

# Total Lunar Eclipse of 1990 Feb 09

Ecliptic Conjunction = 19:16:41.4 TD (= 19:15:44.4 UT)

Greatest Eclipse = 19:12:02.4 TD (= 19:11:05.5 UT)

Penumbral Magnitude = 2.1191

P. Radius = 1.2317°

Gamma = -0.4148

Umbral Magnitude = 1.0750

U. Radius = 0.6914°

Axis = 0.3938°

Saros Series = 133      Member = 25 of 71

## Sun at Greatest Eclipse (Geocentric Coordinates)

R.A. = 21h32m41.8s

Dec. = -14°34'08.6"

S.D. = 00°16'12.6"

H.P. = 00°00'08.9"

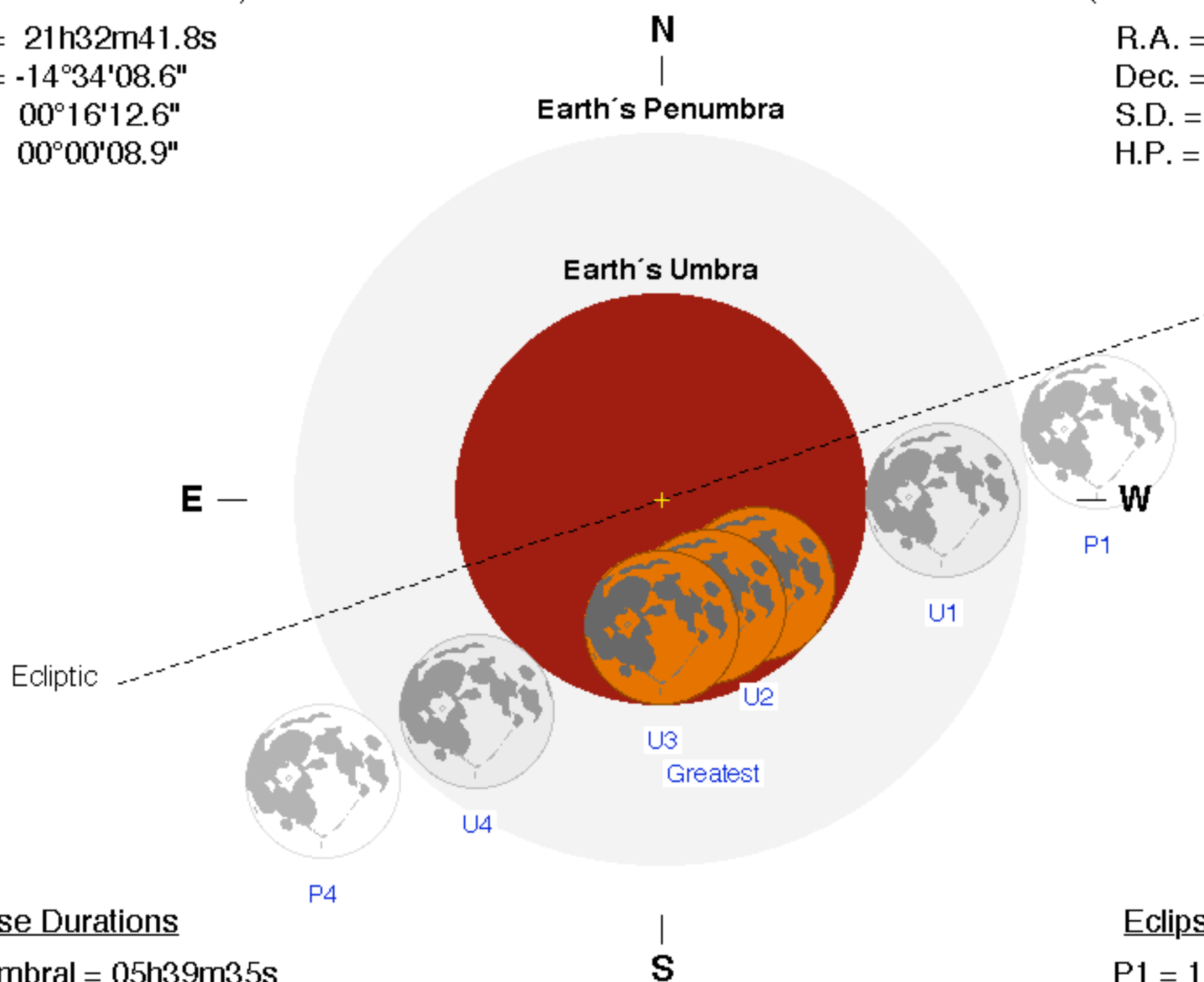
## Moon at Greatest Eclipse (Geocentric Coordinates)

R.A. = 09h32m01.7s

Dec. = +14°12'35.9"

S.D. = 00°15'31.4"

H.P. = 00°56'58.5"



## Eclipse Durations

Penumbral = 05h39m35s

Umbral = 03h24m17s

Total = 00h42m19s

$\Delta T = 57$  s

Rule = CdT (Danjon)

Eph. = VSOP87/ELP2000-85

## Eclipse Contacts

P1 = 16:21:21 UT

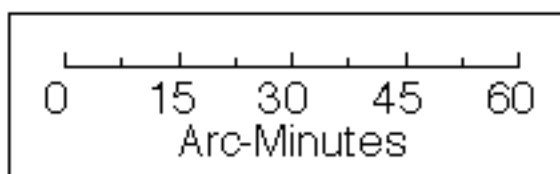
U1 = 17:28:55 UT

U2 = 18:49:55 UT

U3 = 19:32:13 UT

U4 = 20:53:12 UT

P4 = 22:00:56 UT



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

