

Astro Numbers to Memorize

$M_{\text{sun}} \sim 2 \cdot 10^{33} \text{ g}$
 $R_{\text{sun}} \sim 7 \cdot 10^{10} \text{ cm}$
apparent mag sun = -26.83
absolute mag sun = 4.74
 $L_{\text{sun}} \sim 4 \cdot 10^{33} \text{ erg/s}$
 $T_{\text{suncore}} \sim 1.5 \cdot 10^7 \text{ K}$
 $\text{Density}_{\text{suncore}} \sim 150 \text{ g/cm}^3$
 $T_{\text{effsun}} = 5780 \text{ K}$

$M_{\text{earth}} \sim 2 \cdot 10^{-6} M_{\text{sun}}$
 $R_{\text{earth}} \sim 7 \cdot 10^8 \text{ cm} \sim 7000 \text{ km} \sim 0.01 R_{\text{sun}}$

$M_{\text{jupiter}} \sim 10^{-3} M_{\text{sun}}$

$M_{\text{neutronstar}} \sim 1.4 M_{\text{sun}}$
 $R_{\text{neutronstar}} \sim 10 \text{ km}$
 $R_{\text{whitedwarf}} \sim 0.01 R_{\text{sun}} \sim R_{\text{earth}}$

$L_{\text{supernova}} \sim 10^{51} \text{ erg/s}$
 $L^* \sim 3 \cdot 10^{10} L_{\text{sun}}$

$M_{\text{milkywaystellar}} \sim 10^{10} M_{\text{sun}}$
 $R_{\text{milkywaystellar}} \sim 10 \text{ kpc}$

$R_{\text{spacebtwgalaxies}} \sim 1 \text{ Mpc}$

$T_{\text{universe}} \sim 13.8 \text{ Gyr} \sim 10^{10} \text{ yr}$

$1 \text{ AU} \sim 10^{13} \text{ cm} \sim 5 \cdot 10^{-6} \text{ pc}$
 $1 \text{ pc} \sim 10^{18} \text{ cm}$
 $1 \text{ yr} \sim 3 \cdot 10^7 \text{ sec}$
 $1 \text{ meter} \sim 39.4 \text{ inch} \sim 40 \text{ inch}$

Ionizing 13.6eV, 91.2nm
Ly-alpha 10.2eV, 121.6nm

CMB: $z \sim 1100$

Constant:
 $G \sim 7 \cdot 10^{-8} \text{ (cgs)}$
 $k \sim 1 \cdot 10^{-16} \text{ erg/K} \sim 9 \cdot 10^{-5} \text{ eV/K}$
 $c = 3 \cdot 10^{10} \text{ cm/s}$
 $H_0 = 70 \text{ km/s} \cdot \text{Mpc}^{-1} = 2 \cdot 10^{-18} \text{ s}^{-1}$
 $m_H = 1.7 \cdot 10^{-24} \text{ g}$

supernova shock up to 30,000 km/s (.1c)

