

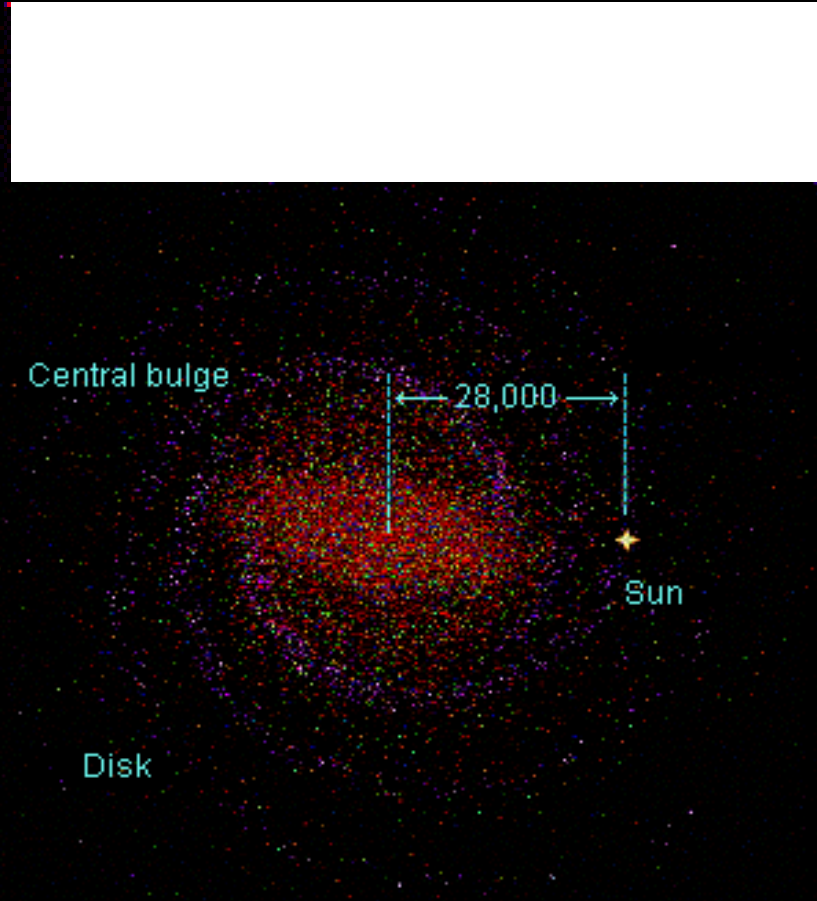
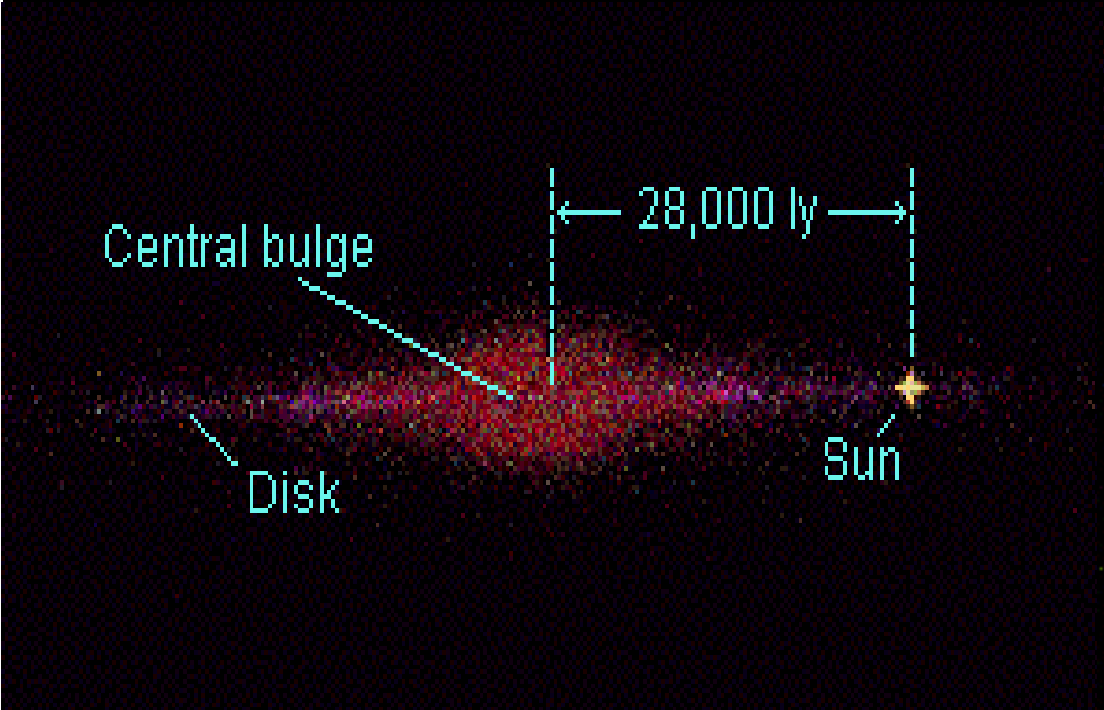
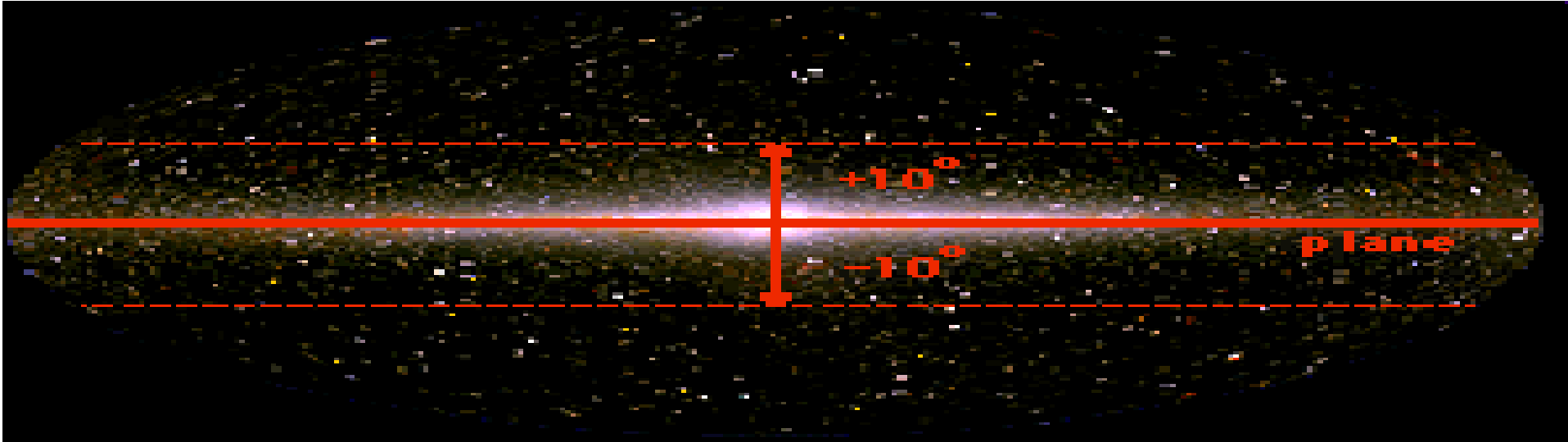
Learning about the Galaxy by constructing a Galactic Garden

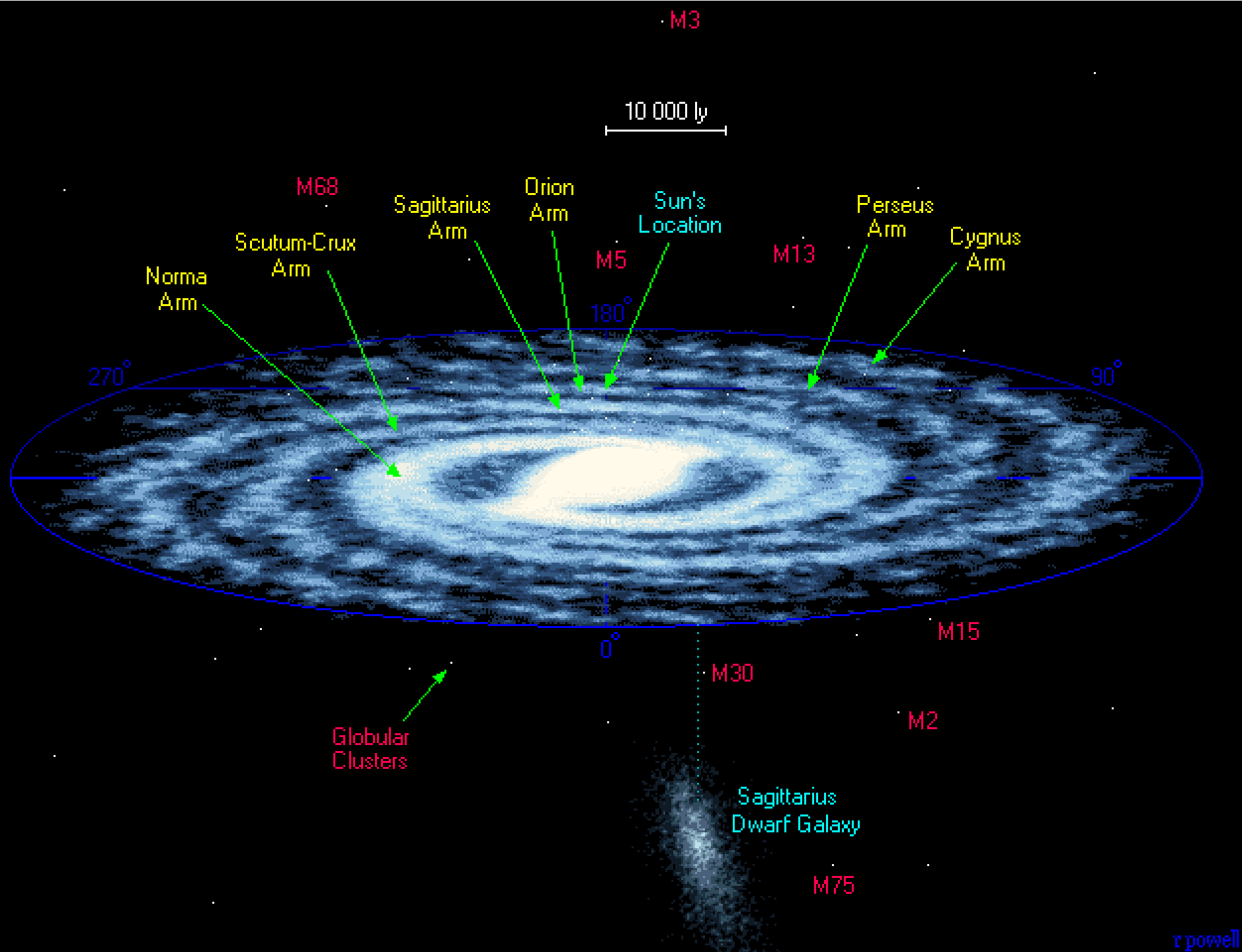
Margarita Metaxa & Eleni Pavlidou
Philekpaideutiki Etaireia, Greece

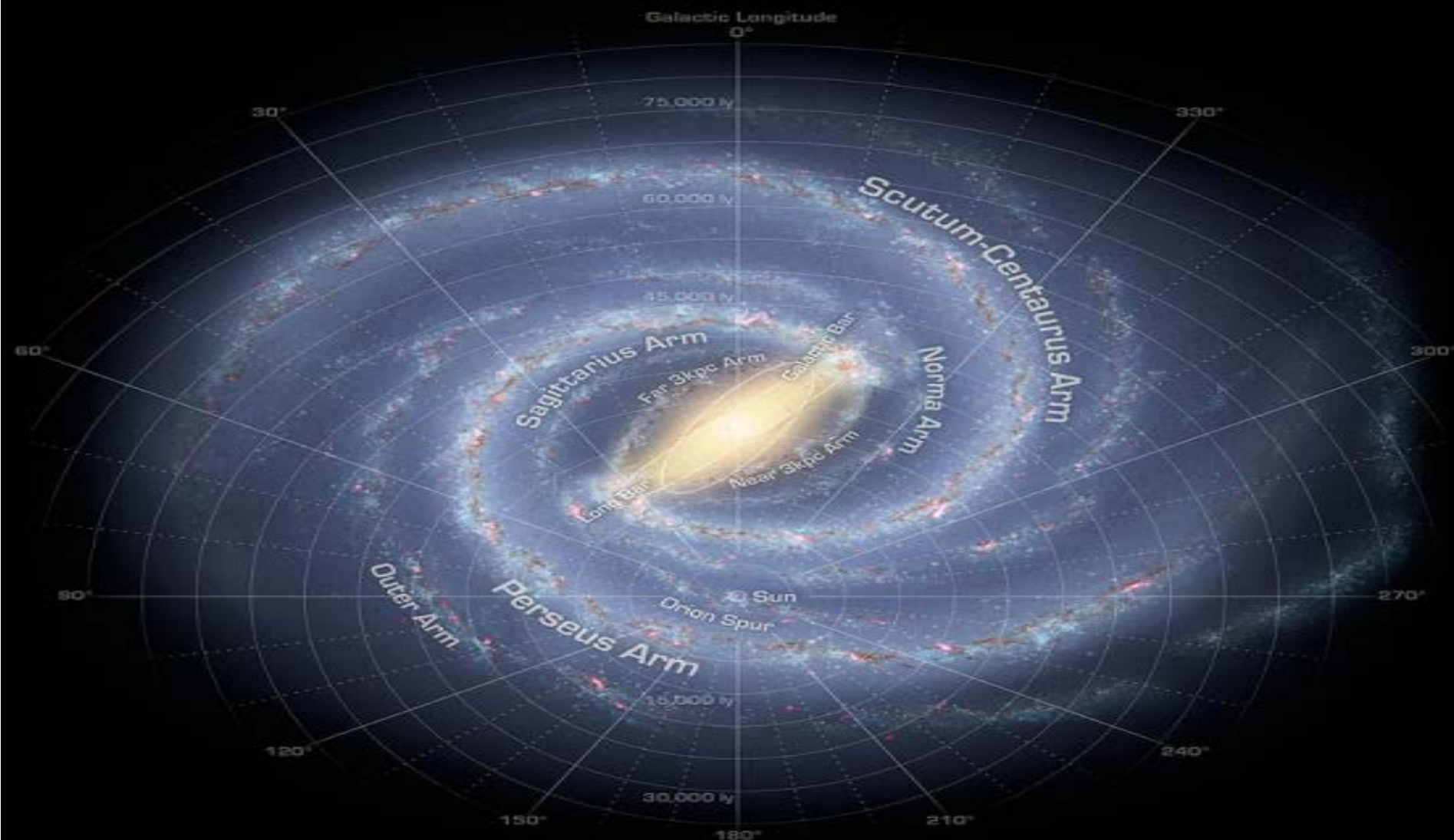


..a typical lesson on 'Galaxy' starts..

- The Milky Way galaxy is the Galaxy in which we live. It is generally considered an Sbc type galaxy. It has a central bulge of stars, and spiral arms of gas and stars in a disk.
- We view the Milky Way essentially edge-on from our perspective near the plane of the disk and 28,000 l.y. from the Galactic center. The images presented are not of the entire sky, just a band stretching 10° above and 10° below the plane of our galaxy.

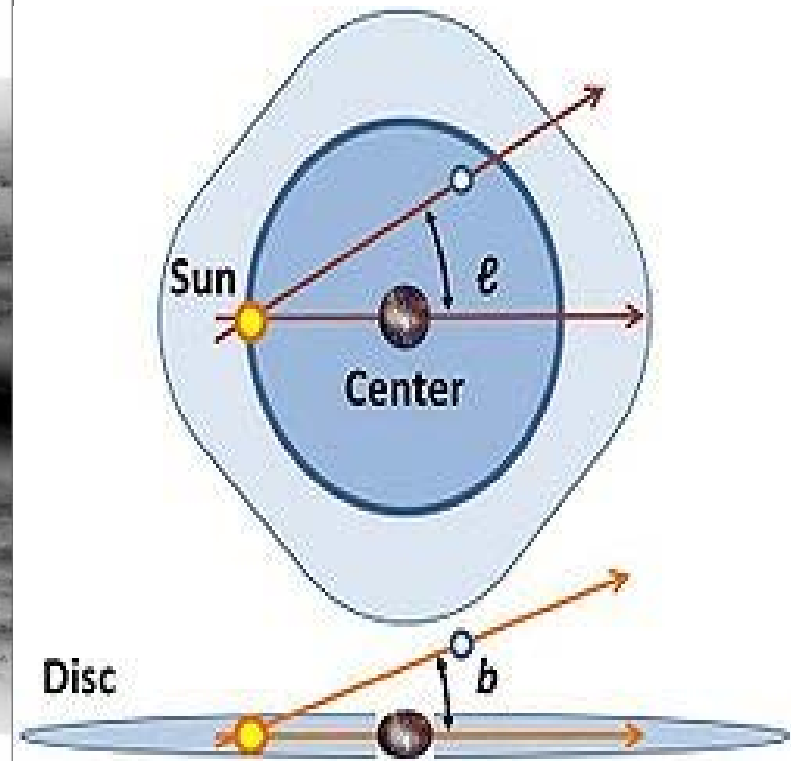
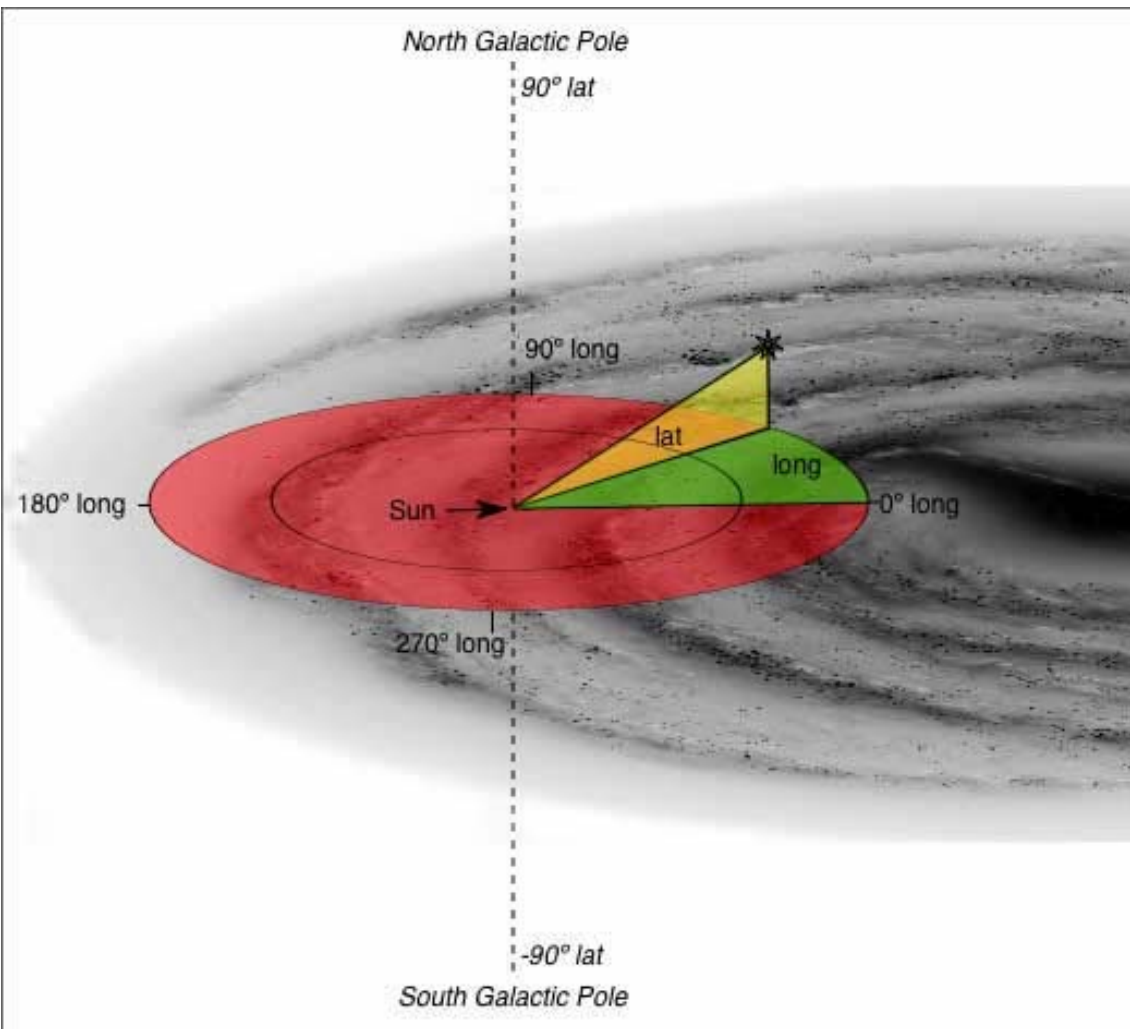


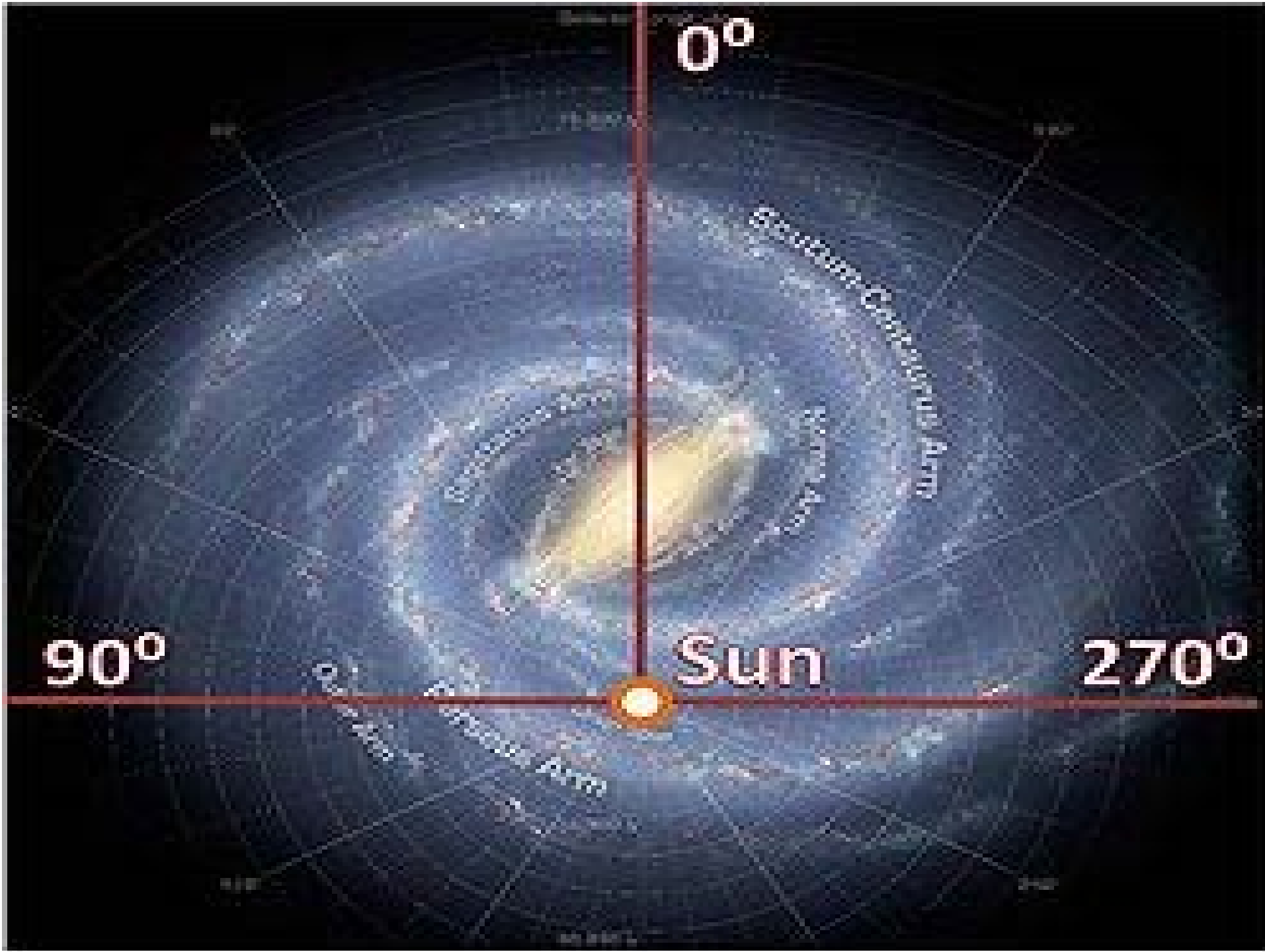




Annotated Roadmap to the Milky Way
(artist's concept)

1st step galactic coordinates





2nd step set up the scale

- in our scale 1.000 l.y. correspond to 10cm.

With a Galactic diameter of 100.000 l.y.

our

galactic garden has a diameter of 10m.

3rd step

the structure

- The Galactic Center: The "Bar"
- The Galactic Center: The "Black Hole"
- The main arms (perseous, scutum-centaurus)

4th step: the content

Arms (1), (2)

The Bar (3)

The Black Hole (4)

black holes

agnus X-1

- GRS1915+105
- AO 620-00
- V404 Cygni
- XTE J1550-564

supernovae

Kepler
Tycho

Crab Nebula

nebulae

crab
bubble
thor's

exoplanets

51 Pegasi b
PSR B1257+12B
Gliese 581c

100.000 l.y.
10 meters

Annotated Roadmap to the Milky Way
(artist's concept)

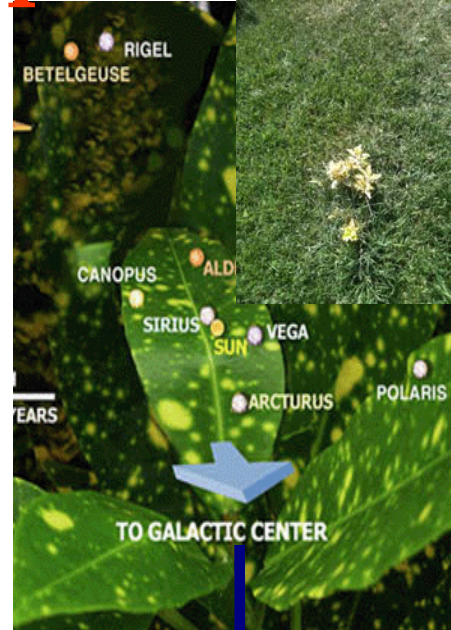
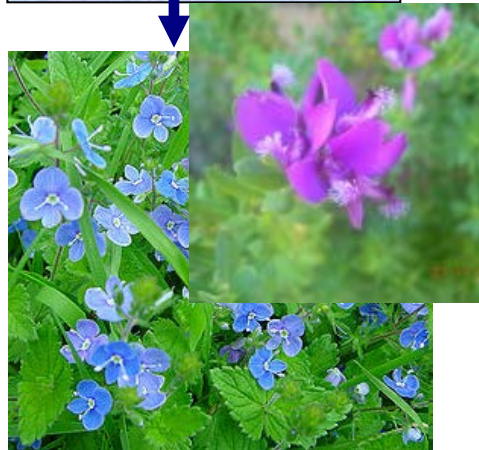
5th step choose the plants/flowers and make up the budget



Stars
Κυδωνίαστρο,
καλούνα,
γκάουρα



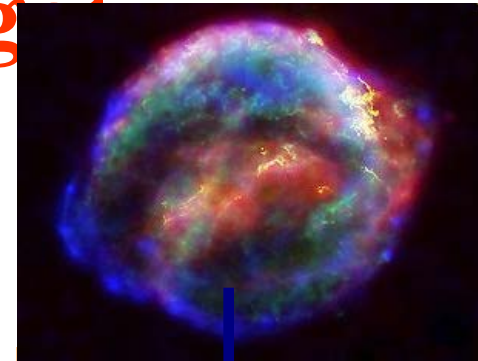
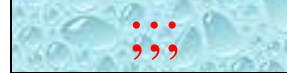
Nebulae
Πολύγαλο,
βερόνικα



Solar system
ευώνυμο



Exoplanets
:::



Supernovae
καλούνα



black holes
μαύρα βότσαλα





2011.04.06



The team



2011.06.09

walking around this Galactic Garden

students can discuss and answer the
following

- What prevents astronomers from easily mapping out the size of the galaxy, and our location within it?
- What is the center of the galaxy like?
- What evidence is there for a massive black hole in the center?
- Do you think that the Earth is inside or outside the galaxy? (Why?)
- How do astronomers map out the structure of our galaxy?
- How many stars are there in the Milky Way;
- Why the Milky Way spins;
- Are the stars spread evenly around the night sky?
- How do astronomers measure the mass of our galaxy?
- How do the spiral arms move relative to the disk material?
- Are all of these stars inhabitants of the Milky Way Galaxy or are some of them inside other galaxies?
- Summarize where we are in the cosmos.
- The flat disk consists...
- Which are the spectral types of the stars of the disk and the spiral arms

**Through this activity we can
provide our students with**

- **Hands-On**

- **Minds-On**

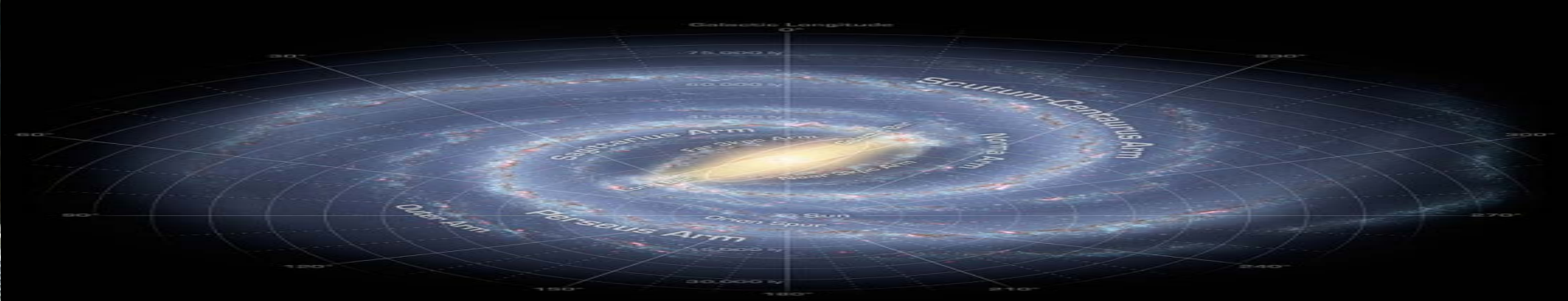
and

- **Learning Experience
in Science with lot of fun!!**



**Who understands our place in the Universe
realizes**

- his significance as **a human being**
- that he must **protect his planet**







A Galactic Garden
is also an

**Ideal Construction to attract
MASS MEDIA
&
PUBLIC EDUCATION**