



A Moon Village Future

Jan Wörner, President acatech

SPACE 1.0: Astronomy

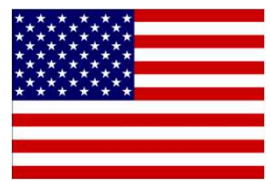


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SPACE 2.0: Race in Space





Ham



Laika





SPACE 3.0: Steps for global cooperation and space applications



Shift of paradigms!

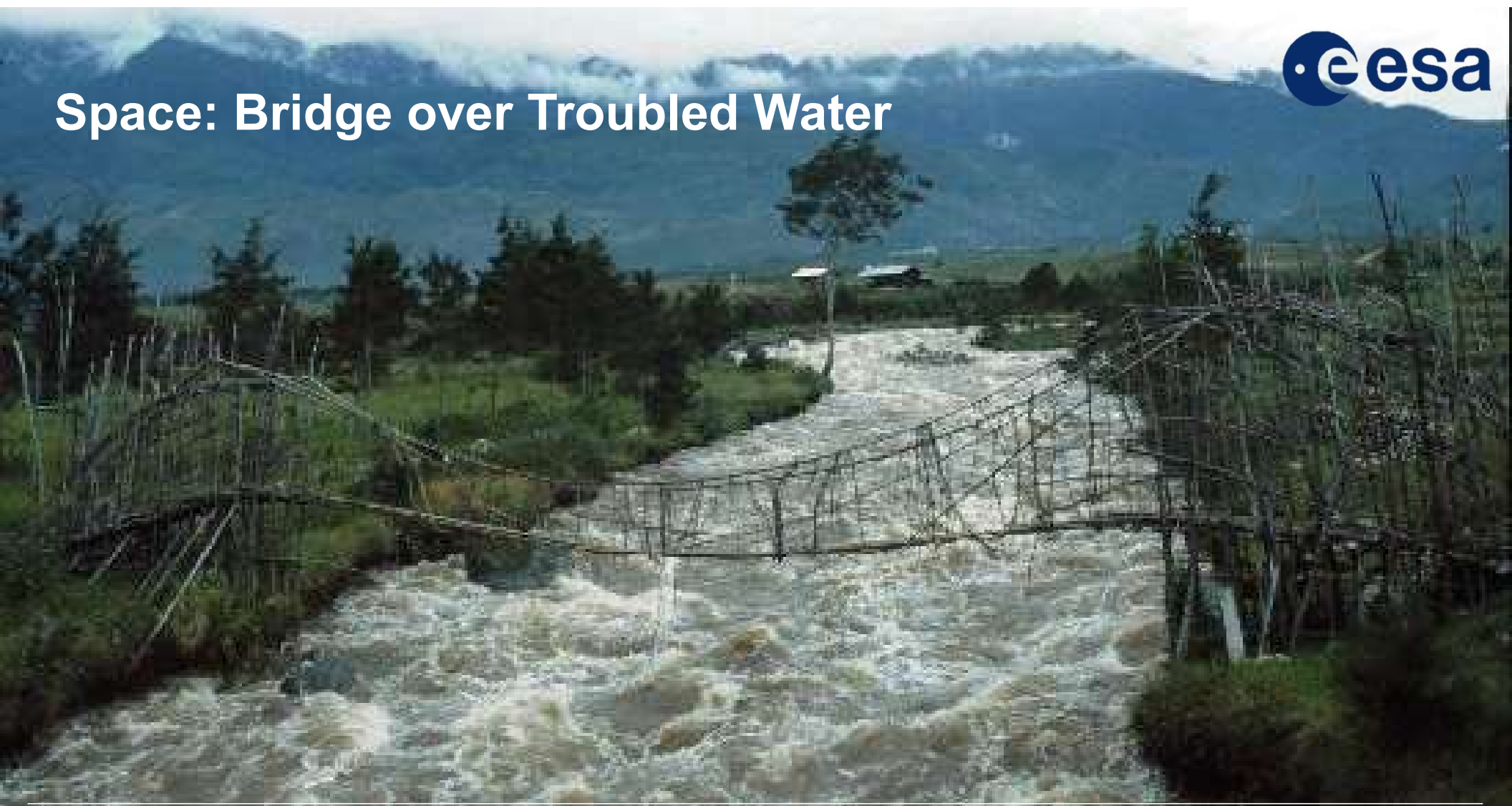
Change of

- Motivations
- Actors
- Contents
- Roles
- Technologies
- Space environment
- Commercialisation...
- Market development
- Global setup
- EU in space
- National activities

- New Space
- Internet of things
- spin in / spin off
- Participation
- Diversity
- Information
- Innovation
- Interaction
- Inspiration
- Cooperation
- Jobs & growth
- Digitalisation&AI



Space: Bridge over Troubled Water



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2014



Alexander Gerst

Maxim Surajev


Reid Wisemann



European Space Agency



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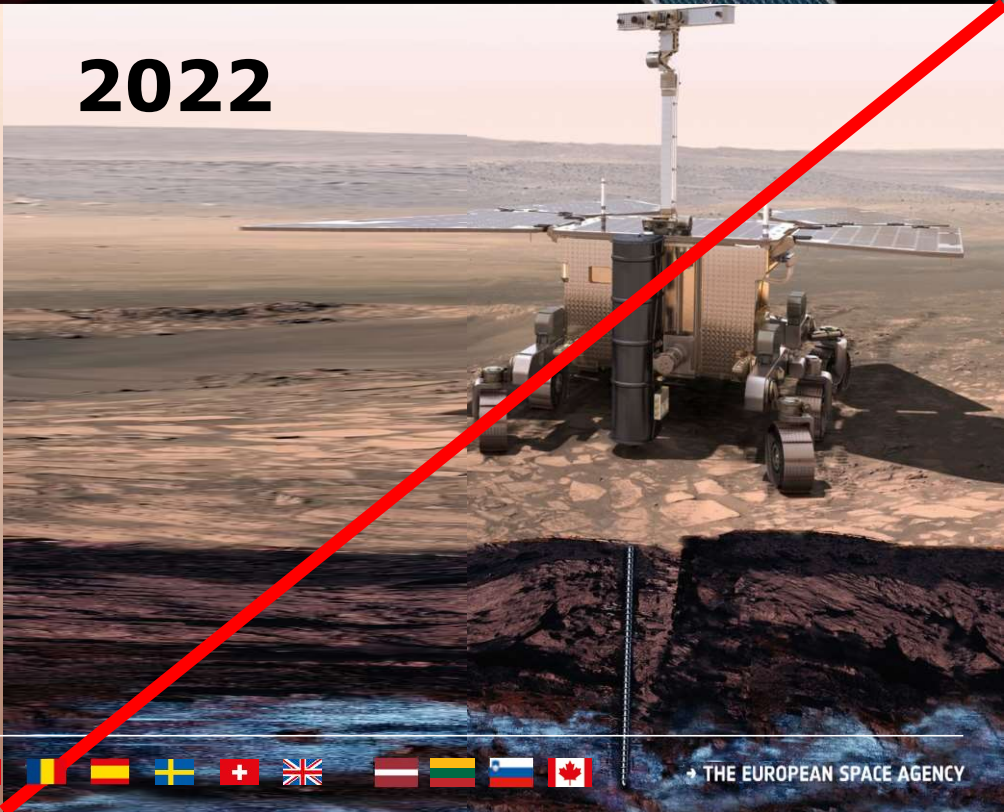
2022



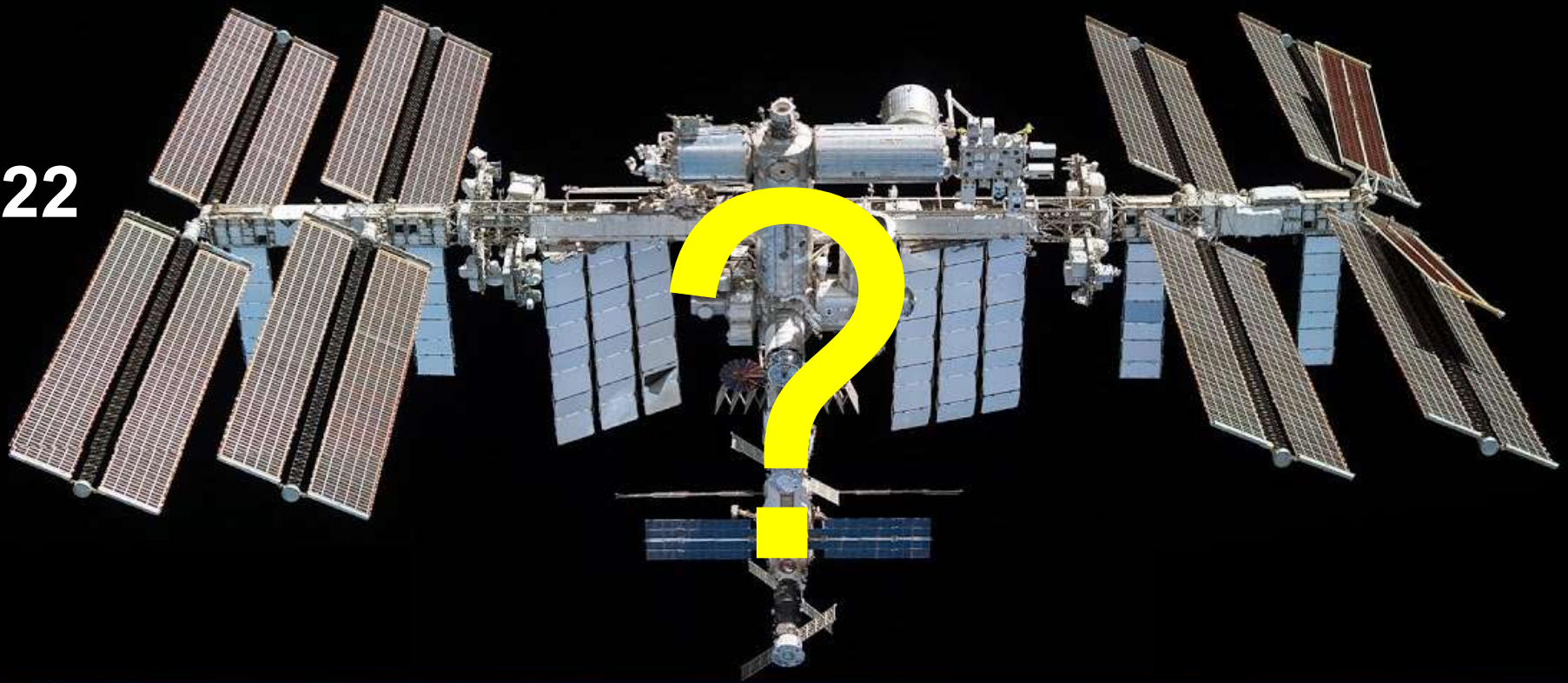
2016



2022



2022



welt
NACHRICHTENSENDER

**JETZT DROHT RUSSLAND MIT
ISS-ABSTURZ - ÜBER DEN USA!**



Competition = driver



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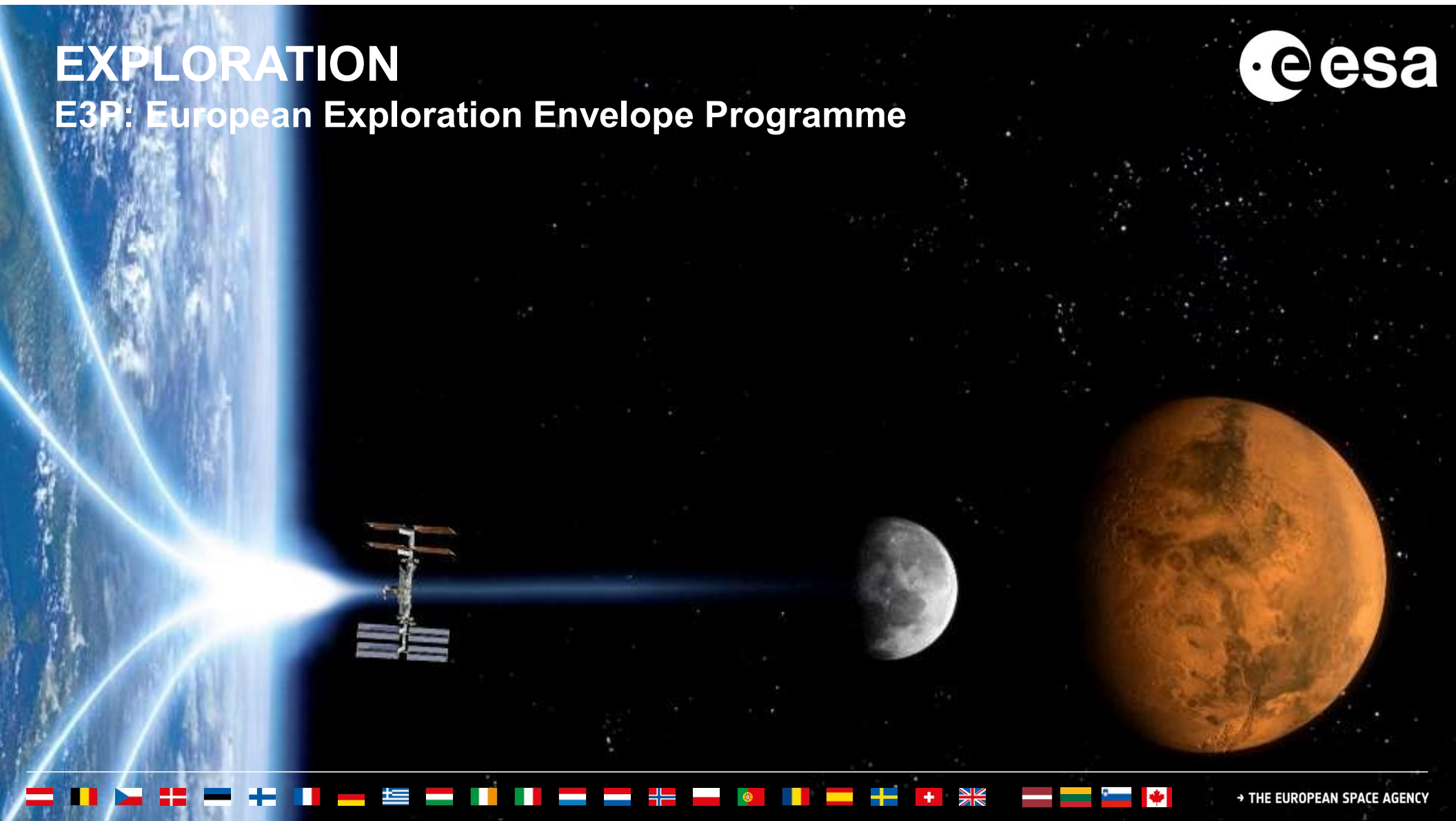
Cooperation = enabler



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EXPLORATION

E3P: European Exploration Envelope Programme



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T. S. Eliot: „We will not cease from exploration until we come back to where we came from and see the place for the first time“



Next destinations?



no “ultimate goal”

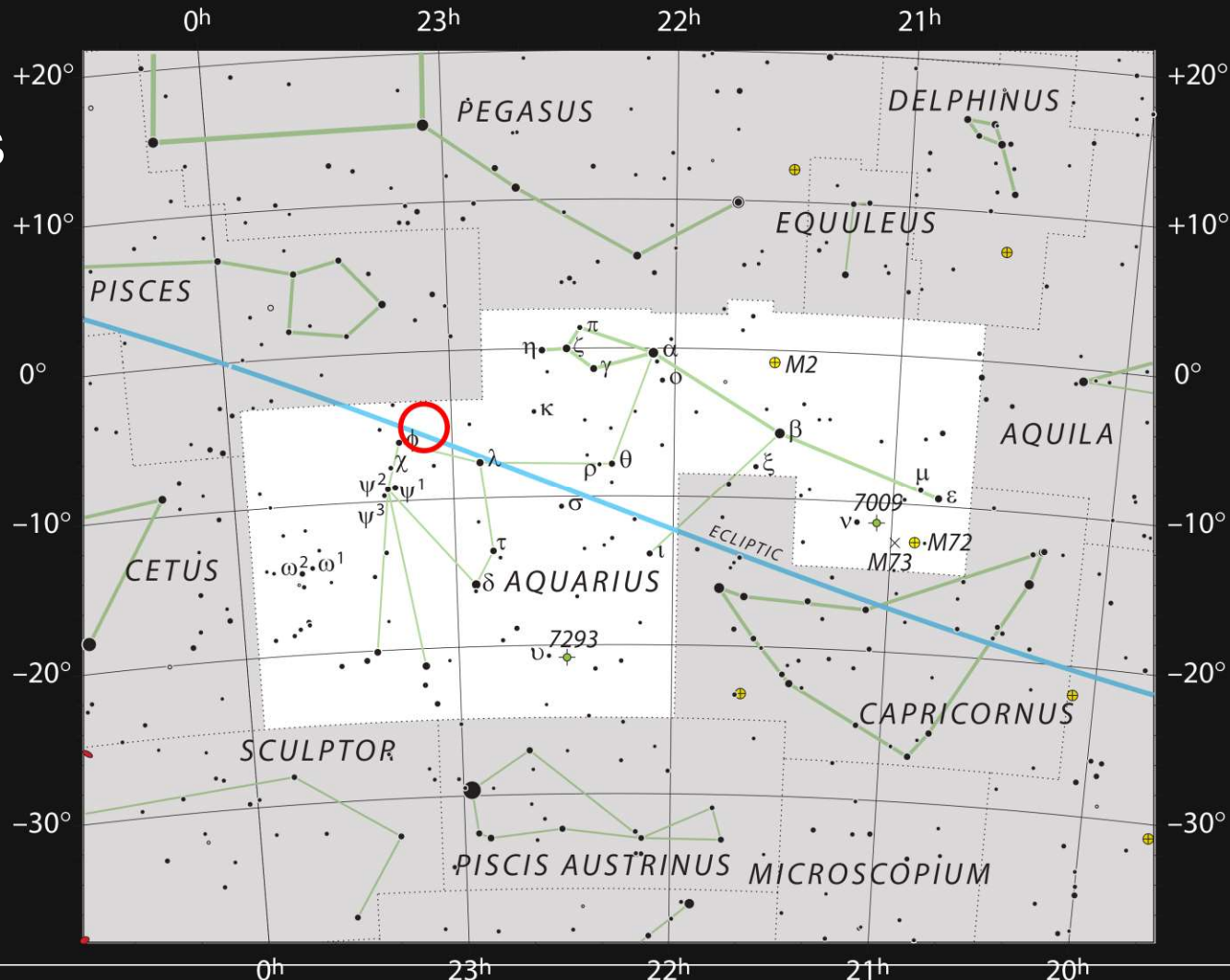


Stephen Hawking: Humans need to leave Earth or risk being annihilated by nuclear war or climate change

Peter Kotecki Oct 18, 2018, 10:31 PM



Trappist-1 39 light years



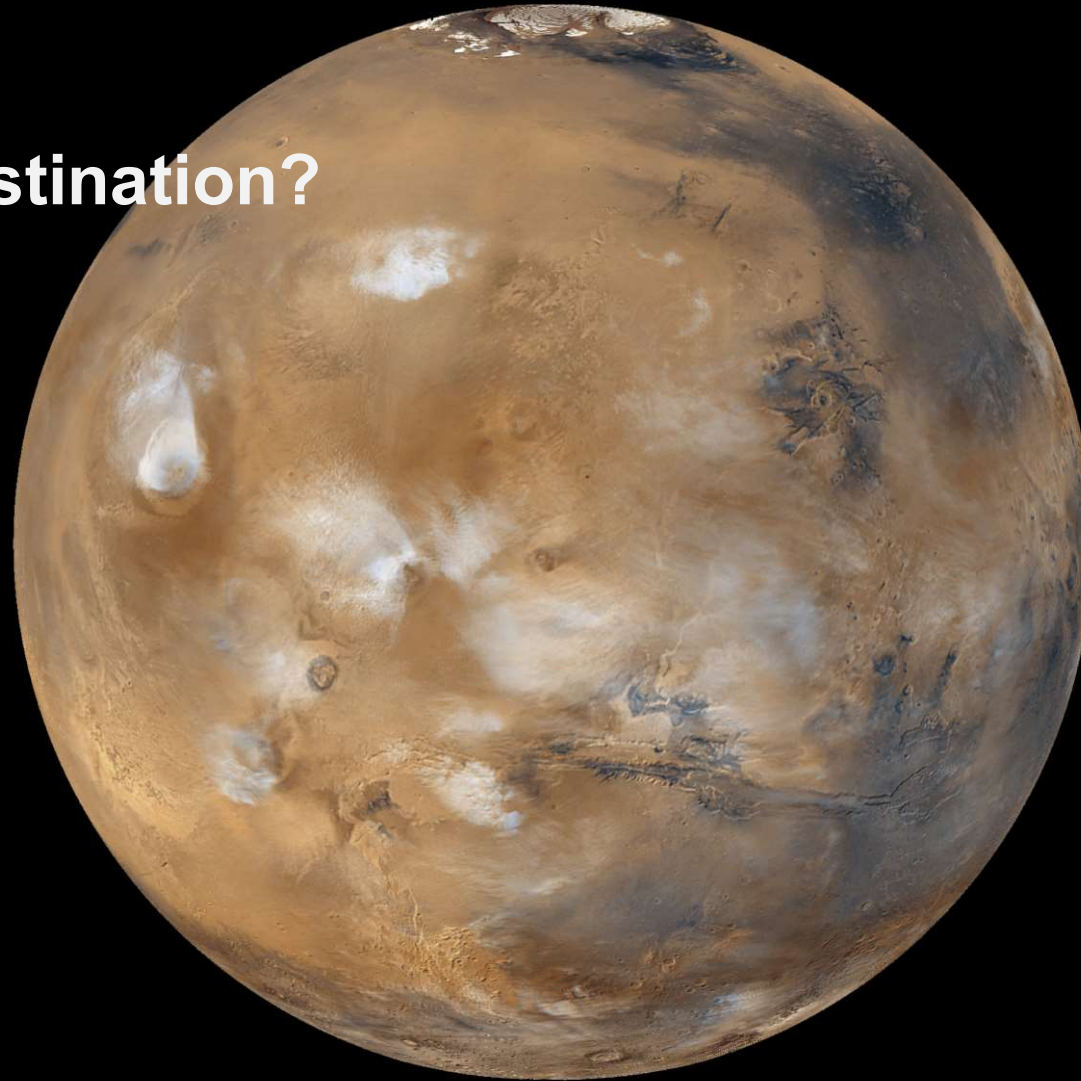
TRAPPIST-1 System



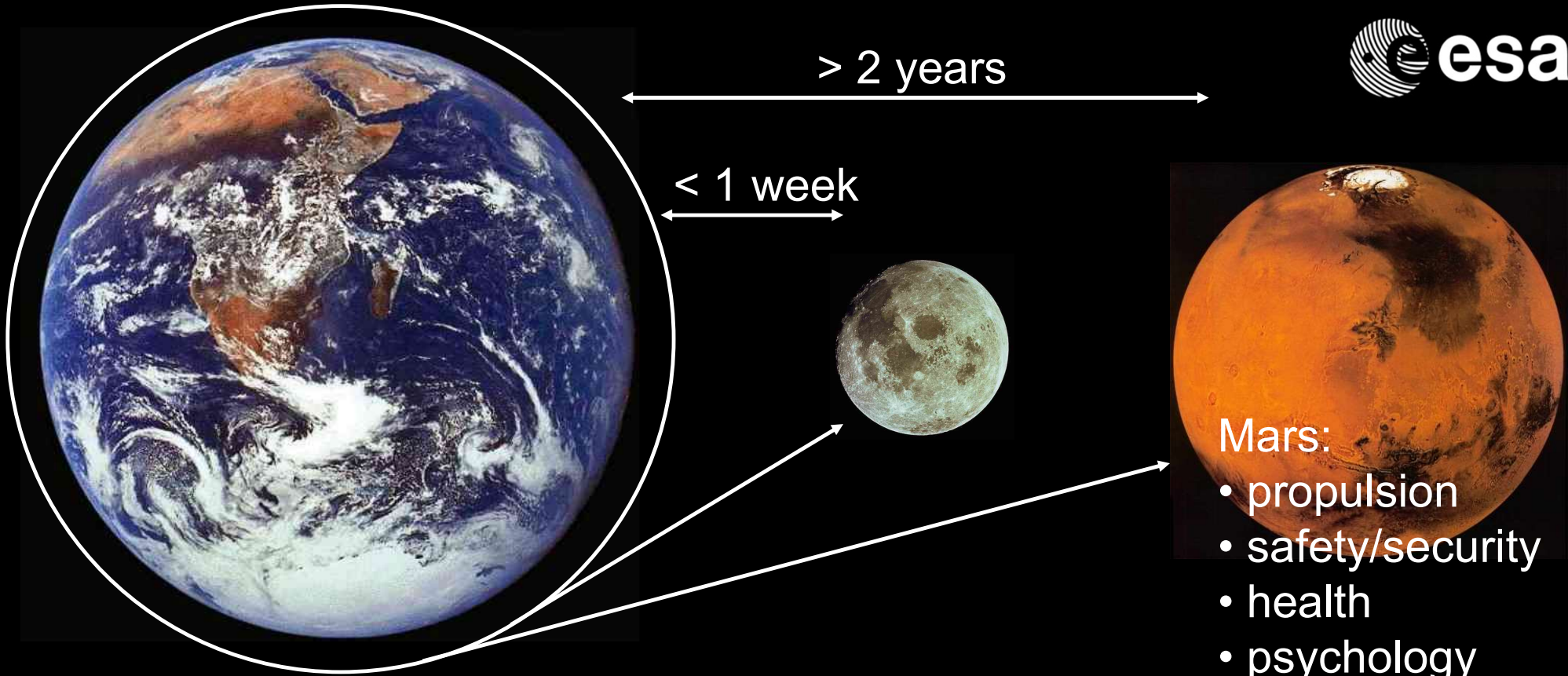
Music of Trappist-1...
frequency*212 million

Mars

The next destination?



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Mars:

- propulsion
- safety/security
- health
- psychology
- radiation
- communication
- ...



Human Settlement on Mars

Mars One will establish a permanent human settlement on Mars. Crews of four will depart every two years, starting in 2024. Our first unmanned mission will be launched in 2018. Join the Global Mars One Community and participate in our mission to Mars.

Support our Human Mission to Mars



THE NEXT GIANT LEAP FOR MANKIND

2019

“Back to the Moon...”





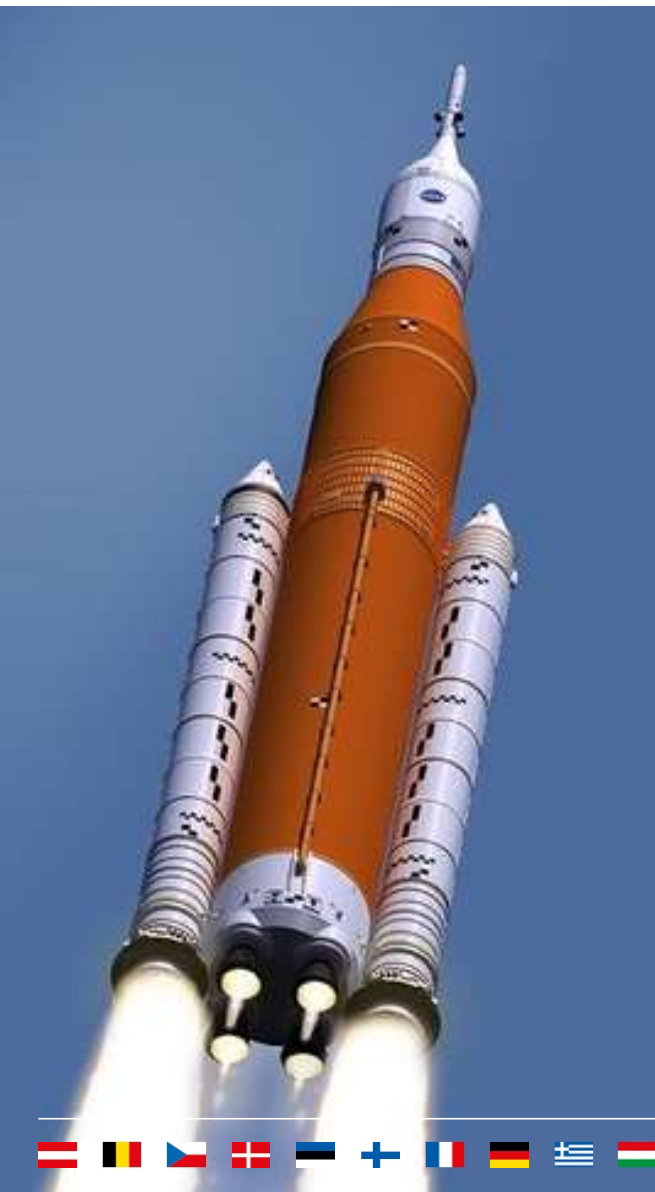
“Forward to the Moon!”



Multi partner open concept



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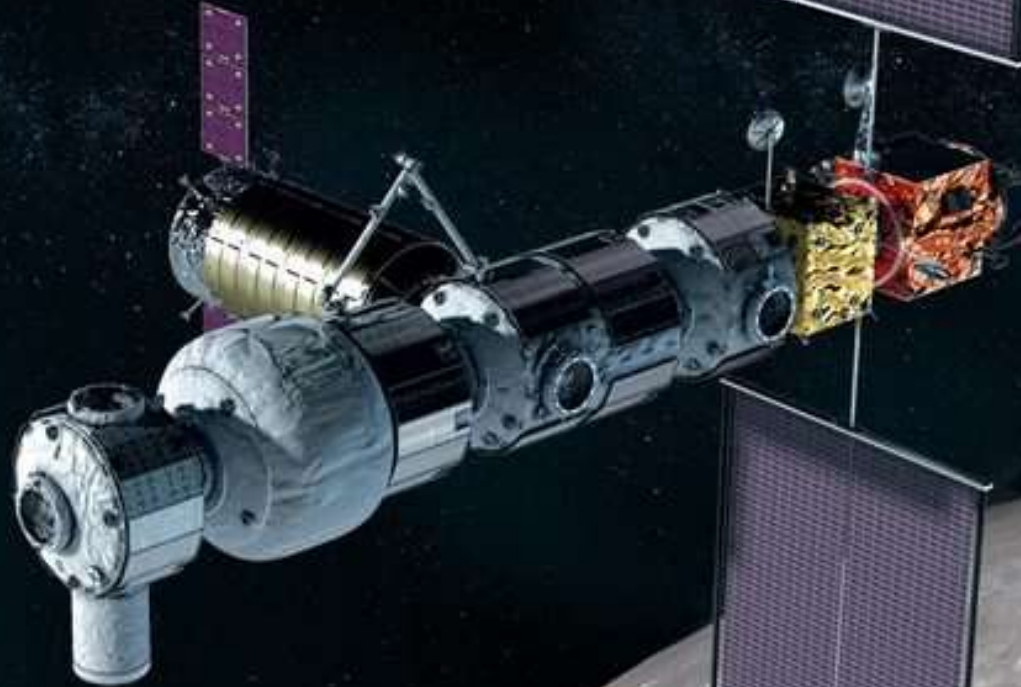
ESM Orion



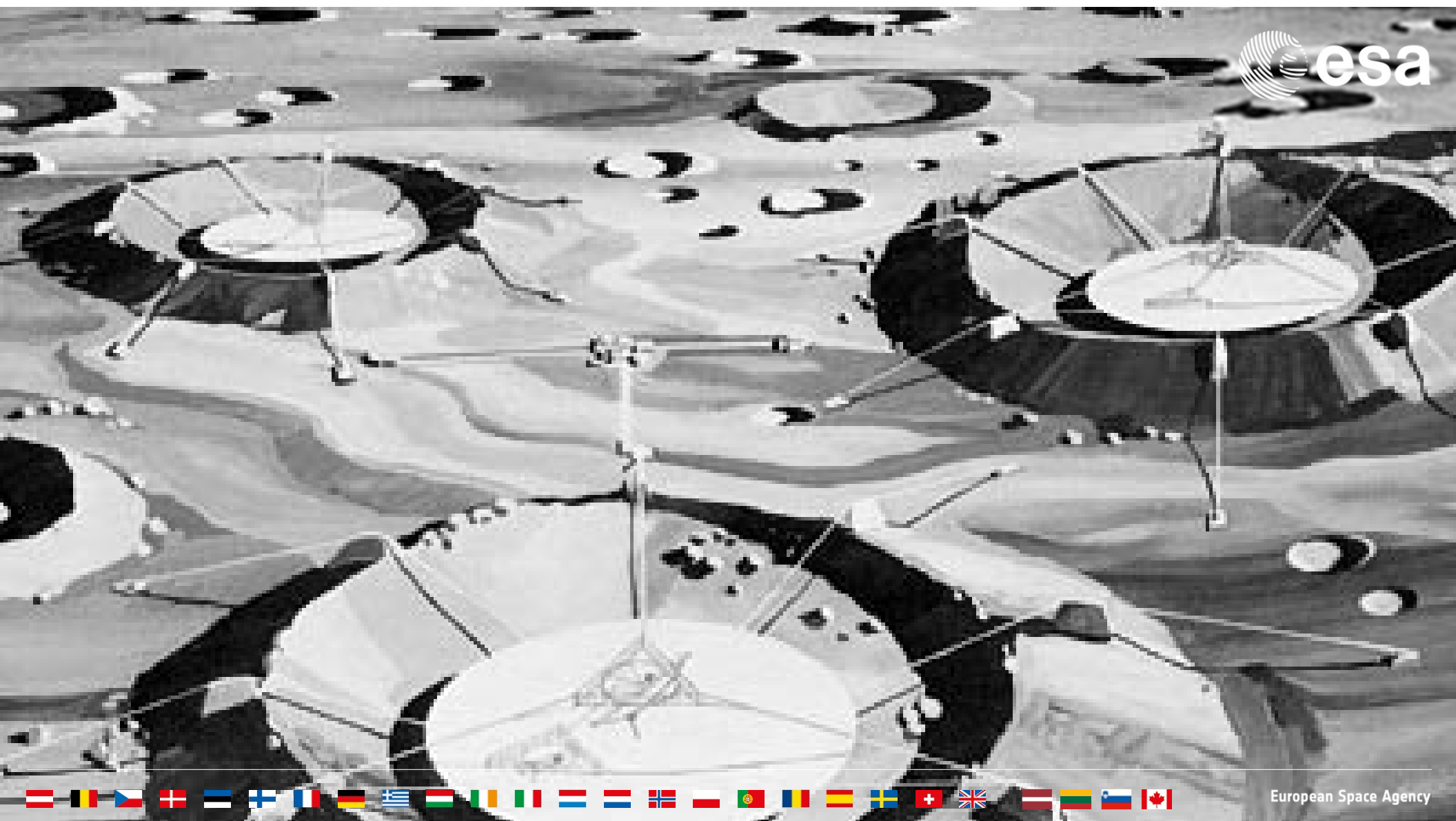
Lunar Gateway



ESA/NASA MOU



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FORWARD TO THE MOON



European Space Agency

GOONHILLY
EARTH STATION

SURREY
SATELLITE TECHNOLOGY LTD

 **esa**



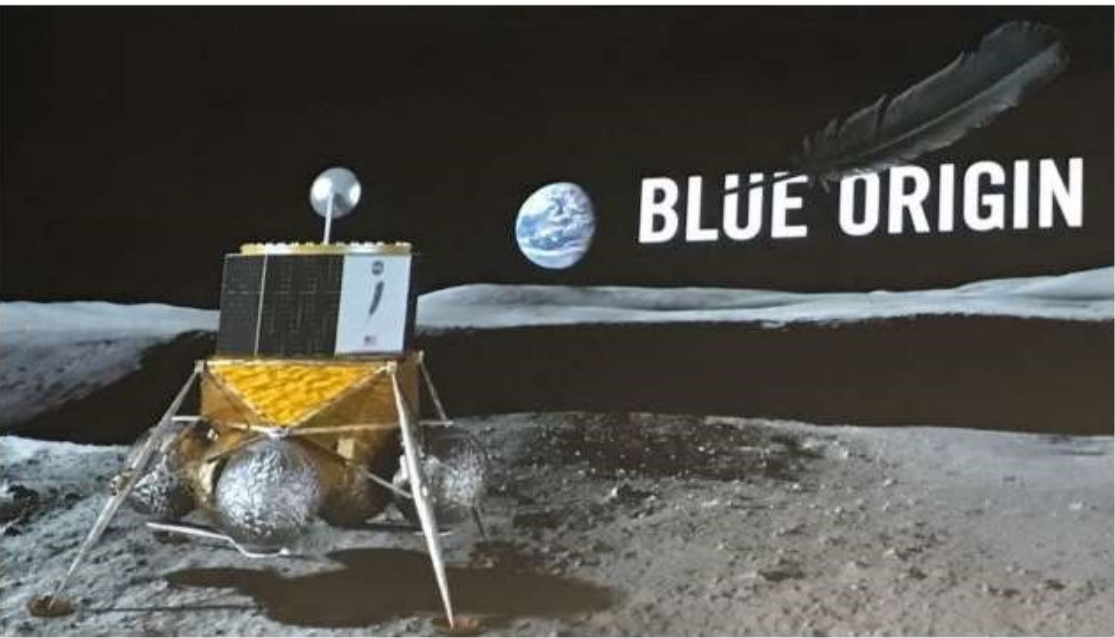
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Newsletter signup

Jeff Bezos lays out his vision for city on the moon, complete with robots

BY ALAN BOYLE on May 20, 2017 at 5:42 pm


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Artist's concept shows Blue Origin's Blue Moon lander on the lunar surface. (Blue Origin Illustration)





elonmusk 

Follow



 207.9k likes  2,072 comments

Moon Base Alpha



29 September 2017



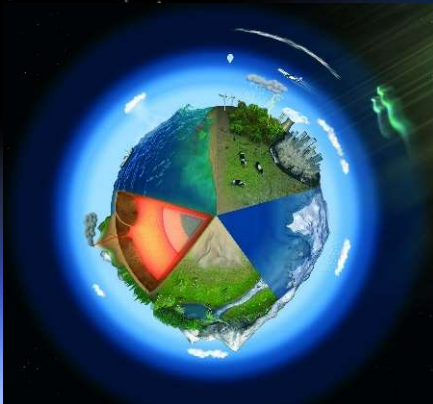
©themoonhouse



European Space Agency

Roles of Public Side (Governments)

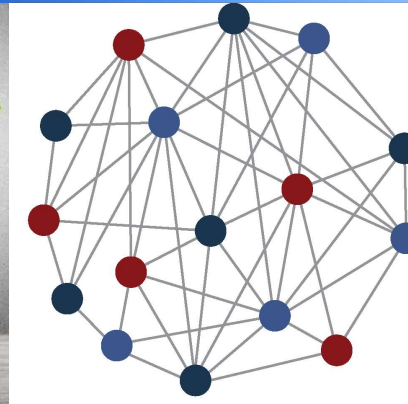
CUSTOMER



INVESTOR



BROKER



REGULATOR





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