



EXO MARS

## ESA's Mission to Search for Signs of Life

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Please see Thursday talk



*IPPW6*  
26 June 2008, Atlanta (USA)



# Mission Objectives

ExoMars is the first mission of ESA's Aurora exploration programme.

## Technology Demonstration Objectives:

- Entry, Descent, and Landing (EDL) of a large payload on the surface of Mars;
- Surface mobility with a rover having several kilometres range;
- Access to the subsurface with a drill to acquire samples down to 2 metres;
- Automatic sample preparation and distribution for analysis with scientific instruments.

## Scientific Objectives (in order of priority):

- To search for signs of past and present life on Mars;
- To characterise the water/geochemical environment as a function of depth in the shallow subsurface;
- To study the surface environment and identify hazards to future human missions;
- To investigate the planet's subsurface and deep interior to better understand its evolution and habitability.





# Mission Configuration

**Launch:** Dec 2013

**Arrival:** Sep 2014

**DM Release:** From a parking orbit, when conditions are optimal

**Landing:** 100 km (target 50 km) 3-sigma, major axis dispersion

The diagram illustrates the mission configuration with two rocket options: the Orion/Orion configuration and the Proton configuration. The Orion/Orion configuration consists of the Orion spacecraft, the European Service Module (ESM), and two European Service Modules (ESMs). The Proton configuration consists of the Proton rocket and the Orion spacecraft. The Orion spacecraft is shown with the Spacecraft Composite, Carrier & Descent Module, and Science Elements (ExoMars Rover). The Data Relay and GEP (Ground Earth Platform) are also shown.

**Spacecraft Composite**

**Carrier & Descent Module**

**Science Elements**

**ExoMars Rover**

**Data Relay**

**GEP**