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Designing the Coupling of Gammasphere and ORRUBA C.M. SHAND, Rutgers University, S.D. PAIN, Oak Ridge National Laboratory, A. RATKIEWICZ, J.A. CIZEWSKI, Rutgers University, D.W. BARDAYAN, Oak Ridge National Laboratory, M.P. CARPENTER, Argonne National Laboratory, S. HARDY, University of Surrey, C.J. LISTER, Argonne National Laboratory, W.A. PETERS, Oak Ridge Associated Universities, D. SEWERYNIAK, S. ZHU, Argonne National Laboratory — In studies of the structure of single-particle states, the ability to detect charged particles and γ rays in coincidence provides significantly more insight than detecting either alone. The γ-ray spectrum carries structure information which would otherwise be lost when only particles are detected. In addition to light-ion transfer reactions, other nuclear reactions that benefit from coincident detection of particles and γ rays include inelastic scattering, transfer with heavy-ions, and surrogates for neutron-induced reactions. The coupling of Gammasphere and ORRUBA is well suited to the coincident detection of charged particles and γ rays. With up to 110 Compton-suppressed HPGe detectors, Gammasphere provides high detection efficiency and energy resolution for γ rays. The position-sensitive silicon strip detector array ORRUBA provides large solid angle coverage and good angular resolution for charged particles. The substantial internal geometry of Gammasphere allows the barrel of ORRUBA to fit within it. The current status, including design work, of coupling the two detector arrays will be discussed. This work is supported in part by the U.S. D.O.E. and N.S.F.

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