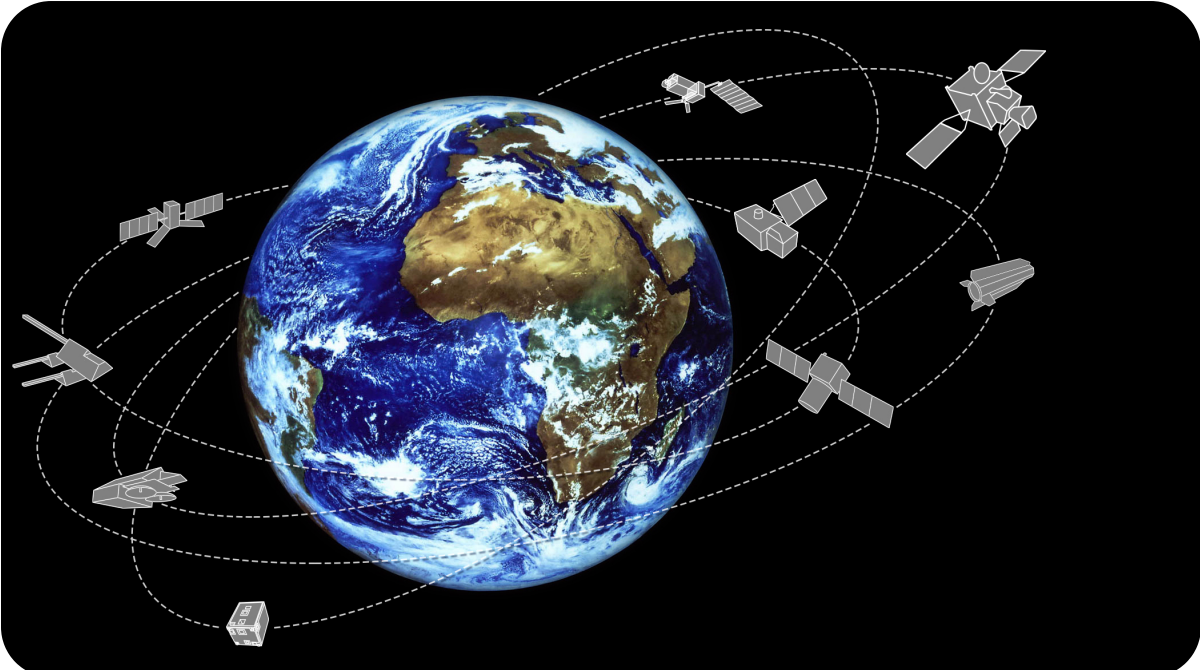


Satellites track Earth’s changing climate

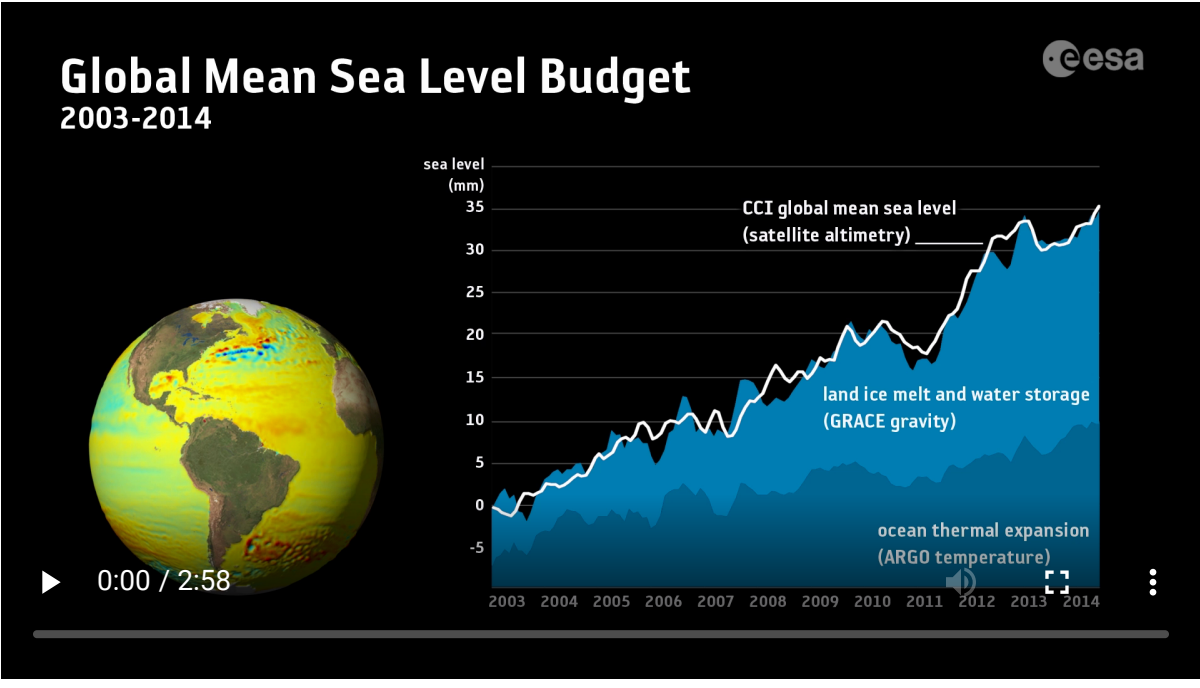


ESA satellites are keeping watch over our planet
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12 June 2017

Last year Earth experienced the hottest temperatures since people started keeping records. This might sound like good news – we all like it when it is warm outside – but unfortunately this is a sign that our climate is changing. Satellites orbiting Earth are helping us to keep track of these changes, and investigate exactly what is causing them.

Climate change is a big problem for people on Earth. For example, warmer temperatures are making ice in the Arctic melt, causing oceans to rise by about 3mm a year. This may not sound like much, but it soon adds up and could flood towns and cities by the sea, as well as many islands.



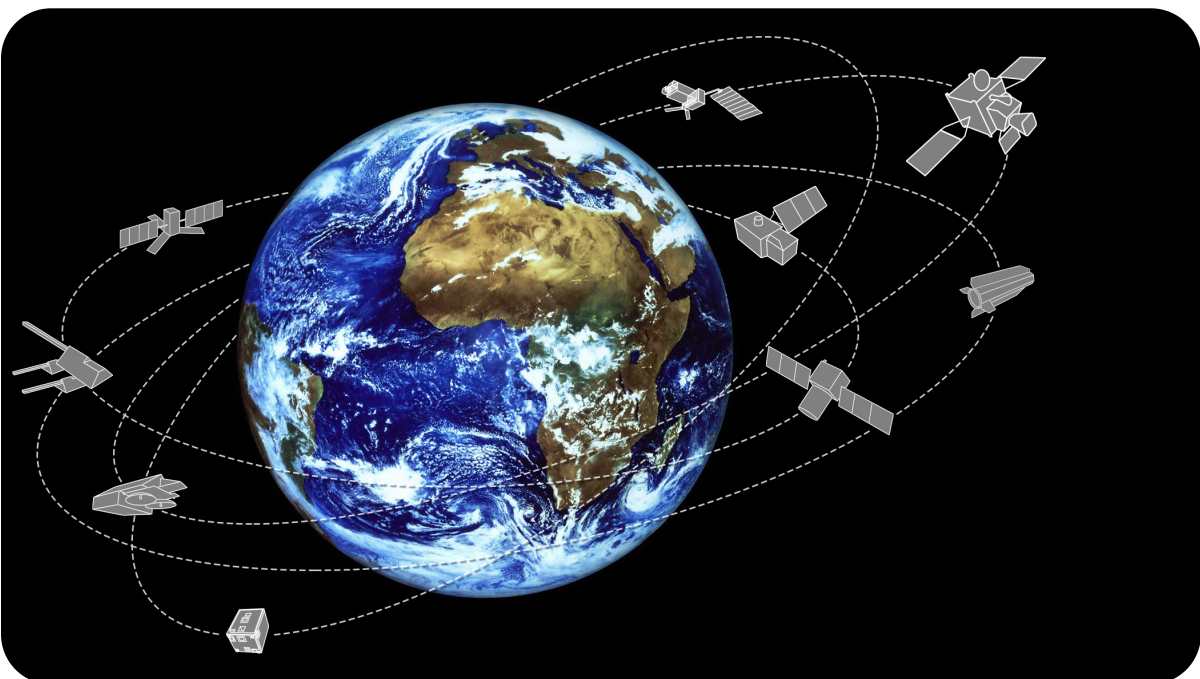
Rising sea levels are a dangerous result of climate change, so satellites are being used to map water levels across our planet. They are also helping to work out where the extra water causing the rise comes from. Melting glaciers and sea ice are a major cause. Also, the water in our seas expands when it gets warmer, further adding to the rise.

Watching Earth from space is not only about sea levels though. Satellites are being used to track greenhouse gases, ozone levels, soil moisture, and much more! Gathering lots of data is the first step toward good science, and the best way for us to make wise decisions about climate change.



Warmer temperatures can cause sea ice to melt
[Access the image](#)

Unfortunately, there is a problem with using satellites for climate science. Scientists studying Earth need data that covers a long time – ideally more than 30 years! – to check that changes are actually happening. But satellites are not designed to work for that long in space. Technology is always improving so new satellites are built and launched to replace older ones, which can lead to some gaps in our monitoring of Earth.



Sentinel satellites are doing an excellent job of tracking changes on Earth
[Access the image](#)

To help solve this problem, ESA have created the Climate Change Initiative – CCI for short – that combines all the information gathered to give us the most complete picture possible of how Earth is changing. This means we now have excellent records over long times. Data from the CCI shows definite evidence that our climate is changing.

What do you think we should do to take better care of our planet and reduce the effects of climate change?

Cool fact: ESA have made a digital book about satellites and climate change that you can download for free on iPad and Android tablets!