

Оценка времени прекращения существования КА GOCE

1. Введение

Космический аппарат GOCE (Gravity field and steady-state Ocean Circulation Explorer), был запущен Европейским космическим агентством в 2009 г. Особенностью эксплуатации КА является применения лазерных измерений для высокоточного определения параметров орбиты (International Laser Ranging Service). Работа аппарата продолжалась до 21 октября 2013 и была прекращена в связи с окончанием запаса топлива.



Сайт ESA <http://www.esa.int> (11 November 2013)

Close to 01:00 CET on Monday 11 November, ESA's GOCE satellite reentered Earth's atmosphere on a descending orbit pass that extended across Siberia, the western Pacific Ocean, the eastern Indian Ocean and Antarctica. As expected, the satellite disintegrated in the high atmosphere and no damage to property has been reported.

Launched in March 2009, the Gravity field and steady-state Ocean Circulation Explorer – GOCE – has mapped variations in Earth's gravity with unrivalled precision. The result is the most accurate shape of the 'geoid' – a hypothetical global ocean at rest – ever produced, which is being used to understand ocean circulation, sea level, ice dynamics and Earth's interior.

GOCE's innovative ion engine, responsible for keeping the satellite at an incredibly low orbit of under 260 km, together with its accelerometer measurements have also provided new insight into air density and wind speeds in the upper atmosphere.

On 21 October, the mission came to a natural end when it ran out of fuel. Over the past three weeks the satellite gradually descended.

While most of the 1100 kg satellite disintegrated in the atmosphere, an estimated 25% reached Earth's surface. An international campaign involving the Inter-Agency Space Debris Coordination Committee and ESA's Space Debris Office monitored the reentry.