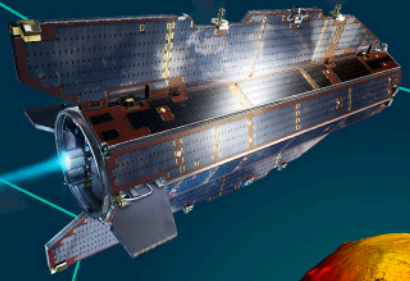
GOCE in Brief

What?

GOCE was ESA's first Earth Explorer satellite in orbit. It used a **sophisticated gravity gradiometer instrument** to provide an accurate and detailed global model of Earth's gravity field and geoid

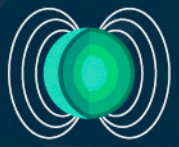


Geoid

ESA's GOCE mission delivered **the most accurate model of Earth's geoid** ever produced, which is crucial for deriving accurate measurements of ocean circulation, sea-level change and terrestrial ice dynamics

Why?

GOCE data supports oceanography, solid Earth physics, geodesy and sea-level research, and significantly contributes to furthering our **understanding of climate change**

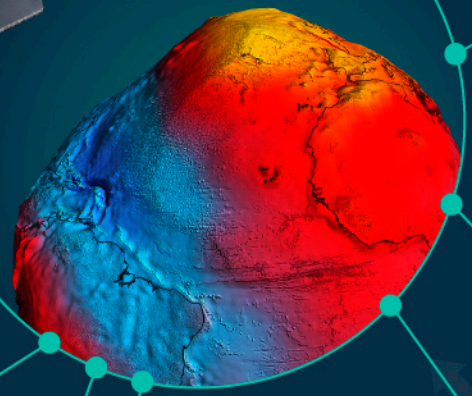


Heritage

Archived data still provide a wealth of information and are maintained and improved in the frame of the **Heritage Space Programme**

Data Access

https://earth.esa.int/eogateway/missions/goce/data



Data and Users

The GOCE mission generated more than **4 TB of open and free data**, which supported more than **1300 projects** producing over **1200 scientific publications**

When?

GOCE was taken into orbit on 17 March 2009, on a **Rockot launcher** from the Plesetsk Cosmodrome in Russia. It orbited at **just 270 km altitude** to maximise its sensitivity to variations in Earth's gravity field

Re-entry

After 4 years and 8 months in orbit, **on 21 October 2013**, the GOCE mission came to a natural end and the satellite began its descent towards Earth, with data collected until its disintegration in the lower atmosphere

Where?

Built by a consortium of 41 companies from 13 European countries, led by **Thales Alenia Space** from Italy and France, **EADS Astrium** from Germany and **ONERA** from France

Seismometer

GOCE became **the first seismometer in orbit** when it detected sound waves from the massive earthquake that hit Japan on 11 March 2011

For more information visit:
https://earth.esa.int/eogateway/missions/goce