

STATUS OF CLARION: CLOVER ARRAY FOR RADIOACTIVE IONS

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The ORNL array of clover Ge detectors is nearing completion at the target location of the Recoil Mass Spectrometer. When completed, the array will consist of eleven segmented clovers, each with its own BGO Compton suppressor, together with twelve smaller Compton-suppressed Ge spectrometers from the old ORNL compact array.

We currently have all eleven of the clover detectors, and six of their associated BGO suppressors. An order for the remaining five BGOs has been placed, with delivery expected by summer of 1999. The two hemispheres of the detector mounting structure are in place at the RMS target, and have been optically aligned.

Construction and assembly of a complete set of new electronics for the eleven clover detectors was completed during January 1999. This electronics is based on a modification of the GAMMASPHERE electronics design, but is housed in CAMAC, with ECL readout. At the time of writing, we are in the final testing and acceptance stage, expected to be completed in March 1999. At that point, we will be able to commission the entire CLARION array.

Each suppressed clover detector has a relative efficiency (with add back) of 150% and a measured peak-to-total ratio of 0.58 for ^{60}Co . The complete array will have a total photopeak efficiency of about 3.0% at 1.33 MeV