

Thanet Astronomy Group

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[NASA is about to launch the Orbiting Carbon Observatory-2](#)



[Picture of the NASA Orbiting Carbon Observatory-2 \(credit NASA JPL\)](#)

On the 1st of July 2014 a Delta II 7320-10C Rocket will launch the 'Orbiting Carbon Observatory-2' which replaces the 'OCO', which crashed at launch on 24 February 2009. This satellite will be the first Earth remote sensing satellite dedicated to monitoring the concentration of CO₂ in our atmosphere.

The erratic and severe swings in the Earth's weather are becoming more pronounced. Carbon Dioxide or CO₂ is one of the green house gases responsible for global warming. The data from OCO-2 will help scientists to better understand and repair the damage done.

This Satellite will orbit the Earth in a polar orbit at a height of 705 Km above the Earth. It will pass over both north and south poles every 99 minutes. Each orbit of the satellite will pass over a different section of the Earth. After 233 orbits, having covered the entire Earth's surface in 16 days the pattern will start again.

The Satellite will make about 16,000,000 measurements every 16 days, and is planned to continue for at least two years but is expected to continue well past this. To make these measurements the OCO-2 has three spectrometers that can look at an area of the Earth's surface as small as 3 square kilometres.

The OCO-2 does not measure CO₂ directly but uses the spectrometers to measure the Sun's light that is reflected from the Earth's surface. This light is split into its separate colours (just like a rainbow). As CO₂ absorbs specific colours of light, NASA can detect the CO₂ levels from the missing colours in this reflected light. This Satellite will be able to measure the CO₂ levels everywhere on Earth every 16 days.

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