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(Music)

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Hi, I'm Nina Lanza, I'm a post-doc on the ChemCam instrument and this is your Curiosity rover update.

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This has been a very exciting week for the Curiosity rover.

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It delivered its 3rd sample to the CHIMRA to complete its cleaning regimen

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and also we've done our first CheMin analysis and we've got a second one on the way.

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In its spare time, Curiosity has also been making measurements with other instruments,

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including the ChemCam instrument, which is what I work on.

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ChemCam is actually two instruments in one. It includes a camera with a telephoto lens and it

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also has a laser that vaporizes a very small amount of rock so we can tell what its chemical composition is.

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And as of this week, we will have done 10,000 shots with the ChemCam laser.

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This week we've been analyzing rocks in an area called Rocknest,

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and I'll tell you in particular about one called 'Zephyr.'

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This one is interesting because it appears to be made of 2 different types of materials.

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It's got this harder, more resistant material on the top, capping it,

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and then beneath that it has a lighter colored softer material that appears to erode more easily.

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It's actually eroded into a set of natural arches,

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so some of our team members have taken to calling it, 'Stonehenge.'

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This feature is really only an inch long and we're shooting this

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from about 8 feet away, making the pointing very difficult.

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So that's why we decided to do 9 points instead of just 2,

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just to make sure we would hit the material of interest.

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We ended up hitting both the dark and the light material

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and we found that there was indeed a compositional difference.

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In addition to composition, we've also been able to make a three-dimensional model

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of the surface of this target using images from the remote micro-imager part of ChemCam.

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We've also used ChemCam to measure soils, such as crestaurum.

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Here you can see a before image, and then after image where you can see the crater left by the laser.

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This week ChemCam did its very first depth profile, in which we shot the laser 600 times in a single location,

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in order to tunnel through the surface of the rock.

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Now, this only tunnels about one millimeter in depth,

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but it can help us understand how the composition of the sample changes from the surface to the interior.

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Coming up, we'll be able to use this information that we've learned from ChemCam