

Night knowledge

by Ron Fisher

Who needs a calendar on the wall? For thousands of years, people have used the night sky to tell them what time of year it is – and what time of the month. They've even used it as a compass! You can too.

Hunt for the hunter

Our planet takes one year to orbit the sun – to travel all the way round it. As the Earth travels, our night-time view of the universe changes. The view tells us the time of year.

In ancient Greek legend, Orion was a great hunter. There are many stories about him. In one, he boasted that he'd kill all the animals in the world. So the gods sent a giant scorpion – Scorpius – to teach Orion a lesson. Scorpius stung and poisoned him. The gods then turned both Orion and Scorpius into constellations (clusters of stars). They put them in the sky, reminding us not to take more than our fair share from nature.

Will she have long
bristly legs with hooks
at the end, like you?

Yes – for crawling through
bat fur, and holding tight
when our bats fly.

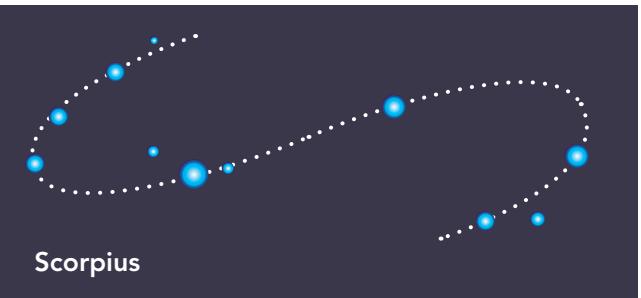


When you can see Orion in the sky all night, you know it's summer.

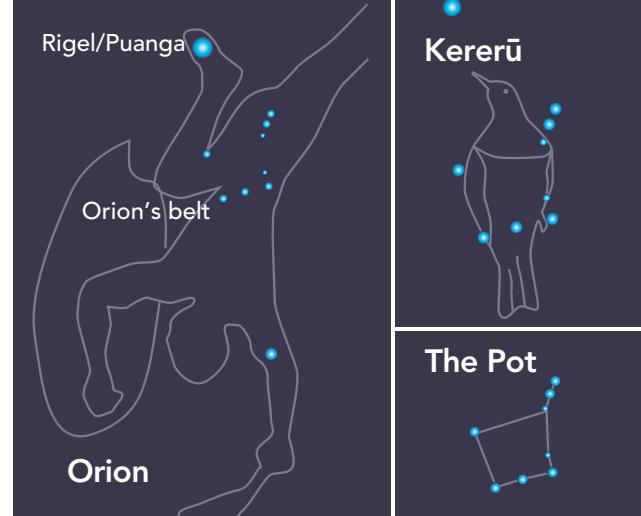
When you see Scorpius begin to rise in the early evening from below the eastern horizon, it's autumn – and you won't see Orion for much longer. Scorpius is about to chase him away!

By winter, the constellation Scorpius is huge, and visible all night. Orion only appears in the sky in the early hours of the morning, once Scorpius has disappeared.

What the ancient Greeks saw as a scorpion's tail, some Māori saw as the fishhook of Māui.



Diagrams: Rob Di Leva



The star-cluster that forms Orion's Belt has many other names too. Some see it as The Pot. In Māori it is often Tautoru. Or is it a perch for a kererū? If so, the bright star Puanga is a berry that the bird is reaching for.

Matariki mornings

The Māori New Year begins once the group of stars called Matariki reappear in our morning sky. This happens in early June – after the stars have disappeared for over a month.

In the past, iwi (tribes) began their New Year celebrations at slightly different times. Some began their New Year straight after Matariki appeared. Others began with the first new moon after that – and still others with the first full moon.

Some iwi didn't use Matariki at all. For them, the reappearance of the bright star Puanga (or Puaka) signalled the New Year.

These days, though, a date is decided on so everyone can celebrate at the same time. That date is the first new moon after the sighting of Matariki.

How to find Matariki

Look at the north-eastern sky in early June, between 6.00 and 6.45 in the morning.

Find the stars of Orion's belt, then point to the left (northwards). You'll see a cluster of stars – Matariki! To appreciate their full beauty, look with binoculars.

To find Puanga, go back to Orion's Belt, then look above it – Puanga is the bright star.



Maramataka – the Māori calendar

The traditional Māori calendar is called Maramataka, because Marama is the Māori word for moon. The moon shows days and months passing.

When the Moon looks like a thin banana, it's called a new moon. Each night, it seems to get bigger and bigger, until it looks like an orange. That's what we call a full moon. After that, it gets smaller again.

How long does it take for the Moon to go from a banana, to an orange, and back to a banana?

Answer: One 'moonth'. That's where, in English, we get the word 'month'. It's actually a 'moonth'.

Why does it happen? The Moon has two sides – one that always faces us, and one that faces away. It takes around one month to orbit planet Earth – and as it orbits us, it goes between the Earth and the Sun. It's a new moon when the Moon is between us and the Sun, and the side of the Moon facing us is in shadow. It's a full moon when we are between the Moon and the Sun, and the side facing us is in sunlight.



Levin stargazers. Photos: Paul Moss

Your night-sky compass

One constellation that's always visible from New Zealand is the Southern Cross. It moves around the sky like the hands of a clock.

The point it's turning around lies straight above south. So if you can find that, you have a compass in the sky! Turn the page to find out how to use it ...