

# European meeting in Athens fuels future space exploration missions to Mars, Moon

31 May 2007

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A European Science Foundation (ESF)-led workshop sponsored by the European Space Agency (ESA) has enabled 88 scientists from 11 European countries to agree on science goals for future Europe's planetary exploration programme; providing the continent with an ambitious roadmap to examine Mars and the Moon.

The meeting, which was held on 15-16 May 2007 in Athens, defined the science rationale of this programme, dubbed "Emergence and co-evolution of life with its planetary environments."

The scientists identified three target bodies to be visited by a number of international missions in the timeframe 2013-2035: the planet Mars, the Moon, and Near-Earth Objects, which are asteroids orbiting the Sun within reach of the Earth. The planet Mars qualifies as a place where life may have evolved in the past and is thus a good candidate for missions searching for signs of extinct, or even extant, life.

The exploration programme, also known as "Aurora" in early versions of this ambitious plan, will focus on planetary bodies that can ultimately be reached by humans, although the first steps of the 30-year programme can only be robotic. An ultimate goal is for European astronauts to participate in the first international mission that will land humans on the planet Mars. In their recommendations to ESA the Athens workshop participants indicated that Mars should be the focus of the European exploration endeavour, with a driving set of missions called "Mars Sample Return", a set of robotic missions aimed at returning pieces of Martian surface and sub-surface for detailed analysis on Earth.

Although Mars Sample Return can realistically only be an international cooperative mission it was stressed that Europe should remain a major actor in its definition, taking bold initiatives to develop,

and improve upon, key technologies relevant to planetary exploration, such as deep drilling techniques, radio-isotopic devices to produce energy on the Martian surface, or the development of a European facility for receiving and analysing extraterrestrial samples.

Research on humans in space environment which are currently carried out on Earth or in the International Space Station must be strengthened. Beyond these activities, opportunities to further that necessary research portfolio may arise in the context of an international lunar exploration programme. The workshop participants indeed agreed that the Moon should be used as a component of a robust European exploration programme.

Finally the Athens workshop participants emphasised that international cooperation among space agencies engaged in planetary exploration should be a major feature of this programme, materialised by concrete joint ventures between the relevant partners, i.e. Europe, U.S., Russia, Japan, China and India.

Source: ESA

APA citation: European meeting in Athens fuels future space exploration missions to Mars, Moon (2007, May 31) retrieved 24 January 2022 from <https://phys.org/news/2007-05-european-athens-fuels-future-space.html>

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