## Figure 3

## Total Solar Eclipse of 2010 Jul 11

Ecliptic Conjunction $=19: 41: 33.5 \mathrm{TD} \quad(=19: 40: 27.3$ UT $)$
Greatest Eclipse $=19: 34: 37.6$ TD $\quad(=19: 33: 31.4$ UT $)$

Eclipse Magnitude $=1.0580 \quad$ Gamma $=-0.6788$
$\frac{\text { Sun at Greatest Eclipse }}{\text { (Geocentric Coordinates) }}$

$$
\text { Saros Series }=146 \quad \text { Member }=27 \text { of } 76
$$

$$
\begin{aligned}
& \text { R.A. }=07 \mathrm{~h} 23 \mathrm{~m} 57.6 \mathrm{~s} \\
& \text { Dec. }=+22^{\circ} 02^{\prime} 11.0^{\prime \prime} \\
& \text { S.D. }=00^{\circ} 15^{\prime} 43.9^{\prime \prime} \\
& \text { H.P. }=00^{\circ} 00^{\prime} 08.7^{\prime \prime}
\end{aligned}
$$

External/Internal Contacts of Penumbra
P1 = 17:09:37.6 UT
P4 = 21:57:14.3 UT

Constants \& Ephemeris
$\Delta \mathrm{T}=66.2 \mathrm{~s}$
$k 1=0.2725076$
$\mathrm{k} 2=0.2722810$
$\Delta b=0.0^{\prime \prime} \quad \Delta l=0.0^{\prime \prime}$
Eph. = JPL DE200/LE200

External/Internal Contacts of Umbra

U1 = 18:15:12.1 UT
U2 $=18: 18: 29.9$ UT
U3 $=20: 48: 19.6$ UT
U4 = 20:51:41.0 UT
Local Circumstances at Greatest Eclipse
Lat. $=19^{\circ} 44.9^{\prime} \mathrm{S}$
Long. $=121^{\circ} 52.5^{\prime} \mathrm{W}$
Path Width $=258.6 \mathrm{~km}$
Duration $=05 \mathrm{~m} 20.2 \mathrm{~s}$


## Geocentric Libration

(Optical + Physical)

$$
\begin{aligned}
& I=-3.25^{\circ} \\
& b=0.86^{\circ} \\
& c=6.62^{\circ}
\end{aligned}
$$

Brown Lun. No. $=1083$

Moon at Greatest Eclipse (Geocentric Coordinates)
R.A. $=07 \mathrm{~h} 23 \mathrm{~m} 15.8 \mathrm{~s}$ Dec. $=+21^{\circ} 22^{\prime} 29.3^{\prime \prime}$ S.D. $=00^{\circ} 16^{\prime 26.7 " ~}$ H.P. $=01^{\circ} 00^{\prime} 20.9^{\prime \prime}$

