

ITALIAN OBSERVATORY IN ANTARCTICA

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The Infrared and Submillimetric OASI Observatory is the first permanent telescope installed in Antarctica. The installation was completed in 1989 at Terra Nova Bay. The diameter of the primary mirror is 2.6 m and the receiver is a cryogenic multichannel bolometric photometer. The OASI Observatory takes advantage of the privileged position in Antarctica, where the atmosphere is very clear and the transmission is very high ($\geq 90\%$ at 2 mm wavelength). It has been designed mainly to investigate the small scale anisotropies of the Cosmic Background Radiation and Galactic and extragalactic diffuse emission. Beam switching in the sky is performed by means of a wobbling secondary mirror; the amplitude of the sky modulation can be selected from a few arcsec up to one degree. The tracking and pointing accuracy is about 10 arcsec. The focal plane is equipped with Si-Bolometers cooled at 0.35 K by means of a $^3\text{He}/^4\text{He}$ cryogenic system. The telescope can operate in the wavelength range between 350 μm and 3 mm. During the 1990/91 Italian Expedition a 2 mm channel has been calibrated by observing Venus and Saturn. Fig 1 shows some preliminary results: it represents the comparison between OASI 2 mm observation of the Large Magellanic Cloud and IRAS 100 μm data of the same region. IRAS data have been reduced in order to simulate the OASI experiment. The correlation coefficient is 0.67 with a confidence level $\geq 99.5\%$.

This work was supported by ENEA - Programma Nazionale di Ricerche in Antartide.

References

- G Dall'Oglio et al 1990, *Ap. J.*, **348**,467
- G. Dall'Oglio et al 1991, *Ap. J.*, **375**,171
- G. Dall'Oglio et al 1991, *A & A*, **249**,299
- G. Dall'Oglio et al 1991, *Cryogenics*, **31**,61

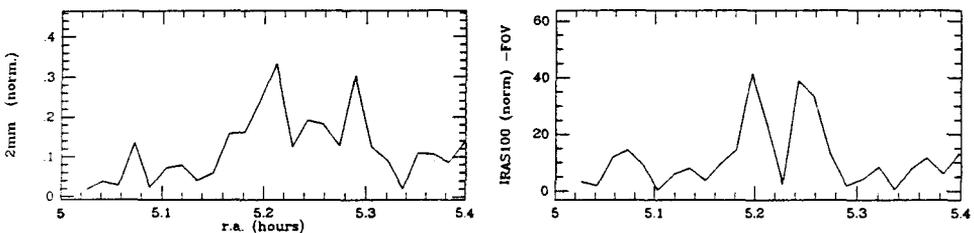


Figure 1. Comparison between observation of Large Magellanic Cloud with OASI at 2 mm (1990-91) and observation with IRAS at 100 μm .