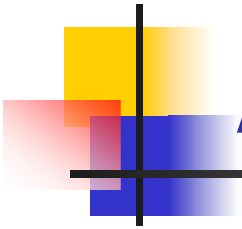
Review for Exam #2

November 4, 2002

1) Review last lecture
2) Announcements
3) Quiz #8
4) Review for Exam #2

Review of Last Weds.

- Star Clusters
- Type II Supernovae
  - nucleosynthesis
- Neutron Stars
  - x-ray binaries
  - pulsars
- General Relativity and Gravity
- Black Holes
  - event horizon



Announcements

- Exam #1 and quiz grades are available on Blackboard
- Exam #2 is on Weds. - 20% of grade
- There will be another extra credit question available after the exam
  - due Fri. Nov. 8, 2002 at 5pm

The Exam

- Approximately 45 multiple choice & true-false questions
  - one point for correctly filling in your name and social security number
- Covers "everything" up to now
  - Chapters 1-16
  - It will concentrate on Chapters 4, 12-16 (about 3/4 of exam)
  - Some questions are directly from the homework and quizzes
- Attempt to test "understanding" and "knowing", not memorization
- Bring a No. 2 pencil, calculator and FSU ID card
- No books or notes

Equations

- This information will be provided for you on the exam:
  - $c = 3 \times 10^8$ m/s (speed of light)
  - $(P_{years})^2 = (A_{AU})^3$
  - $F = G \frac{M_1 M_2}{r^2}$
  - $\tau_{MS} = 1 \times 10^{10}\ (\text{years}) \times \frac{\text{amount of hydrogen (solar mass)}}{\text{rate of hydrogen burning (luminosity)}}$
  - 1 year = 3.2×10^7 seconds
  - $L \propto T^4$
  - $\lambda \propto 1/T$
  - $I = L/4\pi r^2$

New Material

- Waves
  - frequency/wavelength
- Electromagnetic waves
- Atomic energy levels
- Doppler Effect
- Temperature and Light
- Blackbody Radiation
- Measuring properties of stars
- Classification of stars
- Stellar composition
- H-R diagrams
- Main Sequence
- Stellar Interior/Surface
- Fusion
- Solar neutrinos
- Solar wind/sunspots
- Interstellar Gas/Dust
- Molecular clouds
- Protostar
- Calculating Star's Lifetime
- Steps of Star's Life
- Red Giant
- White Dwarf
- Brown Dwarf
- Binary Star Systems
- Nova
- Supernova (Types Ia and II)
- Star Clusters
- Neutron Stars
  - x-ray binaries, pulsars
- Black Holes

Important Older Material

- Scientific Method
- Motion of the Sun, planets, Moon
- Newton's Laws
- Seasons
- Moon's phases
- Eclipses

- Comparative geology
- Solar system formation
- Inner planets
  - geology and atmospheres
- Outer planets
  - compositions, orbits
- Gravity
- Lightyear, AU