

43rd SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) – The
Next Steps (A4)
Poster Session (P)

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INTENDED OSETI SEARCHES AT FOAM13 OBSERVATORY (ITALY)

Abstract

Italy is now constructing an Optical SETI Research facility. It adds to the traditional Radio SETI facility at Medicina (near Bologna), run by Stelio Montebugnoli and co-workers since 1993, and to the intended new program for radio SETI Searches to be conducted at the 64-meter new Sardinia Radio Telescope (SRT).

This SETI Program will run at the FOAM13 Observatory near Tradate, Lombardy region, Italy, <http://www.foam13.it/>. FOAM13 means “Fondazione Osservatorio Astronomico Messier 13” after the first SETI Message sent towards the M13 Globular Cluster by Frank Drake on 16th November 1974, from the Arecibo Radio Telescope. The instrumentation is made by Giuseppe Savio and Alberto Villa. Starting from the solid background of the OSETI activities in Berkeley and Harvard, three main goals are pursued: to develop a relatively low-cost equipment, affordable also by small-scale observatories and based on the triple-coincidence technique; to improve, where possible, the characteristics of the current systems; to create a network between those observatories that will be able to take part to the OSETI activities thanks to the suggested instrumentation.

The equipment employs a 300 mm Cassegrain Telescope; a three-way low-loss beam splitter with equal-length paths (two cascaded 3 mm plate splitters, with 70/30 and 50/50 ratios); three high speed, high gain and wide dynamic-range PhotoMultiplier Tubes with built-in high voltage generator (Hamamatsu H10721); a gain control unit for the three PMTs; a four-channels, 1 GHz analogue bandwidth, 5 GS/s per channel Teledyne-LeCroy WaveSurfer 104MXs-B oscilloscope/signal processor, with the first three channels connected to the PMTs outputs; a PC linked to the Wavesurfer for data storage, post-processing and communication via Internet. The 5 GS/s sampling speed ensures accurate capturing of sub-nanosecond pulses, while the 0,3 ns risetime matches the PMTs response. Coincidence detection is ensured by triggering the oscilloscope with the logic function AND between the three inputs.

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International visibility is provided by the first author of this paper, in his position as SETI Coordinator at FOAM13.