

## SCIENCE NEWS

# VIPER ON THE MOON

**AMERICAN** space agency NASA is sending a robot to the South Pole of the moon.

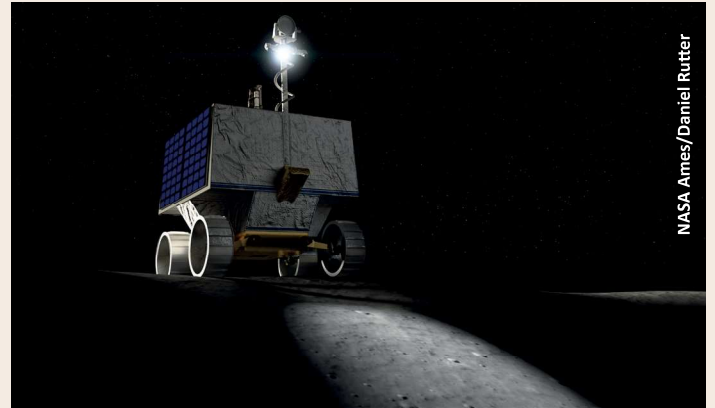
VIPER (Volatiles Investigating Polar Exploration Rover) is about the size of a golf buggy. It will visit the location of water ice on the moon and take the first ever samples of it. The South Pole is where NASA intends to send astronauts in 2024.

VIPER will roam several miles and use four scientific instruments – including a one-metre drill – to take samples of various soil environments: those in complete darkness, occasional light and in direct sunlight.

Water ice was confirmed to be present on the moon ten years ago.

VIPER project manager Daniel Andrews said that the aim of the mission is to “answer the many questions we have about where the water is, and how much there is for us to use.” Around 100 days of data collection will provide the first ever water map of the moon.

A supply of water on the moon could make long, future



NASA Ames/Daniel Rutter

human missions much easier, as it could provide oxygen to breathe and hydrogen and oxygen to fuel future landers and rockets.

VIPER will find out which locations have the highest concentrations of water, and how deep below the surface that water is. The rover (above) is due to arrive on the lunar surface in December 2022.

## COOKIES IN SPACE

**AN oven has been sent to the International Space Station, so that astronauts can bake chocolate chip cookies!**

The astronauts will be looking at what effect high heat and zero gravity have on the cookies – and probably enjoying a fair few of them too!



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## MYSTERY TRIP

**A US Air Force space plane has returned to Earth after a secret mission that lasted 780 days.**

The uncrewed X-37B (opposite) landed at the Kennedy Space Center in Florida more than two years after it took off.

Its 780 days in orbit sets a new endurance record. All we know for sure is that experiments from the Air Force Research Laboratory were on board, but officials haven't said what the plane was doing or why. Any ideas?



Getty



## UK NEWS

## GLOSSARY

**endurance** – How long something lasts

**gravity** – A force or pull towards the centre of an object, eg, the Earth

**NASA** – Stands for North American Space Agency

**officials** – Representatives of an organisation

**orbit** – The way objects travel in space around other objects or planets

**uncrewed** – No pilot or team aboard

Look at the article 'VIPER on the moon'.

1. Match the date to the event.

2009 ●	● NASA's robot called VIPER is due to arrive on the moon
2022 ●	● NASA intends to send astronauts to the moon
2024 ●	● Water ice was confirmed to be present on the moon

2. What type of map will the robot help to create?

3. Think of a **word** you could use to replace the word 'roam' in the sentence below, without changing the meaning.

"The robot will **roam** several miles over the moon's surface."

4. Give **two reasons** why water on the moon is important.

5. How big is the robot?

The size of a golf ball	
The size of a golf buggy	
The size of a golf course	

Look at the article 'Cookies in space'.

6. What type of kitchen appliance has been sent to space?

Dishwasher	
Oven	
Washing machine	

7. Name the **two** things astronauts will be investigating that may affect the cookies.

8. Would you like to eat a space cookie? Explain why/why not.

Look at the article 'Mystery trip'.

9. The US Air Force's X-37B space plane has set an endurance record. How long has it been orbiting the Earth for?

Consider all the articles.

10. Do you think space exploration is important? Explain why/why not.