

Newsletter November 2025

The seasons are turning and the night sky is changing yet again and we have to stay up later to enjoy the stars.

This month we will focus on our closest star The Sun

Often taken for granted, the study of our Sun has given us the most information about the other "suns" in our galaxy and beyond into the universe.

NASA has been busy launching more satellites whose job it will be to observe "space weather." - And there is a space probe that is in orbit around the sun gathering data for scientists

Every culture in the world has stories and legends about the Sun so there are some of these included on the last page for you to enjoy.

And of course some fun facts you might not know about our Sun

In Glenorchy we are looking forward to our first Dark Sky Wānanga and will share the outcome of that discussion next month.

Coming up this month:

- ✚ 4th and 5th Nov: Southern Tuarids meteor shower will peak
- ✚ 5th Nov: Guy Fawkes
- ✚ 5th Nov : Full moon; Biggest super moon of 2025
- ✚ 8th November Dark Sky Wānanga
- ✚ 17th Nov Leonids meteor shower
- ✚ 20th Nov: New moon
- ✚ Comet C/2025 R2 (SWAN) discovered in September, the comet will need to be viewed through binoculars or a telescope as it is quite faint. Use your Stellarium phone app to find it.



KEEPING THE STARS SHINING

TIPS FOR REDUCING LIGHT POLLUTION,
SAVING ENERGY AND PROTECTING OUR
NOCTURNAL SPECIES

- Turn the outside lights off when you aren't using them. Install timers or sensors.
- Shield outside lights and point them down.
- Make outside lighting warm in colour. Less than 3000K.
- Close the curtains and snuggle up.
- Look up and enjoy a view that 90% of the world can no longer see.
- If you want to learn more, book a star tour and subscribe to our dark sky newsletter.

<https://glenorchydarkskies.org.nz>

KEEP IT DARK

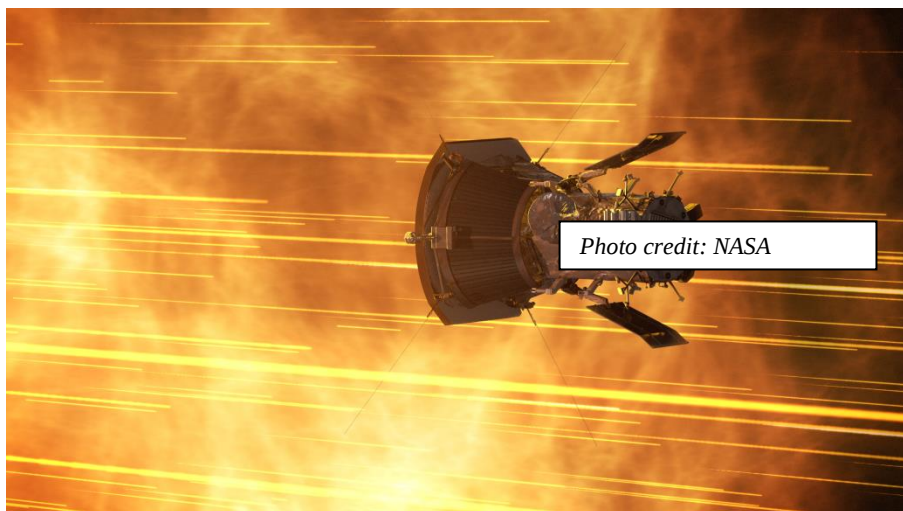
Dark Sky places around New Zealand are coming together in zoom discussions to share projects and ideas and to offer help in overcoming difficulties.

We're also getting closer to becoming a dark sky community. We will soon be starting an education programme to raise awareness about light pollution and how we can all be a part of the solution.

Probing the Sun!!!

The Parker Solar Probe is a NASA spacecraft launched in 2018 to "touch" the Sun's outer atmosphere, the corona, by flying through the solar wind. The Parker Solar Probe has survived its 4th close encounter with the Sun. Parker Solar Probe checked in with flight controllers at the Johns Hopkins Applied Physics Laboratory (APL) in Laurel, Maryland — where the spacecraft was also designed and built — on Sept. 18 2025, transmitting a beacon tone indicating that its systems were operating

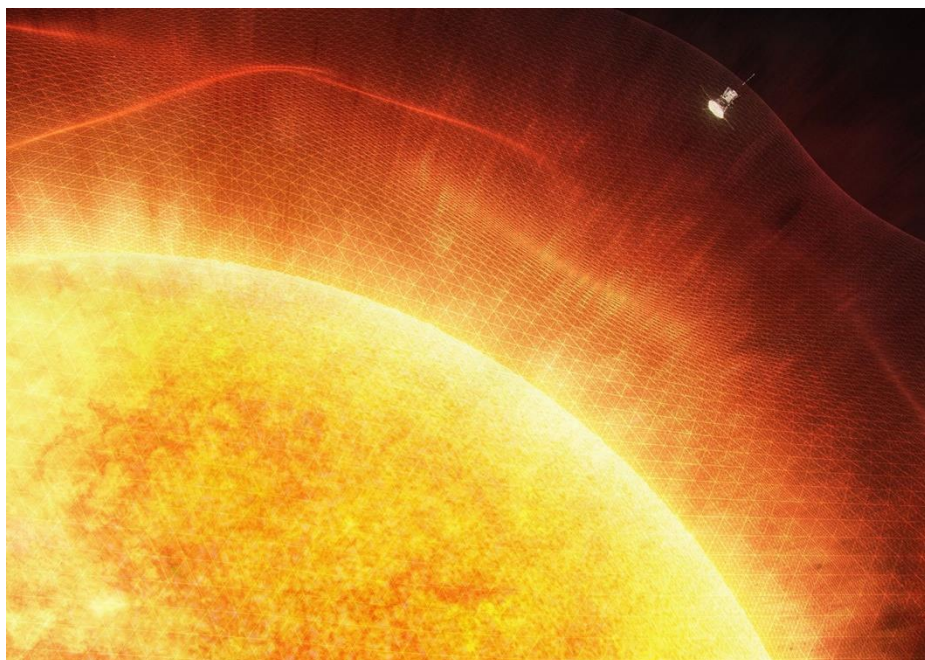
normally. The spacecraft was out of contact with Earth and operating autonomously during the close approach.



The Parker Solar Probe will remain in this orbit around the Sun and continue making observations. Parker's four scientific instrument packages are gathering unique observations from inside the Sun's atmosphere, or corona. The flyby, as the fourth at this distance and speed, is allowing the spacecraft to conduct unrivalled measurements of the

solar wind and solar activity while the Sun is in a more active phase of its 11-year solar cycle.

HOT TIP Check out this link <https://science.nasa.gov/blogs/parker-solar-probe/2025/09/18/nasas-parker-solar-probe-sails-through-25th-sun-flyby/> for more information about the Parker Probe.



IN OTHER NEWS

The distance of Voyager 1 from Earth is currently 25,262,044,388 kilometres. Light takes 23 hours, 24 minutes and 25.1098 seconds to travel from Voyager 1 and arrive to us. Voyager one is expected to reach the milestone of one light day from earth next year.

Learn the night sky

This month...

The Moon will be full on November the 5th and the New Moon is on November the 20th. Dark night begins at 10:30 on the 1st of November and begins at 11:34pm by the end of the month on the 30th of November as we get closer to the solstice in December.

In the Morning sky this month

Jupiter is above the horizon late in the night and enters retrograde motion on November the 11th.

In the Evening Sky

As Scorpius descends in the west, so Orion rises in the East. The Southern Cross is low in the South, but as it is circumpolar, it never goes below our horizon.



The Large and Small Magellanic clouds are clearly visible. These are dwarf galaxies outside of, but close to our own galaxy.

Orion is the constellation often called the “pot” or “saucepan” because, from our view, it appears upside down compared to how it’s seen in the Northern Hemisphere. You can spot the Great Orion Nebula in the handle of the pot, and it’s definitely worth a look through binoculars. This area is a stellar nursery, where huge clouds of gas and dust are busy forming new stars.

By contrast Betelgeuse is a massive red supergiant star in the Orion constellation (seen at the bottom of this

image) that is coming to the end of its life and will eventually explode in a supernova. Betelgeuse is one of the brighter stars in our galaxy. This is because although it is about 700 light years away, it is much more massive than our sun. In fact if you replace our sun with Betelgeuse, it would reach the orbit of Jupiter!

In 1836, astronomer and mathematician Sir John Herschel documented Betelgeuse's changing brightness, but he was likely not the first to note it. There is evidence that the variability of Betelgeuse and other red giants was described much earlier in Aboriginal oral traditions.

Let's talk about the Sun

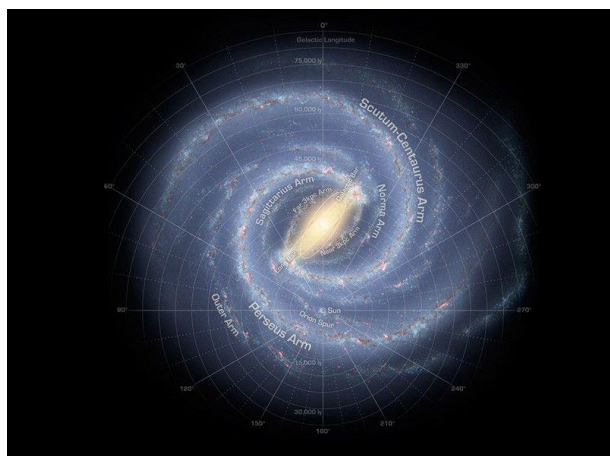
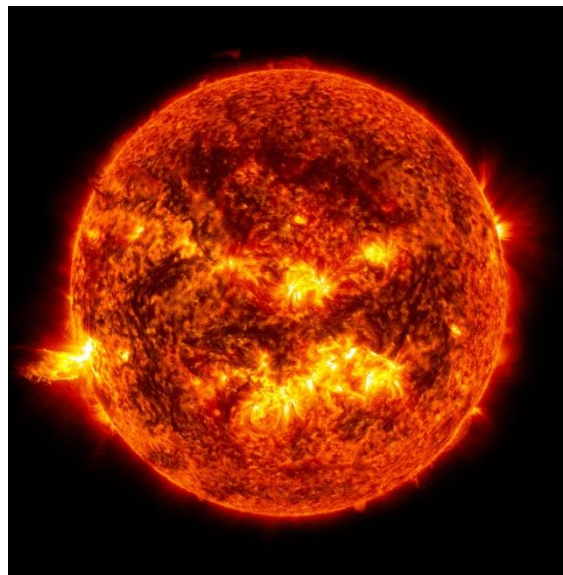
SUN FACTS:

The sun rotates in the same way the planets do, but because the sun is made up of gas, the sun's equator and poles complete their rotations at different times. It takes the sun's equator 24 days to complete a rotation. Its poles rotate every 35 days.

Meanwhile, the sun actually has its own orbit. The sun is in orbit around the centre of the Milky Way galaxy, making a full loop every 230 million years.

An Earth year is one revolution of the Earth around the sun. In Earth years, the sun is about 4.57 billion years old. By contrast, a galactic year is how long it takes the sun to go around the galaxy. In terms of galactic years, the sun is around 20.5 years old!

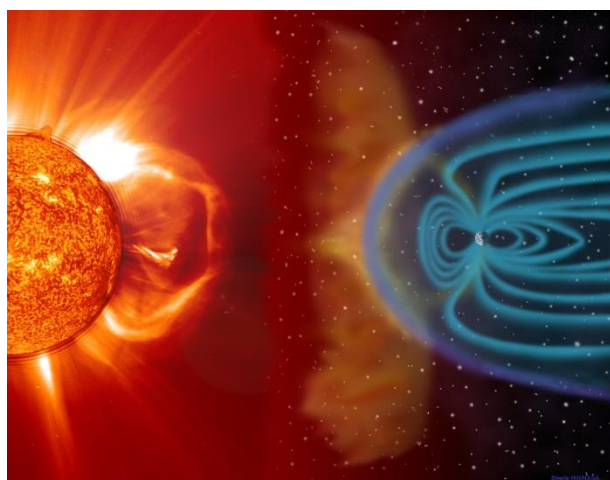
The Milky Way is our edgewise view of the galaxy. The Sun is located in a spiral arm called the Orion Spur that extends outward from the Sagittarius arm.



In December 2024 the Sun reached its solar maximum period, which will continue for over a year. You might remember some of the auroras we've seen in the last two years. They're part of this.

The solar cycle is a natural cycle the Sun goes through as it transitions between low and high magnetic activity. Roughly every 11 years, at the height of the solar cycle, the Sun's magnetic poles flip — on Earth, that'd be like the North and South poles swapping places every decade — and the Sun transitions from being calm to an active and stormy state, before calming down again. We are protected from much of this increased solar energy by the Earth's magnetic field.

Solar activity strongly influences conditions in space known as space weather. This can affect satellites and astronauts in space, as well as communications and navigation systems — such as radio and GPS — and power grids on Earth. When the Sun is most active, space weather events become more frequent. Solar activity has led to increased aurora visibility and impacts on satellites and infrastructure in recent months.



Solar cycles have been tracked by astronomers since Galileo first observed sunspots in the 1600s. Each solar cycle is different — some cycles peak for larger and shorter amounts of time, and others have smaller peaks that last longer.

Sun Stories



Every culture in the world also has a story about the Sun. Here are a few for you to enjoy.

Scandinavia

In ancient Norse legend, the sun goddess Sol travels through the sky chased by a wolf Sköll, who intends to devour her. (Sköll's brother Hati does the same to the moon at night.) Eclipses were said to be a sign that Sköll was dangerously close to catching Sol.

Egypt

One of the most important deities in the Egyptian pantheon was Ra, the falcon-headed sun god. Legend had it that every day Ra captained a boat crewed by gods across the sky. At night, Ra returned to the east via the underworld, bringing light to the dead. It was a treacherous journey: Apep, an evil serpent god,

attempted to stop Ra by devouring him. Solar eclipses were thought to be days when Apep got the upper hand, though Ra always managed to escape.

Ancient Greece

In Greek mythology, the Sun was said to be pulled across the sky in a chariot by Apollo. One day, Apollo's son Phaeton insisted on driving the chariot himself. But he couldn't control the powerful horses. He drove too close to the Earth, scorching the land and creating the Sahara Desert. Then he veered too high, freezing the seas near the Arctic. To stop the chaos, Zeus struck Phaeton down with a lightning bolt. Heartbroken, Apollo never took the reins again and handed the chariot over to Helios, the Titan. As for Phaeton, he was placed among the stars as the constellation Auriga, the charioteer.



Mozambique

In Zambezi traditions the Moon woman was jealous of the Sun man who had beautiful shining feathers. One day when the Sun wasn't looking she stole some feathers for herself. When the Sun realised what she had done he threw some mud at her face. It stuck there and you can still see the mud on the Moons face to this day. But the moon bides her time and every 10 years or so she catches the Sun unawares and throws mud back at him. These make the Sun spots that appear every 10 years.

You can find many more Sun stories online. Here are a few websites to explore.

[Maui and the Sun](#) from New Zealand

[Various Sun stories](#) Myths and superstitions from around the world