

India's Chandrayaan-1 spacecraft reaches its final orbit

November 13 2008



This image of the Moon was taken with by Rosetta's OSIRIS Narrow Angle Camera (NAC) at 07:36 CET on 13 November 2007, about nine hours after Rosetta's closest approach to Earth during one of its gravity assist manoeuvres. OSIRIS has been designed to image faint objects, so a neutral density filter was placed in the optical path to reduce the sensitivity of the camera to one fiftieth. The above image was acquired through the far-focus red filter of the camera (750 nanometres). Credits: ESA ©2007 MPS for OSIRIS Team
MPS/UPD/LAM/IAA/RSSD/INTA/UPM/DASP/IDA

India's Chandrayaan-1 spacecraft successfully reached its final operational orbit around the Moon on 12 November 2008. The spacecraft is now circling the Moon at an altitude of about 100 km.

After being captured into lunar orbit on 8 November, the spacecraft performed three orbit reduction manoeuvres. As a result, the farthest point of Chandrayaan-1's orbit (aposelene) from the Moon's surface was first reduced from 7502 to 255 km and then finally to 100 km. The nearest point of the orbit to the Moon (periselene) was reduced from 200 km to 182 km and finally to 100 km.

In this final orbit, the spacecraft flies over the lunar poles and takes about two hours to circle the Moon once.

The spacecraft will perform chemical, mineralogical and photo-geological mapping of the surface, using its 11 scientific instruments. Three of these, the C1XS and SIR-2 X-ray and infrared spectrometers, respectively, and the SARA atom analyser, were provided by Europe through ESA.

The next major event for the mission is the release of Moon Impact Probe (MIP) from the spacecraft and its impact on the Moon's surface. The impact will provide information on lunar surface properties, and is planned to take place in the next few days, once Chandrayaan-1 selects a proper impact site from orbit.

After the impact, the mission will continue with remote-sensing studies in orbit.

Provided by ESA

Citation: India's Chandrayaan-1 spacecraft reaches its final orbit (2008, November 13) retrieved 24 April 2024 from <https://phys.org/news/2008-11-india-chandrayaan-spacecraft-orbit.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.