TABLE 1

ELEMENTS OF THE TOTAL SOLAR ECLIPSE OF 2008 AUGUST 01

Equatorial Conjunction: 09:48:26.72 TDT J.D. = 2454679.908643
(Sun & Moon in R.A.) (=09:47:21.12 UT)

Ecliptic Conjunction: 10:13:38.78 TDT J.D. = 2454679.926143
(Sun & Moon in Long.) (=10:12:33.18 UT)

Instant of Greatest Eclipse: 10:22:12.15 TDT J.D. = 2454679.932085
(=10:21:06.55 UT)

Geocentric Coordinates of Sun & Moon at Greatest Eclipse (DE200/LE200):

Sun:		Moon:	
R.A. =	08h47m54.149s	R.A. =	08h49m08.757s
Dec. =	+17°51'56.39"	Dec. =	+18°38'01.54"
Semi-Diameter =	15'45.50"	Semi-Diameter =	16'14.12"
Eq.Hor.Par. =	08.66"	Eq.Hor.Par. =	0°59'34.82"
Δ R.A. =	9.694s/h	Δ R.A. =	142.347s/h
Δ Dec. =	-38.19"/h	Δ Dec. =	-762.64"/h

Lunar Radius Constants: k1 = 0.2725076 (Penumbra), k2 = 0.2722810 (Umbra)

Shift in Lunar Position: Δb = 0.00", Δl = 0.00"

Geocentric Libration (Optical + Physical): l = 4.2°, b = -1.0°, c = 14.0°

Brown Lun. No. = 1059
Saros Series = 126 (47/72)
nDot = -26.00 "/cy**2

Eclipse Magnitude = 1.03942 Gamma = 0.83071 ΔT = 65.6 s

Polynomial Besselian Elements for: 2008 Aug 01 10:00:00.0 TDT ($=t_0$)

n	x	y	d	l_1	l_2	μ
0	0.1017945	0.8506194	17.8675385	0.5382522	-0.0078656	328.425751
1	0.5285779	-0.2025230	-0.0101205	0.0001111	0.0001105	15.002012
2	-0.0000634	-0.0001512	-0.0000038	-0.0000120	-0.0000120	0.000002
3	-0.0000081	0.0000033	0.0000000	0.0000000	0.0000000	0.000000

Tan f_1 = 0.0046066 Tan f_2 = 0.0045836

At time t1 (decimal hours), each Besselian element is evaluated by:

$a = a_0 + a_1*t + a_2*t^2 + a_3*t^3$ (or $a = \sum [a_n*t^n]$; n = 0 to 3)

where: a = x, y, d, l_1, l_2, or μ
$t = t_1 - t_0$ (decimal hours) and t_0 = 10.000 TDT

The Besselian elements were derived from a least-squares fit to elements calculated at five uniformly spaced times over a six hour period centered at t_0. The Besselian elements are valid for the period $7.00 \le t_1 \le 13.00$ TDT.

Note that all times are expressed in Terrestrial Dynamical Time (TDT).

Saros Series 126: Member 47 of 72 eclipses in series.