

# Partial Lunar Eclipse of 2077 Nov 29

Ecliptic Conjunction = 21:45:06.3 TD (= 21:42:34.3 UT)

Greatest Eclipse = 21:35:53.1 TD (= 21:33:21.1 UT)

Penumbral Magnitude = 1.2309

P. Radius = 1.2792°

Gamma = 0.8854

Umbral Magnitude = 0.2356

U. Radius = 0.7387°

Axis = 0.8823°

Saros Series = 146

Member = 14 of 72

## Sun at Greatest Eclipse (Geocentric Coordinates)

R.A. = 16h26m14.3s

Dec. = -21°40'58.7"

S.D. = 00°16'12.9"

H.P. = 00°00'08.9"

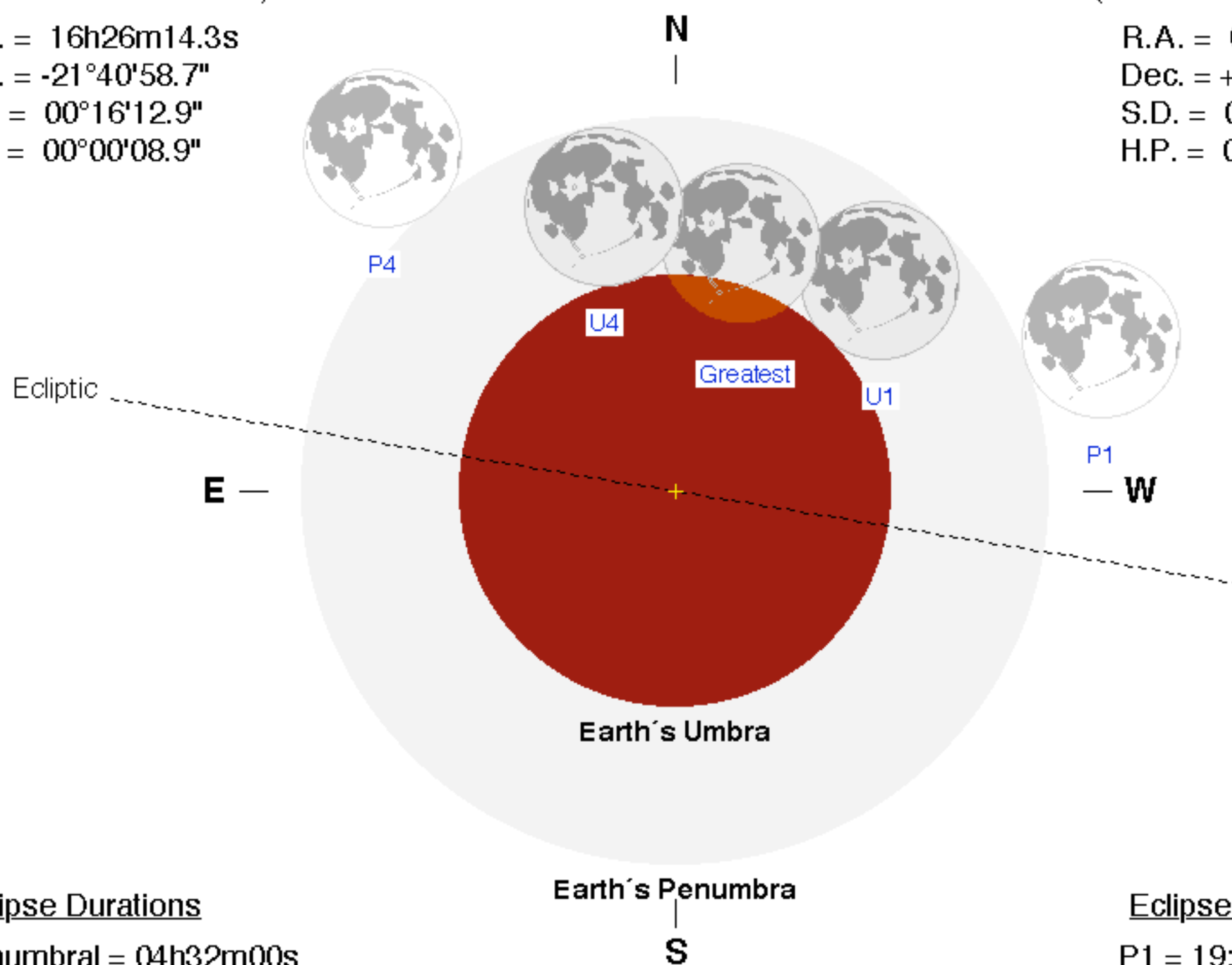
## Moon at Greatest Eclipse (Geocentric Coordinates)

R.A. = 04h25m16.1s

Dec. = +22°32'10.5"

S.D. = 00°16'17.5"

H.P. = 00°59'47.3"



## Eclipse Durations

Penumbral = 04h32m00s

Umbral = 01h44m57s

## Eclipse Contacts

P1 = 19:17:21 UT

U1 = 20:40:48 UT

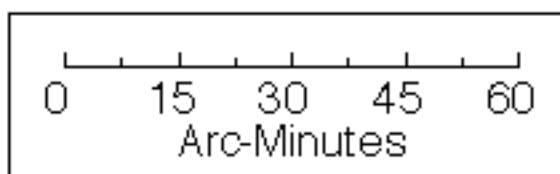
U4 = 22:25:45 UT

P4 = 23:49:21 UT

$\Delta T = 152$  s

Rule = CdT (Danjon)

Eph. = VSOP87/ELP2000-85



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

