


Alphabetical
Index

A B C D E F G H I
J K L M N O P Q R
S T U V W X Y Z

Topical Index

Aeronautics
Anniversaries
Biographies
Centers & Offices
Exploration
Human Spaceflight
Photo-Video
Reference
Satellites
Space Biology
Space Policy
Space Science

NASA Search:

Search

A Chronology of Mars Exploration



No name (retroactively named Marsnik 1)(Mars 1960A) - 480 kg - USSR Mars Probe - (October 10, 1960)

- Failed to reach Earth orbit.

No name (retroactively named Marsnik 2)(Mars 1960B) - 480 kg - USSR Mars Probe - (October 14, 1960)

- Failed to reach Earth orbit.

Sputnik 22 (Mars 1962A) - USSR Mars Flyby - 900 kg - (October 24, 1962)

- Spacecraft failed to leave Earth orbit after the final rocketstage exploded.

Mars 1 - USSR Mars Flyby - 893 kg - (November 1, 1962)

- Communications failed en route.

Sputnik 24 (Mars 1962B) - USSR Mars lander - mass unknown (November 4, 1962)

- Failed to leave Earth orbit.

Mariner 3 - USA Mars Flyby - 260 kg - (November 5, 1964)

- Mars flyby attempt. Solar panels did not open, preventing flyby. Mariner 3 is now in a solar orbit. Click [here](#) for more information about the Mariner missions.

Mariner 4 - USA Mars Flyby - 260 kg - (November 28, 1964- December 20, 1967)

- Mariner 4 arrived at Mars on July 14, 1965 and passed within 6,118 miles of the planet's surface after an eight month journey. This mission provided the first close-up images of the red planet. It returned 22 close-up photos showing a cratered surface. The thin atmosphere was confirmed to be composed of carbon dioxide in the range of 5-10 mbar. A small intrinsic magnetic field was detected. Mariner 4 is now in a solar orbit. Click [here](#) for more information about the Mariner missions.

Zond 2 - USSR Mars Flyby - 996 kg - (November 30, 1964)

- Contact was lost en route.

Mariner 6 - USA Mars Flyby - 412 kg - (February 24, 1969)

- Mariner 6 arrived at Mars on February 24, 1969, and passed within 3,437 kilometers of the planet's equatorial region. Mariner 6 and 7 took measurements of the surface and atmospheric temperature, surface molecular composition, and pressure of the atmosphere. In addition, over 200 pictures were taken. Mariner 6 is now in a solar orbit. Click [here](#) for more information about the Mariner missions.

Mariner 7 - USA Mars Flyby - 412 kg - (March 27, 1969)

- Mariner 7 arrived at Mars on August 5, 1969, and passed within 3,551 kilometers of the planet's south pole region. Mariner 6 and 7 took measurements of the surface and atmospheric temperature, surface molecular composition, and pressure of the atmosphere. In addition, over 200 pictures were taken. Mariner 7 is now in a solar orbit. Click [here](#) for more information about the Mariner missions.

Mars 1969A USSR

- Launch Failure

Mars 1969B USSR

- Launch Failure

Mariner 8 - USA Mars Flyby - 997.9 kg - (May 8, 1971)

- Failed to reach Earth orbit.
Click [here](#) for more information about the Mariner missions.

Kosmos 419 - USSR Mars Probe - 4,549 kg - (May 10, 1971)

- Failed to leave Earth orbit.

Mars 2 - USSR Mars Orbiter/Soft Lander - 4,650 kg - (May 19, 1971)

- The Mars 2 lander was released from the orbiter on November 27, 1971. It crashed-landed because its braking rockets failed- no data was returned and the first human artifact was created on Mars. The orbiter returned data until 1972.

Mars 3 - USSR Mars Orbiter/Soft Lander - 4,643 kg - (May 28, 1971)

- Mars 3 arrived at Mars on December 2, 1971. The lander was released and became the first successful landing on Mars. It failed after relaying 20 seconds of video data to the orbiter. The Mars 3 orbiter returned data until August, 1972. It made measurements of surface temperature and atmospheric composition.

Mariner 9 - USA Mars Orbiter - 974 kg - (May 30, 1971 -1972)

- Mariner 9 arrived at Mars on November 3, 1971 and was placed into orbit on November 24. This was the first US spacecraft to enter an orbit around a planet other than Earth. At the time of its arrival a huge dust storm was in progress on the planet. Many of the scientific experiments were delayed until the storm had subsided. The first hi-resolution images of the moons Phobos and Deimos were taken. River and channel like features were discovered. Mariner 9 is still in Martian orbit.
Click [here](#) for more information about the Mariner missions.

Mars 4 - USSR Mars Orbiter - 4,650 kg - (July 21, 1973)

- Mars 4 arrived at Mars on February, 1974, but failed to go into orbit due to a malfunction of its braking engine. It flew past the planet within 2,200 kilometers of the surface. It returned some images and data.

Mars 5 - USSR Mars Orbiter - 4,650 kg - (July 25, 1973)

- Mars 5 entered into orbit around Mars on February 12, 1974. It acquired imaging data for the Mars 6 and 7 missions.

Mars 6 - USSR Mars Orbiter/Soft Lander - 4,650 kg - (August 5, 1973)

- On March 12, 1974, Mars 6 entered into orbit and launched its lander. The lander returned atmospheric descent data, but failed on its way down.

Mars 7 - USSR Mars Orbiter/Soft Lander - 4,650 kg - (August 9, 1973)

- On March 6, 1974, Mars 7 failed to go into orbit about Mars and the lander missed the planet. Carrier and lander are now in a solar orbit.

Viking 1 - USA Mars Orbiter/Lander - 3,527 kg including fuel - (August 20, 1975 - August 7, 1980)**Viking 2 - USA Mars Orbiter/Lander - 3,527 kg including fuel - (September 9, 1975 - July 25, 1978)**

- Viking 1 and 2 spacecraft included orbiters (designed after the Mariner 8 and 9 orbiters) and landers. The orbiter weighed 883 kg and the lander 572 kg. Viking 1 was launched from the Kennedy Space Center, on August 20, 1975, the trip to Mars and went into orbit about the planet on June 19, 1976. The lander touched down on July 20, 1976 on the western slopes of Chryse Planitia (Golden Plains). Viking 2 was launched for Mars on November 9, 1975, and landed on September 3, 1976. Both landers had experiments to search for Martian micro-

organisms. The results of these experiments are still being debated. The landers provided detailed color panoramic views of the Martian terrain. They also monitored the Martian weather. The orbiters mapped the planet's surface, acquiring over 52,000 images. The Viking project's primary mission ended on November 15, 1976, eleven days before Mars' superior conjunction (its passage behind the Sun), although the Viking spacecraft continued to operate for six years after first reaching Mars. The Viking 1 orbiter was deactivated on August 7, 1980, when it ran out of altitude-control propellant. Viking 1 lander was accidentally shut down on November 13, 1982, and communication was never regained. Its last transmission reached Earth on November 11, 1982. Controllers at NASA's Jet Propulsion Laboratory tried unsuccessfully for another six and one half months to regain contact with the lander, but finally closed down the overall mission on 21 May 1983. Click [here](#) for more information on the Viking missions.

Phobos 1 - USSR Mars Orbiter/Lander - 5,000 kg - (July 7, 1988)

- Phobos 1 was sent to investigate the Martian moon Phobos. It was lost en route to Mars through a command error on September 2, 1988.

Phobos 2 - USSR Phobos Flyby/Lander - 5,000 kg - (July 12, 1988)

- Phobos 2 arrived at Mars and was inserted into orbit on January 30, 1989. The orbiter moved within 800 kilometers of Phobos and then failed. The lander never made it to Phobos.

Mars Observer - USA Mars Orbiter - 2,573 kg - (September 25, 1992)

- Communication was lost with Mars Observer on August 21, 1993, just before it was to be inserted into orbit.

Mars Global Surveyor - USA Mars Orbiter – 1,062.1 kg - (November 7, 1996)

- Initiated due to the loss of the Mars Observer spacecraft, the Mars Global Surveyor (MGS) mission launched on November 7, 1996. MGS has been in a Martian orbit, successfully mapping the surface since March 1998. Click [here](#) to check out the [MGS page at JPL](#).

Mars 96 - Russia Orbiter & Lander - 6,200 kg - (November 16, 1996)

- Mars '96 consisted of an orbiter, two landers, and two soil penetrators that were to reach the planet in September 1997. The rocket carrying Mars 96 lifted off successfully, but as it entered orbit the rocket's fourth stage ignited prematurely and sent the probe into a wild tumble. It crashed into the ocean somewhere between the Chilean coast and Easter Island. The spacecraft sank, carrying with it 270 grams of plutonium-238.

Mars Pathfinder - USA Lander & Surface Rover - 870 kg - (December 1996)

- The Mars Pathfinder delivered a stationary lander and a surface rover to the Red Planet on July 4, 1997. The six-wheel rover, named Sojourner, explored the area near the lander. The mission's primary objective was to demonstrate the feasibility of low-cost landings on the Martian surface. This was the second mission in NASA's low-cost Discovery series. After great scientific success and public interest, the mission formally ended on November 4, 1997, when NASA ended daily communications with the Pathfinder lander and Sojourner rover.

Nozomi - Japan Mars Orbiter – 536 kg - (July 3, 1998) (Planet B)

- Japan's Institute of Space and Astronautical Science (ISAS) launched this probe on July 4, 1998 to study the Martian environment. This would have been the first Japanese spacecraft to reach another planet. The probe was due to arrive at Mars in December of 2003. After revising the flight plan due to earlier problems with the probe, the mission was abandoned on December 9, 2003 when ISAS was unable to communicate with the probe in order to prepare it for orbital insertion.

Mars Climate Orbiter - USA Orbiter - 629 kg - (December 11, 1998) (Mars Surveyor '98 Orbiter)

- This orbiter was the companion spacecraft to the Mars Surveyor '98 Lander, but the mission failed. [Click here to read the Mars Climate Orbiter Mishap Investigation Board's report](#).

Mars Polar Lander - USA Lander - 583 kg - (January 3, 1999) (Mars Surveyor '98 Lander)

- The Polar Lander was scheduled to land on Mars on December 3, 1999. Mounted on the cruise stage of the Mars Polar Lander were two Deep Space 2 impact probes, named Amundsen and Scott. The probes had a mass of 3.572 kg each. The cruise stage was to separate from the Mars Polar Lander, and subsequently the two

probes were to detach from the cruise stage. The two probes planned to impact the surface 15 to 20 seconds before the Mars Polar Lander was to touch down. Ground crews were unable to contact the spacecraft, and the two probes. NASA concluded that spurious signals during the lander leg deployment caused the spacecraft to think it had landed, resulting in premature shutdown of the spacecraft's engines and destruction of the lander on impact.

2001 Mars Odyssey - USA Mars Orbiter and Lander/Rover - 376.3 kg - (April 7, 2001) (Mars Surveyor 2001 Orbiter)

- This Mars orbiter reached the planet on October 24, 2001 and served as a communications relay for future Mars missions. In 2010 Odyssey broke the record for longest-serving spacecraft at the Red Planet. It will support the 2012 landing of the Mars Science Laboratory and surface operations of that mission. Click [here](#) for more information.

Mars Express - European Space Agency Mars Orbiter and Lander - 666 kg - (June 2, 2003)

- The Mars Express Orbiter and the Beagle 2 lander were launched together on June 2, 2003. The Beagle 2 was released from the Mars Express Orbiter on December 19, 2003. The Mars Express arrived successfully on December 25, 2003. The Beagle 2 was also scheduled to land on December 25, 2003; however, ground controllers have been unable to communicate with the probe. Click [here](#) for more information.

Spirit (MER-A) – USA Mars Rover – 185 kg - (June 10, 2003)

- As part of the Mars Exploration Rover (MER) Mission, "Spirit", also known as MER-A, was launched on June 10, 2003 and successfully arrived on Mars on January 3, 2004. The last communication with Spirit occurred on March 22, 2010. JPL ended attempts to re-establish contact on May 25, 2011. The rover likely lost power due to excessively cold internal temperatures.

Opportunity (MER-B) – USA Mars Rover – 185 kg - (July 7, 2003)

- "Opportunity", also known as MER-B, was launched on July 7, 2003 and successfully arrived on Mars on January 24, 2004. Click [here](#) for more information on the MER mission.

Mars Reconnaissance Orbiter – USA Mars Orbiter - 1,031 kg - (August 12, 2005)

- The Mars Reconnaissance Orbiter (MRO) was launched on August 12, 2005 for a seven month voyage to Mars. MRO reached Mars in March 10, 2006 and began its scientific mission in November 2006. Click [here](#) for more information.

Phoenix – USA Mars Lander - 350 kg - (August 4, 2007)

- The Phoenix Mars Lander was launched on August 4, 2007 and landed on Mars on May 25, 2008. It is the first in NASA's Scout Program. Phoenix was designed to study the history of water and habitability potential in the Martian arctic's ice-rich soil. The solar-powered lander completed its three-month mission and kept working until sunlight waned two months later. The mission was officially ended in May 2010. Click [here](#) for more information from the NASA HQ site and [here](#) for more from the JPL- University of Arizona site.

Phobos-Grunt – Russia Mars Lander - 730 kg/**Yinghuo-1** – China Mars Orbital Probe – 115 kg - (November 8, 2011)

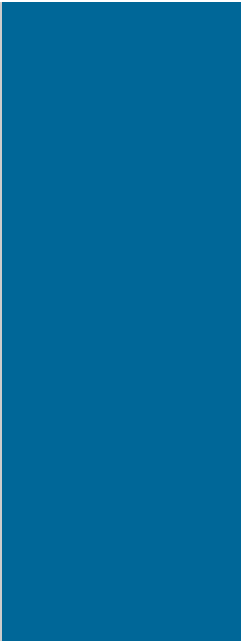
- The Phobos-Grunt spacecraft was meant to land on the Martian moon Phobos. The Russian spacecraft did not properly leave Earth's orbit to set out on its trajectory toward Mars. Yinghuo-1 was a planned Chinese Mars orbital probe launched along with Phobos-Grunt. Both craft were destroyed on re-entry from Earth orbit in January 2012.

Mars Science Laboratory – USA Mars Rover – 750 kg - (November 26, 2011)

- The Mars Science Laboratory was launched on November 26, 2011. With its rover named Curiosity, NASA's Mars Science Laboratory mission is designed to assess whether Mars ever had an environment able to support small life forms called microbes. Curiosity landed successfully in Gale Crater at 1:31 am EDT on August 6, 2012. Click [here](#) for more information from the NASA JPL site.

Mars Orbiter Mission (Mangalyaan) – India Mars Orbiter - 15 kg - (November 5, 2013)

- The Indian Mars Orbiter Mission was launched on November 5, 2013, from the Satish Dhawan Space Center. It was inserted into orbit around Mars on September 24, 2014 and completed its planned 160-day mission duration



in March 2015. The spacecraft continues to operate, mapping the planet and measuring radiation.

MAVEN – USA Mars Orbiter – 2,550 kg - (Launch November 18, 2013)

- MAVEN (Mars Atmospheric and Volatile EvolutionN) was the second mission selected for NASA's Mars Scout program. It launched on November 18, 2013 and entered orbit around Mars on September 21, 2014. MAVEN's mission is to obtain critical measurements of the Martian atmosphere to further understanding of the dramatic climate change that has occurred over the course of its history. Click [here](#) for more information about MAVEN.

InSight – USA Mars Lander - (Launch Window March 8 - March 27, 2016)

- InSight (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport) is the twelfth mission in NASA's series of Discovery-class missions. InSight will take the first look into the deep interior of Mars to see why the Red Planet evolved so differently from Earth as one of our solar system's rocky planets. Click [here](#) for more information from the NASA JPL site.
- We also have an [annotated bibliography](#) available.

ADA Navigation

[About Us](#) | [What's New](#) | [Publications](#) | [Researching NASA History](#) | [News letter/Annual Reports](#) | [Center History Offices](#) | [Topical Index](#) | [Common Topics/FAQ](#) | [Contact Us](#)

	NASA Official: Stephen Garber Last Updated: April 16, 2015 + Contact NASA + Site Map	+ Budgets, Strategic Plans and Accountability Reports + Equal Employment Opportunity Data Posted Pursuant to the No Fear Act + Information-Dissemination Policies and Inventories	+ Freedom of Information Act + Privacy Policy & Important Notices + NASA Advisory Council + Inspector General Hotline + Office of the Inspector General + NASA Communications Policy	 + USA.gov + ExpectMore.gov
--	---	---	---	--