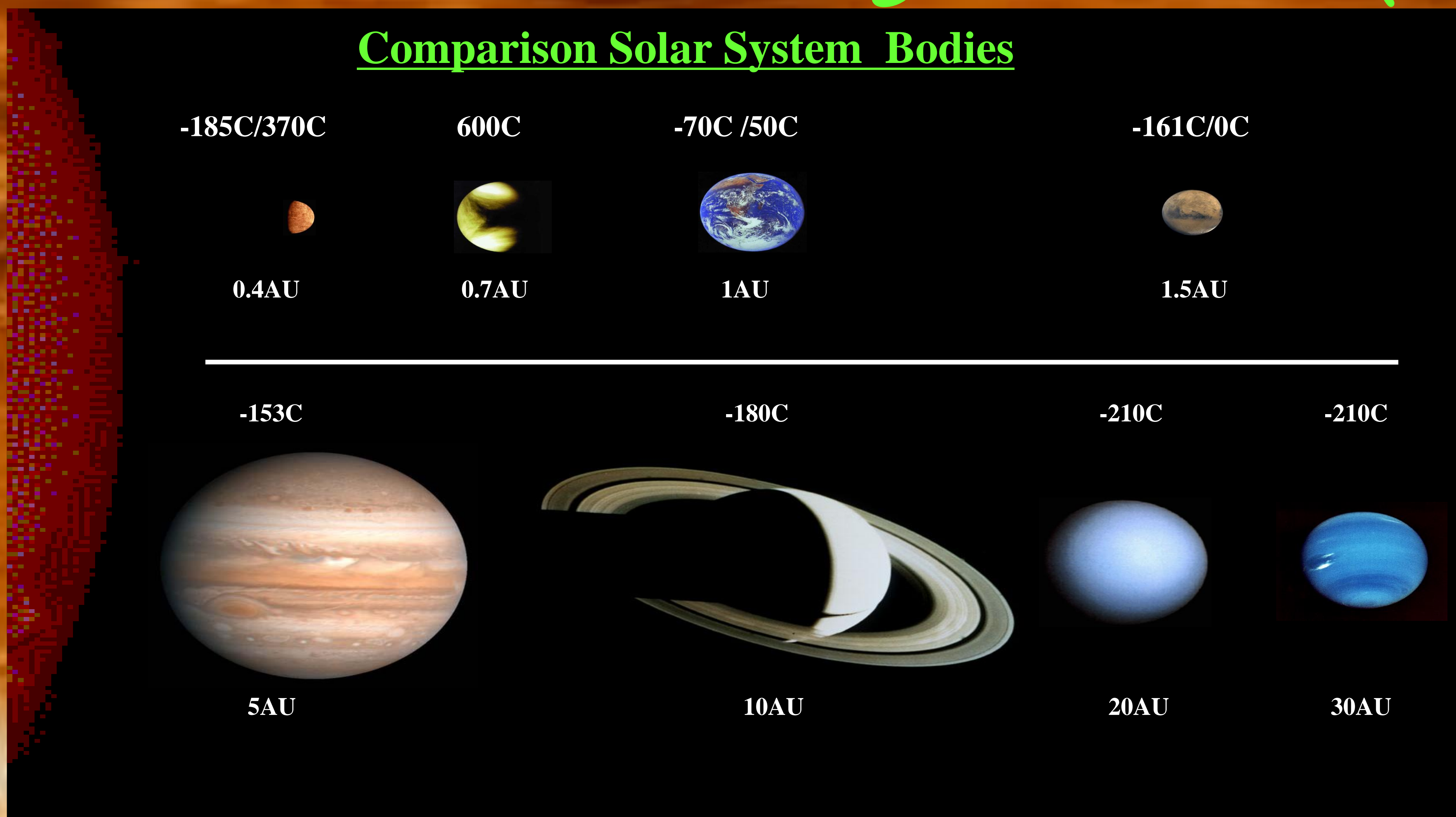


Transit of Venus (5th-6th June 2012)

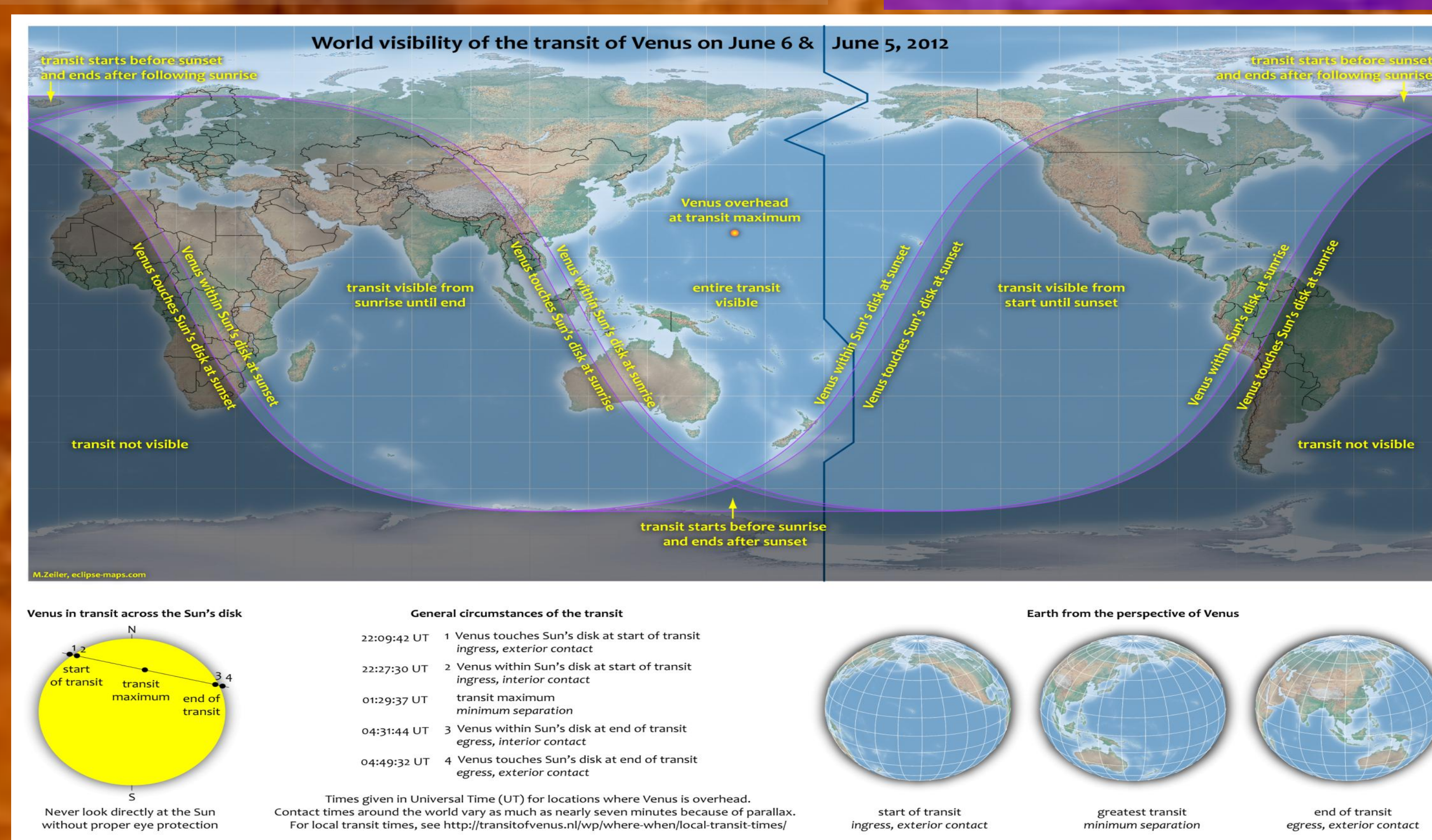
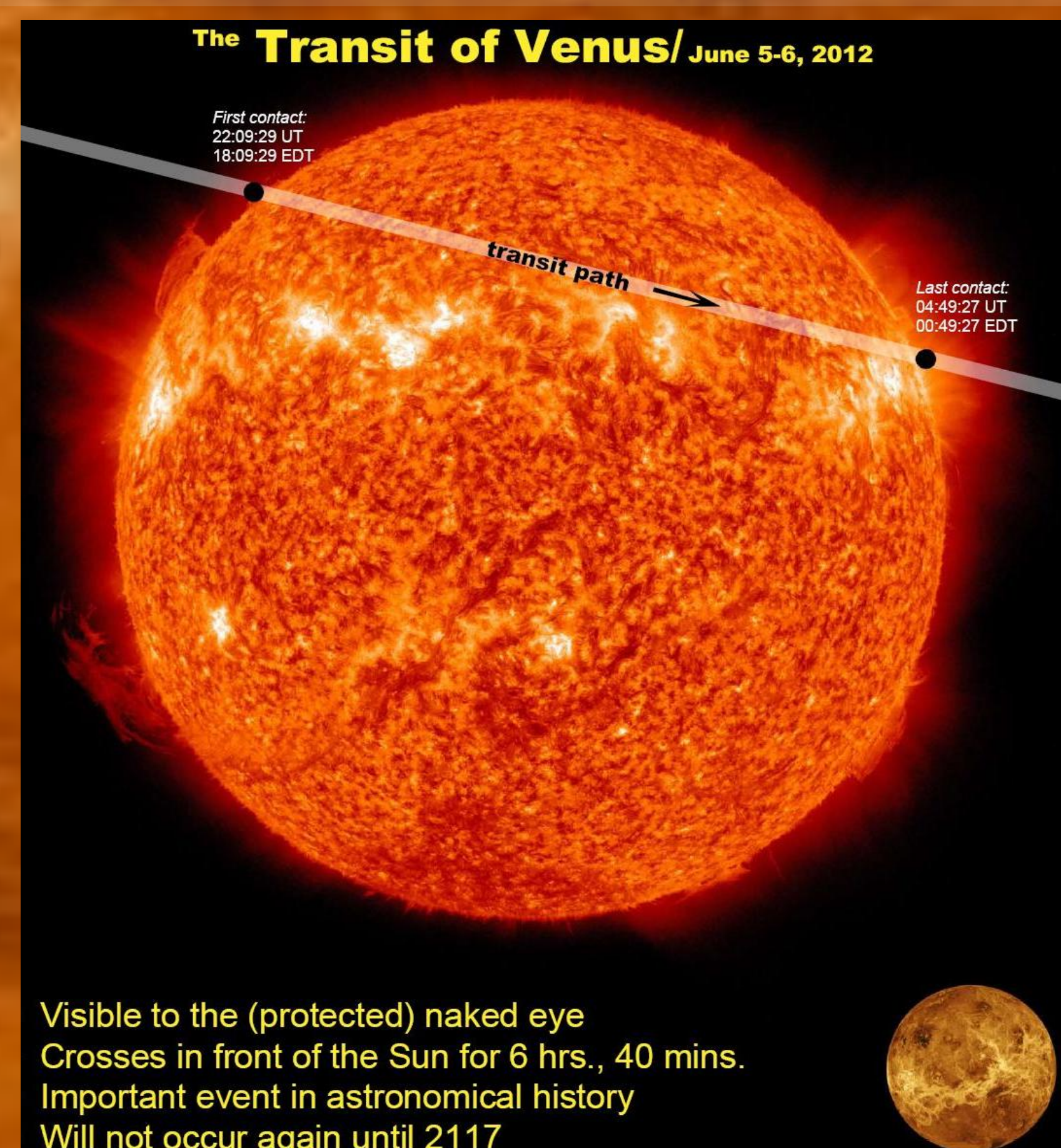
Comparison Solar System Bodies



Planetary transit is like a lunar eclipse. Venus will pass between the Earth and the Sun. The major difference is that Moon appears to be about the same size of the Sun from Earth. Venus, on the other hand, appears very small from Earth. Venus appears 3.125 % of the Sun's apparent diameter.



Transits of Venus are only possible during early December and June when Venus's orbital nodes pass across the Sun. Venus Transits show a clear pattern of recurrence at intervals of 8 years, 121.5 years, 8 years, and 105.5 years.



Venus: Size and mass of Venus are comparable to that of Earth. Earth rotates in about 24 hours whereas Venus rotates in the contrary sense (retrograde rotation) in 243 days. Orbital period of Venus is 224.701 days so that a Venus year is less than a full day. Combination of these two periods results in the Sun appearing from the West and disappearing over East with a day-night cycle of 117 days.

Equator to pole temperatures vary by only a couple of degrees. Thick CO_2 and H_2SO_4 atmosphere obscures the surface in visible light

The atmosphere of Venus is ~90 times more dense than that of earth. Because of denser atmosphere and its chemical composition, Venus experience an immense green-house effect that raises the temperature on the surface to more than 470°C.

Parameters	Venus	Earth	Ratio
Mass (10^{24} kg)	4.868	5.9736	0.815
Eq. radius (km)	6051.8	6378.1	0.949
Po. Radius (km)	6051.8	6356.8	0.952
Mean Density (kg/m ³)	5243	5515	0.951
Es. Velocity (km/s)	10.36	11.19	0.926
Sidereal Or. Period (d)	224.701	365.256	0.615
Tropical Or. Period (d)	224.695	365.242	0.615
Synodic Period (d)	583.92	-----	-----
Mean Orb. Velocity (km/s)	35.02	29.78	1.176
Orb. Inclination (degree)	3.39	0.00	-----
Length of day (hrs)	2802.0	24.00	116.75

Synodic period for Venus (period between successive appearances of Venus at the same point relative to the Sun as seen from the Earth) is 583.924 days. This implies 5 synodic periods of Venus (2919.62 d) corresponds to ~8 Earth orbital periods (2922.05 d) or 13 orbital periods of Venus (2921.11 d). This explains the 8 year periodicity in the transits of Venus.

Venus Transit from Ahmedabad, Gujarat

