Astronomy 101, Section 004

- John McGraw, Professor
Astronomy is the study of:

A. Atoms and molecules
B. Planets and moons
C. Stars and galaxies
D. Everything
• D. *Everything* is the best answer!

• Astronomy is actually the study of everything we can know about our universe. This includes atoms and molecules, as well as stars, galaxies, clusters of galaxies and the nature of the universe itself.
IQ

- A light-year is a unit of distance.
  - A - True
  - B - False

- The constellation Orion
  - Orion is one of 88 constellations in the sky.
  - Look for it tonight!
• **True!**

• A light-year is the distance light travels in one year.

• The speed of light is
  \[ c = 300,000 \text{ km/s}. \]

• One year has 31,536,000 s.
  
  – So, one light-year =
    \[ 31,536,000 \text{ s} \times 300,000 \text{ km/s} = 9,460,800,000,000 \text{ km} \]

• Now you know why we use light-years instead of km!
Can’t someone do something about all those big numbers on the previous IQ image?

- Yes
- No
The correct answer is **Yes!**

As a special one-time offer, if you ask your professor about “big numbers” within the next 60 minutes, you will learn how to manipulate big numbers fearlessly - at no additional cost!

Remember to ask now! This offer won’t last forever!
Remember!

- As a courtesy to other students, the professor, and to keep us from getting kicked out of here:
- No eating or drinking anywhere in the Astronomy Center or Domed Theater
- Turn off cell phones during class – yes, really!

The Very Large Array (VLA) on the Plains of San Agustin, New Mexico