

EXOCAM: A “CHAMBER” TO SIMULATE OXIDO-REDUCTION PROPERTIES OF THE MARS SURFACE LAYER. D. Toublanc, E. Chassefiere, A. Brack, M. Cabane, P. Carlier, J. Ingrin, A. Jacotin, S. Lebonnois, P. Millan, P. Pinet, F. Raulin, P. Renault, and J. M. Siguier, CESR, 9 Avenue de Colonel Roche, BP 4348, Toulouse Cedex 4, 31028, France.

EXOCAM is a one meter cube chamber devoted to exobiology. Since hydrogen peroxide is produced by photochemical processes in the atmosphere of Mars, it is a likely candidate for a martian soil oxidant. We would like to understand how H_2O_2 diffuses into the soil and how its concentration is determined by the extent to which it is adsorbed and by the rate at which it is catalytically destroyed. We will try to reproduce first a sample of martian soil to investigate the depth H_2O_2 can diffuse. We will cycle the chamber's temperature according to the diurnal temperature cycle of the surface of Mars. If there are depths below which H_2O_2 is not transported, it is plausible that organic compounds, protected from an oxidizing environment, may still exist. We will focus in this talk on the apparatus and the possibilities of such a chamber.