

Spirit Completes Studies Of Arad, Moves On

February 3 2006

Spirit is healthy and continues to pursue the short-term goal of driving to 'Home Plate.' Results from scientific instruments on the rover's robotic arm indicate that the white soil target called 'Arad' has a salty chemistry dominated by iron-bearing sulfates.

The composition is similar to that of a more silica-rich target, 'Paso Robles,' encountered earlier in the rover's journey through the 'Columbia Hills.' The presence of salt can be considered another clue to the existence of past water on Mars.

Spirit had a bit of difficulty driving out of the sandy area near Arad. Rover instruments recorded slip rates as high as 92 percent on the wheels before Spirit's drivers designed a command strategy that took Spirit away from the sand dunes and closer to Home Plate.

Spirit's engineering team broke a record the previous week, on sol 720 (Jan. 12, 2006), by taking only 2 hours and 35 minutes to plan and validate the uplink commands for the rover. To put that in perspective, at the beginning of the mission, when all of the rover's systems and science team members were brand new, the process took more than 13 hours.

Sol-by-sol summaries

Sols 723 to 725 (Jan. 14 to 17, 2006): Spirit began a campaign to study different targets of the feature named Arad, using instruments on the robotic arm, including the microscopic imager, Moessbauer spectrometer, and alpha particle X-ray spectrometer.

Sol 726: Spirit terminated the sol's drive early because of high slippage on sandy surfaces. The rover took images and conducted atmospheric observations using the miniature thermal emission spectrometer.

Sol 727: Spirit drove 26 meters (85 feet), took images with the navigation and panoramic cameras after the drive, and conducted atmospheric studies using the miniature thermal emission spectrometer.

Sol 728: Rover planners successfully designed a drive that took Spirit away from the sand dunes and closer to Home Plate. Spirit took images following the drive.

Sol 729 (Jan. 21, 2006): Spirit conducted untargeted atmospheric remote sensing.

Odometry

As of sol 728 (Jan. 20, 2006), Spirit's total odometry was 6178.96 meters (3.94 miles).

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