



Two years of sulfate mapping in Valles Marineris and Terra Meridiani as seen by OMEGA/Mars Express.

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The imaging spectrometer OMEGA onboard Mars Express has now almost covered the entire planet. Valles Marineris and Terra Meridiani have been particularly thoroughly covered, with up to 4 observations for one single region, using high, medium and low resolution. We thus have both a global view of the sulfate distribution throughout Valles Marineris, and a very accurate mapping for deposits observed at high resolution. We confirm and refine here our previous identifications. We identify sulfates and ferric oxides in all the major chasmata of Valles Marineris (Ophir, Candor West and East, Melas, Hebes, Ius, Tithonium, Coprates, Juventae, Capri/Eos), as well as in Aureum, Aram and Iani chaos. As previously noticed, ferric oxides and sulfates are spatially close, and most of the time ferric oxides are located on top and topographically below sulfate deposits. While sulfates are always identified in Layered Deposits, oxides are both identified in Layered terrain and sand at their foot. The sand appears to be the erosion product of the sulfate deposits. Some craters in Arabia Terra also present sulfate signatures (for example Becquerel crater). The mapping of sulfates in Terra Meridiani is confirmed, and kieserite and polyhydrated sulfates are identified in the etched terrains, while ferric oxides are identified both in the etched terrain and Ph units.