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Global Mineralogical Mars History, Derived from the OMEGA/Mars Express Data

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OMEGA, the VIS/NIR hyperspectral imager on board the ESA/Mars Express mission, has provided mineralogical mapping of almost the entire surface of Mars. Both unaltered mafic minerals and a variety of alteration products have been detected, which enables to derive a long term Mars history, characterized by a first era, in which aqueous processing formed clays, observed in the older terrains; then, following a global climatic change, sulfates were deposited, in an acidic environment. Finally, over the past 3.5 billion years, water did not play any significant role at a global scale, with an alteration dominated by the formation of anhydrous ferric oxides, giving Mars its red color. We will present and discuss these results in a framework of comparative planetology.