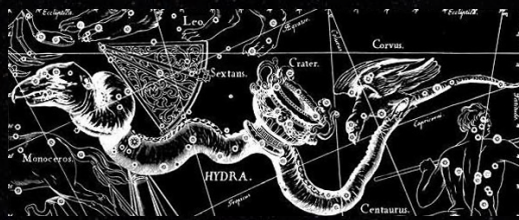


JULY HŪRAE HIGHLIGHTS

Hydra, Corvus and Crater

These three adjacent constellations are linked by a Greek myth from the 3rd century BCE. While fetching water for Apollo, Corvus the crow stopped to feast on a tree of figs. When he eventually returned with the water, he blamed the delay on a water snake (Hydra). Realising the lie, Apollo threw Corvus, the cup Crater, and Hydra into the sky, leaving Crater just out of reach of Corvus, and the crow forever thirsty.



To find these constellations look north-west and locate Virgo. Now find Spica, the brightest star in Virgo. From Spica, shift your gaze south-west to find Corvus. Scan a little further west to locate Crater. You should be able to see the body of Hydra directly south of Corvus and Crater, with his head setting in the west.

Puaka / Matariki

Matariki is the Māori name for the group of stars also known as the Pleiades. Their emergence in the mid-winter sky traditionally signals the Māori New Year. This year they'll make their first appearance in Dunedin around 6am on 6 July.

For South Island Māori, the rising of the star Puaka (Rigel) is also an important indicator of the Māori New Year. Puaka is the principal star for Kāi Tahu, the southern iwi of New Zealand, and the nature of its rising is said to foretell the weather. Light flickering in the north is an indicator of pleasant weather ahead, while light

glimmering in the south warns of bad weather.

The rise of Matariki was traditionally a time to remember those who had died since its last appearance, but it was also a period of celebration and feasting, since it took place at the end of harvesting when food stores were plentiful.

Puaka and Matariki can be viewed between the 6 and 22 July, during the Puaka Matariki festival here in Dunedin around 6am. Because they rise in the morning, they cannot be viewed on this evening-orientated star chart. Puaka is a bright star which will rise from the eastern horizon, whilst Matariki will rise shortly after from the north-eastern horizon.

What's On at Otago Museum?

Matariki Beliefs and Customs in Modern Society explained by Dr Rangi Matamua

Expert talk
11am, Saturday 14 July. Hutton Theatre, book at Eventbrite.

Going Beyond Our World

Expert talk
2pm, Saturday 14 July. Hutton Theatre, book at Eventbrite.

The Art of Night in Theory

Expert talk
5:30pm, Saturday 14 July. Hutton Theatre, book at Eventbrite.

Mārama ā-Whetū - Light of the Stars

Planetarium show
1.30pm daily, Monday 16 July to Sunday 22 July.
Evening screening 7pm, Wednesday 18 July.
Perpetual Guardian Planetarium, book at Museum Shop or online.

Te Reo Māori Evening Screening – Mārama ā-Whetū – Light of the Stars

Planetarium show
7pm, Sunday 22 July. Perpetual Guardian Planetarium, book at Museum Shop or online.

THE SKY TONIGHT



JULY HŪRAE SKY GUIDE

PERPETUAL
GUARDIAN
PLANETARIUM


OTAGOMuseum

MOON MARAMA PHASES

Phase	Date
3rd quarter	Saturday 7 July
New moon	Friday 13 July
1st quarter	Friday 20 July
Full moon	Saturday 28 July

PLANETS WHETŪ AO

Venus
Meremere-tū-ahiahi
1 July before 8.27 pm
15 July before 8.57 pm
31 July before 9.28 pm
In Leo



Mars
Matawhero
1 July after 7.01 pm
15 July all night
31 July all night
In Capricornus



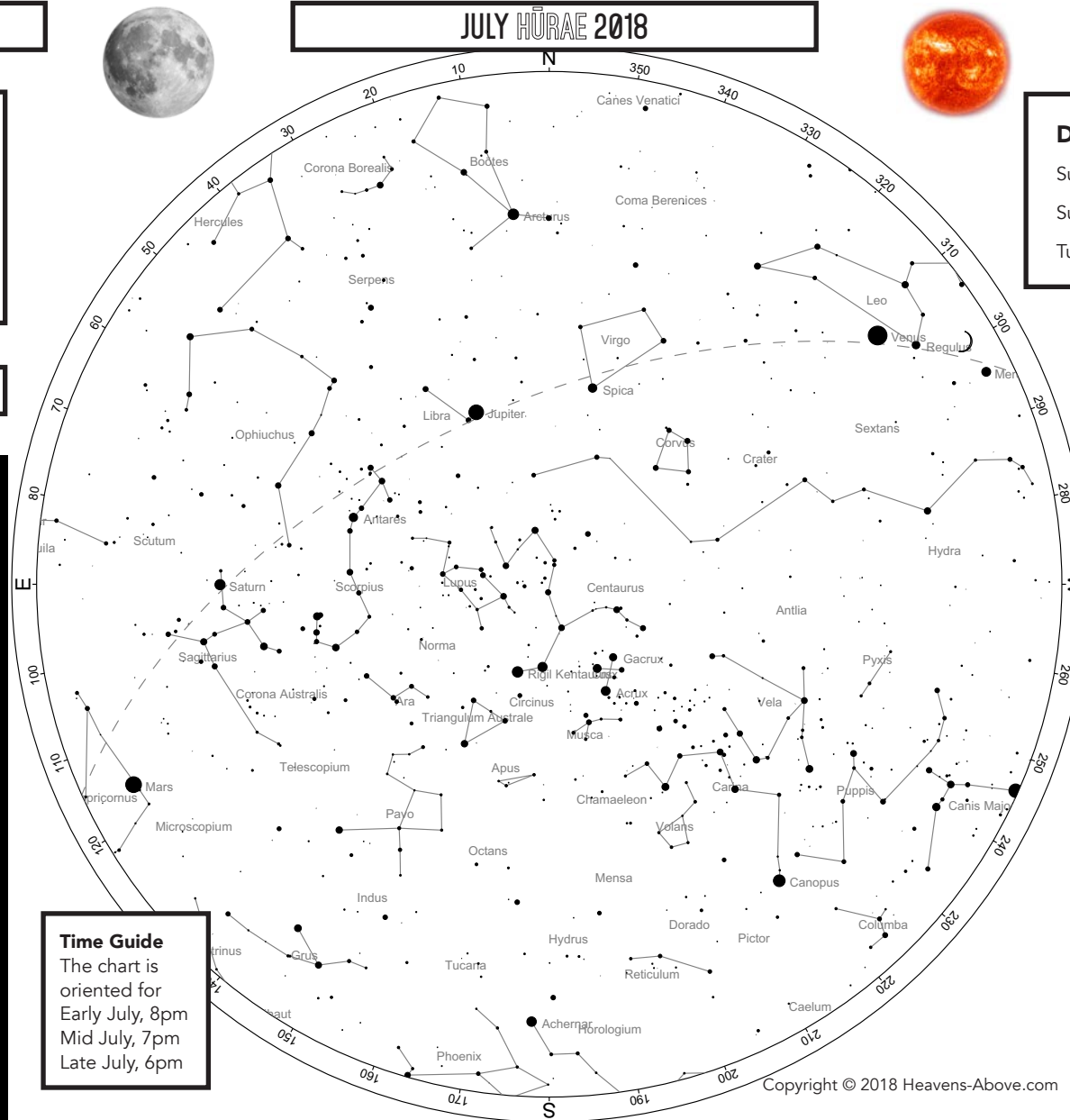
Jupiter
Hine-i-tiweka
1 July before 3.51 am
15 July before 2.56 am
31 July before 1.56 am
In Libra



Saturn
Pareārau
1 July all night
11 July before 7.08 am
31 July before 6.01 am
In Sagittarius



JULY HŪRAE 2018



Time Guide
The chart is oriented for
Early July, 8pm
Mid July, 7pm
Late July, 6pm

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.

SUN RĀ RISE / SUNSET

Date	Rise	Set
Sunday 1st	8.20 AM	5.03 PM
Sunday 15th	8.14 AM	5.17 PM
Tuesday 31st	7.59 AM	5.30 PM

MARS PERIHELIC OPPOSITION

From 7 July to 7 September, Mars will be the brightest it's been since 2003 and the third brightest object in the night sky (after the moon and Venus).

This is due to perihelic opposition.

Because all eight planets orbit our sun in an ellipse instead of a perfect circle, their distance from the sun is always changing. When a planet is at the closest point in its orbit to the sun, it is called perihelion.

Because Mars' orbit is further from the sun than Earth, roughly every two years the Earth moves between Mars and the sun, putting them at opposite sides of the sky. This is known as opposition.

During perihelic opposition, Mars is at opposition while also at its perihelion, making it closer than usual to Earth and therefore brighter. Mars will be at its peak brightness from 27 July to 1 August.

Mars can be spotted throughout July towards the south-east (times in planet section opposite).

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