

ESA: 2013 to be bumper year for space science

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This handout picture released on January 16, 2013 by the European Space Agency (ESA) shows space nearly 200,000 light-years from Earth. European probes this year will return a treasure trove of data from explorations into the Big Bang, water on Mars and climate change, ESA chief Jean-Jacques Dordain said on Thursday.

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"2013 will yield an extraordinary harvest" of knowledge about space, Dordain predicted at a start-of-year press conference.

On February 22, scientists will report back on the Soil Moisture and Salinity (SMOS) mission, in which a satellite launched in 2009 is mapping Earth's land surface and oceans for changes linked to global warming.

On March 21, astrophysicists will release the first all-[sky map](#) of [Cosmic Microwave Background](#) (CMB)—the backwash of ancient radiation from the creation of the Universe 14 billion years ago. The map has been generated by the probe Planck, launched in May 2009.

And in June, ESA experts will release a complete "mineralogical map" of Mars, assembled from remote-sensing data provided by Mars Express, which this year marks its 10th year of operations, said Dordain.

Displaying hydrate soils that point to the signature of past water, the map will help selection of sites for an ambitious European-Russian science mission, ExoMars, comprising an orbiter that will launch in 2016 and a rover in 2018.

On December 29, Mars Express will make the closest-ever flyby of the [Martian moon](#) Phobos, "skimming" it to within less than 50 kilometres (30 miles) of its surface.

Later this year, Herschel, a [space observatory](#) launched in 2009, will provide a complete map of the plane of the Milky Way, enabling astronomers to spot where stars are currently being born in our galaxy.

Also upcoming is the launch in the second half of 2013, of Gaia, a "space astrometry" telescope that will survey a billion stars and provide the largest 3D map of the Milky Way.

ESA also said it would press ahead with the scheduled launch of the first operationally capable satellites in Europe's Galileo programme, the rival to the US [Global Positioning System](#) (GPS) of satellite navigation.

Four satellites will be launched in pairs by two Soyuz rockets from ESA's base in Kourou, French Guiana, in the second half of the year. Four test satellites are already in orbit. Ultimately, Galileo will comprise a constellation of 27 satellites and three spares.

ESA's budget for 2013 is 4.2 billion euros (5.6 billion dollars), an increase of around six percent over last year, Dordain said. Earth Observation missions, which have scientific and environmental use, are the biggest single budget item, accounting for 22.9 percent.

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