

TABLE 14
LOCAL CIRCUMSTANCES FOR JAPAN & PACIFIC
TOTAL SOLAR ECLIPSE OF 2009 JULY 22

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	°	′	″	°							
JAPAN																													
Fukuoka	33°35'N	130°24'E	—	00:37:36.7	282	344	51	—	—	—	—	—	—	—	—	03:17:49.7	123	129	77	01:56:04.0	203	255	66	118	0.898	0.888			
Hiroshima	34°24'N	132°27'E	—	00:41:25.8	281	340	53	—	—	—	—	—	—	—	—	03:20:28.8	126	123	76	01:59:42.1	203	250	68	125	0.856	0.835			
Kitakyushu	33°53'N	130°50'E	—	00:38:27.5	282	343	51	—	—	—	—	—	—	—	—	03:18:14.0	124	128	76	01:56:47.0	203	253	67	120	0.885	0.871			
Kobe	34°41'N	135°10'E	—	00:46:23.7	280	338	56	—	—	—	—	—	—	—	—	03:24:50.8	128	113	75	02:04:52.0	204	245	70	133	0.824	0.794			
Kyoto	35°00'N	135°45'E	—	00:47:36.3	279	336	57	—	—	—	—	—	—	—	—	03:25:16.9	129	112	74	02:05:47.6	204	243	71	135	0.809	0.775			
Nagoya	35°10'N	136°55'E	—	00:49:51.9	279	335	58	—	—	—	—	—	—	—	—	03:26:54.7	131	109	74	02:07:56.6	205	240	71	140	0.793	0.754			
Osaka	34°40'N	135°30'E	15	00:47:00.1	280	338	57	—	—	—	—	—	—	—	—	03:25:26.9	129	112	75	02:05:31.9	204	244	71	134	0.822	0.791			
Sapporo	43°03'N	141°21'E	—	01:04:31.0	262	299	60	—	—	—	—	—	—	—	—	03:16:03.5	147	131	66	02:10:18.3	205	219	66	162	0.506	0.406			
Sendai	38°15'N	140°53'E	—	00:59:14.8	272	318	61	—	—	—	—	—	—	—	—	03:26:30.4	139	113	70	02:12:58.4	206	224	71	158	0.656	0.584			
Tokyo	35°42'N	139°46'E	6	00:55:38.6	277	329	61	—	—	—	—	—	—	—	—	03:30:18.5	134	104	72	02:13:00.0	206	230	73	152	0.747	0.696			
Yokohama	35°27'N	139°39'E	—	00:55:18.5	278	330	61	—	—	—	—	—	—	—	—	03:30:38.2	133	103	72	02:12:59.3	206	231	73	151	0.756	0.708			
JAPAN (ISLANDS)																													
Akuseki-shima	29°28'N	129°36'E	—	00:35:28.1	290	358	50	01:53:21.6	115	177	01:59:42.0	291	352	03:21:29.7	116	125	81	01:56:31.4	23	85	67	109	1.079	1.000	0.968	06m20s			
Iwo Jima	24°47'N	141°20'E	—	01:01:04.9	297	12	67	02:25:30.3	157	196	02:30:43.6	260	288	03:52:49.9	119	47	73	02:28:07.0	28	62	85	146	1.080	1.000	0.376	05m13s			
Kikai-shima	28°18'N	129°56'E	—	00:36:09.1	292	2	51	01:56:59.8	186	251	01:58:53.6	221	285	03:23:33.1	114	119	82	01:57:56.5	23	88	68	107	1.079	1.000	0.045	01m54s			
Kitaijo Jima	25°25'N	141°16'E	—	01:00:26.2	296	9	66	02:23:51.1	128	166	02:30:25.4	289	315	03:51:41.2	120	50	73	02:27:08.3	28	61	84	147	1.080	1.000	0.837	06m34s			
Kuchino-shima	29°58'N	129°55'E	—	00:36:01.1	289	357	50	01:54:07.2	86	147	01:59:44.8	320	20	03:21:35.5	117	123	80	01:56:55.7	203	263	68	110	1.079	1.000	0.541	05m38s			
Nakano-shima	29°51'N	129°53'E	—	00:35:56.0	289	357	50	01:53:55.7	93	154	01:59:52.5	313	13	03:21:38.3	116	123	80	01:56:53.8	203	264	68	110	1.079	1.000	0.655	05m57s			
Suwanose-shima	29°39'N	140°43'E	—	00:35:39.4	290	358	50	01:53:31.8	105	167	01:59:48.2	301	2	03:21:31.6	116	124	81	01:56:39.7	203	264	67	109	1.079	1.000	0.856	06m16s			
Takera-jima	29°09'N	129°12'E	—	00:34:47.9	291	360	50	01:52:53.1	134	198	01:58:46.8	271	334	03:20:57.7	115	127	81	01:55:49.6	23	86	67	107	1.078	1.000	0.631	05m54s			
Yaku-shima	30°13'N	130°33'E	—	00:37:06.7	289	356	51	01:56:10.2	62	121	02:00:07.2	345	43	03:22:38.6	118	120	80	01:58:08.5	203	262	68	112	1.079	1.000	0.217	03m57s			
COOK ISLANDS																													
Avarua, Rarotonga	21°12'S	159°46'W	—	03:26:03.3	313	196	10	—	—	—	—	—	—	—	—	—	—	—	—	04:15	Set	—	—	0	292	0.734	0.677		
FIJI																													
Suva	18°08'S	178°25'E	6	03:18:31.1	330	203	30	—	—	—	—	—	—	—	—	05:08:43.2	91	338	8	04:16:15.7	30	272	19	300	0.541	0.445			
FRENCH POLYNESIA																													
Papeete	17°32'S	149°34'W	2	03:24:27.0	299	190	3	—	—	—	—	—	—	—	—	—	—	—	—	03:40	Set	—	—	0	291	0.301	0.192		
GUAM																													
Agana	13°28'N	144°45'E	110	01:25:55.0	316	69	74	—	—	—	—	—	—	—	—	04:15:02.1	106	5	63	02:53:39.0	32	255	81	318	0.738	0.685			
KIRIBATI (GILBERT ISLANDS)																													
Butaritari	03°10'N	172°50'E	—	02:42:11.8	303	188	55	03:53:10.5	119	17	03:57:58.9	306	203	05:00:17.7	121	26	23	03:55:35.3	212	110	38	293	1.073	1.000	0.947	04m48s			
Marakei	02°00'N	173°16'E	—	02:44:31.1	304	189	53	03:55:25.4	157	53	03:59:20.4	268	164	05:01:39.9	120	24	22	03:57:23.4	32	289	37	294	1.072	1.000	0.431	03m55s			
Nikumaroro Is.	04°40'S	174°32'W	—	03:07:01.3	300	190	34	04:09:34.1	98	355	04:13:13.5	322	219	05:09:03.4	119	22	7	04:11:24.2	210	107	20	294	1.067	1.000	0.622	03m39s			
MARSHALL ISLANDS																													
Enewetak	11°30'N	162°20'E	—	02:09:28.7	303	180	75	03:28:26.6	116	16	03:34:05.0	311	211	04:43:30.8	123	31	40	03:31:16.4	214	113	57	289	1.077	1.000	0.877	05m38s			
Jaluit	05°55'N	169°39'E	—	02:32:51.4	303	187	61	03:46:27.1	105	3	03:51:17.2	321	219	04:55:47.5	123	28	28	03:48:52.8	213	111	44	293	1.074	1.000	0.695	04m50s			
MICRONESIA																													
Kolonia	06°58'N	158°13'E	—	02:09:19.8	315	169	74	—	—	—	—	—	—	—	—	04:45:02.6	112	13	42	03:32:03.0	34	283	58	298	0.838	0.811			
NORTHERN MARIANA IS.																													
Susupe, Saipan	15°09'N	145°43'E	—	01:24:44.0	312	61	75	—	—	—	—	—	—	—	—	04:15:11.8	110	13	63	02:53:12.5	32	266	81	307	0.804	0.768			
SAMOA, AMERICAN																													
Pago Pago, Tutu*	14°16'S	170°42'W	9	03:18:17.5	312	195	24	—	—	—	—	—	—	—	—	—	—	—	—	04:18:07.9	29	279	11	294	0.823	0.790			
SAMOA, WESTERN																													
Apia	13°50'S	171°44'W	—	03:17:25.5	312	195	25	—	—	—	—	—	—	—	—	05:12:22.2	106	1	1	04:17:45.7	29	279	12	295	0.821	0.787			
SOLOMON ISLANDS																													
Honiara	09°26'S	159°57'E	—	02:50:56.8	339	196	54	—	—	—	—	—	—	—	—	04:53:25.9	88	332	31	03:55:29.1	33	268	43	309	0.438	0.331			
TONGA																													
Nuku'alofa	21°08'S	175°12'W	—	03:24:12.4	328	203	23	—	—	—	—	—	—	—	—	05:09:31.0	90	337	1	04:19:11.2	29	271	12	297	0.551	0.456			
TUVALU																													
Funafuti	08°31'S	179°13'E	—	03:05:39.0	313	194	38	—	—	—	—	—	—	—	—	05:10:21.6	108	5	11	04:11:32.4	31	281	24	297	0.833	0.803			
WALLIS & FUTUNA IS.																													
Matautu	13°57'S	171°56'W	—	03:17:26.4	312	195	25	—	—	—	—	—	—	—	—	05:12:22.3	106	1	1	04:17:46.3	29	279	12	295	0.814	0.779			