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The Lunar Reconnaissance Orbiter continues to knock ‘em out of the park.

Over at Universe Today [Nancy Atkinson shows how](#) an LRO Camera image answers a question that’s lasted for almost 40 years: how close did Apollo 14 astronauts Ed Mitchell and Alan Shepard get to Cone Crater before having to turn back due to lack of time? The answer is heart-breaking.

LROC is also finding some things on the Moon we’ve never seen before, or least never had such great images of! Her keen eye spotted what looked for all the world (or worlds) like [the track of a bouncing boulder as it fell downslope on the lunar surface](#). That’s sure what it looks like to me. And she has other very cool images to go with it, too.

With its 50 cm resolution of the Moon, what more will LROC show us? [A similar camera](#) that’s been orbiting Mars for years has returned one devastating image after another. So keep your eyes open and trained on LRO. There’s lots more to come.

September 7th, 2009 11:02 AM by [Phil Plait](#) in [NASA](#) | 34 comments | [RSS feed](#) | [Trackback >](#)

34 Responses to “LROC and stroll”

1. 1. [Joseph Smidt](#) Says:

[September 7th, 2009 at 11:41 am](#)

I’m just excited to see what we learn from the James Webb.

2. 2. [Larian LeQuella](#) Says:

[September 7th, 2009 at 11:46 am](#)

By the way, went to the Christa McAuliffe and Alan Shepard planetarium the other day! 😊

I too am really looking forward to all the images. Although, it would be even cooler if there was a man behind a camera taking pictures on the surface. 😊

3. 3. [Joseph Smidt](#) Says:

[September 7th, 2009 at 11:51 am](#)

Though I said I was excited for the James Webb, the truth is this is a breathtaking picture and it must have been crushing to come so close and yet not go all the way.

4. 4. [Lou FCD](#) Says:

[September 7th, 2009 at 12:05 pm](#)

That’s nuthin’.

I [found a plane](#) on the surface of the moon, with nothing but a camera and a 300mm lens.

5. 5. [dhtroy](#) Says:

[September 7th, 2009 at 12:38 pm](#)

Wow. That ranks up there with almost getting a “hole in one” on the golf course. They were so bloody close.

6. 6. *Torbjörn Larsson, OM* Says:

[September 7th, 2009 at 12:42 pm](#)

Um, “her” at the second link refers to Emily Lakdawalla, who was perhaps first to report tracks but didn’t see the boulders (in that link). [Nancy shows more tracks, some ending up with boulders.](#)

7. 7. *Allen Thomson* Says:

[September 7th, 2009 at 1:21 pm](#)

There’s something on the inner rille loop (about half-way down the picture and 2/3 to the right) that looks like a subsidence pit rather than an impact crater. Or maybe a giant lunar ant-lion trap for catching giant lunar ants.

Any idea what it is?

8. 8. *Pillownaut* Says:

[September 7th, 2009 at 1:24 pm](#)

30 meters!!! That really is heartbreaking.

9. 9. *metre* Says:

[September 7th, 2009 at 1:40 pm](#)

Sorry, don’t see any footprints or rover tracks. Are we sure we’re not seeing what we’d like to see?

10. 10. *T.E.L.* Says:

[September 7th, 2009 at 2:02 pm](#)

metre,

The tracks are plain as day in this image:

http://lroc.sese.asu.edu/news/uploads/LROCIotw/ap14_area_5de_v2.png

11. 11. *Lars* Says:

[September 7th, 2009 at 2:05 pm](#)

@metre #7: “Click the image for larger version if you’re having trouble seeing the tracks.”

12. 12. *KLD-S* Says:

[September 7th, 2009 at 2:30 pm](#)

I don’t see them either, metre. I clicked to make the image bigger. I looked at the link from T.E.L. and I really don’t see them. 😞

13. 13. *Synopsis* Says:

[September 7th, 2009 at 2:34 pm](#)

Also compare it with the youtube video at about 20 seconds in and you can match up the landscape features.

14. 14. *Charles J. Slavis, Jr.* Says:

[September 7th, 2009 at 2:56 pm](#)

I see a tiny line across the surface. If that is the tracks then I suspect some of us are looking for a larger double track which is not close enough to see.

15. 15. *Charles J. Slavis, Jr.* Says:

[September 7th, 2009 at 3:02 pm](#)

Boulder tracks are easy to see.

16. 16. *Charles J. Slavis, Jr.* Says:

[September 7th, 2009 at 3:14 pm](#)

They may have reached the crater. I think I see some petrified wood in there.

17. 17. *kuhnigget* Says:

[September 7th, 2009 at 3:15 pm](#)

@ metre:

Also, there was no rover on this mission. The astronauts were pulling a 3-wheeled tool cart barely larger than a wheelbarrow.

18. 18. *kuhnigget* Says:

[September 7th, 2009 at 3:18 pm](#)

Weren't those boulder tracks used as evidence that "someone else is on the moon"?

I seem to remember seeing fuzzy pictures of similar features in some quack book from the 70s. They were given various technic names and such and described in fantastic (literally) detail.

19. 19. *coolstar* Says:

[September 7th, 2009 at 3:39 pm](#)

Shepherd was perhaps my least favorite of the Mercury 7. Not a nice person at all but certainly very politically astute (which is why he got that Apollo mission at all AND made general).

20. 20. *Zucchi* Says:

[September 7th, 2009 at 3:42 pm](#)

Speaking of visible signs of lunar exploration, check this out: <http://www.moonpublicity.com/mp/>

Don't know if they're serious or not.

21. 21. *Alex* Says:

[September 7th, 2009 at 5:34 pm](#)

coolstar:

Shepard was in the Navy, which has very few generals.

22. 22. *Loaf Of Bread* Says:

[September 7th, 2009 at 5:51 pm](#)

kuhnigget, I remember reading that book! The way they went on about evidence for some other civilization on the moon was incredible, and of course all their claims were supported by NASA photographs.

If the writers were still around, I'm sure Phil could have almost as much fun with them as he does with Richard Hoagland.

23. [23. *MichaelL* Says:](#)
[September 7th, 2009 at 9:07 pm](#)

Kuhnigget & Loaf Of Bread:
This is the book you refer to. I believe (And I read it as well!)
Somebody Else Is On The Moon by George Leonard

I remember signing it out from my high school library!

24. [24. *Peter B* Says:](#)
[September 7th, 2009 at 9:27 pm](#)

KLD-S Says: "I don't see them either, metre. I clicked to make the image bigger. I looked at the link from T.E.L. and I really don't see them. 😞"

Start with the LM, which is on the left hand side of the picture, at about 8 o'clock from Cone Crater. The tracks head pretty much east across the picture to Flank Crater. Flank is roughly at 7 o'clock to Cone Crater, and about one Cone-Crater-diameter away from it. The tracks then turn north-east, and I accept they're a lot harder to find in that part of the walk.

25. [25. *MarkW* Says:](#)
[September 8th, 2009 at 3:24 am](#)

My favourite moonbat moon book was "Our Mysterious Spaceship Moon" by Don Wilson.

"Hollow moon"ism (believe it or not) http://en.wikipedia.org/wiki/Spaceship_Moon_Theory

Please note: I grew out of this sort of nonsense 😊

26. [26. *Plutonium being from Pluto* Says:](#)
[September 8th, 2009 at 3:53 am](#)

Wow. Great video.
(Even if I must admit that I am also having trouble making out the footprints, etc ..)

What a co-incidence too seeing as I mentioned Apollo 14 (well mistaking it for Apollo 12 -oops - but anyway) & Alan Shepherd in my last (*Ares* ready) post here. Weird but neat how that can work sometimes. 😊

Just one very minor nit to pick : Isn't it spelt 'Frau Mauro' not 'Fra'? Not that it matters and - even more so - NOT that I can talk when it comes to spelling, my own typing is atrocious ... 😊

27. 27. *T.E.L.* Says:
[September 8th, 2009 at 5:54 am](#)

Perhaps some people have expectations that aren't panning out. It should be spelled out at this point that there aren't any individual bootprints visible in that pic. What is visible is a thin trail a shade or two darker than the surrounding soil, like a length of sewing thread lain across the landscape. That thread is the integrated appearance of the crew's prints and the track of the wheelbarrow they were lugging along with them.

28. 28. *Lewis* Says:
[September 8th, 2009 at 7:38 am](#)

You're probably already aware of this but

http://www.nasa.gov/mission_pages/LRO/multimedia/lroimages/lroc_20090903_apollo12.html 😊

29. 29. *Nigel Depledge* Says:
[September 8th, 2009 at 8:21 am](#)

Metre (9) said:

Sorry, don't see any footprints or rover tracks. Are we sure we're not seeing what we'd like to see?

Stop looking for trails of footprints or obvious tyre-marks. (They didn't have a lunar rover on 14, anyway). You won't see individual footprints in any of these images.

What you are looking for is a trail of churned-up regolith – it looks like a simple line across most of the image (start with the lower-left quadrant looking for a line of a darker shade).

This trail is where the astronauts and the MET that they were towing churned the regolith to reveal the darker layer (the top half-inch or so is a lighter shade, probably because it has experienced micrometeorite impacts for a long time).

30. 30. *Nigel Depledge* Says:
[September 8th, 2009 at 8:25 am](#)

Plutonium being from Pluto said:

Isn't it spelt 'Frau Mauro' not 'Fra'?

No, the area is definitely Fra Mauro. Go and re-watch *Apollo 13* (the one with Tom Hanks as Jim Lovell) to get the pronunciation.

31. 31. *Imrryr* Says:
[September 8th, 2009 at 8:45 am](#)

Awesome! Now we just need to find Alan Shepard's golf ball! (Although, from what I've read, the ball didn't travel too far from where Shepard hit it)

Anyway, now that we have these pictures, the only other thing I'd love to see are some images of the tracks from the Soviet Lunokhod rovers. I wonder if LRO's controllers will make an attempt to locate

those as well? Time permitting, of course 😊

32. 32. [kuhnigget](#) Says:
[September 8th, 2009 at 8:55 am](#)

@ Michael L:

That's the one! Thanks!

As I recall, the author labeled every little rock with some fancy name, e.g. “roller,” “slider,” etc., as if he were describing some weird alien technological device. He also saw pyramids and glass atriums, all kinds of good stuff. They just looked like rocks to me.

33. 33. [Bill Nettles](#) Says:
[September 8th, 2009 at 10:30 am](#)

They are supposed to release images from the updated Hubble tomorrow, if everything is on schedule. Talked with the Science Director back in August and he said they were planning on 9/9 for new image releases (the Jupiter impact was a special event). Says he, “You won't be disappointed.”

34. 34. [Anchor](#) Says:
[September 12th, 2009 at 11:04 pm](#)

I seem to recall very nice images by one of the Lunar Orbiters (circa 1966) of a couple of big house-sized boulders having run down a slope in or near Vitello crater, in which the tracks clearly show them changing course to follow the topography.

The arresting thing is that they could have performed their several minute-long roll – perhaps dislodged from some rocky outcropping at their origin – by the seismic disturbance of an impact or a rare lunar quake, as long ago as before life colonized the land on Earth a mere 600 million years ago (give or take)...the thing is, if sufficient resolution is brought to bear, these kinds of boulder tracks can be DATED by craterlet count. And eventually, with in situ geological examination, referenced to known impact craters.

When things happened may be very easy to read if we only look closely enough.

Lunar science is intrinsically Earth science. Even Earth paleontology. The moon's history IS “our” history: what better way to understand clearly what has happened in these parts (along the Earth's orbit) over the last 3 or 4 billion years than to consult a ready-made natural detector with a surface area approaching that of Africa that has hung around our planet all that time, a surface free of atmosphere and seas unmolested by anything else OTHER than the environment of space? It's a major scientific treasure and a potential motherlode of information into the past. That all by itself is a good and enormously valuable reason for going there.

Trouble is, the notion seems to elude even scientists – say like paleontologists – who's fields could most benefit. They would rather squirm around on the confused and muddy surface of the Earth in order to patch their “history of Earth” together. For indefinite generations to come.

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Phil Plait, the creator of Bad Astronomy, is an astronomer, lecturer, and author.



After ten years working on Hubble Space Telescope and six more working on astronomy education, he struck out on his own as a writer. He has written two books, dozens of magazine articles, and 12 bazillion blog articles. He is a skeptic, and fights misuses of science as well as praising the wonder of real science.



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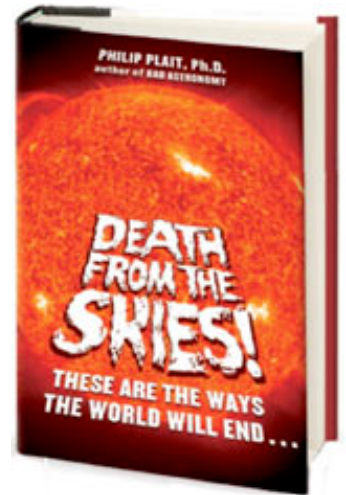
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-- Adam Savage, *Mythbusters*



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-- Daniel H. Wilson, author of *How to Survive a Robot Uprising*

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