

Overview of the ESA Science Programme

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ESA Scientific Programme

Mandatory programme of the Agency, about 400 M€ per year.

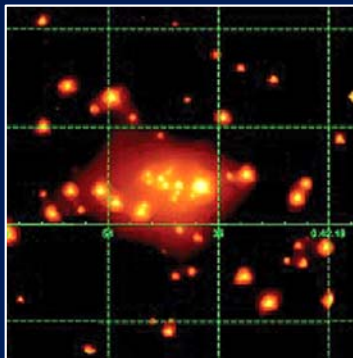
To define and implement a space science programme fulfilling the needs of the European scientific community.

This programme defines the scientific objectives, the scientific satellites and the means to reach these objectives.

It is nowadays called “Cosmic Vision”.

Cosmic Vision

The Scientific Missions



Past missions

- Huygens [2005]
- Smart-1 [2003]
- ISO [1995]
- Hipparcos [1989]
- Giotto [1985]
- Exosat [1983]
- IUE [1978]
- COS-B [1975]

Operations

- COROT [2006]
- Venus Express [2005]
- Rosetta [2004]
- Double Star [2003]
- Mars Express [2003]
- INTEGRAL [2002]
- Cluster [2000]
- XMM-Newton [1999]
- SOHO [1995]
- Hubble [1990]
- Ulysses [1990]

Implementation

- Herschel [2008]
- Planck [2008]
- LISA Pathfinder [2009]
- Microscope [2010]
- Gaia [2011]
- BepiColombo [2013]
- JWST [2013]

Definition

- Solar Orbiter [2015]
- LISA [2017]

Some recent Planetary Missions



SMART-1

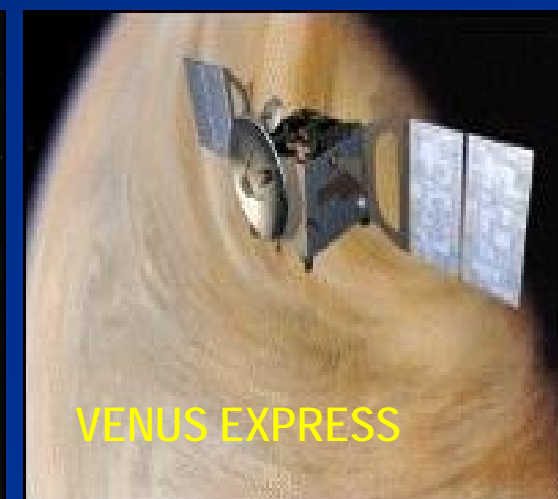
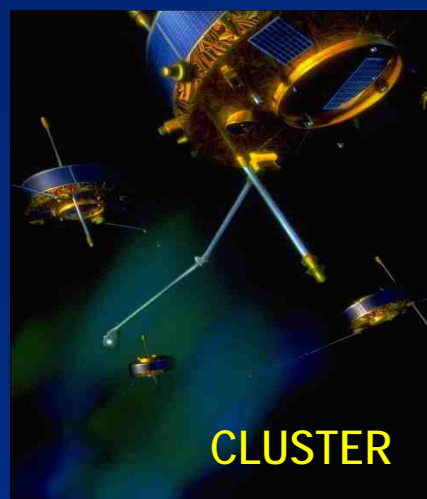
First of ESA's small missions to test new technology, SMART-1 was also the first European spacecraft to go to the Moon. Its main objective was to test solar-electric primary propulsion for future deep-space missions.



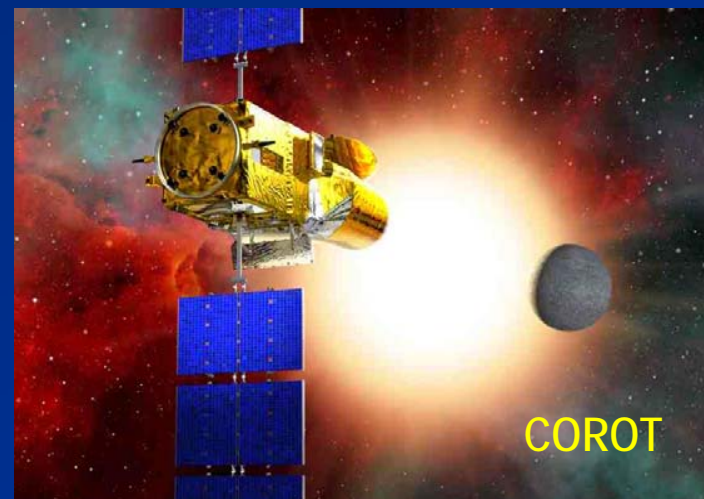
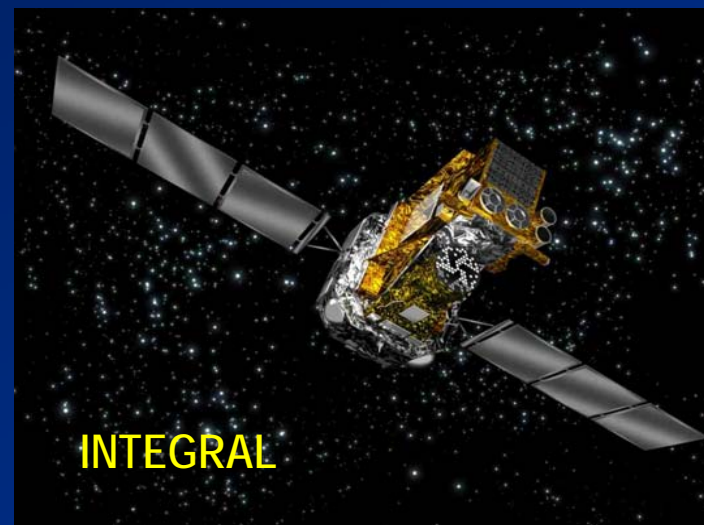
CASSINI-HUYGENS

A NASA/ESA/ASI mission to explore the Saturnian system. The ESA component consisted of the Huygens probe designed to enter and study the atmosphere of Saturn's largest moon, Titan, while descending under parachute down to the surface.

Satellites in Orbit: Solar System



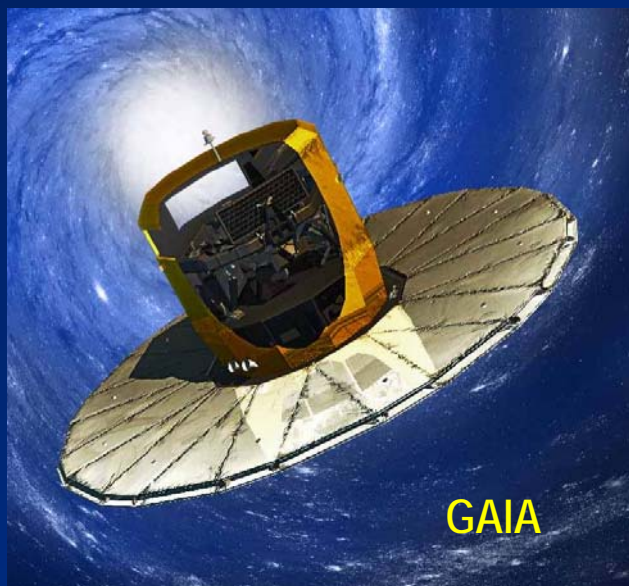
Satellites in Orbit: Astrophysics & Astronomy



Scientific Missions under Development



HERSCHEL



GAIA



BEPICOLOMBO

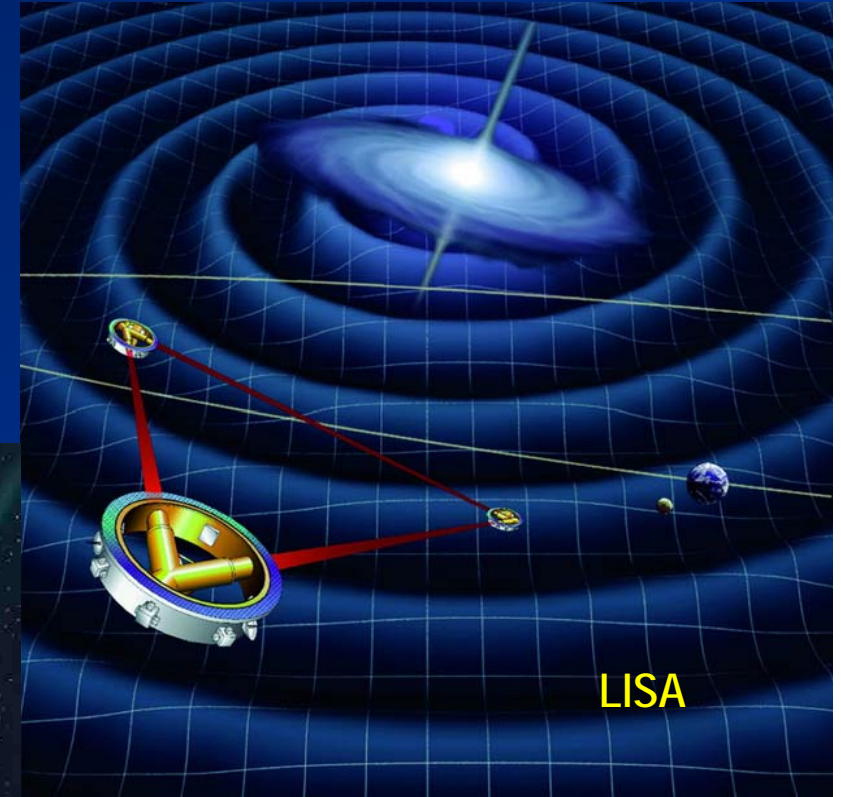
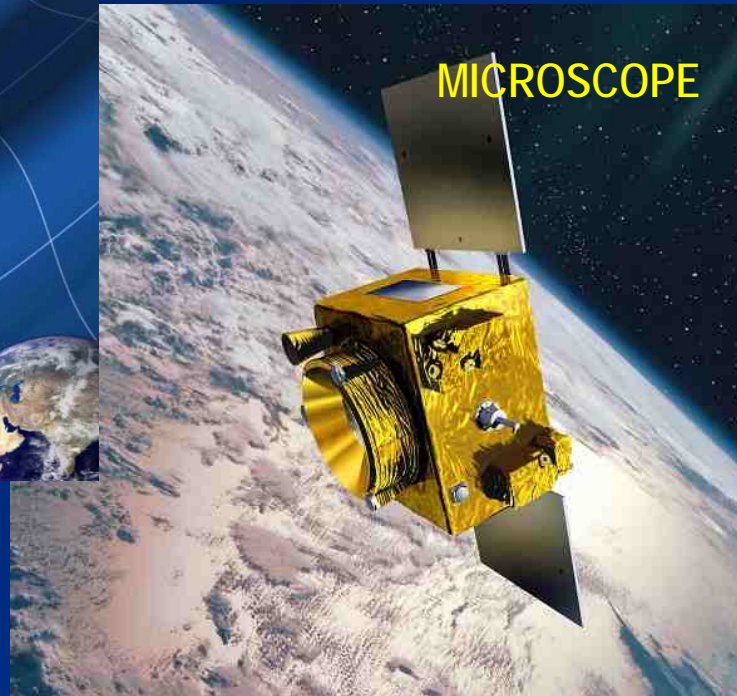
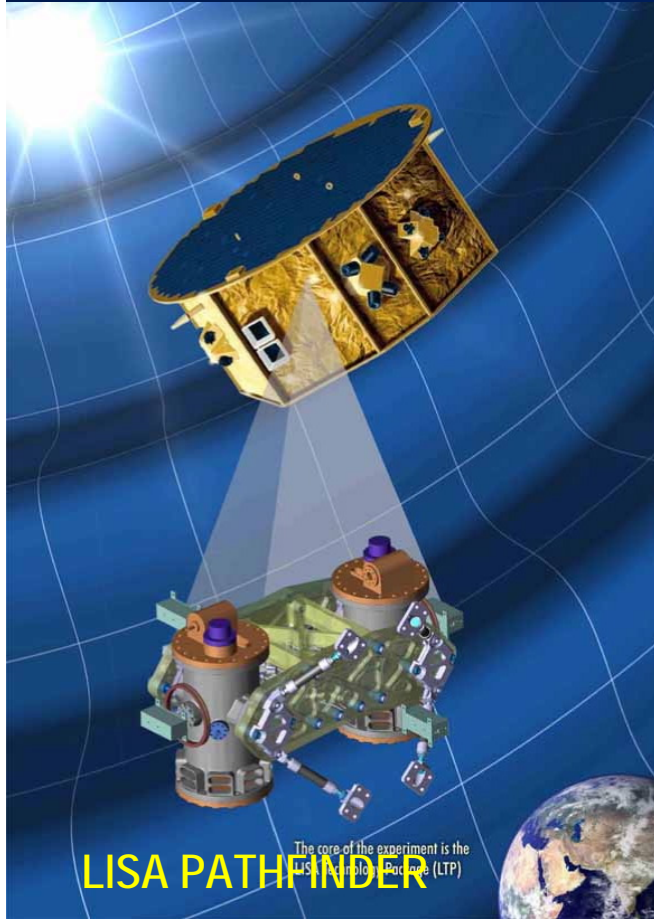


PLANCK



JWST

Fundamental Physics



Cosmic Vision Call 2015-2025

How does the Solar System work ?

What are the conditions for life & planetary formation ?

What are the fundamental laws of the Universe ?

How did the Universe originate and what is the Universe made of?

- Call released end February 2007
- Proposals received end June 2007
- Evaluation on going
- Recommendation to be made by the ESA Space Science Advisory Committee by mid October 2007 → **3 M-Class missions** and **3 L-class missions** to be studied
- Final down selection of **1 M-class** (300M€ to ESA) and **1 L-class** (650M€ to ESA) mission by end 2011
- First selected Mission to be launched before end 2017

Herschel & Planck for launch in 2008

