8-Pi Spectrometer Progress Report

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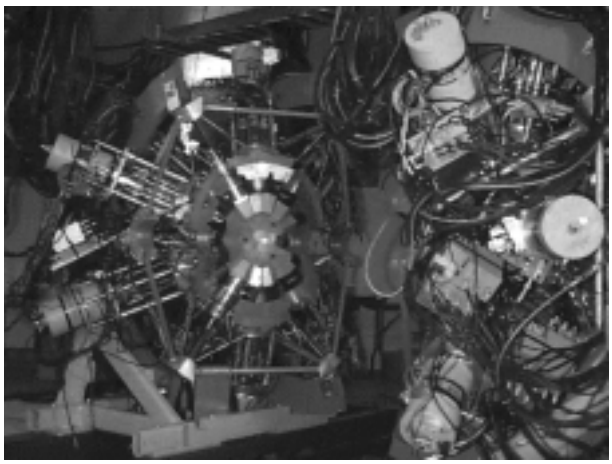

The 8-PI Specrometer, on loan from McMaster University, has been installed in Cave 4C at the 88" Cyclotron.

The instrument comprises a high-quality Bismuth-Germanate (BGO) spherical shell of 72 detectors,and an array of twenty HPGe detectors with BGO Compton-suppression shields. A number of auxilliary detectors and special equipment developed for the 8-PI Spectrometer are also available;these include a computer-controlled Recoil-Distance apparatus for precise lifetime measurment and a 4-PI array of CsI detectors for light-ions.

The instrument is ideal for a wide range of nuclear structure studies, particularly in high-spins. First experiments are scheduled for mid-March.

In the future, the 8-Pi Ge detectors will be available for use with the Berkeley Gas Filled Separator (BGS). This will enable one to perform nuclear structure studies far from beta stability (e.g. excited states following beta decay) by placing the detectors at the BGS focal plane. It is also possible to place the detectors around the target position, allowing one to carry-out prompt decay studies in regions where the competition from fission background would otherwise be too strong.