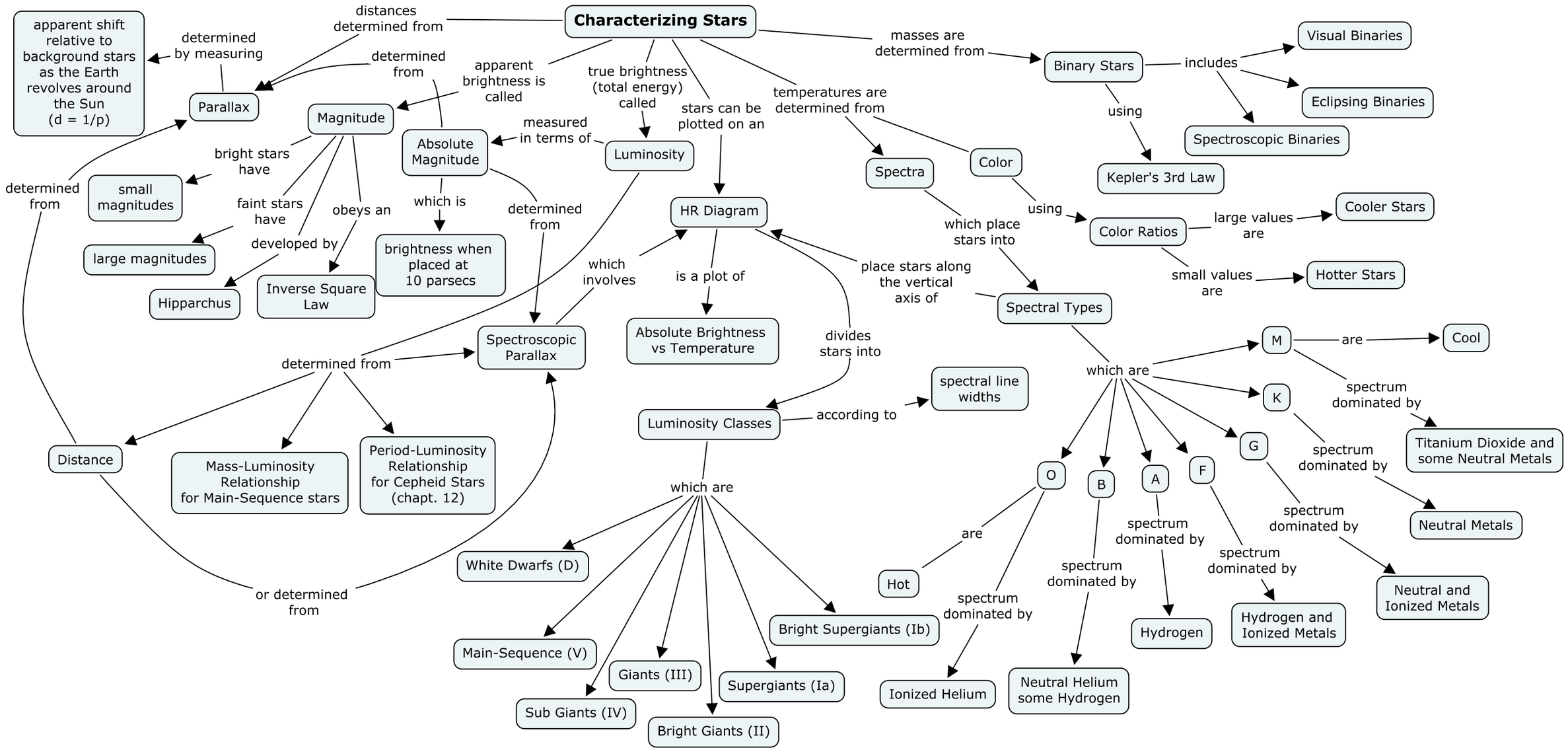
Characterizing Stars
distances determined from
Parallax
determined by measuring
apparent shift relative to background stars as the Earth revolves around the Sun (d = 1/p)
determined from
Distance
Magnitude
bright stars have
small magnitudes
faint stars have
large magnitudes
obeys an
Inverse Square Law
developed by
Hipparchus
apparent brightness is called
Absolute Magnitude
which is
brightness when placed at 10 parsecs
determined from
Spectroscopic Parallax
true brightness (total energy) called
Luminosity
measured in terms of
stars can be plotted on an
HR Diagram
which involves
is a plot of
Absolute Brightness vs Temperature
divides stars into
Luminosity Classes
according to
spectral line widths
which are
White Dwarfs (D)
Main-Sequence (V)
Sub Giants (IV)
Giants (III)
Bright Giants (II)
Supergiants (Ia)
Bright Supergiants (Ib)
determined from
Mass-Luminosity Relationship for Main-Sequence stars
Period-Luminosity Relationship for Cepheid Stars (chapt. 12)
or determined from
temperatures are determined from
Spectra
which place stars into
Spectral Types
place stars along the vertical axis of
Color
using
Color Ratios
large values are
Cooler Stars
small values are
Hotter Stars
masses are determined from
Binary Stars
includes
Visual Binaries
Eclipsing Binaries
Spectroscopic Binaries
using
Kepler's 3rd Law
which are
O
are
Hot
spectrum dominated by
Ionized Helium
B
spectrum dominated by
Neutral Helium some Hydrogen
A
spectrum dominated by
Hydrogen
F
spectrum dominated by
Hydrogen and Ionized Metals
G
spectrum dominated by
Neutral and Ionized Metals
K
spectrum dominated by
Neutral Metals
M
are
Cool
spectrum dominated by
Titanium Dioxide and some Neutral Metals