

## **Mars Science Laboratory Landing Site: Gale crater - July 22, 2011**

**John Grotzinger:** I'm John Grotzinger, the project scientist for Mars Science Laboratory--the Curiosity rover and we're going to take Curiosity to our chosen landing site in Gale crater, which sits at the border between the southern highlands of Mars and the northern lowlands, a really exciting spot because it's very low and that's the kind of place where water might have pooled and possibly formed lakes.

So here we see a different view of Gale crater that has a different perspective.

You can see our landing ellipse down at the bottom, which is the white circle. And in the middle of Gale crater is this mountain of rock that is 5 kilometers high, made layer by layer by layer. But the layers at the bottom are the ones that we're most interested in, because we think that those were deposited in an aqueous environment, which is very important for understanding habitability. What you can see here now is that we're about to land very close to the center of the landing ellipse, and we have a couple of different routes that we can take. The scientists on the team prefer the one on the right. And so what we would do is drive along it.

And now you can see at the base of this mountain where these lower layers are.

And the layers are important because they allow us to sort of read a geological book. You start at the bottom of the mountain and those are the oldest layers. And then the layers that occur up near the top, those are the youngest parts, the youngest chapters in the book.

We will drive along, up to this outcrop that we call "the fence." And when we get there, we're going to study it. It's a really attractive spot for us because it contains the kind of minerals that formed in water. And then, when we're done with that, we're going to go beyond. And we're going to enter a canyon. And this kind of terrain around here reminds us a lot of Sedona, Arizona. And all the rocks around here formed in aqueous environments. And so, there's a lot of rock, hundreds of meters of it, layer after layer, that we can study to tell us about the history of Mars at Gale crater.

Now we cross a boundary and we go into a very different type of rock. You can see how it weathers very differently. It's really rugged. So at that point in the mission, we'll be beyond our initial mission of two Earth years. This will take us into many years afterwards of exploration as we drive around this very rugged terrain. If we make it, we'll be able to look back over the area that we have previously studied, back down in towards the bottom of Gale crater, back towards our landing ellipse.