

## Engineers fight for stranded Mars probe after 'sign of life' (Update)

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The Phobos-Grunt probe at Russia's Baikonur cosmodrome, October 2011. A European tracking station in western Australia has "established contact" with Russia's Phobos-Grunt space probe, which has been stranded in orbit since its launch on November 8

Engineers fought desperately on Wednesday to save Russia's Phobos-Grunt spacecraft after the Martian probe sent "a first sign of life" more than two weeks after being stranded in orbit.

After days of frustrating silence, contact with the probe was made on Tuesday at 2025 GMT at a European Space Agency ground station in Perth, Western Australia, the Paris-based ESA said.

"ESA teams are working closely with engineers in Russia to determine how best to maintain communication with the spacecraft," it said.

A spokesman at European Space Operations Centre (ESOC) in Darmstadt, Germany, told AFP: "We sent an instruction to (the probe) to switch on its transmitter and the probe sent us telemetric data.

"However, we do not have all the details and we are not very sure of what we received. It's a first sign of life," he said.

The probe is in a "very low, very unfavourable orbit (that) is difficult to identify accurately," the spokesman added.

The task is being complicated by very narrow windows for communication "of between five and 10 minutes," he explained.

The five-billion-ruble (\$165-million) mission is one of the most ambitious in the history of Martian exploration.

It is designed to travel to the moon of Phobos, scoop up soil and return the sample to Earth by 2014.

But mission control lost radio contact with the craft hours after launch on November 8, leaving engineers bewildered as to where it was. On Tuesday, Russia's space agency had said it saw "little chance" of saving the 13.5-tonne vessel.



On Tuesday, 22 November at 20:25 UT, ESA's tracking station at Perth, Australia, established contact with Russia's Phobos-Grunt spacecraft. The contact with the Mars mission was lost shortly after launch on 8 November. ESA teams are working closely with engineers in Russia to determine how best to maintain communication with the spacecraft. Credit: ESA

In Moscow, the Russian space agency Roskosmos confirmed the ESA report.

It said the Perth station had received a radio signal from Phobos-Grunt during a scheduled monitoring period and European and Russian were "appraising the situation."

The probe blasted off successfully from the Baikonur cosmodrome but did not manage to leave its Earth orbit as planned.

Motors failed to fire twice to steer it on a course for Mars, and it is still

carrying the fuel that would have been used in this manoeuvre.

But before losing control of the probe, the Russians sent out instructions for it to deploy its solar panels, an ESA official said.

"Initially, it was thought that the spacecraft would die after three days when its battery ran out.

"But the solar panels played a crucial role yesterday, enabling the ground station in Perth to make contact," the source said.

Perth is the sole means of communicating with Phobos-Grunt as it is the only listening post in a part of the Earth that is in daylight when the probe passes overhead, the official explained.

Exposure to the sunlight provides electricity to the spacecraft, enabling to briefly talk to the ground. But it loses power when it moves over ground stations in parts of the globe that are in night.

Phobos-Grunt is also carrying a Chinese satellite, Yinghuo-1, which was to go into orbit around Mars in a landmark space cooperation between Moscow and Beijing.

Orbiting Mars at just under 10,000 kilometres (6,000 miles) distance, Phobos is believed to be the closest moon to any planet in the Solar System. It has long intrigued scientists, who believe it holds secrets about the origins of the planets.

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