

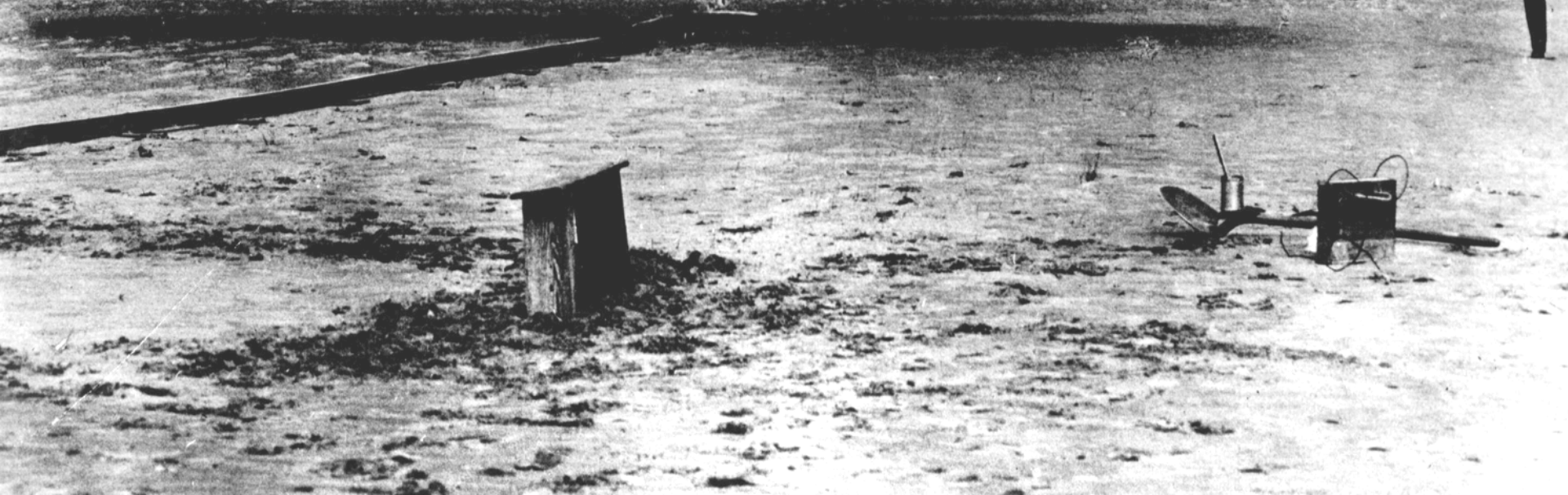
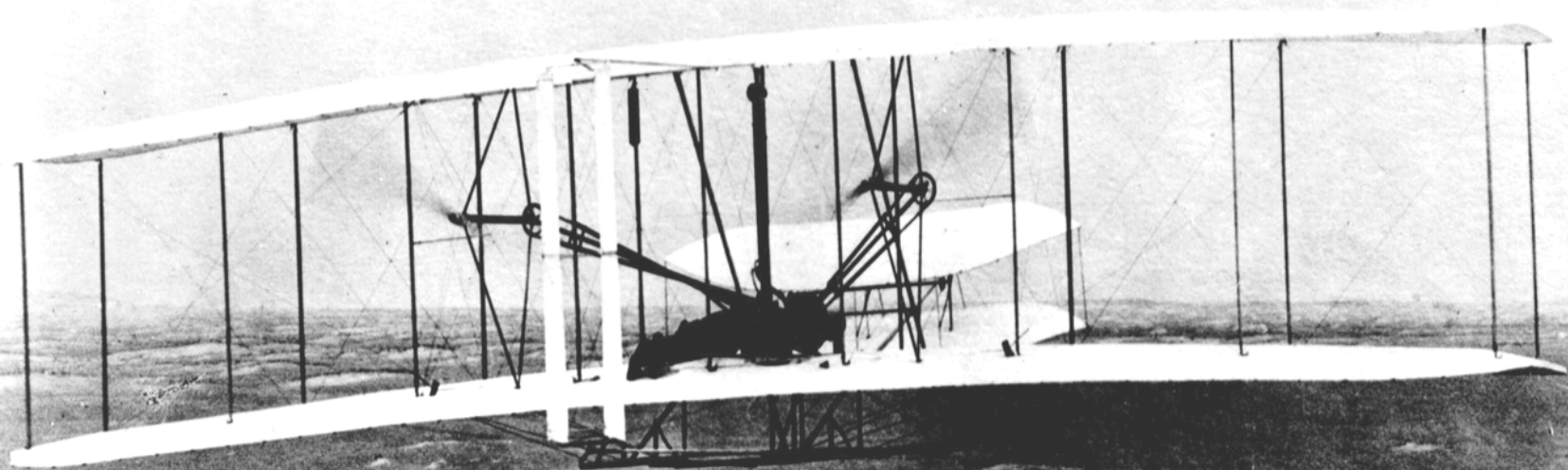
# THE FUTURE *AND* MOONEX

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ALAN STERN

CHIEF SCIENTIST & MISSION ARCHITECT  
MOON EXPRESS













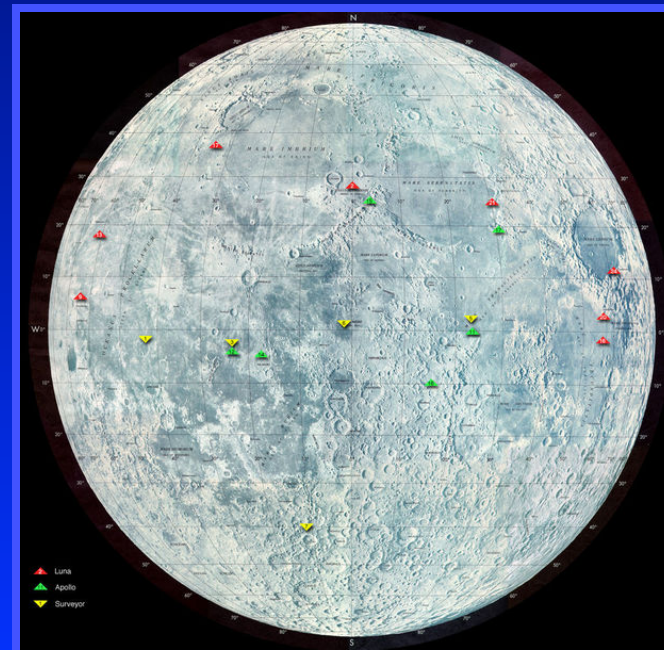
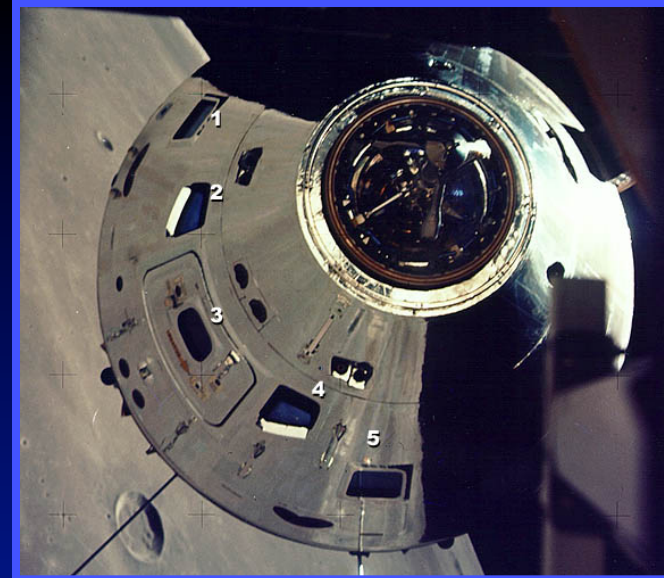




# LIFE

SPECIAL EDITION

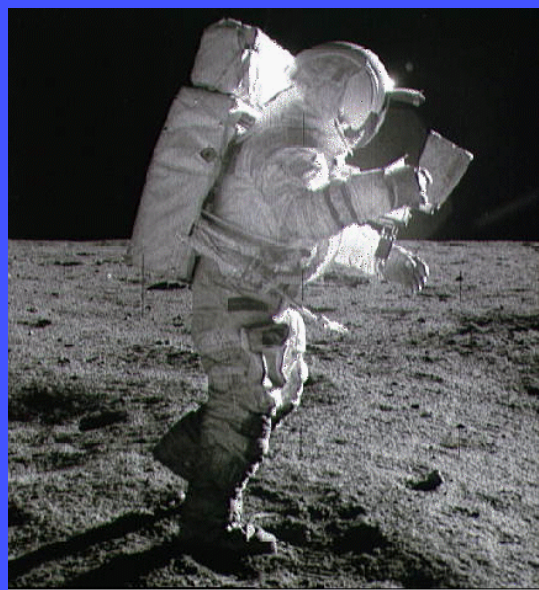
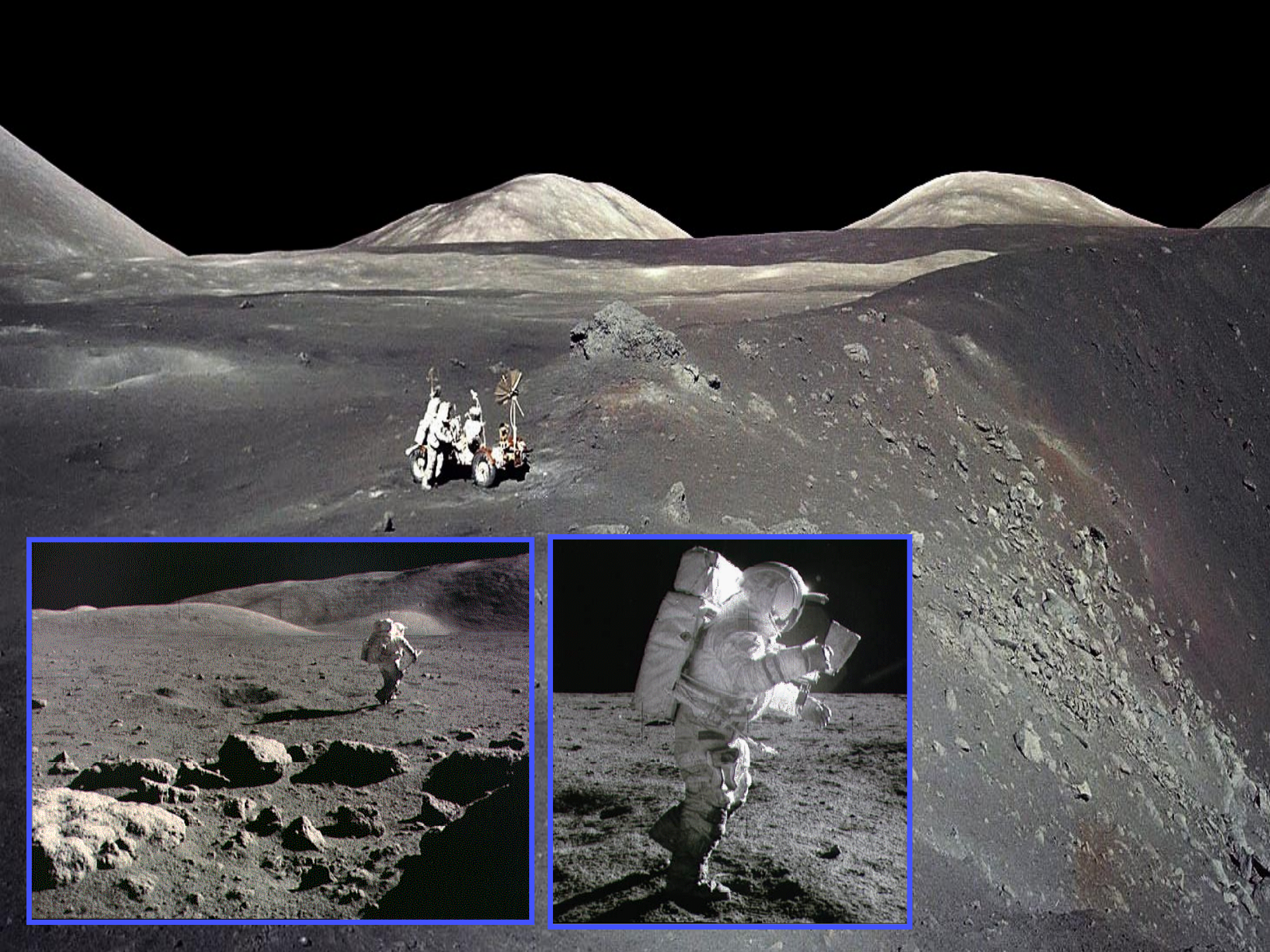
TO  
THE  
MOON  
AND  
BACK



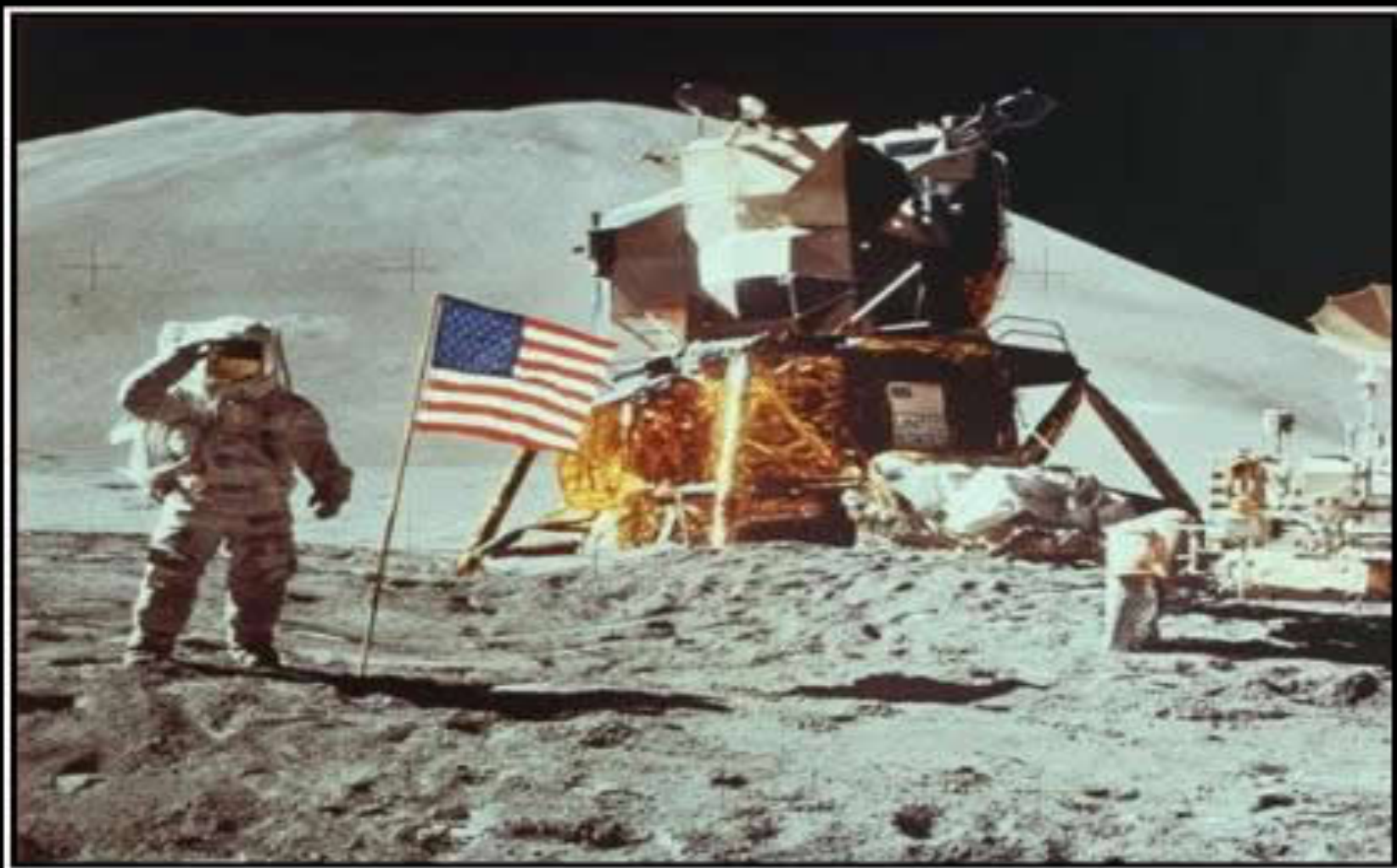






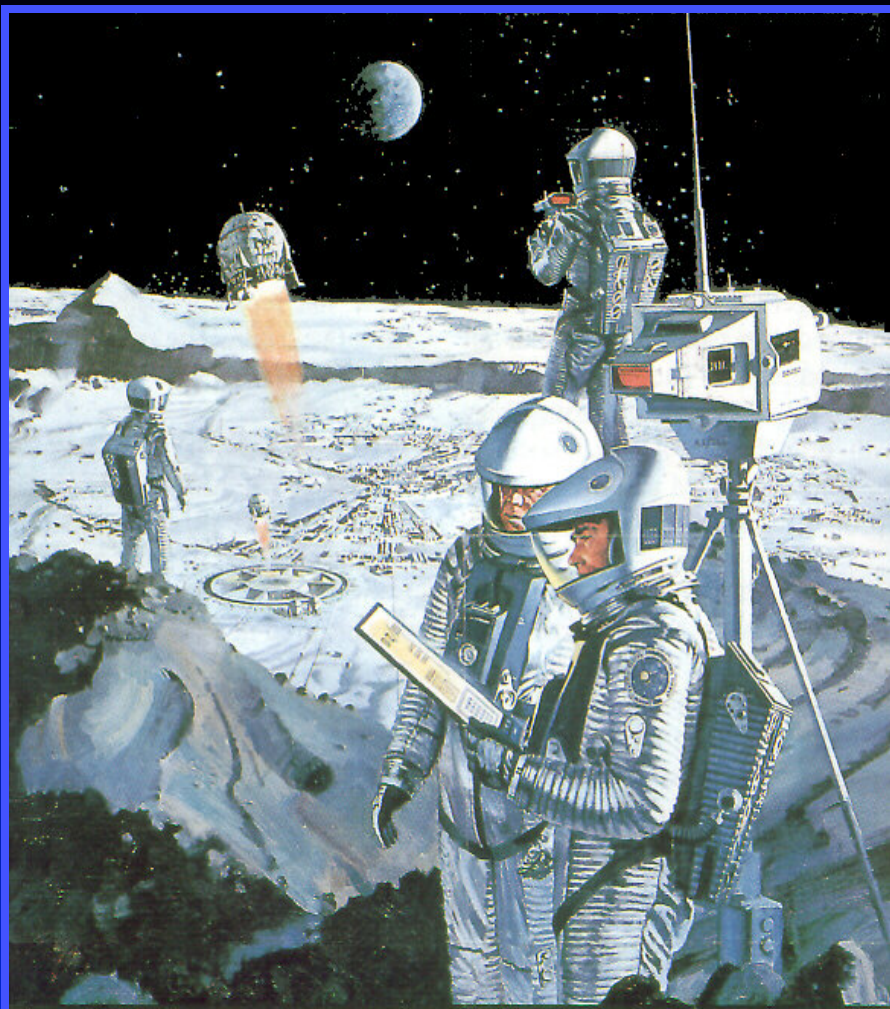






# ROCKET SCIENCE

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



# 2001: a space odyssey

MGM PRESENTS A STANLEY KUBRICK PRODUCTION

**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.



## 2001: a space odyssey

STANLEY KUBRICK'S

CASTING BY KEIR DULLEA • GARY LOCKWOOD • STANLEY KUBRICK • ARTUR C. CLARKE  
 "2001" STANLEY KUBRICK • IN SUPER PANAVISION® • METROCOLOR

(C) GENERAL AUDIENCES

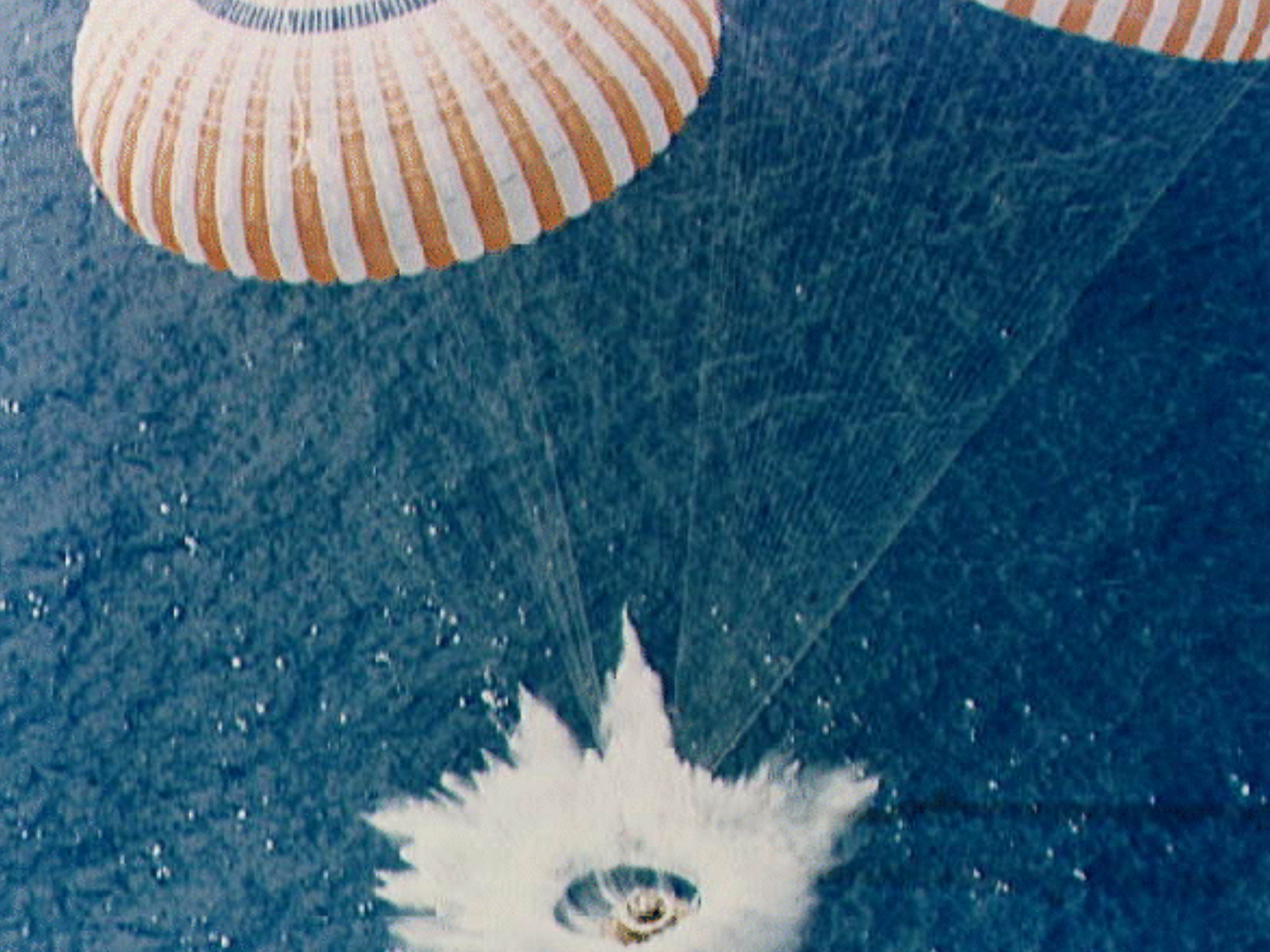
MGM Metrocolor United Artists



















Endeavour

Canada



SPACE













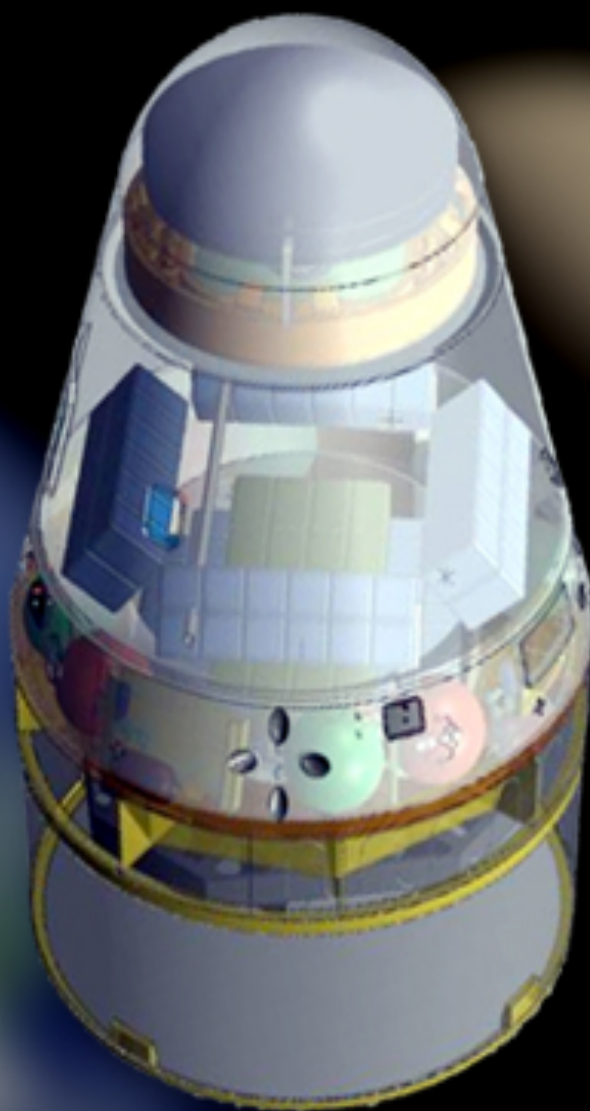
Ike Massee



**Falcon 9 Launch Vehicle**



**SPACEX**



**Dragon Cargo**



**Dragon Crew**













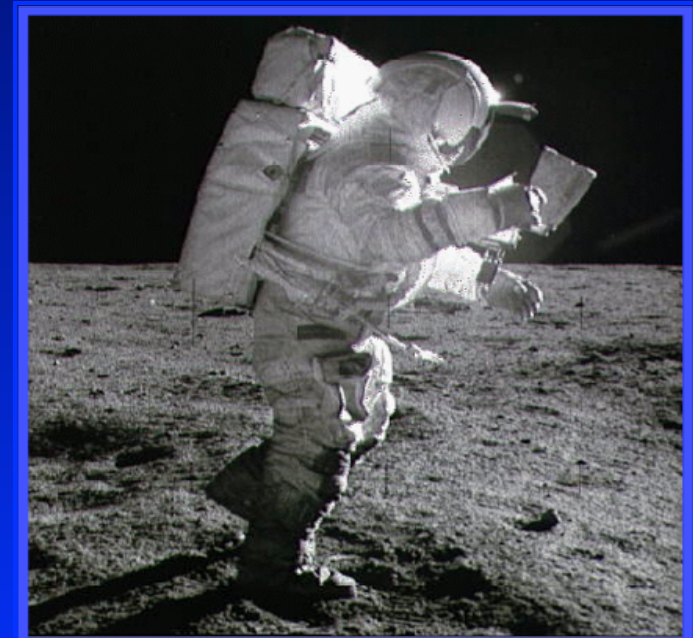
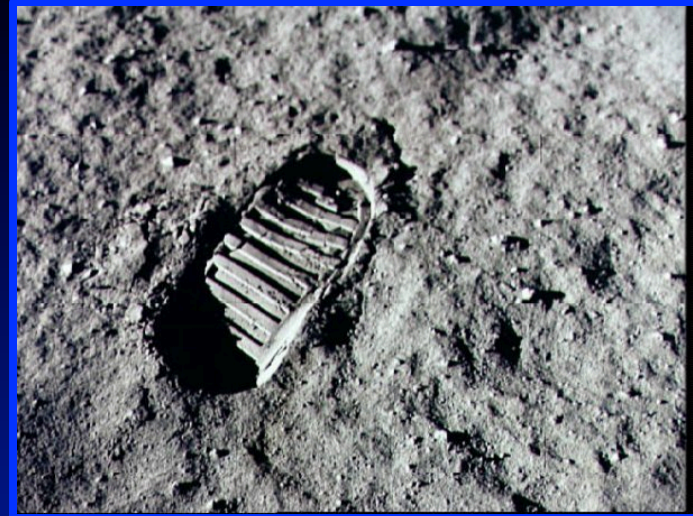














# Google \$30M Lunar X PRIZE

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..







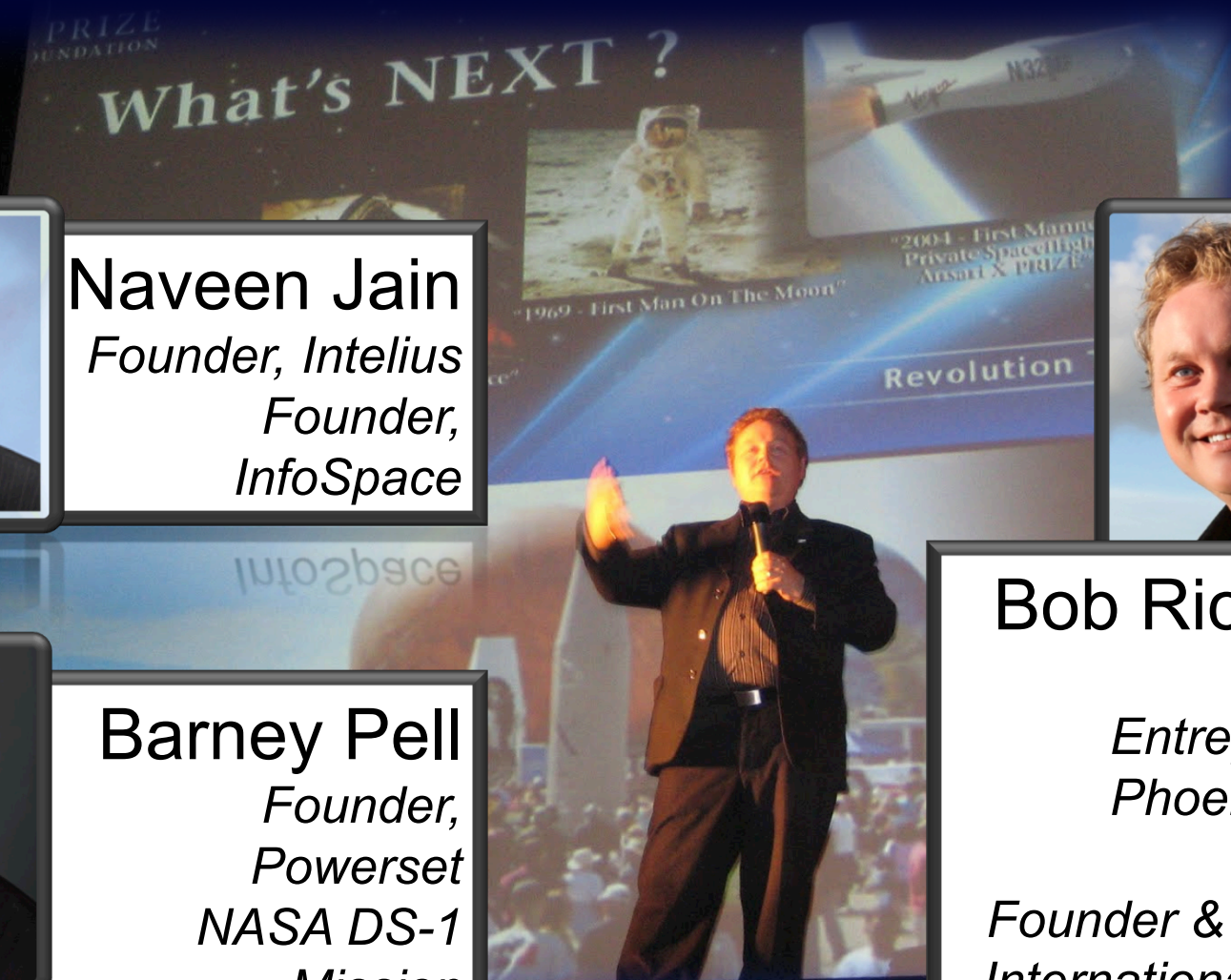
**Naveen Jain**  
*Founder, Intelius*  
*Founder,*  
*InfoSpace*



**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**

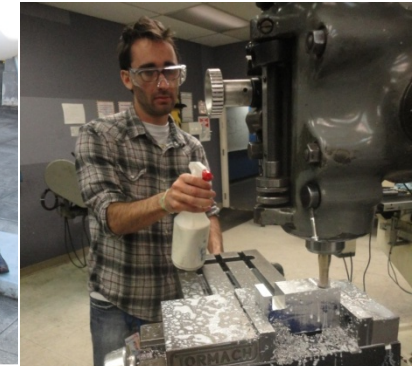
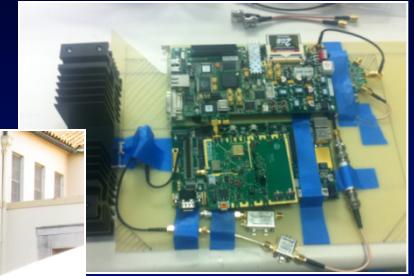


**“Area 45”  
Hover Test  
Facility &  
Lander Test  
Vehicle**

**MoonEx  
Perm HQ**

**“McMoon”  
Lunar  
Orbiter  
Image  
Recovery  
Project**







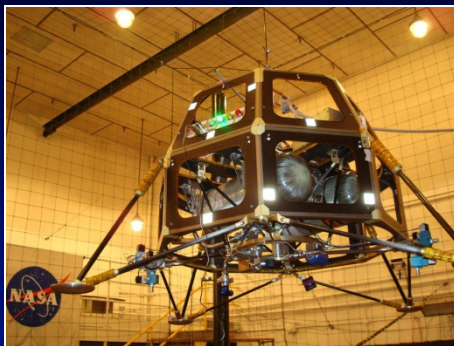


# THE MOONEX SCIENCE ADVISORY BOARD

| Individual                          | Category                                      |
|-------------------------------------|---|
| Alan Stern, Chair/ME                | Planetary Scientist and<br>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<br>Expert       |



Hover testing  
the Common  
Spacecraft Bus  
lander  
prototype



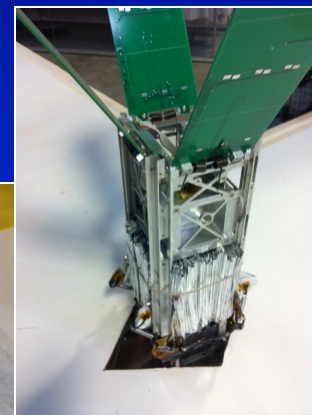
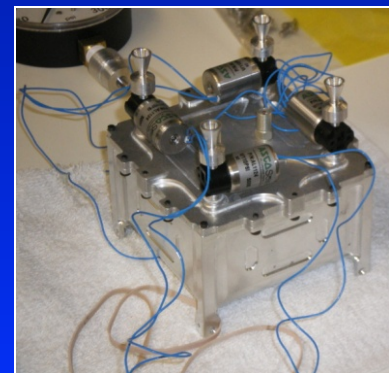
Recommissioning  
Hover Test Vehicle  
& Facility



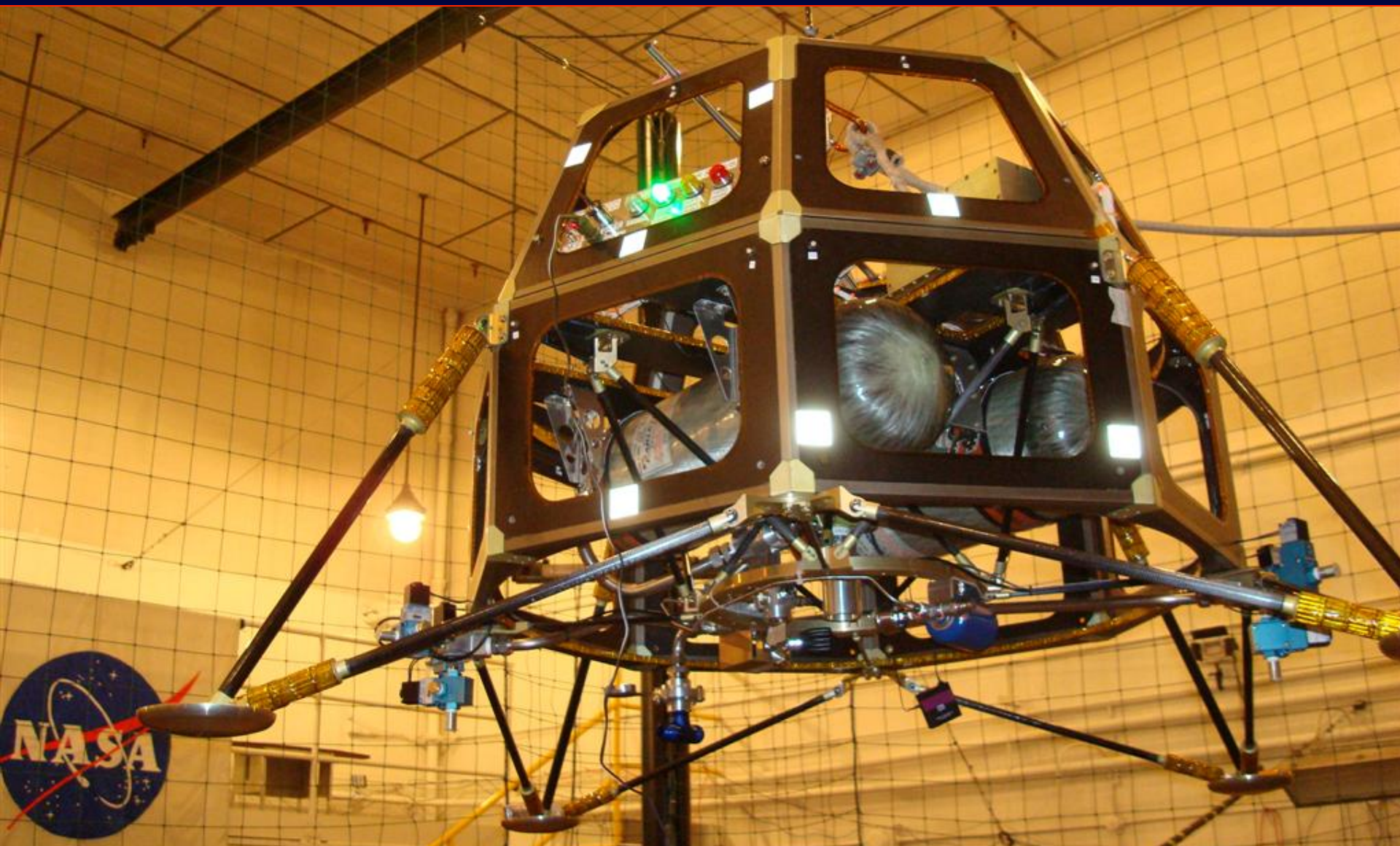
Miniature  
landing  
radar  
development &  
test



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.)

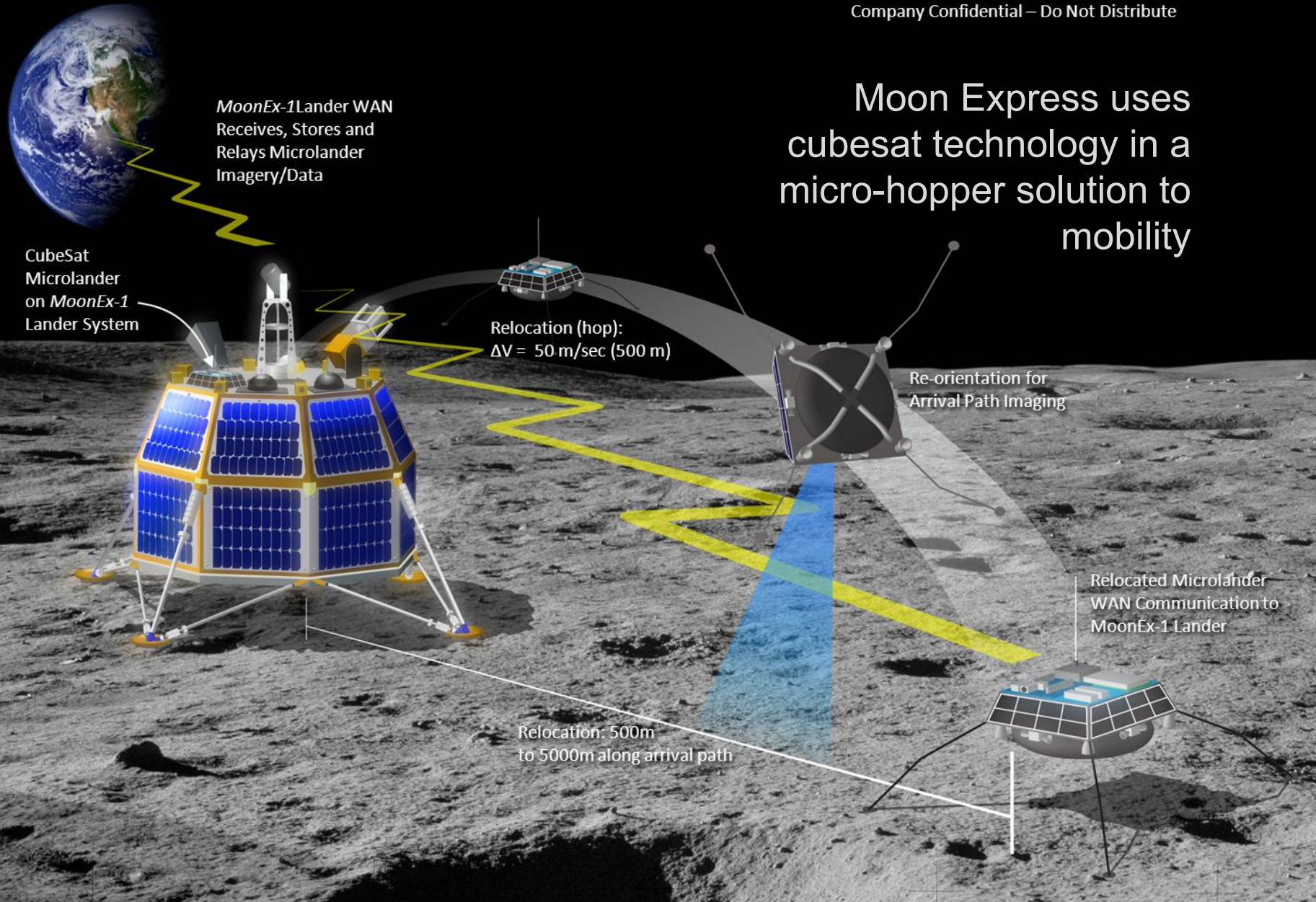


# 1<sup>st</sup> Private Moon Landing

MOON·EX

Company Confidential – Do Not Distribute

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

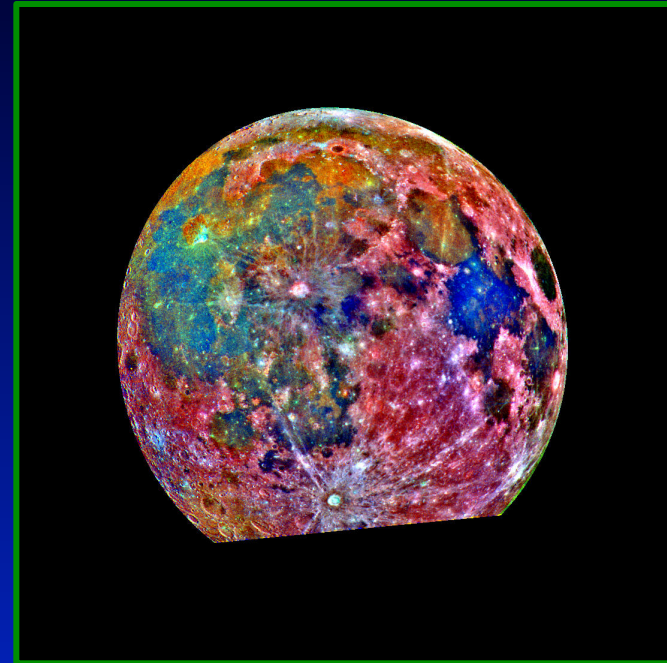






# HOSTED PAYLOADS SCIENCE APPLICATIONS:

- ✓ LUNAR GEOPHYSICS
- ✓ LUNAR GEOCHEMISTRY
- ✓ LUNAR ATMOSPHERE
- ✓ ISRU DEMOS
- ✓ TECH DEMOS
- ✓ EPO PAYLOADS
- ✓ APP DEMOS (E.G., ASTRONOMY)
- ✓ SOON: A POTENTIAL NEW ILN.

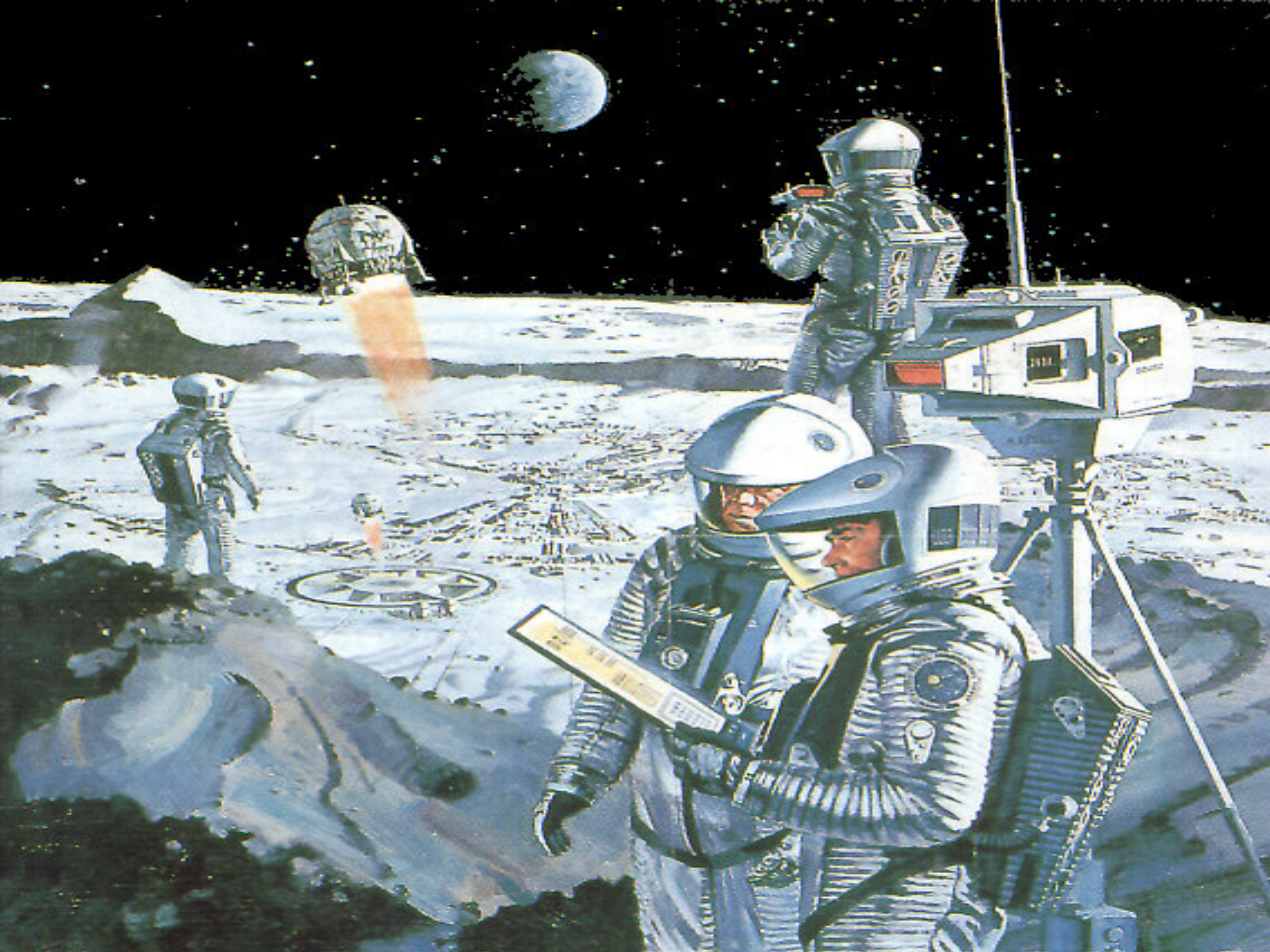




# MINING PGEs

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



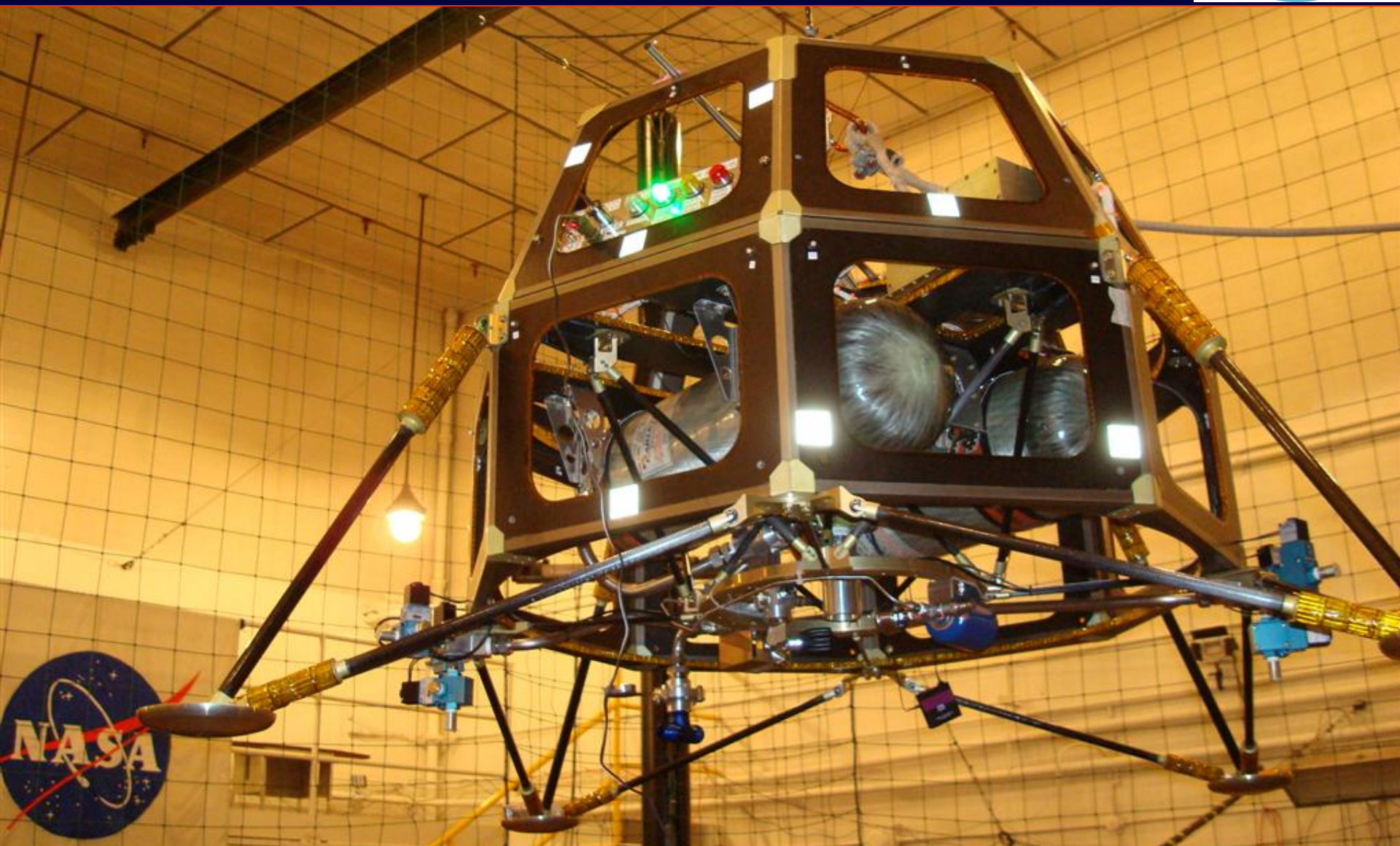




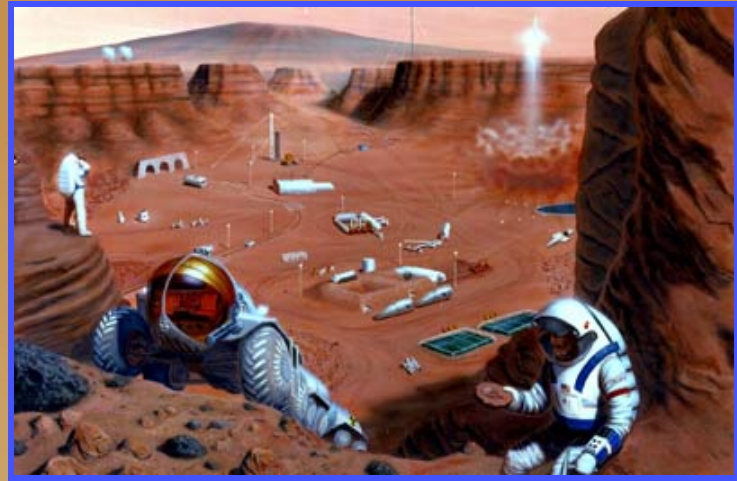
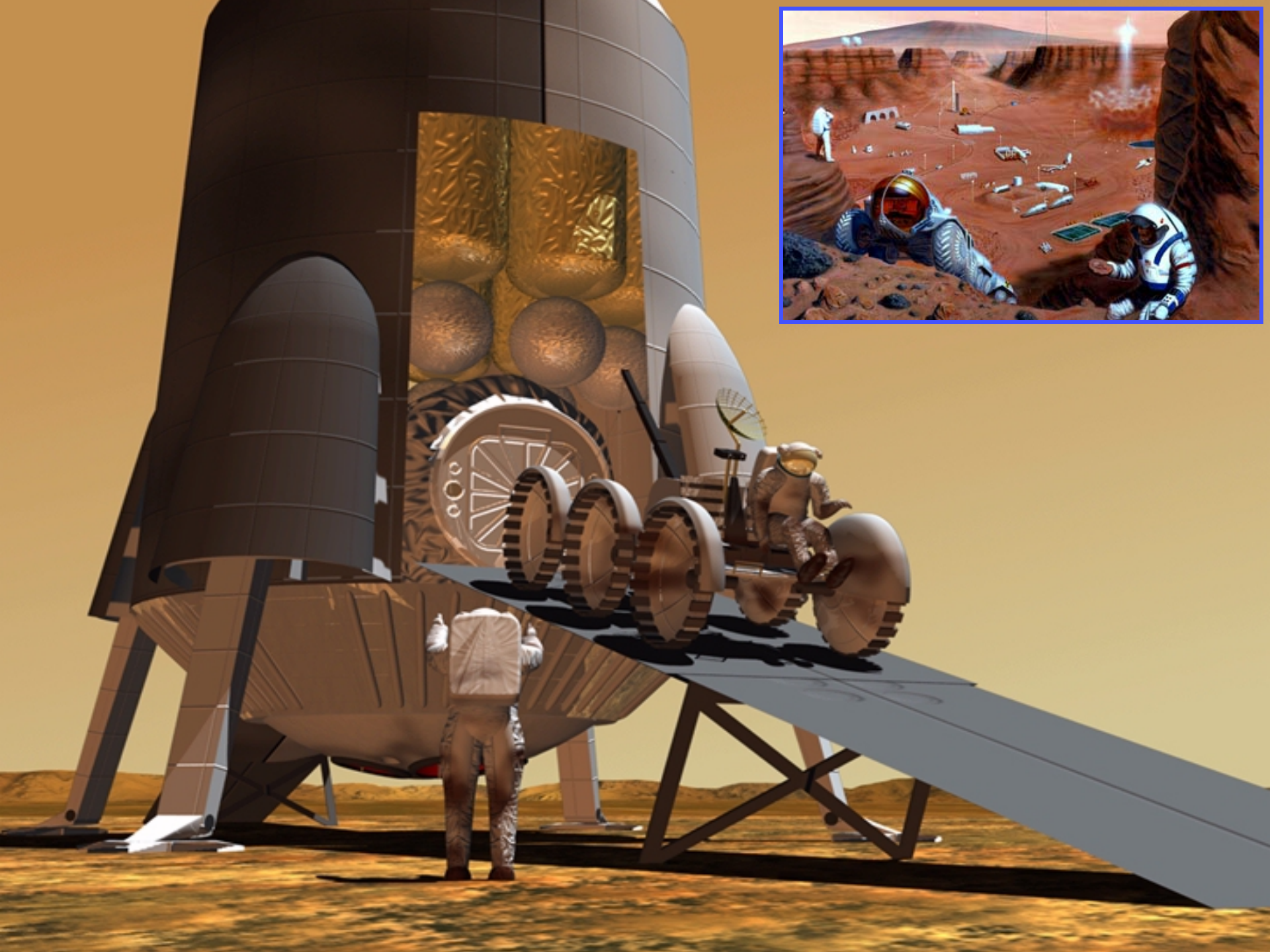


















# BACKUP CHARTS

