

# 1994年5月10日金環日食の詳細予報(1)

(NASA、Reference Publication 1301 より)

編集部

以前お知らせしましたように、アメリカ海軍天文台は、私たちに親しまれてきた日食サーキュラーの発行を止めることになりました。代わってNASAが詳細予報を発表することになりましたので、日食情報センターも今後はNASAの情報に基づいて、皆様に情報提供を行います。今回はあまりに情報量が多いため、日食帯の地図と局地予報だけを掲載し、その他の情報は次号に掲載しますのでご承知おき下さい。

## 《序》

1994年5月10日、西半球の広い地域で金環日食が見られる。月の擬本影はメキシコ北部を含む北アメリカ(合衆国の南西部・中西部・五大湖地域の南部・ニューイングランドとカナダの海岸)を通る。金環帯は北大西洋を横切り、途中、アゾレス諸島を通過して、モロッコの日没で終わりを迎える。月の半影はもっと大きいので、部分食は北アメリカ・東シベリア・西ヨーロッパ・北アフリカで見られる。

## 《日食帯と日食の見え方》

月の擬本影による金環帯は、ハワイ諸島の南西約700kmの太平洋で始まる。月の影が日の出の明暗界線(15:21)で初めて地表に接するとき、金環帯の幅は311km、継続時間は4分34秒になる。太平洋を東北東へ向かって高速で移動した影は、15:54UT、バハ・カリフォルニアの西海岸で初めて陸地に上陸する(3、4図)。地球は球体であるから、地表は金環帯の中の各地点を本影の頂点に近づけるような向きにカーブしている。そのため、金環帯の幅は267kmに減少している。それにもかかわらず、金環継続時間は5分28秒に延びている。これは、地表あるいは地面の持つ速度ベクトルの、影が動いていく方向の成分が、金環帯の幅が狭くなることで継続時間に与える影響を相殺するのに十分なだけの速さで増加するために起こるのである。(訳注:移動していく影を、地表が自転によって追いかけるかたちになる)バハでは太陽高度40度、食最大の時の食分が0.939になる。これは、太陽面全体の0.882が暗くなることと同じである。擬本影がカリフォルニア湾を飛ぶように横切っているとき、その地表での速さは北東に秒速0.9kmである。

メキシコを通過後、影は合衆国の南東に到達し、アリゾナ南部とニューメキシコ、テキサス西部に入る(図4)。エルパソは中心線のちょうど南に位置し、16:07に始まる金環の継続時間は5分40秒になる。テキサスの細長い地域を通過した金環帯はオクラホマに入る。オクラホマシティは南限界線のちょうど内側に入る。次に影が通る州は、カンザスとミズーリだ。カンザスシティは北限界線のわずかに外側に位置し、スプリングフィールドはちょうど南限界線

の内側にはいる。両方の都市では、16:45UTの食最大の時、太陽高度62度程度になる。セントルイス・スプリングフィールド・Decaturもまた金環帯に入り、シカゴ・インディアナポリスの両市は、それぞれ北と南の限界線のわずかに外側に位置する（図5）。

最大食は17:11:27UTに起こり、継続時間は6分13秒に達する。太陽高度は66度、金環帯の幅は230kmになる。トレドは、擬本影がエリー湖にさしかかろうとするちょうど中心線上に位置する。ここで観測者は、エリー湖とオンタリオ湖のカナダ側と合衆国側の両方で、金環食を目撃することになる。カナダでは金環帯の中にある最大の都市であるトロントは、北限界線のわずかに内側に位置し、17:24UTに食最大になる。ペンシルベニアの北西部をかすめた後、月の影はニューヨーク州の北部を通る。ここではバッファローとロチェスターで金環食が見られる。バーモントとニューハンプシャーの大部分は金環帯の中に入り、メインの南半分がそれに続く。再びカナダに入った影は、ニューブランズウィックとノバスコシアの南部を通る。ハリファックスでは17:56UT、5分53秒の金環食が高度55度で観測される。

北アメリカを離れた影は北大西洋を横切って、およそ18:45UTにアゾレス諸島に到着する。ここでの太陽高度は27度、金環帯の幅は270kmになっていて、中心線上での継続時間は5分10秒に減っている。数分後、擬本影はモロッコの大西洋岸に到達する。内陸に向かった影のほとんどは、18:57UTに地表を離れる。カサブランカでは、珍しい「火の輪」が4分32秒間、西の水平線上の高度3度に見られる。最終的に残った影の縁が日没端で地球から離れ、19:02UTに金環食は終わりを迎える。3時間42分の間に、月の影はほとんど14000kmの距離を走り、地球表面の0.72%を包むことになる。

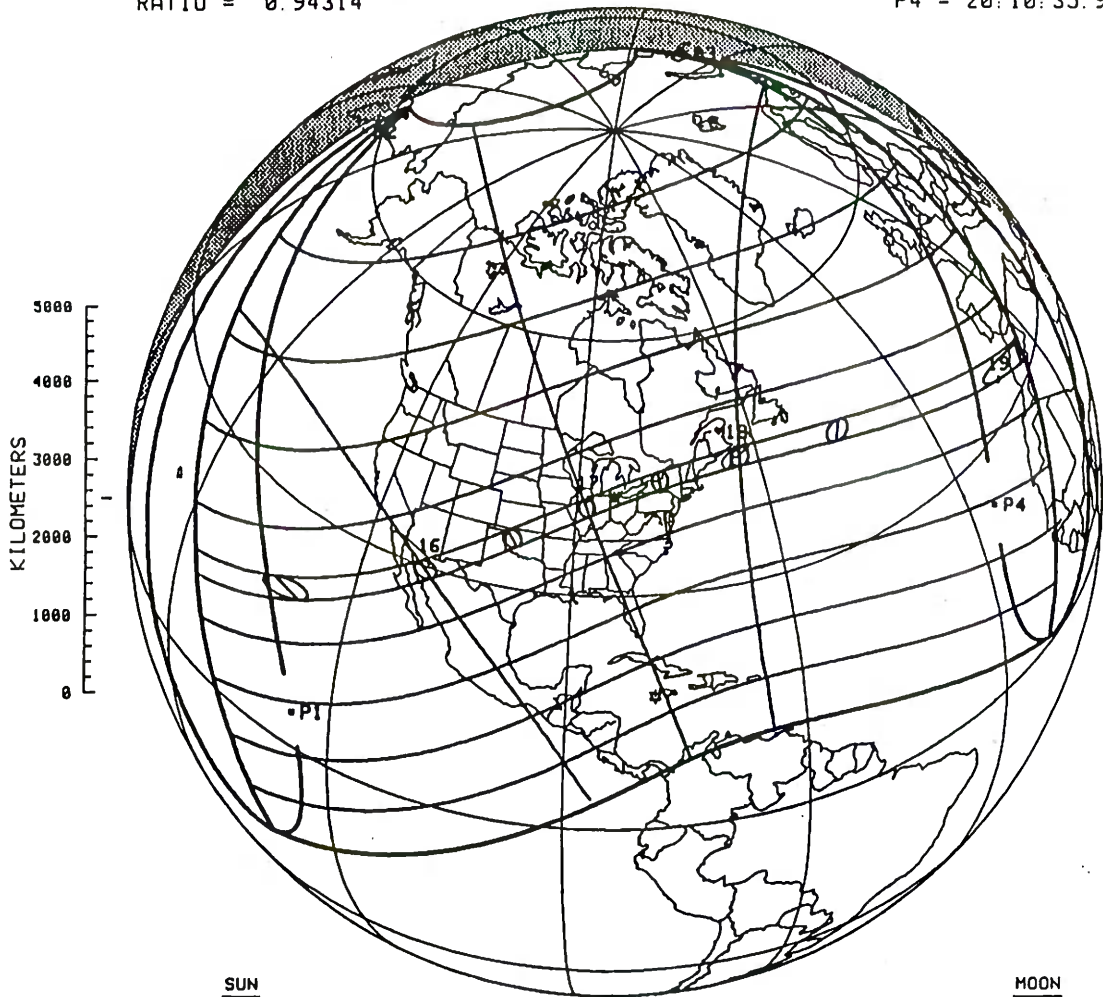
Figure 1: ORTHOGRAPHIC PROJECTION MAP OF THE ECLIPSE PATH

# Annular Solar Eclipse of 10 May 1994

CONTACTS

GREATEST = 17:11:27.0 UT  
 CONJUNCTION = 17:19:51.4 UT  
 GAMMA = 0.40772  
 RATIO = 0.94314

P1 = 14:12:12.0 UT  
 U1 = 15:20:36.9 UT  
 U4 = 19:02:09.9 UT  
 P4 = 20:10:35.9 UT



SUN  
 RA = 3<sup>h</sup> 9<sup>m</sup> 27<sup>s</sup>.1  
 DEC = 17° 41' 21".5  
 SD = 15' 50".2  
 HP = 0° 0' 8".7

MOON  
 RA = 3<sup>h</sup> 9<sup>m</sup> 11<sup>s</sup>.3  
 DEC = 18° 3' 1".1  
 SD = 14' 44".1  
 HP = 0° 54' 4".4

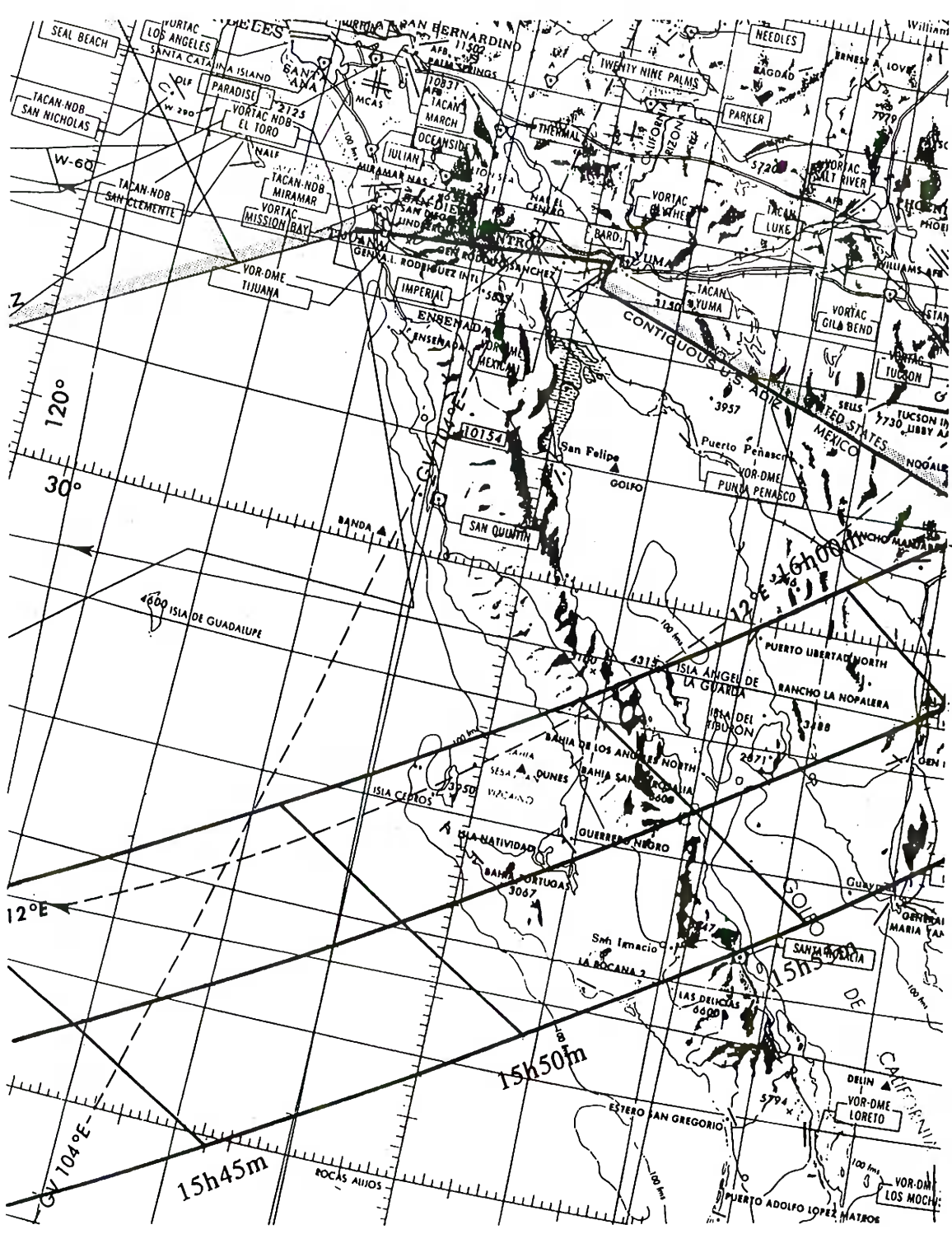
SAROS 128 (57/73)

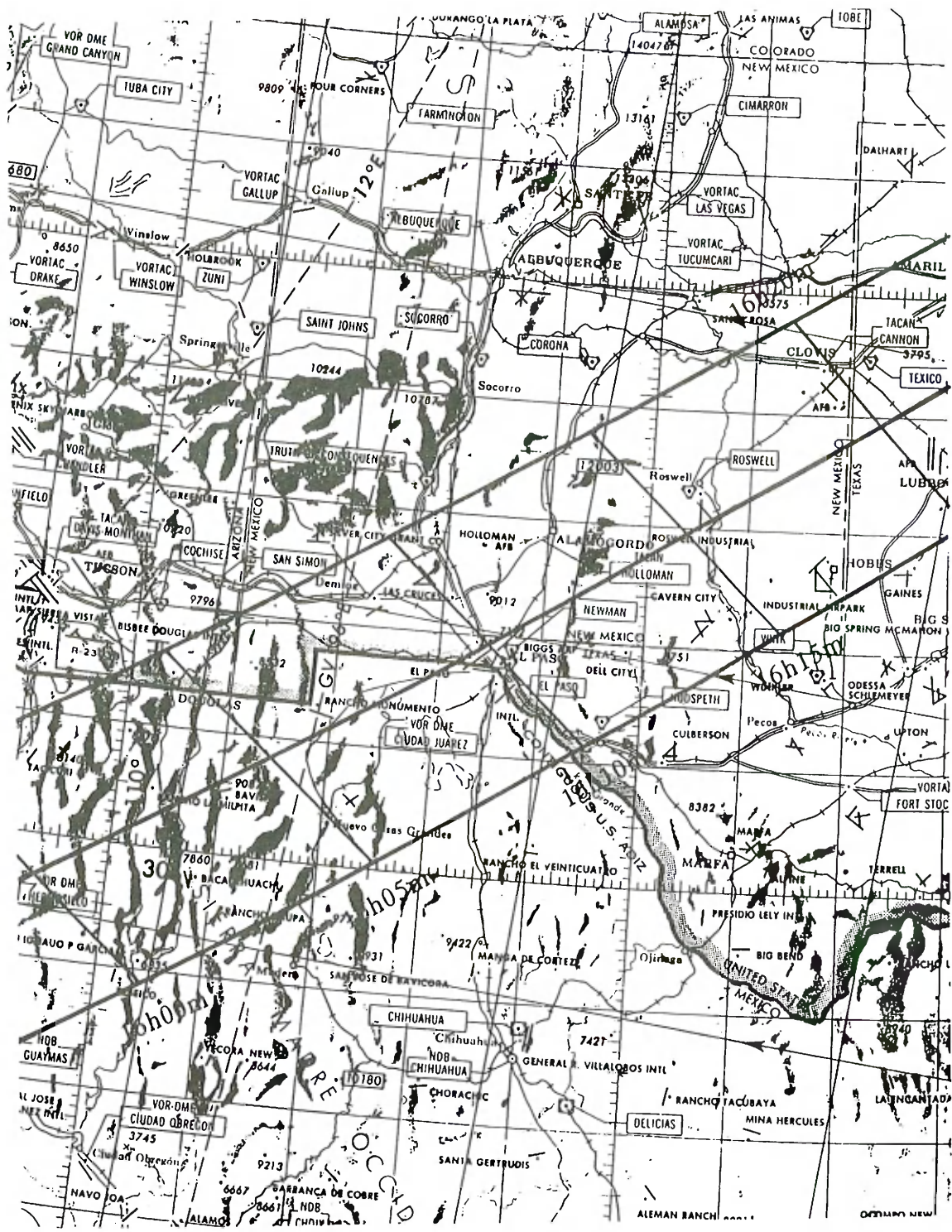
JD = 2449483.217

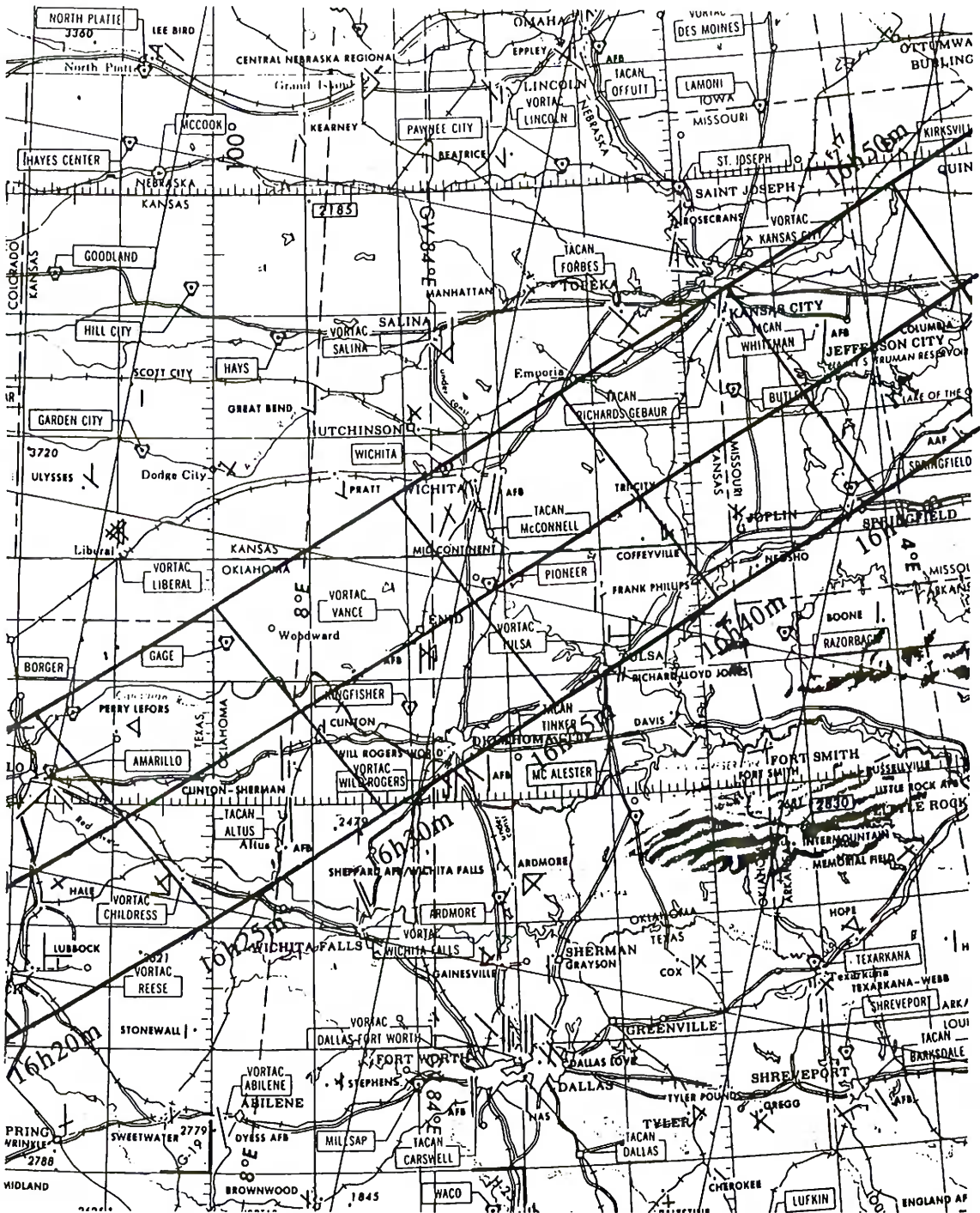
ΔT = 59.5 S

GREATEST	LAT = 41° 32' 2N	ALT = 65.7	DURATION = 6.13.5
ECLIPSE :	LONG = 84° 7' 3W	AZ = 167.5	WIDTH = 230.1 KM

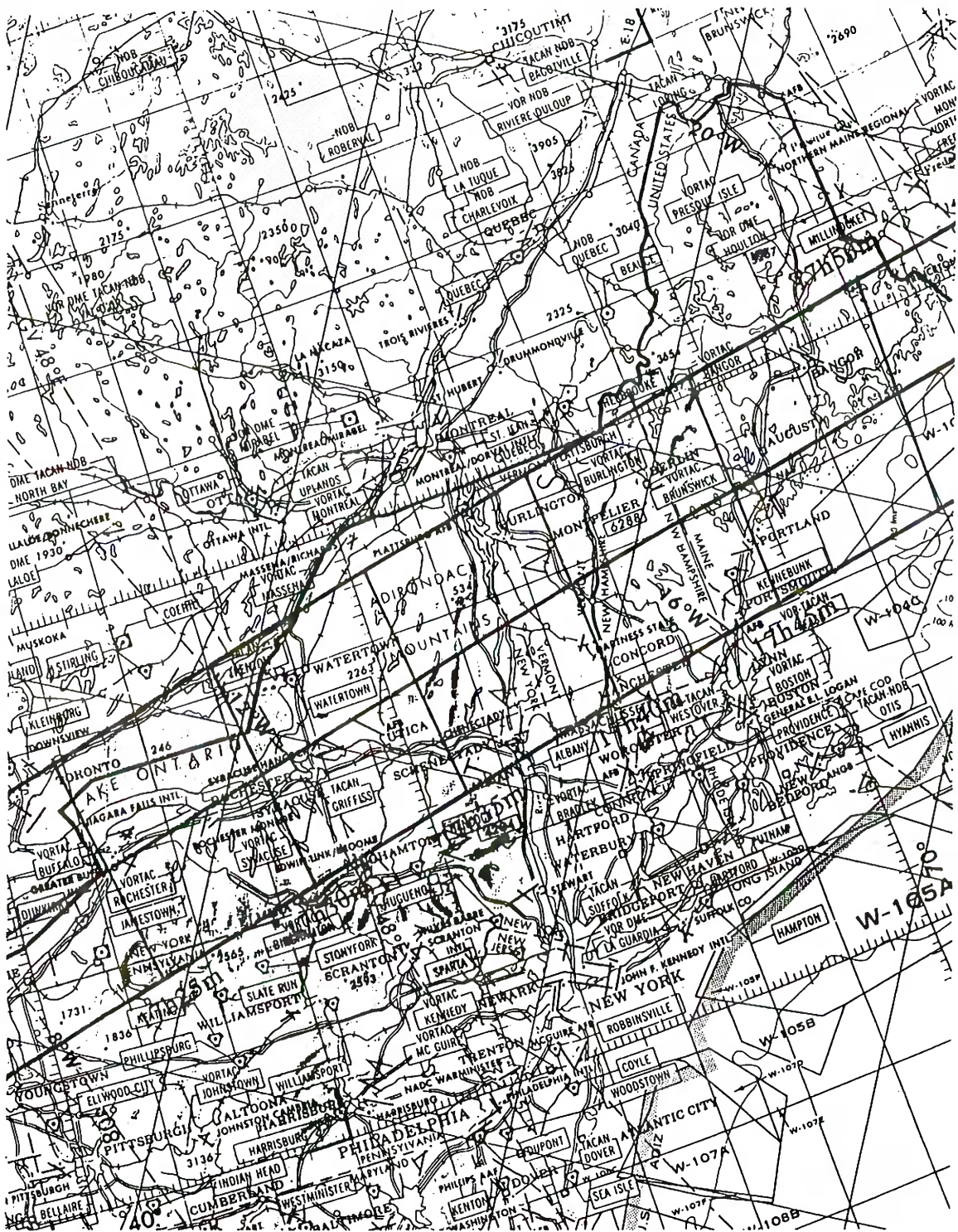
F. Espenak, NASA/GSFC - 1/93



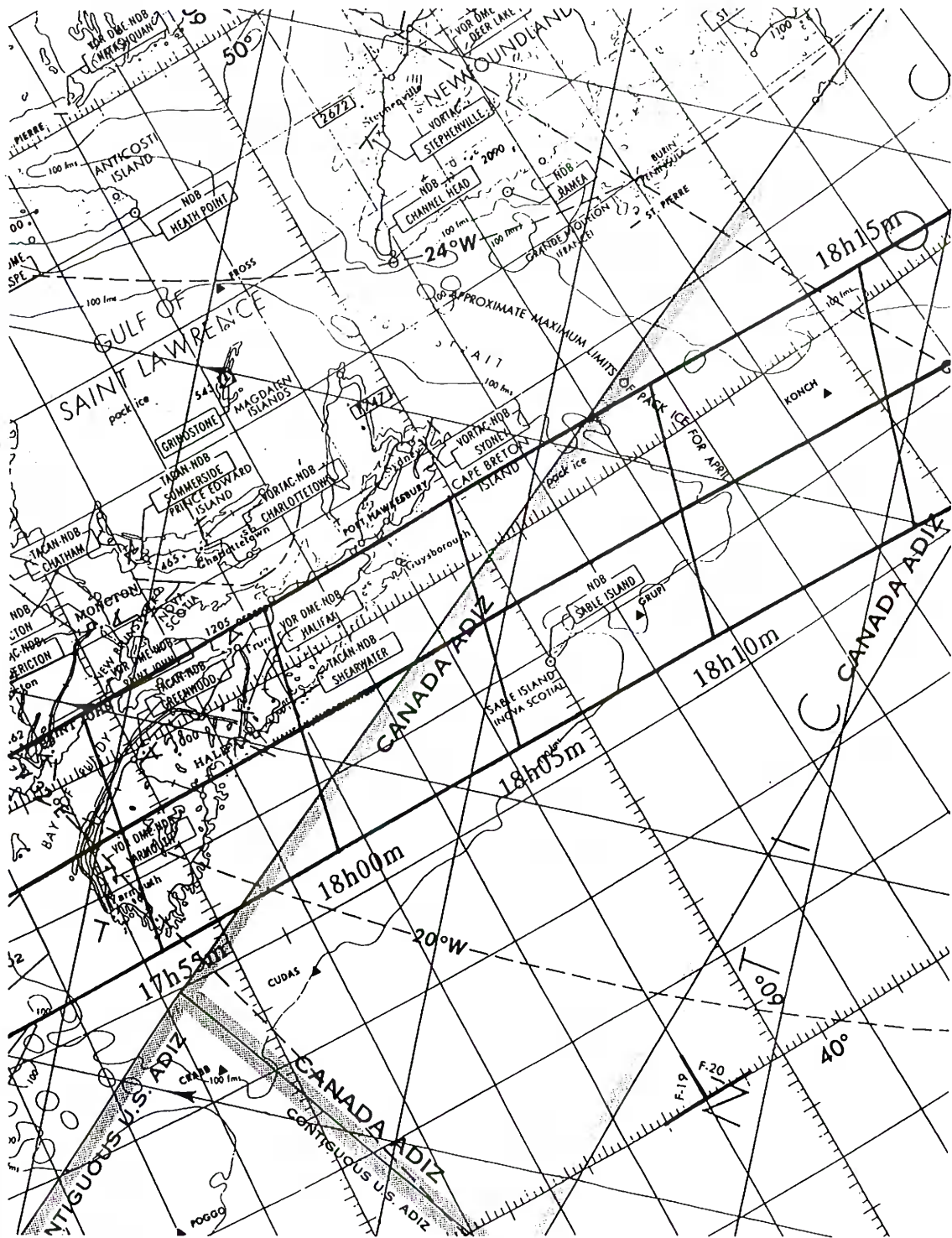












*Table 8a*  
**CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994**  
**FOR MEXICO**

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Urbal Durat. m s	Path Width km	Sun Alt	Sun Az.	P	V	Eclipse Mag.	Eclipse Obs.
<b>MEXICO</b>												
Acapulco	16 51.0	-99-55.0	3	15:51:02.5			51	82	335	60	0.535	0.421
Aguascalientes	21 53.0	-102-18.0	-	15:56:42.3			50	88	336	53	0.688	0.597
Buenaventura	29 51.0	-107-29.0	-	16:04:34.2			47	96	337	42	0.936	0.883
Campeche	19 51.0	-90-32.0	-	16:16:44.2			66	91	335	56	0.478	0.361
Celaya	20 31.0	-100-49.0	-	15:56:29.9			51	87	335	55	0.636	0.536
Chihuahua	28 08.0	-106-05.0	1453	16:04:08.3			48	95	337	43	0.892	0.839
Ciudad Juarez	31 44.0	-106-29.0	-	16:09:44.1	5 38.4	256	49	99	337	39	0.941	0.885
Ciudad Madero	22 16.0	-97-50.0	-	16:05:21.4			56	91	335	52	0.638	0.538
Ciudad Obregon	27 29.0	-109-56.0	-	15:56:44.4			43	91	337	46	0.914	0.862
Ciudad Victoria	23 43.8	-99-09.0	-	16:05:48.2			55	93	336	49	0.690	0.600
Coatzacoalcos	18 09.0	-94-25.0	-	16:04:05.5			59	86	335	59	0.489	0.372
Cuernavaca	18 57.0	-99-13.0	-	15:56:14.3			53	85	335	57	0.576	0.468
Culiacan	24 48.0	-107-24.0	-	15:54:50.5			45	89	336	49	0.822	0.756
Durango	24 01.0	-104-40.0	-	15:57:11.0			48	90	336	50	0.769	0.693
Ensenada	31 52.0	-116-37.0	-	15:57:50.5			38	92	158	221	0.855	0.794
Guadalajara	20 40.0	-103-20.0	1704	15:52:43.9			48	86	336	54	0.674	0.580
Guaymas	27 56.0	-110-54.0	-	15:56:26.2			42	91	337	45	0.935	0.881
Hermosillo	29 04.0	-110-58.0	-	15:58:32.2	5 16.9	265	43	92	337	44	0.940	0.883
Irapuato	20 41.0	-101-21.0	-	15:55:55.8			51	87	335	54	0.647	0.549
Jalapa	19 32.0	-96-55.0	-	16:01:41.1			56	87	335	56	0.558	0.448
La Paz	24 10.0	-110-17.0	-	15:50:03.2			41	87	337	50	0.844	0.782
Leon	21 07.0	-101-40.0	-	15:56:14.8			51	88	335	54	0.662	0.566
Los Mochis	25 45.0	-108-57.0	-	15:54:38.8			44	90	337	48	0.863	0.805
Magdalena	30 38.0	-110-57.0	-	16:01:36.0	3 19.0	262	43	94	157	222	0.940	0.883
Matamoros	25 53.0	-97-30.0	-	16:13:20.6			58	98	336	45	0.720	0.635
Mazatlan	23 11.0	-106-25.0	-	15:53:05.4			46	88	336	51	0.773	0.697
Merida	20 58.0	-89-37.0	24	16:21:27.2			68	94	335	53	0.495	0.378
Mexicali	32 40.0	-115-29.0	-	16:00:29.6			39	93	158	220	0.851	0.790
Mexico City	19 24.0	-99-09.0	2408	15:57:11.4			53	86	335	56	0.586	0.479
Minatitlan	17 59.0	-94-31.0	-	16:03:32.5			59	85	335	59	0.486	0.369
Monclova	26 54.0	-101-25.0	-	16:08:07.1			53	96	336	45	0.795	0.724
Monterrey	25 40.0	-100-19.0	568	16:07:33.9			54	95	336	47	0.752	0.672
Morelia	19 42.0	-101-07.0	-	15:54:25.6			51	86	335	56	0.620	0.518
Nacozari	30 24.0	-109-39.0	-	16:02:45.8	5 32.9	261	45	95	157	222	0.940	0.883
Nuevo Laredo	27 30.0	-99-31.0	-	16:12:44.4			56	99	336	43	0.785	0.712
Orizaba	18 51.0	-97-06.0	-	15:59:58.6			56	86	335	57	0.544	0.432
Oaxaca	17 05.0	-96-43.0	-	15:57:16.4			55	83	335	60	0.495	0.379
Pachuca	20 07.0	-98-44.0	-	15:59:23.0			54	87	335	55	0.598	0.492
Poza Rica Hidalgo	20 33.0	-97-27.0	-	16:02:39.8			56	89	335	55	0.591	0.484
Puebla	19 03.0	-96-12.0	-	16:02:09.3			57	87	335	57	0.536	0.424
Queretaro	20 36.0	-100-23.0	-	15:57:23.9			52	87	335	54	0.632	0.531
Reynosa	26 07.0	-98-18.0	-	16:12:14.7			57	98	336	45	0.736	0.654
Salina Cruz	16 11.0	-95-12.0	60	15:58:33.3			57	82	334	62	0.451	0.332
Saltillo	25 25.0	-101 00.0	-	16:05:51.7			53	94	336	47	0.755	0.676
San Ignacio	27 27.0	-112-51.0	-	15:53:18.6	3 50.7	269	40	89	337	46	0.939	0.882
San Luis Potosi	22 09.0	-100-59.0	-	15:59:24.1			52	89	335	52	0.677	0.584
Santa Ana	33 38.0	-117-57.0	-	15:59:58.0			37	92	159	220	0.805	0.735
Santa Rosalia	27 19.0	-112-17.0	-	15:53:40.7			41	90	337	46	0.938	0.882
Tampico	22 13.0	-97-51.0	26	16:05:13.4			56	91	335	52	0.637	0.537
Tepec	21 30.0	-104-54.0	-	15:52:01.6			47	87	336	53	0.714	0.627
Tijuana	32 32.0	-117-01.0	-	15:58:44.0			37	92	158	221	0.837	0.773
Toluca	19 17.0	-99-40.0	-	15:56:05.3			52	86	335	56	0.590	0.484
Torreón	25 33.0	-103-26.0	-	16:02:04.9			50	93	336	47	0.789	0.717
Tuxtia Gutierrez	16 45.0	-93-07.0	-	16:04:10.1			60	84	334	62	0.436	0.316
Uruapan	19 25.0	-102-04.0	-	15:52:21.3			49	85	335	56	0.626	0.525
Veracruz	19 13.2	-96-07.2	17	16:02:39.3			57	87	335	57	0.540	0.427



Table 10a  
CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994  
FOR THE UNITED STATES OF AMERICA

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt °	Sun Az. °	P °	V °	Eclipse Mag.	Eclipse Obs.
<b>CONNECTICUT</b>												
Bridgeport	41 11.4	-73-11.4	3	17:37:34.0			64	207	345	323	0.901	0.850
Bristol	41 40.0	-72-55.0	-	17:38:24.1			64	208	345	323	0.913	0.864
Danbury	41 23.0	-73-27.0	-	17:37:00.3			64	206	345	324	0.908	0.858
East Hartford	41 45.0	-72-35.0	-	17:39:13.9			63	209	345	322	0.914	0.865
Fairfield	41 08.0	-73-22.0	-	17:37:06.7			64	207	345	323	0.900	0.849
Greenwich	41 01.0	-73-37.0	-	17:36:26.9			65	206	345	324	0.898	0.847
Hamden	41 20.0	-72-55.0	-	17:38:17.3			64	208	345	323	0.904	0.854
Hartford	41 45.6	-72-41.4	13	17:38:58.7			64	209	345	323	0.915	0.866
Manchester	41 45.0	-72-30.0	-	17:39:25.9			63	209	345	322	0.914	0.865
Meriden	41 30.0	-72-50.0	62	17:38:32.9			64	208	345	323	0.908	0.858
Milford	41 15.0	-73-05.0	-	17:37:51.1			64	208	345	323	0.902	0.852
New Britain	41 40.0	-72-45.0	66	17:38:48.3			64	209	345	323	0.913	0.863
New Haven	41 18.6	-72-55.8	13	17:38:14.8			64	208	345	323	0.903	0.853
Norwalk	41 06.0	-73-25.0	-	17:36:58.5			65	207	345	324	0.900	0.849
Stamford	41 03.0	-73-32.0	11	17:36:40.1			65	206	345	324	0.899	0.848
Stratford	41 10.0	-73-05.0	-	17:37:49.2			64	208	345	323	0.900	0.849
Waterbury	41 30.0	-73 00.0	85	17:38:08.6			64	208	345	323	0.909	0.859
West Hartford	41 45.0	-72-45.0	-	17:38:49.9			64	208	345	323	0.915	0.866
West Haven	41 16.0	-72-57.0	-	17:38:11.0			64	208	345	323	0.902	0.852
<b>DELAWARE</b>												
Dover	39 09.6	-75-31.8	-	17:30:35.3			67	200	344	327	0.855	0.797
Wilmington	39 45.0	-75-33.0	44	17:30:54.6			67	200	344	327	0.872	0.816
<b>DISTRICT OF COLUMBIA</b>												
Washington	38 52.8	-77-01.2	5	17:26:28.1			68	194	343	331	0.855	0.797
<b>FLORIDA</b>												
Boca Raton	26 21.0	-80-05.0	-	17:01:43.9			81	157	339	0	0.529	0.416
Clearwater	27 43.0	-82-45.0	-	16:55:10.4			78	142	338	14	0.592	0.487
Daytona Beach	29 11.0	-81-02.0	2	17:03:08.2			78	160	339	358	0.616	0.514
Fort Lauderdale	26 07.0	-80-09.0	-	17:01:06.6			81	156	339	2	0.523	0.409
Gainesville	29 39.6	-82-19.8	57	16:59:47.3			77	152	339	4	0.641	0.543
Hialeah	25 49.0	-80-18.0	-	17:00:04.7			81	153	339	5	0.516	0.402
Hollywood	26 00.0	-80-11.0	-	17:00:47.8			81	155	339	3	0.520	0.406
Jacksonville	30 19.2	-81-39.0	7	17:02:57.8			77	159	339	359	0.653	0.556
Largo	27 54.0	-82-47.0	-	16:55:23.3			77	142	338	13	0.598	0.493
Miami	25 46.8	-80-13.2	2	17:00:17.8			81	153	339	4	0.515	0.400
Orlando	28 32.4	-81-22.8	23	17:00:58.8			78	155	339	2	0.602	0.497
Pensacola	30 25.0	-87-13.0	5	16:46:48.6			72	130	338	22	0.710	0.624
Pompano Beach	26 12.0	-80-07.0	-	17:01:21.9			81	156	339	1	0.525	0.412
St. Petersburg	27 47.0	-82-38.0	7	16:55:39.8			78	143	338	13	0.593	0.487
Sarasota	27 20.0	-82-32.0	7	16:55:11.8			78	142	338	14	0.580	0.472
Tallahassee	30 26.4	-84-17.4	-	16:55:09.4			75	143	339	12	0.681	0.589
Tampa	27 57.6	-82-28.2	-	16:56:29.5			78	145	338	11	0.596	0.491
West Palm Beach	26 43.0	-80-03.2	-	17:02:26.5			80	159	339	359	0.539	0.427
<b>GEORGIA</b>												
Albany	31 34.8	-84-09.6	-	16:57:26.5			74	148	339	8	0.710	0.624
Atlanta	33 45.6	-84-24.6	331	17:00:12.8			72	153	339	3	0.771	0.696
Augusta	33 28.2	-81-59.4	47	17:06:38.0			74	165	340	353	0.742	0.661
Columbus	32 28.8	-84-57.0	87	16:56:40.3			73	147	339	8	0.742	0.661
Macon	32 49.8	-83-39.6	110	17:00:52.5			73	154	339	2	0.739	0.658
Savannah	32 03.0	-81-05.4	7	17:07:16.8			75	167	340	351	0.696	0.606
<b>HAWAII</b>												
Hilo	19 44.0	-155-01.0	13	15:47 Rise			0	71	-	-	0.659	0.560
Honolulu	21 18.6	-157-50.4	7	15:56 Rise			0	71	-	-	0.549	0.435
<b>IDAHO</b>												
Boise	43 36.6	-116-13.2	931	16:21:07.1			41	105	160	207	0.633	0.532
Coeur D'Alene	47 40.8	-116-46.2	-	16:28:26.8			40	110	161	203	0.557	0.446
Lewiston	46 24.0	-116-59.0	-	16:25:46.4			40	108	160	204	0.577	0.468
Pocatello	42 52.8	-112-27.0	1463	16:23:50.5			44	109	160	207	0.683	0.590
Twin Falls	42 33.0	-114-29.0	-	16:20:54.0			42	106	160	208	0.669	0.574
<b>ILLINOIS</b>												
Arlington Heights	42 05.0	-87-59.0	-	17:03:28.8			64	155	161	180	0.928	0.879
Aurora	41 45.0	-88-18.0	-	17:02:20.4			64	154	161	181	0.934	0.884
Bloomington	40 29.0	-89 00.0	262	16:59:00.3	5 36.1	232	64	149	160	184	0.943	0.889
Champaign	40 06.6	-88-15.0	243	17:00:08.1	6 8.7	232	65	151	340	3	0.943	0.889
Chicago	41 51.0	-87-40.8	199	17:03:49.6			64	156	161	180	0.937	0.886
Cicero	41 50.0	-87-46.0	-	17:03:36.9			64	156	161	180	0.936	0.886
Decatur	39 50.0	-88-59.0	224	16:58:04.7	6 7.1	233	65	148	340	5	0.943	0.889



Table 10a  
**CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994**  
**FOR THE UNITED STATES OF AMERICA**

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt	Sun Az.	P	V	Eclipse Mag.	Eclipse Obs.
<b>ILLINOIS</b>												
Des Plaines	42 02.0	-87-54.0	—	17:03:35.6			64	155	161	180	0.930	0.881
East St. Louis	38 38.0	-90-10.0	—	16:53:34.1	3 31.7	234	65	142	339	10	0.943	0.889
Elgin	42 03.0	-88-16.0	—	17:02:49.3			64	154	161	181	0.927	0.878
Evanston	42 02.0	-87-41.0	—	17:04:03.9			64	156	161	179	0.932	0.882
Joliet	41 37.0	-88-05.0	—	17:02:37.7			64	154	161	181	0.939	0.888
Mount Prospect	42 03.0	-87-56.0	—	17:03:32.6			64	155	161	180	0.930	0.880
Oak Lawn	41 43.0	-87-45.0	—	17:03:29.7			64	155	161	180	0.939	0.888
Oak Park	41 53.0	-87-48.0	—	17:03:36.6			64	155	161	180	0.935	0.885
Peoria	40 42.6	-89-36.6	154	16:58:00.2	3 43.0	233	64	148	160	185	0.943	0.889
Rockford	42 16.2	-89-04.2	235	17:01:24.4			63	152	161	182	0.915	0.865
Schaumburg	42 02.0	-88-05.0	—	17:03:11.8			64	155	161	180	0.929	0.879
Skokie	42 02.0	-87-45.0	—	17:03:55.2			64	156	161	179	0.931	0.882
Springfield	39 48.0	-89-39.0	200	16:56:32.6	6 10.3	233	65	146	160	187	0.943	0.889
Urbana	40 06.3	-88-13.5	238	17:00:11.0	6 8.1	232	65	151	340	3	0.943	0.889
<b>INDIANA</b>												
Anderson	40 05.0	-85-50.0	—	17:05:39.5	3 13.6	231	66	159	341	357	0.943	0.890
Bloomington	39 12.6	-86-34.8	—	17:02:42.5			67	155	340	0	0.931	0.882
Evansville	37 58.8	-87-33.0	126	16:58:36.4			67	149	340	5	0.908	0.858
Fort Wayne	41 04.2	-85-09.0	259	17:08:30.7	6 9.2	231	66	163	341	354	0.943	0.890
Gary	41 35.0	-87-21.0	194	17:04:11.8	2 41.5	231	65	156	161	179	0.943	0.889
Hammond	41 37.0	-87-31.0	—	17:03:52.4	1 23.4	231	64	156	161	179	0.943	0.889
Indianapolis	39 47.4	-86-08.4	260	17:04:32.8			67	158	340	358	0.942	0.889
Muncie	40 11.5	-85-23.3	312	17:06:50.8	2 57.4	231	67	161	341	356	0.943	0.890
South Bend	41 40.0	-86-20.0	233	17:06:34.1	4 26.5	231	65	160	161	177	0.943	0.889
Terre Haute	39 28.1	-87-24.4	163	17:01:08.3	1 55.8	232	66	153	340	2	0.943	0.890
<b>IOWA</b>												
Ames	42 02.4	-93-36.6	—	16:51:47.4			60	139	160	191	0.881	0.827
Cedar Rapids	41 58.0	-91-39.9	240	16:55:33.9			62	144	160	187	0.900	0.849
Council Bluffs	41 16.0	-95-53.0	—	16:46:07.8			59	133	159	195	0.878	0.824
Davenport	41 32.4	-90-35.4	194	16:57:08.8			63	146	160	186	0.920	0.871
Des Moines	41 36.0	-93-37.8	308	16:51:02.6			61	138	160	191	0.892	0.839
Dubuque	42 30.0	-90-43.0	269	16:58:18.0			62	148	160	185	0.896	0.844
Iowa City	41 40.2	-91-31.8	225	16:55:23.4			62	144	160	188	0.909	0.859
Sioux City	42 30.0	-96-24.0	331	16:47:14.9			58	134	160	194	0.845	0.785
Waterloo	42 30.0	-92-22.0	279	16:54:57.9			61	143	160	188	0.882	0.828
<b>KANSAS</b>												
Dodge City	37 45.6	-100-01.2	847	16:32:08.9			56	118	158	206	0.916	0.866
Independence	37 13.0	-95-42.0	—	16:39:19.4	6 1.7	239	61	125	338	22	0.942	0.888
Kansas City	39 06.0	-94-39.0	246	16:44:48.4			61	131	159	197	0.941	0.888
Lawrence	38 57.6	-95-15.0	—	16:43:21.6			61	129	159	198	0.938	0.886
Overland Park	38 59.0	-94-40.0	—	16:44:34.2	1 18.1	237	61	131	159	197	0.943	0.888
Parsons	37 20.0	-95-16.0	—	16:40:24.8	5 59.5	238	61	126	338	21	0.943	0.888
Salina	38 50.1	-97-36.5	403	16:38:34.3			58	124	159	201	0.917	0.867
Topeka	39 02.4	-95-41.4	305	16:42:37.8			60	129	159	199	0.932	0.882
Wichita	37 40.8	-97-19.8	423	16:36:58.4	3 2.3	240	59	123	158	203	0.942	0.888
<b>KENTUCKY</b>												
Ashland	38 28.6	-82-38.4	176	17:11:26.1			69	170	341	350	0.881	0.827
Bowling Green	36 59.0	-86-27.0	167	16:59:47.2			69	151	340	4	0.873	0.818
Corbin	36 56.4	-84-06.0	—	17:05:41.7			70	161	340	356	0.852	0.793
Frankfort	38 12.0	-84-51.6	—	17:05:29.2			68	160	340	357	0.891	0.839
Lexington	38 03.6	-84-29.4	313	17:06:13.4			69	161	340	356	0.884	0.831
Louisville	38 13.2	-85-45.0	156	17:03:19.0			68	157	340	360	0.899	0.848
Owensboro	37 45.0	-87-05.0	—	16:59:23.0			68	151	340	4	0.898	0.847
Paducah	37 05.0	-88-36.0	113	16:54:42.4			67	144	339	9	0.895	0.844
<b>LOUISIANA</b>												
Alexandria	31 18.0	-92-28.0	—	16:35:11.4			65	118	337	30	0.791	0.719
Baton Rouge	30 27.0	-91-08.4	19	16:36:42.9			67	119	337	30	0.754	0.676
Bossier City	32 31.0	-93-42.0	—	16:34:43.6			64	118	337	29	0.834	0.772
Kenner	29 58.0	-90-15.0	—	16:37:59.5			68	120	337	30	0.732	0.650
Lafayette	30 13.2	-92-01.2	—	16:34:08.5			66	116	337	32	0.759	0.681
Lake Charles	30 12.6	-93-12.0	—	16:31:21.5			64	114	337	33	0.772	0.697
Monroe	32 30.6	-92-06.0	—	16:38:21.8			66	122	338	26	0.816	0.750
New Orleans	29 58.2	-90-04.8	2	16:38:25.6			68	120	337	29	0.730	0.647
Shreveport	32 28.2	-93-46.2	67	16:34:28.8			64	118	337	29	0.834	0.772









Table 10a  
**CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994**  
**FOR THE UNITED STATES OF AMERICA**

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt	Sun Az.	P	V	Eclipse Mag.	Eclipse Obs.
<b>MICHIGAN</b>												
Westland	42 19.0	-83-24.0	-	17:13:58.3	5 15.7	230	65	171	162	169	0.943	0.889
Wyoming	42 54.0	-85-42.0	-	17:09:29.2			64	164	161	174	0.925	0.876
<b>MINNESOTA</b>												
Bloomington	44 50.0	-93-18.0	-	16:56:40.1			59	145	161	186	0.819	0.753
Duluth	46 47.4	-92-06.6	200	17:01:36.5			58	151	161	182	0.783	0.710
Hibbing	47 25.2	-92-55.2	-	17:01:00.5			57	149	161	183	0.763	0.686
Internat'l Falls	48 36.0	-93-24.6	-	17:01:44.3			56	150	162	182	0.732	0.650
Mankato	44 09.6	-94 00.0	-	16:54:21.2			59	142	160	188	0.829	0.765
Minneapolis	44 57.6	-93-16.2	274	16:56:54.6			59	145	161	186	0.816	0.750
Northfield	44 27.6	-93-09.6	-	16:56:22.8			59	145	160	186	0.829	0.765
Rochester	44 01.0	-92-30.0	-	16:56:58.8			60	146	160	186	0.845	0.784
St. Cloud	45 34.0	-94-10.4	341	16:56:08.9			58	144	161	187	0.795	0.724
St. Paul	44 57.0	-93-05.0	256	16:57:14.6			59	146	161	186	0.818	0.752
<b>MISSISSIPPI</b>												
Aberdeen	33 49.0	-88-33.0	-	16:49:22.2			69	136	338	16	0.812	0.745
Biloxi	30 24.6	-88-55.2	7	16:42:14.9			70	125	337	26	0.729	0.645
Greenville	33 25.0	-91 00.0	-	16:42:39.0			67	127	338	22	0.827	0.763
Jackson	32 19.2	-90-12.0	98	16:42:33.9			68	127	338	24	0.791	0.720
Meridian	32 21.0	-88-41.0	-	16:46:26.1			69	131	338	20	0.776	0.702
Vicksburg	32 20.0	-90-50.0	-	16:41:02.6			67	125	338	25	0.798	0.729
<b>MISSOURI</b>												
Cape Girardeau	37 18.6	-89-31.8	-	16:52:53.0			66	141	339	11	0.909	0.860
Columbia	38 55.0	-92-19.0	240	16:49:19.8	6 4.5	235	63	137	159	194	0.943	0.889
Fayette	39 09.0	-92-42.0	-	16:48:54.6	5 26.8	235	63	136	159	194	0.943	0.889
Florissant	38 47.0	-90-20.0	-	16:53:26.1	4 46.0	234	65	142	339	10	0.943	0.889
Independence	39 06.0	-94-26.0	-	16:45:14.7	0 43.9	237	61	132	159	197	0.943	0.888
Jefferson City	38 34.2	-92-10.8	-	16:49:02.6	6 0.3	235	63	136	339	14	0.943	0.889
Kansas City	39 05.0	-94-35.0	243	16:44:54.7			61	131	159	197	0.942	0.888
Mexico	39 10.0	-91-53.0	-	16:50:40.3	6 0.7	235	63	138	159	192	0.943	0.889
Nevada	37 51.0	-94-22.0	-	16:43:11.2	6 4.8	237	62	129	339	19	0.943	0.889
St. Joseph	39 44.0	-94-49.0	279	16:45:34.2			61	132	159	196	0.924	0.875
St. Louis	38 37.8	-90-15.0	149	16:53:22.5	3 44.4	234	65	142	339	10	0.943	0.889
Sedalia	38 42.0	-93-14.0	-	16:47:01.7	5 54.1	236	62	134	159	196	0.943	0.889
Springfield	37 12.0	-93-17.4	427	16:44:17.7	1 15.3	237	63	130	339	18	0.943	0.889
<b>MONTANA</b>												
Billings	45 46.8	-108-32.4	1024	16:34:12.1			47	118	160	201	0.664	0.569
Bozeman	45 41.0	-111 00.0	-	16:30:57.2			45	114	160	202	0.644	0.545
Butte	46 00.0	-112-31.0	1891	16:29:45.6			44	113	160	203	0.624	0.522
Great Falls	47 30.0	-111-15.0	1096	16:34:03.5			45	117	160	200	0.608	0.503
Helena	46 35.4	-112-01.8	1363	16:31:26.5			44	114	160	202	0.617	0.514
Missoula	46 51.6	-114 00.0	1047	16:29:44.7			43	112	160	202	0.595	0.489
<b>NEBRASKA</b>												
Grand Island	40 55.8	-98-21.0	-	16:40:59.5			57	127	159	199	0.862	0.805
Lincoln	40 48.6	-96-40.2	377	16:43:51.6			59	130	159	197	0.881	0.827
North Platte	41 08.0	-100-45.0	-	16:37:11.0			55	123	159	201	0.834	0.771
Omaha	41 18.0	-95-57.0	341	16:46:03.5			59	132	159	195	0.877	0.822
Scottsbluff	41 51.6	-103-39.6	-	16:33:49.7			52	119	159	202	0.790	0.718
<b>NEVADA</b>												
Carson City	39 09.0	-119-46.8	1535	16:08:58.1			37	97	159	214	0.680	0.587
Las Vegas	36 10.2	-115-10.2	709	16:07:37.6			40	97	159	216	0.784	0.711
Reno	39 31.5	-119-48.7	1445	16:09:40.3			37	97	160	213	0.673	0.578
<b>NEW HAMPSHIRE</b>												
Concord	43 10.0	-71-30.0	95	17:42:06.7	4 2.7	231	62	211	346	322	0.943	0.889
Hanover	43 42.3	-72-17.0	-	17:40:26.6	6 5.1	231	62	208	345	324	0.943	0.889
Manchester	42 59.4	-71-27.6	57	17:42:10.3	2 16.4	231	62	211	346	322	0.943	0.889
Nashua	42 47.0	-71-23.0	-	17:42:18.6			62	212	346	321	0.939	0.887
<b>NEW JERSEY</b>												
Atlantic City	39 21.6	-74-26.4	3	17:33:33.5			67	204	344	324	0.856	0.797
Bayonne	40 40.0	-74-07.0	-	17:35:03.0			65	205	344	325	0.890	0.838
Camden	39 56.0	-75-06.0	10	17:32:10.6			66	202	344	326	0.875	0.820
Cape May	38 56.4	-74-54.6	-	17:32:05.0			67	203	344	325	0.846	0.786
Cherry Hill	39 56.0	-75-01.0	-	17:32:23.4			66	202	344	326	0.874	0.819
Clifton	40 35.0	-74-09.0	-	17:34:55.6			65	205	344	325	0.888	0.836
East Orange	40 46.0	-74-12.0	-	17:34:53.4			65	204	344	325	0.894	0.842
Edison	40 27.0	-74-18.0	-	17:34:29.2			66	204	344	325	0.885	0.832
Elizabeth	40 40.0	-74-13.0	7	17:34:48.0			65	204	344	325	0.891	0.839
Irvington	40 43.0	-74-15.0	-	17:34:44.4			65	204	344	325	0.892	0.841
Jersey City	40 43.0	-74-05.0	7	17:35:09.4			65	205	344	325	0.892	0.840



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**FOR THE UNITED STATES OF AMERICA**

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt °	Sun Az. °	P °	V °	Eclipse Mag.	Eclipse Obs.
<b>NEW JERSEY</b>												
Newark	40 44.4	-74-11.4	-	17:34:54.1			65	204	344	325	0.893	0.841
Passaic	40 52.0	-74-08.0	-	17:35:06.1			65	204	344	325	0.896	0.845
Paterson	40 55.0	-74-10.0	33	17:35:02.6			65	204	344	325	0.898	0.846
Princeton	40 21.0	-74-39.6	-	17:33:31.6			66	203	344	326	0.884	0.831
Trenton	40 13.2	-74-45.6	11	17:33:12.2			66	203	344	326	0.881	0.827
Union	40 41.0	-74-15.0	-	17:34:43.5			65	204	344	325	0.891	0.839
Union City	40 46.0	-74-01.0	-	17:35:20.8			65	205	344	325	0.893	0.841
Vineland	39 30.0	-75 00.0	-	17:32:10.9			67	202	344	326	0.862	0.805
<b>NEW MEXICO</b>												
Alamogordo	32 54.0	-105-57.0	-	16:12:50.9	5 0.3	254	50	102	157	217	0.941	0.885
Albuquerque	35 05.0	-106-40.0	1742	16:16:07.3			49	104	158	214	0.900	0.848
Clovis	34 24.0	-103-12.0	-	16:20:08.8	4 56.6	249	53	107	158	214	0.941	0.886
Deming	32 16.0	-107-45.0	-	16:08:59.4	3 52.8	256	47	99	157	219	0.940	0.884
Las Cruces	32 20.4	-106-43.8	-	16:10:35.1	5 16.1	255	49	100	157	218	0.941	0.885
Portales	34 11.0	-103-20.0	-	16:19:29.9	5 17.3	249	53	107	157	214	0.941	0.886
Roswell	33 23.0	-104-32.0	-	16:15:58.9	5 32.1	252	51	104	157	216	0.941	0.886
Santa Fe	35 40.2	-105-57.0	2280	16:18:20.4			50	106	158	213	0.896	0.843
Sunspot	32 47.2	-105-49.2	-	16:12:49.0	5 22.0	254	50	102	157	217	0.941	0.885
<b>NEW YORK</b>												
Albany	42 39.6	-73-46.8	7	17:36:42.0	1 32.4	230	63	205	345	326	0.943	0.889
Binghamton	42 05.0	-75-55.0	284	17:31:22.4			65	198	344	330	0.937	0.887
Buffalo	42 54.6	-78-51.0	231	17:24:59.7	6 11.1	229	65	187	163	157	0.943	0.889
Cheektowaga	42 54.0	-78-46.0	-	17:25:10.8	6 12.0	229	65	188	163	157	0.943	0.889
Irondequoit	43 12.0	-77-36.0	-	17:28:04.8	6 8.7	229	64	192	164	155	0.943	0.889
Ithaca	42 26.4	-76-29.4	-	17:30:12.6	3 58.8	230	65	196	344	332	0.943	0.889
Jamestown	42 06.6	-79-14.4	-	17:23:28.0	5 6.2	229	65	186	343	338	0.943	0.890
Mount Vernon	40 55.0	-73-51.0	-	17:35:49.7			65	205	344	324	0.896	0.845
New Rochelle	40 55.0	-73-47.0	-	17:35:59.6			65	206	344	324	0.896	0.845
New York	40 43.8	-73-55.2	43	17:35:34.3			65	205	344	324	0.891	0.839
Niagara Falls	43 06.0	-79-02.0	187	17:24:42.7	5 54.2	229	64	187	163	158	0.943	0.889
Poughkeepsie	41 42.0	-73-55.2	-	17:35:59.5			64	205	345	325	0.918	0.869
Rochester	43 09.6	-77-36.6	169	17:28:02.0	6 10.4	229	64	192	164	155	0.943	0.889
Schenectady	42 47.0	-73-53.0	80	17:36:30.3	3 24.5	230	63	204	345	326	0.943	0.889
Syracuse	43 05.0	-76-10.0	131	17:31:19.6	6 4.0	230	64	197	344	331	0.943	0.889
Tonawanda	43 01.0	-78-53.0	-	17:24:59.7	6 4.9	229	65	187	163	158	0.943	0.889
Troy	42 45.0	-73-45.0	11	17:36:48.2	2 52.6	230	63	205	345	326	0.943	0.889
Utica	43 06.2	-75-13.6	136	17:33:30.9	5 50.3	230	63	200	344	329	0.943	0.889
West Seneca	42 50.0	-78-45.0	-	17:25:10.2	6 13.1	229	65	188	163	157	0.943	0.889
Yonkers	40 57.0	-73-54.0	3	17:35:43.1			65	205	344	324	0.897	0.846
<b>NORTH CAROLINA</b>												
Asheville	35 35.4	-82-33.6	702	17:07:57.7			72	166	340	353	0.804	0.735
Charlotte	35 13.2	-80-49.8	236	17:12:17.8			72	174	341	346	0.780	0.707
Durham	36 00.0	-78-54.6	133	17:18:38.4			72	185	342	337	0.788	0.716
Fayetteville	35 02.0	-78-54.0	-	17:17:36.8			73	184	341	338	0.761	0.684
Greensboro	36 04.2	-79-48.6	275	17:16:11.0			72	180	341	341	0.796	0.726
High Point	35 55.0	-80 00.0	-	17:15:28.4			72	179	341	342	0.793	0.722
Raleigh	35 47.4	-78-39.0	120	17:19:09.4			72	186	342	336	0.780	0.707
Wilmington	34 13.2	-77-55.8	9	17:19:34.9			73	190	342	333	0.732	0.649
Winston-Salem	36 06.0	-80-15.6	282	17:14:57.6			72	178	341	343	0.800	0.731
<b>NORTH DAKOTA</b>												
Bismarck	46 48.6	-100-46.8	540	16:47:03.0			53	132	160	193	0.712	0.625
Fargo	46 52.2	-96-47.4	295	16:53:33.8			55	140	161	188	0.745	0.664
Grand Forks	47 55.0	-97-05.0	-	16:54:39.8			55	141	161	187	0.719	0.634
Minot	48 14.4	-101-18.0	509	16:48:36.8			52	133	161	192	0.678	0.585
<b>OHIO</b>												
Akron	41 05.0	-81-30.7	287	17:17:06.9			67	177	342	345	0.942	0.889
Canton	40 50.0	-81-25.0	338	17:17:05.5			67	177	342	344	0.935	0.885
Cincinnati	39 08.4	-84-30.6	180	17:07:35.7			68	163	341	355	0.913	0.863
Cleveland	41 28.8	-81-39.6	217	17:17:09.4	4 47.2	230	66	177	342	345	0.943	0.890
Cleveland Heights	41 30.0	-81-35.0	-	17:17:21.5	4 47.3	230	66	177	342	345	0.943	0.890
Columbus	39 58.8	-82-59.4	256	17:12:20.3			67	170	341	349	0.923	0.874
Dayton	39 45.0	-84-15.0	188	17:09:00.1			67	165	341	353	0.926	0.878
Elyria	41 22.0	-82-07.0	-	17:15:57.5	4 47.4	230	66	175	342	346	0.943	0.890
Euclid	41 34.0	-81-32.0	-	17:17:32.6	5 2.1	230	66	177	342	344	0.943	0.890
Hamilton	39 22.0	-84-33.0	197	17:07:47.4			68	163	341	355	0.919	0.870



Table 10a  
**CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994**  
**FOR THE UNITED STATES OF AMERICA**

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt °	Sun Az. °	P °	V °	Eclipse Mag.	Eclipse Obs.
<b>OHIO</b>												
Kettering	39 40.0	-84-15.0	-	17:08:53.8			67	165	341	353	0.924	0.875
Lakewood	41 29.0	-81-48.0	-	17:16:49.7	4 57.6	230	66	176	342	345	0.943	0.890
Lima	40 45.0	-84-06.0	284	17:10:34.6	4 21.1	230	66	167	341	352	0.943	0.890
Lorain	41 28.0	-82-10.0	200	17:15:56.6	5 16.1	230	66	175	342	346	0.943	0.890
Mansfield	40 45.0	-82-30.0	-	17:14:23.3			67	173	342	347	0.940	0.888
Parma	41 23.0	-81-44.0	-	17:16:53.1	4 21.6	230	66	176	342	345	0.943	0.890
Springfield	39 55.0	-83-50.0	322	17:10:12.9			67	167	341	352	0.928	0.879
Steubenville	40 22.0	-80-37.0	217	17:18:35.1			67	180	342	342	0.917	0.868
Toledo	41 40.2	-83-34.2	192	17:12:52.5	6 13.5	230	66	170	342	350	0.943	0.890
Warren	41 15.0	-80-50.0	-	17:18:54.5			66	180	342	343	0.942	0.889
Youngstown	41 05.4	-80-39.0	276	17:19:12.0			67	180	342	342	0.937	0.886
<b>OKLAHOMA</b>												
Clinton	35 31.0	-98-59.0	-	16:29:44.3	5 47.9	243	58	115	338	29	0.942	0.887
Enid	36 23.7	-97-52.5	407	16:33:30.9	5 59.6	241	59	119	338	206	0.942	0.888
Lawton	34 36.0	-98-25.0	-	16:29:01.6			58	114	338	30	0.937	0.885
Midwest City	35 26.0	-97-23.0	-	16:32:38.1	2 23.4	242	59	118	338	27	0.942	0.888
Norman	35 13.0	-97-25.0	-	16:32:09.2			59	117	338	28	0.940	0.887
Muskogee	35 44.0	-95-21.0	-	16:37:17.5			61	122	338	24	0.930	0.880
Oklahoma City	35 28.8	-97-31.8	422	16:32:26.1	3 25.6	242	59	118	338	27	0.942	0.888
Ponca City	36 42.0	-97-05.0	-	16:35:37.4	6 1.2	240	59	121	338	25	0.942	0.888
Tulsa	36 08.4	-95-56.4	264	16:36:50.6	2 45.8	240	61	122	338	24	0.942	0.888
<b>OREGON</b>												
Burns	43 35.0	-119-05.0	-	16:18:16.9			38	102	160	208	0.607	0.502
Corvallis	44 34.0	-123-16.0	-	16:16:39.0			35	100	161	208	0.552	0.441
Eugene	44 03.0	-123-06.0	138	16:15:46.2			35	99	160	209	0.562	0.452
Medford	42 19.0	-122-52.0	-	16:12:34.5			35	98	160	211	0.594	0.488
Pendleton	45 40.2	-118-48.0	-	16:22:36.9			39	105	160	206	0.573	0.464
Portland	45 31.2	-122-39.0	7	16:18:59.8			35	101	161	207	0.542	0.429
Salem	44 55.8	-123-01.8	51	16:17:32.6			35	100	161	208	0.548	0.436
<b>PENNSYLVANIA</b>												
Allentown	40 35.0	-75-30.0	84	17:31:32.4			66	200	344	328	0.894	0.843
Altoona	40 25.0	-78-25.0	387	17:24:06.4			67	189	343	336	0.905	0.855
Bethlehem	40 40.0	-75-25.0	77	17:31:47.8			66	200	344	328	0.896	0.845
Erie	42 07.2	-80-04.8	225	17:21:29.4	5 44.1	229	66	183	343	340	0.943	0.890
Harrisburg	40 16.2	-76-52.8	120	17:27:51.7			67	195	343	331	0.893	0.841
Lancaster	40 05.0	-76-20.0	116	17:29:07.2			67	197	343	330	0.885	0.832
Penn Hills	40 28.0	-79-51.0	-	17:20:34.6			67	183	342	340	0.915	0.866
Philadelphia	40 00.0	-75-09.0	33	17:32:05.2			66	201	344	327	0.877	0.822
Pittsburgh	40 26.4	-79-58.2	245	17:20:15.3			67	182	342	340	0.915	0.866
Reading	40 20.0	-75-55.0	87	17:30:20.4			66	198	344	329	0.890	0.837
Scranton	41 24.6	-75-40.2	238	17:31:35.6			65	199	344	329	0.918	0.869
Upper Darby	39 58.0	-75-16.0	-	17:31:46.2			67	201	344	327	0.876	0.822
Wilkes-Barre	41 14.5	-75-53.3	210	17:30:57.7			66	198	344	329	0.914	0.865
<b>RHODE ISLAND</b>												
Cranston	41 46.0	-71-25.0	-	17:42:01.9			63	213	345	320	0.911	0.861
East Providence	41 49.0	-71-22.0	-	17:42:09.7			63	213	345	320	0.912	0.862
Pawtucket	41 53.0	-71-23.0	-	17:42:08.1			63	213	345	320	0.914	0.865
Providence	41 49.2	-71-25.8	-	17:42:00.6			63	212	345	320	0.912	0.863
Warwick	41 42.0	-71-27.0	26	17:41:56.2			63	213	345	320	0.909	0.859
<b>SOUTH CAROLINA</b>												
Charleston	32 48.6	-79-57.6	3	17:11:45.5			75	176	341	344	0.707	0.620
Columbia	34 00.6	-81 00.0	62	17:10:15.1			74	171	340	348	0.748	0.669
Greenville	34 51.0	-82-23.4	317	17:07:25.4			72	165	340	353	0.782	0.710
North Charleston	32 49.0	-79-57.0	-	17:11:47.9			75	176	341	344	0.707	0.620
Spartanburg	34 56.4	-81-55.8	287	17:08:50.0			72	168	340	351	0.781	0.708
<b>SOUTH DAKOTA</b>												
Pierre	44 22.2	-100-20.4	486	16:43:37.1			54	129	160	196	0.768	0.692
Rapid City	44 04.2	-103-13.8	1060	16:38:32.1			52	123	160	199	0.747	0.667
Sioux Falls	43 32.4	-96-42.6	364	16:48:24.8			57	135	160	193	0.819	0.753
<b>TENNESSEE</b>												
Chattanooga	35 02.4	-85-16.8	221	16:59:50.2			71	152	339	4	0.812	0.745
Clarksville	36 30.0	-87-23.0	-	16:56:43.8			68	147	339	7	0.869	0.813
Knoxville	35 58.8	-83-56.4	292	17:04:46.6			71	160	340	357	0.825	0.761
Memphis	35 07.2	-89-59.4	90	16:48:06.4			67	135	338	17	0.859	0.802
Nashville	36 09.6	-86-46.2	194	16:57:43.5			69	148	339	6	0.855	0.796



Table 10a  
**CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994**  
**FOR THE UNITED STATES OF AMERICA**

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt.	Sun Az.	P	V	Eclipse Mag.	Eclipse Obs.
<b>TEXAS</b>												
Abilene	32 25.0	-99-45.0	561	16:22:12.4			57	108	337	35	0.902	0.851
Amarillo	35 12.0	-101-51.0	1209	16:23:59.0	4 36.3	247	54	110	158	211	0.942	0.887
Arlington	32 44.0	-97-07.0	-	16:27:54.9			60	113	337	32	0.879	0.824
Austin	30 17.4	-97-43.8	196	16:21:49.2			59	107	337	37	0.828	0.764
Baytown	29 44.0	-95-01.0	-	16:26:20.6			62	109	337	36	0.782	0.709
Beaumont	30 04.8	-94-07.2	7	16:29:00.8			63	112	337	35	0.780	0.707
Brownsville	25 54.6	-97-29.4	5	16:13:25.1			58	98	336	45	0.721	0.636
Corpus Christi	27 45.0	-97-24.6	11	16:17:19.4			59	102	336	42	0.764	0.687
Dallas	32 47.4	-96-47.4	143	16:28:41.1			60	113	337	32	0.876	0.821
El Paso	31 47.4	-106-25.2	1285	16:09:55.6	5 39.7	256	49	99	337	39	0.941	0.885
Fort Worth	32 44.9	-97-19.7	220	16:27:31.2			59	112	337	32	0.881	0.827
Galveston	29 18.0	-94-48.6	2	16:25:55.5			62	109	337	37	0.769	0.694
Garland	32 55.0	-96-39.0	-	16:29:13.1			60	114	337	31	0.878	0.823
Grand Prairie	32 45.0	-97 00.0	-	16:28:11.0			60	113	337	32	0.878	0.823
Houston	29 45.0	-95-23.4	13	16:25:34.2			62	109	337	37	0.787	0.715
Irving	32 49.0	-96-57.0	-	16:28:24.9			60	113	337	32	0.879	0.824
Laredo	27 31.0	-99-29.0	144	16:12:50.0			56	99	336	43	0.785	0.712
Longview	32 29.0	-94-44.0	-	16:32:23.6			63	116	337	30	0.845	0.785
Lubbock	33 35.0	-101-51.0	1048	16:20:47.0	4 37.6	248	54	107	337	34	0.942	0.887
McAllen	26 12.0	-98-13.0	-	16:12:34.5			57	98	336	45	0.737	0.655
Mesquite	32 46.0	-96-35.0	-	16:29:03.6			60	114	337	32	0.873	0.818
Midland	32 05.0	-102-05.0	-	16:17:23.8			54	105	337	37	0.922	0.871
Odessa	31 51.0	-102-22.0	-	16:16:26.8			53	104	337	37	0.920	0.869
Pasadena	29 43.0	-95-13.0	-	16:25:52.6			62	109	337	36	0.784	0.712
Plano	33 01.0	-96-42.0	-	16:29:18.8			60	114	337	31	0.880	0.826
Port Arthur	29 52.0	-93-59.0	3	16:28:53.7			63	111	337	35	0.773	0.698
Plainsview	34 11.0	-101-43.0	-	16:22:12.8	5 44.7	248	55	109	337	33	0.942	0.887
Richardson	32 56.0	-96-44.0	-	16:29:04.9			60	114	337	31	0.879	0.824
San Angelo	31 28.0	-100-22.0	605	16:19:10.6			56	105	337	37	0.887	0.834
San Antonio	29 25.8	-98-30.0	213	16:18:34.5			58	104	336	39	0.817	0.751
Tyler	32 21.0	-95-19.0	-	16:30:52.9			62	115	337	31	0.849	0.789
Victoria	28 48.0	-97 00.0	-	16:20:17.0			60	105	336	40	0.784	0.711
Waco	31 33.2	-97-08.0	133	16:25:32.6			60	110	337	34	0.851	0.791
Wichita Falls	33 54.0	-98-30.0	310	16:27:29.8			58	113	337	31	0.922	0.872
<b>UTAH</b>												
Logan	41 46.0	-111-51.0	-	16:22:24.0			45	108	159	208	0.710	0.622
Ogden	41 13.5	-111-58.4	1409	16:21:11.1			44	107	159	208	0.719	0.633
Orem	40 15.0	-111-50.0	-	16:19:27.3			45	106	159	210	0.740	0.657
Provo	40 15.0	-111-40.0	1493	16:19:38.8			45	106	159	210	0.741	0.659
Salt Lake City	40 45.6	-111-52.2	1385	16:20:24.0			45	107	159	209	0.729	0.645
Sandy City	40 36.0	-111-53.0	-	16:20:04.8			44	106	159	209	0.732	0.649
<b>VERMONT</b>												
Brattleboro	42 51.1	-72-33.8	98	17:39:35.8	2 8.3	231	62	208	345	324	0.943	0.889
Burlington	44 28.8	-73-13.2	36	17:38:32.7	4 26.5	230	61	205	165	146	0.943	0.889
Montpelier	44 15.6	-72-34.2	159	17:39:55.7	5 36.6	231	61	207	165	145	0.943	0.889
<b>VIRGINIA</b>												
Alexandria	38 49.2	-77-04.8	-	17:26:15.8			68	194	343	331	0.854	0.796
Arlington	38 55.0	-77-10.0	-	17:26:06.6			68	194	343	332	0.857	0.799
Bristol	36 36.6	-82-10.8	-	17:10:19.6			71	169	341	350	0.828	0.764
Charlottesville	38 02.4	-78-29.4	-	17:21:50.3			70	188	342	336	0.841	0.780
Chesapeake	38 48.0	-76-16.0	-	17:28:24.0			68	197	343	329	0.849	0.790
Danville	36 35.4	-79-24.0	-	17:17:53.9			71	183	342	339	0.807	0.739
Hampton	37 02.0	-76-21.0	-	17:26:49.1			70	198	343	328	0.801	0.731
Lynchburg	37 24.6	-79-09.6	-	17:19:24.9			70	185	342	338	0.828	0.764
Newport News	37 03.0	-76-28.8	-	17:26:28.2			70	197	343	328	0.802	0.733
Norfolk	36 54.0	-76-16.2	3	17:26:56.1			70	198	343	328	0.796	0.727
Petersburg	37 13.2	-77-24.0	-	17:24:03.6			70	193	342	332	0.812	0.745
Portsmouth	36 50.0	-76-19.0	3	17:26:45.0			70	198	343	328	0.795	0.725
Richmond	37 32.4	-77-27.6	52	17:24:10.6			70	192	343	332	0.821	0.756
Roanoke	37 16.8	-79-57.6	297	17:17:06.5			70	181	342	341	0.830	0.767
Virginia Beach	36 50.0	-75-58.0	-	17:27:44.0			70	199	343	327	0.793	0.722



Table 10b  
**LOCAL CIRCUMSTANCES DURING THE ANNULAR SOLAR ECLIPSE OF 10 MAY 1994  
 FOR THE UNITED STATES OF AMERICA**

Location Name	First Contact				Second Contact				Third Contact				Fourth Contact			
	U.T.	Alt	P	V	U.T.	Alt	P	V	U.T.	Alt	P	V	U.T.	Alt	P	V
	h m s	°	'	"	h m s	°	'	"	h m s	°	'	"	h m s	°	'	"
<b>TEXAS</b>																
Abilene	14:50:41.1	38	253	315									18:10:11.4	74	65	86
Amarillo	14:53:59.6	36	248	307	16:21:38.4	54	211	265	16:26:14.7	55	107	161	18:08:47.6	71	71	93
Arlington	14:54:08.8	41	254	316									18:17:49.8	75	65	70
Austin	14:49:15.4	39	257	322									18:11:59.0	77	61	76
Baytown	14:51:52.5	42	259	325									18:18:29.0	78	59	56
Beaumont	14:53:41.0	43	259	325									18:21:39.6	77	59	50
Brownsville	14:43:05.1	38	262	333									18:03:16.5	80	53	86
Corpus Christi	14:45:43.9	39	260	328									18:07:44.1	79	56	79
Dallas	14:54:38.0	41	254	316									18:18:48.7	75	65	68
El Paso	14:44:02.0	31	249	312	16:07:06.4	48	256	318	16:12:46.0	49	60	122	17:51:52.3	69	68	114
Fort Worth	14:53:55.4	40	254	316									18:17:16.5	75	65	72
Galveston	14:51:30.6	42	260	326									18:18:13.5	78	58	55
Garland	14:55:01.7	41	254	316									18:19:23.2	75	65	68
Grand Prairie	14:54:18.9	41	254	316									18:18:10.5	75	65	70
Houston	14:51:23.1	42	259	325									18:17:28.0	78	59	59
Irving	14:54:29.5	41	254	316									18:18:24.8	75	65	69
Laredo	14:42:55.1	36	259	328									18:01:34.0	78	57	94
Longview	14:56:43.1	43	256	318									18:24:00.2	75	63	56
Lubbock	14:50:51.3	36	250	311	16:18:30.6	54	287	344	16:23:08.2	55	30	87	18:06:27.6	72	68	95
McAllen	14:42:32.9	37	262	332									18:01:59.4	79	54	90
Mesquite	14:54:50.6	41	254	316									18:19:20.4	75	64	67
Midland	14:47:52.7	35	252	315									18:03:26.7	73	66	97
Odessa	14:47:12.5	35	252	315									18:02:18.4	73	66	99
Pasadena	14:51:34.3	42	259	325									18:17:53.4	78	59	58
Plano	14:55:08.8	41	254	315									18:19:24.1	75	65	68
Port Arthur	14:53:33.5	43	260	325									18:21:38.9	78	58	49
Plainsview	14:52:08.0	36	249	310	16:19:21.4	54	261	317	16:25:06.2	55	56	112	18:07:42.4	72	69	94
Richardson	14:54:57.5	41	254	316									18:19:11.1	75	65	68
San Angelo	14:48:22.6	37	253	317									18:06:56.4	75	64	90
San Antonio	14:46:58.2	38	257	323									18:08:13.5	77	60	83
Tyler	14:55:43.0	42	256	318									18:22:11.0	75	63	59
Victoria	14:47:48.6	39	259	326									18:11:05.5	78	58	73
Waco	14:52:04.5	40	255	319									18:15:52.2	76	63	71
Wichita Falls	14:54:42.8	39	252	312									18:15:49.4	73	67	78
<b>UTAH</b>																
Logan	15:02:29.9	30	235	287									17:52:33.8	59	86	120
Ogden	15:01:10.8	30	236	288									17:51:42.9	59	85	121
Orem	14:58:59.1	29	237	290									17:50:57.9	60	84	121
Provo	14:59:02.1	29	237	290									17:51:19.3	60	84	121
Salt Lake City	15:00:08.2	30	236	289									17:51:26.4	60	85	121
Sandy City	14:59:46.3	29	236	289									17:51:14.7	60	84	121
<b>VERMONT</b>																
Brattleboro	15:54:14.1	62	256	277	17:38:36.7	63	327	305	17:40:44.9	62	7	345	19:21:09.8	49	78	34
Burlington	15:54:51.6	61	253	274	17:36:16.1	61	213	195	17:40:42.6	61	120	101	19:18:47.2	49	80	39
Montpelier	15:55:55.5	61	254	273	17:37:05.3	61	233	214	17:42:41.9	61	101	80	19:20:05.2	48	80	38
<b>VIRGINIA</b>																
Alexandria	15:39:11.5	62	259	296									19:13:53.6	55	71	24
Arlington	15:39:07.2	62	259	296									19:13:42.1	55	71	25
Bristol	15:25:02.6	57	259	308									19:01:42.7	62	67	23
Charlottesville	15:35:00.5	61	259	301									19:10:47.1	57	69	23
Chesapeake	15:41:01.4	63	260	296									19:15:37.5	54	71	23
Danville	15:31:03.6	60	261	306									19:08:22.6	59	67	19
Hampton	15:38:45.6	63	262	302									19:15:25.0	55	68	18
Lynchburg	15:32:40.6	60	260	303									19:09:09.7	58	68	22
Newport News	15:38:27.8	63	262	302									19:15:08.0	55	68	18
Norfolk	15:38:48.4	64	262	302									19:15:34.5	55	68	17
Petersburg	15:36:28.1	62	261	302									19:13:07.0	56	68	19
Portsmouth	15:38:37.1	64	262	302									19:15:27.7	55	67	17
Richmond	15:36:43.0	62	261	301									19:13:01.7	56	69	20
Roanoke	15:30:43.9	60	260	304									19:07:16.8	59	68	22
Virginia Beach	15:39:28.6	64	263	302									19:16:13.9	55	67	17

Table 11a  
CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994  
FOR CANADA

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt.	Sun Az.	P	V	Eclipse Mag.	Eclipse Obs.
<b>ALBERTA</b>												
Banff	51 10.0	-115-34.0	-	16:36:13.0			41	116	161	198	0.508	0.392
Calgary	51 03.0	-114-05.0	1161	16:37:29.6			42	118	161	197	0.521	0.406
Edmonton	53 33.0	-113-28.0	728	16:42:38.1			42	121	162	194	0.484	0.366
Lethbridge	49 41.4	-112-49.2	979	16:36:20.1			43	117	161	198	0.555	0.444
Medicine Hat	50 03.0	-110-40.0	-	16:39:24.5			45	121	161	197	0.566	0.457
Red Deer	52 16.0	-113-48.0	-	16:40:00.2			42	119	162	196	0.503	0.387
<b>BRITISH COLUMBIA</b>												
Fort Nelson	58 50.0	-122-35.0	411	16:44:22.9			35	116	163	193	0.342	0.223
Kamloops	50 40.0	-120-20.0	-	16:30:53.2			38	109	161	200	0.478	0.360
Kelowna	49 53.0	-119-29.0	-	16:30:07.7			38	109	161	201	0.497	0.380
Matsqui	49 12.0	-122-25.0	-	16:26:20.6			36	105	161	203	0.484	0.367
Nanaimo	49 10.0	-123-56.0	-	16:25:06.0			35	104	161	203	0.473	0.354
Penticton	49 19.2	-119-37.2	370	16:28:55.6			38	109	161	202	0.505	0.389
Prince George	53 55.0	-122-45.0	728	16:35:07.1			36	110	162	198	0.410	0.290
Prince Rupert	54 19.2	-130-19.2	56	16:30:53.7			31	103	163	199	0.351	0.232
Vancouver	49 16.0	-123-07.0	42	16:25:55.2			35	105	161	203	0.478	0.359
Victoria	48 26.0	-123-23.0	19	16:24:05.7			35	104	161	204	0.489	0.371
<b>MANITOBA</b>												
Brandon	49 51.0	-99-57.0	415	16:53:09.4			52	138	161	188	0.656	0.559
Churchill	58 46.0	-94-10.0	31	17:12:19.2			47	158	164	176	0.512	0.397
Selkirk	50 10.0	-96-52.0	-	16:58:16.7			53	144	162	185	0.673	0.579
The Pas	53 49.8	-101-15.0	292	16:57:15.8			49	141	162	185	0.567	0.457
Winnipeg	49 53.0	-97-09.0	257	16:57:26.3			53	144	161	185	0.677	0.583
<b>NEW BRUNSWICK</b>												
Chatham	47 02.0	-65-28.0	36	17:54:20.1			55	222	168	139	0.900	0.848
Edmunston	47 22.0	-68-20.0	-	17:48:46.9			56	215	167	142	0.887	0.833
Fredericton	45 57.0	-66-38.5	10	17:52:22.6			56	221	167	139	0.927	0.877
Moncton	46 05.4	-64-47.4	12	17:55:57.4			55	225	168	137	0.926	0.876
St. John	45 16.0	-66-03.0	39	17:53:44.0	3 17.8	234	56	223	167	137	0.942	0.887
St. Stephen	45 12.0	-67-17.0	-	17:51:14.4	3 18.4	233	57	220	167	138	0.942	0.888
<b>NEWFOUNDLAND</b>												
Gander	48 57.0	-54-37.0	163	18:11:10.2			46	239	170	134	0.845	0.784
St. John's	47 34.0	-52-43.0	69	18:15:14.5			45	244	171	131	0.878	0.822
<b>NOVA SCOTIA</b>												
Bridgewater	44 23.0	-64-31.0	-	17:57:06.6	6 0.1	235	56	227	348	314	0.942	0.887
Dartmouth	44 40.0	-63-34.0	8	17:58:54.3	5 51.9	235	55	229	168	134	0.942	0.887
Glace Bay	46 12.0	-59-57.0	-	18:04:50.9			51	234	169	133	0.924	0.873
Guysborough	45 23.0	-61-30.0	-	18:02:31.8	3 10.3	237	53	232	169	133	0.942	0.886
Halifax	44 39.0	-63-36.0	27	17:58:50.8	5 53.0	235	55	229	168	134	0.942	0.887
Kentville	45 05.0	-64-30.0	-	17:56:53.5	4 45.2	235	55	226	168	135	0.942	0.887
Liverpool	44 02.0	-64-43.0	-	17:56:49.2	5 34.8	235	56	227	348	314	0.942	0.887
New Glasgow	45 35.0	-62-39.0	-	18:00:15.8			54	229	168	134	0.941	0.886
Port Hawkesbury	45 37.0	-61-21.0	-	18:02:40.6			52	232	169	133	0.940	0.886
Sable Island	43 55.0	-59-50.0	-	18:06:32.0	5 5.9	238	52	237	349	310	0.941	0.886
Shelburne	43 46.0	-65-19.0	-	17:55:39.4	4 46.9	234	57	226	348	314	0.942	0.888
Sydney	46 08.4	-60-10.8	5	18:04:28.8			51	233	169	133	0.925	0.875
Truro	45 22.0	-63-16.0	-	17:59:11.2	3 11.7	235	54	229	168	135	0.942	0.887
Windsor	44 59.0	-64-08.0	-	17:57:39.3	5 9.9	235	55	227	168	135	0.942	0.887
Yarmouth	43 50.0	-66-07.0	-	17:53:57.3	5 11.3	234	57	224	347	315	0.942	0.888
<b>NORTHWEST TERRITORY</b>												
Aklavik	68 14.0	-135 00.0	10	16:55:01.9			27	111	165	187	0.175	0.084
Alert	82 31.0	-62-20.0	31	17:36:22.9			25	204	169	166	0.154	0.070
Fort Simpson	61 45.0	-121-14.0	182	16:50:31.3			35	121	164	189	0.312	0.195
Frrobisher Bay	63 45.0	-68-33.0	36	17:43:35.9			42	204	168	157	0.486	0.369
Resolute	74 43.0	-94-59.0	72	17:23:58.9			33	165	167	171	0.234	0.129
Yellowknife	62 27.0	-114-21.0	221	16:56:46.4			38	130	164	186	0.340	0.222

Table 11b  
**LOCAL CIRCUMSTANCES DURING THE ANNULAR SOLAR ECLIPSE OF 10 MAY 1994  
 FOR CANADA**

Location Name	First Contact				Second Contact				Third Contact				Fourth Contact				
	U.T.		Alt	P	U.T.		Alt	P	U.T.		Alt	P	U.T.		Alt	P	V
	h	m	s	.	.	h	m	s	.	.	h	m	s	.	.	h	m
<b>ALBERTA</b>																	
Banff	15:25:07.9	30	224	265										17:52:39.6	50	101	127
Calgary	15:25:09.5	31	225	265										17:55:18.8	51	100	125
Edmonton	15:32:00.1	32	223	260										17:57:40.8	50	103	125
Lethbridge	15:21:55.3	32	227	269										17:56:55.4	53	98	122
Medicine Hat	15:23:33.8	33	228	269										18:01:19.4	54	97	119
Red Deer	15:28:28.0	32	224	263										17:56:29.7	51	102	125
<b>BRITISH COLUMBIA</b>																	
Fort Nelson	15:45:23.3	28	214	246										17:45:37.4	42	114	138
Kamloops	15:23:10.1	27	222	264										17:43:50.1	48	103	134
Kelowna	15:21:10.1	27	223	266										17:44:42.5	49	101	133
Matsqui	15:19:14.5	25	222	266										17:39:02.7	47	102	137
Nanaimo	15:19:10.6	24	222	265										17:36:28.1	46	103	139
Penticton	15:19:40.9	27	224	267										17:44:00.7	49	101	133
Prince George	15:31:48.7	27	218	256										17:42:15.1	44	108	137
Prince Rupert	15:33:33.5	22	214	252										17:31:21.9	39	113	146
Vancouver	15:19:25.0	25	222	265										17:37:55.2	46	102	138
Victoria	15:17:15.7	24	223	267										17:36:42.8	46	102	138
<b>MANITOBA</b>																	
Brandon	15:28:55.1	41	233	272										18:23:01.1	58	92	96
Churchill	15:55:32.3	42	226	250										18:30:11.6	49	104	101
Selkirk	15:32:09.8	43	234	271										18:29:21.1	58	92	90
The Pas	15:38:08.1	40	228	262										18:20:13.1	54	99	104
Winnipeg	15:31:13.8	43	235	272										18:28:48.3	58	92	90
<b>NEW BRUNSWICK</b>																	
Chatham	16:13:37.9	61	253	254										19:27:49.4	41	85	43
Edmunston	16:08:10.3	60	251	258										19:23:29.4	44	85	45
Fredericton	16:10:14.1	62	254	258										19:27:34.5	43	84	40
Moncton	16:14:16.7	62	254	255										19:29:54.4	41	84	40
St. John	16:10:55.0	62	255	259	17:52:01.4	56	202	172	17:55:19.2	56	136	105		19:29:11.4	42	83	38
St. Stephen	16:08:11.4	62	255	261	17:49:31.4	57	202	174	17:52:49.9	57	135	106		19:27:31.0	43	82	38
<b>NEWFOUNDLAND</b>																	
Gander	16:36:21.2	56	252	234										19:36:28.5	33	91	48
St. John's	16:39:53.8	57	255	232										19:40:16.1	31	89	44
<b>NOVA SCOTIA</b>																	
Bridgewater	16:13:39.7	63	257	257	17:54:06.7	56	262	229	18:00:06.8	55	76	42		19:32:16.8	41	81	35
Dartmouth	16:15:58.7	63	257	255	17:55:57.4	55	248	215	18:01:49.3	54	91	56		19:33:12.7	40	82	36
Glace Bay	16:24:41.7	61	255	245										19:35:34.7	37	85	40
Guysborough	16:20:57.7	62	256	249	18:00:53.2	53	203	167	18:04:03.5	53	138	102		19:34:53.8	38	84	38
Halifax	16:15:53.6	63	257	255	17:55:53.4	55	249	216	18:01:46.4	54	90	55		19:33:11.3	40	82	36
Kentville	16:14:10.3	63	256	256	17:54:28.2	56	222	190	17:59:13.4	55	117	84		19:31:30.2	41	83	37
Liverpool	16:12:58.7	64	257	258	17:54:03.5	56	282	248	17:59:38.4	56	57	23		19:32:23.5	41	81	34
New Glasgow	16:18:32.9	62	256	251										19:33:15.3	39	84	38
Port Hawkesbu...	16:21:24.3	62	256	249										19:34:46.3	38	84	38
Sable Island	16:24:09.7	63	259	248	18:04:01.1	52	291	252	18:09:07.0	52	50	10		19:38:39.3	37	82	34
Shelburne	16:11:25.6	64	258	260	17:53:18.9	57	297	264	17:58:05.7	56	41	7		19:31:50.6	42	80	34
Sydney	16:24:10.6	61	255	246										19:35:24.4	37	85	40
Truro	16:17:04.2	62	256	253	17:57:31.8	54	202	169	18:00:43.5	54	137	103		19:32:45.4	40	83	38
Windsor	16:14:54.8	63	256	255	17:55:02.1	55	229	197	18:00:12.1	55	110	76		19:32:06.2	41	82	37
Yarmouth	16:09:38.7	64	257	262	17:51:24.1	58	290	259	17:56:35.4	57	48	15		19:30:38.4	42	80	34
<b>NORTHWEST TERRITORY</b>																	
Aklavik	16:13:09.6	24	201	224										17:36:56.6	31	131	150
Alert	16:57:15.4	25	203	201										18:14:17.1	24	137	133
Fort Simpson	15:53:36.5	29	212	241										17:48:55.0	40	117	137
Frobisher Bay	16:29:01.2	44	228	228										18:55:06.4	38	110	90
Resolute	16:33:45.6	31	208	216										18:13:10.3	33	128	128
Yellowknife	15:56:20.1	32	214	241										17:58:32.2	42	115	130

Table 11a  
CIRCUMSTANCES AT MAXIMUM ECLIPSE ON 10 MAY 1994  
FOR CANADA

Location Name	Latitude	Longitude	Elev. m	U.T. h m s	Umbral Durat. m s	Path Width km	Sun Alt °	Sun Az. °	P	V	Eclipse Mag.	Eclipse Obs.
<b>ONTARIO</b>												
Barrie	44 24.0	-79-40.0	-	17:24:14.4			63	185	163	160	0.925	0.876
Brantford	43 08.0	-80-16.0	231	17:21:54.6	5 2.4	229	65	182	163	161	0.943	0.889
Cambridge	43 22.0	-80-19.0	-	17:21:59.2	3 40.1	229	64	182	163	161	0.943	0.889
Chatham	42 24.0	-82-11.0	-	17:16:50.8	5 53.0	230	65	175	162	166	0.943	0.889
Cornwall	45 02.0	-74-44.0	-	17:35:24.4			61	200	165	150	0.931	0.881
Guelph	43 33.0	-80-15.0	349	17:22:17.3	1 42.5	229	64	183	163	161	0.943	0.889
Hamilton	43 15.0	-79-51.0	108	17:22:57.3	4 55.9	229	64	184	163	160	0.943	0.889
Kapuskasing	49 25.0	-82-28.0	244	17:22:11.1			58	178	164	165	0.783	0.709
Kingston	44 15.0	-76-38.0	87	17:30:52.8	1 49.4	230	63	195	164	153	0.943	0.889
Kitchener	43 27.0	-80-29.0	361	17:21:40.8	2 28.2	229	64	182	163	161	0.943	0.889
London	42 59.0	-81-14.0	270	17:19:34.5	4 43.8	230	65	179	162	163	0.943	0.889
Niagara Falls	43 06.0	-79-04.0	194	17:24:38.1	5 53.4	229	64	187	163	158	0.943	0.889
North Bay	49 19.0	-79-28.0	399	17:27:43.4			58	186	164	160	0.800	0.730
Ottawa	45 25.0	-75-42.0	123	17:33:28.0			61	197	165	152	0.917	0.868
Oshawa	43 54.0	-78-51.0	115	17:25:42.1			64	187	163	158	0.943	0.889
Peterborough	44 18.0	-78-19.5	221	17:27:08.5			63	189	164	157	0.935	0.884
Port Arthur	48 22.0	-89-19.0	211	17:08:37.6			58	159	162	176	0.767	0.690
Pt. Pelee N.P.	41 57.0	-82-30.0	-	17:15:39.5	6 13.6	230	66	174	342	347	0.943	0.890
St. Catharines	43 10.0	-79-15.0	119	17:24:15.8	5 39.2	229	64	186	163	158	0.943	0.889
St. Thomas	42 47.0	-81-12.0	-	17:19:28.1	5 31.6	230	65	179	162	163	0.943	0.889
Sarnia	42 58.0	-82-23.0	-	17:16:56.8	2 55.1	230	65	175	162	166	0.943	0.889
Sault St. Marie	46 31.8	-84-19.8	193	17:16:12.7			61	171	163	169	0.844	0.783
Sudbury	46 28.0	-81 00.0	279	17:22:55.1			61	181	163	162	0.864	0.807
Thunder Bay	48 25.2	-89-13.8	202	17:08:50.6			58	160	162	176	0.766	0.690
Toronto	43 39.0	-79-23.0	124	17:24:19.3	2 54.4	229	64	186	163	159	0.943	0.889
Welland	43 04.0	-79-03.0	-	17:24:38.9	5 57.5	229	65	187	163	158	0.943	0.889
Windsor	42 18.0	-83-01.0	198	17:14:49.8	5 37.3	230	65	172	162	168	0.943	0.889
Woodstock	43 08.0	-80-45.0	-	17:20:48.4	4 32.4	229	65	181	163	162	0.943	0.889
Prince Edward Island												
Charlottetown	46 14.0	-63-08.0	59	17:59:02.5			54	228	168	136	0.923	0.873
<b>QUEBEC</b>												
Chicoutimi	48 26.0	-71-04.0	-	17:43:27.5			57	208	166	147	0.852	0.793
Drummondville	45 53.0	-72-29.0	-	17:40:25.6			60	206	166	147	0.916	0.867
Knob Lake	54 48.0	-66-49.0	562	17:49:16.4			49	212	168	149	0.697	0.607
Montreal	45 31.0	-73-34.0	61	17:38:03.8			60	203	165	148	0.922	0.873
Quebec City	46 49.0	-71-14.0	78	17:43:05.7			58	209	166	146	0.895	0.843
Shawinigan	46 33.0	-72-45.0	-	17:39:59.1			59	205	166	148	0.898	0.846
Sherbrooke	45 25.0	-71-54.0	176	17:41:35.2			60	208	166	145	0.931	0.881
Trois-Rivieres	46 21.0	-72-33.0	38	17:40:21.9			59	206	166	147	0.903	0.853
<b>SASKATCHEWAN</b>												
Moose Jaw	50 23.0	-105-32.0	585	16:46:16.6			48	129	161	193	0.602	0.496
Regina	50 25.0	-104-39.0	618	16:47:29.3			49	131	161	192	0.608	0.504
Saskatoon	52 07.0	-106-38.0	554	16:47:46.9			47	130	162	192	0.560	0.450
<b>YUKON TERRITORY</b>												
Inuvik	68 25.0	-133-30.0	-	16:55:56.2			28	113	165	186	0.180	0.088
Whitehorse	60 43.0	-135-03.0	756	16:40:51.8			28	104	164	194	0.246	0.139

Table 11b  
**LOCAL CIRCUMSTANCES DURING THE ANNULAR SOLAR ECLIPSE OF 10 MAY 1994  
 FOR CANADA**

Location Name	First Contact				Second Contact				Third Contact				Fourth Contact			
	U.T.	Alt	P	V	U.T.	Alt	P	V	U.T.	Alt	P	V	U.T.	Alt	P	V
	h m s	'	"	"	h m s	'	"	"	h m s	'	"	"	h m s	'	"	"
<b>ONTARIO</b>																
Barrie	15:42:18.0	57	250	281									19:06:51.0	55	80	45
Brantford	15:39:05.0	57	251	286	17:19:20.4	65	219	218	17:24:22.8	65	110	107	19:06:12.7	56	78	41
Cambridge	15:39:23.0	57	251	285	17:20:05.0	64	201	200	17:23:45.1	64	128	125	19:06:00.9	56	78	42
Chatham	15:34:21.8	56	251	289	17:13:52.6	65	235	240	17:19:45.6	65	92	95	19:02:22.2	58	77	42
Cornwall	15:52:34.5	60	252	274									19:15:41.6	50	81	42
Guelph	15:39:48.7	57	251	284	17:21:21.1	64	181	179	17:23:03.6	64	148	146	19:06:04.9	55	79	43
Hamilton	15:40:02.7	57	252	285	17:20:26.2	64	217	215	17:25:22.1	64	112	108	19:07:01.3	55	78	41
Kapuskasing	15:46:58.3	52	242	269									18:58:05.3	53	88	63
Kingston	15:47:43.6	59	252	279	17:29:53.3	63	183	172	17:31:42.6	63	148	137	19:12:48.0	52	80	41
Kitchener	15:39:13.2	57	251	285	17:20:21.9	64	188	187	17:22:50.2	64	141	139	19:05:38.6	56	79	43
London	15:37:04.3	56	251	287	17:17:09.2	65	214	216	17:21:53.0	65	114	114	19:04:14.9	57	78	42
Niagara Falls	15:41:16.2	58	252	285	17:21:39.8	65	236	233	17:27:33.2	64	93	87	19:08:40.7	55	78	40
North Bay	15:51:15.5	54	244	267									19:03:34.2	51	88	59
Ottawa	15:51:15.9	59	251	274									19:13:40.1	51	82	44
Oshawa	15:42:58.0	58	251	282									19:08:43.9	54	79	42
Peterborough	15:44:35.4	58	251	280									19:09:32.5	53	80	43
Port Arthur	15:35:42.5	48	240	275									18:45:22.0	58	87	71
Pt. Pelee N.P.	15:33:01.0	56	252	291	17:12:32.9	66	255	261	17:18:46.5	66	73	76	19:01:45.6	58	76	41
St. Catharines	15:41:01.8	58	252	285	17:21:24.1	64	230	227	17:27:03.3	64	99	93	19:08:16.7	55	78	40
St. Thomas	15:36:47.4	57	251	288	17:16:40.0	65	227	229	17:22:11.6	65	101	101	19:04:22.6	57	77	42
Sarnia	15:35:00.5	56	251	288	17:15:24.6	65	192	196	17:18:19.7	65	136	139	19:01:48.3	58	78	44
Sault St. Mar...	15:38:33.7	53	245	278									18:56:22.9	57	84	57
Sudbury	15:43:38.3	55	247	276									19:03:01.3	54	83	52
Thunder Bay	15:35:55.9	49	240	275									18:45:31.4	58	87	71
Toronto	15:41:34.1	58	251	283	17:22:47.5	64	193	189	17:25:41.9	64	137	132	19:07:47.5	55	79	42
Welland	15:41:14.9	58	252	285	17:21:38.7	65	239	235	17:27:36.2	64	91	85	19:08:43.5	55	78	40
Windsor	15:32:43.2	55	251	290	17:11:59.0	65	228	236	17:17:36.3	65	99	103	19:00:34.3	59	77	43
Woodstock	15:38:12.1	57	251	286	17:18:28.7	65	211	212	17:23:01.0	65	117	116	19:05:12.4	56	78	42
<b>PRINCE EDWARD ISLAND</b>																
Charlottetown	16:17:54.5	61	255	251									19:31:49.7	40	85	40
<b>QUEBEC</b>																
Chicoutimi	16:04:12.1	58	249	260									19:18:12.2	46	87	49
Drummondville	15:58:10.1	60	252	269									19:18:46.6	48	83	43
Knob Lake	16:19:21.6	53	241	242									19:14:12.5	41	97	66
Montreal	15:55:32.4	60	252	271									19:17:18.5	49	82	42
Quebec City	16:01:49.2	60	251	264									19:19:49.1	46	84	45
Shawinigan	15:58:31.8	59	250	267									19:17:40.9	48	84	45
Sherbrooke	15:58:44.6	61	252	269									19:20:10.9	47	82	41
Trois-Rivieres	15:58:39.0	60	251	267									19:18:12.6	48	83	44
<b>SASKATCHEWAN</b>																
Moose Jaw	15:26:43.2	37	230	270									18:11:40.3	56	95	109
Regina	15:27:17.4	37	230	270									18:13:27.8	56	95	107
Saskatoon	15:30:40.4	36	228	265									18:09:54.6	54	98	112
<b>YUKON TERRITORY</b>																
Inuvik	16:13:22.9	24	202	224									17:38:31.5	31	130	149
Whitehorse	15:52:09.7	22	207	238									17:30:50.7	34	123	150