

TABLE 2.13
LOCAL CIRCUMSTANCES FOR SOUTH ASIA
ANNULAR SOLAR ECLIPSE OF 2010 JANUARY 15

Location Name	Latitude	Longitude	Elev. m	First Contact			Second Contact			Third Contact			Fourth Contact			Maximum Eclipse				Eclip. Mag.	Eclip. Obs.	Umbral Depth	Umbral Durat.			
				U.T.	P	V Alt	U.T.	P	V	U.T.	P	V	U.T.	P	V Alt	U.T.	P	V Alt	Azm							
				h m s	°	°	h m s	°	°	h m s	°	°	h m s	°	°	h m s	°	°	°							
AFGHANISTAN																										
Kabul	34°31'N	069°12'E	1815	06:22:24.6	203	220	32	—	—	—	—	09:13:24.3	101	77	29	07:51:13.4	151	147	34	185	0.322	0.203				
BANGLADESH																										
Chittagong	22°20'N	091°50'E	—	06:45:36.1	233	218	45	—	—	—	—	10:01:47.9	61	4	17	08:32:53.2	146	104	33	223	0.898	0.825				
Dacca	23°43'N	090°25'E	—	06:44:06.7	230	218	44	—	—	—	—	10:00:58.7	64	9	18	08:31:36.9	147	107	33	221	0.844	0.770				
Khulna	22°48'N	089°33'E	—	06:40:38.1	230	220	45	—	—	—	—	10:00:10.2	64	9	19	08:29:41.6	146	107	35	220	0.850	0.776				
Rajshahi	24°22'N	088°36'E	—	06:40:46.9	228	219	44	—	—	—	—	09:59:24.9	67	14	19	08:29:08.2	147	109	34	218	0.800	0.720				
BHUTAN																										
Thimbu	27°28'N	089°39'E	—	06:47:54.3	225	214	41	—	—	—	—	09:59:53.2	71	19	16	08:32:14.3	147	111	31	219	0.751	0.663				
INDIA																										
Ahmadabad	23°02'N	072°37'E	55	05:57:16.2	218	243	42	—	—	—	—	09:33:32.6	81	42	35	07:52:21.6	148	137	45	191	0.564	0.450				
Ambasamudram	08°42'N	077°28'E	—	05:37:05.7	238	275	54	07:41:56.6	199	178	07:50:19.7	92	68	09:36:28.8	56	360	41	07:46:08.7	145	123	58	201	0.918	0.843	0.406	08m23s
Aruppukottai	09°31'N	078°06'E	—	05:40:53.1	238	271	54	07:45:49.7	187	165	07:52:47.4	103	77	09:38:26.1	56	360	40	07:49:18.8	145	121	57	203	0.918	0.842	0.260	06m58s
Bangalore	12°59'N	077°35'E	895	05:46:31.4	233	262	52	—	—	—	—	09:41:07.4	62	8	38	07:53:29.7	146	123	53	202	0.846	0.774				
Bombay	18°58'N	072°50'E	8	05:46:43.5	223	254	44	—	—	—	—	09:34:58.4	75	33	38	07:48:10.7	147	136	49	191	0.645	0.541				
Calcutta	22°32'N	088°22'E	6	06:37:15.5	229	222	46	—	—	—	—	09:59:05.9	64	10	20	08:27:34.8	146	108	36	219	0.835	0.761				
Delhi	28°40'N	077°13'E	—	06:23:15.8	214	225	39	—	—	—	—	09:40:59.6	84	44	27	08:09:10.3	148	129	38	200	0.531	0.413				
Hyderabad	17°23'N	078°29'E	531	05:59:24.0	228	248	49	—	—	—	—	09:45:17.8	67	16	33	08:02:00.3	146	122	48	204	0.771	0.687				
Jaipur	26°55'N	075°49'E	—	06:15:42.8	215	230	40	—	—	—	—	09:39:11.3	83	43	29	08:04:37.8	148	131	40	198	0.542	0.425				
Kanpur	26°28'N	080°21'E	—	06:25:18.6	219	225	42	—	—	—	—	09:48:12.2	78	33	25	08:14:56.1	147	122	38	206	0.622	0.514				
Karaikkudi	10°04'N	078°47'E	—	05:44:19.1	237	268	54	07:48:32.1	189	164	07:55:38.4	101	74	09:40:04.7	56	360	39	07:52:05.5	145	119	56	204	0.918	0.842	0.278	07m06s
Kanpur	26°28'N	080°21'E	—	06:25:18.6	219	225	42	—	—	—	—	09:48:12.2	78	33	25	08:14:56.1	147	122	38	206	0.622	0.514				
Karaikkudi	10°04'N	078°47'E	—	05:44:19.1	237	268	54	07:48:32.1	189	164	07:55:38.4	101	74	09:40:04.7	56	360	39	07:52:05.5	145	119	56	204	0.918	0.842	0.278	07m06s
Kumbakonam	10°58'N	079°23'E	—	05:48:10.5	236	264	54	07:53:07.5	168	142	07:57:09.8	122	93	09:41:55.6	57	0	37	07:55:08.5	145	118	54	206	0.917	0.842	0.082	04m02s
Lucknow	26°51'N	080°55'E	122	06:27:28.0	219	224	42	—	—	—	—	09:48:58.7	78	33	25	08:16:22.5	147	121	37	207	0.623	0.516				
Madras	13°05'N	080°17'E	16	05:55:32.4	234	256	53	—	—	—	—	09:45:13.9	59	3	35	08:00:40.5	145	116	51	208	0.892	0.823				
Madurai	09°56'N	078°07'E	—	05:41:47.0	230	270	54	07:48:24.5	164	140	07:51:42.9	127	102	09:38:56.7	57	1	40	07:50:03.5	145	121	56	203	0.918	0.842	0.053	03m18s
Nagappattinam	10°46'N	079°50'E	—	05:49:17.7	237	263	55	07:51:59.2	197	170	07:59:58.9	93	63	09:42:19.8	56	359	37	07:55:59.5	145	116	54	207	0.917	0.842	0.384	08m00s
Nagercoil	08°10'N	077°26'E	—	05:35:56.2	239	276	54	07:40:10.6	216	196	07:50:02.0	75	50	09:35:44.9	55	358	42	07:45:07.1	145	123	59	201	0.918	0.843	0.669	09m51s
Nagpur	21°09'N	079°06'E	—	06:09:58.8	224	238	46	—	—	—	—	09:47:09.6	71	23	30	08:07:46.4	146	122	44	205	0.706	0.611				
New Delhi	28°36'N	077°12'E	212	06:23:04.2	214	225	39	—	—	—	—	09:41:00.7	84	44	27	08:09:06.0	148	129	38	200	0.532	0.414				
Palayankottai	08°43'N	077°44'E	—	05:38:02.4	239	274	54	07:42:22.2	206	185	07:51:27.6	84	59	09:36:54.5	56	359	41	07:46:55.5	145	122	58	202	0.918	0.843	0.514	09m05s
Patna	25°36'N	085°07'E	—	06:34:42.2	223	221	43	—	—	—	—	09:55:27.8	72	22	22	08:23:51.9	147	114	36	213	0.717	0.623				
Pudukkottai	10°23'N	078°49'E	—	05:45:04.3	237	267	54	07:50:10.4	175	150	07:55:13.8	115	88	09:40:29.0	57	0	38	07:52:42.1	145	119	55	205	0.918	0.842	0.130	05m03s
Pune	18°32'N	073°52'E	—	05:48:34.2	224	253	45	—	—	—	—	09:36:47.1	73	29	37	07:50:44.5	147	134	49	193	0.670	0.570				
Quilon	08°53'N	076°36'E	—	05:34:31.1	238	276	53	—	—	—	—	09:35:19.6	57	2	42	07:43:58.5	146	126	58	198	0.915	0.842				
Rajapalayam	09°27'N	077°34'E	—	05:38:56.2	237	272	54	07:45:56.3	165	143	07:49:29.9	125	102	09:37:32.6	57	1	41	07:47:42.9	145	123	57	201	0.918	0.842	0.060	03m34s
Sivakasi	09°27'N	077°49'E	—	05:39:47.2	238	272	54	07:45:31.2	179	157	07:51:18.4	111	87	09:37:55.7	57	0	40	07:48:24.9	145	122	57	202	0.918	0.842	0.170	05m47s
Thanjavur	10°48'N	079°09'E	—	05:47:02.9	236	265	54	07:52:28.2	166	139	07:56:03.7	124	97	09:41:25.1	57	0	38	07:54:15.8	145	118	55	205	0.918	0.842	0.064	03m36s
Tirunelveli	08°44'N	077°42'E	—	05:37:57.5	238	274	54	07:42:22.4	205	184	07:51:19.6	86	61	09:36:52.7	56	359	41	07:46:51.6	145	122	58	202	0.918	0.843	0.491	08m57s
Trivandrum	08°29'N	076°55'E	—	05:34:47.5	238	276	54	07:40:33.5	189	170	07:47:49.1	102	79	09:35:20.7	56	0	42	07:44:11.6	146	125	59	199	0.918	0.843	0.279	07m16s
Tuticorin	08°47'N	078°08'E	—	05:39:32.6	239	273	55	07:43:16.8	215	193	07:53:00.3	75	49	09:37:35.4	55	358	41	07:48:09.3	145	121	58	203	0.918	0.843	0.655	09m44s
Virudunagar	09°36'N	079°58'E	—	05:40:35.9	237	271	54	07:46:17.2	178	155	07:51:52.9	112	88	09:38:20.0	57	0	40	07:49:05.1	145	122	57	202	0.918	0.842	0.158	05m36s
Vishakhapatnam	17°42'N	083°18'E	—	06:14:29.9	231	239	51	—	—	—	—	09:52:15.1	62	7	28	08:13:35.9	145	112	44	213	0.850	0.777				
MALDIVES																										
Male	04°10'N	073°30'E	—	05:15:21.5	244	296	51	07:20:20.8	245	242	07:31:06.0	49	40	09:23:15.1	54	359	50	07:25:44.2	327	321	65	186	0.919	0.844	0.857	10m45s
NEPAL																										
Kathmandu	27°43'N	085°19'E	1348	06:39:03.6	221	218	41	—	—	—	—	09:55:01.9	75	27	20	08:25:19.0	147	116	34	213	0.677	0.577				
PAKISTAN																										
Faisalabad	31°25'N	073°05'E	—	06:21:25.2	208	223	36	—	—	—	—	09:28:42.7	92	60	29	08:00:19.0	150	138	36	193	0.422	0.299				
Islamabad	33°42'N	073°10'E	—	06:27:35.4	206	218	34	—	—	—	—	09:26:10.3	96	65	27	08:01:33.6	150	139	34	193	0.386	0.263				
Karachi	24°52'N	067°03'E	4	05:48:11.0	213	246																				