

Stars

Characteristic	Classical Cepheids	Flare Stars	Long Period
Spectral Types*	F, G	K, M	M
Mean Luminosity**	-3	+10	-1, 0
Spatial Distribution***	Dust-filled galactic plane	Lower main sequence stars	Dust-free galactic plane
Avg. Temperature****	5,770* K	10,000* K	1,300* K

Definitions for Terms in Table

*Spectral Types = of or concerning spectra or the spectrum; some classifications are:

F = Intrinsic***** color is white; temp is 7,240 K; prom. absorb. lines are H(weaker), Ca+, ionized metals

G = Intrinsic color is yellow-white; temp is 5,920 K; prom. absorb. Lines are H(weaker), Ca+, ionized & neutral metal

K = Intrinsic color is orange; temp is 5,300 K; prom. absorb. lines are Ca+ (strongest), neutral metals strong, H(weak)

M = Intrinsic color is red; temp is 3,850 K; prom. absorb. lines are Strong neutral atoms, TiO; coolest star type

** Mean Luminosity = the intrinsic brightness of a celestial object.

***Spatial Distribution = The distribution of the star along the HR diagram.

****Avg. Temperature = The average temperature at the surface of the star.

*****Intrinsic = belonging naturally

The Basic Lifecycle of a Star

1. Stars are born in nebulae: Huge clouds of dust and gas collapse under gravitational forces, heat up to 15 million degrees, forming protostars
2. These young stars undergo further collapse to form main sequence stars (our Sun is at this stage)
3. Stars expand as they grow old: the core runs out of hydrogen and helium then contracts and the outer layers expand, cool, and become less bright; The star is now either a Red Giant or a Red Super Giant depending on the initial mass of the star
4. Eventually the star will collapse and explode

5. Depending again on the initial mass, the star will either become a black dwarf, neutron star, or black hole

Three Types of Galaxies

Spirals (like The Milky Way)

The shapes of these closely resemble a spiral with about 3 arms spreading out from the center.

Ellipticals

These far outnumber spiral galaxies.
These galaxies resemble a squashed ball.

Barred Spirals

These have a clear central bar from which the spiral arms trail.