IQ Second Test Logistics

- **Review Session:**
  - Tonight after class

- **Test:**
  - Monday 30 March
    - Chapters 7 through 15
      (planets and planetary systems)
Totality! The total solar eclipse of the sun seen from Africa, March 2006. The left image shows the eclipsed sun, and the right image shows the moon’s shadow traversing Africa.

(Images courtesy of the BBC and Andrea.)
The sun is made of hydrogen (~74%) and helium (~25%), making it similar in composition to the theoretical mix of the universe at the time of the Big Bang.
• **T. It is true!**
• The Sun is about 74% hydrogen, 25% helium and 1% everything else (by mass).
• This is also very close to the composition of the universe, in general!
• The “other 1%” is all the C, Si, Fe, etc. that make us possible!
The Sun’s energy comes from:

A. Burning hydrogen in the oxygen-rich atmosphere to form water
B. Gravitational contraction
C. Nuclear fusion of hydrogen to form helium
D. The sun is carbon-rich (like coal) and is on fire.
The correct answer is C, nuclear fusion.

$E = mc^2$
The Sun’s oscillations provide information on its distance from Earth.

T

F.
• False!

• The Sun oscillates with more than a million periods corresponding to sound wave resonances.

• The oscillations tell us about the interior of the Sun!
About 10 billion solar neutrinos passed through every square centimeter of your body in the past second.
IQ

- T. True!
- How many did you feel?
- Why?
- Solar neutrinos can tell us about the deep interior of the Sun. Ask me how.
IQ

- Sunspots appear dark, but are actually hot

- T
- F
• T! It is true.

• The photosphere of the sun is 5800 K.

• The center (umbra) of a sunspot is about 4300 K. The sunspot is hot, but appears dark because every square meter of the spot radiates less energy (light) than each square meter of the photosphere.
IQ

- NEVER EVER LOOK DIRECTLY AT THE SUN, EITHER THROUGH A TELESCOPE OR BINOCULARS, OR WITH THE NAKED EYE!

- DON’T DO IT! YOU RISK SEVERE EYE DAMAGE!

- DON’T DO IT! ITS JUST plain STUPID!