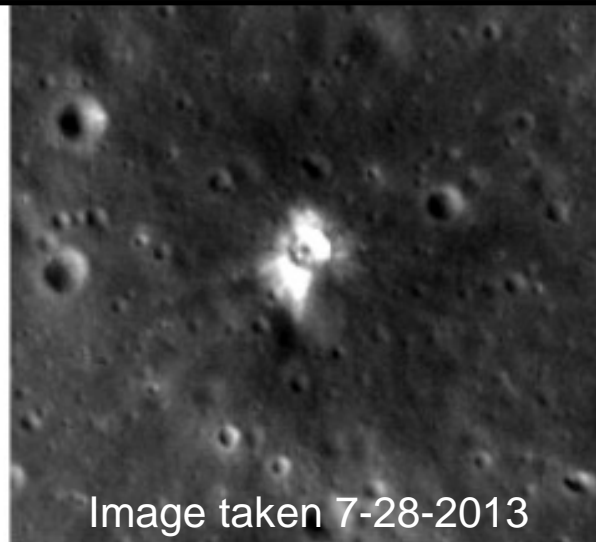


New Craters on the Moon: Watch Out!

Over 50 new craters have been identified by reimagining of the lunar surface by the Lunar Reconnaissance Orbiter Camera and the before and after pictures are providing new knowledge of the effects of small impact craters on the Moon.

- On March 17, 2013 the NASA Marshall Lunar Impact Monitoring Program observed a bright flash on the lunar surface, the largest impact they had observed, and high-resolution images from LRO found the source of the flash, a new 18.8 meter (62 ft) diameter crater (below).
- Ejected material and secondary craters have been identified as far as 30 kilometers from the crater, and provide new information about distribution of ejecta and the processes that modify the regolith of the Moon's surface. The top tens of cm are "mature" meaning that they have been subject to "gardening" by micrometeorite impacts, whereas the regolith is "immature" below 1m.

LRO Camera images taken months apart show evidence of the March 17, 2013 impact.



- The study of impacts through observations of new craters and ejecta patterns will inform strategies for planetary defense, including suggestions for breaking up large asteroids before terrestrial impact, however more data are needed to properly constrain the flux and size of meter scale objects entering the Earth-Moon system

Robinson, M., et al. (2015), *Icarus*.