Clay-Rich Terrain in Oxia Planum: A Proposed ExoMars Landing Site

The origin of the clays—perhaps due to alteration of volcanic sediments—is of keen interest to researchers looking for a terrain where traces of life have been preserved and could be studied by a rover. Another issue that rover planners have to be aware of is the presence of dunes which could block the traverses of rovers, but this part of Oxia Planum appears benign in that respect as well.

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Searching for Clinoforms in a Possible Delta

One line of evidence not yet investigated is to search for what are called clinoforms. In geology, a clinoform refers to a steep slope of sediment on the outer margin of a delta. This image seeks to test whether those features are visible and help confirm that Mars in ancient times had a standing body of water in this location.

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Pedestal Crater Development

A pedestal crater is when the ejecta from an impact settles around the new crater and is more erosion-resistant than the surrounding terrain. Over time, the surrounding terrain erodes much faster than the ejecta; in fact, some pedestal craters are measured to be hundreds of meters above the surrounding area.

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A Channel System and Patterned Ground near Hellas Basin

In this image, we see a portion of the channel system along the southwestern crater floor near where the valley breaches the southern rim. The darker-toned surface has a pattern similar to the texture of a basketball, and blankets the region both in the channel belt and in the basin below the cliffs.

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