

## Curiosity Completes Its First Martian Year

I'm Ashwin Vasavada, deputy project scientist.

I'm Matt Heverly, a rover driver.

And this is your Curiosity Rover Report.

Curiosity has been on Mars for one Mars year.

That's 687 Earth days.

Our goal over that time was to find a habitable environment and we did!

We found a lakebed on Mars that we drilled into and found the ingredients and conditions that could've supported microbial life, if life ever was on Mars.

It hasn't all been smooth sailing for the rover on Mars. After we left Yellowknife Bay where we did our first drilling, we noticed that the wheels were taking much more damage than we had expected.

Sharp embedded rocks on the surface of Mars were really giving trouble to our wheels. We think we understand what's causing those holes from a lot of tests we've done here in the Mars yard and a lot of analysis of the terrain from our orbital images.

One of the other things we've done here in the Mars yard to understand the wheel wear issue is we built a half of a rover that we're driving over the simulated terrain so we can watch how the wheels really wear. We think we've got new techniques to be able to drive the rover safely and identify some safe paths.

Using our new driving techniques we made it to a site called "the Kimberley," where Curiosity drilled its third drill hole of the mission.

We drilled into a site where water flowed across the surface and deposited a series of sandstones. We drilled into one of those sandstones, acquired rock powder and fed it to our two analytical laboratories located inside the rover body.

While the rover was at the Kimberley doing its drilling campaign, it even took some time to take a selfie. It reached out its robotic arm just like me with my camera phone and it used the MAHLI to take a series of pictures that it stitched together to take its self portrait.

The rover took a selfie before drilling and after so you could even see where it drilled a hole on Mars.

As we drive from the Kimberley to Murray Buttes at the base of Mount Sharp. We tried to identify the best path for the rover. This means driving through sand.

We took the Scarecrow rover to the Mojave Desert where we drove over similar sandy terrain to make sure that we know what's going to happen once we get there.

The focus of the mission is really now on driving, as we approach the base of Mt. Sharp.

In our first Martian year, we've driven almost eight kilometers of total distance with the rover. We get a little bit closer to the base of that mountain every day.

Over the next few months the science team is real excited to get to Mount Sharp where we think the layered rocks there have captured the major climate changes in Mars history. We can't wait to get there and figure it all out. But it's going to take a lot of driving.

You ready, Matt?

Ready!

Let' do it!