

# Rosetta Exomars GAIA Hints on the Science Programme of ESA

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# What is ESA?



- 1. In 1964 after the strong pressure mainly of Italian and French eminent scientists, E. Amaldi and P. Auger, followed by scientists from other 8 countries( UK, D, B, DK, S, E, SU) the European Science Research Organization-ESRO was created.**
- 2. Two years earlier, 1962, with the leadership of UK, that was already very active in design his rocket, the *Blu Streak*, and France, but also with a strong interest from Italy, Germany, Belgium and Holland, The European Laucher Development Organisation-ELDO was also settled.**
- 3. Merging the positive inheritance of ESRO and the less positive of ELDO, in 1975 ESA entered into force.**

- **The Programme is Science-driven:**

both long-term science planning and mission calls are bottom-up processes, relying on broad community input and peer review.

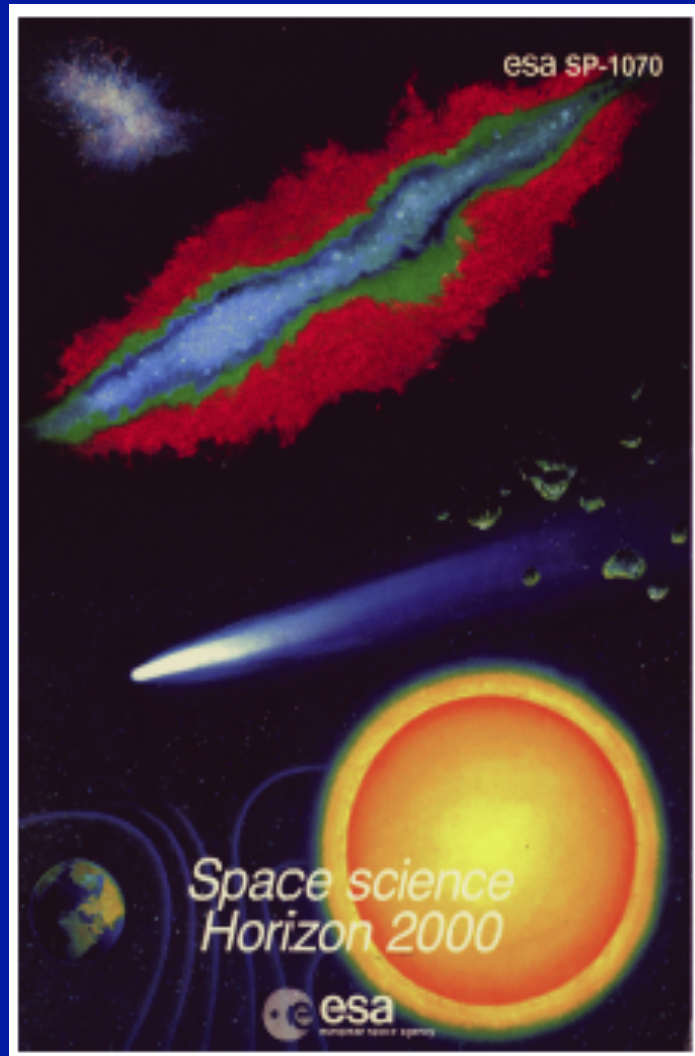
- **The Programme is Mandatory:**

all member states contribute pro-rata to GDP providing budget stability, allowing long-term planning of its scientific goals and being the backbone of the Agency.

- **The Delegates of the Member States in the Science Programme Committee approve the missions to be implemented.**



# HORIZON 2000 (1986-2005) HORIZON 2000+ (2006-2015)



In 1995, a roll-forward of the programme was established, with the name Horizon 2000+, for 10 additional years, i.e. with launches up to 2015.

# COSMIC VISION 2016-2025

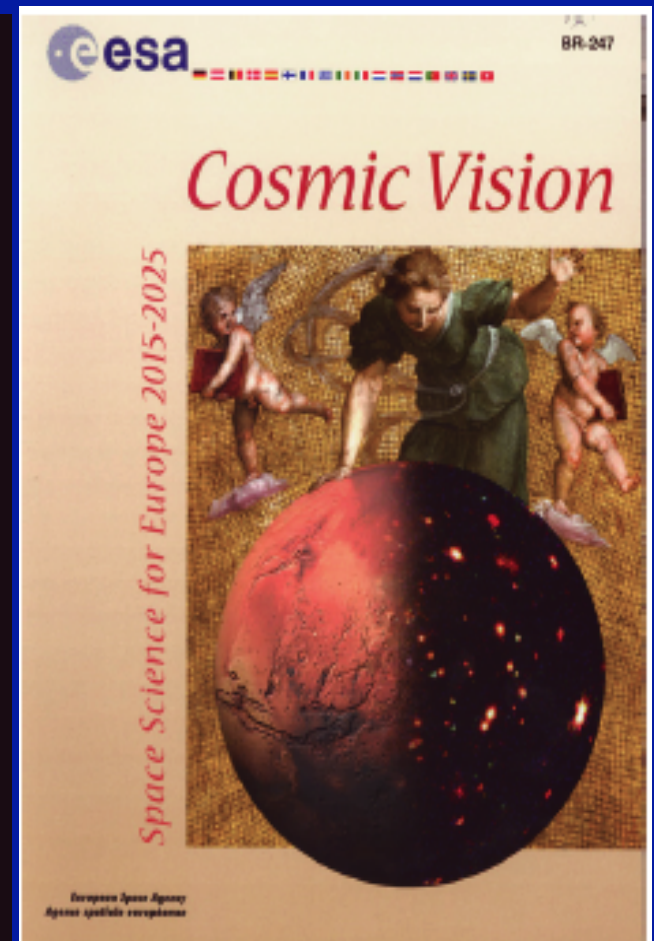


In 2005, a new programme was introduced to replace H2000+, for one more decade (until 2025) with the name Cosmic Vision (2015-2025).



What are the themes for space science?  
*A call to the European Science Community*

150 Ideas Proposed





# The COSMIC VISION “Grand Themes”



1. What are the conditions for planetary formation and the emergence of life ?
2. How does the Solar System work?
3. What are the physical fundamental laws of the Universe?
4. How did the Universe originate and what is it made of?



**soho**  
Facing the Sun

**venus express**  
Studying Venus' atmosphere

**juice**  
Characterising the conditions of  
ocean-bearing moons around Jupiter

**proba-2**  
Observing coronal  
dynamics and solar eruptions

**bepicolombo**  
Exploring Mercury

**cassini-huygens**  
Studying the Saturnian system  
and landing on Titan

**mars express**  
Investigating the Red Planet

**cluster**  
Measuring Earth's magnetic shield

**solar orbiter**  
The Sun up close

**rosetta**  
Chasing a comet

## → ESA'S FLEET IN THE SOLAR SYSTEM

The Solar System is a natural laboratory that allows scientists to explore the nature of the Sun, the planets and their moons, as well as comets and asteroids. ESA's missions have transformed our view of the celestial neighbourhood, visiting Mars, Venus, and Saturn's moon Titan, and providing new insight into how the Sun interacts with Earth and its neighbours. The Solar System is the result of 4.6 billion years of formation and evolution. Studying how it appears now allows us to unlock the mysteries of its past and to predict how the various bodies will change in the future.



# ESA's Fleet in Astrophysics

