



LUNAR SCIENCE 2010 FORUM

[Welcome](#) [Logistics](#) [Registration](#) [Agenda / Presentations](#) [Organizing Committee](#)
[Student Competition](#)


Diane Wooden

- ▶ [My account](#)
- ▶ [Edit abstract](#)
- ▶ [Log out](#)

[Home](#)

LCROSS: Volatiles and Exosphere Associated with a Permanently Shadowed Region in Cabeus

Posted May 3rd, 2010 by Diane Wooden

 [Printer-friendly version](#)

Author Names and Affiliations

First Name: Diane

Last Name: Wooden

Department: Planetary Systems Branch

Institution: NASA Ames Research Center

Address: NASA Ames Research Center, MS 245-3, Bldg 245 Rm 224

Country: United States

Email: Diane.H.Wooden@nasa.gov

Co-authors: Anthony Colaprete

Jennifer Heldmann

Kimberly Ennico

Mark Shirley

William Marshall

We discuss the volatile species in the LCROSS data set in addition to water that were observed by the LCROSS Shepherding Spacecraft before its own demise in the four minutes following the first impact by the Centaur. The stochastic nature of the temporal variations observed by the nadir-viewing near-Infrared spectrometer combined with the diversity of the volatile species suggests that these species were in situ in the permanently shadowed crater and were released by a combination of the centaur impact and the resulting warming of the regolith by the impact and ejecta debris blanket. Adding to this intrigue are the pre-impact observations by the UV-Visual spectrometer which reveal that the field-of-view into the permanently shadowed crater contains UV emission lines. The UV lines are clearly revealed once the descent of the shepherding spacecraft narrows the field-of-view of the UV-Vis spectrometer so as to exclude any surrounding bright terrain. Our

suggestion is that this emission comes from tenuous gases, i.e., there appears to be a potential association between the cold, permanently shadowed region and an exosphere.

Presenter Information

First Name: Diane
Middle Initial: H
Last Name: Wooden
Job Title: Astrophysicist
Affiliation: NASA Ames

Contact Information

Business Phone: 650-604-5522
Home Phone: (831) 234-9050
Fax: 650-604-6779
Email: Diane.H.Wooden@nasa.gov

Session chair:

Willing to chair a session

Presentation information

Topic: Other
Other topic:
LCROSS, Permanently Shadowed Regions (PSR)
Presentation preference: Oral Presentation
Student poster competition: Not enrolled in student poster competition.



Printer-friendly version



Send page by email



- ▶ Freedom of Information Act
- ▶ Budgets, Strategic Plans and Accountability Reports
- ▶ The President's Management Agenda
- ▶ NASA Privacy Statement, Disclaimer, and Accessibility Certification
- ▶ Inspector General Hotline
- ▶ Equal Employment Opportunity Data Posted Pursuant to the No Fear Act
- ▶ Information-Dissemination Priorities and Inventories



- ▶ Author/Curator: Joseph Minafra
- ▶ NASA Official: Greg Schmidt
- ▶ Contact NASA