TABLE 2.9
LOCAL CIRCUMSTANCES FOR EUROPE
ANNULAR SOLAR ECLIPSE OF 2010 JANUARY 15

Location Name	Latitude	Longitude	Elev.	First Contact				Second Contact			Third Contact			Fourth Contact				Maximum Eclipse					Eclip.	Eclip.	Umbral	Umbral
				U.T.	P	V	Alt	U.T.	P	V	U.T.	P	V	U.T.	P	V	Alt	U.T.	P	V	Alt	Azm	Mag.	Obs.	Depth	Durat.
			m	h m s	°	°	°	h m s	°	°	h m s	°	°	h m s	°	°	°	h m s	°	°	°	°				
ALBANIA																										
Tiranë	41°20'N	019°50'E	7	–				–			–			06:50:35.6	134	175	7	06:06 Rise	–	–	0	118	0.171	0.080		
AUSTRIA																										
Vienna	48°13'N	016°20'E	202	–				–			–			06:49:59.4	142	179	1	06:43 Rise	–	–	0	122	0.035	0.008		
BOSNIA & HERZEGOWINA																										
Sarajevo	43°52'N	018°25'E	–	–				–			–			06:50:06.2	137	177	4	06:19 Rise	–	–	0	119	0.129	0.053		
BULGARIA																										
Sofija	42°41'N	023°19'E	550	–				–			–			06:52:22.2	138	176	8	06:07:33.3	169	212	2	121	0.133	0.055		
CROATIA																										
Zagreb	45°48'N	015°58'E	–	–				–			–			06:49:41.8	139	178	2	06:35 Rise	–	–	0	120	0.072	0.022		
CZECH REPUBLIC																										
Ostrava	49°50'N	018°17'E	–	–				–			–			06:50:06.7	146	180	1	06:41 Rise	–	–	0	123	0.035	0.007		
GREECE																										
Athens	37°58'N	023°43'E	107	–				–			–			06:53:16.8	131	173	11	05:58:41.2	170	218	3	119	0.200	0.101		
HUNGARY																										
Budapest	47°30'N	019°05'E	120	–				–			–			06:50:17.0	143	179	3	06:29 Rise	–	–	0	122	0.078	0.025		
ITALY																										
Naples	40°51'N	014°17'E	25	–				–			–			06:48:26.8	131	175	3	06:27 Rise	–	–	0	118	0.133	0.056		
Rome	41°54'N	012°29'E	115	–				–			–			06:48:17.8	131	175	2	06:37 Rise	–	–	0	118	0.075	0.024		
MACEDONIA																										
Skopje	41°59'N	021°26'E	240	–				–			–			06:51:23.4	136	176	7	06:04:17.4	170	214	0	119	0.153	0.069		
MOLDOVA																										
Kisin'ov	47°00'N	028°50'E	–	05:53:36.6	188	226	1	–			–			06:54:12.5	147	179	8	06:23:17.1	168	203	5	128	0.057	0.016		
POLAND																										
Krakow	50°03'N	019°58'E	220	–				–			–			06:50:06.9	147	181	2	06:35 Rise	–	–	0	123	0.047	0.012		
Warsaw	52°15'N	021°00'E	90	–				–			–			06:49:28.7	151	183	1	06:41 Rise	–	–	0	125	0.023	0.004		
ROMANIA																										
Bucharest	44°26'N	026°06'E	82	–				–			–			06:53:42.7	142	177	9	06:14:19.5	169	208	3	124	0.096	0.035		
RUSSIA																										
Barnaul	53°22'N	083°45'E	–	07:14:50.2	195	189	15	–			–			09:12:37.6	114	91	8	08:15:27.6	154	139	12	204	0.227	0.122		
Chelyabinsk	55°10'N	061°24'E	–	07:09:25.3	175	183	13	–			–			08:05:41.2	141	141	14	07:37:37.4	158	162	14	174	0.040	0.009		
Irkutsk	52°16'N	104°20'E	467	07:25:17.1	211	191	11	–			–			–				08:36:10.0	154	126	4	227	0.439	0.316		
Kemerovo	55°20'N	086°05'E	–	07:17:43.7	195	188	13	–			–			09:12:08.1	114	92	6	08:16:31.5	155	139	10	206	0.225	0.120		
Krasnojarsk	56°01'N	092°50'E	152	07:21:06.2	200	188	11	–			–			09:20:51.2	110	84	2	08:22:52.5	155	135	7	214	0.275	0.161		
Novokuzneck	53°45'N	087°06'E	–	07:16:56.0	197	189	14	–			–			09:17:44.1	111	87	6	08:19:15.2	154	137	11	208	0.253	0.143		
Novosibirsk	55°02'N	082°55'E	–	07:16:03.3	193	187	13	–			–			09:06:58.0	117	96	8	08:12:55.3	155	141	11	203	0.200	0.102		
Omsk	55°00'N	073°24'E	85	07:12:04.1	186	186	14	–			–			08:44:46.5	126	113	12	07:59:06.8	156	149	13	190	0.122	0.049		
Tomsk	56°30'N	084°58'E	–	07:18:10.7	194	187	12	–			–			09:07:15.3	117	96	6	08:14:04.0	155	141	9	205	0.202	0.103		
Ufa	54°44'N	055°56'E	174	07:08:59.0	170	181	12	–			–			07:44:20.4	149	155	14	07:26:40.6	159	168	13	166	0.015	0.002		
Vladivostok	43°10'N	131°56'E	29	07:40:17.5	240	199	3	–			–			–				08:00 Set	–	–	0	241	0.250	0.140		
Volgograd	48°44'N	044°25'E	–	06:35:30.3	175	200	12	–			–			07:14:34.3	151	171	15	06:54:57.6	163	185	14	147	0.018	0.003		
SERBIA AND MONTENEGRO																										
Beograd	44°50'N	020°30'E	138	–				–			–			06:50:48.0	140	178	5	06:14 Rise	–	–	0	120	0.119	0.047		
SLOVAKIA																										
Bratislava	48°09'N	017°07'E	–	–				–			–			06:50:02.9	143	179	1	06:39 Rise	–	–	0	122	0.048	0.012		
SLOVENIA																										
Ljubljana	46°03'N	014°31'E	–	–				–			–			06:49:33.1	138	177	1	06:42 Rise	–	–	0	121	0.041	0.010		
UKRAINE																										
Kiev	50°26'N	030°31'E	–	06:14:32.8	179	212	2	–			–			06:51:29.6	154	183	7	06:32:53.8	167	198	4	131	0.020	0.003		
Odessa	46°28'N	030°44'E	65	05:54:59.7	188	226	2	–			–			06:56:02.1	147	178	10	06:24:53.2	167	202	6	129	0.055	0.015		

TABLE 2.10
LOCAL CIRCUMSTANCES FOR JAPAN

Location Name	Latitude	Longitude	Elev.	First Contact				Second Contact			Third Contact			Fourth Contact				Maximum Eclipse					Eclip.	Eclip.	Umbral	Umbral
				U.T.	P	V	Alt	U.T.	P	V	U.T.	P	V	U.T.	P	V	Alt	U.T.	P	V	Alt	Azm	Mag.	Obs.	Depth	Durat.
			m	h m s	°	°	°	h m s	°	°	h m s	°	°	h m s	°	°	°	h m s	°	°	°	°				
JAPAN																										
Fukuoka	33°35'N	130°24'E	–	07:45:30.8	253	204	8	–			–			–				08:31 Set	–	–	0	245	0.560	0.444		
Hiroshima	34°24'N	132°27'E	–	07:46:09.3	253	204	6	–			–			–				08:21 Set	–	–	0	245	0.437	0.313		
Kitakyushu	33°53'N	130°50'E	–	07:45:34.8	253	204	7	–			–			–				08:29 Set	–	–	0	245	0.533	0.414		
Kobe	34°41'N	135°10'E	–	07:47:18.9	255	204	4	–			–			–				08:10 Set	–	–	0	244	0.282	0.167		
Kyoto	35°00'N	135°45'E	–	07:47:19.9	255	204	3	–			–			–				08:07 Set	–	–	0	244	0.244	0.135		
Osaka	34°40'N	135°30'E	15	07:47:28.8	255	204	3	–			–			–				08:08 Set	–	–	0	244	0.263	0.151		