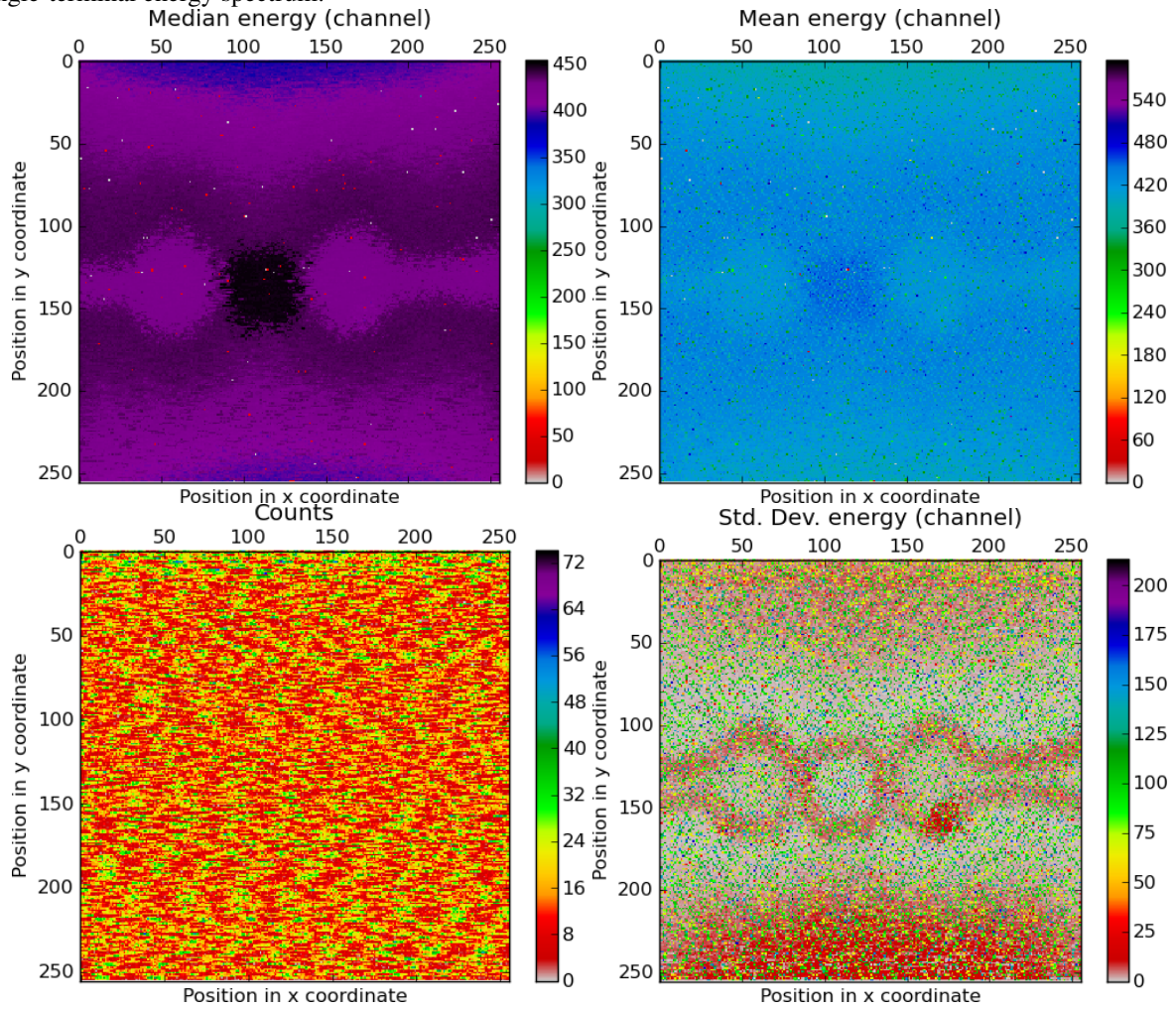


Two-Terminal IBIC 2006 data analysis

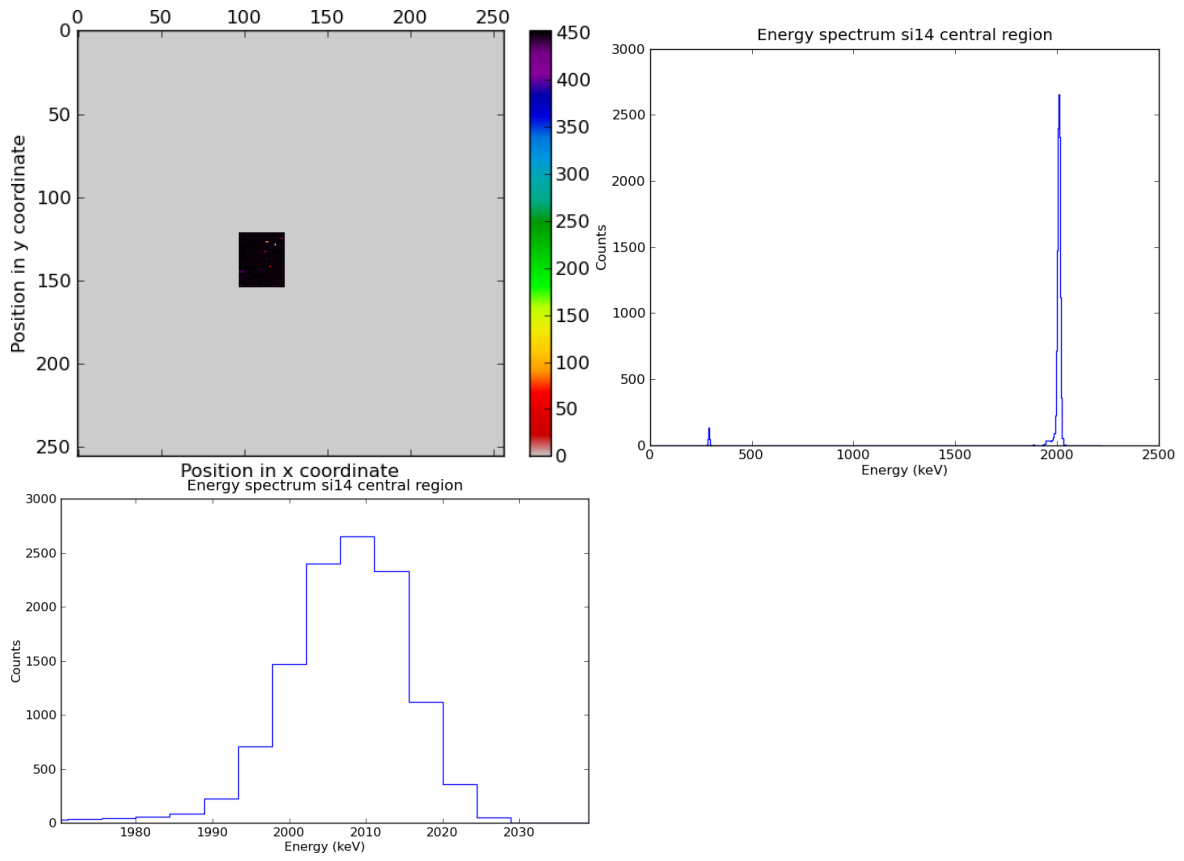
August 6, 2010

1 Si14 dataset

Single-terminal energy spectrum:



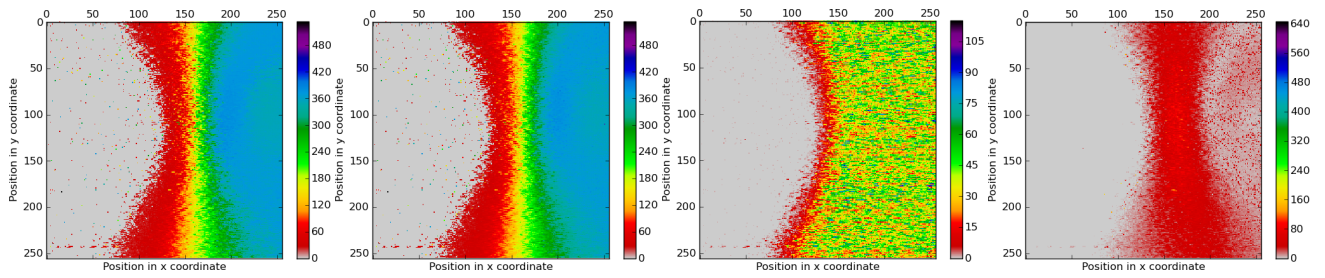
Everything seems okay here. An energy spectrum of the central region:



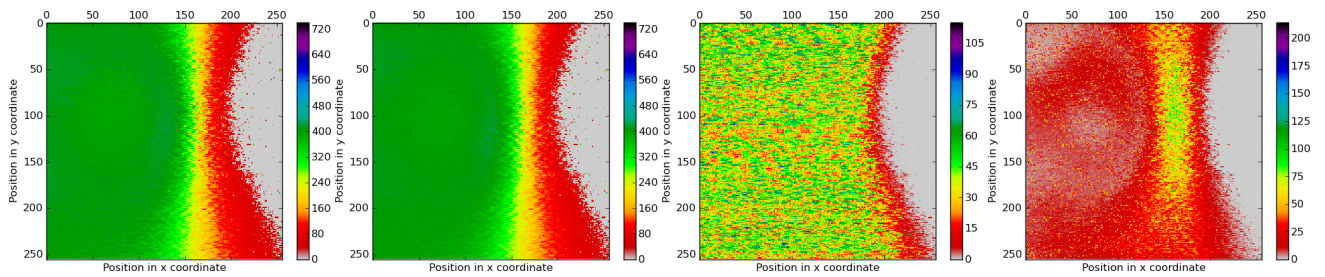
This shows the detector energy resolution looks to be about right (Std. Dev. ~ 10 keV). Note: I have just guessed at the energy calibration here – I guessed that Channel 450 was 2000 keV and Channel 0 was 0 keV.

2 E3 Dataset

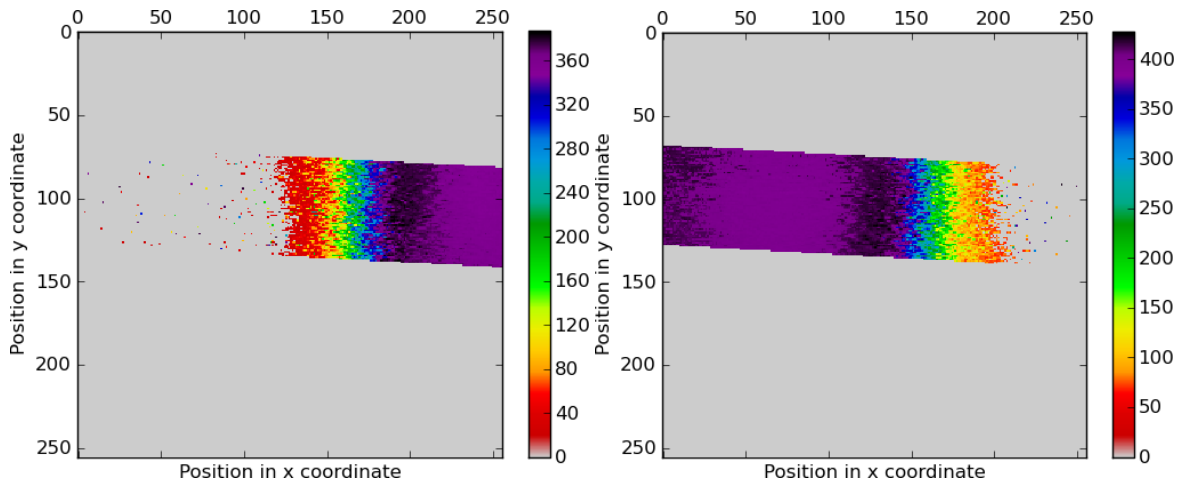
2.1 Station 1:



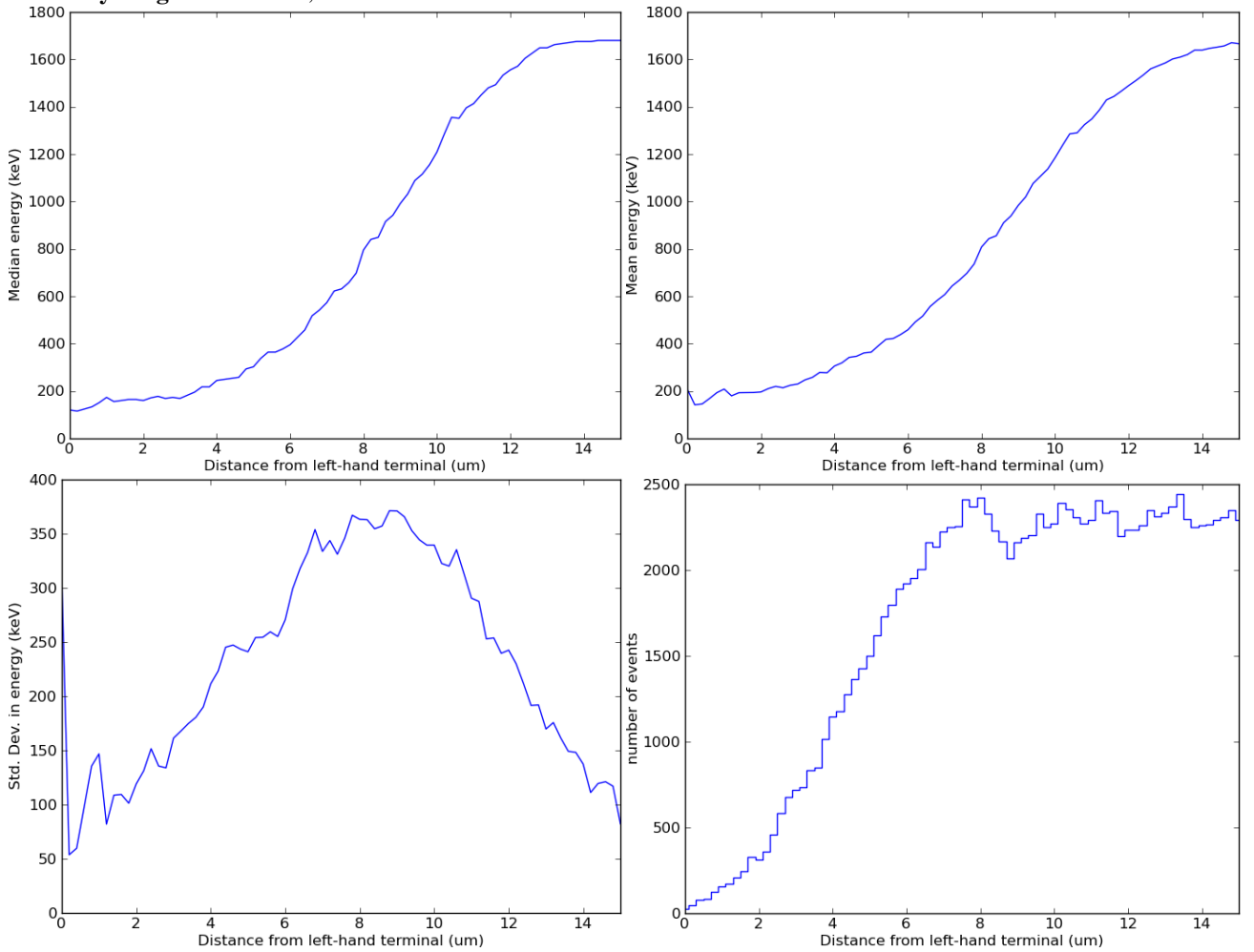
2.2 Station 3:



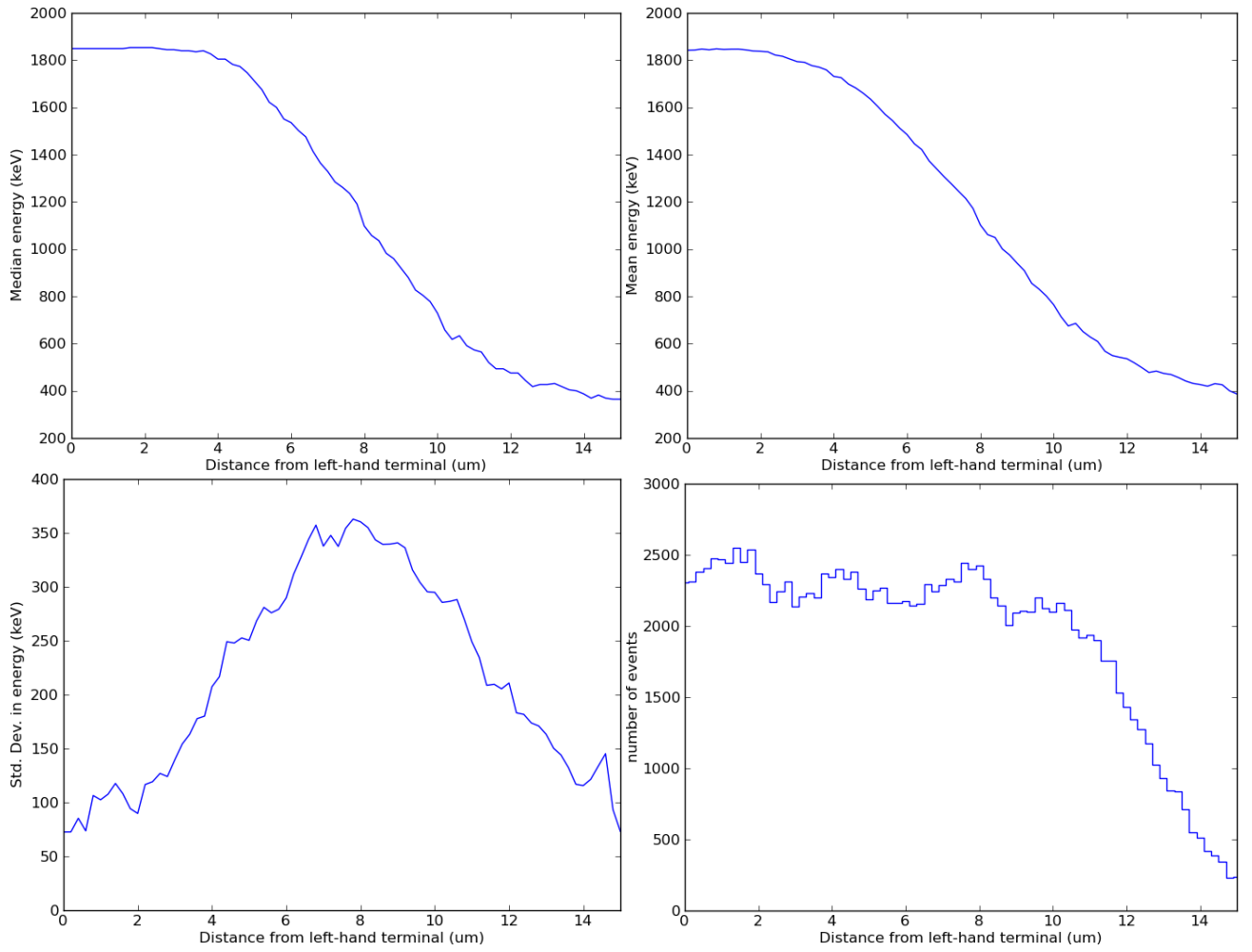
2.3 Central Region



With very rough calibration, for station 1:



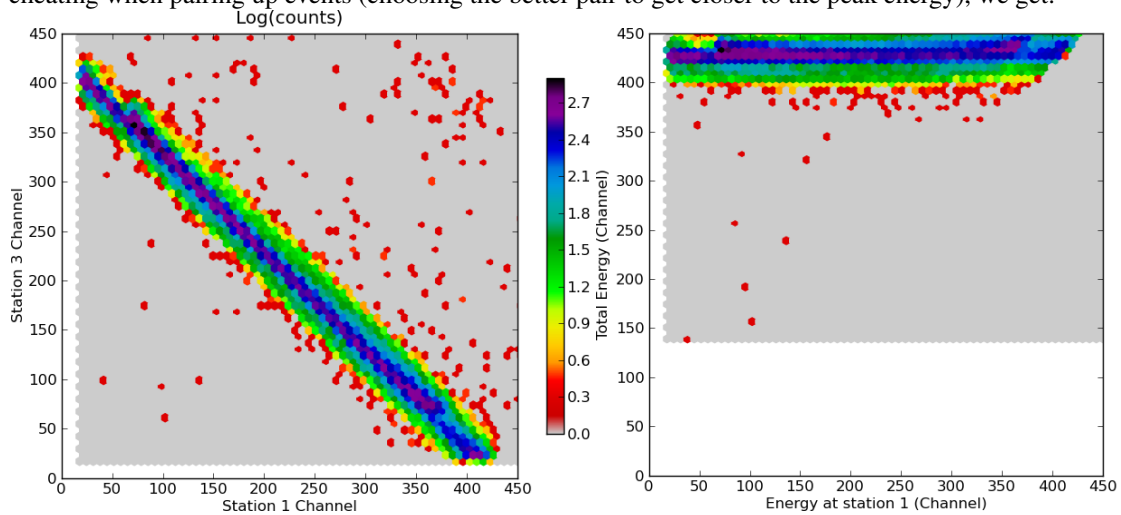
And for station 3:

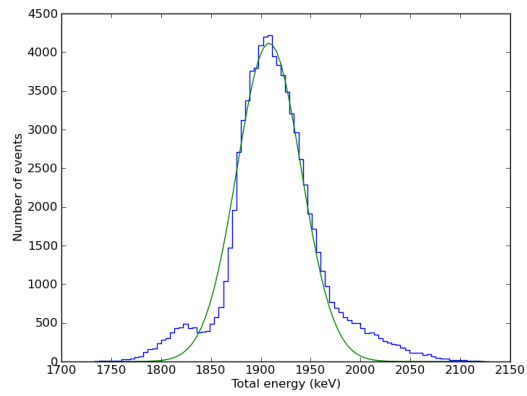


This data quite convincingly shows the expected behaviour, with large standard deviation in energy in the central region, which could easily be due to beam spot size (i.e. error in x coordinate) – the standard deviation looks like the (absolute value plus an offset of the) gradient of the median-energy graph.

2.4 E. vs. E

By cheating when pairing up events (choosing the better pair to get closer to the peak energy), we get:





The standard deviation of the Gaussian fit in this final graph is 32 keV (~7 channels), considerably larger than the earlier measurement which had a standard deviation of about 10keV (~2 channels).