K. RADHAKRISHNAN
ISRO Chairman
He initiated and pushed Mars mission in 2010

V. ADIMURTHY
Former Dy. Director, VSSC
Chaired team that endorsed feasibility study

A.S. KIRAN KUMAR
Director, Space Applications Centre
Team devised instruments to study Red Planet

S.K. SHIVAKUMAR
Director, ISRO Satellite Centre; his team built spacecraft in record time

M. ANNADURAI
Mars Mission Programme Director
Also led 2008 Chandrayaan-1 mission

V. KESAVA RAJU
Post-launch Mission Director
Responsible for every move since launch

S. ARUNAN
MOM Project Director
Mothered the spacecraft

B. S. CHANDRASHEKHAR
Director ISTRAC & IDSN
Team tracks and communicates with spacecraft

The Soviet Union made the first bid in 1960; US agency NASA has been the luckiest

India aspires to be the third country and ISRO the fourth space agency to go for it

NASA launched its MAVEN Mars orbiter on Nov. 18, 2013, soon after MOM

MOM enters Martian orbit just two days after MAVEN, but on a different plane

INDIAN MARS ODYSSEY

ON WEDNESDAY MORNING, WILL DEBUTANT INDIA MAKE HISTORY AT MARS? A VITAL ENGINE FIRING FROM BANGALORE WILL DECIDE. GET SET...

Madhumathi D.S.

BANGALORE: When the Indian Space Research Organisation (ISRO) started looking at Mars soon after doing a Moon mission in 2008-09, there were a few sceptics and nay-sayers.

An occasion for a celestial rendezvous of Earth with Mars comes up once in 26 months. In August 2010, K. Radhakrishnan, who had taken charge about a year before as ISRO Chairman, initiated a feasibility study under former ISRO aerodynamics expert and VSSC Deputy Director V. Adimurthy. The report was ready in June 2011.

After the Space Commission and the Union Cabinet approved it, the then Prime Minister Manmohan Singh announced the Rs. 450-crore Mars Orbiter Mission in August 2012.

A hectic 15 months later, the first Indian spacecraft to Mars was aloft on an Indian PSLV rocket and away on its 660-million-km-long trip.

Earth and Mars have some things in common and scientists have been curious to know if our neighbour ever harboured life millions of years ago; and what happened to its now depleted atmosphere. The Indian spacecraft's five instruments will look for clues to these on its surface and atmosphere. A methane sensor will look for methane, which is a clue to life on the planet. A Mars Colour Camera will send back pictures of the planet.

If we had missed this opportunity, the next best chance, experts say, would have been mid-2018, rather than 2016.

The story so far

The Mars orbiter is a 1,350-kg spacecraft built by ISRO scientists in Bangalore with devices from other centres.

November 5, 2013: The space crafat takes off on an Indian PSLV rocket from Sriharikota; after several trips around Earth to pick up speed, it escapes Earth's gravitational pull on December 1, 2013, and sets off on a nine-month-long travel across space, towards Mars.

ISRO has made three minor route adjustments en route.

September 22, 2014: After travelling for over 300 days, the spacecraft will enter the Martian gravitational sphere; it will get a small, fourth course correction from Earth.

The Big Day is the morning of September 24. Scientists on the ground in Bangalore must fire the main engine, sleeping for the last 300 days, and coax the spacecraft into an orbit around Mars. If they achieve it, India and ISRO will have literally arrived on Mars.

From then on, ISRO expects the spacecraft to keep moving in this elliptical path for at least the next six months. Its instruments will send their gleanings back home.

Mars colour camera

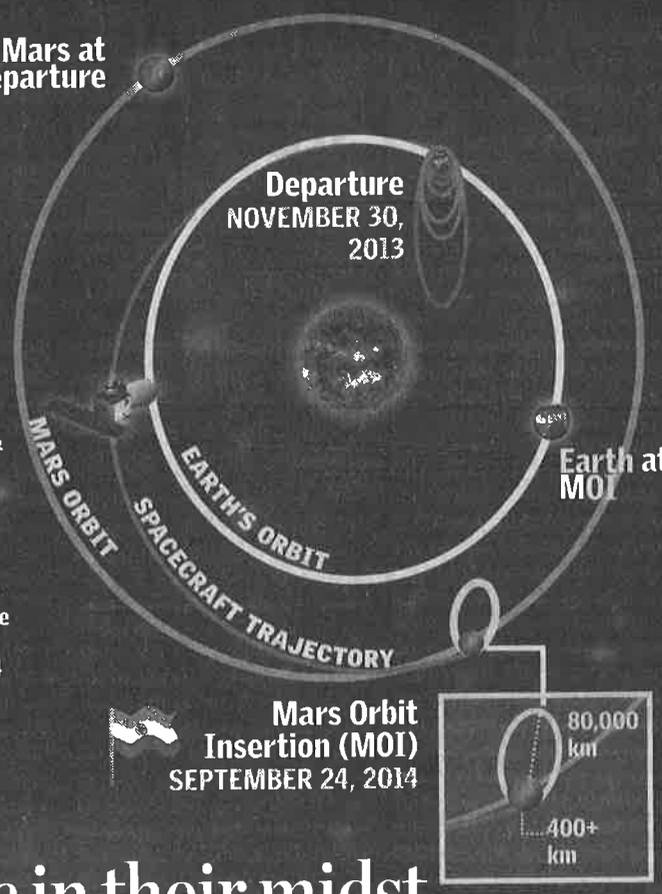
MOM carries 5 instruments, including a colour camera to look at Mars and its surface

ITS METHANE SENSOR WILL LOOK FOR A CLUE TO PAST LIFE

At **Rs. 450 crore** (about $70 million), MOM costs about a fifth of other missions and less than the Hollywood sci-fi blockbuster `Gravity', made at **$ 100 million**

In mid-October MOM & MAVEN may have a ring-side view of Comet Siding Spring, which is due to breeze past Mars

Starting from 1960, the US, USSR and Europe have totally sent up 44 missions to Mars. The success rate has been 47%



The giant *bili baanale* in their midst

Vinayashree Jagadeesh

BANGALORE: *"Bili baanale"* (white frying pan) is what the children here call the big antennae situated within their Byalalu village in Ramanagaram district, which is also home to Indian Space Research Organisation's Indian Deep Space Network (IDSN).

Even as this space communications hub constantly connects with the spacecraft several million kilometres away, there seems to be a 'disconnect' between the centre and the residents around it.

Most of the children studying in a local government school have no idea what this giant *baanale* is called, or what it does. A couple of them, however, were wiser. They said their parents had told them it is part of the local ISRO building, which deals with "planets and space".

Narasamma and daughter Kirthana. Behind them is the antennae. – PHOTO: K. MURALI KUMAR

It is not just the children who are clueless, the elders too are in the dark about the fact that the centre's 32-metre-deep space scanner has been tracking the Mars spacecraft, which is just over four days away from entering the Martian orbit. All they seem to know is that the IDSN is an 'ISRO building', and are naïve about its importance.

The antenna stands out against the barren landscape of Byalalu village on the outskirts of Bangalore. Six years ago, the same antenna had been communicating with the Chandrayaan-1 spacecraft. Narasamma, who has lived in Byalalu for 20 years, including during the lunar mission, said she has not heard of the Chandrayaan or the Mangalyaan, the present Mars Orbiter Mission. They don't mean much to her.

However, the news of the Mars Orbiter Mission has reached the nearby high school where her daughter, Kirthana, studies. "My teachers have spoken about the mission to Mars in our school," she said, though she admitted she did not know how the IDSN and its antennae had anything to do with it.

When this reporter spoke to another resident, Shanta Kumar, who lives next to the vast IDSN compound, he said that "flights" were monitored from the centre. "We don't know much about the centre as we are not allowed to go inside," he said. Strangely, he was convinced that the centre could track that conversation as well.