

Earth’s air pollution seen from orbit



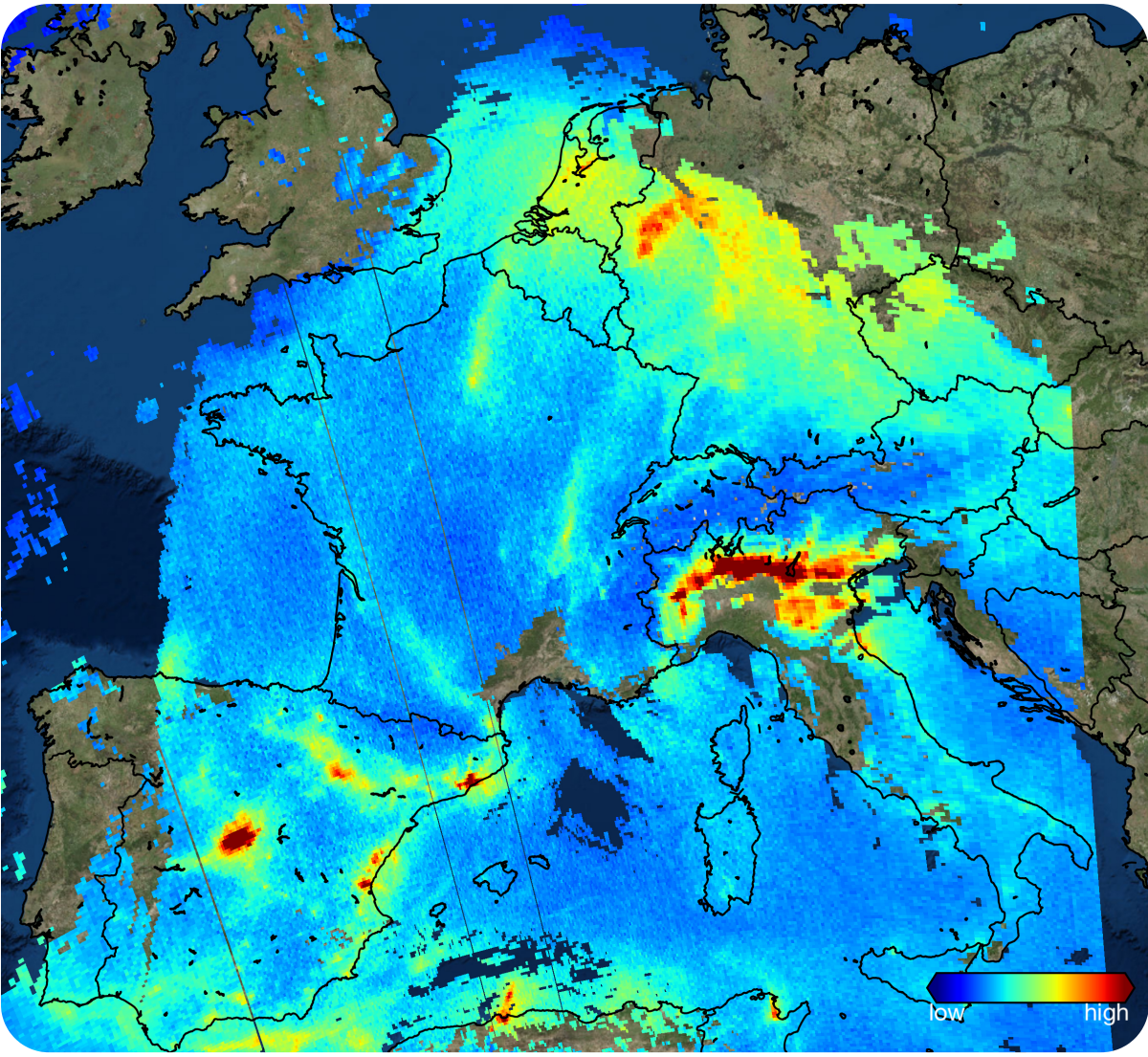
Sentinel-5P is in orbit around Earth

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ESA’s Sentinel-5P satellite was launched into space on 13 October, and is still undergoing tests before its mission can begin properly. However, it is already gathering exceptional data that is helping us to better understand our planet!

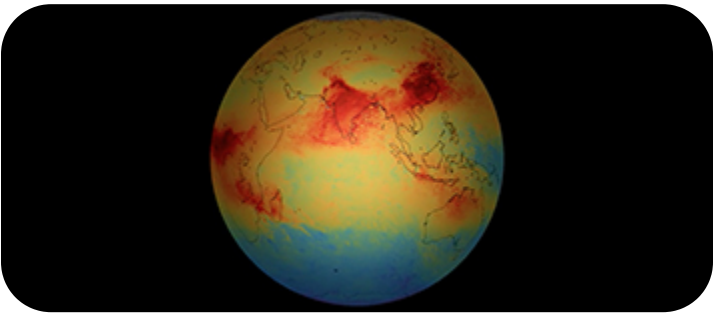
Sentinel-5P is designed to study the blanket of air around our planet, which we call our atmosphere. The atmosphere is what we breathe, and is an important part of Earth’s climate systems, so knowing more about it is important. Sentine-5P’s specialty is looking for pollution in the atmosphere. Its first images have done just that.



Sentinel-5P created this map of air pollution levels over Europe

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The satellite has discovered large amounts of the gas nitrogen oxide in the air over parts of Europe. Nitrogen oxide is given out by cars, lorries, and other vehicles. It is also produced after burning fossil fuels like coal in big factories. Sentinel-5P has spotted high concentrations of this unhealthy gas over parts of the Netherlands, the Ruhr area in western Germany, the Po Valley in Italy and over parts of Spain.



Red shows the densest areas of carbon monoxide

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Carbon monoxide is another gas that can be dangerous to us if we breathe in too much of it. Sentinel-5P has created a global map of carbon monoxide, and found large amounts over parts of Asia, Africa, and South America. There is also a lot of pollution in the air over power plants in India.

The secret to Sentinel-5P’s success is a high-tech sensor called Tropomi. Using Tropomi, Sentinel-5P can map pollutants in the air all around the world. Once we know the scale of the problem with pollution we will be better able to find solutions to keep our air clean.

Stefan Dech is Director of the German Aerospace Center (DLR)’s Earth Observation Center. Excited about Sentinel-5P’s performance so far, he said, “These first images are astonishing, especially given the satellite is still in the early stages of being commissioned for operations. The satellite’s Tropomi instrument promised to offer images of pollutants in higher resolution than ever before, and it’s certainly living up to its promise.”

What do you think the air quality is like where you live? Would Sentinel-5P find that your air is clean, or could there be pollution?

Cool fact: Sentinel-5P can scan the entire Earth for air pollution once every 24 hours!

More information

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- [Watch the Sentinel-2A launch!](#)
- [Sentinel-3 getting ready to watch over Earth](#)
- [Sentinel satellite launched!](#)
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- [ESA satellites spot coral reefs in danger](#)
- [Sentinel-5P satellite helps our planet stay healthy](#)
- [Lift-off for Sentinel-5P!](#)