

Impact

The European Space Sciences Committee (ESSC) actively collaborates today with the European Space Agency, the European Commission, national space agencies and national research funding organisations. This unique position gives ESSC a reference name in space sciences within Europe.

The ESSC members provide advice and policy foresight on science and technology in Europe to:

- the ESA Director General and Directors
- the ESA Advisory Structure
- the ESA Ministerial Council with an observer role
- the European Commission Directorate General of Industry and Entrepreneurship, Mobility and Transport, Research Innovation and Science
- the National Space Agencies
- the Science Community (via the Science Advisory Committee of the Committee for Space Research – COSPAR/CSAC)
- other international bodies on an *ad hoc* or permanent basis (e.g. UN-OOSA, OECD)

In particular and on an international level the ESSC:

- is represented *ex officio* in most of the **European Space Agency** (ESA) scientific advisory bodies such as ESA's High-level Science Policy Advisory Committee (HiSPAC), the Human Spaceflight and Exploration Science Advisory Committee (HESAC) and the Space Science Advisory Committee (SSAC), hence advising ESA Directors and the Director General;
- has observer status in **ESA's Council of Ministers** of ESA Member States where it participates since 1999, representing the science community therein. The Chair of ESSC has the possibility to deliver statements at these meetings, highlighting the Committee's recommendations concerning the scientific programmes of ESA;
- maintains close relationships and exchanges with the **European Commission/European Union**;
- entertains strong permanent relationships with the National Academies' **Space Studies Board** in the US, and with the **United Nations Office for Outer Space Affairs**;

- has strong ties with international organisations such as **COSPAR**, and with various scientific bodies, sitting at their science advisory committees;
- has developed good relations with corresponding structures and officials such as the **Chinese Academy of Sciences** and other China's space science authorities, and with Russian and Japanese scientists and relevant institutions.

ESSC Members and Members Organisations

The ESSC members are drawn from reputed experts active in all fields of space research on the basis of scientific expertise and recognition within the community. ESSC's impact is based on the unbiased expertise, international reputation and reach of its members. These senior space experts are not appointed as representatives of national institutions; however they are required to maintain strong ties with ESSC Funding Organisations and their national space agencies. They offer their understanding and competence in the field of space science and policy.

The Committee's four panels (Astronomy and Fundamental Physics, Earth Sciences, Life and Physical Sciences, Solar System and Exploration) reflect the variety of space-related disciplines.

European Space Sciences Committee (ESSC)

European Science Foundation
1 quai Lezay-Marnésia – BP 90015
F-67080 Strasbourg Cedex - France
Tel: +33 (0)3 88 76 71 30
▶ www.esf.org/essc

April 2016 – Graphic Design: Dans les villes



European Space Sciences Committee

Europe's Advisor on Space Science and Policy



History and mission

The European Space Sciences Committee (ESSC) was established in 1974, first as the *European Provisional Advisory Committee for Space Research*, and then as an independent committee under the then newly-created *European Science Foundation (ESF)*, as a means to give European space scientists an independent voice in the space sciences arena.

The ESSC scope covers the whole spectrum of space sciences, from microgravity research to space physics, and from planetary sciences to astronomy and Earth sciences.

Somehow comparable to the National Academies' Space Studies Board in the USA, ESSC has a unique position in Europe providing independent scientific advice on space science matters to the European Space Agency (ESA), the European Commission (EC), national space agencies, and other stakeholders and has become the reference body in Europe on space sciences matters.

ESSC members are reputed experts active in all fields of space research and well recognised within the community. The mission of the ESSC is to facilitate and foster space sciences at the European level by providing an unbiased, expert advice on European space research and policy via recommendations or reports. Furthermore, ESSC provides a unique focal point to assist European national councils and agencies to achieve optimal science return and harmonise strategic priorities in space activities.

Cover image:
Sentinel-2 spacecraft which will provide unprecedented views of Earth for Europe's Copernicus programme

© ESA, Airbus DS

Stakeholders and mission evolution

ESSC fulfils its pivotal mission in Europe under the umbrella of the European Science Foundation (ESF) and the support of historic and new institutional stakeholders (European Commission, European Parliament, Academies, Research Councils, space agencies, etc) ensuring that the role of the ESSC is always efficient, amplified and diversified. This support allows to maintain a high-level independent body, providing formal and authoritative advice and expertise in the European space arena, by:

- **Underlining** the role of space sciences and technology as basic pillars of the European space venture.
- **Supporting** European visibility and enhancing the position of Europe in global space initiatives, also taking into account national priorities.
- **Assessing** the status and perspectives of European space activities on a regular basis

The ESSC action can make a difference by helping space agencies to establish a science-optimised agenda that covers the most promising and broad space science themes and by providing expert advice on the status and perspectives of the European space activities, in cases where an integrated approach is needed. This is due to the unique position the ESSC achieved over the past decades, allowing to connect the decision makers and the scientific community, something that cannot be supplied by any other European institution.

Many institutional stakeholders who fund or organise space research at their national level, support the ESSC. They thus benefit from the expertise and experience of the committee members (for instance in setting up roadmaps and priorities in European space science strategy and policy).



Cassini-Huygens

One of the milestones in the ESSC history dates back to 1984 when the Committee, together with the US SSB/ NAS and ASI, recommended that ESA and NASA develop the Cassini-Huygens mission to the Saturnian system. The extremely successful exploration (since 2014) continues today with the spacecraft still orbiting Saturn and its moons. The European-built Huygens probe descended on Titan in 2005 and delivered a large amount of data, still being analysed ten years later. © NASA



Rosetta-Philae

The highly-successful Rosetta mission was born in 1980, in discussions within the ESSC leading to propose a comet rendezvous and an asteroid fly-by. The ground-breaking European mission was launched in March 2004, arriving at the comet 67P/Churyumov-Gerasimenko in August 2014. On 12th November 12 of the same year, the lander Philae successfully landed on the comet surface. © ESA

ESSC unique features

- **Space sciences broad coverage**
The structure of the ESSC encompasses various themes from fundamental physics to life sciences and thus reflects the variety of the space-related disciplines in Europe. It provides an asset to space agencies and decision makers by assembling valuable expertise across all these domains (research on, in and from space).
- **Backward and forward-looking approach**
Full knowledge of the past and current landscape (backward-looking) is a necessary step for expressing an independent collective vision (forward-looking) on the future European space and technological research, in connection with national priorities. ESSC and ESF have substantial experience and know-how in *ex-post* and *ex-ante* evaluations (e.g. ESA's ELIPS programme; roadmaps on astrobiology, life in extreme environments, and research disciplines enabling both robotic exploration and human spaceflight).
- **Independence and quality of the advice**
The ESSC is able to provide its Funding Organisations and other stakeholders with documented, competent and unbiased advice on space research issues. Its highly-expert members are appointed *ad personam* and thus play an independent role of advisors in Europe.
- **Integrated approach**
By representing a unique focal point integrating European national research councils and space agencies' strategic interest in all domains of space science and technology activities, the ESSC is able to effectively address the coordination between national research councils and academies on the one hand, and ESA, national space agencies and the EC, on the other hand thus leading to an improved coordination between national and European research institutions.