

Lunar discovery: Two new moon rock types

November 9 2010, by Miranda Marquit



Image via Wikipedia

Many of us think of our nearest celestial neighbor as having few secrets to give up. However, we are still finding out new things about the moon. The latest discovery is of two types of moon rock not seen before. The last time scientists identified a different type of moon rock, it was in the 1970s. One of the new types of rock was found on the far side of the moon, but the other was found on the near side.

One of the most interesting things about the rock found on the far side of the moon is that it contains magnesium spinel, which has not been seen on the moon yet. On earth, a large amount of this spinel is considered a [gemstone](#). According to Universe Today, the new [moon rock](#) is concentrated in an area that also lacks minerals that scientists have come to expect on the moon. The discovery of this strange rock

might mean a change in how we look at the moon, according to Dr. Carle Pieters, the scientist who identified the rock and who was interviewed by [Universe Today](#):

So this is a big mystery and it is a very exciting one because now we have to reexamine our understanding of the character of the lunar crust, in particular to the depths that might have been tapped by this enormous basin and that we are now looking at as exposed on the surface. ...

These are old surfaces that have been undisturbed but have an extremely unusual composition. And even the space weathering that has occurred on the surface throughout the billions of years of history on the Moon has not erased their unusual compositions. So, they are unusual for the kind of compositions we see, but they are also unusual because they have no identifying property that allows us to identify them in our imagery which is quite unusual for features on the surface of the Moon.

It may not be so surprising to some that a new moon rock discovery was made on the far side of the moon. But the second moon rock was found on the near side of moon. The scientist in charge of identifying the moon rock on the near side of the moon, Dr. Jessica Sunshine, knew about the discovery made by Pieters. However, when Sunshine looked at a rock sample from an area with "dark mantle" (from firefountain deposits during the moon's earlier geologic activity), she discovered that it contained chrome. Universe Today reports on her comments on where the rock was found:

This came from explosive eruptions of lava and gas over large areas of the Moon, about the size of Massachusetts. And we knew that three of them were there, it just turned out that one of them was compositionally different from the other ones, and in particular it had the kind of spinel which is a chromite, because it has chrome in it, and now we're busy trying to figure out why this deposit is different from the one next door, and

what does it mean.

Clearly, whatever we think we know about the moon, moon rocks and the formation of the [moon](#), there are still mysteries to solve.

More information: Nancy Atkinson, "Two New Kinds of Moon Rocks Found," Universe Today (November 4, 2010). Available online: [www.universetoday.com/77315/tw ... of-moon-rocks-found/](http://www.universetoday.com/77315/tw...of-moon-rocks-found/)

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