1995年10月24日の日食の詳細予報

NASA Reference Publication 1344 より

編 集 部

前号に引き続き、NASAによる予報をお届けします。ページ数の関係で、観測地選びに重要な気象情報を先に掲載してしまいましたが、今回の予報で実際の観測計画を練って下さい。

概要

1995年10月24日の火曜日、東半球のかなりの地域で皆既日食が見られる。皆既帯は中東に始まり、インド、東南アジア、南シナ海を通る。フィリピンとニューギニアの間を通り抜ける前には、わずかにボルネオの北部をかすめる。日没とともに皆既が終わるのは、マーシャル諸島南の太平洋である。部分食はアジアのほとんどの地域とインドネシアの諸島、オーストラリアなど、月の半影かかかる広い地域で見られる。

皆既帯が通る地域と日食の見え方

皆既帯の始まりはイランの中央部、 Tehran の１００ｋｍほど南にある Oom の近くである。月の本影が最初に地表に接するのは日の出の位置なので（2:52ＵＴ）、皆既帯の幅は16ｋｍに満たず、継続時間もたかだか16秒にすぎない。本影は南東に進んで、７分後にはアフガニスタンとパキスタンを越え、3:00ＵＴには北インドに入る。地表を走る本影の早さは２．２５５ｋｍ/ｓ、皆既帯の幅は37ｋｍに達し、継続時間は当初の３倍あまりの44秒になっている。早朝の太陽は東の地平線から21度の高さにある。４分後、最大食分0．９６５の部分食が皆既帯の北約１３０ｋｍにある New Dehli で見られる。世界で最も魅力的な建築、タジ・マハールがある町 Agra は、皆既帯の北限界線からわずかにはずれている。タジ・マハールからは、実に惜しいことに最大食分0．９９７の部分食が3:05ＵＴに見える。

Allahabad は皆既帯の北限界線にあり、3:09ＵＴにわずか31秒間の皆既が見られる。中心線はここからわずか20ｋｍ南で、そこでの継続時間は１分３秒である。本影がガンジズ河のデルタに達する頃（3:20ＵＴ）、皆既帯の幅は55ｋｍ、継続時間は１分18秒、太陽高度は40度になっている。 Calcutta は北限界線をまたいでおり、1100万人もの人々がこのすばらしい出来事の目撃者になることができる。

インドを離れた本影はベンガル湾を越えて、ミャンマーの西海岸に達する（3:30ＵＴ）。皆既帯の幅は61ｋｍに広がり、継続時間は１分30秒に達する。本影は内陸に向けて進み、

皆既帯の北１００ｋｍにあるYangonでは、3:38ＵＴに食分0.975の部分食になる。南東に進む本影は、Thaungyin 川を越えて3:44ＵＴ、タイに入る。ここでの継続時間は１分45秒、太陽高度は54度、そして本影のスピードは0.73ｋｍ/ｓになっている。タイの首都Bangkokは皆既帯の南約１４０ｋｍにあり、3:51ＵＴに食分0.957の部分食になる。皆既帯の幅は、本影がカンボジアの中央部を進む間も少しずつ増加を続ける。4:00ＵＴには中心線上の継続時間は１分57秒に、皆既帯の幅は72ｋｍ、太陽高度は62度になっている。アンコールワットの遺跡は皆既帯の中にあり、この天体ショーを沈黙のうちに見るに違いない。カンボジアを4:09ＵＴに離れた本影は、ベトナム南部のHo Chi Minh市の北約１００ｋｍを通る。Ho Chi Minhでは食分0.978の部分食になる。

4:14ＵＴにベトナムの南東海岸に達した本影は、アジア大陸を離れて南シナ海を横切って進み始める。そのすぐ後、4:32:29.5ＵＴ に食の最大になる。ここでの継続時間は２分10秒、太陽高度は69度、皆既帯の幅は78ｋｍ、本影のスピードは0.564ｋｍ/ｓになる。次に陸地にかかるのは4:44ＵＴ、ボルネオ島の北海岸のSarawakである。北海岸線に沿って進んだ本影はすぐに陸地を離れる。本影がセレベス海を通過するとき、その南限界線がTawi-Tawi島を二分する。本影がおよそ5:15ＵＴにミンダナオ島の南約１５０ｋｍを通過するときに、Pulau Sangihe島にかかるが、ここが陸地にかかる最後の場所になる。

本影は太平洋を東に進み、皆既帯の幅と継続時間は次第に減少を続ける。本影が日没とともに地表を離れるのは6:13ＵＴで、ここでの継続時間は20秒にすぎない。

今回の日食では皆既帯の幅が狭いため、13600ｋｍの皆既帯の長さをもってしても、地表のわずか0.1％を覆うにすぎない。

Figure 4: **THE ECLIPSE PATH IN INDIA**

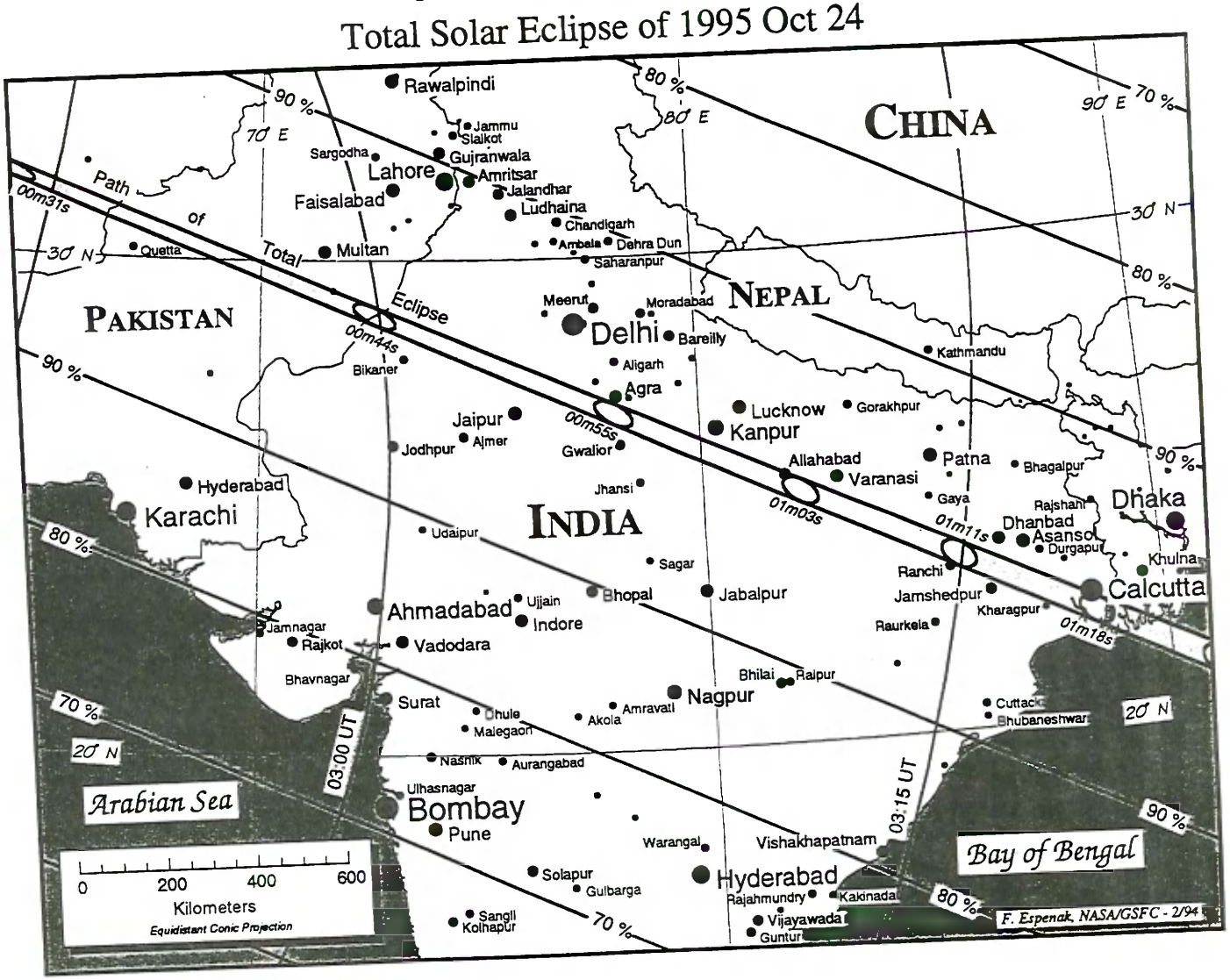


Figure 5: **THE ECLIPSE PATH IN SOUTHEAST ASIA**

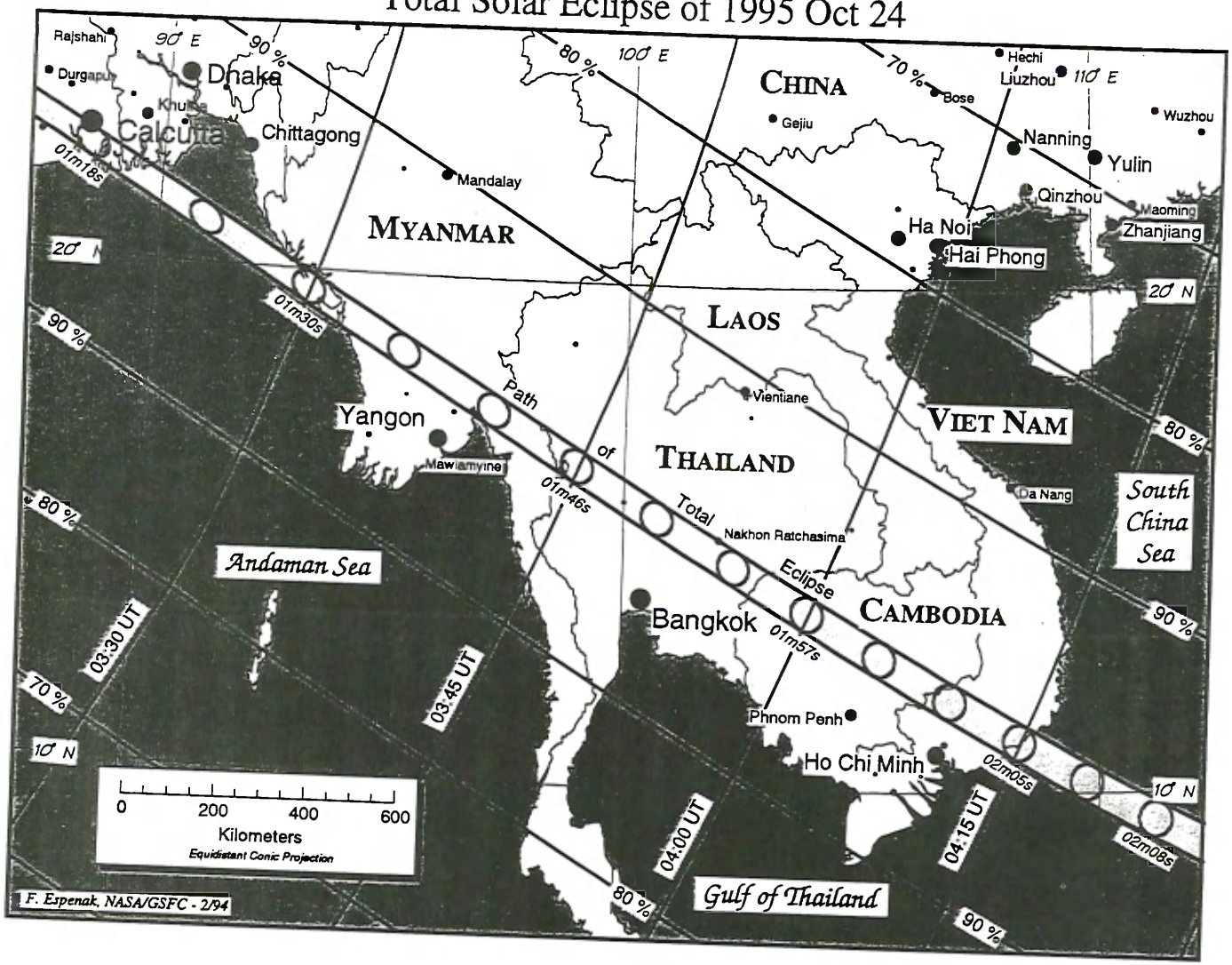


Figure 6: **THE ECLIPSE PATH IN SOUTH CHINA SEA AND CELEBES SEA**

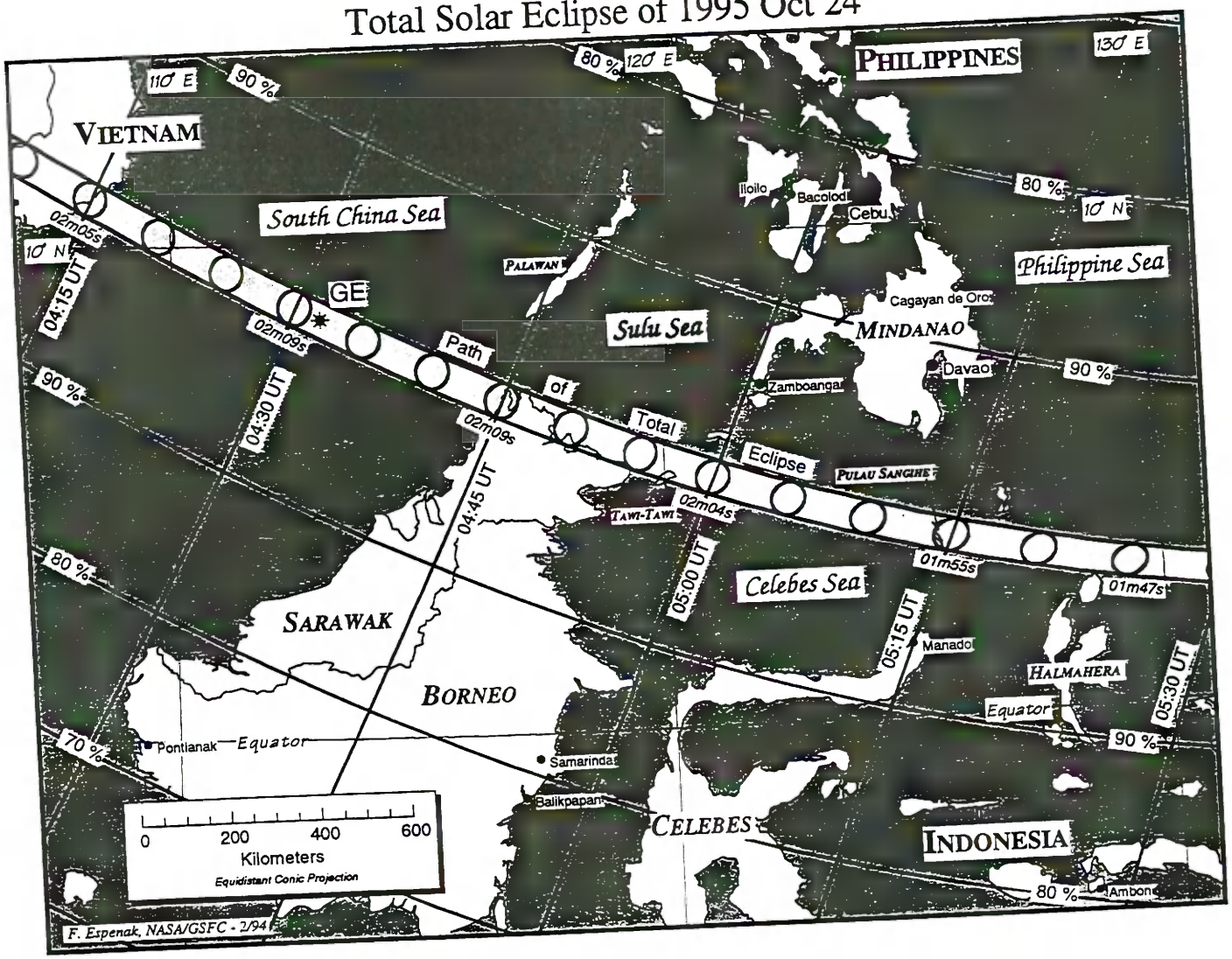
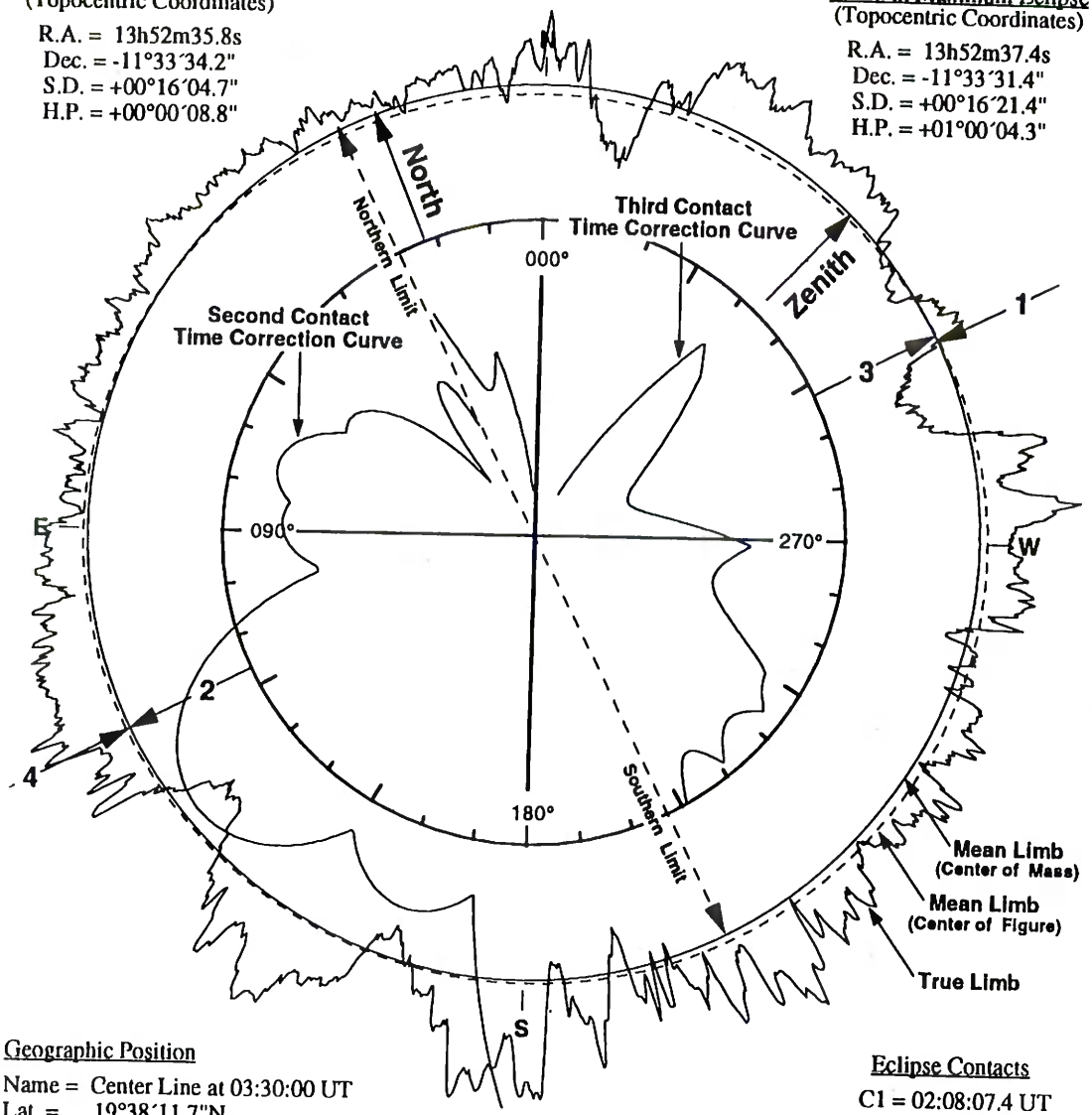


Figure 7: **THE LUNAR LIMB PROFILE AT 03:30 UT**

Total Solar Eclipse of 1995 Oct 24

Maximum Eclipse = 03:30:00.0 UT



Sun at Maximum Eclipse
(Topocentric Coordinates)

R.A. = 13h52m35.8s
Dec. = -11°33′34.2"
S.D. = +00°16′04.7"
H.P. = +00°00′08.8"

Moon at Maximum Eclipse
(Topocentric Coordinates)

R.A. = 13h52m37.4s
Dec. = -11°33′31.4"
S.D. = +00°16′21.4"
H.P. = +01°00′04.3"

Geographic Position

Name = Center Line at 03:30:00 UT
Lat. = 19°38′11.7"N
Long. = 093°17′03.3"E
Elev. = 0.0 m

Ephemeris & Constants

Eph. = DE200/LE200
ΔT = 61.0 s
k1 = 0.2725076
k2 = 0.2722810
Δb = 0.00" Δl = 0.00"

Local Circumstances at Maximum Eclipse

Sun Alt. = 46.9° Path Width = 60.8 km
Sun Azm. = 133.7° Duration = 01m30.3s
PA(N.Limit) = 27.2° A.Vel. (M:S) = 0.370"/s

0 1 2 3 4 5
Arc-Seconds

0 1 2 3 4 5
Seconds

Eclipse Contacts

C1 = 02:08:07.4 UT
C2 = 03:29:15.0 UT
C3 = 03:30:45.2 UT
C4 = 05:02:46.7 UT
ΔC2 = 2.3s ΔC3 = -6.2s

Topocentric Libration
(Optical + Physical)

l = -3.52°
b = -0.08°
c = 22.05°

F. Espenak, NASA/GSFC - 6/94

Table 1

ELEMENTS OF THE TOTAL SOLAR ECLIPSE OF 1995 OCTOBER 24

Geocentric Conjunction of Sun & Moon in R.A.:	04:23:32.10 TDT (=04:22:31.10 UT)	J.D. = 2450014.683010
Instant of Greatest Eclipse:	04:33:30.49 TDT (=04:32:29.49 UT)	J.D. = 2450014.689936

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

Sun:		Moon:	
R.A. =	13h 52m 45.401s	R.A. =	13h 53m 07.189s
Dec. =	-11°-34′-24.47"	Dec. =	-11°-14′-17.00"
Semi-Diameter =	16′ 04.68"	Semi-Diameter =	16′ 10.19"
Eq.Hor.Par. =	8.84"	Eq.Hor.Par. =	0° 59′ 20.39"
Δ R.A. =	9.525s/h	Δ R.A. =	140.742s/h
Δ Dec. =	-52.38"/h	Δ Dec. =	-561.53"/h

Lunar Radius Constants:	k1 = 0.2725076 (Penumbra)	Shift in Lunar Position:	Δb = 0.0"
	k2 = 0.2722810 (Umbra)		Δl = 0.0"

Geocentric Libration: (Optical + Physical)	l = -4.1°	Brown Lun. No. = 1185
	b = -0.4°	Saros Series = 143 (22/72)
	c = 22.0°	Ephemeris = (DE200/LE200)

Eclipse Magnitude = 1.02134 Gamma = 0.35176 ΔT = 61.0 s

Polynomial Besselian Elements for: 1995 Oct 24 05:00:00.0 TDT ($=t_0$)

n	x	y	d	l_1	l_2	μ
0	0.3300331	0.2763473	-11.5805674	0.5447736	-0.0013769	258.926819
1	0.5430526	-0.1441103	-0.0141956	-0.0001149	-0.0001143	15.002741
2	0.0000181	0.0000525	0.0000024	-0.0000121	-0.0000120	-0.000002
3	-0.0000083	0.0000021	0.0000000	0.0000000	0.0000000	0.000000

Tan f_1 = 0.0047003 Tan f_2 = 0.0046769

At time 't_1' (decimal hours), each besselian element is evaluated by:

$x = x_0 + x_1*t + x_2*t^2 + x_3*t^3$ (or $x = \Sigma\ [x_n*t^n]$; n = 0 to 3)

where: $t = t_1 - t_0$ (decimal hours) and t_0 = 5.000

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

Saros Series 143: Member 22 of 72 eclipses in series.

Table 10a

CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 1995 OCTOBER 24 FOR INDIAN ASIA - I

Location Name	Latitude	Longitude	Elev. m	U.T. of Maximum Eclipse h m s	Umbral Duration	Path Width km	Sun Alt °	Sun Azm °	P °	V °	Eclipse Mag.	Eclipse Obs.
BANGLADESH												
Barisal	22°42.0'N	090°22.0'E	–	03:22:52.1			42	131	208	253	0.966	0.962
Chittagong	22°20.0'N	091°50.0'E	–	03:25:35.0			43	133	208	252	0.956	0.948
Comilla	23°27.0'N	091°12.0'E	–	03:23:53.5			42	133	208	251	0.934	0.921
Dhaka	23°43.0'N	090°25.0'E	–	03:22:27.0			41	132	208	252	0.938	0.925
Jessore	23°10.0'N	089°13.0'E	–	03:20:44.9			40	130	208	254	0.969	0.965
Khulna	22°48.0'N	089°33.0'E	–	03:21:27.9			41	130	208	254	0.975	0.972
Mymensingh	24°45.0'N	090°24.0'E	–	03:21:57.8			40	132	207	251	0.909	0.889
Pabna	24°00.0'N	089°15.0'E	–	03:20:25.7			40	131	207	253	0.946	0.936
Rajshahi	24°22.0'N	088°36.0'E	–	03:19:15.2			39	130	207	253	0.944	0.934
Sylhet	24°54.0'N	091°52.0'E	–	03:24:20.0			41	135	208	249	0.885	0.859
BHUTAN												
Thimbu	27°28.0'N	089°39.0'E	–	03:19:51.0			37	133	207	249	0.846	0.808
INDIA												
Agra	27°11.0'N	078°01.0'E	–	03:04:56.7			27	121	205	257	0.997	0.997
Ahmadabad	23°02.0'N	072°37.0'E	59	03:00:06.4			23	115	25	83	0.833	0.792
Ajmer	26°27.0'N	074°38.0'E	–	03:01:38.5			24	118	25	79	0.956	0.947
Akola	20°44.0'N	077°00.0'E	–	03:05:03.5			29	117	26	84	0.817	0.771
Aligarh	27°53.0'N	078°05.0'E	–	03:04:59.4			26	121	205	256	0.976	0.973
Allahabad	25°27.0'N	081°51.0'E	–	03:09:31.7	00m31.2s	48	31	123	206	257	1.014	1.000
Alwar	27°34.0'N	076°36.0'E	–	03:03:29.8	00m33.3s	42	25	120	205	257	1.012	1.000
Ambala	30°21.0'N	076°50.0'E	–	03:03:51.9			24	121	205	254	0.919	0.900
Amravati	20°56.0'N	077°45.0'E	–	03:05:50.5			30	118	26	84	0.832	0.790
Amritsar	31°35.0'N	074°53.0'E	–	03:02:17.5			22	120	204	253	0.904	0.882
Asansol	23°41.0'N	086°59.0'E	–	03:17:03.3			38	128	207	255	0.985	0.985
Aurangabad	19°53.0'N	075°20.0'E	–	03:03:31.4			28	115	25	86	0.771	0.714
Bangalore	12°58.0'N	077°36.0'E	964	03:09:42.7			34	114	27	92	0.596	0.502
Bareilly	28°21.0'N	079°25.0'E	–	03:06:23.7			27	122	205	255	0.947	0.937
Belgaum	15°52.0'N	074°31.0'E	–	03:04:18.6			29	113	26	90	0.643	0.557
Bhagalpur	25°15.0'N	087°00.0'E	–	03:16:31.5			36	129	207	253	0.941	0.930
Bhavnagar	21°46.0'N	072°09.0'E	–	02:59:54.5			23	114	25	85	0.791	0.738
Bhilai	21°13.0'N	081°26.0'E	–	03:10:14.9			33	121	27	81	0.886	0.860
Bhopal	23°16.0'N	077°24.0'E	–	03:04:48.6			28	118	26	81	0.895	0.871
Bihar	25°11.0'N	085°31.0'E	–	03:14:25.3			35	127	207	254	0.962	0.956
Bikaner	28°01.0'N	073°18.0'E	–	03:00:29.1			22	117	24	78	0.987	0.986
Bokaro Steel City	23°45.0'N	086°07.0'E	–	03:15:44.9			37	127	207	256	0.995	0.996
Bombay	18°58.0'N	072°50.0'E	9	03:01:17.0			25	113	25	88	0.715	0.645
Calcutta	22°32.0'N	088°22.0'E	7	03:19:41.3			40	129	207	255	0.998	0.999
Calicut	11°15.0'N	075°46.0'E	–	03:08:36.1			33	112	26	95	0.522	0.417
Chandigarh	30°44.0'N	076°55.0'E	–	03:03:59.5			24	121	205	253	0.907	0.885
Cochin	09°58.0'N	076°14.0'E	–	03:10:10.2			34	111	27	96	0.490	0.382
Coimbatore	11°00.0'N	076°58.0'E	–	03:10:19.6			34	112	27	95	0.530	0.426
Cuttack	20°30.0'N	085°50.0'E	–	03:16:46.4			38	125	27	79	0.925	0.909
Dehra Dun	30°19.0'N	078°02.0'E	–	03:05:01.8			25	122	205	253	0.907	0.885
Delhi	28°40.0'N	077°13.0'E	–	03:04:07.0			25	120	205	256	0.963	0.956
Dhanbad	23°48.0'N	086°27.0'E	–	03:16:13.1			37	127	207	255	0.989	0.989
Durgapur	23°29.0'N	087°20.0'E	–	03:17:39.7			38	128	207	255	0.986	0.986
Erode	11°21.0'N	077°44.0'E	–	03:11:04.7			35	113	27	94	0.551	0.450
Firozabad	27°09.0'N	078°25.0'E	–	03:05:22.1			27	121	205	257	0.993	0.994
Gaya	24°47.0'N	085°00.0'E	–	03:13:49.1			35	126	207	255	0.980	0.979
Ghaziabad	28°40.0'N	077°26.0'E	–	03:04:20.0			25	121	205	255	0.961	0.953
Gorakhpur	26°45.0'N	083°22.0'E	–	03:11:11.6			32	125	206	254	0.945	0.935
Gulbarga	17°20.0'N	076°50.0'E	–	03:06:14.0			31	115	26	88	0.715	0.644
Guntur	16°18.0'N	080°27.0'E	–	03:11:22.6			35	117	27	87	0.731	0.665
Gwalior	26°13.0'N	078°10.0'E	–	03:05:10.5			27	120	25	78	0.990	0.990
Haora	22°35.0'N	088°20.0'E	–	03:19:36.7			40	129	207	255	0.998	0.999
Hubli-Dharwar	15°21.0'N	075°10.0'E	–	03:05:18.3			30	113	26	91	0.635	0.549
Hyderabad	17°29.0'N	079°28.0'E	571	03:09:23.8			33	117	27	87	0.753	0.691
Indore	22°43.0'N	075°50.0'E	–	03:03:16.1			27	117	25	82	0.861	0.827
Jabalpur	23°10.0'N	079°57.0'E	–	03:07:45.0			31	120	26	80	0.924	0.907

Table 10b

LOCAL CIRCUMSTANCES DURING THE TOTAL SOLAR ECLIPSE OF 1995 OCTOBER 24 FOR INDIAN ASIA - I

Location Name	First Contact				Second Contact				Third Contact				Fourth Contact			
	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °
BANGLADESH																
Barisal	02:04:09.2	26	293	351									04:52:25.0	54	119	139
Chittagong	02:05:46.2	28	293	350									04:56:14.8	55	120	136
Comilla	02:04:58.6	27	291	348									04:53:34.1	53	121	139
Dhaka	02:04:08.0	26	291	348									04:51:30.3	53	121	140
Jessore	02:02:57.2	25	293	351									04:49:19.1	52	119	141
Khulna	02:03:19.1	26	294	351									04:50:25.6	53	119	140
Mymensingh	02:04:08.9	26	290	345									04:50:23.9	52	122	142
Pabna	02:02:56.7	25	292	348									04:48:36.4	52	120	142
Rajshahi	02:02:19.0	24	292	348									04:46:49.8	51	120	143
Sylhet	02:05:47.0	27	289	343									04:53:27.8	52	124	140
BHUTAN																
Thimbu	02:03:55.1	24	286	339									04:45:58.6	48	125	146
INDIA																
Agra	01:55:03.5	13	293	351									04:24:15.7	40	116	154
Ahmadabad	01:53:32.8	9	303	7									04:15:27.2	38	105	154
Ajmer	01:53:36.3	10	296	356									04:18:43.3	38	112	155
Akola	01:55:45.9	14	305	10									04:23:47.9	44	105	151
Aligarh	01:55:12.8	12	292	349									04:24:07.8	40	117	155
Allahabad	01:57:02.2	17	294	353	03:09:16.5	31	55	106	03:09:47.7	31	355	45	04:32:03.3	45	116	151
Alwar	01:54:28.0	11	293	352	03:03:13.4	25	64	116	03:03:46.8	25	344	36	04:21:44.6	39	115	155
Ambala	01:55:22.7	11	288	344									04:21:15.1	37	120	157
Amravati	01:55:56.9	15	304	8									04:25:19.2	45	106	150
Amritsar	01:55:04.3	9	287	342									04:18:01.3	34	120	158
Asansol	02:00:52.3	23	294	352									04:43:52.3	51	118	145
Aurangabad	01:55:42.2	13	307	13									04:20:25.7	43	102	151
Bangalore	02:03:00.9	19	318	31									04:24:42.3	50	93	146
Bareilly	01:56:01.7	14	290	347									04:26:12.6	41	119	154
Belgaum	01:58:50.0	14	315	25									04:18:07.4	44	95	149
Bhagalpur	02:00:53.7	22	291	348									04:42:37.6	49	120	146
Bhavnagar	01:53:56.9	9	305	11									04:14:30.9	38	103	153
Bhilai	01:57:33.4	18	301	4									04:33:06.3	48	110	148
Bhopal	01:54:58.6	13	300	2									04:24:12.8	43	109	152
Bihar	01:59:38.6	20	292	350									04:39:35.5	48	119	148
Bikaner	01:53:19.0	8	294	353									04:16:24.1	36	114	156
Bokaro Steel ...	02:00:08.6	22	294	353									04:41:55.6	50	117	146
Bombay	01:55:44.7	11	310	18									04:15:20.1	41	99	151
Calcutta	02:02:14.0	25	295	353									04:47:56.3	53	117	142
Calicut	02:05:08.6	18	323	37									04:19:25.1	48	88	146
Chandigarh	01:55:35.2	11	287	343									04:21:14.6	37	120	157
Cochin	02:07:22.0	19	325	40									04:19:58.7	49	86	145
Coimbatore	02:05:46.3	19	323	37									04:22:25.5	50	88	146
Cuttack	02:00:42.3	23	300	2									04:43:31.7	53	112	143
Dehra Dun	01:55:58.1	12	287	343									04:23:06.8	38	121	156
Delhi	01:54:58.8	11	291	348									04:22:25.4	39	118	156
Dhanbad	02:00:24.8	22	294	352									04:42:36.8	50	118	145
Durgapur	02:01:11.4	23	294	352									04:44:48.4	51	118	144
Erode	02:05:24.0	20	322	35									04:24:35.4	51	90	145
Firozabad	01:55:15.0	13	293	351									04:24:58.1	41	116	154
Gaya	01:59:13.5	20	293	351									04:38:48.5	48	118	148
Ghaziabad	01:55:05.0	12	291	348									04:22:46.5	39	118	156
Gorakhpur	01:58:11.4	18	291	348									04:34:13.8	45	119	151
Gulbarga	01:58:00.9	15	311	19									04:23:31.1	46	99	149
Guntur	02:00:17.0	19	311	19									04:32:03.6	51	101	146
Gwalior	01:55:02.2	13	294	354									04:24:50.9	41	115	154
Haora	02:02:11.7	24	295	353									04:47:49.1	53	117	142
Hubli-Dharwar	01:59:31.5	15	315	26									04:19:26.9	45	95	148
Hyderabad	01:58:49.8	18	309	16									04:29:33.1	49	102	147
Indore	01:54:32.9	12	302	5									04:21:18.4	42	107	152
Jabalpur	01:56:10.2	16	299	0									04:29:16.4	45	111	150

Table 11a

CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 1995 OCTOBER 24
FOR INDIAN ASIA - II

Location Name	Latitude	Longitude	Elev. m	U.T. of Maximum Eclipse h m s	Umbral Duration	Path Width km	Sun Alt °	Sun Azm °	P °	V °	Eclipse Mag.	Eclipse Obs.
INDIA												
Jaipur	26°55.0′N	075°49.0′E	–	03:02:44.7			25	119	25	78	0.983	0.981
Jalandhar	31°19.0′N	075°34.0′E	–	03:02:50.4			22	120	204	253	0.905	0.882
Jammu	32°42.0′N	074°52.0′E	–	03:02:31.3			21	120	204	252	0.873	0.842
Jamnagar	22°28.0′N	070°04.0′E	–	02:58:01.1			21	113	24	85	0.789	0.736
Jamshedpur	22°48.0′N	086°11.0′E	–	03:16:13.2			37	126	27	77	0.995	0.996
Jaridih Bazar	23°38.0′N	086°04.0′E	–	03:15:43.1			37	127	207	256	0.999	0.999
Jhansi	25°26.0′N	078°35.0′E	–	03:05:43.1			28	120	25	78	0.972	0.968
Jodhpur	26°17.0′N	073°02.0′E	–	03:00:12.9			22	116	24	80	0.934	0.919
Kakinada	16°56.0′N	082°13.0′E	–	03:13:27.6			37	119	27	86	0.773	0.717
Kanpur	26°28.0′N	080°21.0′E	–	03:07:34.3			29	122	206	256	0.990	0.990
Kharagpur	22°20.0′N	087°20.0′E	–	03:18:09.9			39	127	27	76	0.997	0.998
Kolhapur	16°42.0′N	074°13.0′E	–	03:03:35.3			28	113	26	90	0.664	0.583
Lucknow	26°51.0′N	080°55.0′E	131	03:08:10.9			30	123	206	256	0.972	0.969
Ludhaina	30°54.0′N	075°51.0′E	–	03:03:01.6			23	120	204	254	0.914	0.894
Madras	13°08.0′N	080°15.0′E	17	03:13:13.1			37	116	27	91	0.636	0.550
Madurai	09°56.0′N	078°07.0′E	–	03:12:43.9			36	112	27	96	0.514	0.409
Malegaon	20°33.0′N	074°32.0′E	–	03:02:29.0			26	115	25	85	0.782	0.727
Mangalore	12°52.0′N	074°53.0′E	–	03:06:25.8			31	112	26	94	0.559	0.459
Mathura	27°30.0′N	077°41.0′E	–	03:04:35.2			26	120	205	257	0.991	0.992
Medinipur	22°26.0′N	087°20.0′E	–	03:18:07.1	00m09.4s	54	39	127	27	76	1.015	1.000
Meerut	28°59.0′N	077°42.0′E	–	03:04:36.6			25	121	205	255	0.949	0.938
Mirzapur	25°09.0′N	082°35.0′E	–	03:10:30.7			32	124	206	256	1.014	1.000
Moradabad	28°50.0′N	078°47.0′E	–	03:05:43.1			26	122	205	255	0.941	0.928
Mysore	12°18.0′N	076°39.0′E	–	03:08:58.2			33	113	27	94	0.564	0.465
Nagpur	21°09.0′N	079°06.0′E	–	03:07:21.2			31	119	26	83	0.855	0.819
Nashik	19°59.0′N	073°48.0′E	–	03:01:54.8			26	114	25	86	0.756	0.696
Nellore	14°26.0′N	079°58.0′E	–	03:11:54.2			36	116	27	90	0.670	0.591
New Delhi	28°36.0′N	077°12.0′E	228	03:04:05.7			25	120	205	256	0.965	0.959
Patna	25°36.0′N	085°07.0′E	–	03:13:45.2			34	127	207	254	0.956	0.948
Pondicherry	11°56.0′N	079°53.0′E	–	03:13:36.5			37	115	27	93	0.596	0.503
Pune	18°32.0′N	073°52.0′E	–	03:02:28.0			27	114	25	88	0.714	0.644
Puruliya	23°20.0′N	086°22.0′E	–	03:16:16.5	00m58.6s	53	37	127	207	256	1.015	1.000
Raipur	21°14.0′N	081°38.0′E	–	03:10:30.2			34	121	27	81	0.889	0.864
Rajahmundry	16°59.0′N	081°47.0′E	–	03:12:48.9			36	119	27	86	0.769	0.712
Rajkot	22°18.0′N	070°47.0′E	–	02:58:37.8			22	113	24	85	0.792	0.739
Ranchi	23°21.0′N	085°20.0′E	–	03:14:45.9			36	126	27	77	0.999	0.999
Raurkela	22°13.0′N	084°53.0′E	–	03:14:34.0			36	125	27	78	0.961	0.954
Saharanpur	29°58.0′N	077°33.0′E	–	03:04:31.2			25	121	205	254	0.922	0.905
Salem	11°39.0′N	078°10.0′E	–	03:11:26.1			35	113	27	94	0.565	0.466
Sangli	16°52.0′N	074°34.0′E	–	03:03:53.4			28	114	26	89	0.673	0.594
Solapur	17°41.0′N	075°55.0′E	–	03:05:01.0			29	115	26	88	0.714	0.643
Srinagar	34°05.0′N	074°49.0′E	–	03:02:51.5			20	121	204	251	0.835	0.793
Surat	21°10.0′N	072°50.0′E	–	03:00:39.8			24	114	25	85	0.780	0.725
Tamluk	22°18.0′N	087°55.0′E	–	03:19:05.4	01m09.2s	55	39	128	27	76	1.016	1.000
Tiruchchirappalli	10°49.0′N	078°41.0′E	–	03:12:47.9			36	113	27	94	0.548	0.446
Tirunelveli	08°44.0′N	077°42.0′E	–	03:13:10.5			36	111	27	97	0.474	0.364
Tiruppur	11°06.0′N	077°21.0′E	–	03:10:45.4			34	112	27	95	0.538	0.435
Trivandrum	08°29.0′N	076°55.0′E	–	03:12:18.6			35	111	27	98	0.456	0.345
Tuticorin	08°47.0′N	078°08.0′E	–	03:13:44.4			37	112	27	97	0.481	0.372
Udaipur	24°35.0′N	073°41.0′E	–	03:00:53.1			24	116	25	81	0.891	0.865
Ujjain	23°11.0′N	075°46.0′E	–	03:03:06.3			26	117	25	82	0.874	0.843
Ulhasnagar	19°13.0′N	073°07.0′E	–	03:01:28.7			25	114	25	87	0.726	0.658
Vadodara	22°18.0′N	073°12.0′E	–	03:00:45.9			24	115	25	84	0.818	0.773
Varanasi	25°20.0′N	083°00.0′E	–	03:11:00.2			32	124	206	256	0.990	0.990
Vellore	12°56.0′N	079°08.0′E	–	03:11:48.2			36	115	27	92	0.615	0.525
Vijayawada	16°31.0′N	080°37.0′E	–	03:11:28.5			35	118	27	87	0.740	0.675
Vishakhapatnam	17°42.0′N	083°18.0′E	–	03:14:33.9			38	121	27	84	0.810	0.764
Warangal	18°00.0′N	079°35.0′E	–	03:09:17.5			33	118	27	86	0.769	0.712
NEPAL												
Kathmandu	27°43.0′N	085°19.0′E	1451	03:13:33.3			33	128	206	252	0.894	0.870
Wiratnagar	26°29.0′N	087°17.0′E	–	03:16:34.9			36	130	207	252	0.903	0.881
SRI LANKA												
Colombo	06°56.0′N	079°51.0′E	7	03:18:01.3			40	111	28	98	0.451	0.339

Table 11b

LOCAL CIRCUMSTANCES DURING THE TOTAL SOLAR ECLIPSE OF 1995 OCTOBER 24 FOR INDIAN ASIA - II

Location Name	First Contact				Second Contact				Third Contact				Fourth Contact			
	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °
INDIA																
Jaipur	01:54:03.9	11	294	354									04:20:36.0	39	114	155
Jalandhar	01:55:14.0	9	287	342									04:19:04.0	35	120	158
Jammu	01:55:41.0	8	285	339									04:17:41.2	34	122	159
Jamnagar	01:53:18.7	7	305	10									04:11:02.8	36	102	154
Jamshedpur	02:00:18.9	22	296	355									04:42:46.3	51	116	145
Jaridih Bazar	02:00:06.8	22	294	353									04:41:54.3	50	117	146
Jhansi	01:55:13.4	14	296	356									04:25:51.8	42	114	153
Jodhpur	01:53:06.6	8	297	358									04:16:08.5	36	111	155
Kakinada	02:00:35.2	21	308	15									04:36:19.2	52	104	145
Kanpur	01:56:12.2	15	293	351									04:28:42.9	43	117	153
Kharagpur	02:01:21.3	24	296	355									04:45:43.7	52	116	143
Kolhapur	01:57:56.0	13	313	23									04:17:40.6	43	96	149
Lucknow	01:56:35.0	15	292	350									04:29:34.4	43	118	152
Ludhaina	01:55:09.8	10	287	343									04:19:36.2	36	120	158
Madras	02:03:41.0	21	316	27									04:31:38.8	53	95	145
Madurai	02:07:48.1	21	324	39									04:25:05.2	52	88	145
Malegaon	01:55:05.9	12	306	12									04:18:51.7	42	103	151
Mangalore	02:02:34.6	16	320	33									04:17:57.1	46	90	147
Mathura	01:54:56.8	12	292	351									04:23:35.1	40	116	155
Medinipur	02:01:20.2	23	296	355	03:18:01.8	39	199	248	03:18:11.2	39	213	262	04:45:38.9	52	116	143
Meerut	01:55:18.3	12	290	347									04:23:05.8	39	118	156
Mirzapur	01:57:30.2	18	294	353									04:33:39.7	46	116	150
Moradabad	01:55:49.2	13	290	346									04:24:56.1	40	119	155
Mysore	02:03:43.6	18	320	33									04:22:06.3	49	91	146
Nagpur	01:56:25.0	16	303	7									04:28:06.1	46	108	150
Nashik	01:55:15.1	11	308	14									04:17:23.1	41	101	151
Nellore	02:02:00.1	20	314	24									04:30:57.1	52	97	145
New Delhi	01:54:57.1	11	291	348									04:22:24.9	39	117	156
Patna	01:59:21.3	20	292	349									04:38:28.0	47	119	148
Pondicherry	02:05:10.6	21	319	31									04:30:31.5	53	93	144
Pune	01:56:16.4	12	310	18									04:17:18.9	42	99	151
Puruliya	02:00:23.3	22	295	354	03:15:47.7	37	80	129	03:16:46.3	37	332	21	04:42:47.1	50	117	145
Raipur	01:57:39.7	18	301	4									04:33:32.3	48	110	148
Rajahmundry	02:00:19.2	20	309	15									04:35:13.9	52	103	145
Rajkot	01:53:28.9	8	305	10									04:12:13.0	37	103	153
Ranchi	01:59:34.0	21	295	355									04:40:30.5	50	116	146
Raurkela	01:59:26.5	21	298	358									04:40:15.4	50	114	146
Saharanpur	01:55:34.5	11	288	344									04:22:29.7	38	120	156
Salem	02:05:03.4	20	321	34									04:25:50.3	51	91	145
Sangli	01:57:50.8	13	313	22									04:18:28.1	44	97	149
Solapur	01:57:27.1	14	311	19									04:21:31.2	45	99	149
Srinagar	01:56:34.8	8	283	335									04:17:12.4	32	124	160
Surat	01:54:22.5	10	306	12									04:15:41.0	39	102	152
Tamluk	02:01:52.3	24	295	355	03:18:30.6	39	142	190	03:19:39.7	40	271	319	04:47:05.8	53	117	142
Tiruchchirapp..	02:06:29.2	21	322	36									04:26:58.6	52	90	145
Tirunelveli	02:09:52.5	21	327	43									04:23:19.9	52	85	144
Tiruppur	02:05:41.9	19	322	36									04:23:28.9	50	89	146
Trivandrum	02:10:13.0	21	328	44									04:20:58.4	51	84	145
Tuticorin	02:09:52.2	22	326	42									04:24:35.4	52	86	144
Udaipur	01:53:26.2	9	299	2									04:17:18.3	38	109	154
Ujjain	01:54:23.3	12	301	4									04:21:07.9	41	108	153
Ulhasnagar	01:55:37.0	11	309	17									04:15:56.3	41	99	151
Vadodara	01:53:56.7	10	304	9									04:16:26.8	39	104	153
Varanasi	01:57:47.1	18	293	352									04:34:23.1	46	117	150
Vellore	02:03:32.5	20	318	29									04:28:40.5	52	94	145
Vijayawada	02:00:09.7	20	310	18									04:32:26.6	51	101	146
Vishakhapatnam	02:00:35.7	22	306	12									04:38:46.4	53	106	144
Warangal	01:58:29.2	18	308	15									04:29:46.0	49	103	148
NEPAL																
Kathmandu	01:59:53.7	19	288	343									04:37:14.7	46	122	150
Wiratnagar	02:01:19.5	22	289	344									04:42:09.2	48	122	147
SRI LANKA																
Colombo	02:13:56.0	25	329	46									04:28:40.6	56	84	143

Table 12a

CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 1995 OCTOBER 24 FOR SOUTHEAST ASIA

Location Name	Latitude	Longitude	Elev. m	U.T. of Maximum Eclipse h m s	Umbral Duration	Path Width km	Sun Alt °	Sun Azm °	P °	V ° ′	Eclipse Mag.	Eclipse Obs.
CAMBODIA												
Angkor Wat	13°26.0′N	103°52.0′E	–	03:59:48.6	01m48.4s	72	62	154	30	56	1.020	1.000
Batdambang	13°06.0′N	103°12.0′E	–	03:58:33.1			62	151	30	58	0.987	0.988
Kampong Cham	12°00.0′N	105°27.0′E	–	04:05:47.1			65	159	30	51	0.993	0.994
Kampong Chhnang	12°15.0′N	104°40.0′E	–	04:03:24.3			64	156	30	54	0.987	0.988
Kampong Saom	10°38.0′N	103°30.0′E	–	04:02:34.3			65	152	30	59	0.925	0.911
Krachen	12°29.0′N	106°01.0′E	–	04:06:37.7	01m50.5s	74	65	161	210	229	1.021	1.000
Phnom Penh	11°33.0′N	104°55.0′E	13	04:04:59.8			65	157	30	53	0.972	0.970
Siemreab	13°22.0′N	103°51.0′E	–	03:59:51.2	01m35.2s	72	62	153	30	56	1.020	1.000
LAOS												
Savannakhet	16°33.0′N	104°45.0′E	–	03:58:14.0			60	157	209	232	0.917	0.901
Vientiane	17°58.0′N	102°36.0′E	183	03:51:23.7			57	151	209	237	0.913	0.895
MYANMAR												
Bago	17°20.0′N	096°29.0′E	–	03:38:19.1			52	138	29	70	0.995	0.996
Dawei	14°05.0′N	098°12.0′E	–	03:45:25.1			57	139	30	70	0.934	0.921
Henzada	17°38.0′N	095°28.0′E	–	03:35:56.1			51	136	29	72	0.987	0.988
Mandalay	22°00.0′N	096°05.0′E	83	03:33:41.5			48	140	208	246	0.903	0.882
Mawlamyine	16°30.0′N	097°38.0′E	49	03:41:35.2			54	139	29	69	0.990	0.991
Monywa	22°05.0′N	095°08.0′E	–	03:31:47.6			47	138	208	248	0.915	0.897
Myingyan	21°28.0′N	095°23.0′E	–	03:32:42.0			47	138	208	248	0.928	0.913
Nyaunglebin	17°57.0′N	096°44.0′E	–	03:38:16.4	01m13.4s	65	52	139	209	249	1.018	1.000
Pathein	16°47.0′N	094°44.0′E	–	03:35:12.6			51	134	29	74	0.953	0.945
Prome	18°49.0′N	095°13.0′E	–	03:34:24.4	01m04.3s	63	49	136	209	251	1.018	1.000
Sittwe	20°09.0′N	092°54.0′E	–	03:28:54.5			46	133	208	253	1.017	1.000
Taunggyi	20°47.0′N	097°02.0′E	–	03:36:29.7			49	141	209	246	0.922	0.906
Yangon	16°47.0′N	096°10.0′E	–	03:38:10.3			52	137	29	71	0.975	0.973
THAILAND												
Bangkok	13°45.0′N	100°31.0′E	17	03:51:10.9			59	144	30	65	0.962	0.957
Chiang Mai	18°47.0′N	098°59.0′E	–	03:42:19.7			53	143	209	244	0.946	0.937
Chon Buri	13°22.0′N	100°59.0′E	–	03:52:45.7			60	145	30	64	0.959	0.953
Hat Yai	07°01.0′N	100°28.0′E	–	03:59:56.2			66	140	30	71	0.777	0.723
Khon Kaen	16°26.0′N	102°50.0′E	–	03:53:38.1			58	151	209	237	0.950	0.942
Lop Buri	14°48.0′N	100°37.0′E	–	03:50:11.4			58	145	30	64	0.991	0.993
Nakhon Pathom	13°49.0′N	100°03.0′E	–	03:49:59.9			59	143	30	66	0.956	0.949
Nakhon Ratchasima	14°58.0′N	102°07.0′E	–	03:53:35.2			59	149	210	240	1.020	1.000
Nakhon Sawan	15°41.0′N	100°07.0′E	–	03:48:01.7	01m44.8s	68	57	144	30	65	1.019	1.000
Pak Chong	14°42.0′N	101°25.0′E	–	03:52:12.6	00m57.8s	70	59	147	30	62	1.020	1.000
Phitsanulok	16°50.0′N	100°15.0′E	–	03:47:05.9			56	145	209	243	0.979	0.978
Phra Nakhon	13°45.0′N	100°31.0′E	–	03:51:10.9			59	144	30	65	0.962	0.957
Sakon Nakhon	17°10.0′N	104°09.0′E	–	03:56:01.9			59	155	209	234	0.910	0.892
Samut Prakan	13°36.0′N	100°36.0′E	–	03:51:33.6			59	144	30	65	0.959	0.953
Samut Sakhon	13°32.0′N	100°17.0′E	–	03:50:53.2			59	144	30	66	0.952	0.945
Saraburi	14°32.0′N	100°55.0′E	–	03:51:12.6			59	146	30	64	0.989	0.990
Songkhla	07°12.0′N	100°36.0′E	–	04:00:00.5			66	141	30	70	0.784	0.732
Takhli	15°15.0′N	100°21.0′E	–	03:49:03.1			58	145	30	64	0.999	1.000
Ubon Ratchathani	15°14.0′N	104°54.0′E	–	04:00:11.3			61	157	209	232	0.950	0.942
Udon Thani	17°26.0′N	102°46.0′E	–	03:52:22.0			57	152	209	237	0.924	0.909
Yala	06°33.0′N	101°18.0′E	–	04:02:42.7			67	142	30	69	0.778	0.724
VIET_NAM												
Bien Hoa	10°57.0′N	106°49.0′E	–	04:10:52.5			67	164	30	46	0.986	0.987
Cam Ranh	11°54.0′N	109°09.0′E	–	04:15:55.2			66	173	209	216	0.974	0.973
Can Tho	10°02.0′N	105°47.0′E	–	04:09:23.7			67	160	30	50	0.945	0.936
Da Nang	16°04.0′N	108°13.0′E	–	04:07:48.5			62	168	209	221	0.878	0.851
Hai Phong	20°52.0′N	106°41.0′E	–	03:58:20.2			56	163	209	225	0.777	0.723
Ha Noi	21°02.0′N	105°51.0′E	7	03:56:06.3			56	160	209	227	0.785	0.733
Ho Chi Minh	10°45.0′N	106°40.0′E	11	04:10:45.1			67	163	30	47	0.978	0.977
Hon Gai	20°57.0′N	107°05.0′E	–	03:59:15.1			56	164	209	224	0.769	0.713
Hue	16°28.0′N	107°42.0′E	–	04:05:56.2			61	166	209	223	0.875	0.847
Long Xuyen	10°23.0′N	105°25.0′E	–	04:07:55.5			66	158	30	52	0.949	0.941
My Tho	10°21.0′N	106°21.0′E	–	04:10:27.9			67	162	30	48	0.963	0.958
Nam Dinh	20°25.0′N	106°10.0′E	–	03:57:30.8			56	161	209	227	0.796	0.747
Nha Trang	12°15.0′N	109°11.0′E	–	04:15:31.3			66	173	209	216	0.964	0.960
Phan Thiet	10°56.0′N	108°06.0′E	–	04:14:23.5	01m47.3s	75	67	169	29	40	1.021	1.000
Qui Nhon	13°46.0′N	109°14.0′E	–	04:13:34.3			64	172	209	217	0.923	0.908
Thai Nguyen	21°36.0′N	105°50.0′E	–	03:55:30.3			55	160	209	227	0.771	0.715
Vinh	18°40.0′N	105°40.0′E	–	03:58:08.0			58	160	209	229	0.848	0.813

Table 12b

LOCAL CIRCUMSTANCES DURING THE TOTAL SOLAR ECLIPSE OF 1995 OCTOBER 24 FOR SOUTHEAST ASIA

Location Name	First Contact				Second Contact				Third Contact				Fourth Contact			
	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °
CAMBODIA																
Angkor Wat	02:27:35.2	47	298	354	03:58:53.8	62	140	167	04:00:42.2	62	275	301	05:39:50.8	62	116	89
Batdambang	02:26:41.9	46	299	356									05:38:25.1	63	115	90
Kampong Cham	02:31:51.5	50	299	354									05:46:22.1	62	115	81
Kampong Chhna...	02:30:08.5	49	299	355									05:43:47.4	62	115	83
Kampong Saom	02:29:47.6	49	303	2									05:42:31.4	64	112	81
Krachen	02:32:29.3	50	298	352	04:05:43.3	64	93	113	04:07:33.8	65	322	341	05:47:16.1	61	116	81
Phnom Penh	02:31:18.9	50	300	357									05:45:28.1	62	114	80
Siemreab	02:27:36.9	47	298	354	03:59:02.6	62	154	180	04:00:37.8	62	262	288	05:39:53.6	62	116	89
LAOS																
Savannakhet	02:27:03.1	46	292	344									05:37:27.9	59	121	96
Vientiane	02:22:23.4	42	292	344									05:29:28.5	59	122	105
MYANMAR																
Bago	02:13:13.1	36	298	356									05:13:56.3	61	117	119
Dawei	02:17:57.2	40	302	2									05:22:40.9	64	113	107
Henzada	02:11:43.5	35	298	357									05:10:48.9	61	116	122
Mandalay	02:11:04.7	33	290	345									05:06:52.9	56	123	128
Mawlamyine	02:15:17.9	38	298	357									05:18:08.0	62	116	114
Monywa	02:09:47.7	32	291	346									05:04:28.0	56	122	130
Myingyan	02:10:12.8	32	292	347									05:05:52.4	57	122	129
Nyaunglebin	02:13:13.2	36	297	354	03:37:40.7	52	75	116	03:38:54.1	52	340	20	05:13:51.0	60	118	119
Pathein	02:11:20.2	34	300	0									05:09:45.9	61	114	122
Prome	02:10:48.7	34	296	354	03:33:53.3	49	70	112	03:34:57.6	50	345	27	05:08:44.9	59	118	124
Sittwe	02:07:29.6	30	296	354									05:01:14.3	57	118	132
Taunggyi	02:12:36.4	35	292	346									05:10:53.5	58	122	124
Yangon	02:13:08.2	36	299	358									05:13:43.6	62	115	118
THAILAND																
Bangkok	02:21:40.5	43	300	359									05:29:49.4	64	114	99
Chiang Mai	02:16:05.2	38	293	349									05:18:42.8	60	121	116
Chon Buri	02:22:45.5	44	301	359									05:31:40.1	64	114	97
Hat Yai	02:30:02.8	48	312	17									05:36:51.5	70	104	79
Khon Kaen	02:23:34.3	44	294	348									05:32:30.6	60	120	100
Lop Buri	02:20:57.3	42	299	356									05:28:43.7	63	116	102
Nakhon Pathom	02:20:53.8	42	301	360									05:28:23.2	64	114	101
Nakhon Ratcha...	02:23:17.3	44	297	353									05:32:43.4	62	117	98
Nakhon Sawan	02:19:31.1	41	298	355	03:47:09.0	57	133	168	03:48:53.7	57	283	318	05:26:07.5	62	117	105
Pak Chong	02:22:19.4	43	298	355	03:51:42.4	59	177	210	03:52:40.1	59	239	271	05:31:07.8	63	116	99
Phitsanulok	02:18:60.0	40	296	352									05:24:53.5	61	119	108
Phra Nakhon	02:21:40.5	43	300	359									05:29:49.4	64	114	99
Sakon Nakhon	02:25:35.7	45	292	343									05:34:51.7	59	122	99
Samut Prakan	02:21:56.4	43	301	359									05:30:15.4	64	114	98
Samut Sakhon	02:21:30.6	43	301	0									05:29:25.3	64	114	99
Saraburi	02:21:38.6	43	299	356									05:29:56.4	63	116	100
Songkhla	02:29:56.5	48	311	17									05:37:08.2	69	104	79
Takhli	02:20:11.7	42	298	356									05:27:22.1	62	116	104
Ubon Ratchath...	02:28:07.7	47	294	347									05:39:59.6	60	119	92
Udon Thani	02:22:55.7	43	293	345									05:30:46.0	60	121	103
Yala	02:32:01.7	49	312	17									05:39:56.2	69	104	74
VIET NAM																
Bien Hoa	02:35:36.6	52	299	354									05:51:42.2	61	114	74
Cam Ranh	02:39:32.8	54	296	346									05:56:44.0	58	117	73
Can Tho	02:34:38.4	52	302	359									05:49:58.4	62	112	73
Da Nang	02:34:26.9	50	290	337									05:47:22.1	57	123	88
Hai Phong	02:29:41.7	45	284	328									05:34:37.6	55	129	105
Ha Noi	02:27:55.4	44	284	330									05:32:18.1	55	128	107
Ho Chi Minh	02:35:31.8	52	300	355									05:51:33.3	61	114	74
Hon Gai	02:30:33.3	45	283	327									05:35:25.4	54	129	105
Hue	02:33:07.1	49	290	337									05:45:19.8	57	123	90
Long Xuyen	02:33:32.2	51	302	359									05:48:27.6	63	113	75
My Tho	02:35:21.5	52	301	357									05:51:11.5	62	113	73
Nam Dinh	02:28:38.5	45	285	331									05:34:14.1	55	128	105
Nha Trang	02:39:17.9	54	295	345									05:56:16.9	58	117	74
Phan Thiet	02:38:15.2	54	298	351	04:13:28.8	67	148	160	04:15:16.1	67	266	277	05:55:18.5	59	115	71
Qui Nhon	02:38:09.8	53	293	341									05:53:58.0	57	120	79
Thai Nguyen	02:27:52.2	43	283	328									05:31:11.0	55	129	109
Vinh	02:27:58.8	45	288	336									05:36:12.5	57	125	101

Table 14a

CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 1995 OCTOBER 24 FOR INDONESIA, JAPAN AND MALAYSIA

Location Name	Latitude	Longitude	Elev. m	U.T. of Maximum Eclipse h m s	Umbral Duration	Path Width km	Sun Alt °	Sun Azm °	P °	V °	Eclipse Mag.	Eclipse Obs.
INDONESIA												
Ambon	03°43.0′S	128°12.0′E	–	05:29:09.3			55	255	21	301	0.807	0.760
Balikpapan	01°17.0′S	116°50.0′E	–	04:57:09.4			72	235	26	330	0.784	0.732
Bandung	06°54.0′S	107°36.0′E	–	04:40:09.8			85	198	29	11	0.499	0.392
Bogor	06°35.0′S	106°47.0′E	–	04:37:31.7			85	181	29	28	0.496	0.389
Cirebon	06°44.0′S	108°34.0′E	–	04:42:28.8			84	212	29	356	0.518	0.413
Denpasar	08°39.0′S	115°13.0′E	–	05:02:29.7			75	257	26	307	0.547	0.446
Jakarta	06°10.0′S	106°48.0′E	9	04:36:56.6			85	180	29	30	0.508	0.403
Jambi	01°36.0′S	103°37.0′E	–	04:21:20.0			78	145	30	66	0.589	0.495
Jember	08°10.0′S	113°42.0′E	–	04:57:58.7			78	253	27	312	0.544	0.443
Kediri	07°49.0′S	112°01.0′E	–	04:53:07.4			80	247	28	319	0.533	0.431
Kudus	06°48.0′S	110°50.0′E	–	04:48:35.7			82	234	28	333	0.547	0.447
Madiun	07°37.0′S	111°31.0′E	–	04:51:32.3			81	244	28	323	0.532	0.430
Magelang	07°28.0′S	110°13.0′E	–	04:47:54.2			83	235	28	332	0.519	0.415
Malang	07°59.0′S	112°37.0′E	–	04:54:55.0			79	250	27	316	0.536	0.434
Manado	01°29.0′N	124°51.0′E	–	05:15:17.1			60	244	23	317	0.941	0.931
Mataram	08°35.0′S	116°07.0′E	–	05:04:42.7			74	258	26	305	0.559	0.460
Medan	03°35.0′N	098°35.0′E	–	04:00:16.6			67	131	30	80	0.651	0.568
Padang	00°57.0′S	100°21.0′E	–	04:11:45.4			73	130	30	81	0.554	0.455
Palembang	02°55.0′S	104°45.0′E	–	04:26:26.2			80	152	30	59	0.570	0.473
Pekalongan	06°53.0′S	109°40.0′E	–	04:45:37.0			83	226	28	342	0.529	0.426
Pekanbaru	00°32.0′N	101°27.0′E	–	04:12:15.5			73	137	30	75	0.614	0.524
Pematangsiantar	02°57.0′N	099°03.0′E	–	04:02:23.5			68	132	31	80	0.641	0.557
Pontianak	00°02.0′S	109°20.0′E	–	04:34:25.5			78	189	29	20	0.721	0.654
Purwokerto	07°25.0′S	109°14.0′E	–	04:45:14.2			84	226	28	342	0.507	0.402
Samarinda	00°30.0′S	117°09.0′E	–	04:56:57.0			71	233	26	331	0.810	0.765
Semarang	06°58.0′S	110°25.0′E	–	04:47:43.5			82	233	28	335	0.537	0.435
Sukabumi	06°55.0′S	106°56.0′E	–	04:38:25.5			85	186	29	24	0.489	0.381
Surabaya	07°15.0′S	112°45.0′E	–	04:54:17.0			79	246	27	320	0.559	0.460
Surakarta	07°35.0′S	110°50.0′E	–	04:49:41.6			82	240	28	327	0.524	0.421
Tahuna	03°37.0′N	125°29.0′E	–	05:14:19.6	01m52.8s	75	58	241	23	320	1.020	1.000
Tanjungkarang-Tel.	05°27.0′S	105°16.0′E	–	04:31:46.5			83	155	30	55	0.506	0.400
Tasikmalaya	07°20.0′S	108°12.0′E	–	04:42:23.3			85	212	29	357	0.495	0.388
Tegal	06°52.0′S	109°08.0′E	–	04:44:10.7			84	220	29	348	0.522	0.418
Ujungpandang	05°07.0′S	119°24.0′E	–	05:08:59.5			69	251	25	311	0.698	0.625
Yogyakarta	07°48.0′S	110°22.0′E	–	04:48:46.1			83	239	28	328	0.512	0.407
JAPAN												
Fukuoka	33°35.0′N	130°24.0′E	–	04:46:30.6			39	213	201	173	0.244	0.140
Hiroshima	34°24.0′N	132°27.0′E	–	04:50:20.9			36	216	200	170	0.218	0.118
Kawasaki	35°32.0′N	139°43.0′E	–	05:04:40.9			30	226	198	161	0.169	0.081
Kitakyushu	33°53.0′N	130°50.0′E	–	04:47:10.2			38	214	201	173	0.236	0.133
Kobe	34°41.0′N	135°10.0′E	–	04:56:13.1			34	220	200	166	0.200	0.104
Kyoto	35°00.0′N	135°45.0′E	–	04:57:03.9			33	221	199	166	0.192	0.098
Nagoya	35°10.0′N	136°55.0′E	–	04:59:22.6			32	223	199	164	0.184	0.093
Osaka	34°40.0′N	135°30.0′E	16	04:56:59.3			34	221	199	166	0.199	0.104
Sapporo	43°03.0′N	141°21.0′E	–	04:56:21.9			25	223	198	167	0.041	0.010
Sendai	38°15.0′N	140°53.0′E	–	05:02:49.0			27	226	198	163	0.118	0.048
Tokyo	35°42.0′N	139°46.0′E	6	05:04:31.7			30	226	198	161	0.166	0.079
Yokohama	35°37.0′N	139°39.0′E	–	05:04:25.2			30	226	198	161	0.168	0.081
MALAYSIA												
Ipoh	04°35.0′N	101°05.0′E	–	04:05:04.1			69	140	30	71	0.720	0.653
Kelang	03°02.0′N	101°27.0′E	–	04:08:22.1			71	140	30	72	0.683	0.607
Kota Baharu	06°08.0′N	102°15.0′E	–	04:05:45.5			68	145	30	66	0.782	0.730
Kota Kinabalu	05°59.0′N	116°04.0′E	–	04:44:29.2			69	212	27	354	0.982	0.982
Kuala Lumpur	03°10.0′N	101°42.0′E	36	04:08:48.6			71	141	30	71	0.691	0.617
Kuala Terengganu	05°20.0′N	103°08.0′E	–	04:09:15.2			70	148	30	63	0.774	0.720
Kuantan	03°48.0′N	103°20.0′E	–	04:12:06.8			72	148	30	63	0.735	0.671
Pinang	05°25.0′N	100°20.0′E	–	04:01:55.5			67	138	30	73	0.731	0.666
Sandakan	05°50.0′N	118°07.0′E	–	04:50:39.6	01m08.6s	78	67	220	26	345	1.021	1.000
Seremban	02°43.0′N	101°56.0′E	–	04:10:06.6			72	141	30	70	0.682	0.606
Taiping	04°51.0′N	100°44.0′E	–	04:03:46.6			68	139	30	72	0.722	0.655

Table 14b

LOCAL CIRCUMSTANCES DURING THE TOTAL SOLAR ECLIPSE OF 1995 OCTOBER 24 FOR INDONESIA, JAPAN AND MALAYSIA

Location Name	First Contact				Second Contact				Third Contact				Fourth Contact			
	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °	U.T. h m s	Alt °	P °	V °
INDONESIA																
Ambon	03:52:43.3	77	304	251									06:52:50.4	35	95	9
Balikpapan	03:17:37.5	76	310	354									06:30:05.6	51	98	21
Bandung	03:13:26.8	70	328	47									06:03:55.1	67	84	4
Bogor	03:11:14.3	68	329	47									06:01:22.1	69	85	6
Cirebon	03:14:28.0	71	327	44									06:07:07.9	66	85	5
Denpasar	03:32:16.0	82	324	33									06:25:24.0	55	84	356
Jakarta	03:09:59.8	68	328	46									06:01:37.0	68	85	8
Jambi	02:52:34.5	59	323	36									05:51:34.7	72	92	34
Jember	03:27:51.8	79	324	37									06:21:37.9	57	85	358
Kediri	03:23:39.7	77	325	40									06:17:05.2	60	85	359
Kudus	03:18:31.8	74	325	39									06:14:05.8	62	86	4
Madiun	03:22:09.6	76	326	41									06:15:44.2	61	85	0
Magelang	03:19:25.5	74	327	43									06:11:55.3	63	85	1
Malang	03:25:15.9	78	325	39									06:18:42.8	59	85	359
Manado	03:34:24.6	77	298	288									06:45:15.2	39	104	26
Mataram	03:33:54.8	83	323	28									06:27:44.5	54	85	356
Medan	02:33:52.1	48	319	30									05:32:41.5	74	97	76
Padang	02:46:33.6	55	325	40									05:40:00.5	76	90	49
Palembang	02:57:40.8	62	324	38									05:55:28.3	71	90	25
Pekalongan	03:16:44.4	72	326	42									06:10:31.1	64	86	4
Pekanbaru	02:44:18.4	55	322	34									05:43:43.5	73	94	50
Pematangsiant...	02:35:46.4	49	320	31									05:34:34.4	74	96	71
Pontianak	02:58:30.5	65	315	19									06:09:28.1	62	98	30
Purwokerto	03:17:37.5	72	328	45									06:08:54.0	65	84	2
Samarinda	03:16:49.1	75	308	350									06:30:30.7	50	100	23
Semarang	03:18:16.8	73	325	41									06:12:46.5	62	86	3
Sukabumi	03:12:29.4	69	329	48									06:01:41.8	68	84	5
Surabaya	03:23:22.7	77	324	35									06:19:27.2	59	86	1
Surakarta	03:20:50.7	75	326	42									06:13:43.6	62	85	0
Tahuna	03:33:16.7	75	294	284	05:13:22.6	58	124	62	05:15:15.4	58	278	214	06:44:39.8	37	108	32
Tanjungkarang...	03:05:36.1	65	328	46									05:56:42.3	71	86	13
Tasikmalaya	03:15:42.8	71	328	47									06:05:38.6	66	84	2
Tegal	03:15:47.7	72	327	43									06:08:51.8	65	85	4
Ujungpandang	03:32:20.7	83	314	343									06:36:34.6	48	92	7
Yogyakarta	03:20:41.6	74	327	44									06:12:11.8	63	84	360
JAPAN																
Fukuoka	03:47:41.9	44	242	229									05:45:29.6	31	158	118
Hiroshima	03:55:12.3	42	239	222									05:45:35.3	29	159	120
Kawasaki	04:17:50.7	36	232	203									05:51:09.0	22	162	119
Kitakyushu	03:49:26.3	43	241	227									05:45:05.7	30	158	119
Kobe	04:03:56.7	40	236	215									05:48:18.4	26	160	119
Kyoto	04:06:02.7	39	235	213									05:47:56.7	26	161	119
Nagoya	04:09:39.2	38	234	210									05:48:53.0	25	161	119
Osaka	04:04:55.9	40	236	214									05:48:48.9	26	160	118
Sapporo	04:34:21.8	27	214	186									05:20:04.8	22	180	146
Sendai	04:24:11.1	32	226	197									05:41:55.9	22	168	127
Tokyo	04:18:09.7	36	231	203									05:50:35.2	22	163	119
Yokohama	04:17:45.5	36	232	203									05:50:45.1	22	162	119
MALAYSIA																
Ipoh	02:35:12.1	51	315	23									05:40:40.0	71	101	68
Kelang	02:38:47.0	52	317	27									05:42:47.2	72	98	61
Kota Baharu	02:34:10.0	51	311	17									05:43:20.3	69	104	69
Kota Kinabalu	03:03:08.7	67	299	338									06:22:35.1	50	110	45
Kuala Lumpur	02:38:52.0	53	317	26									05:43:33.6	71	99	60
Kuala Terengg...	02:36:55.9	52	312	17									05:46:49.1	68	103	63
Kuantan	02:40:04.3	54	314	21									05:48:34.8	69	101	57
Pinang	02:32:36.3	49	314	22									05:37:37.5	71	101	74
Sandakan	03:08:50.6	70	297	329	04:50:03.3	67	172	131	04:51:11.9	67	237	195	06:27:32.1	48	111	43
Seremban	02:40:07.8	53	317	27									05:44:34.5	71	98	57
Taiping	02:34:12.3	50	315	23									05:39:19.8	71	101	70

Figure 11: **THE SKY DURING TOTALITY AS SEEN FROM CENTER LINE AT 03:30 UT**

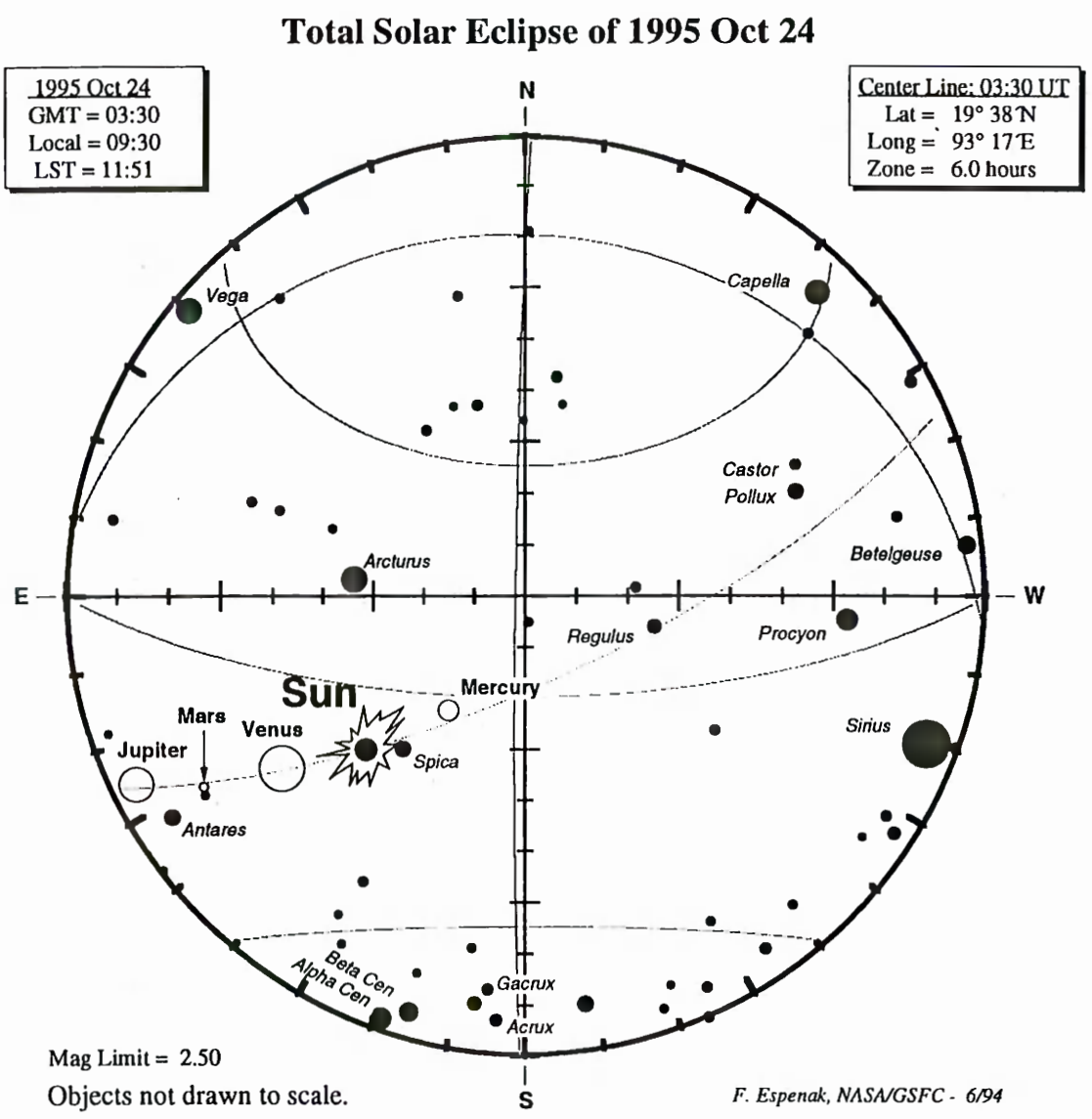


Figure 11: The sky during totality as seen from the center line in Myanmar at 03:30 UT. Jupiter (m=–1.4), Venus (m=–3.3) and Mercury (m=–0.6) should all be easily visible during the total eclipse. Bright stars which may also be visible include Spica (m=+1.0v), Antares (m=+0.9v), Arcturus (m=–0.04), Vega (m=+0.03), Regulus (m=+1.35), Alpha Centauri (m=–0.01), Beta Centauri (m=+0.6v), Acrux (m=+1.33) and Gacrux (m=+1.63v). Magnitudes followed by a 'v' are variable.