

THURSDAY, AUG 3

Dark Matter Masterclass (Pilot, Peggy Norris)

AM Session (all times Eastern Daylight)

10:00

- Welcome/introductions
- [Assess prior knowledge](#) - What have you heard or read about dark matter?

10:20 Dark Matter Background Session

1. Evidence for the existence of dark matter
 - a. The movement of galaxies
 - b. The movement of stars within galaxies
 - i. [Activity 1](#) (*hands-on, discussion*)
 - ii. [Activity 2](#)
 - c. General relativity / gravitational lensing
 - i. [Activity 3](#) (*hands-on, discussion*)
2. Candidates for dark matter
3. Detecting dark matter
 - a. [Xenon1T Summary Article](#) Jigsaw activity

We will take a break at a convenient spot around 11:30 and break for lunch at 1:00 pm. Lunch time reading:

<https://news.mit.edu/2012/explained-sigma-0209>

Afternoon Session

2:15 Discussion of Sigma article

2:30 pm

Xenon1T Detector Response Analysis for WIMP candidates

- Work through 4 GeV/c² WIMP mass together
- Each group work through analysis for a different WIMP mass
- Report out by groups

3:30 BREAK

3:45 [ORID Discussion](#) in small groups; feedback on pilot MC:

4:00 [What did you learn about dark matter today](#) (post-assessment)?

4:15 What questions do you still have about dark matter?