

DECEMBER TIHEMA HIGHLIGHTS

Monoceros

Taken from the Greek name for unicorn, the monoceros is a one-horned creature represented by a constellation that you can currently see in the eastern sky. As it is a relatively faint constellation, you will need to be away from any light pollution in order to see it clearly. Monoceros can be found nestled between Orion and his two hunting dogs, Canis Major and the smaller Canis Minor.

Look towards the northeast, where you can spot Orion, the three bright stars in a row. Directly below this, you'll find Betelgeuse, and then look to the east to find Sirius, the brightest star in the night sky. Below these two is Procyon, from Canis Minor. Draw imaginary lines between Betelgeuse, Sirius, and Procyon, making the shape of a triangle. Inside this triangle you'll find most of the constellation Monoceros.

Pictured on the cover, the Christmas Tree cluster (in the NGC 2264 region) can be found in the Monoceros constellation, and is located about 2600 light years from Earth. The Christmas Tree cluster is a group of young stars that are largely obscured by heavy layers of dust clouds. Within these dust clouds, bright new stars are being formed.



Harry Potter Astronomy

As we enter summer, there are many connections to be seen between the night skies and J K Rowling's Harry Potter series. Sirius Black, Harry's godfather, was named after the brightest star in the sky, Sirius. This star belongs to the constellation Canis Major, Latin for 'greater dog' and representing one of the huntsman Orion's dogs. This star is nicknamed the Dog Star, which is fitting, as Sirius Black's animagus form was a dog. Currently, Sirius is above the eastern horizon.

The Black family has many astronomical links. Orion Black was the father of Sirius, bearing the name of the constellation Orion, located next to Canis Major. Bellatrix Lestrange, Sirius Black's cousin, receives her first name from the star that marks Orion's left shoulder. These stars can be found in the Northeast, close to Canis Major.

One character with a connection to both astronomy and New Zealand is Merope Gaunt, the mother of Lord Voldemort. Her name originates from the star Merope, one of the 'seven sisters' in the Pleiades star cluster, known as Matariki in New Zealand. The rising of Matariki in the early winter mornings signals the beginning of the Māori New Year, but it can also be seen during the summer nights. Look for a fuzzy, bright cluster of stars in the northern sky.

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THE SKY TONIGHT TE ĀHUA O TE RAKI I TĒNEI PŌ



DECEMBER TIHEMA SKY GUIDE

PERPETUAL
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MOON MARAMA PHASES



Phase	Date
First Quarter	Wednesday, 4 December
Full Moon	Thursday, 12 December
Third Quarter	Thursday, 19 December
New Moon	Thursday, 26 December

DECEMBER TIHEMA 2019



SUN RĀ RISE / SUNSET

Date	Rise	Set
Sunday, 1 December	5.44am	9.09pm
Sunday, 15 December	5.41am	9.23pm
Tuesday, 31 December	5.39am	9.30pm

SUMMER SOLSTICE

This year, the summer solstice will occur here in Dunedin at 5.19pm on December 22.

In the Southern Hemisphere, the summer solstice happens when the South Pole reaches its maximum tilt toward the Sun. This is when the Sun reaches its highest position in the sky and marks the day with the longest period of daylight. This day will be 7 hours and 5 minutes longer than the winter solstice, our shortest day of the year. Summertime can make stargazing difficult as you have to stay up quite late to be able to see the stars, but the warm nights and clear skies can make this worth it.

Throughout next year, we will host stargazing events to mark the equinoxes and winter solstice – keep an eye out for these over the coming months.

-  **Canis Major**
-  **Monoceros**
-  **Orion**

PLANETS WHETŪ AO

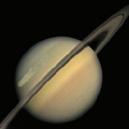
Mars Matawhero



1 December after 4.22am
15 December after 3.49am
31 December after 3:16am

In Libra

Saturn Pareārau



1 December until 11.59pm
15 December until 11.09pm
31 December not visible

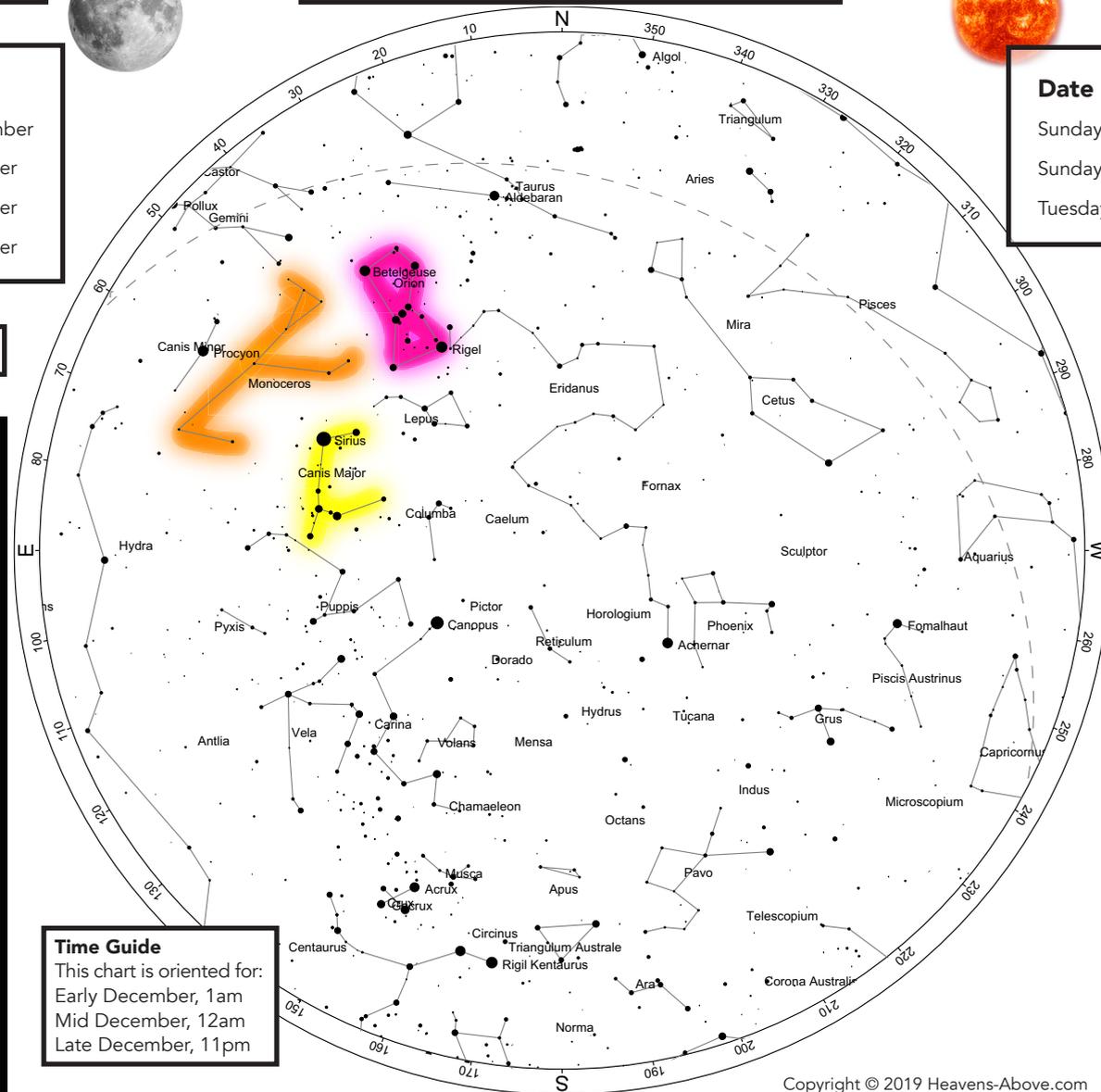
In Sagittarius

Venus Meremere-tū-ahiahi



1 December until 11.25pm
15 December until 11.35pm
31 December until 11.30pm

In Sagittarius



Time Guide
This chart is oriented for:
Early December, 1am
Mid December, 12am
Late December, 11pm

How to use this chart: Hold the chart up to the sky and rotate it, so the direction you are looking matches the direction printed on the bottom. For example, if you are looking south, place 'S' at the lower edge. Stars rise in the east and set in the west like the sun. As the Earth turns, the sky appears to rotate clockwise around the south celestial pole. The sky makes a small shift to the west every night, as the Earth rotates around the sun.