

Astrobotic Technology Inc.

Robotic precursors to build a lunar data library

David Gump
President

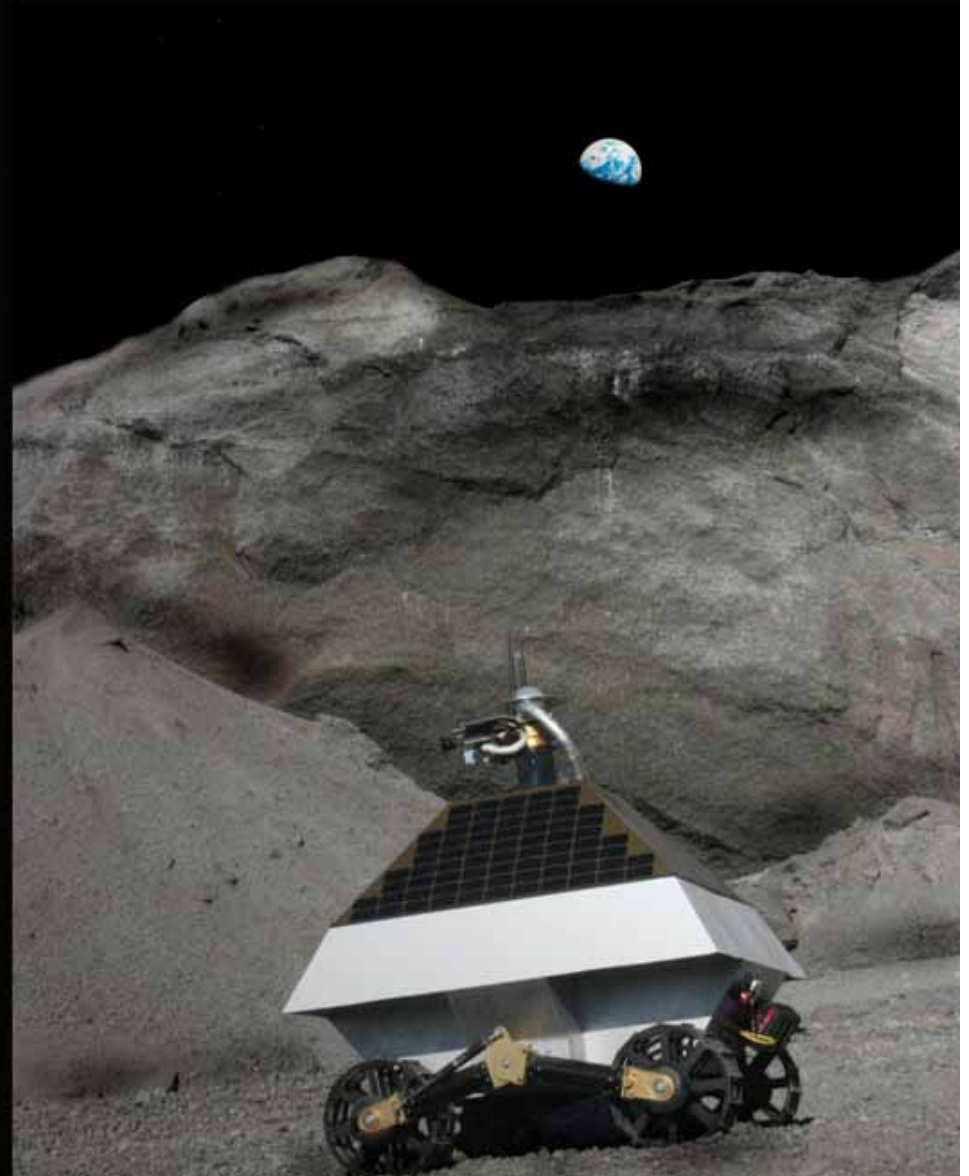


Proposed role for commercial participation

Small robotic precursors
match **need** to **ability**

Need: Ground truth now
while large government
projects are in their
design phases

Ability: Commercial
firms can execute small
robotic missions quickly
enough to be useful



Data licensing for lowest cost to customers

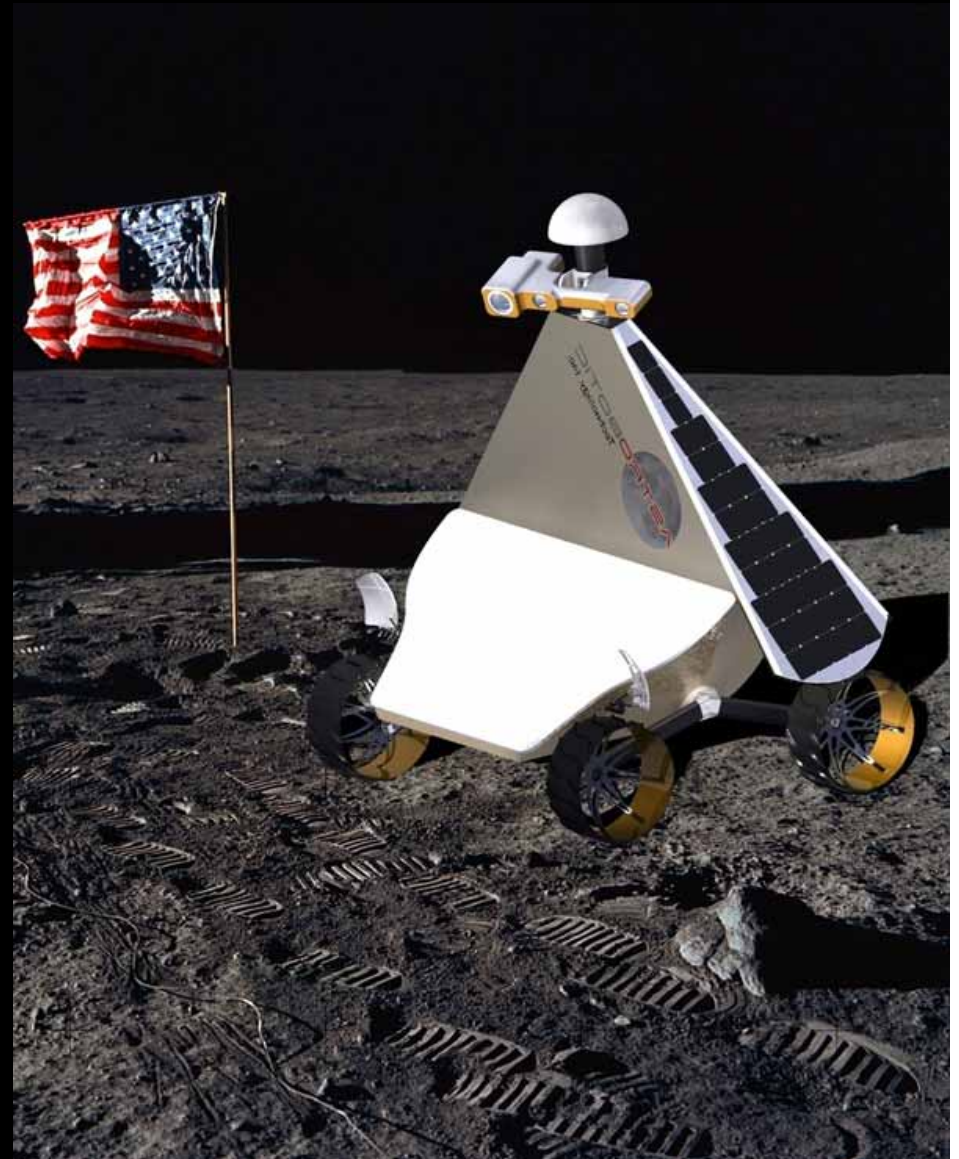
Astrobotic will build a library of key lunar data

- ▶ Early data reduces risk
- ▶ Licensing spreads the cost among customers

Expanded space funding

- ▶ Television networks pay for media content
- ▶ Sponsors pay for links **and** increase public participation

Google
LUNAR X PRIZE



Astrobotic exploits university expertise



A world leader
in intelligent
mobile robots

Carnegie Mellon

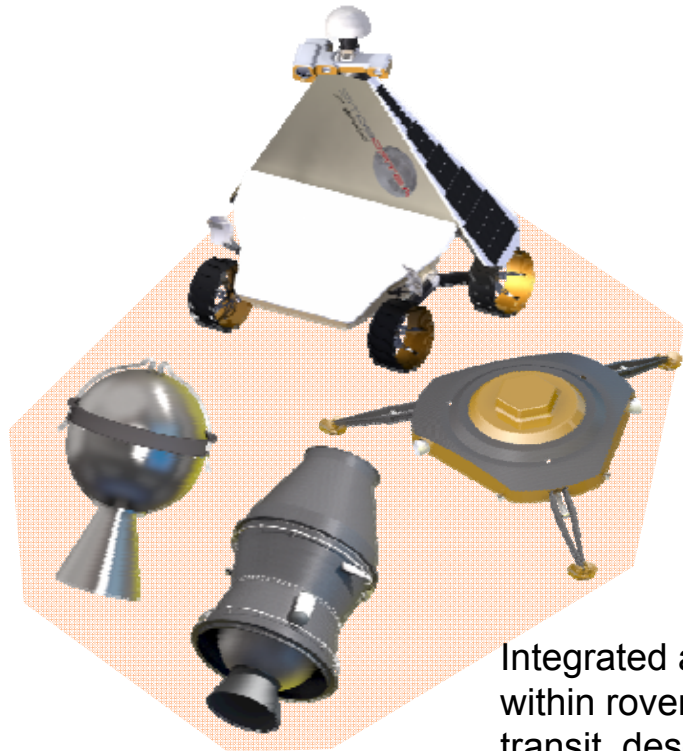


UA contributes space mission experience

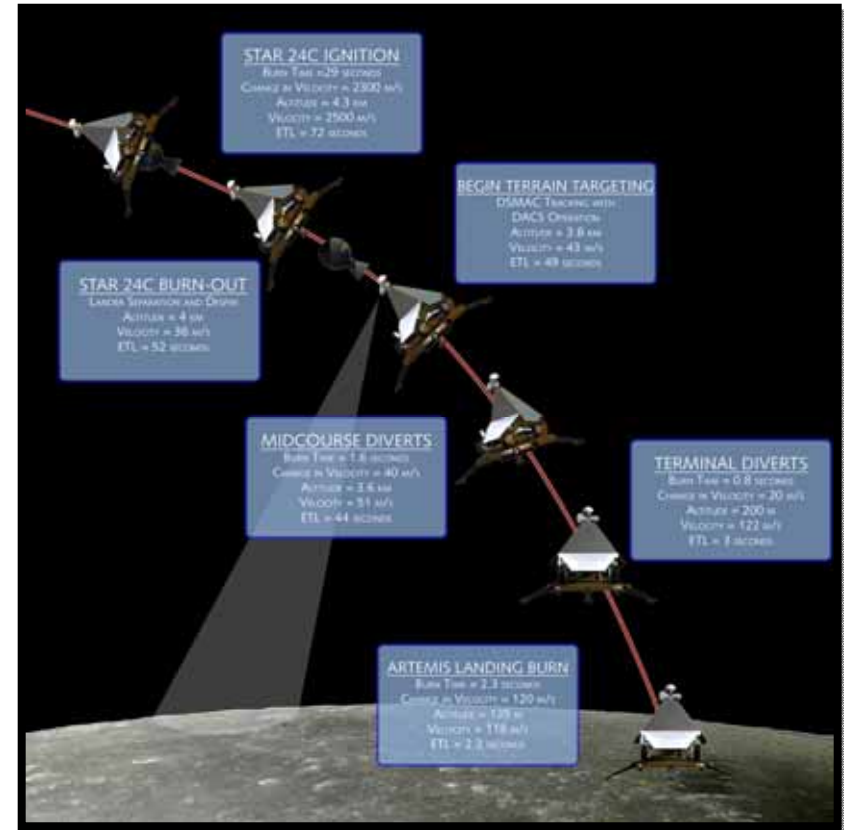




Rover-centric Design Includes Raytheon's Tech



Integrated avionics within rover control transit, descent and surface ops



Raytheon

High precision propulsion systems

- Investment by Raytheon & customers in the hundreds of millions of dollars

Multi-year development of lunar lander technology



Video: field testing

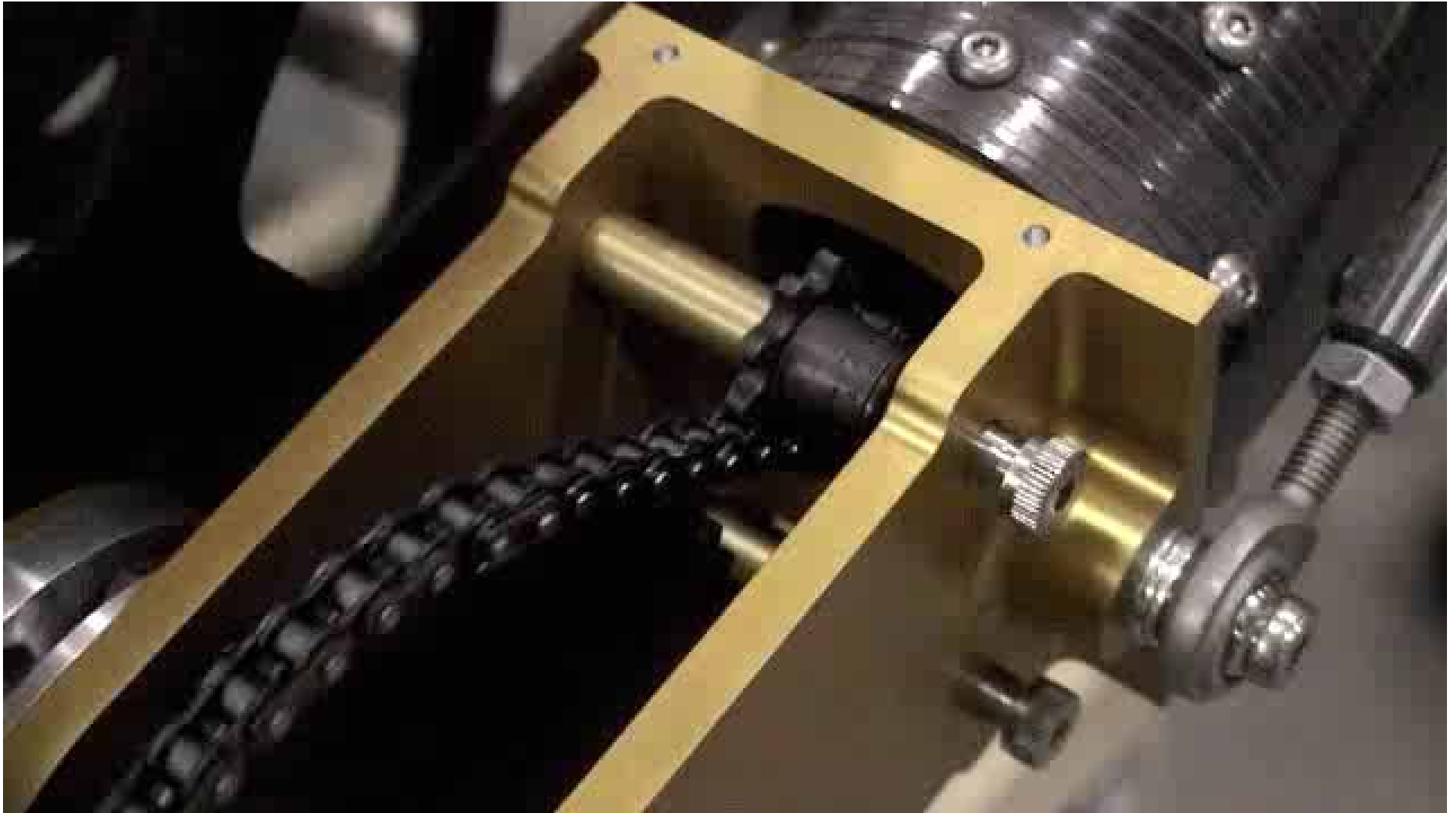


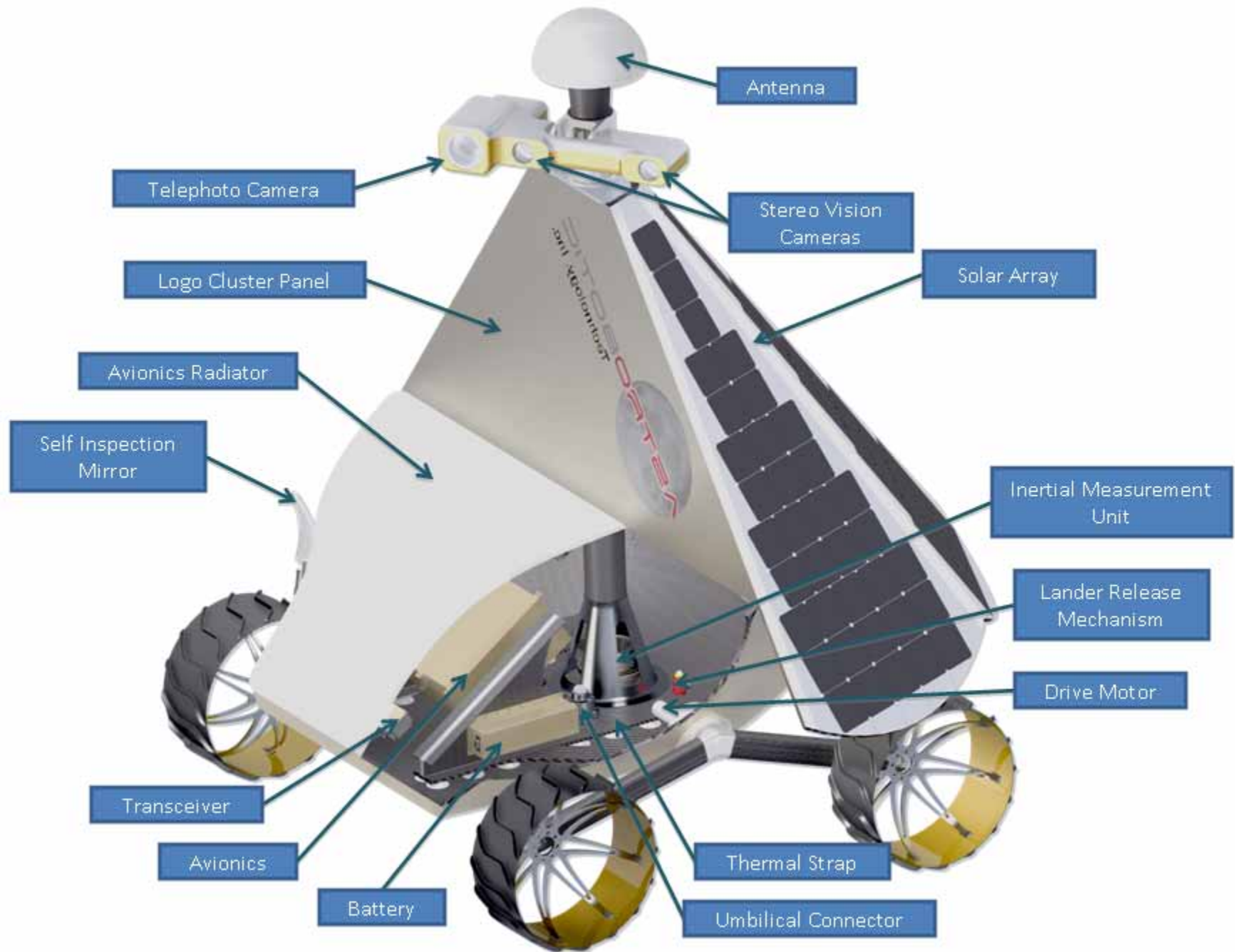
Trek development: Wheel tests in lunar simulant



Wheel and drive train are being run tens of kilometers in simulated lunar soil using counterweighted boom to mimic one-sixth gravity of the Moon

Video: traction testing





TranquilityTrek™

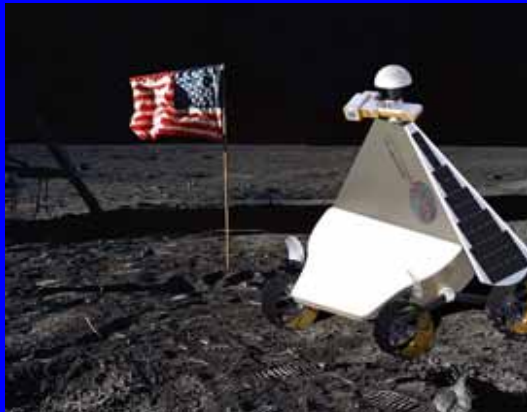
**Launches from Cape Canaveral,
lands on Sea of Tranquility**

Wins the \$20M Google prize

Explores Apollo 11 **in HD
and roams for two weeks**

**Sponsors featured on global
TV and Web programming**

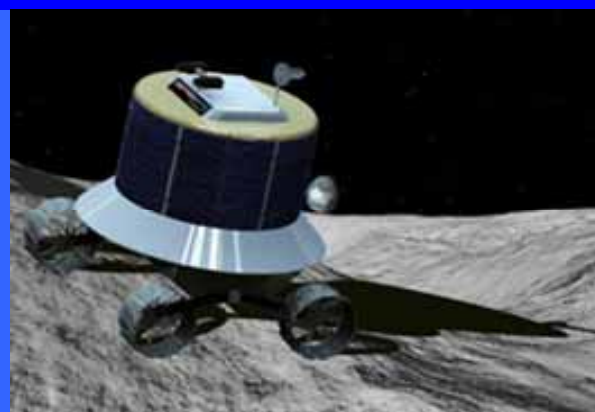




Tranquility Trek

Win X Prize, visit Apollo 11

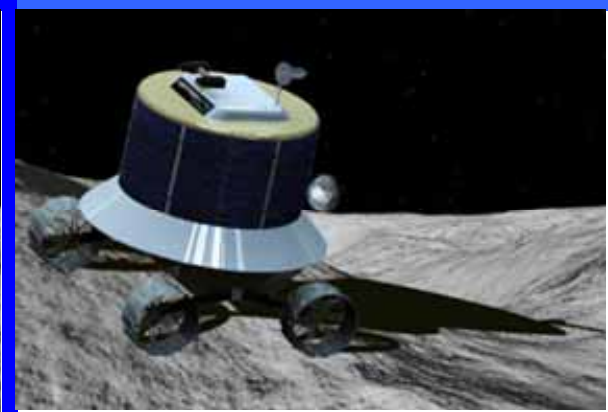
Q2 - 2010



South Pole Scout

Shackleton Crater Rim

Q3 - 2011



North Pole Scout

TBD Crater Rim

Q1 - 2012



ILN Precursor

Shackleton Crater Rim

Q3 - 2012



Ice Surveyor

Shackleton Crater Floor

Q2 - 2013



Moon Dozer

Shackleton Crater

Q3 - 2013

Astrobotic's Commercial Alternative

	Astrobotic	Traditional
Cost Per Mission	\$90 - \$110M	\$300M - \$1B
Price Per Data Set (several sensors per mission)	\$5 - \$20M Several customers buy individual licenses	\$30 - \$80M One space agency pays mission cost
Risk (to customer)	0% Data already collected	10% - 15% Launch and landing; sensor malfunction

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