

Curiosity On Mars: Dating Younger Rocks

Hi I'm John Grotzinger. I'm the project scientist for Mars Science Laboratory mission and this is your Curiosity Rover Report.

Curiosity's got some great new findings. We've been able to find a place on Mars where we can actually date a rock. That means we don't have to have astronauts to bring them back to Earth like we did back in the 1960's.

We simply drill the rock, put it into the instrument and its able to give us the age at which time the rock formed. One of the big things that Curiosity is trying to do is explore and find organic carbon on Mars.

It turns out this carbon depends on how old the rock is that's its inside of and so some rocks have been exposed recently to the Martian atmosphere and others have been exposed for a long time. And the ones that have been exposed for a long time have received more radiation damage, which is bad for the preservation of organics.

So the good thing about this is that we can now put this knowledge to use and as we explore in the future we're going to be able to find the younger surfaces where we think they might preserve better signs of organic carbon.

As we learned how to explore with Curiosity, we discovered that the rocks that we have drilled are actually part of much thicker packages, much longer-lived intervals of geologic time.

And so we have a long-lived habitable environment that's actually younger than what we may have expected when we first came to Gale Crater. And this means that other similar places on Mars, that are also relatively young, that have such clay bearing rocks, could've also been habitable.

So in addition to this, Curiosity is now been making measurements for over a year on the surface of Mars of the amount of radiation an astronaut would feel if they were walking around on the surface of Mars.

And what we find right now is that the levels are not too high. On the other hand, we haven't had any big solar storms yet, so most of the radiation comes from the background cosmic radiation.

The measurements are important because they will allow NASA scientists to understand how much radiation an astronaut on Mars would have to withstand.

This has been your Curiosity Rover Report and be sure to check back for more updates.