Rover to spend 14 days on moon: Isro chief

Sivan Says It'll Send Surface Images In 15 Minutes To Earth

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New Delhi: Gearing up for its most challenging space mission, Indian Space Research Organisation (Isro) is leaving no stone unturned to make the Chandrayaan-2 (lunar-2) mission a success. Unlike the first lunar mission when a PSLV rocket carried the spacecraft to the moon's orbit, this time heavy-payload lifter GSLV Mk II will launch the spacecraft weighing 3,290kg as this time the lunar module will carry an orbiter, a rover and a lander to the moon.

Giving details about the mission, Isro chairman Dr K Sivan told TOI, "Chandraayan-2 is a challenging mission as for the first time we will carry an orbiter, a lander and a rover to the moon. The tentative launch date is sometime in April. Once the GSLV rocket carrying the spacecraft is launched from Sriharikota, the orbiter will reach the moon's orbit in one to two months. (The moon's orbit is 3,82,000km away from the earth's surface)."

Dr Sivan further said, "After reaching the moon's orbit, the lander will get detached from the orbiter and do a soft-landing near the south pole of the moon. The 6-wheeled rover fixed within the lander will get detached and move on wheels on the lunar surface. The rover has been designed in such a way that it will have power to spend a lunar day or 14 earth days on the moon's surface and walk up to 150-200 km. It will do several experiments and on-site chemical analysis of the lunar surface." These payloads will collect scientific information on lunar topography, mineralogy, elemental abundance, lunar exosphere and water-ice.

The Isro chairman said, "The rover will then send data and images of the lunar surface back to the Earth through the orbiter within 15 minutes. After spending 14 earth days, the rover will go in a sleep mode. We are hoping the rover will again come alive whenever that part of the moon (where the rover landed) gets sunlight and recharges the rover's solar cells. Besides the rover, the orbiter will also capture images of the moon while orbiting it and send them back to the earth."

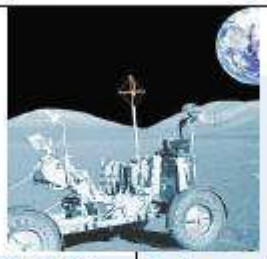
On testing and integration of these Chandrayaan-2 components, Dr Sivan said, "All three components of the lunar module, orbiter, lander and rover, are almost ready. Currently, there integration is going on. Once the module is ready, it will have to go through rigorous tests."

In preparation for the lunar touchdown, landing simulations are currently on at Isro's Liquid Propulsion System Centre at Mahendra Giri, Tamil Nadu.

On fixing the date of the Chandraayan-2 launch,the Isro chief said, "The launch date for the mission will depend on various factors like the moon's relative position with respect to the earth. Once the GSLV Mk II is launched, it will put the spacecraft in the 170 km x 20,000 km elliptical orbit. From the elliptical orbit, the spacecraft will be manoeuvred towards the lunar orbit by firing the thrusters with chemical propellant at least 10 times. Therefore, we expect the spacecraft will reach the lunar orbit through the transfer orbit in one or two months."

LUNAR ODYSSEY

Picture for representational purpose



- Chandrayaan-2 craft **(weighing 3,290 kg)** will **reach lunar orbit** after **launch** (scheduled in **April**) within **one to two months**
- After reaching lunar orbit, **lander will get detached from orbiter** and do a **soft landing near south pole of moon**
- **Six-wheeled rover fixed in lander will get detached** and move on wheels on lunar surface
- Rover will have power to **spend one lunar day (14 Earth days)** on moon surface and **walk up to 150-200 km**
- Rover will study lunar surface and **send images to Earth** via orbiter **within 15 minutes**
- Rover will thereafter **go in a sleep mode** and **get activated whenever sun rays will fall** on it