



# TABLE XIX :—Ghatikas and Palas (Naligais and Vinadis) as Fractions of a day.

N.B.—The same table will serve for minutes and seconds as fractions of an Hour or a Degree.

SL

| Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |       |      |      | Palas. | Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |      |      |      |
|-----------|------|------|------|------|--------|-----------|------|-------|------|------|--------|-----------|------|------|------|------|--------|-----------|------|------|------|------|
| 0         | 1    | 2    | 3    | 4    |        | 5         | 6    | 7     | 8    | 9    |        | 10        | 11   | 12   | 13   | 14   |        | 15        | 16   | 17   | 18   | 19   |
| ...       | 0167 | 0333 | 0500 | 0667 | 0      | 0833      | 1000 | 1167  | 1333 | 1500 | 0      | 1667      | 1833 | 2000 | 2167 | 2333 | 0      | 2500      | 2667 | 2833 | 3000 | 3167 |
| 0003      | 0169 | 0336 | 0503 | 0669 | 1      | 0836      | 1003 | 1169  | 1336 | 1503 | 1      | 1669      | 1836 | 2003 | 2169 | 2336 | 1      | 2503      | 2669 | 2836 | 3003 | 3169 |
| 0005      | 0172 | 0339 | 0505 | 0672 | 2      | 0839      | 1005 | 1172  | 1339 | 1505 | 2      | 1672      | 1839 | 2005 | 2172 | 2339 | 2      | 2505      | 2672 | 2839 | 3005 | 3172 |
| 0008      | 0175 | 0342 | 0508 | 0675 | 3      | 0842      | 1008 | 1175  | 1342 | 1508 | 3      | 1675      | 1842 | 2008 | 2175 | 2342 | 3      | 2508      | 2675 | 2842 | 3008 | 3175 |
| 0011      | 0178 | 0344 | 0511 | 0678 | 4      | 0844      | 1011 | 1178  | 1344 | 1511 | 4      | 1678      | 1844 | 2011 | 2178 | 2344 | 4      | 2511      | 2678 | 2844 | 3011 | 3178 |
| 0014      | 0180 | 0347 | 0514 | 0680 | 5      | 0847      | 1014 | 1180  | 1347 | 1514 | 5      | 1680      | 1847 | 2014 | 2180 | 2347 | 5      | 2514      | 2680 | 2847 | 3014 | 3180 |
| 0017      | 0183 | 0350 | 0517 | 0683 | 6      | 0850      | 1017 | 1183  | 1350 | 1517 | 6      | 1683      | 1850 | 2017 | 2183 | 2350 | 6      | 2517      | 2683 | 2850 | 3017 | 3183 |
| 0019      | 0186 | 0353 | 0519 | 0686 | 7      | 0853      | 1019 | 1186  | 1353 | 1519 | 7      | 1686      | 1853 | 2019 | 2186 | 2353 | 7      | 2519      | 2686 | 2853 | 3019 | 3186 |
| 0022      | 0189 | 0355 | 0522 | 0689 | 8      | 0855      | 1022 | 1189  | 1355 | 1522 | 8      | 1689      | 1855 | 2022 | 2189 | 2355 | 8      | 2522      | 2689 | 2855 | 3022 | 3189 |
| 0025      | 0192 | 0358 | 0525 | 0692 | 9      | 0858      | 1025 | 1192  | 1358 | 1525 | 9      | 1692      | 1858 | 2025 | 2192 | 2358 | 9      | 2525      | 2692 | 2858 | 3025 | 3192 |
| 0028      | 0194 | 0361 | 0528 | 0694 | 10     | 0861      | 1028 | 1194  | 1361 | 1528 | 10     | 1694      | 1861 | 2028 | 2194 | 2361 | 10     | 2528      | 2694 | 2861 | 3028 | 3194 |
| 0030      | 0197 | 0364 | 0530 | 0697 | 11     | 0864      | 1030 | 1197  | 1364 | 1530 | 11     | 1697      | 1864 | 2030 | 2197 | 2364 | 11     | 2530      | 2697 | 2864 | 3030 | 3197 |
| 0033      | 0200 | 0367 | 0533 | 0700 | 12     | 0867      | 1033 | 1200  | 1367 | 1533 | 12     | 1700      | 1867 | 2033 | 2200 | 2367 | 12     | 2533      | 2700 | 2867 | 3033 | 3200 |
| 0036      | 0203 | 0369 | 0536 | 0703 | 13     | 0869      | 1036 | 1203  | 1369 | 1536 | 13     | 1702      | 1869 | 2036 | 2203 | 2369 | 13     | 2536      | 2703 | 2869 | 3036 | 3203 |
| 0039      | 0205 | 0372 | 0539 | 0705 | 14     | 0872      | 1039 | 1205  | 1372 | 1539 | 14     | 1705      | 1872 | 2039 | 2205 | 2372 | 14     | 2539      | 2705 | 2872 | 3039 | 3205 |
| 0042      | 0208 | 0375 | 0542 | 0708 | 15     | 0875      | 1042 | 1208  | 1375 | 1542 | 15     | 1708      | 1875 | 2042 | 2208 | 2375 | 15     | 2542      | 2708 | 2875 | 3042 | 3208 |
| 0044      | 0211 | 0378 | 0544 | 0711 | 16     | 0878      | 1044 | 1211  | 1378 | 1544 | 16     | 1711      | 1878 | 2044 | 2211 | 2378 | 16     | 2544      | 2711 | 2878 | 3044 | 3211 |
| 0047      | 0214 | 0380 | 0547 | 0714 | 17     | 0880      | 1047 | 1214  | 1380 | 1547 | 17     | 1714      | 1880 | 2047 | 2214 | 2380 | 17     | 2547      | 2714 | 2880 | 3047 | 3214 |
| 0050      | 0217 | 0383 | 0550 | 0717 | 18     | 0883      | 1050 | 1217  | 1383 | 1550 | 18     | 1717      | 1883 | 2050 | 2217 | 2383 | 18     | 2550      | 2717 | 2883 | 3050 | 3217 |
| 0053      | 0219 | 0386 | 0553 | 0719 | 19     | 0886      | 1053 | 1219  | 1386 | 1553 | 19     | 1719      | 1886 | 2053 | 2219 | 2386 | 19     | 2553      | 2719 | 2886 | 3053 | 3219 |
| 0055      | 0222 | 0389 | 0555 | 0722 | 20     | 0889      | 1055 | 1222  | 1389 | 1555 | 20     | 1722      | 1889 | 2055 | 2222 | 2389 | 20     | 2555      | 2722 | 2889 | 3055 | 3222 |
| 0058      | 0225 | 0392 | 0558 | 0725 | 21     | 0892      | 1058 | 1225  | 1392 | 1558 | 21     | 1725      | 1892 | 2058 | 2225 | 2392 | 21     | 2558      | 2725 | 2892 | 3058 | 3225 |
| 0061      | 0228 | 0394 | 0561 | 0728 | 22     | 0894      | 1061 | 1228  | 1394 | 1561 | 22     | 1728      | 1894 | 2061 | 2228 | 2394 | 22     | 2561      | 2728 | 2894 | 3061 | 3228 |
| 0064      | 0230 | 0397 | 0564 | 0730 | 23     | 0897      | 1064 | 1230  | 1397 | 1564 | 23     | 1730      | 1897 | 2064 | 2230 | 2397 | 23     | 2564      | 2730 | 2897 | 3064 | 3230 |
| 0067      | 0233 | 0400 | 0567 | 0733 | 24     | 0900      | 1067 | 1233  | 1400 | 1567 | 24     | 1733      | 1900 | 2067 | 2233 | 2400 | 24     | 2567      | 2733 | 2900 | 3067 | 3233 |
| 0069      | 0236 | 0403 | 0569 | 0736 | 25     | 0903      | 1069 | 1236  | 1403 | 1569 | 25     | 1736      | 1903 | 2069 | 2236 | 2403 | 25     | 2569      | 2736 | 2903 | 3069 | 3236 |
| 0072      | 0239 | 0405 | 0572 | 0739 | 26     | 0905      | 1072 | 1239  | 1405 | 1572 | 26     | 1739      | 1905 | 2072 | 2239 | 2405 | 26     | 2572      | 2739 | 2905 | 3072 | 3239 |
| 0075      | 0242 | 0408 | 0575 | 0742 | 27     | 0908      | 1075 | 1242  | 1408 | 1575 | 27     | 1742      | 1908 | 2075 | 2242 | 2408 | 27     | 2575      | 2742 | 2908 | 3075 | 3242 |
| 0078      | 0244 | 0411 | 0578 | 0744 | 28     | 0911      | 1078 | 1244  | 1411 | 1578 | 28     | 1744      | 1911 | 2078 | 2244 | 2411 | 28     | 2578      | 2744 | 2911 | 3078 | 3244 |
| 0080      | 0247 | 0414 | 0580 | 0747 | 29     | 0914      | 1080 | 1247  | 1414 | 1580 | 29     | 1747      | 1914 | 2080 | 2247 | 2414 | 29     | 2580      | 2747 | 2914 | 3080 | 3247 |
| 0083      | 0250 | 0417 | 0583 | 0750 | 30     | 0917      | 1083 | 1250  | 1417 | 1583 | 30     | 1750      | 1917 | 2083 | 2250 | 2417 | 30     | 2583      | 2750 | 2917 | 3083 | 3250 |
| 0086      | 0253 | 0419 | 0586 | 0753 | 31     | 0919      | 1086 | 1253  | 1419 | 1586 | 31     | 1753      | 1919 | 2086 | 2253 | 2419 | 31     | 2586      | 2753 | 2919 | 3086 | 3253 |
| 0089      | 0255 | 0422 | 0589 | 0755 | 32     | 0922      | 1089 | 1255  | 1422 | 1589 | 32     | 1755      | 1922 | 2089 | 2255 | 2422 | 32     | 2589      | 2755 | 2922 | 3089 | 3255 |
| 0092      | 0258 | 0425 | 0592 | 0758 | 33     | 0925      | 1092 | 1258  | 1425 | 1592 | 33     | 1758      | 1925 | 2092 | 2258 | 2425 | 33     | 2592      | 2758 | 2925 | 3092 | 3258 |
| 0094      | 0261 | 0428 | 0594 | 0761 | 34     | 0928      | 1094 | 1261  | 1428 | 1594 | 34     | 1761      | 1928 | 2094 | 2261 | 2428 | 34     | 2594      | 2761 | 2928 | 3094 | 3261 |
| 0097      | 0264 | 0430 | 0597 | 0764 | 35     | 0930      | 1097 | 1264  | 1430 | 1597 | 35     | 1764      | 1930 | 2097 | 2264 | 2430 | 35     | 2597      | 2764 | 2930 | 3097 | 3264 |
| 0100      | 0267 | 0433 | 0600 | 0767 | 36     | 0933      | 1100 | 1267  | 1433 | 1600 | 36     | 1767      | 1933 | 2100 | 2267 | 2433 | 36     | 2600      | 2767 | 2933 | 3100 | 3267 |
| 0103      | 0269 | 0436 | 0603 | 0769 | 37     | 0936      | 1103 | 1269  | 1436 | 1603 | 37     | 1769      | 1936 | 2103 | 2269 | 2436 | 37     | 2603      | 2769 | 2936 | 3103 | 3269 |
| 0105      | 0272 | 0439 | 0605 | 0772 | 38     | 0939      | 1105 | 1272  | 1439 | 1605 | 38     | 1772      | 1939 | 2105 | 2272 | 2439 | 38     | 2605      | 2772 | 2939 | 3105 | 3272 |
| 0108      | 0275 | 0442 | 0608 | 0775 | 39     | 0942      | 1108 | 1275  | 1442 | 1608 | 39     | 1775      | 1942 | 2108 | 2275 | 2442 | 39     | 2608      | 2775 | 2942 | 3108 | 3275 |
| 0111      | 0278 | 0444 | 0611 | 0778 | 40     | 0944      | 1111 | 1278  | 1444 | 1611 | 40     | 1778      | 1944 | 2111 | 2278 | 2444 | 40     | 2611      | 2778 | 2944 | 3111 | 3278 |
| 0114      | 0280 | 0447 | 0614 | 0780 | 41     | 0947      | 1114 | 1280  | 1447 | 1614 | 41     | 1780      | 1947 | 2114 | 2280 | 2447 | 41     | 2614      | 2780 | 2947 | 3114 | 3280 |
| 0117      | 0283 | 0450 | 0617 | 0783 | 42     | 0950      | 1117 | 1283  | 1450 | 1617 | 42     | 1783      | 1950 | 2117 | 2283 | 2450 | 42     | 2617      | 2783 | 2950 | 3117 | 3283 |
| 0119      | 0286 | 0453 | 0619 | 0786 | 43     | 0953      | 1119 | 1286  | 1453 | 1619 | 43     | 1786      | 1953 | 2119 | 2286 | 2453 | 43     | 2619      | 2786 | 2953 | 3119 | 3286 |
| 0122      | 0289 | 0455 | 0622 | 0789 | 44     | 0955      | 1122 | 1289  | 1455 | 1622 | 44     | 1789      | 1955 | 2122 | 2289 | 2455 | 44     | 2622      | 2789 | 2955 | 3122 | 3289 |
| 0125      | 0292 | 0458 | 0625 | 0792 | 45     | 0958      | 1125 | 1292  | 1458 | 1625 | 45     | 1792      | 1958 | 2125 | 2292 | 2458 | 45     | 2625      | 2792 | 2958 | 3125 | 3292 |
| 0128      | 0294 | 0461 | 0628 | 0794 | 46     | 0961      | 1128 | 1294  | 1461 | 1628 | 46     | 1794      | 1961 | 2128 | 2294 | 2461 | 46     | 2628      | 2794 | 2961 | 3128 | 3294 |
| 0130      | 0297 | 0464 | 0630 | 0797 | 47     | 0964      | 1130 | 1297  | 1464 | 1630 | 47     | 1797      | 1964 | 2130 | 2297 | 2464 | 47     | 2630      | 2797 | 2964 | 3130 | 3297 |
| 0133      | 0300 | 0467 | 0633 | 0800 | 48     | 0967      | 1133 | 1300  | 1467 | 1633 | 48     | 1800      | 1967 | 2133 | 2300 | 2467 | 48     | 2633      | 2800 | 2967 | 3133 | 3300 |
| 0136      | 0303 | 0469 | 0636 | 0803 | 49     | 0969      | 1136 | 1303  | 1470 | 1636 | 49     | 1803      | 1969 | 2136 | 2303 | 2469 | 49     | 2636      | 2803 | 2969 | 3136 | 3303 |
| 0139      | 0305 | 0472 | 0639 | 0805 | 50     | 0972      | 1139 | 13050 |      |      |        |           |      |      |      |      |        |           |      |      |      |      |





**TABLE XIX.—Ghatikas and Palas (Naligais and Vinadis) as Fractions of a day.—*Contd.***

**N.B.**—The same table will serve for minutes and seconds as fractions of an Hour or a Degree.

CSL

| Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |      |      |      |
|-----------|------|------|------|------|--------|-----------|------|------|------|------|--------|-----------|------|------|------|------|--------|-----------|------|------|------|------|
| 20        | 21   | 22   | 23   | 24   |        | 25        | 26   | 27   | 28   | 29   |        | 30        | 31   | 32   | 33   | 34   |        | 35        | 36   | 37   | 38   | 39   |
| 3333      | 3500 | 3667 | 3833 | 4000 | 0      | 4167      | 4333 | 4500 | 4667 | 4833 | 0      | 5000      | 5167 | 5333 | 5500 | 5667 | 0      | 5833      | 6000 | 6167 | 6333 | 6500 |
| 3336      | 3503 | 3669 | 3836 | 4003 | 1      | 4169      | 4336 | 4503 | 4669 | 4836 | 1      | 5003      | 5169 | 5336 | 5503 | 5669 | 1      | 5836      | 6003 | 6169 | 6336 | 6503 |
| 3339      | 3506 | 3672 | 3839 | 4006 | 2      | 4172      | 4339 | 4506 | 4672 | 4839 | 2      | 5006      | 5172 | 5339 | 5506 | 5672 | 2      | 5839      | 6006 | 6172 | 6339 | 6506 |
| 3342      | 3508 | 3675 | 3842 | 4008 | 3      | 4175      | 4342 | 4508 | 4675 | 4842 | 3      | 5008      | 5175 | 5342 | 5508 | 5675 | 3      | 5842      | 6008 | 6175 | 6342 | 6508 |
| 3344      | 3511 | 3678 | 3844 | 4011 | 4      | 4178      | 4344 | 4511 | 4678 | 4844 | 4      | 5011      | 5178 | 5344 | 5511 | 5678 | 4      | 5844      | 6011 | 6178 | 6344 | 6511 |
| 3347      | 3514 | 3680 | 3847 | 4014 | 5      | 4180      | 4347 | 4514 | 4680 | 4847 | 5      | 5014      | 5180 | 5347 | 5514 | 5680 | 5      | 5847      | 6014 | 6180 | 6347 | 6514 |
| 3350      | 3517 | 3683 | 3850 | 4017 | 6      | 4183      | 4350 | 4517 | 4683 | 4850 | 6      | 5017      | 5183 | 5350 | 5517 | 5683 | 6      | 5850      | 6017 | 6183 | 6350 | 6517 |
| 3353      | 3519 | 3686 | 3853 | 4019 | 7      | 4186      | 4353 | 4519 | 4686 | 4853 | 7      | 5019      | 5186 | 5353 | 5519 | 5686 | 7      | 5853      | 6019 | 6186 | 6353 | 6519 |
| 3355      | 3522 | 3689 | 3855 | 4022 | 8      | 4189      | 4355 | 4522 | 4689 | 4855 | 8      | 5022      | 5189 | 5355 | 5522 | 5689 | 8      | 5855      | 6022 | 6189 | 6355 | 6522 |
| 3358      | 3525 | 3692 | 3858 | 4025 | 9      | 4192      | 4358 | 4525 | 4692 | 4858 | 9      | 5025      | 5192 | 5358 | 5525 | 5692 | 9      | 5858      | 6025 | 6192 | 6358 | 6525 |
| 3361      | 3528 | 3694 | 3861 | 4028 | 10     | 4194      | 4361 | 4528 | 4694 | 4861 | 10     | 5028      | 5194 | 5361 | 5528 | 5694 | 10     | 5861      | 6028 | 6194 | 6361 | 6528 |
| 3364      | 3530 | 3697 | 3864 | 4030 | 11     | 4197      | 4364 | 4530 | 4697 | 4864 | 11     | 5030      | 5197 | 5364 | 5530 | 5697 | 11     | 5864      | 6030 | 6197 | 6364 | 6530 |
| 3367      | 3533 | 3700 | 3867 | 4033 | 12     | 4200      | 4367 | 4533 | 4700 | 4867 | 12     | 5033      | 5200 | 5367 | 5533 | 5700 | 12     | 5867      | 6033 | 6200 | 6367 | 6533 |
| 3369      | 3536 | 3703 | 3869 | 4036 | 13     | 4203      | 4369 | 4536 | 4703 | 4869 | 13     | 5036      | 5203 | 5369 | 5536 | 5703 | 13     | 5869      | 6036 | 6203 | 6369 | 6536 |
| 3372      | 3539 | 3705 | 3872 | 4039 | 14     | 4205      | 4372 | 4539 | 4705 | 4872 | 14     | 5039      | 5205 | 5372 | 5539 | 5705 | 14     | 5872      | 6039 | 6205 | 6372 | 6539 |
| 3375      | 3542 | 3708 | 3875 | 4042 | 15     | 4208      | 4375 | 4542 | 4708 | 4875 | 15     | 5042      | 5208 | 5375 | 5542 | 5708 | 15     | 5875      | 6042 | 6208 | 6375 | 6542 |
| 3378      | 3544 | 3711 | 3878 | 4044 | 16     | 4211      | 4378 | 4544 | 4711 | 4878 | 16     | 5044      | 5211 | 5378 | 5544 | 5711 | 16     | 5878      | 6044 | 6211 | 6378 | 6544 |
| 3380      | 3547 | 3714 | 3880 | 4047 | 17     | 4214      | 4380 | 4547 | 4714 | 4880 | 17     | 5047      | 5214 | 5380 | 5547 | 5714 | 17     | 5880      | 6047 | 6214 | 6380 | 6547 |
| 3383      | 3550 | 3717 | 3883 | 4050 | 18     | 4217      | 4383 | 4550 | 4717 | 4883 | 18     | 5050      | 5217 | 5383 | 5550 | 5717 | 18     | 5883      | 6050 | 6217 | 6383 | 6550 |
| 3386      | 3553 | 3719 | 3886 | 4053 | 19     | 4219      | 4386 | 4553 | 4719 | 4886 | 19     | 5053      | 5219 | 5386 | 5553 | 5719 | 19     | 5886      | 6053 | 6219 | 6386 | 6553 |
| 3389      | 3555 | 3722 | 3889 | 4055 | 20     | 4222      | 4389 | 4555 | 4722 | 4889 | 20     | 5055      | 5222 | 5389 | 5555 | 5722 | 20     | 5889      | 6055 | 6222 | 6389 | 6555 |
| 3392      | 3558 | 3725 | 3892 | 4058 | 21     | 4225      | 4392 | 4558 | 4725 | 4892 | 21     | 5058      | 5225 | 5392 | 5558 | 5725 | 21     | 5892      | 6058 | 6225 | 6392 | 6558 |
| 3394      | 3561 | 3728 | 3894 | 4061 | 22     | 4228      | 4394 | 4561 | 4728 | 4894 | 22     | 5061      | 5228 | 5394 | 5561 | 5728 | 22     | 5894      | 6061 | 6228 | 6394 | 6561 |
| 3397      | 3564 | 3730 | 3897 | 4064 | 23     | 4230      | 4397 | 4564 | 4730 | 4897 | 23     | 5064      | 5230 | 5397 | 5564 | 5730 | 23     | 5897      | 6064 | 6230 | 6397 | 6564 |
| 3400      | 3567 | 3733 | 3900 | 4067 | 24     | 4233      | 4400 | 4567 | 4733 | 4900 | 24     | 5067      | 5233 | 5400 | 5567 | 5733 | 24     | 5900      | 6067 | 6233 | 6400 | 6567 |
| 3403      | 3569 | 3736 | 3903 | 4069 | 25     | 4236      | 4403 | 4569 | 4736 | 4903 | 25     | 5069      | 5236 | 5403 | 5569 | 5736 | 25     | 5903      | 6069 | 6236 | 6403 | 6569 |
| 3405      | 3572 | 3739 | 3905 | 4072 | 26     | 4239      | 4405 | 4572 | 4739 | 4905 | 26     | 5072      | 5239 | 5405 | 5572 | 5739 | 26     | 5905      | 6072 | 6239 | 6405 | 6572 |
| 3408      | 3575 | 3742 | 3908 | 4075 | 27     | 4242      | 4408 | 4575 | 4742 | 4908 | 27     | 5075      | 5242 | 5408 | 5575 | 5742 | 27     | 5908      | 6075 | 6242 | 6408 | 6575 |
| 3411      | 3578 | 3744 | 3911 | 4078 | 28     | 4244      | 4411 | 4578 | 4744 | 4911 | 28     | 5078      | 5244 | 5411 | 5578 | 5744 | 28     | 5911      | 6078 | 6244 | 6411 | 6578 |
| 3414      | 3580 | 3747 | 3914 | 4080 | 29     | 4247      | 4414 | 4580 | 4747 | 4914 | 29     | 5080      | 5247 | 5414 | 5580 | 5747 | 29     | 5914      | 6080 | 6247 | 6414 | 6580 |
| 3417      | 3583 | 3750 | 3917 | 4083 | 30     | 4250      | 4417 | 4583 | 4750 | 4917 | 30     | 5083      | 5250 | 5417 | 5583 | 5750 | 30     | 5917      | 6083 | 6250 | 6417 | 6583 |
| 3419      | 3586 | 3753 | 3919 | 4086 | 31     | 4253      | 4419 | 4586 | 4753 | 4919 | 31     | 5086      | 5253 | 5419 | 5586 | 5753 | 31     | 5919      | 6086 | 6253 | 6419 | 6586 |
| 3422      | 3589 | 3756 | 3922 | 4089 | 32     | 4255      | 4422 | 4589 | 4756 | 4922 | 32     | 5089      | 5255 | 5422 | 5589 | 5756 | 32     | 5922      | 6089 | 6255 | 6422 | 6589 |
| 3425      | 3592 | 3758 | 3925 | 4092 | 33     | 4258      | 4425 | 4592 | 4758 | 4925 | 33     | 5092      | 5258 | 5425 | 5592 | 5758 | 33     | 5925      | 6092 | 6258 | 6425 | 6592 |
| 3428      | 3594 | 3761 | 3928 | 4094 | 34     | 4261      | 4428 | 4594 | 4761 | 4928 | 34     | 5094      | 5261 | 5428 | 5594 | 5761 | 34     | 5928      | 6094 | 6261 | 6428 | 6594 |
| 3430      | 3597 | 3764 | 3930 | 4097 | 35     | 4264      | 4431 | 4597 | 4764 | 4930 | 35     | 5097      | 5264 | 5431 | 5597 | 5764 | 35     | 5930      | 6097 | 6264 | 6431 | 6597 |
| 3433      | 3600 | 3767 | 3933 | 4100 | 36     | 4267      | 4433 | 4600 | 4767 | 4933 | 36     | 5100      | 5267 | 5433 | 5600 | 5767 | 36     | 5933      | 6100 | 6267 | 6433 | 6600 |
| 3436      | 3603 | 3769 | 3936 | 4103 | 37     | 4269      | 4436 | 4603 | 4769 | 4936 | 37     | 5103      | 5269 | 5436 | 5603 | 5769 | 37     | 5936      | 6103 | 6269 | 6436 | 6603 |
| 3439      | 3605 | 3772 | 3939 | 4105 | 38     | 4272      | 4439 | 4605 | 4772 | 4939 | 38     | 5105      | 5272 | 5439 | 5605 | 5772 | 38     | 5939      | 6105 | 6272 | 6439 | 6605 |
| 3442      | 3608 | 3775 | 3942 | 4108 | 39     | 4275      | 4442 | 4608 | 4775 | 4942 | 39     | 5108      | 5275 | 5442 | 5608 | 5775 | 39     | 5942      | 6108 | 6275 | 6442 | 6608 |
| 3444      | 3611 | 3778 | 3944 | 4111 | 40     | 4278      | 4444 | 4611 | 4778 | 4944 | 40     | 5111      | 5278 | 5444 | 5611 | 5778 | 40     | 5944      | 6111 | 6278 | 6444 | 6611 |
| 3447      | 3614 | 3780 | 3947 | 4114 | 41     | 4280      | 4447 | 4614 | 4780 | 4947 | 41     | 5114      | 5280 | 5447 | 5614 | 5780 | 41     | 5947      | 6114 | 6280 | 6447 | 6614 |
| 3450      | 3617 | 3783 | 3950 | 4117 | 42     | 4283      | 4450 | 4617 | 4783 | 4950 | 42     | 5117      | 5283 | 5450 | 5617 | 5783 | 42     | 5950      | 6117 | 6283 | 6450 | 6617 |
| 3453      | 3619 | 3786 | 3953 | 4119 | 43     | 4286      | 4453 | 4619 | 4786 | 4953 | 43     | 5119      | 5286 | 5453 | 5619 | 5786 | 43     | 5953      | 6119 | 6286 | 6453 | 6620 |
| 3455      | 3622 | 3789 | 3955 | 4122 | 44     | 4289      | 4455 | 4622 | 4789 | 4955 | 44     | 5122      | 5289 | 5455 | 5622 | 5789 | 44     | 5955      | 6122 | 6289 | 6455 | 6622 |
| 3458      | 3625 | 3792 | 3958 | 4125 | 45     | 4292      | 4458 | 4625 | 4792 | 4958 | 45     | 5125      | 5292 | 5458 | 5625 | 5792 | 45     | 5958      | 6125 | 6292 | 6458 | 6625 |
| 3461      | 3628 | 3794 | 3961 | 4128 | 46     | 4294      | 4461 | 4628 | 4794 | 4961 | 46     | 5128      | 5294 | 5461 | 5628 | 5794 | 46     | 5961      | 6128 | 6294 | 6461 | 6628 |
| 3464      | 3630 | 3797 | 3964 | 4130 | 47     | 4297      | 4464 | 4630 | 4797 | 4964 | 47     | 5130      | 5297 | 5464 | 5630 | 5797 | 47     | 5964      | 6130 | 6297 | 6464 | 6630 |
| 3467      | 3633 | 3800 | 3967 | 4133 | 48     | 4300      | 4467 | 4633 | 4800 | 4967 | 48     | 5133      | 5300 | 5467 | 5633 | 5800 | 48     | 5967      | 6133 | 6300 | 6467 | 6633 |
| 3469      | 3636 | 3803 | 3969 | 4136 | 49     | 4303      | 4469 | 4636 | 4803 | 4969 | 49     | 5136      | 5303 | 5469 | 5636 | 5803 | 49     | 5969      | 6136 | 6303 | 6469 | 6636 |
| 3472      | 3639 | 3805 | 3972 | 4139 | 50     | 4305      | 4472 | 4639 | 4805 | 4972 | 50     | 5139      | 5305 | 5472 | 5639 | 5805 | 50     | 5972      | 6139 |      |      |      |





# TABLE XIX:—Ghatikas and Palas (Naligais and Vinadis) as Fractions of a day.—*contd.*

**N.B.**—The same table will serve for minutes and seconds as fractions of an Hour or a Degree.

CSL

| Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |      |      |      | Palas. | Ghatikas. |      |      |      |      | Palas. |      |      |      |      |      |    |      |      |      |      |      |
|-----------|------|------|------|------|--------|-----------|------|------|------|------|--------|-----------|------|------|------|------|--------|-----------|------|------|------|------|--------|------|------|------|------|------|----|------|------|------|------|------|
| 40        | 41   | 42   | 43   | 44   |        | 45        | 46   | 47   | 48   | 49   |        | 50        | 51   | 52   | 53   | 54   |        | 55        | 56   | 57   | 58   | 59   |        | 50   | 51   | 52   | 53   | 54   |    | 55   | 56   | 57   | 58   | 59   |
| 6667      | 6833 | 7000 | 7167 | 7333 | 0      | 7500      | 7667 | 7833 | 8000 | 8167 | 0      | 8333      | 8500 | 8667 | 8833 | 9000 | 0      | 9167      | 9333 | 9500 | 9667 | 9833 | 0      | 8333 | 8500 | 8667 | 8833 | 9000 | 0  | 9167 | 9333 | 9500 | 9667 | 9833 |
| 6669      | 6836 | 7003 | 7169 | 7336 | 1      | 7503      | 7669 | 7836 | 8003 | 8169 | 1      | 8336      | 8503 | 8669 | 8836 | 9003 | 1      | 9169      | 9336 | 9503 | 9669 | 9836 | 1      | 8336 | 8503 | 8669 | 8836 | 9003 | 1  | 9169 | 9336 | 9503 | 9669 | 9836 |
| 6672      | 6839 | 7006 | 7172 | 7339 | 2      | 7506      | 7672 | 7839 | 8006 | 8172 | 2      | 8339      | 8506 | 8672 | 8839 | 9006 | 2      | 9172      | 9339 | 9506 | 9672 | 9839 | 2      | 8339 | 8506 | 8672 | 8839 | 9006 | 2  | 9172 | 9339 | 9506 | 9672 | 9839 |
| 6675      | 6842 | 7008 | 7175 | 7342 | 3      | 7508      | 7675 | 7842 | 8008 | 8175 | 3      | 8342      | 8508 | 8675 | 8842 | 9008 | 3      | 9175      | 9342 | 9508 | 9675 | 9842 | 3      | 8342 | 8508 | 8675 | 8842 | 9008 | 3  | 9175 | 9342 | 9508 | 9675 | 9842 |
| 6678      | 6844 | 7011 | 7178 | 7344 | 4      | 7511      | 7678 | 7844 | 8011 | 8178 | 4      | 8344      | 8511 | 8678 | 8844 | 9011 | 4      | 9178      | 9344 | 9511 | 9678 | 9844 | 4      | 8344 | 8511 | 8678 | 8844 | 9011 | 4  | 9178 | 9344 | 9511 | 9678 | 9844 |
| 6680      | 6847 | 7014 | 7180 | 7347 | 5      | 7514      | 7680 | 7847 | 8014 | 8180 | 5      | 8347      | 8514 | 8680 | 8847 | 9014 | 5      | 9180      | 9347 | 9514 | 9680 | 9847 | 5      | 8347 | 8514 | 8680 | 8847 | 9014 | 5  | 9180 | 9347 | 9514 | 9680 | 9847 |
| 6683      | 6850 | 7017 | 7183 | 7350 | 6      | 7517      | 7683 | 7850 | 8017 | 8183 | 6      | 8350      | 8517 | 8683 | 8850 | 9017 | 6      | 9183      | 9350 | 9517 | 9683 | 9850 | 6      | 8350 | 8517 | 8683 | 8850 | 9017 | 6  | 9183 | 9350 | 9517 | 9683 | 9850 |
| 6686      | 6853 | 7019 | 7186 | 7353 | 7      | 7519      | 7686 | 7853 | 8019 | 8186 | 7      | 8353      | 8519 | 8686 | 8853 | 9019 | 7      | 9186      | 9353 | 9519 | 9686 | 9853 | 7      | 8353 | 8519 | 8686 | 8853 | 9019 | 7  | 9186 | 9353 | 9519 | 9686 | 9853 |
| 6689      | 6855 | 7022 | 7189 | 7355 | 8      | 7522      | 7689 | 7855 | 8022 | 8189 | 8      | 8355      | 8522 | 8689 | 8855 | 9022 | 8      | 9189      | 9355 | 9522 | 9689 | 9855 | 8      | 8355 | 8522 | 8689 | 8855 | 9022 | 8  | 9189 | 9355 | 9522 | 9689 | 9855 |
| 6692      | 6858 | 7025 | 7192 | 7358 | 9      | 7525      | 7692 | 7858 | 8025 | 8192 | 9      | 8358      | 8525 | 8692 | 8858 | 9025 | 9      | 9192      | 9358 | 9525 | 9692 | 9858 | 9      | 8358 | 8525 | 8692 | 8858 | 9025 | 9  | 9192 | 9358 | 9525 | 9692 | 9858 |
| 6694      | 6861 | 7028 | 7194 | 7361 | 10     | 7528      | 7694 | 7861 | 8028 | 8194 | 10     | 8361      | 8528 | 8694 | 8861 | 9028 | 10     | 9194      | 9361 | 9528 | 9694 | 9861 | 10     | 8361 | 8528 | 8694 | 8861 | 9028 | 10 | 9194 | 9361 | 9528 | 9694 | 9861 |
| 6697      | 6864 | 7030 | 7197 | 7364 | 11     | 7530      | 7697 | 7864 | 8030 | 8197 | 11     | 8364      | 8530 | 8697 | 8864 | 9030 | 11     | 9197      | 9364 | 9530 | 9697 | 9864 | 11     | 8364 | 8530 | 8697 | 8864 | 9030 | 11 | 9197 | 9364 | 9530 | 9697 | 9864 |
| 6700      | 6867 | 7033 | 7200 | 7367 | 12     | 7533      | 7700 | 7867 | 8033 | 8200 | 12     | 8367      | 8533 | 8700 | 8867 | 9033 | 12     | 9200      | 9367 | 9533 | 9700 | 9867 | 12     | 8367 | 8533 | 8700 | 8867 | 9033 | 12 | 9200 | 9367 | 9533 | 9700 | 9867 |
| 6703      | 6869 | 7036 | 7203 | 7369 | 13     | 7536      | 7703 | 7869 | 8036 | 8203 | 13     | 8369      | 8536 | 8703 | 8869 | 9036 | 13     | 9203      | 9369 | 9536 | 9703 | 9869 | 13     | 8369 | 8536 | 8703 | 8869 | 9036 | 13 | 9203 | 9369 | 9536 | 9703 | 9869 |
| 6705      | 6872 | 7039 | 7205 | 7372 | 14     | 7539      | 7705 | 7872 | 8039 | 8205 | 14     | 8372      | 8539 | 8705 | 8872 | 9039 | 14     | 9205      | 9372 | 9539 | 9705 | 9872 | 14     | 8372 | 8539 | 8705 | 8872 | 9039 | 14 | 9205 | 9372 | 9539 | 9705 | 9872 |
| 6708      | 6875 | 7042 | 7208 | 7375 | 15     | 7542      | 7708 | 7875 | 8042 | 8208 | 15     | 8375      | 8542 | 8708 | 8875 | 9042 | 15     | 9208      | 9375 | 9542 | 9708 | 9875 | 15     | 8375 | 8542 | 8708 | 8875 | 9042 | 15 | 9208 | 9375 | 9542 | 9708 | 9875 |
| 6711      | 6878 | 7044 | 7211 | 7378 | 16     | 7544      | 7711 | 7878 | 8044 | 8211 | 16     | 8378      | 8544 | 8711 | 8878 | 9044 | 16     | 9211      | 9378 | 9544 | 9711 | 9878 | 16     | 8378 | 8544 | 8711 | 8878 | 9044 | 16 | 9211 | 9378 | 9544 | 9711 | 9878 |
| 6714      | 6880 | 7047 | 7214 | 7380 | 17     | 7547      | 7714 | 7880 | 8047 | 8214 | 17     | 8380      | 8547 | 8714 | 8880 | 9047 | 17     | 9214      | 9380 | 9547 | 9714 | 9880 | 17     | 8380 | 8547 | 8714 | 8880 | 9047 | 17 | 9214 | 9380 | 9547 | 9714 | 9880 |
| 6717      | 6883 | 7050 | 7217 | 7383 | 18     | 7550      | 7717 | 7883 | 8050 | 8217 | 18     | 8383      | 8550 | 8717 | 8883 | 9050 | 18     | 9217      | 9383 | 9550 | 9717 | 9883 | 18     | 8383 | 8550 | 8717 | 8883 | 9050 | 18 | 9217 | 9383 | 9550 | 9717 | 9883 |
| 6719      | 6886 | 7053 | 7219 | 7386 | 19     | 7553      | 7719 | 7886 | 8053 | 8219 | 19     | 8386      | 8553 | 8719 | 8886 | 9053 | 19     | 9219      | 9386 | 9553 | 9719 | 9886 | 19     | 8386 | 8553 | 8719 | 8886 | 9053 | 19 | 9219 | 9386 | 9553 | 9719 | 9886 |
| 6722      | 6889 | 7055 | 7222 | 7389 | 20     | 7555      | 7722 | 7889 | 8055 | 8222 | 20     | 8389      | 8555 | 8722 | 8889 | 9055 | 20     | 9222      | 9389 | 9555 | 9722 | 9889 | 20     | 8389 | 8555 | 8722 | 8889 | 9055 | 20 | 9222 | 9389 | 9555 | 9722 | 9889 |
| 6725      | 6892 | 7058 | 7225 | 7392 | 21     | 7558      | 7725 | 7892 | 8058 | 8225 | 21     | 8392      | 8558 | 8725 | 8892 | 9058 | 21     | 9225      | 9392 | 9558 | 9725 | 9892 | 21     | 8392 | 8558 | 8725 | 8892 | 9058 | 21 | 9225 | 9392 | 9558 | 9725 | 9892 |
| 6728      | 6894 | 7061 | 7228 | 7394 | 22     | 7561      | 7728 | 7894 | 8061 | 8228 | 22     | 8394      | 8561 | 8728 | 8894 | 9061 | 22     | 9228      | 9394 | 9561 | 9728 | 9894 | 22     | 8394 | 8561 | 8728 | 8894 | 9061 | 22 | 9228 | 9394 | 9561 | 9728 | 9894 |
| 6730      | 6897 | 7064 | 7230 | 7397 | 23     | 7564      | 7730 | 7897 | 8064 | 8230 | 23     | 8397      | 8564 | 8730 | 8897 | 9064 | 23     | 9230      | 9397 | 9564 | 9730 | 9897 | 23     | 8397 | 8564 | 8730 | 8897 | 9064 | 23 | 9230 | 9397 | 9564 | 9730 | 9897 |
| 6733      | 6900 | 7067 | 7233 | 7400 | 24     | 7567      | 7733 | 7900 | 8067 | 8233 | 24     | 8400      | 8567 | 8733 | 8900 | 9067 | 24     | 9233      | 9400 | 9567 | 9733 | 9900 | 24     | 8400 | 8567 | 8733 | 8900 | 9067 | 24 | 9233 | 9400 | 9567 | 9733 | 9900 |
| 6736      | 6903 | 7069 | 7236 | 7403 | 25     | 7569      | 7736 | 7903 | 8069 | 8236 | 25     | 8403      | 8569 | 8736 | 8903 | 9069 | 25     | 9236      | 9403 | 9569 | 9736 | 9903 | 25     | 8403 | 8569 | 8736 | 8903 | 9069 | 25 | 9236 | 9403 | 9569 | 9736 | 9903 |
| 6739      | 6905 | 7072 | 7239 | 7405 | 26     | 7572      | 7739 | 7905 | 8072 | 8239 | 26     | 8405      | 8572 | 8739 | 8905 | 9072 | 26     | 9239      | 9405 | 9572 | 9739 | 9905 | 26     | 8405 | 8572 | 8739 | 8905 | 9072 | 26 | 9239 | 9405 | 9572 | 9739 | 9905 |
| 6742      | 6908 | 7075 | 7242 | 7408 | 27     | 7575      | 7742 | 7908 | 8075 | 8242 | 27     | 8408      | 8575 | 8742 | 8908 | 9075 | 27     | 9242      | 9408 | 9575 | 9742 | 9908 | 27     | 8408 | 8575 | 8742 | 8908 | 9075 | 27 | 9242 | 9408 | 9575 | 9742 | 9908 |
| 6744      | 6911 | 7078 | 7244 | 7411 | 28     | 7578      | 7744 | 7911 | 8078 | 8244 | 28     | 8411      | 8578 | 8744 | 8911 | 9078 | 28     | 9244      | 9411 | 9578 | 9744 | 9911 | 28     | 8411 | 8578 | 8744 | 8911 | 9078 | 28 | 9244 | 9411 | 9578 | 9744 | 9911 |
| 6747      | 6914 | 7080 | 7247 | 7414 | 29     | 7580      | 7747 | 7914 | 8080 | 8247 | 29     | 8414      | 8580 | 8747 | 8914 | 9080 | 29     | 9247      | 9414 | 9580 | 9747 | 9914 | 29     | 8414 | 8580 | 8747 | 8914 | 9080 | 29 | 9247 | 9414 | 9580 | 9747 | 9914 |
| 6750      | 6917 | 7083 | 7250 | 7417 | 30     | 7583      | 7750 | 7917 | 8083 | 8250 | 30     | 8417      | 8583 | 8750 | 8917 | 9083 | 30     | 9250      | 9417 | 9583 | 9750 | 9917 | 30     | 8417 | 8583 | 8750 | 8917 | 9083 | 30 | 9250 | 9417 | 9583 | 9750 | 9917 |
| 6753      | 6919 | 7086 | 7253 | 7419 | 31     | 7586      | 7753 | 7919 | 8086 | 8253 | 31     | 8419      | 8586 | 8753 | 8919 | 9086 | 31     | 9253      | 9419 | 9586 | 9753 | 9919 | 31     | 8419 | 8586 | 8753 | 8919 | 9086 | 31 | 9253 | 9419 | 9586 | 9753 | 9919 |
| 6755      | 6922 | 7089 | 7255 | 7422 | 32     | 7589      | 7755 | 7922 | 8089 | 8255 | 32     | 8422      | 8589 | 8755 | 8922 | 9089 | 32     | 9255      | 9422 | 9589 | 9755 | 9922 | 32     | 8422 | 8589 | 8755 | 8922 | 9089 | 32 | 9255 | 9422 | 9589 | 9755 | 9922 |
| 6758      | 6925 | 7092 | 7258 | 7425 | 33     | 7592      | 7758 | 7925 | 8092 | 825  |        |           |      |      |      |      |        |           |      |      |      |      |        |      |      |      |      |      |    |      |      |      |      |      |





TABLE XX:—Hours and Minutes as Fractions of a Day.

Seconds  
as fractions  
of a day.

| Minutes. |         | Hours.  |         |         |    | Minutes. |         | Hours.  |         |    |         | Minutes. |         | Hours.  |    |       |     | Minutes. |     | Seconds<br>as fractions<br>of a day. |     |    |       |    |       |    |       |    |       |    |       |
|----------|---------|---------|---------|---------|----|----------|---------|---------|---------|----|---------|----------|---------|---------|----|-------|-----|----------|-----|--------------------------------------|-----|----|-------|----|-------|----|-------|----|-------|----|-------|
| 0        | 1       | 2       | 3       | 4       | 5  | 6        | 7       | 8       | 9       | 10 | 11      | 0        | 1       | 2       | 3  | 4     | 5   | 6        | 7   | 8                                    | 9   | 0  | 1     | 2  | 3     | 4  | 5     | 6  | 7     | 8  | 9     |
| 0        | ...     | 0416666 | 0833333 | 1250000 | 0  | 1666666  | 2083333 | 2500000 | 2916666 | 0  | 3333333 | 3750000  | 4166666 | 4583333 | 0  | ...   | ... | ...      | ... | ...                                  | ... | 0  | ...   | 1  | 00001 | 2  | 00002 | 3  | 00003 | 4  | 00004 |
| 1        | 0006944 | 0423611 | 0840277 | 1256944 | 1  | 1673611  | 2090277 | 2506944 | 2923611 | 1  | 3340277 | 3756944  | 4173611 | 4590277 | 1  | 00001 | ... | ...      | ... | ...                                  | ... | 1  | 00001 | 2  | 00002 | 3  | 00003 | 4  | 00004 | 5  | 00005 |
| 2        | 0013888 | 0430555 | 0847222 | 1263888 | 2  | 1680555  | 2097222 | 2513888 | 2930555 | 2  | 3347222 | 3763888  | 4180555 | 4597222 | 2  | 00002 | ... | ...      | ... | ...                                  | ... | 2  | 00002 | 3  | 00003 | 4  | 00004 | 5  | 00005 | 6  | 00006 |
| 3        | 0020833 | 0437500 | 0854166 | 1270833 | 3  | 1687500  | 2104166 | 2520833 | 2937500 | 3  | 3354166 | 3770833  | 4187500 | 4604166 | 3  | 00003 | ... | ...      | ... | ...                                  | ... | 3  | 00003 | 4  | 00004 | 5  | 00005 | 6  | 00006 | 7  | 00007 |
| 4        | 0027777 | 0444444 | 0861111 | 1277777 | 4  | 1694444  | 2111111 | 2527777 | 2944444 | 4  | 3361111 | 3777777  | 4194444 | 4611111 | 4  | 00004 | ... | ...      | ... | ...                                  | ... | 4  | 00004 | 5  | 00005 | 6  | 00006 | 7  | 00007 | 8  | 00008 |
| 5        | 0034722 | 0451388 | 0868055 | 1284722 | 5  | 1701388  | 2118055 | 2534722 | 2951388 | 5  | 3368055 | 3784722  | 4201388 | 4618055 | 5  | 00005 | ... | ...      | ... | ...                                  | ... | 5  | 00005 | 6  | 00006 | 7  | 00007 | 8  | 00008 | 9  | 00009 |
| 6        | 0041666 | 0458333 | 0875000 | 1291666 | 6  | 1708333  | 2125000 | 2541666 | 2958333 | 6  | 3375000 | 3791666  | 4208333 | 4625000 | 6  | 00006 | ... | ...      | ... | ...                                  | ... | 6  | 00006 | 7  | 00007 | 8  | 00008 | 9  | 00009 | 10 | 00010 |
| 7        | 0048611 | 0465277 | 0881944 | 1298611 | 7  | 1715277  | 2131944 | 2548611 | 2965277 | 7  | 3381944 | 3798611  | 4215277 | 4631944 | 7  | 00007 | ... | ...      | ... | ...                                  | ... | 7  | 00007 | 8  | 00008 | 9  | 00009 | 10 | 00010 | 11 | 00011 |
| 8        | 0055555 | 0472222 | 0888888 | 1305555 | 8  | 1722222  | 2138888 | 2555555 | 2972222 | 8  | 3388888 | 3805555  | 4222222 | 4638888 | 8  | 00008 | ... | ...      | ... | ...                                  | ... | 8  | 00008 | 9  | 00009 | 10 | 00010 | 11 | 00011 | 12 | 00012 |
| 9        | 0062500 | 0479166 | 0895833 | 1312500 | 9  | 1729166  | 2145833 | 2562500 | 2979166 | 9  | 3395833 | 3812500  | 4229166 | 4645833 | 9  | 00009 | ... | ...      | ... | ...                                  | ... | 9  | 00009 | 10 | 00010 | 11 | 00011 | 12 | 00012 | 13 | 00013 |
| 10       | 0069444 | 0486111 | 0902777 | 1319444 | 10 | 1736111  | 2152777 | 2569444 | 2986111 | 10 | 3402777 | 3819444  | 4236111 | 4652777 | 10 | 00010 | ... | ...      | ... | ...                                  | ... | 10 | 00010 | 11 | 00011 | 12 | 00012 | 13 | 00013 | 14 | 00014 |
| 11       | 0076388 | 0493055 | 0909722 | 1326388 | 11 | 1743055  | 2159722 | 2576388 | 2993055 | 11 | 3409722 | 3826388  | 4243055 | 4659722 | 11 | 00011 | ... | ...      | ... | ...                                  | ... | 11 | 00011 | 12 | 00012 | 13 | 00013 | 14 | 00014 | 15 | 00015 |
| 12       | 0083333 | 0500000 | 0916666 | 1333333 | 12 | 1750000  | 2166666 | 2583333 | 3000000 | 12 | 3416666 | 3833333  | 4250000 | 4666666 | 12 | 00012 | ... | ...      | ... | ...                                  | ... | 12 | 00012 | 13 | 00013 | 14 | 00014 | 15 | 00015 | 16 | 00016 |
| 13       | 0090277 | 0506944 | 0923611 | 1340277 | 13 | 1756944  | 2173611 | 2590277 | 3006944 | 13 | 3423611 | 3840277  | 4256944 | 4673611 | 13 | 00013 | ... | ...      | ... | ...                                  | ... | 13 | 00013 | 14 | 00014 | 15 | 00015 | 16 | 00016 | 17 | 00017 |
| 14       | 0097222 | 0513888 | 0930555 | 1347222 | 14 | 1763888  | 2180555 | 2597222 | 3013888 | 14 | 3430555 | 3847222  | 4263888 | 4680555 | 14 | 00014 | ... | ...      | ... | ...                                  | ... | 14 | 00014 | 15 | 00015 | 16 | 00016 | 17 | 00017 | 18 | 00018 |
| 15       | 0104166 | 0520833 | 0937500 | 1354166 | 15 | 1770833  | 2187500 | 2604166 | 3020833 | 15 | 3437500 | 3854166  | 4270833 | 4687500 | 15 | 00015 | ... | ...      | ... | ...                                  | ... | 15 | 00015 | 16 | 00016 | 17 | 00017 | 18 | 00018 | 19 | 00019 |
| 16       | 0111111 | 0527777 | 0944444 | 1361111 | 16 | 1777777  | 2194444 | 2611111 | 3027777 | 16 | 3444444 | 3861111  | 4277777 | 4694444 | 16 | 00016 | ... | ...      | ... | ...                                  | ... | 16 | 00016 | 17 | 00017 | 18 | 00018 | 19 | 00019 | 20 | 00020 |
| 17       | 0118055 | 0534722 | 0951388 | 1368055 | 17 | 1784722  | 2201388 | 2618055 | 3034722 | 17 | 3451388 | 3868055  | 4284722 | 4701388 | 17 | 00017 | ... | ...      | ... | ...                                  | ... | 17 | 00017 | 18 | 00018 | 19 | 00019 | 20 | 00020 | 21 | 00021 |
| 18       | 0125000 | 0541666 | 0958333 | 1375000 | 18 | 1791666  | 2208333 | 2625000 | 3041666 | 18 | 3458333 | 3875000  | 4291666 | 4708333 | 18 | 00018 | ... | ...      | ... | ...                                  | ... | 18 | 00018 | 19 | 00019 | 20 | 00020 | 21 | 00021 | 22 | 00022 |
| 19       | 0131944 | 0548611 | 0965277 | 1381944 | 19 | 1798611  | 2215277 | 2631944 | 3048611 | 19 | 3465277 | 3881944  | 4298611 | 4715277 | 19 | 00019 | ... | ...      | ... | ...                                  | ... | 19 | 00019 | 20 | 00020 | 21 | 00021 | 22 | 00022 | 23 | 00023 |
| 20       | 0138888 | 0555555 | 0972222 | 1388888 | 20 | 1805555  | 2222222 | 2638888 | 3055555 | 20 | 3472222 | 3888888  | 4305555 | 4722222 | 20 | 00020 | ... | ...      | ... | ...                                  | ... | 20 | 00020 | 21 | 00021 | 22 | 00022 | 23 | 00023 | 24 | 00024 |
| 21       | 0145833 | 0562500 | 0979166 | 1395833 | 21 | 1812500  | 2229166 | 2645833 | 3062500 | 21 | 3479166 | 3895833  | 4312500 | 4729166 | 21 | 00021 | ... | ...      | ... | ...                                  | ... | 21 | 00021 | 22 | 00022 | 23 | 00023 | 24 | 00024 | 25 | 00025 |
| 22       | 0152777 | 0569444 | 0986111 | 1402777 | 22 | 1819444  | 2236111 | 2652777 | 3069444 | 22 | 3486111 | 3902777  | 4319444 | 4736111 | 22 | 00022 | ... | ...      | ... | ...                                  | ... | 22 | 00022 | 23 | 00023 | 24 | 00024 | 25 | 00025 | 26 | 00026 |
| 23       | 0159722 | 0576388 | 0993055 | 1409722 | 23 | 1826388  | 2243055 | 2659722 | 3076388 | 23 | 3493055 | 3909722  | 4326388 | 4743055 | 23 | 00023 | ... | ...      | ... | ...                                  | ... | 23 | 00023 | 24 | 00024 | 25 | 00025 | 26 | 00026 | 27 | 00027 |
| 24       | 0166666 | 0583333 | 1000000 | 1416666 | 24 | 1833333  | 2250000 | 2666666 | 3083333 | 24 | 3500000 | 3916666  | 4333333 | 4750000 | 24 | 00024 | ... | ...      | ... | ...                                  | ... | 24 | 00024 | 25 | 00025 | 26 | 00026 | 27 | 00027 | 28 | 00028 |
| 25       | 0173611 | 0590277 | 1006944 | 1423611 | 25 | 1840277  | 2256944 | 2673611 | 3090277 | 25 | 3506944 | 3923611  | 4340277 | 4756944 | 25 | 00025 | ... | ...      | ... | ...                                  | ... | 25 | 00025 | 26 | 00026 | 27 | 00027 | 28 | 00028 | 29 | 00029 |
| 26       | 0180555 | 0597222 | 1013888 | 1430555 | 26 | 1847222  | 2263888 | 2680555 | 3097222 | 26 | 3513888 | 3930555  | 4347222 | 4763888 | 26 | 00026 | ... | ...      | ... | ...                                  | ... | 26 | 00026 | 27 | 00027 | 28 | 00028 | 29 | 00029 | 30 | 00030 |
| 27       | 0187500 | 0604166 | 1020833 | 1437500 | 27 | 1854166  | 2270833 | 2687500 | 3104166 | 27 | 3520833 | 3937500  | 4354166 | 4770833 | 27 | 00027 | ... | ...      | ... | ...                                  | ... | 27 | 00027 | 28 | 00028 | 29 | 00029 | 30 | 00030 | 31 | 00031 |
| 28       | 0194444 | 0611111 | 1027777 | 1444444 | 28 | 1861111  | 2277777 | 2694444 | 3111111 | 28 | 3527777 | 3944444  | 4361111 | 4777777 | 28 | 00028 | ... | ...      | ... | ...                                  | ... | 28 | 00028 | 29 | 00029 | 30 | 00030 | 31 | 00031 | 32 | 00032 |
| 29       | 0201388 | 0618055 | 1034722 | 1451388 | 29 | 1868055  | 2284722 | 2701388 | 3118055 | 29 | 3534722 | 3951388  | 4368055 | 4784722 | 29 | 00029 | ... | ...      | ... | ...                                  | ... | 29 | 00029 | 30 | 00030 | 31 | 00031 | 32 | 00032 | 33 | 00033 |
| 30       | 0208333 | 0625000 | 1041666 | 1458333 | 30 | 1875000  | 2291666 | 2708333 | 3125000 | 30 | 3541666 | 3958333  | 4375000 | 4791666 | 30 | 00030 | ... | ...      | ... | ...                                  | ... | 30 | 00030 | 31 | 00031 | 32 | 00032 | 33 | 00033 | 34 | 00034 |
| 31       | 0215277 | 0631944 | 1048611 | 1465277 | 31 | 1881944  | 2298611 | 2715277 | 3131944 | 31 | 3548611 | 3965277  | 4381944 | 4798611 | 31 | 00031 | ... | ...      | ... | ...                                  | ... | 31 | 00031 | 32 | 00032 | 33 | 00033 | 34 | 00034 | 35 | 00035 |
| 32       | 0222222 | 0638888 | 1055555 | 1472222 | 32 | 1888888  | 2305555 | 2722222 | 3138888 | 32 | 3555555 | 3972222  | 4388888 | 4805555 | 32 | 00032 | ... | ...      | ... | ...                                  | ... | 32 | 00032 | 33 | 00033 | 34 | 00034 | 35 | 00035 | 36 | 00036 |
| 33       | 0229166 | 0645833 | 1062500 | 1479166 | 33 | 1895833  | 2312500 | 2729166 | 3145833 | 33 | 3562500 | 3979166  | 4395833 | 4812500 | 33 | 00033 | ... | ...      | ... | ...                                  | ... | 33 | 00033 | 34 | 00034 | 35 | 00035 | 36 | 00036 | 37 | 00037 |
| 34       | 0236111 | 0652777 | 1069444 | 1486111 | 34 | 1902777  | 2319444 | 2736111 | 3152777 | 34 | 3569444 | 3986111  | 4402777 | 4819444 | 34 | 00034 | ... | ...      | ... | ...                                  | ... | 34 | 00034 | 35 | 00035 |    |       |    |       |    |       |



**TABLE XX:— Hours and Minutes as Fractions of a Day—*contd.***

[illegible]





TABLE XXI.—Navamsas.

TSL

| Nav. Long. | Nav. Sign. | Nav. Long. | Nav. Sign. | Nav. Long. | Nav. Sign. | Nav. Long. | Nav. Sign. | Nav. Long. | Nav. Sign. | Nav. Long. | Nav. Sign. | Nav. Long. | Nav. Sign. |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1 3-3      | I          | 1 63-3     | VII        | 1 123-3    | I          | 1 183-3    | VII        | 1 243-3    | I          | 1 303-3    | VII        | 1 363-3    | VII        |
| 2 6-6      | II         | 2 66-6     | VIII       | 2 126-6    | II         | 2 186-6    | VIII       | 2 246-6    | II         | 2 306-6    | VIII       | 2 366-6    | VIII       |
| 3 10-0     | III        | 3 70-0     | IX         | 3 130-0    | III        | 3 190-0    | IX         | 3 250-0    | III        | 3 310-0    | IX         | 3 370-0    | IX         |
| 4 13-3     | IV         | 4 73-3     | X          | 4 133-3    | IV         | 4 193-3    | X          | 4 253-3    | IV         | 4 313-3    | X          | 4 373-3    | X          |
| 5 16-6     | V          | 5 76-6     | XI         | 5 136-6    | V          | 5 196-6    | XI         | 5 256-6    | V          | 5 316-6    | XI         | 5 376-6    | XI         |
| 6 20-0     | VI         | 6 80-0     | XII        | 6 140-0    | VI         | 6 200-0    | XII        | 6 260-0    | VI         | 6 320-0    | XII        | 6 380-0    | XII        |
| 7 23-3     | VII        | 7 83-3     | I          | 7 143-3    | VII        | 7 203-3    | I          | 7 263-3    | VII        | 7 323-3    | I          | 7 383-3    | I          |
| 8 26-6     | VIII       | 8 86-6     | II         | 8 146-6    | VIII       | 8 206-6    | II         | 8 266-6    | VIII       | 8 326-6    | II         | 8 386-6    | II         |
| 9 30-0     | IX         | 9 90-0     | III        | 9 150-0    | IX         | 9 210-0    | III        | 9 270-0    | IX         | 9 330-0    | III        | 9 390-0    | III        |
| 1 33-3     | X          | 1 93-3     | IV         | 1 153-3    | X          | 1 213-3    | IV         | 1 273-3    | X          | 1 333-3    | IV         | 1 393-3    | IV         |
| 2 36-6     | XI         | 2 96-6     | V          | 2 156-6    | XI         | 2 216-6    | V          | 2 276-6    | XI         | 2 336-6    | V          | 2 396-6    | V          |
| 3 40-0     | XII        | 3 100-0    | VI         | 3 160-0    | XII        | 3 220-0    | VI         | 3 280-0    | XII        | 3 340-0    | VI         | 3 400-0    | VI         |
| 4 43-3     | I          | 4 103-3    | VII        | 4 163-3    | I          | 4 223-3    | VII        | 4 283-3    | I          | 4 343-3    | VII        | 4 403-3    | VII        |
| 5 46-6     | II         | 5 106-6    | VIII       | 5 166-6    | II         | 5 226-6    | VIII       | 5 286-6    | II         | 5 346-6    | VIII       | 5 406-6    | VIII       |
| 6 50-0     | III        | 6 110-0    | IX         | 6 170-0    | III        | 6 230-0    | IX         | 6 290-0    | III        | 6 350-0    | IX         | 6 410-0    | IX         |
| 7 53-3     | IV         | 7 113-3    | X          | 7 173-3    | IV         | 7 233-3    | X          | 7 293-3    | IV         | 7 353-3    | X          | 7 413-3    | X          |
| 8 56-6     | V          | 8 116-6    | XI         | 8 176-6    | V          | 8 236-6    | XI         | 8 296-6    | V          | 8 356-6    | XI         | 8 416-6    | XI         |
| 9 60-0     | VI         | 9 120-0    | XII        | 9 180-0    | VI         | 9 240-0    | XII        | 9 300-0    | VI         | 9 360-0    | XII        | 9 420-0    | XII        |

TABLE XXII.—Ahargana.

## CENTURIES.

| A.D.    | K.Y. | Days.      | A.D. | K.Y. | Days.      | A.D. | K.Y. | Days.      | A.D. | K.Y. | Days.      | A.D. | K.Y. | Days.      |
|---------|------|------------|------|------|------------|------|------|------------|------|------|------------|------|------|------------|
| 01 B.C. | 3001 | 1096141-28 | 400  | 3501 | 1278770-66 | 900  | 4001 | 1461400-03 | 1400 | 4501 | 1644029-41 | 1900 | 5001 | 1826658-79 |
| 1 B.C.  | 3101 | 1132667-15 | 500  | 3601 | 1315296-53 | 1000 | 4101 | 1497925-91 | 1500 | 4601 | 1680555-29 | 2000 | 5101 | 1863184-67 |
| 00 A.D. | 3201 | 1169193-03 | 600  | 3701 | 1351822-41 | 1100 | 4201 | 1534451-78 | 1600 | 4701 | 1717081-16 | 3000 | 5201 | 2228443-42 |
| 100     | 3301 | 1205718-90 | 700  | 3801 | 1388348-28 | 1200 | 4301 | 1570977-66 | 1700 | 4801 | 1753607-04 | 4000 | 5301 | 2593702-18 |
| 200     | 3401 | 1242244-78 | 800  | 3901 | 1424874-16 | 1300 | 4401 | 1607503-54 | 1800 | 4901 | 1790132-91 | 5000 | 5401 | 2958960-94 |

N.B.—For centuries prior to 1 B.C. (3101 K.Y.), subtract from the ahargana for 1 B.C. the ahargana for 100, 200, ..., 3000 years as the case may be according to last column of next table. Supposing we want the ahargana for Rama's birthday (according to Bentley), i.e., the 33rd day of Solar Year 962 B.C. (i.e., 39th year of century beginning with B.C. 1001).

| Days.                 |          |     |     |            |
|-----------------------|----------|-----|-----|------------|
| We have B.C. 1        | Ahargana | ... | ... | 1132667-15 |
| Deduct for 1000 years | Do.      | ... | ... | —365258-76 |
|                       |          |     |     | 767408-39  |
| Add for 39 years      | Do.      | ... | ... | +14245-09  |
| Do. 33 days           | Do.      | ... | ... | +33-00     |

B.C. 962, 33rd day of Solar Year.

781686-48 Ahargana required.

## ODD YEARS.

| Yrs. | Days.   | Yrs. | Days.    | Yrs. | Days.    | Yrs. | Days.    | Yrs. | Days.    |
|------|---------|------|----------|------|----------|------|----------|------|----------|
| 1    | 365-26  | 21   | 7670-43  | 41   | 14975-61 | 61   | 22281-78 | 81   | 29585-95 |
| 2    | 730-52  | 22   | 8035-69  | 42   | 15340-87 | 62   | 22646-04 | 82   | 29951-22 |
| 3    | 1095-78 | 23   | 8400-95  | 43   | 15706-13 | 63   | 23011-30 | 83   | 30316-48 |
| 4    | 1461-03 | 24   | 8766-21  | 44   | 16071-38 | 64   | 23376-56 | 84   | 30681-73 |
| 5    | 1826-29 | 25   | 9131-47  | 45   | 16436-64 | 65   | 23741-82 | 85   | 31046-99 |
| 6    | 2191-55 | 26   | 9496-73  | 46   | 16801-90 | 66   | 24107-08 | 86   | 31412-25 |
| 7    | 2556-81 | 27   | 9861-99  | 47   | 17167-16 | 67   | 24472-34 | 87   | 31777-51 |
| 8    | 2922-07 | 28   | 10227-24 | 48   | 17532-42 | 68   | 24837-59 | 88   | 32142-77 |
| 9    | 3287-33 | 29   | 10592-50 | 49   | 17897-68 | 69   | 25202-85 | 89   | 32508-03 |
| 0    | 3652-59 | 30   | 10957-76 | 50   | 18262-94 | 70   | 25568-11 | 90   | 32873-29 |
| 1    | 4017-85 | 31   | 11323-02 | 51   | 18628-20 | 71   | 25933-37 | 91   | 33238-55 |
| 2    | 4383-10 | 32   | 11688-28 | 52   | 18993-45 | 72   | 26298-63 | 92   | 33603-80 |
| 3    | 4748-36 | 33   | 12053-54 | 53   | 19358-71 | 73   | 26663-89 | 93   | 33969-06 |
| 4    | 5113-62 | 34   | 12418-80 | 54   | 19723-97 | 74   | 27029-15 | 94   | 34334-32 |
| 5    | 5478-88 | 35   | 12784-06 | 55   | 20089-23 | 75   | 27394-41 | 95   | 34699-58 |
| 6    | 5844-14 | 36   | 13149-31 | 56   | 20454-49 | 76   | 27759-66 | 96   | 35064-84 |
| 7    | 6209-40 | 37   | 13514-57 | 57   | 20819-75 | 77   | 28124-92 | 97   | 35430-10 |
| 8    | 6574-66 | 38   | 13879-83 | 58   | 21185-01 | 78   | 28490-18 | 98   | 35795-36 |
| 9    | 6939-92 | 39   | 14245-09 | 59   | 21550-27 | 79   | 28855-44 | 99   | 36160-62 |
| 0    | 7305-17 | 40   | 14610-35 | 60   | 21915-52 | 80   | 29220-70 | 100  | 36525-88 |





## Models for Compendious Working of Tithis, Nakshatras and Yogas.

These models are chiefly intended to illustrate the use of the Eye-Table, which is a companion to Tables VIII, IX, X, XI, XII and XVII for finding longitudes, rasis, solar dates and, lastly and chiefly, the ending moments of any Tithi, Nakshatra, or Yoga.

**Table XII and Eye-Table.—Lunar Tithis (A.D. 1840—A.D. 1920).**

*Required the ending moment of (Lunar) Ashada Sukla Ashtami, Saka 1832, Vik. 1967.*

| Mean ending moment of                       |     | d. | gh. | p.  | ☉'s Anom.              | ☾'s Anom.              |
|---------------------------------------------|-----|----|-----|-----|------------------------|------------------------|
| Ashadha New Moon Saka 1832.                 |     |    |     |     | d. gh. p.              | d. gh. p.              |
| (Table XII) A.D. 1910. ...                  | Jl. | 7  | 10  | 57  | 84 58                  | 4 29                   |
| Collective duration of 8 tithis (Eye-Table) |     | 7  | 52  | 29  | 7 52                   | 7 52                   |
| Ending moment of mean Tithi                 | Jl. | 15 | 3   | 26  | ☉'s Eqn. (Eye-Tab.) -2 | ☾'s Eqn. (Eye-Tab.) -9 |
| Sum of ☉'s and ☾'s Equations                |     |    |     | -11 | 92 50                  | 12 21                  |
|                                             | Jl. | 14 | 52  |     | -11                    | 12 19                  |

The ending moment of the tithi (Lanka time) was, therefore, 52 ghatikas after Lanka sunrise on 14 July 1910. If we want local time, we should use Table XIII.

**Tables XII, XI and IX.—Nakshatras and Yogas (A.D. 1840—A.D. 1920).** Eye-Table not used.

*Required the ending moment of Krittika Nakshatra for the month of July 1910.*

Since Ashadha New Moon fell on 7 July 1910 and Krittika Nakshatra in Ashadha ends about 25 days from New moon (Table XI) which would take us into August, we take the previous New moon.

|                                                                         | d. | gh. | p. | ☉'s Anom.            |
|-------------------------------------------------------------------------|----|-----|----|----------------------|
| (Tab. XII) Jyeshtha New Moon ... A.D. 1910.                             |    |     |    | d. gh. p.            |
| (Tab. XI-A) Longest interval from Jyesh. New Moon to Krit. (No. 3) Nak. | 28 | 18  | 39 | Je. 7 39 7           |
| (Tab. XI-A) Deduct for Nak. in S.Y. A.D. 1910 ...                       | 1  | 56  | 18 | 2 30 40              |
|                                                                         | 26 | 22  | 21 | 26 22 21             |
| (Tab. IX-B) ☾'s Nak. Eqn. for An. of 1 d. 19 gh. 44 p.                  |    |     |    | 26 22 21             |
|                                                                         |    |     |    | Je. 34 1 28          |
|                                                                         |    |     |    | -6 20                |
|                                                                         |    |     |    | 28 53 1              |
|                                                                         |    |     |    | 27 33 17 Anom. month |

The ending moment of Krittika Nakshatra in July 1910, was 55 ghatikas after Lanka sunrise on 3 July 1910. If we want local time, we should use Table XIII.

For Yogas proceed similarly, but add together ☉'s and ☾'s Yoga Eqns. by Tab. IX-A.

**Table X and Eye-Table.—Lunar Tithis (ANY YEAR IN TAB. X).**

This method will be of immense service to Epigraphists who will require the English equivalents of thousands of tithis ranging from 1 B.C. to modern times. With Table X and the Eye-Table the operation can be performed in less than a minute. Thus, *Required the ending moment of Ashada Sukla 12, A.D. 484, K.Y. 3585.*

| Mean ending moment of Ashada New moon Tithi. | Week. | Month    | Fraction | ☉'s Anom.     | ☾'s Anom.      |
|----------------------------------------------|-------|----------|----------|---------------|----------------|
| A.D. 484 (Table X).                          | day.  | and day. | of day.  | ☉'s Eqn. —04. | 24-39 4-49     |
|                                              | 7     | Je. 9    | -67      | (Eye-Tab.)    | 59-06 3-95     |
| Collective duration of 12 tithis (Eye-Tab.)  | 11    |          | -81      | ☾'s Eqn. +41  | 89-45 8-44     |
|                                              | +1*   |          |          | (Eye-Tab.)    | 11-81 11-81    |
|                                              | 19    | 21       | -48      |               | 95-26 20-25    |
| Sum of ☉'s and ☾'s Equations                 | ...   | ...      | +37      | +37           | -04 (☉'s Eqn.) |
| (19-14)=                                     | 5     | 21       | -85      |               | 20-21          |

ANSWER.—*Thursday, 21 June A.D. 484, at '85 (i.e., by Eye-Table, 51 ghatikas or 20½ hours) after sunrise (Lanka time). The absolutely correct time differs from the above by only 11 palas, as we may see at p. 91, Sec. 259 of the text.*

\* When the sum of the several fractions of a day in the column headed *fraction of day* exceeds unity, we should add 1 to the "Week-day" column.

**TABLES XVII, XI, X, VIII, V, III, AND EYE-TABLE.—NAKSHATRAS AND YOGAS**

THREE ALTERNATIVE METHODS TO CHOOSE FROM. (ANY YEAR IN TAB. X). Table IX not used.

*Required the Nakshatra current at the ending moment of above Tithi.*

By Table VIII (last col.) the sun's long. for Nak. corresponding to 95 days of the solar year is. 7-5051  
By Table V (last col.) ☉'s long. for 26 day is ... -02

☉'s long. corresponding to 95-26 days ... 7-53  
Add Tithi equivalent in days ... 11-81

By Table III, at 19-34 days of lunation space, the Nakshatra current is the 18th, i.e., Jyeshtha. This, then, was the Nakshatra current at the ending moment of Ash. Suk. 12, A.D. 484.

### SECOND METHOD

We may calculate directly from Tab. XVII-A and C (pp. 207, 209). ☉'s long. for 95-26 days of Solar year, i.e.,  $91.49^\circ - 54^\circ 4' - 26^\circ = 91.21^\circ$ . Add ☾'s-☉'s long. i.e., No. of tithi  $\times 12^\circ = 12 \times 12^\circ = 144^\circ$

Total ... 235-21°

This, by Eye-Tab. is the long. of Nakshatra Jyeshtha.

### THIRD METHOD BY TABLE XI, FOR ENDING MOMENT OF NAKSHATRA.

Annual correction for Nakshatras for A.D. 484 is that for 24-39, i.e.,  $1.79 + .03 = 1.82$  (Tab. X and XI).

The ending moment of No. 18 Nak. in Lunar Ashada was  $13.95 - 1.82 = 12.13$  days from the new moon, i.e., 32 of a day after the mean tithi, whose ending moment is 11-81 days from New moon.

The ☾'s anom. then was 32 more than that of the tithi, i.e., 20-57, for which the Nak. eqn. is +38 (Eye-Tab.). The ending moment of the Nak. No. 18, i.e., Jyeshtha, was, therefore,  $48 + 32 + 38 = 118$  or 18 of a day after sunrise on the next day after the 21st June.

*Yoga current at ending moment of above tithi.*

$2 \times \text{☉'s Longitude as in 1st column} = 182.42^\circ$   
Add ☾'s-☉'s long. = No. of Tithi  $\times 12^\circ = 144^\circ$

Total ... 326-42°

This, by Eye-Tab. is the long. of Yoga Brahman.





# EYE-TABLE.

CSL

SANKRANTIS. i. e. (1) MOMENTS OF COMMENCEMENT OF SOLAR MONTHS, (2) LATEST POSSIBLE MOMENTS OF COMMENCEMENT OF LUNAR MONTHS (Surya Siddhanta), (3) Longitudes of Rasis.

|                                                                           |     |              |              |             |              |                |             |             |               |            |             |              |              |
|---------------------------------------------------------------------------|-----|--------------|--------------|-------------|--------------|----------------|-------------|-------------|---------------|------------|-------------|--------------|--------------|
| Order of Signs of Zodiac or Rasis ...                                     | ... | 1            | 2            | 3           | 4            | 5              | 6           | 7           | 8             | 9          | 10          | 11           | 12           |
| Bengal Solar months ...                                                   | ... | Vaisakha     | Jyeshtha     | Ashadha     | Shravana     | Bhadrapada     | Asvina      | Kartika     | Margasira     | Pausha     | Magha       | Phalgun      | Chaitra      |
| Malayalam Solar months ; also names of Rasis ...                          | ... | Mesha        | Vrishabha    | Mithunam    | Karkadam     | Simham         | Kanni       | Tulam       | Vrischikam    | Dhanus     | Makaram     | Kumbham      | Minam        |
| ...                                                                       | ... | Medam        | Edavam       | ...         | ...          | ...            | ...         | ...         | ...           | ...        | ...         | ...          | ...          |
| Degree of Longitude at planet's entry into each sign                      | ... | 0°           | 30°          | 60°         | 90°          | 120°           | 150°        | 180°        | 210°          | 240°       | 270°        | 300°         | 330°         |
| Tamil Solar months                                                        | ... | Chittirai    | Vaikasi      | Ani         | Adi          | Avani          | Purattasi   | Aippasi     | Kartigai      | Margali    | Tai         | Masi         | Panguni      |
| Moment of Sankranti in days of Solar Year, and decimals of a day          | ... | 0-0          | 30-9353      | 62-3555     | 94-0003      | 125-4755       | 156-4942    | 187-9355    | 218-8289      | 249-3192   | 279-6369    | 309-9550     | 339-9033     |
| Do. do. Ghatikas and Palas                                                | ... | 0, 0, 0      | 30, 56, 7    | 62, 21, 20  | 94, 0, 1     | 125, 28, 32    | 156, 29, 39 | 187, 56, 8  | 218, 49, 44   | 249, 19, 9 | 279, 38, 13 | 309, 5, 6    | 339, 54, 19  |
| English date corresponding to each Sankranti (A.D. 1911)                  | ... | Ap. 13       | May 14       | June 14     | July 16      | Aug. 16        | Sep. 16     | Oct. 17     | Nov. 16       | Dec. 15    | Jan. 14     | Feb. 12      | Mar. 13      |
| Lunar Month : each month commences before Sankranti noted in next column. | ... | (1) Vaisakha | (2) Jyeshtha | (3) Ashadha | (4) Shravana | (5) Bhadrapada | (6) Asvina  | (7) Kartika | (8) Margasira | (9) Pausha | (10) Magha  | (11) Phalgun | (12) Chaitra |

Tithi equivalents in days, decimals of a day, Ghatikas and Palas.

|                          |                         |     |          |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |                       |                         |            |
|--------------------------|-------------------------|-----|----------|------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------------------|-------------------------|------------|
| (Increase of Anomaly).   |                         |     |          |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |                       |                         |            |
| Tithis                   | ...                     | 1   | 2        | 3          | 4         | 5         | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 13         | 14         | 15         | 16         | 17         | 18        | 19        | 20         | 21         | 22         | 23         | 24         | 25         | 26         | 27         | 28         | 29         | 30         | 28         | 29                    | 30                      |            |
| Tithi equivalent in days | ...                     | .98 | 1.97     | 2.95       | 3.94      | 4.92      | 5.91       | 6.89       | 7.87       | 8.86       | 9.84       | 10.83      | 11.81      | 12.80      | 13.78      | 14.76      | 15.75      | 16.73      | 17.72     | 18.70     | 19.69      | 20.67      | 21.65      | 22.64      | 23.62      | 24.61      | 25.59      | 26.58      | 27.56      | 28.55      | 29.53      | .01        | 1.00                  | 1.98                    |            |
| Do.                      | do. Ghatikas, and Palas | ... | 0, 59, 4 | 1, 58, 7   | 2, 57, 11 | 3, 56, 15 | 4, 55, 18  | 5, 54, 22  | 6, 53, 26  | 7, 52, 29  | 8, 51, 33  | 9, 50, 37  | 10, 49, 40 | 11, 48, 44 | 12, 47, 48 | 13, 46, 51 | 14, 45, 55 | 15, 44, 59 | 16, 44, 2 | 17, 43, 6 | 18, 42, 10 | 19, 41, 14 | 20, 40, 17 | 21, 39, 21 | 22, 38, 24 | 23, 37, 28 | 24, 36, 32 | 25, 35, 36 | 26, 34, 39 | 27, 33, 43 | 28, 32, 46 | 29, 31, 50 | 30 tithis 1 Anom. mo. |                         |            |
|                          |                         |     |          |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |                       | 29, 31, 50, 27, 19, 17, |            |
|                          |                         |     |          |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |           |           |            |            |            |            |            |            |            |            |            |            |            |            |                       | (Increase of anomaly)   |            |
| Do.                      | do.                     | do. | ...      | 15, 44, 59 | 16, 44, 2 | 17, 43, 6 | 18, 42, 10 | 19, 41, 14 | 20, 40, 17 | 21, 39, 21 | 22, 38, 24 | 23, 37, 28 | 24, 36, 32 | 25, 35, 36 | 26, 34, 39 | 27, 33, 43 | 28, 32, 46 | 29, 31, 50 | 0, 0, 26  | 0, 59, 29 | 1, 58, 33  | 2, 57, 37  | 3, 56, 41  | 4, 55, 45  | 5, 54, 49  | 6, 53, 53  | 7, 52, 57  | 8, 51, 61  | 9, 50, 65  | 10, 49, 69 | 11, 48, 73 | 12, 47, 77 | 13, 46, 81            | 14, 45, 85              | 15, 44, 89 |

Order, Names and Longitudes of Nakshatras and YOGAS.

|                                                                                                  |     |            |         |           |           |           |             |             |          |           |             |               |               |          |          |
|--------------------------------------------------------------------------------------------------|-----|------------|---------|-----------|-----------|-----------|-------------|-------------|----------|-----------|-------------|---------------|---------------|----------|----------|
| Nakshatras                                                                                       | ... | Asvini     | Bharani | Krittika  | Rohini    | Mrigasira | Ardra       | Punarvasu   | Pushya   | Alesha    | Magha       | Pur. Phalguni | Utt. Phalguni | Hasta    | Chitra   |
| YOGAS                                                                                            | ... | Vishkambha | Priti   | Ayushman  | Saubhagya | Sobhana   | Atiganda    | Sukarman    | Dhriti   | Sula      | Ganda       | Vridhhi       | Dhruva        | Vyaghata | Harshana |
| Longitudo at Planet's entry into each Nakshatra ; also longitude, at commencement, of each Yoga. | ... | 0°         | 13° 20' | 26° 40'   | 40° 0'    | 53° 20'   | 66° 40'     | 80° 0'      | 93° 20'  | 106° 40'  | 120° 0'     | 133° 20'      | 146° 40'      | 160° 0'  | 173° 20' |
| Nakshatras                                                                                       | ... | Svati      | Visakha | Anuradha  | Jyeshtha  | Mula      | Pur. Ashada | Utt. Ashada | Shravana | Sravishta | Satabhishaj | Pur. Bhadr.   | Utt. Bhadr.   | Revati   |          |
| YOGAS                                                                                            | ... | Vajra      | Siddhi  | Vyadipata | Variyati  | Parigha   | Siva        | Siddha      | Sadhya   | Subha     | Sukla       | Brahman       | Indra         | Vaidriti |          |
| Longitudo at Planet's entry into each Nakshatra ; also longitude, at commencement, of each Yoga. | ... | 186° 40'   | 200° 0' | 213° 0'   | 226° 40'  | 240° 0'   | 253° 20'    | 266° 40'    | 280° 0'  | 293° 20'  | 306° 40'    | 320° 0'       | 333° 20'      | 346° 40' |          |

(Surya Siddhanta.) Moon's Equation of the Centre and Moon's Anomaly in Days and Decimals of a Day. (\*The signs - and + are to be applied to the equation in heavy type and not to the anomaly.)

|                         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                         | .00   | .01   | .02   | .03   | .04   | .05   | .06   | .07   | .08   | .09   | .10   | .11   | .12   | .13   | .14   | .15   | .16   | .17   | .18   | .19   | .20   | .21   | .22   | .23   | .24   | .25   | .26   | .27   | .28   | .29   | .30   | .31   | .32   | .33   | .34   | .35   | .36   | .37   | .38   | .39   | .40   | .41   |       |
| * -                     | .00   | .11   | .23   | .34   | .46   | .58   | .69   | .81   | .93   | 1.04  | 1.16  | 1.28  | 1.40  | 1.52  | 1.64  | 1.77  | 1.89  | 2.02  | 2.14  | 2.27  | 2.40  | 2.53  | 2.67  | 2.80  | 2.94  | 3.08  | 3.23  | 3.38  | 3.53  | 3.69  | 3.85  | 4.01  | 4.19  | 4.37  | 4.56  | 4.76  | 4.98  | 5.21  | 5.48  | 5.78  | 6.14  | 6.70  |       |
| * -                     | 13-78 | 13-68 | 13-59 | 13-49 | 13-40 | 13-30 | 13-20 | 13-11 | 13-01 | 12-91 | 12-81 | 12-71 | 12-61 | 12-51 | 12-41 | 12-31 | 12-20 | 12-10 | 11-99 | 11-88 | 11-77 | 11-66 | 11-55 | 11-43 | 11-31 | 11-19 | 11-07 | 10-94 | 10-81 | 10-67 | 10-53 | 10-38 | 10-23 | 10-07 | 9-90  | 9-71  | 9-51  | 9-30  | 9-06  | 8-78  | 8-43  | 7-90  |       |
| * +                     | 13-78 | 13-87 | 13-97 | 14-06 | 14-16 | 14-25 | 14-35 | 14-45 | 14-54 | 14-64 | 14-74 | 14-84 | 14-94 | 15-04 | 15-14 | 15-24 | 15-35 | 15-45 | 15-55 | 15-67 | 15-78 | 15-89 | 15-99 | 16-10 | 16-21 | 16-31 | 16-41 | 16-51 | 16-61 | 16-71 | 16-81 | 16-91 | 17-02 | 17-12 | 17-23 | 17-33 | 17-44 | 17-54 | 18-05 | 18-15 | 18-26 | 18-36 | 18-47 |
| * +                     | 21-55 | 21-44 | 21-32 | 21-21 | 21-09 | 20-98 | 20-86 | 20-74 | 20-63 | 20-51 | 20-39 | 20-27 | 20-15 | 20-03 | 19-51 | 19-39 | 19-26 | 19-14 | 19-02 | 18-90 | 18-78 | 18-66 | 18-54 | 18-42 | 18-30 | 18-18 | 18-06 | 17-94 | 17-82 | 17-70 | 17-58 | 17-46 | 17-34 | 17-22 | 17-10 | 16-98 | 16-86 | 16-74 | 16-62 | 16-50 | 16-38 | 16-26 | 16-14 |
| Equation for Nakshatras | ...   | .04   | .05   | .06   | .06   | .07   | .08   | .09   | .10   | .11   | .12   | .13   | .14   | .15   | .16   | .17   | .18   | .19   | .20   | .21   | .22   | .23   | .24   | .25   | .26   | .27   | .28   | .29   | .30   | .30   | .31   | .32   | .33   | .34   | .35   | .36   | .37   | .38   | .39   | .40   | .41   |       |       |
| Equation for Yogas      | ...   | .03   | .04   | .05   | .06   | .06   | .08   | .08   | .09   | .10   | .11   | .12   | .13   | .14   | .15   | .16   | .17   | .18   | .19   | .20   | .21   | .22   | .23   | .24   | .25   | .26   | .27   | .27   | .28   | .29   | .30   | .31   | .32   | .33   | .34   | .35   | .36   | .37   | .38   | .39   | .40   | .41   |       |

(Surya Siddhanta.) Sun's equation of the Centre and Sun's Anomaly in days and decimals of a day. (The anomalies are entered in ordinary type and the equations, with appropriate signs, in heavy type.)

|     |      |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| +18 | +175 | +17 | +16 | +15 | +14 | +13 | +12 | +11 | +10 | +9 | +8 | +7 | +6 | +5 | +4 | +3 | +2 | +1 | .00 | .01 | .02 | .03 | .04 | .05 | .06 | .07 | .08 | .09 | .10 | .11 | .12 | .13 | .14 | .15 | .16 | .17 | .18 | .19 | .20 | .21 | .22 | .23 | .24 | .25 | .26 | .27 | .28 | .29 | .30 | .31 | .32 | .33 | .34 | .35 | .36 | .37 | .38 | .39 | .40 | .41 | .42 | .43 | .44 | .45 | .46 | .47 | .48 | .49 | .50 | .51 | .52 | .53 | .54 | .55 | .56 | .57 | .58 | .59 | .60 | .61 | .62 | .63 | .64 | .65 | .66 | .67 | .68 | .69 | .70 | .71 | .72 | .73 | .74 | .75 | .76 | .77 | .78 | .79 | .80 | .81 | .82 | .83 | .84 | .85 | .86 | .87 | .88 | .89 | .90 | .91 | .92 | .93 | .94 | .95 | .96 | .97 | .98 | .99 | 1.00 | 1.01 | 1.02 | 1.03 | 1.04 | 1.05 | 1.06 | 1.07 | 1.08 | 1.09 | 1.10 | 1.11 | 1.12 | 1.13 | 1.14 | 1.15 | 1.16 | 1.17 | 1.18 | 1.19 | 1.20 | 1.21 | 1.22 | 1.23 | 1.24 | 1.25 | 1.26 | 1.27 | 1.28 | 1.29 | 1.30 | 1.31 | 1.32 | 1.33 | 1.34 | 1.35 | 1.36 | 1.37 | 1.38 | 1.39 | 1.40 | 1.41 | 1.42 | 1.43 | 1.44 | 1.45 | 1.46 | 1.47 | 1.48 | 1.49 | 1.50 | 1.51 | 1.52 | 1.53 | 1.54 | 1.55 | 1.56 | 1.57 | 1.58 | 1.59 | 1.60 | 1.61 | 1.62 | 1.63 | 1.64 | 1.65 | 1.66 | 1.67 | 1.68 | 1.69 | 1.70 | 1.71 | 1.72 | 1.73 | 1.74 | 1.75 | 1.76 | 1.77 | 1.78 | 1.79 | 1.80 | 1.81 | 1.82 | 1.83 | 1.84 | 1.85 | 1.86 | 1.87 | 1.88 | 1.89 | 1.90 | 1.91 | 1.92 | 1.93 | 1.94 | 1.95 | 1.96 | 1.97 | 1.98 | 1.99 | 2.00 | 2.01 | 2.02 | 2.03 | 2.04 | 2.05 | 2.06 | 2.07 | 2.08 | 2.09 | 2.10 | 2.11 | 2.12 | 2.13 | 2.14 | 2.15 | 2.16 | 2.17 | 2.18 | 2.19 | 2.20 | 2.21 | 2.22 | 2.23 | 2.24 | 2.25 | 2.26 | 2.27 | 2.28 | 2.29 | 2.30 | 2.31 | 2.32 | 2.33 | 2.34 | 2.35 | 2.36 | 2.37 | 2.38 | 2.39 | 2.40 | 2.41 | 2.42 | 2.43 | 2.44 | 2.45 | 2.46 | 2.47 | 2.48 | 2.49 | 2.50 | 2.51 | 2.52 | 2.53 | 2.54 | 2.55 | 2.56 | 2.57 | 2.58 | 2.59 | 2.60 | 2.61 | 2.62 | 2.63 | 2.64 | 2.65 | 2.66 | 2.67 | 2.68 | 2.69 | 2.70 | 2.71 | 2.72 | 2.73 | 2.74 | 2.75 | 2.76 | 2.77 | 2.78 | 2.79 | 2.80 | 2.81 | 2.82 | 2.83 | 2.84 | 2.85 | 2.86 | 2.87 | 2.88 | 2.89 | 2.90 | 2.91 | 2.92 | 2.93 | 2.94 | 2.95 | 2.96 | 2.97 | 2.98 | 2.99 | 3.00 | 3.01 | 3.02 | 3.03 | 3.04 | 3.05 | 3.06 | 3.07 | 3.08 | 3.09 | 3.10 | 3.11 | 3.12 | 3.13 | 3.14 | 3.15 | 3.16 | 3.17 | 3.18 | 3.19 | 3.20 | 3.21 | 3.22 | 3.23 | 3.24 | 3.25 | 3.26 | 3.27 | 3.28 | 3.29 | 3.30 | 3.31 | 3.32 | 3.33 | 3.34 | 3.35 | 3.36 | 3.37 | 3.38 | 3.39 | 3.40 | 3.41 | 3.42 | 3.43 | 3.44 | 3.45 | 3.46 | 3.47 | 3.48 | 3.49 | 3.50 | 3.51 | 3.52 | 3.53 | 3.54 | 3.55 | 3.56 | 3.57 | 3.58 | 3.59 | 3.60 | 3.61 | 3.62 | 3.63 | 3.64 | 3.65 | 3.66 | 3.67 | 3.68 | 3.69 | 3.70 | 3.71 | 3.72 | 3.73 | 3.74 | 3.75 | 3.76 | 3.77 | 3.78 | 3.79 | 3.80 | 3.81 | 3.82 | 3.83 | 3.84 | 3.85 | 3.86 | 3.87 | 3.88 | 3.89 | 3.90 | 3.91 | 3.92 | 3.93 | 3.94 | 3.95 | 3.96 | 3.97 | 3.98 | 3.99 | 4.00 | 4.01 | 4.02 | 4.03 | 4.04 | 4.05 | 4.06 | 4.07 | 4.08 | 4.09 | 4.10 | 4.11 | 4.12 | 4.13 | 4.14 | 4.15 | 4.16 | 4.17 | 4.18 | 4.19 | 4.20 | 4.21 | 4.22 | 4.23 | 4.24 | 4.25 | 4.26 | 4.27 | 4.28 | 4.29 | 4.30 | 4.31 | 4.32 | 4.33 | 4.34 | 4.35 | 4.36 | 4.37 | 4.38 | 4.39 | 4.40 | 4.41 | 4.42 | 4.43 | 4.44 | 4.45 | 4.46 | 4.47 | 4.48 | 4.49 | 4.50 | 4.51 | 4.52 | 4.53 | 4.54 | 4.55 | 4.56 | 4.57 | 4.58 | 4.59 | 4.60 | 4.61 | 4.62 | 4.63 | 4.64 | 4.65 | 4.66 | 4.67 | 4.68 | 4.69 | 4.70 | 4.71 | 4.72 | 4.73 | 4.74 | 4.75 | 4.76 | 4.77 | 4.78 | 4.79 | 4.80 | 4.81 | 4.82 | 4.83 | 4.84 | 4.85 | 4.86 | 4.87 | 4.88 | 4.89 | 4.90 | 4.91 | 4.92 | 4.93 | 4.94 | 4.95 | 4.96 | 4.97 | 4.98 | 4.99 | 5.00 | 5.01 | 5.02 | 5.03 | 5.04 | 5.05 | 5.06 | 5.07 | 5.08 | 5.09 | 5.10 | 5.11 | 5.12 | 5.13 | 5.14 | 5.15 | 5.16 | 5.17 | 5.18 | 5.19 | 5.20 | 5.21 | 5.22 | 5.23 | 5.24 | 5.25 | 5.26 | 5.27 | 5.28 | 5.29 | 5.30 | 5.31 | 5.32 | 5.33 | 5.34 | 5.35 | 5.36 | 5.37 | 5.38 | 5.39 | 5.40 | 5.41 | 5.42 | 5.43 | 5.44 | 5.45 | 5.46 | 5.47 | 5.48 | 5.49 | 5.50 | 5.51 | 5.52 | 5.53 | 5.54 | 5.55 | 5.56 | 5.57 | 5.58 | 5.59 | 5.60 | 5.61 | 5.62 | 5.63 | 5.64 | 5.65 | 5.66 | 5.67 | 5.68 | 5.69 | 5.70 | 5.71 | 5.72 | 5.73 | 5.74 | 5.75 | 5.76 | 5.77 | 5.78 | 5.79 | 5.80 | 5.81 | 5.82 | 5.83 | 5.84 | 5.85 | 5.86 | 5.87 | 5.88 | 5.89 | 5.90 | 5.91 | 5.92 | 5.93 | 5.94 | 5.95 | 5.96 | 5.97 | 5.98 | 5.99 | 6.00 | 6.01 | 6.02 | 6.03 | 6.04 | 6.05 | 6.06 | 6.07 | 6.08 | 6.09 | 6.10 | 6.11 | 6.12 | 6.13 | 6.14 | 6.15 | 6.16 | 6.17 | 6.18 | 6.19 | 6.20 | 6.21 | 6.22 | 6.23 | 6.24 | 6.25 | 6.26 | 6.27 | 6.28 | 6.29 | 6.30 | 6.31 | 6.32 | 6.33 | 6.34 | 6.35 | 6.36 | 6.37 | 6.38 | 6.39 | 6.40 | 6.41 | 6.42 | 6.43 | 6.44 | 6.45 | 6.46 | 6.47 | 6.48 | 6.49 | 6.50 | 6.51 | 6.52 | 6.53 | 6.54 | 6.55 | 6.56 | 6.57 | 6.58 | 6.59 | 6.60 | 6.61 | 6.62 | 6.63 | 6.64 | 6.65 | 6.66 | 6.67 | 6.68 | 6.69 | 6.70 | 6.71 | 6.72 | 6.73 | 6.74 | 6.75 | 6.76 | 6.77 | 6.78 | 6.79 | 6.80 | 6.81 | 6.82 | 6.83 | 6.84 | 6.85 | 6.86 | 6.87 | 6.88 | 6.89 | 6.90 | 6.91 | 6.92 | 6.93 | 6.94 | 6.95 | 6.96 | 6.97 | 6.98 | 6.99 | 7.00 | 7.01 | 7.02 | 7.03 | 7.04 | 7.05 | 7.06 | 7.07 | 7.08 | 7.09 | 7.10 | 7.11 | 7.12 | 7.13 | 7.14 | 7.15 | 7.16 | 7.17 | 7.18 | 7.19 | 7.20 | 7.21 | 7.22 | 7.23 | 7.24 | 7.25 | 7.26 | 7.27 | 7.28 | 7.29 | 7.30 | 7.31 | 7.32 | 7.33 | 7.34 | 7.35 | 7.36 | 7.37 | 7.38 | 7.39 | 7.40 | 7.41 | 7.42 | 7.43 | 7.44 | 7.45 | 7.46 | 7.47 | 7.48 | 7.49 | 7.50 | 7.51 | 7.52 | 7.53 | 7.54 | 7.55 | 7.56 | 7.57 | 7.58 | 7.59 | 7.60 | 7.61 | 7.62 | 7.63 | 7.64 | 7.65 | 7.66 | 7.67 | 7.68 | 7.69 | 7.70 | 7.71 | 7.72 | 7.73 | 7.74 | 7.75 | 7.76 | 7.77 | 7.78 | 7.79 | 7.80 | 7.81 | 7.82 | 7.83 | 7.84 | 7.85 | 7.86 | 7.87 | 7.88 | 7.89 | 7.90 | 7.91 | 7.92 | 7.93 | 7.94 | 7.95 | 7.96 | 7.97 | 7.98 | 7.99 | 8.00 | 8.01 | 8.02 | 8.03 | 8.04 | 8.05 | 8.06 | 8.07 | 8.08 | 8.09 | 8.10 | 8.11 | 8.12 | 8.13 | 8.14 | 8.15 | 8.16 | 8.17 | 8.18 | 8.19 | 8.20 | 8.21 | 8.22 | 8.23 | 8.24 | 8.25 | 8.26 | 8.27 | 8.28 | 8.29 | 8.30 | 8.31 | 8.32 | 8.33 | 8.34 | 8.35 | 8.36 | 8.37 | 8.38 | 8.39 | 8.40 | 8.41 | 8.42 | 8.43 | 8.44 | 8.45 | 8.46 | 8.47 | 8.48 | 8.49 | 8.50 | 8.51 | 8.52 | 8.53 | 8.54 | 8.55 | 8.56 | 8.57 | 8.58 | 8.59 | 8.60 | 8.61 | 8.62 | 8.63 | 8.64 | 8.65 | 8.66 | 8.67 | 8.68 | 8.69 | 8.70 | 8.71 | 8.72 | 8.73 | 8.74 | 8.75 | 8.76 | 8.77 | 8.78 | 8.79 | 8.80 | 8.81 | 8.82 | 8.83 | 8.84 | 8.85 | 8.86 | 8.87 | 8.88 | 8.89 | 8.90 | 8.91 | 8.92 | 8.93 | 8.94 | 8.95 | 8.96 | 8.97 | 8.98 | 8.99 | 9.00 | 9.01 | 9.02 | 9.03 | 9.04 | 9.05 | 9.06 | 9.07 | 9.08 | 9.09 | 9.10 | 9.11 | 9.12 | 9.13 | 9.14 | 9.15 | 9.16 | 9.17 | 9.18 | 9.19 | 9.20 | 9.21 | 9.22 | 9.23 | 9.24 | 9.25 | 9.26 | 9.27 | 9.28 | 9.29 | 9.30 | 9.31 | 9.32 | 9.33 | 9.34 | 9.35 | 9.36 | 9.37 | 9.38 | 9.39 | 9.40 | 9.41 | 9.42 | 9.43 | 9.44 | 9.45 | 9.46 | 9.47 | 9.48 | 9.49 | 9.50 | 9.51 | 9.52 | 9.53 | 9.54 | 9.55 | 9.56 | 9.57 | 9.58 | 9.59 | 9.60 | 9.61 | 9.62 | 9.63 | 9.64 | 9.65 | 9.66 | 9.67 | 9.68 | 9.69 | 9.70 | 9.71 | 9.72 | 9.73 | 9.74 | 9.75 | 9.76 | 9.77 | 9.78 | 9.79 | 9.80 | 9.81 | 9.82 | 9.83 | 9.84 | 9.85 | 9.86 | 9.87 | 9.88 | 9.89 | 9.90 | 9.91 | 9.92 | 9.93 | 9.94 | 9.95 | 9.96 | 9.97 | 9.98 | 9.99 | 10.00 | 10.01 | 10.02 | 10.03 | 10.04 | 10.05 | 10.06 | 10.07 | 10.08 | 10.09 | 10.10 | 10.11 | 10.12 | 10.13 | 10.14 | 10.15 | 10.16 | 10.17 | 10.18 | 10.19 | 10.20 | 10.21 | 10.22 | 10.23 | 10.24 | 10.25 | 10.26 | 10.27 | 10.28 | 10.29 | 10.30 | 10.31 | 10.32 | 10.33 | 10.34 | 10.35 | 10.36 | 10.37 | 10.38 | 10.39 | 10.40 | 10.41 | 10.42 | 10.43 | 10.44 | 10.45 | 10.46 | 10.47 | 10.48 | 10.49 | 10.50 | 10.51 | 10.52 | 10.53 | 10.54 | 10.55 | 10.56 | 10.57 | 10.58 | 10.59 | 10.60 | 10.61 | 10.62 | 10.63 | 10.64 | 10.65 | 10.66 | 10.67 | 10.68 | 10.69 | 10.70 | 10.71 | 10.72 | 10.73 | 10.74 | 10.75 | 10.76 | 10.77 | 10.78 | 10.79 | 10.80 | 10.81 | 10.82 | 10.83 | 10.84 | 10.85 | 10.86 | 10.87 | 10.88 | 10.89 | 10.90 | 10.91 | 10.92 | 10.93 | 10.94 | 10.95 | 10.96 | 10.97 | 10.98 | 10.99 | 11.00 | 11.01 | 11.02 | 11.03 | 11.04 | 11.05 | 11.06 | 11.07 | 11.08 | 11.09 | 11.10 | 11.11 | 11.12 | 11.13 | 11.14 | 11.15 | 11.16 | 11.17 | 11.18 | 11.19 | 11.20 | 11.21 | 11.22 | 11.23 | 11.24 | 11.25 | 11.26 | 11.27 | 11.28 | 11.29 | 11.30 | 11.31 | 11.32 | 11.33 | 11.34 | 11.35 | 11.36 | 11.37 | 11.38 | 11.39 | 11.40 | 11.41 | 11.42 | 11.43 | 11.44 | 11.45 | 11.46 | 11.47 | 11.48 | 11.49 | 11.50 | 11.51 | 11.52 | 11.53 | 11.54 | 11.55 | 11.56 | 11.57 | 11.58 | 11.59 | 11.60 | 11.61 | 11.62 | 11.63 | 11.64 | 11.65 | 11.66 | 11.67 | 11.68 | 11.69 | 11.70 | 11.71 | 11.72 | 11.73 | 11.74 | 11.75 | 11.76 | 11.77 | 11.78 | 11.79 | 11.80 | 11.81 | 11.82 | 11.83 | 11.84 | 11.85 | 11.86 | 11.87 | 11.88 | 11.89 | 11.90 | 11.91 | 11.92 | 11.93 | 11.94 | 11.95 | 11.96 | 11.97 | 11.98 | 11.99 | 12.00 | 12.01 | 12.02 | 12.03 | 12.04 | 12.05 | 12.06 | 12.07 | 12.08 | 12.09 | 12.10 | 12.11 | 12.12 | 12.13 | 12.14 | 12.15 | 12.16 | 12.17 | 12.18 | 12.19 | 12.20 | 12.21 | 12.22 | 12.23 | 12.24 | 12.25 | 12.26 | 12.27 | 12.28 | 12.29 | 12.30 | 12.31 | 12.32 | 12.33 | 12.34 | 12.35 | 12.36 | 12.37 | 12.38 | 12.39 | 12.40 | 12.41 | 12.42 | 12.43 | 12.44 | 12.45 | 12.46 | 12.47 | 12.48 | 12.49 | 12.50 | 12.51 | 12.52 | 12.53 | 12.54 | 12.55 | 12.56 | 12.57 | 12.58 | 12.59 | 12.60 | 12.61 | 12.62 | 12.63 | 12.64 | 12.65 | 12.66 | 12.67 | 12.68 | 12.69 | 12.70 | 12.71 | 12.72 | 12.73 | 12.74 | 12.75 | 12.76 | 12.77 | 12.78 | 12.79 | 12.80 | 12.81 | 12.82 | 12.83 | 12.84 | 12.85 | 12.86 | 12.87 | 12.88 | 12.89 | 12.90 | 12.91 | 12.92 | 12.93 | 12.94 | 12.95 | 12.96 | 12.97 | 12.98 | 12.99 | 13.00 | 13.01 | 13.02 | 13.03 | 13.04 | 13.05 | 13.06 | 13.07 | 13.08 | 13.09 | 13.10 | 13.11 | 13.12 | 13.13 | 13.14 | 13.15 | 13.16 | 13.17 | 13.18 | 13.19 | 13.20 | 13.21 | 13.22 | 13.23 | 13.24 | 13.25 | 13.26 | 13.27 | 13.28 | 13.29 | 13.30 | 13.31 | 13.32 | 13.33 | 13.34 | 13.35 | 13.36 | 13.37 | 13.38 | 13.39 | 13.40 | 13.41 | 13.42 | 13.43 | 13.44 | 13. |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|





## INDEX.

*N.B.*—References to the Text are by Section in *Arabic* numerals, not by page, unless the page is specially indicated; similarly, references to the Tables are by the *Roman number* of the Table (and occasionally by page, which is then specially indicated). Thus "215" means "Section 215 of the Text" and "II" means "Table II". Arabic numerals placed between brackets (except when a page of the Text is indicated), refer to the numbers of subparagraphs or sub-entries. Thus "112 (16)", "XIII-A (82)", "XIV (57)", "I (15)". The names of (12) signs of the Zodiac, (15) Tithis, (27) Nakshatras, (27) Yogas, (8) Karanas, (60) years in Jupiter's Cycle (Northern and Southern Systems), places whose latitude and longitude are given in Tables XIII and XIII-A, festivals noted under tithis, (21) eras noted under Sec. 112 etc., etc., have all been carefully indexed by references to Section, Table and sub-number.

## A

|                                            |                        |
|--------------------------------------------|------------------------|
| Actual moment of New-Moon ...              | Ch. III, 9-15          |
| Aden ...                                   | XIII-A (1)             |
| Adhika months, investigation of ...        | 151, 267-275           |
| " " limits of ...                          | II                     |
| " " system explained ...                   | 18-34                  |
| Ādi, Tamil solar month ...                 | II, VIII, X, XII, etc. |
| Adoni ...                                  | XIII-A (62)            |
| Africa ...                                 | 86                     |
| Akbar ...                                  | 112 (21)               |
| Ahas ...                                   | 57, 58                 |
| Ahmadabad ...                              | XIII-A (28)            |
| Ahmadnagar ...                             | XIII-A (29)            |
| Aippaṣi, Tamil solar month ...             | II, VIII, X, XII, etc. |
| Ajā Ekādaśī ...                            | 115, p. (49)           |
| Ajmere ...                                 | XIII-A (2)             |
| Akola ...                                  | XIII-A (25)            |
| Akshaya, or Kshaya, in Jupiter's cycle ... | I (60), XIV (83)       |
| Akyab ...                                  | XIII-A (44)            |
| Alleppey ...                               | XIII-A (130)           |
| Alwar ...                                  | XIII-A (136)           |
| Āmalakt Ekādaśī ...                        | 115, p. (49)           |
| Amānta system ..                           | 32                     |
| Amāvāsyā (Bahula Panchadasi, Tithi 15)...  | 32, 115, p. (53)       |

## A—(contd.)

|                                                         |                                 |
|---------------------------------------------------------|---------------------------------|
| Amherst ...                                             | XIII-A (45)                     |
| Amli year ...                                           | 112 (11)                        |
| Amraoti ...                                             | XIII-A (26)                     |
| Amritayoga ...                                          | 54                              |
| Amritsar ...                                            | XIII-A (85)                     |
| Anala, or Nala, in Jupiter's cycle ...                  | I (50), XIV (28)                |
| Ānanda in Jupiter's cycle..                             | I (48), XIV (21)                |
| Ananta Chaturdaśī ...                                   | 115, p. (51)                    |
| Angirasa, in Jupiter's cycle                            | I (6), XIV (39)                 |
| Anhilwad ...                                            | XIII, pp. 171-176, XIII-A (108) |
| Āni, Tamil solar month                                  | II, VIII, X, XII, etc.          |
| Annual correction ...                                   | 263 ; XI                        |
| " equation for planets ...                              | XVII                            |
| " " moon ...                                            | 117 (5)                         |
| Anomalistic month ...                                   | 112, 250                        |
| " year ...                                              | 4, 252                          |
| Anomaly and equation, Moon's ...                        | IX-a to l, XVI-B                |
| " Sun's and Moon's ...                                  | 9, 15, 94, 212, 250-253         |
| Anurādhā (Nakshatra No. 17), III, XI, XVIII, Eye-Table. |                                 |
| Aparā Ekādaśī ...                                       | 115, p. (49)                    |
| Aparāhna ...                                            | 113 (5)                         |
| Arapaksha same as <i>krishna paksha</i> , which see.    |                                 |
| Apogee ...                                              | 198, 199                        |



**A—(contd.)**

|                                                    |                                      |
|----------------------------------------------------|--------------------------------------|
| Apsides, Planets' line of ...                      | XVII                                 |
| Arabi San ...                                      | 112 (15)                             |
| Aries ...                                          | 23, 296                              |
| Ardhodaya ...                                      | 54, 115, p. (53)                     |
| Ārdrā (Nakshatra No. 6)...                         | III ; XI, XVIII,<br>Eye-Table.       |
| <i>Art de vérifier les Dates</i> ...               | 95, 96                               |
| Arunodaya ...                                      | 113 (a)                              |
| Ārya Siddhānta ...                                 | 2 ; II, VI, VII, X                   |
| Āshādha, lunar month ...                           | II                                   |
| Ashtamī ...                                        | II                                   |
| Āśleshā (Nakshatra No. 9).                         | III, XI, XVIII,<br>Eye-Table.        |
| Astronomical commence-<br>ment of the solar month. | 142                                  |
| Astronomical constants ...                         | 1                                    |
| Āśvina, lunar month ...                            | II                                   |
| Āśvinādi year ...                                  | 112 (12)                             |
| Āśvini, (Nakshatra No. 1),                         | III, XI, XVIII,<br>Eye-Table.        |
| Atigandā (Yoga No. 6) ...                          | III, XI, XI-A,<br>Eye-Table.         |
| Āvani, Tamil solar month.                          | II, XII, XIII,<br>XVIII, Eye-Table.  |
| Āvani Avittam ...                                  | 114                                  |
| Aquarius, sign of the<br>Zodiac ...                | 296                                  |
| Ayushmat (Yoga No. 3) ...                          | 51, 52 ; III, XI<br>XI-A, Eye-Table. |

**B**

|                                       |                  |
|---------------------------------------|------------------|
| Badi = krishna paksha ...             | 33               |
| Bahudhānya, in Jupiter's<br>cycle ... | I (12), XIV (45) |
| Bahula paksha ...                     | 32               |
| Balasore ...                          | XIII-A (5)       |
| Bālava (Karana No. 3) ...             | III              |
| Bangalore ...                         | XIII-A (131)     |
| Banija (Karana No. 7) ...             | 14, III          |
| Bankūra ...                           | XIII-A (6)       |

**B—(contd.)**

|                               |                                             |
|-------------------------------|---------------------------------------------|
| Baranagar ...                 | XIII-A (19)                                 |
| Baroda ...                    | XIII, pp. 165-170,<br>XIII-A (107)          |
| Barsi ...                     | XIII-A (40)                                 |
| Batala ...                    | XIII-A (89)                                 |
| Bava (Karana No. 2) ...       | III                                         |
| Bassein ...                   | XIII-A (46)                                 |
| Belgaum ...                   | XIII, pp. 159-164, XIII-A (30)              |
| Bellary ...                   | XIII-A (62)                                 |
| Benares ...                   | XIII, pp. 171-176                           |
| Bengal solar dates ...        | 140-149 ; II,<br>XII, p. 136,<br>Eye-Table. |
| Bengali San ...               | 112 (6)                                     |
| Bettiah ...                   | XIII-A (9)                                  |
| Bhadrā (Karana No. 8) ...     | 56 ; III                                    |
| Bhādrapada, lunar month .     | II, X, XII,<br>Eye-Table.                   |
| Bhagalpur ...                 | XIII-A (7)                                  |
| Bharani (Nakshatra No. 2).    | III, XI, XVIII,<br>Eye-Table.               |
| Bharatpur ...                 | XIII-A (137)                                |
| Bhatpara ...                  | XIII-A (19)                                 |
| Bhāva, in Jupiter's cycle ... | I (8), XIV (41)                             |
| Bhāskara ...                  | 277                                         |
| Bhīshma panchaka vrata .      | 115, p. (49)                                |
| Bhiwani ...                   | XIII-A (92)                                 |
| Bhopal ...                    | XIII-A (115)                                |
| Bhuj ...                      | XIII-A (111)                                |
| Bija ...                      | 12, 230                                     |
| Bikaner ...                   | XIII-A (138)                                |
| Bodinayakanur ...             | XIII-A (71)                                 |
| Bombay ...                    | XIII, pp. 183-188.                          |
| Brahma's system ...           | 45, 46 ; III                                |
| Brahman (Yoga No. 25) ...     | III, XI, XI-A,<br>Eye-Table.                |
| Broach ...                    | XIII-A (33)                                 |
| Burdwan ...                   | XIII-A (8)                                  |
| Burhanpur ...                 | XIII-A (54)                                 |





## C

|                                                               |                                                           |
|---------------------------------------------------------------|-----------------------------------------------------------|
| Calcutta                                                      | ... XIII, pp. 183-188                                     |
| Calendar, European                                            | ... IV, VIII, XIII, XVIII, Eye-Table.                     |
| " Muhammanadan                                                | ... 123-127 ; XV                                          |
| Calicut                                                       | ... XIII-A (72)                                           |
| Cambay                                                        | ... XIII-A (110)                                          |
| Cancer, sign of Zodiac                                        | ... 296                                                   |
| Cannanore                                                     | ... XIII-A (72)                                           |
| <i>Canon der Finsternisse</i> ,<br>Oppolzer's                 | ... 95                                                    |
| Capricornus, sign of Zodiac                                   | ... 296                                                   |
| Central India                                                 | ... 112 (8)                                               |
| Chaitra, lunar month                                          | ... 21, 23, 115 ; II,<br>VIII, X, XI, XII,                |
| Chaitrādi year                                                | ... 107, 110                                              |
| Chaitra śukla pratipada                                       | ... 23                                                    |
| Chalukya Era                                                  | ... 112 (18)                                              |
| Champa shashthi                                               | ... 54                                                    |
| Chāndra māsa, or lunar<br>month                               | ... 18-34                                                 |
| Chapra                                                        | ... XIII-A (23)                                           |
| Chaturdaśī                                                    | ... 115, p. (51) ; II                                     |
| Chaturthī                                                     | ... 115, p. (47) ; II                                     |
| Chatuspada (Karana No. 60).                                   | ... III                                                   |
| Chedi Era                                                     | ... 112 (7)                                               |
| Chhatre, Professor, Author<br>of "Graha-Sādhana<br>Koshtakam" | ... 177, 268-272, 275,<br>276                             |
| Chingleput                                                    | ... XIII-A (63)                                           |
| Chitrabhanu, in Jupiter's<br>cycle                            | ... I (16), XIV (49)                                      |
| Chitrā (Nakshatra No. 14)                                     | ... III, XI, XVIII,<br>Eye-Table.                         |
| Chittagong                                                    | ... XIII-A (57)                                           |
| Chittirai, Tamil solar<br>month                               | ... 19, 23 ; II, VIII,<br>XII, XIII, XVIII,<br>Eye-Table. |
| Christian Era                                                 | ... 97, 232                                               |

## C—(contd.)

|                                                          |                                     |
|----------------------------------------------------------|-------------------------------------|
| Chronology, Hindu                                        | ... 5                               |
| " planets and<br>planetary                               | ... Part IV, 281-298                |
| Civil day                                                | ... 113                             |
| Cochin                                                   | ... XIII-A (128)                    |
| Coimbatore                                               | ... XIII-A (64)                     |
| Conjeeveram                                              | ... XIII-A (63)                     |
| College panchangam,                                      | see<br>"Nautical Almanac".          |
| Commencement of the<br>solar month                       | ... 142                             |
| Constants, Astronomical                                  | ... 1                               |
| " for centuries,<br>Ārya Siddhānta                       | ... VI                              |
| " Śūrya "                                                | ... VI                              |
| Construction of Tables                                   | Part III, 244-280                   |
| Correction, for equation<br>of time                      | ... 63 (2), 77                      |
| " for the sun's<br>tropical longitude                    | ... 63 (3), 77                      |
| " negative                                               | ... 81                              |
| " positive                                               | ... 81                              |
| " for terrestrial<br>longitude                           | ... 63 (1)                          |
| " for sunset                                             | ... 81                              |
| " for local time                                         | ... 13                              |
| " for sunrise                                            | ... 13, 62-76, 255-262              |
| <i>Corpus Inscriptionum<br/>Indicarum</i> , by Dr. Fleet | ... 104                             |
| Correspondence between<br>A.D. and K.Y. years            | ... 6 ; VI                          |
| B.C. " "                                                 | see Addendum<br>p. (4) of contents. |
| Cossipur-Chitpur                                         | ... XIII-A (19)                     |
| Cuddalore                                                | ... XIII-A (76)                     |
| Cunningham                                               | ... 112, 268                        |
| Current years                                            | ... 5, 108                          |
| " Jovian year                                            | ... 101 (foot-note)                 |
| Cuttack                                                  | ... XIII-A (10)                     |



**C—(contd.)**

|                                                                                                                                                                                                             |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Cycle, names of years in                                                                                                                                                                                    |                     |
| Jupiter's ...                                                                                                                                                                                               | I, XIV              |
| " Metonic, a cycle of 19 years, one of the lunar cycles <i>q. v.</i>                                                                                                                                        |                     |
| " of Saros, an ancient cycle of 18 years, being the period after which solar and lunar eclipses are generally found to recur with difference of a month. Such cycles may be noticed on any page of Table X. |                     |
| " Muhammadan, of 30 years.                                                                                                                                                                                  | 184; IX             |
| " principal lunar, of 19 years, 385 years, 648 years, 1315 years, 2329 years.                                                                                                                               | 226                 |
| <b>D</b>                                                                                                                                                                                                    |                     |
| Dakhan Fasli ...                                                                                                                                                                                            | 112 (13)            |
| Dakshinayana Sankranti, the Karnataka Sankranti (90° sun's long.) so called because in A.D. 520 the Sun at this point turned Southwards in his yearly course.                                               |                     |
| Daśami ...                                                                                                                                                                                                  | 115, p. (49); II    |
| Dattatreya or Datta Jayanti                                                                                                                                                                                 | 115, p. (52)        |
| Days of the week ...                                                                                                                                                                                        | 231-243             |
| Decursus of Hindu solar reckoning ...                                                                                                                                                                       | 5                   |
| Degree ...                                                                                                                                                                                                  | 76                  |
| Delhi ...                                                                                                                                                                                                   | XIII, pp. 177-182,  |
| Dhanishṭhā (Nakshatra No. 23) III, XI, XVIII, Eye-Table.                                                                                                                                                    |                     |
| Dhanus, sign of the Zodiac, or rāṣi...                                                                                                                                                                      | 296; II             |
| Dhātri, in Jupiter's cycle...                                                                                                                                                                               | I (10), XIV (43)    |
| Dhoraji ...                                                                                                                                                                                                 | XIII-A (112)        |
| Dhriti (Yoga No. 8) ...                                                                                                                                                                                     | III, XI, Eye-Table. |
| Dhruva (Yoga No. 12) ...                                                                                                                                                                                    | III, XI, Eye-Table. |
| Dhulia ...                                                                                                                                                                                                  | XIII-A (36)         |
| Divasa ...                                                                                                                                                                                                  | 33                  |
| Drig-ganita panchāngam...120-122, 170, 171 (see "Nautical Almanac").                                                                                                                                        |                     |
| Dundubhi, in Jupiter's cycle...                                                                                                                                                                             | I (56), XIV (29)    |
| Duration of an eclipse ...                                                                                                                                                                                  | 84                  |

**D—(contd.)**

|                                     |                         |
|-------------------------------------|-------------------------|
| Durmati, in Jupiter's cycle,        | I (55), XIV (28)        |
| Durmukha " "                        | I (30), XIV (3)         |
| Dvādaśī ...                         | 115, p. (50); II        |
| Dvādaśamśa ...                      | 298                     |
| Dvitiyā ...                         | 115, p. (47); II        |
| <b>E</b>                            |                         |
| Eclipse ...                         | 82-96                   |
| " Tables ...                        | X, XII                  |
| Ecliptic ...                        | 71, 283                 |
| Ekādaśī ...                         | II                      |
| Ellore ...                          | XIII-A (67)             |
| Encyclopædia Britannica.            | 120                     |
| Ephemeris ...                       | 128, 149, 150, 173; XII |
| Epigraphia Indica ...               | 10, 69, 89, 181         |
| Equation, moon's annual...          | 117 (5)                 |
| " sun's, of the centre ...          | 117 (1); IX             |
| " negative ...                      | 118                     |
| " positive ...                      | 118                     |
| Eran ...                            | 261                     |
| Eras ...                            | 112                     |
| European Calendar ...               | IV                      |
| Evection, moon's ...                | 117 (3)                 |
| Expired years ...                   | 5, 107                  |
| Expunction of Tithis ...            | 151                     |
| " of lunar month ...                | 20                      |
| " of years of Jupiter's cycle.      | 101                     |
| Eye-Table ...                       | p. 133                  |
| <b>F</b>                            |                         |
| Fasli year ...                      | 112 (12)                |
| " Madras ...                        | 12 (13)                 |
| Festivals, according to Nakshatras. | 114                     |
| " " Tithis                          | 113, 115, pp. (47)-(53) |
| First point of Aries ...            | 23                      |
| Fixing the moment of New Moon ...   | 7, 8                    |
| Fleet, Dr. ...                      | 177, 182, 272           |
| " Gupta Inscriptions                | 248, 259                |
| Flight, Muhammad's ...              | 123                     |





## G

|                                   |     |                        |
|-----------------------------------|-----|------------------------|
| Gadag                             | ... | XIII-A (34)            |
| Ganda (Yoga No. 10)               | ... | III, XI,<br>Eye-Table. |
| Ganeśa Daivajna, Astro-<br>nomer  | ... | 12                     |
| Ganjam                            | ... | XIII-A (65)            |
| Gara (Karana No. 6)               | ... | III                    |
| Garden Reach                      | ... | XIII-A (19)            |
| Garga's system of Nak-<br>shatras | ... | 45; III                |
| Gata years                        | ... | 5, 107                 |
| Gaya                              | ... | XIII-A (12)            |
| Gemini, sign of the Zodiac.       | ... | 296                    |
| General Ephemeris                 | ... | XII                    |
| Geocentric longitudes             | ... | 286; XVIII             |
| Ghatika                           | ... | 130                    |
| Godhra                            | ... | XIII-A (38)            |
| Gregorian Calendar                | ... | 236                    |
| Gujarat                           | ... | 112                    |
| Gujranwala                        | ... | XIII-A (90)            |
| Gulburga                          | ... | XIII-A (123)           |
| Guntur                            | ... | XIII-A (68)            |
| Gupta Era                         | ... | 112 (8)                |
| „ Inscriptions by Dr.<br>Fleet    | ... | 248                    |
| Gurdaspur                         | ... | XIII-A (89)            |
| Gurgaon                           | ... | XIII-A (91)            |

## H

|                                  |     |                               |
|----------------------------------|-----|-------------------------------|
| Harshana, (Yoga No. 14)...       | ... | III, XI,<br>Eye-Table.        |
| Harsha Kāla Era                  | ... | 112 (16)                      |
| Hasta (Nakshatra No. 13)         | ... | III, XI, XVIII,<br>Eye-Table. |
| Heliacal rising of the moon.     | ... | 127                           |
| „ „ Jupiter                      | ... | 104                           |
| Hemalamba, in Jupiter's<br>cycle | ... | I (31), XIV (4)               |
| Henzada                          | ... | XIII-A (47)                   |
| Hijra                            | ... | 123                           |
| Hoogly                           | ... | XIII-A (13)                   |

## H—(contd.)

|           |     |                                    |
|-----------|-----|------------------------------------|
| Horoscope | ... | 296                                |
| Howrah    | ... | XIII-A (8)                         |
| Hyderabad | ... | XIII, pp. 159-164,<br>XIII-A (102) |

## I

|                                   |     |                                    |
|-----------------------------------|-----|------------------------------------|
| Iaora                             | ... | XIII-A (19)                        |
| Imphal                            | ... | XIII-A (58)                        |
| Inauspicious Yogas                | ... | 54                                 |
| „ Nakshatra periods<br>or Tyajyam | ... | 59, 60                             |
| “Indian Antiquary”                | ... | 71, 98, 105, 177,<br>182           |
| Intercalation of months           | ... | 21                                 |
| Indore                            | ... | XIII, pp. 171-176,<br>XIII-A (118) |
| Indra (Yoga No. 26)               | ... | III, XI, Eye-Table.                |
| Īśvara, in Jupiter's cycle        | ... | I (11), XIV (44)                   |

## J

|                                                          |     |                              |
|----------------------------------------------------------|-----|------------------------------|
| Jacobi, Professor                                        | ... | 10, 71-76, 250,<br>259, etc. |
| Jaipur                                                   | ... | XIII-A (139)                 |
| Jammu                                                    | ... | XIII-A (126)                 |
| Jantris                                                  | ... | 149                          |
| Jaya, in Jupiter's cycle                                 | ... | I (28), XIV (1)              |
| Jayanti                                                  | ... | 115                          |
| Jehlum                                                   | ... | XIII, pp. 183-188            |
| Jervis                                                   | ... | p. (87), (intro. note.)      |
| Jhang-Maghiana                                           | ... | XIII-A (93)                  |
| Jovian cycle, years, and<br>months                       | ... | Chap. XIII, 97-106           |
| Jubbulpore                                               | ... | XIII-A (52)                  |
| Jullunder                                                | ... | XIII-A (95)                  |
| Jamād-al-akhir or Jamād-<br>us-sani, Muhammadan<br>month | ... | 126                          |
| Jamād-al-awwal, Muham-<br>madan month                    | ... | 126                          |
| Junagarh                                                 | ... | XIII-A (112)                 |





## J—(contd.)

|                              |     |                            |
|------------------------------|-----|----------------------------|
| Jupiter                      | ... | 288 ; V, XIV, XVII, XVIII  |
| Jyeshtha, lunar month        | ... | II, VIII, X, etc.          |
| Jyeshtha (Nakshatra No. 18). | ... | III, XI, XVIII, Eye-Table. |

## K

|                               |     |                             |
|-------------------------------|-----|-----------------------------|
| Kabul                         | ... | XIII, pp. 183-188           |
| Kalachuri Era                 | ... | 112 (7)                     |
| Kāla Sankalita, Warren's.     | ... | 279                         |
| Kālayukta, in Jupiter's cycle | ... | I (52), XIV (25)            |
| Kaliyuga                      | ... | 112 (1)                     |
| Kāmada, or Kāmika             | ... |                             |
| Ekādasi                       | ... | 115, p. (49)                |
| Kamptee                       | ... | XIII-A (53)                 |
| Kanauj                        | ... | 112 (16)                    |
| Kanjanur panchāgam            | ... | 168                         |
| Kanyā, Rāśi                   | ... | Eye-Table.                  |
| Kapilā Shashthi               | ... | 54, 115, p. (48)            |
| Karāchi                       | ... | XIII-A (103)                |
| Karnal                        | ... | XIII-A (94)                 |
| Karana                        | ... | 55-56 ; III                 |
| Kārttigai, Tamil solar month, | ... | Eye-Table.                  |
| Kārttika lunar month          | ... | II, VIII, X                 |
| Kārttikādi system of citation | ... | 108, 111                    |
| Kashmir                       | ... | XIII-A (127)                |
| Kasur                         | ... | XIII-A (96)                 |
| Kataka, Rāśi                  | ... | Eye-Table.                  |
| Kathiawar                     | ... | XIII-A (112)                |
| Kaulava (Karana No. 4)        | ... | III                         |
| Khara, in Jupiter's cycle     | ... | I (25), XIV (58)            |
| Kielhorn, Dr. F.              | ... | 105, 112 (19), 115, p. (46) |
| Kilaka, in Jupiter's cycle..  | ... | I (42), XIV (15)            |
| Kimstughna, (Karana No. 1)    | ... | III                         |
| Kojāgari pūrṇimā              | ... | 115, p. (52)                |
| Kolar                         | ... | XIII-A (132)                |
| Kolhapur                      | ... | XIII-A (13)                 |
| Kollam                        | ... | 105, 112 (5), 139           |
| Kotah                         | ... | XIII-A (18)                 |
| Krishnagar                    | ... | XIII-A (18)                 |

## K—(contd.)

|                              |     |                            |
|------------------------------|-----|----------------------------|
| Krishna paksha               | ... | 32                         |
| Krittikā, (Nakshatra No. 3). | ... | III, XI, XVIII, Eye-Table. |
| Krodhana, in Jupiter's cycle | ... | I (59), XIV (32)           |
| Krodhi, in Jupiter's cycle.. | ... | I (38), XIV (11)           |
| Kshaya months                | ... | 20, 29 ; Chap. XXIX        |
| " tithi                      | ... | 151                        |
| " years                      | ... | 101 ; XIV                  |
| " in Jupiter's cycle..       | ... | I (60), XIV (33)           |
| Kumbakonam                   | ... | I XIII-A (78)              |
| Kumbha, Rāśi                 | ... | Eye-Table.                 |
| Kūma jayanti                 | ... | 115, p. (52)               |
| Kurnool                      | ... | XIII-A, (69)               |

## L

|                                                    |     |                                |
|----------------------------------------------------|-----|--------------------------------|
| Lagna                                              | ... | 71-76                          |
| Lahore                                             | ... | XIII, pp. 177-182, XIII-A (96) |
| Lakshmana Sena Era                                 | ... | 112 (19)                       |
| Lalitā panchami                                    | ... | 115, p (47)                    |
| Lankā                                              | ... | 130                            |
| Largeateau                                         | ... | 246, 247                       |
| Lashkar                                            | ... | XIII-A (117)                   |
| Latitude, considered in Sunrise tables             | ... | 68                             |
| " of planets,                                      | ... | 289, 291, 293                  |
| Leap year, English                                 | ... | 214                            |
| " Indian                                           | ... | 295 (9)                        |
| " Muhammadan,                                      | ... | 123, 125; XV, Explan. para. 4  |
| Leo, sign of Zodiac                                | ... | 296                            |
| Longitude, variation in time caused by terrestrial | ... | 62                             |
| " of planet                                        | ... | 283; XVII, XVIII, Eye-Table.   |
| Ludhiana                                           | ... | XIII A (97)                    |
| Lunar acceleration                                 | ... | 159                            |
| Lunar cycles                                       | ... | Chap. XXV, 226-228             |
| " eclipses                                         | ... | 89                             |
| " months                                           | ... | 18-34                          |
| " Tithis                                           | ... | 150-173                        |





## L—(contd.)

|                            |                                       |                                           |
|----------------------------|---------------------------------------|-------------------------------------------|
| Lunation                   | ...                                   | 3                                         |
| "Luni-solar" justification |                                       |                                           |
| of name                    | ...                                   | 151                                       |
| Luni-solar year            | ...                                   | 151                                       |
| <b>M</b>                   |                                       |                                           |
| Madhyāhna                  | ...                                   | 113 (3)                                   |
| Madras                     | ... XIII, pp. 159-164,<br>XIII-A (70) |                                           |
| " Fasli                    | ...                                   | 112 (14)                                  |
| " standard time            | ...                                   | 160                                       |
| Madura                     | XIII, pp. 153-158,<br>XIII-A (71)     |                                           |
| Maghā (Nakshatra No. 10)   | III, XI, XVIII,<br>Eye-Table.         |                                           |
| Magha, name of lunar       |                                       |                                           |
| month                      | ...                                   | II, X, etc.                               |
| Makara, Rāśi               | ...                                   | Eye-Table.                                |
| Māhṛatta Śār San Era       | ...                                   | 112 (15)                                  |
| Māhṛatta Rāja Śaka Era.    | ...                                   | 112 (20)                                  |
| Maisur                     | ... XIII, pp. 153-158                 |                                           |
| Malar Kotla                | ...                                   | XIII-A (134)                              |
| Malayālam Dates            | ...                                   | 138                                       |
| " Era                      | ...                                   | 112 (5)                                   |
| Mālava Era                 | ...                                   | 112 (3)                                   |
| Mandasar                   | ...                                   | XIII-A (120)                              |
| Mangalore                  | ...                                   | XIII-A (77)                               |
| Maniktala                  | ...                                   | XIII-A (19)                               |
| Manmatha, in Jupiter's     |                                       |                                           |
| cycle                      | ...                                   | I (29), XIV (2)                           |
| Mannargudi                 | ...                                   | XIII-A (78)                               |
| Maranayoga                 | ...                                   | 54                                        |
| Mārgali, Tamil solar       |                                       |                                           |
| month                      | ...                                   | II, VIII, XII, XIII,<br>XVIII, Eye-Table. |
| Margaśtra, Lunar month...  | ...                                   | II, VIII, X                               |
| Mars, superior planet      | ...                                   | 288                                       |
| Mean motion of planets     | ...                                   | XVII                                      |
| Masulipatam                | ...                                   | XIII-A (67)                               |
| Māśi, Tamil solar month... | ...                                   | II, VIII, XII, XIII,<br>XVIII, Eye-Table  |
| Mathura                    | ...                                   | XIII, pp. 177-182                         |

## M—(contd.)

|                                     |                                              |                               |
|-------------------------------------|----------------------------------------------|-------------------------------|
| Mattancheri                         | ...                                          | XIII-A (128)                  |
| Mayavaram                           | ...                                          | XIII-A (78)                   |
| Mean anomaly                        | ...                                          | see 'Moon'.                   |
| Mercury, superior planet.           |                                              | 288                           |
| Meridian                            | ...                                          | 68                            |
| Mesha Sankrānti                     | ...                                          | 23                            |
| Midnapore                           | ...                                          | XIII-A (14)                   |
| Mīna, Rāśi                          | ...                                          | Eye-Table.                    |
| Mithila                             | ...                                          | 112 (19)                      |
| Mithuna, Rāśi                       | ...                                          | Eye-Table.                    |
| Mōla (Nakshatra No. 19)             | ...                                          | III, XI, XVIII,<br>Eye-Table. |
| Multan                              | ...                                          | XIII-A (98)                   |
| Murshidabad                         | ...                                          | XIII-A (16)                   |
| Muzaffarpur                         | ...                                          | XIII-A (17)                   |
| Monghyr                             | ...                                          | XIII-A (15)                   |
| Month, commencement                 |                                              |                               |
| of solar                            | ...                                          | 142                           |
| " lunar in relation to solar months |                                              | Chap. V, 18-34                |
| " length of sy-                     |                                              |                               |
| nodical                             | ...                                          | 3                             |
| " sidereal                          | ...                                          | 263                           |
| " anomalistic                       | ...                                          | 12                            |
| Moon, acceleration                  | ...                                          | 159                           |
| " anomalies                         | ...                                          | IX                            |
| " eclipses                          | ...                                          | 82-96                         |
| " longitude                         | ...                                          | 292                           |
| " mean anomaly                      | ...11, 118, Chap. XIII,<br>194-212, 250, 251 |                               |
| " synodical month                   | ...                                          | 2                             |
| Moulmien                            | ...                                          | XIII-A (45)                   |
| Mrigaśira (Nak-                     | ...                                          | 112 (13), III, XI,            |
| shatra No. 5).                      | ...                                          | XVIII, Eye-Table.             |
| Muhammadan Calendar                 | ...                                          | Chap. XVIII; XV               |
| " Months                            | ...                                          | 126                           |
| " Era                               | ...                                          | 123                           |





| N                                                    | P                                                                                              |
|------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Nādi ... 180                                         | Paksha ... 32                                                                                  |
| Nadiad ... XIII-A (35)                               | Pala ... 130                                                                                   |
| Naga (Karana No. 59) ... III                         | Palamcottah ... XIII-A (79)                                                                    |
| Nāgapanchamī ... 115, p. (47)                        | Panchamī ... 115, p. (47); II                                                                  |
| Nagerkoil ... XIII-A (130)                           | Panchāgam, Kanjanur ... 168                                                                    |
| Nagpur ... XIII, pp. 165—170                         | „ Nungambaukam ... 168                                                                         |
| Nakshatras ... 35, 46; III, XI,<br>XVIII, Eye-Table. | „ Mr. Srauti's<br>Tiruvādi... 80                                                               |
| Nandana, in Jupiter's cycle I (26), XIV (59)         | Pandharpur ... XIII-A (40)                                                                     |
| Narayanganj ... XIII-A (58)                          | Panguni, Tamil solar II, VIII, XII, XIII,<br>month ... XVIII, Eye-Table.                       |
| Nasik ... XIII, pp. 165—170                          | Panipat ... XIII-A (94)                                                                        |
| Nautical Almanac ... 9, 116, 121                     | Parābhava, in Jupiter's<br>cycle ... I (40), XIV (13)                                          |
| Navagrahas ... 281                                   | Pāpanāśinī ... 115, p. (50)                                                                    |
| Navamī ... II                                        | Paridh vi, in Jupiter's<br>cycle ... I (46), XIV (19)                                          |
| Navāmśas ... 296                                     | Parigha (Yoga No. 19) ... III, XI, Eye-Table.                                                  |
| Nellore ... XIII, pp. 159—164                        | Patan ... XIII-A (103)                                                                         |
| Nepal (Nevār Era) ... 112 (17)                       | Pārthiva, in Jupiter's<br>cycle ... I (19), XIV (52)                                           |
| New year day                                         | Patiala ... XIII, pp. 177—182                                                                  |
| „ Bengal Fasli ... 112 (12)                          | Patna ... XIII, pp. 171—176                                                                    |
| „ Dakhan Fasli ... 112 (13)                          | Pausha, lunar month ... II, VIII, X,<br>Eye-Table.                                             |
| „ Kollam Era ... 112 (5)                             | Peshawar ... XIII-A (84)                                                                       |
| „ Lunar New year. 115, p (46)                        | Phālguna, lunar month ... II, VIII, X,<br>Eye-Table.                                           |
| „ Mahrāṭṭa Raja<br>Śaka Era ... 112 (20)             | Phalgunī, Pārva and<br>Uttara (Nakshatras Nos.<br>11 and 12) ... III, XI, XVIII,<br>Eye-Table. |
| „ Mahrāṭṭa Sur<br>San ... 112 (15)                   | Pingala, in Jupiter's<br>cycle ... I (51), XIV (24)                                            |
| „ Śaka Era ... 112 (4)                               | Pisces, sign of Zodiac ... 296                                                                 |
| „ Vikrama Era ... 112 (3)                            | Planets 284—295; XVII, XVIII                                                                   |
| Nija ... 19                                          | Planetary Tables, Chap. XXX, 276—280;<br>XVII, XVIII                                           |
| Nīṣṭa ... 113 (c)                                    | Plava, in Jupiter's cycle .. I (35), XIV (?)                                                   |
| Node, moon's (Rāhu and<br>Ketu) ... 281              | Plavanga, in Jupiter's<br>cycle ... I (41), XIV (4)                                            |
| „ Planets ... 289; XVII                              |                                                                                                |
| O                                                    |                                                                                                |
| Oppolzer's <i>Canon der<br/>Finsternisse</i> ... 95  |                                                                                                |
| Orissa ... 112 (11), 144 (1)                         |                                                                                                |
| Oudh ... XIII, pp. 171—176                           |                                                                                                |





## P—(contd.)

|                                                     |                            |
|-----------------------------------------------------|----------------------------|
| Poona                                               | ... XIII, pp.165—170       |
| Pope Gregory XIII                                   | ... 236                    |
| Porabander                                          | ... XIII-A (112)           |
| Prabhava, in Jupiter's cycle                        | I (1), XIV (34)            |
| Pradosha                                            | ... 113 (b)                |
| Prajapati, in Jupiter's cycle                       | I (5), XIV (38)            |
| Pramādicha, in Jupiter's cycle (Southern system)... | I (47)                     |
| Pramadin, in Jupiter's cycle (Northern system)...   | XIV (20)                   |
| Pramathi, in Jupiter's cycle ...                    | I (13), XIV (46)           |
| Pramoda, in Jupiter's cycle (Northern system)...    | XIV (37)                   |
| Pramoduta, in Jupiter's cycle (Southern system)...  | I (4)                      |
| Prātaḥkāla                                          | ... 113 (1)                |
| Prathamā                                            | ... II                     |
| Pratipadā                                           | ... 115, p. (46) ; II      |
| Precession of the equinoxes ...                     | 64                         |
| Prīti (Yoga No. 2)                                  | ...III, XI, Eye-Table.     |
| Pudukottai                                          | ... XIII-A (129)           |
| Punarvasu (Nakshatra No. 7).                        | III, XI, XVIII, Eye-Table. |
| Purattāṣi, Tamil solar month ...                    | II                         |
| Pūrnimānta system                                   | ... 32, Chap. XIV, 107-111 |
| Pūrva Ashādhā (Nakshatra No. 20) ...                | III, XI, XVIII, Eye-Table. |
| Pūrva Bhādrapadā (Nakshatra No. 25) ...             | III, XI, XVIII, Eye-Table. |
| Pūrva Phalgunī (Nakshatra No. 11).                  | III, XI, XVIII, Eye-Table. |
| Pushya (Nakshatra No. 8).                           | III, XI, XVIII, Eye-Table. |

## Q

Qutub

... (see Kollam)

## R

|                                                                                                                                                                                                                                                                                                                                           |                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Rāhu, moon's ascending node ...                                                                                                                                                                                                                                                                                                           | 289 ; XVII-B               |
| Raichur                                                                                                                                                                                                                                                                                                                                   | ... XIII-A (125)           |
| Raipur                                                                                                                                                                                                                                                                                                                                    | ... XIII-A (55)            |
| Rājahmundry                                                                                                                                                                                                                                                                                                                               | ... XIII-A (66)            |
| Rājapālayam                                                                                                                                                                                                                                                                                                                               | ... XIII-A (79)            |
| Rāja Śaka Era                                                                                                                                                                                                                                                                                                                             | ... 112 (20)               |
| Rājkot                                                                                                                                                                                                                                                                                                                                    | ... XIII-A (112)           |
| Rājshāhi                                                                                                                                                                                                                                                                                                                                  | ... XIII-A (61)            |
| Rākshasa, in Jupiter's cycle                                                                                                                                                                                                                                                                                                              | I (49), XIV (22)           |
| Raktāksha, in Jupiter's cycle ...                                                                                                                                                                                                                                                                                                         | I (58), XIV (31)           |
| Rāma navamī                                                                                                                                                                                                                                                                                                                               | ... 115, p. (49)           |
| Rāmadāsa navamī                                                                                                                                                                                                                                                                                                                           | ... 115, p. (49)           |
| Rameswaram                                                                                                                                                                                                                                                                                                                                | ... XIII, pp. 153, 158     |
| Rampur                                                                                                                                                                                                                                                                                                                                    | ... XIII-A (141)           |
| Rampur Bolia                                                                                                                                                                                                                                                                                                                              | ... XIII-A (65)            |
| Ranchi                                                                                                                                                                                                                                                                                                                                    | ... XIII-A (22)            |
| Ranga panchamī                                                                                                                                                                                                                                                                                                                            | ... 115, p. (47)           |
| Rangoon                                                                                                                                                                                                                                                                                                                                   | ... XIII-A (50)            |
| Rāsi                                                                                                                                                                                                                                                                                                                                      | ... 296                    |
| Raudra, in Jupiter's cycle.                                                                                                                                                                                                                                                                                                               | I (54), XIV (27)           |
| Rawalpindi                                                                                                                                                                                                                                                                                                                                | ... XIII-A (99)            |
| Revatī (Nakshatra No. 27)                                                                                                                                                                                                                                                                                                                 | III, XI, XVIII, Eye-Table. |
| Rewa                                                                                                                                                                                                                                                                                                                                      | ... XIII-A (114)           |
| Rewari                                                                                                                                                                                                                                                                                                                                    | ... XIII-A (91)            |
| Ritu, one of six Seasons, each consisting of two months, into which the year was formerly divided. They are at present <i>Vasanta</i> (Mēsha and Vriṣabha), <i>Grishma</i> (Mithuna and Kataka), <i>Varsha</i> (Simha and Kanya), <i>Sarat</i> (Tula and Vriṣchika), <i>Hemanta</i> (Dhanus and Makara), <i>Sisira</i> (Kumbha and Mīna.) |                            |
| Rohini (Nakshatra No. 4)...                                                                                                                                                                                                                                                                                                               | III, XI, XVIII, Eye-Table. |
| Rohtak                                                                                                                                                                                                                                                                                                                                    | ... XIII-A (100)           |
| Rudhīrodgāri, in Jupiter's cycle ...                                                                                                                                                                                                                                                                                                      | I (57), XIV (30)           |

## S

|                                   |                  |
|-----------------------------------|------------------|
| Sadhārana, in Jupiter's cycle ... | I (44), XIV (17) |
|-----------------------------------|------------------|



**S—(contd.)**

|                                               |                                  |
|-----------------------------------------------|----------------------------------|
| Sādhyā (Yoga No. 22) ...                      | III, XI, Eye-Table               |
| Sagittarius, sign of Zodiac.                  | 296                              |
| Śaka Era ...                                  | 112 (4)                          |
| Śakuni (Karana No. 58) ...                    | III                              |
| Salem ...                                     | XIII-A (75)                      |
| Samjava ...                                   | 113 (2)                          |
| Samvatsara, Jupiter's ...                     | 230                              |
| Sankrānti ...                                 | 16, 23                           |
| "    Mesha ...                                | 23                               |
| Saptami ...                                   | II                               |
| Saptarshi, Era ...                            | 112 (3)                          |
| Sarvadhāri, in Jupiter's<br>cycle ...         | I (22), XIV (55)                 |
| Śarvajit, in Jupiter's<br>cycle ...           | I (21), XIV (54)                 |
| Śārvari, in Jupiter's<br>cycle ...            | I (34), XIV (7)                  |
| Sasaram ...                                   | XIII-A (24)                      |
| Satara ...                                    | XIII, pp. 165-170<br>XIII-A (41) |
| Śatabhisaj (Nakshatra<br>No. 24) ...          | III, XI, XVIII,<br>Eye-Table.    |
| Saturn, superior planet ...                   | 288                              |
| "    mean motions ...                         | XVII                             |
| Saubhāgya (Yoga No. 4) ...                    | III, XI,<br>Eye-Table.           |
| Saugor ...                                    | XIII-A (56)                      |
| Saumya, in Jupiter's cycle.                   | I (43), XIV (16)                 |
| Sāyāhna ...                                   | 113 (5)                          |
| Schram, Dr. ...                               | 105                              |
| Scorpio, sign of Zodiac ...                   | 296                              |
| Sewell and Dikshit's<br>"Indian Calendar" ... | 144, 268                         |
| Shahabad ...                                  | XIII-A (105)                     |
| Shasthī ...                                   | II                               |
| Shashthiamśa ...                              | 298                              |
| Shikarpur ...                                 | XIII-A (104)                     |
| Sialkot ...                                   | XIII-A (101)                     |
| Siddha (Yoga No. 21) ...                      | III, XI,<br>Eye-Table.           |
| Siddhanta ...                                 | Foot-note, p. (1)                |

**S—(contd.)**

|                                       |                               |
|---------------------------------------|-------------------------------|
| Siddhārthi, in Jupiter's<br>cycle ... | I (53), XIV (26)              |
| Siddhi (Yoga No. 16) ...              | III                           |
| Sidereal period of lunar<br>month ... | 263                           |
| "    year ...                         | 4                             |
| Sikar ...                             | XIII-A (139)                  |
| Simha, Rāśi ...                       | Eye-Table.                    |
| Simla ...                             | XIII, pp. 177-182             |
| Sitapur ...                           | XIII-A (106)                  |
| Śiva (Yoga No. 20) ...                | III, XI, Eye-Table.           |
| Śivāji, Rāja ...                      | 112 (20)                      |
| Śivarātri ...                         | 115, p. (51)                  |
| Sobhakrit ...                         | see "Sobhana".                |
| Śobhana (Yoga No. 5) ...              | III, XI, Eye-Table.           |
| "    in Jupiter's cycle.              | I (37), XIV (10)              |
| Śodhya ...                            | 6, 66                         |
| Solar days ...                        | 151                           |
| "    months ...                       | 16-17, 24; II                 |
| "    years ...                        | 4; VI, X, etc.                |
| Śrāvāna, lunar month ...              | II VIII, X, etc.              |
| Śrāvāna (Nakshatra No. 22)            | III, XI, XVIII,<br>Eye-Table. |
| Śravishthā (Nakshatra<br>No. 23) ...  | 111, XI, XVIII,<br>Eye-Table. |
| Śrīmukha, in Jupiter's<br>cycle ...   | I (7), XIV (40)               |
| Śrīnagar ...                          | XIII, pp. 183-188             |
| Srivilliputtur ...                    | XIII-A (79)                   |
| Śubhakrit, in Jupiter's<br>cycle ...  | I (36), XIV (9)               |
| Śubha (Yoga No. 23) ...               | III, XI,<br>Eye-Table.        |
| Śubhānu, in Jupiter's<br>cycle ...    | I (17), XIV (50)              |
| Sukarman (Yoga No. 7) ...             | III, XI,<br>Eye-Table.        |
| Sukkur ...                            | XIII-A (104)                  |
| Śukla, in Jupiter's cycle ...         | I (3), XIV (36)               |
| "    (Yoga No. 24) ...                | III, XI,<br>Eye-Table.        |



**S—(contd.)**

|                             |                               |
|-----------------------------|-------------------------------|
| Suklapaksha ...             | (see <i>paksha</i> ).         |
| Sūla (Yoga No. 9) ...       | III, XI,<br>Eye-Table.        |
| Sur-San, Era ...            | 112 (15)                      |
| Surat ...                   | XIII-A (42)                   |
| Svāti (Nakshatra No. 15)... | III, XI, XVIII,<br>Eye-Table. |
| Synodical month ...         | 3                             |

**T**

|                                                 |                                   |
|-------------------------------------------------|-----------------------------------|
| Tables, construction of ...                     | Part III, Chap.<br>XXVII-XXX      |
| „ use of the ...                                | Part II, Chap.<br>XIX-XXVI        |
| Tai, Tamil solar month ...                      | II                                |
| Taitila (Karana No. 5) ...                      | III                               |
| Tamil countries, solar<br>reckoning used in ... | 132                               |
| Tamil solar dates ...                           | 134                               |
| Tanjore ...                                     | XIII, pp. 153-158<br>XIII-A (78)  |
| Tārana, in Jupiter's cycle...                   | I (18), XIV (51)                  |
| Taurus, sign of Zodiac ...                      | 296                               |
| Tavoy ...                                       | XIII-A (51)                       |
| Tellicherry ...                                 | XIII-A (72)                       |
| Tingal (Tamil for Monday).                      | 231                               |
| Tinnevely ...                                   | XIII-A (79)                       |
| Tirhut ...                                      | XIII-A (112)                      |
| Tiruchendur ...                                 | XIII-A (79)                       |
| Travancore ...                                  | (112)                             |
| Trayōdastī ...                                  | II                                |
| Trivandrum ...                                  | XIII, pp. 153-158<br>XIII-A (130) |
| Trichinopoly ...                                | XIII-A (80)                       |
| Trimśamsā ...                                   | 298                               |
| Tritiyā ...                                     | II                                |
| Tropical year ...                               | 4                                 |
| Tulā, Rāśi ...                                  | Eye-Table.                        |
| Tutic ...                                       | XIII-A (79)                       |

**U**

|                                                                                                                                                                                                                                                                                   |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Udaipur ...                                                                                                                                                                                                                                                                       | XIII-A (143) |
| Ujjain ...                                                                                                                                                                                                                                                                        | XIII-A (117) |
| Unequal space system for<br>Nakshatras ...                                                                                                                                                                                                                                        | 45 ; III     |
| Uttarayana Sankranti, name for the<br>Makara Sankranti, when the<br>Sun's sidereal long. is 270°. The<br>name is properly applicable only<br>to the Sun's tropical long. of 270°,<br>when he begins his journey north-<br>wards, but in practice the name<br>is applied as above. |              |

**V**

|                                            |                               |
|--------------------------------------------|-------------------------------|
| Vadi or <i>badi</i> =Krishna-<br>paksha... | 33                            |
| Vākya panchāṅgam ...                       | 168                           |
| Valabhi Era ...                            | 112 (9)                       |
| Vajra (Yoga No. 15) ..                     | III, XI, Eye-Table.           |
| Vāra or week-day ...                       | Chap. XXVI,<br>231-243        |
| Vaidhriti (Yoga No. 27) ...                | III, XI, Eye Table.           |
| Vaikasi, Tamil solar month.                | II                            |
| Vaiśākha, Lunar month ...                  | II                            |
| Vartiyas (Yoga No. 18) ...                 | III, XI, Eye-Table.           |
| Varttamāna system of<br>citation ...       | Chap. XIV ; III               |
| Vavilāla Kuchchinna ..                     | 279                           |
| Venus, planet ...                          | 288, 294 (a) ;<br>XVII, XVIII |
| Vibhava, in Jupiter's<br>cycle ...         | I (2), XIV (35)               |
| Vijay, in Jupiter's cycle ...              | I (27), XIV (60)              |
| Vikram, in Jupiter's cycle...              | I (33), XIV (6)               |
| Vikrama, in Jupiter's cycle...             | I (33), XIV (47)              |
| Vikrama Era ...                            | 112 (3)                       |
| Vikrita, in Jupiter's cycle.               | I (24), XIV (57)              |
| Vilamba „ „ „ ...                          | I (32), XIV (5)               |
| Vilāyati year ...                          | 112 (10)                      |
| Virgo, sign of Zodiac ...                  | 296                           |
| Virodhi, in Jupiter's cycle.               | I (23), XIV (56)              |



**V—(contd.)**

|                                     |                            |
|-------------------------------------|----------------------------|
| Virodhakrit, in Jupiter's cycle ... | I (45), XIV (18)           |
| Viśakhā (Nakshatra No. 16).         | III, XI, XVIII, Eye-Table. |
| Viśhkambha (Yoga No. 1).            | III, XI, Eye-Table.        |
| Vishti (Karana No. 8) ...           | III                        |
| Visvāvasu, in Jupiter's cycle ...   | I (39), XIV (72)           |
| Vizagapatam ...                     | XIII-A (81)                |
| Vizianagaram ...                    | XIII, pp. 159—164          |
| Vridhhi (Yoga No. 11) ...           | III, XI, Eye-Table.        |
| Vriśchika, Rāsi ...                 | Eye Table.                 |
| Vriśha, in Jupiter's cycle...       | I (15), XIV (48)           |
| Vriśhabha, sign of Zodiac.          | 296, 298                   |
| Vyāghāta (Yoga No. 13) ...          | III, XI, Eye-Table.        |
| Vyātpāta (Yoga No. 17)...           | III, XI, Eye-Table.        |
| Vyaya, in Jupiter's cycle...        | I (20), XIV (53)           |

**W**

|                    |              |
|--------------------|--------------|
| Wadhwan ...        | XIII-A (112) |
| Warren ...         | 279          |
| Week-day names ... | 231          |

**Y**

|                              |                            |
|------------------------------|----------------------------|
| Year, Jupiter's cycle ...    | Chap. XIII, XXV ; I, XIV   |
| „ Anomalistic ...            | 4, 252, 253                |
| „ Āśvinādi ...               | 112 (12)                   |
| „ Chaitrādi ...              | 107                        |
| „ Current ...                | 108                        |
| „ Expired ...                | 107                        |
| „ Lunar ...                  | 107                        |
| „ Meshādi ...                | 107                        |
| „ Sidereal ...               | 4, (foot-note)             |
| „ solar ...                  | 4                          |
| „ tropical ...               | 4                          |
| Yogas ...                    | 47-54 ; III, XI Eye-Table. |
| Yuga, Kali ...               | 112 (1)                    |
| Yuva, in Jupiter's cycle ... | I (9), XIV (52)            |

**Z**

|                      |     |
|----------------------|-----|
| Zodiac, signs of ... | II  |
| „ diagram ...        | 296 |

HOS

*[Handwritten signature]*

*[Handwritten signature]*

AS-001710

CSL-AS-54 (R)  
AS001710

529.3 PIL-I