COLEGIO BAYARD

Mission to Mars

Stage 3 - Flight Path

For a trip to Mars, it is ideal to choose a date when Mars and Earth are close 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 favorably aligned 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 last between 6 and 9 months.

Once the spacecraft reaches Mars, it usually waits a period of time before beginning the return journey to Earth. This is because astronomical conditions need to be favorable again 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 come back into proper alignment.

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

Takeoff	Landing	Time in Mars	Return to Earth	Landing and end of mission
October 2026	Abril 2027	18 months	October 2028	June 2029