

Some useful astronomical facts and figures

$$1 \text{ A.U.} = 1.495980 \times 10^{11} \text{ m}$$

$$1 \text{ pc} = 2.063 \times 10^5 \text{ A.U.} \\ = 3.086 \times 10^{16} \text{ m}$$

$$1 \text{ l.y.} = 9.46 \times 10^{15} \text{ m}$$

$$1 \text{ pc} = 3.26 \text{ l.y.}$$

Luminosities

$$\text{Absolute luminosity of Sun, } L_s, = 4 \times 10^{26} \text{ J s}^{-1}$$

$$\text{Absolute luminosities of Cepheids} = 10^2 L_s - 10^4 L_s$$

$$\text{" " blue supergiants} = 5 \times 10^5 L_s$$

$$\text{" " brightest galaxy} = 2 \times 10^{11} L_s$$

$$\left. \begin{array}{l} \text{Estimated absolute luminosities} \\ \text{of quasars} \end{array} \right\} = 10^{13} L_s - 10^{14} L_s$$

Typical distances and sizes

$$\text{Distance to Proxima Centauri} \quad 1.31 \text{ pc}$$

$$\text{Diameter of Orion nebula} \quad \sim 5 \text{ pc}$$

$$\text{Distance to Hyades cluster} \quad 36.8 \text{ pc}$$

$$\text{Distance to Polaris} \quad 200 \text{ pc}$$

$$\text{Diameter of Milky Way Galaxy} \quad 30 \text{ kpc}$$

$$\left. \begin{array}{l} \text{Distance to Large Magellanic} \\ \text{Cloud Galaxy} \end{array} \right\} \quad 50 \text{ kpc}$$

$$\text{Distance to Andromeda Galaxy} \quad 650 \text{ kpc}$$

$$\left. \begin{array}{l} \text{Diameter of "Local Group"} \\ \text{of galaxies} \end{array} \right\} \quad 1.4 \text{ Mpc}$$

$$\text{Distance to "Whirlpool Galaxy"} \\ \text{(M51)} \quad 5 \text{ Mpc}$$

$$\text{Distance to Virgo cluster} \quad 24 \text{ Mpc}$$

$$\text{Typical diameter of supercluster} \quad 20 - 30 \text{ Mpc}$$

$$\text{Distance to Hydra cluster} \quad 1.2 \text{ Gpc}$$

$$\text{Estimated radius of the} \\ \text{"observable" universe} \quad 3 \text{ Gpc}$$

Miscellaneous

$$\text{Largest measured proper} \\ \text{motion (exhibited by} \\ \text{Barnard's star, 1.8 pc away} \\ = 10.5 \text{ " year}^{-1}$$

$$\text{Surface temperature of} \\ \text{the Sun} \sim 6000 \text{ K}$$

$$\text{Peak wavelength of the} \\ \text{spectrum of the Sun} \\ \sim 500 \text{ nm}$$

$$\text{Hubble Constant, } H, \\ (\pm 50\% \text{ (sic)}) \\ 50 \text{ km s}^{-1} \text{ | Mpc}$$

$$\text{Age of Universe} \\ \left(< \frac{1}{H} \right) < 2 \times 10^{10} \text{ years}$$