# Total Lunar Eclipse of 2011 Jun 15 

Ecliptic Conjunction $=$ 20:14:40.7 TD ( $=$ 20:13:33.4 UT $)$<br>Greatest Eclipse $=$ 20:13:43.1 TD ( $=20: 12: 35.8$ UT )<br>Penumbral Magnitude $=2.6868$<br>P. Radius $=1.2504^{\circ}$<br>Gamma $=0.0897$<br>Umbral Magnitude $=1.6998$<br>U. Radius $=0.7256^{\circ}$<br>Axis $=0.0875^{\circ}$

Saros Series $=130$
Member $=34$ of 72
$\frac{\text { Sun at Greatest Eclipse }}{\text { (Geocentric Coordinates) }}$
R.A. $=05 \mathrm{~h} 35 \mathrm{~m} 33.6 \mathrm{~s}$

Dec. $=+23^{\circ} 19^{\prime} 06.1^{\prime \prime}$
S.D. $=00^{\circ} 15^{\prime} 44.7^{\prime \prime}$
H.P. $=00^{\circ} 00^{\prime} 08.7^{\prime \prime}$

Moon at Greatest Eclipse (Geocentric Coordinates)
R.A. $=17 \mathrm{~h} 35 \mathrm{~m} 32.3 \mathrm{~s}$

Dec. $=-23^{\circ} 13^{\prime} 51.6^{\prime \prime}$
S.D. $=00^{\circ} 15^{\prime} 57.2^{\prime \prime}$
H.P. $=00^{\circ} 58^{\prime} 33.0^{\prime \prime}$


Eclipse Durations
Penumbral $=05 \mathrm{~h} 36 \mathrm{~m} 12 \mathrm{~s}$
Umbral $=03 \mathrm{~h} 39 \mathrm{~m} 19 \mathrm{~s}$
Total $=01 \mathrm{~h} 40 \mathrm{~m} 13 \mathrm{~s}$
$\Delta T=67 \mathrm{~s}$
Rule $=\mathrm{CdT}$ (Danjon)
Eph. = VSOP87/ELP2000-85

Earth's Penumbra
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F. Espenak, NASA's GSFC eclipse.gsfc.nasa.gov/eclipse.html

Eclipse Contacts
P1 = 17:24:33 UT
U1 = 18:22:55 UT
U2 = 19:22:29 UT
U3 $=21: 02: 41$ UT
U4 $=22: 02: 14$ UT
P4 = 23:00:44 UT


