

Scientist eyes 39-day voyage to Mars

February 26 2010, by Jean-Louis Santini

A handout image from the US Geological Survey in 2008 shows a mosaic of the Schiaparelli hemisphere of the planet Mars projected into point perspective, a view similar to that which one would see from a spacecraft. A journey from Earth to Mars could soon take just 39 days, cutting current travel time nearly six times, according to a rocket scientist who has the ear of the US space agency.

A journey from Earth to Mars could in the future take just 39 days -- cutting current travel time nearly six times -- according to a rocket scientist who has the ear of the US space agency.

Franklin Chang-Diaz, a former astronaut and a physicist at the Massachusetts Institute of Technology (MIT), says reaching the Red Planet could be dramatically quicker using his high-tech VASIMR rocket, now on track for liftoff after decades of development.

The Variable Specific Impulse Magnetoplasma Rocket -- to give its full name -- is quick becoming a centerpiece of NASA's future strategy as it looks to private firms to help meet the astronomical costs of space exploration.

NASA, still reeling from a political decision to cancel its Constellation program that would have returned a human to the moon by the end of the decade, has called on firms to provide new technology to power rovers or even future manned missions.

Hopes are now pinned on firms like Chang-Diaz's Texas-based Ad Astra Rocket Company.

"In the early days... NASA support for the project was rather minimal because the agency did not emphasize advanced technologies as much as it's doing now," Chang-Diaz told AFP.

NASA was focused instead on the series of Apollo missions that delivered men to the moon for the first, and so far last, times.

"They were mesmerized by the Apollo days and lived in the Apollo era for 40 years, and they just forgot developing something new," he said.

Chang-Diaz, 60, hopes that "something" is a non-chemical rocket that eventually allow for a manned trip to Mars -- long the Holy Grail for Apollonians.

His rocket would use electricity to transform a fuel -- likely hydrogen, helium or deuterium -- into plasma gas that is heated to 51.8 million degrees Fahrenheit (11 million degrees Celsius). The plasma gas is then channeled into tailpipes using magnetic fields to propel the spacecraft.

That would send a shuttle hurtling toward the moon or Mars at ever

faster speeds up to an estimated 35 miles (55 kilometers) per second until the engines are reversed.

Chang-Diaz, a veteran of seven space missions, said this rapid acceleration could allow for trips of just 39 days instead of the current anticipated round trip voyage to Mars that would last three years, including a forced stay of 18 months on the Red Planet, as astronauts await an opening to return to Earth.

The distance between the Earth and Mars varies between 35 and 250 million miles (55 million and 400 million kilometers) depending on their points of orbit.

And the use of ionized fuel could have the extra benefit of helping create a magnetic field around the spacecraft to protect against radiation.

Scaled-down models of the VASIMR craft have been built and tested in a vacuum, under a deal with NASA.

The next major step, according to Chang-Diaz, will be orbital deployment at the end of 2013 of a vessel using the 200-kilowatt prototype VASIMR engine, the VX-200.

Talks are underway with fellow space firms SpaceX and Orbital Science Corp to make that a reality.

Despite the hurdles ahead, Chang-Diaz sees the potential for a vast market for his technology -- maintaining and repairing fixing satellites or launching robotic and commercial missions to Mars.

His rocket may just launch NASA's brave new, commercial, world of space exploration.

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