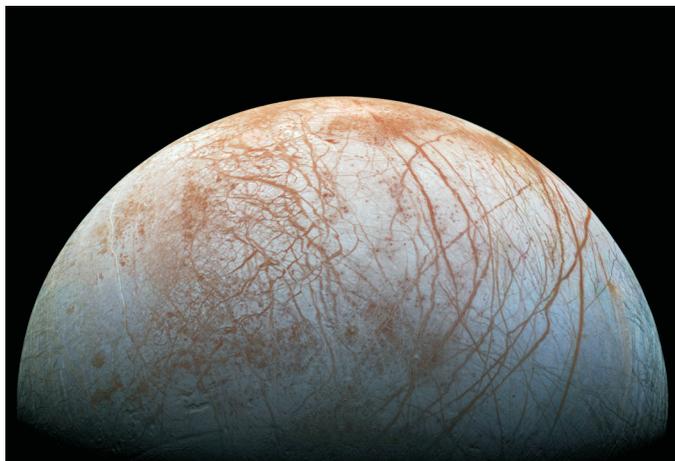


## Impact of European Union Funding on Planetary Science



Jupiter's icy moon, Europa, is a target of the European Space Agency's flagship mission, JUICE, which is due for launch in 2022. Credit: NASA/JPL-Caltech/SETI Institute.

Investment by the European Union through FP6, FP7 and Horizon 2020 has played a vital role in building a coherent, well-networked and collaborative planetary community that can fully exploit its resources. Historically, fragmentation has been a particular challenge for planetary science in Europe. Unlike other space agencies (e.g. NASA), which have responsibility for both space missions and the associated science, the European Space Agency (ESA) is only responsible for building and operating missions. Support for the underpinning scientific community is distributed among ESA's national members and institutions, each with their own funding structures.

Horizon 2020 has widened the scope of the EU's space programme and enabled the space science community to enhance return on investment in missions and facilities and strengthen European expertise. Currently, Horizon 2020 Transnational Access is the only funding mechanism that allows European researchers cross-border access to facilities; without this key support, Europe's world-leading facilities would risk under-use and reduced scientific output. Projects funded through the EU's "European Research Infrastructures", "Leadership in Enabling and Industrial Technologies - Space" and "Spreading Excellence and Widening Participation" Work Programmes have formed a critical mass of research, innovation and infrastructure that underpins and reinforces Europe's position as a global leader in planetary science.

- Planetary science covers the study of our solar system and those around other stars.
- It is an interdisciplinary field of research that covers physics, chemistry, astronomy and geophysics, robotic and human exploration of other planets, as well as the search for extraterrestrial life.
- Comparative planetology research, such as climate modelling, can help improve our understanding of the Earth, its history, evolution and the risks that it faces from space, such as geomagnetic storms or asteroid impacts.
- Europe has world-leading facilities and the largest international community of planetary scientists, comprising over 1000 tenured academics and around 5000 early career researchers spread in more than 200 research groups/ institutions.
- Since 2005, the European Commission has supported the European planetary science community with over €40 million funding, including €18 million for the Europlanet project to integrate planetary science across the European Research Area.

Looking ahead to the next Multiannual Financial Framework, the European planetary science community has identified the following Work Programmes as essential to maintaining its world-leading and competitive status beyond 2020:

- European Research Infrastructures (including e-Infrastructures) to provide ongoing Virtual Access and Transnational Access to facilities.
- Leadership in Enabling and Industrial Technologies - Space calls to address the development of new technologies for space exploration.
- "Widespread" calls in the "Spreading Excellence and Widening Participation" Work Programme extended beyond the narrow remit of the Smart Specialisation Strategy to enable Capacity Building Regions (central and Eastern Europe, the Balkans and Baltics) to develop new communities in space and planetary science.