

SUMMER 2 NOTES (July)

Summer Sights:

Hercules: M13 Globular Star Cluster, NGC 6205; 1974 Arecibo "Hello" signal
M92 Globular Star Cluster, Black Hole identified by JWST
HD 162826, 110 Lyrs away, candidate for Sun "sibling"; similar age, chemistry etc

Ursa Major: M 101 (Pinwheel Galaxy); new supernova in one of the "arms"

ASSOCIATIONS:

*Group of stars that share some common factor, usually gravitationally related

*smaller than star clusters

O-B association:

*involves stars of the same age, chemistry, motion and magnitude

*not gravitationally "bound" like a cluster

*still expanding (see slide)

*Arthur Eddington, Victor Ambartsumian

EX: Orion OB1b; three "belt" stars

T association:

*Very young (100K-10M) variable stars, evolving into main sequence stars,

*Same chemistry (Spectra) and motion (1-12 E-days, increases with age)

EX: T Tauri associations; see below*

NAMING: Alpha, beta, gamma vs A,B,C

STAR: Greek alphabet letter or number BEFORE constellation name = apparent magnitude (brightness) within a constellation

EX: α Lyra

STAR: Double = apparently related or spectrographically related; period unknown

STAR: Binary = orbit verified, actually gravitationally related

Given capital letter A,B,C etc after STAR name

EX: Sirius A, Sirius B; no designation for Double or Binary

STAR: Variable = Capital Letter R thru Z before star name indicates what type of variable (complicated)

EX: T Tauri variable in Taurus (description is detailed and technical)*

EX: R Leonis variable (+- a year period)

(See *Variable stars across the observational HR diagram*

Eyer & Mowlavi 2008JPhCS.118a2010E)

STAR: Pulsar = rotating Neutron star, 8-20 Ms, SN 1a remnant, Prefix PSR
EX: PSR B0531+21, Crab Pulsar (also SN1054)

Verified PLANETS orbiting a star: Star name followed by b, c, d etc (never a):
EX: Fomalhaut b or α Piscis Austrinus b

Black Hole or Active Galactic Nuclei (AGN): Constellation name followed by an A (Usually only one); addition of an * indicates an "excited" radio source.

Ex: Sagittarius A* of Milky Way galaxy

X if a large Xray source:

Ex. Cygnus X

Catalogue designation: Name or letters of a Catalogue or Institution etc followed by a number
Applied to an object of a specific catalogue type (galaxy, cluster, gamma ray burst (GRB), etc)

Catalogues can have very complicated and technical classification

Ex: NGC 3242 (New General Catalogue);

Ex: M44 (Messier Object)

EX: HD 101197 (Draper Catalogue)

EX: WR 137 (Wolfe-Rayet star)