

ANNULAR SOLAR ECLIPSE OF 2012 MAY 20

TABLE 2

SHADOW CONTACTS AND CIRCUMSTANCES ANNULAR SOLAR ECLIPSE OF 2012 MAY 20

$$\Delta T = 66.7 \text{ s}$$

$$= 000^{\circ}16'43.5''$$

		Terrestrial Dynamical Time h m s	Latitude	Ephemeris Longitude†	True Longitude*
External/Internal					
Contacts of Penumbra:	P ₁	20:57:13.7	10°53.3'N	130°46.8'E	131°03.6'E
	P ₄	02:50:28.4	22°48.2'N	124°33.4'W	124°16.7'W
Extreme					
North/South Limits					
of Penumbral Path:	N ₁	21:43:34.2	10°03.6'S	126°59.7'E	127°16.4'E
	S ₁	02:04:13.8	01°56.9'N	121°11.8'W	120°55.1'W
External/Internal					
Contacts of Antumbra:	U ₁	22:07:23.7	20°34.0'N	109°21.5'E	109°38.2'E
	U ₂	22:12:53.5	21°46.0'N	107°28.3'E	107°45.0'E
	U ₃	01:34:49.4	33°30.9'N	100°26.1'W	100°09.3'W
	U ₄	01:40:17.7	32°20.7'N	102°26.0'W	102°09.2'W
Extreme					
North/South Limits					
of Antumbral Path:	N ₁	22:11:49.4	22°23.3'N	107°28.1'E	107°44.8'E
	S ₁	22:08:29.9	19°56.0'N	109°21.0'E	109°37.7'E
	N ₂	01:35:53.0	34°07.1'N	100°22.0'W	100°05.2'W
	S ₂	01:39:11.9	31°43.6'N	102°29.1'W	102°12.3'W
Extreme Limits					
of Central Line:	C ₁	22:10:08.1	21°09.2'N	108°25.4'E	108°42.2'E
	C ₂	01:37:34.1	32°55.0'N	101°26.7'W	101°10.0'W
Instant of					
Greatest Eclipse:	G ₀	23:53:53.4	49°05.7'N	175°59.7'E	176°16.5'E
Circumstances at					
Greatest Eclipse:	Sun's Altitude = 60.9°		Path Width = 236.9 km		
	Sun's Azimuth = 171.0°		Central Duration = 05m46.3s		

† Ephemeris Longitude is the terrestrial dynamical longitude assuming a uniformly rotating Earth.

* True Longitude is calculated by correcting the Ephemeris Longitude for the non-uniform rotation of Earth.

$$(T.L. = E.L. + 1.002738 * \Delta T / 240, \text{ where } \Delta T(\text{in seconds}) = \text{TDT} - \text{UT})$$

Note: Longitude is measured positive to the East.

Because ΔT is not known in advance, the value used in the predictions is an extrapolation based on pre-2012 measurements. The actual value is expected to fall within ± 0.3 seconds of the estimated ΔT used here.