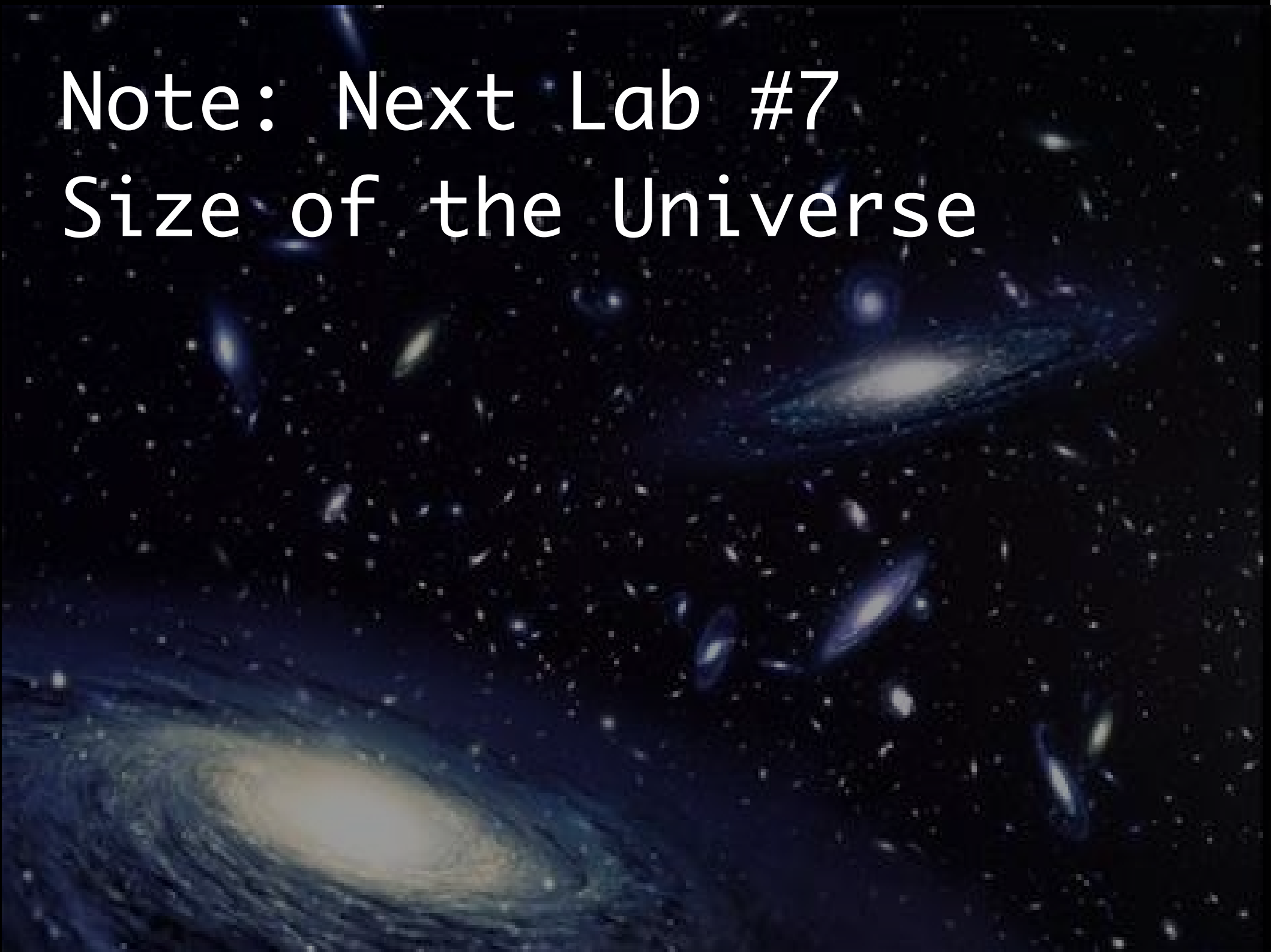
How big is our Galaxy?


Note: Next Lab #7
Size of the Universe

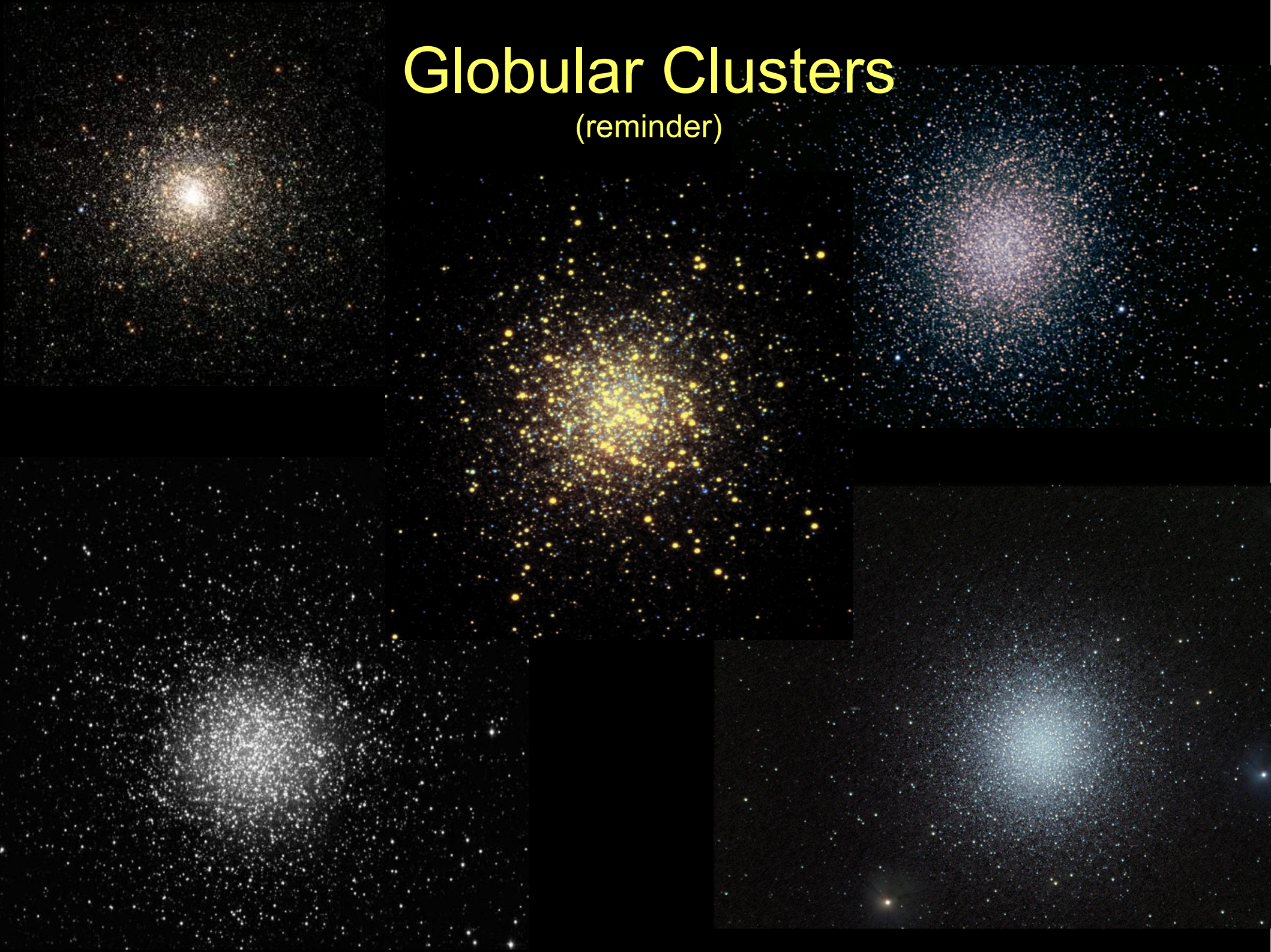
Why are we doing this Lab?

Long ago, we thought that Earth was the centre of everything. Today, you're going to see that we are no where near the centre of our galaxy!

Since we're inside our galaxy, it's hard to measure its size. Fortunately, globular clusters make good distance diagnostics.

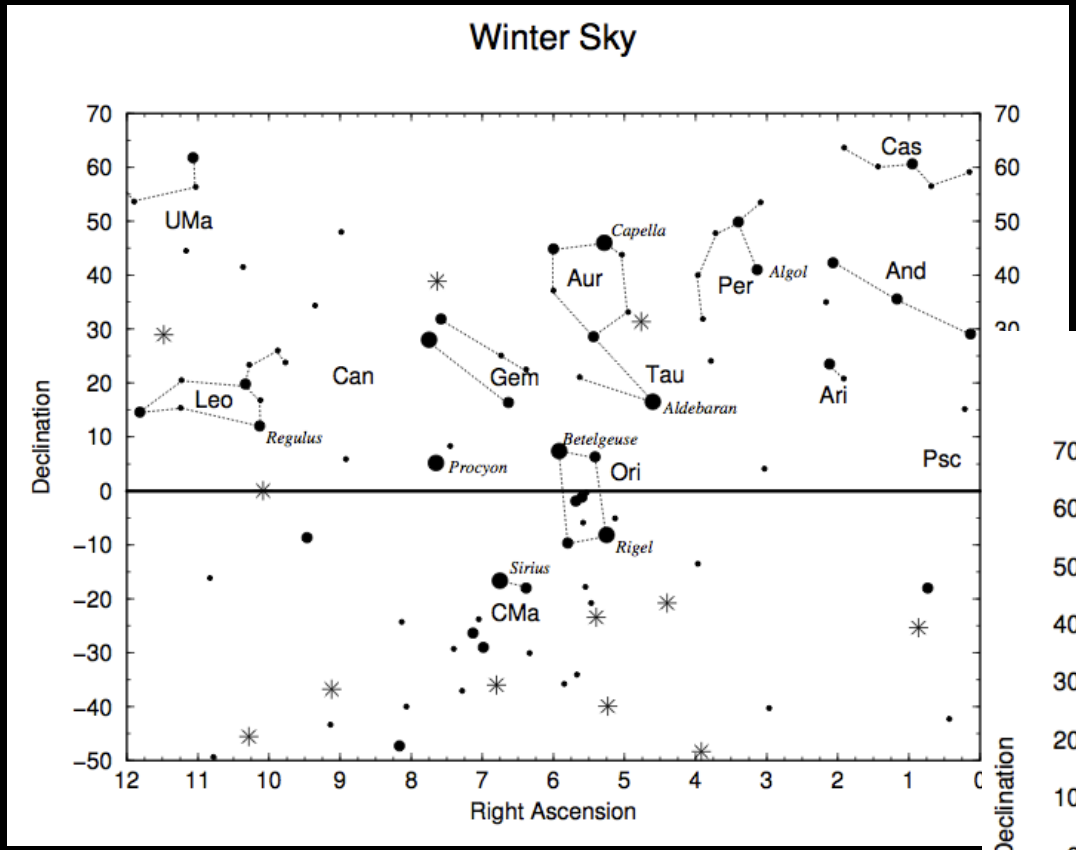
Globular Clusters

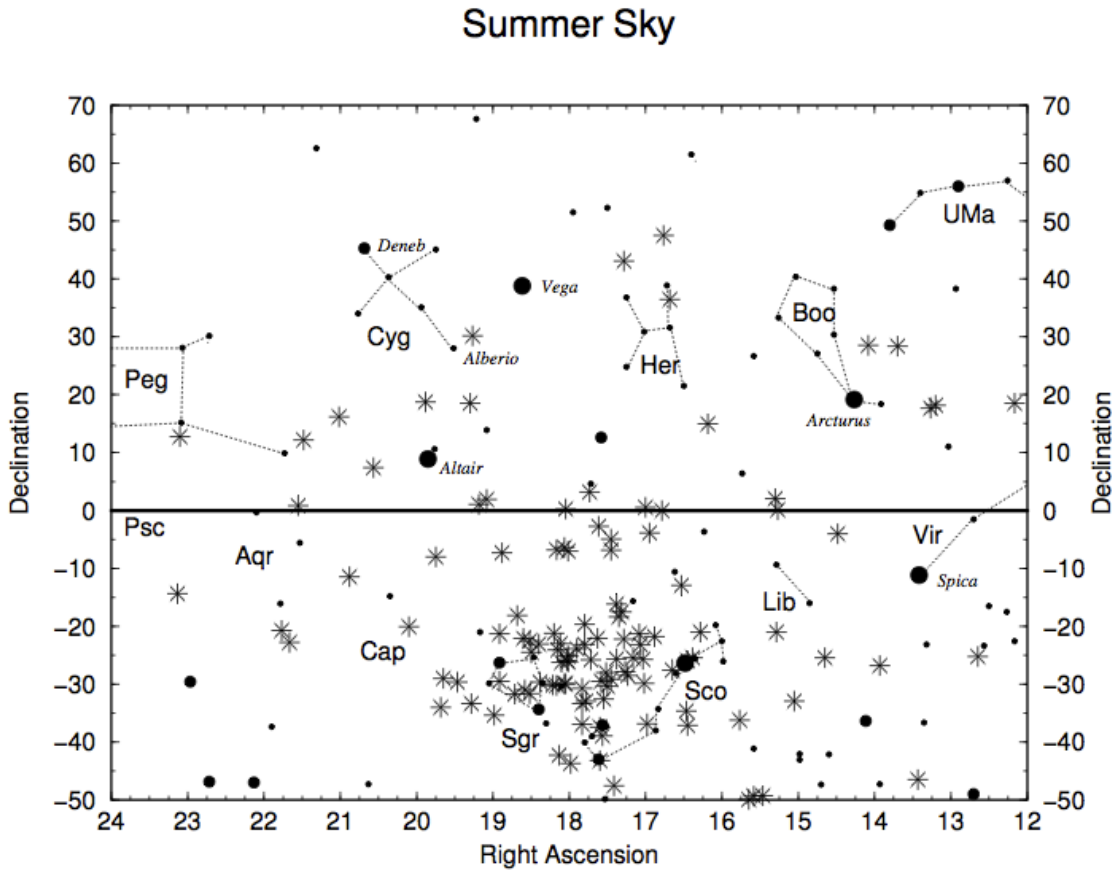
(reminder)



Why Globular Clusters?

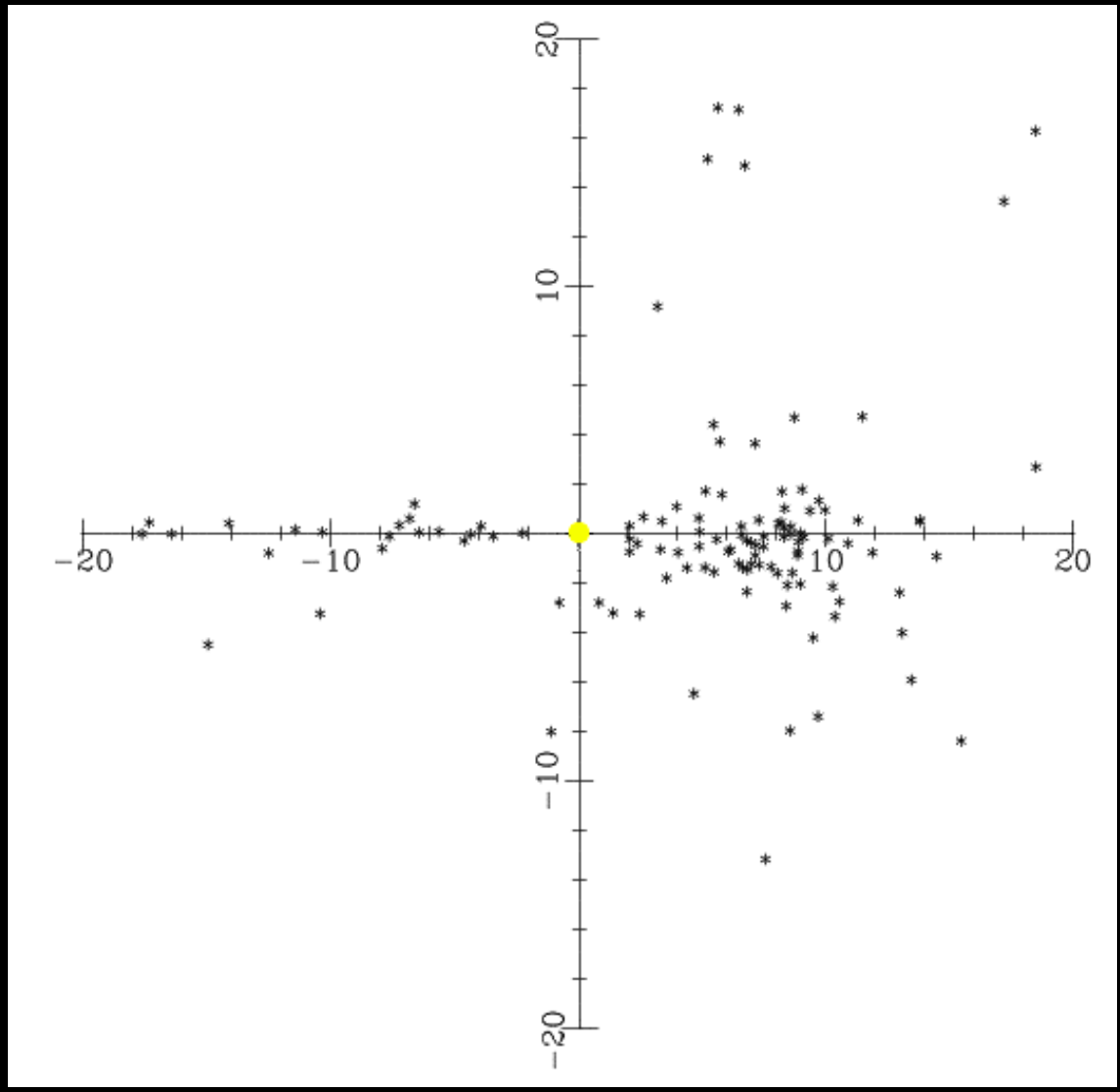
Globular clusters are found mainly in one part of the sky.





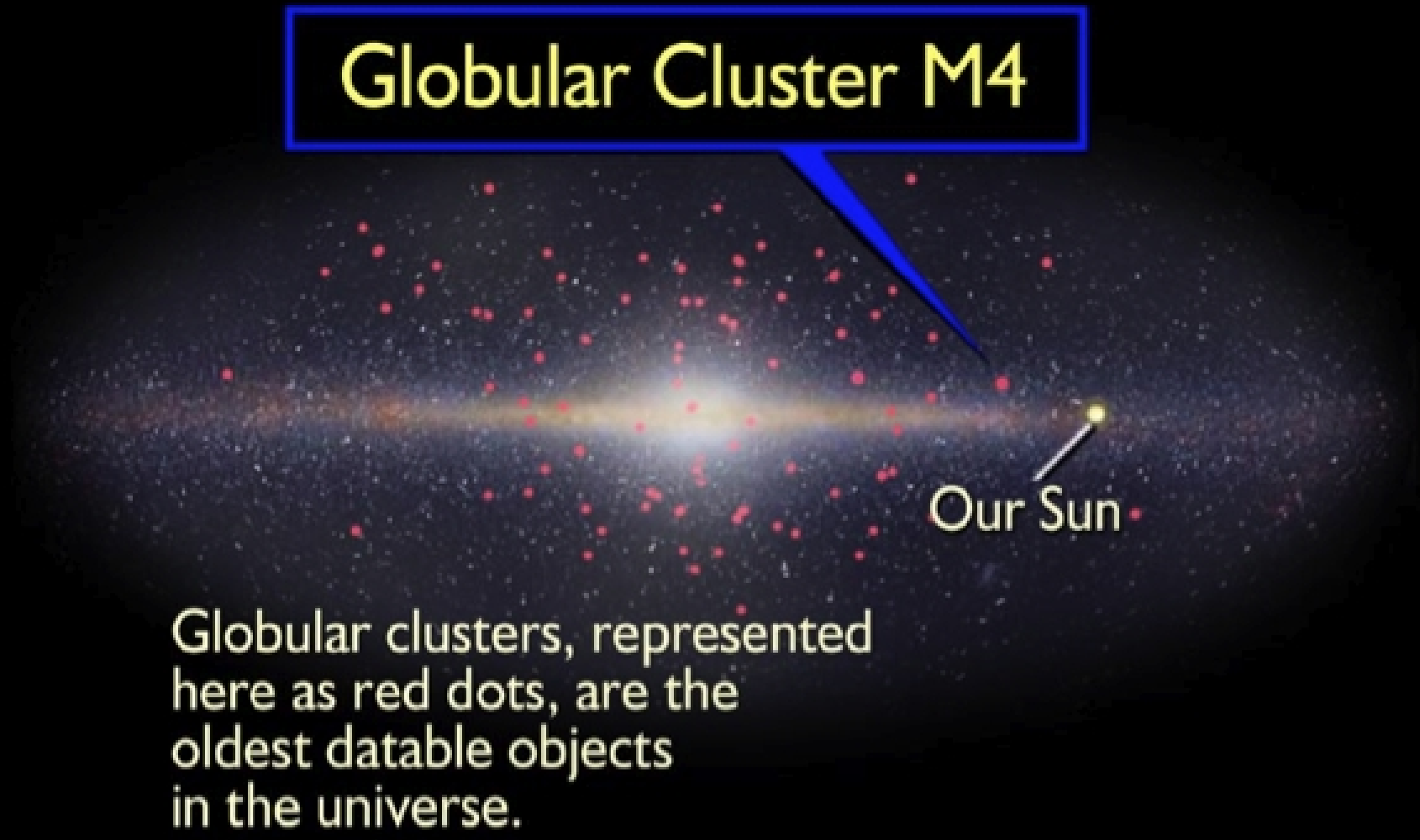
Globular Cluster Locations

If you plot globular cluster positions, the Sun is offset!



Size of Our Galaxy

Average distance to each cluster should give the Galactic radius!

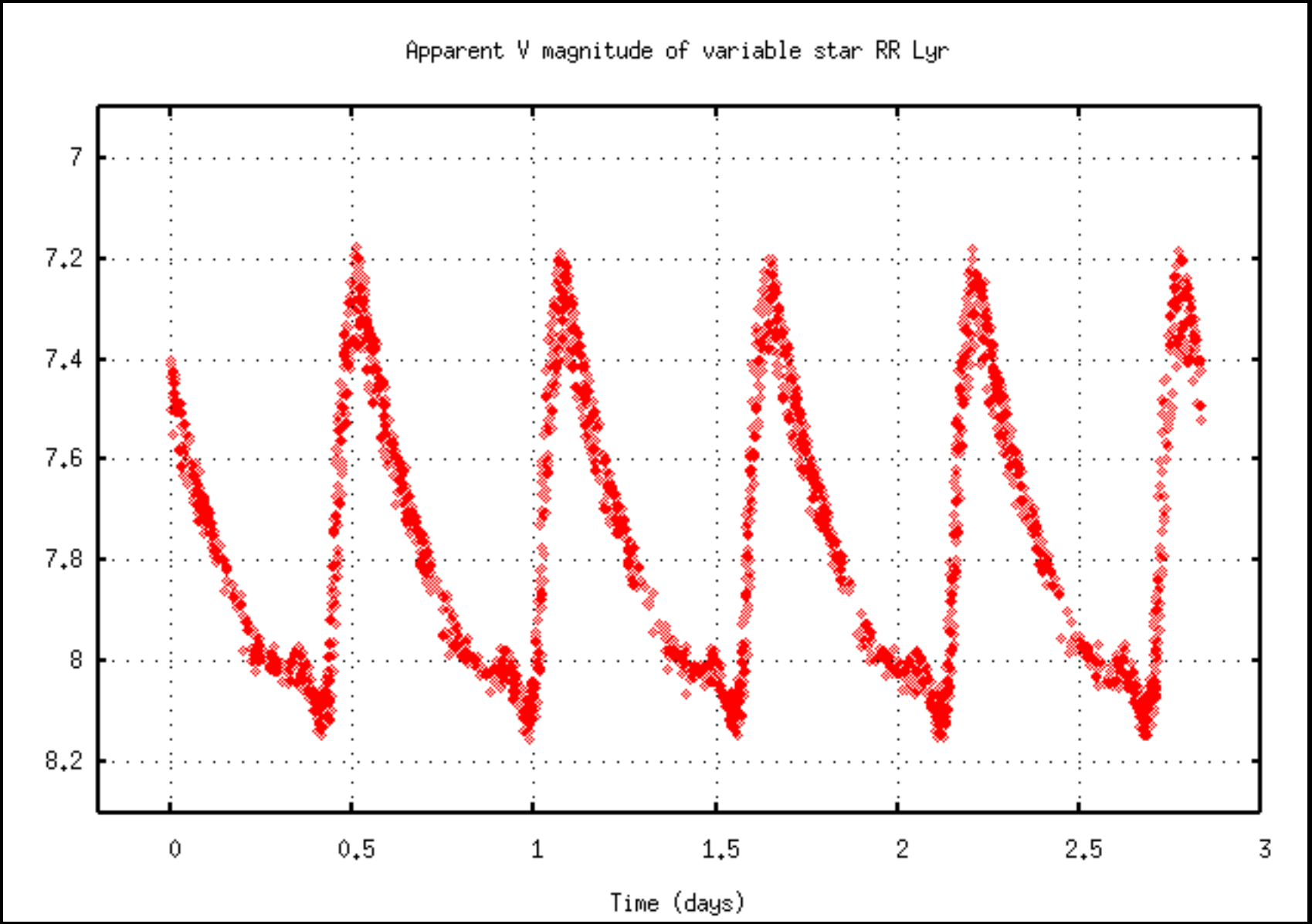


How to Measure GC Distance?

GCs contain a kind of variable star called RR Lyrae variables

How to Measure GC Distance?

RR Lyrae stars have the same absolute magnitude!



This Lab

You will measure RR Lyrae stars to a single GC

You will measure sizes of many other GCs

Assuming GCs have the same size you will find their centre position