

Total Solar Eclipse of 0033 Mar 19

Ecliptic Conjunction = 13:33:01.2 TD (= 10:42:58.7 UT)

Greatest Eclipse = 13:40:16.2 TD (= 10:50:13.7 UT)

Eclipse Magnitude = 1.0576 Gamma = -0.7168

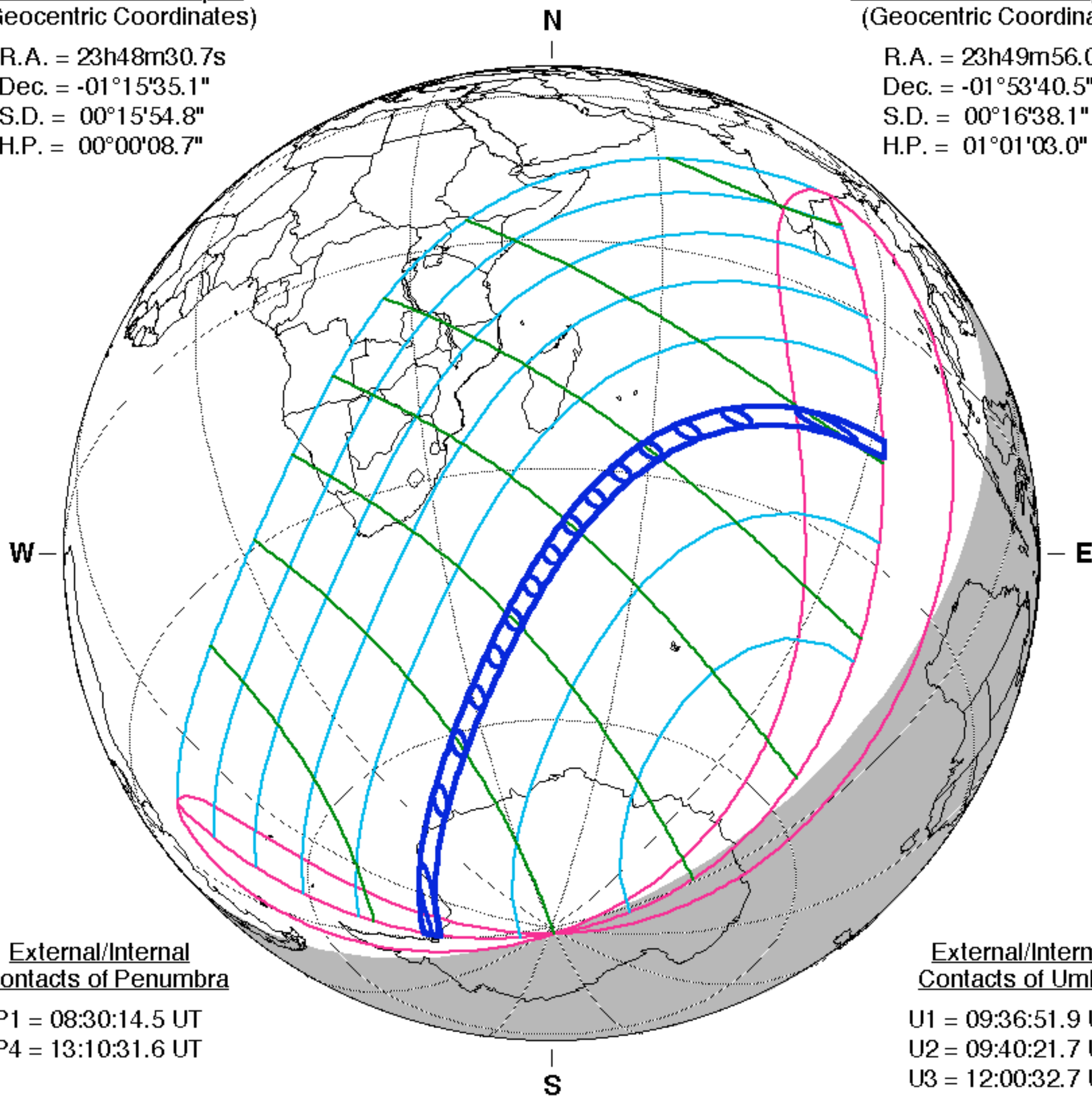
Saros Series = 59 Member = 60 of 72

Sun at Greatest Eclipse (Geocentric Coordinates)

R.A. = 23h48m30.7s
Dec. = -01°15'35.1"
S.D. = 00°15'54.8"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse (Geocentric Coordinates)

R.A. = 23h49m56.0s
Dec. = -01°53'40.5"
S.D. = 00°16'38.1"
H.P. = 01°01'03.0"



External/Internal Contacts of Penumbra

P1 = 08:30:14.5 UT
P4 = 13:10:31.6 UT

External/Internal Contacts of Umbra

U1 = 09:36:51.9 UT
U2 = 09:40:21.7 UT
U3 = 12:00:32.7 UT
U4 = 12:03:59.9 UT

Local Circumstances at Greatest Eclipse

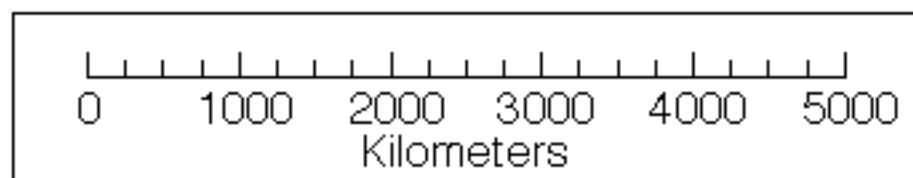
Lat. = 40°05.5'S Sun Alt. = 44.0°
Long. = 046°54.6'E Sun Azm. = 320.6°
Path Width = 267.0 km Duration = 04m06.3s

Constants & Ephemeris

$\Delta T = 10202.4$ s
 $k1 = 0.2724880$
 $k2 = 0.2722810$
 $\Delta b = 0.0''$ $\Delta l = 0.0''$
Eph. = VSOP87/ELP2000-82

Geocentric Libration (Optical + Physical)

$l = 1.80^\circ$
 $b = 0.95^\circ$
 $c = -22.17^\circ$
Brown Lun. No. = -23373



F. Espenak, NASA's GSFC

eclipse.gsfc.nasa.gov/eclipse.html