Review

Fission Reactions
  ● Oklo
  ● “The Bomb”
  ● Reactor

Fusion Reactions
  ● Stars
  ● Tsar
  ● ITER and Omega Laser Facility
Natural nuclear reactor sites

Sandstone

Uranium ore

Sandstone

Granite

The uranium isotopes found at Oklo strongly resemble those in the spent nuclear fuel generated by today’s nuclear power plants.
Advanced Test Reactor at the U.S. Department of Energy’s Idaho National Engineering and Environmental Laboratory
Réactions de fusion de l’hydrogène dans les étoiles

1. $^1H + ^1H \rightarrow ^2D + e^+ + \nu$
2. $^1H + ^2D \rightarrow ^3He + \gamma$
3. $^3He + ^3He \rightarrow ^4He + 2^1H + \gamma$
The Russian-built “Tsar” Hydrogen Bomb
ITER construction began in 2007
Omega Laser Facility at the University of Rochester
NEXT TIME

- Fundamental Particles and Interactions
  - Harris: 12.1-12.2
- In-class presentations all next week
- We have just 3 lectures left
  - the first 2 will be new material
  - the last lecture (Apr. 29) will be a review and discussion of the final exam