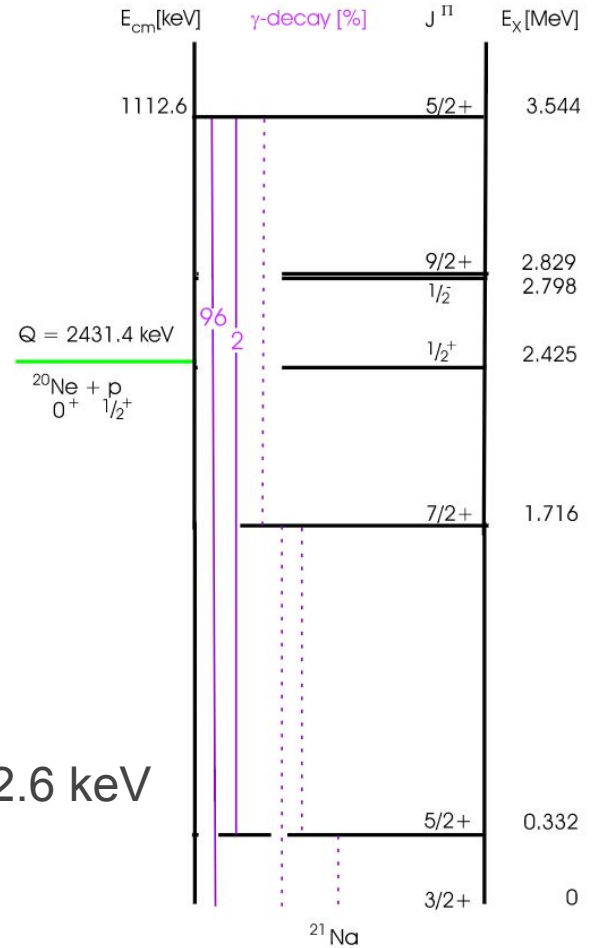
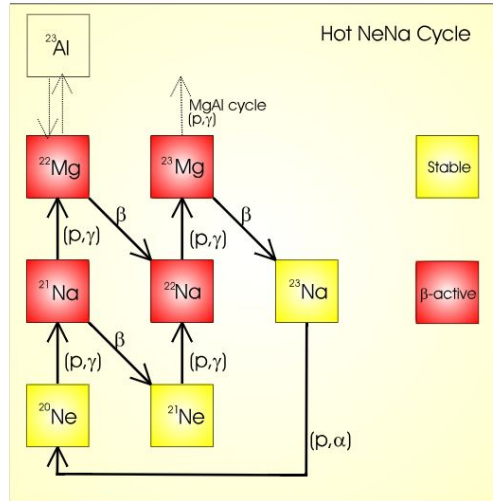
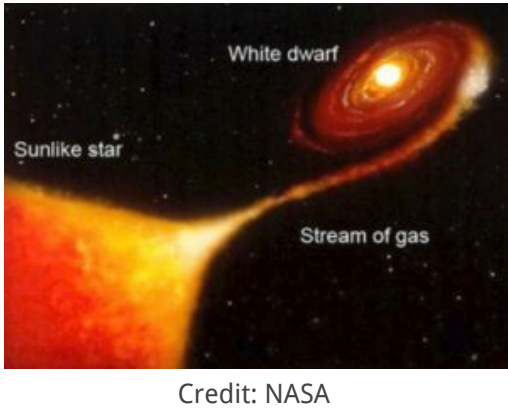
A yellow starburst graphic with a black outline, containing the text 'Group 6' and 'Dan and Sara'.

Group 6

Dan and Sara

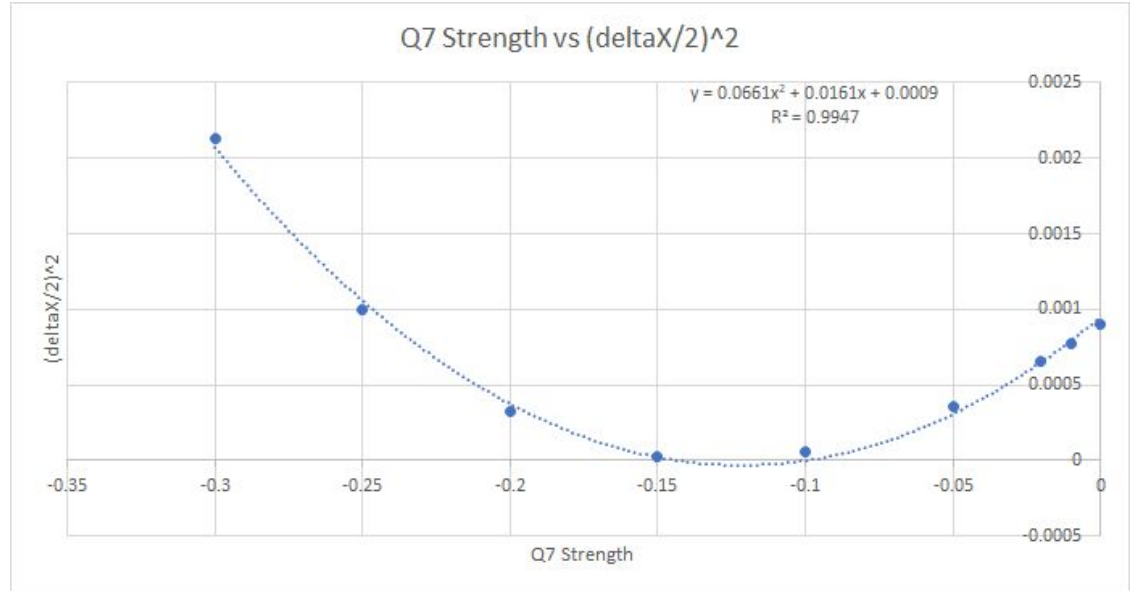
$^{20}\text{Ne}(p,g)^{21}\text{Na}$



- Planned for commissioning of SECAR at $E_{cm} = 1112.6 \text{ keV}$
- We took $E = 40 \text{ MeV}$

We are bad at math.

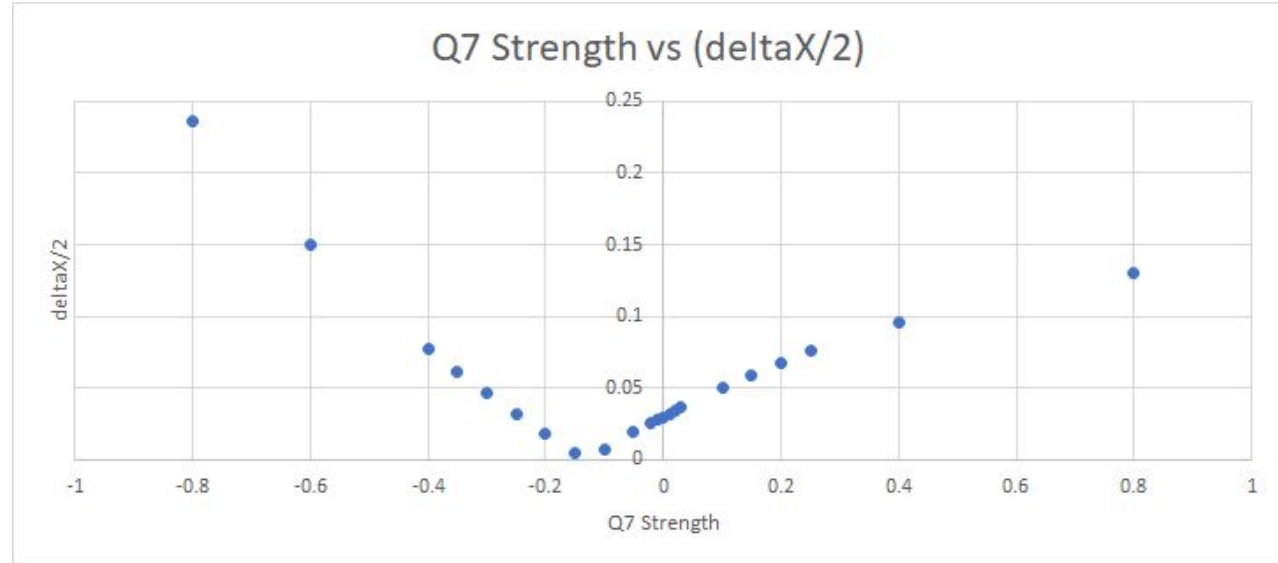
It was interesting that the field had to be decreased from 0.02T to -0.3T for us to see the expected shape



Varying the strength of Q7 and seeing the changes in the half width of the image.

We are bad at math.

- We also found it interesting that outside of that region the shape goes a little crazy
- Using the coefficients we found an emittance value close to expected but a factor is still missing, but we decided to move on



Varying the strength of Q7 and seeing the changes in the half width of the image.

We know how to fit now.

- We started by fitting Q2, Q3, and Q4
- But we had issues with some minor bugs and by the time we fixed those we had switched to Q2, in first order.
- We fit Q2 with the original full length then we shortened by 3% and fit the strength again
- **Difference in field was 3% as expected**
- Q2 converged at, Mas. Res.Power at FP2= 751, Resol. by max. ray= 950 using COSY 9.1 (FRIB) and 747 and 946 respectively using COSY 10.0.



This is something we should be aware of when using COSY in the near future for commissioning.

Interesting: resol. By max and mas.res.power didn't match in first order most likely because real life misalignment and lengths being in the file.

More things to learn..

- Make SECAR fox file easier to manage for users (text file inputs, etc)
- Study impact of longitudinal, transversal and pitch, roll and yaw changes
- Make own version for ReA
- Better understand the limitations

Thanks for the organizers!