



TABLE XIII.

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Day of Solar year.	Lat. 33°—480" Long.			Lat. 34°—228" Long.			Lat. 35°—1592" Long.			Lat. 19°—692" Long.			Lat. 22.5°—4302" Long.				
	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corrn. in seconds.		
	A.D. 1840—1920			A.D. 1840—1920			A.D. 1840—1920			A.D. 1840—1920			A.D. 1840—1920				
187	+600	-179	-955	+605	-189	-756	1	+610	-198	-2173	+598	-61	-511	16	+552	-89	+3035
188	597	224	1003	602	236	806	2	607	248	2225	536	76	538	17	551	112	3011
189	604	269	1041	609	233	846	3	614	298	2268	533	92	557	18	548	134	2986
190	601	314	1091	606	330	896	4	611	347	2310	530	107	575	19	545	156	2961
191	588	358	1146	593	378	953	5	598	397	2383	527	122	593	20	542	179	2935
192	585	403	1194	590	425	1007	6	595	446	2435	524	138	612	21	538	201	2919
193	581	448	1243	586	472	1058	7	591	496	2489	521	153	631	22	535	224	2893
194	578	493	1296	583	519	1113	8	588	546	2546	518	168	660	23	532	246	2868
195	574	538	1351	579	566	1169	9	584	595	2605	515	184	690	24	529	268	2844
196	570	582	1405	575	614	1225	10	580	645	2663	511	199	720	25	525	291	2778
Bengal, Karika.																	
197	566	627	1460	571	661	1281	11	576	694	2722	507	214	750	26	521	313	2741
198	562	672	1514	567	708	1337	12	572	744	2780	503	229	780	27	517	336	2696
199	558	717	1568	563	755	1393	13	568	794	2838	499	245	811	28	513	358	2670
200	553	762	1624	558	802	1450	14	563	843	2898	494	260	842	29	508	380	2633
201	548	806	1679	553	850	1507	15	558	893	2957	490	275	872	30	503	403	2596
202	544	851	1734	549	897	1563	16	553	942	3017	486	291	909	31	499	425	2560
203	539	896	1789	544	944	1620	17	549	992	3075	481	306	934	1	494	448	2523
204	533	941	1845	538	991	1678	18	543	1042	3135	476	321	965	2	489	455	2486
205	528	986	1901	533	1038	1735	19	538	1091	3195	471	337	997	3	484	492	2449
206	523	1030	1956	528	1086	1792	20	533	1141	3254	466	352	1028	4	479	515	2412
Malayalam, Tulam; Bengai, Karika.																	
207	519	1075	2011	524	1133	1848	21	529	1191	3313	462	367	1057	5	475	537	2376
208	513	1120	2067	518	1180	1906	22	523	1240	3373	457	382	1089	6	469	560	2338
209	507	1165	2123	512	1227	1964	23	517	1290	3433	451	398	1122	7	463	582	2300
210	501	1210	2180	506	1274	2022	24	511	1339	3494	446	413	1153	8	458	604	2263
211	495	1254	2236	500	1322	2080	25	505	1389	3554	440	428	1185	9	452	627	2225
212	488	1299	2294	493	1369	2139	26	498	1438	3616	434	444	1216	10	450	649	2191
213	484	1344	2348	487	1416	2197	27	490	1488	3678	428	460	1235	11	448	672	2157
214	477	1394	2405	480	1468	2256	28	483	1542	3739	427	466	1267	12	445	704	2122
215	470	1445	2463	473	1520	2315	29	476	1597	3801	420	513	1301	13	440	735	2186
216	463	1495	2520	466	1572	2374	30	469	1651	3862	423	539	1334	14	433	767	2046
Tamil, Alipai; Malayalam, Tulam; Bengai, Karika.																	
217	456	1546	2578	459	1624	2433	1	462	1706	3924	416	565	1367	15	426	800	2007
218	449	1596	2635	452	1676	2492	2	455	1760	3975	409	591	1400	16	419	831	1969
219	441	1646	2693	444	1728	2552	3	447	1814	4047	402	618	1434	17	412	863	1930
220	434	1697	2751	437	1780	2611	4	440	1869	4109	395	644	1467	18	405	895	1891
221	426	1747	2809	429	1832	2671	5	432	1923	4171	388	670	1500	19	397	927	1850
222	418	1798	2868	421	1884	2731	6	424	1978	4234	381	697	1534	20	389	959	1811
223	410	1848	2926	413	1936	2791	7	416	2032	4296	374	723	1566	21	382	991	1773
224	402	1898	2972	405	1988	2838	8	408	2086	4343	366	749	1602	22	374	1023	1734
225	394	1949	3018	397	2040	2884	9	400	2141	4391	358	776	1638	23	366	1055	1695
226	386	1999	3064	389	2092	2931	10	392	2195	4438	350	802	1674	24	358	1087	1657
Tamil, Alipai; Malayalam, Tulam; Bengai, Karika.																	
227	377	2050	3111	380	2144	2979	11	383	2250	4487	342	828	1710	25	350	1119	1620
228	369	2100	3157	372	2196	3025	12	375	2304	4534	334	854	1746	26	341	1151	1599
229	360	2150	3204	363	2248	3073	13	366	2358	4583	326	881	1782	27	333	1183	1560
230	351	2201	3250	354	2300	3121	14	357	2413	4631	317	907	1819	28	324	1215	1521
231	342	2251	3297	345	2352	3169	15	348	2467	4680	309	933	1855	29	316	1247	1483
232	333	2302	3344	336	2404	3216	16	339	2522	4728	301	960	1891	30	307	1279	1444
233	324	2352	3391	327	2456	3264	17	330	2576	4777	293	986	1927	1	299	1311	1405
234	314	2402	3439	317	2508	3313	18	320	2630	4826	284	1012	1964	2	290	1343	1366
235	305	2453	3486	308	2560	3360	19	311	2685	4875	275	1039	2001	3	281	1374	1327
236	296	2503	3533	299	2612	3408	20	302	2739	4923	266	1065	2038	4	272	1407	1288
Tamil, Alipai; Malayalam, Tulam; Bengai, Karika.																	
237	287	2554	3580	290	2664	3456	21	293	2794	4972	257	1091	2075	5	263	1439	1249
238	277	2604	3628	280	2716	3505	22	283	2848	5021	248	1117	2112	6	254	1470	1209
239	267	2654	3676	270	2768	3553	23	273	2902	5071	239	1144	2149	7	245	1502	1170
240	258	2705	3723	261	2820	3601	24	264	2957	5119	230	1170	2186	8	236	1534	1130
241	246	2755	3773	248	2872	3653	25	251	3011	5172	220	1196	2224	9	226	1567	1091
242	236	2806	3821	238	2924	3701	26	241	3066	5221	211	1223	2261	10	216	1598	1052
243	211	2856	3869	212	2976	3766	27	213	3120	5287	203	1248	2297	11	205	1630	1013
244	202	2894	3911	203	3015	3814	28	204	3159	5337	194	1276	2334	12	196	1660	974
245	192	2932	3959	193	3053	3863	29	194	3199	5387	184	1304	2372	13	186	1691	935
246	182	2970	4026	183	3092	3911	30	184	3238	5436	174	1332	2410	14	176	1721	896



TABLE XIII.

137
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Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

Day of Solar year.	Lat. 33° — 480" Long.			Lat. 34° — 228" Long.			Lat. 35° — 1592" Long.			Lat. 19° — 692" Long.			Lat. 22° 5' — 3626" Long.				
	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corn. in seconds. Jehlum.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corn. in seconds. Srinagar.	Days of solar months.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds. Kabul.	Total Corn. in seconds. Bombay.	Eng. date.	Eqn. of time in seconds.	☉'s Trop. Long. in seconds.	Total Corn. in seconds. Calcutta.			
	A.D. 1840— 1920		A.D. 1840— 1920		A.D. 1840— 1920			A.D. 1840— 1920		A.D. 1840— 1920		A.D. 1840— 1920		A.D. 1840— 1920			
247	+172	-3008	-4074	+173	-3131	-3960	1	+174	-3278	-5486	+164	-1360	-2448	15	+166	-1741	+850
248	162	3046	4122	163	3169	4009	2	164	3317	5535	154	1388	2486	16	156	1762	809
249	152	3084	4170	153	3208	4057	3	154	3357	5585	144	1416	2524	17	146	1793	769
250	142	3121	4218	143	3247	4106	4	144	3396	5634	134	1444	2562	18	135	1823	728
251	132	3159	4266	133	3286	4155	5	134	3436	5683	124	1472	2600	19	125	1853	688
252	122	3197	4314	123	3324	4204	6	124	3475	5733	114	1500	2638	20	115	1883	648
253	112	3235	4362	113	3363	4252	7	114	3515	5782	104	1528	2676	21	105	1914	607
254	102	3273	4410	103	3402	4301	8	104	3554	5832	94	1556	2714	22	95	1944	567
255	92	3311	4457	93	3440	4307	9	94	3594	5837	84	1584	2731	23	85	1974	523
256	82	3349	4424	83	3479	4313	10	84	3633	5842	74	1612	2754	24	75	2004	483
257	72	3387	4430	73	3518	4319	11	74	3673	5848	64	1640	2765	25	65	2034	443
258	62	3425	4437	63	3557	4325	12	64	3712	5853	54	1668	2782	26	55	2065	403
259	51	3463	4445	52	3595	4332	13	53	3752	5859	44	1696	2799	27	44	2095	363
260	41	3501	4452	42	3634	4338	14	43	3791	5864	34	1724	2817	28	34	2125	323
261	31	3539	4459	32	3673	4344	15	33	3831	5869	24	1752	2834	29	24	2155	283
262	21	3577	4465	22	3711	4350	16	23	3870	5875	14	1780	2851	30	14	2185	243
263	11	3615	4472	12	3750	4356	17	13	3910	5880	2	1808	2868	31	2	2216	203
264	— 19	3653	4479	— 20	3789	4364	18	— 21	3949	5890	— 10	1836	2891	1	— 11	2246	163
265	29	3691	4506	30	3828	4390	19	31	3989	5914	20	1864	2903	2	31	2276	123
266	39	3728	4513	40	3866	4396	20	41	4028	5919	32	1892	2925	3	32	2306	83
267	49	3766	4519	50	3905	4402	21	51	4068	5925	41	1920	2941	4	42	2336	43
268	59	3804	4526	60	3944	4408	22	61	4107	5930	51	1948	2958	5	52	2367	3
269	70	3842	4534	71	3982	4415	23	72	4147	5936	61	1976	2975	6	63	2397	— 37
270	80	3880	4541	81	4021	4421	24	82	4186	5941	70	2004	2992	7	73	2427	— 97
271	91	3918	4549	92	4060	4428	25	93	4225	5947	81	2032	3010	8	84	2457	— 117
272	92	3956	4546	93	4099	4425	26	94	4265	5944	91	2060	3027	9	94	2487	— 137
273	93	3994	4544	94	4137	4422	27	95	4304	5940	101	2088	3044	10	100	2518	— 157
274	98	4032	4546	97	4176	4421	28	97	4344	5937	102	2116	3052	11	102	2548	— 177
275	103	4029	4548	102	4172	4422	29	102	4339	5937	109	2123	3066	12	107	2552	— 197
276	109	4026	4551	108	4168	4424	1	107	4334	5937	115	2130	3079	13	114	2557	253
277	115	4022	4553	114	4164	4426	2	113	4330	5939	122	2137	3093	14	120	2561	213
278	120	4019	4555	119	4160	4427	3	119	4325	5940	129	2144	3107	15	127	2567	273
279	126	4016	4558	125	4156	4429	4	124	4320	5940	135	2151	3120	16	133	2572	333
280	132	4013	4561	131	4152	4431	5	130	4315	5941	142	2159	3135	17	140	2578	393
281	137	4010	4563	136	4148	4432	6	136	4310	5942	149	2166	3149	18	146	2583	453
282	143	4006	4565	142	4144	4434	7	141	4306	5943	155	2173	3172	19	152	2588	513
283	149	4003	4568	148	4140	4436	8	146	4301	5943	162	2180	3176	20	159	2591	573
284	154	4000	4570	153	4136	4437	9	152	4296	5944	169	2187	3189	21	165	2595	633
285	160	3997	4526	159	4132	4391	10	158	4291	5896	175	2194	3168	22	171	2600	693
286	166	3994	4481	165	4128	4345	11	163	4286	5847	182	2201	3149	23	178	2605	753
287	171	3990	4436	170	4124	4298	12	168	4282	5797	189	2208	3129	24	184	2610	813
288	177	3987	4392	176	4120	4252	13	174	4277	5749	195	2215	3108	25	190	2615	873
289	183	3984	4347	182	4116	4201	14	180	4272	5701	202	2222	3088	26	197	2620	933
290	188	3981	4302	187	4112	4160	15	185	4267	5652	209	2230	3069	27	204	2624	993
291	194	3978	4258	193	4108	4114	16	191	4262	5604	215	2237	3048	28	210	2629	1053
292	200	3974	4213	199	4104	4068	17	197	4258	5555	222	2244	3028	29	216	2634	1113
293	205	3971	4168	204	4100	4021	18	202	4253	5506	229	2251	3009	30	222	2639	1173
294	211	3968	4124	210	4096	3975	19	207	4248	5457	235	2258	2988	31	229	2644	1233
295	216	3965	4078	216	4092	3929	20	213	4242	5409	242	2265	2968	1	236	2648	1293
296	222	3962	4034	221	4088	3882	21	219	4238	5361	249	2272	2949	2	242	2653	1353
297	228	3958	3990	227	4084	3837	22	224	4234	5311	255	2279	2928	3	248	2657	1413
298	233	3955	3944	233	4080	3791	23	229	4229	5262	262	2286	2908	4	255	2662	1473
299	239	3952	3900	238	4076	3744	24	235	4224	5214	269	2295	2888	5	261	2666	1533
300	245	3949	3856	244	4072	3698	25	241	4219	5166	275	2301	2868	6	268	2670	1593
301	250	3946	3810	249	4068	3651	26	246	4214	5111	282	2308	2848	7	274	2675	1653
302	256	3942	3766	254	4064	3604	27	251	4210	5067	289	2315	2828	8	280	2680	1713
303	262	3939	3722	259	4060	3557	28	256	4205	5018	295	2322	2808	9	286	2685	1773
304	267	3936	3676	264	4056	3511	29	261	4200	4969	302	2328	2788	10	293	2689	1833
305	269	3886	3628	266	4004	3461	30	263	4146	4917	305	2301	2764	11	296	2659	1893



TABLE XIII.

Sunrise from 33° to 35° N. Latitude; also for BOMBAY and CALCUTTA.

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Day of Solar year.	Lat. 33°—480''			Lat. 34°—228''			Lat. 35°—1592''			Lat. 19°—692''			Lat. 22° 52'—3020''		
	Long.			Long.			Long.			Long.			Long.		
Eqn. of time in seconds.	A.D.			A.D.			A.D.			A.D.			A.D.		
☉'s Trop. Long. in seconds.	1840— 1920			1840— 1920			1840— 1920			1840— 1920			1840— 1920		
Total Corrn. in seconds.	Jehlum.			Srinagar.			Kabul.			Bombay.			Calcutta.		
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TABLE XIII—A.

Latitudes and Longitudes of Chief places in British India and the Feudatory States

(Longitudes are expressed by the difference in Seconds of time as compared with Ujjain.)

Serial No.	District.	Town.	Latitude in degrees & decimals of a degree.	Time difference in Seconds.	Serial No.	District.	Town.	Latitude in degrees & decimals of a degree.	Time difference in Seconds.
BRITISH TERRITORY.					Bombay Province—(continued).				
Aden Province.					37 Nasik ...	Nasik	20°0	— 480	
1 Aden ...	Aden		12°7	—7348	38 Panch Mahal ...	Godhra	22°7	— 520	
Ajmere—Merwara Province.					39 Poona ...	Poona	18°5	— 464	
2 Ajmere ...	Ajmere		26°5	— 280	40 Sholapur ...	Sholapur	17°7	+ 28	
	Nazirabad		26°3	— 256		Pandharpur	17°7	— 84	
3 Merwara ...	Beawar		26°0	— 352		Barsi	18°2	— 24	
	(Nayanagar)				41 Satara ...	Satara	17°7	— 428	
Baluchistan Province.					42 Surat ...	Surat	12°2	— 708	
4 Quetta—Peshin	Quetta		30°2	—2104	43 Thana ...	Bandra	19°0	— 708	
Bengal Province.					Burma Province.				
5 Balasore ...	Balasore		21°5	+2676	44 Akyab ...	Akyab	20°2	+4112	
6 Bankura ...	Bankura		23°2	+2708	45 Amberst ...	Moulmein	16°5	+5244	
7 Bhagalpur ...	Bhagalpur		25°2	+2692	46 Bassein ...	Bassein	16°7	+4556	
8 Burdwan ...	Burdwan		23°2	+2896	47 Henzada ...	Henzada	17°7	+4732	
	Howrah		22°5	+3016	48 Mandalay ...	Mandalay	22°0	+4876	
9 Champaram ...	Bettiah		26°5	+2092	49 Prome ...	Prome	18°8	+4664	
10 Cuttack ...	Cuttack		20°5	+2420	50 Rangoon ...	Rangoon	16°7	+4896	
11 Darbhanga ...	Darbhanga		26°2	+2428	51 Tavoy ...	Tavoy	14°1	+5380	
12 Gaya ...	Gaya		24°5	+2216	Central Provinces.				
13 Hooghly ...	{ Hoogly and Chinsura }		23°0	+3028	52 Jubbulpore ...	Jubbulpore	23°2	+1000	
	Seerampore		22°7	+3016	53 Nagpur ...	Kamptee	21°2	+ 820	
14 Midnapore ...	Midnapore		22°5	+2768		Nagpur	21°2	+ 800	
15 Monghyr ...	Monghyr		25°3	+2564	54 Nimar ...	Burhanpur	21°3	+ 108	
16 Murshidabad ...	Berhampore		24°0	+2996	55 Raipur ...	Raipur	21°2	+1408	
17 Muzaffarpur ...	Hajipur		25°7	+2260	56 Saugor ...	Saugor	23°8	+ 712	
	Muzaffarpur		26°0	+2308	Eastern Bengal & Assam Province.				
18 Nadia ...	Krishnagar		23°5	+3056	57 Chittagong ...	Chittagong	23°3	+3852	
	Santipur		23°2	+3040	58 Decca ...	{ Decca }	23°7	+2508	
	Calcutta					{ Narayanganj }			
19 Twenty-four Parganas ...	{ Cossipur-Chitpur Garden Reach Maniktala }		23°5	+3020	59 Manipur ...	Imphal	24°8	+4360	
	Naihati		23°0	+3032	60 Patna ...	Sirajganj	24°5	+3352	
	Bananagar		22°7	+3020	61 Rajshahi ...	Rampur-Bolia	24°3	+3076	
	Bhatpara		23°0	+3032	Madras Province.				
20 Patna ...	Patna		25°7	+2252	62 Bellary ...	Adoni	15°7	+ 360	
	Bihar		25°2	+2336		Bellary	15°2	+ 256	
	Dinapore		25°7	+2224	63 Chingleput ...	Conjeeveram	12°8	+ 940	
21 Puri ...	Puri		19°8	+2408	64 Coimbatore ...	Coimbatore	11°0	+ 284	
22 Ranchi ...	Ranchi		23°3	+2292	65 Ganjam ...	Berhampore	19°3	+2164	
23 Saran ...	Chapra		25°8	+2148	66 Godavari ...	Cocanada	17°0	+1548	
24 Shahabad ...	Sasaram		25°0	+1976		Rajahmundry	17°0	+1436	
	Arrah		25°5	+2132	67 Kistna ...	Bezawada	16°5	+1160	
Berar Province.						Ellore	16°7	+1280	
25 Akola ...	Akola		20°7	+ 300		Masulipatam	16°2	+1284	
26 Amraoti ...	Amraoti		21°0	+ 480	68 Guntnr ...	Guntnr	16°3	+1124	
27 Ellichpur ...	Ellichpur		21°2	+ 424	69 Kurnool ...	Kurnool	15°8	+ 548	
Bombay Province.					70 Madras ...	Madras	13°0	+1072	
28 Ahmadabad ...	Ahmadabad		23°0	— 768	71 Madura ...	Madura	10°0	+ 560	
29 Ahmadnagar ...	Ahmadnagar		19°0	— 208		Bodinayakkanur	10°0	+ 376	
30 Belgaum ...	Belgaum		16°0	— 304		Dindigul	10°3	+ 528	
31 Bijapur ...	Bijapur		16°8	— 16	72 Malabar ...	Calicut	11°2	+ 0	
32 Bombay ...	Bombay		19°0	— 692		Cannanore	11°8	— 100	
33 Broach ...	Broach		21°7	— 672		Palghat	10°8	+ 208	
34 Dharwar ...	Hubli		15°3	— 152	73 Nellore ...	Tellicherry	11°7	— 72	
	Dharwar		15°5	— 184		Nellore	14°5	+1008	
	Gadag		15°5	— 36	74 North Arcot ...	Gudiyattam	13°0	+ 744	
35 Kaira ...	Nadiad		22°7	— 700		Vellore	12°9	+ 808	
36 Khandesh ...	Dhulia		21°0	— 340	75 Salem ...	Salem	11°7	+ 572	
					76 South Arcot ...	Cuddalore	11°7	+ 956	
					77 South Canara ...	Mangalore	12°8	— 224	
					78 Tanjore ...	Kumbakonam	11°0	+ 860	
						Negapatam	10°7	+ 976	



TABLE XIII—A.

CSL

Latitudes and Longitudes of Chief places in British India and the Feudatory States.

(Longitudes are expressed by the difference in Seconds of time as compared with Ujjain.)

Serial No.	District.	Town.	Latitude in degrees & decimals of a degree.	Time difference in Seconds.	Serial No.	District.	Town.	Latitude in degrees & decimals of a degree.	Time difference in Seconds.
Madras Province—(continued).					Bombay Native States—(continued).				
78	Tanjore—contd ...	Tanjore.	10·7	+ 804	112	Kathiawar—contd.	Junagarah	21·5	—1244
		Mannargudi	10·7	+ 880			Navanagar	22·4	—1324
		Mayavaram	11·1	+ 928			Porabandar	21·6	—1436
79	Tinnevely ...	Palamcottah	8·7	+ 472			Rajkot	22·3	—1188
		Rajapalayam	9·5	+ 424			Wadhwan	22·6	— 972
		Srivilliputtur	9·5	+ 440	113	Kolhapur ...	Kolhapur	16·6	— 364
		Tinnevely	8·7	+ 456					
		Tiruchendur	8·5	+ 560					
		Tuticorin	8·8	+ 568					
80	Trichinopoly ...	Trichinopoly	10·8	+ 700					
		Srirangam			114	Rewah ...	Rewah	24·5	+1324
81	Vizagapatam.	Vizagapatam	17·7	+1804	115	Bhopal ...	Bhopal	23·2	+ 392
		Vizianagaram	18·2	+1832	116	Datia ...	Datia	25·6	+ 644
					117	Gwalior ...	Lashkar	26·2	+ 572
							Ujjain	23·1	+ 0
					118	Indore ...	Indore	22·7	+ 28
					119	Jaora ...	Jaora	23·6	—156
					120	Mandasar in	Mandasar	24·1	— 168
						Gwalior			
					121	Ratlam ...	Ratlam	23·8	— 176
North West Frontier Province.					Hyderabad State.				
82	Dera Ismail Khan	Dera Ismail Khan	31·8	—1168	122	Aurangabad ...	Aurangabad	19·8	— 108
83	Kohat ...	Kohat	33·6	—1044			Jalna		
84	Peshawar ...	Peshawar	34·0	—1008	123	Gulbarga ...	Gulbarga	17·3	+ 256
					124	Hyderabad ...	Hyderabad	17·3	+ 640
					125	Raichur ...	Raichur	16·2	+ 376
Punjab Province.					Kashmir State.				
85	Amritsar ...	Amritsar	31·7	— 216	126	Jammu ...	Jammu	32·7	— 208
86	Delhi ...	Delhi	28·7	+ 352	127	Kashmir ...	Srinagar	34·8	— 228
87	Dera Ghazi Khan	Dera Ghazi Khan	30·0	—1200					
88	Ferozepore ...	Ferozepore	31·0	— 280					
89	Gurdaspur ...	Batala	30·8	— 140					
90	Gujranwala ...	Gujranwala	32·2	— 384					
91	Gurgaon ...	Rewari	28·2	+ 204					
92	Hissar ...	Bhiwani	28·8	+ 84					
93	Jhang ...	Jhang-Maghiana	31·3	— 828					
94	Karnal ...	Karnal	29·7	+ 288					
		Panipat	29·4	+ 288					
95	Jullundur ...	Jullundur	31·3	— 48					
96	Lahore ...	Lahore	31·6	— 348					
		Kasur	31·1	— 316					
97	Ludhiana ...	Ludhiana	31·0	+ 20					
98	Multan ...	Multan	30·2	—1024					
99	Rawalpindi ...	Rawalpindi	33·6	— 640					
100	Rohtak ...	Rohtak	28·9	+ 192					
101	Sialkot ...	Sialkot	32·5	— 300					
Sindh Province.					Madras Native States.				
102	Hyderabad ...	Hyderabad	25·3	—1768	128	Cochin ...	Ernakulam	10·0	+ 120
103	Karachi ...	Karachi	24·8	—2092			Mattancheri	10·0	+ 112
104	Sukkur ...	Shikarpur	28·0	—1708	129	Pudukkottai ...	Pudukkottai	10·8	+ 728
		Sukkur	27·7	—1652	130	Travancore ...	Alleppey	9·5	+ 132
							Nagercoil	8·1	+ 400
							Trivandrum	8·5	+ 280
United Provinces of Agra and Oudh.					Mysore State.				
105	Harodi ...	Shahabad	27·7	+1000	131	Bangalore ...	Bangalore	13·0	+ 432
106	Sitapur ...	Sitapur	27·6	+1172	132	Kolar ...	Kolar	13·1	+ 564
					133	Mysore ...	Mysore	12·3	+ 212
NATIVE STATES.					Punjab Native States.				
Baroda State.					134	Malar Kotla ...	Malar Kotla	30·5	+ 48
107	Baroda ...	Baroda	22·3	— 608	135	Patiala ...	Patiala	30·3	+ 164
108	Kadi ...	Patan	23·8	— 868					
		(Anhilwad)							
109	Navasan ...	Navasan	21·0	— 684					
Bombay Native States.					Rajputana Agency.				
110	Cambay ...	Cambay	22·3	— 748	136	Alwar ...	Alwar	27·6	+ 196
111	Cutch ...	Bhuj	23·2	—1436	137	Bharatpur ...	Bharatpur	27·2	+ 412
112	Kathiawar ...	Bhaunagar	21·7	— 860	138	Bikaner ...	Bikaner	28·0	— 596
		Dhoraji	21·7	—1240	139	Jaipur ...	Sikar	27·6	—156
							Jaipur	26·9	+ 12
					140	Karauli ...	Karauli	26·5	+ 300
					141	Kotah ...	Kotah	25·1	+ 16
					142	Jodhpur ...	Jodhpur	26·3	— 664
					143	Mewar or			
						Udaipur	Udaipur	24·6	— 500
					144	Tonk ...	Tonk	26·1	+ 4
United Provinces Native States.					145	Rampur ..	Rampur	28·8	+ 780

TABLE XIV.

Jupiter's Cycle of 60 years—Northern System, showing suppressed years. A.D. 280 to A.D. 2000.

	0	1	2	3	4	5	6	7	8	9	10	11
0 Vijaya	280	389	398	458	517	576	636	695	754	814	873	932
1 Jaya	81	40	99	59	18	77	37	96	55	15	74	33
2 Mannatha	82	41	400	60	19	78	38	2	97	56	16	75
3 Dermukha	83	42	01	61	20	79	39	3	98	57	17	76
4 Hemalamba	84	43	02	62	21	80	40	4	99	58	18	77
5 Vilamba	85	44	03	63	22	81	41	5	700	59	19	78
6 Vikarin	86	45	04	64	23	82	42	6	01	60	20	79
7 Sarvari	87	46	05	65	24	83	43	7	02	61	21	80
8 Plava	88	47	06	66	25	84	44	8	03	62	22	81
9 Subhakrit	89	48	07	67	26	85	45	9	04	63	23	82
10 Sobhana	90	49	08	68	27	86	46	10	05	64	...	83
11 Krodhin	91	50	09	69	28	87	47	11	06	65	24	84
12 Visvavasu	92	51	10	70	29	88	48	12	07	66	25	85
13 Parabhava	93	52	11	71	30	89	49	13	08	67	26	86
14 Plavanga	94	53	12	72	31	90	50	14	09	68	27	87
15 Kilaka	95	54	13	73	32	91	51	15	10	69	28	88
16 Saumya	96	55	14	74	33	92	52	16	11	70	29	89
17 Sadharana	97	56	15	75	34	93	53	17	12	71	30	90
18 Virodhakrit	98	57	16	76	35	94	...	18	13	72	31	91
19 Paridhavin	99	58	17	77	36	95	54	19	14	73	32	92
20 Pramadin	300	59	18	78	37	96	55	20	15	74	33	93
21 Ananda	01	60	19	79	38	97	56	21	16	75	34	94
22 Rakshasa	02	61	20	80	39	98	57	22	17	76	35	95
23 Anala	03	62	21	81	40	99	58	23	18	77	36	96
24 Pingala	04	63	22	82	41	600	59	24	19	78	37	97
25 Kalayukta	05	64	23	...	42	01	60	25	20	79	38	98
26 Siddharthin	06	65	24	83	43	02	61	26	21	80	39	99
27 Raudra	07	66	25	84	44	03	62	27	22	81	40	900
28 Durmati	08	67	26	85	45	04	63	28	23	82	41	01
29 Dundubhi	09	68	27	86	46	05	64	29	24	83	42	02
30 Rudhirodgarin	10	69	28	87	47	06	65	30	25	84	43	03
31 Raktaksha	11	70	29	88	48	07	66	31	26	85	44	04
32 Krodhana	...	71	30	89	49	08	67	32	27	86	45	05
33 Kshaya	12	72	31	90	50	09	68	33	28	87	46	06
34 Prabhava	13	73	32	91	51	10	69	34	29	88	47	07
35 Vibhava	14	74	33	92	52	11	70	35	30	89	48	08
36 Sukla	15	75	34	93	53	12	71	36	31	90	49	...
37 Pramoda	16	76	35	94	54	13	72	37	32	91	50	09
38 Prajapati	17	77	36	95	55	14	73	38	33	92	51	10
39 Angiras	18	78	37	96	56	15	74	39	34	93	52	11
40 Srimukha	19	79	38	97	57	16	75	40	35	94	53	12
41 Bhava	20	80	39	98	58	17	76	41	36	95	54	13
42 Yuvan	21	81	40	99	59	18	77	42	37	96	55	14
43 Dhatri	22	82	41	500	60	19	78	43	38	97	56	15
44 Isvara	23	83	42	01	61	20	79	44	...	98	57	16
45 Bahudhanya	24	84	43	02	62	21	80	45	39	99	58	17
46 Pramathin	25	85	44	03	63	22	81	46	40	800	59	18
47 Vikrama	26	86	45	04	64	23	82	47	41	01	60	19
48 Vrisha	27	87	46	05	65	24	83	48	42	02	61	20
49 Chitrabhanu	28	88	47	06	66	25	84	49	43	03	62	21
50 Subhanu	29	89	48	07	67	26	85	50	44	04	63	22
51 Tarana	30	90	49	08	...	27	86	51	45	05	64	23
52 Parthiva	31	91	50	09	68	28	87	52	46	06	65	24
53 Vyaya	32	92	51	10	69	29	88	53	47	07	66	25
54 Sarvajit	33	93	52	11	70	30	89	54	48	08	67	26
55 Sarvadarhin	34	94	53	12	71	31	90	55	49	09	68	27
56 Virodhin	35	95	54	13	72	32	91	56	50	10	69	28
57 Vikrita	36	96	55	14	73	33	92	57	51	11	70	29
58 Khara	37	97	56	15	74	34	93	58	52	12	71	30
59 Nandana	38	...	57	16	75	35	94	59	53	13	72	31



TABLE XIV.

CSL

Jupiter's Cycle of 60 years—Northern System, showing suppressed years. A.D. 280 to A.D. 2000.

0	Vijaya	...	11 69	12 29	12 88	13 47	14 07	14 66	15 25	0	15 85	16 44	17 03	17 63	18 22	18 81	19 41
1	Jaya	...	70	30	89	48	08	67	26	1	86	45	04	64	23	82	...
2	Manmatha	...	71	31	90	49	09	68	27	2	87	46	05	65	24	83	42
3	Durmukha	...	72	32	91	50	10	69	28	3	88	47	06	66	25	84	43
4	Hemalamba	...	73	33	92	51	11	70	29	4	89	48	07	67	26	85	44
5	Vilamba	...	74	34	93	52	12	71	30	5	90	49	08	68	27	86	45
6	Vikarin	...	75	35	94	53	13	72	31	6	91	50	09	69	28	87	46
7	Sarvati	...	76	36	95	54	14	73	32	7	92	51	10	70	29	88	47
8	Plava	...	77	37	96	55	15	74	33	8	93	52	11	71	30	89	48
9	Subhakrit	...	78	38	97	56	16	75	34	9	94	53	12	...	31	90	49
10	Sobhana	...	79	39	98	57	17	76	35	10	95	54	13	72	32	91	50
11	Krodhin	...	80	40	99	58	18	77	36	11	96	55	14	73	33	92	51
12	Visvayasu	...	81	41	13 00	59	19	78	37	12	97	56	15	74	34	93	52
13	Parabhava	...	82	42	01	60	20	79	38	13	98	57	16	75	35	94	53
14	Plavanga	...	83	43	02	61	...	80	39	14	99	58	17	76	36	95	54
15	Kilaka	...	84	44	03	62	21	81	40	15	16 00	59	18	77	37	96	55
16	Saumya	...	85	45	04	63	22	82	41	16	...	60	19	78	38	97	56
17	Sadharana	...	86	46	05	64	23	83	42	17	01	61	20	79	39	98	57
18	Virodhakrit	...	87	47	06	65	24	84	43	18	02	62	21	80	40	99	58
19	Paridhavin	...	88	48	07	66	25	85	44	19	03	63	22	81	41	19 00	59
20	Pramadin	...	89	49	08	67	26	86	45	20	04	64	23	82	42	01	60
21	Ananda	...	90	50	09	68	27	87	46	21	05	65	24	83	43	02	61
22	Rakshasa	...	91	...	10	69	28	88	47	22	06	66	25	84	44	03	62
23	Anala	...	92	51	11	70	29	89	48	23	07	67	26	85	45	04	63
24	Pingala	...	93	52	12	71	30	90	49	24	08	68	27	86	46	05	64
25	Kalayunkta	...	94	53	13	72	31	91	50	25	09	69	28	87	47	06	65
26	Siddharthin	...	95	54	14	73	32	92	51	26	10	70	29	88	48	07	66
27	Randra	...	96	55	15	74	33	93	52	27	11	71	30	89	49	08	67
28	Darinati	...	97	56	16	75	34	94	53	28	12	72	31	90	50	09	68
29	Dundubhi	...	98	57	17	76	35	95	54	29	13	73	32	91	51	10	69
30	Rudhrodgarin	...	99	58	18	77	36	96	55	30	14	74	33	92	52	11	70
31	Raktaksha	...	12 00	59	19	78	37	97	56	31	15	75	34	93	53	12	71
32	Krodhana	...	01	60	20	79	38	98	57	32	16	76	35	94	54	13	72
33	Kshaya	...	02	61	21	80	39	99	58	33	17	77	36	95	55	14	73
34	Prabhava	...	03	62	22	81	40	15 00	59	34	18	78	37	96	56	15	74
35	Vibhava	...	04	63	23	82	41	01	60	35	19	79	38	97	...	16	75
36	Sukla	...	05	64	24	83	42	02	61	36	20	80	39	98	57	17	76
37	Pramoda	...	06	65	25	84	43	03	62	37	21	81	40	99	58	18	77
38	Prajapati	...	07	66	26	85	44	04	63	38	22	82	41	18 00	59	19	78
39	Angus	...	08	67	27	86	45	05	64	39	23	83	42	01	60	20	79
40	Srimukha	...	09	68	28	87	46	06	65	40	24	84	43	02	61	21	80
41	Bhava	...	10	69	29	88	47	07	66	41	25	85	44	03	62	22	81
42	Yuvan	...	11	70	30	89	48	08	67	42	26	...	45	04	63	23	82
43	Dhatri	...	12	71	31	90	49	09	68	43	27	86	46	05	64	24	83
44	Isvara	...	13	72	32	91	50	10	69	44	28	87	47	06	65	25	84
45	Bahudhanya	...	14	73	33	92	51	11	70	45	29	88	48	07	66	26	85
46	Pramathin	...	15	74	34	93	52	12	71	46	30	89	49	08	67	27	86
47	Vikrama	...	16	75	35	94	53	13	72	47	31	90	50	09	68	28	87
48	Vrisha	...	17	76	...	95	54	14	73	48	32	91	51	10	69	29	88
49	Chitrabhanu	...	18	77	36	96	55	...	74	49	33	92	52	11	70	30	89
50	Subhanu	...	19	78	37	97	56	15	75	50	34	93	53	12	71	31	90
51	Tarana	...	20	79	38	98	57	16	76	51	35	94	54	13	72	32	91
52	Parthiva	...	21	80	39	99	58	17	77	52	36	95	55	14	73	33	92
53	Vyaya	...	22	81	40	14 00	59	18	78	53	37	96	56	15	74	34	93
54	Sarvajit	...	23	82	41	01	60	19	79	54	38	97	57	16	75	35	94
55	Sarvadhari	...	24	83	42	02	61	20	80	55	39	98	58	17	76	36	95
56	Virodhin	...	25	84	43	03	62	21	81	56	40	99	59	18	77	37	96
57	Vikrita	...	26	85	44	04	63	22	82	57	41	17 00	60	19	78	38	97
58	Khara	...	27	86	45	05	64	23	83	58	42	01	61	20	79	39	98
59	Nandana	...	28	87	46	06	65	24	84	59	43	02	62	21	80	40	99

TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 622 to A.D. 965.

	A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.		A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.
Dec	...	6 40*0 20	6 72 0 53	7 05 0 87	7 37 1 20	7 70 1 54	Dec	8 02 1 87	8 35 2 21	8 68 2 55	9 00 2 88	9 33 3 22
Dec	...	41 21	73 54	06 88	(5) 38 21	71 55	Dec	03* 88	36 22	69 56	63 01* 89	34 23
Dec	...	...	74 55	07 89	39 22	72 56	Dec	04 89	37 23	...	02 90	...
Nov	...	42 22	75 56	08 90	40 23	73 57	Nov	05 90	38 24	70 57	03 91	35 24
Nov	...	43 23	76* 57	(4) 09 91	41 24	74* 58	Nov	06 91	39 25	71 58	04 92	36 25
Nov	...	44 24	77 58	...	42 25	...	Nov	07 92	...	61 72* 59	05 93	37 26
Oct	...	45 25	78 59	10 92	43 26	75 59	Oct	08 93	40 26	73 60	06 94	38* 27
Oct	...	46 26	79 60	11 93	44 27	76 60	Oct	09 94	41 27	74 61	07 95	39 28
Oct	...	47* 27	(3) 80 61	12 94	45* 28	77 61	Oct	10 95	42 28	75 62	...	40 29
Sep	...	48 28	81 62	13 95	46 29	78 62	Sep	11 96	60 43* 29	76 63	08 96	41 30
Sep	...	49 29	82 63	14 96	47 30	79 63	Sep	12 97	44 30	77 64	09* 97	(12) 42 31
Sep	...	50 30	...	15 97	...	80 64	Sep	13 98	45 31	78 65	10 98	43 32
Aug	...	(2) 51 31	83 64	16* 98	48 31	81 65	Aug	52 14* 99	46 32	79 66	11 99	44 33
Aug	...	52 32	84 65	17 99	49 32	82 66	Aug	15 2 00	47 33	80* 67	12 3 00	45 34
Aug	...	53 33	85 66	18 1 00	50 33	83 67	Aug	...	48 34	81 68	(11) 13 01	46 35
July	6 22 0 1	54 34	86 67	19 01	51 34	84 68	July	16 01	49 35	82 69	14 02	47 36
July	23 2	55 35	87* 68	20 02	52 35	85* 69	July	17 02	50 36	83 70	15 03	48 37
July	...	...	88 69	21 03	53 36	86 70	July	18 03	51* 37	...	16 04	...
June	24 3	56 36	89 70	22 04	54 37	87 71	June	19 04	52 38	(10) 84 71	17 05	49* 38
June	25 4	57 37	90 71	23 05	55 38	88 72	June	20 05	53 39	85 72	18 06	50 39
June	26 5	58* 38	91 72	...	56 56* 39	...	June	21 06	54 40	86 73	19 07	51 40
May	27 6	59 39	92 73	24 06	57 40	89 73	May	22* 07	(9) 55 41	87 74	20* 08	52 41
May	28 7	60 40	93 74	25 07	58 41	90 74	May	23 08	56 42	88 75	21 09	53 42
May	...	61 41	94 75	26 08	59 42	91 75	May	24 09	...	89 76	22 10	54 43
Apr	29* 8	62 42	95 76	55 27* 09	60 43	92 76	Apr	25 10	57 43	90 77	23 11	55 44
Apr	30 9	63 43	96 77	28 10	61 44	93* 77	Apr	(8) 26 11	58 44	91* 78	24 12	56 45
Apr	31 10	64 44	...	29 11	62 45	94 78	Apr	27 12	59 45	92 79	...	57 46
Mar	32 11	65 45	97 78	30 12	63 46	95 79	Mar	28 13	60 46	93 80	25 13	58 47
Mar	33 12	66 46	53 98* 79	31 13	64* 47	96 80	Mar	29 14	61 47	94 81	26 14	59 48
Mar	34 13	67 47	99 80	32 14	...	(7) 97 81	Mar	...	62* 48	95 82	27 15	60* 49
Feb	35 14	68 48	7 00 81	33 15	65 48	98 82	Feb	30 15	63 49	96 83	28 16	61 50
Feb	36 15	52 69* 49	01 82	34 16	66 49	99 83	Feb	31 16	64 50	97 84	29 17	62 51
Feb	37 16	...	02 83	...	67 50	8 00 84	Feb	32 17	65 51	...	30 18	...
Jan	38 17	70 50	03 84	35* 17	(6) 68 51	01 85	Jan	33* 18	66 52	98 85	64 31* 19	63 52
Jan	39 18	71 51	04 85	36 18	69 52	02 86	Jan	34 19	67 53	99 86	32 20	64 53
Jan	51 40 19	72 52	05* 86	37 19	70 53	...	Jan	35 20	68 54	9 00 87	33 21	65 54

TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 985 to A.D. 1323.

	A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.		A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.
Dec	9 85 3 55	9 98 3 89	10 30 4 22	10 63 4 56	10 95 4 89	11 28 5 23	Dec	11 60 5 56	11 93 5 90	12 26 6 24	12 58 6 57	12 91 6 91
Dec	56 56	99 90	31 23	64 57	96 90	29 24	Dec	61 57	94 91	27 25	59 58	(24) 92 92
Dec	67* 57	10 00 91	32 24	65* 58	97 91	30 25	Dec	62 58	95 92	...	60 59	93 93
Nov	68 58	(14) 01 92	33 25	66 59	98 92	31 26	Nov	73 63* 59	96 93	28 26	61 60	94 94
Nov	69 59	02 93	34 26	67 60	99 93	32 27	Nov	64 60	97 94	29* 27	(23) 62 61	95 95
Nov	70 60	...	35 27	...	11 00 94	33 28	Nov	65 61	98 95	30 28	63 62	...
Oct	(13) 71 61	03 94	36* 28	68 61	01 95	72 34* 29	Oct	66 62	99 96	31 29	64 63	96 96
Oct	72 62	04 95	37 29	69 62	02 96	35 30	Oct	67 63	12 00* 97	32 30	65 64	97 97
Oct	73 63	05 96	38 30	70 63	03 97	...	Oct	68 64	01 98	(22) 33 31	66 65	98* 98
Sep	74 64	06 97	39 31	71 64	04 98	36 31	Sep	69 65	02 99	34 32	67 66	99 99
Sep	75 65	07* 98	40 32	72 65	71 05* 99	37 32	Sep	70 66	03 00	35 33	68 67	13 00 7 00
Sep	...	08 99	...	73 66	06 5 00	38 33	Sep	71* 67	...	36 34	...	01 01
Aug	76 66	09 4 00	41 33	74 67	07 01	39 34	Aug	72 68	(21) 04 01	37 35	69* 68	02 02
Aug	77 67	10 01	42 34	75 68	08 02	40 35	Aug	73 69	05 02	38 36	70 69	03 03
Aug	78* 68	11 02	43 35	76 69	...	41 36	Aug	74 70	06 03	39 37	71 70	04 04
July	79 69	12 03	44 36	77 70	09 03	42* 37	July	(20) 75 71	07 04	40* 38	72 71	05 05
July	80 70	13 04	45 37	78 71	10 04	43 38	July	76 72	08 05	41 39	73 72	06 06
July	81 71	14 05	46 38	79 72	11 05	44 39	July	...	09 06	42 40	74 73	07 07
June	82 72	15 06	69 47* 39	80 73	12 06	45 40	June	77 73	10 07	43 41	75 74	08 08
June	83 73	16 07	48 40	81 74	13* 07	(19) 46 41	June	78 74	11* 08	44 42	76 75	79 09* 09
June	84 74	...	49 41	82 75	14 08	47 42	June	79 75	12 09	...	77 76	...
May	85 75	17 08	50 42	83 76	15 09	48 43	May	80 76	13 10	45 43	78 77	10 10
May	86 76	67 18* 09	51 43	84* 77	16 10	49 44	May	81 77	14 11	46 44	79 78	11 11
May	87 77	19 10	52 44	...	(18) 17 11	...	May	82* 78	15 12	47 45	78 80* 79	12 12
Apr	88 78	20 11	53 45	85 78	18 12	50 45	Apr	83 79	16 13	48 46	81 80	13 13
Apr	67 89* 79	21 12	54 46	86 79	19 13	51 46	Apr	84 80	17 14	49 47	82 81	14 14
Apr	...	22 13	55 47	87 80	20 14	52 47	Apr	85 81	...	50 48	83 82	15 15
Mar	90 80	23 14	56* 48	(17) 88 81	21 15	53* 48	Mar	86 82	18 15	77 51* 49	84 83	16 16
Mar	91 81	24 15	57 49	89 82	22 16	54 49	Mar	87 83	19 16	52 50	85 84	17* 17
Mar	92 82	25 16	...	90 83	23 17	55 50	Mar	88 84	20 17	53 51	...	18 18
Feb	93 83	26* 17	58 50	91 84	24* 18	56 51	Feb	89 85	21 18	54 52	86 85	19 19
Feb	94 84	27 18	(16) 59 51	92 85	25 19	57 52	Feb	90 86	76 22* 19	55 53	87 86	20 20
Feb	95 85	...	60 52	93 86	...	58 53	Feb	...	23 20	...	88* 87	...
Jan	96 86	28 19	61 53	94 87	26 20	59 54	Jan	91 87	24 21	56 54	89 88	(25) 21 21
Jan	97* 87	29 20	62 54	95* 88	27 21	60 55	Jan	92 88	25 22	57 55	90 89	22 22
Jan	98 88	(15) 30 21	63 55	...	28 22	...	Jan	74 93* 89	26 23	58 56	91 90	23 23

TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadian) and A.D. Years, A.D. 1323 to A.D. 1681.

	A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.		A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.
Dec	13 23 7 24	13 56 7 58	13 88 7 91	14 21 8 25	14 54* 8 59	14 86 8 92	Dec	15 19 9 26	15 51 9 59	15 84 9 93	16 16 10 26	16 49 10 60
Dec	24 25	57 59	89 92	22 26	85 55 60	87 93	Dec	20 27	52 60	85 94	17 27	50 61
Dec	25 26	58 60	90 93	23 27	...	88 94	Dec	21* 28	(33) 53 61	86 95	18* 28	51 62
Nov	26 27	59 61	91 94	24 28	56 61	89 95	Nov	22 29	54 62	87 96	19 29	52 63
Nov	27* 28	60 62	92 95	25* 29	57 62	90 96	Nov	23 30	55 63	88 97	20 30	53 64
Nov	28 29	...	93 96	26 30	58 63	91* 97	Nov	...	56 64	...	21 31	54 65
Oct	29 30	61 63	94 97	27 31	59 64	92 98	Oct	(32) 24 31	57 65	89* 98	22 32	55 66
Oct	30 31	62 64	95 98	28 32	60 65	93 99	Oct	25 32	58 66	90 99	23 33	56 67
Oct	31 32	63 65	88 96* 99	...	61 66	94 9 00	Oct	26 33	59 67	91 10 00	24 34	...
Sep	32 33	64 66	87 8 00	29 33	62* 67	(31) 95 01	Sep	27 34	60* 68	92 01	25 35	57 68
Sep	33 34	65 67	98 01	30 34	63 68	96 02	Sep	28 35	61 69	93 02	26 36	58* 69
Sep	34 35	66 68	99 02	31 35	64 69	...	Sep	29 36	...	94 03	27 37	59 70
Aug	35 36	82 67* 69	14 00 03	32 36	65 70	97 03	Aug	30 37	62 70	95 04	28 38	60 71
Aug	36 37	68 70	01 04	33* 37	(30) 66 71	98 04	Aug	31* 38	63 71	96 05	29 39	61 72
Aug	...	69 71	02 05	34 38	67 72	99 05	Aug	32 39	64 72	97 06	...	62 73
July	37 38	70 72	03 06	35 39	68 73	15 00 06	July	33 40	65 73	98 07	30 40	63 74
July	81 38* 39	71 73	04* 07	36 40	69 74	01 07	July	34 41	66 74	99 08	31 41	64 75
July	39 40	72 74	...	(29) 37 41	...	02* 08	July	...	67 75	16 00* 09	32 42	65 76
June	40 41	73 75	05 08	38 42	70 75	03 09	June	35 42	68 76	97 01 10	33 43	66* 77
June	41 42	74 76	06 09	39 43	71 76	04 10	June	36 43	69 77	02 11	34 44	67 78
June	42 43	75* 77	07 10	40 44	72 77	05 11	June	37 44	70 78	03 12	35 45	68 79
May	43 44	76 78	(28) 08 11	41 45	73* 78	06 12	May	38 45	71* 79	04 13	36 46	69 80
May	44 45	...	09 12	42 46	74 79	07 13	May	39 46	72 80	05 14	37* 47	(37) 70 81
May	45 46	77 79	10 13	43 47	75 80	08 14	May	40 47	73 81	...	38 48	...
Apr	46* 47	78 80	11 14	44* 48	76 81	09 15	Apr	41 48	74 82	06 15	39 49	71 82
Apr	47 48	(27) 79 81	12 15	45 49	77 82	10 16	Apr	88 42* 49	75 83	07 16	40 50	72 83
Apr	48 49	80 82	13 16	...	78 83	...	Apr	43 50	...	08* 17	(36) 41 51	73 84
Mar	49 50	81 83	14 17	46 50	79 84	11 17	Mar	44 51	76 84	09 18	42 52	74 85
Mar	(26) 50 51	82 84	15* 18	47 51	80 85	12 18	Mar	45 52	77 85	10 19	43 53	75 86
Mar	...	83 85	16 19	48 52	81 86	87 13* 19	Mar	46 53	78 86	11 20	...	76 87
Feb	51 52	84 86	17 20	49 53	82 87	14 20	Feb	47 54	79* 87	(35) 12 21	44 54	77* 88
Feb	52 53	85 87	18 21	50 54	83 88	15 21	Feb	48 55	80 88	13 22	45 55	78 89
Feb	53 54	86* 88	...	51 55	...	16 22	Feb	...	81 89	14 23	46 56	79 90
Jan	54 55	87 89	19 22	52 56	86 84* 89	17 23	Jan	49 56	82 90	15 24	47 57	80 91
Jan	55 56	88 90	20 23	53 57	85 90	18 24	Jan	50* 57	(34) 83 91	16 25	48* 58	81 92
Jan	56* 57	...	21 24	54 58	86 91	19 25	Jan	51 58	84 92	...	49 59	...



TABLE XV.—(See Explanation on page 197.)

Correspondence of Hijra (Muhammadan) and A.D. Years, A.D. 1681 to A.D. 2000.

	A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.		A.D. H.	A.D. H.	A.D. H.	A.D. H.	A.D. H.
Dec	1681 1093	1714 1127	1747 1161	1780 1195	1813 1229	Dec	1845 1262	1878 1296	1911 1330	1943 1363	1976 1397
Dec	82 94	15 28	48 62	81 96	14 30	Dec	46 63	79 97	12 31	44 64	77 98
Dec	83 95	16* 29	...	82* 97	(42) 15 31	Dec	47 64	80* 98	...	45 65	(06) 78* 99
Nov	84 96	17 30	49 63	33 98	16 32	Nov	48 65	81 99	13 32	46 66	79 1400
Nov	85 97	18 31	50 64	84 99	17 33	Nov	49 66	82 1300	14 33	47 67	80 01
Nov	86 98	19 32	51 65	85 1200	...	Nov	50 67	83 01	15 34	48 68	...
Nov	...	...	52 66	...	...	Nov	...	...	...	...	...
Oct	24 87* 99	20 33	53* 67	(41) 86 01	18 34	Oct	51* 68	84 02	16 35	(05) 49* 69	81 02
Oct	88 1100	21 34	54 68	87 02	19 35	Oct	52 69	85 03	17 36	(1d) 50 70	82 03
Oct	89 01	22 35	55 69	88 03	20 36	Oct	53 70	...	18 37	51 71	83 04
Sep	90 02	23 36	56 70	89 04	21 37	Sep	54 71	86 04	19 38	52 72	84 05
Sep	91 03	24* 37	(40) 57 71	90 05	22* 38	Sep	55 72	87 05	(04) 20* 39	53 73	85 06
Sep	92 04	...	58 72	...	23 39	Sep	56 73	88 06	(1d) 21 40	...	86* 07
Aug	93 05	25 38	59 73	91 06	24 40	Aug	57 74	89 07	22 41	54 74	87 08
Aug	94 06	26 39	60 74	92 07	25 41	Aug	58 75	90 08	23 42	55 75	88 09
Aug	95* 07	27 40	61 75	93* 08	26 42	Aug	...	(03) 91* 09	24 43	56 76	89 10
July	96 08	(39) 28 41	62 76	94 09	27 43	July	59 76	92 10	25 44	57* 77	(48) 90 11
July	97 09	29 42	63 77	95 10	28 44	July	60 77	93 11	26 45	58 78	91 12
July	...	30 43	...	96 11	...	July	61 78	94 12	27 46	59 79	92 13
June	98 10	31 44	64* 78	97 12	29 45	June	(01) 62* 79	95 13	28* 47	60 80	93 14
June	(38) 99 11	32 45	65 79	98 13	30 46	June	(1d) 63 80	96 14	29 48	(47) 61 81	94 15
June	17 00 12	33 46	66 80	99 14	31 47	June	64 81	97 15	...	62 82	...
May	01 13	34 47	67 81	18 00 15	32 48	May	65 82	98 16	30 49	63 83	95 16
May	02 14	35* 48	68 82	01 16	(00) 33* 49	May	66 83	99* 17	31 50	64 84	96 17
May	03 15	36 49	69 83	02 17	(1d) 34 50	May	67 84	19 00 18	(46) 32 51	65 85	97* 18
Apr	04 16	37 50	70 84	03 18	35 51	Apr	68 85	01 19	33 52	66 86	98 19
Apr	05 17	38 51	71 85	(09) 04* 19	36 52	Apr	69 86	02 20	34 53	67 87	99 20
Apr	06* 18	...	72 86	05 20	37 53	Apr	70* 87	...	35 54	...	20 00 21
Mar	07 19	39 52	73 87	06 21	38 54	Mar	71 88	(45) 03 21	36 55	68* 88	...
Mar	08 20	40 53	74 88	07 22	39 55	Mar	72 89	04 22	37 56	69 89	...
Mar	09 21	41 54	(98) 75* 89	...	40 56	Mar	73 90	05 23	38 57	70 90	...
Feb	10 22	42 55	76 90	08 23	41* 57	Feb	(44) 74 91	06 24	39* 58	71 91	...
Feb	11 23	43 56	77 91	09 24	42 58	Feb	75 92	07 25	40 59	72 92	...
Feb	...	44 57	...	10 25	43 59	Feb	...	08 26	...	73 93	...
Jan	12 24	45 58	78 92	11 26	44 60	Jan	76 93	09 27	41 60	74 94	...
Jan	13 25	(97) 46* 59	79 93	12* 27	(43) 45 61	Jan	77 94	10* 28	42 61	75 95	...
Jan	14 26	47 60	80 94	13 28	...	Jan	78 95	11 29	43 62	76 96	...

Correspondence of Hijra (Muhammadian) and A.D. Years, A.D. 622 to A.D. 2000.

2. Hijra years are divided into cycles of 30 each. From 622 A.D. to 2000 A.D. there are 48 such cycles, the first cycle being an incomplete one of 29 years. The cycles are indicated by the figures between brackets.

3. The actual date of the A.D. month marking the commencement of each *Hirā* year can be obtained from Table X by adding 1, 2 or 3 days, according to the following rules, to the date of mean new-moon shown in that table.

(a) Subject to the exceptions noted in Rule (c) below, 2 days are to be added to the date of mean new-moon when the fraction of day shown in Table X against the mean new-moon does not exceed the decimal figure printed in *italic* under each cycle in this table. When this figure is exceeded, add 3 days.

(b) The figure printed in *italic* may be called the 'argument of the crescent' and the quantity to be added to the date of mean new-moon, whether 1, 2 or 3 days, may be called the 'equation of the crescent'. In cycles (1) to (41), the highest argument for an equation of 2 days is shown against the year in which that argument occurs. For instance, in the 30th cycle, the maximum argument for an equation of 2 days is .86 which is entered against A.D. 1484, H. 889. This entry means that in the 30th cycle, whenever the fraction of day set against a new moon in Table X, is .86 (as in January 1484 A.D.) or less, 2 days are to be added to the date of mean new moon in order to get the commencement of the corresponding Hijra year. Otherwise, that is, if the fraction of day exceeds .86, 3 days should be added. Thus, taking 10 successive years of the 30th cycle, the dates of commencement of the corresponding Hijra years are ascertained as follows from this Table and Table X:—

A.D. year.	Month.	Day and fraction of day.	Hijra year.	Commencement of Hijra year.	A.D. year.	Month.	Day and fraction of day.	Hijra year.	Commencement of Hijra year.
1480	March	11-39	885	13th March	1485	January	16-23	890	18th January
1481	February	28-76	886	2nd March	1486	January	5-60	891	7th January
1482	February	18-13	887	20th February	1486	December	25-96	892	28th December
1483	February	7-50	888	9th February	1487	December	15-33	893	17th December
1484	January	27-86	889	29th January	1488	December	3-70	894	5th December

(c) From the 42nd to the 48th cycles (A.D. 1815—2000), the additions to be made to mean new moon dates in order to get the commencement of Hijra years are 1 day and 2 days respectively, according as the limit shown in this table is not, or is, exceeded. Thus in the 42nd cycle, 1 day has to be added only when the fraction of day of mean new moon is $\cdot 00$, i.e., in the year 1833, when new moon fell on May 19 $\cdot 00$. The corresponding Hijra year 1249, therefore, commenced on 20th May 1833. In all other years of this cycle the number of days to be added to mean new moon in order to get the commencement of Hijra year is 2. Similarly in 1862, mean new-moon fell on June 27 $\cdot 01$ and the Hijra year 1279 commenced on 28th June. In A.D. 1978, the Hijra year will commence on Dec. 1, because new-moon will fall on Nov. 30 $\cdot 06$, and $\cdot 06$, is the argument of the crescent for that cycle.

4. The 2nd, 5th, 8th, 10th, 13th, 15th, 19th, 21st, 24th, 27th and 29th years in each cycle are leap years according to the present table, that is, they will be found to contain 355 days instead of 354. In certain countries, however, the 7th, 18th and 26th years of each cycle are reckoned as leap years instead of the 8th, 19th and 27th. Under the former reckoning, the 8th, 19th and 27th years following as they do, certain leap years, would begin 1 day later than they do according to the present table. For the convenience of reference, the 8th, 19th and 27th years of each cycle are marked by an asterisk. The reader will understand that the date of commencement of such Hira years, as determined by the rules above laid down, is liable to be increased by 1 day in those countries where the 7th, 18th and 26th years of each cycle are regarded as leap years.

Modern Equations for Lunar Inequalities.

A.—Equation for Lunar Variation.

[illegible]



TABLE XVI.—Modern Equations for

B.—('s Anomaly in days, ghatikas and palas and corresponding Equation of the

Eqn. 10 ^a	1	2	3	4	5	6	7	8	9	Eqn. 10 ^b	11	12	13	14	15	16	17	18	19
Palas	0	1	2	3	4	5	6	7	8	Palas	1	2	3	4	5	6	7	8	9
g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.	g.P.
0	0, 6	8,30	17, 0	25,34	34, 8	42,43	51,22	0,10	8,53	17,41	0	26,39	35,36	44,52	54,12	3,32	13,16	23, 8	33, 5
1	0, 9	8,39	17,13	25,43	34,17	42,52	51,31	0,14	8,58	17,15	1	26,43	35,45	45, 1	54,17	3,46	13,25	23,13	33,14
2	0,14	8,48	17,18	25,52	34,27	43, 1	51,40	0,23	9, 7	17,55	2	26,52	35,54	46, 5	54,26	3,55	13,34	23,26	33,28
3	0,23	8,57	17,27	26, 1	34,31	43,10	51,45	0,33	9,16	18, 4	3	27, 1	36, 4	45,15	54,40	4, 4	13,43	23,36	33,37
4	0,32	9, 6	17,36	26,11	34,41	43,19	51,54	0,42	9,25	18,14	4	27,15	36,13	45,28	54,49	4,13	13,52	23,45	33,46
5	0,41	9,11	17,46	26,20	34,50	43,29	52, 7	0,51	9,35	18,23	5	27,20	36,22	45,38	54,53	4,23	14, 1	23,54	33,55
6	0,50	9,20	17,55	26,29	34,59	43,38	52,17	1, 0	9,44	18,32	6	27,29	36,31	45,47	55, 2	4,32	14,15	24, 3	34, 1
7	1, 0	9,30	17,59	26,34	35, 8	43,47	52,21	1, 9	9,53	18,41	7	27,38	36,40	45,52	55,16	4,46	14,20	24,17	34,19
8	1, 9	9,39	18, 8	26,43	35,17	43,52	52,30	1,19	9,58	18,50	8	27,48	36,49	46, 5	55,25	4,50	14,29	24,26	34,23
9	1,18	9,48	18,18	26,52	35,26	44, 1	52,40	1,28	10, 7	18,59	9	28, 1	36,59	46,14	55,35	5, 0	14,43	24,35	34,37
10	1,27	9,53	18,27	27, 1	35,31	44,10	52,49	1,37	10,16	19, 9	10	28, 6	37, 8	46,24	55,44	5,13	14,52	24,49	34,46
11	1,32	10, 2	18,36	27,11	35,40	44,19	52,58	1,46	10,25	19,13	11	28,15	37,17	46,33	55,53	5,23	14,56	24,54	35, 0
12	1,41	10,11	18,45	27,20	35,49	44,28	53, 7	1,55	10,34	19,22	12	28,24	37,26	46,42	56, 2	5,32	15,10	25, 3	35, 9
13	1,50	10,20	18,50	27,29	35,59	44,33	53,17	2, 5	10,43	19,31	13	28,33	37,35	46,51	56,11	5,41	15,20	25,13	35,14
14	2, 0	10,29	18,59	27,38	36, 8	44,42	53,25	2, 9	10,53	19,46	14	28,43	37,44	47, 0	56,20	5,50	15,29	25,21	35,27
15	2, 9	10,38	19, 8	27,47	36,17	44,51	53,35	2,18	11, 2	19,54	15	28,52	37,54	47, 9	56,30	5,59	15,38	25,35	35,32
16	2,18	10,48	19,17	27,52	36,26	45, 0	53,39	2,28	11,11	19,59	16	29, 1	38, 3	47,19	56,39	6, 8	15,47	25,44	35,46
17	2,22	10,57	19,26	28, 1	36,35	45,10	53,49	2,37	11,20	20, 8	17	29,10	38,12	47,28	56,48	6,18	15,56	25,53	35,50
18	2,32	11, 6	19,36	28,10	36,44	45,19	53,58	2,46	11,29	20,18	18	29,19	38,21	47,37	56,57	6,27	16, 6	26, 7	36, 4
19	2,41	11,10	19,45	28,19	36,49	45,28	54, 7	2,55	11,38	20,27	19	29,29	38,30	47,46	57, 7	6,36	16,19	26,11	36,13
20	2,50	11,20	19,54	28,24	36,58	45,37	54,16	3, 4	11,48	20,36	20	29,38	38,39	47,55	57,16	6,50	16,24	26,26	36,27
21	2,59	11,29	20, 3	28,33	37, 7	45,46	54,25	3,13	11,57	20,45	21	29,47	38,49	48, 5	57,25	6,59	16,38	26,35	36,36
22	3, 8	11,38	20, 8	28,42	37,17	45,51	54,35	3,23	12, 1	20,54	22	29,56	38,58	48,14	57,34	7, 8	16,47	26,44	36,45
23	3,17	11,43	20,17	28,51	37,26	46, 0	54,44	3,27	12,11	21, 4	23	30, 5	39, 7	48,23	57,43	7,17	16,56	26,53	36,54
24	3,27	11,52	20,26	29, 1	37,35	46, 9	54,53	3,36	12,20	21,13	24	30,14	39,16	48,32	57,52	7,26	17, 5	27, 2	37, 8
25	3,31	12, 1	20,36	29,10	37,44	46,19	55, 2	3,45	12,29	21,17	25	30,24	39,26	48,41	58, 2	7,36	17,14	27,16	37,17
26	3,40	12,10	20,45	29,19	37,53	46,28	55,11	3,59	12,38	21,26	26	30,33	39,30	48,50	58,11	7,45	17,23	27,25	37,27
27	3,50	12,20	20,54	29,28	38, 2	46,37	55,20	4, 8	12,48	21,36	27	30,42	39,39	49, 0	58,25	7,54	17,33	27,34	37,36
28	3,59	12,29	21, 3	29,37	38, 7	46,46	55,30	4,13	12,57	21,49	28	30,47	39,53	49,14	58,29	8, 3	17,46	27,44	37,50
29	4, 3	12,38	21,12	29,42	38,16	46,55	55,34	4,22	13, 6	21,54	29	30,56	40, 2	49,18	58,38	8,17	17,51	27,53	37,58
30	4,13	12,47	21,21	29,51	38,26	47, 4	55,43	4,31	13,15	22, 3	30	31, 5	40,12	49,27	58,47	8,26	18, 5	28, 6	38,13
31	4,22	12,56	21,26	30, 0	38,34	47, 9	55,52	4,41	13,20	22,12	31	31,14	40,16	49,36	59, 1	8,35	18,14	28,16	38,17
32	4,31	13, 1	21,35	30, 9	38,39	47,18	56, 2	4,50	13,29	22,21	32	31,23	40,25	49,50	59, 6	8,45	18,23	28,25	38,31
33	4,40	13,10	21,44	30,19	38,49	47,27	56,11	4,59	13,43	22,31	33	31,33	40,39	49,59	59,15	8,54	18,37	28,34	38,40
34	4,49	13,19	21,53	30,23	38,58	47,37	56,20	5, 8	13,52	22,40	34	31,42	40,48	50, 4	59,29	9, 3	18,41	28,43	38,54
35	4,59	13,28	21,58	30,32	39, 7	47,46	56,29	5,18	13,56	22,49	35	31,51	40,53	50,13	59,38	9,12	18,56	28,57	38,59
36	5, 8	13,38	22, 7	30,41	39,16	47,55	56,38	5,27	14, 6	22,58	36	32, 0	41, 2	50,27	59,47	9,21	19, 4	29, 6	39,12
37	5,17	13,42	22,16	30,51	39,25	48, 4	56,48	5,31	14,15	23, 8	37	32, 5	41,11	50,36	59,52	9,30	19,14	29,15	39,22
38	5,22	13,51	22,26	31, 0	39,34	48,13	56,52	5,40	14,24	23,12	38	32,19	41,20	50,41	2 0, 5	9,44	19,23	29,24	39,35
39	5,31	14, 0	22,35	31, 9	39,44	48,22	57, 2	5,50	14,33	23,21	39	32,28	41,34	50,50	0,15	9,53	19,32	29,34	39,44
40	5,40	14,10	22,44	31,19	39,53	48,27	57,10	5,59	14,42	23,30	40	32,37	41,39	51, 4	0,24	9,58	19,46	29,47	39,54
41	5,49	14,19	22,53	31,28	39,57	48,36	57,20	6, 8	14,51	23,39	41	32,41	41,48	51,13	0,33	10,12	19,55	29,52	40, 3
42	5,58	14,28	23, 2	31,37	40, 7	48,45	57,33	6,17	15, 1	23,54	42	32,51	41,57	51,22	0,42	10,21	20, 4	30, 6	40,17
43	6, 3	14,37	23,11	31,41	40,16	48,55	57,38	6,26	15,10	23,58	43	33, 4	42,11	51,31	0,52	10,30	20,13	30,15	40,26
44	6,12	14,46	23,16	31,51	40,25	49, 4	57,47	6,35	15,14	24, 7	44	33,14	42,15	51,40	1, 0	10,39	20,23	30,24	40,35
45	6,21	14,56	23,26	32, 0	40,34	49,13	57,57	6,45	15,24	24,16	45	33,23	42,24	51,50	1,15	10,48	20,36	30,38	40,44
46	6,30	15, 0	23,34	32, 9	40,43	49,22	58, 6	6,49	15,38	24,26	46	33,27	42,34	51,59	1,19	10,58	20,46	30,43	40,53
47	6,40	15, 9	23,44	32,18	40,52	49,32	58,15	6,58	15,46	24,35	47	33,36	42,43	52, 8	1,28	11,11	20,55	30,56	41, 7
48	6,49	15,18	23,53	32,27	41, 2	49,41	58,24	7,12	15,56	24,44	48	33,46	42,52	52,17	1,38	11,21	21, 4	31, 6	41,21
49	6,58	15,28	24, 2	32,36	41,11	49,45	58,33	7,21	16, 0	24,53	49	33,59	43, 2	52,26	1,51	11,25	21,13	31,15	41,25
50	7, 7	15,32	24,11	32,46	41,15	49,54	58,43	7,26	16, 9	25, 2	50	34, 4	43,11	52,35	1,56	11,39	21,27	31,24	41,39
51	7,16	15,41	24,21	32,55	41,24	50, 4	58,52	7,35	16,19	25,11	51	34,13	43,20	52,45	2,10	11,48	21,36	31,33	41,49
52	7,21	15,51	24,30	32,59	41,34	50,13	58,56	7,44	16,28	25,16	52	34,22	43,34	52,54	2,19	11,57			

20gh. 21	22	23	24	Eqn. 25gh. 26	27	28	29	30
III	III	III	III	Palas.	IV	IV	IV	V
G.P.	G.P.	G.P.	G.P.	Palas.	G.P.	G.P.	G.P.	G.P.
5, 0 16,24 28,11 40,32 53,45				0	7,45 22,41 39,13	57,45 19,38 48,39		
5,14 16,33 28,21 40,49 53,59				1	7,55 23, 0 39,32	57,58 20, 1 49,20		
5,23 16,47 28,34 41, 3 54, 8				2	8, 9 23,18 39,45	58,21 20,29 49,48		
5,37 16,56 28,48 41,17 54,22				3	8,27 23,32 40, 4	58,44 20,51 50,29		
5,46 17,10 29, 1 41,26 54,36				4	8,41 23,46 40,23	59, 9 21,14 51,10		
5,54 17,24 29,11 41,40 54,54				5	8,50 24, 4 40,45	59,21 21,38 51,47		
6, 9 17,38 29,25 41,49 55, 8				6	9, 8 24,18 41, 4	59,44 22, 5 52,28		
6,18 17,42 29,39 42, 3 55,17				7	9,22 24,36 41,17	5 0, 3 22,28 52,56		
6,27 17,56 29,52 42,12 55,31				8	9,40 24,50 41,36	0,25 22,51 53,37		
6,41 18,10 30, 2 42,26 55,45				9	9,54 25, 4 41,59	0,48 23,19 54,18		
6,50 18,19 30,11 42,40 55,58				10	10, 8 25,22 42,17	1, 2 23,41 55, 0		
7, 4 18,28 30,25 42,54 56,12				11	10,22 25,40 42,31	1,25 24, 9 55,23		
7,13 18,41 30,39 43, 7 56,26				12	10,36 25,59 42,49	1,48 24,37 56, 4		
7,22 18,56 30,52 43,16 56,40				13	10,54 26, 8 43, 7	2,11 24,55 56,45		
7,36 19,10 31, 2 43,30 56,54				14	11, 3 26,26 43,26	2,25 25,18 57,27		
7,45 19,19 31,15 43,44 57, 8				15	11,22 26,45 43,44	2,48 25,45 58, 8		
7,59 19,28 31,29 43,53 57,17				16	11,35 27, 3 43,58	3,11 26,13 58,36		
8, 8 19,42 31,43 44, 7 57,30				17	11,49 27,12 44,17	3,34 26,41 59,17		
8,22 19,56 31,56 44,20 57,44				18	12, 8 27,31 44,35	3,52 27,13 59,54		
8,36 20, 5 32, 7 44,34 57,55				19	12,17 27,49 44,58	4,10 27,40 6 0,35		
8,45 20,14 32,19 44,48 58, 4				20	12,35 28, 7 45,12	4,33 28,12 1, 3		
8,59 20,28 32,33 45, 2 58,25				21	12,49 28,21 45,30	4,52 28,35 1,39		
9, 8 20,41 32,47 45,16 58,39				22	13, 3 28,35 45,48	5,15 29, 7 2,39		
9,16 20,51 32,56 45,29 58,53				23	13,16 28,53 46, 7	5,28 29,40 3,34		
9,27 21, 0 33,10 45,44 59, 7				24	13,30 29, 7 46,30	5,51 30,12 4,29		
9,40 21,14 33,19 45,57 59,16				25	13,48 29,25 46,39	6,14 30,44 5,11		
9,45 21,28 33,33 46, 6 59,34				26	14, 2 29,39 47, 2	6,37 31, 7 6, 6		
9,58 21,36 33,47 46,20 59,48				27	14,16 29,57 47,20	7, 0 31,34 7, 1		
10,12 21,46 33,56 46,34 0 0,1				28	14,30 30,11 47,38	7,14 32, 7 7,56		
10,26 21,59 34,10 46,52 0,2				29	14,43 30,30 47,52	7,37 32,39 8,37		
10,35 22,13 34,24 47, 6 0,25				30	15, 1 30,48 48,10	8, 0 33,11 9,32		
10,44 22,27 34,37 47,15 0,39				31	15,16 30,57 48,29	8,23 33,29 10,32		
10,58 22,36 34,47 47,29 0,57				32	15,25 31,16 48,52	8,42 34, 2 11,27		
11,12 22,46 35, 0 47,42 1, 6				33	15,43 31,34 49,10	9, 9 34,34 12,27		
11,21 22,59 35,14 47,56 1,20				34	15,57 31,53 49,24	9,32 35, 6 13, 8		
11,30 23,13 35,28 48, 6 1,34				35	16,16 32, 2 49,42	9,59 35,20 14, 4		
11,44 23,22 35,42 48,24 1,52				36	16,29 32,20 50, 1	10,18 35,56 14,59		
11,58 23,31 35,51 48,37 2, 6				37	16,38 32,38 50,19	10,32 36,20 15,54		
12, 7 23,45 36, 0 48,51 2,20				38	16,57 32,57 50,33	10,55 37, 1 16,35		
12,21 23,59 36,14 49, 5 2,33				39	17,11 33,15 50,51	11,18 37,33 17,30		
12,30 24, 8 36,27 49,15 2,52				40	17,29 33,24 51,14	11,36 37,56 18,21		
12,44 24,22 36,37 49,28 3, 6				41	17,38 33,43 51,33	11,59 38,28 18,53		
12,58 24,31 36,50 49,42 3,20				42	17,52 34, 1 51,51	12,22 39, 0 21, 1		
13, 7 24,45 37, 4 50, 0 3,33				43	18,10 34,15 52, 9	12,49 39,32 22, 6		
13,16 24,54 37,17 50,10 3,47				44	18,20 34,29 52,23	13,12 39,50 23,37		
13,30 25, 8 37,32 50,23 4, 6				45	18,42 34,47 52,46	13,40 40,23 25, 9		
13,39 25,17 37,41 50,37 4,19				46	18,56 35, 1 53, 9	13,58 40,55 26,46		
13,53 25,30 37,55 50,51 4,28				47	19,10 35,19 53,23	14,21 41,27 27,50		
14, 6 25,40 38, 9 51, 5 4,47				48	19,23 35,33 53,41	14,49 41,59 29,27		
14,16 25,54 38,22 51,14 5, 0				49	19,47 35,51 54, 4	15,16 42,17 31, 7		
14,29 26, 8 38,32 51,32 5,19				50	20, 1 36, 9 54,27	15,35 42,50 32,53		
14,38 26,17 38,45 51,46 5,29				51	20,19 36,28 54,45	15,58 43,22 34,25		
14,53 26,26 38,54 52, 0 5,42				52	20,33 36,51 54,59	16,25 43,54 35,11		
15, 3 26,40 39, 8 52, 9 6, 0				53	20,51 37, 5 55,18	16,53 44,26 36, 6		
15,15 26,53 39,22 52,23 6,13				54	21, 1 37,23 55,36	17,20 44,49 40,32		
15,29 27, 7 39,31 52,36 6,25				55	21,19 37,42 55,59	17,39 45,30 45, 0		
15,38 27,16 39,45 52,51 6,41				56	21,37 38, 0 56,13	18, 9 46,12 50, 0		
15,52 27,30 39,59 53, 9 6,55				57	21,55 38,19 56,36	18, 4 46,53 53,19		
16, 1 27,44 40,12 53,18 7,15				58	22,14 38,32 56,59	18,52 47,20 ...		
16,11 27,58 40,22 53,32 7,28				59	22,23 38,55 57,22	19,11 47,57 ...		

Eqn. 0gh. 1	2	3	4	5	6
Palas.	0	Days	I	II	III
Palas.	G.P.	G.P.	G.P.	G.P.	G.P.
0 0, 0 40,11 20,59 4, 9 51,23 46, 2 5 0,21					
1 0,41 40,39 21,45 5, 0 52,13 47,11 2, 6					
2 1, 9 41,24 22,31 5,36 52,59 48,15 3,15					
3 1,55 42, 6 23,17 6,22 53,50 49,19 4,56					
4 2,36 42,57 23,44 7, 8 54,45 50, 5 6,42					
5 3,17 43,19 24,20 7,59 55,26 51,14 8,23					
6 4, 4 44, 5 25,16 8,49 55,59 52,23 9,59					
7 4,31 44,47 26, 7 9,21 57,12 53,27 11,31					
8 5,17 45,32 26,24 10, 7 58, 7 54,13 13,40					
9 5,58 46,14 27,16 10,58 59, 6 55,22 15,49					
10 6,40 46,42 27,42 11,48 59,43 56,31 17,53					
11 7, 7 47,27 28,47 12,25 3 0,39 57,39 19,14					
12 7,53 48, 9 29,33 13,11 1,34 58,49 21,14					
13 8,39 48,54 30, 1 13,57 2,29 59,34 23,19					
14 9,20 49,22 30,47 14,47 3, 9 4 1, 6 25,18					
15 10, 2 50, 8 31,33 15,33 4, 1 1,57 27,13					
16 10,29 50,50 32,19 16,10 4,56 3,10 28,49					
17 11,15 51,40 32,51 16,56 5,51 3,56 31,16					
18 11,56 52,17 33,37 17,47 6,51 5,15 33,49					
19 12,42 52,44 34,23 18, 1 7,32 6,28 36,10					
20 13, 5 53,30 35, 9 19,14 8,22 7,42 37,51					
21 13,51 54,16 35,54 20, 0 9,27 8,55 40,18					
22 14,37 55, 2 36,27 20,50 10,18 9,45 42,50					
23 15,18 55,29 37,13 21,41 10,58 10,59 44,26					
24 16, 4 56,15 37,59 22,31 11,53 12,13 50,14					
25 16,27 56,57 38,44 23, 8 12,53 13,26 50,47					
26 17,13 57,43 39,18 23,54 13,53 14,16 53,55					
27 17,59 58,29 40, 2 24,44 14,52 15,30 57, 4					
28 18,45 58,52 40,49 25,39 15,34 16,43 6 0,12					
29 19,13 59,38 41,34 26,16 16,29 18,20 1,39					
30 19,58 1 0,23 42,21 27, 2 17,29 19,15 7, 1					
31 20, 4 1, 9 42,52 27,53 18,29 20,10 11,36					
32 21,26 1,37 43,20 28,44 19,10 21,33 13,12					
33 22, 8 2,23 44,24 29,34 20, 5 22,55 15,53					
34 22,35 3, 4 45,10 30,10 21, 5 24,18 26,32					
35 23,20 3,45 45,42 30,57 22, 4 25, 8 33, 6					
36 24, 3 4,32 46,28 31,47 23, 4 26,31 53,19					
37 24,43 4,59 47,14 32,37 23,42 27,54 ...					
38 25,11 5,45 48,41 33,14 24,41 29,16 ...					
39 25,57 6,31 48,50 34, 5 25,40 30,39 ...					
40 26,43 7,13 49,23 35, 0 26,40 31,34 ...					
41 27,24 7,40 50, 9 35,46 27,26 31,57 ...					
42 28, 6 8,26 50,55 36,41 28,21 34,20 ...					
43 28,32 8,53 51,45 37,18 29,26 35,33 ...					
44 29,19 9,58 52,17 38, 8 30,80 36,83 ...					
45 30, 0 10,43 53, 3 39, 4 31,34 38, 5 ...					
46 30,46 11,12 53,49 39,53 32,15 39,36 ...					
47 31,14 11,57 54,36 40,35 33,15 41, 9 ...					
48 32, 0 12,43 55,26 41,21 34,19 42,40 ...					
49 32,41 13,29 55,58 42,16 35,23 43,40 ...					
50 33,22 13,57 56,44 43, 7 36, 9 45,12 ...					
51 34, 9 14,42 57,30 44, 1 37, 9 46,44 ...					
52 34,27 15,28 58,15 44,38 38, 9 48,52 ...					
53 35,17 16,14 58,48 45,30 39,13 49,15 ...					
54 36, 3 17, 0 59, 2 46,26 40,17 50,47 ...					
55 36,49 17,28 2 0,33 47,15 41, 3 52,46 ...					
56 37,12 18,14 1,14 47,56 42, 3 53,55 ...					
57 37,59 18,59 2, 1 48,46 43, 3 55,41 ...					
58 38,44 19,46 2,37 49,37 43,53 56,59 ...					
59 39,30 20,13 3,23 50,32 44,58 58,35 ...					

TABLE XVII.—*contd.*201
SL

Mars' Anomaly.

	+	0	1	2	3	4	5	6	7	8	9
	Degrees.										
0	0.0	0.5	0.9	1.4	1.9	2.4	2.9	3.4	3.9	4.4	
1	4.8	5.3	5.8	6.3	6.7	7.2	7.7	8.2	8.7	9.2	
2	9.7	10.2	10.7	11.2	11.7	12.2	12.7	13.2	13.7	14.2	
3	14.7	15.2	15.7	16.2	16.7	17.3	17.8	18.3	18.8	19.4	
4	19.9	20.4	20.9	21.4	22.0	22.5	23.0	23.6	24.1	24.7	
5	25.2	25.7	26.3	26.8	27.4	28.0	28.6	29.1	29.7	30.2	
6	30.8	31.4	32.0	32.6	33.2	33.7	34.4	35.0	35.6	36.2	
7	36.9	37.5	38.1	38.7	39.4	40.1	40.7	41.4	42.1	42.7	
8	43.4	44.1	44.8	45.5	46.3	47.0	47.7	48.5	49.2	50.0	
9	50.8	51.6	52.4	53.2	54.2	55.0	55.9	56.8	57.7	58.7	
10	59.7	60.7	61.8	62.9	64.0	65.2	66.5	67.7	69.2	70.6	
11	72.2	74.1	76.1	78.4	81.2	85.7	...	...	...	...	

Maximum Equation 11.53 for Anomaly of 90.00.

	+	9	8	7	6	5	4	3	2	1	0
	Degrees.										
11	...	...	...	...	94.2	98.7	101.6	103.9	105.9	107.8	
10	109.4	110.8	112.3	113.5	114.8	116.0	117.1	118.2	119.3	120.3	
9	121.3	123.3	125.2	127.1	129.0	130.8	132.6	134.4	136.2	138.0	
8	130.0	130.8	131.5	132.3	133.0	133.7	134.5	135.2	135.9	136.6	
7	137.3	137.9	138.6	139.3	139.9	140.6	141.3	141.9	142.5	143.1	
6	143.8	144.4	145.0	145.6	146.3	146.8	147.4	148.0	148.6	149.2	
5	149.8	150.3	150.9	151.4	152.0	152.6	153.1	153.7	154.3	154.8	
4	155.3	155.9	156.4	157.0	157.5	158.0	158.6	159.1	159.6	160.1	
3	160.6	161.2	161.7	162.2	162.7	163.3	163.8	164.3	164.8	165.3	
2	165.8	166.3	166.8	167.3	167.8	168.3	168.8	169.3	169.8	170.3	
1	170.8	171.3	171.8	172.3	172.8	173.3	173.7	174.2	174.7	175.2	
0	175.6	176.1	176.6	177.1	177.6	178.1	178.6	179.1	179.5	180.0	

	+	0	1	2	3	4	5	6	7	8	9
	Degrees.										
0	180.0	180.5	180.9	181.4	181.9	182.4	182.9	183.4	183.9	184.4	
1	184.8	185.3	185.8	186.3	186.7	187.2	187.7	188.2	188.7	189.2	
2	189.7	190.2	190.7	191.2	191.7	192.2	192.7	193.2	193.7	194.2	
3	194.7	195.2	195.7	196.2	196.7	197.3	197.8	198.3	198.8	199.4	
4	199.9	200.4	200.9	201.4	202.0	202.5	203.0	203.6	204.1	204.7	
5	205.2	205.7	206.3	206.9	207.4	208.0	208.6	209.1	209.7	210.2	
6	210.8	211.4	212.0	212.6	213.2	213.7	214.4	215.0	215.6	216.2	
7	216.9	217.5	218.1	218.7	219.4	220.1	220.7	221.4	222.1	222.7	
8	223.4	224.1	224.8	225.5	226.3	227.0	227.7	228.5	229.2	230.0	
9	230.8	231.6	232.4	233.2	234.2	235.0	235.9	236.8	237.7	238.7	
10	239.7	240.7	241.8	242.9	244.0	245.2	246.5	247.7	249.2	250.6	
11	252.2	254.1	256.1	258.4	261.2	265.7	...	...	...	...	

Maximum Equation 11.53 for Anomaly of 270.00.

	+	9	8	7	6	5	4	3	2	1	0
	Degrees.										
11	...	...	...	...	274.2	278.7	281.6	285.9	285.9	287.8	
10	289.4	290.8	292.3	293.5	294.8	296.0	297.1	298.2	299.3	300.3	
9	301.3	302.3	303.2	304.1	305.0	305.8	306.8	307.6	308.4	309.2	
8	310.0	310.8	311.5	312.3	313.0	313.7	314.5	315.2	315.9	316.6	
7	317.3	317.9	318.6	319.3	319.9	320.6	321.3	321.9	322.5	323.1	
6	323.8	324.4	325.0	325.6	326.3	326.8	327.4	328.0	328.6	329.2	
5	329.8	330.3	330.9	331.4	332.0	332.6	333.1	333.7	334.3	334.8	
4	335.3	335.9	336.4	337.0	337.5	338.0	338.6	339.1	339.6	340.1	
3	340.6	341.2	341.7	342.2	342.7	343.3	343.8	344.3	344.8	345.3	
2	345.8	346.3	346.8	347.3	347.8	348.3	348.8	349.3	349.8	350.3	
1	350.8	351.3	351.8	352.3	352.8	353.3	353.7	354.2	354.7	355.2	
0	355.6	356.1	356.6	357.1	357.6	358.1	358.6	359.1	359.5	360.0	

MERCURY.

Data for calculating Latitude and geocentric Longitude of Mercury from B. C. 1 to A. D. 2000.

Mercury's mean motion for Centuries.

A.D.	Kaliyuga.	Mean Long. at commence- ment of Solar Year.	Longi- tude of apsis.	Longi- tude of node.
		Deg.	Deg.	Deg.
1 B.C.	3101 K.Y.	209.3843	220.4118	20.7580
100 A.D.	3201	285.4023	220.4149	20.7539
200	3301	1.4203	220.4180	20.7499
300	3401	77.4383	220.4210	20.7458
400	3501	153.4563	220.4241	20.7417
500	3601	229.4744	220.4272	20.7377
600	3701	305.4924	220.4302	20.7336
700	3801	21.5104	220.4333	20.7295
800	3901	97.5284	220.4363	20.7255
900	4001	173.5464	220.4394	20.7214

A.D.	Kaliyuga.	Mean Long. at commence- ment of Solar Year.	Longi- tude of apsis.	Longi- tude of node.
		Deg.	Deg.	Deg.
1000 A.D.	4101 K.Y.	249.5645	220.4425	20.7173
1100	4201	325.5825	220.4455	20.7133
1200	4301	41.6005	220.4486	20.7092
1300	4401	117.6185	220.4517	20.7051
1400	4501	193.6365	220.4547	20.7011
1500	4601	269.6546	220.4578	20.6970
1600	4701	345.6726	220.4609	20.6929
1700	4801	61.6906	220.4639	20.6889
1800	4901	137.7086	220.4670	20.6848
1900	5001	213.7266	220.4701	20.6807
2000	5101	289.7447	220.4731	20.6767

Mercury's mean motion for Odd Years.

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	54.76	11	242.36	21	69.96	31	257.57	41	85.17	51	272.77	61	100.37	71	287.97	81	115.57
2	109.52	12	297.12	22	124.72	32	312.33	42	139.93	52	327.53	62	155.13	72	342.73	82	170.33
3	164.28	13	251.88	23	179.48	33	7.09	43	194.69	53	22.29	63	209.89	73	37.49	83	225.09
4	219.04	14	46.64	24	234.24	34	61.85	44	249.45	54	77.05	64	264.65	74	92.25	84	279.85
5	273.80	15	101.40	25	289.00	35	116.61	45	304.21	55	131.81	65	319.41	75	147.01	85	334.61
6	328.56	16	156.16	26	343.76	36	171.37	46	358.97	56	186.57	66	14.17	76	201.77	86	29.37
7	383.32	17	210.92	27	398.52	37	226.13	47	53.73	57	241.33	67	58.93	77	256.53	87	84.13
8	78.08	18	265.68	28	93.28	38	280.89	48	108.49	58	296.09	68	123.69	78	311.29	88	138.89
9	132.84	19	320.44	29	148.04	39	335.65	49	163.25	59	350.85	69	178.45	79	6.05	89	193.65
10	187.60	20	15.20	30	202.80	40	30.41	50	218.01	60	45.61	70	233.21	80	60.81	90	248.42
																100	76.02

TABLE XVII.—*contd.*

GSL

Mercury's mean motion for Days.

Mercury's
Annual Equation.

Mercury's Anomaly.

Days.	0	1	2	3	4	5	6	7	8	9	+	—	+	+	—	—
											Degrees.	Degrees.	Degrees.	Degrees.	Degrees.	Degrees.
0	...	4-09	8-18	12-28	16-37	20-46	24-55	28-65	32-74	36-83	0 0	360-0	0 0	180-0	180-0	360-0
1	40-92	45-02	49-11	53-20	57-29	61-38	65-48	69-57	73-66	77-75	1 8-7	358-3	0 1	1-2	178-8	181-2
2	81-87	85-94	90-03	94-12	98-22	102-31	106-40	110-49	114-59	118-68	2 7-4	352-6	0 2	2-4	177-6	182-4
3	122-77	126-86	130-95	135-05	139-14	143-23	147-32	151-42	155-51	159-60	3 11-2	348-8	0 3	3-6	176-4	183-6
4	163-69	167-79	171-88	175-97	180-06	184-15	188-25	192-34	196-43	200-52	4 14-9	345-1	0 4	4-9	175-1	184-9
5	204-62	208-71	212-80	216-89	220-99	225-08	229-17	233-26	237-36	241-45	5 18-7	341-3	0 5	6-0	174-0	186-0
6	245-54	249-63	253-72	257-82	261-91	266-00	270-09	274-19	278-28	282-37	6 22-5	337-5	0 6	7-2	172-8	187-2
7	286-46	290-56	294-65	298-74	302-83	306-92	311-02	315-11	319-20	323-29	7 26-4	333-6	0 7	8-5	171-5	188-5
8	327-39	331-48	335-57	339-66	343-76	347-85	351-94	356-03	0-13	4-22	8 30-2	329-8	0 8	9-7	170-3	189-7
9	8-31	12-40	16-49	20-59	24-68	28-77	32-86	36-96	41-05	45-14	9 34-7	325-3	0 9	11-0	169-0	191-0
10	49-23	53-33	57-42	61-51	65-60	69-69	73-78	77-88	81-97	86-06	10 38-2	321-8	1 0	12-2	167-8	192-2
11	90-16	94-25	98-34	102-43	106-53	110-62	114-71	118-80	122-90	126-99	11 42-3	317-7	1 1	13-5	166-5	193-5
12	131-08	135-17	139-26	143-36	147-45	151-54	155-63	159-73	163-82	167-91	12 46-5	313-5	1 2	14-7	165-3	194-7
13	172-00	176-10	180-19	184-28	188-37	192-47	196-56	200-65	204-74	208-83	13 50-7	309-3	1 3	16-1	163-9	196-1
14	212-93	217-02	221-11	225-20	229-30	233-39	237-48	241-57	245-67	249-76	14 55-2	304-8	1 4	17-4	162-6	197-4
15	253-85	257-94	262-03	266-13	270-22	274-31	278-40	282-50	286-59	290-68	15 59-8	300-2	1 5	18-7	161-3	198-7
16	294-77	298-87	302-96	307-05	311-14	315-24	319-33	323-42	327-51	331-60	16 64-6	295-4	1 6	20-1	159-9	200-1
17	335-70	339-79	343-88	347-97	352-07	356-16	0-25	4-34	8-44	12-53	17 69-8	290-2	1 7	21-5	158-5	201-5
18	16-62	20-71	24-80	28-90	32-99	37-08	41-17	45-27	49-36	53-45	18 75-4	284-6	1 8	22-7	157-3	202-7
19	57-54	61-64	65-73	69-82	73-91	78-01	82-10	86-19	90-28	94-37	19 81-6	278-4	1 9	24-2	155-8	204-2
20	98-47	102-56	106-65	110-74	114-84	118-93	123-02	127-11	131-21	135-30	20 88-7	271-3	2 0	25-6	154-4	205-6
21	139-39	143-48	147-58	151-67	155-76	159-85	163-94	168-04	172-98	176-22	21 98-6	261-4	2 1	27-0	153-0	207-0
22	180-31	184-41	188-50	192-59	196-68	200-78	204-87	208-96	213-05	217-15	21 112-2	247-8	2 2	28-5	151-5	208-5
23	221-24	225-33	229-42	233-51	237-61	241-70	245-80	249-88	253-98	258-07	22 +	—	2 3	29-9	150-1	209-9
24	262-16	266-25	270-35	274-44	278-53	282-62	286-71	290-80	294-90	298-99	23 123-7	236-3	2 4	31-4	148-6	211-4
25	303-08	307-18	311-27	315-36	319-45	323-55	327-64	331-73	335-82	339-92	24 131-5	228-5	2 5	33-0	147-0	213-0
26	344-01	348-10	352-19	356-28	0-38	4-47	8-56	12-65	16-75	20-84	25 136-6	223-4	2 6	34-5	145-5	214-5
27	24-93	29-02	33-12	37-21	41-30	45-39	49-49	53-58	57-67	61-76	26 140-7	219-3	2 7	36-0	144-0	216-0
28	65-85	69-95	74-04	78-13	82-22	86-32	90-41	94-50	98-59	102-69	27 144-3	215-7	2 8	37-7	142-3	217-7
29	106-78	110-87	114-96	119-05	123-15	127-24	131-33	135-42	139-52	143-61	28 147-4	212-6	2 9	39-4	140-6	219-4
30	147-70	151-79	155-89	159-98	164-07	168-16	172-26	176-35	180-44	184-53	29 150-3	209-7	3 0	41-2	138-8	221-2
31	188-62	192-72	196-81	200-90	204-99	209-09	213-18	217-27	221-36	225-46	30 152-9	207-1	3 1	42-9	137-1	222-9
32	229-55	233-64	237-73	241-82	245-92	250-00	254-10	258-19	262-29	266-38	31 155-3	204-7	3 2	44-7	135-3	224-7
33	270-47	274-56	278-66	282-75	286-84	290-93	295-03	299-12	303-21	307-30	32 157-6	202-4	3 3	46-6	133-4	226-6
34	311-39	315-49	319-58	323-67	327-76	331-86	335-95	340-04	344-13	348-23	33 159-8	200-2	3 4	48-5	131-5	228-5
35	352-32	356-41	0-50	4-60	8-69	12-78	16-87	20-96	25-06	29-15	34 161-9	198-1	3 5	50-6	129-4	230-6
36	33-24	37-33	41-43	45-52	49-61	53-70	...	...	...	...	35 163-9	196-1	3 6	52-7	127-3	232-7
											36 165-8	194-2	3 7	55-0	125-0	235-0
											7 167-7	192-3	3 8	57-5	122-5	237-5
											8 169-5	190-5	3 9	60-0	120-0	240-0
											5 171-3	188-7	4 0	63-0	117-0	243-0
											4 173-1	186-9	4 1	66-0	114-0	246-0
											3 174-8	185-2	4 2	69-7	110-2	249-7
											2 176-6	183-4	4 3	74-0	106-0	254-0
											1 178-3	181-7	4 4	80-5	99-5	260-5
											0 180-0	180-0	4 5	90-0	90-0	270-0

JUPITER.

Data for calculating Latitude and Geocentric Longitude of Jupiter from B.C. 1 to A.D. 2000.

Jupiter's mean motion for Centuries.

A.D.	Kaliyuga.	Mean long. at commence- ment of Solar Year.	Longi- tude of apsis.	Longi- tude of node.	A.D.	Kaliyuga.	Mean long. at commence- ment of Solar Year.	Longi- tude of apsis.	Longi- tude of node.
		Deg.	Deg.	Deg.			Deg.	Deg.	Deg.
1 B.C.	3101 K.Y.	163-1655	171-2250	79-6967	1000 A.D.	4101 K.Y.	270-6117	171-3001	79-682
100 A.D.	3201	317-9101	171-2325	79-6952	1100	4201	65-3563	171-3076	79-680
200	3301	112-6547	171-2400	79-6938	1200	4301	220-1009	171-3151	79-679
300	3401	267-3993	171-2475	79-6923	1300	4401	14-8455	171-3226	79-677
400	3501	62-1439	171-2550	79-6909	1400	4501	169-5901	171-3301	79-676
500	3601	216-8885	171-2625	79-6894	1500	4601	324-3347	171-3376	79-674
600	3701	11-6331	171-2700	79-6880	1600	4701	119-0793	171-3451	79-673
700	3801	166-3778	171-2776	79-6865	1700	4801	273-8239	171-3526	79-672
800	3901	321-1225	171-2851	79-6851	1800	4901	68-5665	171-3601	79-670
900	4001	115-8671	171-2926	79-6836	1900	5001	223-3130	171-3676	79-669
					2000	5101	18-0576	171-3752	79-667



TABLE XVII.—contd.

203
CSL

Jupiter's mean motion for Odd Years.

Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.	Yrs. Deg.
1 30-35	11 333-82	21 277-30	31 220-77	41 164-24	51 107-72	61 51-19	71 354-67	81 298-14	91 241-62		
2 60-69	12 4-17	22 307-64	32 251-12	42 194-59	52 138-07	62 81-54	72 25-02	82 328-49	92 271-96		
3 91-04	13 34-52	23 337-99	33 281-46	43 224-94	53 168-41	63 111-89	73 55-36	83 358-84	93 302-31		
4 121-39	14 64-86	24 8-34	34 311-81	44 255-29	54 198-76	64 142-24	74 85-71	84 29-18	94 332-66		
5 151-74	15 95-21	25 38-69	35 342-16	45 285-63	55 229-11	65 172-58	75 116-06	85 59-53	95 3-01		
6 182-08	16 125-56	26 69-03	36 12-51	46 315-98	56 259-46	66 202-93	76 146-41	86 89-88	96 33-35		
7 212-43	17 155-91	27 99-38	37 42-85	47 346-33	57 289-80	67 233-28	77 176-75	87 120-23	97 63-70		
8 242-78	18 186-25	28 129-73	38 73-20	48 16-68	58 320-15	68 263-63	78 207-10	88 150-57	98 94-05		
9 273-13	19 216-60	29 160-07	39 103-55	49 47-03	59 350-50	69 293-97	79 237-45	89 180-92	99 124-40		
10 303-47	20 246-95	30 190-42	40 133-90	50 77-37	60 20-85	70 324-32	80 267-80	90 211-27	100 154-74		

Jupiter's mean motion for Days.

Days.	Degrees.	Days.	Degrees.	Days.	Degrees.	Days.	Degrees.	Days.	Degrees.	Days.	Degrees.
0 ...	0-80	0-17	0-25	0-33	0-41	0-50	0-58	0-66	0-75	19 15-79	15-87
1 0-83	0-91	1-00	1-08	1-16	1-25	1-33	1-41	1-50	1-58	20 16-62	16-70
2 1-66	1-74	1-83	1-91	1-99	2-07	2-16	2-24	2-33	2-41	21 17-45	17-53
3 2-49	2-56	2-66	2-74	2-82	2-91	2-99	3-07	3-16	3-24	22 18-28	18-36
4 3-32	3-41	3-49	3-57	3-66	3-74	3-82	3-90	3-99	4-07	23 19-11	19-19
5 4-15	4-24	4-32	4-40	4-49	4-57	4-65	4-74	4-82	4-90	24 19-94	20-02
6 4-99	5-07	5-15	5-23	5-32	5-40	5-48	5-57	5-65	5-73	25 20-77	20-86
7 5-82	5-90	5-98	6-07	6-15	6-23	6-31	6-40	6-48	6-56	26 21-60	21-69
8 6-65	6-73	6-81	6-90	6-98	7-06	7-15	7-23	7-31	7-39	27 22-43	22-52
9 7-48	7-56	7-64	7-73	7-81	7-89	7-98	8-06	8-14	8-23	28 23-27	23-35
10 8-31	8-39	8-47	8-56	8-64	8-72	8-81	8-89	8-97	9-06	29 24-10	24-18
11 9-14	9-22	9-31	9-39	9-47	9-55	9-64	9-72	9-80	9-89	30 24-93	25-01
12 9-97	10-05	10-14	10-22	10-30	10-39	10-47	10-55	10-64	10-72	31 25-76	25-84
13 10-80	10-88	10-97	11-05	11-13	11-22	11-30	11-38	11-47	11-55	32 26-59	26-67
14 11-63	11-72	11-80	11-88	11-96	12-05	12-13	12-21	12-30	12-38	33 27-42	27-50
15 12-46	12-55	12-63	12-71	12-80	12-88	12-96	13-04	13-13	13-21	34 28-25	28-33
16 13-29	13-38	13-46	13-54	13-63	13-71	13-79	13-88	13-96	14-04	35 29-08	29-16
17 14-13	14-21	14-29	14-37	14-46	14-54	14-62	14-71	14-79	14-87	36 29-91	30-00
18 14-96	15-04	15-12	15-21	15-29	15-37	15-45	15-54	15-62	15-70		

Jupiter's Annual Equation.

+ 0	1	2	3	4	5	6	7	8	9	- 0	1	2	3	4	5	6	7	8	9
0 0-0	0-6	1-2	1-8	2-4	3-1	3-7	4-3	4-9	5-5	0 180-0	180-4	180-8	181-2	181-7	182-1	182-5	182-9	183-3	183-7
1 6-1	6-7	7-4	8-0	8-6	9-2	9-8	10-4	11-1	11-7	1 184-1	184-5	185-0	185-4	185-8	186-2	186-6	187-0	187-5	187-9
2 12-2	12-9	13-5	14-1	14-7	15-4	16-0	16-6	17-2	17-9	2 188-3	188-7	189-1	189-6	190-0	190-4	190-8	191-3	191-7	192-1
3 18-5	19-1	19-7	20-4	21-0	21-6	22-2	22-9	23-5	24-2	3 192-5	193-0	193-4	193-8	194-3	194-7	195-1	195-5	196-0	196-4
4 24-8	25-4	26-1	26-7	27-4	28-0	28-6	29-2	29-9	30-6	4 196-9	197-3	197-8	198-2	198-6	199-1	199-6	200-0	200-5	200-9
5 31-2	31-9	32-6	33-2	33-9	34-5	35-2	35-9	36-6	37-2	5 201-4	201-8	202-3	202-8	203-2	203-7	204-2	204-7	205-2	205-6
6 37-9	38-6	39-3	40-0	40-7	41-4	42-0	42-8	43-5	44-2	6 206-1	206-6	207-1	207-6	208-1	208-6	209-1	209-6	210-1	210-7
7 44-9	45-7	46-4	47-2	47-9	48-6	49-4	50-2	50-9	51-7	7 211-2	211-7	212-3	212-8	213-4	213-9	214-5	215-1	215-6	216-2
8 52-4	53-2	54-0	54-8	55-7	56-4	57-3	58-2	59-0	59-8	8 216-8	217-4	217-9	218-6	219-2	219-8	220-4	221-1	221-8	222-4
9 60-7	61-6	62-5	63-4	64-4	65-3	66-3	67-2	68-3	69-4	9 223-2	223-8	224-6	225-3	226-0	226-8	227-6	228-3	229-2	229-9
10 70-4	71-5	72-7	73-9	75-0	76-4	77-6	79-0	80-5	82-0	10 230-2	231-8	232-8	233-8	234-8	236-0	237-0	238-1	239-4	240-8
11 83-7	85-5	87-3	90-0	93-0	97-5	...	...	...	...	11 242-3	243-8	245-8	247-8	250-5	255-0	...	...	...	...

Maximum Equation 11-54 for Anomaly of 103-00.

+ 9	8	7	6	5	4	3	2	1	0
11 ...	...	...	...	105-0	109-5	112-2	114-2	116-2	117-7
10 119-2	120-6	121-9	123-0	124-0	125-2	126-2	127-2	128-2	129-1
9 130-1	130-8	131-7	132-4	133-2	134-0	134-7	135-4	136-2	136-8
8 137-6	138-2	138-9	139-6	140-2	140-8	141-4	142-1	142-6	143-2
7 143-8	144-4	144-9	145-5	146-1	146-6	147-2	147-7	148-3	148-8
6 149-3	149-9	150-4	150-9	151-4	151-9	152-4	152-9	153-4	153-9
5 154-4	154-8	155-3	155-8	156-3	156-8	157-2	157-7	158-2	158-6
4 159-1	159-5	160-0	160-4	160-9	161-4	161-8	162-2	162-7	163-1
3 163-6	164-0	164-5	164-9	165-3	165-7	166-2	166-6	167-0	167-5
2 167-9	168-3	168-7	169-2	169-6	170-0	170-4	170-9	171-3	171-7
1 172-1	172-5	173-0	173-4	173-8	174-2	174-6	175-0	175-5	175-9
0 176-3	176-7	177-1	177-5	177-9	178-3	178-7	179-2	179-6	180-0

Maximum Equation 11-54 for Anomaly of 257-00.

- 9	8	7	6	5	4	3	2	1	0
11 ...	...	...	...	...	262-5	267-0	270-0	272-5	274-5
10 278-0	279-5	281-0	282-4	283-6	285-0	286-4	287-3	288-5	289-6
9 290-6	291-7	292-8	293-7	294-7	295-6	296-6	297-5	298-4	299-3
8 300-2	301-0	301-8	302-7	303-6	304-3	305-2	306-0	306-8	307-6
7 308-3	309-1	309-8	310-6	311-4	312-1	312-8	313-6	314-3	315-1
6 315-8	316-5	317-2	318-0	318-6	319-3	320-0	320-7	321-4	322-1
5 322-8	323-4	324-1	324-8	325-5	326-1	326-8	327-4	328-1	328-8
4 329-4	330-1	330-8	331-4	332-0	332-6	333-3	333-9	334-6	335-2
3 335-8	336-5	337-1	337-8	338-4	339-0	339-6	340-3	341-0	341-6
2 342-1	342-8	343-4	344-0	344-6	345-3	345-9	346-5	347-1	347-8
1 348-3	348-9	349-6	350-2	350-8	351-4	352-0	352-6	353-3	353-9
0 354-5	355-1	355-7	356-3	356-9	357-6	358-2	358-8	359-4	360-0

Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	225-19	11	317-09	21	48-99	31	140-88	41	232-78	51	324-68	61	565-8	71	148-48	81	240-88	91	332-28
2	90-38	12	182-28	22	274-18	32	6-07	42	97-97	52	189-87	62	281-77	72	13-67	82	105-57	92	197-47
3	315-57	13	47-47	23	139-37	33	231-26	43	323-16	53	55-06	63	146-96	73	238-86	83	330-76	93	62-66
4	180-76	14	272-66	24	4-56	34	96-45	44	188-35	54	280-25	64	191-15	74	104-05	84	195-95	94	287-85
5	45-95	15	137-85	25	229-75	35	321-64	45	53-54	55	145-44	65	237-34	75	329-24	85	61-14	95	153-04
6	271-14	16	3-04	26	94-94	36	186-83	46	278-73	56	10-63	66	102-53	76	194-43	86	286-33	96	18-23
7	136-33	17	228-23	27	320-13	37	52-02	47	143-92	57	235-82	67	327-72	77	59-62	87	151-52	97	243-42
8	1-52	18	93-42	28	185-32	38	277-21	48	9-11	58	101-01	68	192-91	78	284-81	88	16-71	98	108-60
9	226-71	19	318-61	29	5-61	39	142-40	49	234-30	59	326-20	69	58-10	79	150-00	89	241-90	99	333-79
10	91-90	20	183-80	30	275-70	40	7-59	50	99-49	60	191-39	70	283-29	80	15-19	90	107-09	100	198-98

	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.	Yrs.	Deg.
1	13:22	11	134:41	21	256:60	31	18:79	41	140:98	51	263:17	61	25:36	71	147:55	81	269:74	91	31:93		
2	21:44	12	146:63	22	268:82	32	31:01	42	153:20	52	275:39	62	37:58	72	159:77	82	281:96	92	44:15		
3	36:66	13	158:85	23	281:04	33	43:23	43	165:42	53	287:61	63	49:80	73	171:99	83	294:18	93	56:37		
4	48:88	14	171:07	24	293:26	34	55:45	44	177:64	54	299:83	64	62:02	74	184:21	84	306:40	94	68:56		
5	61:09	15	183:29	25	305:48	35	67:67	45	189:86	55	312:05	65	74:24	75	196:43	85	318:62	95	80:81		
6	73:31	16	195:50	26	317:70	36	79:89	46	202:08	56	324:27	66	86:46	76	208:65	86	330:84	96	92:03		
7	85:53	17	207:72	27	329:91	37	92:10	47	214:30	57	336:49	67	98:63	77	220:87	87	343:06	97	105:25		
8	97:75	18	219:94	28	342:13	38	104:32	48	226:51	58	348:71	68	110:90	78	233:09	88	355:28	98	117:47		
9	109:97	19	232:16	29	354:35	39	116:54	49	238:73	59	0:92	69	123:12	79	245:31	89	7:50	99	129:69		
10	122:19	20	244:38	30	6:57	40	128:76	50	250:95	60	13:14	70	135:33	80	257:52	90	19:72	100	141:31		

[illegible]

	0	1	2	3	4	5	6	7	8	9		0	1	2	3	4	5	6	7	8	9
						Degrees.											Degrees.				
0	0.0	1.0	2.0	3.1	4.1	5.1	6.1	7.1	8.2	9.2	0	180.0	180.8	181.7	182.5	183.3	184.1	184.9	185.8	186.6	187.4
1	10.2	11.2	12.2	13.3	14.4	15.4	16.4	17.5	18.5	19.6	1	188.3	189.1	189.9	190.8	191.6	192.4	193.3	194.1	194.9	195.8
2	20.6	21.7	22.7	23.8	24.9	26.0	27.1	28.2	29.2	30.4	2	196.7	197.5	198.4	199.4	200.8	201.1	201.9	202.8	203.8	204.7
3	31.5	32.6	33.7	34.9	36.1	37.2	38.4	39.6	40.8	42.0	3	205.6	206.5	207.5	208.4	209.4	210.3	211.3	212.3	213.3	214.4
4	43.2	44.5	45.9	47.1	48.5	49.7	51.1	52.5	54.0	55.5	4	215.4	216.5	217.5	218.7	219.8	221.0	222.1	223.4	224.6	225.9
5	57.0	58.5	60.1	61.7	63.5	65.4	67.2	69.2	71.5	73.7	5	227.3	228.5	229.8	231.3	233.0	234.6	236.3	238.3	240.0	242.3
6	76.2	79.3	82.7	87.5	93.5	...	...	...	...	...	6	244.3	247.8	250.8	255.0	262.5	...	...	...	...	...

	9	8	7	6	5	4	3	2	1	0
	Degrees.									
6	...	...	...	...	97.5	105.0	109.2	112.7	115.7	
5	117.7	120.0	121.7	123.7	125.4	127.0	128.7	130.2	131.5	132.7
4	134.1	135.4	136.6	137.9	139.0	140.2	141.3	142.5	143.5	144.6
3	145.6	146.7	147.7	148.7	149.7	150.6	151.6	152.5	153.5	154.4
2	155.3	156.2	157.2	158.1	158.9	159.2	160.7	161.6	162.5	163.3
1	164.2	165.1	165.9	166.7	167.6	168.4	169.2	170.1	170.9	171.7
0	172.6	173.4	174.2	175.1	175.9	176.7	177.5	178.3	179.2	180.0

	9	8	7	6	5	4	3	2	1	0
	Degrees.									
6	...	...	...	...	262.5	272.5	277.3	280.8	283.8	
5	286.3	288.5	290.8	292.8	294.6	296.5	298.3	299.9	301.5	303.0
4	304.5	306.0	307.5	308.9	310.8	311.5	312.9	314.1	315.5	316.8
3	318.0	319.2	320.4	321.6	322.8	323.9	325.1	326.3	327.4	328.5
2	329.6	330.8	332.1	332.9	334.0	335.1	336.2	337.3	338.3	339.4
1	340.4	341.5	342.5	343.6	344.6	345.6	346.7	347.8	348.8	349.8
0	350.8	351.8	352.9	353.9	354.9	355.9	356.9	358.0	359.0	360.0

	0	1	2	3	4	5	6	7	8	9		0	1	2	3	4	5	6	7	8	9
	Degrees.											Degrees.									
0	0.0	0.7	1.5	2.2	2.9	3.7	4.4	5.2	5.9	6.7	0	180.0	180.7	181.5	182.2	182.9	183.7	184.4	185.2	185.9	186.7
1	7.4	8.1	8.9	9.6	10.4	11.2	11.9	12.7	13.4	14.2	1	187.4	188.1	188.9	189.6	190.4	191.2	191.9	192.7	193.4	194.2
2	14.9	15.7	16.5	17.2	18.1	18.8	19.6	20.4	21.2	22.0	2	194.9	195.7	196.5	197.2	198.1	198.8	199.6	200.4	201.2	202.0
3	22.8	23.7	24.5	25.3	26.1	26.9	27.8	28.7	29.5	30.3	3	202.8	203.7	204.5	205.3	206.1	206.9	207.8	208.7	209.5	210.3
4	31.2	32.1	33.0	33.9	34.8	35.7	36.7	37.6	38.5	39.5	4	211.2	212.1	213.0	213.9	214.8	215.7	216.7	217.6	218.5	219.5
5	40.5	41.5	42.5	43.5	44.6	45.6	46.7	47.9	49.0	50.1	5	220.5	221.5	222.5	223.5	224.6	225.6	226.7	227.9	229.0	230.1
6	51.4	52.5	53.9	55.1	56.5	57.9	59.2	60.9	62.5	64.1	6	231.4	232.5	233.9	235.1	236.5	237.9	239.2	240.9	242.5	244.1
7	66.0	67.7	70.0	72.2	75.0	78.2	83.0	90.0			7	246.0	247.7	250.0	252.2	255.0	258.2	263.0	270.0		

	9	8	7	6	5	4	3	2	1	0
	Degrees.									
7	...	...	90.0	97.0	101.8	105.0	107.8	110.0	112.3	114.0
6	115.9	117.5	119.1	120.8	122.1	123.6	124.9	126.1	127.5	128.6
5	129.9	131.0	132.1	133.3	134.4	135.4	136.5	137.5	138.5	139.5
4	140.5	141.5	142.4	143.3	144.3	145.2	146.1	147.0	147.9	148.8
3	149.7	150.5	151.3	152.2	153.1	153.9	154.7	155.5	156.3	157.2
2	158.0	158.8	159.6	160.4	161.2	161.9	162.8	163.6	164.3	165.1
1	165.8	166.6	167.3	168.1	168.8	169.6	170.4	171.1	171.9	172.6
0	173.3	174.1	174.8	175.6	176.3	177.1	177.8	178.5	179.3	180.0

	9	8	7	6	5	4	3	2	1	0
	Degrees.									
7	...	...	270.0	277.0	281.8	285.0	287.8	290.0	292.3	294.0
6	295.9	297.5	299.1	300.8	302.1	303.5	304.9	306.1	307.5	308.6
5	309.9	311.0	312.1	313.3	314.4	315.4	316.6	317.5	318.5	319.5
4	320.5	321.5	322.4	323.3	324.3	325.2	326.1	327.0	327.9	328.8
3	329.7	330.5	331.3	332.2	333.1	333.9	334.7	335.5	336.3	337.2
2	338.0	338.8	339.6	340.4	341.2	341.9	342.8	343.5	344.3	345.1
1	345.8	346.6	347.3	348.1	348.8	349.6	350.4	351.1	351.9	352.6
0	353.3	354.1	354.8	355.6	356.3	357.1	357.8	358.5	359.3	360.0



TABLE XVII. A.

Sun's mean Longitude and Equation for every complete day of Hindu Solar year.

207
SL

Day	☉'s mean Longitude.	Eqn.	Day	☉'s mean Longitude.	Eqn.	Day	☉'s mean Longitude.	Eqn.	Day	☉'s mean Longitude.	Eqn.	Day	☉'s mean Longitude.	Eqn.
	Degrees.			Degrees.			Degrees.			Degrees.			Degrees.	
0	357-8606	+2-1378	61	57-9823	+7-267	122	118-1041	-1-4333	183	178-2258	-2-1367	244	238-3476	-7-203
1	358-8462	2-1333	62	58-9679	-6-919	123	119-0897	-1-4586	184	179-2114	-2-1306	245	239-3332	-6-833
2	359-8318	2-1228	63	59-9535	-6-661	124	120-0753	-1-4883	185	180-1970	-2-1219	246	240-3188	-6-469
3	0-8174	2-1133	64	60-9391	-6-192	125	121-0609	-1-5133	186	181-1827	-2-1183	247	241-3044	-6-097
4	1-8030	2-1036	65	61-9247	-5-847	126	122-0465	-1-5405	187	182-1688	-2-1061	248	242-2190	-5-739
5	2-7886	2-0967	66	62-9103	-5-480	127	123-0321	-1-5667	188	183-1539	-2-0964	249	243-2756	-5-369
6	3-7742	2-0858	67	63-8959	-5-111	128	124-0177	-1-5919	189	184-1395	-2-0853	250	244-2612	-5-000
7	4-7598	2-0767	68	64-8815	-4-739	129	125-0037	-1-6167	190	185-1251	-2-0753	251	245-2468	-4-636
8	5-7454	2-0647	69	65-8671	-4-369	130	125-8889	-1-6433	191	186-1107	-2-0642	252	246-3324	-4-253
9	6-7310	2-0514	70	66-8527	-4-000	131	126-9745	-1-6687	192	187-0963	-2-0519	253	247-2180	-3-888
10	7-7166	2-0394	71	67-8383	-3-622	132	127-9601	-1-6894	193	188-0819	-2-0388	254	248-2036	-3-500
11	8-7022	2-0267	72	68-8239	-3-192	133	128-9457	-1-7133	194	189-0675	-2-0261	255	249-1892	-3-122
12	9-6878	2-0122	73	69-8096	-2-869	134	129-9313	-1-7388	195	190-0531	-2-0125	256	250-1748	-2-753
13	10-6734	1-9986	74	70-7952	-2-486	135	130-9169	-1-7572	196	191-0387	-1-9978	257	251-1604	-2-369
14	11-6590	1-9833	75	71-7808	-2-167	136	131-9025	-1-7789	197	192-0243	-1-9819	258	252-1460	-1-992
15	12-6446	1-9667	76	72-7664	-1-717	137	132-8881	-1-8000	198	193-0099	-1-9661	259	253-1316	-1-597
16	13-6302	1-9500	77	73-7520	-1-333	138	133-8737	-1-8217	199	193-9955	-1-9514	260	254-1172	-1-228
17	14-6158	1-9333	78	74-7376	-0-975	139	134-8593	-1-8419	200	194-9811	-1-9333	261	255-1029	-0-847
18	15-6014	1-9167	79	75-7232	-0-600	140	135-8449	-1-8597	201	195-9667	-1-9161	262	256-0885	-0-469
19	16-5870	1-9000	80	76-7088	-0-203	141	136-8305	-1-8789	202	196-9523	-1-9003	263	257-0741	-0-086
20	17-5726	1-8833	81	77-6944	-0-167	142	137-8161	-1-8980	203	197-9379	-1-8808	264	258-0597	+0-394
21	18-5582	1-8622	82	78-6800	-0-550	143	138-8017	-1-9167	204	198-9235	-1-8600	265	259-0453	-0-764
22	19-5438	1-8419	83	79-6656	-0-933	144	139-7873	-1-9333	205	199-9091	-1-8417	266	260-0309	-1-111
23	20-5294	1-8217	84	80-6512	-1-314	145	140-7729	-1-9500	206	200-8947	-1-8222	267	261-0165	-1-469
24	21-5150	1-8025	85	81-6368	-1-692	146	141-7585	-1-9667	207	201-8803	-1-8014	268	262-0021	-1-847
25	22-5006	1-7814	86	82-6224	-2-072	147	142-7441	-1-9825	208	202-8659	-1-7805	269	262-9877	-2-239
26	23-4862	1-7600	87	83-6080	-2-444	148	143-7298	-1-9980	209	203-8515	-1-7575	270	263-9733	-2-566
27	24-4718	1-7383	88	84-5936	-2-833	149	144-7154	-2-0122	210	204-8371	-1-7369	271	264-9589	-2-992
28	25-4574	1-7167	89	85-5792	-3-203	150	145-7010	-2-0253	211	205-8227	-1-7139	272	265-9445	-3-369
29	26-4430	1-6933	90	86-5648	-3-572	151	146-6866	-2-0369	212	206-8083	-1-6894	273	266-9301	-3-739
30	27-4286	1-6680	91	87-5504	-3-955	152	147-6722	-2-0492	213	207-7939	-1-6664	274	267-9157	-4-122
31	28-4142	1-6455	92	88-5360	-4-333	153	148-6578	-2-0611	214	208-7795	-1-6433	275	268-9013	-4-500
32	29-3998	1-6192	93	89-5216	-4-692	154	149-6434	-2-0739	215	209-7651	-1-6178	276	269-8869	-4-869
33	30-3854	1-5955	94	90-5072	-5-061	155	150-6290	-2-0858	216	210-7507	-1-5922	277	270-8725	-5-253
34	31-3710	1-5692	95	91-4928	-5-433	156	151-6146	-2-0955	217	211-7363	-1-5667	278	271-8581	-5-611
35	32-3567	1-5455	96	92-4784	-5-789	157	152-6002	-2-1036	218	212-7219	-1-5411	279	272-8437	-5-980
36	33-3423	1-5167	97	93-4640	-6-167	158	153-5858	-2-1136	219	213-7105	-1-5130	280	273-8293	-6-347
37	34-3279	1-4914	98	94-4496	-6-525	159	154-5714	-2-1228	220	214-6931	-1-4869	281	274-8149	-6-692
38	35-3135	1-4633	99	95-4352	-6-894	160	155-5570	-2-1314	221	215-6787	-1-4589	282	275-8005	-7-061
39	36-2991	1-4358	100	96-4208	-7-228	161	156-5426	-2-1383	222	216-6643	-1-4308	283	276-7861	-7-419
40	37-2847	1-4061	101	97-4064	-7-586	162	157-5282	-2-1433	223	217-6499	-1-4028	284	277-7717	-7-764
41	38-2703	1-3778	102	98-3920	-7-944	163	158-5138	-2-1494	224	218-6355	-1-3733	285	278-7573	-8-122
42	39-2559	1-3480	103	99-3776	-8-289	164	159-4994	-2-1567	225	219-6212	-1-3439	286	279-7429	-8-469
43	40-2415	1-3180	104	100-3632	-8-633	165	160-4850	-2-1603	226	220-6068	-1-3144	287	280-7285	-8-803
44	41-2271	1-2894	105	101-3488	-8-986	166	161-4706	-2-1617	227	221-5924	-1-2828	288	281-7141	-9-147
45	42-2127	1-2586	106	102-3344	-9-333	167	162-4562	-2-1667	228	222-5780	-1-2533	289	282-6997	-9-500
46	43-1983	1-2197	107	103-3200	-9-667	168	163-4418	-2-1692	229	223-5636	-1-2228	290	283-6853	-9-833
47	44-1839	1-1967	108	104-3056	-1-0009	169	164-4274	-2-1728	230	224-5492	-1-1905	291	284-6709	-1-0192
48	45-1695	1-1647	109	105-2912	-1-0333	170	165-4130	-2-1742	231	225-5348	-1-1589	292	285-6565	-1-0508
49	46-1551	1-1347	110	106-2760	-1-0667	171	166-3986	-2-1755	232	226-5204	-1-1283	293	286-6421	-1-0850
50	47-1407	1-1014	111	107-2625	-1-1000	172	167-3842	-2-1769	233	227-5060	-1-0967	294	287-6277	-1-1167
51	48-1263	1-0703	112	108-2481	-1-1308	173	168-3698	-2-1755	234	228-4916	-1-0614	295	288-6133	-1-1483
52	49-1119	1-0369	113	109-2337	-1-0629	174	169-3554	-2-1742	235	229-4772	-1-0283	296	289-5989	-1-1814
53	50-0975	1-0025	114	110-2193	-1-1955	175	170-3410	-2-1728	236	230-4628	-9953	297	290-5845	-1-2130
54	51-0831	-9703	115	111-2049	-1-2253	176	171-3266	-2-1714	237	231-4484	-9622	298	291-5701	-1-2439
55	52-0687	-9358	116	112-1905	-1-2561	177	172-3122	-2-1678	238	232-4340	-9280	299	292-5558	-1-2747
56	53-0543	-9025	117	113-1761	-1-2858	178	173-2978	-2-1642	239	233-4196	-8928	300	293-5414	-1-3036
57	54-0399	-8667	118	114-1617	-1-3167	179	174-2834	-2-1597	240	234-4052	-8597	301	294-5270	-1-3322
58	55-0255	-8333	119	115-1473	-1-3455	180	175-2690	-2-1561	241	235-3908	-8228	302	295-5126	-1-3622
59	56-0111	-7964	120	116-1329	-1-3739	181	176-2546	-2-1489	242	236-3764	-7894	303	296-4982	-1-3903
60	56-9967	-7622	121	117-1185	-1-4025	182	177-2402	-2-1439	243	237-3620	-7536	304	297-4838	-1-4197

Day.	Deg.	Days.	Deg.	Days.	Deg.	Days.	Deg.	Days.	Deg.	Days.	Deg.
1	0053	1	0530	10	5298	100	52984	190	10669	280	148355
2	0106	2	1060	20	10597	110	58282	200	105968	290	153654
3	0159	3	1589	30	15895	120	63581	210	111266	300	158952
4	0212	4	2119	40	26194	130	68879	220	116565	310	164250
5	0265	5	2649	50	26492	140	74177	230	121863	320	169548
6	0318	6	3179	60	31790	150	79476	240	127162	330	174847
7	0371	7	3709	70	37089	160	84774	250	132460	340	180145
8	0424	8	4239	80	42387	170	90073	260	137758	350	185444
9	0477	9	4768	90	47686	180	95371	270	143057	360	190742

TABLE XVII-C.				TABLE XVII-D.				TABLE XVII-E.				TABLE XVII-F.			
Decimal parts of O's L. for one day.				Decimal parts of increase of C's L. for one nakshatra.				Eqn. in minutes of a degree for ascertaining the latitude of a planet.				Table of Hindu Sines.			
Day.	Degree.	Day.	Degree.	Degree.	Degree.	Degree.	Degree.	Degree.	Mar. Mer. Jap. Ven. Sat.	Degree.	Degree.	Degree.	Sine.	Degree.	Diff.
01	0099	51	5027	01	1393	51	68000	00	5682 4708 4107 5940 2811	360	00	00	000	180	00
02	0197	52	5125	02	2666	52	69333	375	5678 4706 4107 5936 3810	356	25	375	925	183	75
03	0296	53	5224	03	4000	53	70666	750	5667 4699 4104 5925 3809	352	50	750	449	187	50
04	0394	54	5322	04	5333	54	72000	1125	5651 4688 4099 5919 3806	348	75	1125	671	191	25
05	0493	55	5421	05	6666	55	73333	1500	5629 4674 4092 5886 3801	345	00	1500	890	195	00
06	0591	56	5519	06	8000	56	74666	1875	5601 4656 4083 5857 3795	341	25	1875	1105	198	75
07	0690	57	5618	07	9333	57	76000	2250	5567 4634 4071 5822 3788	337	50	2250	1315	202	50
08	0788	58	5716	08	10666	58	77333	2625	5528 4608 4056 5781 3779	333	75	2625	1520	206	25
09	0887	59	5815	09	12000	59	78666	3000	5484 4578 4040 5734 3769	330	00	3000	1719	210	00
10	0986	60	5914	10	13333	60	80000	3375	5431 4545 4021 5681 3758	326	25	3375	1910	213	75
11	1084	61	6012	11	14666	61	81333	3750	5379 4507 3999 5622 3745	322	50	3750	2093	217	50
12	1183	62	6111	12	16000	62	82666	4125	5318 4467 3976 5558 3731	318	75	4125	2267	221	25
13	1281	63	6209	13	17333	63	84000	4500	5252 4423 3951 5487 3716	315	00	4500	2431	225	00
14	1380	64	6308	14	18666	64	85333	4875	5181 4375 3922 5412 3699	311	25	4875	2585	228	75
15	1478	65	6406	15	20000	65	86666	5250	5104 4324 3892 5331 3682	307	50	5250	2728	232	50
16	1577	66	6505	16	21333	66	88000	5625	5023 4270 3860 5244 3663	303	75	5625	2859	236	25
17	1675	67	6603	17	22666	67	89333	6000	4937 4213 3827 5152 3643	300	00	6000	3084	240	00
18	1774	68	6702	18	24000	68	90666	6375	4851 4153 3791 5055 3623	296	25	6375	3256	243	75
19	1873	69	6801	19	25333	69	92000	7500	4751 4090 3754 4953 3601	292	50	7500	3438	247	50
20	1971	70	6899	20	26666	70	93333	7875	4651 4025 3716 4846 3579	288	75	7875	3625	251	25
21	2070	71	6998	21	28000	71	94666	8250	4547 3957 3676 4734 3556	285	00	8250	3817	254	00
22	2168	72	7096	22	29333	72	96000	8625	4429 3886 3635 4617 3534	281	25	8625	4009	257	50
23	2267	73	7195	23	30666	73	97333	9000	4327 3813 3593 4496 3509	277	50	9000	4202	259	75
24	2365	74	7293	24	32000	74	98666	9375	4210 3738 3550 4371 3484	273	75	9375	4399	262	50
25	2464	75	7392	25	33333	75	100000	9750	4090 3662 3506 4241 3459	270	00	9750	4601	265	00
26	2563	76	7491	26	34666	76	101333	10125	3966 3584 3461 4107 3431	266	25	10125	4817	268	25
27	2661	77	7589	27	36000	77	102666	10500	3750 3504 3417 3970 3409	262	50	10500	5044	271	50
28	2760	78	7688	28	37333	78	104000	10875	3708 3423 3372 3828 3384	258	75	10875	5285	274	75
29	2858	79	7786	29	38666	79	105333	11250	3575 3341 3326 3684 3359	255	00	11250	5538	277	50
30	2957	80	7885	30	40000	80	106666	11625	3450 3259 3282 3536 3335	251	25	11625	5801	280	25
31	3055	81	7983	31	41333	81	108000	12000	3303 3177 3238 3385 3313	247	50	12000	6074	283	50
32	3154	82	8082	32	42666	82	109333	12375	3162 3095 3195 3231 3289	243	75	12375	6356	286	75
33	3252	83	8180	33	44000	83	110666	12750	3019 3012 3152 3075 3265	240	00	12750	6647	289	00
34	3351	84	8279	34	45333	84	112000	13125	2875 2930 3110 2916 3242	236	25	13125	6946	292	25
35	3450	85	8378	35	46666	85	113333	13500	2730 2851 3070 2756 3221	232	50	13500	7253	295	50
36	3548	86	8476	36	48000	86	114666	13875	2585 2773 3032 2594 3200	228	75	13875	7568	298	75
37	3647	87	8575	37	49333	87	116000	14250	2440 2697 2995 2432 3181	225	00	14250	7891	301	00
38	3745	88	8673	38	50666	88	117333	14625	2295 2624 2961 2269 3162	221	25	14625	8221	304	25
39	3844	89	8772	39	52000	89	118666	15000	2152 2554 2928 2106 3146	217	50	15000	8566	307	50
40	3942	90	8870	40	53333	90	120000	15375	2011 2487 2898 1945 3131	213	75	15375	8925	310	75
41	4041	91	8969	41	54666	91	121333	15750	1874 2426 2871 1786 3117	210	00	15750	9297	313	00
42	4139	92	9067	42	56000	92	122666	16125	1743 2370 2847 1630 3104	206	25	16125	9681	316	25
43	4238	93	9166	43	57333	93	124000	16500	1618 2319 2825 1481 3092	202	50	16500	10076	319	50
44	4337	94	9265	44	58666	94	125333	16875	1503 2275 2807 1341 3083	198	75	16875	10481	322	75
45	4435	95	9363	45	60000	95	126666	17250	1402 2238 2793 1213 3077	195	00	17250	10896	325	00
46	4534	96	9462	46	61333	96	128000	17625	1317 2208 2782 1101 3072	191	25	17625	11321	328	25
47	4632	97	9560	47	62666	97	129333	18000	1251 2186 2774 1013 3068	187	50	18000	11766	331	50
48	4731	98	9659	48	64000	98	130666		1209 2173 2770 956 3066	183	75		12229	334	75
49	4829	99	9757	49	65333	99	132000		1194 2168 2769 936 3065	180	00		12698	337	00
50	4928	100	9856	50	66666	100	133333						13177	340	25

TABLE XVII-G.

Decimal parts of 3.75 degrees [Example 3.2°=853 of 3.75°].

0.1	026666	0.6	160000	1.1	293333	1.6	426666	2.1	560000	2.6	693333	3.1	826666	3.6	960000
0.2	053333	0.7	186666	1.2	320000	1.7	453333	2.2	586666	2.7	720000	3.2	853333	3.7	986666
0.3	080000	0.8	213333	1.3	346666	1.8	480000	2.3	613333	2.8	746666	3.3	880000		
0.4	106666	0.9	240000	1.4	373333	1.9	506666	2.4	640000	2.9	773333	3.4	906666		
0.5	133333	1.0	266666	1.5	400000	2.0	533333	2.5	666666	3.0	800000	3.5	933333		



Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170			
☉'s Mean L.	357-0	6-9	16-7	26-6	36-4	46-8	56-1	66-0	75-9	85-7	95-6	105-4	115-3	125-1	135-0	144-8	154-7	164-6			
Corrn. for do.	+2-1	+2-0	+1-9	+1-7	+1-4	+1-1	+0-8	+0-4	+0-0	-0-3	-0-7	-1-1	-1-4	-1-6	-1-9	-2-0	-2-1	-2-2			
English date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28			
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur			
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15			
1840 Mars ...	5-0	12-6	20-0	27-2	34-5	41-7	48-8	55-7	62-5	69-4	76-1	82-9	89-3	95-8	102-3	108-6	114-9	121-0			
☉'s L. Merc. ...	0-0	352-6	353-4	3-2	18-4	36-1	55-0	73-8	92-0	108-5	121-1	126-7	122-4	115-9	115-5	128-6	143-3	160-3			
+8 Jup. ...	204-8	203-5	202-2	200-9	199-8	198-5	197-7	197-0	196-7	196-3	196-4	197-4	198-3	199-5	200-9	202-5	204-3	206-3			
Ven. ...	332-1	344-4	356-4	8-8	21-0	33-2	45-5	57-7	69-6	82-3	94-5	106-8	119-0	131-3	143-1	155-9	168-4	180-6			
Sat. ...	239-1	238-6	238-1	237-7	237-0	236-3	235-5	234-8	234-1	233-4	233-0	232-6	232-3	232-4	232-4	232-5	233-1	233-7			
1841 Mars ...	187-5	183-9	180-7	177-8	176-8	177-1	178-4	181-0	184-1	188-0	192-6	197-6	203-0	208-8	214-7	221-1	227-6	234-4			
☉'s L. Merc. ...	333-8	343-0	357-2	14-7	33-5	52-6	70-8	85-9	101-0	108-3	105-4	98-2	99-3	109-2	123-8	140-6	158-4	176-0			
+5 Jup. ...	233-2	237-8	237-0	236-1	235-1	233-8	232-6	231-2	230-0	228-9	228-3	227-7	227-7	228-0	228-6	229-8	230-4	231-8			
Ven. ...	39-1	41-9	41-5	36-9	30-9	26-1	23-8	27-7	33-5	41-1	49-9	59-4	69-7	80-5	91-5	102-8	114-5	126-4			
Sat. ...	250-5	250-2	249-9	249-5	248-5	247-5	246-5	246-1	245-7	245-3	245-4	245-5	245-6	244-8	244-0	243-2	243-6	244-0			
1842 Mars ...	19-7	26-9	33-9	41-0	47-9	55-0	61-8	68-4	75-3	81-9	88-6	95-0	101-5	107-5	114-3	120-9	127-0	133-3			
☉'s L. Merc. ...	335-0	351-8	10-3	29-1	47-9	65-4	79-9	88-8	88-2	80-8	79-8	88-1	102-0	118-6	136-7	154-5	171-7	187-2			
+3 Jup. ...	269-6	270-3	270-5	270-7	270-5	269-8	268-9	267-7	266-5	265-2	263-9	262-7	261-7	260-9	260-4	260-2	260-2	260-6			
Ven. ...	8-6	21-0	33-3	45-5	57-7	70-1	82-0	94-1	105-9	117-9	129-7	141-7	153-4	164-8	176-7	187-6	198-7	209-5			
Sat. ...	261-3	260-9	260-5	260-0	259-8	259-6	259-4	258-7	258-0	257-3	256-6	255-9	255-1	254-8	254-5	254-2	254-5	254-8			
1843 Mars ...	237-0	239-1	240-3	240-3	239-3	237-3	234-4	231-5	229-4	228-4	228-5	229-3	233-0	236-7	241-1	246-6	251-5	257-4			
☉'s L. Merc. ...	347-0	6-7	24-5	42-3	57-7	68-2	70-4	68-2	60-1	67-0	80-0	96-3	114-4	132-6	150-3	166-6	179-7	186-8			
+0 Jup. ...	298-9	300-6	302-0	303-1	304-2	304-7	305-2	305-3	304-8	304-2	302-2	301-4	300-7	299-3	298-0	296-9	295-9	295-2			
Ven. ...	315-9	327-5	339-4	351-8	3-8	15-2	27-0	39-0	51-1	63-3	75-4	87-3	99-4	111-8	124-0	136-4	148-8	161-2			
Sat. ...	272-2	272-8	272-4	272-5	272-1	271-7	271-3	270-6	269-9	269-2	268-5	267-8	267-0	266-5	266-0	265-5	265-5	265-6			
1844 Mars ...	34-7	41-5	48-3	55-0	61-8	68-4	75-0	81-5	88-1	94-6	100-0	107-5	113-9	120-3	126-6	132-9	139-4	145-7			
☉'s L. Merc. ...	3-1	21-0	36-8	48-3	51-3	45-0	40-8	46-4	59-0	75-4	93-5	112-1	130-2	147-0	161-2	169-7	169-3	161-4			
+7 Jup. ...	327-3	329-5	331-5	333-6	335-4	337-1	338-6	339-7	340-5	341-0	341-2	341-1	340-5	339-6	338-5	337-4	336-1	334-7			
Ven. ...	42-4	53-4	64-1	74-6	83-9	93-0	100-1	105-7	108-3	107-1	102-1	95-1	91-5	91-4	94-5	100-5	108-4	117-0			
Sat. ...	283-1	283-4	283-7	284-0	283-8	283-6	283-3	282-7	282-0	281-4	280-6	279-9	279-1	278-5	277-9	277-2	277-0	276-8			
1845 Mars ...	267-9	273-6	279-4	284-6	289-8	294-5	298-8	303-5	308-1	307-3	307-7	306-4	304-7	301-9	299-4	298-2	297-8	299-1			
☉'s L. Merc. ...	14-4	25-6	32-5	27-6	21-5	25-2	36-8	52-7	70-6	89-4	107-9	125-4	140-7	151-3	156-6	146-8	142-5	147-4			
+5 Jup. ...	354-9	357-3	359-7	2-1	4-5	6-5	8-2	10-6	12-4	14-0	15-4	16-5	17-3	17-6	17-7	17-4	16-8	15-8			
Ven. ...	350-2	2-7	15-0	27-5	39-7	51-9	64-2	76-8	88-6	100-7	113-3	125-4	137-5	149-5	161-8	174-0	186-1	198-1			
Sat. ...	293-8	294-4	294-9	295-4	295-4	295-4	295-4	294-8	294-3	293-8	293-0	292-3	291-6	290-8	290-1	289-4	289-1	288-7			
1846 Mars ...	49-0	55-4	61-8	68-2	74-5	80-9	87-3	93-5	100-0	106-4	112-7	118-9	125-4	131-7	138-1	144-4	150-9	157-2			
☉'s L. Merc. ...	12-9	10-3	3-1	4-4	14-4	29-5	47-4	66-5	85-0	103-0	119-3	131-6	136-9	132-0	125-7	128-3	139-0	153-4			
+2 Jup. ...	22-5	24-8	27-1	29-5	31-9	34-3	36-7	39-0	41-1	43-4	45-4	47-2	48-9	51-0	51-6	52-6	53-3	53-9			
Ven. ...	317-7	324-6	332-8	341-9	352-0	2-6	13-2	24-4	35-7	47-4	59-1	70-7	82-5	94-4	106-4	118-3	130-9	143-3			
Sat. ...	304-6	305-4	306-2	306-9	307-2	307-4	307-6	307-3	307-0	306-7	306-0	305-3	304-6	303-8	303-0	302-2	301-6	301-1			
1847 Mars ...	289-5	296-7	303-8	310-3	317-8	324-9	331-6	338-2	344-8	351-0	356-7	2-1	8-1	12-5	16-0	18-4	19-8	20-4			
☉'s L. Merc. ...	345-6	344-3	352-6	6-9	24-2	42-9	61-8	79-3	97-8	111-1	118-5	116-2	108-9	109-3	118-5	132-6	149-2	167-7			
+0 Jup. ...	50-3	52-2	54-2	56-5	58-7	60-0	63-3	65-7	67-9	70-2	72-5	73-9	76-9	79-0	80-9	82-7	84-1	85-5			
Ven. ...	26-8	38-9	50-8	62-8	74-6	86-2	97-6	108-9	120-0	130-6	140-9	150-3	159-2	166-7	172-5	175-5	175-4	170-0			
Sat. ...	315-7	316-6	317-5	318-4	318-9	319-4	319-8	319-7	319-6	319-5	319-0	318-5	317-9	317-1	316-3	315-6	314-8	314-4			
1848 Mars ...	64-4	70-2	76-1	82-1	88-0	94-2	100-3	106-4	112-9	118-9	124-9	131-3	137-6	144-0	150-4	156-8	163-2	169-7			
☉'s L. Merc. ...	332-5	345-7	2-7	21-4	40-2	58-2	76-5	91-0	99-4	99-1	91-4	90-3	98-7	112-6	129-4	147-0	164-9	182-4			
+7 Jup. ...	79-1	80-3	81-7	83-4	85-2	87-2	89-3	91-5	93-6	95-9	98-1	100-5	102-8	105-0	107-2	109-3	111-3	113-3			
Ven. ...	332-6	344-9	357-1	9-4	21-5	33-7	45-9	58-2	70-5	82-8	94-9	106-9	119-5	131-8	144-2	156-4	168-9	181-1			
Sat. ...	326-9	327-9	328-9	330-0	330-8	331-5	332-2	332-0	331-8	331-5	331-4	331-4	331-4	330-7	330-0	329-2	328-4	327-7			
1849 Mars ...	308-9	316-4	324-1	331-7	339-3	346-8	354-0	1-4	9-4	15-5	22-3	29-0	35-5	41-5	47-4	52-9	58-1	62-4			
☉'s L. Merc. ...	341-5	358-1	16-9	35-7	53-4	68-9	79-6	81-1	74-0	71-1	77-9	90-7	107-2	125-0	143-2	160-6	176-7	189-9			
+4 Jup. ...	109-4	109-7	110-3	111-2	112-2	113-5	115-1	116-9	118-6	120-7	122-8	124-9	127-0	129-3	131-5	133-8	135-6	138-8			
Ven. ...	37-4	40-2	43-4	46-2	49-2	52-6	56-3	60-3	64-8	69-7	75-5	81-0	86-8	92-8	98-8	104-8	110-8	116-8			
Sat. ...	338-1	339-3	340-5	341-7	342-6	343-5	344-4	344-8	345-2	345-5	345-3	345-1	345-0	344-5	343-9	343-3	342-5	341-1			
Mesh. Vrsch. Mith. Kat. Sim. Kan. Tul. Vrsch. Dhan. Mak. Kum. Min. Asvn. Bhar. Krit. Rohi. Mrig. Ardh. Punar. Push. Asle.	30	60	90	120	150	180	210	240	270	300	330	360	12-3	26-7	40-0	53-3	66-7	80-0	93-3	106-7	120-0

174-4	184-3	194-1	204-0	213-8	223-7	233-5	243-4	253-3	263-1	273-0	282-8	292-7	302-5	312-4	322-2	332-1	342-0	351-8	
-2-2	-2-1	-1-9	-1-7	-1-5	-1-2	-0-9	-0-5	-0-1	263-1	273-0	282-8	292-7	302-5	312-4	322-2	332-1	342-0	351-8	
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 6,7	16,17	26,27	Ap 5,6	
Pur 25	Aipp 4	Aipp 14	Aipp 24	Kart 4	Kart 14	Kart 24	Marg 5	Marg 15	Marg 25	Tai 5	Tai 15	Tai 25	Masi 6	Masi 16	Masi 26	Pang 6	Pang 16	Pang 26	
127-0	133-2	139-0	144-9	150-4	156-0	161-5	166-8	171-8	41	176-6	180-8	184-8	188-8	191-1	193-1	193-8	193-9	192-0	189-0
177-9	195-4	211-6	225-3	233-7	239-1	225-4	223-1	229-9		242-9	259-0	276-4	294-4	311-4	327-3	339-4	344-3	339-8	334-2
208-0	210-2	212-3	215-8	216-8	218-9	221-2	223-4	225-6		227-7	239-6	231-4	233-2	234-7	236-0	237-1	237-8	238-8	238-4
193-1	205-7	217-9	230-4	242-7	255-1	267-4	279-5	292-0		303-9	315-6	327-5	339-2	350-3	0-9	11-1	20-6	29-3	35-8
234-2	235-1	236-0	237-0	238-1	239-2	240-4	241-7	243-0		244-2	245-3	246-4	247-5	248-4	249-3	250-1	250-4	250-7	251-1
241-2	248-3	255-7	262-9	270-4	277-8	285-2	293-0	300-6	42	308-5	316-0	323-6	331-2	338-8	346-5	354-0	1-3	8-9	16-0
192-8	207-3	216-8	218-4	210-8	207-1	211-2	224-2	239-7		256-9	274-6	291-8	307-3	320-3	325-6	322-1	315-3	317-3	327-8
233-3	235-2	237-1	239-1	241-2	243-4	245-7	248-0	250-2		252-5	254-8	257-0	259-3	261-3	263-1	265-0	266-5	268-1	269-3
138-4	130-1	162-3	174-6	187-0	199-3	211-7	224-1	236-7		249-3	262-0	274-7	287-1	299-8	312-3	324-9	337-5	349-8	2-2
244-4	245-3	246-2	247-0	248-1	249-2	250-2	251-4	252-6		253-7	254-8	255-9	257-1	258-0	258-9	259-7	260-3	260-9	261-4
140-4	145-7	151-8	157-8	163-8	169-9	175-7	181-7	187-5	43	193-2	198-8	204-3	209-7	214-8	219-7	224-3	228-6	232-5	235-7
198-9	203-3	197-8	191-5	194-0	204-7	219-1	235-7	253-3		270-7	287-0	300-3	308-2	306-6	298-9	298-0	306-8	320-9	338-0
261-7	262-8	264-3	265-8	267-4	269-3	271-5	273-6	275-9		278-2	280-4	282-8	285-2	287-5	289-7	292-0	294-2	296-2	298-1
219-5	229-2	237-5	244-8	250-0	251-8	250-1	244-1	240-9		236-6	237-7	242-6	249-6	257-6	266-2	277-2	288-0	299-0	310-2
255-0	255-7	256-4	257-0	258-0	259-0	260-1	261-2	262-3		263-5	264-7	265-9	267-0	268-0	269-0	270-1	270-8	271-5	272-1
263-6	270-2	277-7	283-6	290-5	297-6	304-9	312-0	319-3	44	326-6	333-9	341-2	348-2	355-5	2-5	9-6	16-6	23-6	30-6
184-5	176-7	176-4	185-0	198-9	215-0	232-1	249-4	266-4		280-3	290-1	291-1	283-7	280-3	286-4	299-1	315-6	333-6	352-6
294-7	294-8	295-2	295-8	296-7	297-9	299-5	301-3	303-1		305-1	307-3	309-5	311-8	314-1	316-5	318-9	321-4	323-8	326-1
174-3	186-2	198-9	211-2	223-6	236-2	248-7	261-6	274-2		286-6	299-2	311-5	323-9	336-0	348-5	0-3	12-2	24-1	35-6
265-5	266-1	266-7	267-2	268-1	269-0	269-9	270-9	272-0		273-1	274-4	275-6	276-9	277-9	279-0	280-2	281-0	281-8	282-7
152-1	158-3	164-6	170-9	177-4	183-6	189-9	196-1	202-5	45	208-8	215-1	221-4	227-8	234-0	240-2	246-5	252-8	258-8	264-8
152-5	166-8	179-9	195-7	213-0	230-2	246-6	261-4	272-2		275-2	268-6	263-7	267-9	279-6	295-3	312-9	331-2	349-4	6-3
333-5	332-3	331-5	330-9	330-7	330-9	331-4	332-2	333-3		334-7	336-2	338-1	339-9	342-2	344-4	346-7	349-0	351-4	353-8
127-2	137-7	148-7	159-8	171-6	183-4	195-1	207-5	219-8		232-0	244-3	256-7	269-3	281-8	294-4	306-8	319-1	331-6	344-0
276-7	277-0	277-4	277-7	278-5	279-4	280-2	281-3	282-8		283-4	284-7	285-9	287-1	288-3	289-5	290-6	291-5	292-4	293-4
301-4	304-8	308-9	313-4	318-7	324-1	330-0	335-9	341-9	46	348-1	354-4	0-6	7-1	13-6	20-0	26-5	32-9	39-4	45-7
159-3	174-9	192-0	209-3	226-3	241-8	253-9	259-4	255-3		247-9	249-5	259-4	273-8	290-8	308-8	326-9	344-4	359-6	10-4
14-1	13-4	12-2	10-9	10-0	9-6	8-4	7-5	7-4		7-4	7-9	8-8	10-1	11-5	13-2	15-1	17-1	19-1	21-3
210-8	222-1	232-9	245-7	257-4	268-9	279-9	290-6	300-5		310-0	317-9	324-3	328-1	328-2	324-1	317-9	313-1	312-5	315-4
288-3	288-5	288-7	288-8	289-4	290-0	290-7	291-7	292-7		293-8	294-9	296-6	297-3	298-5	299-7	300-9	302-0	303-0	304-0
163-7	170-2	176-5	183-9	189-7	196-4	203-1	209-7	216-3	47	223-1	230-0	236-9	243-6	250-7	257-6	264-6	271-8	278-8	286-0
170-7	188-3	205-5	221-6	235-1	242-7	241-6	234-2	231-9		239-8	253-1	266-8	284-3	302-1	319-9	336-3	350-0	357-5	349-1
53-7	53-1	52-0	51-2	50-2	48-8	47-5	45-3	45-1		44-0	43-4	43-0	43-0	43-4	44-0	45-0	46-2	47-1	43-4
155-5	167-8	180-2	192-7	205-2	217-8	230-4	243-0	256-8		268-7	281-0	293-5	306-3	318-7	331-2	343-9	356-2	8-5	20-7
300-5	300-4	300-3	300-3	300-7	301-2	301-7	302-6	308-5		304-5	305-6	306-7	307-8	309-1	310-4	311-7	312-9	314-0	315-2
18-6	18-6	13-8	11-1	9-4	8-9	9-5	11-3	13-7	48	16-9	20-6	24-9	29-5	34-5	39-5	45-1	50-5	56-0	61-9
184-6	201-2	215-7	225-7	227-2	220-5	215-8	221-1	232-6		248-0	265-4	283-0	300-7	316-6	329-6	336-2	332-9	325-9	327-3
86-5	87-2	87-5	87-6	87-5	86-9	86-0	84-8	83-6		82-3	81-0	79-8	79-1	77-9	77-4	77-2	77-3	77-7	78-6
164-7	160-2	159-6	163-1	168-8	176-8	185-9	195-6	206-3		217-4	228-9	240-4	252-5	264-5	276-5	288-7	300-8	313-0	325-3
313-4	313-1	312-8	312-5	312-7	313-0	313-3	314-0	314-7		315-5	316-6	317-7	318-8	320-0	321-2	322-5	323-5	324-5	325-6
176-4	182-9	189-7	196-5	203-3	210-1	216-9	223-9	231-1	49	238-1	245-1	252-6	259-9	267-3	274-8	282-3	288-9	297-4	305-1
197-1	208-5	212-0	206-6	200-2	203-3	214-1	229-0	245-8		263-3	280-7	297-1	310-4	318-1	316-5	308-8	308-9	318-1	332-3
114-9	116-5	117-0	118-2	119-6	120-0	120-1	119-8	119-3		118-5	117-5	116-2	114-9	113-6	112-5	111-3	110-5	109-8	109-5
193-8	206-2	218-6	230-9	243-2	255-6	267-7	280-2	292-2		304-2	316-2	328-0	339-3	350-2	1-0	11-0	18-9	25-6	34-1
326-8	326-2	325-7	325-2	325-2	325-3	325-3	325-6	325-9		326-2	327-5	328-8	330-1	331-3	332-5	333-7	335-0	336-3	337-6
66-7	70-2	72-6	74-0	74-4	73-4	71-4	67-8	64-1	50	61-1	58-9	58-2	58-5	60-0	62-4	65-4	69-3	73-5	77-9
196-1	193-3	185-7	185-9	194-7	208-4	224-7	242-2	259-5		276-0	290-3	299-3	300-7	293-2	290-0	296-5	309-7	326-3	344-4
140-2	142-1	144-0	145-7	147-3	148-5	149-6	150-3	150-8		151-0	150-9	150-4	149-4	148-6	147-3	146-0	144-7	143-5	142-4
138-7	150-8	162-8	175-0	187-5	199-8	212-2	224-8	237-4		249-8	263-5	275-0	287-8	300-3	313-0	325-4	338-0	350-5	2-8
340-9	340-2	339-5	338-9	338-6	338-3	338-1	338-4	338-8		339-2	340-0	340-8	341-6	342-7	343-9	345-1	346-4	347-7	349-0

lag. P. Thal.	U. Phal.	Hasta.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P. Ash.	U. Ash.	Srav.	Dan.	Satab.	P. Bhad.	U. Bhad.	Revati.	
233	146.7	160.0	173.3	186.7	200.0	213.3	226.7	240.0	253.3	266.7	280.0	293.3	306.7	320.0	333.3	346.7	360.0



Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170			
☉'s Mean L. Corrn. for do. English date. Tamil month. Do. Date.	357-0 +2-1 Ap 11 Chit 1	6-9 +2-0 Ap 21 Chit 11	16-7 +1-9 My 1 Chit 21	26-6 +1-7 My 11 Chit 31	36-4 +1-4 My 21 Vaik 10	46-3 +1-1 My 31 Vaik 20	56-1 +0-8 Je 10 Vaik 30	66-0 +0-4 Je 20 Ani 9	75-9 +0-0 Je 30 Ani 19	85-7 -0-3 Jul 10 Ani 29	95-6 -0-7 Jul 20 Adi 7	105-4 -1-1 Jul 30 Adi 17	115-3 -1-4 Aug 9 Adi 27	125-1 -1-6 Aug 19 Avan 6	135-0 -1-9 Aug 29 Avan 16	144-8 -2-0 S 8 S 8	154-7 -2-1 S 18 Pur 5	164-6 -2-2 S 28 Pur 15			
1850 Mars ... ☉'s L. Merc. ... +2 Jup. ... Ven. ... Sat. ...	80-3 353-8 141-8 9-1 349-7	85-5 12-0 140-9 21-5 351-0	90-8 30-5 140-5 33-7 352-3	96-1 46-7 140-3 46-0 353-5	101-6 58-5 140-4 58-4 354-5	107-5 62-8 140-8 70-6 355-5	113-2 58-6 141-8 82-4 356-6	118-9 51-8 143-7 94-6 357-3	125-0 56-4 144-0 106-4 358-0	130-7 68-7 145-5 118-4 358-7	137-2 84-9 147-1 130-4 358-8	143-4 102-7 149-1 141-9 358-9	149-7 121-1 151-1 153-6 359-1	156-2 139-0 153-1 165-3 358-6	162-4 155-9 155-2 176-9 358-1	168-9 170-0 157-4 187-9 357-7	175-6 179-0 159-6 198-8 357-0	182-0 179-0 161-7 209-8 356-8			
1851 Mars ... ☉'s L. Merc. ... -1 Jup. ... Ven. ... Sat. ...	326-1 8-1 175-3 316-2 1-4	333-9 24-0 175-1 328-1 2-7	341-6 37-0 175-0 339-9 4-0	349-3 43-4 174-8 351-8 5-3	356-9 39-2 174-7 3-6 6-6	4-3 32-9 174-9 15-8 7-9	12-0 34-6 175-2 27-5 9-1	19-6 46-6 176-7 39-5 10-0	26-4 62-1 176-3 51-6 10-8	33-6 79-8 177-8 63-8 11-6	40-1 98-6 177-8 75-9 12-1	47-3 116-8 178-8 88-0 12-5	54-1 134-4 179-9 100-1 12-9	60-7 149-6 181-3 112-3 12-7	66-9 160-6 182-6 124-5 12-4	73-2 163-5 184-0 136-9 12-1	79-1 156-9 185-5 149-3 11-6	84-7 152-0 187-0 161-4 11-0			
1852 Mars ... ☉'s L. Merc. ... +7 Jup. ... Ven. ... Sat. ...	100-3 16-8 209-6 42-8 13-7	103-9 23-9 208-5 54-0 15-0	108-0 21-1 207-2 64-5 16-3	112-5 15-1 205-9 74-6 17-6	117-2 15-3 204-6 83-9 18-9	122-2 25-7 203-5 92-4 20-2	127-5 40-9 202-4 99-3 21-6	133-2 58-7 201-5 104-4 22-6	138-9 77-3 201-0 106-4 23-6	144-8 96-1 200-8 104-2 24-6	150-7 115-9 200-9 98-3 25-3	156-8 129-9 201-3 92-0 26-0	163-0 142-1 202-0 89-0 26-7	169-4 146-8 203-2 83-4 26-8	175-9 141-5 204-6 93-3 26-9	182-4 135-5 206-0 99-7 27-0	189-1 138-5 207-6 108-0 26-6	195-8 149-7 209-3 117-4 26-5			
1853 Mars ... ☉'s L. Merc. ... +4 Jup. ... Ven. ... Sat. ...	342-9 3-5 242-8 350-7 26-4	350-7 356-2 242-4 3-1 27-5	358-5 355-1 241-9 15-5 28-6	6-1 3-6 241-1 28-0 29-8	13-6 17-9 240-1 40-2 31-1	21-1 35-4 238-8 52-6 32-5	28-3 54-0 237-5 64-7 33-9	35-6 73-1 237-0 77-1 35-1	42-7 91-2 235-4 89-1 36-3	49-8 108-1 233-9 101-4 37-5	56-6 121-8 232-4 113-6 38-5	63-3 128-7 232-2 135-9 39-4	70-1 126-3 232-2 138-0 40-3	76-6 118-9 232-1 150-2 40-7	83-0 119-5 232-5 162-4 41-1	89-3 128-6 233-4 174-3 41-4	95-5 142-9 234-2 186-4 41-2	101-7 159-7 235-5 198-8 41-1			
1854 Mars ... ☉'s L. Merc. ... +1 Jup. ... Ven. ... Sat. ...	126-8 335-6 273-7 316-8 38-5	127-4 342-3 274-4 323-9 39-8	129-6 355-3 275-1 332-3 41-1	132-1 12-0 275-6 341-8 42-3	135-4 30-6 275-6 351-9 43-7	139-5 49-6 275-2 351-9 45-1	144-0 68-2 274-5 2-7 46-5	148-9 85-8 273-5 13-5 47-8	154-0 100-5 272-3 36-0 49-1	159-5 109-8 271-0 47-8 50-5	165-2 109-8 269-7 58-5 51-5	171-1 102-3 268-5 71-2 52-6	177-3 100-5 267-2 83-2 53-6	183-6 108-1 266-3 94-9 54-3	190-0 121-6 265-7 107-1 55-0	196-6 137-9 265-1 119-3 55-7	203-3 155-4 265-0 131-4 55-8	210-7 173-3 265-5 143-7 55-5			
1855 Mars ... ☉'s L. Merc. ... -1 Jup. ... Ven. ... Sat. ...	358-4 332-9 302-7 27-2 51-3	6-1 349-1 304-4 39-3 52-4	13-4 7-2 306-1 51-3 53-6	20-9 26-2 307-5 63-3 54-8	28-2 45-2 308-7 74-8 56-1	35-5 63-0 309-4 86-5 57-4	42-5 78-8 310-1 97-9 58-7	49-5 89-5 310-2 109-8 60-0	56-6 92-4 309-6 121-3 61-3	63-6 85-6 308-8 132-5 62-7	70-4 81-7 307-8 141-8 63-9	77-0 87-4 306-5 150-2 65-0	83-7 100-1 305-2 158-9 66-3	90-1 116-0 302-8 166-0 67-3	96-6 133-9 302-5 171-0 68-2	102-8 151-7 302-5 173-6 69-1	109-3 169-2 301-4 172-1 69-4	115-8 185-7 300-6 166-7 69-5			
1856 Mars ... ☉'s L. Merc. ... +6 Jup. ... Ven. ... Sat. ...	166-0 346-2 330-9 333-1 64-4	163-3 4-7 333-2 345-4 65-5	161-4 23-5 335-2 357-8 66-5	160-9 41-7 337-4 10-0 67-5	161-5 57-8 339-4 22-2 68-8	163-5 69-5 341-1 34-2 70-1	166-3 78-8 342-8 46-6 71-3	169-5 88-2 344-0 58-9 72-6	173-8 62-8 345-0 71-0 73-9	178-5 68-7 345-3 83-3 75-2	183-6 79-6 345-6 95-5 76-5	189-1 95-5 346-4 107-8 77-8	194-7 113-4 346-1 120-0 79-2	200-8 131-6 345-4 132-3 80-2	207-0 149-6 344-5 144-6 81-3	213-4 166-0 343-3 156-9 82-2	220-1 179-9 342-0 169-4 82-9	227-7 188-8 340-0 181-7 83-3			
1857 Mars ... ☉'s L. Merc. ... +4 Jup. ... Ven. ... Sat. ...	14-0 0-8 358-5 35-7 77-8	21-3 18-7 0-9 37-6 78-5	28-4 35-0 3-3 35-1 79-2	35-7 48-2 5-7 29-0 80-1	42-7 54-3 8-0 23-2 81-2	49-6 50-4 10-3 20-2 82-4	56-7 43-7 12-5 21-5 83-5	63-5 46-6 14-6 25-5 84-4	70-4 57-6 16-3 32-1 86-1	77-0 72-9 18-1 40-3 87-5	83-6 90-7 19-7 49-7 88-8	90-1 109-3 20-9 59-4 90-1	96-5 127-4 21-9 69-9 91-4	103-1 144-8 22-5 80-9 92-6	109-5 160-0 22-7 92-1 93-7	115-9 170-3 22-7 103-6 94-9	122-2 172-8 22-3 115-3 95-7	128-8 166-6 21-1 127-7 96-6			
1858 Mars ... ☉'s L. Merc. ... +1 Jup. ... Ven. ... Sat. ...	220-2 12-6 26-1 9-6 91-8	219-6 26-6 28-4 22-0 92-3	217-9 34-6 30-8 34-2 92-8	215-2 32-8 33-2 46-8 93-3	211-7 25-4 35-6 58-9 94-4	209-0 25-8 38-0 71-1 95-4	206-8 35-6 40-3 82-9 96-4	206-2 50-5 42-6 95-0 97-6	206-4 67-8 44-9 106-9 98-8	208-2 86-5 47-2 118-7 100-1	210-9 105-0 49-2 130-7 101-4	214-3 122-8 51-1 142-4 102-7	218-8 139-0 52-9 153-9 104-1	223-6 151-2 54-5 165-6 105-4	229-0 156-6 55-8 177-0 106-6	234-8 151-8 56-9 188-2 107-8	240-7 145-2 57-7 198-9 108-8	247-7 147-7 58-8 209-9 109-9			
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29			
1859 Mars ... ☉'s L. Merc. ... +8 Jup. ... Ven. ... Sat. ...	29-0 14-6 54-2 317-7 105-6	35-8 13-6 56-0 329-6 105-9	43-0 6-9 58-1 341-4 106-1	49-8 6-1 60-2 353-4 106-5	56-6 14-7 62-3 5-3 107-2	63-3 29-1 64-6 17-2 108-0	70-0 45-9 66-9 29-2 108-8	76-6 65-2 69-3 41-2 110-0	83-3 83-7 71-7 53-1 111-2	89-8 102-2 74-0 65-4 112-4	96-4 118-3 76-2 77-7 113-7	102-7 132-2 78-5 89-9 115-0	109-2 139-0 80-7 101-8 116-2	115-6 136-2 82-7 114-1 117-5	122-2 128-9 84-6 126-4 118-8	128-5 129-4 86-4 138-6 120-0	134-3 138-8 88-0 151-0 121-2	140-7 150-7 89-8 162-7 122-5			
Mesh. Vrsch. Mith. Kat. Sim. Kan. Tul. Vrsch. Dhan. Mak. Kum. Min. Asvn. Bhar. Krit. Robi. Mrig. Ardh. Punar. Push. Asle.	30	60	90	120	150	180	210	240	270	300	330	360	13-3	26-7	40-0	53-3	66-7	80-0	93-3	106-7	120-0

Mag.	P. Phal.	U. Phal.	Hasta.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P. Ash.	U. Ash.	Shrav.	Dhan.	Satav.	P. Bhad.	U. Bhad.	Revati.
133.3	146.7	160.0	173.3	186.7	200.0	213.3	226.7	240.0	253.3	266.7	280.0	293.3	306.7	320.0	333.3	346.7	360.0



Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	
☉'s Mean Long.	357-0	6-9	16-7	26-6	36-4	46-3	56-1	66-0	75-9	85-7	95-6	105-4	115-3	125-1	135-0	144-8	154-7	164-6	
Corrn. for do.	+2-1	+2-0	+1-9	+1-7	+1-4	+1-1	+0-8	+0-4	+0-0	-0-3	-0-7	-1-1	-1-4	-1-6	-1-9	-2-0	-2-1	-2-2	
English date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28	
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur	
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15	
1860 Mars ...	257-4	262-2	266-6	270-4	274-1	278-6	278-3	279-0	278-2	276-5	274-0	271-4	269-5	269-0	269-7	271-6	274-6	278-8	
☉'s L. Merc.	348-8	346-4	353-2	6-5	23-2	41-9	60-8	79-4	96-7	111-4	120-3	120-1	112-6	110-8	118-7	132-0	148-4	166-0	
+6 Jup. ...	83-0	84-1	85-5	87-0	88-8	90-7	92-7	94-9	97-0	99-3	101-6	103-7	106-0	108-3	109-9	112-7	114-6	116-5	
Ven. ...	42-9	54-1	64-4	74-5	83-6	92-1	98-2	102-9	103-8	100-7	94-4	88-3	86-5	87-7	92-4	99-2	107-7	117-0	
Sat. ...	119-4	119-5	119-6	119-5	119-5	120-1	120-6	121-2	122-3	123-3	124-3	125-5	126-7	127-9	129-2	130-5	131-8	133-0	
1861 Mars ...	43-2	49-8	55-4	62-9	69-5	75-9	82-4	88-7	95-3	101-7	108-0	114-5	120-7	127-1	133-7	139-8	146-2	152-6	
☉'s L. Merc.	332-1	344-0	0-2	18-3	37-2	56-4	74-2	89-7	100-4	102-8	96-1	92-1	98-4	110-5	126-7	144-2	162-1	179-3	
+3 Jup. ...	112-6	113-8	114-2	114-9	115-9	117-1	118-5	120-8	122-1	123-9	126-0	128-1	130-3	132-5	134-6	136-8	139-1	141-3	
Ven. ...	351-2	3-7	16-0	28-5	40-7	53-1	65-2	77-6	89-6	101-9	114-3	126-4	138-5	150-7	162-7	174-8	186-9	199-1	
Sat. ...	133-4	133-1	132-9	132-6	132-8	133-2	133-5	134-4	135-2	136-0	137-1	138-2	139-3	140-5	141-7	143-0	144-3	145-6	
1862 Mars ...	281-6	288-2	294-9	301-5	308-0	314-4	320-7	326-7	332-3	337-6	342-4	346-4	349-5	351-5	352-4	351-9	349-9	347-1	
☉'s L. Merc.	337-5	355-3	1-40	32-9	51-2	67-5	79-7	84-6	79-4	78-6	77-8	89-3	104-6	122-2	140-3	158-1	174-7	188-7	
+1 Jup. ...	146-5	145-5	144-9	144-5	144-5	144-8	145-4	146-4	147-7	149-0	150-6	152-3	154-3	156-2	158-3	160-5	162-6	164-8	
Ven. ...	316-6	324-1	332-7	342-6	352-7	3-4	14-5	25-7	37-2	48-8	60-6	72-4	84-3	96-1	108-3	120-5	132-6	144-9	
Sat. ...	147-0	146-5	146-1	145-5	145-6	145-6	145-7	146-4	147-0	147-6	148-5	149-5	150-4	151-6	152-8	154-0	155-2	156-4	
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29	
1863 Mars ...	58-4	64-5	70-6	76-7	82-9	89-1	95-3	101-6	107-8	114-1	120-3	126-7	133-0	139-3	145-7	152-1	158-5	165-2	
☉'s L. Merc.	352-8	11-5	29-5	46-3	59-4	65-5	61-4	54-9	57-3	68-7	84-1	101-7	120-0	138-2	155-3	170-0	186-2	182-1	
+8 Jup. ...	179-9	178-6	177-4	176-2	175-4	174-7	174-5	174-6	174-8	175-5	176-4	177-6	179-1	180-7	182-5	184-4	186-4	188-4	
Ven. ...	29-0	40-9	52-9	64-8	75-9	87-9	99-4	110-5	121-5	131-6	141-6	150-9	159-2	165-5	169-9	171-1	167-8	161-6	
Sat. ...	160-3	159-7	159-0	158-4	158-2	158-2	157-9	158-3	158-8	159-1	160-0	160-8	161-6	162-7	163-9	164-9	166-1	167-3	
Eng. date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28	
1864 Mars ...	301-6	309-1	316-7	324-0	331-6	338-0	346-1	353-3	0-2	7-2	13-7	20-0	26-0	31-9	37-3	42-2	46-4	50-1	
☉'s L. Merc.	6-7	24-0	37-8	45-8	44-0	36-5	37-0	46-8	61-7	79-0	97-5	115-9	133-5	149-4	161-5	166-3	161-4	154-7	
+6 Jup. ...	214-0	213-0	211-8	210-5	209-2	208-0	206-9	206-3	205-4	204-9	204-9	205-2	205-9	206-8	208-1	209-5	211-1	212-9	
Ven. ...	333-7	346-0	358-3	10-5	23-2	35-0	47-3	58-3	71-6	83-7	96-1	108-8	120-8	132-9	145-3	157-5	170-0	182-2	
Sat. ...	173-5	172-7	171-9	171-2	170-8	170-6	170-1	170-2	170-4	170-5	171-2	171-8	172-6	173-7	174-9	176-1	177-1	178-1	
1865 Mars ...	73-9	79-3	84-8	90-5	96-1	102-0	108-0	113-9	119-7	126-0	132-1	138-5	144-8	151-2	157-5	164-0	170-5	177-0	
☉'s L. Merc.	16-2	25-5	25-8	18-4	18-6	24-6	33-6	56-0	74-3	93-1	111-3	128-0	141-7	148-8	146-5	138-9	138-9	147-6	
+3 Jup. ...	246-9	246-8	246-3	245-7	244-8	243-6	242-3	241-0	239-8	238-6	237-5	236-8	236-4	236-4	236-7	237-2	238-1	239-4	
Ven. ...	33-9	35-2	32-0	25-2	19-8	18-0	20-1	24-8	31-7	40-1	49-7	59-6	70-4	81-2	92-5	104-0	115-9	127-6	
Sat. ...	186-3	185-5	184-8	184-0	183-4	182-9	182-2	182-2	182-1	182-1	182-5	183-0	183-4	184-3	185-1	186-1	187-2	188-3	
1866 Mars ...	319-4	327-7	334-9	342-5	350-3	357-7	5-2	12-4	19-8	26-7	33-7	40-7	47-3	53-8	60-0	66-0	71-7	77-1	
☉'s L. Merc.	8-2	1-0	357-0	3-0	15-8	32-7	51-0	69-0	88-7	106-0	120-7	130-1	130-7	123-1	120-7	127-6	140-8	157-0	
+0 Jup. ...	277-7	278-7	279-5	280-0	280-1	279-8	279-2	278-3	277-1	275-9	274-7	273-8	272-1	271-0	270-2	269-6	269-5	269-6	
Ven. ...	10-1	22-4	34-7	47-0	59-3	71-5	83-4	95-4	107-2	119-2	131-2	142-7	154-4	165-9	177-3	188-3	199-0	209-4	
Sat. ...	198-7	197-9	197-2	196-3	195-6	194-9	194-3	194-0	193-6	193-4	193-6	193-9	194-2	194-9	195-6	196-3	197-3	198-4	
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29	
1867 Mars ...	92-1	96-4	100-9	105-9	111-1	116-4	121-9	127-5	133-5	139-3	145-4	151-5	157-9	164-2	170-7	177-1	183-9	190-5	
☉'s L. Merc.	338-4	343-0	354-9	11-3	29-6	48-8	67-4	85-3	100-4	111-3	113-4	106-4	102-9	108-6	115-4	132-8	150-7	168-4	
+8 Jup. ...	306-8	308-8	310-4	311-8	313-1	314-1	314-7	315-0	314-9	314-5	313-8	312-8	311-6	310-3	308-9	307-6	306-3	305-0	
Ven. ...	318-3	330-0	342-0	353-8	5-9	17-8	29-8	41-8	53-7	66-0	78-9	91-6	102-4	115-7	127-0	139-4	151-8	164-0	
Sat. ...	210-8	210-0	209-2	208-5	207-7	207-0	206-3	205-8	205-4	204-9	205-0	205-0	205-1	205-4	205-6	205-8	207-1	208-6	
Eng. date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28	
1868 Mars ...	336-8	344-4	352-8	359-8	7-3	14-9	22-2	29-5	36-8	43-8	50-8	57-5	64-4	70-8	77-3	83-5	89-6	95-6	
☉'s L. Merc.	333-2	348-3	6-2	25-2	44-1	62-4	78-5	90-7	95-3	90-1	84-3	88-3	99-9	115-4	132-8	150-7	168-4	184-8	
+5 Jup. ...	334-9	337-2	339-3	341-6	343-5	345-4	347-0	348-5	349-6	350-5	351-1	351-3	351-2	350-6	349-7	348-7	347-5	346-2	
Ven. ...	43-2	53-9	64-5	74-4	83-4	91-4	97-5	101-0	101-7	97-3	91-0	85-7	83-8	87-1	91-5	98-9	107-4	117-3	
Sat. ...	222-3	221-7	221-0	220-5	219-7	219-0	218-3	217-6	217-0	216-4	216-3	216-1	216-0	216-3	216-7	217-1	218-0	218-8	
1869 Mars ...	115-2	117-3	120-2	123-5	127-8	132-1	137-0	142-3	147-6	153-4	159-2	165-6	171-5	177-8	184-3	190-8	197-4	204-3	
☉'s L. Merc.	344-2	1-8	20-7	39-1	56-0	69-8	76-4	78-0	66-0	68-2	78-4	93-2	111-7	128-9	146-9	164-0	179-0	189-4	
+3 Jup. ...	2-4	4-8	7-2	9-7	12-8	14-3	16-5	18-6	20-4	22-4	23-9	25-2	26-5	27-2	27-6	27-4	27-0	26-4	
Ven. ...	351-8	4-3	16-8	29-1	41-2	53-7	65-8	78-1	90-2	102-5	114-7	127-0	139-1	151-1	163-4	175-4	187-5	199-3	
Sat. ...	234-0	233-4	232-9	232-3	231-4	230-6	229-8	229-2	228-6	227-9	227-6	227-2	227-0	227-1	227-3	227-6	228-2	228-9	
Mesh. Vrsah.	Mith.	Kat.	Sim.	Kan.	Tul.	Vrsch.	Dhan.	Mak.	Kum.	Min.	Asvn.	Bhar.	Krit.	Rohi.	Mrig.	Ardh.	Punar.	Push.	Asles.
30	60	90	120	150	180	210	240	270	300	33									

mean Surprise for every ten days from A.D. 1860 to A.D. 1869.																				215 SL	
180	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360		
174.4 -2.2 O 8 Pur 25	184.3 -2.1 O 18 Aipp 4	194.1 -1.9 O 28 Aipp 14	201.0 -1.7 N 7 Aipp 24	213.8 -1.5 N 17 Kart 4	223.7 -1.2 N 27 Kart 14	233.5 -0.9 D 7 Kart 24	243.4 -0.5 D 17 Marg 5	253.3 -0.1 D 27 Marg 15		263.1 +0.3 Ja 6 Marg 25	273.0 +0.6 Ja 16 Tai 5	282.8 +1.0 Ja 26 Tai 15	292.7 +1.3 F 5 Tai 25	302.5 +1.6 F 15 Masi 6	312.4 +1.8 F 25 Masi 16	322.2 +2.0 Mr 7 Masi 26	332.1 +2.1 Mr 17 Pang 6	342.0 +2.2 Mr 27 Pang 16	351.8 +2.2 Ap 6 Pang 26		
283.3 183.6 118.4 126.3 134.1	288.7 200.6 120.6 138.0 135.3	294.3 215.4 121.4 149.2 186.3	300.3 226.5 122.6 160.3 137.2	306.5 229.9 123.5 172.4 138.2	312.9 224.5 124.2 184.2 139.0	319.5 221.5 124.3 196.0 139.9	325.9 223.2 124.3 208.2 139.7	332.7 232.2 123.7 220.5 139.6	61	339.3 247.3 123.1 232.9 139.7	346.2 264.4 122.6 245.4 189.1	353.0 282.0 121.1 257.8 138.6	359.8 299.6 119.8 270.4 138.0	64 316.2 118.5 282.7 137.2	18.3 330.0 117.2 295.3 136.4	19.9 332.2 116.0 307.7 135.6	26.7 337.3 115.1 320.1 134.9	33.3 329.7 114.4 332.7 134.2	39.7 328.7 113.8 344.9 133.5		
159.2 193.5 145.3 211.1 146.9	165.4 208.1 145.5 222.9 147.9	171.8 215.3 147.3 234.7 149.0	178.8 211.2 149.2 246.5 150.0	184.7 203.7 150.8 257.7 150.7	191.3 203.9 152.1 268.9 151.5	197.8 212.8 153.3 279.9 152.1	204.3 226.5 154.2 290.3 152.3	210.9 243.2 154.7 300.1 152.6	62	217.5 260.6 155.1 308.8 152.8	224.2 278.2 155.1 315.9 152.6	230.7 294.7 154.0 321.3 152.3	237.4 309.4 153.1 323.1 151.9	244.0 319.1 153.1 321.3 151.2	250.9 320.5 151.9 315.5 150.4	257.7 312.1 150.9 310.2 149.7	264.5 309.6 149.8 307.5 148.9	271.3 316.7 148.1 308.9 148.2	278.5 329.6 147.0 312.0 147.4		
344.6 197.7 167.1 167.4 167.7	343.0 197.4 169.2 169.5 158.9	342.1 189.7 171.3 181.9 160.1	342.6 187.1 173.5 194.4 161.3	345.4 193.8 175.4 206.9 162.0	347.8 206.6 177.4 219.7 163.0	350.5 222.0 179.1 232.0 163.9	354.3 239.4 180.6 244.8 164.3	358.7 256.9 181.9 257.6 164.8	63	3.6 273.6 183.2 270.1 165.2	8.4 288.8 184.1 282.7 165.0	14.0 300.1 184.8 295.4 164.9	19.4 303.8 185.1 308.0 164.8	24.9 297.8 184.7 320.4 164.3	30.8 292.5 184.7 332.9 163.7	36.7 296.2 183.1 345.6 163.1	42.9 307.8 181.8 357.9 162.3	48.3 323.7 180.2 10.2 161.6	54.7 341.5 160.8 23.2 160.8		
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6		
171.6 175.1 190.6 156.3 168.6	178.2 170.8 192.7 154.6 169.8	184.7 176.0 194.9 156.2 171.0	191.3 187.8 197.2 161.1 172.3	198.1 203.1 199.4 163.2 173.2	204.8 219.1 201.5 177.0 174.2	211.6 237.5 203.6 186.5 175.1	218.6 251.4 205.6 196.9 175.7	225.4 269.9 207.4 207.8 176.2	64	232.5 282.0 209.3 218.9 176.9	239.5 287.3 210.9 230.6 177.0	246.6 282.7 212.3 242.3 177.2	253.8 275.9 213.5 254.4 177.3	261.0 278.0 214.5 266.9 176.8	268.8 288.4 215.0 278.7 176.4	275.7 303.2 215.6 290.7 175.9	283.1 320.8 215.5 303.0 175.2	290.4 339.2 215.1 315.1 174.5	297.9 357.7 214.5 327.5 173.7		
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6		
52.6 157.5 214.9 194.9 179.1	54.4 168.0 216.8 207.3 180.3	55.0 182.5 218.8 219.5 181.5	54.0 199.2 221.1 231.8 182.7	52.1 216.6 223.3 244.1 183.8	49.1 233.8 225.5 256.5 184.9	45.6 249.6 227.7 263.7 185.9	42.9 262.9 230.0 281.1 186.7	41.2 270.4 232.2 293.1 187.4	65	40.7 268.9 234.4 304.9 168.3	41.3 260.7 236.5 316.9 188.5	42.9 259.9 238.5 328.5 188.7	45.5 268.3 240.2 340.0 189.0	48.5 282.0 242.3 350.8 188.9	52.2 298.6 243.3 1.3 188.8	56.5 316.8 244.7 10.5 188.6	61.2 335.0 245.8 19.2 188.0	66.2 353.0 246.5 27.1 187.1	71.2 9.0 246.9 32.4 186.5		
183.8 161.6 240.8 139.8 189.2	190.5 178.2 242.4 151.7 190.6	197.3 195.7 241.1 163.9 191.8	204.3 213.0 246.0 176.1 192.9	211.1 229.4 248.0 188.4 194.0	218.1 243.5 250.1 200.9 195.2	225.1 252.8 252.4 213.3 196.3	232.3 254.1 254.7 226.0 197.2	239.6 246.7 257.0 238.3 198.0	66	246.8 242.9 259.3 251.0 199.0	254.3 248.7 261.6 263.6 199.6	261.6 261.2 263.9 276.3 200.1	269.3 277.0 266.2 289.0 200.6	276.8 294.4 268.3 301.4 200.6	284.4 312.6 270.3 314.1 200.7	292.1 330.2 272.4 326.7 200.6	300.0 347.1 274.2 339.1 200.1	307.7 0.5 275.8 351.6 199.4	315.4 7.7 277.3 4.0 198.9		
82.4 174.3 270.0 219.0 199.4	86.9 191.9 271.0 227.9 200.6	90.8 208.5 272.1 235.2 201.8	94.4 223.9 273.4 242.1 202.9	97.2 235.1 275.0 244.0 204.0	99.0 239.0 276.8 243.2 205.1	99.8 233.5 278.6 238.5 206.3	99.3 227.2 280.8 232.2 207.2	97.7 230.1 282.9 228.7 208.4	67	94.8 240.7 285.2 229.2 209.5	90.9 255.6 287.4 232.9 210.0	87.0 272.8 289.7 239.2 210.6	83.9 290.7 292.1 247.6 211.2	81.8 308.3 294.4 256.7 211.0	81.2 325.0 296.8 266.9 210.9	82.3 339.4 299.2 277.3 210.7	83.8 348.2 301.5 288.2 210.9	86.5 347.9 303.6 299.7 211.0	89.9 340.3 305.8 311.1 211.1		
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6		
197.2 189.4 304.7 176.7 209.5	204.2 205.5 304.5 189.0 210.6	211.2 217.7 304.5 201.7 211.7	218.3 223.6 304.9 214.0 212.3	225.3 219.8 305.5 226.7 214.1	232.7 219.8 306.5 239.2 215.3	240.0 212.3 307.7 251.8 216.5	247.4 222.9 309.3 264.4 217.4	254.8 236.6 311.1 277.1 218.6	68	262.5 253.3 313.0 289.5 219.6	270.1 270.9 317.0 301.9 220.5	277.9 288.3 317.0 314.3 221.3	285.5 305.8 319.8 326.7 222.1	293.4 319.6 321.6 339.7 222.4	301.2 329.6 324.0 350.9 222.8	309.2 330.7 326.5 2.7 223.1	317.1 323.2 328.8 14.6 222.9	324.9 320.2 331.1 26.3 222.8	332.7 327.1 333.7 37.8 222.6		
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27		Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6		
101.2 198.4 344.7 127.2 219.6	106.8 207.0 343.5 138.3 220.6	111.9 206.1 342.5 149.3 221.6	116.8 198.5 341.6 161.0 222.7	121.3 196.4 340.9 172.7 223.9	125.4 203.5 340.8 184.7 225.1	128.7 216.3 340.9 196.7 226.2	131.4 232.1 341.2 208.9 227.3	133.2 249.6 342.2 221.3 228.3	69	133.9 267.0 343.0 233.4 229.5	138.5 283.9 344.5 245.8 230.4	141.5 299.1 346.1 258.8 231.2	148.4 310.2 347.9 270.9 232.2	154.9 313.7 349.9 283.4 232.8	161.2 307.4 352.1 296.0 233.3	167.9 301.6 354.3 308.4 233.9	174.5 306.6 356.5 320.8 233.9	181.5 318.5 358.8 333.2 234.0	188.7 334.5 1.2 345.6 234.0		
211.1 191.6 26.0 211.4 229.4	218.2 185.0 24.9 223.3 230.4	225.3 180.2 23.6 235.1 231.4	232.6 184.7 23.3 246.9 232.4	239.9 196.3 23.0 258.2 233.5	247.2 211.6 19.9 269.3 234.6	255.0 228.6 18.8 280.1 235.8	262.6 245.8 18.1 290.1 236.9	270.2 262.8 17.5 299.9 238.0	70	277.9 278.5 17.3 308.4 239.2	285.7 291.1 17.5 314.5 240.3	293.6 298.7 18.0 319.6 241.3	301.4 292.7 19.0 320.8 242.3	309.4 294.3 20.1 317.7 243.0	317.3 296.1 21.5 311.6 243.8	325.0 306.4 23.5 306.6 244.4	332.9 321.1 25.0 304.9 244.7	340.7 338.0 26.9 306.9 244.9	348.4 348.2 29.1 311.8 245.2		
Mag. P. Phal. U. Phal. Hasta. Chit. Svati. Visa. Anur. Jyesh. Mula. P. Ash. U. Ash. Srav. Dan. Satab. P. Bhad. U. Bhad. Revati.																					
133.3 146.7 160.0 173.3 186.7 200.0 213.3 226.7 240.0 253.3 266.7 280.0 293.3 306.7 320.0 333.3 346.7 360.0																					



Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
☉'s Mean L.	357-0	6-9	16-7	26-6	36-4	46-3	56-1	66-0	75-9	85-7	95-6	105-4	115-3	125-1	135-0	144-8	154-7	164-6
Corrn. for do.	+2-1	+2-0	+1-9	+1-7	+1-4	+1-1	+0-8	+0-4	+0-0	-0-3	-0-7	-1-1	-1-4	-1-6	-1-9	-2-0	-2-1	-2-2
English date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pura	Pura
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1870 Mars	352-3	0-0	7-7	15-1	22-5	29-8	37-1	44-2	51-4	58-2	65-0	71-8	78-4	85-0	91-4	97-7	104-0	110-0
☉'s L. Merc.	357-5	14-8	33-3	47-7	56-5	55-7	48-2	47-5	56-4	71-0	88-2	106-3	124-7	142-4	158-3	170-4	175-7	171-0
+0 Jup.	30-0	32-2	34-5	36-9	39-2	41-6	44-0	46-3	48-8	51-1	53-1	55-1	56-9	58-6	59-9	61-1	62-1	62-8
Ven.	311-1	322-9	332-0	341-9	352-2	3-0	14-0	25-4	36-9	48-7	60-4	72-3	84-1	96-0	108-2	120-4	132-5	144-8
Sat.	245-2	245-0	244-7	244-6	243-8	242-9	242-0	241-2	240-5	239-8	239-3	238-9	238-3	238-3	238-2	238-2	238-6	238-9
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 31	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29
1871 Mars	148-6	147-1	147-0	148-2	150-1	152-9	156-7	160-8	165-6	170-6	176-0	181-8	187-6	193-8	200-2	206-7	213-4	220-4
☉'s L. Merc.	12-1	27-1	36-6	36-8	29-2	27-7	35-7	50-0	66-9	85-5	103-9	122-0	138-7	151-8	158-6	155-9	148-4	148-8
+7 Jup.	58-0	59-9	61-8	63-8	66-0	68-1	70-4	72-8	75-2	77-5	79-8	82-0	84-3	86-4	88-3	90-2	91-9	93-3
Ven.	29-5	41-5	53-2	65-3	77-0	88-4	99-8	110-8	121-3	131-9	141-5	150-6	158-5	164-4	168-0	168-6	164-3	158-1
Sat.	256-3	256-0	255-8	255-6	255-4	255-1	254-9	253-7	252-6	251-4	250-8	250-8	249-7	249-5	249-4	249-2	249-5	249-7
Eng. date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28
1872 Mars	8-1	15-5	23-0	30-2	37-5	44-5	51-5	58-4	65-3	72-1	78-8	85-4	92-0	98-4	104-8	111-1	117-5	123-6
☉'s L. Merc.	14-2	18-3	11-8	8-0	14-1	27-4	43-9	62-4	81-2	99-6	116-8	131-3	140-7	140-6	133-0	130-7	138-1	151-1
+5 Jup.	87-1	88-1	89-3	90-7	92-4	94-3	96-2	98-3	100-4	102-6	104-8	107-0	109-3	111-7	113-9	116-1	118-2	120-1
Ven.	334-2	346-5	358-7	11-0	23-1	35-3	47-6	59-8	72-1	84-4	96-6	108-8	121-3	133-4	145-8	158-0	170-5	182-9
Sat.	267-2	267-2	267-3	267-2	266-7	266-0	265-6	264-9	264-2	263-5	262-8	262-2	261-4	261-0	260-5	260-2	260-3	260-5
1873 Mars	199-5	196-6	193-3	190-0	187-7	186-7	186-8	188-3	190-9	194-2	198-2	202-7	208-0	213-5	219-5	225-5	231-9	238-7
☉'s L. Merc.	354-8	348-9	352-8	4-9	20-7	38-9	57-9	76-8	94-4	110-1	121-1	123-9	117-4	112-8	118-1	130-0	145-9	163-0
+2 Jup.	118-8	118-2	118-3	118-9	119-7	120-8	122-2	123-8	125-5	127-3	129-3	131-5	133-5	135-8	138-0	140-0	142-4	144-5
Ven.	32-2	32-3	28-3	22-0	16-7	15-7	18-6	24-1	31-2	40-0	49-6	59-9	70-4	81-4	92-8	104-8	116-2	128-1
Sat.	278-0	278-8	278-5	278-7	278-3	278-0	277-7	277-1	276-4	275-7	274-3	273-0	271-5	271-6	271-7	271-7	271-7	271-6
1874 Mars	22-8	29-8	36-8	43-9	50-8	57-7	64-4	71-1	78-1	84-4	91-0	97-5	103-9	110-4	116-8	123-1	129-5	135-8
☉'s L. Merc.	332-7	342-6	357-8	15-7	34-4	53-4	71-4	87-2	100-8	106-2	101-3	95-1	98-3	109-1	124-3	141-5	159-4	176-9
+0 Jup.	150-9	149-9	149-2	148-7	148-6	148-7	149-4	150-2	151-3	152-5	154-0	156-0	157-7	159-5	161-6	163-8	165-9	168-1
Ven.	10-7	23-0	35-8	47-6	59-9	72-0	84-0	96-1	107-7	119-6	131-6	143-1	154-8	166-5	177-5	188-5	199-0	209-2
Sat.	238-8	239-2	239-7	240-1	240-0	239-8	239-8	239-3	238-7	238-2	237-4	236-7	235-8	235-1	234-4	233-8	233-5	233-4
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 31	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29
1875 Mars	245-1	248-5	251-2	252-7	253-1	252-7	251-3	248-7	246-4	243-6	242-1	243-4	243-7	246-1	249-7	253-8	258-9	264-2
☉'s L. Merc.	337-1	354-3	13-6	31-5	50-2	67-1	80-8	87-4	83-8	76-9	78-7	89-1	104-0	121-2	139-5	157-3	174-1	188-7
+7 Jup.	184-7	183-3	182-1	180-9	180-0	179-3	178-8	178-7	178-9	179-4	180-2	181-3	182-6	184-1	185-8	187-9	189-8	191-7
Ven.	318-6	330-3	342-8	354-3	6-2	18-1	30-2	42-3	54-0	66-5	78-7	90-7	102-9	115-2	127-5	139-9	152-3	164-7
Sat.	299-7	300-4	301-0	301-6	301-8	301-8	301-9	301-4	301-0	300-6	299-9	299-2	298-5	297-7	297-0	296-2	295-7	295-3
Eng. date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28
1876 Mars	37-6	44-4	51-1	57-9	64-4	71-0	77-6	84-2	90-6	97-1	103-5	109-9	116-3	122-6	129-1	135-8	141-7	148-0
☉'s L. Merc.	349-8	7-4	27-1	44-7	58-9	67-7	66-6	59-0	58-6	67-8	81-9	98-9	117-2	135-3	152-8	168-5	180-4	185-1
+5 Jup.	218-7	217-8	216-6	215-3	214-1	212-8	211-6	210-6	209-9	209-4	209-2	209-4	209-9	210-8	211-8	213-8	214-6	216-4
Ven.	43-4	54-4	64-7	74-2	83-1	90-6	96-6	99-3	98-8	93-8	87-4	82-5	81-8	84-8	90-9	98-5	107-4	117-0
Sat.	310-6	311-6	312-5	313-6	313-8	313-8	314-1	313-9	313-8	313-5	312-9	312-2	311-6	310-8	310-1	309-2	308-6	308-1
1877 Mars	272-8	279-0	285-3	291-1	296-9	302-2	307-5	312-1	316-5	319-8	322-4	323-8	323-3	322-1	319-8	317-2	314-9	314-0
☉'s L. Merc.	3-5	21-6	36-8	47-1	48-5	41-1	38-5	45-9	59-4	76-3	94-3	113-0	130-9	147-5	160-9	168-3	166-1	158-4
+2 Jup.	251-3	251-5	251-1	250-6	249-8	248-7	247-4	246-1	244-7	243-5	242-5	241-7	241-0	240-8	241-1	241-4	242-1	243-1
Ven.	352-5	5-0	17-8	29-4	42-0	54-2	66-3	78-6	90-8	102-8	115-2	127-5	139-6	151-6	163-8	175-7	187-8	200-0
Sat.	321-7	322-6	323-6	324-5	325-2	325-8	326-5	326-5	326-6	326-6	326-1	325-7	325-1	324-4	323-7	322-9	322-1	321-4
1878 Mars	52-1	58-4	64-9	71-0	77-2	83-5	89-9	96-1	102-6	108-7	115-0	121-4	127-8	134-2	140-5	146-9	153-2	159-6
☉'s L. Merc.	14-7	26-2	29-6	23-4	18-8	24-2	36-9	53-3	71-5	90-2	108-7	125-8	140-6	150-0	150-9	143-7	140-5	146-9
-1 Jup.	281-8	283-0	283-8	284-5	284-8	284-8	284-4	283-6	282-6	281-5	280-1	278-7	277-5	276-4	275-4	274-6	274-2	274-9
Ven.	314-0	322-7	331-7	341-2	352-5	3-2	14-3	25-7	37-2	49-4	60-9	72-6	84-5	96-6	108-7	120-9	133-0	145-3
Sat.	332-9	334-0	335-0	336-2	337-0	337-6	338-5	338-9	339-2	339-6	339-3	339-1	338-8	338-2	337-5	336-8	336-0	335-3
Eng. date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 31	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29
1879 Mars	294-5	301-5	308-7	316-1	323-4	330-5	337-4	344-2	350-9	357-5	3-6	9-5	14-9	20-1	24-4	28-0	30-9	32-8
☉'s L. Merc.	10-8	5-5	35-8	4-0	16-0	31-9	50-5	69-1	87-8	105-5	120-8	131-7	134-0	127-2	123-6	128-3	140-4	156-1
+7 Jup.	310-8	312-7	314-5	316-0	317-4	318-5	319-4	319-9	319-9	319-7	319-3	318-4	317-2	316-0	314-6	313-2	312-1	310-7
Ven.	29-9	41-9	53-7	65-7	77-2	88-8	100-0	111-2	121-7	131-9	141-5	150-2	157-5	163-2	165-4	165-2	160-5	154-7
Sat.	344-4	345-6	346-8	348-1	349-1	349-9	351-0	351-5	352-1	352-6	353-0	353-3	353-7	352-7	352-0	351-1	350-3	349-6
Mesh. Vrsh. Mith. Kat. Sim. Kan. Tul. Vrsch. Dhan. Mak. Kum. Min. Asv. Bhar. Krit. Rohi. Mrig. Ardh. Punar. Push. Asles.	30	60	90	120	150	180	210	240	270	300	330							

Sunrise for every ten days from A.D. 1870 to A.D. 1879.																																				
1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904		
171-1	184-3	194-1	204-0	213-8	223-7	233-5	243-4	253-3	263-1	273-0	282-8	292-7	302-5	312-4	322-2	332-1	342-0	351-8	361-7	371-6	381-5	391-4	401-3	411-2	421-1	431-0	440-9	450-8	460-7	470-6	480-5	490-4	500-3	510-2		
-2-2	-2-1	-1-9	-1-7	-1-5	-1-3	-0-9	-0-5	-0-1	+0-3	+0-6	+1-0	+1-3	+1-6	+1-8	+2-0	+2-1	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	+2-2	
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6	Ap 16	Ap 26	Ap 36	Ap 46	Ap 56	Ap 66	Ap 76	Ap 86	Ap 96	Ap 106	Ap 116	Ap 126	Ap 136	Ap 146	Ap 156			
Pur	Aipp	Aipp	Aipp	Kart	Kart	Kart	Marg	Marg	Marg	Tai	Tai	Tai	Masi	Masi	Masi	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang	Pang		
4	14	24	4	14	24	5	15	25	5	15	25	6	16	26	6	16	26	6	16	26	6	16	26	6	16	26	6	16	26	6	16	26	6	16		
116-2	121-9	127-5	133-2	138-4	143-7	148-3	153-0	158-8	163-5	168-2	173-0	177-7	182-4	187-1	191-8	196-5	201-2	205-9	210-6	215-3	220-0	224-7	229-4	234-1	238-8	243-5	248-2	252-9	257-6	262-3	267-0	271-7	276-4	281-1		
164-1	166-6	170-5	181-0	207-4	224-8	241-9	258-1	271-6	289-4	307-2	325-0	342-8	360-6	378-4	396-2	414-0	431-8	449-6	467-4	485-2	503-0	520-8	538-6	556-4	574-2	592-0	609-8	627-6	645-4	663-2	681-0	698-8	716-6	734-4		
63-0	63-0	62-5	61-8	60-8	59-6	58-3	57-0	55-8	54-5	53-6	52-9	52-5	52-9	53-6	54-5	55-7	56-7	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1	57-1		
157-3	169-4	181-8	194-5	206-8	219-6	232-1	245-7	257-3	270-0	282-8	295-3	307-9	320-3	333-0	345-3	357-8	370-1	382-6	395-1	407-6	420-1	432-6	445-1	457-6	470-1	482-6	495-1	507-6	520-1	532-6	545-1	557-6	570-1	582-6		
239-4	240-4	241-5	242-4	243-4	244-4	245-6	246-8	248-0	249-1	250-2	251-2	252-4	253-2	253-9	254-8	255-2	255-7	256-2	256-7	257-2	257-7	258-2	258-7	259-2	259-7	260-2	260-7	261-2	261-7	262-2	262-7	263-2	263-7	264-2	264-7	
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7	Mr 17	Mr 27	Ap 6	Ap 16	Ap 26	Ap 36	Ap 46	Ap 56	Ap 66	Ap 76	Ap 86	Ap 96	Ap 106	Ap 116	Ap 126	Ap 136	Ap 146	Ap 156			
227-3	234-8	241-6	249-1	256-4	264-0	271-6	279-2	287-2	294-9	302-9	310-6	318-4	326-1	334-0	341-6	349-3	356-8	364-5	372-2	379-9	387-6	395-3	403-0	410-7	418-4	426-1	433-8	441-5	449-2	456-9	464-6	472-3	480-0	487-7		
157-7	171-8	189-2	205-5	222-8	239-3	256-2	262-4	262-9	255-5	252-2	258-4	271-2	287-3	305-0	323-1	341-0	358-8	376-7	394-6	412-5	430-4	448-3	466-2	484-1	502-0	519-9	537-8	555-7	573-6	591-5	609-4	627-3	645-2	663-1		
94-6	95-5	96-1	96-5	96-6	96-2	95-7	94-7	93-5	92-8	91-0	89-6	88-4	87-4	86-7	86-2	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0	86-0		
153-4	152-3	154-5	160-2	167-7	176-7	186-4	196-9	208-0	219-2	230-9	242-6	254-7	266-9	279-0	291-2	303-3	315-6	328-0	340-3	352-6	364-9	377-2	389-5	401-8	414-1	426-4	438-7	451-0	463-3	475-6	487-9	500-2	512-5	524-8		
250-0	250-8	251-5	252-3	253-4	254-5	255-6	256-7	257-8	259-0	260-1	261-2	262-4	263-3	264-3	265-2	265-9	266-5	267-1	267-6	268-1	268-6	269-1	269-6	270-1	270-6	271-1	271-6	272-1	272-6	273-1	273-6	274-1	274-6	275-1	275-6	
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6	Ap 16	Ap 26	Ap 36	Ap 46	Ap 56	Ap 66	Ap 76	Ap 86	Ap 96	Ap 106	Ap 116	Ap 126	Ap 136	Ap 146	Ap 156			
129-7	135-7	141-8	147-5	153-3	158-9	164-7	170-1	175-2	180-2	185-0	189-5	193-4	197-0	199-7	201-7	202-6	202-5	200-9	198-9	196-9	194-9	192-9	190-9	188-9	186-9	184-9	182-9	180-9	178-9	176-9	174-9	172-9	170-9	168-9		
167-2	184-6	202-0	218-6	233-6	244-5	248-0	241-9	236-3	239-6	250-7	265-8	283-1	301-2	318-9	334-7	350-1	358-8	368-5	378-2	387-9	397-6	407-3	417-0	426-7	436-4	446-1	455-8	465-5	475-2	484-9	494-6	504-3	514-0	523-7		
121-9	123-6	125-1	127-3	126-5	128-1	128-6	128-7	128-3	127-8	127-1	126-1	124-8	123-5	122-1	120-9	119-9	119-0	118-4	117-8	117-2	116-6	116-0	115-4	114-8	114-2	113-6	113-0	112-4	111-8	111-2	110-6	110-0	109-4	108-8		
195-4	207-8	220-8	232-3	244-6	257-0	269-3	281-4	293-5	305-6	317-4	328-8	339-9	350-6	361-2	371-8	382-4	393-0	403-6	414-2	424-8	435-4	446-0	456-6	467-2	477-8	488-4	499-0	509-6	520-2	530-8	541-4	552-0	562-6	573-2		
260-5	261-2	261-8	262-4	263-3	264-3	265-3	266-6	267-7	268-8	270-0	271-2	272-3	273-4	274-4	275-4	276-2	276-9	277-7	278-5	279-3	280-1	280-8	281-6	282-4	283-2	284-0	284-8	285-6	286-4	287-2	288-0	288-8	289-6	290-4	291-2	
245-4	252-5	259-6	266-8	274-3	281-8	289-3	296-9	304-4	312-1	319-6	327-3	334-8	342-3	349-8	357-2	364-7	372-2	379-7	387-2	394-7	402-2	409-7	417-2	424-7	432-2	439-7	447-2	454-7	462-2	469-7	477-2	484-7	492-2	500-0	507-8	
30-8	197-9	213-8	226-2	232-2	228-8	221-6	222-0	231-0	245-0	261-7	279-3	297-9	314-0	328-8	339-0	341-1	334-3	331-6	328-9	326-2	323-5	320-8	318-1	315-4	312-7	310-0	307-3	304-6	301-9	299-2	296-5	293-8	291-1	288-4	285-7	
46-7	148-8	150-7	152-6	154-3	155-7	157-2	158-2	158-7	159-2	159-3	159-0	158-5	157-8	156-5	155-3	154-1	152-6	151-7	150-7	149-7	148-7	147-7	146-7	145-7	144-7	143-7	142-7	141-7	140-7	139-7	138-7	137-7	136-7	135-7	134-7	
39-5	152-2	164-2	176-6	188-9	201-4	213-8	226-4	238-8	251-5	264-1	276-7	289-5	302-0	314-1	326-6	339-2	351-7	364-2	376-7	389-2	401-7	414-2	426-7	439-2	451-7	464-2	476-7	489-2	501-7	514-2	526-7	539-2	551-7	564-2	576-7	
271-5	271-9	272-4	272-8	273-7	274-5	275-4	276-5	277-6	278-8	280-0	281-2	282-3	283-5	284-7	285-8	286-9	287-7	288-5	289-3	290-1	290-9	291-7	292-5	293-3	294-1	294-9	295-7	296-5	297-3	298-1	298-9	299-7	300-5	301-3	302-1	302-9
42-1	148-2	154-3	160-5	166-5	172-6	178-7	184-6	190-5	196-5	202-4	208-0	213-6	219-1	224-3	229-5	234-2	238-6	242-8	246-9	251-1	255-3	259-5	263-7	267-9	272-1	276-3	280-5	284-7	288-9	293-1	297-3	301-5	305-7	309-9	314-1	318-3
93-4	207-2	215-8	215-5	207-7	205-2	211-9	224-7	240-6	257-8	275-6	292-7	307-9	319-4	323-8	318-3	312-4	316-3	328-0	340-3	352-6	364-9	377-2	389-5	401-8	414-1	426-4										



Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170			
☉'s Mean L. Corr'n. for do. English date.	357°0	6°9	16°7	26°6	36°4	46°3	56°1	66°0	75°9	85°7	95°6	105°4	115°3	125°1	135°0	144°8	154°7	164°6			
Tamil month. Do. date.	+2-1	+2-0	+1-9	+1-7	+1-4	+1-1	+0-8	+0-4	+0-0	-0-8	-0-7	-1-1	-1-4	-1-6	-1-9	-2-0	-2-1	-2-2			
	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28			
	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Ani	Ani	Ani	Ani	Ani	Ani	Pur	Pur			
	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15			
1880 Mars ...	67°5	78°2	79°1	84°9	90°9	96°9	103°0	108°9	115°1	121°3	127°4	133°8	140°1	146°4	152°8	159°2	165°7	172°			
☉'s L. Merc.	341°5	343°2	353°7	8°	26°7	45°7	64°5	83°1	99°1	111°5	116°6	111°5	105°6	108°6	119°7	135°6	151°8	169°			
+4 Jup. ...	338°6	340°9	343°2	345°4	347°5	349°5	351°2	352°7	353°9	355°0	355°7	356°0	356°1	355°6	355°1	354°2	353°2	351°			
Ven. ...	334°7	346°9	359°2	11°5	23°6	36°0	48°1	60°5	72°6	84°9	97°2	109°3	121°8	133°9	146°2	158°5	171°0	188°			
Sat. ...	354°9	356°5	358°2	359°9	1°1	2°2	3°3	4°0	4°8	5°6	5°8	6°1	6°4	6°2	5°9	5°7	5°3	4°			
1881 Mars ...	312°7	320°2	328°0	335°6	343°2	350°6	358°0	5°4	12°5	19°7	26°5	33°3	39°9	46°1	52°1	58°0	63°4	68°			
☉'s L. Merc.	332°1	346°3	3°6	22°3	41°3	59°8	76°7	90°6	97°8	95°3	88°0	88°9	98°6	113°1	130°1	148°1	165°8	182°			
+2 Jup. ...	6°2	8°6	11°0	13°4	15°8	18°2	20°5	22°6	24°6	26°5	28°2	29°7	30°9	31°8	32°4	32°7	32°6	32°			
Ven. ...	30°3	29°3	24°3	17°2	13°9	13°9	17°4	23°5	31°0	39°9	49°8	60°1	70°6	82°2	93°4	104°9	116°8	128°			
Sat. ...	7°9	9°2	10°5	11°9	13°2	14°4	15°6	16°6	17°5	18°6	19°1	19°4	20°3	20°4	20°4	20°5	19°9	19°			
1882 Mars ...	84°3	89°0	94°1	99°3	104°7	110°3	116°0	121°8	127°7	133°7	139°8	146°0	152°4	158°6	165°0	171°6	178°1	184°			
☉'s L. Merc.	340°7	358°9	17°8	36°4	53°9	68°9	78°1	77°9	70°5	69°2	77°4	91°2	108°0	125°9	144°1	161°4	177°2	189°			
-1 Jup. ...	33°8	36°0	38°8	40°6	42°9	45°3	47°8	50°1	52°3	54°6	56°9	58°9	60°9	62°6	64°1	65°4	66°5	67°			
Ven. ...	11°2	23°6	35°8	48°3	60°0	72°4	84°5	96°4	108°3	120°1	132°1	143°4	155°1	166°8	177°6	188°6	199°3	208°			
Sat. ...	20°0	21°3	22°6	24°0	25°4	26°8	28°1	29°3	30°4	31°5	32°3	33°1	33°9	34°2	34°5	34°8	34°5	34°			
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 31	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 2			
1883 Mars ...	330°4	338°1	345°9	353°5	1°1	8°7	16°1	23°4	30°6	37°7	44°8	51°5	58°2	64°7	71°1	77°4	83°3	89°			
☉'s L. Merc.	356°5	15°0	32°7	48°0	58°2	59°5	51°9	49°6	56°9	70°6	87°2	105°3	123°7	141°6	157°9	171°0	177°8	175°			
+6 Jup. ...	62°1	63°8	65°6	67°5	69°7	71°8	74°1	76°4	78°7	81°0	83°3	85°6	87°9	89°9	91°8	93°8	95°6	97°			
Ven. ...	318°9	330°8	342°8	354°8	6°7	18°6	30°6	42°8	54°9	67°0	79°9	92°4	103°4	115°7	128°0	140°4	153°8	165°			
Sat. ...	32°7	34°0	35°3	36°6	37°9	39°3	40°7	41°9	43°1	44°4	45°4	46°4	47°4	48°0	48°6	49°1	49°1	49°			
Eng. Date.	Ap 11	Ap 31	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 2			
1884 Mars ...	105°4	107°6	111°9	115°9	120°6	125°4	130°8	136°3	141°8	147°6	153°5	159°7	165°8	172°2	178°7	185°1	191°9	198°			
☉'s L. Merc.	9°9	25°7	37°3	40°8	34°3	30°1	35°4	48°0	64°3	82°6	101°3	119°5	136°5	150°9	160°2	160°3	152°9	150°			
+4 Jup. ...	91°3	92°1	93°2	94°5	96°1	97°9	99°7	101°7	103°8	106°0	108°2	110°4	112°8	115°0	117°3	119°5	121°6	123°			
Ven. ...	43°7	54°6	64°6	74°1	82°9	89°9	94°9	97°2	95°5	89°9	84°2	79°6	81°6	83°8	90°2	98°0	107°1	117°			
Sat. ...	45°5	46°7	47°9	49°1	50°5	51°9	53°3	54°6	55°9	57°2	58°3	59°4	60°5	61°4	62°2	63°0	63°3	62°			
1885 Mars ...	346°9	354°1	1°7	9°2	16°8	24°0	31°4	38°8	45°6	52°8	59°6	66°5	73°3	79°5	86°1	92°4	98°5	104°			
☉'s L. Merc.	16°1	21°6	17°1	11°0	14°0	25°6	41°3	59°5	78°3	96°9	114°3	131°0	141°3	144°3	137°8	132°9	137°5	144°			
+1 Jup. ...	122°5	122°3	122°5	122°8	123°5	124°5	125°8	127°2	128°9	130°8	132°8	134°8	136°9	139°1	141°2	143°4	145°6	147°			
Ven. ...	353°0	5°5	17°8	30°1	42°4	53°9	66°8	79°1	91°3	103°5	115°9	128°0	140°1	152°1	164°2	176°2	188°3	200°			
Sat. ...	58°6	59°6	60°7	61°8	63°1	64°4	65°7	67°0	68°4	69°8	71°2	72°5	73°8	74°7	75°6	76°5	77°1	77°			
1886 Mars ...	134°0	134°0	135°3	137°3	140°0	143°7	148°0	152°7	157°6	163°0	168°6	174°6	180°5	186°8	193°2	199°9	206°5	213°			
☉'s L. Merc.	0°1	352°7	353°6	3°3	18°5	36°2	55°1	73°9	92°1	108°6	121°2	126°8	122°5	116°0	115°6	128°7	143°4	160°			
-1 Jup. ...	155°6	154°5	153°7	152°9	152°8	152°9	153°2	154°1	155°0	156°0	157°5	159°2	161°0	162°9	165°0	167°0	169°1	171°			
Ven. ...	313°8	322°3	331°7	342°0	353°1	3°7	14°7	26°1	37°8	49°6	61°3	73°2	85°1	97°1	109°3	121°5	133°6	145°			
Sat. ...	71°9	72°8	73°7	74°6	75°8	77°0	78°1	79°4	80°7	82°1	83°5	84°8	86°1	87°2	88°3	89°4	90°3	91°			
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 31	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 2			
1887 Mars ...	2°4	9°7	17°3	24°6	31°9	39°0	46°1	53°2	60°2	66°9	73°8	80°8	87°0	93°5	99°9	106°1	112°4	118°			
☉'s L. Merc.	333°9	343°1	357°3	14°8	33°6	52°7	70°9	86°0	101°1	108°4	105°5	98°3	99°4	109°3	123°9	140°7	158°5	170°			
+6 Jup. ...	189°4	188°1	186°8	185°5	184°5	183°6	183°1	182°9	183°0	183°3	184°0	184°9	186°2	187°6	189°4	191°2	193°2	194°			
Ven. ...	30°4	42°3	54°4	66°2	77°3	89°1	100°3	111°3	121°8	131°8	141°3	149°7	156°6	161°5	169°9	182°1	195°6	154°			
Sat. ...	85°4	86°1	86°8	87°5	88°5	89°6	90°7	92°0	93°3	94°6	95°9	97°2	98°5	99°8	101°0	102°2	103°2	104°			
Eng. Date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 2			
1888 Mars ...	178°0	174°2	170°2	168°3	169°6	170°5	173°9	175°7	179°4	183°4	188°3	193°6	199°2	205°0	211°1	217°4	224°2	230°			
☉'s L. Merc.	335°1	351°9	10°9	29°2	48°0	65°5	80°0	88°9	88°3	80°9	79°9	88°2	102°1	118°7	136°8	154°6	171°8	188°			
+3 Jup. ...	223°3	222°4	221°3	220°6	218°9	217°5	216°3	215°2	214°4	213°6	213°3	213°4	213°8	214°6	215°7	216°3	218°2	219°			
Ven. ...	335°2	347°5	359°7	12°2	24°2	36°5	48°8	60°0	73°1	85°6	97°7	110°0	122°4	134°4	146°9	159°0	171°5	184°			
Sat. ...	99°2	99°6	100°0	100°5	101°3	102°2	103°1	104°3	105°5	106°8	108°1	109°4	110°6	112°0	113°3	114°6	115°7	116°			
1889 Mars ...	16°9	24°2	31°4	38°6	45°6	52°4	59°4	66°2	73°0	78°6	86°4	92°8	99°4	105°8	112°2	118°7	124°8	130°			
☉'s L. Merc.	347°1	6°8	24°6	42°4	57°8	68°3	70°5	63°3	60°2	67°1	80°1	96°4	114°5	132°7	150°4	166°9	179°8	186°			
+1 Jup. ...	255°7	255°9	255°7	255°3	254°7	253°7	252°5	251°2	249°9	248°6	247°4	246°4	245°7	245°5	245°4	245°6	246°2	247°			
Ven. ...	28°2	25°8	20°2	14°1	11°0	12°0	16°2	22°6	30°7	40°0	51°2	60°2	71°1	82°1	93°7	105°2	117°1	128°			
Sat. ...	113°2	113°4	113°4	113°4	114°1	114°8	115°5	116°5	117°5	118°3	119°8	121°1	122°4	123°7	125°0	126°4	127°6	128°			
Meshr. Vrsh. Mith. Kat. Sim. Kan. Tul. Vrsch. Dhan. Mak. Kum. Min. Asv. Bh. Krit. Rohi. Mrig. Ardh. Punar. Push. Ash.	30	60	90	120	150	180	210	240	270	300	330	360	13°3	26°7	40°0	53°3	66°7	80°0	93°3	106°7	120°0

mea Sunrise for every ten days from A.D. 1880 to A.D. 1889.

[illegible]

fag.	P.Phal.	U.Phal.	Hast.	Chit.	Svati.	Visa.	Anur.	Jyesh.	Mula.	P.Ash.	U.Ash.	Shrav.	Dhan.	Satab.	P.Bhad.	U.Bhad.	Kavati.
33.3	146.7	160.0	173.3	186.7	200.0	213.3	226.7	240.0	253.3	266.7	280.0	293.3	306.7	320.0	333.3	346.7	360.0



Geocentric (Indian) Longitudes of sun and Major planets at Ujjain

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170			
☉'s mean L.	857-0	6-9	16-7	26-6	36-4	46-3	56-1	66-0	75-9	85-7	95-6	105-4	115-3	125-1	135-0	144-8	154-7	164-6			
Corr. for do.	+2-1	+2-0	+1-9	+1-7	+1-4	+1-1	+0-8	+0-4	+0-0	-0-3	-0-7	-1-1	-1-4	-1-6	-1-9	-2-0	-2-1	-2-2			
English date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 31	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 29			
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur			
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15			
1890 Mars ...	230-0	231-0	230-7	229-6	227-1	224-8	221-2	219-1	218-1	218-6	220-2	222-9	225-5	230-8	235-8	241-2	247-3	253-8			
☉'s L. Merc.	8-2	21-1	36-9	48-4	51-4	45-1	40-9	46-5	59-1	75-5	93-6	112-2	130-3	147-1	161-3	169-8	169-4	161-1			
+8 Jup.	286-1	287-3	288-4	289-1	289-5	289-6	289-3	288-7	287-8	286-8	285-4	284-0	282-7	281-9	280-7	279-6	279-1	279-1			
Ven.	13-1	25-5	37-5	50-0	62-1	74-3	86-2	98-3	110-3	121-9	133-5	145-1	156-6	167-9	179-3	189-9	200-2	209-1			
Sat.	127-0	126-6	126-5	126-6	127-0	127-4	127-9	128-8	129-7	130-6	131-7	132-8	134-0	135-2	136-5	137-8	139-1	140-9			
1891 Mars ...	31-1	38-8	45-8	52-5	59-3	66-1	72-7	79-3	85-7	92-3	98-8	105-2	111-7	118-2	124-6	130-8	137-1	143-9			
☉'s L. Merc.	14-5	25-7	32-6	27-7	21-6	25-3	36-9	52-8	70-7	89-5	108-0	125-0	140-8	151-4	153-7	146-9	142-6	147-7			
+6 Jup.	314-7	316-7	318-5	320-2	321-6	322-9	324-1	324-6	324-9	324-9	324-5	323-8	322-8	321-5	320-3	319-0	317-6	316-1			
Ven.	319-5	331-4	343-2	355-2	7-3	19-2	31-3	43-4	55-5	67-6	79-9	91-8	103-6	116-3	128-6	141-0	153-4	165-1			
Sat.	140-8	140-4	140-0	139-6	139-8	140-0	140-2	140-8	141-5	142-2	143-2	144-3	145-4	146-6	147-8	149-1	150-4	151-1			
Eng. Date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28			
1892 Mars ...	263-3	268-6	273-7	278-7	283-0	287-1	290-3	294-2	294-2	294-7	293-5	291-0	288-7	286-2	284-6	284-6	286-4	289-1			
☉'s L. Merc.	13-0	10-4	3-2	4-5	14-5	29-6	47-5	66-6	85-1	103-1	119-4	131-7	137-0	132-1	125-8	128-4	139-1	153-8			
+3 Jup.	342-4	344-8	347-1	349-3	351-5	353-5	355-4	357-1	358-5	359-8	360-3	360-8	361-3	361-8	362-3	362-8	363-3	363-8			
Ven.	44-0	54-6	64-7	73-8	82-2	88-9	93-6	94-8	91-9	85-7	80-1	77-2	78-5	82-7	89-3	97-9	107-2	117-7			
Sat.	154-3	153-7	153-2	152-7	152-6	152-5	152-5	152-9	153-3	153-8	154-8	155-7	156-6	157-7	158-8	160-0	161-2	162-2			
1893 Mars ...	46-3	52-8	59-3	65-8	72-1	78-5	85-0	91-4	97-8	104-1	110-5	116-9	123-3	129-5	136-0	142-3	148-9	155-1			
☉'s L. Merc.	345-7	344-4	352-7	7-0	24-3	43-0	61-9	79-4	97-4	115-2	133-6	151-3	169-0	186-8	118-6	132-7	149-3	167-1			
+1 Jup.	9-9	13-3	14-7	17-2	19-5	21-9	24-4	26-5	28-5	30-6	32-4	34-0	35-8	36-4	37-0	37-6	37-7	37-7			
Ven.	353-6	6-1	18-4	30-7	43-0	55-3	67-5	79-7	91-9	104-1	116-5	128-6	140-6	152-7	164-6	176-8	188-9	200-1			
Sat.	167-7	166-9	166-2	165-7	165-2	164-2	164-7	164-9	165-1	165-4	166-2	166-9	167-6	168-6	169-6	170-7	171-9	173-1			
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29			
1894 Mars ...	286-5	293-9	300-5	307-4	314-1	321-0	327-8	333-9	340-1	345-7	351-4	356-1	361-8	366-5	371-2	375-9	380-6	385-3			
☉'s L. Merc.	332-6	345-8	2-8	21-5	40-3	58-9	76-6	91-1	99-5	99-2	91-5	90-4	98-8	112-7	129-5	147-1	165-0	182-2			
+8 Jup.	37-8	40-0	42-3	44-6	46-9	49-3	51-6	54-0	56-3	58-6	60-9	62-9	64-8	66-6	68-3	69-8	70-9	71-1			
Ven.	314-3	323-0	332-8	343-2	353-8	5-0	16-4	27-6	39-1	51-3	63-0	74-8	86-8	98-7	110-9	123-2	135-5	147-7			
Sat.	180-4	180-0	179-6	179-1	178-4	177-6	176-8	176-8	176-8	176-8	177-4	178-0	178-5	179-4	180-4	181-4	182-5	183-1			
1895 Mars ...	61-6	67-5	73-6	79-6	85-8	91-8	98-0	104-2	110-3	116-7	122-7	129-0	135-4	141-7	148-1	154-6	161-0	167-1			
☉'s L. Merc.	341-6	358-2	17-0	35-8	53-6	69-0	79-7	81-2	74-1	71-2	78-0	90-8	107-3	125-1	143-3	160-7	176-8	189-1			
+5 Jup.	65-9	67-4	69-3	71-1	73-2	75-3	77-6	79-9	82-1	84-4	86-7	89-0	91-2	93-4	95-4	97-4	99-2	100-0			
Ven.	30-9	42-7	54-9	66-3	78-0	89-4	100-4	111-4	121-7	131-7	141-0	149-2	155-8	160-2	161-3	158-4	152-1	147-1			
Sat.	192-9	192-1	191-3	190-6	189-0	189-4	188-8	188-6	188-4	188-1	188-4	188-7	189-1	189-8	190-7	191-6	192-2	193-1			
Eng. Date.	Ap 11	Ap 21	My 1	My 11	My 21	My 31	Je 10	Je 20	Je 30	Jul 10	Jul 20	Jul 30	Aug 9	Aug 19	Aug 29	S 8	S 18	S 28			
1896 Mars ...	305-5	313-0	320-6	328-2	336-8	343-1	350-5	357-8	365-1	372-4	379-7	386-9	394-1	401-3	408-5	415-7	422-9	430-1			
☉'s L. Merc.	353-9	12-1	30-6	46-8	58-6	62-9	58-7	51-9	56-5	68-8	85-0	102-8	121-2	139-1	156-0	170-1	179-1	179-1			
+8 Jup.	95-3	96-0	97-0	98-3	99-8	101-4	103-2	105-2	107-3	109-4	111-6	113-8	115-9	118-3	120-5	122-8	124-9	127-1			
Ven.	335-8	348-1	360-3	372-8	385-3	397-1	409-2	421-6	434-1	446-6	459-1	471-6	484-1	496-6	509-1	521-6	534-1	546-6			
Sat.	205-2	203-7	202-1	200-6	199-9	199-2	198-4	198-1	197-7	197-4	197-6	197-7	198-0	198-6	199-3	200-0	201-0	202-1			
1897 Mars ...	78-3	82-7	87-9	93-4	99-0	104-7	110-7	116-6	122-6	128-3	134-6	141-1	147-3	153-6	160-1	166-5	173-0	179-1			
☉'s L. Merc.	8-2	24-1	37-1	43-5	39-3	33-0	34-7	46-7	62-2	79-9	98-7	116-9	134-5	149-7	160-7	163-6	157-0	151-1			
+0 Jup.	126-8	126-6	126-6	126-8	127-3	128-3	129-4	130-8	132-5	134-1	136-0	138-1	140-9	143-7	144-5	146-7	148-9	151-1			
Ven.	15-7	10-5	3-9	1-0	1-3	4-9	11-3	19-3	28-6	38-8	49-4	60-6	72-1	83-4	95-4	107-5	119-6	131-1			
Sat.	217-0	216-4	215-7	215-0	214-2	213-5	212-7	212-1	211-6	211-1	211-1	211-0	210-9	211-3	211-8	212-1	213-0	213-1			
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29			
1898 Mars ...	323-7	331-5	339-2	346-9	354-6	362-3	370-0	377-7	385-4	393-1	400-8	408-5	416-2	423-9	431-6	439-3	447-0	454-7			
☉'s L. Merc.	16-9	24-0	21-2	15-2	15-4	25-8	41-0	58-8	77-4	96-2	114-0	130-0	142-2	146-9	141-6	135-6	138-6	141-1			
+8 Jup.	160-1	158-9	158-1	157-4	156-9	156-9	157-1	157-8	158-8	159-8	161-2	162-8	164-4	166-4	168-3	170-4	172-5	174-6			
Ven.	11-7	24-1	36-7	49-0	61-3	73-9	86-3	98-5	110-5	123-3	135-4	147-3	159-2	171-0	182-1	192-9	203-6	214-3			
Sat.	228-6	228-0	227-3	226-8	226-0	225-3	224-6	224-0	223-5	222-8	222-4	222-1	221-8	222-1	222-3	222-6	223-4	224-1			
1899 Mars ...	96-4	100-3	104-6	110-2	114-3	119-5	124-9	130-5	136-4	142-3	148-1	154-4	160-6	166-9	173-3	179-7	186-6	193-1			
☉'s L. Merc.	3-6	35-3	35-2	3-7	18-0	35-5	54-1	73-2	91-3	108-2	121-9	128-8	126-4	119-0	119-6	128-7	143-0	150-1			
+5 Jup.	194-1	192-8	191-5	190-3	189-2	188-2	187-5	187-2	187-1	187-2	187-8	188-7	189-8	191-2	192-8	194-5	196-4	198-1			
Ven.	319-8	331-9	343-7	355-7	7-6	19-7	31-7	43-9	55-5	68-1	80-4	92-3	104-7	116-8	129-3	141-5	153-7	165-1			
Sat.	239-9	239-5	239-1	238-6	237-8	237-0	236-3	235-7	235-0	234-2	233-8	233-3	233-0	233-0	233-1	233-1	233-7	234-1			
Mesh. Vrsh. Mith. Kat. Sira. Kan. Tul. Vrsch. Dhan. Mak. Kum. Min. Asvn. Bhar. Krit. Rohi. Mrig. Ardh. Punar. Push. Ash.	30	60	90	120	150	180	210	240	270	300	330	360	13-3	26-7	40-0	53-3	66-7	80-0	93-3	106-7	120-0



men Sunrise for every ten days from A.D. 1890 to A.D. 1899.

174	184	194	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360
174-2	184-3	194-1	204-0	213-8	223-7	233-5	243-4	253-3	263-1	273-0	282-8	292-7	302-5	312-4	322-2	332-1	342-0	351-8	361-8
-2-2	-2-1	-1-9	-1-7	-1-5	-1-2	-0-9	-0-5	-0-1	+0-3	+0-6	+1-0	+1-3	+1-6	+1-8	+2-0	+2-1	+2-2	+2-2	+2-2
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7,8	Mr 17,18	Mr 27,28	Ap 6,7	Ap 6,7
Pur 25	Aipp 4	Aipp 14	Aipp 24	Kart 4	Kart 14	Kart 24	Marg 5	Marg 15	Marg 25	Tai 5	Tai 15	Tai 25	Masi 6	Masi 16	Masi 26	Pang 6	Pang 16	Pang 26	Pang 26
259-6	266-3	273-1	280-2	287-3	294-5	302-0	309-1	316-6	91	324-0	331-2	338-6	345-8	353-1	0-3	7-5	14-6	21-6	28-6
159-6	166-9	180-0	195-8	213-1	230-3	246-7	261-5	272-3	275-3	268-7	263-8	268-0	279-7	295-4	313-0	331-3	349-5	364	6-4
279-2	280-0	280-6	281-7	289-1	284-6	286-4	288-5	290-6	292-8	295-0	297-4	299-8	302-1	304-5	306-9	309-2	311-6	313-7	313-7
219-0	226-6	232-6	235-8	235-3	231-8	225-1	221-1	220-9	224-4	230-5	238-4	247-5	257-5	267-9	279-0	290-3	301-8	313-5	313-5
141-6	142-7	143-7	144-7	145-8	145-9	146-5	146-6	146-7	146-8	146-4	146-0	145-5	144-8	144-0	143-2	142-4	141-6	140	140
149-8	156-2	162-3	168-7	174-9	181-2	187-5	193-7	199-9	92	206-2	212-3	218-6	224-6	230-9	237-0	242-9	249-0	254-7	260-6
159-1	175-0	192-1	209-4	226-4	241-9	254-0	259-5	265-4	248-0	249-6	259-3	273-9	290-9	308-9	327-0	344-5	359-7	10-5	10-5
315-3	314-4	314-4	314-3	314-7	315-4	316-3	317-6	319-2	321-0	322-8	324-8	327-0	329-3	331-7	334-1	336-5	338-9	341-3	341-3
178-3	190-8	203-2	215-8	228-3	240-9	253-4	266-1	278-6	291-1	303-5	315-8	327-9	340-3	352-3	3-9	15-8	27-5	38-4	38-4
152-8	153-9	155-0	156-1	167-0	157-8	158-6	158-9	159-2	159-5	159-3	159-0	158-8	158-2	157-5	156-8	156-1	155-3	154-6	154-6
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6	Ap 6
292-6	296-9	301-7	307-1	312-8	318-7	325-0	331-1	337-5	93	344-0	350-6	357-0	3-7	10-2	16-9	23-4	29-9	36-4	43-1
170-8	188-4	205-6	221-7	235-2	242-6	241-7	234-3	232-0	239-9	253-2	266-9	284-4	302-2	320-0	336-4	350-1	357-6	349-2	349-2
356-4	354-3	353-7	352-5	351-1	351-0	350-8	350-8	351-4	352-1	353-2	354-5	356-1	358-0	359-8	2-0	4-1	6-5	8-8	8-8
127-8	139-1	150-3	162-0	173-9	185-9	198-1	210-3	222-7	235-0	247-5	259-9	272-5	285-0	297-6	309-8	322-4	334-8	346-2	346-2
163-8	165-0	166-1	167-2	168-2	169-2	170-1	170-6	171-2	171-7	171-7	171-7	171-7	171-2	170-7	170-1	169-4	168-7	167-9	167-9
161-8	168-1	174-4	181-1	187-5	194-0	200-6	207-2	213-9	94	220-6	227-4	234-0	241-0	247-7	254-4	261-5	268-5	275-9	282-4
184-7	201-3	215-3	235-8	227-3	220-6	215-9	221-2	232-7	248-1	265-5	283-1	300-8	316-7	329-7	336-3	333-0	326-0	327-4	327-4
36-8	35-8	34-8	33-6	32-3	30-9	29-7	28-6	27-8	27-3	27-1	27-4	27-8	28-8	30-0	31-4	32-9	34-7	36-6	36-6
212-5	224-6	236-1	247-5	258-6	269-6	279-9	289-7	298-1	305-5	311-0	312-9	311-1	304-7	299-7	298-6	298-2	302-6	309-3	309-3
174-3	175-5	176-7	178-0	179-0	180-0	181-0	181-7	182-4	183-1	183-4	183-7	183-9	183-6	183-3	183-0	182-3	181-6	180-8	180-8
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 7,8	Mr 17,18	Mr 27,28	Ap 6,7	Ap 6,7
3-8	1-0	358-6	357-4	357-0	358-2	0-1	3-1	6-7	95	10-4	15-0	19-8	24-9	30-1	35-5	41-2	46-8	52-9	58-5
197-2	208-6	212-1	206-7	200-3	208-4	214-2	229-1	245-9	263-4	280-8	297-2	310-5	318-2	316-6	308-9	309-0	318-2	332-4	332-4
72-4	72-6	72-3	72-3	71-5	70-3	68-0	67-7	66-3	65-1	64-0	63-0	62-3	62-1	62-1	62-5	63-0	64-0	65-2	65-2
159-9	172-4	184-8	197-3	209-9	222-0	235-1	247-7	260-4	273-0	285-6	298-2	310-9	323-1	336-0	348-3	0-5	12-7	24-9	24-9
184-8	186-0	187-2	188-4	189-5	190-6	191-7	192-6	193-4	194-2	194-6	195-0	195-3	195-2	195-1	195-0	194-5	194-0	193-4	193-4
174-2	180-6	187-3	194-0	200-8	207-6	214-5	221-4	228-4	96	235-4	242-5	249-8	257-4	264-3	271-8	279-1	286-6	294-2	301-6
196-2	193-4	185-8	186-0	194-8	203-5	224-8	242-3	259-6	276-1	290-4	299-9	300-8	293-8	290-1	296-6	309-8	326-4	344-5	344-5
102-4	103-7	104-5	105-3	105-8	105-8	105-4	104-7	103-8	102-7	101-4	99-9	98-6	97-1	96-1	95-7	95-3	95-1	95-4	95-4
144-6	146-3	151-1	158-0	166-2	176-1	186-2	197-4	208-7	220-0	232-1	243-8	255-9	268-2	280-4	292-7	304-9	317-2	329-8	329-8
134-8	135-9	197-0	198-2	199-4	200-6	201-8	202-7	203-6	204-6	205-2	205-8	206-3	206-4	206-5	206-5	206-1	205-7	205-3	205-3
O 8	O 18	O 28	N 7	N 17	N 27	D 7	D 17	D 27	Ja 6	Ja 16	Ja 26	F 5	F 15	F 25	Mr 7	Mr 17	Mr 27	Ap 6	Ap 6
60-9	63-7	65-3	65-9	65-2	63-4	60-3	56-9	53-9	97	51-7	50-5	51-0	52-4	54-4	57-6	61-2	65-5	70-0	74-8
171-3	168-9	175-7	188-4	204-2	221-4	238-5	255-5	270-4	281-2	284-7	278-5	273-2	277-0	288-5	304-0	321-9	340-4	358-7	358-7
128-9	130-6	132-2	133-7	135-0	135-9	136-6	137-0	137-0	136-6	136-1	135-2	134-4	132-9	131-6	130-3	129-1	128-0	127-2	127-2
196-8	209-2	221-6	238-9	246-0	258-4	270-6	282-6	294-1	305-4	316-4	322-2	337-9	347-6	356-8	5-2	11-9	16-0	17-0	17-0
203-2	204-4	205-6	206-7	207-9	209-1	210-3	211-5	212-8	214-1	214-6	215-2	215-7	216-0	216-2	216-6	216-6	216-7	216-8	216-8
186-5	193-2	199-9	206-0	213-8	220-9	228-0	235-3	242-6	98	250-0	257-3	264-9	272-5	280-2	287-7	295-7	303-4	311-1	319-0
156-5	168-1	183-8	200-3	217-7	234-6	250-2	262-5	268-3	264-5	257-4	258-4	268-1	282-4	299-6	317-6	336-0	353-6	368	368
153-3	155-4	157-3	159-2	161-1	162-7	164-3	165-4	166-3	167-0	167-5	167-6	167-3	166-6	165-7	164-7	163-6	162-7	160-9	160-9
143-7	155-8	168-0	180-2	192-3	204-6	216-8	229-0	241-3	253-3	265-4	277-7	289-7	302-2	314-7	327-4	339-4	351-5	4-3	4-3
214-8	215-9	217-0	218-0	219-2	220-4	221-5	222-6	223-8	224-9	225-8	226-6	227-4	227-8	228-3	228-8	228-8	228-7	228-8	228-8
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28	Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7	Ap 7
87-2	91-0	96-4	100-3	103-5	106-0	107-5	107-7	106-8	99	104-7	101-4	97-6	93-8	90-9	89-1	88-1	90-0	92-0	94-9
164-1	181-0	198-5	215-6	231-4	244-8	252-1	260-3	242-2	210-3	249-8	263-2	279-6	297-7	315-5	333-1	348-1	0-8	5-4	5-4
176-8	179-1	181-2	183-7	185-6	187-5	189-5	191-2	192-8	194-1	195-5	196-4	197-3	197-6	197-6	197-4	196-8	195-8	194-7	194-7
222-4	230-4	236-2	239-4	239-1	234-6	227-7	223-3	222-5	225-0	230-5	238-0	246-7	256-2	266-7	277-4	288-5	300-0	311-5	311-5
224-9	225-9	226-9	228-0	229-1	230-2	231-4	232-6	233-8	234-9	235-8	236-8	237-7	238-4	239-0	239-6	239-7	239-9	240-0	240-0
200-1	207-0	214-0	221-2	228-3	235-6	243-0	250-5	258-0	1900	265-5	273-3	281-0	288-9	296-8	304-6	312-5	320-5	328-3	336-1
177-3	194-7	211-2	225-8	235-0	236-1	238-8	225-0	230-5	242-7	255-8	275-6	293-7	310-9	327-3	343-3	346-7	343-3	336-2	336-2
200-2	202-4	204-6	206-8	209-0	211-2	213-5	215-7	217-7	219-6	221-4	223-2	224-7	225-9	227-0	228-0	228-7	228-4	228-3	228-3
178-8	191-3	204-7	216-3	228-8	241-4	254-1	266-5	279-2	291-6	304-0	316-1	328-4	340-6	352-6	4-2	16-1	27-6	38-7	38-7
234-8	235-7	236-7	237-7	238-8	239-9	241-1	242-3	243-5	244-6	245-7	246-7	247-7	248-5	249-2	250-1	250-4	250-8	251-6	251-6



Geocentric (Indian) Longitudes of Sun and Major planets at Ujjain

Day of S. Yr.		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
☉'s Mean L.		357°0	6°9	16°7	26°6	36°4	46°3	56°1	66°0	75°9	85°7	95°6	105°4	115°3	125°1	135°0	144°8	154°7	164°6
Corr. for do.		+2°1	+2°0	+1°9	+1°7	+1°4	+1°1	+0°8	+0°4	+0°0	-0°3	-0°7	-1°1	-1°4	-1°6	-1°9	-2°0	-2°1	-2°2
English date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 31	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29
Tamil month.		Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Pur	Pur
Do. date.		1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1900	Mars	340°1	347°8	355°5	363°2	371°0	378°7	386°4	394°1	401°8	409°5	417°2	424°9	432°6	440°3	448°0	455°7	463°4	471°1
☉'s L.	Merc.	335°7	342°4	349°1	355°8	362°5	369°2	375°9	382°6	389°3	396°0	402°7	409°4	416°1	422°8	429°5	436°2	442°9	449°6
+2	Jup.	227°8	227°0	226°1	225°0	223°7	222°3	221°0	219°9	218°9	217°8	216°7	215°6	214°5	213°4	212°3	211°2	210°1	209°0
	Ven.	44°1	54°5	64°5	73°7	81°7	88°0	92°0	92°5	88°6	82°3	76°7	74°9	77°0	81°8	89°0	97°4	106°9	116°9
	Sat.	251°1	250°3	250°6	250°3	249°6	248°8	248°2	247°4	246°7	246°0	245°4	244°9	244°3	243°7	243°0	242°3	241°6	240°9
1901	Mars	131°4	122°8	124°9	128°0	131°8	136°0	140°7	145°7	151°0	156°5	162°2	168°4	174°4	180°7	187°2	193°8	200°4	207°2
☉'s L.	Merc.	333°0	342°9	352°8	362°8	372°8	382°8	392°8	402°8	412°8	422°8	432°8	442°8	452°8	462°8	472°8	482°8	492°8	502°8
+0	Jup.	259°9	260°3	260°3	260°2	259°9	259°4	257°6	256°1	254°9	253°6	252°5	251°4	250°6	250°0	249°9	250°0	250°4	251°2
	Ven.	354°1	6°5	18°9	31°2	43°6	55°8	68°1	80°2	92°4	104°6	117°0	128°9	141°2	153°2	165°2	177°1	189°4	201°2
	Sat.	262°1	262°1	262°0	261°9	261°3	260°8	260°2	259°5	258°9	258°1	257°0	255°9	254°9	255°0	255°0	255°1	255°2	255°4
Eng. Date.		Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Jul 2	Jul 12	Jul 22	Aug 1	Aug 11	Aug 21	Aug 31	S 10	S 20	S 30
1902	Mars	356°4	3°9	11°5	18°9	26°2	33°6	40°7	47°8	54°9	61°8	68°3	75°2	81°9	88°4	94°8	101°0	107°3	113°4
☉'s L.	Merc.	346°3	4°8	12°6	20°1	27°9	35°6	43°3	50°9	58°6	66°3	73°9	81°6	89°3	97°0	104°7	112°4	120°1	127°8
+7	Jup.	289°9	291°3	292°4	293°4	294°1	294°5	294°2	293°0	292°0	291°8	290°7	289°5	288°1	286°8	285°7	284°7	283°0	281°7
	Ven.	313°5	322°5	332°4	342°9	353°8	364°9	376°1	387°3	398°5	409°7	420°9	432°1	443°3	454°5	465°7	476°9	488°1	499°3
	Sat.	273°0	273°1	273°3	273°8	273°8	273°3	272°2	271°5	270°7	270°1	269°3	268°6	267°7	266°8	265°8	264°8	263°8	262°8
1903	Mars	157°8	155°4	154°7	154°7	156°2	158°5	161°4	165°4	169°9	174°8	179°9	185°6	191°3	197°6	203°9	210°2	217°0	223°9
☉'s L.	Merc.	0°9	18°8	35°1	48°3	64°4	80°5	96°6	112°7	128°8	144°9	161°0	177°1	193°2	209°3	225°4	241°5	257°6	273°7
+5	Jup.	318°4	320°4	322°4	324°3	325°9	327°3	328°4	329°2	329°5	329°7	329°7	329°2	328°3	327°0	325°8	324°5	323°1	321°9
	Ven.	31°3	43°6	55°2	66°9	78°6	90°0	100°8	111°6	121°9	131°7	140°8	148°5	155°0	160°2	163°9	166°1	167°8	168°3
	Sat.	288°8	284°1	284°5	284°8	284°7	284°5	284°2	283°6	282°9	282°3	281°5	281°8	280°1	279°4	278°8	278°1	277°9	277°8
Eng. Date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29
1904	Mars	11°2	18°6	25°8	33°1	40°3	47°3	54°2	61°2	67°9	74°5	81°4	88°0	94°5	101°1	107°4	113°7	120°0	126°3
☉'s L.	Merc.	12°7	26°7	34°7	32°9	25°5	25°9	35°7	50°6	67°9	86°6	105°1	122°9	139°1	151°3	166°7	181°1	195°5	209°9
+2	Jup.	346°1	348°5	350°9	353°1	355°3	357°4	359°4	1°1	2°7	4°1	5°2	5°9	6°3	6°3	5°9	5°3	4°4	3°2
	Ven.	336°3	348°4	0°7	13°1	25°3	37°6	49°3	62°1	74°3	86°7	98°8	111°1	123°3	135°5	148°0	160°1	172°6	185°0
	Sat.	294°6	295°2	295°7	296°2	296°3	296°2	296°3	296°1	296°0	294°8	293°4	293°0	292°6	291°8	291°1	290°4	290°0	289°5
1905	Mars	211°5	209°4	206°9	203°7	200°4	198°2	197°0	198°1	198°8	201°3	204°6	208°8	213°6	218°7	224°5	230°5	236°5	243°2
☉'s L.	Merc.	14°8	15°4	8°1	5°1	13°5	27°6	42°8	63°8	82°2	100°5	117°5	131°2	139°2	137°4	129°7	129°2	137°8	151°7
+0	Jup.	13°7	16°0	18°4	20°8	23°3	25°7	28°0	30°2	32°4	34°2	36°3	37°9	39°4	40°5	41°4	42°2	42°5	42°3
	Ven.	23°1	18°9	12°8	8°1	6°4	8°9	14°2	21°7	30°2	39°8	50°0	60°7	71°6	83°0	94°6	106°3	118°0	130°1
	Sat.	305°6	306°3	307°1	307°7	308°0	308°2	308°5	308°2	308°0	307°6	307°0	306°3	305°6	304°8	304°1	303°2	302°8	302°3
Eng. Date.		Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Jul 2	Jul 12	Jul 22	Aug 1	Aug 11	Aug 21	Aug 31	S 10	S 20	S 30
1906	Mars	26°5	33°4	40°4	47°3	54°4	61°0	67°8	74°7	81°1	87°6	94°2	100°6	107°2	113°5	120°0	126°3	132°5	138°9
☉'s L.	Merc.	348°9	346°5	353°3	6°6	23°4	42°0	60°9	79°5	96°8	111°6	120°4	120°2	112°7	110°9	118°8	132°1	148°5	166°1
+7	Jup.	41°6	43°8	45°9	48°2	50°5	52°9	55°2	57°5	59°9	62°2	64°5	66°5	68°5	70°2	71°9	73°6	75°0	76°0
	Ven.	14°2	26°6	38°8	51°1	63°2	75°2	87°2	99°0	110°8	122°6	134°3	146°0	157°5	168°4	179°4	190°0	200°1	209°3
	Sat.	316°6	317°5	318°3	319°3	319°7	320°2	320°7	320°6	320°6	320°5	320°0	319°4	318°8	318°0	317°3	316°5	315°8	315°1
1907	Mars	252°8	256°3	259°9	263°1	265°8	266°9	267°5	266°0	263°7	261°8	259°0	257°5	256°4	257°8	259°7	263°0	267°0	271°5
☉'s L.	Merc.	332°2	344°1	0°3	18°4	34°3	50°5	74°3	89°8	100°5	102°9	96°2	92°2	98°5	110°6	126°8	144°3	162°2	179°4
+4	Jup.	69°7	71°2	72°8	74°7	76°7	78°8	81°0	83°2	85°6	87°9	90°1	92°5	94°7	97°0	99°0	101°0	102°8	104°6
	Ven.	320°1	332°1	344°2	356°2	368°1	380°1	392°1	404°1	416°1	428°1	440°1	452°1	464°1	476°1	488°1	500°1	512°1	524°1
	Sat.	327°7	328°7	329°8	330°8	331°6	332°3	333°0	333°1	333°3	333°5	333°2	332°8	332°5	331°8	331°0	330°2	329°4	328°7
Eng. Date.		Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Jul 1	Jul 11	Jul 21	Jul 31	Aug 10	Aug 20	Aug 30	S 9	S 19	S 29
1908	Mars	40°5	47°3	54°0	60°5	67°0	73°6	80°0	86°6	92°9	99°4	105°8	112°2	118°7	125°0	131°4	137°8	144°1	150°5
☉'s L.	Merc.	237°6	355°4	14°1	33°0	51°3	67°6	79°8	84°7	79°5	73°7	77°9	89°4	104°7	122°3	140°4	158°2	174°8	188°8
+2	Jup.	99°5	100°1	101°0	102°0	103°4	104°9	106°8	108°8	110°7	112°8	115°0	117°2	119°4	121°6	123°8	126°1	128°2	130°3
	Ven.	44°3	54°9	64°2	73°3	80°9	87°2	90°0	89°8	85°1	78°7	73°7	72°7	75°6	81°2	88°6	97°4	107°1	117°5
	Sat.	339°1	340°3	341°4	342°6	343°5	344°3	345°3	345°7	346°2	346°7	346°5	346°4	346°3	345°7	345°0	344°4	343°6	342°9
1909	Mars	277°6	284°1	290°7	297°1	303°8	309°4	315°0	320°6	325°7	330°3	334°4	337°3	339°2	339°9	339°1	337°1	334°4	332°2
☉'s L.	Merc.	350°8	9°4	27°8	44°9	58°7	65°8	62°6	55°5	57°1	67°4	82°7	99°7	118°1	136°3	153°6	168°5	179°6	183°8
+1	Jup.	131°4	130°9	130°9	130°8	131°3	132°1	133°2	134°5	136°0	137°6	139°4	141°4	143°4	145°5	147°6	149°8	152°0	154°2
	Ven.	354°6	7°1	19°4	31°7	44°0	56°3	68°6	80°7	92°9	105°1	117°5	129°4	142°2	153°7	165°6	177°6	189°7	201°5
	Sat.	350°5	351°8	353°0	354°3	355°4	356°4	357°5	358°2	358°8	359°6	359°7	359°0	0°1	359°8	359°4	358°9	358°2	357°5
Mesh. Vrs. Mith. Kat. Sim. Kan. Tul. Vrsch. Dhan. Mak. Kum. Min. Asv. Bhar. Krit. Rohi. Mig. Ardh. Punar. Push. Asles.		20	60	90	120	150	180	210	240	270	300	330	360	130	260	400	530	660	790

Sunrise for every ten days from A.D. 1900 to A.D. 1909.																			
189	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	
174.1 -2.2 O 9 Pur 25	184.3 -2.1 O 19 Aipp 4	194.1 -1.9 O 29 Aipp 14	204.0 -1.7 N 8 Aipp 24	213.8 -1.5 N 18 Kart 4	223.7 -1.2 N 28 Kart 14	233.5 -0.9 D 8 Kart 24	243.4 -0.5 D 18 Marg 5	253.3 -0.1 D 28 Marg 15	263.1 +0.3 Ja 7 Marg 25	273.0 +0.6 Ja 17 Tai 5	282.8 +1.0 Ja 27 Tai 15	292.7 +1.3 F 6 Tai 25	302.5 +1.6 F 16 Masi 6	312.4 +1.8 F 26 Masi 16	322.2 +2.0 Mr 8 Masi 26	332.1 +2.1 Mr 18 Pang 6	342.0 +2.2 Mr 28 Pang 16	351.8 +2.2 Ap 7 Pang 26	
104.7 190.4 225.0 127.9 245.1	110.2 205.7 226.9 139.4 246.0	115.6 217.1 228.9 150.6 246.8	120.6 220.3 231.1 162.5 247.7	125.3 215.9 233.3 174.4 248.7	129.7 209.3 235.4 186.4 249.7	133.6 212.1 237.7 198.6 250.8	136.5 222.6 240.0 210.8 252.0	139.0 237.3 242.3 223.0 253.2	01 140.5 254.3 244.5 235.3 254.3	140.7 271.9 246.7 248.1 255.4	139.5 289.3 248.9 260.4 256.5	137.4 305.7 250.9 273.0 257.7	134.1 319.6 252.8 285.5 258.5	130.4 328.0 254.6 298.1 259.4	126.6 327.1 256.2 310.5 260.3	123.7 319.4 257.6 322.9 260.9	121.7 318.4 258.8 335.5 261.4	121.2 326.7 259.7 347.9 262.0	
214.0 198.4 252.4 213.0 255.6	221.1 203.4 253.7 224.0 256.2	228.3 202.7 255.7 236.4 256.9	235.6 195.2 257.2 247.8 257.6	248.0 194.7 258.8 258.9 258.6	250.5 203.3 260.9 268.4 259.7	258.1 217.1 263.1 279.6 260.7	265.7 233.2 265.3 280.4 261.8	273.3 249.4 267.5 297.9 262.9	02 281.2 268.1 269.8 304.6 264.1	289.0 284.8 273.2 309.3 265.3	296.7 309.1 274.4 310.4 266.5	304.7 303.5 276.7 307.1 267.7	312.6 310.7 279.0 301.0 268.7	320.6 303.5 281.3 296.0 269.6	328.4 299.9 283.4 295.5 270.6	336.9 306.3 285.4 296.5 271.3	343.9 319.0 287.4 301.5 272.1	351.6 335.4 289.1 308.6 272.7	
O 10 119.6 188.1 283.7 160.1 266.3	O 20 125.4 180.6 284.1 172.6 266.8	O 30 131.2 178.2 285.9 185.1 267.4	N 9 136.7 185.3 286.9 197.5 268.0	N 19 142.2 188.3 287.1 210.1 268.9	N 29 147.5 191.2 288.5 212.2 269.9	D 9 152.5 198.2 289.2 212.6 270.8	D 19 157.1 202.7 292.2 217.9 271.9	D 29 161.4 205.2 294.4 220.7 273.0	03 165.2 280.1 296.5 273.2 274.1	168.7 291.1 298.7 285.8 275.3	171.1 294.1 301.0 298.5 276.5	172.8 287.8 303.3 311.1 277.7	173.2 287.1 305.7 311.1 278.8	172.5 298.8 308.1 336.2 279.8	170.4 298.8 310.5 348.9 281.0	167.0 314.6 312.9 0.6 281.9	163.2 332.7 315.3 12.9 282.7	160.1 351.1 317.5 24.9 283.5	
230.9 161.6 320.8 142.4 277.5	238.0 166.3 320.0 145.7 277.9	245.2 178.0 319.7 150.1 278.2	252.6 193.3 319.4 157.6 278.6	259.9 206.2 319.8 165.5 279.4	267.5 226.6 319.8 176.3 280.1	275.1 244.4 320.7 186.6 281.0	282.8 260.0 322.0 197.6 282.1	290.6 272.4 323.4 208.9 283.2	04 298.4 277.8 324.9 220.4 284.2	306.3 274.0 326.7 232.5 285.4	314.1 266.5 328.6 244.5 286.6	321.8 268.2 330.8 256.7 287.7	329.5 278.6 332.1 268.8 288.9	337.3 292.8 335.4 281.0 290.1	344.9 310.2 337.8 293.0 291.3	352.4 328.8 340.2 305.5 292.2	0.1 346.3 342.6 317.8 293.2	7.5 4.5 345.0 330.2 294.2	
O 9 132.3 158.0 2.0 197.3 289.2	O 19 138.4 172.5 0.6 209.7 289.3	O 29 143.9 189.3 850.3 221.9 289.4	N 8 150.4 206.8 358.0 234.2 289.5	N 18 156.2 223.8 357.0 246.5 290.2	N 28 161.9 236.8 356.3 258.7 290.8	D 8 167.6 253.3 355.8 270.9 291.4	D 18 172.3 261.0 355.8 283.1 292.4	D 28 178.5 259.7 356.1 295.2 293.5	05 183.8 252.0 356.6 306.9 294.5	188.8 250.4 357.5 318.5 295.7	193.6 258.3 358.8 329.7 296.9	197.9 271.8 0.2 340.4 298.1	201.9 288.2 3.8 350.9 300.5	205.6 306.1 3.8 0.5 300.5	208.6 324.2 5.9 8.9 301.7	210.8 242.1 8.0 16.2 302.8	211.8 358.2 10.3 21.7 303.8	211.8 10.7 12.5 23.3 305.0	
249.8 168.0 41.9 142.1 301.7	256.8 185.5 41.1 154.2 301.6	263.9 202.8 40.1 166.4 301.4	270.9 219.5 38.9 178.8 301.3	278.4 233.9 37.5 191.1 301.7	285.8 243.8 35.9 203.6 302.2	293.3 245.6 34.9 216.3 302.5	300.8 238.4 35.7 228.7 303.4	308.8 234.1 32.9 241.2 304.2	06 315.9 239.2 32.1 253.9 305.2	323.4 251.2 31.8 266.7 306.4	330.9 266.7 31.9 279.1 307.6	338.3 284.1 32.2 291.9 308.7	345.8 319.8 33.0 316.9 311.1	353.2 336.4 34.0 316.9 312.3	0.9 349.8 35.2 329.4 312.3	7.8 349.8 36.7 342.0 313.5	15.1 357.1 38.4 354.5 314.7	22.1 354.8 40.8 6.7 316.0	
O 10 145.0 183.7 76.7 217.9 314.3	O 20 151.3 200.7 77.0 224.7 314.0	O 30 157.5 215.5 77.1 229.2 313.6	N 9 163.6 226.6 76.8 230.8 313.4	N 19 169.9 230.0 76.2 236.3 313.6	N 29 175.9 224.6 75.3 222.7 313.9	D 9 182.0 218.3 74.2 217.3 314.2	D 19 188.1 221.6 72.7 215.1 314.9	D 29 194.2 232.3 71.5 217.1 315.7	07 200.2 217.4 70.4 221.8 316.4	206.2 261.5 69.1 229.0 317.4	212.2 257.7 68.1 237.7 318.5	219.7 291.9 67.2 247.2 319.6	223.6 316.3 66.8 257.5 320.9	229.3 330.1 66.8 268.4 322.2	234.7 338.1 66.9 279.5 323.5	240.0 337.4 67.3 290.8 324.7	245.2 329.8 68.1 302.5 325.9	250.1 328.8 68.9 314.2 327.2	
277.1 195.6 108.1 179.3 328.0	282.7 208.2 107.6 191.8 327.4	288.8 215.4 108.6 204.2 336.9	295.2 211.3 109.3 216.8 326.3	301.6 203.8 109.8 229.3 326.4	308.8 204.8 109.9 242.1 326.4	315.0 212.8 109.5 254.6 326.4	321.8 226.6 109.1 266.9 326.9	328.7 243.3 108.4 279.5 327.5	08 335.7 260.7 107.4 291.9 328.0	342.7 278.3 106.3 304.5 328.9	349.5 294.8 105.1 316.6 329.9	356.5 309.5 103.6 328.9 330.9	3.4 319.2 102.5 841.1 331.1	10.2 320.6 101.4 353.1 332.3	17.0 312.2 99.8 4.7 334.5	23.8 309.7 99.5 16.4 335.8	30.5 316.8 99.6 27.9 337.1	37.2 329.7 99.6 38.8 338.4	
O 9 156.8 197.8 132.3 128.3 342.2	O 19 163.3 197.5 134.0 139.6 341.4	O 29 169.7 187.2 137.3 151.2 340.6	N 8 176.0 187.2 138.7 162.9 339.9	N 18 182.5 193.9 138.7 174.6 339.6	N 28 188.9 206.7 139.8 186.8 339.4	D 8 195.3 222.1 141.1 211.4 339.1	D 18 201.8 239.5 141.1 223.6 339.5	D 28 208.2 257.0 141.2 223.6 339.8	09 215.0 273.7 141.1 236.0 340.1	221.3 288.9 140.7 248.7 340.9	227.9 300.2 139.9 261.0 341.8	234.5 293.9 138.7 273.7 342.6	241.2 292.6 136.4 286.1 343.7	247.7 292.6 136.4 298.7 344.8	Mr 8 254.5 296.3 135.1 311.1 346.0	Mr 18 261.0 307.9 133.8 323.5 347.3	Mr 28 267.6 323.8 132.7 336.1 348.6	Ap 7 274.3 341.6 131.8 348.3 349.8	
330.5 175.6 156.4 213.5 356.7	330.3 171.2 158.6 225.5 355.9	331.6 175.1 160.6 235.7 355.2	332.8 186.5 162.6 248.1 354.3	336.0 201.5 164.5 259.0 353.8	339.5 218.4 166.1 269.5 353.4	343.8 235.6 167.6 279.5 352.8	348.7 252.8 189.9 288.9 352.9	353.5 268.6 199.9 297.0 352.9	10 358.7 281.1 170.9 303.5 352.9	4.2 288.1 171.4 306.9 353.6	9.8 283.9 171.5 307.2 354.2	15.7 272.7 171.4 303.4 354.8	21.4 277.6 170.9 297.0 355.8	27.5 287.1 170.2 292.4 356.9	33.6 301.6 169.1 291.8 358.0	39.7 318.9 168.0 294.8 359.2	45.8 337.0 166.7 300.7 0.4	51.9 355.8 165.5 308.2 1.6	
Mag. P.Phal. U.Phal. Hast. Chit. Svati. Visa. Anur. Jyesh. Mula. P.Ash. U.Ash. Srav. Dan. Satab. P.Bhad. U.Bhad. Revati.																			
133.3	146.7	160.0	173.3	186.7	200.0	213.8	226.7	240.0	253.3	266.7	280.0	293.3	306.7	320.0	333.3	346.7	360.0		

Day of S. Yr.	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170
☉'s Mean L.	357.0	6.9	16.7	26.6	36.4	46.3	56.1	66.0	75.9	85.7	95.6	105.4	115.3	125.1	135.0	144.8	154.7	164.6
Corrn. for do.	+2.1	+2.0	+1.9	+1.7	+1.4	+1.1	+0.8	+0.4	+0.0	-0.3	-0.7	-1.1	-1.4	-1.6	-1.9	-2.0	-2.1	-2.2
English date.	Ap 13	Ap 23	My 3	My 13	My 23	Je 2	Je 12	Je 22	Je 2	Je 12	Je 22	Je 2	Je 12	Je 22	Je 2	Je 12	Je 22	Je 2
Tamil month.	Chit	Chit	Chit	Chit	Vaik	Vaik	Vaik	Vaik	Ani	Ani	Ani	Adi	Adi	Adi	Avan	Avan	Avan	Par
Do. date.	1	11	21	31	10	20	30	9	19	29	7	17	27	6	16	26	5	15
1910 Mars ...	55.6	61.8	68.0	74.3	80.5	86.8	93.0	99.7	105.6	111.9	118.2	124.4	130.8	137.1	143.6	149.9	156.3	162.9
☉'s L. Merc. ...	6.8	24.1	37.9	45.9	44.1	36.6	37.1	46.9	61.8	79.1	97.4	116.0	133.6	149.5	161.6	166.4	161.5	154.8
+6 Jup. ...	164.8	163.7	162.5	161.6	161.1	161.0	161.1	161.3	162.3	163.4	164.6	166.1	167.9	169.7	171.6	173.7	175.7	177.9
Ven. ...	313.6	322.7	332.9	343.6	354.3	364.8	375.1	385.2	395.2	405.1	414.9	424.6	434.2	443.7	453.1	462.4	471.6	480.7
Sat. ...	2.3	3.6	4.9	6.3	7.5	8.6	9.9	10.9	11.8	12.7	13.1	13.6	13.9	13.7	13.6	13.5	12.9	12.1
1911 Mars ...	298.4	305.7	313.0	320.5	327.7	335.1	342.2	349.1	356.2	362.9	369.3	375.4	381.2	386.7	391.9	396.8	401.5	406.0
☉'s L. Merc. ...	16.3	25.6	25.9	18.5	18.7	24.7	38.7	56.1	74.4	93.2	111.4	128.1	141.8	148.9	146.6	139.0	139.0	147.7
+4 Jup. ...	198.8	197.6	197.0	194.9	193.8	192.8	191.9	191.4	191.4	191.4	191.7	192.6	193.5	194.9	196.3	198.0	199.7	201.7
Ven. ...	31.8	43.6	55.7	67.2	78.9	90.8	100.9	111.7	122.0	131.6	140.3	147.9	153.7	156.6	156.0	151.2	145.1	140.2
Sat. ...	14.3	15.7	17.1	18.5	19.8	21.1	22.4	23.7	25.2	26.5	26.9	27.2	27.6	27.7	27.9	28.0	27.5	27.1
Eng. Date.	Ap 12	Ap 22	My 2	My 12	My 22	Je 1	Je 11	Je 21	Je 1	Je 11	Je 21	Je 1	Je 11	Je 21	Je 1	Je 11	Je 21	Je 1
1912 Mars ...	70.9	76.5	82.1	87.9	93.7	99.5	105.6	111.5	117.7	123.8	130.1	136.3	142.4	148.9	155.4	161.8	168.3	174.8
☉'s L. Merc. ...	8.3	1.1	357.1	3.1	15.9	32.8	51.1	69.1	88.8	106.1	120.8	130.2	130.8	123.2	120.8	127.7	140.9	157.1
+1 Jup. ...	232.4	231.0	230.6	229.9	228.6	227.3	225.9	224.8	223.7	222.9	222.2	222.0	222.0	222.4	223.3	224.4	225.4	226.8
Ven. ...	336.8	349.1	361.4	373.6	385.8	397.9	409.9	421.8	433.6	445.3	456.9	468.4	479.8	491.1	502.3	513.4	524.4	535.3
Sat. ...	26.9	28.2	29.5	30.8	32.1	33.4	34.8	36.1	37.3	38.5	39.4	40.2	41.2	41.6	42.1	42.5	42.4	42.3
1913 Mars ...	316.3	323.9	331.7	339.3	347.0	354.5	361.9	369.3	376.6	383.7	390.7	397.6	404.4	411.1				

185	190	200	210	220	230	240	250	260		270	280	290	300	310	320	330	340	350	360
1744	1843	1941	2040	2138	2237	2335	2434	2533		2631	2730	2828	2927	3025	3124	3222	3321	3420	3518
-22	-21	-19	-17	-15	-12	-9	-5	-1		+03	+06	+10	+13	+16	+18	+20	+21	+22	+22
9 10	0 20	0 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18,19	28,29	Ap 7,8
Pur 25	Aipp 1	Aipp 14	Aipp 24	Kart 4	Kart 14	Kart 24	Marg 5	Marg 15		Marg 25	Tai 5	Tai 15	Tai 25	Masi 6	Masi 16	Masi 26	Pang 6	Pang 16	Pang 26
169.4	176.0	182.5	189.0	195.7	202.4	209.3	216.1	223.0	11	229.9	236.8	243.9	250.9	258.2	265.3	272.6	280.0	287.2	294.5
157.6	168.1	182.6	199.3	216.7	233.9	249.7	268.0	270.5		269.0	280.8	290.0	268.4	282.1	298.7	316.9	335.1	353.1	9-1
180.1	182.3	184.4	186.6	188.8	190.9	192.8	194.6	196.8		197.9	199.4	200.3	201.2	201.6	201.7	201.6	201.3	200.5	199.5
161.0	173.6	186.0	198.6	211.0	223.7	236.2	248.9	261.5		274.1	286.8	299.3	311.9	324.3	336.9	349.2	362.5	375.8	26.8
11.5	10.6	9.8	9.0	8.3	7.7	7.1	6.8	6.6		6.4	6.8	7.1	7.6	8.4	9.3	10.2	11.4	12.6	13.8
44.8	45.7	44.9	42.7	40.1	37.0	34.5	32.8	32.0	12	32.7	34.4	37.0	40.3	44.0	48.1	52.1	57.6	62.9	68.1
161.7	178.3	195.8	213.8	229.5	243.6	252.9	264.2	246.8		243.0	248.8	261.3	277.1	294.5	312.7	330.3	347.2	364.0	7.8
209.8	205.8	207.9	210.2	212.4	214.6	216.8	219.0	221.1		223.2	225.0	226.7	228.3	229.8	230.9	231.8	232.4	232.7	232.7
139.9	142.4	149.4	157.1	166.2	176.2	186.5	197.7	209.2		220.7	232.2	244.8	257.0	269.1	281.5	293.5	305.8	318.2	330.7
26.7	25.9	25.1	24.4	23.6	22.9	22.1	21.6	21.1		20.7	20.8	20.9	20.9	21.6	22.2	23.0	24.0	25.2	26.2
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7
181.4	188.2	195.0	201.8	208.6	216.1	223.1	230.2	237.4	13	244.5	251.9	259.3	266.8	274.3	281.9	289.5	297.1	304.9	312.6
174.4	192.0	208.6	224.0	235.2	239.1	243.6	247.3	250.2		240.8	255.7	272.9	290.8	308.4	325.1	339.5	348.3	348.0	340.4
228.6	230.4	232.4	234.5	236.7	238.9	241.1	243.3	245.7		247.9	250.1	252.3	254.3	256.8	258.2	259.9	261.5	262.8	263.6
197.8	210.1	222.4	234.7	247.0	259.4	271.4	283.5	295.4		307.2	319.4	329.8	340.5	350.6	0.2	8.4	14.9	19.6	20.6
42.1	41.2	40.2	39.2	38.6	38.1	37.6	36.9	36.3		35.5	35.3	35.2	34.9	35.4	35.8	36.2	37.0	37.9	38.9
78.1	82.5	86.3	89.4	91.7	92.7	92.9	91.4	88.8	14	85.5	81.7	78.5	76.0	74.9	75.8	75.9	79.3	82.5	86.1
188.0	204.2	216.9	223.5	221.1	213.2	213.8	221.3	234.8		251.4	269.1	286.7	303.6	318.5	328.9	331.2	324.4	320.5	326.2
256.2	257.6	259.2	260.8	262.5	264.5	266.6	268.0	271.0		273.3	275.6	278.0	280.3	282.7	284.9	287.1	289.2	291.2	293.2
142.4	154.7	166.9	179.4	191.7	204.1	216.8	229.2	241.7		254.4	267.1	279.6	292.4	305.3	318.2	329.9	342.5	355.0	7.2
57.0	56.6	56.1	55.7	55.9	54.1	53.3	52.5	51.8		51.0	50.6	50.1	49.7	49.7	49.8	49.8	50.5	51.2	51.9
O 10	O 20	O 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18,19	28,29	Ap 7,8
194.9	201.7	208.6	215.6	222.8	230.1	237.4	244.7	252.1	15	259.7	267.3	275.1	282.7	290.4	298.3	306.2	314.1	321.9	329.8
198.5	207.1	206.2	198.6	196.5	203.6	216.4	232.2	249.7		267.1	284.0	299.2	310.3	313.8	307.5	301.7	306.7	318.6	334.6
238.5	238.3	239.3	230.1	291.3	292.6	294.2	295.9	298.2		300.3	302.4	304.8	307.1	309.4	311.8	314.3	316.7	319.1	321.4
217.1	223.8	227.5	228.7	224.6	218.5	213.6	212.6	215.4		220.9	228.3	237.2	247.1	257.6	268.5	279.6	291.1	302.8	314.7
71.5	71.3	71.2	71.0	70.3	69.5	68.9	68.1	67.4		66.5	65.9	65.2	64.5	64.4	64.1	64.0	64.4	64.9	65.2
98.4	103.3	108.9	113.4	117.9	121.8	124.9	127.1	128.4	16	128.6	127.5	125.3	122.0	118.0	114.2	111.4	109.7	109.2	110.1
191.7	185.1	180.3	184.8	196.4	211.7	228.6	245.9	262.9		278.6	291.2	296.8	292.8	294.4	296.2	306.5	321.2	338.1	348.3
326.3	325.6	324.9	324.4	324.3	324.7	325.3	326.3	327.6		329.2	329.8	332.7	334.8	337.0	339.2	341.6	344.0	346.4	348.8
179.9	192.4	205.0	217.5	229.9	242.5	255.5	267.7	280.1		292.6	304.9	317.2	329.3	341.5	353.5	5.1	17.0	28.1	39.2
85.4	85.5	85.7	85.8	85.3	84.9	84.4	83.6	82.8		82.0	81.1	80.3	79.4	79.1	78.7	78.4	78.5	78.5	78.6
O 9	O 19	O 29	N 8	N 18	N 28	D 8	D 18	D 28		Ja 7	Ja 17	Ja 27	F 6	F 16	F 26	Mr 8	Mr 18	Mr 28	Ap 7
208.5	215.6	222.6	229.9	237.1	244.6	252.0	259.6	267.2	17	275.0	282.9	290.6	298.6	306.4	314.1	322.1	330.0	338.0	345.6
164.5	166.7	176.6	191.1	207.5	224.9	242.0	258.2	271.7		279.5	278.4	270.8	267.3	277.2	290.9	307.4	323.3	342.1	0.5
7.8	6.4	5.0	3.8	2.6	1.7	1.0	0.9	0.9		1.4	2.1	3.2	4.4	6.1	7.9	9.7	11.9	14.1	16.4
128.6	139.9	151.5	163.2	175.3	187.3	199.5	211.7	224.0		236.5	249.2	261.5	274.2	287.0	299.0	311.6	324.1	336.6	349.0
98.9	99.3	99.7	100.1	99.8	99.6	99.4	98.7	98.0		97.4	96.6	96.9	95.0	94.3	93.7	93.0	92.9	92.7	92.5
O 10	O 20	O 30	N 9	N 19	N 29	D 9	D 19	D 29		Ja 8	Ja 18	Ja 28	F 7	F 17	F 27	Mr 8,9	18,19	28,29	Ap 7,8
114.1	119.9	125.6	131.0	136.1	141.2	145.8	149.9	153.6	18	156.4	158.8	159.9	160.2	158.6	155.8	152.6	148.4	145.2	142.4
157.8	171.9	188.3	205.6	222.9	239.4	253.3	262.5	263.0		255.6	252.3	258.5	271.3	287.4	305.1	323.2	341.1	357.9	11.3
47.0	46.4	45.5	44.3	43.1	36.7	40.3	39.2	38.1		37.3	36.9	36.7	37.0	37.6	38.5	39.6	40.9	42.5	44.3
215.0	226.7	237.8	249.2	260.1	270.5	280.2	289.2	296.8		302.2	304.8	303.7	298.4	292.1	289.1	290.3	294.1	300.8	308.7
111.9	112.6	113.2	113.8	113.9	113.9	114.0	113.9	113.1		112.5	111.7	110.9	110.2	109.4	108.6	107.8	107.4	106.9	106.6
224.4	231.4	238.6	246.0	253.5	260.9	268.7	276.3	283.9	19	291.8	299.6	307.5	315.0	323.2	331.0	338.8	346.6	354.2	1.4
167.3	184.7	202.1	218.7	233.7	244.6	248.1	242.0	236.4		239.7	250.8	265.9	283.2	301.3	319.0	334.8	350.2	358.9	358.6
80.9	81.1	81.8	81.6	81.2	80.3	79.0	78.1	76.8		75.6	74.3	73.2	72.2	71.6	71.3	71.3	71.5	72.3	73.3
161.5	174.0	186.4	198.7	211.5	224.1	236.7	249.4	262.0		274.7	287.3	299.6	312.4	325.0	327.8	319.7	2.0	14.3	26.2
124.4	125.1	125.9	126.7	127.1	127.3	127.7	127.7	127.8		127.9	126.3	125.6	124.9	124.0	123.2	122.4	122.4	120.5	119.6
127.5	133.5	139.5	145.2	151.0	156.5	162.0	167.1	172.2	20	177.2	181.7	185.6	189.3	192.3	194.4	195.7	195.6	194.3	191.7
180.9	198.0	213.9	226.3	232.3	238.9	241.7	232.1	231.1		245.1	261.8	279.4	298.0	314.1	328.9	339.1	341.2	334.4	331.7
110.0	111.3	112.5	113.4	114.1	114.4	114.4	114.1	113.3		112.4	111.3	109.9	108.6	107.4	106.2	105.2	104.4	104.0	103.9
138.2	141.9	148.5	156.8	165.8	176.1	186.9	198.0	209.8		221.0	233.0	245.3	257.5	269.6	282.0	294.1	306.8	318.8	331.2
135.4	136.3	137.4	138.4	139.2	139.9	140.6	140.9	141.1		141.3	140.8	140.4	140.1	139.4	138.6	137.9	137.1	136.4	135.6

Mag. P.Phal. U.Phal. Hasta. Chit. Svati. Visa. Anur. Jyesh. Mula. P.Ash. U.Ash. Shra. Dan. Satab. P.Bhad. U.Bhad. Revati.