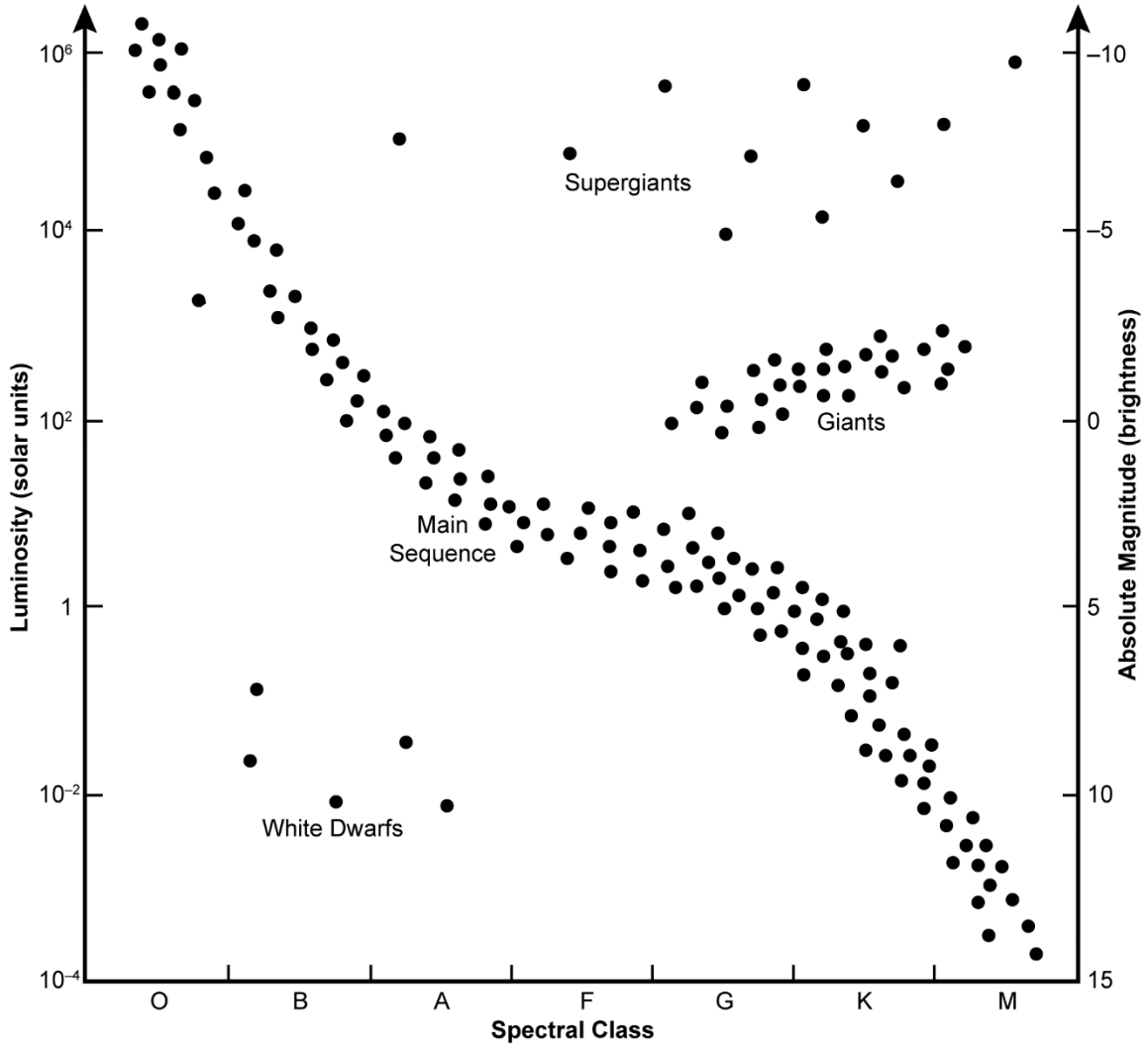


## REFERENCE MATERIALS FOR EARTH SCIENCE

### Solar System Data

Object	Average Distance from Sun (million km)	Period of Rotation at Equator	Period of Revolution	Eccentricity of Orbit	Equatorial Diameter (km)	Mass Relative to Earth	Density (g/cm <sup>3</sup> )
<b>Mercury</b>	57.9	59 d	88 d	0.206	4,879	0.06	5.4
<b>Venus</b>	108.2	243 d	224.7 d	0.007	12,104	0.82	5.2
<b>Earth</b>	149.6	23 h 56 m 4 s	365.26 d	0.017	12,756	1.00	5.5
<b>Mars</b>	227.9	24 h 37 m 23 s	687 d	0.093	6,794	0.11	3.9
<b>Jupiter</b>	778.4	9 h 50 m 30 s	11.9 y	0.048	142,984	317.83	1.3
<b>Saturn</b>	1,426.7	10 h 14 m	29.5 y	0.054	120,536	95.16	0.7
<b>Uranus</b>	2,871.0	17 h 14 m	84.0 y	0.047	51,118	14.54	1.3
<b>Neptune</b>	4,498.3	16 h	164.8 y	0.009	49,528	17.15	1.8
<b>Earth's Moon</b>	149.6	27.3 d	27.3 d	0.055	3,476	0.01	3.3

# Hertzsprung-Russell Diagram



### Geologic Time Line

Time (mya)	Eon		Era	Period	Epoch	
0	Phanerozoic		Cenozoic	Quaternary	Holocene	
					Pleistocene	
Neogene				Pliocene		
				Miocene		
Paleogene				Oligocene		
				Eocene		
				Paleocene		
65				Mesozoic	Cretaceous	Late
						Early
			Jurassic		Late	
					Middle	
					Early	
			Triassic		Late	
					Middle	
					Early	
			251		Paleozoic	Permian
Middle						
Early						
Pennsylvanian				Late		
				Early		
Mississippian				Late		
				Middle		
				Early		
Devonian				Late		
	Middle					
	Early					
Silurian	Late					
	Early					
Ordovician	Late					
	Middle					
	Early					
544	Pre-Cambrian	Proterozoic	Late			
			Middle			
			Early			
Archaean	Late					
	Middle					
	Early					
Hadean						

### Average Chemical Composition of Earth's Crust

Element	by Mass	by Volume
oxygen (O)	46.10%	94.04%
silicon (Si)	28.20%	0.88%
aluminum (Al)	8.23%	0.48%
iron (Fe)	5.63%	0.49%
calcium (Ca)	4.15%	1.18%
sodium (Na)	2.36%	1.11%
magnesium (Mg)	2.33%	0.33%
potassium (K)	2.09%	1.42%
other	0.91%	0.07%

### Properties of Water

Heat of fusion	334 J/g
Heat energy gained during vaporization	2260 J/g
Specific heat capacity	4.2 g/J°C
Density at 4°C	1.0 g/mL

### Radioactive Decay Data

Radioactive Isotope	Disintegration	Half-Life (years)
carbon-14	$^{14}\text{C} \rightarrow ^{14}\text{N}$	$5.7 \times 10^3$
potassium-40	$  \begin{array}{l}  \nearrow ^{40}\text{Ar} \\  ^{40}\text{K} \\  \searrow ^{40}\text{Ca}  \end{array}  $	$1.3 \times 10^9$
uranium-238	$^{238}\text{U} \rightarrow ^{206}\text{Pb}$	$4.5 \times 10^9$
rubidium-87	$^{87}\text{Rb} \rightarrow ^{87}\text{Sr}$	$4.9 \times 10^{10}$