

Industry involvement

A look at private companies & PSUs that participated and contributed to India's 3rd unmanned lunar mission – Chandrayaan-3

Private



Larsen & Toubro (L&T)

- Played a role in manufacturing of subsystems to mission tracking
- Supplied critical booster segments – head end segment, middle segment and nozzle bucket flange
- System integration of launch vehicle
- Ground & flight umbilical plates
- Space hardware was produced at its Aerospace Manufacturing Facility



- Supplied liquid propulsion engines – Vikas and CE20
- Supplied satellite thrusters



Walchandnagar Industries Ltd

- Supplied S200, critical booster segments, for launch vehicle, LVM3
- Also supplied flex nozzle control tankages and S200 flex nozzle



- Solid propellant plant
- Vehicle assembly building
- Mobile launch pedestal



- Supplied fire-resistant ceramic components called squibs which won't melt even in extreme weather conditions.
- Squibs were supplied to several Isro missions, including Chandrayaan-2



- Supplied systems to the mission
- It has supplied systems to Chandrayaan-1 and 2 as well

Kortas Industries Pvt Ltd

- Supplied several sub-assemblies for various stages

PSUs

Bharat Heavy Electricals Limited (BHEL):

- Provided over 100 batteries

Hindustan Aeronautics Limited:

- Metallic & composite structures
- Propellant tanks
- Bus structure for rover & lander

Kerala State Electronics Development Corporation (KELTRON):

- Supplied 41 electronics modules
- Maintained assembling & fabrication processes

Heavy Engineering Corporation, Ranchi:

- Mobile launch pedestal
- Horizontal sliding door
- Folding-cum-vertical repositionable platform

Kerala Minerals and Metals Ltd:

- Provided titanium sponge metal used to make critical components

Steel and Industrial Forgings Ltd (SIFL):

- Provided titanium and aluminium forgings and other accessories
- Supplied components for LVM-3, separation system, and engines

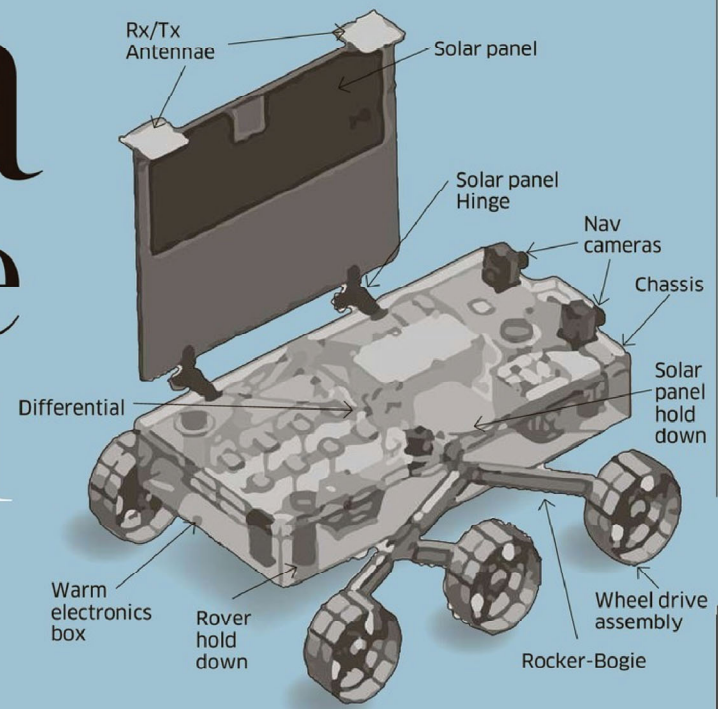
Start-ups

Omnipresent Robot Tech:

Developed navigation software for Pragyan rover

DH GRAPHIC: Deepak Harichandan, Ramu Mastaiyah, Gururaj Vaidya, Gangadhar R and Sagar M S

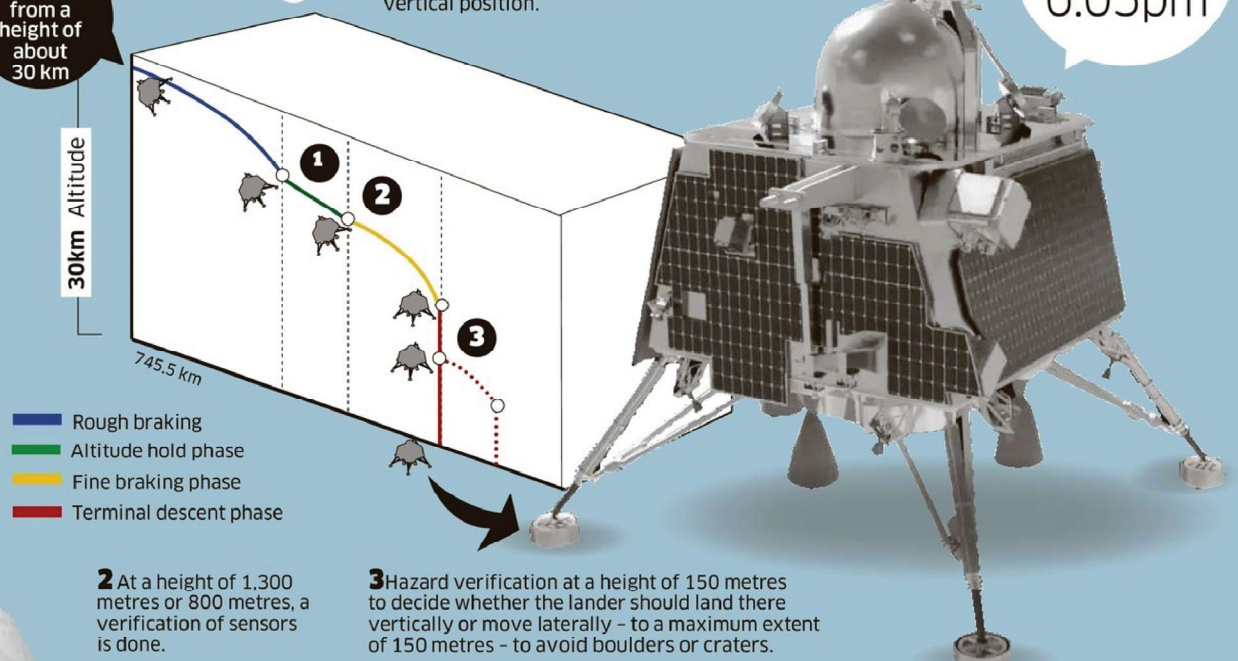
India over the moon



The final 20 minutes

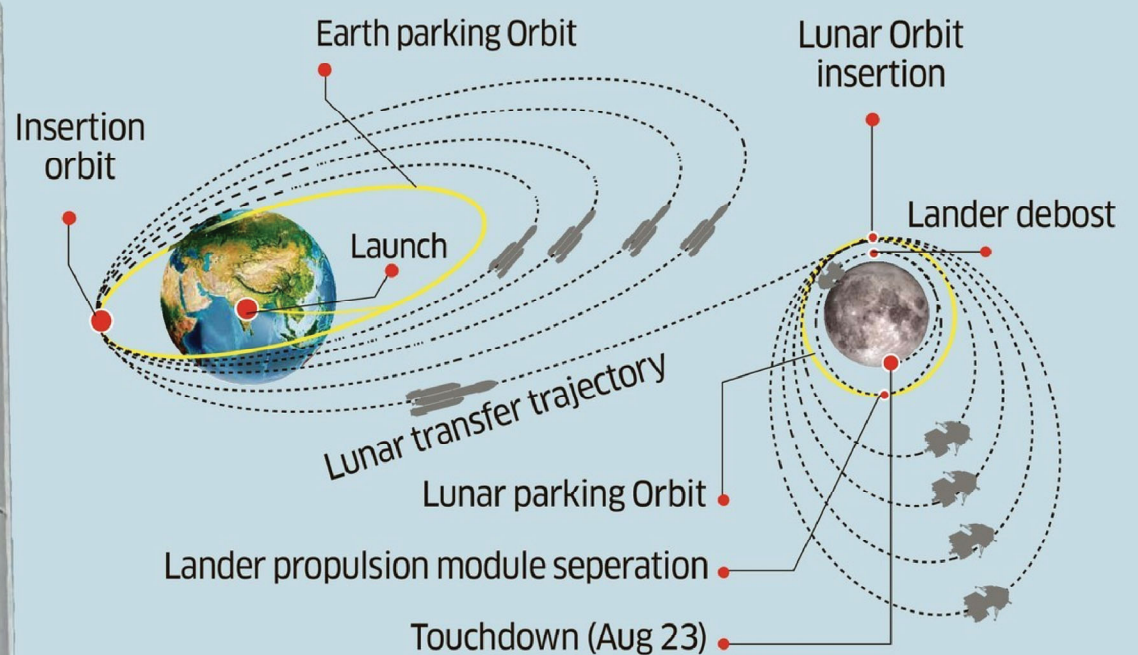
The soft landing

Final descent from a height of about 30 km



Soft landing on lunar surface at 6.03pm

The Orbital track of Chandrayaan-3



Compiled by: Kalyan Ray and ET B Sivapriyan

