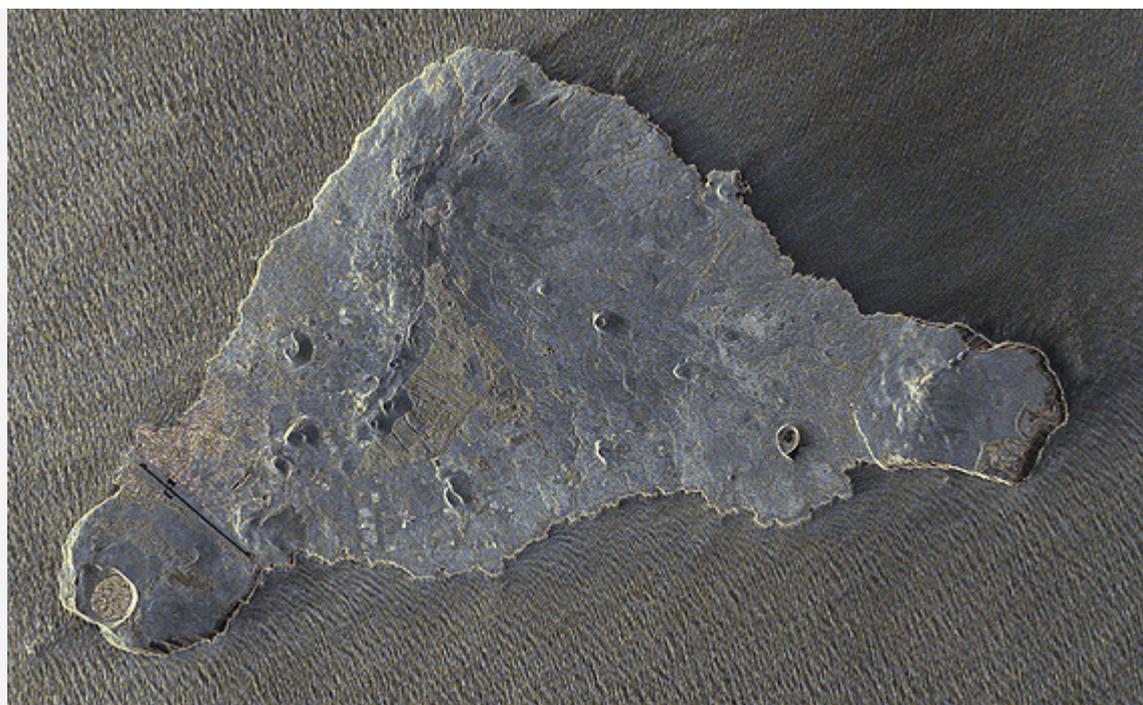


**News-Archiv**

**TerraSAR-X image of the month: Easter Island – the most isolated island in the world**

*1 April 2010*

Seen from space, Easter Island looks anything but egg-shaped. The German Earth observation satellite TerraSAR-X flew over this small and remote volcanic island, acquiring snapshots that show that man-made structures can be seen easily even from space. This image shows the principle town of Hanga Roa, on the northwestern coast (in yellow), and the airport, in the western part of the island (black line).



Easter Island seen from space

The island has an area of just 160 square kilometres and owes its name to the Christian festival of Easter. The Dutchman Jakob Roggeveen landed on its shore on Easter Sunday, 5 April 1722, and chose the rather unimaginative name. Located about 3600 kilometres from the mainland of Chile and more than 4000 kilometres from Tahiti, Easter Island can justifiably be described as the most isolated island in the world. The nearest neighbours – about 50 descendants of the mutineers on the British naval vessel HMS Bounty – live 2000 kilometres away on the small island of Pitcairn.

James Cook, who stopped at Easter Island in 1774 during his second expedition to the South Seas, was less than delighted with the island. He wrote in his journal: *"No Nation will ever contend for the honour of the discovery of Easter Island as there is hardly an island in this sea offering less refreshments, and conveniences for Shipping than it does."* This is no surprise: the island was formed when lava flows from three volcanoes joined to form a landmass between them.

## Runway for Space Shuttles

Easter Island is famous for its large stone statues, known as Moai. About 4000 people inhabit the island. The different colours in the TerraSAR-X image are due to the unevenness of the surface. Artificial structures such as buildings, settlements or urban infrastructure, shown in yellow, contrast clearly with the island's natural formations such as lava fields or vegetation, which appear blue or green in the image. In the centre of the island are fields used for agriculture, which attract attention due to their angular structure.

Even the crests and troughs of the waves of the Pacific are revealed by TerraSAR-X. "The sea was rough on the day this image was taken," explains Dr Thomas Fritz from DLR's Remote Sensing Technology Institute (Institut für Methodik der Fernerkundung; IMF). During the rising and falling of the waves, the radar signals are reflected to different a degree. The calmer waters in the lee of the island, off the northeastern coast (upper right), are easy to see – the surface of the water is smoother and therefore appears dark in the image. The island's steep coastline can also be recognised easily by its yellow colouring.

Some parts of the image are black. The 'culprit' is NASA – in 1984 they extended the runway of Mataverí airport, which now stretches almost four kilometres from one coast to the other in the southwest of the island, for use as an emergency landing site for the Space Shuttle. The concrete area reflects radar beams away from the satellite and shows up as a black line in the image. Until now, no Space Shuttle has ever landed on Easter Island – further contributing to the island's seclusion.

### The TerraSAR-X mission

TerraSAR-X is the first German satellite that has been manufactured under what is known as a Public-Private Partnership (PPP) between DLR and Astrium GmbH in Friedrichshafen. The satellite travels around Earth in a polar orbit and records unique, high-quality X-band radar data about the entire planet using its active antenna. TerraSAR-X works regardless of weather conditions, cloud cover or the absence of daylight and is able to provide radar data with a resolution down to one metre.

DLR is responsible for using TerraSAR-X data for scientific purposes. It is also responsible for planning and implementing the mission as well as controlling the satellite. Astrium built the satellite and shares the costs of developing and using it. Infoterra GmbH, a subsidiary company founded specifically for this purpose by Astrium, is responsible for marketing the data commercially.

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