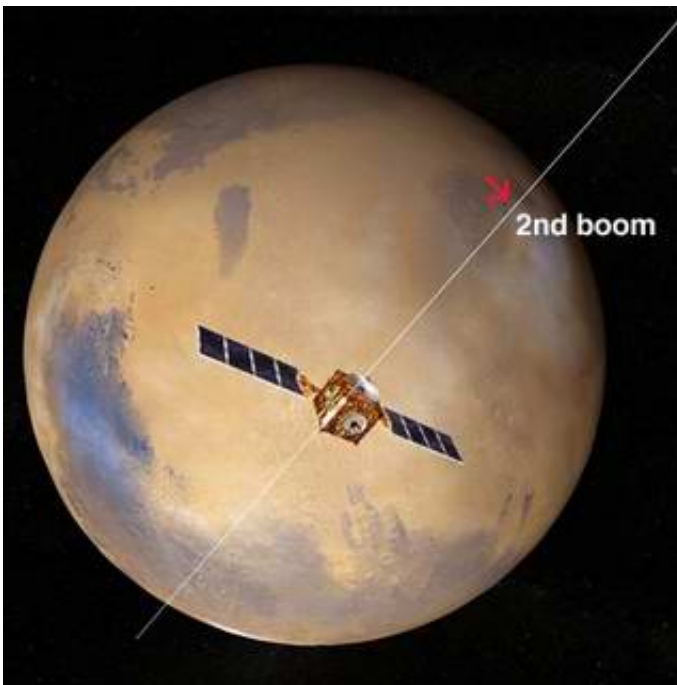


Green light for the deployment of the second MARSIS boom

June 8 2005



Following in-depth analyses performed after the deployment of the first MARSIS antenna boom on board Mars Express, ESA has decided to proceed with the deployment of the second 20-metre antenna boom.

Image: The 2nd antenna of the Mars Express radar MARSIS (indicated by the red arrow) is due to be deployed in mid-June 2005. The Mars Express Sub-Surface Sounding Radar Altimeter (MARSIS) experiment is to map the

Martian sub-surface structure to a depth of a few kilometres. The instrument's 40-metre long antenna booms will send low frequency radio waves towards the planet, which will be reflected from any surface they encounter.

The full operation will be performed during a time frame starting 13 June and nominally ending on 21 June.

A delay in the execution of the second boom deployment was necessary, due to problems encountered with the first deployment in early May this year. During the deployment, one of the antenna hinges (the tenth) got stuck in an unlocked position. Analysis of data obtained from earlier ground testing suggested a potential solution.

The Mars Express spacecraft control team at ESA's Spacecraft Operations Centre (ESOC) succeeded in unblocking the hinge by exposing the cold side of the boom to the Sun. This warmed the hinges and the boom quickly became unstuck. In the end, the first boom deployment was completed on 10 May.

The lessons learnt during the first boom deployment were used to run new simulations and determine a new deployment scenario for the second boom. This scenario contains an additional sun-heating phase, to get the best possible thermal conditions for all hinges.

The deployment of the third (7-metre) third MARSIS boom is not considered critical. It will be commanded only once the ESA ground control team have re-acquired signal from the spacecraft, and made sure with a sequence of tests that the second boom is correctly locked into position and the spacecraft is well under control.

After this event MARSIS, the Mars Express Sub-Surface Radar Altimeter, will enter into a commissioning phase for the next few weeks,

before starting to look at Mars's ionosphere during martian daylight, and to probe down below the Martian surface during the martian night.

Source: ESA

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