

Welcome to



sciencecafe.capetown@gmail.com



Science Cafe Cape Town



@SciCafeCT #scicafect

From Earth to Mars

A Journey for Us All

Kai Staats, MSc University of Cape Town







Red jumpsuit with patches, including a NASA logo and a circular emblem. The person is sitting on a metal chair.

Red jumpsuit with patches. The person is sitting on a metal chair.

Red jumpsuit with patches, holding a small white and orange plush toy. The person is sitting on a metal chair.

Red jumpsuit with patches. The person is sitting on a metal chair.

Red jumpsuit with patches, wearing tan boots. The person is sitting on a metal chair.

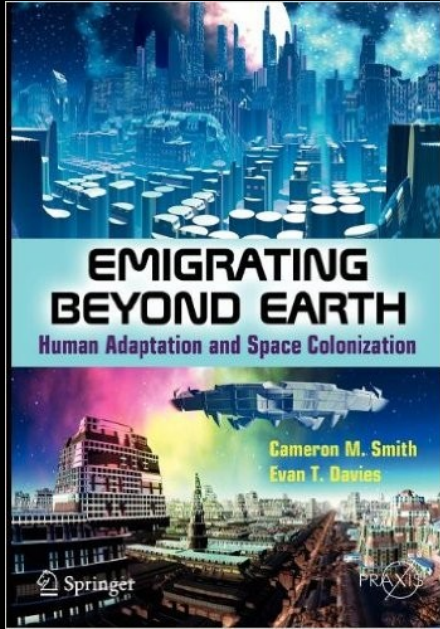
Red jumpsuit with patches, holding a small green plush toy. The person is sitting on a metal chair.

Red jumpsuit with patches, wearing a brown cap and tan boots. The person is sitting on a metal chair.

Will we ever walk on Mars?

DYI Spacesuit

by Dr. Cameron Smith, Anthropologist



Planetary Resources

Asteroid Mining

We have assembled the right team to make the “impossible” of the future, happen today.



Deep Space Industries

Asteroid Mining



Space Resources

The harvest of space is going to be the biggest industrial transformation in human history. Full realization of this transformation is a marathon effort. This is a long game. And we have a detailed game plan.



Mothership

DSI's concept spacecraft, Mothership™, will enable affordable access to deep space destinations by providing delivery and communications services. Help us design the mission that is right for you by filling out our short survey.

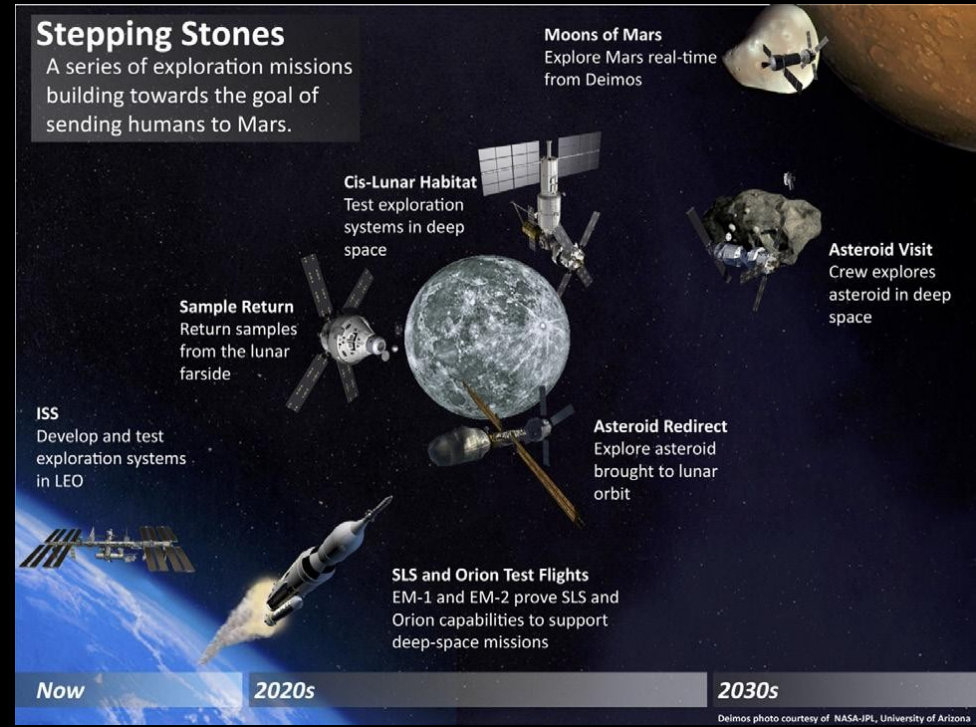
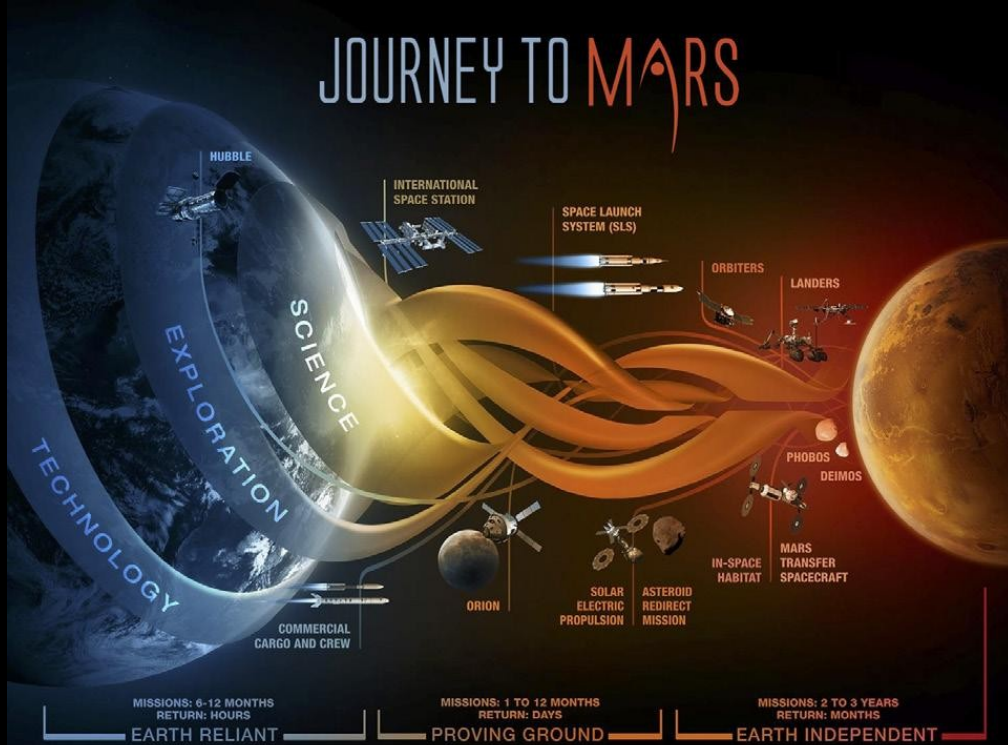


Our Technology

What we're proposing is no easy feat. Deep Space Industries has brought together the best minds in spacecraft design and implementation to create the world's most advanced deep space vehicles.

The Planetary Society

Humans Orbiting Mars



Virgin Galactic

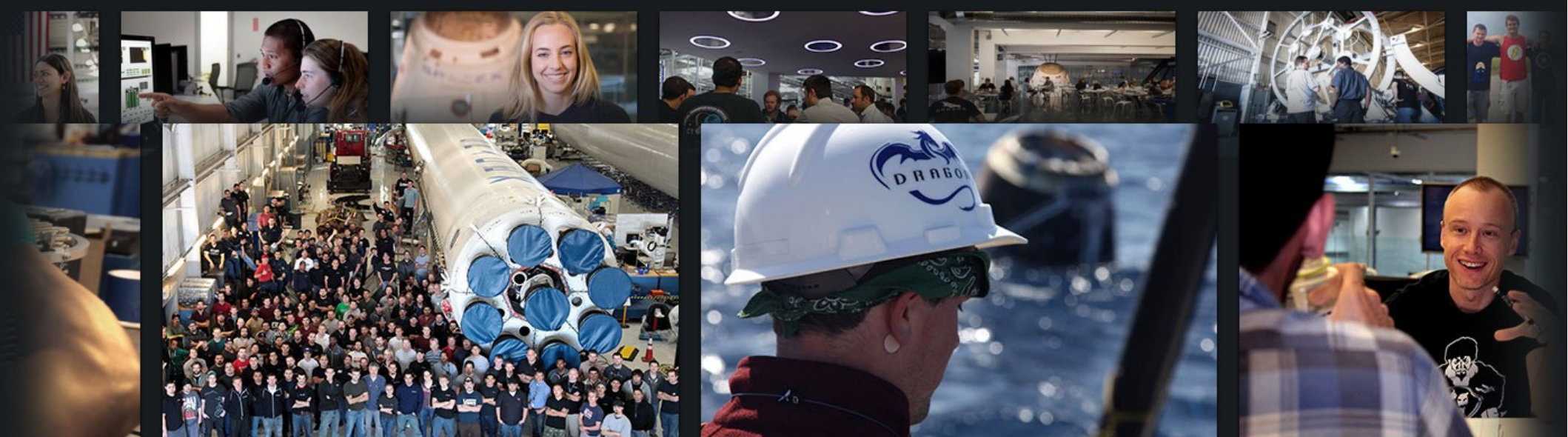
Sub-Orbital Space Tourism



Space X

Reusable, Heavy Lift Vehicles

SpaceX designs, manufactures and launches advanced rockets and spacecraft. The company was founded in 2002 to revolutionize space technology, with the ultimate goal of enabling people to live on other planets.

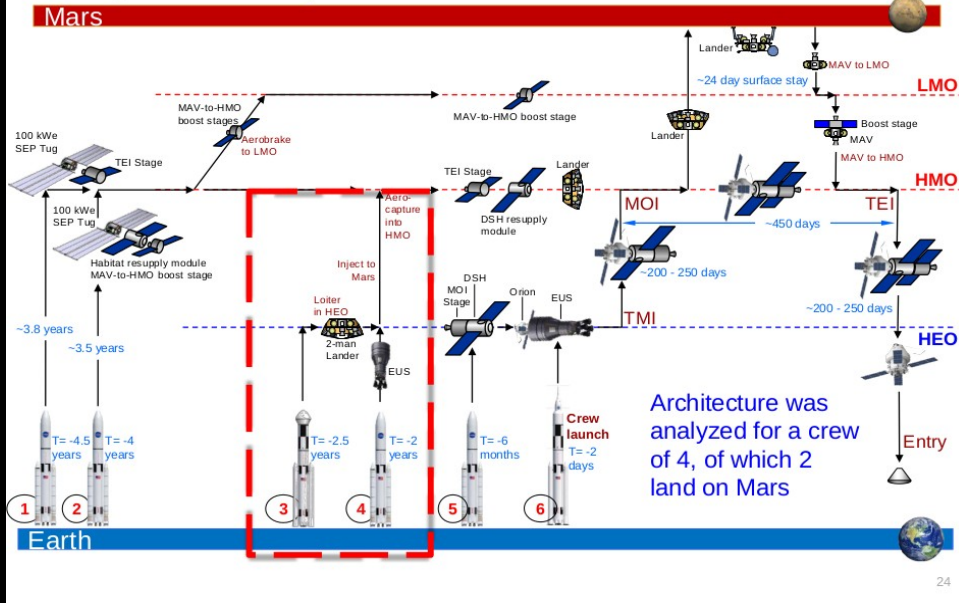


NASA

A vision for the next 25 years

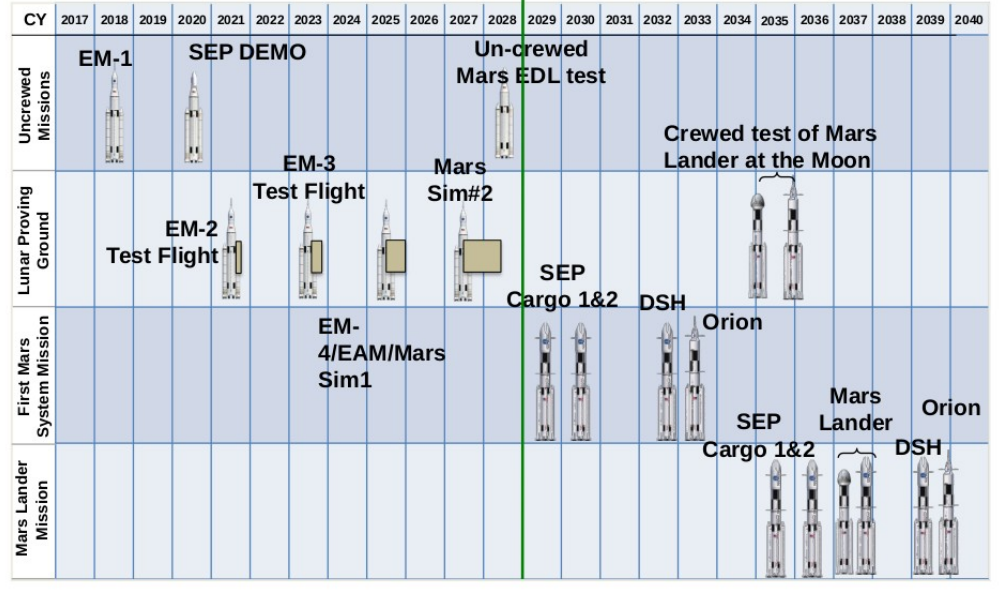
Short-stay Surface Concept

24-Day Surface Stay; Crew of 2; 6 SLS Launches



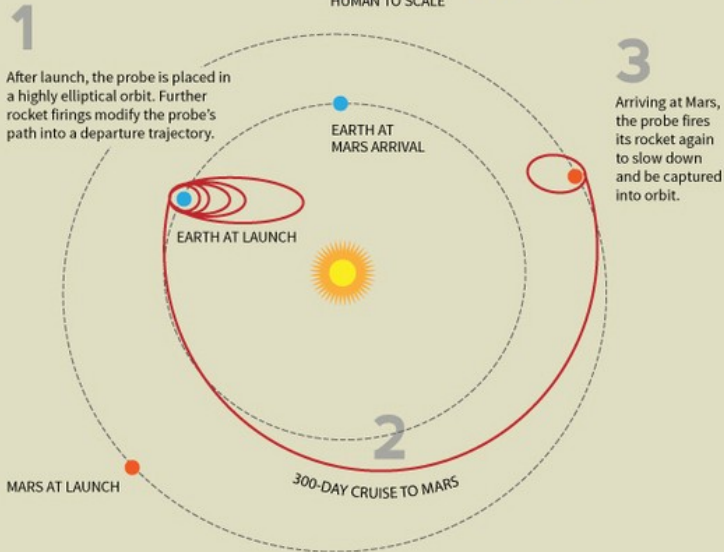
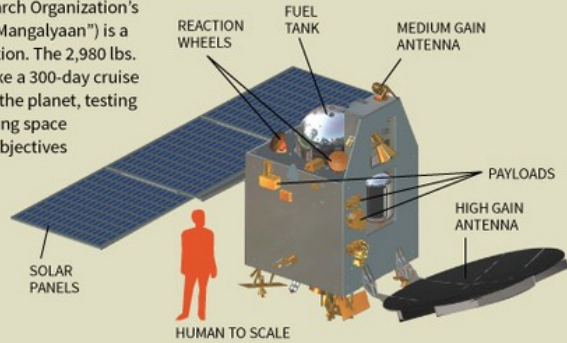
Notional SLS Flight Manifest

105 t SLS ← 130 t SLS

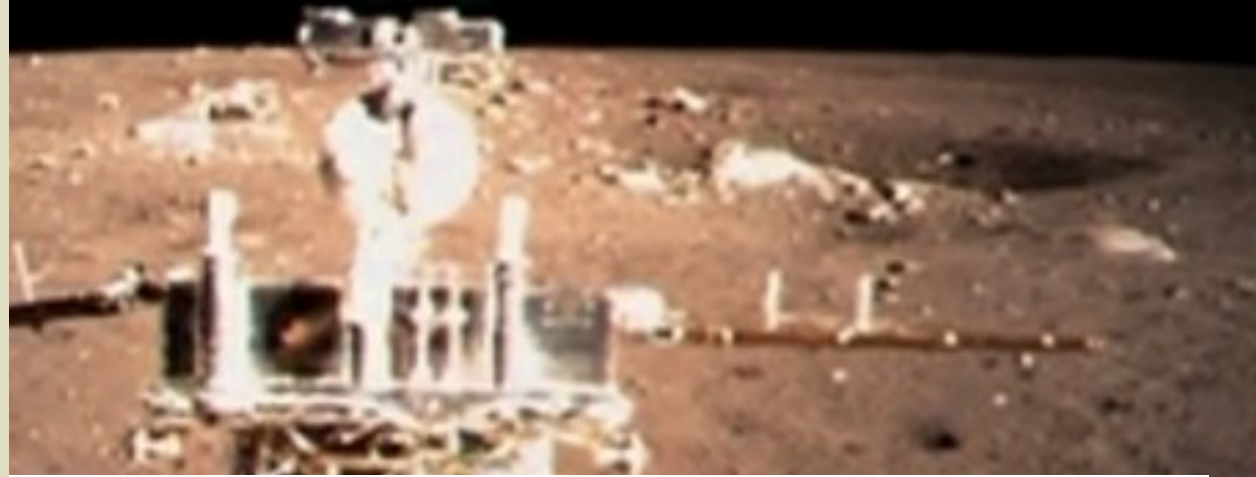


India

The Indian Space Research Organization's Mars Orbiter Mission ("Mangalyaan") is a technology demonstration. The 2,980 lbs. (1,350 kg) probe will take a 300-day cruise to Mars and then circle the planet, testing equipment and practicing space maneuvers. Scientific objectives are secondary.



Russia



China

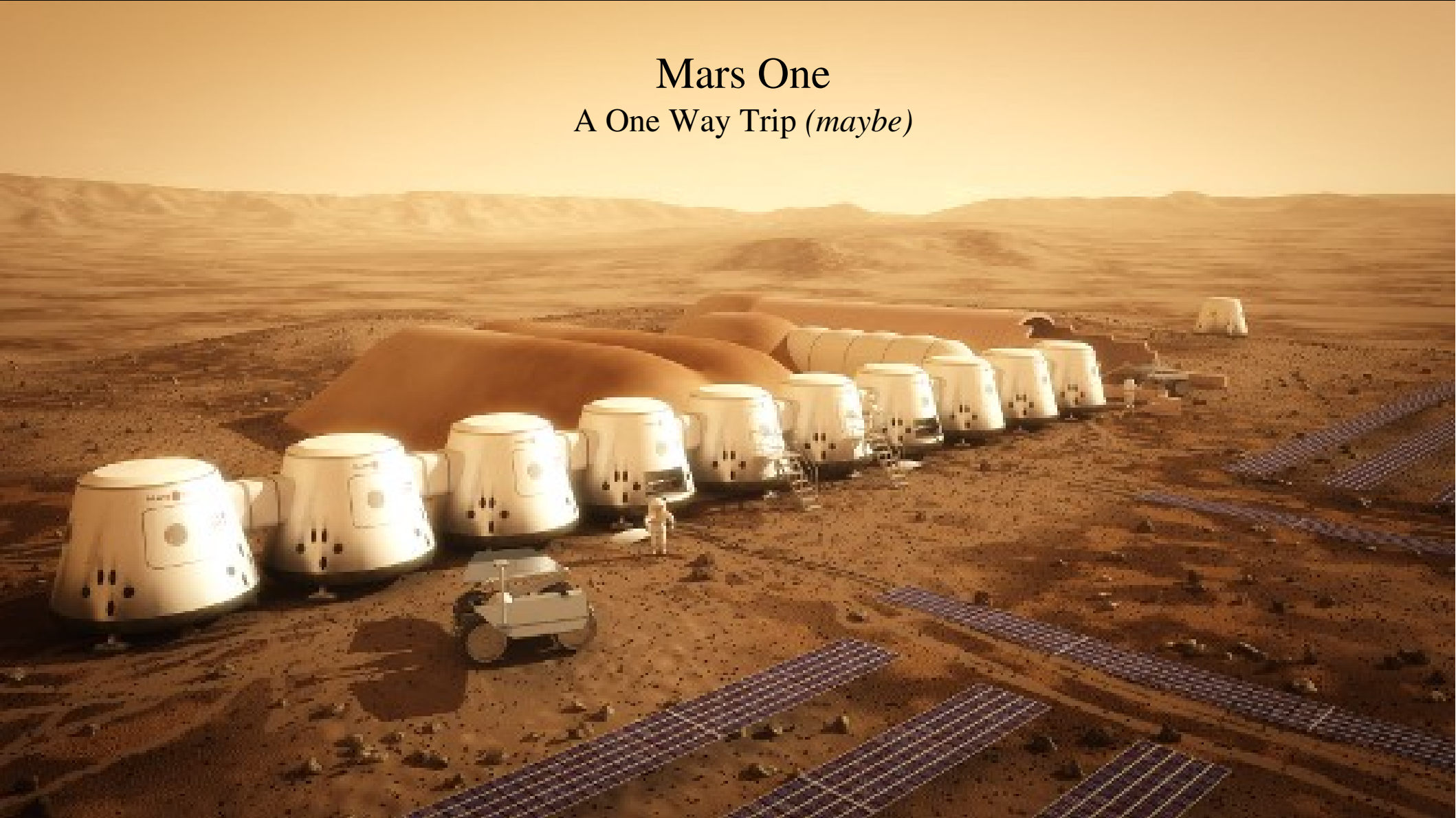
looks like the European Space Agency
e along for the ride. Two weeks ago, **BBC**
reported that the ESA had been in talks
oscosmos to collaborate on sending a
to the Moon's south pole. The mission,
Luna 27, would be the first in a series of
ns that would eventually return humans to
the lunar surface. "We have an ambition to have

**IT'S PART OF
THE AGENCY'S
ULTIMATE GOAL
OF CREATING A
LUNAR STATION**

European astronauts on the Moon. There are

Mars One

A One Way Trip (*maybe*)



The Challenges

- Funding
- Technology
- Motivation

Financial Challenges

Is it really too expensive?

Technological Challenges

- Atmosphere recycling
- Food for long-duration stays
- Radiation shielding
- Fuel for the return to Earth

Motivation

What is the definition of depression?

Are we alone?

“Do we have to climb mountains? Do we have to paint and sculpt? ... As the sun heats up, as the oceans boil away, we have to find places for our species, or whatever it becomes, to go. So we do have to get off this planet. There is a survival imperative.”

- Dr. Jim Bell, Astronomer, Planetary Scientist
and Chief Photographer for the Mars Rovers

The Reward



60
MINUTES



PHOTOGRAPHY
BY
NASA

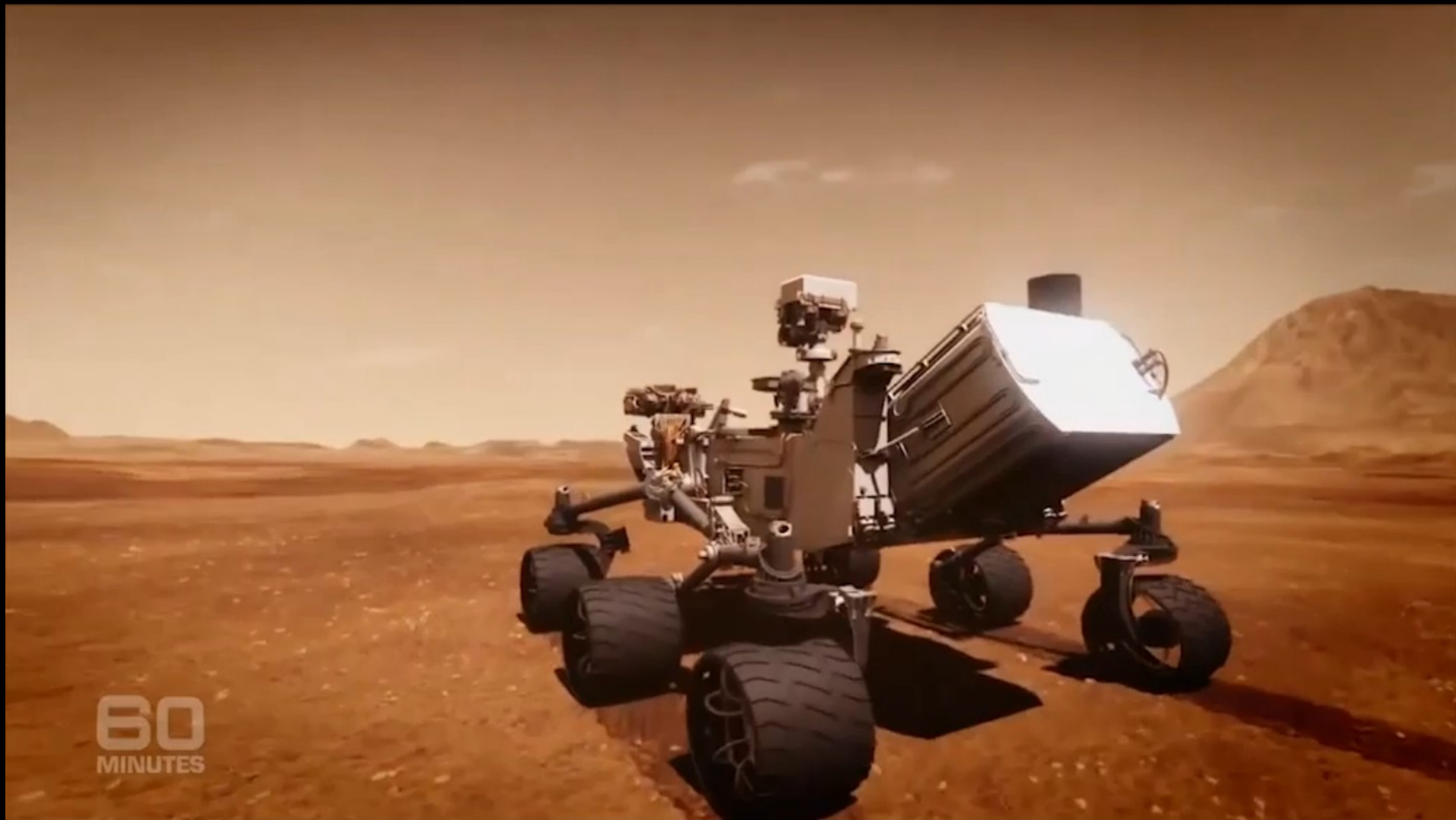


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Propulsion Laboratory
California Institute of Technology



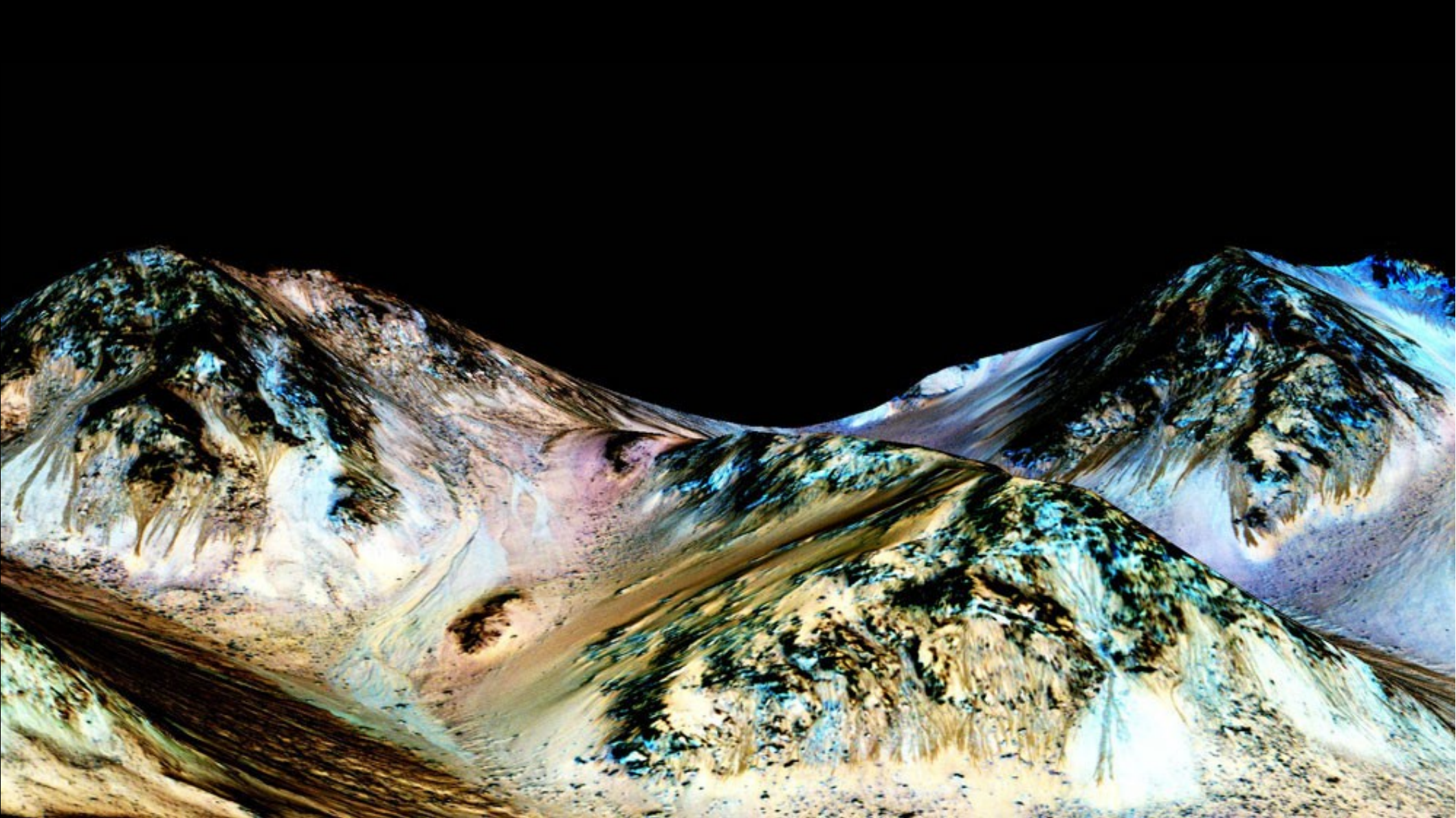
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MINUTES



A dark blue gradient background with a white arrow pointing to a small white dot labeled 'Earth'.

Earth

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MINUTES

The Planetary Society

www.planetary.org

NASA

mars.nasa.gov

ESA

exploration.esa.int/mars

Mars Society

www.marssociety.org

Africa to Moon

africa2moon.developspacesa.org

British Interplanetary Society

www.bis-space.com

Initiative for Interstellar Studies

www.i4is.org

Icarus Interstellar

www.icarusinterstellar.org

Kai Staats

www.kaistaats.com/research/

www.kaistaats.com/film/

Science Café:
Last Thursday of the month

Next café: 26 November



 sciencecafe.capetown@gmail.com

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