). The unaided eye shows about seven stars but many more are seen using binoculars.

Following a line up through Orion towards the south brings you to Canopus, the second brightest star in the night sky after Sirius. Canopus, known as Atutahi to Māori, dominates our view overhead during the summer. It is the brightest star in the major southern constellation of Carina and lies about 40 times further from us than Sirius. The final bright star to locate is Achernar, marking the end of the meandering constellation of Eridanus (the River).

Two special features of our Southern Hemisphere night sky are the Large and Small Magellanic Clouds (marked as LMC and SMC respectively on the star charts) and are named after the Portuguese explorer, Ferdinand Magellan (1480-1521), who first described them. These two dwarf galaxies are the two closest galaxies to our much larger Milky Way Galaxy. For early evening viewing away from city lights on a moonless night, they are easily seen with the naked eye and reach their highest point due south around early January. They can be seen better using binoculars. The distance to the LMC is about 160,000 light-years, while that of the SMC is about 210,000 light-years

**Mercury**: The most difficult planet to spot because it orbits closest to the Sun. This means, as viewed from Earth, Mercury never gets far from the Sun in the sky. It sets and rises near the Sun and is only briefly visible in the night sky. During this period Mercury remains too close to the Sun to view.

**Venus**: Very bright low in the western sky after sunset. Being the second planet from the Sun, Venus strays further from the Sun than Mercury in early evening and pre-dawn skies. It is also the brightest of the planets.

**Mars**: Remains relatively close to the Sun during these three months. It is visible in the predawn sky low in the east. From January Mars rises progressively earlier.

**Jupiter**: During January & February, Jupiter moves further from the Sun in the eastern sky. It will be placed between Mars (higher) and Saturn (lower) in the predawn sky.

**Saturn**: Is briefly visible in the predawn sky by February, a little below brighter Jupiter. Our two gas giant planets remain in close company all this year in the constellation of Sagittarius