

KARI Space Exploration Update



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Korea's First Space Exploration Mission



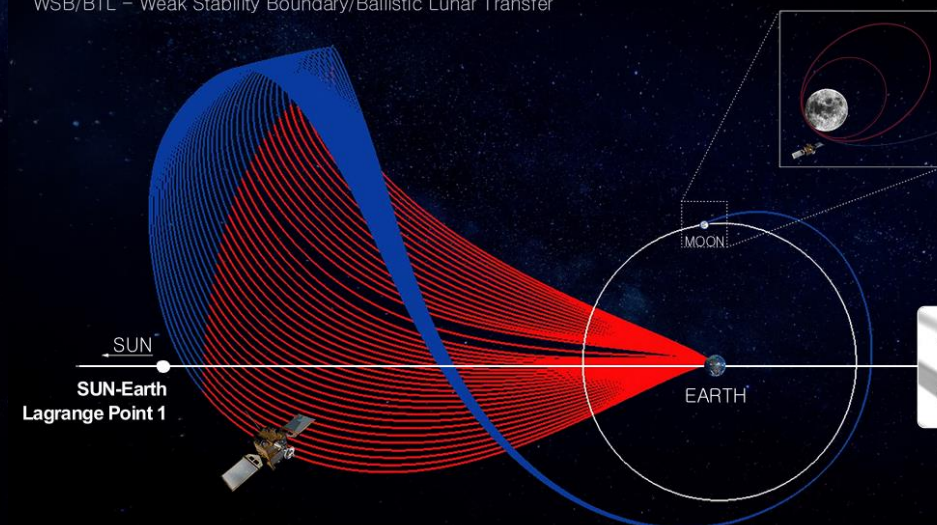
KPLO – Korea Pathfinder Lunar Orbiter / Danuri

- Total Launch Mass: 678kg
- Mission Life : 1 Year
- Lunar Polar Orbit (100km)

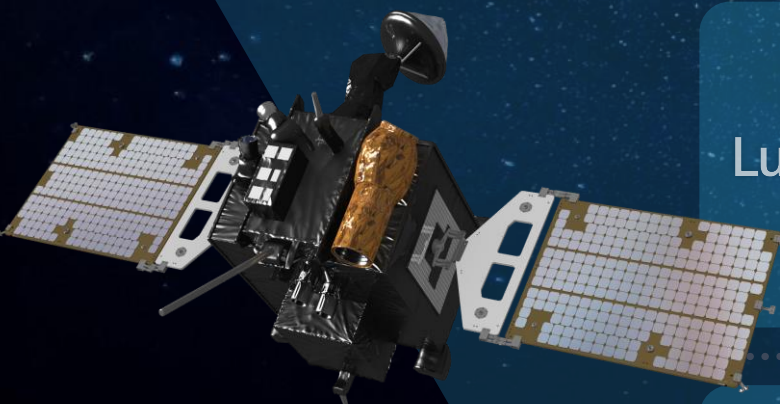
- ① Launch - August 5 (KST)
- ② WSB/BLT trajectory insertion
- ③ 1st trajectory correction maneuver – August 7
- ④ 2nd trajectory correction maneuver – September 2
- ⑤ 3rd trajectory correction maneuver – November 18
- ⑥ Lunar Orbit Insertion – December 17

Journey of KPLO to the moon (WSB/BLT trajectory)

WSB/BLT – Weak Stability Boundary/Ballistic Lunar Transfer



KPLO Payloads & NASA Partnership



Lunar Terrain Imager
(LUTI)



Korea Astronomy and
Space Science Institute

Wide-Angle
Polarimetric Camera
(PolCam)



Korea Institute of Geoscience
and Mineral Resources

KPLO Gamma Ray
Spectrometer
(KGRS)



KYUNG HEE
UNIVERSITY

KPLO Magnetometer
(KMAG)



Electronics and Telecommunications
Research Institute

KPLO Delay Tolerant
Network Experiment
Payload (DTNPL)



Arizona State
University

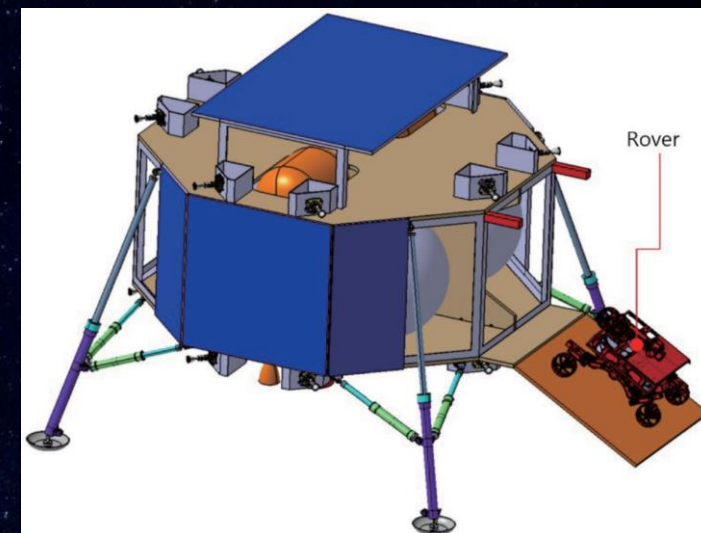
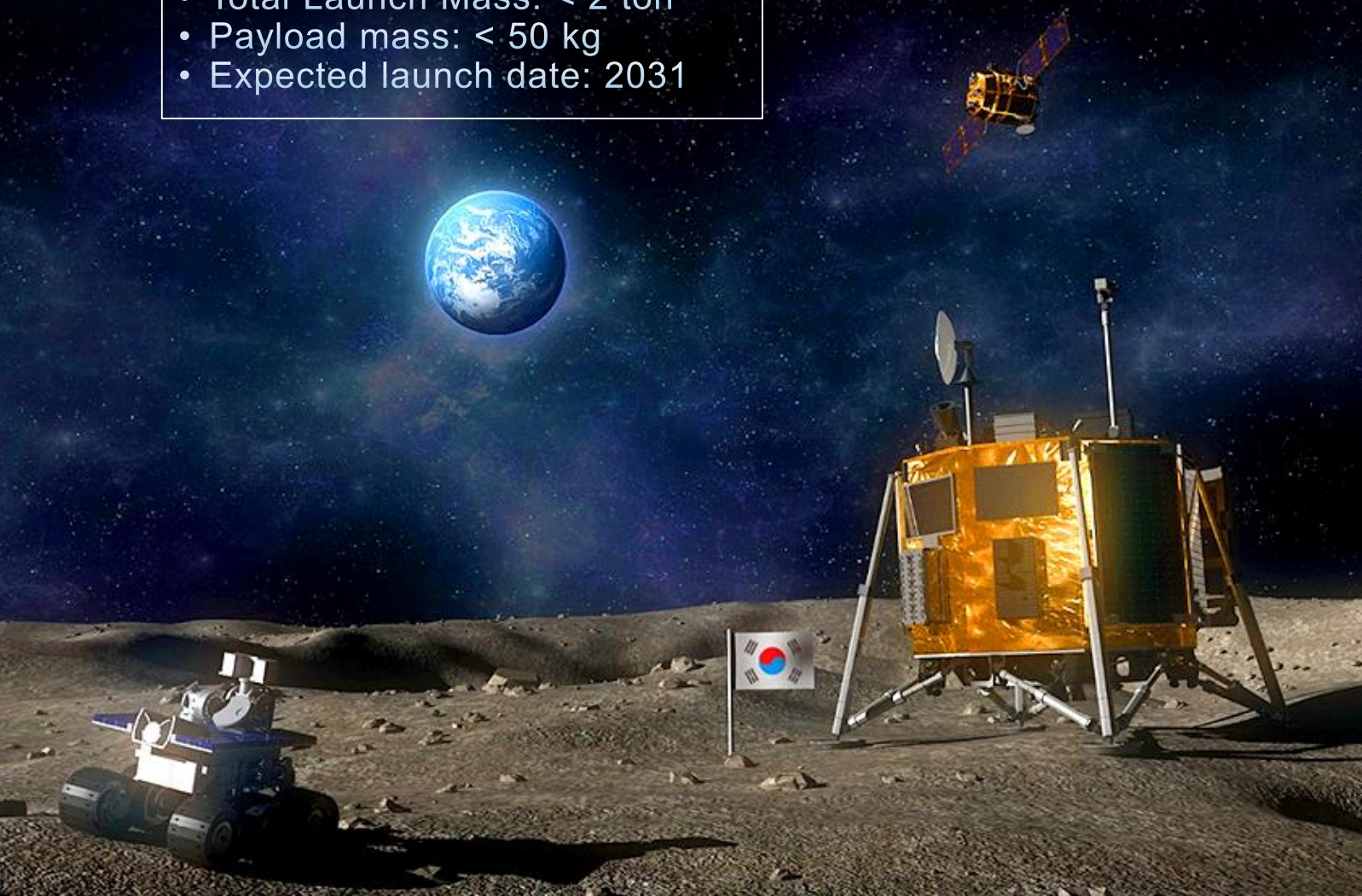


ShadowCam



Next Step – Korea Lunar Lander

- Total Launch Mass: < 2 ton
- Payload mass: < 50 kg
- Expected launch date: 2031



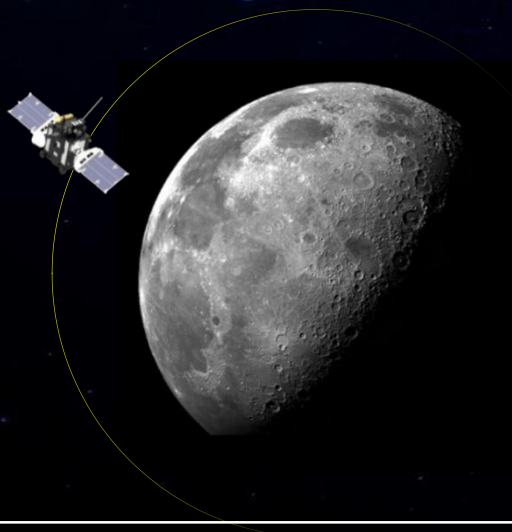
- Precise Soft Landing with Hazard Avoidance
- Payload/Instruments
 - Rover
 - RTG
 - Lunar Science
 - ISRU Tech Demo



The 3rd Space Development Promotion Basic Plan (2018)

Phase I (2022)

Lunar Orbiter



Phase II (Early 2030s)

Lunar Lander & Rover



Phase III (by 2035)

Asteroid & Deep Space Mission



An updated plan will be released by the end of the year

ISECG Emerging Space Agency Working Group



◆ ISECG Overview

- International Space Exploration Coordination Group
- ISECG agencies work collectively in a non-binding, consensus-driven manner towards advancing the Global Exploration Strategy
- Now 27 space agencies

◆ Establishment of Working Group

- Increased participation by emerging space agencies
- To accommodate needs and perspectives of emerging agencies in ISECG activities
- started as a Tiger Team in late 2020, became a permanent Working Group in April 2021

◆ Current Status of Working Group

- Members: AEB(Brazil), AEM(Mexico), ASA(Australia), CSA(Canada), ESA(Europe), GISTDA (Thailand), KARI(Korea), LSA(Luxembourg), POLSA(Poland), PTSPACE(Portugal), ROSA(Romania), NASA(U.S.A.)
- Initial focus is on information sharing on each agency's activities to identify common interests and areas of potential collaboration
- will facilitate interactions among emerging agencies, between emerging and established agencies, and contribute to ISECG products from emerging agencies perspectives



Thank you

