ISM OBSERVATIONS OF MARS: VERY FIRST RESULTS; J-P Bibring[1], M. Combes[2], T. Encrenaz[2], S. Erard[1], O. Forni[1], B. Gondet[1], J. Head[3], L. Ksanfomaliti[4], Y. Langevin[1], P. Masson[1], V. Moroz[4], C. Peters[3], F. Rocard[1], C. Sotin[1], A. Soufflot[1]; (1) IAS/LPSP/University, Orsay, France; (2) Observatoire de Meudon, France; (3) Brown University, USA; (4) IKI, Moscow, USSR

ISM is an infrared spectro-imager, operating in the range 0.8 - 3 μm, on board the soviet "Phobos" spacecraft. According to the nominal scenarion, it should provide in 1989 a partial mapping of both Mars and Phobos.

On january 29, the spacecraft will arrive at Mars, and will be transferred to an equatorial, elliptical orbit, with a low pericenter altitude (< 1000 km), and a period of approximately 3 days. After 3 such orbits, the altitude of the pericenter will be increased to 6300 km. The spacecraft will remain on this new elliptical orbit for an additional duration of $\simeq$ 9 days. Then, the orbit will be circularized at the altitude of the pericenter, becoming similar to the orbit of the closest satellite of Mars, Phobos. In early april, a close fly-by of Phobos should take place, lasting $\simeq$ 15 mn, at a distance from the surface of Phobos of about 50 m, and a relative velocity $\leq$ 5 m/s. After the fly-by, the spacecraft will continue to orbit Mars on the same circular orbit. ISM will be turned on at each phase of the mission.

With the angular resolution of 12 arcminutes, the spatial resolution achieved on Mars will range from 2 to 25 km. On Phobos, we shall obtain both the complete mapping, on a subkilometric scale, and a track, a few kilometers long, during the close fly-by, with a resolution of a few tens of centimeters.

The spectral range, as well as the spectral resolution ($\lambda/\Delta\lambda$ = 25 to 50), will make possible the detection and the mapping of the major silicates, the carbonates and the hydrated minerals. We will present the very first results obtained by the time of the conference, and give some tentative indications of their implications to the history of the evolution of Mars.

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