Total Solar Eclipse of 1870 Dec 22

Ecliptic Conjunction = 12:18:48.0 TD (= 12:18:48.1 UT)
Greatest Eclipse = 12:27:32.7 TD (= 12:27:32.8 UT)

Eclipse Magnitude = 1.0248 Gamma = 0.8585

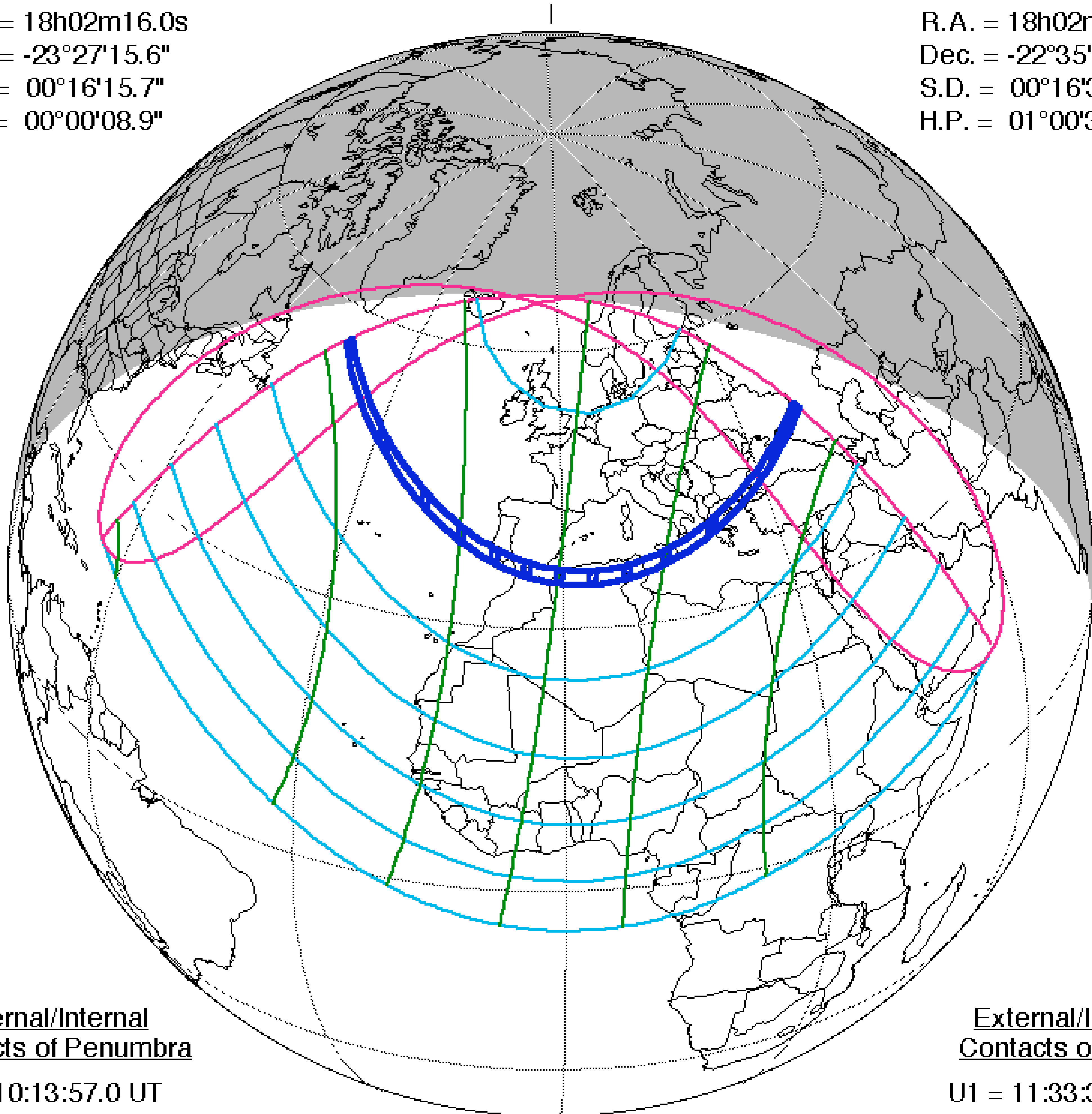
Saros Series = 120 Member = 53 of 71

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 18h02m16.0s
Dec. = -23°27'15.6"
S.D. = 00°16'15.7"
H.P. = 00°00'08.9"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 18h02m36.9s
Dec. = -22°35'32.9"
S.D. = 00°16'31.5"
H.P. = 01°00'38.9"



External/Internal
Contacts of Penumbra

P1 = 10:13:57.0 UT
P4 = 14:41:15.4 UT

External/Internal
Contacts of Umbra

U1 = 11:33:35.5 UT
U2 = 11:35:20.7 UT
U3 = 13:19:52.3 UT
U4 = 13:21:34.1 UT

Local Circumstances at Greatest Eclipse

Lat. = 35°44.5'N Sun Alt. = 30.6°
Long. = 001°31.7'W Sun Azm. = 186.0°
Path Width = 164.6 km Duration = 02m10.9s

Constants & Ephemeris

ΔT = -0.1 s
k1 = 0.2724880
k2 = 0.2722810
Δb = 0.0" Δl = 0.0"
Eph. = VSOP87/ELP2000-82

0 1000 2000 3000 4000 5000
Kilometers

Geocentric Libration
(Optical + Physical)

l = 2.92°
b = -1.08°
c = -1.76°

Brown Lun. No. = -643

F. Espenak, NASA's GSFC

eclipse.gsfc.nasa.gov/eclipse.html