



COLEGIO BAYARD

Mission to Mars

Stage 3: Flight Path

For a trip to Mars, it is ideal to select a date when Mars and Earth are in a close position in their orbits around the Sun. This is known as a Mars launch window. These launch windows occur approximately every 26 months, when the two planets are in favorable alignment for the most efficient interplanetary travel in terms of time and energy consumption.

The duration of the trip to Mars can vary depending on several factors, such as the speed of the spacecraft and the trajectory used. On average, a direct trip to Mars can take between 6 and 9 months.

Once the spacecraft arrives at Mars, a period of time is generally expected before the return trip to Earth is undertaken. This is because astronomical conditions must again be favorable for an efficient return trip. The duration of this wait on Mars can be approximately 18 months, which includes the time for Mars and Earth to return to proper alignment.

The transfer orbit used to travel between Earth and Mars is known as a Hohmann orbit, which is an elliptical trajectory that allows a spacecraft to transfer from an orbit around one planet to orbit around another planet. This orbit is of minimum energy and is characterized by having an ellipse that touches the orbits of both planets.

Takeoff	Land on Mars	Time on Mars	Return to earth	Landing and the end of the mission
August 17, 2024	It's between	approximated 18	October 22, 2026	Between april 17

	january 17 and april 17, 2025 (between 6 or 9 months)	months (october 17 or july 17)		and july 17, 2027 (between 6 and 9 months)
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