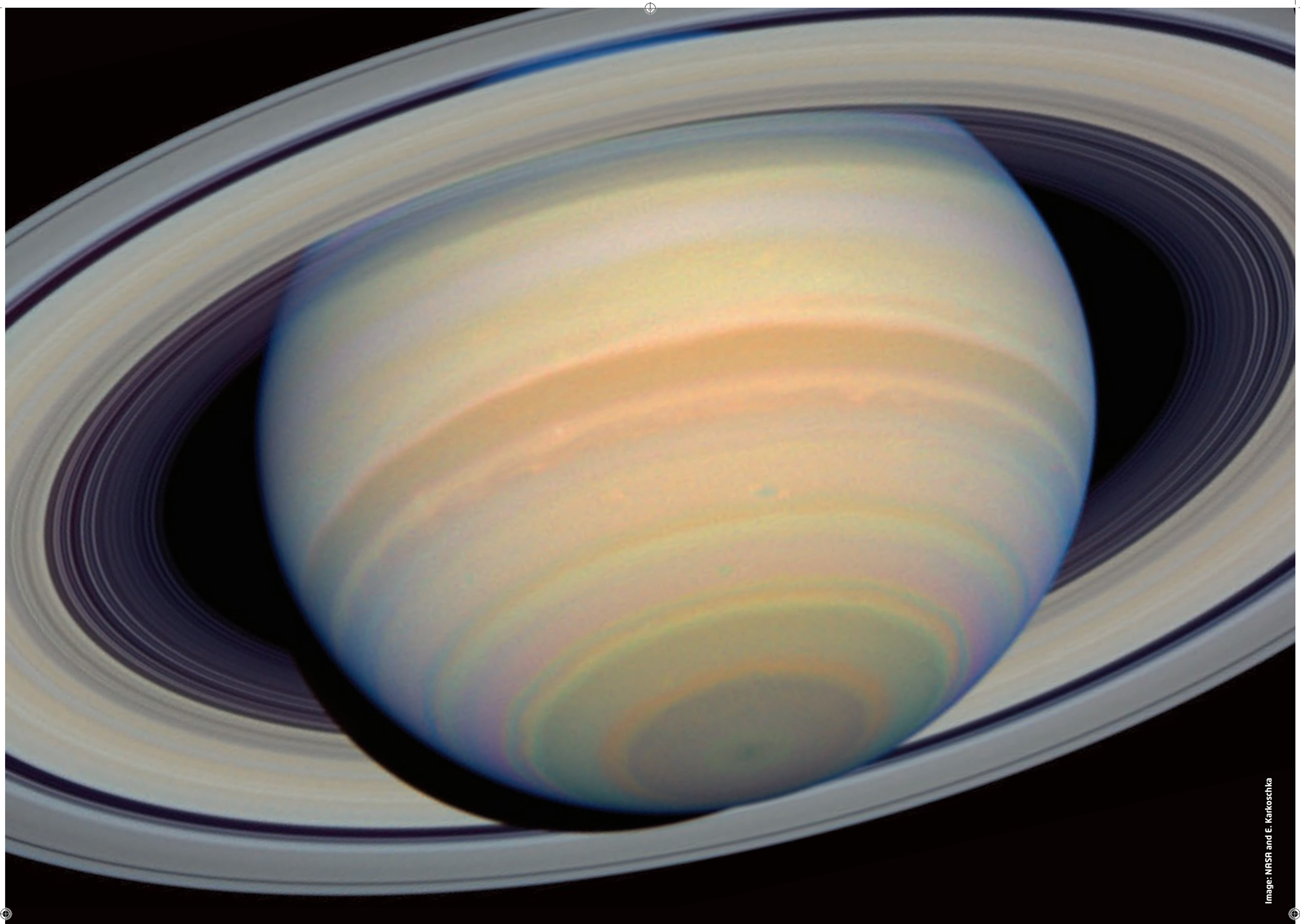

Image: NASA and E. Karkoschka

SATURN FACT FILE

In legends, the god **Saturn** is said to have brought a Golden Age to Rome.

The golden planet **Saturn** orbits the Sun over a billion kilometres from us. Far from the warmth and radiation of the Sun, gases do not boil away into space so easily. This is why **Saturn** has such an **enormous atmosphere.**

Saturn is a ball of mostly hydrogen gas, almost **ten times bigger across than the Earth.** As Saturn spins, **fierce winds** stir up tiny particles of ammonia, methane and sulphurous compounds, making it look striped.

The **rings of Saturn** are its most dramatic feature. They are made from **millions of snowballs, ice boulders and dust** trapped in orbit around the giant planet.

Only one kilometre thick, the ring plane is over 280,000 kilometres from edge to edge. Some of **Saturn's** many moons orbit inside, **herding the bits** into tidy orbits.

At least **60 moons orbit around Saturn**, with more being discovered every year. Each is a world of its own, and a few have the **ingredients for life** as we know it.

Titan is the second largest moon in the Solar System. Its hazy atmosphere covers a cold, rocky world beneath. Clouds rain organic chemicals onto the ground where they collect into **lakes**. There, the **molecules of life may be forming.**

Enceladus is a small water ice world just outside **Saturn's** rings. Its south pole cracks and **spits water out** for hundreds of kilometres above its frozen surface. **Life may be thriving in its underground oceans.**

Did you know that...?

Saturn spins so fast that it is **nearly flying apart.** As a result, it is ten thousand kilometres wider than it is tall! Hurricanes the size of the entire Earth rip through the thick hydrogen atmosphere of **Saturn. Lightning** also crackles in the clouds of **Saturn.**

A permanent and gigantic storm at **Saturn's** southern pole is so energetic, it is the warmest place on the planet. Its unique winds create amazing shapes in its atmosphere.

SATURN STATISTICS

Distance of Saturn from the Sun:	1,426,725,400 km (average)
Distance from the Sun compared to Earth:	9.5 X
Length of Year:	29.4 years
Length of Day:	10.6 days
Diameter:	60,268 km
Diameter compared to Earth:	9.5 X
Moons:	60 +

Mysteries still to solve

What lurks inside **Saturn?** Models predict that if you look inside Saturn, you would see layers of **soupy hydrogen and helium.** The gases are so dense, their weight **squashes them into liquids.** At the centre may be a **rocky core.**

The liquid hydrogen inside **Saturn** can carry electricity. It **creates a magnetic field** around it 578 times that of Earth's. Like a railway system, the magnetic field shuttles charged particles from space right into **Saturn's** thick atmosphere. When the particles hit, they **energise the gases and they glow.** But what is making those charged particles?

And how did **Saturn** get its **amazing rings** and how old are they? Perhaps an unlucky **comet was torn apart** by **Saturn's** gravity and spattered into bits millions of years ago. Or maybe **Saturn's** fast spin kept it from collecting these bits into itself when it first formed billions of years ago.

Understanding the origin of the orderly rings helps scientists understand how Solar Systems and even galaxies form.

The international **Cassini spacecraft** is now gathering data about **Saturn's** magnetic field and its gases. And every two weeks it plunges through the rings to learn more about them.

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