The purpose of this week’s lab is to study the evolution of stars using the most important diagram (HR diagram) in Astronomy.

You should make an HR diagram of the core of the globular cluster using the actual data that is provided. You should use as many stars as you can in order to see different evolutionary phase of stars comprising this cluster. Answer the following questions.

i) What is the angular size of the globular cluster?

ii) If you place this cluster ten times further away, what would its angular size be?

iii) After constructing your own HR diagram, what is the color index of the turnoff point? What is the visual magnitude of the turnoff point?

iv) What is the significance of the turnoff point?

v) Why is the vertical axis of the HR diagram shown in terms of the apparent visual magnitude and not in terms of the luminosity of stars in the cluster?