

This image was taken by the Cassini spacecraft when Saturn was directly in front of the Sun. If you look close enough you can see the Earth in the background. I wonder where you were when this picture was taken.

Our Spectacular View of Saturn

We don't know for sure, but we have a lot of ideas. The most plausible idea is that Saturn met a giant comet as it was travelling around our solar system which was then torn apart as it was dragged into Saturn's orbit. Other ideas are that some of Saturn's moons collided and broke up, leaving the small pieces of ice and rock we see today or even that water was turned into ice.

How were the rings made?

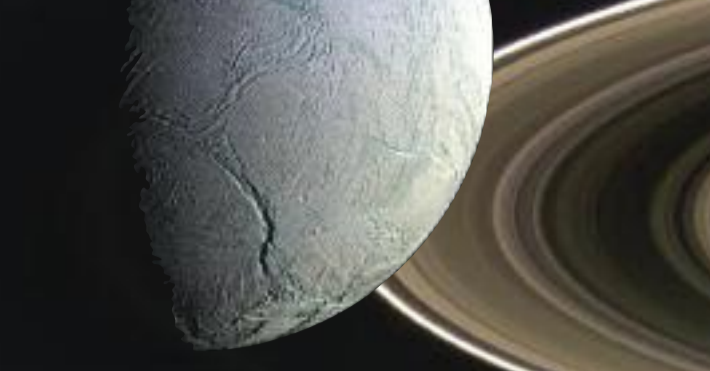
Did you know that Earth isn't the only place where it rains? There is also another place in the Solar System with lakes, rivers and mountains. Yes, Earth is not the only place we know of which has all these features. Titan, Saturn's largest Moon, has some features similar to the Earth - like mountains and rivers. One important difference is that on Earth we have rivers and lakes of water, but on Titan they are lakes and rivers of methane (a major greenhouse gas). The ocean waves on Titan are huge - imagine surfing on a wave seven times bigger than the ones we get here. Although



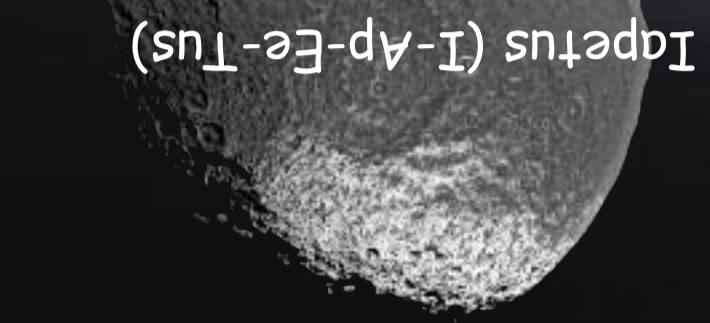
How fast did Cassini go?

The highest speed that Cassini reached was 13 kilometres per second (29100 miles an hour) as it flew by Venus. This is the same as flying from London to Glasgow in under 1 minute!

Enceladus is the sixth largest moon of Saturn. It has an icy surface. There are huge geysers that shoot out icy water. Scientists think these geysers helped make up one of the rings of Saturn.



Iapetus is the third largest moon around Saturn. It is known for its two coloured sides. Half of the moon is white while the other half is black. This moon is made from ice and rock. There is a huge bulge around the middle that is so high, it would be the same as putting two Mount Everests one on top of the other.



Hyperion looks a bit like a bath sponge but is made from water, ice and rock. Instead of spinning like the other moons, Hyperion tumbles around which makes it unique.

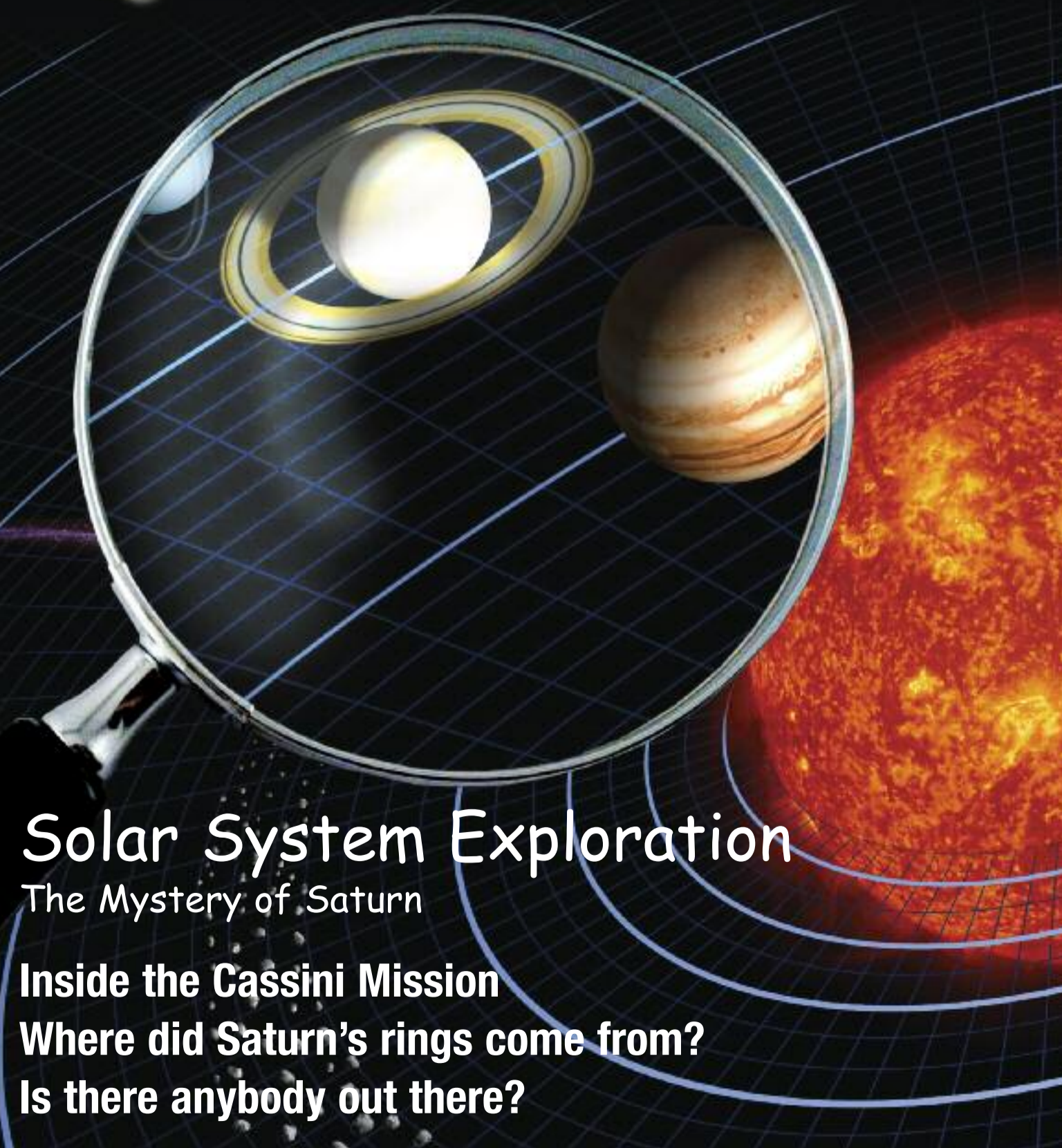


Moons of Saturn

Life on Titan

Voyage

Space For Young Explorers



Solar System Exploration

The Mystery of Saturn

Inside the Cassini Mission
Where did Saturn's rings come from?
Is there anybody out there?

Carl Murray

Professor of Mathematics and Astronomy



Name:	Where
Carl Murray	Astronomy Unit Queen Mary, University of London
Profession:	
Professor of Mathematics and Astronomy	

What do you do?
I carry out research in astronomy. I investigate the rings of Saturn and I work on the Cassini mission to Saturn. I am also in a team that has discovered two new moons of Saturn.

How did you get to where you are now?
As a school boy I always admired Buzz Aldrin (the American Astronaut who was the second man to walk on the moon) which made me want to become an astronaut, but I didn't think it was possible. I studied mathematics at university before going on to work in astronomy research.

If you had to invest a billion pounds into scientific research what area would you invest into?
I would invest into more missions to the outer solar system because I think there is a lot more to learn and many benefits.

Alien Hunting

Discovering life somewhere else in our solar system is very possible. Two moons of Saturn - Titan and Enceladus - could be home to simple life.

What you should look for when going on your alien hunt:

- Water
- A climate that isn't too hot or too cold, so similar to Earth's
- An atmosphere which protects life from the star's harmful radiation

If you are interested in discovering life yourself, especially intelligent life, check out the Search for Extra Terrestrial Intelligence (SETI). They send out and receive radio waves from space and you can be a part of it! All you need is a computer and access to the internet. Look up SETI@home for more information on how you can become an alien hunter.

Queen Mary, University of London
Mile End Road
London
E1 4NS



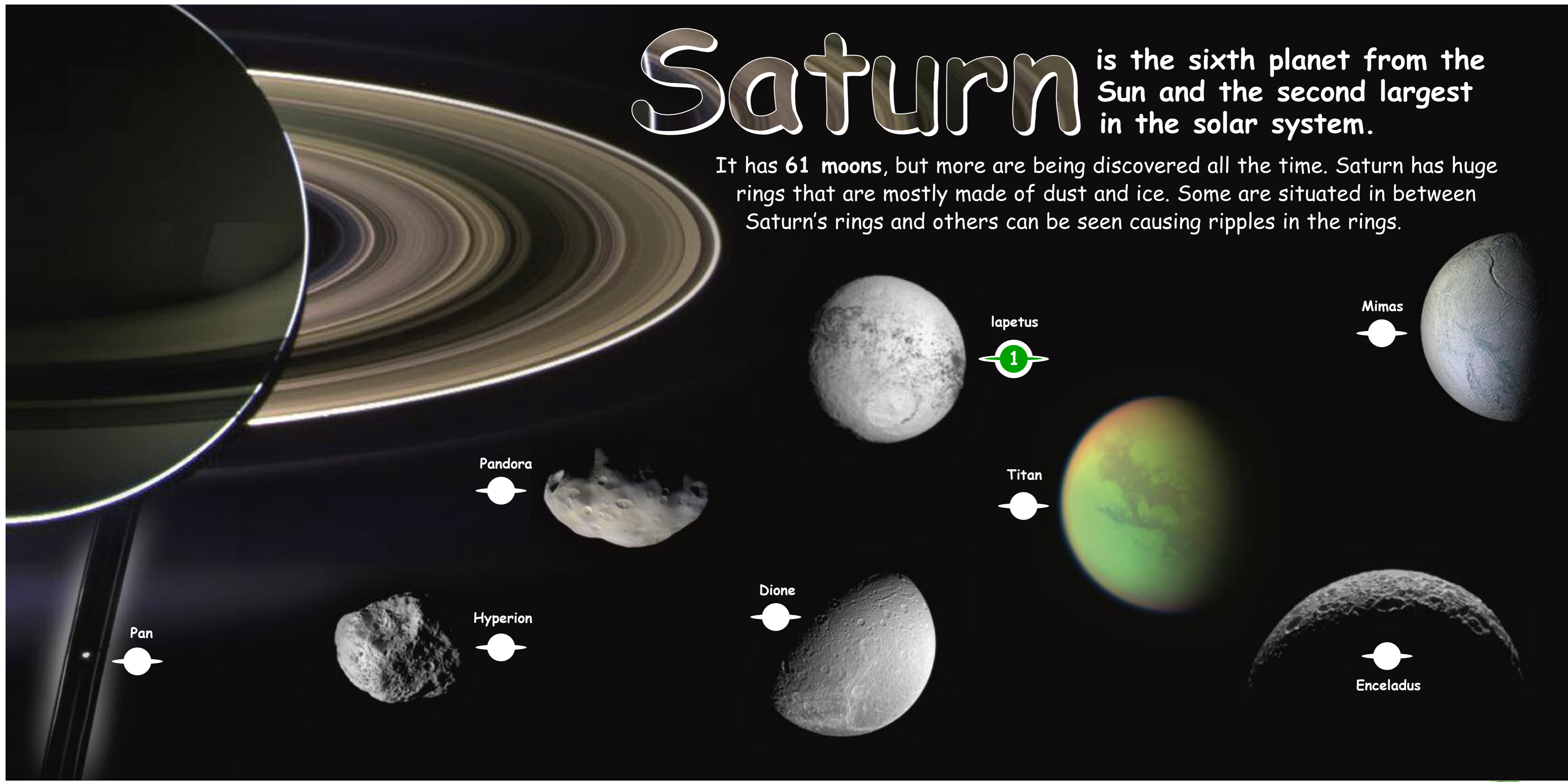
Written and designed by students from Morpeth and Stepney Green Schools taking part in the 2009 Media Space Summer School. www.maths.qmul.ac.uk



Saturn

is the sixth planet from the Sun and the second largest in the solar system.

It has 61 moons, but more are being discovered all the time. Saturn has huge rings that are mostly made of dust and ice. Some are situated in between Saturn's rings and others can be seen causing ripples in the rings.



Moon Hunting

Match the moons to the facts. We've given you eight facts about Saturn's many moons, now find out which moon is which. We've completed one to get you started! Just write the number of the fact in the white Saturn shape next to the moon you think that fact belongs to.



1 One side of this moon is dark and the other is light.

2 This moon orbits Saturn at about the same distance as our Moon orbits the Earth.

3 On the surface of this moon there is a 140 kilometre crater.

4 Discovered in 1980, we still know very little about this moon except that it is a strange shape.

5 The orbit of this moon is difficult to predict and is called "chaotic" and its shape resembles a potato.

6 Residing in the Encke Gap, this is the innermost of Saturn's moons.

7 Titan is Saturn's largest moon and has its own atmosphere.

8 This moon is one of the brightest objects in our solar system. It is covered in ice that reflects the sun.

For the answers, visit our website:
www.maths.qmul.ac.uk/home/for-schools-colleges