Slope Instability

One small section of this image shows boulders that have rolled down the slope of a crater wall. The boulders vary in size, with the largest one approximately 6 meters across. They appear to come from one small part of the crater wall that is less stable than surrounding materials.

HIRISE

uahirise.org/ESP_037700_1710

Glorious Glacier

These flow-like structures were previously called “lobate debris aprons,” but the Shallow Radar (SHARAD) instrument on MRO has shown that they are actually debris-covered flows of ice, or glaciers. There is no evidence for present-day flow of these glaciers, so they appear to be remnants of past climates.

HIRISE

uahirise.org/ESP_045334_1350

Einstein and Mars

In February 1917, Albert Einstein wrote in a letter: “It is a pity that we do not live on Mars and just observe man’s nasty antics by telescope.” We do have a telescope at Mars, but we use it to image Mars rather than Earth, such as this image of bizarre landforms in Gorgonum Basin. This basin may have contained an ancient lake, with channels draining into the lake from the sides.

HIRISE

uahirise.org/ESP_045344_1420

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Mesas and Pits

What's up and what's down? This image covers mesas, or high-standing plateaus, to the north and pits, or low-standing, depressions to the south. If it looks the other way around, then you are not seeing the topography correctly.

HIRISE

uahirise.org/ESP_045390_2215

Faulting Mars

This region of Xanthe Terra has mostly been contracted due to thrust faulting, but this local region shows evidence of extensional faulting, also called normal faulting. When two normal faults face each other, they create a bathtub-like depression called a “graben.”

HIRISE

uahirise.org/ESP_045497_1800

North Polar Gypsum Dunes in Olympia Undae

Unlike most of the sand dunes on Mars that are made of the volcanic rock basalt, these are made of a type of sulfate mineral called gypsum. Whence the sand? Well, gypsum is a mineral that can often form from the evaporation of water that has sulfur and calcium dissolved in it. This sand was probably sourced from a northern region on Mars that used to be quite wet.

HIRISE

uahirise.org/ESP_045501_2605

Colorful Bedrock in the Central Uplift of an Impact Crater

Large impact craters rebound from the initial shock, raising deep bedrock to the surface in the central uplift of the crater. Often this bedrock has greater compositional diversity than the surface layers, because they are from greater depths, older, jumbled, and altered.

HIRISE

uahirise.org/ESP_045519_1730

A Meandering Channel on Hellas' Rim

The central portion of this image features a mildly-winding depression that was carved by water, likely around four billion years ago shortly after the Hellas basin formed following a giant asteroid or comet impact. Water would have flowed from the uplands (to the east [right]) and drained into the low-lying basin, carving river channels as it flowed.

HIRISE

uahirise.org/ESP_045611_1410

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