## Lab Preparation - The Expansion of the Universe

## *Before* the lab session:

Read the lab manual <u>The Expansion of the Universe</u>. Note: you need not do the exercise on Signal/Noise (pp. 7-8 and 7-9) since you have already done this in the Spectral Classification Lab. Nonetheless, read the last paragraph of this section (p. 7-9).

Answer the following questions to check your understanding of several basic ideas.

1) Using Hubble's diagram (Figure 1), derive a value for the Hubble constant. (See p. 7-11 and Q7.)

2) Suppose you obtain the spectrum of a galaxy and measure the wavelength of the Calcium K line to be 3940.5 Å. What is the recession velocity of the galaxy?

3) Using your value for H<sub>0</sub> and the Hubble Law, how far away is this galaxy? Show your work.