

Mars: graveyard of broken dreams and landers

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Mars, the fourth planet from the Sun, has become a veritable graveyard for landers and rovers despatched to its surface from neighbouring Earth.

Only the United States has successfully operated rovers on the Red Planet, four in all, and has lost only one stationary lander.

The former Soviet Union had chalked up repeated failures, while Russia's first attempt at a rover will be a joint mission along with Europe dubbed ExoMars.

If data shows that Europe's Schiaparelli lander crashed into the Red Planet on Wednesday, it will be the second failed attempt for Europe in 13 years.

Overall, almost half of all attempts to land on Mars since the 1960s have ended in disappointment.

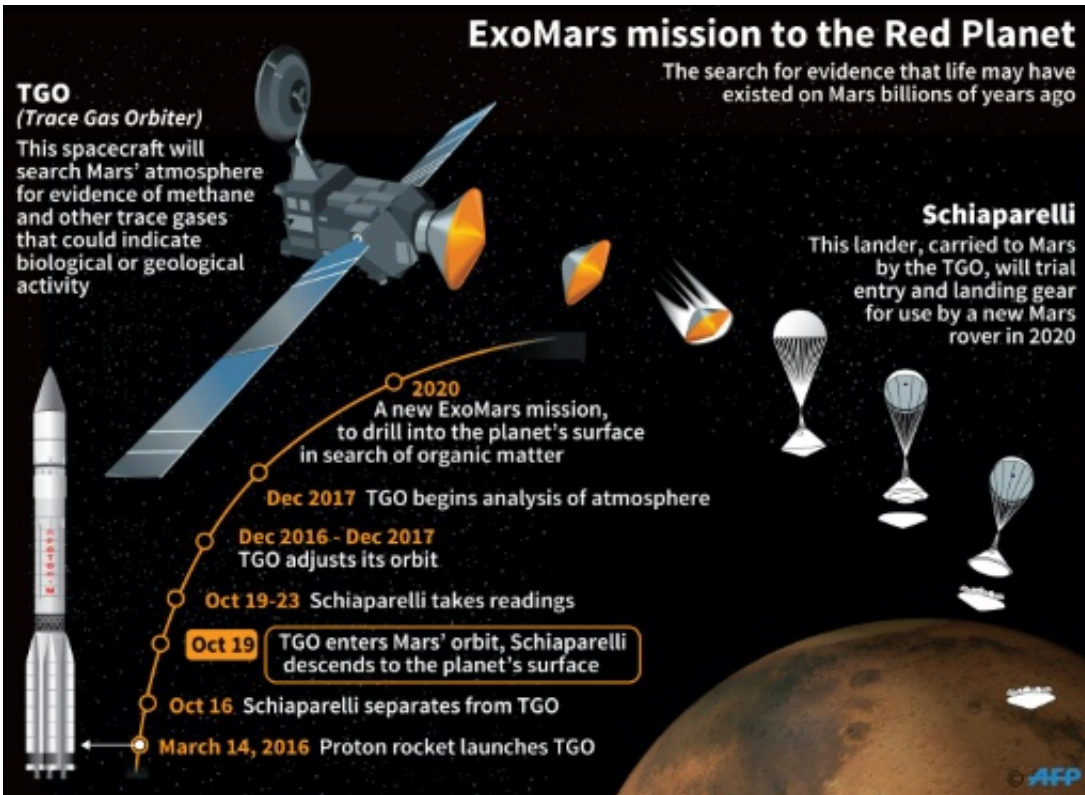
A recap of surface-bound missions that missed the mark.

USSR - Russia

The Soviet Union (USSR) was the first to attempt to place a craft on Mars.

A launch failure spoiled its first bid in 1962, followed in 1971 with its Mars 2 lander becoming the first pile of man-made debris on the Red Planet.

Less than a week later, Mars 3 became the first craft to make a soft Mars landing, though contact was lost after mere seconds and the mission was chalked up as a partial failure. A small "walking" rover on board Mars 3 did not deploy.



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Moscow tried again in 1973 with its Mars 6 and Mars 7 landers, but contact with the first was lost as it reached the surface, and the second never penetrated the Martian atmosphere.

Pre-touchdown communications were lost with two further would-be landers, Fobos 1 and Fobos 2, both launched in 1988.

The United States

After more than a decade of Soviet attempts, the US was successful on its first attempt—the Viking 1 and Viking 2 landers launched in 1975.

They were followed in 1996 by the Mars Pathfinder, a science station and base for the Sojourner rover—the first motorised robot to be operated by humans beyond the Earth or Moon. The only US failure was its Mars Polar Lander which failed to touch down in 1999.

It has subsequently placed three more rovers on the Red Planet: Spirit and Opportunity in 2003, and Curiosity in 2011. The latter two are still criss-crossing the alien Martian surface.

European Union

Europe's first attempt to land on Mars saw the British-built Beagle 2 lander disappear without trace after separating from its Mars Express mothership in 2003.

A NASA photo last year showed finally that the craft had touched down, but its battery-recharging solar panels failed to deploy and it was unable to communicate.

European Space Agency scientists are trying to establish the fate of their Schiaparelli lander, launched in March as a test run for a Mars rover due for launch in 2020.

Schiaparelli separated from its Trace Gas Orbiter mothership on Sunday but signal was lost just seconds before it was to touch down on Mars three days later.

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