

The logo for the Lunar Exploration Analysis Group (LEAG) features the letters 'LEAG' in a bold, sans-serif font. A stylized white rocket trail starts from the bottom right and curves upwards, ending in a white arrowhead that points to the letter 'A'. The logo is set against a dark blue circular background with a lighter blue border.

LEAG

The background of the slide is a dark space scene. A large, detailed Earth is visible in the center, showing its continents and oceans. To the left, a portion of the Moon's surface is visible, showing its craters. The background is filled with numerous stars of various colors, including yellow, orange, and red. A blue circular border frames the central content.

Lunar Exploration Analysis Group  
Updates and Action Requests  
*March 2024 Lightning Edition*

Dr. Benjamin Greenhagen, LEAG Chair

Presented to NASA Planetary Advisory Committee

5 March 2024



# Sample priority within the Architecture Definition Document (ADD) in collection, transport, and analysis *in situ* and on Earth

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- **The Lunar community continues to express concern over sample mass, sample transit conditions, and curation. LEAG and ExMAG have responded to NASA's request for a Sample Specific Action Team (SAT) to examine curation and data infrastructure, but it may not address all needs.**
  - The LEAG ExMAG Joint SAT does not explicitly examine funding needs.
  - Technology development may be needed to enable curation and promote analyses described in the ADD. **Will ESDMD include this as a necessary item in the ADD? Or does this fall to SMD working with STMD?**
  - To fully address some goals/objectives, the community needs to do more than identify, collect, document, and return samples. **Where does the analysis on Earth fit in to complete addressing these goals/objectives?**
  - ADD guides architecting from the right, but sample mass allotted in Orion appears to contradict this, especially for transporting cold-conditioned samples, whose freezer is a significant mass. **Is the allotted sample mass enough to address the goals?**
  - LEAG supports a trade study to examine the use of uncrewed sample return vehicles to increase the mass of samples returned by the Artemis missions.
- **LEAG requests action to ensure SMD and ESDMD are coordinating to ensure support through to the completion of the goals and objectives.**



# LEAG Activities and Updates

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- **Annual Meeting Findings (presented to PAC in November 2023) are online now**
- **LEAG thanks NASA for facilitating the development of rubrics for inclusion plans, which closes a finding from our 2023 Annual Meeting.**
- **Draft Implementation Plan for a NASA Integrated Lunar Science Strategy in the Artemis Era**
  - Detailed LEAG feedback provided in December 2023
- **LEAG Lunar Science Goals**
  - Activity is underway, all subcommittees are filled, meeting regularly, aiming for summer release
- **LSSW 22: Science Enabled by the Artemis Base Camp (April 3, 2024)**
  - LEAG is supporting the workshop and will organize community white papers
- **LEAG ExComm Community Meetings**
  - January 2024 – MEPAG Mars human science objectives
  - February 2024 – Lunar Exploration and Science Orbiter (LExSO)
- **LEAG values continued planetary science community support for the Decadal Survey science priorities, including (but not limited to) those attributed to LDEP**



# Additional LEAG Slides for the PAC

- *Updated LEAG Executive Committee*
- *Supporting International Lunar Year*
- *Coordination with other AGs: Joint LEAG-ExMAG SAT & Working with MEPAG on M2M*

# Updated LEAG Executive Committee (March 2024)

<b>Chair</b>	Benjamin Greenhagen, JHU APL
<b>Emeritus Chair</b>	Amy Fagan, Western Carolina Univ.
<b>Science</b>	Timothy Glotch, Stony Brook Univ.
<b>Human Exploration</b>	Jacob Richardson, NASA GSFC
<b>Technology</b>	Jose Hurtado, Univ. of Texas, El Paso
<b>Astrophysics Liaison</b>	Nivedita Mahesh, California Institute of Technology
<b>Equity, Diversity, &amp; Inclusion</b>	Alexandra Matiella Novak, JHU APL
<b>Operations</b>	Lauren Jozwiak, JHU APL
<b>Strategic Roadmap</b>	< vacant for FY24 >
<b>Workforce Development</b>	Tabb Prissel, NASA JSC
<b>At-Large Member</b>	Kerri Donaldson Hanna, Univ. Central Florida
<b>At-Large Member</b>	Erica Jawin, Smithsonian Institute
<b>At-Large Member</b>	Sarah Valencia, NASA GSFC
<b>Chair, CAB</b>	Stephen Indyk, Honeybee Robotics

**Ex Officio Members**  
Sarah Noble, NASA SMD  
Jacob Bleacher, NASA ESDMD  
< vacant >, NASA STMD  
Gregory Schmidt, SSERVI

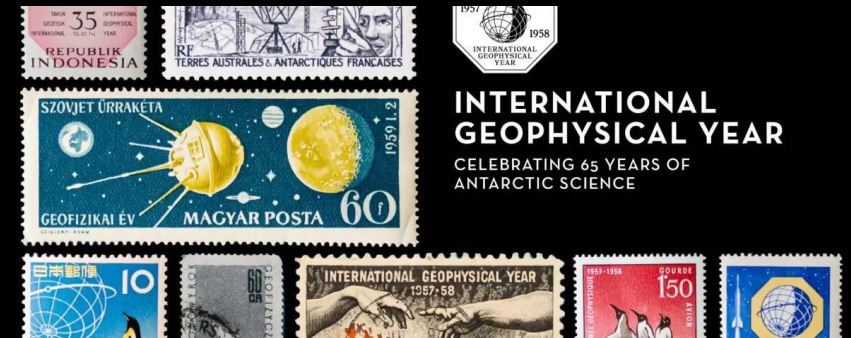
# LEAG is Helping the Community Organize an International Lunar Year Towards the End of this Decade

- **LEAG has formed a community coordination group (30+ institutions) to help communicate and align activities**
  - Meeting at LPSC (March 23th, 5pm CT)
- **An ILY during the timeframe 2027-2030 could:**
  - Prompt new multilateral coordination relevant to enduring human and robotic presence at the Moon
  - Promote long-term safety and sustainability in exploration and utilization activities at the Moon
  - Foster coordination between scientific, educational, and commercial space communities
  - Promote communication and coordination between operators in Cislunar space
- **ILY requires a concerted, grassroots effort from the lunar science and exploration communities to get off the ground**

For more info contact either:

LEAG ILY Lead, Erica Jawin ([JawinE@si.edu](mailto:JawinE@si.edu))

LEAG Chair, Ben Greenhagen ([Benjamin.Greenhagen@jhuapl.edu](mailto:Benjamin.Greenhagen@jhuapl.edu))



Intent is to model after successful past Science Years, such as the IGY 1957-58



Community  
Sign-up Form



# LEAG is Coordinating with other AGs: Joint LEAG-ExMAG SAT & Working with MEPAG on M2M

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- **Joint LEAG-ExMAG SAT will examine three main topics: (1) Volatile Samples and Cold Curation, (2) Nominal Samples, and (3) Sample Data Infrastructure**
  - Three LEAG ExComm Members are Supporting: Sarah Valencia (Nominal Samples, Vice Chair), Tim Glotch (Sample Data Infrastructure, Vice-Chair), Amy Fagan (Ex Officio)
  - Vice Chairs are supported in their topics by four members of the community and a graduate student executive summary
- **LEAG and MEPAG are investigating ways improve coordination given the alignment of our communities through the Moon to Mars Architecture**
  - MEPAG provided the LEAG ExComm with a briefing of their recent Mars science objectives for human exploration tiger team (January 2024)
  - Lessons-learned from the well-established Mars Science Goals process are feeding into a lunar science goals process to be kicked off in December 2023
  - MEPAG and LEAG both attended the M2M workshop and are exploring opportunities to coordinate feedback to the annual M2M ADD review cycle