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Lunar Exploration Analysis Group (LEAG)

<http://www.lpi.usra.edu/leag/>



Community Meeting,
38th Lunar & Planetary Science Conference.



Clive R. Neal
University of Notre Dame



Lunar Exploration Analysis Group (LEAG)



- Community based, interdisciplinary forum.
- Analyzes scientific, engineering, technology, and operational issues associated with lunar exploration to support the Vision for Space Exploration.
- Not limited to science—covers exploration activities, science, resource utilization, and commerce.



Lunar Exploration Strategy Objectives



Basic Science (Astronomy and Astrophysics; Heliophysics; Earth Observation; Lunar Geology; Environmental Characterization)

Applied Science (Lunar Resource ISRU; Materials Science)

Human Health and Biology (Human Health; Life Support and Habitation; Operations Environment Monitoring; Environmental Hazard Mitigation).

Infrastructure (Power; Communication; Guidance, Navigation and Control; Surface Mobility; Transportation; General Infrastructure; Crew Activity Support; Operations Test & Verification).



Commerce (Development of Lunar Commerce; Commercial Opportunities).

Other (Historic Preservation; Global Partnerships; Public Engagement; Program Execution).

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The LEAG Charter

The Lunar Exploration Analysis Group (LEAG) is responsible for analyzing scientific, technical, commercial, and operational issues associated with lunar exploration in response to requests by NASA.

The LEAG serves as a community-based, interdisciplinary forum for analysis in support of lunar exploration objectives and of their implications for lunar architecture planning and activity prioritization and for future exploration.

It provides findings of analyses to NASA through the NASA Advisory Council within which the LEAG Chair is a member of the Planetary Science Subcommittee.



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The LEAG Charter



To carry out its role, the LEAG will:

- Provide findings, analysis, and other information that can be used to inform decisions on the science, technology, commercial, and operational content and priorities of lunar robotic and human missions.
- Provide a regular forum for broad discussion of lunar exploration science, technology, commerce, and operational issues, which will allow a conduit for community input into lunar exploration activities and planning.



The LEAG Charter



- Perform focused analyses in response to requests from the Exploration Systems Mission Directorate (ESMD), the Science Mission Directorate (SMD), the Space Operations Mission Directorate (SOMD), or the Committees of the Council.



- Coordinate analyses that involve both the Moon and Mars with the Mars Exploration Program Analysis Group (MEPAG).

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LEAG Executive Committee



Chair: **Clive Neal, Notre Dame**

Vice-Chair: **Charles Shearer, New Mexico**

Previous Chair: **Jeff Taylor, U. Hawaii**

ESMD Rep. (Exec. Sec.): **Michael Wargo, NASA-HQ**

SMD Rep. **Kelly Snook, NASA-HQ**

SOMD Rep. **Michelle Gates, NASA-HQ**



Community Liaison: **Steve Mackwell, LPI**

ISRU: **Jerry Sanders, NASA-JSC**

Commercialization: **Paul Eckert, Boeing**

Lunar Exploration Analysis Group (LEAG)



First formal meeting, January, 2005

Examined issues surrounding human missions:

- Sorties vs single base;
- Role of Resource Utilization;
- Commercial involvement.

Studied robotic measurements and experiments; set rough priorities;

Developed list of technology demonstrations.

Specific Action Team: Nature of Second Lunar mission, March, 2005.

Specific Action Team: Science Activities and Site Selection, June-July, 2005.



LEAG Activities



- Co-sponsored “Space Resources Roundtable VII: LEAG Conference on Lunar Exploration”, October, 2005.
- **Specific Action Team:** Review of Plans Developed by the RLEP 2 Measurement Team, March, 2006.
- **LEAG_TOP-SAT:** Review of Themes and Objectives Phasing Document for Lunar Exploration Strategy, July, 2006.
- **LEAG_HAB-SAT:** To assess the relative importance and time phasing of objectives in relation to the theme of Human Habitation of the Moon, Oct. 12-13, 2006.



LEAG Activities

- LEAG_GEO-SAT: To assess the relative importance of geoscience objectives. Conducted via telecon/ e-mail, November 2006.

