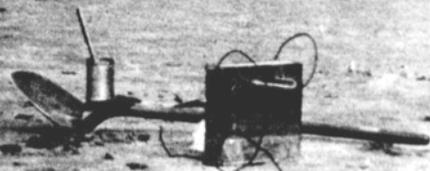
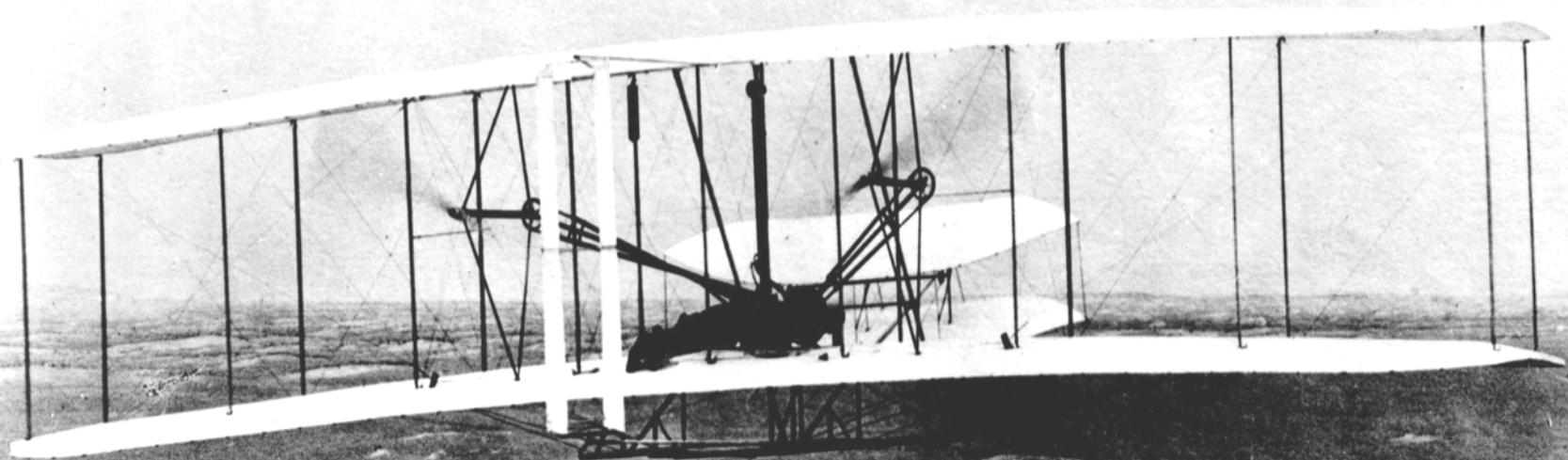


THE FUTURE *AND* MOONEX

ALAN STERN

CHIEF SCIENTIST & MISSION ARCHITECT
MOON EXPRESS







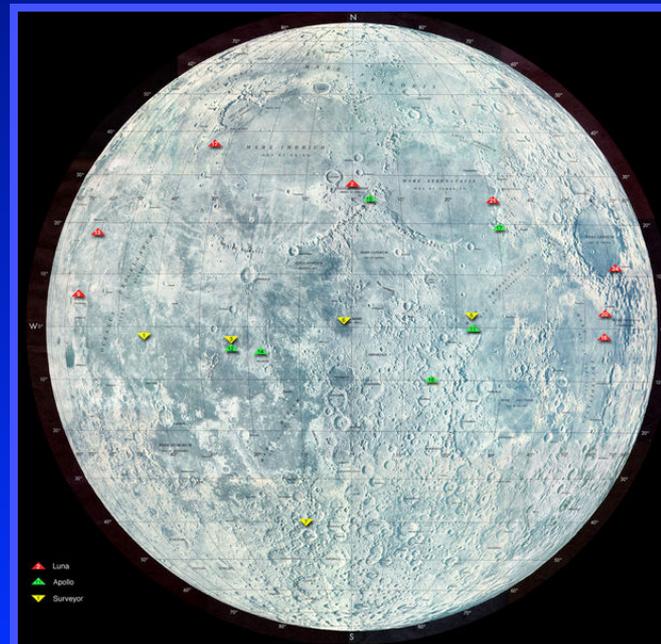
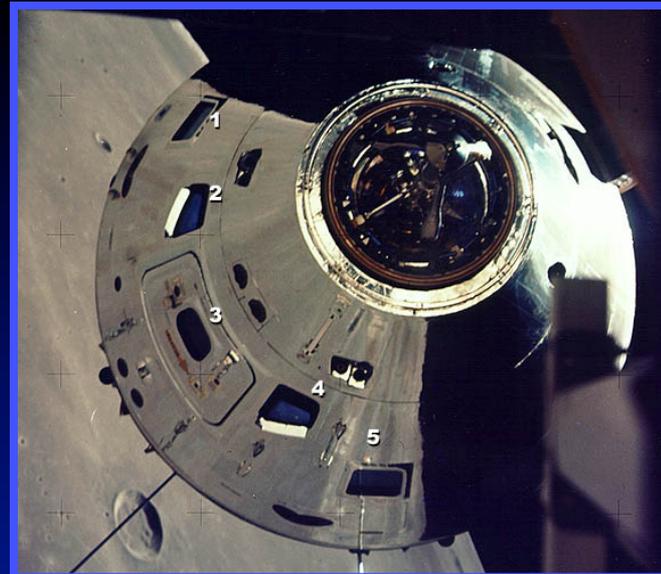
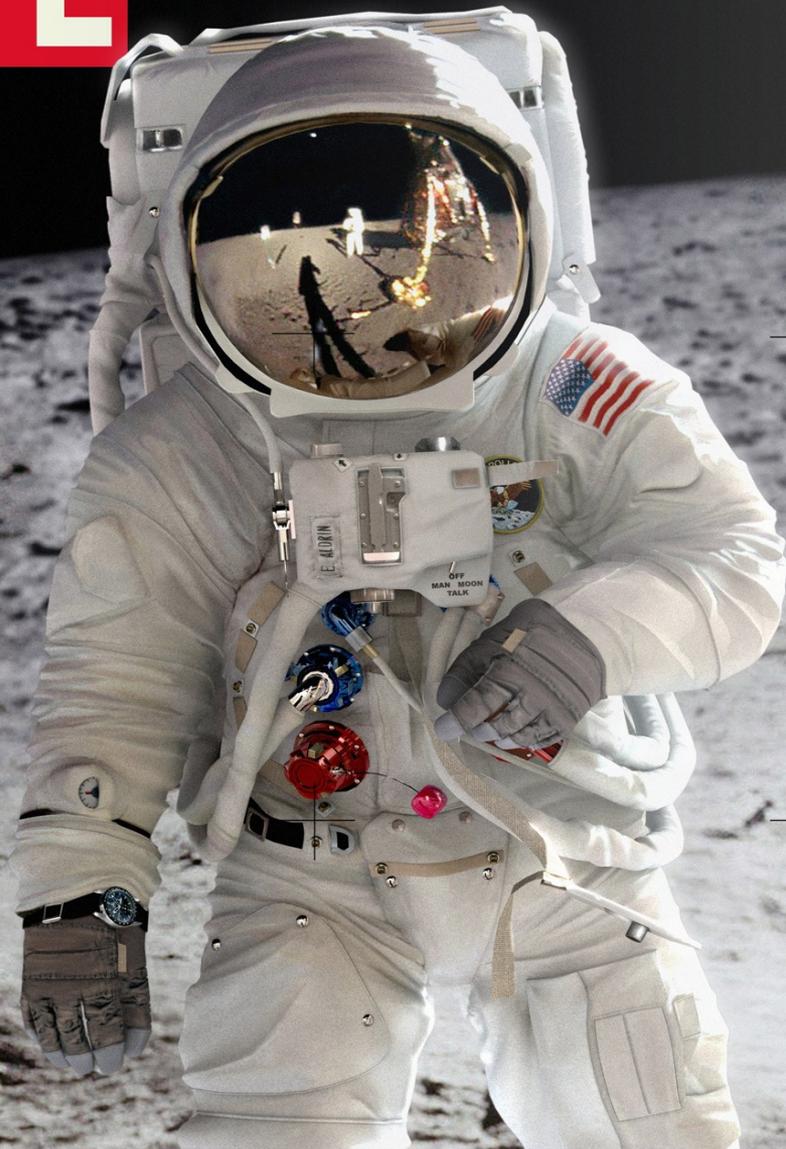


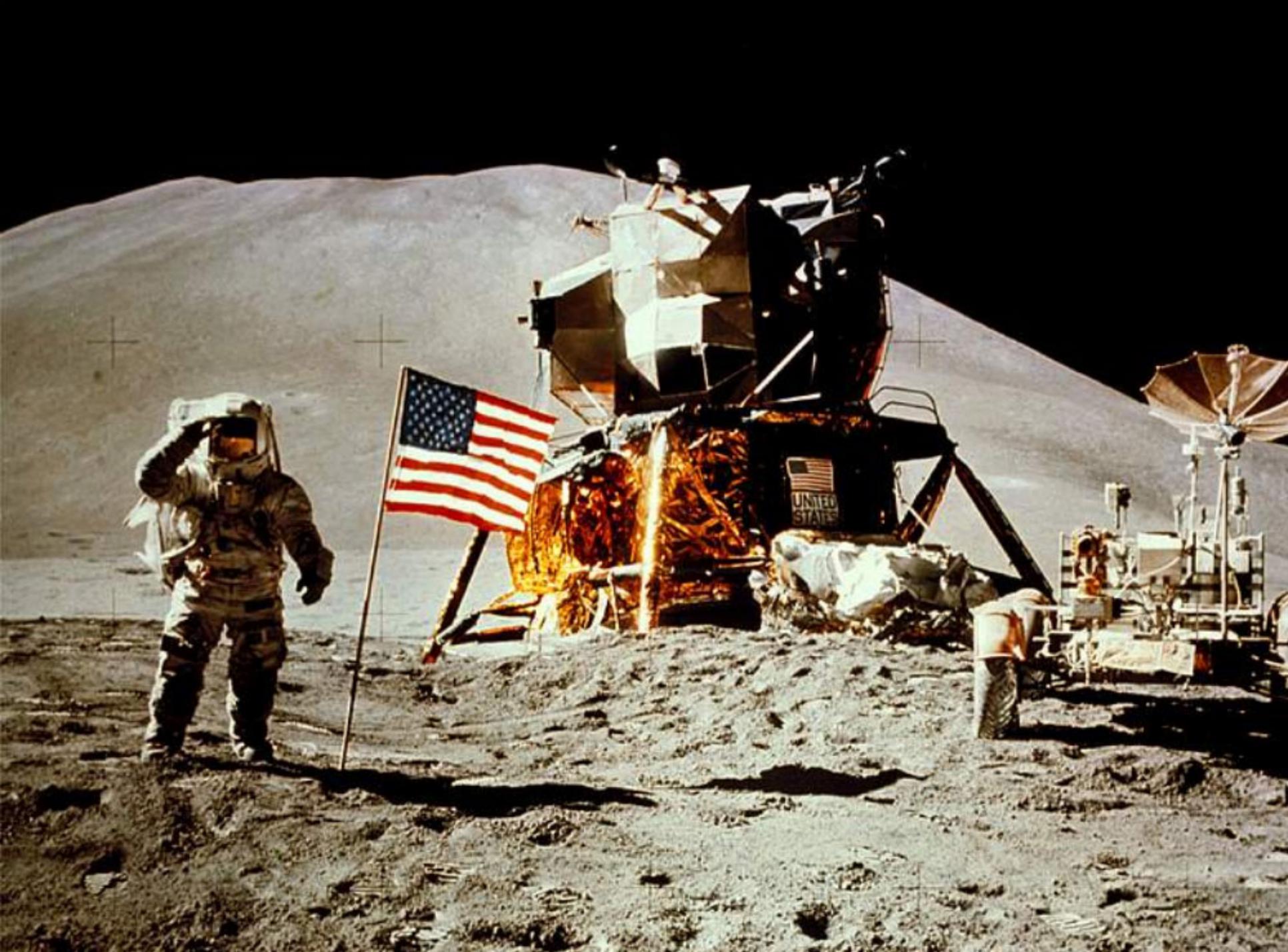


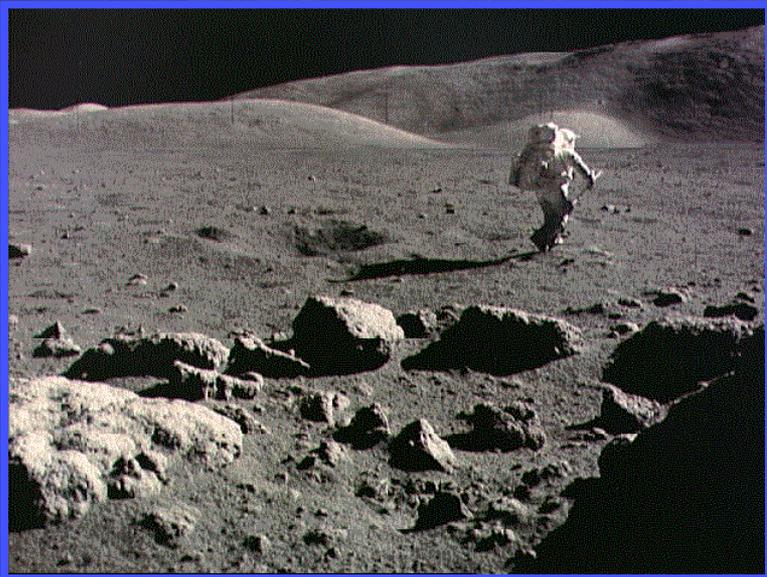
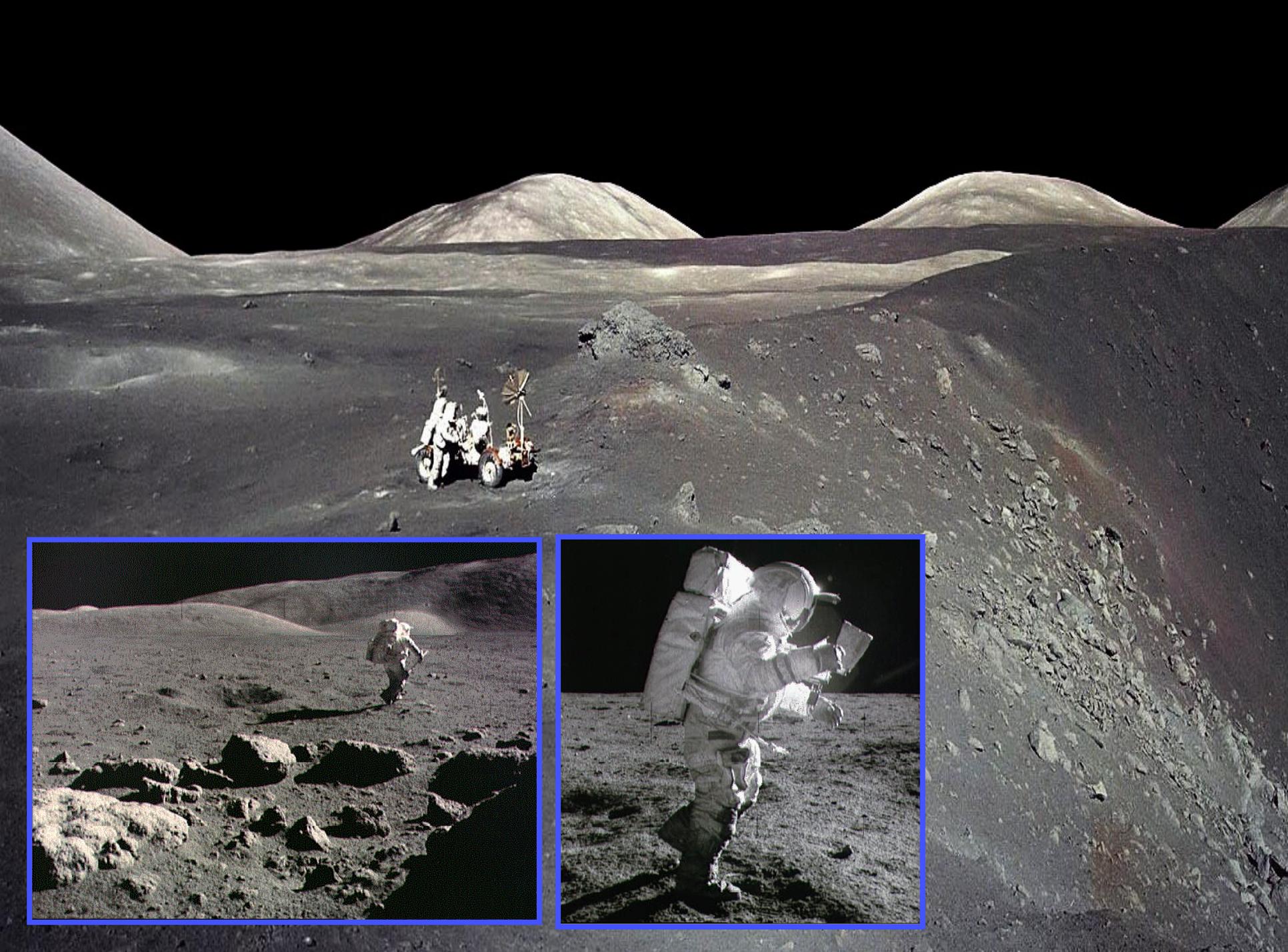
LIFE

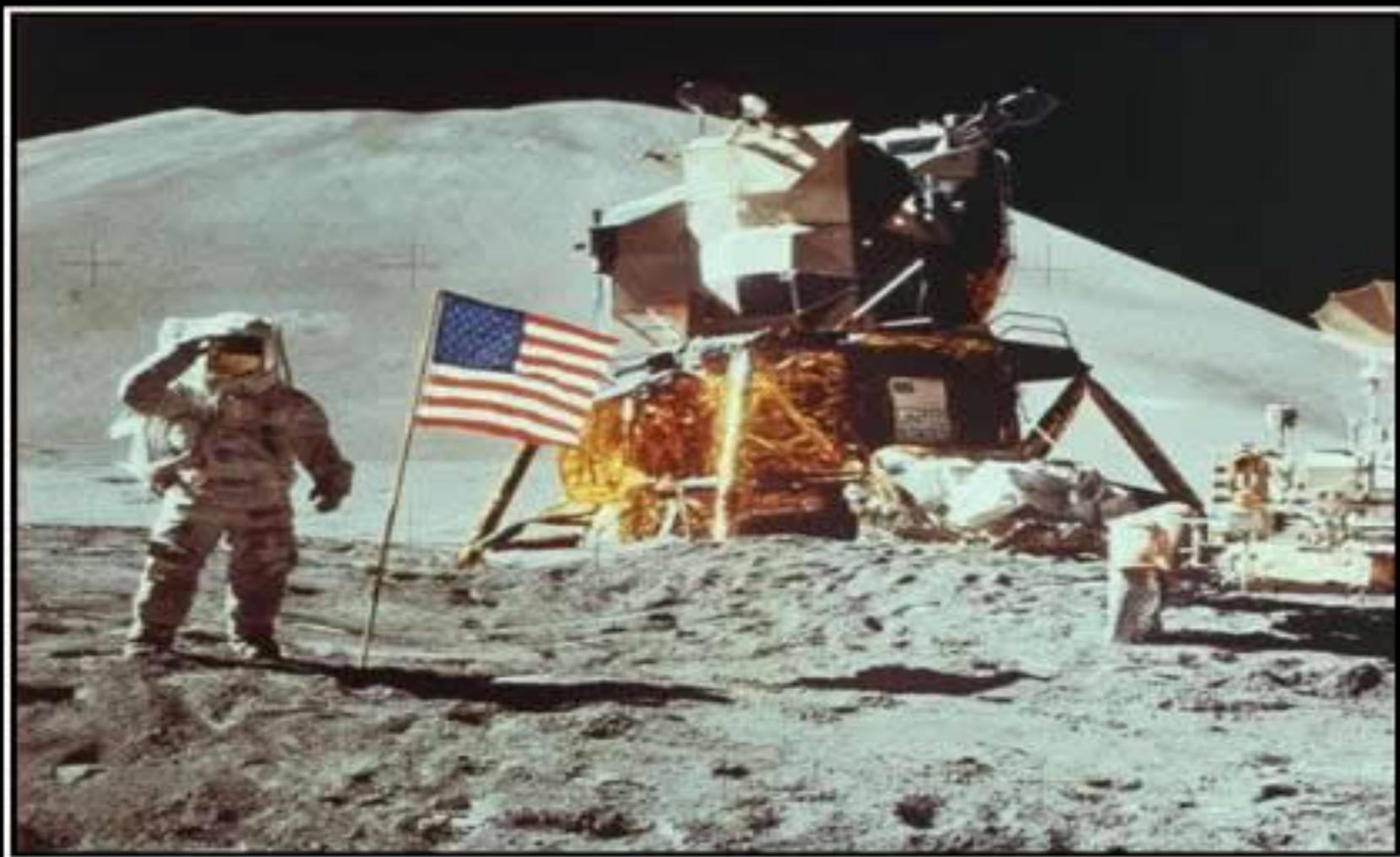
SPECIAL EDITION

TO
THE
MOON
AND
BACK



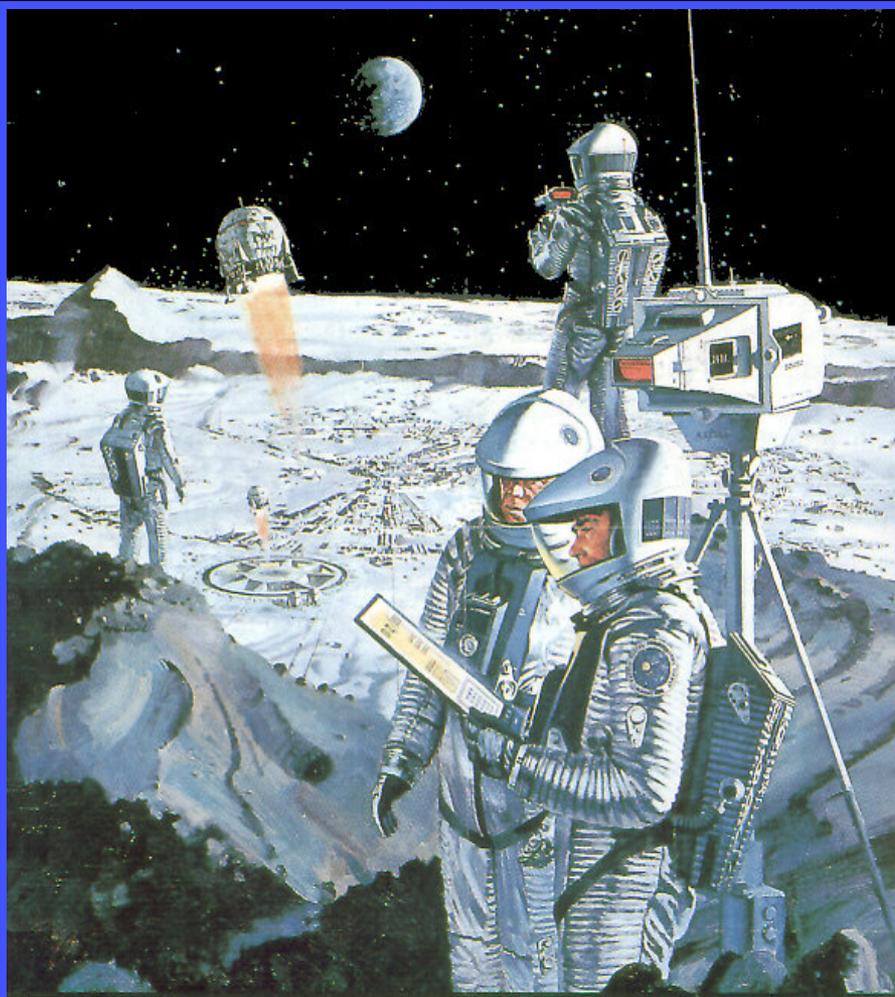






ROCKET SCIENCE

It really is that hard, but the results kick ass.



MGM PRESENTS A STANLEY KUBRICK PRODUCTION

2001: a space odyssey

CINERAMA Super Panavision® and Metrocolor

**An epic drama of
adventure and exploration**

Space Station One: your first step in an Odyssey that will take you to the Moon, the planets and the distant stars.



STANLEY KUBRICK'S

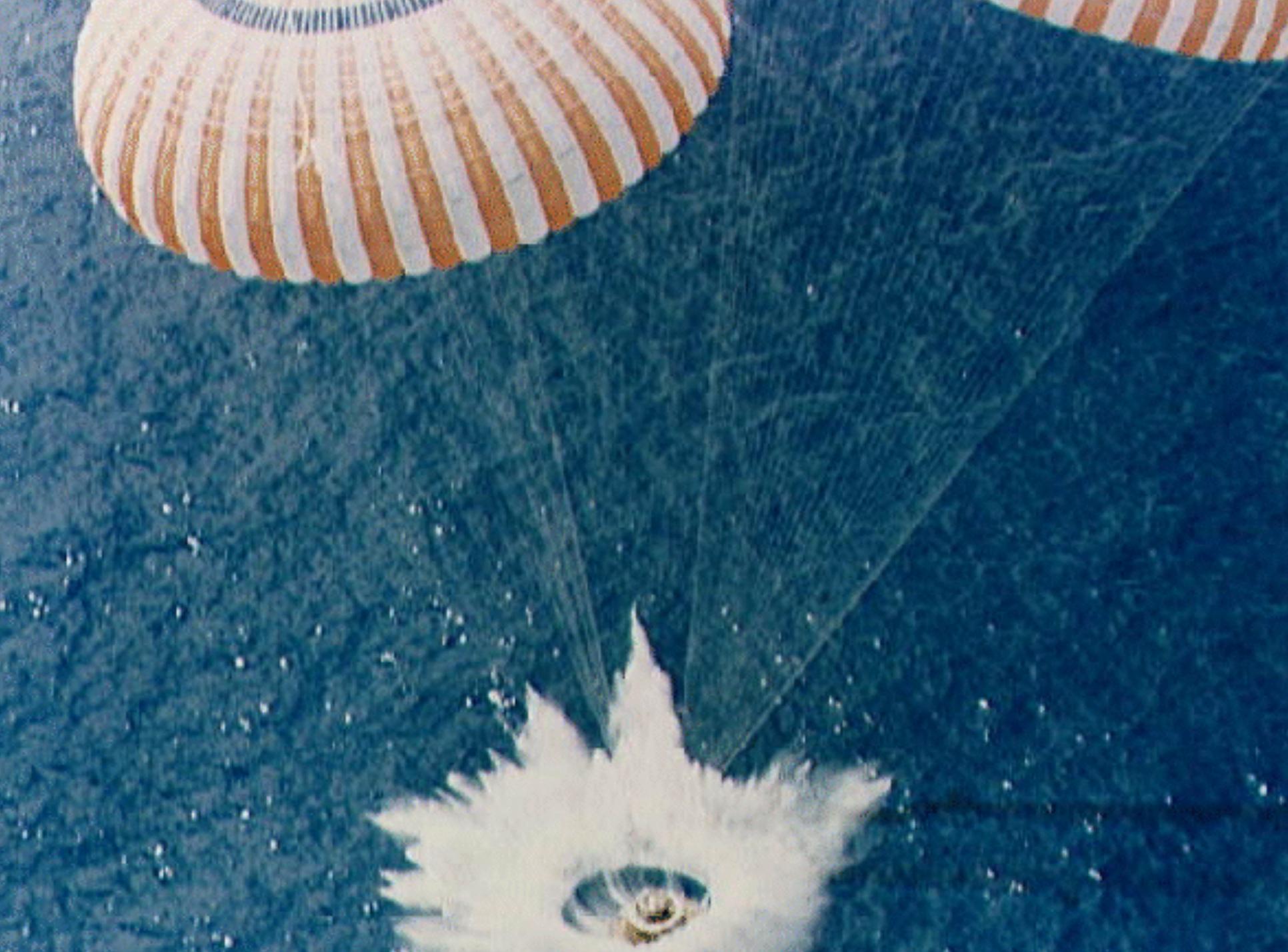
2001: a space odyssey

CASTING BY KEIR DULLEA • GARY LOCKWOOD • STANLEY KUBRICK • COSTUME DESIGNER ARTHUR C. CLARKE
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Endeavour

Canada



SPACE







Ike Masee

Falcon 9 Launch Vehicle



SPACEX



Dragon Cargo



Dragon Crew

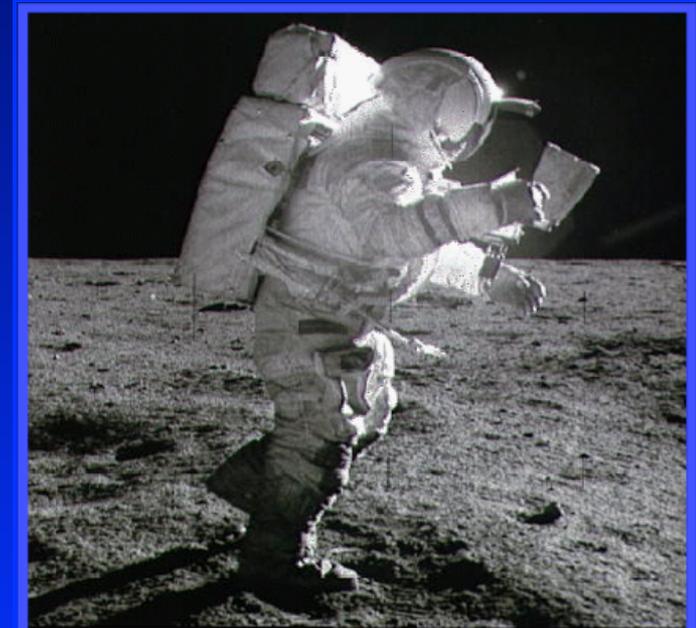
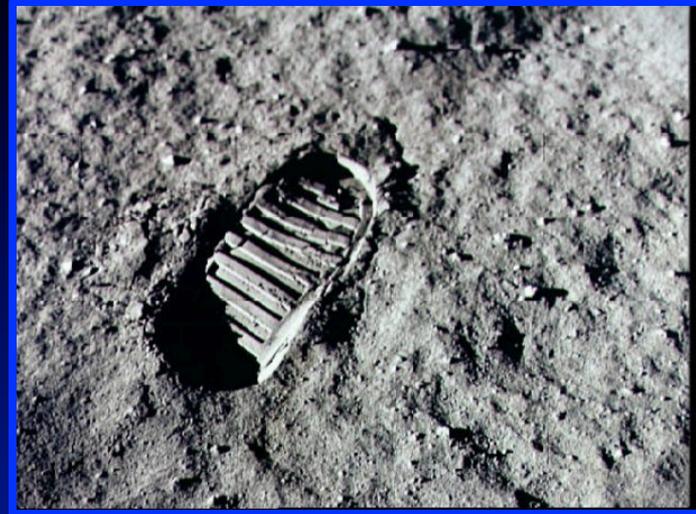












Google \$30M Lunar X PRIZE

Sponsored by
Google and
managed by
the **X PRIZE**
Foundation.

A follow-on
challenge to
the successful
\$10M Ansari
X PRIZE for
the first
private
spaceship.



\$20M Grand Prize to first private team to land on Moon, travel 500 meters and broadcast HD images and video to Earth.

A commercial lunar transportation and data services company competing in the \$30M Google Lunar X PRIZE and selected by NASA for its \$30M commercial lunar ILDD program..





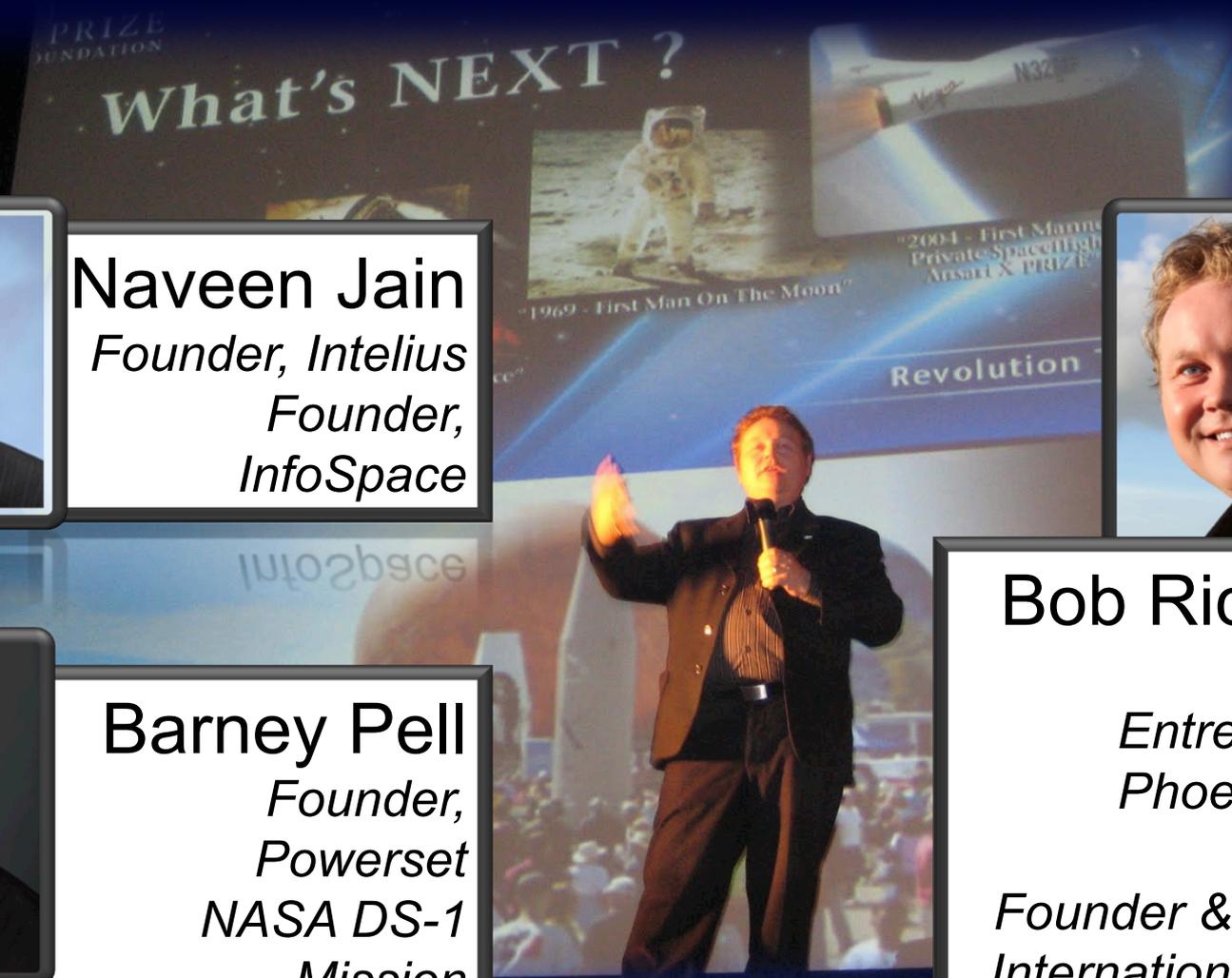
Naveen Jain
Founder, Intelius
Founder,
InfoSpace



Barney Pell
Founder,
Powerset
NASA DS-1
Mission



Bob Richards
Space
Entrepreneur;
Phoenix Mars
Mission;
Founder & Trustee,
International Space
University







THE MOONEX BUSINESS MODEL

- ✓ CARRY HOSTED PAYLOADS TO THE MOON.
- ✓ WIN THE GLXP.
- ✓ RETURN SAMPLES FOR HIRE.
- ✓ MINE THE REGOLITH FOR PGEs.

MoonEx Orientation NASA Research Park



MoonEx
Temporary
Offices

NASA Lunar
Science
Institute

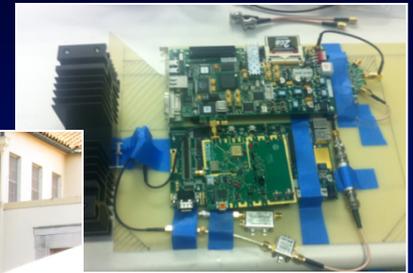
Singularity
University



“Area 45”
Hover Test
Facility &
Lander Test
Vehicle

MoonEx
Perm HQ

“McMoon”
Lunar
Orbiter
Image
Recovery
Project





THE MOONEX SCIENCE ADVISORY BOARD

| Individual | Category |
|--|---|
| Alan Stern, Chair/ME | Planetary Scientist and Former NASA SMD AA |
| Clive Neal/Notre Dame | Chair, LEAG |
| Steve <u>Mackwell</u>/LPI | Head, LPI |
| Randy <u>Korotey</u> /Washington U. | Lunar Geochemist |
| Jack Burns/U. Colorado | NSLI Node Lead, Astronomer |
| Wendell <u>Mendell</u>/LPI | Lunar Generalist, Exploration Expert |

Hover testing
the Common
Spacecraft Bus
lander
prototype



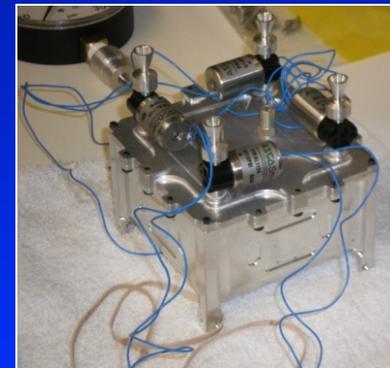
Recommissioning
Hover Test Vehicle
& Facility

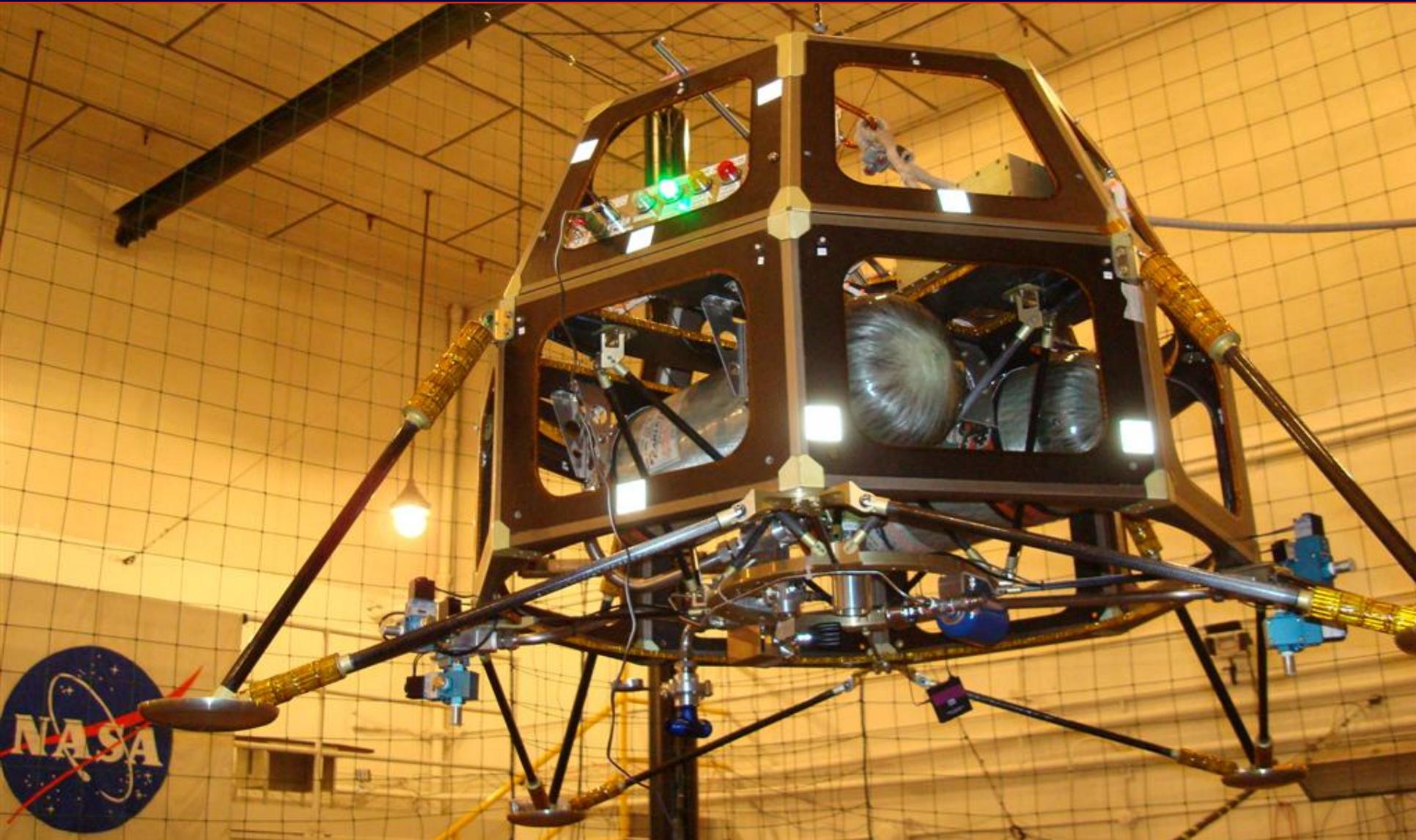


Miniature
landing
radar
development &
test



Micro-
propulsion
system
maturation





NASA Rates Moon Express #1

Moon Express was the only bidder to receive top marks across all NASA evaluation categories.

Moon Express is one of only three U.S. companies selected by NASA for the first delivery order of its “Innovative Lunar Demonstration Data (ILDD)” program.

| MERIT | TECHNICAL | BUSINESS | NASA VALUE |
|----------|-------------|---------------|-----------------|
| HIGH | 1,2,3 | 1 | 1,2,3,4,6,7,8,9 |
| MODERATE | 4,5,6 | 2,3,4,5 | |
| LOW | 7,8,9,10,11 | 6,7,8,9,10,11 | 10,11 |

NASA ILDD CONTRACT WINNERS:

- 1) Moon Express**
- 2) Astrobotic Technologies
- 3) Next Giant Leap (Draper)
- 4) Rocket City Space Pioneers (Dynetics)
- 5) Team FREDNET / Open Space Society
- 6) Omega Envoy (Earthrise Space Inc.)

1st Private Moon Landing

MOON · EX

Company Confidential – Do Not Distribute



MoonEx-1 Lander WAN
Receives, Stores and
Relays Microlander
Imagery/Data

CubeSat
Microlander
on *MoonEx-1*
Lander System

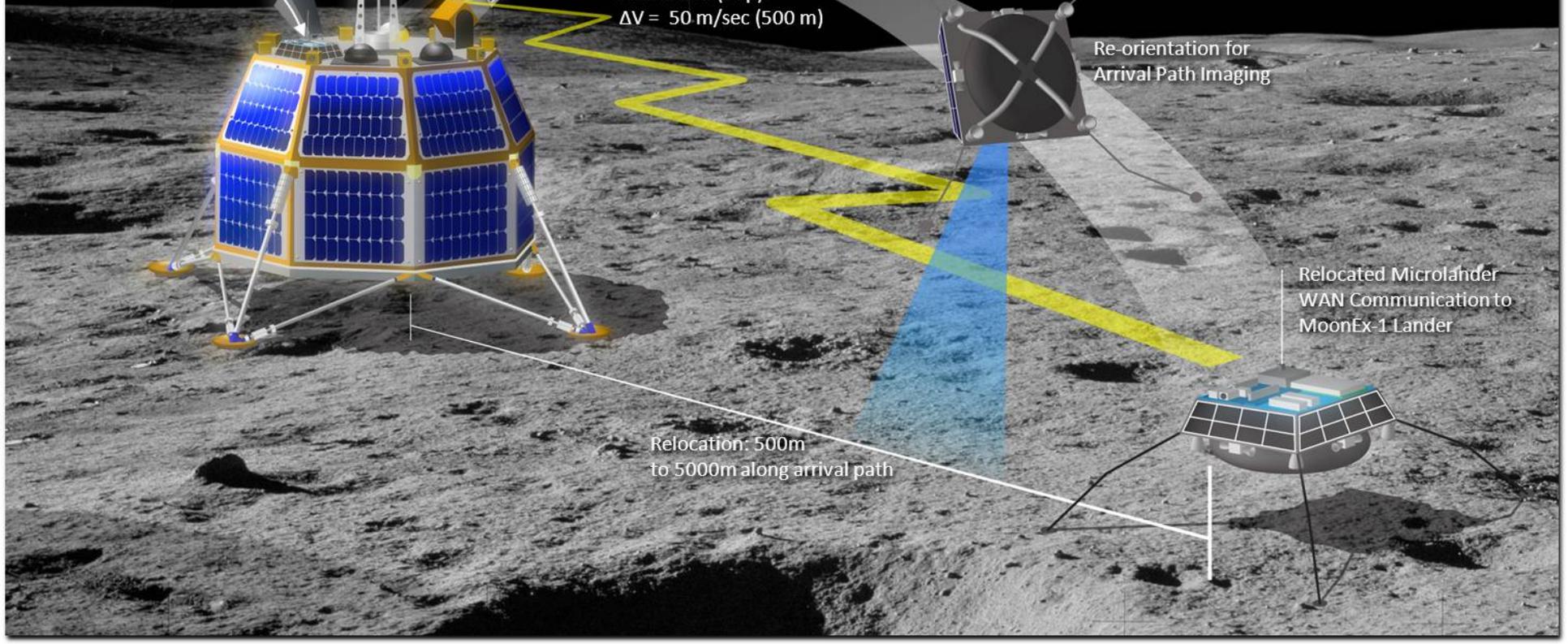
Relocation (hop):
 $\Delta V = 50 \text{ m/sec}$ (500 m)

Re-orientation for
Arrival Path Imaging

Relocated Microlander
WAN Communication to
MoonEx-1 Lander

Relocation: 500m
to 5000m along arrival path

Moon Express uses
cubesat technology in a
micro-hopper solution to
mobility





HOSTED PAYLOADS THE PROMISE

- ✓ SHARED MISSION COST
- ✓ QUICK RETURNS
- ✓ MULTIPLE FLIGHTS
- ✓ EVOLVING CAPABILITIES



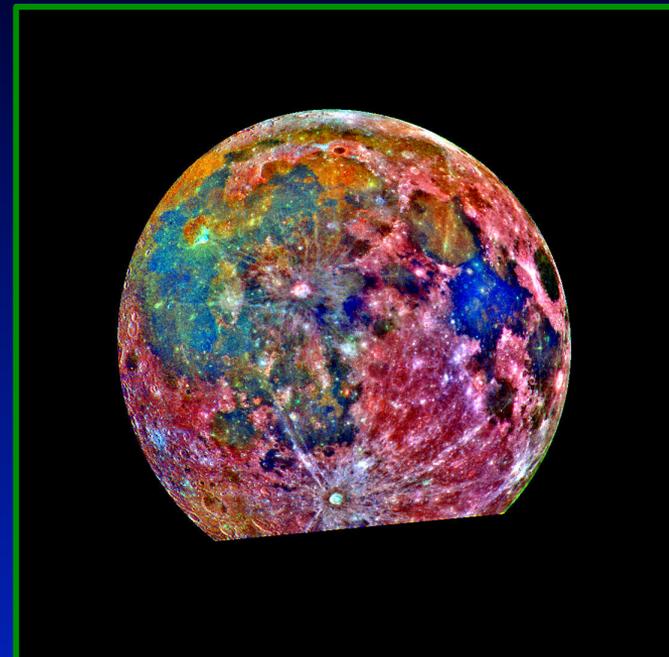


HOSTED PAYLOADS SCIENCE APPLICATIONS:

- ✓ LUNAR GEOPHYSICS
- ✓ LUNAR GEOCHEMISTRY
- ✓ LUNAR ATMOSPHERE

- ✓ ISRU DEMOS
- ✓ TECH DEMOS
- ✓ EPO PAYLOADS
- ✓ APP DEMOS (E.G., ASTRONOMY)

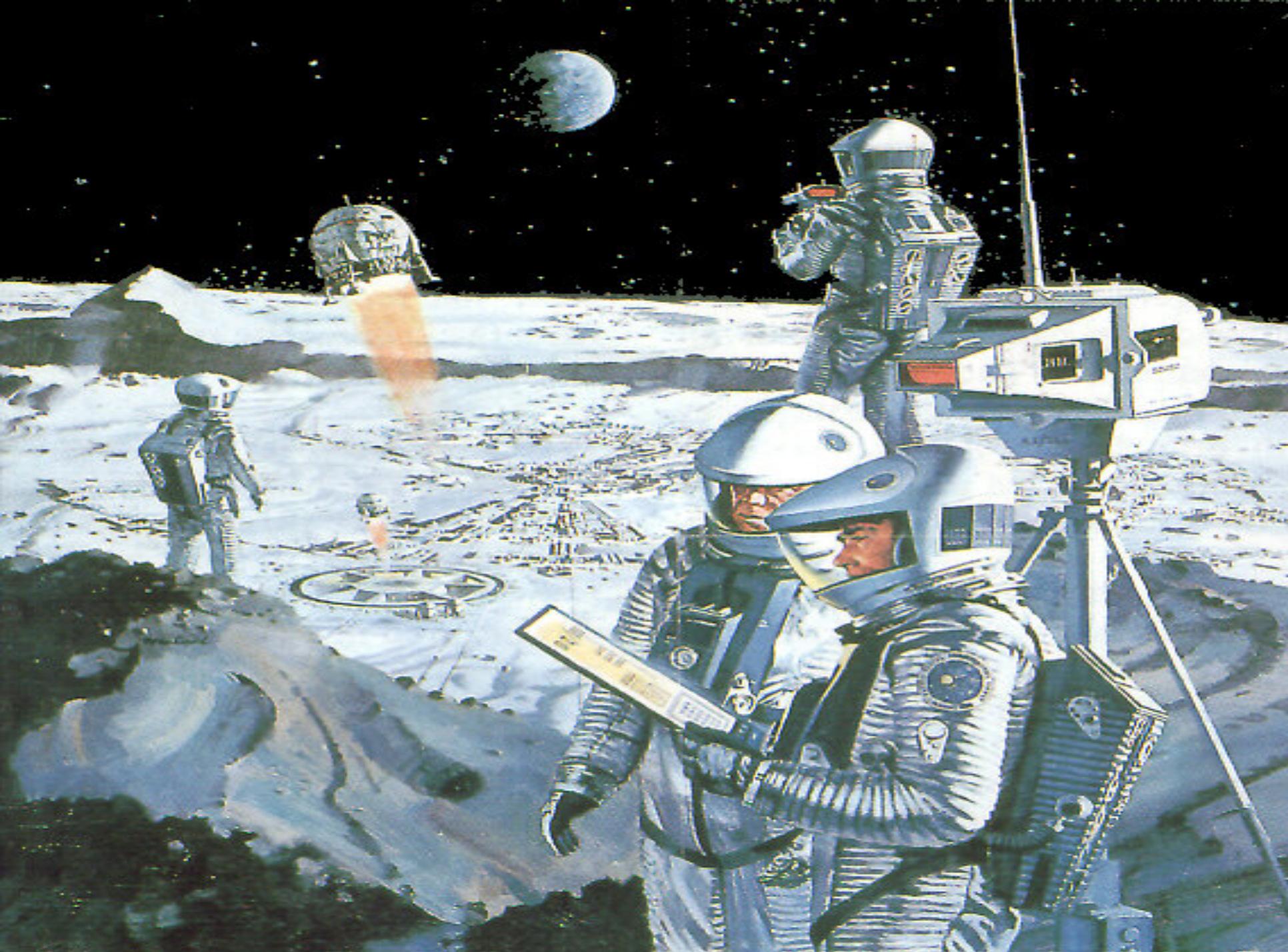
- ✓ SOON: A POTENTIAL NEW ILN.





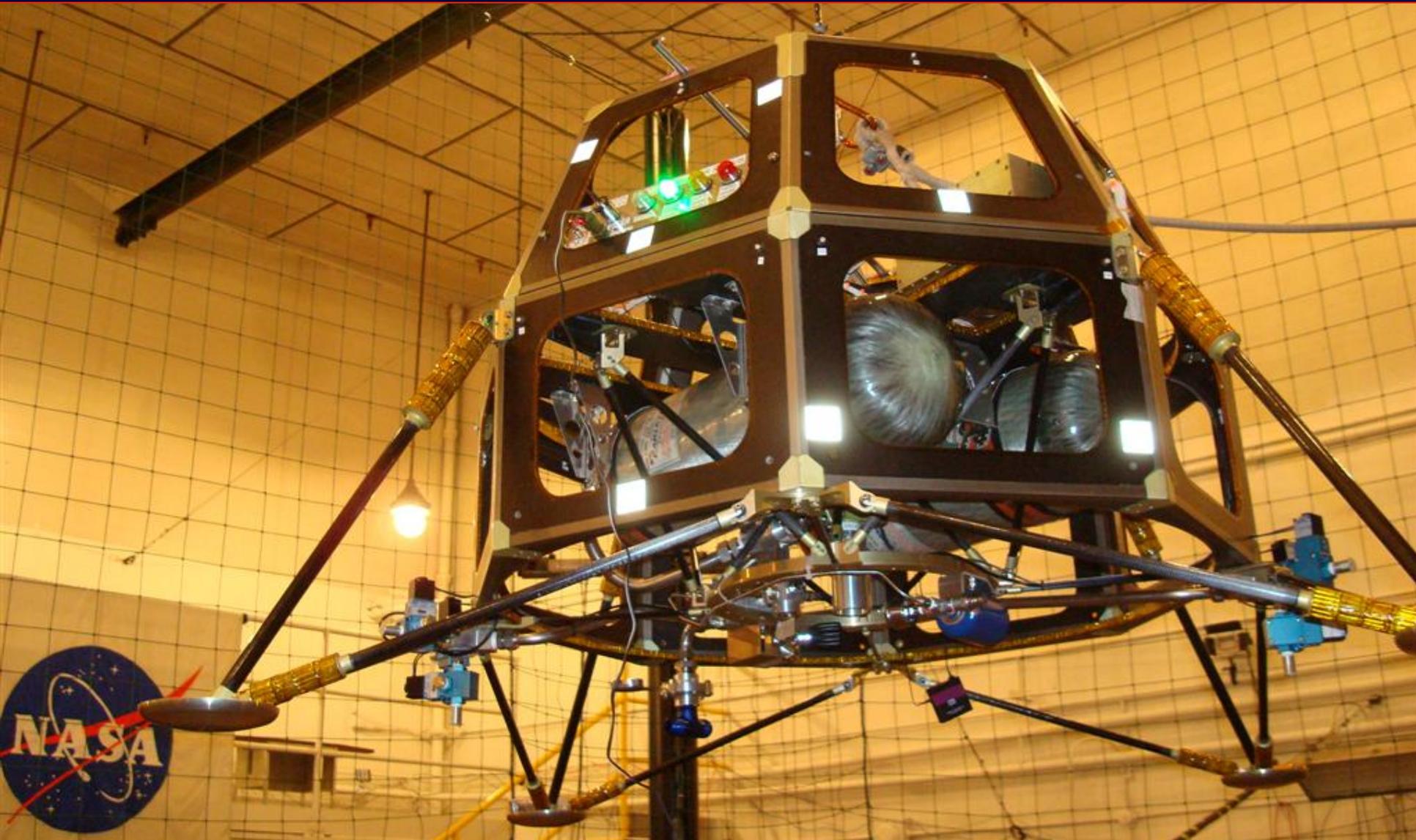
MINING PGEs

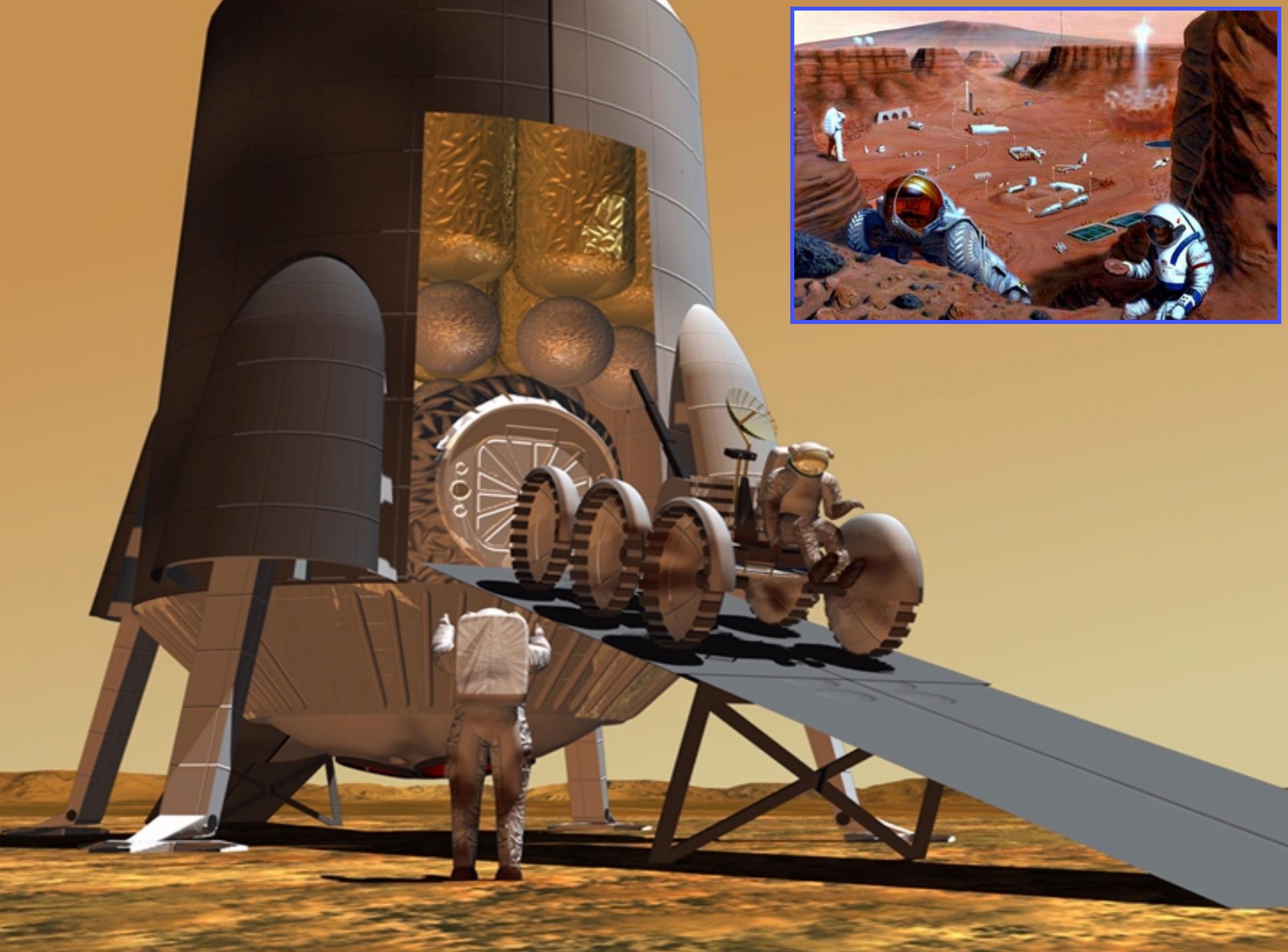
- ✓ ABUNDANT IN THE REGOLITH.
- ✓ PARTICULARLY AT SPECIFIC LOCATIONS.
- ✓ WE' RE DEVELOPING THE TOOLS AND TECHNOLOGY TO GO AND GET THESE.















BACKUP CHARTS

