

Lift-off for ESA’s JUICE mission to explore Jupiter’s icy moons!



Launch of JUICE 14 April 2023
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Juice liftoff

See the launch of JUICE, onboard an Ariane 5 rocket! Copyright: ESA/CNES/Arianespace.

On 14 April 2023, a powerful [Ariane 5](#) rocket blasted off from [Europe's Spaceport](#) in French Guiana. It was carrying a very special passenger: ESA's [JUICE spacecraft](#)! JUICE stands for Jupiter Icy Moons Explorer, and this high-tech probe is now journeying across space on the adventure of a lifetime!

JUICE's target is [Jupiter](#), the largest planet in our Solar System and in particular the icy moons that orbit this world, such as Callisto, Europa, and most of all Ganymede. This fascinating moon has a magnetic field, interesting geology, and a vast ocean hidden beneath its surface. There are plenty of mysteries that JUICE hopes to solve!

But first, JUICE must complete a long and dangerous journey. It will take around eight years to reach Jupiter and its icy moons! This presents many challenges. For example, JUICE will be so far from the [Sun](#) that light collected by its solar panels will be 25 times weaker compared to when it is close to Earth. This means that the probe must be very power-efficient. It will also be hundreds of millions of kilometres from Earth, making communication with scientists difficult. To help, JUICE has a large antenna 2.5-metres across, to send signals and information back home.



This animation shows JUICE unfolding its solar panels and deploying scientific instruments. Copyright: ESA / ATG medialab.

Mission engineers have thought of some clever ways to get JUICE to its destination. It will use gravity from the Earth and Moon to propel it toward [Venus](#), which will then slingshot it toward Jupiter. Between July 2031 and November 2034, JUICE will complete an incredible 35 fly-bys of various moons orbiting Jupiter, before eventually orbiting around Ganymede, making it the first spacecraft to orbit a moon other than Earth's own. A 'fly-by' is a close approach of a spacecraft to a celestial body, such as a planet. What a rollercoaster ride for JUICE!

Exploring Jupiter and Ganymede (artist's impression)

This animation shows JUICE during a fly-by of Ganymede. Copyright: ESA / ATG medialab.

Science data will start to be collected around six months before JUICE arrives at Jupiter, and the first really interesting photos are expected to be taken in February 2032 during a science flyby of Ganymede and close pass of Jupiter. Can you work out how old you will be when that happens?

Cool fact: You can use [this](#) interactive tool to see where JUICE is right now!