

# Will Solar Cycle 25 ruin our chance to go back to the moon?

By Hannah Cook

It has been 49 years since American astronauts were last on the moon. NASA wants to return to the moon by 2024, but Solar Cycle 25 is making it challenging to ensure a safe and successful mission.

## What is a Solar Cycle?

Not too many people are familiar with solar cycles and probably never even realize when one is taking place. According to NASA research scientist Michael Cook, the solar cycle is essentially an 11-year period where the sun goes from solar minimum and it reaches solar maximum.

Solar Cycle 25 started in 2019 and is expected to last through 2030.

“The peak of sunspot activity is known as solar maximum and the low is known as solar minimum,” said Catherine Boeckman in [an article about solar cycles and how they affect weather](#).

Scientists track the solar cycles in many ways. The number of sunspots currently on the sun is monitored; more sunspots when the sun is more active.

According to the National Weather Service, sunspots are areas where the magnetic field is about 2,500 times stronger than Earth's, much higher than anywhere else on the Sun.

We also have many satellites in space that are continuously monitoring the sun. Some examples of these satellites include STEREO and the Solar Dynamics Observatory.

College of Charleston astronomy professor Kawerya Davis follows the solar cycle on [Space Weather](#). Davis encourages all of his students to be involved with keeping up with major events like these.

## The effects of a Solar Cycle

Cook talks about what affects solar cycles have here on Earth. Anywhere from satellite anomalies, solar storms and even auroras could be seen during the 11-year span of the cycle.

Cook jokingly compares the solar cycle to a woman's menstrual cycle.

“It's not like you literally stop, like that part of your body shuts off” during the cycle, he says. “It's just like the aurora can happen throughout the entire solar cycle.”

A monumental effect that happened during Solar Cycle 10 in December 1855 was the Carrington Event. During this strong geomagnetic storm, a solar coronal mass ejection hit earth's magnetosphere and is now known as the largest geomagnetic storm to date.

The future of us going back to the Moon

One current problem with solar cycles is its impact on NASA missions in space - including a planned trip to the moon in 2024 - smack in the middle of Solar Cycle 25.

NASA has come out with an Artemis timeline that includes Artemis I being the first manned mission to the Moon in the 21st century, followed by five other missions in 2024.

Since the earth will still be in the 11-year period of Solar Cycle 25, scientists are interested in the issues that may arise when going back to the moon, so they are monitoring it very closely.

Here on Earth, for the most part we are safe from any of the complications that may arise during a cycle. That is not the case for the Moon, Earth's magnetic field will not shield the astronauts as well as the equipment from the solar wind and even the flares that might occur.

NASA is diving head first into getting humans back on the Moon and is not going to let Solar Cycle 25 get in the way.

### **What preventive measures are NASA and ISS taking?**

Since the moon does not have a barrier protecting it from the sun, NASA and ISS are taking precautionary measures to ensure the astronauts are kept as safe as they can be while on their mission to the moon.

One of NASA's biggest concerns for this mission is that astronauts may be exposed to more radiation than normal due to Solar Cycle 25. If the astronauts are roaming around the Moon and are not protected by any shelter or in the base and a solar flare were to happen they would be very exposed to massive amounts of radiation.

NASA is taking the most preventative measures with Artemis. They want Artemis to be the generation where there is a Moon base and that is what they are working on right now.

"They are going to have a shelter there but still that shelter is very different because that shelter is their only protection," said Cook.

NASA is not going to let these what-ifs get in the way of sending our astronauts to the Moon. As time goes on there is so much more to explore in space and we finally have the time, money and resources to do so.