THE WORLD OF SOLAR PHYSICISTS

Solar physicists are scientists who study the Sun – the large **star** at the heart of our **solar system.** The Sun affects everything in outer space, from small **comets** to the largest planets. Without it, life on Earth wouldn't exist!

Solar physicist
(SOH-lar fizz-uh-sist)

Remember: **NEVER** look at the Sun. The scientists who study it have special ways of protecting their eyes, but for everyone else the Sun is very harmful.

*Solar physicists use powerful **telescopes** in **observatories** on Earth to study the Sun. They also use **satellites** in space to collect information about the Sun without Earth's **atmosphere** getting in the way.*

WHAT DO SOLAR PHYSICISTS DO?

The work of solar physicists can tell us a lot about how the Sun interacts with the planets, moons, and space rocks that make up our solar system.

FIELDWORK

Not all telescopes can study the Sun. They have to be a particular kind with special **filters** to make sure that it is safe to look at the Sun. Solar physicists will travel around the world to use these solar telescopes. They can be used to collect important information about the Sun's **atmosphere**, structure, and temperature.

LAB WORK

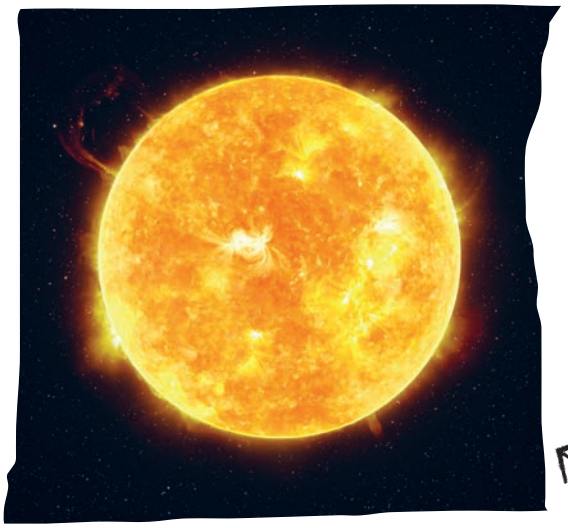
Back in the lab, solar physicists study the data collected by the solar telescopes. They use it to learn about how the Sun has changed over time and how it affects Earth and the other planets. This often means having to work alongside other scientists to share results and discoveries. Solar physicists can also work with **engineers** to develop spacecraft that study the Sun up close.

WHO DO SOLAR PHYSICISTS WORK FOR?

Many solar physicists work for government-run **space agencies**, which exist all over the world. These include NASA, the European Space Agency, and the space agencies of China, Japan, Canada, India, and Russia. Solar physicists can also work at universities and other research institutions.

FAMOUS DISCOVERIES

Solar physicists have made so many amazing discoveries that have changed our understanding of the Sun and other stars. Here's just a few of the biggest and best!

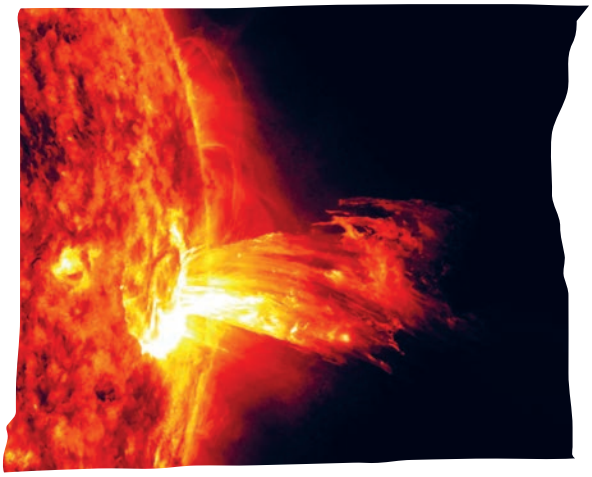


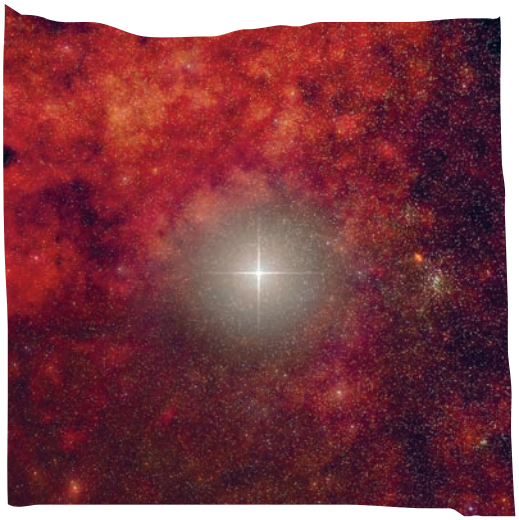
BRAND NEW ELEMENT

In 1868 a new **element** was discovered in the Sun – **helium**! This was the first time that an element was found somewhere else in space before it was found on Earth. Helium is lighter than air and is sometimes used on Earth to fill balloons.

SOLAR STORMS

Solar physicists discovered that the most powerful **solar storm** in history hit Earth over 14,000 years ago during the last **Ice Age**. This explosion of energy from the Sun affected the entire **solar system**.





NEARBY STARS

In 1915 a Scottish **astronomer** found Proxima Centauri, the next nearest star to Earth after the Sun. It is 4.2 **light-years** away from us, making it look very dim. It is only possible to see it using large **telescopes**.

Solar physicists are making discoveries all the time; who knows what they might discover next!

FAMOUS SOLAR PHYSICISTS

There have been so many clever solar physicists over the years. Here's just a few of the most famous.

NICOLAUS COPERNICUS

Nicolaus was a Polish astronomer who discovered it was Earth that **orbited** the Sun – not the other way around! This was a very important discovery that changed the way scientists viewed Earth and outer space.

JOHANNES KEPLER

German-born Johannes discovered that the orbits of the planets around the Sun are **ellipse**-shaped rather than circular. He also thought that the further a planet is from the Sun, the longer it takes to complete one orbit – which turned out to be true!

CECILIA PAYNE-GAPOSCHKIN

Cecilia was a pioneering scientist who was the first astronomer to properly question what the Sun was made of. She discovered that the Sun and all other stars are made mostly of **hydrogen**. This was one of the most important discoveries in all of **physics**!

These are just a few of the many scientists who have made a huge difference to the study of the Sun.

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