

²⁶⁹Al Studies

Aims:

- Produce and Accelerate ²⁶⁹Al
- Measure contaminants
- Confirm ²⁶⁹Al via 363 keV resonance
- Ion chamber background rejection efficiency.

Tentative Schedule:

26th - 27th April

Assemble ion chamber electronics. Test DAQ with

28th - 5th April - May

TUDA is running (Chris, Dorio & Jonky required)

Wed 5th May

Assemble & test ion chamber GHS.

OLIS tunes ²¹Ne → 269 keV resonance.

Thurs 6th May

Take data on & off resonance.

Fri 7th May

Retract ion chamber.

12th - 17th May

²¹Na(p,γ)²²Mg run.

Mon 17th May (busy day!)

AM: Install ion chamber.

OLIS tune ²⁶Mg 384 keV/u

M. Dombosky ²⁶Al yield tests.

EARLY PM: Establish ²⁶Mg tune - take some att. beam data.

LATE PM: Switch to ²⁶Al

Owl Shift: Run on resonance (if time, off resonance)
Should be ~ 100 cts/hr coinc.

Tue 18th May

Contamination measurements (AM)*
PM + Overnight, more recoil data.

* to be discussed...

Contamination Measurements

What do we expect?

Primary beam $\sim 3 \times 10^8 \text{ s}^{-1}$ ^{26g}Al almost stable
 $\sim 3 \times 10^6 \text{ s}^{-1}$ ^{26}Na ($T_{1/2} = 1.01 \text{ s}$, β^- 1.809 MeV)
 $\sim 3 \times 10^4 \text{ s}^{-1}$ ^{26m}Al ($T_{1/2} = 6.3 \text{ s}$, β^+ 1.809 MeV)
 $\sim ?$ ^{26}Mg stable!

- Decay curves (scalers)
 - Elastics
 - β -monitor (useful at these intensities?)
 β -endpoint? (β^- vs 511 s)
- (REM grid)

DAQ

Assume 4-Anodes.

Singles spectra

4 x Anode pulse height

$E_1 \times (E_2 + E_3 + E_4)$

MCP-HF time

MCP-HF time

$\times (E_1 + E_2 + E_3 + E_4)$

= 7

Coincidence spectra?

What spectra can we lose?