



# ASTRONOMICAL LEAGUE

A FEDERATION OF ASTRONOMICAL SOCIETIES  
A NON-PROFIT ORGANIZATION

- ★ *To promote the science of astronomy;*
- ★ *By fostering astronomical education;*
- ★ *By providing incentives for astronomical observation and research;*
- ★ *By assisting communication among amateur astronomical societies.*

## ASTRO NOTES

Produced by the Astronomical League

### Note 18: Basic Astronomical Data

#### Solar System

Planet	AU*	Miles* x10 <sup>6</sup>	Sidereal Year	Diameter at Equator (miles)	Mass (Earth =1)	Gravity (Earth =1)	Rotation (days)	Number of Moons
Sun				864,049	332,946	27.9	25-35**	
Mercury	0.387	35.9	87.97d	2160	0.0553	0.38	58.65	0
Venus	0.723	67.	224.7d	7500	0.815	0.91	243	0
Earth	1.000	92.8	365.26d	7937	1.000	1.00	1	1
Mars	1.524	141	687d	4220	0.107	0.38	1.03	2
Jupiter	5.203	483	11.86y	88,850	317.9	2.54	0.41 **	16 ***
Saturn	9.529	884	29.5y	74,900	95.18	1.08	0.44 **	18 ***
Uranus	19.23	1785	84 y	31,800	14.54	0.91	0.72	15 ***
Neptune	30.14	2800	164.8y	30,800	17.15	1.19	0.67	8 ***
Pluto ****	39.81	3700	247.7y	1430	0.002	0.06	6.39	2 ***

\* Mean Distance from Sun

\*\* depends on latitude, equatorial period given

\*\*\* moon count of outer planets is classical number; many more have been found by spacecraft observation

\*\*\*\* Pluto was traditionally considered a planet. In 2008, the IAU reclassified Pluto as a "Plutoid" having formerly reclassified it as a "dwarf planet".

#### Additional Earth Data

Equatorial Diameter: 7937 miles

Polar Diameter: 7900 miles

1° of latitude or longitude: 69 miles at the equator, less closer to poles

Magnetic North Pole: N76°, W101° (near Prince of Wales Isl., NWT, Canada)

Magnetic South Pole: S66°, E140° (near Antarctic coast, south of Australia)

Orbital Speed: 18.5 miles/sec

### Solar Data

Mass:  $2 \times 10^{30}$  kg (2.2 x 10<sup>27</sup> tons)

Power Output:  $3.8 \times 10^{23}$  kW

Energy Flux at Earth's Orbital Distance: 1.37 kW/meter<sup>2</sup>

Solar Wind Speed near Earth: 280 miles/sec

Solar Velocity: 12.3 miles/sec -- (toward R.A. = 18.1h, Dec. = +30°: E. Hercules)

### Stars within 10 Light Years of the Sun

Name	R.A.	Dec.	Distance (light years)	Name	R.A.	Dec.	Distance (light years)
Proxima	14h30m	-62°41'	4.2	BD+36°2147	11h03m	+35°59'	8.3
$\alpha$ Centauri	14h40m	-62°50'	4.3	L-726-A/B	01h39m	-17°57'	8.4
Barnard's	17h58m	+04°34'	6.0	Sirius ( $\alpha$ CMj)	06h45m	-16°43'	8.6
Wolf 359	10h56m	+07°01'	7.7	Ross 154	18h50m	-23°50'	9.4

### Milky Way Galaxy

Mass:  $10^{12}$  solar masses

Center: Direction: R.A = 17.8h, Dec. = -29° (in Sagittarius)

Distance: 29,000 lt. yrs.

Diameter: 90,000 lt. yrs.

Velocity: 370 miles/sec relative to 3°K background radiation  
toward R.A = 10h, Dec. = -20° (southeast Hydra)

### Some Close Galaxies of the Local Group

Name	R.A	Dec	Distance (light years)
Large Magellanic Cloud	05h 24m	-69° 45'	163,000
Small Magellanic Cloud	00h 53m	-72° 49'	196,000
Leo I	10h 09m	+12° 14'	750,000
Leo II	11h 14m	+22° 09'	750,000
M31, M32	00h 42m	+41° 00'	2.3 million
M33	01h 34m	+30° 39'	2.4 million

### Most Distant Object Readily Visible in an Amateur Telescope

3C273 R.A = 12h 29m, Dec. = +02° 03' (approx 2 - 3 billion light years)  
(quasar) (typically requires 10-in. or larger telescope)

Compiled from a variety of sources and may not maintain consistent basis for various data items. All coordinates are J2000.