• Light Year: The **Distance** Light Travels in **one** year

– One light year (distance light travels in one year) is **6 trillion miles**
How fast does light travel?

186,000 miles/sec
12 miles/sec
18,000 mph it would take 38,000 years to travel one light year or 6 trillion miles.
Proxima Centauri, Closest Star

4.2 ly
Closest Solar System

- Epsilon Eridani

| Orion's Belt

10.5 ly
Closest Galaxy

2,500,000 ly
a system of billions of stars
Types of Galaxies

- E0
- E3
- E7
- S0
- Sa
- Sb
- Sc
- Sb a
- Sb b
- Sb c
- Irregular
Examples of Galaxies

1. Irregular: Youngest, a lot of gas and dust, No definite shape
2. Elliptical: Oldest, oval shaped, can be flattened
3. **Spiral**: Shaped like a pinwheel with huge stretched arms.

- A Black Hole Center – older massive star that has collapsed in
  - Milky Way
  - Andromeda
Andromeda Galaxy
The Milky Way Galaxy

• A **spiral** galaxy

• Only **one** of the billions of galaxies in the **universe**

• Our **Solar System** orbits the middle in one of the **arms** (we are not in the **center**!!!)

• A **black hole** is in the center of the galaxy.
Milky Way Galaxy

The Sun

925,000,000,000,000,000,000,000 km
The Milky Way Galaxy

Figure 10-13. The Milky Way galaxy
Center of the Milky Way

30,000 ly away.
Click here: http://dingo.care-mail.com/cards/flash/5409/galaxy.swf