NASA INTERNATIONAL SPACE APPS CHALLENGE

American Space Dushanbe

WANNA WALK ON MARS? SURE!

Challenge: Visualize a Space Mission Using Virtual Reality
Project title: The value of visualization
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JS Developer

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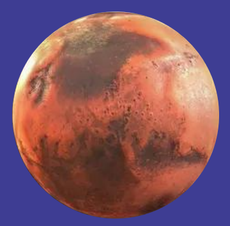
Design Everything

A EARTH–MARS CYCLER IS A KIND OF SPACECRAFT TRAJECTORY THAT ENCOUNTERS EARTH AND MARS REGULARLY

We calculated the trajectory and visualized it on the web

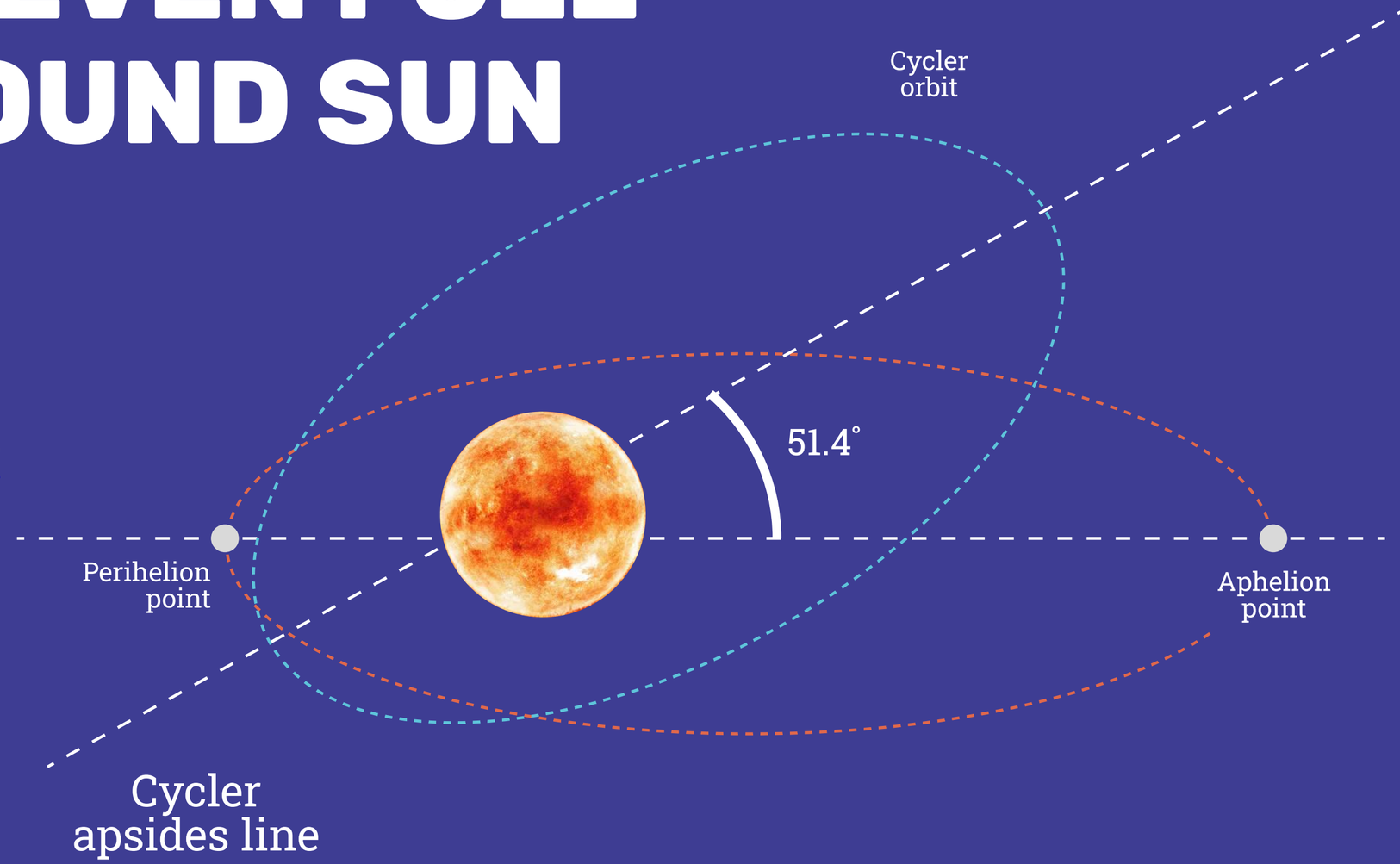
WHEN EARTH COMPLETES 15 ORBITS AROUND THE SUN, MARS COMPLETES EIGHT

Therefore, we have assigned the value of 1.875 years to the period of Mars' revolution

ONE YEAR ON EARTH  =  1,875 YEAR ON MARS

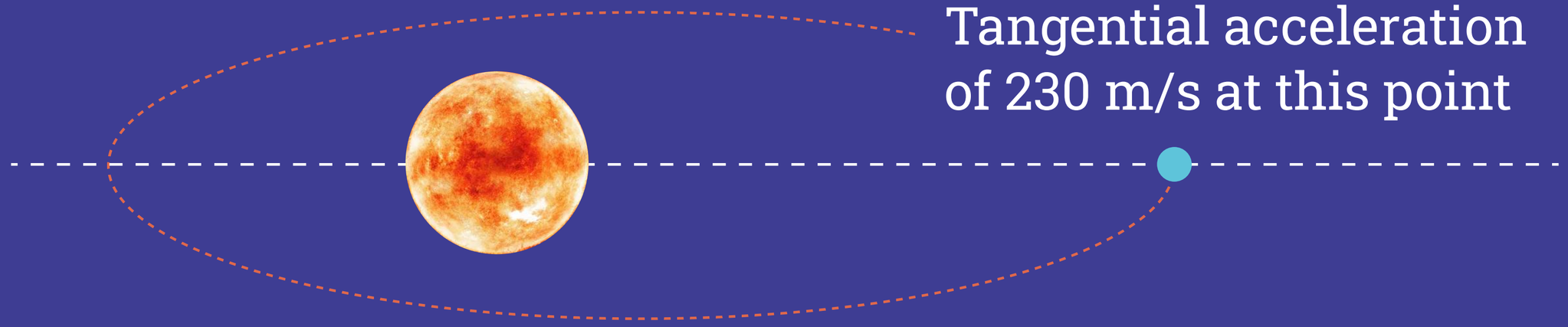
EARTH-MARS CYCLER MUST FLY SEVEN FULL ORBITS AROUND SUN

To fly near Mars, and then return and fly near Earth. To do this, the apsides of the orbit must be shifted by 51.4 degrees.

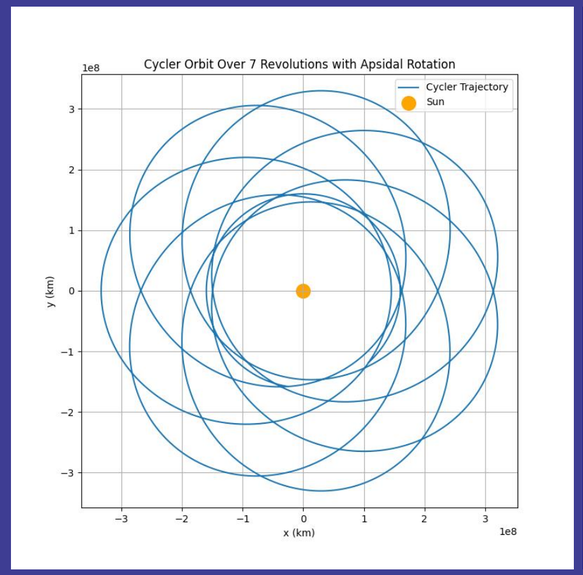


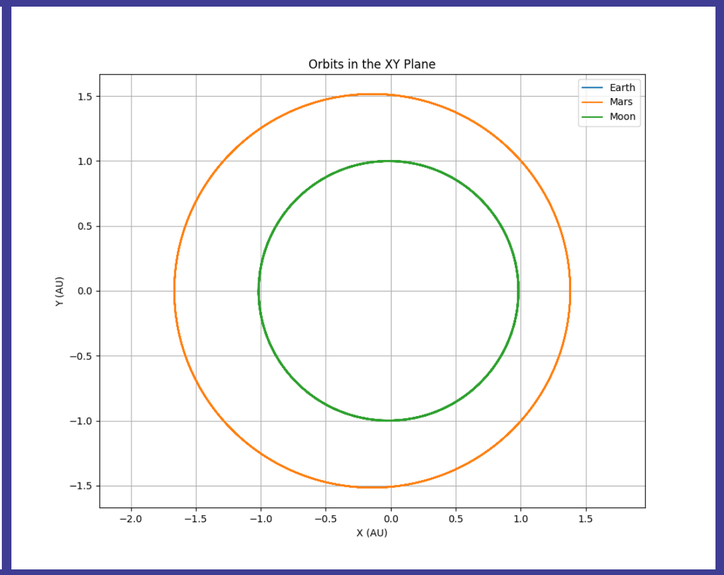
ΔV MANEUVER

This is a tangential acceleration of 230 m/s at the aphelion of the cycler's orbit, to correct the trajectory.



WE USED OUR KNOWLEDGE IN ASTROPHYSICS TO CALCULATE THE CORRECT CYCLER TRAJECTORY





THEN VISUALIZED ON THE WEB, USING BABYLON.JS