

FIGURE 5

# Hybrid Solar Eclipse of 2013 Nov 03

Ecliptic Conjunction = 12:51:04.1 TD (= 12:49:57.0 UT)

Greatest Eclipse = 12:47:35.7 TD (= 12:46:28.6 UT)

Eclipse Magnitude = 1.0159      Gamma = 0.3271

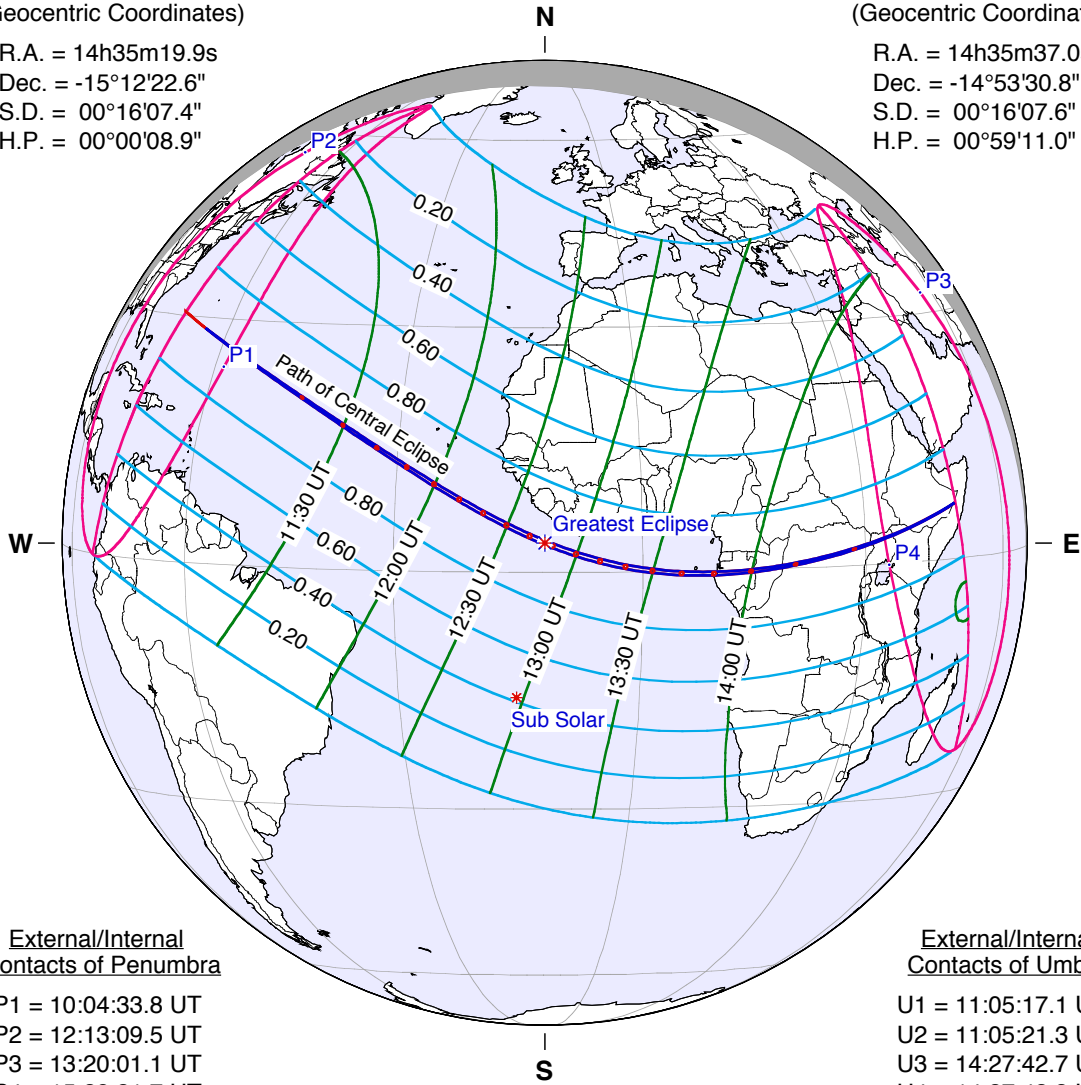
Saros Series = 143      Member = 23 of 72

Sun at Greatest Eclipse  
(Geocentric Coordinates)

R.A. = 14h35m19.9s  
Dec. = -15°12'22.6"  
S.D. = 00°16'07.4"  
H.P. = 00°00'08.9"

Moon at Greatest Eclipse  
(Geocentric Coordinates)

R.A. = 14h35m37.0s  
Dec. = -14°53'30.8"  
S.D. = 00°16'07.6"  
H.P. = 00°59'11.0"



External/Internal  
Contacts of Penumbra

P1 = 10:04:33.8 UT  
P2 = 12:13:09.5 UT  
P3 = 13:20:01.1 UT  
P4 = 15:28:21.7 UT

External/Internal  
Contacts of Umbra

U1 = 11:05:17.1 UT  
U2 = 11:05:21.3 UT  
U3 = 14:27:42.7 UT  
U4 = 14:27:43.3 UT

Constants & Ephemeris

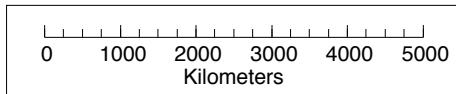
$\Delta T = 67.1$  s  
 $k1 = 0.2724880$   
 $k2 = 0.2722810$   
 $\Delta b = 0.0''$      $\Delta l = 0.0''$   
Eph. = VSOP87/ELP2000-85

Local Circumstances at Greatest Eclipse

Lat. = 03°29.3'N      Sun Alt. = 70.9°  
Long. = 011°41.9'W      Sun Azm. = 192.0°  
Path Width = 57.5 km      Duration = 01m39.5s

Geocentric Libration  
(Optical + Physical)

$l = -4.19^\circ$   
 $b = -0.37^\circ$   
 $c = 19.55^\circ$   
Brown Lun. No. = 1124



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[eclipse.gsfc.nasa.gov/eclipse.html](http://eclipse.gsfc.nasa.gov/eclipse.html)

Generated on 2012 Mar 18