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OMEGA/Mars Express: identification, characterization and implications of a Mars global climatic change

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The identification and mapping, by OMEGA, of major and minor constituents of the Martian surface and atmosphere has enabled to derive driving features of the Mars evolution at all timescales. Seasonal variations can be followed through both gaseous and frost spatial variations; precession and obliquity cycles are recorded in perennial polar icy structures; long term geological evolution can be traced back in the mineralogical content of specific units. In particular, OMEGA results have enabled to identify and to characterize what we have quoted as a “Mars global climatic change”, which took place in its early History. We will present the evidences for this major event, its relationship with other processes (dynamo drop, atmospheric loss, Tharsis building and related tectonic effects), and some of its implications with respect to the potential Mars habitability.