

GAIA SATELLITE - BUILT TO MAP THE MILKY WAY

50 EUROPEAN COMPANIES

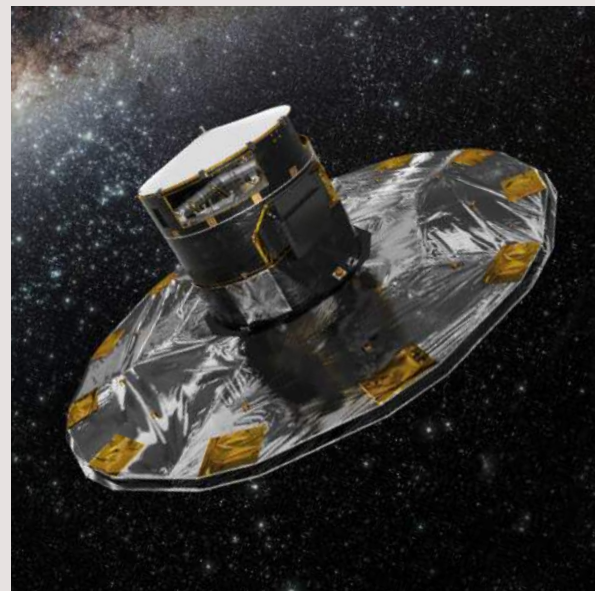
400 ENGINEERS

15 PROJECT INVOLVING 15 EUROPEAN SPACE AGENCY MEMBER COUNTRIES

3 YEARS OF TESTING AND INTEGRATION

Dec 19 LAUNCH SCHEDULED FOR DECEMBER 2013

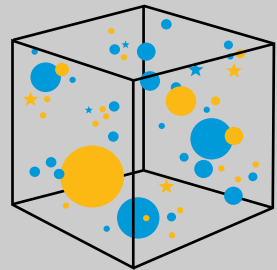
5 YEARS NOMINAL LIFE IN ORBIT



ADVANCED PAYLOAD TECHNOLOGY

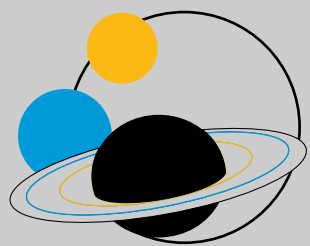
DUAL TELESCOPE CONCEPT IN A SINGLE INTEGRATED INSTRUMENT COMPRISING

- 10 mirrors
- 1 astrometry function
- 1 photometry function
- 1 spectrometry function



3D IMAGES OF A BILLION STARS

Each star will be detected and measured 70 times during the mission. Gaia will determine their position, velocity, distance from Earth, colour and luminosity.



DISCOVERY OF 20,000 NEW PLANETS

Their detection will enable us to improve our knowledge of the mechanisms at work in planetary systems.



A UNIQUE SPACECRAFT

HEIGHT **3m**

DIAMETER **10m** with sunshield deployed.



EXTREMELY HIGH POINTING ACCURACY

MAXIMUM **stability**

Cold-gas micro-propulsion system for fine attitude control.



PERMANENT DATA LINK TO EARTH

5Mbits/sec

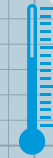
Downlink operational 8 hours per day at a data rate equivalent to ADSL.

5 years of data equivalent to the content of **1 million** CDs or 1000 million million octets.



THE LARGEST INSTRUMENT EVER BUILT USING CERAMICS

Structure made of **silicon carbide**, a material in which Airbus Defence and Space possesses unique expertise. **OPTIMISED FOR STABILITY, DURABILITY AND LOW MASS**



THERMAL INSULATION

resistant to temperatures **BETWEEN**

-170°C
+70°C



MEASURING INSTRUMENTS OF UNPRECEDENTED PRECISION

Photometer with a resolution of

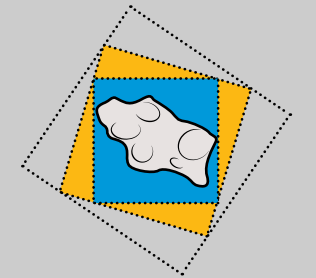
1 billion PIXELS

(array of 106 CCD detectors each delivering 9 million pixels).

Capable of detecting stars with a luminosity

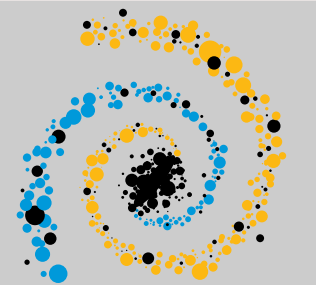
400,000 TIMES

lower than those visible to the naked eye.



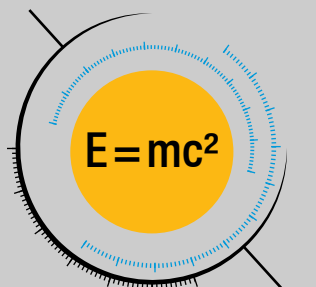
DETECTION AND STUDY OF 200,000 NEW ASTEROIDS

Gaia will log their position and calculate their speed. A first opportunity to study asteroids in the regions closest to the Sun, normally invisible to telescopes on Earth.



THREE-DIMENSIONAL MAP OF OUR GALAXY, THE MILKY WAY

An astronomical census that will provide answers to questions about the formation and evolution of our galaxy.



NEW TESTS OF THE THEORY OF RELATIVITY