H160 Critical Thinking Questions
What is Wrong with these Observations

Use your own paper or mine. Work in pairs or threes but hand in your own separate copy. Outline form is preferred. Conclude your reasoning with either NPH (no problem here), VSBNI (very surprising but not impossible) or ATOOTM (are they out of their minds). Here is an example.

Astronomers announce the discovery of a 33 solar mass star with an age of 2 billion years.

the ages of stars are inversely related to mass
theoretical models and statistical observations & calculations give a main sequence lifetime of less than 5 million years for this star
after the main sequence a star of this mass would quickly go supernova and become a compact object, probably a black hole
how the heck did they arrive at such an age?
ages are really difficult to determine for isolated stars
what brand of tequila were they consuming? ATOOTM

Review of Recent Chapters

1. Astronomers announce a new GRB is seen by the SWIFT observatory (in orbit) and follow-up observations in visible light reveal an afterglow that appears to come from a globular cluster in our galactic halo.

2. Astronomers find a very young star cluster in the disk of the Milky Way with a metallicity almost the same as the globular clusters in the halo.

4. Astronomers observe a nova outburst from a binary star system. Analysis shows that more massive object has a mass of 5 $M_{\text{Sun}}$ and the low mass object has a mass of 3 $M_{\text{Sun}}$.

5. Astronomers announce finding a red supergiant star with a mass of 3 $M_{\text{Sun}}$.

6. The SWIFT observatory records a long GRB and the afterglow from it is seen in a galaxy 8 billion light years away. At the same time as the SWIFT observation, the LIGO gravitational observatory records gravity waves passing through the Earth from the direction of the GRB.

7. Astronomers find an x-ray burster in the disk of the Milky Way. Analysis shows that more massive object has a mass of 25 $M_{\text{Sun}}$ and the low mass object has a mass of 13 $M_{\text{Sun}}$.

Current Chapters

8. Astronomers announce the discovery of a globular cluster in the disk of the Milky Way.

9. Astronomer mining the data from the GAIA satellite find a star in the plane of the Milky Way that has an elliptical orbit whose orbital direction is the opposite of the Sun's.

10. Astronomers using the Hubble Space Telescope announce the discover of a quasar in the halo of our galaxy.