Center for Lunar Science and Exploration E/PO

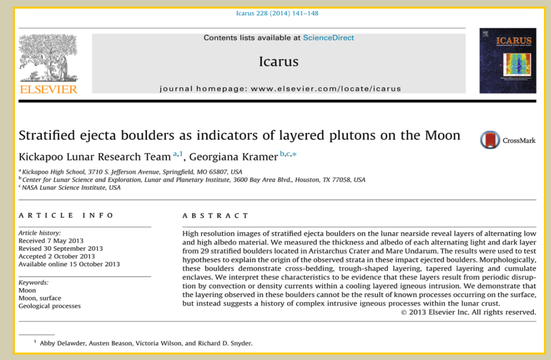
A. J. Shaner, S. S. Shipp, D. A. Kring
Lunar and Planetary Institute, Center for Lunar Science and Exploration
shaner@lpi.usra.edu

The LPI-JSC Center for Lunar Science and Exploration (CLSE) E/PO is leading a suite of exciting programs that strengthen the future science workforce, attract and retain students in STEM disciplines, and develop advocates for the exploration of the Moon and asteroids. Specific program efforts focus on the need for high school programs that highlight research experiences emphasizing the nature of science and scientific inquiry and inspire STEM career decisions, and materials for informal education venues to engage the public.

Exploration of the Moon and Asteroids by Secondary Students

The Exploration of the Moon and Asteroids by Secondary Students (ExMASS) program offers secondary students the opportunity to participate in authentic, data-rich, open-inquiry experiences. The program builds on the CLSE's highly successful High School Lunar Research Projects, a program run under the former NASA Lunar Science Institute. The ExMASS program strengthens the pipeline by articulating explicit paths from high school to higher education science studies.

Scientists with SSERVI teams are invited to participate in the ExMASS program as mentoring scientists or judges!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Stratified ejecta boulders as indicators of layered plutons on the Moon

Kickapoo Lunar Research Team [a,1], Georgiana Kramer [b,c,*]

[a] Kickapoo High School, 3710 S. Jefferson Avenue, Springfield, MO 65807, USA
[b] Center for Lunar Science and Exploration, Lunar and Planetary Institute, 3600 Bay Area Blvd., Houston, TX 77058, USA
[c] NASA Lunar Science Institute, USA

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ABSTRACT

High resolution images of stratified ejecta boulders on the lunar nearside reveal layers of alternating low and high albedo material. We measured the thickness and albedo of each alternating light and dark layer from 29 stratified boulders located in Aristarchus Crater and Mare Undarum. The results were used to test hypotheses to explain the origin of the observed strata in these impact ejected boulders. Morphologically, these boulders demonstrate cross-bedding, trough-shaped layering, tapered layering and cumulate enclaves. We interpret these characteristics to be evidence that these layers result from periodic disruption by convection or density currents within a cooling layered igneous intrusion. We demonstrate that the layering observed in these boulders cannot be the result of known processes occurring on the surface, but instead suggests a history of complex intrusive igneous processes within the lunar crust.

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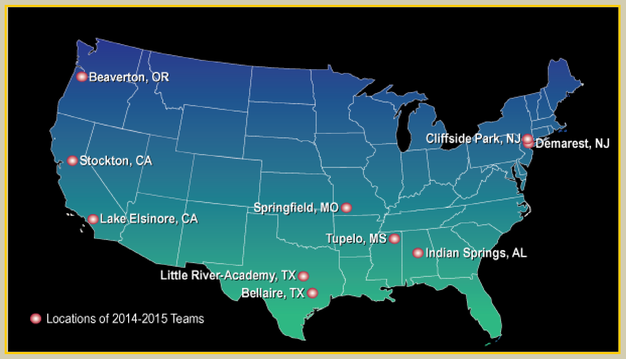
[1] Abby Delawder, Austen Beason, Victoria Wilson, and Richard D. Snyder.



Left: Student work from the 2011-2012 High School Lunar Research Projects was published in the January 2014 issue of Icarus.

Right: Locations of the 2014-2015 ExMASS teams.

CLSE traveling library exhibits have been displayed at over 40 public libraries across the country (left) and at the NASA Lunar Science Forum (right). Examples are also on display this week at the Exploration Science Forum.

Traveling Library Exhibits

Under NLSI, CLSE created seven traveling exhibits which share the excitement of lunar science and exploration with the public. Designed for public libraries which typically have limited space, each exhibit consists of three banners, each measuring approximately 3 feet wide by 8 feet tall. Under SSERVI, the CLSE E/PO team is creating two new asteroid traveling library exhibits to complement the team's current inventory of lunar exhibits.

Traveling exhibits are available for loan to SSERVI scientists' communities. Reserve one today to display at a local public library, possibly as part of a science night event!

Google Hangouts

In partnership with CosmoQuest, CLSE E/PO will conduct monthly Google Hangouts featuring members of the CLSE science team and other SSERVI science team members. These Google Hangouts will serve to engage the general public, increase advocacy for NASA science and exploration, and provide a means for the general public to enter the NASA pipeline.

Scientists with SSERVI teams are invited to be guests on a CLSE/CosmoQuest Google Hangout!

Public Observing Events

CLSE E/PO will host observing events to educate the public about SSERVI, SMD, and NASA science and exploration. These events are theme-based and include theme-aligned, hands-on learning activities for families, opportunities to interact with scientists, short public-focused presentations by scientists, and night sky viewing.

CLSE will distribute your team's materials at our public observing events!