

## Curiosity Rover Hits Paydirt

Hi, I'm Joel Hurowitz, a scientist with the surface sampling system team and this is your Curiosity rover report.

This week the Curiosity science team released its initial findings from its first ever drilled sample on Mars. This sample was collected from the "John Klein" drill site, which is located about 500 meters east of where we landed about 7 months ago.

Curiosity obtained her first drill sample and passed that sample on to her onboard analytical lab instruments, called CheMin and SAM. These powerful instruments tell us about what minerals are present in these rocks and whether they contain the ingredients necessary to sustain life as we know it.

What the Curiosity team has found is incredibly exciting. When we combine what we have learned from our remote sensing and contact science instruments with the data that's coming in from CheMin and SAM, we get a picture of an ancient watery environment, which would have been habitable had life been present in it.

As an example, the information that we're getting from the CheMin instrument, tells us that the minerals that are present in this lakebed sedimentary rock at John Klein are very different from just about anything we've ever analyzed before on Mars. And they tell us that the John Klein rock was deposited in a fresh water environment.

This is an important contrast with other sedimentary environments that we've visited on Mars, like the Meridiani Planum landing site where the Mars Exploration Rover, Opportunity, has been operating since 2004.

At that site, the sedimentary rocks record evidence of an environment that was only wet on a very intermittent basis, and when it was, the waters that were there were highly acidic, very salty, and not favorable for the survival of organic compounds.

This is in direct contrast to the fresh water environment we're seeing here at the John Klein Site.

The SAM instrument is telling us that these rocks contained all of the ingredients necessary for a habitable environment. We found carbon, sulfur and oxygen, all present and a number of other elements in states that life could have taken advantage of.

All in all, these few tablespoons of powder from a Martian rock have provided the Curiosity science team with an exciting new dataset that tells us that Gale Crater, and perhaps all of Mars, contained habitable environments. This is an incredible success for the Curiosity mission to Gale, and the science team is looking forward to digging deeper into Mars' ancient watery past in the weeks, months, and years ahead.

This has been your Curiosity rover report. Please check back for more updates.