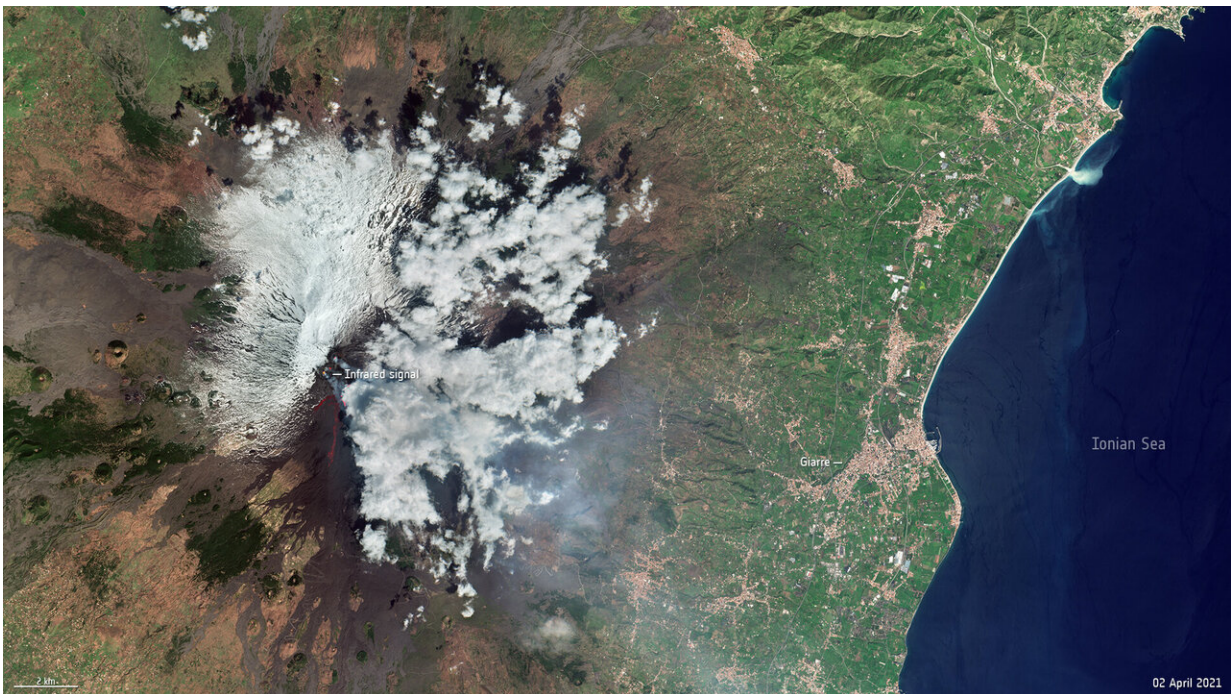


Satellites monitor Mount Etna's unpredictable behavior

April 9 2021



This image, captured on 2 April 2021 by the Copernicus Sentinel-2 mission, shows the latest activity in Italy's Mount Etna. The image has been processed using the mission's shortwave-infrared band to show the ongoing activity in the crater. Smoke plumes can be seen blowing eastwards towards the town of Giarre. Credit: Copernicus Sentinel data (2021), processed by ESA, CC BY-SA 3.0 IGO

Italy's Mount Etna, Europe's most active volcano, has recently been on explosive form, with 17 eruptions in less than three months. Instruments

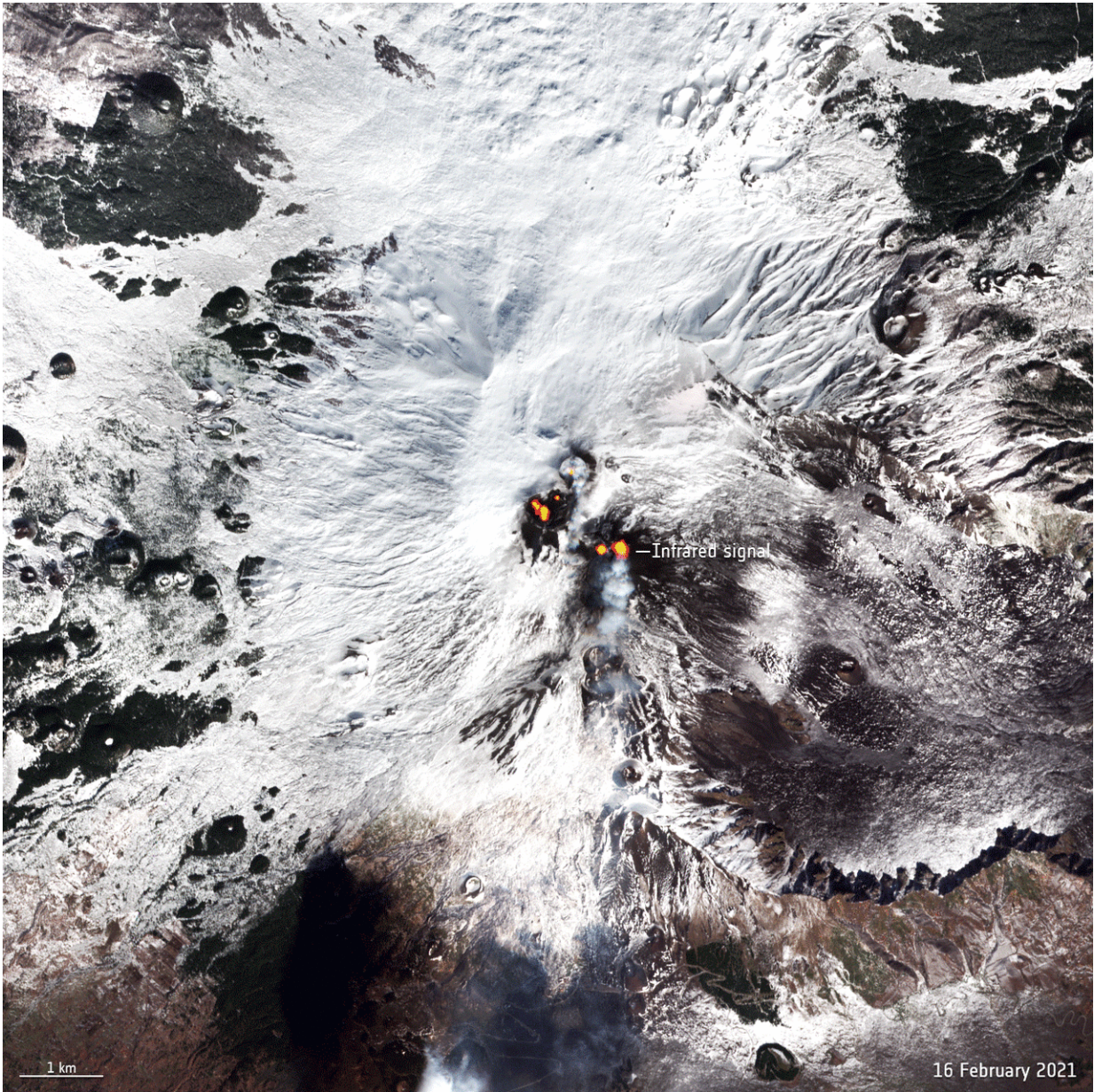
onboard three different satellites orbiting Earth have acquired imagery of the eruptions—revealing the intensity of the lava-fountaining eruptive episodes, known as paroxysms.

Located on the east coast of Sicily, Mount Etna is one of the world's most active volcanoes. Its eruptions occur at the summit, where there are four craters: the Voragine and the Bocca Nuova, formed in 1945 and 1928 respectively, the Northeast Crater, the highest point on Etna (3330 m) and the Southeast Crater, which has recently been the most active of the four.

Starting in February 2021, the Southeast Crater produced a series of intense lava fountains coloring the night sky in hues of orange and red. Over the course of the following weeks, the volcano produced lava fountains reaching as high as 1.5 km.

These spectacular explosions are amongst the highest observed at the Southeast Crater in recent decades. In the past, lava fountains reaching the same height were only observed at the Voragine crater in December 2015—with lava fountains of over 2000 m.

Different satellites carry different instruments that can provide a wealth of complementary information to understand [volcanic eruptions](#). Once an [eruption](#) begins, [optical instruments](#) can capture the various phenomena associated with it, including lava flows, mudslides, ground fissures and earthquakes.



This Copernicus Sentinel-2 animation shows the latest activity taking place in Mount Etna from 16 February 2021 until 2 April 2021. Credit: Copernicus Sentinel data (2021), processed by ESA, CC BY-SA 3.0 IGO

The images below show the latest activity taking place in the volcano. The images, captured by the Copernicus Sentinel-2 and Sentinel-3

missions, have been processed using the shortwave-infrared band to show the ongoing activity in the [crater](#). Smoke plumes can be seen blowing eastwards towards the town of Giarre.

Atmospheric sensors on satellites can also identify the gases and aerosols released by the eruption, as well as quantify their wider environmental impact. The image below, captured by the Copernicus Sentinel-5P satellite, shows the sulfur dioxide concentrations visible traveling southwards towards Libya. Sulfur dioxide is released from a volcano when magma is relatively close to the surface.

After a week or so of remaining calm, Etna's Southeast Crater re-awoke on the morning of 31 March with a loud explosion at around 07:00 CEST, followed by several puffs of ash and lava.

According to the National Institute of Geophysics and Volcanology in Italy (INGV), the explosive activity increased in the late afternoon and during the night with lava flowing towards the Valle del Bove, with smaller flows advancing southwards. As of today, activity in the Southeast Crater remains calm.

Provided by European Space Agency

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