

# Total Solar Eclipse of 1869 Aug 07

Ecliptic Conjunction = 22:08:11.2 TD (= 22:08:09.9 UT)

Greatest Eclipse = 22:01:04.8 TD (= 22:01:03.5 UT)

Eclipse Magnitude = 1.0551      Gamma = 0.6960

Saros Series = 143      Member = 15 of 72

## Sun at Greatest Eclipse (Geocentric Coordinates)

R.A. = 09h11m15.8s

Dec. = +16°14'37.3"

S.D. = 00°15'46.6"

H.P. = 00°00'08.7"

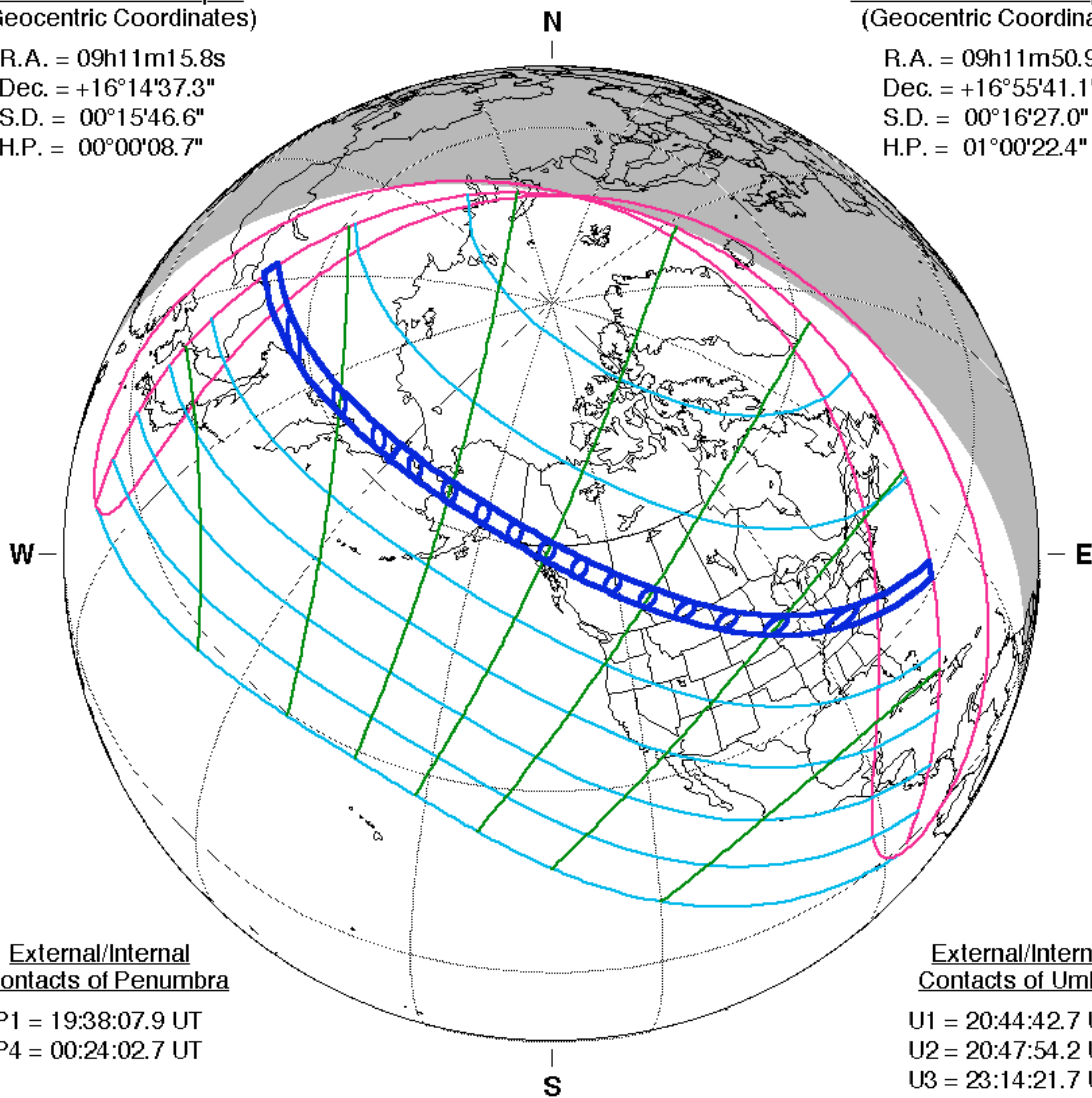
## Moon at Greatest Eclipse (Geocentric Coordinates)

R.A. = 09h11m50.9s

Dec. = +16°55'41.1"

S.D. = 00°16'27.0"

H.P. = 01°00'22.4"



## External/Internal Contacts of Penumbra

P1 = 19:38:07.9 UT

P4 = 00:24:02.7 UT

## External/Internal Contacts of Umbra

U1 = 20:44:42.7 UT

U2 = 20:47:54.2 UT

U3 = 23:14:21.7 UT

U4 = 23:17:36.4 UT

## Local Circumstances at Greatest Eclipse

Lat. = 59°06.4'N

Sun Alt. = 45.6°

Long. = 133°09.8'W

Sun Azm. = 201.9°

Path Width = 253.9 km      Duration = 03m48.0s

## Constants & Ephemeris

$\Delta T = 1.3$  s

$k_1 = 0.2724880$

$k_2 = 0.2722810$

$\Delta b = 0.0''$        $\Delta l = 0.0''$

Eph. = VSOP87/ELP2000-82

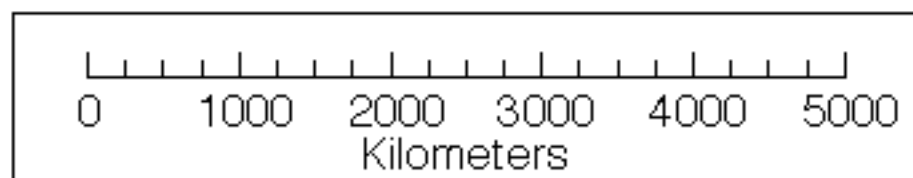
## Geocentric Libration (Optical + Physical)

$l = -3.12^\circ$

$b = -0.87^\circ$

$c = 18.70^\circ$

Brown Lun. No. = -660



F. Espenak, NASA's GSFC

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