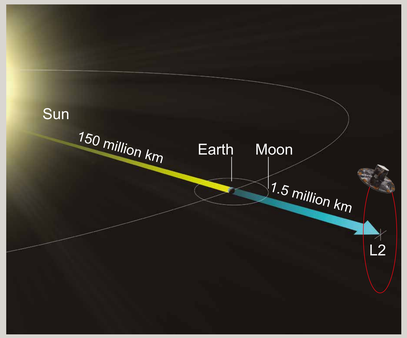
Start of a Soyuz-Fregat launcher at 12th October 2012 (ESA-S.Corvaja)

The orbit around L2

L2 is an equilibrium point of the Sun-Earth system. As with the space observatories Herschel and Planck, Gaia will move on a special orbit around the L2 point.

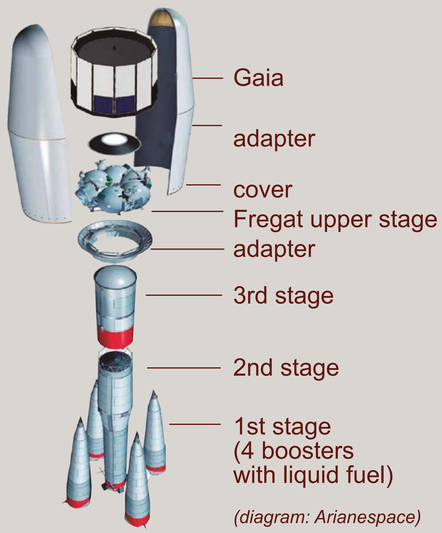


The Launch of Gaia

Gaia starts its mission on board a Soyuz-Fregat launcher from a launch pad of the European spaceport near Kourou in French Guiana. Approximately thirty days later Gaia will be inserted into a special orbit around the Lagrange point L2 of the Sun-Earth system. The L2 point is located at a distance of 1.5 million kilometres from the Earth.

The Soyuz-Fregat launcher

Length	46,2 m
Max. diameter	10,3 m
Mass	308 t (including 280t of fuel)
Fuel	Kerosene, liquid oxygen
Stages	3 stages + restartable Fregat upper stage



(diagram: Arianespace)

Content and design Universitat de Barcelona / ICC / IEEC;
Adaptation and translation by ARI, ZAH, Heidelberg and Lohrmann Observatory, Dresden;
Sponsored by MINECO-FEDER and DLR

t_0 = time of launch

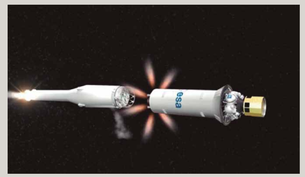
Engines of 1st and 2nd stages are started. The rocket lifts off.

t_0 + 118 seconds

The four engines of the 1st stage are shut down and separated from the launcher.

t_0 + 208 seconds

The rocket has reached sufficient altitude so that the cover can be blasted away.

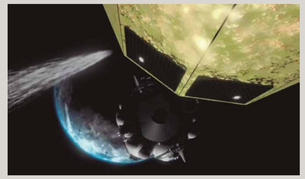


t_0 + 288 seconds

The engines of the 3rd stage are started. This leads to the separation of the 3rd from the 2nd stage.

t_0 + 562 seconds

The 3rd stage is separated. The Fregat upper stage is then ignited to lift Gaia into a parking orbit around the Earth. Shortly afterwards the Fregat stage is ignited again to leave the orbit in the direction of L2.



t_0 + 42 minutes

After reaching the orbit towards the Lagrange point L2, the Fregat upper stage will be separated from Gaia.

t_0 + 64 minutes

During the flight to L2 Gaia opens its sunshield of 11 m diameter to protect its sensitive instruments from solar radiation.