

MOON VILLAGE ASSOCIATION WEBINAR – LUNAR SPACE TOURISM: GETTING THERE

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GETTING TO THE MOON

(WITHOUT ANY HELP FROM THE GOVERNMENT!)

1. Why Lunar Space Tourism?
2. Space Tourism Markets – in general
3. **Lunar** Space Tourism Market Demand
4. How to do it – First Steps: **Going around the Moon**
5. Finally, Landing and Moving on **the Surface of the Moon**
6. Addendum: Protecting the Lunar Legacy Sites

1. WHY LUNAR SPACE TOURISM?

WHY?

- New phase of lunar activity – Moon 2.0
- The Moon Village Association is contributing to this new future
- This is the start of Commercial Development of the Moon
- Possible Commercial Markets include resource extraction for export to Earth (eg PGM's, Rare Earths, He3), Archival storage, movies/media/advertising, and lunar space tourism
- Lunar Tourism will be **first source of real commercial revenues**

2. SPACE TOURISM MARKETS – IN GENERAL

MARKET RESEARCH FINDINGS FOR NEAR-EARTH SPACE TOURISM DEMAND

Orbital Space Tourism Demand

- 60 per year at \$20 million (Futron/Zogby Survey)

Sub-Orbital Space Tourism Demand

- 15,000 per year at \$100,000 (Futron/Zogby Survey)

- 43,000 per year at \$100,000 (Astrium Survey)

ORBITAL SPACE TOURISM – PIONEER TOURISTS – ALL USED GOVERNMENTAL SOYUZ TO ORBIT (2001-2009) \$20 M + PER TICKET – AND THEY LOVED IT!



FUTURE **ORBITAL** SPACE TOURISM VIA SPACEX DRAGON?

Inside the Russian Soyuz



ISS025E017120

Inside the private commercial Dragon



SUB-ORBITAL SPACE TOURISM PROTOTYPE – SPACESHIPONE, ANSARI XPRIZE, MOJAVE, 2004 (NON-GOVERNMENTAL, RE-USABLE LAUNCHER AND SPACECRAFT)



VIRGIN GALACTIC OFFERING FOR **SUB-ORBITAL** SPACE TOURISM – SPACESHIPTWO ~\$200,000 (REUSABLE SPACECRAFT AND LAUNCHER) (BIG WAITING LIST....)



BLUE ORIGIN OFFERING FOR SUB-ORBITAL SPACE TOURISM (REUSABLE LAUNCHER AND CAPSULE) ~ \$100K PER TICKET?



3. LUNAR SPACE TOURISM MARKET DEMAND

(Market Research Study Data is limited)

MARKET DATA (LIMITED) FOR LUNAR SPACE TOURISM DEMAND – TWO CATEGORIES

- Lunar **Orbit** Space Tourism Demand
 - 2 per year at \$150 million (Space Tourists Handbook – Anderson)
 - Adventurers' Survey cites **19% of sample** if price could be reduced to \$ 1 million
- Lunar **Surface** Space Tourism Demand
 - No published findings
 - Former proposed offerings from Golden Spike, announced in 2012, led by two ex-NASA directors Alan Stern and Gerry Griffin, no quoted prices

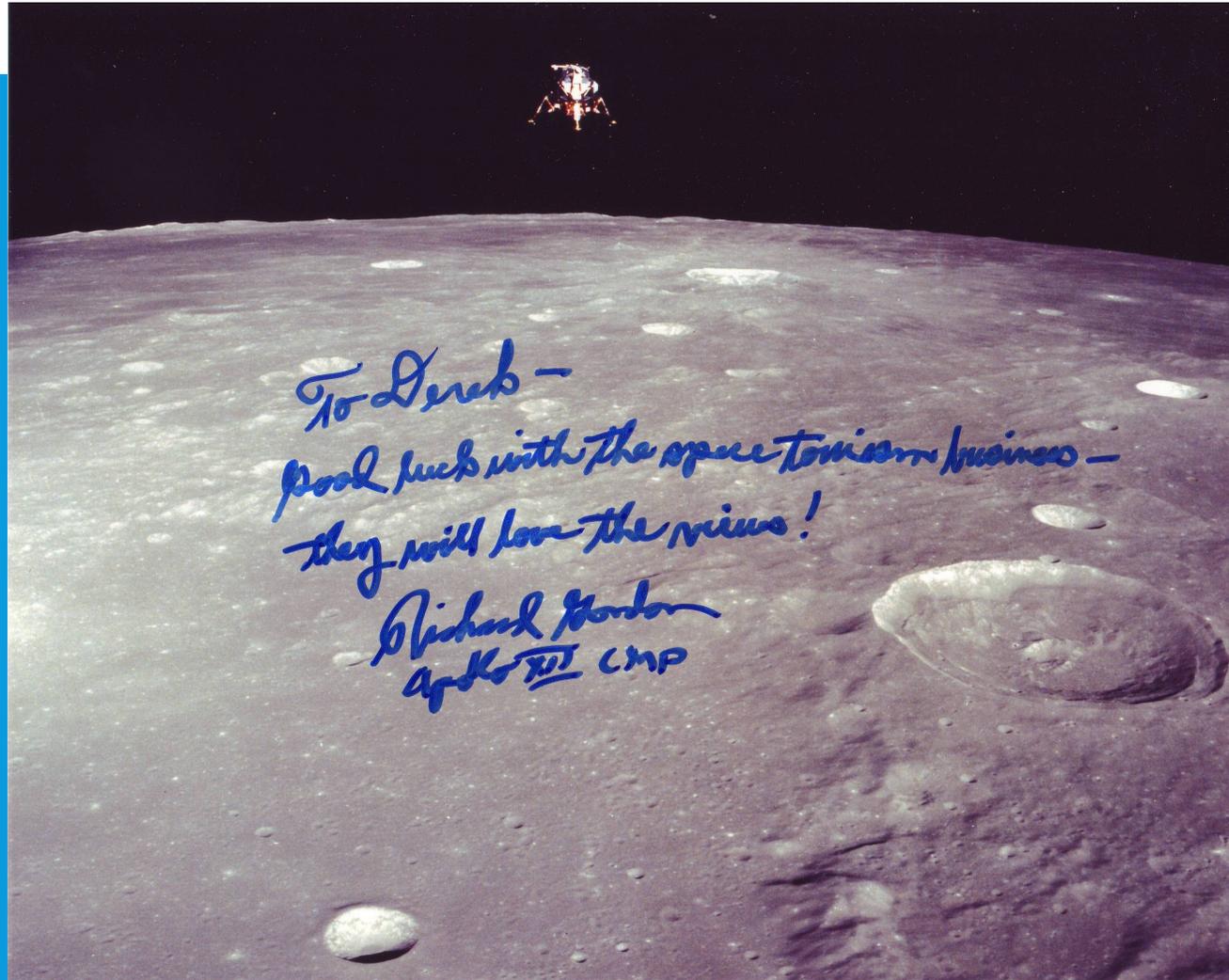
4. HOW TO DO IT – FIRST STEPS, GOING AROUND THE MOON

(The lowest cost solution)

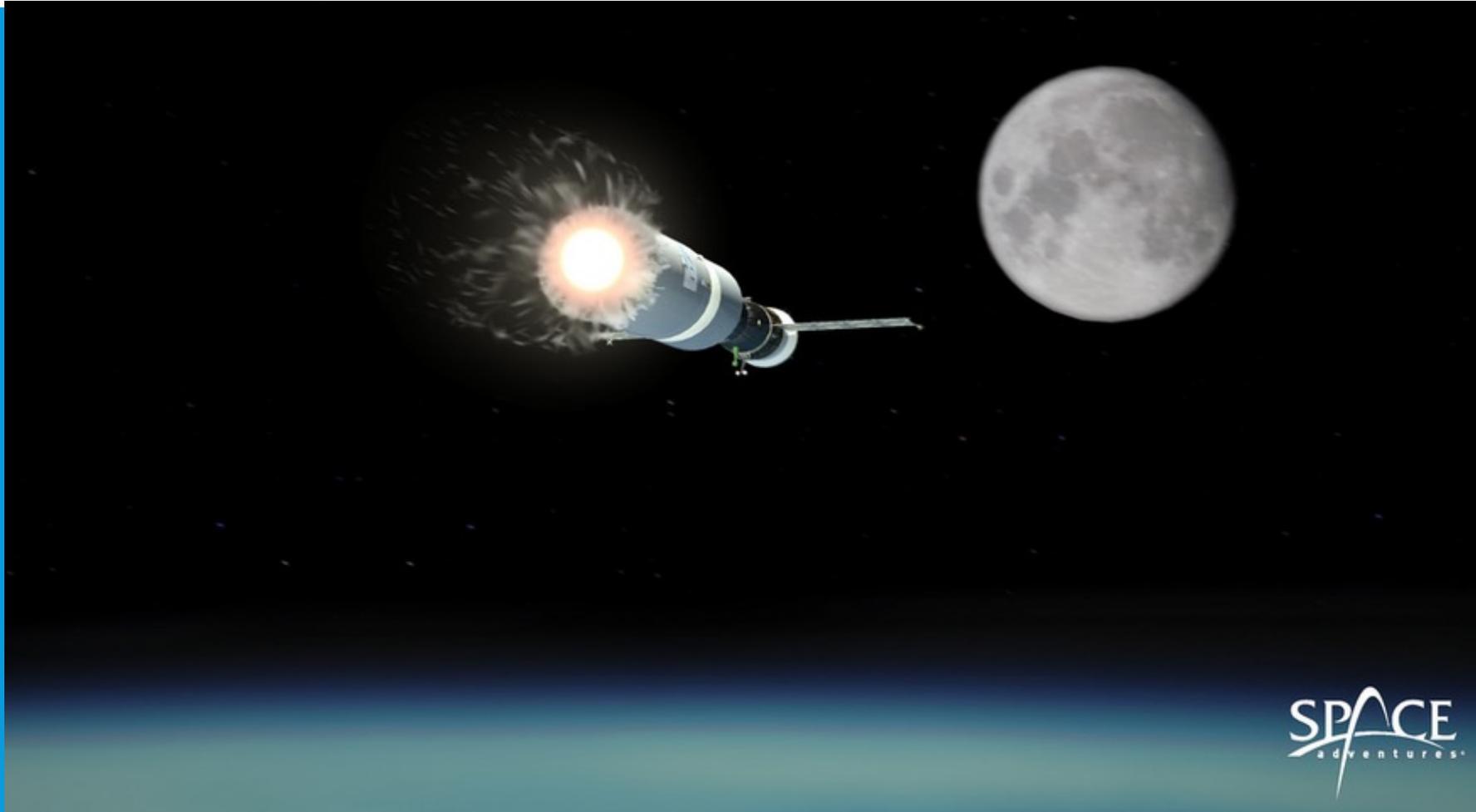
APOLO 8 WAS FIRST (IN DECEMBER, 1968)



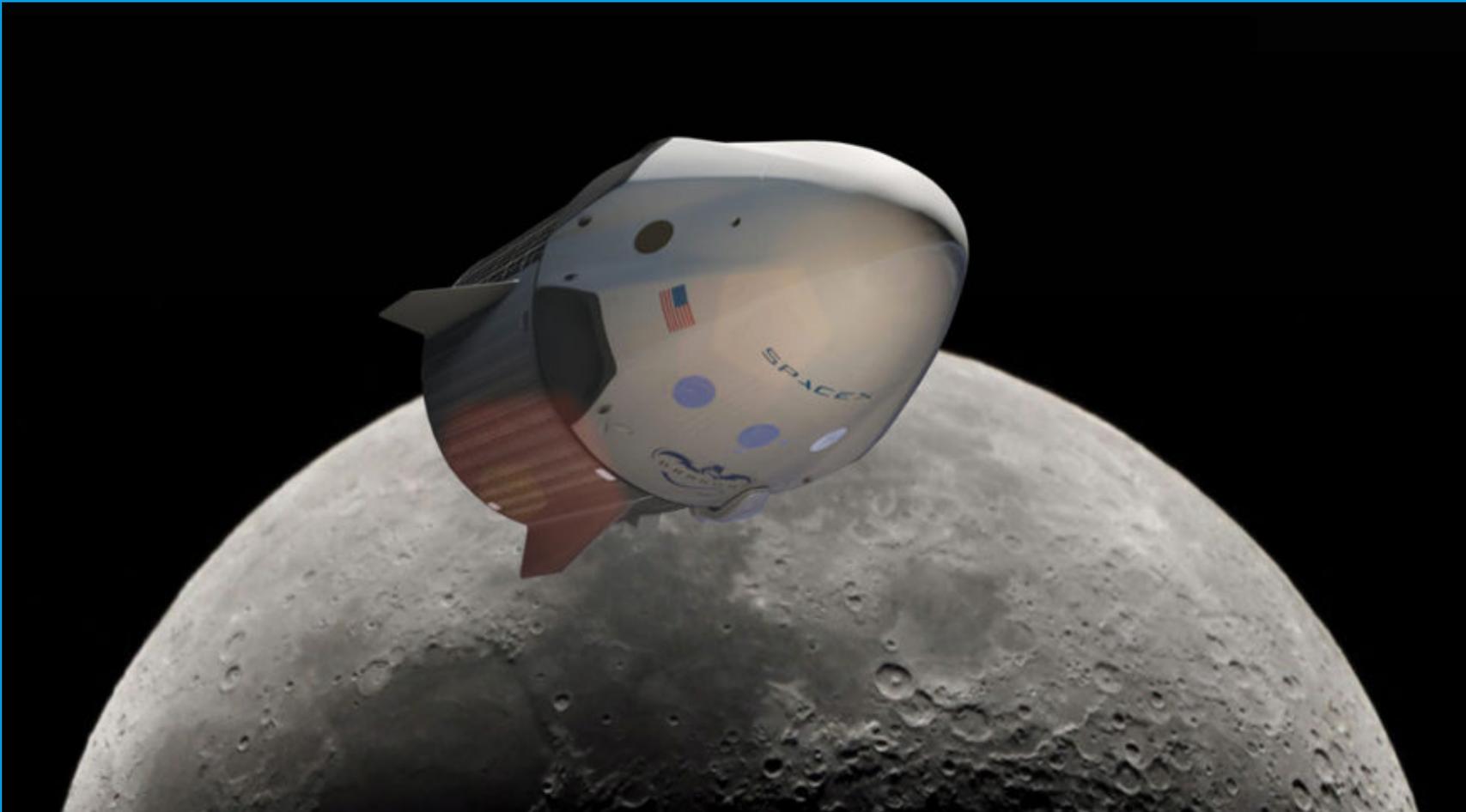
"TOURISTS WILL LOVE IT!" SAYS RICHARD GORDON OF APOLLO 12 (1969)



FIRST ORBITAL LUNAR TOURISM OFFERING – FROM SPACE ADVENTURES (2007, USING GOVERNMENTAL SOYUZ) - PRICED AT \$150 M PER PERSON



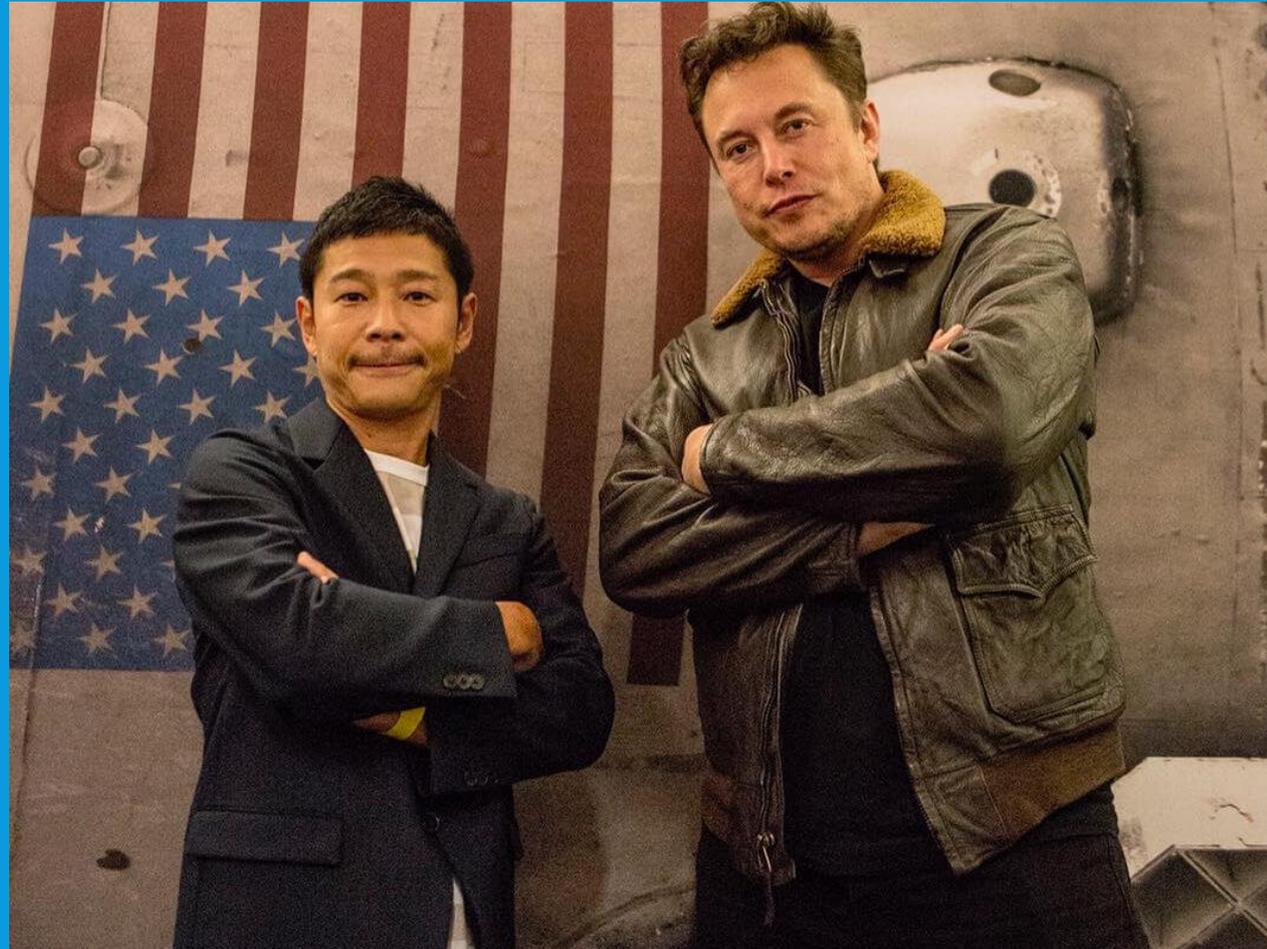
FIRST SPACEX ORBITAL LUNAR TOURISM OFFERING USING PRIVATE DRAGON CAPSULE/ FALCON LAUNCHER (2017) - PRICED AT \$150M



SECOND SPACEX ORBITAL LUNAR TOURISM OFFERING, USING PRIVATE STARSHIP (2018, TARGETED FOR 2023) – NO PUBLISHED PRICE



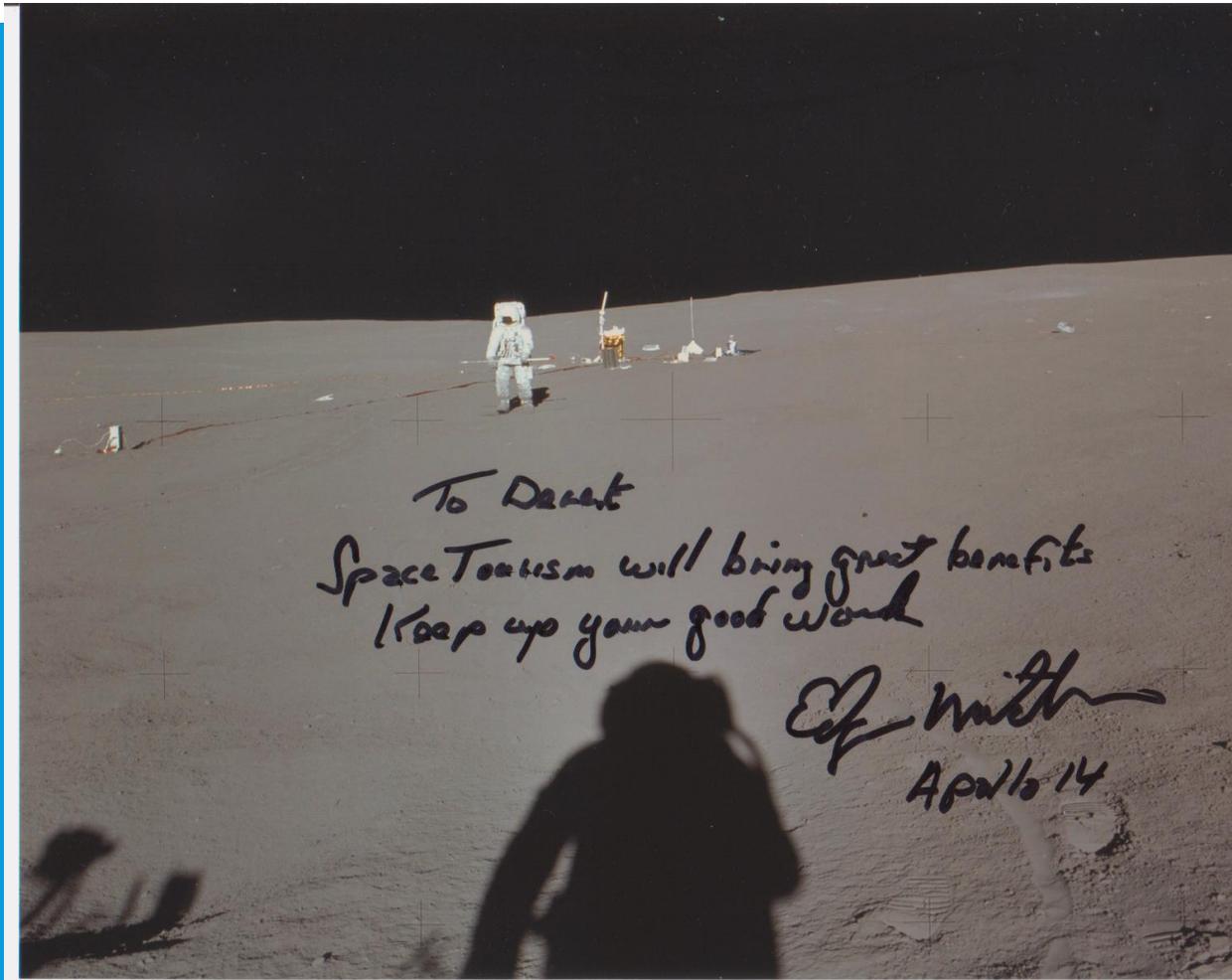
FIRST ORBITAL LUNAR TOURIST (BILLIONAIRE) CLIENT (YUSAKU MAEZAWA), WITH ELON MUSK OF SPACEX (SEPT 17, 2018)



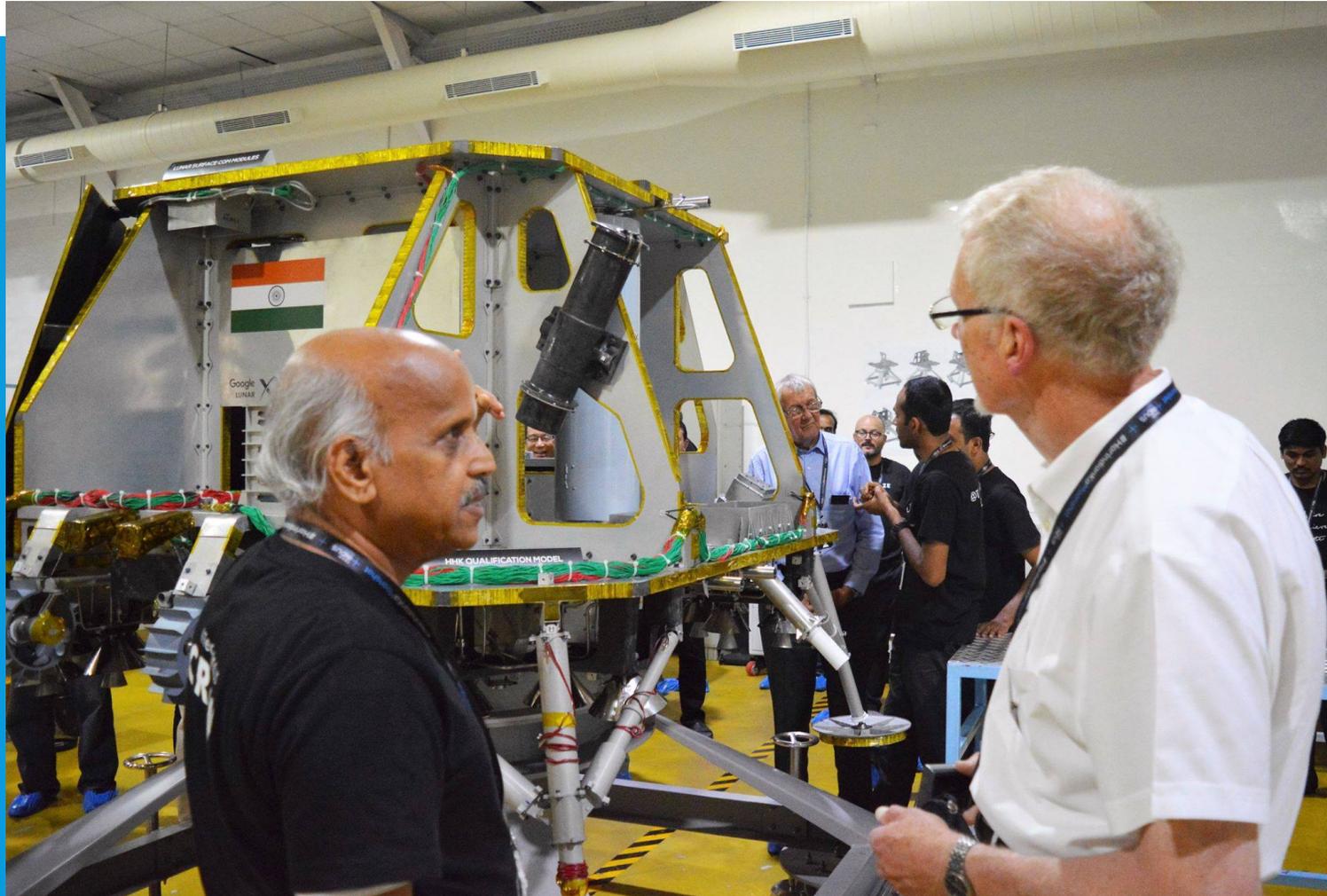
5. HOW TO DO IT – FINALLY, LANDING AND MOVING ON THE SURFACE OF THE MOON

(The Google Lunar XPRIZE Story – Non-governmental teams competed)

NO HUMANS SINCE APOLLO GOVERNMENTAL ASTRONAUTS,
AND **LUNAR SURFACE TOURISM** NOT YET BEING OFFERED
– BUT MORE ENCOURAGEMENT FROM APOLLO GUYS! (ED MITCHELL OF APOLLO 14)



GLXP AIMED AT PRIVATE LANDING ON MOON. \$40MILLION IN PRIZES. JUDGING THE TEAM INDUS LANDER (OCT 2017)



GLXP JUDGES IN TEAM INDUS CONTROL ROOM – MONITORING TESTS IN BANGALORE, INDIA (OCT 2017)

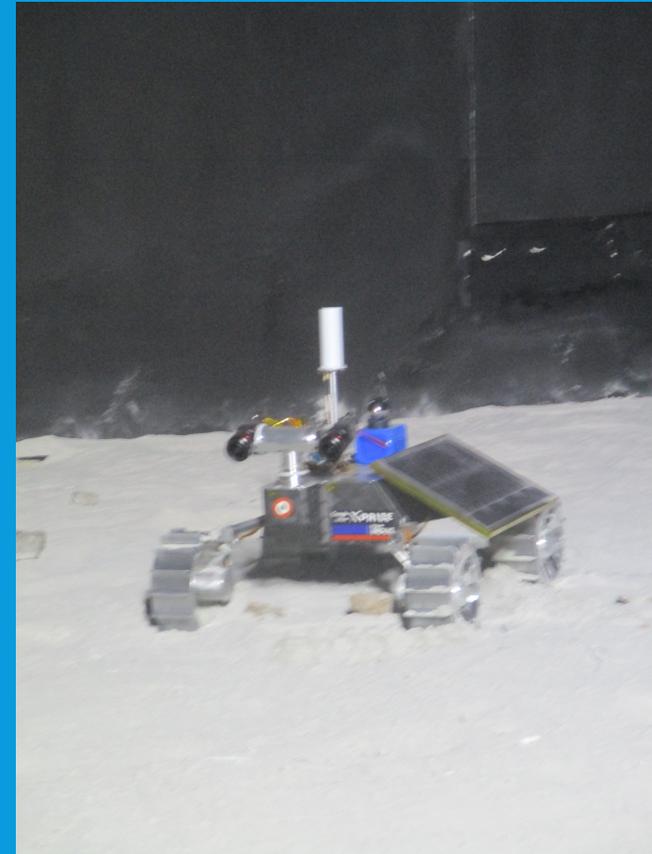


GLXP JUDGES MONITORING PRIVATE LUNAR LANDER AND ROVER – BANGALORE, INDIA

Simulated Lunar Surface



Team Indus Rover

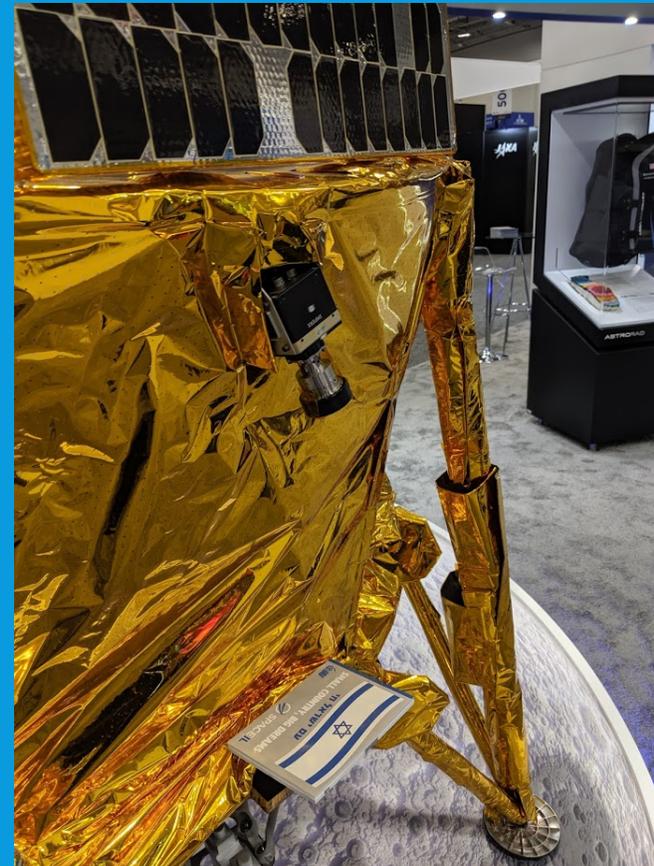


TEAM SPACEIL, FROM ISRAEL, MADE ATTEMPT - (LAUNCHED 21 FEB 2019)

SPACEIL Lander



Emblem on SpaceIL Lander



GLXP TEAM SPACEIL ACHIEVES **FIRST PRIVATE** **MOON ROBOTIC (HARD!)LANDING** (11TH APRIL, 2019)



FIRST LUNAR SURFACE TOURISM? MAYBE VIA SPACEX STARSHIP – WHICH IS ALREADY BEING READIED FOR NASA ARTEMIS MISSION.

SpaceX Lunar
Starship Moon
landing



SO, WE ARE GETTING THERE.....

- Moon Village Association working to enable “Moon 2.0”
- Space Tourism is important as a demand generator, and will be the **first commercial revenue source at the Moon**
- Space Tourism is real – orbital tourists can testify
- Space Tourism is about to get a boost from new Sub-Orbital Initiatives
- **Orbital Lunar** Space Tourism Offerings are available and contracts signed
- **Lunar Surface** Private Robotic missions have now been demonstrated thru GLXP and are real
- Where government lunar astronauts go (eg Artemis program landers), **lunar tourists** will follow, SpaceX Starship could be the means.
- Pat Collins will show you why in the next part of this Webinar.....

6. ADDENDUM - PROTECTING THE LUNAR LEGACY SITES

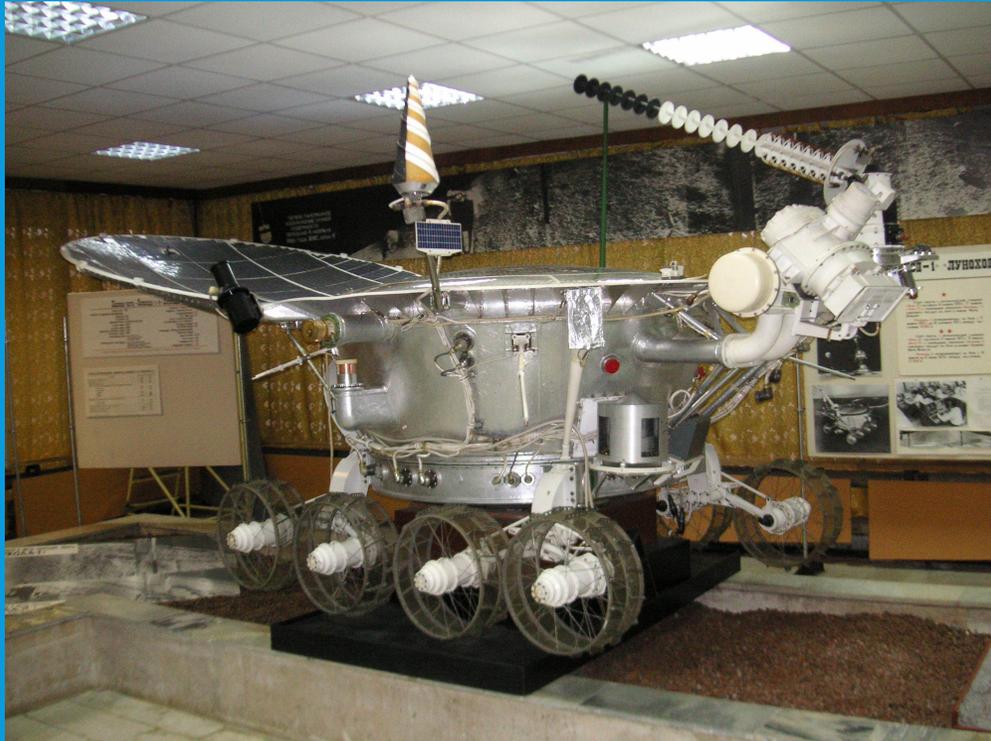
(Prime sites for future Lunar Tourists)

“SISTER ORGANIZATIONS” – MOON VILLAGE ASSOCIATION AND FORALLMOONKIND.

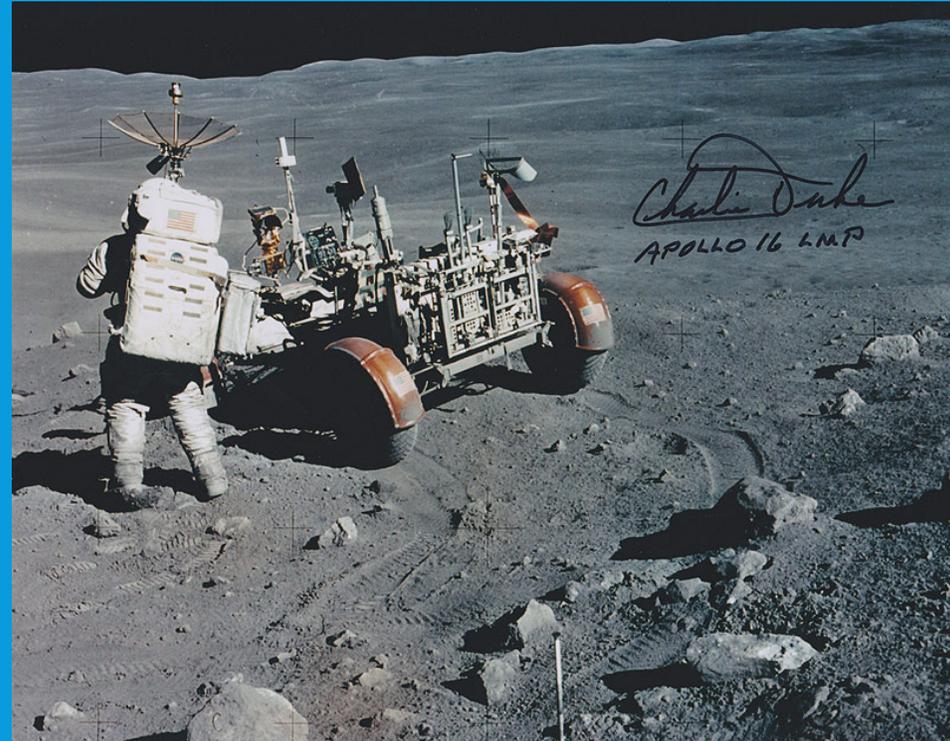
- Both organizations are NGO's having Observer status at the UN in Vienna
- Both are looking to the future and an equitable way forward for lunar activities
- ForAllMoonkind has a particular focus – protecting the Lunar Legacy Sites.

HERITAGE ON THE MOON.....

Soviet era Lunokhod Rover



Apollo tracks and footprints



UNCOPUOS, VIENNA – “FORALLMOONKIND” PANEL ADDRESSES DELEGATES ABOUT PROTECTING LUNAR LEGACY SITES

17 JUNE 2019



JOIN AND SUPPORT THE INITIATIVES....

- Join the Moon Village Association (and its working groups)
- Join ForAllMoonkind to preserve the legacy sites...

THANK YOU

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www.Spaceportassociates.com

Space Tourism Books: “The Wright Stuff”, Apogee, 2010, - and “Space Tourism Business”, Curtis, 2020