

35th Symposium on The Search for Extraterrestrial Intelligence (SETI) – The Next Steps
(A4.)

SETI I - Technical Aspects (1.)

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**THE ITASEL PROJECT (ITALIAN SEARCH FOR EXTRATERRESTRIAL
LIFE)**

Abstract

The Italian Space Agency (ASI) has approved and financed for the first time a project concerning two different aspects of Bioastronomy: 1) Search for the possibility of primordial life on exoplanets. 2) Participation in the international SETI-project on a national basis (SETI-ITALIA). After the detection of the 22 GHz water MASER emission line during the impact of Comet Shoemaker/Levy9 with Jupiter in July 1994 (Cosmovici et al., Planet.Space.Sci.,44,735,1996), it has been shown that under particular physical conditions, MASER emission can be observed from exoplanetary atmospheres. Thus a search program with the 32 m dish of the Medicina radiotelescope started 1999 using a fast multichannel spectrometer. Up to now 32 exoplanetary systems have been observed; suspect transient emissions have been identified from 4 stellar systems, but the low S/N ratio needs confirmation from other powerful radiotelescopes with different methods. In order to improve the detection limits a new multichannel spectrometer, which will be used also for the SETI program, is under development. It is a modular system: parallelising several boards it will be possible to increase the bandwidth and the number of channels. The system will be able to operate realtime FFTs (over bands narrower than 100 MHz) in parallel to KLTs (no real time) or other transforms (Wavelets, chirplet, etc...). This feature could play a key role in ordinary spectral line observations and in future applications requiring very high processing/computing power, dramatically increasing the on-line analysis performances.