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Article

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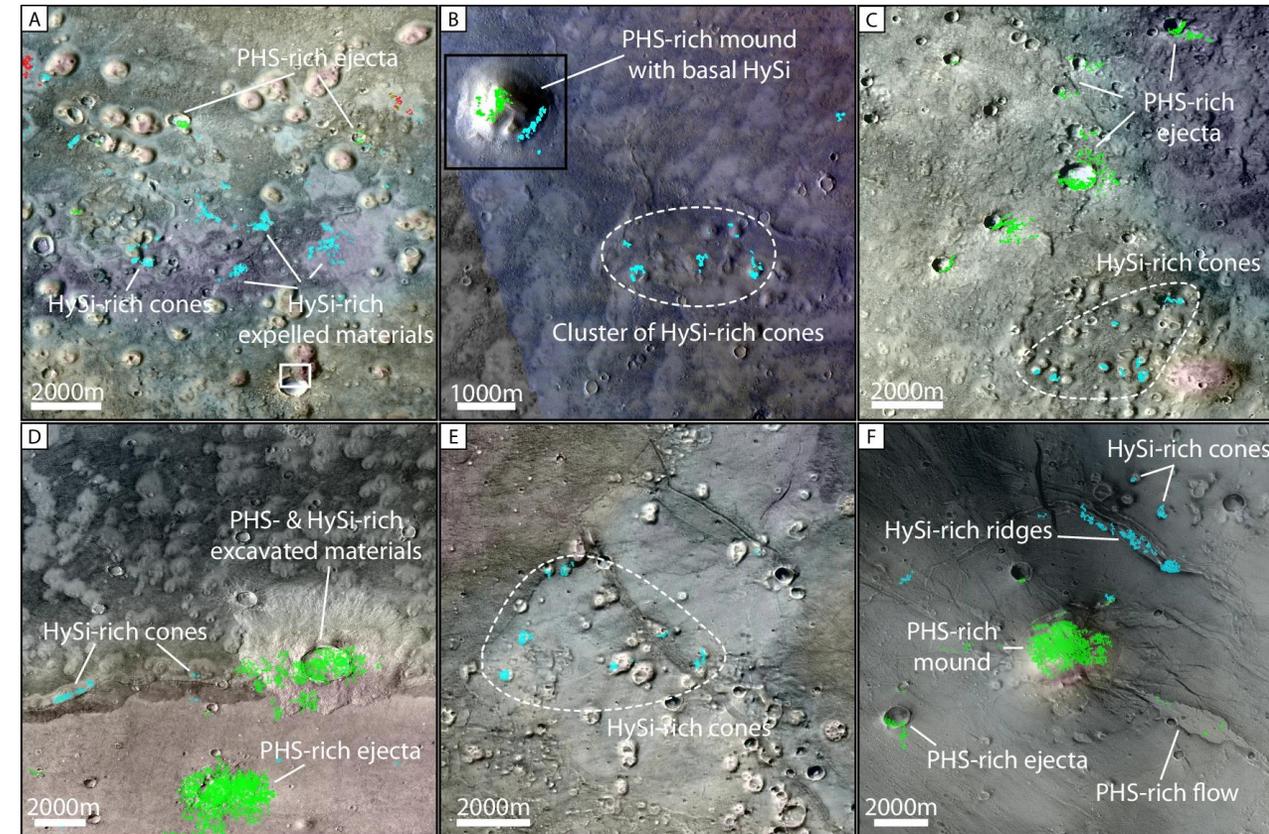
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Recent aqueous alteration associated to sedimentary volcanism on Mars

Check for updates

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- **Sedimentary volcanism**, whereby material is brought to the surface by fluid overpressure, has been proposed to explain some of the periglacial landforms, including pitted cones, **in the Northern Plains of Mars, but it has never been conclusively determined.**
- **Detection of hydrated silica along with sulfate salts in candidate mud volcano-like morphologies** which likely formed during the Early Amazonian period, supporting the sedimentary volcanism origin.
- The exposed sulfates may have been derived from **ancient buried evaporite deposits** suggesting, at least locally, a salt-rich aqueous origin for the Vastitas Borealis Formation, and **would be consistent with the presence of a past northern ocean on Mars.**



Examples of CRISM detections of **hydrated** phases in association with sedimentary volcanism edifices in Acidalia and Utopia Planitia.