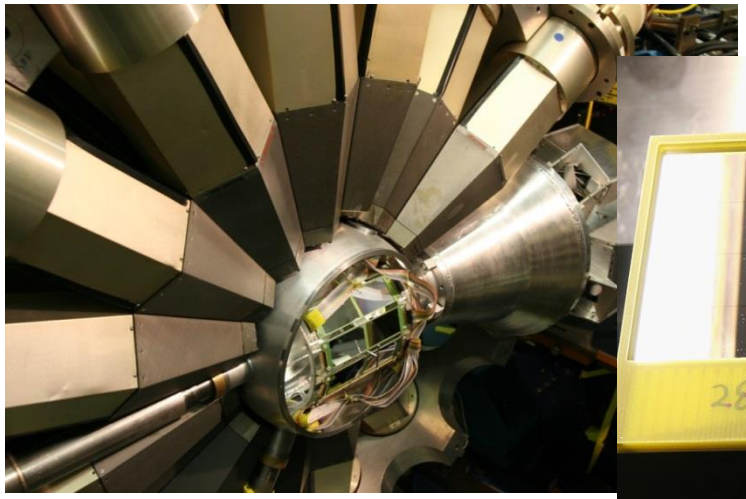
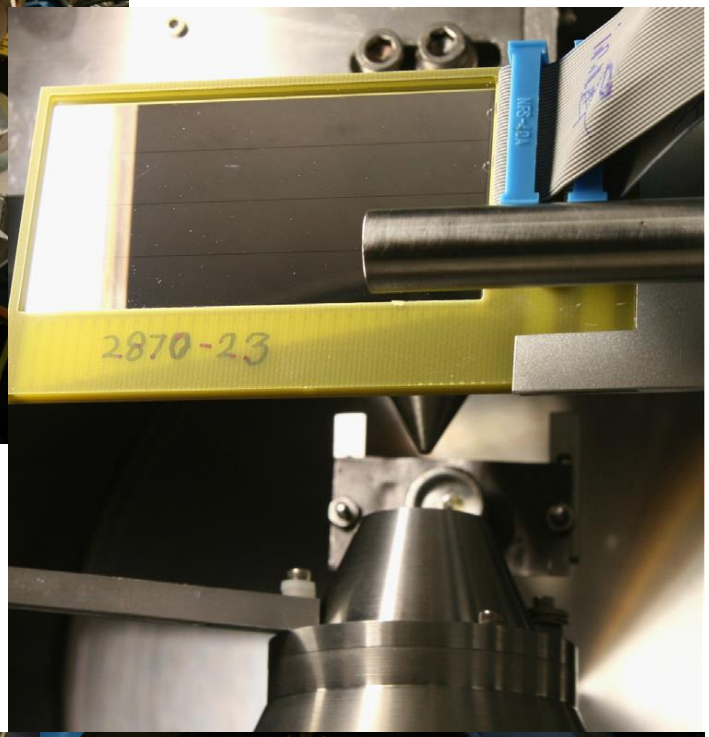
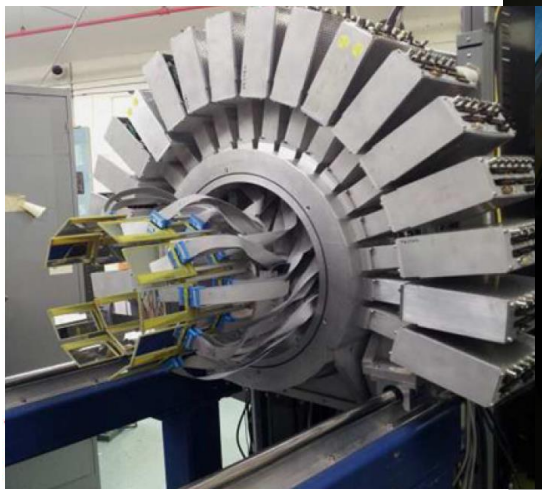
ORRUBA(-like) detectors

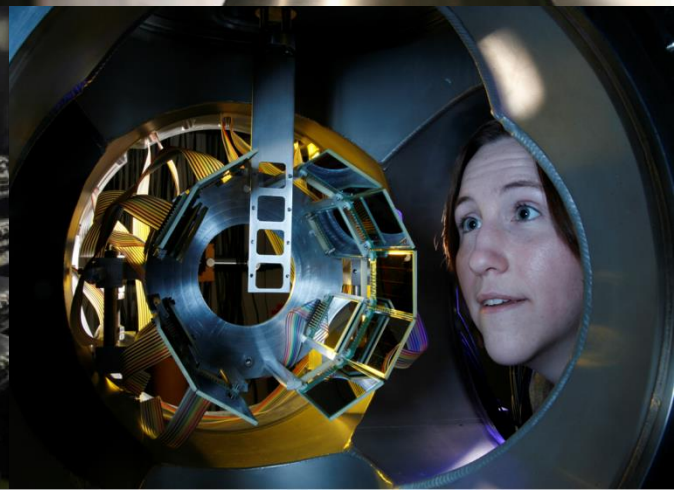
- Large silicon arrays
- Standard (slow) and resistive (very slow) signals
- 300-2000 channels
- Conventional, ASICs, 100MHz digital
- Often coupled to other large instruments (Gammasphere, DRS, S800, JENSA, GRETINA) – different DAQ solution each time
- Auxiliary detectors (ionization chambers, proportional counters, plastic phoswich detectors, PPACs, MCPs etc)





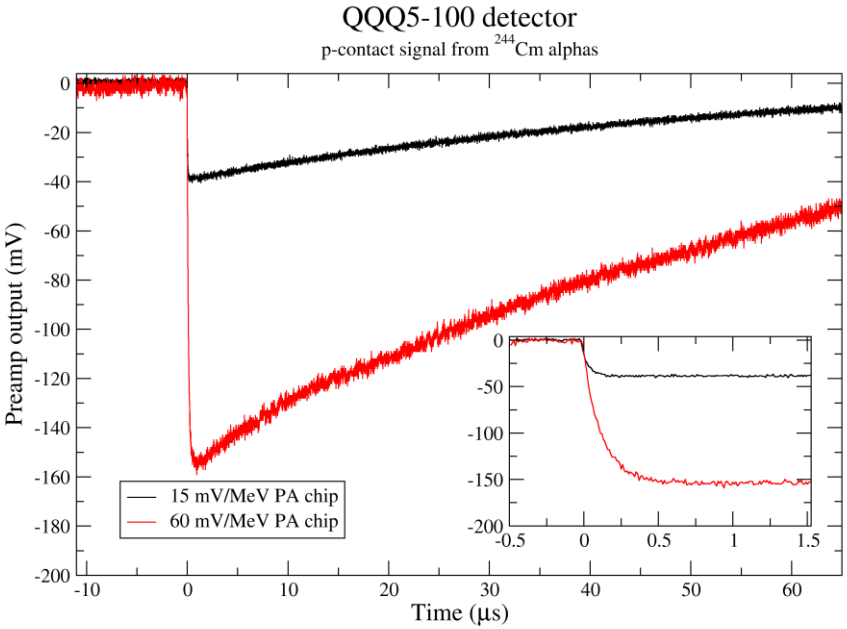
Typically used for light-ion transfer, elastic/inelastic scattering, heavy-ion transfer, Coulex, p-decay…

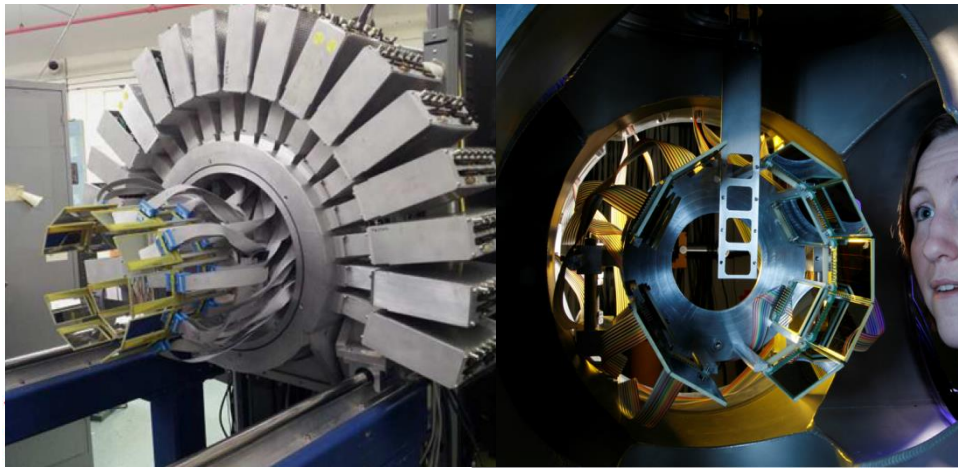


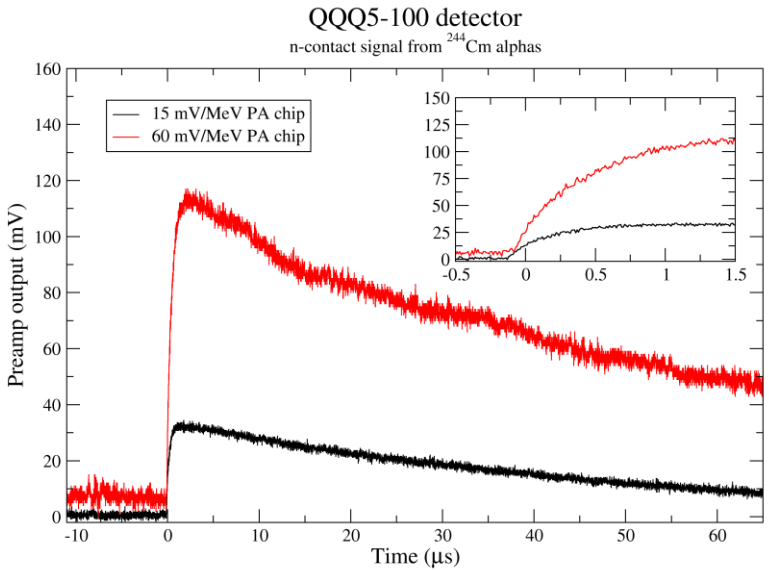


ORRUBA-like experiments

- Primary trigger: silicon singles; readout all Si signals + any auxiliary detectors (GS, GRETINA, S800, etc) in coincidence within few μs timing window
- Scaled-down singles of aux detectors
- Low to moderate trigger rates (10 Hz to a few kHz)
- Auxiliary rates may be higher, but not triggers (100 kHz – 1MHz)

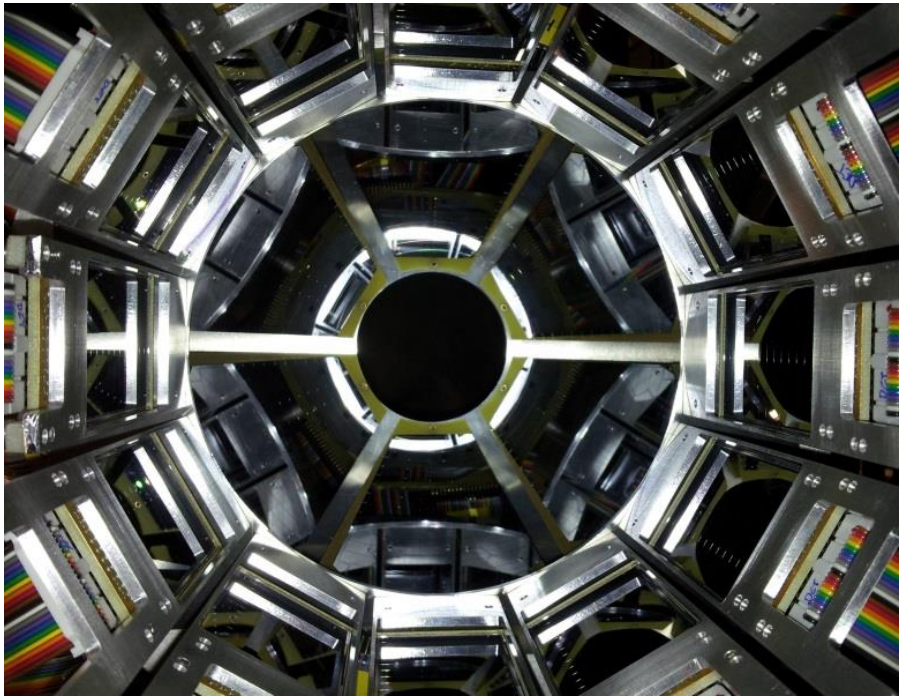






ORRUBA DAQ wish list

- Standardized
- Straightforward sync/merge pass trigger information between different separately running DAQs
- Preferably on-line merged data and analysis
- Multiple trigger classes (event-by-event record of triggers)
- Logging of guages etc direct to data stream
- Access to the data stream
- Down-scalable triggers



- Modular approach. Independent codes: modules for running the DAQ, reading scalers, reading live data from the data stream, …
- Multiple instances of each of these modules on any one computer, access from multiple computers
- Text-based interface, so can access remotely via ssh (GUI optional)
- Relatively straightforward implementation (not too OS-dependent, installable on laptop for experiments at other facilities)