

Chandrayaan 2, decides ISRO

JOHNSONTA

BANGALORE, AUGUST 31

THE second Indian space mission to the moon, Chandrayaan 2, scheduled for 2013, will have three new Indian payloads and will repeat two instruments from the 2008 Chandrayaan 1 mission that lead to the discovery of water in the form of ice near the North Pole of the moon.

The Indian Space Research Organization (ISRO) on Monday announced that a national committee of experts had picked five scientific payloads to be on the orbiting Chandrayaan 2 spacecraft and two instruments on the rover that is set to land on the moon with the help of a Russian lander. The committee has not picked any foreign payloads for the mission though a large number of agencies have evinced interest in the mission. ISRO officials said a decision on including other payloads would be taken as the

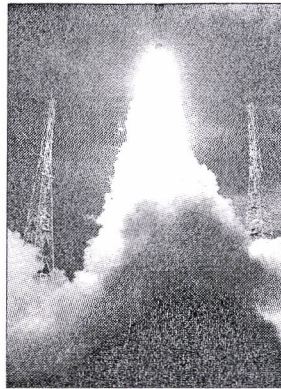
mission progresses.

"Inclusion of additional payloads, if possible within the mission constraints, will be considered at a later date following a detailed review," ISRO said.

ISRO said the five instruments for the spacecraft had been picked by the experts committee on the basis of detailed considerations of the mission requirements for Chandrayaan 2, including the weight and power available for the scientific payloads.

The Rs 500 crore Chandrayaan 2 spacecraft will weigh about 2,650 kg at lift-off, of which the orbiter weight is about 1,400 kg and lander weight is about 1,250 kg. The spacecraft is to be launched by ISRO's Geosynchronous Satellite Launch Vehicle. Greater analysis of the moon and a more in-depth study of findings from the first Indian mission to the moon are among the main mission objectives.

The two improved instru-



Chandrayaan 1 launched in October 2008 had 11 payloads. EXPRESS ARCHIVE

ments from the Chandrayaan 1 mission that will be on board Chandrayaan 2 will be from the Space Applications Centre in Ahmedabad — an L and S band Synthetic Aperture Radar (SAR) and the Terrain Mapping Camera (TMC-2).

The SAR will be used "for probing the first few tens of meters of the lunar surface for the presence of different constituents including water ice. SAR is

expected to provide further evidence confirming the presence of water ice below the shadowed regions of the moon," ISRO said.

The TMC-2 will be used for preparing a three-dimensional map essential for studying the lunar mineralogy and geology.

The new instruments recommended on Chandrayaan 2 will be a Large Area Soft X-ray Spectrometer (CLASS) from the ISRO Satellite Centre at Bangalore alongside a Solar X-ray Monitor (XSM) from the Physical Research Laboratory in Ahmedabad for mapping the major elements present on the moon's surface.

There will also be an Imaging IR Spectrometer (IIRS) from SAC, Ahmedabad for the mapping of lunar surface over a wide wavelength range for the study of minerals, water molecules and hydroxyl present and a Neutral Mass Spectrometer (ChACE-2) from Space Physics Labora-

tory (SPL), Thiruvananthapuram to study the lunar exosphere in detail.

On the rover that will land on the moon the two instruments identified to study the area around the landing site are a Laser Induced Breakdown Spectroscope (LIBS) from the Laboratory for Electro Optic Systems at Bangalore and an Alpha Particle Induced X-ray Spectroscope from PRL.

The payloads for Chandrayaan 2 were finalised by experts from ISRO, academic institutions and research laboratories under Prof U R Rao, Chairman, Advisory Committee on Space Sciences.

The first Chandrayaan mission, launched in October 2008, had 11 scientific payloads including a Moon Mineralogy Mapper and a Mini SAR from NASA, that provided the initial data for scientific publications of the presence of water on the moon. The lift off weight of Chandrayaan 1 was 1380 kg.

Indian Express. Dated 01/05/10
Page No. 2