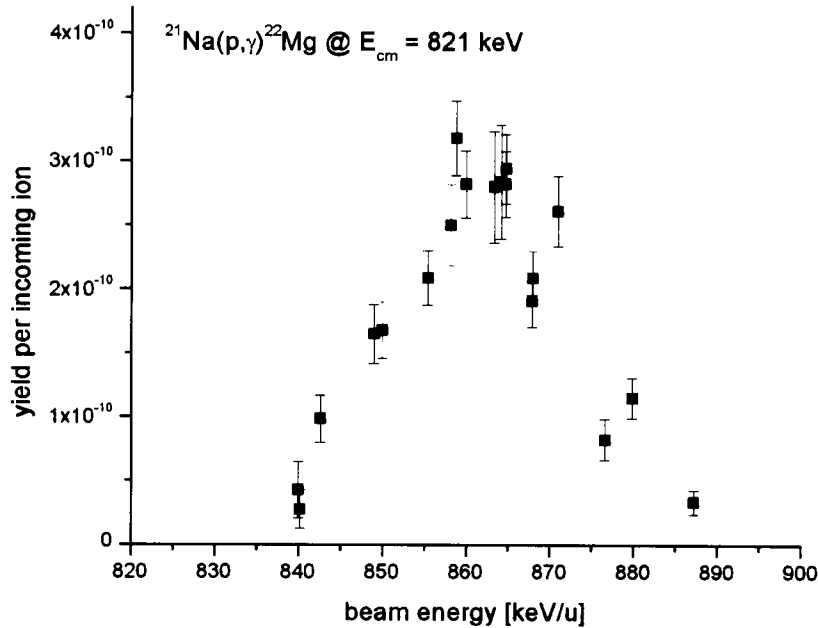


Resonance: $E_{cm} = 821 \text{ keV}$



Runs: 4798, 4829, 4834, 4835,
5059, 5060,
6211, 6212, 6213, 6214,
6284, 6285, 6287, 6288

Normalization: $q = 8+$
 $p(q) = 34.0 \pm 2.7 \%$ (measured at 859 keV/u, runs 4829 – 4832)

transmission: 99.5 %
dsssd: 99.0 %

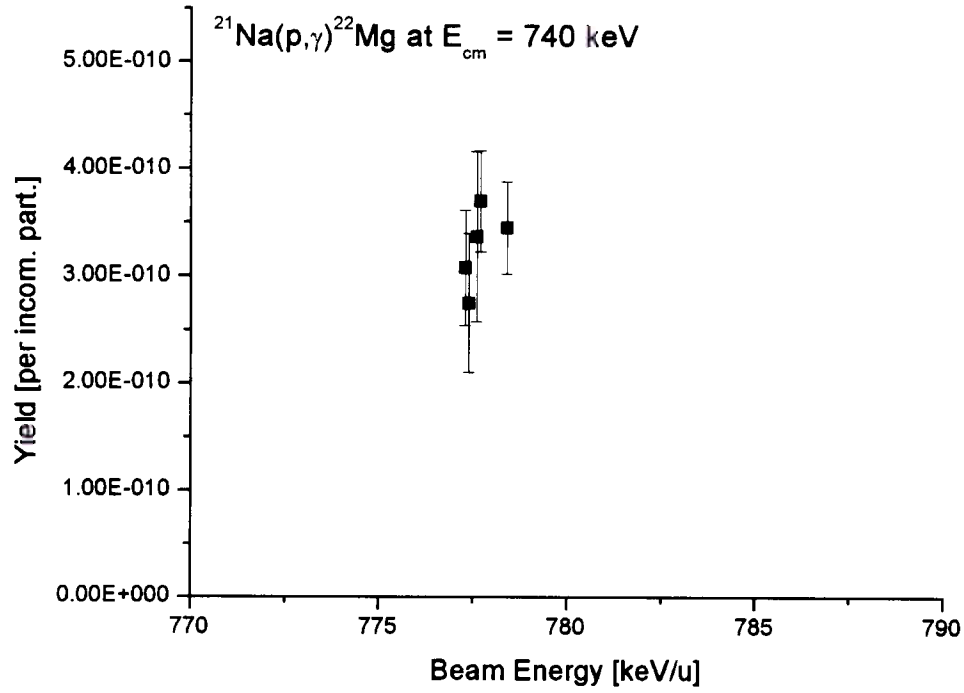
beam normalization to beta monitor
 $FC4_{eff} = \text{beta}_{tot}/\text{time} * 0.0747 + 10.5$

$dE = 82.15 \cdot 10^{-15} \text{ eV/at/cm}^2$

Analysis: recoil singles
1386 recoil singles total
 $2.30 \cdot 10^{13}$ ions on target
Breit-Wigner fit over data Yield = Y(Pressure,Energy)

Results: $\omega\gamma = 555.7 \pm 40.7 \text{ (stat)} \pm 65.0 \text{ (sys) meV}$
 $E_{cm} = 821.3 \pm 0.9 \text{ keV}$
 $\Gamma_{tot} = 16.1 \pm 2.8 \text{ keV}$ (after subtracting 3.0 keV dE_{beam})

Resonance: $E_{cm} = 740 \text{ keV}$



Runs: 7239, 7241, 7242, 7243, 7244
(7210 & 7212 have unusual coin/spls ratio)

Normalization: $q = 8+$
 $p(q) = 43.2 \pm 4.3 \%$ (Wenjie)

transmission: $99.5 \pm 0.5 \%$
dsssd: $99.0 \pm 1.0 \%$

beam normalization to beta monitor
 $FC4_{eff} = \text{beta}_{tot}/\text{time} * 0.05994 + 1.07$ (FC4 ~ 13-16 epA)

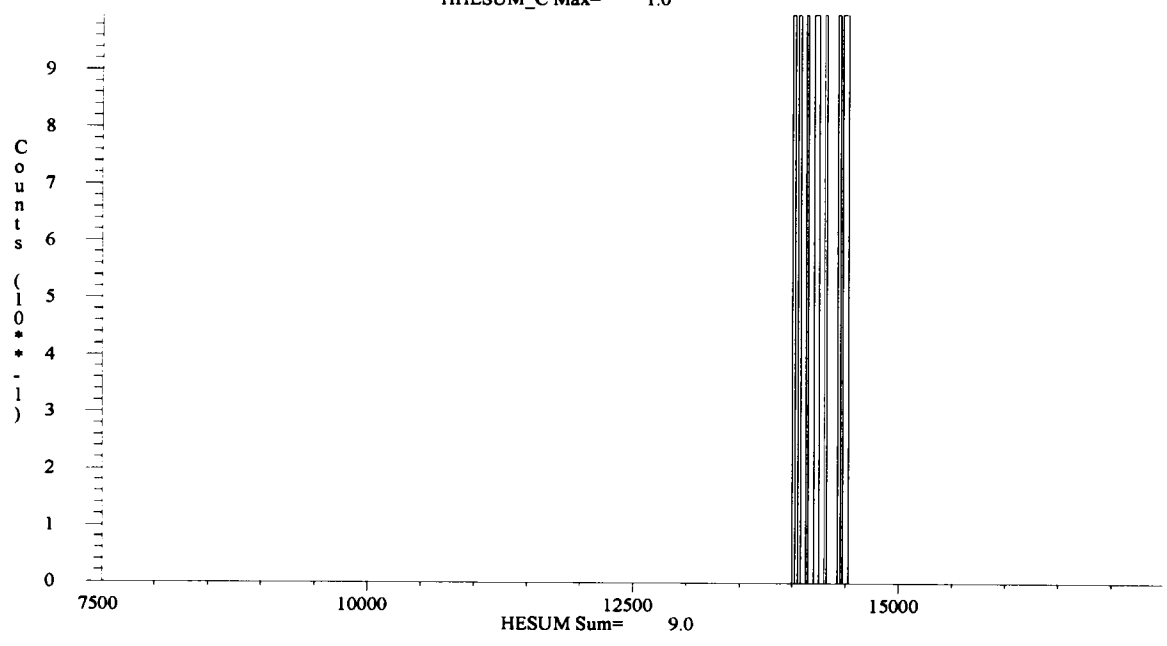
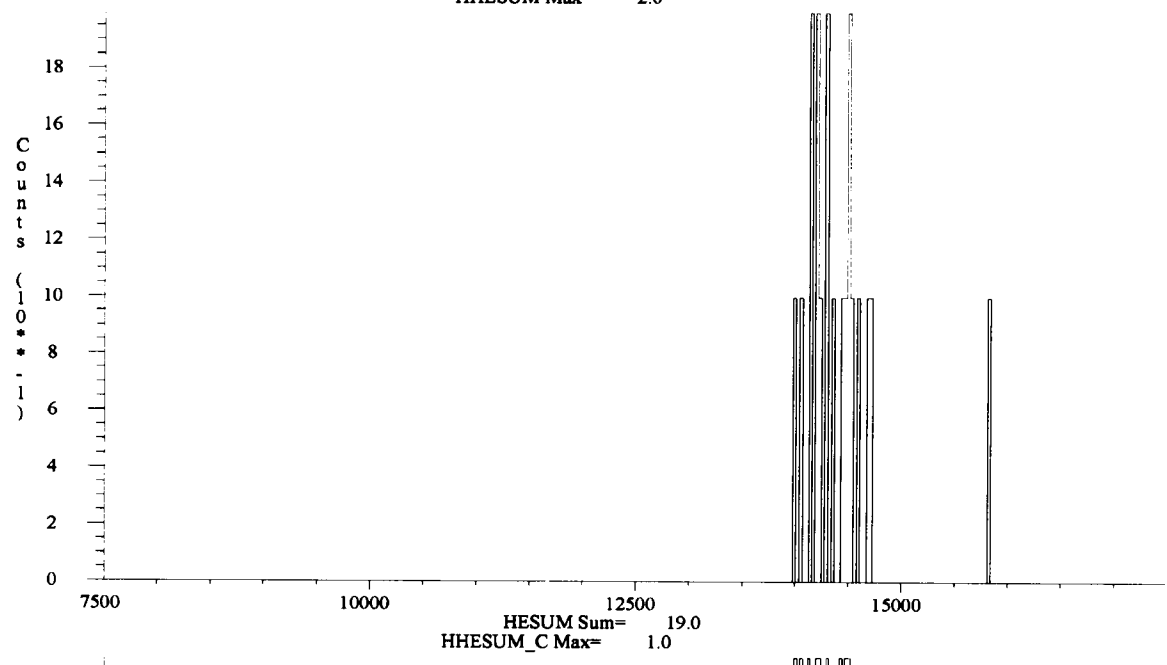
$dE = 94.6 \pm 5.6 \cdot 10^{-15} \text{ eV/at/cm}^2$

Analysis: recoil singles
thick target yield,
202 recoil singles total
 $7.14 \cdot 10^{12}$ ions on target

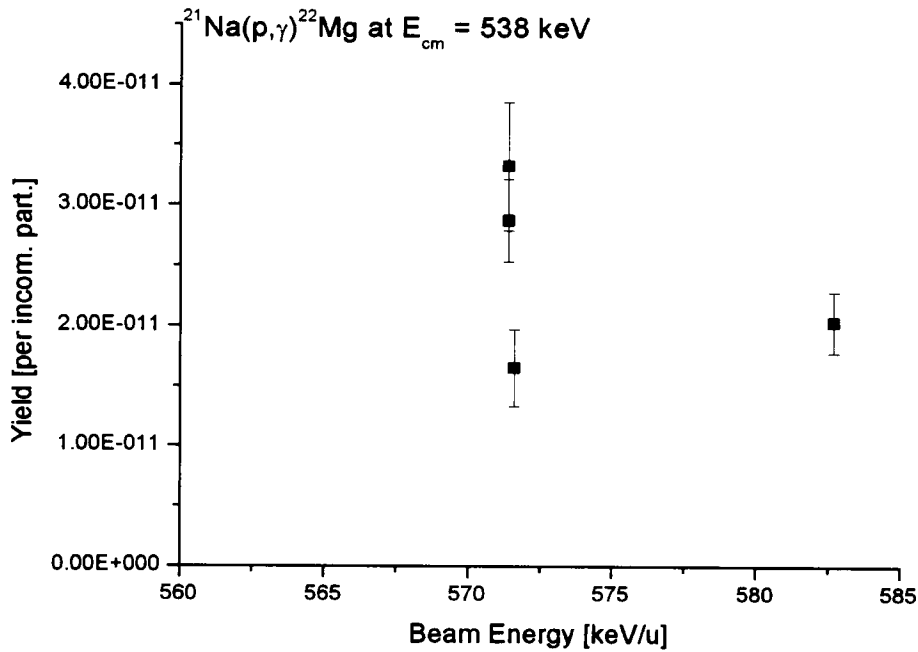
Results: $\omega\gamma = 251 \pm 18$ (stat) ± 36 (sys) meV
 $E_{res} = 734.1 \pm 6.6 \text{ keV}$

Resonance: $E_{cm} = 740 \text{ keV}$

Run # 7239 Tue Jul 22 09:02:50 2003
HHESUM Max= 2.0



Resonance: $E_{cm} = 538 \text{ keV}$



Runs: 7176, 7181, (6+, life times ~ 60 – 80 %)
6276, 7192 (7+)
(6274, 7191, 7194 E too high)

Normalization: q = 6+, 7+
p(6) = 23.4 +/- 2.3 % (Wenjie)
p(7) = 43.2 +/- 4.3 % (Wenjie)

transmission: 99.3 +/- 0.6 %
dsssd: 99.0 +/- 1.0 %

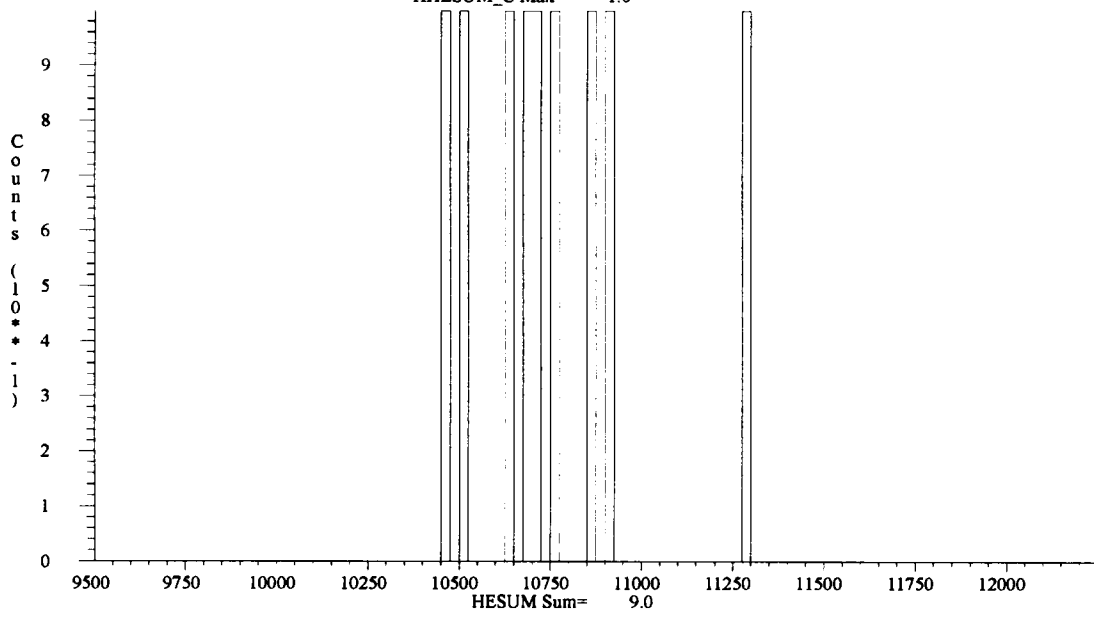
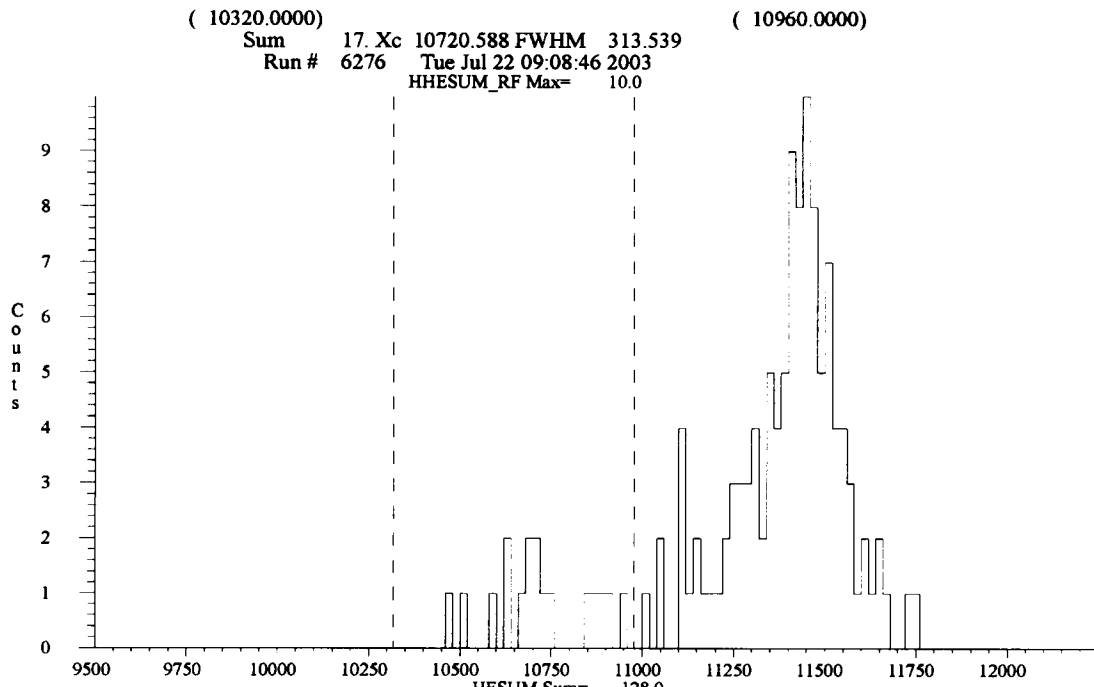
beam normalization to beta monitor
 $FC4_{eff} = \text{beta}_{tot}/\text{time} * 0.12191 + 46.6$ (FC4 ~ 250 – 610 epA)

$dE = 94.8 \pm 4.2 \cdot 10^{-15} \text{ eV/at/cm}^2$

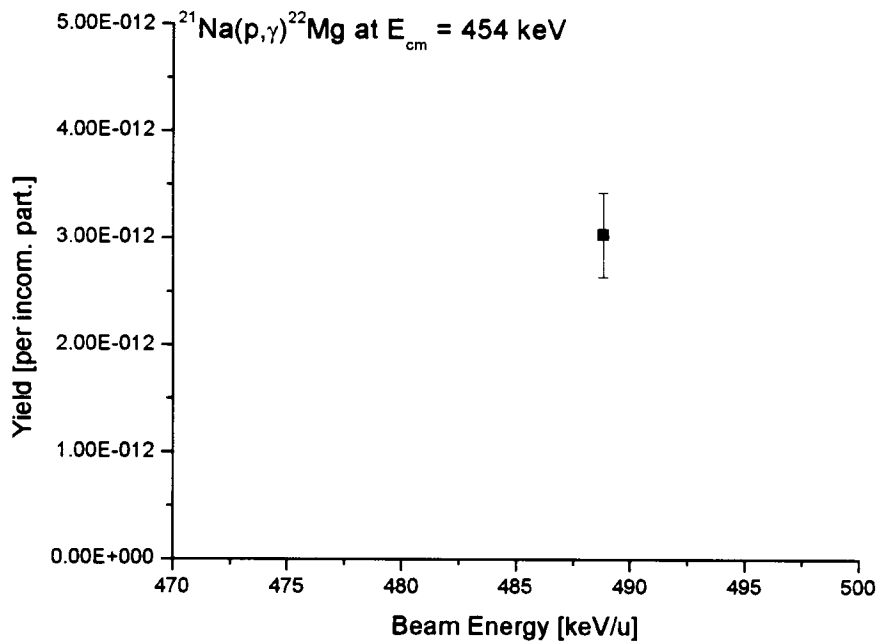
Analysis: recoil singles
thick target yield,
114 (6+) and 94 (7+) recoil singles total
 $2.80 \cdot 10^{13}$ ions on target

Results: $\omega\gamma = 16.6 \pm 1.6$ (stat) ± 2.3 (sys) meV (6+)
 $\omega\gamma = 10.2 \pm 1.1$ (stat) ± 1.4 (sys) meV (7+)
 $\omega\gamma = 12.1 \pm 0.9$ (stat) ± 1.2 (sys) meV (combined)
 $E_{res} = 542.2 \pm 13 \text{ keV}$ (3 reasonable z-mask, that don't agree)

Resonance: $E_{cm} = 538 \text{ keV}$



Resonance: $E_{cm} = 454 \text{ keV}$



Runs: 9015 - 9045
(except 9019, 9021, 9038)

Normalization: $q = 6+$
 $p(q) = 38.2 \pm 3.8 \%$ (Wenjie)
 measured at 425 keV to be 41.2 % from FCCH/FC4

transmission: $99.2 \pm 0.7 \%$
 dsssd: $99.0 \pm 1.0 \%$

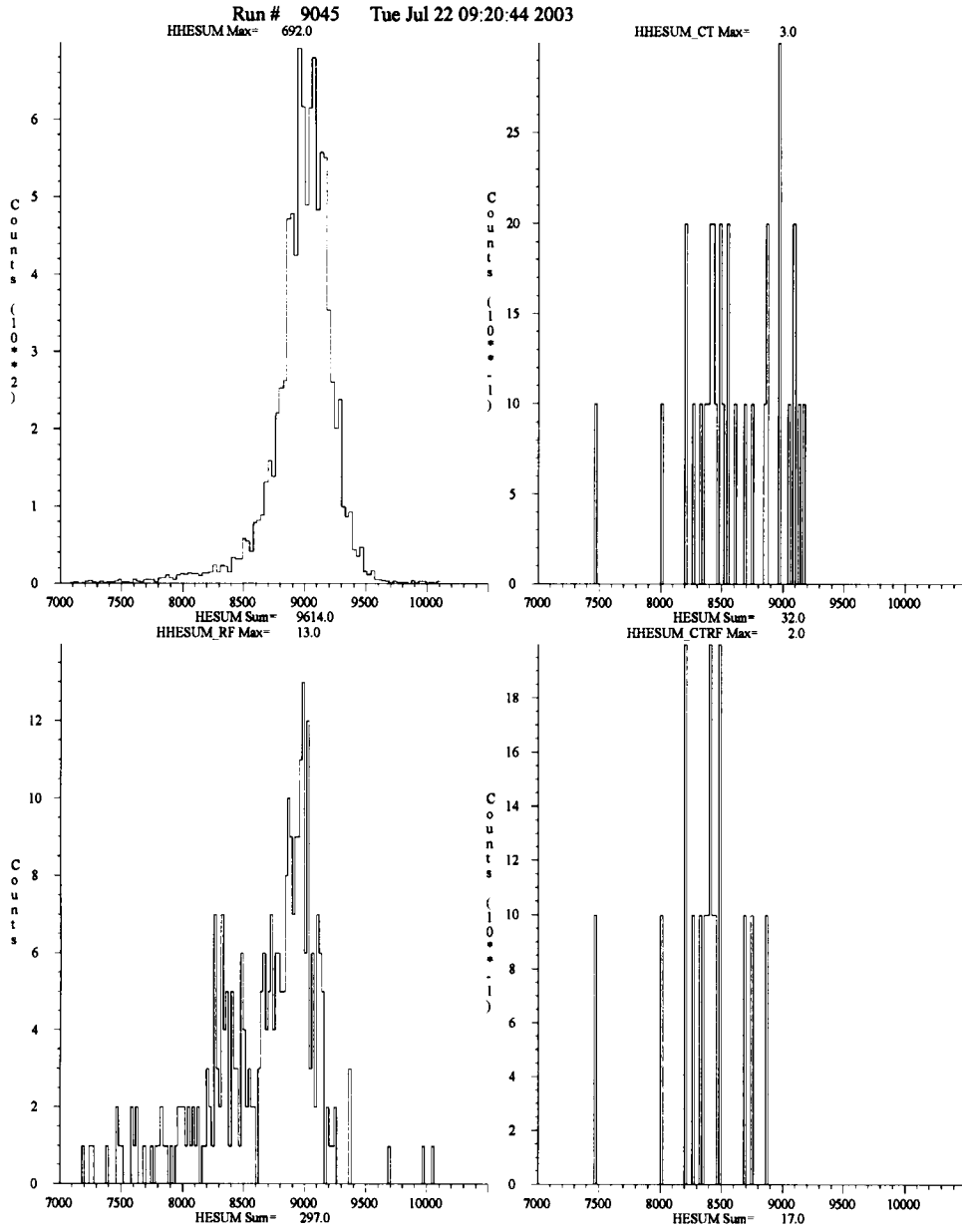
beam normalization to beta monitor
 $FC4_{eff} = \text{beta}_{tot}/\text{time} * 0.17816 + 0.11$ (FC4 130 – 300 epA)

$dE = 102 \pm 5.1 \cdot 10^{-15} \text{ eV/at/cm}^2$

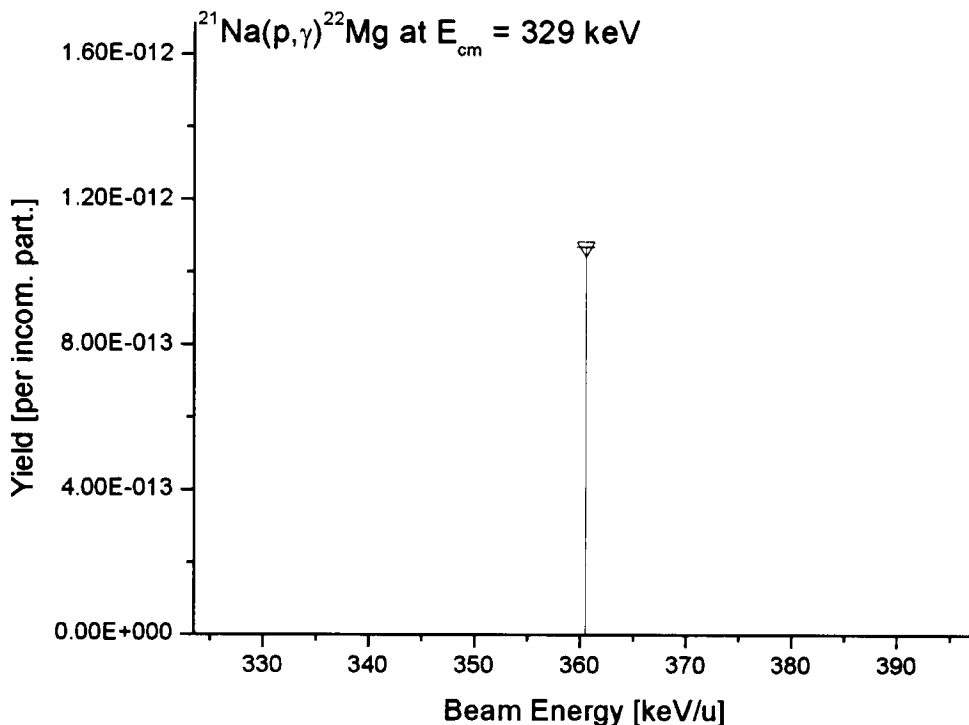
Analysis: thick target yield,
 16 (20 / Dave) recoil coincidences total
 tight rf and E-cut leads to 68 recoil singles, with approx 23
 background events, thus 45 good recoil singles
 same cuts on coincidence events reduces them to 12
 estimation of 60 good recoil single events
 $4.89 \cdot 10^{13}$ ions on target

Results: $\omega\gamma = 1.24 \pm 0.18$ (stat) ± 0.18 (sys) meV
 $E_{res} = 453.0 \pm 7.0 \text{ keV}$

Resonance: $E_{cm} = 454 \text{ keV}$



Resonance: $E_{cm} = 329 \text{ keV}$



Runs: 6234, 6235, 6236, 6237, 6239
6246, 6247, 6248

Normalization: $q = 5+$
 $p(q) = 39.6 \pm 4.0 \%$ (Wenjie)

transmission: $98.9 \pm 0.8 \%$
dsssd: $99.0 \pm 1.0 \%$
bgo: $40 \pm 10 \%$

beam normalization to beta monitor
 $FC4_{eff} = \text{beta}_{tot}/\text{time} * 0.05994 + 1.07$ (FC4 ~ 100 epA)

$dE = 94.6 \pm 5.6 \cdot 10^{-15} \text{ eV/at/cm}^2$

Analysis: recoil coincidences
thick target yield,
0 recoil coincidences total
 $6.02 \cdot 10^{12}$ ions on target

Results: $\omega\gamma < 0.36 \pm 0.36$ (stat) ± 0.10 (sys) meV
Energy Range : 319 - 346