

THE RACE TO MARS
THE US SPACE AGENCY, NASA, HAS SAID IT INTENDS TO SEND ASTRONAUTS TO MARS SOMETIME IN THE NEXT DECADE. THE UNITED ARAB EMIRATES, WHICH CURRENTLY HAS A SPACECRAFT ORBITING THE PLANET, IS ALSO PROMOTING A 100-YEAR PLAN TO ESTABLISH A COLONY THERE. WHILE CHINA SAYS ITS LONG-TERM GOAL IS TO SEND HUMANS TO MARS, THOSE CURRENTLY EAGER TO EXPERIENCE MARTIAN LIFE CAN GET AN IDEA OF THIS BY VISITING A SIMULATION SITE THEY SET UP IN THE .GOBI DESERT

IN THE MIDST OF ALL THIS, BILLIONAIRE ELON MUSK EMERGED AS THE MOST ENTHUSIASTIC AND AMBITIOUS MAN FOR THIS EXPERIMENT. THE FOUNDER OF SPACEX WANTS TO SEND HUMANS TO MARS IN THIS DECADE. IN AN INTERVIEW LAST YEAR, MUSK SAID HE WAS CONFIDENT A MANNED MISSION COULD BE SENT .TO THE RED PLANET IN 2026

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**DIFFICULTIES FACING IT
DESPITE ALL THESE AMBITIONS, MANY
SCIENTISTS WARN THAT THERE ARE MANY
QUESTIONS**

**THERE ARE STILL NO DEFINITIVE ANSWERS
REGARDING DEEP SPACE TRAVEL. ELON MUSK
ALSO ACKNOWLEDGED THE DANGERS OF
GETTING THERE, SAYING, "IT'S GOING TO BE
".HARD TO GET THERE**

**THE BILLIONAIRE TWEETED: "BECOMING MULTI-
PLANETARY IS ONE OF THE GREATEST
DISCOVERIES. ONLY NOW, 4.5 BILLION YEARS
AFTER THE FORMATION OF THE EARTH, IS IT
"?POSSIBLE**

**IT IS UNCERTAIN HOW LONG THIS WINDOW FOR
REACHING MARS WILL REMAIN OPEN. IT MAY
REMAIN OPEN FOR A LONG TIME, OR NOT. BUT IF
THIS IS THE LAST WINDOW, WE NEED TO ACT
".NOW**



CHALLENGES
DURING AN INTERVIEW THE BILLIONAIRE GAVE WITH X-PRIZE FOUNDER PETER DIAMANDIS, MUSK SAID, "TO BE HONEST, IT'S POSSIBLE THAT SOME PEOPLE WILL DIE IN THE BEGINNING OF OPERATIONS."

WITH ALL OF THESE PERILOUS ENDEAVOURS, HERE ARE SOME OF THE BIGGEST CHALLENGES THESE HUMAN MISSIONS FACE, FROM SURVIVING COSMIC RADIATION AND DUST STORMS, TO BEING ABLE TO PRODUCE OXYGEN AND WATER.



THE FAR JOURNEY

APOLLO ASTRONAUTS MANAGED TO TRAVEL TO THE MOON WITHIN A FEW DAYS. BUT IT IS DIFFERENT FOR THE TRIP TO MARS, WHICH CAN TAKE 6 TO 9 MONTHS.

THE DISTANCE BETWEEN MARS AND EARTH MAY RANGE FROM 35 MILLION TO 249 MILLION MILES (1 MILE = 1,609 KM), DUE TO THE ELLIPTICAL ORBITS OF THE PLANETS. THEREFORE, THERE IS ONLY ONE SMALL WINDOW AVAILABLE FOR TRAVEL ON THIS JOURNEY,

WHEN THE TWO PLANETS ARE ALIGNED IN THEIR PATHS OPTIMALLY FOR THE JOURNEY. THIS LIMITED WINDOW IS WHAT MAKES THE LOGISTICS OF PLANNING MORE DIFFICULT.

WHILE IN THE CASE OF LUNAR EXPLORATION, "THERE IS ALWAYS THE POSSIBILITY OF PROVIDING SUPPORT, WITH RELIEF, OR SUPPLIES FROM EARTH, OR A SPACE STATION IN THE MIDDLE OF THE ROAD. BUT IT'S NOT LIKE THAT FOR MARS," SAID ALICE GORMAN, ASSOCIATE PROFESSOR AT THE UNIVERSITY OF LONDON. FLINDERS UNIVERSITY, ADELAIDE, AND A MEMBER OF THE ADVISORY BOARD OF THE AEROSPACE INDUSTRY ASSOCIATION OF AUSTRALIA.



SOLAR ERUPTIONS

A TRIP OF THIS DIMENSION COULD EXPOSE THE CREW TO ONE OF THE MOST TERRIFYING PHENOMENA IN THE WORLD OF SPACE; NO SOLAR FLARES. IT IS THE MOST POWERFUL EXPLOSION IN THE SOLAR SYSTEM, AS THE FORCE OF A SINGLE EXPLOSION FROM THE SUN IS EQUIVALENT TO THE POWER OF 100 MILLION HYDROGEN BOMBS.

WHILE EARTH'S MAGNETIC FIELD CAN PROTECT ASTRONAUTS WHEN THEY ARE IN ORBIT, THAT IS NOT THE CASE WHEN TRAVELING IN DEEP SPACE. IF THE FLIGHT THERE WERE EXPOSED TO THIS TYPE OF RADIATION, IT WOULD BE DIFFICULT FOR ANY OF ITS CREW TO SURVIVE FOR MORE THAN A FEW DAYS. "IT'S A PRETTY HORRIBLE WAY TO DIE," SAID LEWIS DARTNELL, AN ASTROBIOLOGIST IN THE DEPARTMENT OF LIFE SCIENCES AT THE UNIVERSITY OF WESTMINSTER IN LONDON. NOTABLY, DARTNELL CONDUCTS RESEARCH RELATED TO LIFE ON MARS.



**FINALLY
WILL ELON MUSK
OVERCOME THE
OBSTACLES TO ESTABLISH
NEW LIFE ON MARS, OR WILL
?HE GIVE UP HALFWAY**

