THE MAIN SEQUENCE

GOALS: To learn about gravity as an energy sources.
To learn about nuclear reactions as energy sources.
To learn about some of the fusion reactions that are important as energy sources in (main sequence) stars, particularly the p-p cycle.
To learn the equations of stellar structure and how they are derived.
To learn how stellar models are made.
To become familiar with the solar model.
To become familiar with the story of solar neutrinos.

DUE: (a) Monday, March 15, 2010 (5 pm)
(b) Wednesday, March 17, 2010 (noon)

READ: Chapters 9

HOMEWORK: (Sign the honor code at the end)

1. 9.4 (8 pts) (a) first find the gravitational potential energy of the star
(b) problem as stated in text [Gravitational Energy]

2. 9.6 (4) [Δm --> E]

3. 9.7 (5) [[Δm --> E, β decay]

4. 9.8 (5) [Binding energy]

5. 9.11 (12) [Fusion]

6. 9.12 (8) [density=ρ(r)]

7. Q9.9 (6) [Stellar models]

Office hours/review session: Monday, March 15, 1:00-2:00 pm
Tuesday, March 16 3:00-4:00 pm, in NSC 119.
I encourage you to come to my office to discuss these problems and the course material. It is a good way to learn the material.