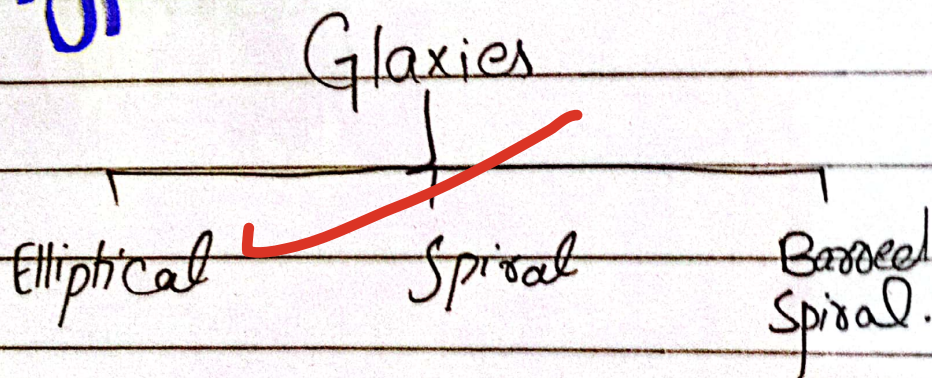


Galaxy:

attempt and upload proper questions for evaluation; not notes.

- fundamental unit of universe.
- Composed of hundreds of thousands of stars with gas & dust.
- with in a galaxy there are planets, stars, black holes, moons, comets & dark matter.
- Hubble classified in galaxy according to its shape & structure.
- Hubble Classification is known as "Hubble turning fork Diagram".
- His classification looks like a turning fork. with one handle & two branches.

Types



1 Elliptical

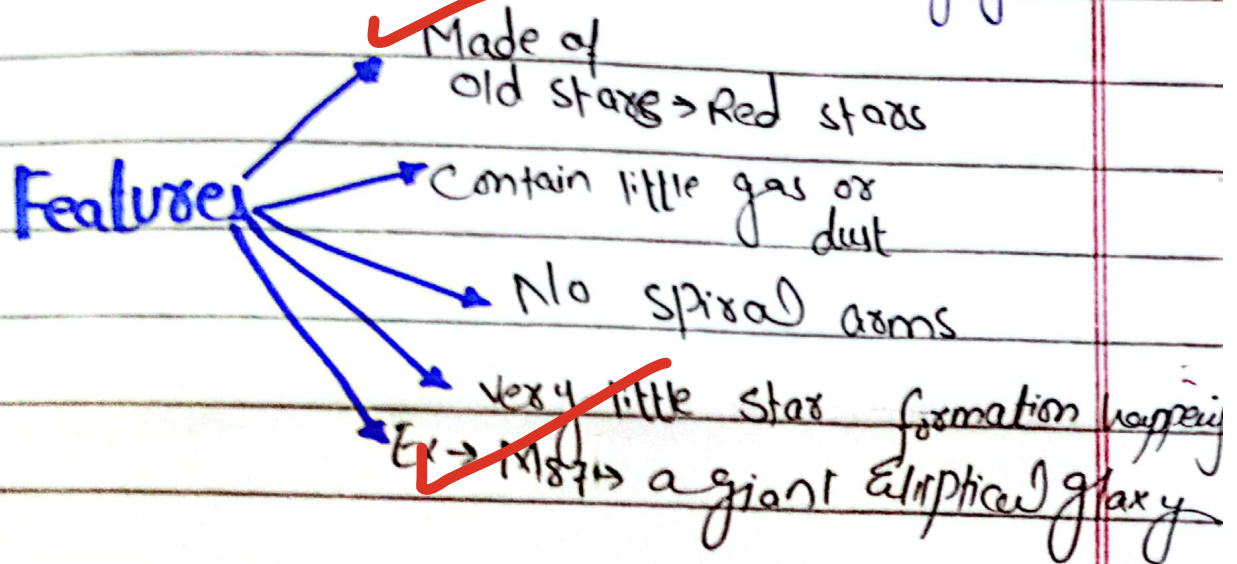
Handle of the fork
Ranging from round to oval



Labeled E0 to E7

E0 → Nearly round → almost circular

E7 → very oval → very stretched like a rugby ball.



2 Spiral

→ flat disk like with spiral arm & central bulge

→ Most Common type of galaxy

→ of all the known ~~type~~ galaxies 77% of them are classified spiral galaxies.

Spiral galaxy has 3 main components:

Disk

Bulge
↓

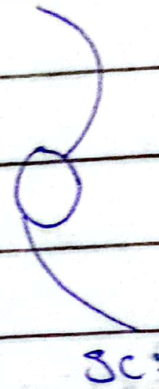
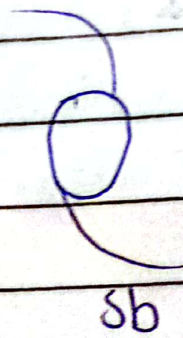
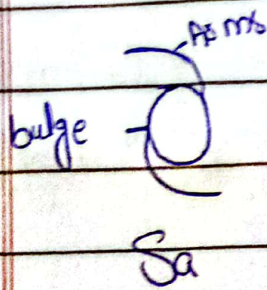
Halo

→ Bulge is located at the centre of the galaxy. Spherical in shape & only contain old stars.

MTWTFSS

→ ~~Bulge~~ Disk → both in shape
 of galaxy → where new stars
 form in the galaxy

Halo is just like Bulge → it is
 outer edge & form of old stars
 which are known as globular clusters



Sa These galaxies which have tightly bound arms
 Sb Medium bulge & moderate arm tight
 Sc Small bulge loose & open arms.

Features → Form young / old stars
 Rich in gas & dust
 New stars form in arms
 Ex → Andromeda galaxy M31

3 Barred Spiral

- look like spiral but have a bar of stars running through in center.
- spiral arms coming from the ends of bars. Bar of matter

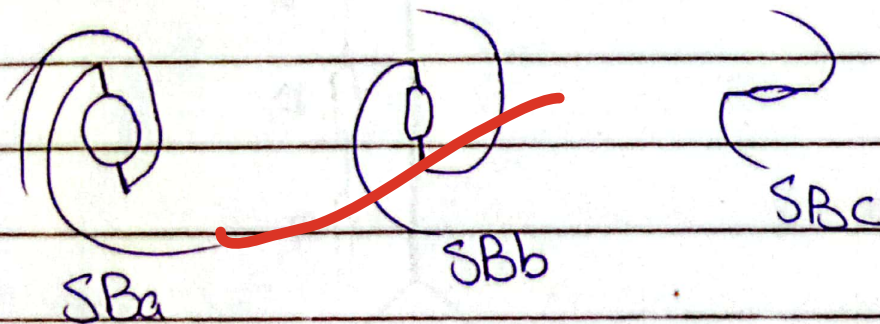
→ Structure ~~same~~ just like spiral
Bulge disk & Halo

their ~~classic~~ label start from SB

SBa Large Bar tight arms

SBb Medium bar & Moderate tightly arms

SBc Small bar & loose arms



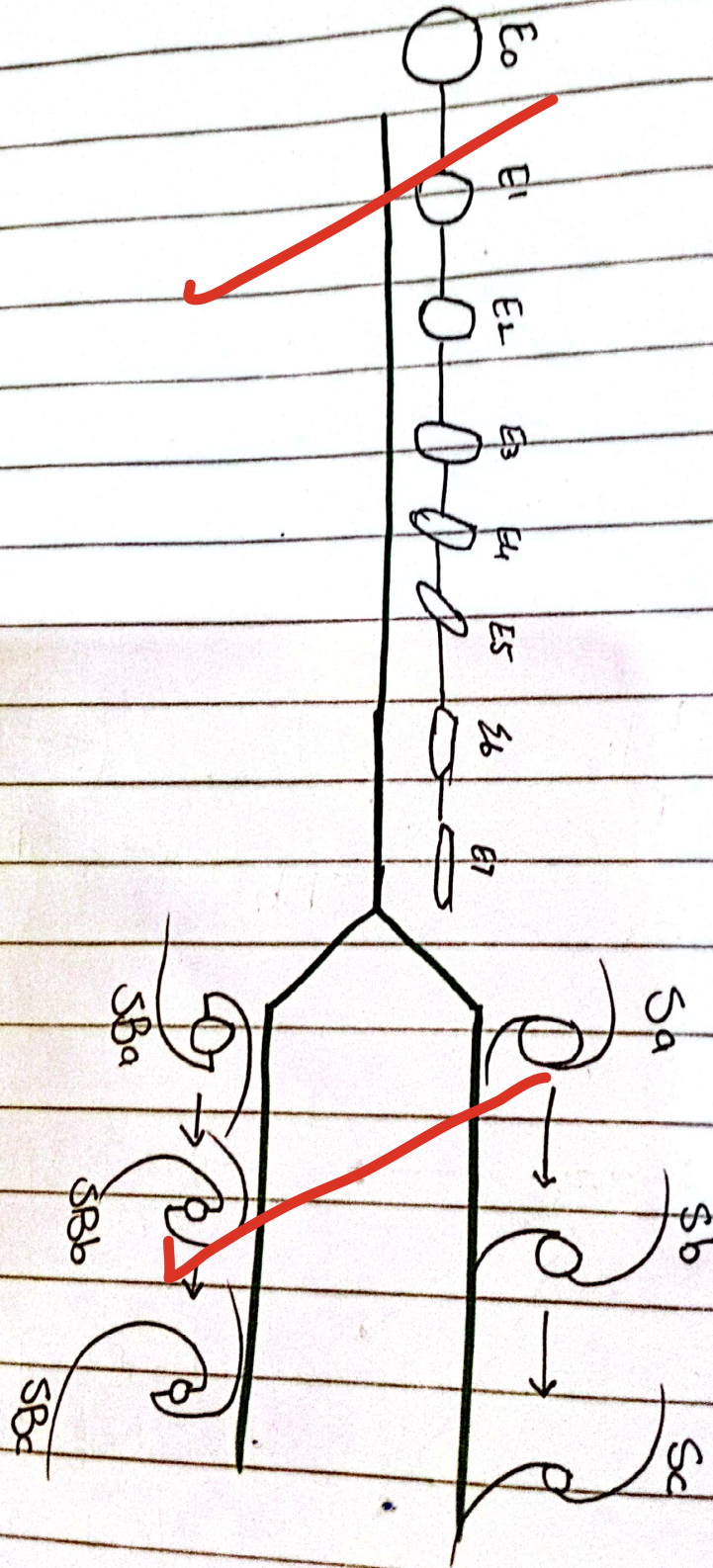
Features

→ Similar to spiral but with a central bar

~~Rich in gas dust~~
& New stars

Ex → Milky way galaxy

Diagram Tuning Fork



Irregular Galaxy

- Not included in Tunning fork model
 - As in name implies → it is irregular in shape or size
 - These galaxies are quite unique
 - According to NASA, the uniqueness of irregular galaxies may be because of interactions they could have had in the past with other neighbouring galaxies.
- These galaxies look like chaotic, messy & have lots of gas & dust.

Features →

- No spiral arms or symmetry
- Lots of new star formation
- May have been distorted by gravitational force
- Ex → Large Magellanic cloud (LMC)

MILKY Way Galaxy:

- The Milkyway Galaxy has contain our solar system.
- Barred spiral Galaxy

MTWTFSS

- Diameter → 100,000 → 200,000 light years.
- Thickness → 1000 light years.
- Num of Stars → over 100 billion to 400 billion.
- Solar system location → Roughly 2/3 way light years from the galactic center.
- Age → Around 13.6 billion years.
- Sun takes 200 million years to orbit around in milky way → Sun revolve around the nucleus of milky way.
- Nearest galaxy that is near to Milky way is Andromeda.
- Our milky way galaxy is a part of galaxies group called Local group in milky way forms about 1 to 3 new stars per year.

Milky Way Structure**Structure**

Halo

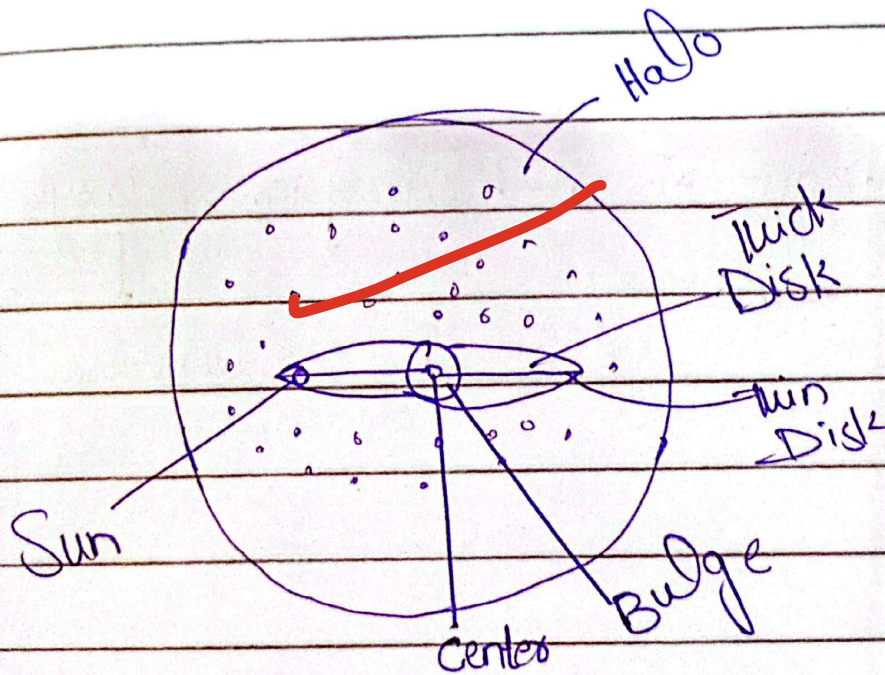
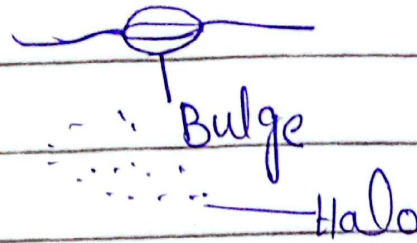
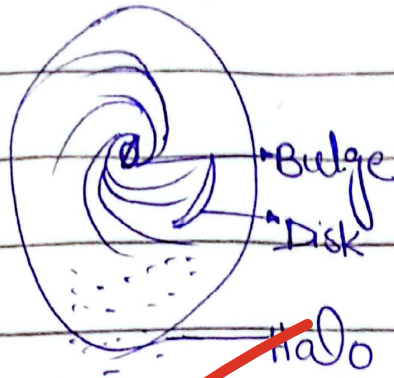


Galactic Center

Bulge

Disk

Spiral arms



Center → Contain black hole called ~~Sag~~ Sagittarius A*
very Dense & energetic region

Bulge → Spherical ~~center~~ ^{structure} around in center
Contain ~~old~~ stars & dense star cluster

Disk → Flat → Disk-shape region containing arms
Contain gas dust stars & solar system
Thin → younger stars
Thick → older stars

M T W T F S

DATE:

The Sun revolves around in nucleus of
the Milky Way once in 225 million
years. This duration is called cosmic
year.

In addition to Sun the Milky Way
contains 400 billion other stars.