

NAME.....

**ASTR/PHYS109: 2008**

**HOMEWORK SHEET #10**

Due: 1.00 pm Thursday Oct 16 2008

**Bring to lecture, tutorial or leave with department administrator room 706,  
Physics and Astronomy Department.**

1. A galaxy in the Virgo cluster is measured to have a distance of 20 Mpc.  
When we receive the light from the galaxy we see the galaxy as it was in the past.  
How long ago?
2. State the two *Cosmological Principles* and discuss what they mean.
3. Give a sketch of the Hubble Diagram. Explain how the diagram is different on the three separate assumptions of a (i) closed, (ii) critically flat and (iii) open universe.
4. Observations tell us that the universe is expanding.  
Does this mean that the size of the Solar System is increasing in size due to this expansion effect? Explain.