

[International Space Fellowship](#)

Search

[Headlines](#)[News](#)[Forum](#)[Chat](#)[Calendar](#)[About](#)[Contact](#)[Posts](#)

[Comments](#)

Nasa LRO – The fractured floor of Compton

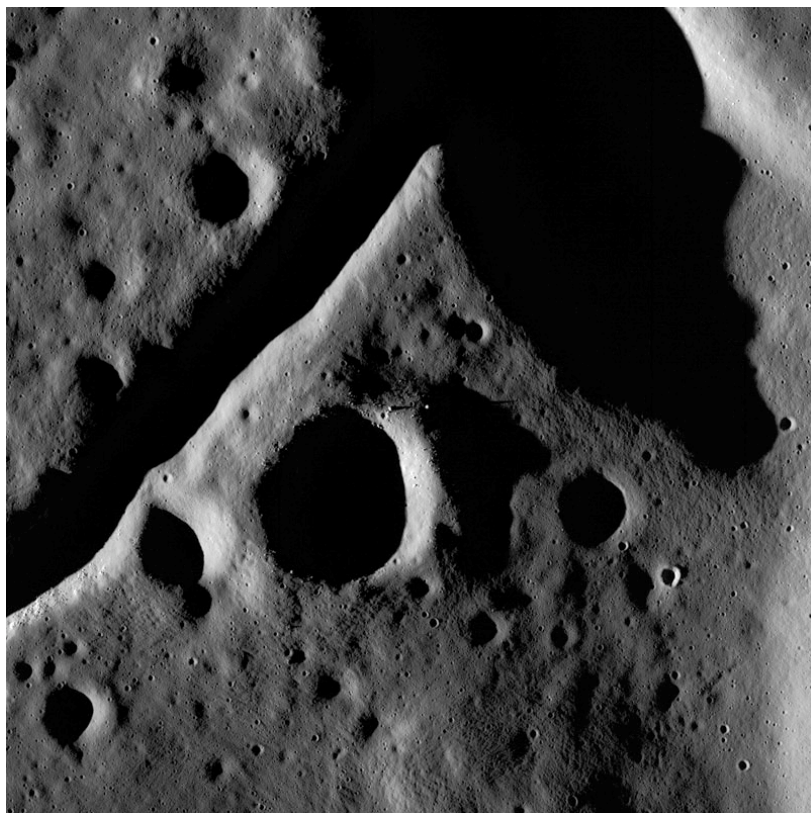
By
Matt

Published: 13 July 2009 6:05 PM UTC

(NASA) – Orbit 136 took LRO over the Imbrian-aged Compton Crater (162 km diameter) at an altitude of 172 kilometers. At this height, large boulders can be seen casting shadows, especially on the rims of the numerous secondary impacts that cover this ancient surface. But there is more to this image than craters and boulders.

In the upper part, the western edge of Compton’s huge central peak is visible. The wide, sloping flat floored trough (or graben) records a period of uplift of the crater floor. The uplift caused the floor to break and pull apart, forming the graben. The cause of the uplift and fracture of crater floors is not yet fully understood. One possibility is the slow readjustment of the crust after the crater-forming impact. Asteroids and comets strike the Moon at speeds greater than 15 km/second. So much energy is released that rock behaves as a plastic for a brief instant – the crust is pushed down. Over time the crust relaxes and uplifts towards its original position, fracturing lava flows that were erupted and hardened after the impact. Another idea concerns the intrusion of lava into the shallow subsurface. As this magma follows existing cracks, it exerts pressure on the surrounding rock causing uplift and more fracturing. Unraveling the origin of lunar tectonic features like this one is a primary focus of LROC science team.

LROC is now officially in the instrument commissioning phase. The LROC team has begun the process of analyzing the data, and are still making small adjustments to the instruments as the LRO mission continues.



The central peak and fractured floor of Compton crater as imaged by the LROC Narrow Angle Camera at dawn, image width is ~1720 meters Credit:

STATE	AVG. MONTHLY RATE
Alabama	\$56.50
Alaska	\$80.17
Arizona	\$77.17
Arkansas	\$57.75
California	\$70.42
Colorado	\$68.92



Log In

Username:

Password:

- Remember me
- Login as hidden

[I forgot my password](#)

[Register new account](#)

- o [Tag Cloud](#)
- o [Comments](#)
- o [Active Topics](#)

[Apollo](#) [Apollo 11](#) [Ariane 5](#) [Arianespace](#) [Astronomy](#)
[ATK](#) [Boeing](#) [Buzz Aldrin](#) [Cape Canaveral](#) [Cassini](#) [Delta](#)
[IV DLR](#) [Endeavour](#) [Envisat](#) [ESA](#) [Falcon 1](#) [GOES-O](#)
[hirise](#) [Hubble](#) [JLS](#) [International Space Station](#) [ISS](#)
[Kennedy Space Center](#) [LCROSS](#) [LRO](#) [Mars](#) [Moon](#)

[NASA](#) [NOAA](#) [Northrop Grumman](#) [Picture Of](#)
[The Day](#) [Progress](#) [RazakSat](#) [Roscosmos](#) [Saturn](#) [Sovuz](#)
[Space shuttle](#) [SpaceX](#) [Spirit](#) [STS-127](#) [Sun](#) [TerreStar-1](#)
[The Space Show](#) [VSE](#) [X Prize](#)

- o [Links for 7/21/2009 | Jason Clarke on Longest Solar Eclipse of the 21st Century](#)
- o [constellation program | Fooner on Stennis Marks Milestone in Construction of New Test Stand](#)
- o [neil armstrong death | Fooner on Neil Armstrong Statement on the Death of Walter Cronkite](#)
- o [STS-127 Day six – planned activities « on STS-127 Flight Day 6 Planned Activities](#)
- o [Astrobotic Technology unveils robot that survives the Moon's ... « Gadget Exposure on Astrobotic Technology unveils robot that survives the Moon's boiling-hot temperatures](#)
- o [STS-127 Endeavor crew completes first walk « on Endeavour Crew Completes First Spacewalk, Installs Japanese Exposed Facility](#)
- o [A Day of Mourning | Chaos](#)

NASA/GSFC/Arizona State University

LROC Commissioning Phase Operations

LRO will remain in a 30 km by 199 km (19 mile by 124 mile) orbit with a periapsis above the South Pole during the commissioning phase. This orbit requires very little in the way of station-keeping, thus it saves fuel while the spacecraft and instruments are running through their checkout procedures. For LROC we have two types of checkout observations. First, there are sequences that require the spacecraft to maneuver to a special orientation to support our observations. For example, we will image stars and Jupiter to check the geometric and radiometric calibrations we performed on the ground.

Second, there will be other calibration sequences that are taken while the spacecraft is in its nominal nadir (looking straight down at the Moon) position. There are seven instruments on LRO, and each has its own specific requirements for calibration and checkout. Some of the calibration sequences prevent other instruments from acquiring data at the same time, so there is a bit of planning that takes place so all of the instrument teams can get the observations they need within the commissioning phase. Of course, not everything goes exactly as planned, so each instrument team must remain flexible in terms of adjusting the timelines.

We hope to have all of the LROC checkout and calibration sequences completed by mid-August so we can begin systematic data acquisition with the NACs and WAC. Of course, we will post images from the commissioning phase soon after receipt on the ground to allow everybody to follow our progress. Right now, the spacecraft is still performing a series of maneuvers to get LRO into the commissioning orbit by the end of this week.

Program on [Governor Bill Richardson Announces Spaceport America and Virgin Galactic Sign Historic Lease Agreement](#)


- o Fresh From Twitter: Picture of the ... on [Picture of the Day – From the Moon to the Earth](#)
- o 21-09 18:22 [Team Prometheus Finalist for Hein](#)
- o 21-09 17:17 [Official Armadillo O&A thread](#)
- o 21-09 17:11 [I finally meet John Powell and wha](#)
- o 21-09 02:35 [New Forum Ideas](#)
- o 21-09 02:06 [no Human Space Flight Plans Com](#)
- o 21-09 02:03 [Next Generation Robot explorers &](#)
- o 21-09 01:58 [Ways to Raise Capital for a Private](#)
- o 21-09 01:02 [Private Space sector and public per](#)
- o 20-09 09:56 [Political danger for private space tr](#)
- o 18-09 10:26 [MarsDrive is Here](#)
- o 17-09 13:42 [Rocketplane - Terminates office lea](#)
- o 16-09 18:34 [SFS News: Kiwi 2 Space - Quick I](#)

● **Bookmarking**

[Follow us on Twitter](#) [Join Facebook Group](#) [Join LinkedIn Group](#) [Vote on Reddit](#)

Tags: [LRO](#), [LROC](#), [Moon](#), [NASA](#)

● [Share This](#)

●  0 points

● Digg

▲ Next Article

▼ Prev Article [NASA Announces Apollo Astronauts Media Briefing Endeavour Fueling Complete](#)

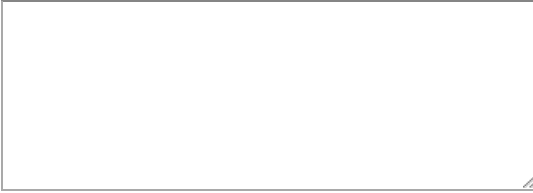
No Comments

Start the ball rolling by posting a comment on this article!

Leave a Reply

You must be [logged in](#) to post a comment.

XHTML: You can use these tags: `` `<abbr title="">` `<acronym title="">` `` `<blockquote cite="">` `<code>` `<del datetime="">` `` `<i>` `<q cite="">` `<strike>` ``



Submit Comment

Cole Parmer Instrument Quality scientific instruments, lab supplies & technical products	Digi-Key Instant Availability, Pricing Specs. Quality Components & Service
-----------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------

Ads by Google

● **Copyright**

International Space Fellowship. All Rights Reserved.
Design By [Gabitsoft Interactive](#)
[Privacy Policy](#) | [Terms Of Use](#)