Geophysical Research Abstracts, Vol. 7, 09628, 2005
SRef-ID: 1607-7962/gra/EGU05-A-09628

The weather on Mars at the time of MERs and Beagle 2 landing

L. Montabone, S. R. Lewis, P. L. Read (1), P. Withers (2)

(1) AOPP, Department of Physics, University of Oxford, UK, (2) Center for Space Physics, Boston University, USA

We reconstruct the temperature and density structure of the atmosphere on Mars at the time of the landing of the two NASA Mars Exploration Rovers, "Spirit" and "Opportunity", and ESA's "Beagle 2". The reconstruction is based on the assimilation of thermal profiles and dust opacity observations from the Thermal Emission Spectrometer aboard the Mars Global Surveyor spacecraft into a general circulation model for the Martian atmosphere. The results from the assimilation are compared, in the case of Spirit and Opportunity, with retrievals of temperature and density profiles from accelerometer data. For all the three landers, results are also compared with the climatological state predicted by the Mars Climate Database with three different prescribed dust scenarios and added large and small scale variability. Good agreement is found between the results from the assimilation and the results from the analysis of the accelerometer data in the case of the two Rovers. The comparison with the Mars Climate Database forecast exhibits a good agreement for all the three landers when using a Viking-like prescribed scenario outside full dust storm.