

Transcript

For almost seven years, NASA's Curiosity rover has been exploring Mars. Let's see where it is now. The rover is climbing a mountain... Mt. Sharp, that is dry and sandy today. But three and a half billion years ago, rivers, lakes, and groundwater could be found here. The white line shows where we'd like to send Curiosity over the next few years. Curiosity recently entered a valley between a ridge and cliffs higher up the mountain. We've been calling this area the Clay Unit, because Mars orbiters have seen a strong clay signal here. That's exciting! Because clay minerals often form when water is around. From the ground, we can look for clues of ancient water. In these cliffs, above the Clay Unit, the same orbiters see sulfate minerals. That could mean that water was drying up. or becoming more acidic. Comparing the clay and sulfate layers could give us a better idea of how the Martian climate changed over time. Cutting through the sulfate layer is evidence of an ancient, gushing river - Gediz Vallis Channel. In orbiter images, we've seen boulders and other debris that were probably washed out by the river. This channel formed after the clay and sulfate layers. It's a whole other chapter in the story of water on Mt. Sharp. These features can teach us about more than just the mountain. They may help explain what changes were happening across Mars at the same time. And how that affected its ability to support life, if it ever existed here.