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[Jupiter icy moon explorer \(JUICE\)](#)

Understanding our Solar System

JUICE is an ESA Large class science mission. It will study Jupiter and three of its icy moons: Ganymede, Europa and Callisto. Liquid water is thought to be below the icy surface of these moons, so a key aspect will be to study them for potential habitability.

The JUICE mission will help us understand big questions about our solar system – how it was formed, what are the conditions for planet formation and how life might form in a Jupiter type planetary system.

JUICE will also study the atmosphere and magnetosphere of Jupiter and the interactions of the magnetosphere with its moons. It will carry 11 different science experiments, including a magnetometer, an optical camera and a geophysical package.

Set for launch in 2022, it will arrive in 2030 and will then spend 3.5 years in orbit in the Jovian system.

10 scientific instruments on one unique space craft

The JUICE spacecraft will carry [10 scientific instruments](#) to carry out powerful remote sensing and geophysical measurements and observations across its 11 year life. You can read about each of these instruments on the [ESA mission webpages](#).

Remote sensing instruments

- JANUS – Camera system lead by a team in Italy.
- MAJIS – Moons and Jupiter Imaging Spectrometer
- UVS – UV imaging Spectrograph

- SWI – Sub-millimeter Wave Instrument

Geophysical instruments

- GALA – GAnymede Laser Altimeter
- RIME – Radar for Icy Moons Exploration

Radio science instrument

- 3GM – Gravity & Geophysics of Jupiter and Galilean Moons

In situ instruments

- PEP – Particle Environment Package
- J-MAG – A magnetometer instrument for JUICE
- RPWI – Radio & Plasma Wave Investigation

How is the UK involved?

UKSA has invested approximately £9 million spanning across all UK involvement in the mission up to instrument delivery.

The UK is leading the development of the magnetometer, J-MAG. The team at Imperial College London are led by Principal Investigator, Prof. Michele Dougherty.

Scientific measurements from the J-MAG magnetometer will lead to an understanding of the formation of the Galilean satellites, a characterisation of their oceans and interiors, and will provide deep insight into the behaviour of rapidly rotating magnetised bodies and how they accelerate particles.

Recent work for the J-MAG team has concentrated on the Qualification Model (QM) and Flight Model (FM) units which has culminated in the delivery of the J-MAG FM unit for integration on the spacecraft in May 2021.

The spacecraft arrived at ESTEC in April 2021 and is undergoing environmental and functional test campaign. JUICE aims to launch on the Ariane 5 rocket, with launch window opening at the end of August 2022. Following its cruise phase JUICE would then reach Jupiter Orbit insertion in July 2031, followed by:

1. Europa phase: June 2032 – end July 2032
2. High latitude phase: 14 August 2032 – 10 August 2033
3. Transfer to Ganymede: 1 November 2033 – 18 November 2034
4. Ganymede Orbit Insertion: December 2034
5. End of nominal mission: September 2035

The UK Space Agency is also funding the [Open University, under the management of Dr Mark Leese](#), to characterise, test and calibrate the CMOS imaging sensors for the Italian-led optical camera system, JANUS.

These sensors have been specially designed by [Teledyne e2v](#) in Chelmsford to

withstand the harsh radiation environment of Jupiter.

University of Leicester, led by Dr Nigel Bannister, has also been supported to contribute to the radiation-hardness and mechanical designs.

University College London's [Mullard Space Science Laboratory](#) is providing the Solid-State Detectors for the (Swedish-led) Particle Environment Package (PEP), and Aberystwyth University is contributing to the radiation design of PEP instrument suite.

Ministry of Justice statement in fee-paid judicial litigation: May 2021

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New Customer Panel will help transform customer experience

At SLC we have made a strategic commitment to improving customer experience. Recently, we have established our Customer Vision:

To be widely recognised for enabling student opportunity and supporting the future economic prosperity of the UK. We aspire to provide an outstanding customer experience, helping customers to invest in their futures by providing an intuitive, supportive and trusted service.

We recognise that we have some way to go to achieve this vision, so we will strive to deliver excellence across everything we do, from our information and guidance, through to the quality of our customer care and the design and reliability of our platforms, products, and services. But it is only by listening to our customers that we can become a truly customer centric organisation – delivering an end-to-end customer journey that is centred on

their needs.

A key part of this work is the establishment of a Student Finance Customer Panel which complements our existing user research and testing work. The Customer Panel gives us a new way of meaningfully engaging with a broad and diverse range of future, current and former higher and further education students who reflect the wider population we serve.

I was joined by colleagues from SLC's UX team, who lead the research, design and testing of our products and services with users, for our first Customer Panel meeting which took place virtually last month. During this session we discussed the importance of communication, with panel members sharing their thoughts on how they prefer to engage with organisations such as SLC.

We wanted to hear their opinions on our service and their expectations on areas such as opening hours, response times and channel usage for specific types of enquiry. Due to the Covid-19 pandemic, we also wanted to hear the panel's comments on their current service expectations of SLC and how that might change going forward. The discussion generated some very constructive and considered feedback which will be invaluable to SLC as we work to improve our services going forward. I appreciated how open and engaged all our panel members were and was encouraged to hear that they had also found the session useful.

One panel member Mark, very much echoed my own sentiments when he said:

We have panel members from all over the UK, representing many different backgrounds, qualifications and realities and I truly believe the rich diversity of experiences and journeys to, through and after university will prove invaluable to the Customer Panel overall. I thoroughly look forward to continuing the constructive discussions with my fellow panel members and supporting SLC's desire to continuously improve its customer experience, now and in the future.

From SLC's perspective, we are also looking forward to future meetings. If the first session is anything to go by then I am confident the panel will be a success in helping to ensure the voice of the customer is reflected in future service design.

With our Customer Panel in place and a keen focus on our Customer Vision, I believe that we are well placed to build on our existing and planned improvements and deliver an outstanding experience for those we serve.

Tree planting rates to treble by end of this Parliament

Plans to treble tree planting rates over the course of this Parliament will be set out by the Environment Secretary this week.

In a speech that will outline the government's ambitions to create more woodlands, protect our peatlands and boost biodiversity, he will set out how new measures to increase tree planting will form a central pillar in the efforts to reach net zero emissions by 2050.

Under the new target, approximately 7,000 hectares of woodlands will be planted per year by the end of this Parliament (May 2024) alongside new initiatives to improve the health of our trees, create more woodlands in cities, and deliver thousands of green jobs as we build back greener from the pandemic.

The increase in woodland creation rates will be backed up by new funding for tree nurseries to improve our domestic tree production and maintain high levels of biosecurity. This will ensure the trees we plant now are healthy and resilient to the impacts of changing climate and increasing threats from pests and diseases.

Launching the plan, the Environment Secretary George Eustice is expected to say:

We are putting plans in place to treble woodland creation rates by the end of this Parliament, reflecting England's contribution to meeting the UK's overall target of planting 30,000 hectares per year by the end of this Parliament. We will make sure that the right trees are planted in the right places and that more green jobs are created in the forestry sector.

He will also outline the importance of nature for people and society, saying:

The events of the last twelve months have led people to appreciate the difference that nature makes to our lives more than ever before. There is an increased awareness of the link between our own health, and economic prosperity, and that of the planet— as highlighted by the recent Dasgupta Review of the economics of biodiversity.

Details of how the government will deliver the new target will be set out in an England Trees Action Plan, which will outline how we will create the diverse woodlands we need, through processes such as natural regeneration,

where woodlands are restocked by trees which grow from seeds which naturally fall and germinate there, as well as programmes of tree planting.

The Action Plan aims to see the current planting trends for woodlands made up of mostly native broadleaf trees continue, given the additional benefits they provide for nature by supporting native insects, birds and other animals.

The Environment Secretary's speech on Tuesday will take place at an event chaired by the Wildlife Trusts where speakers will also include Tony Juniper, Chair of Natural England, and Sir William Worsley, Chair of the Forestry Commission.

Last week, the government marked less than six months to go before the UK hosts the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow later this year. In the run up to the summit, the UK is focused on four goals to drive progress: securing global net zero, protecting communities and natural habitats from the impacts of climate change, mobilising finance and working together to accelerate action.