

ASTRONOMICAL EPHEMERIS
of
Geocentric Places of Planets
for
1954

(Indian Standard Time observed throughout)

Published by
Shree Jiwaji Observatory, Ujjain
with the sanction of Education Department,
Madhya Bharat.

Price Rupee One and Annas Four Only

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PREFACE

The heliocentric places of Jupiter, Saturn, Uranus and Neptune were obtained from Newcomb and Hill's Tables and these were later converted into geocentric longitudes and latitudes. The geocentric places of Mercury, Venus and Mars were computed *directly* from their respective elements and this is why the heliocentric co-ordinates have been omitted from the following pages.

Owing to the uncertainty in the elements of Pluto the positions of this planet cannot be taken as strictly correct. It is estimated that the maximum error in its longitude will hardly exceed ten minutes of arc. This error will be rectified in the Ephemeris for 1955.

As a precaution against accidental errors the final results were differenced and all the doubtful cases were carefully scrutinised.

Thanks are due to Shree G.C. Natarajan, the Superintendent of the Government Central Press, Gwalior, for the personal interest taken by him while this Ephemeris was in Press. Thanks are also due to my Assistants Pt. Purshottam Joshi, Tej Kiran, Karkhanis, D. B. Joshi, Chavreker, Sharma and Saxena.

UJJAIN,
November, 1953.

D. K. BELEKAR,
Superintendent,
S. J. Observatory.

Mean Places of Principal Stars on 1st January, 1954

Names.	Stars	Mag	R. A.	Decl	Long.	Lat.
			H. M.	°	°	°
♈ Andromeda	U. Bhadra.	2.1	0 6 + 28 50	13 38 + 25 41		
♈ Pegasi ..	U. Bhadra.	2.8	0 11 + 14 55	8 30 + 12 31		
♈ Piscium ..	Revati.	5.6	1 11 + 7 20	19 10 - 0 9		
♈ Eridani ..	Achernar.	0.6	1 36 - 57 30	344 36 - 59 28		
♈ Polaris ..	Dhruva.	2.1	1 50 + 89 2	89 53 + 66 6		
♈ Arietes ..	Ashvini.	2.7	1 52 + 20 35	33 18 + 8 29		
♈ Arietes ..	Ashvini.	2.2	2 5 + 23 14	37 0 + 9 58		
♈ Arietes ..	Bharani.	3.7	2 47 + 27 4	49 27 + 10 27		
♈ Persei ..	Algol.	Var	3 5 + 40 47	55 30 + 22 25		
♈ Tauri ..	Krittika.	3.0	3 45 + 23 58	59 20 + 4 3		
♈ Tauri ..	Rohini.	1.1	4 33 + 16 25	69 8 - 5 28		
♈ Orionis ..	Rigel.	0.3	5 12 - 8 16	76 10 - 31 8		
♈ Aurigee ..	Capella.	0.2	5 13 + 45 57	81 12 + 22 52		
♈ Orionis ..	Bellatrix.	1.7	5 23 + 6 19	80 17 - 16 49		
♈ Orionis ..	Mrigashirsh	4.5	5 32 + 9 28	82 56 - 13 49		
♈ Orionis ..	Mrig Bana.	1.7	5 34 - 1 14	82 49 - 24 31		
♈ Orionis ..	Ardra.	0.9	5 53 + 7 24	88 5 - 16 2		
♈ Carinae ..	Agastya.	0.9	6 23 - 52 40	104 19 - 75 46		
♈ Canis Majori	Vyadha.	1.6	6 43 - 16 39	103 25 - 39 36		
♈ Geminorum	Castor.	2.0	7 32 + 31 59	109 36 + 10 2		
♈ Canis Minor	Prashva.	0.5	7 37 + 5 21	115 8 - 16 54		
♈ Geminorum	Punarvasu	1.2	7 42 + 28 8	112 34 + 6 51		
♈ Cancrī ..	Pushya.	4.1	8 42 + 18 20	128 2 + 0 10		
♈ Cancrī ..	Ashleha.	4.3	8 56 + 12 3	132 58 - 5 5		
♈ Leonis ..	Magha.	1.3	10 6 + 12 12	149 10 + 0 28		
♈ Leonis ..	Purva.	2.6	11 12 + 20 47	160 39 + 14 53		
♈ Leonis ..	Uttara.	2.2	11 47 + 14 50	170 58 + 12 16		
♈ Corvi ..	Hasta.	3.1	12 27 - 16 15	192 47 - 13 1		
♈ Virginis ..	Chitra.	1.2	13 23 - 10 53	203 10 - 2 1		
♈ Bootes ..	Swati.	0.2	14 14 + 19 26	203 34 + 30 46		
♈ Libra ..	Vishakha.	2.9	14 48 - 15 49	224 25 + 0 22		
♈ Scorpii ..	Anuradha.	2.5	15 58 - 22 28	241 55 - 1 58		
♈ Scorpii ..	Jyeshtha.	1.2	16 27 - 26 19	249 5 - 4 23		
♈ Scorpii ..	Mool.	1.7	16 26 - 26 19	263 55 - 13 47		
♈ Sagittarus ..	P. Shadha.	2.8	18 18 - 29 51	273 55 - 6 27		
♈ Sagittarus ..	P. Shadha.	1.9	18 21 - 34 25	274 25 - 11 3		
♈ Sagittarus ..	U. Shadha.	2.1	18 52 - 26 22	281 43 - 3 27		
♈ Lyrae ..	Abhijit.	0.1	18 35 + 38 44	284 39 + 61 44		
♈ Aquillae ..	Shravana.	0.9	19 48 + 8 45	301 16 + 29 19		
♈ Delphini ..	Dhanistha.	3.7	20 35 + 14 26	315 40 + 31 55		
♈ Delphini ..	Dhanistha.	3.8	20 37 + 15 45	316 43 + 33 2		
♈ Cygni ..	Deneb.	1.3	20 40 + 45 7	334 41 + 59 54		
♈ Aquarii ..	Shatabhij.	3.8	22 50 - 7 31	340 51 - 0 6		
♈ Piscis Astr.	Fomalhaut	1.3	22 55 - 29 54	333 11 - 21 9		
♈ Pegasi ..	P. Bhadra.	2.6	23 1 + 27 50	358 43 + 31 8		
♈ Pegasi ..	P. Bhadra.	2.6	23 2 + 14 57	352 50 + 19 26		

EPHEMERIS

OF

Planets' Places for 1954

INTRODUCTION

THE places of the Sun, Moon and the Planets given in the following pages are *Sayan* and are true for the true equinox of each day. They are given for 12 o'clock noon Indian Standard Time (I.S.T.) which is 5½ hours in advance of Greenwich Mean Time but, for convenience, the *Sidereal Time* is given for the *Mean Noon, Ujjain Local Time*.

Nirayana places are obtained by subtracting the *Ayanamshas* from the *Sayan* places.

It should be noted that the *Tithis* and *Aspects* are the same both in the *Sayan* and the *Nirayana* systems.

EXPLANATION OF SYMBOLS

Planets.	Signs.	Aspects.
☉ Sun.	♈ Aries.	♌ Conjunction = 0°
☾ Moon.	♉ Taurus.	♊ Semi-Sextile = 30°
♇ Pluto.	♊ Gemini.	♎ Semi-Quintile = 36°
♆ Neptune.	♋ Cancer.	♏ Semi-Square = 45°
♅ Herschel (Uranus).	♌ Leo.	♍ Sextile = 60°
♄ Saturn.	♍ Virgo.	♎ Quintile = 72°
♃ Jupiter.	♎ Libra.	♏ Square = 90°
♂ Mars.	♏ Scorpio.	♌ Trine = 120°
♀ Venus.	♏ Sagittarus.	♎ Sesqui-quadrate = 135°
☿ Mercury.	♐ Capricornus.	♊ Bi-quintile = 144°
♁ Earth.	♑ Aquarius.	♈ Quincunx = 150°
♂ Rah.	♒ Pisces.	♏ Opposition = 180°

4		FEBRUARY, 1954										S. J. O. UJJAIN	
Date	Day	Sidereal Time		O		D		Midnight		ψ			
				Long.	Decl.	Long.	Lat.	Decl.	D				
1	M.	20	43	43	11 52	28 17	S 14	11 5	1 S 10	24 S 9	17 51	26	4
2	Tu.	47	39	12	52	46 16	57 24	43 0	N 5	21 7	1 39	R	4
3	W.	51	36	13	54	3 40	8 43	1 21	16	47	15 50		4
4	Th.	55	33	14	54	53 22	23 1	2 34	11 25	0 16			4
5	F.	59	29	15	55	44 4	7 33	3 38	5 22	14 53			4
6	S.	21	3	26	16	56 32	15 46	22 13	4 29	1 N 1	29 33		4
7	Su.	7	22	17	57	17 27	6 52	5 1	7 20	14 10			4
8	M.	11	19	18	58	5 8	21 25	14 13	12	28 38			4
9	Tu.	15	15	19	58	50 14	49 5 47	7 18	16	12 53			4
10	W.	19	12	20	59	32 31	19 55	4 41	22 15	26 53			4
11	Th.	23	8	22	0	14 11	3 47	0 24	50	10 37			3
12	F.	27	5	23	0	54 13	51 17	23 3	6 25	56 24	5		2
13	S.	31	2	24	1	34 31	0 44	2 2	29	7 19			2
14	Su.	34	58	25	2	12 11	13 51	0 53	23 53	20 20			1
15	M.	38	55	26	2	48 12	50 26	45 0	S 17	20 32	3 8		0
16	Tu.	4	51	27	3	22 30	9 28	1 25	16 31	15 45	25 59		
17	W.	46	48	28	3	56 9	21 59	2 28	11 51	28 11	58		
18	Th.	50	44	29	4	29 11	48 4 21	3 23	6 45	10 28	57		
19	F.	54	41	0	4	59 27	16 33	4 9	1 30	22 36	56		
20	S.	58	37	1	5	28 5	28 37	42	3 S 46	4 37	55		
21	Su.	22	2	34	2	5 53	10 44	10 35	5 2	8 49	16 33		54
22	M.	6	30	3	6	21 22	22 29	9 13	33	28 25	53		
23	Tu.	10	27	4	6	45 0	4 21	3 17	44	10 17	52		
24	W.	14	24	5	7	9 9	38 16	14 4	44 21	14 22	13		51
25	Th.	18	20	6	7	29 16	28 14	13 23	53	4 18	50		
26	F.	22	17	7	7	48 8	51 10	25 3	30 25	28 16	36		49
27	S.	26	13	8	8	6 31	22 52	2 35	50	29 13	48		
28	Su.	30	10	9	8	21 9	5 40	1 32	24 52	12 13	47		

Date	ψ		θ		γ		α		δ	
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
2	1 N 43	8 S 28	0 N 30	22 N 25	2 N 29	12 S 11	0 S 22	22 N 24	0 N 59	18 S 14
4									58	31
6		27		26		12			57	48
8				27			21		56	19
10		26		28	30	13			55	19
12								25	54	34
14		25		29	31		20		52	48
16									51	20
18	44	24		3	32	12	19	26	50	15
20						11		27	49	28
22		23		31	33		18	28	47	40
24		22			33	10		29	46	52
26		21		32	34	9		30	44	4
28		20				8		31	43	15

EPHEMERIS										FEBRUARY, 1954										5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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6		MARCH, 1954 S. J. O. UJJAIN									
Date	Day	Sidereal Time		☉		☽		Midnight		ψ	
				Long.	Decl.	Long.	Lat.	Decl.	ψ		
1	M.	22	34	6 10	8 45	7 S 46	18 52	0 S 22	22 S 29	25 38	25 46
2	Tu.		38	3 11	8 47	2 2 31	N 51	18 46	9 32	R 45	
3	W.		42	0 12	8 57	0 16 39	2 4 13	53	23 54	44	
4	Th.		45	56 13	9 2	6 3 1	3 11 8	5	8 36	43	
5	F.		49	53 14	9 12	14 16	5 4 6	1 43	23 36	42	
6	S.		53	49 15	9 17	5 51	1 7 9	45	4 N 49	3 43	41
7	Su.		57	46 16	9 21	28 16	16 5	4 11	4 23	46	40
8	M.	23	1	42 17	9 20	4 1 12	2 16 36	8 35	8 35	39	
9	Tu.		5	34 18	9 23	4 41 15	53 4	40 21	4 23	6	38
10	W.		9	35 19	9 17	18 0 13	1 24	8	7 15	36	
11	Th.		13	32 20	9 13	3 54 14	10 3	9 25	37 20	59	35
12	F.		17	29 21	9 6	3 27 42	2 7	32	4 20	20	34
13	S.		21	25 22	8 57	7 10 53	1 0 23	59	17 22	33	
14	Su.		25	22 23	8 46	2 43 23	46 0	S 1 21	13 0 7	31	
15	M.		29	18 24	8 34	20 6 24	1 15	17 28	12 33	10	
16	Tu.		33	15 25	8 20	1 56 18	49 2	17 13	1 24	58	29
17	W.		37	11 26	8 4	32 1 5	3 12 8	6	7 10	27	
18	Th.		41	8 27	7 47	8 13 14	57 2	57	19 16	26	
19	F.		45	4 28	7 25	0 45 25	17 4	31 2 S	16 1 16	24	
20	S.		49	1 29	7 2	21 7 14	52 7	21	13 12	23	
21	Su.		52	5 0	6 37	0 N 3 19	9 5	1 12	8 25	5	21
22	M.		56	54 1	6 10	26 1 1	4 57	16 28	6 57	20	
23	Tu.	0	0	51 2	5 42	50 12 53	40 20	9	18 50	18	
24	W.		4	47 3	5 10	1 14 24	47	11 23	2 0 47	16	
25	Th.		8	44 4	4 38	37 6 48	3 30	24 53	12 51	15	
26	F.		12	40 5	4 4	2 1 18	57 2	39 25	37 25	7	14
27	S.		16	37 6	3 28	24 1 20	1 40	6	7 39	12	
28	Su.		20	33 7	2 50	47 14 3	0 34	23 20	20 32	11	
29	M.		24	30 8	2 8	3 11 27	9 0	N 35 20	10 3 51	9	
30	Tu.		28	27 9	1 25	35 10 42	1 45	15 52	12 39	8	
31	W.		32	23 10	0 38	58 24 44	2 50	10 36	1 57	6	

Date	ψ		μ		λ		λ		δ	
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
2	1 N 44	8 S 19	0 N 30	22 N 32	2 N 35	12 S 7	0 S 17	22 N 32	0 N 41	21 S 26
4		18			36	6		33	39	36
6	45		29	33		5	16	34	37	45
8		17			37	4		35	36	54
10		16				2	15	36	34 22	3
12				34	38	59		37	32	12
14		15			58			38	30	20
16		14			56	14		39	27	27
18		13			39	54		40	25	34
20		12			52			41	23	41
22		10		35		49		43	20	48
24		9			40	46	13	45	18	54
26		8			44			46	15 23	0
28		7			41	42		48	12	5
30		6			40			51	9	10

EPHEMERIS										MARCH, 1954										7
Date	Longitudes										Lunar Aspects									
	♈	♉	♊	♋	♌	♍	♎	♏	♐	☉	☽	♈	♉	♊	♋	♌	♍	♎	♏	♐
1	19	19	9	13	17	0	10	30	17	29	10	27								
2		R 18	10	12		3	11	2	18	43	9R	27	☿	☽	♈	♉	♊	♋	♌	♍
3		46		11		7		33	19	58	8	21	☿	☽	♈	♉	♊	♋	♌	♍
4		45		9		11	12	4	21	13	7	20	☿	☽	♈	♉	♊	♋	♌	♍
5		14		7		16		35	22	28	6	22	☿	☽	♈	♉	♊	♋	♌	♍
6		13		5		20	13	5	23	43	5	28	☿	☽	♈	♉	♊	♋	♌	♍
7		12		4		25		36	24	5	4	38	☿	☽	♈	♉	♊	♋	♌	♍
8		11		2		30	14	7	26	13	3	53	☿	☽	♈	♉	♊	♋	♌	♍
9		10		0		35		37	27	27	15		☿	☽	♈	♉	♊	♋	♌	♍
10		9	8	58		41	15	7	28	42	2	43	☿	☽	♈	♉	♊	♋	♌	♍
11		3		56		45		37	29	57	19	0	☿	☽	♈	♉	♊	♋	♌	♍
12		7		54		52	16	7	1	11	0		☿	☽	♈	♉	♊	♋	♌	♍
13		6		52		57		37	2	26	1	47	☿	☽	♈	♉	♊	♋	♌	♍
14		5		49	18	2	17	6	3	41	43		☿	☽	♈	♉	♊	♋	♌	♍
15		5		47		8		35	4	55	D 44		☿	☽	♈	♉	♊	♋	♌	♍
16		4		44		14	18	4	6	10	51		☿	☽	♈	♉	♊	♋	♌	♍
17		4		41		21		33	7	24	2	3	☿	☽	♈	♉	♊	♋	♌	♍
18		4		39		28	19	2	8	39	21		☿	☽	♈	♉	♊	♋	♌	♍
19		3		36		34		31	9	54	44		☿	☽	♈	♉	♊	♋	♌	♍
20		2		33		41		59	11	8	3	12	☿	☽	♈	♉	♊	♋	♌	♍
21		2		30		48	20	27	12	23	4	44	☿	☽	♈	♉	♊	♋	♌	♍
22		1		27		55		55	13	37	4	20	☿	☽	♈	♉	♊	♋	♌	♍
23		1		23	19	2	21	22	14	51	5	1	☿	☽	♈	♉	♊	♋	♌	♍
24		1		20		9		51	16	6	45		☿	☽	♈	♉	♊	♋	♌	♍
25		1		17		17	22	18	17	20	6	32	☿	☽	♈	♉	♊	♋	♌	♍
26		1		14		25		45	18	35	7	24	☿	☽	♈	♉	♊	♋	♌	♍
27		1		10		33	23	12	19	49	8	18	☿	☽	♈	♉	♊	♋	♌	♍
28		1		6		40		39	21	3	9	16	☿	☽	♈	♉	♊	♋	♌	♍
29		1		3		48	24	5	22	18	10	15	☿	☽	♈	♉	♊	♋	♌	♍
30		0	7	59		57		31	23	32	11	18	☿	☽	♈	♉	♊	♋	♌	♍
31	D	1		56	20	5		57	24	46	12	24	☿	☽	♈	♉	♊	♋	♌	♍

Date		☽		☽		Mean	Date	Time	Phenomena
		Lat.	Decl.	Lat.	Decl.				
1	19	15							☽ at ♈
2	1 S 25	5 S 4		3 N 40	4 S 39	21 33	4	...	Heli. rising of ♈ in East
4	24 4 46	29 5 35				26 5	8	40	New Moon, Decl. 2° S 36
6	23 3 45	10 6 33				20 18	18		☽ on Equator.
8	21 2 45	2 48 7	29			14 6	2	0	☽ at Perigee.
10	19 1 43	20 8 19				8 9	...		Heli. rising of ♈ in E.
12	17 0 42	1 52 9	2			1 11	23	24	☽ at First Quarter.
14	15 0 N 19	23 35	20			55 13	20	48	☽ on Equator.
16	12 1 21	0 54 59				49 14	11	35	☽ at ☽
18	9 2 22	26 10 14				42 19	1	34	☽ on Equator
20	6 3 24	1 20				36 18	14		Full Moon, Decl. 3° S 35'
22	3 4 25	0 S 24	17			30 20	13	55	☽ at ☽
24	0 5 25	46 7				23 21	8	45	☉ enters ♈ (Equinox).
26	0 56 6	25 1	6 9	49		17 11		0	☽ at Apogee.
28	52 7 25	24 24				11 27	21	40	☽ at Last Quarter.
30	48 8 24	40 8 52				4 28	22	50	☽ at ☽
						30 20	0		☽ at Aphelion.

APRIL, 1954

S. J. O. UJJAIN

Date	Day	Sidereal Time		☉		☽			Midnight		ψ	
		H.	M.	S.	Long.	Decl.	Long.	Lat.	Decl.	☽		
1	Th.	0	36	20	10 59	53	4 N 21	9 16	3 N 47	4 S 35	16 42	25 5
2	F.		40	16	11 59	4	44	24 13	4 30	1 N 59	1 48	R 4
3	S.		44	13	12 58	13	5	7 9 26	55	8 16	17 6	
4	Su.		48	9	13 57	21	30	24 46	59	14 14	2 24	24 59
5	M.		52	6	14 56	25	53	10 8 0	42	19 16	17 32	58
6	Tu.		56	2	15 55	29	6	16 24 59	5	22 59	2 9	57
7	W.		59	59	16 54	29	39	9 33	3	13 25	4 16	41
8	Th.	1	3	56	17 53	27	7	1 23 42	2	11 28	0 35	53
9	F.		7	52	18 52	25	24	7 21	1	3 24	17 14	1
10	S.		11	49	19 51	18	46	2 34	0 S	7 21	46 27	1
11	Su.		15	45	20 50	12	8	3 24	1	14 18	12 9	41
12	M.		19	42	21 49	2	2	30 15 5	2	16 13	55 22	5
13	Tu.		23	38	22 47	51	52	28 42	3	10 9	8 4 16	45
14	W.		27	35	23 46	38	9	14 10 18	55	4 5	16 19	43
15	Th.		31	31	24 45	23	35	22 18	4	28 1 S	3 28	16
16	F.		35	28	25 44	0	57	4 14	50	6 8	10 11	40
17	S.		39	25	26 42	44	10	18 16 7	59	10 56	22 4	39
18	Su.		43	21	27 41	25	39	27 59	55	15 21	3 56	37
19	M.		47	18	28 40	3	11	0 9 53	38	19 11	15 55	35
20	Tu.		51	14	29 38	38	21	21 48	9	22 14	17 47	33
21	W.		55	11	0 37	1	42	3 47	3	29 24	20 9	49
22	Th.		59	7	1 35	42	12	2 15 52	2	39 25	20 21	58
23	F.	2	3	4	2 34	1	22	28 6	1	41 6	4 17	29
24	S.		7	0	3 32	42	42	10 32	0	37 23	38 16	51
25	Su.		10	57	4 31	4	13	2 23 14	0 N 31	20 57	29 43	26
26	M.		14	54	5 29	29	2	6 16	1	38 17	8 12	56
27	Tu.		18	50	6 27	51	40	19 42	2	42 12	21 26	36
28	W.		22	47	7 26	7	59	3 36	3	39 6	47 10	43
29	Th.		26	43	8 24	29	14	19 17 57	4	24 0	43 25	17
30	F.		30	40	9 22	44	37	2 43	53	5 N 33	10 13	17

Date	☉		☽		♂		♀		♂	
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
1	1 N 45	8 S	4	0 N 29	22 N 35	2 N 41	11 S 37	0 S 12	22 N 54	0 N 6 23 S 15
3			3				34		55	3
5			2				32	11	56	0 S 0
7			1				29		57	3
9			0				26		59	6
11			7				23	0	10	10
13			57				20	10	2	14
15	46		56		33		17		3	18
17			55				14		4	22
19			54		32		11		5	27
21			53				8	9	7	31
23			51		31		5		8	36
25			50	28			2		10	40 24
27			49				10	59	11	45
29			48				56	8	12	50

EPHEMERIS

APRIL, 1954

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Date	Longitudes										Lunar Aspects									
	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
1	19 50	1	7 11	52 20	13 25	23 26	7 0	13 31	11	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
2		2	R 48	22	49 27	14 14	41		11	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
3		2	44	31	26	14 28	29 15	53	11	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
4		2	40	40	39	29	43	17	7	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
5		2	36	49	27	3 0	57	18	24	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
6		3	32	58	28	2	11	19	42	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
7		3	28 21	7	52	3	2 21	2	2	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
8		4	24	16 23	16	4	39	22	24	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
9		5	20	26	39	5	53	23	48	11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
10		6	16	35 29	2	7	7 25	13		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
11		7	11	45	25	8	21 26	41		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
12		8	7	55	47	9	35 28	10		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
13		9	3 22	5	0 3	9 10	4 29	41		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
14		10	6 58	15	31	12	2 1 13			11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
15		11	54	25	52	13	16	2 47		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
16		12	49	35	1	13 14	30	4 23		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
17		13	45	45	34	15	43	6 0		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
18		14	40	56	54	16	57	7 39		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
19		15	36 23	6	2	14 18	11	9 19		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
20		16	32	17	35	19	24 11	2		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
21		17	27	27	54	20	38 12	45		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
22		18	23	38	3	13 21	51 14	31		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
23		19	18	49	30	23	5 16	18		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
24		20	14 24	0	48	24	18 18	7		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
25		22	9	11	4	5 25	32 19	58		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
26		24	4	22	22	26	45 21	50		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
27	15	26	0	33	39	27	59 23	44		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
28		27	5	55	44	54	12 25	39		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
29		29	51	55	5	10	0 25	27		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀
30		30	46 25	7	25	1	39 29	36		11	☉	☽	♂	♀	♂	♀	♂	♀	♂	♀

Date	☉		☽		Mean		Time	Phenomena
	Lat.	Decl.	Lat.	Decl.	☉	☽		
1	0 S 44	9 N 22	1 S 54	8 S 14	19 5	58	2 5	9
3	40 10	19	2 6	7 30	52	3	12	0
5	35 11	16	15	6 40	45	17	54	New Moon, D. 9° N 44'
7	30 12	11	2 5	45	39	5	12	0
9	26 13	5	29	4 44	32	10	9	35
11	21	58	32	3 39	26	10	36	☉ at First Quarter.
13	16 14	49	34	2 29	20	15	7	55
15	11 15	39	33	1 14	13	17	9	☉ on Equator.
17	6 16	28	31	0 N 5	7	10	0	☉ at Apogee.
19	1 17	14	26	1 28	1			Heli. Setting of ☉ in E
21	0 N 5	59	19	2 54	18	54	18	11
23	10 18	43	10	4 24	48	19	20	0
25	15 19	24	0	5 58	41	20	20	41
27	21 20	3	1	47	7	34	25	1
29	26	40	32	9 12	29	26	10	12
					29	14	45	☉ on Equator.

10		MAY, 1954										S. J. O. UJJAIN	
Date	Day	Sidereal Time		☉		☽		Midnight		☿			
		H.	M.	Long.	Decl.	Long.	Lat.	Decl.					
1 S.	2	34	36	10 21	0 14 N	56 17	28 5 N	2 11 N	3 25	24 24	16		
2 Su.		38	33	11 19	12 15	14 3 8	3 4	51 17	5 10	41 R	15		
3 M.		42	29	12 17	24 32	18 18	3 18	21 24	25 51		13		
4 Tu.		46	26	13 15	3 49	3 21	3 28	24 14	10 45		11		
5 W.		50	23	14 13	40 16	7 18	4 2	25 25	19 25	16	10		
6 Th.		54	19	15 11	48 24	2 21	1 15	24 40	9 51		8		
7 F.		58	16	16 9	51 41	16 8	0 2	22 30	22 51		7		
8 S.	3	2	12	17 7	54 57	29 27	1 S	9 19	9 50	57	6		
9 Su.		6	9	18 5	55 17	14 12	2 14	14 57	18 41		4		
10 M.		10	5	19 3	55 30	24 55	3 10	10 10	1 5		3		
11 Tu.		14	2	20 1	53 45	7 12	5 57	5 12	13 15		1		
12 W.		17	59		59 50	18 1	4 32	0 5	25 15	23	59		
13 Th.		21	55	21 57	45 16	1 13	55 4 S	9 7	9 58				
14 F.		25	52	22 55	39 31	13 5	5 5	9 19	1 57				
15 S.		29	48	23 53	31 45	4 57	2 14	20 0	53	55			
16 Su.		33	45	24 51	21 59	6 59	4 45	18 17	12 48	54			
17 M.		37	41	25 49	10 19	13 18	47 17	21 31	24 47	53			
18 Tu.		41	38	26 46	57 27	0 48	3 36	23 51	26 51	51			
19 W.		45	34	27 44	43 40	12 56	2 46	25 5	19 3	50			
20 Th.		49	31	28 42	30 53	25 12	1 47	8 1	23 49				
21 F.		53	28	29 40	12 20	5 37	0 42	23 55	13 54	47			
22 S.		57	24	0 54	54 17	20 14	0 N	26 21	29 36	46			
23 Su.	4	1	21	1 35	35 29	3 4	1 34	17 55	36 45				
24 M.		5	17	2 33	14 41	16 12	2 39	13 27	22 53	44			
25 Tu.		9	14	3 30	52 52	29 38	3 37	8 13	6 43	43			
26 W.		13	10	4 28	29 21	2 13	4 23	2 27	20 28	42			
27 Th.		17	7	5 26	5 13	27 36	55 3	N 34	4 48	40			
28 F.		21	3	6 23	39 23	12 5	5 10	9 32	19 27	39			
29 S.		25	0	7 21	14 33	26 52	4 15	5	4 19	38			
30 Su.		28	57	8 18	46 42	11 48	4 38	19 47	19 18	37			
31 M.		32	53	9 16	18 51	26 47	3 52	23 12	4 14	36			

Date	☿		♈		♉		♊		♋	
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
1	1 N 45	7 S 47	0 N 28	22 N 30	2 N 42	10 S 54	0 S 8	23 N 13	0 S 55	24 S 14
3		45				51		24	1	19
5		44		29		48		15	7	24
7		43		28		45	7	16	13	29
9		42		27		42		17	19	34
11		41				39		18	25	39
13		40		26		37			32	45
15		39		25		35		19	39	51
17		38		24	41	32		20	46	57
19		37				30	6		53	25
21		36		23		27		21	2	0
23		35		22		24			8	18
25				21	40	22			16	26
27		34		20		20	5		24	34
29						18			32	43
31		33		19		17			40	51

EPHEMERIS										MAY, 1954										11										
Date	Longitudes															Lunar Aspects														
	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
1	19	32	5	42	25	19	5	39	2	52	1	36				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
2		34	R	37		30		53	4	5	3	38				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
3		36		33		42	6	7	5	18	5	42				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
4		38		28		53		19	6	31	7	47				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
5		40		24	26	5		31	7	44	9	53				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
6		42		19		17		43	8	57	12	0	4			☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
7		44		15		29		53	10	10	14	9	*			☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
8		46		10		41	7	3	11	23	16	18				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
9		48		6		53		13	12	36	8	29				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
10		50		2	27	5		23	13	49	20	39				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
11		52	4	57		18		33	15	2	22	50				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
12		55		53		30		42	16	15	25	0				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
13		57		49		42		49	17	28	27	10				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
14		59		45		54		55	18	40	29	20				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
15	20	2		40	28	7	8	1	19	53	1	28				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
16		4		36		19		21	6	3	35					☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
17		6		32		32		12	22	18	5	41				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
18		8		28		44		16	23	31	7	46				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
19		11		24		57		19	24	44	9	48				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
20		14		20	29	10		21	25	57	11	48				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
21		17		16		23		23	27	9	13	46				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
22		19		12		35		24	28	21	15	41				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
23		22		8		48		25	29	34	17	34				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
24		24		5	0	1	R	24	0	46	19	24				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
25		27		1		14		23	1	58	21	12				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
26		30	3	58		27		22	3	11	22	56				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
27		33		55		40		19	4	23	4	37				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
28		36		52		53		16	5	35	26	16				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
29		38		49		6		11	6	47	27	52				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
30		41		46		19		6	7	59	29	24				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				
31		44		44		32		1	9	11	0	53				☾	☿	♈	♉	♊	♋	♌	♍	♎	♏	♐				

Date	☿		♈		Mean		Date	Time	Phenomena	
	Lat.	Decl.	Lat.	Decl.	☿		H. M.			
1	0 N 31	21 N 15	1 S 16	10 N 51	18 23	1 21	0		☾ at Perigee.	
3	36	47	0 57	12 31	16 3	1 55			New Moon, D. 19° N 36'	
5	42	22 17	38 14	11	10	7 12	40		☾ at ☿	
7	47	45	18 15	48	4	9 5	10		☿ at ☽	
9	52	23 10	0 N 3	17 23	17 57	23 50			☾ at First Quarter.	
11	57	33	24 11	53	50	12 12	24		☾ on Equator.	
13	1	53	45 20	16	41	13 19	0		☿ at Perihelion.	
15	6 24	10 1	4 21	31	3	14 19	0		☾ at Apogee.	
17	11	24	22 22	37	32	18 3	15		Full Moon, D. 23° S 0'	
19	15	36	38 23	32	25	19			Heli. rising of ☿ in W.	
21	19	44	51 24	18	13	21 20	17		☉ enters ♏	
23	24	50 2	1	53	13	22 2	50		☾ at ☽	
25	27	53	8 25	17	6	23 10	0		☿ at Perihelion.	
27	31	53	12	32	0	25 19	15		☾ at Last Quarter.	
29	34	51	13	39 16	53	26 21	46		☾ on Equator.	
31	38	45	11	37	47	30 5	0		☾ at Perigee.	

12		JUNE, 1954.										S. J. O. UJJAI N	
Date	Day	Sidereal Time		☉		☽		Midnight		ψ			
		H. M. S.		Long.	Decl.	Long.	Lat.	Decl.	D				
1	Tu.	4 36 50	10 13 48	21 N 59	11 40	2 N 51	25 N 1	19 0	23 35				
2	W.	40 46 11	11 18 22	7 26 16	1 40	4	3 25	3 25	R 34				
3	Th.	44 43 12	8 46	15 10 29	0 25	23 26	17 28	33					
4	F.	48 39 13	6 12	23 24 20	0 S 51	20 26	1 5	32					
5	S.	52 36 14	3 40	30 7 43	2 16	23 14	16	31					
6	Su.	56 3 15	1 6	36 20 42	3 31	11 42	27 4	30					
7	M.	0 29	58 32	42 3 20	4 54	6 38	9 52	29					
8	Tu.	4 26 16	55 54	48 15 40	4 36	1 27	21 44	29					
9	W.	8 22 17	53 17	54 27 46	5 56	3 S 38	3 45	28					
10	Th.	12 19 18	50 38	59 9 43	5 12	8 34	15 40	27					
11	F.	16 15 19	48 1 23	3 21 36	11 13	14 27	32	27					
12	S.	20 12 20	45 22	7 3 28	4 57	17 19	9 15	26					
13	Su.	24 8 21	42 41	11 15 23	30 20	45 21	23	25					
14	M.	28 5 22	40 0	15 27 25	3 51	23 20	3 59	24					
15	Tu.	32 1 23	37 20	18 9 35	1 24	52 15	43	23					
16	W.	35 58 24	34 38	2 21 54	2 225	14 28	8	23					
17	Th.	39 55 25	31 54	22 4 24	0 56	24 18	10 44	22					
18	F.	43 51 26	29 11	24 17 7	0 N 14	22 7	23 33	22					
19	S.	47 48 27	26 29	25 0 2	1 24	18 47	6 34	21					
20	Su.	51 44 28	23 44	26 13 11	2 31	14 27	19 46	21					
21	M.	55 41 29	21 36	27 26 31	3 31	9 21	3 16	20					
22	Tu.	59 37 0	18 11	27 10 10	4 21	3 41	17 5	20					
23	W.	3 34 1	15 29	16 24 2	5 2	N 9	1 2	19					
24	Th.	7 30 2	13 43	25 8 7	5 15	8 2	15 14	19					
25	F.	11 27 3	9 47	24 2 24	13 13	34 29	37	19					
26	S.	15 24 4	7 11	23 6 51	4 53	18 25	14 8	19					
27	Su.	19 20 5	4 25	22 21 23	14 22	12 28	40	19					
28	M.	23 17 6	1 38	21 5 57	3 17	24 32	13 11	18					
29	Tu.	27 13	58 51	19 20 24	2 10	25 15	27 34	18					
30	W.	31 10 7	56 3	15 4 41	0 53	24 17	11 44	18					

Date	ψ	♈		♉		♊		♋	
		Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
2	1 N 45	7 S 32	0 N 28	22 N 18	2 N 39	10 S 16	0 S 5	23 N 21	2 S 48
4									
6									
8									
10	44	30							
12									
14									
16									
18									
20									
22									
24									
26	43	27							
28									
30									

EPHEMERIS																		JUNE, 1954										13	
Date	Longitudes.												Lunar Aspects.																
	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	☉	☽	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓			
1	20	47	3	41	1	45	7	54	10	23	2	19	♈	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
2		50	R	38		58	R	47	11	35	3	42	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
3		53		35	2	11		40	12	47	5	2	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
4		56		32		25		32	13	59	6	19	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
5		59		29		38		22	15	10	7	32	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
6	21	3		27		52		12	16	22	8	43	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
7		6		24	3	5		1	17	34	9	49	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
8		9		21		18	6	50	18	46	10	52	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
9		12		19		32		38	19	57	11	52	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
10		15		16		45		25	21	9	12	48	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
11		18		14		59		11	22	20	13	41	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
12		22		11	4	12	5	57	23	32	14	30	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
13		25		9		26		43	24	43	15	14	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
14		28		7		39		28	25	54	15	55	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
15		32		4		53		13	27	6	16	32	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
16		35		2	5	6	4	57	28	17	17	5	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
17		38		0		20		40	29	28	17	34	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
18		42	2	58		33		24	0	39	17	58	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
19		45		56		47		6	1	50	18	17	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
20		48		54	6	0	3	49	3	1	18	33	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
21		52		52		14		31	4	12	18	43	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
22		55		50		27		13	5	23	18	49	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
23		59		48		41	2	54	6	33	18	51	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
24	22	2		46		55		36	7	44	18	48	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
25		6		44	7	8		18	8	55	18	40	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
26		9		43		22	1	59	10	5	18	29	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
27		13		42		35		40	11	16	18	13	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
28		16		41		49		21	12	26	17	53	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
29		20		40	8	2		3	13	37		29	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			
30		23		40		16	0	45	14	47		2	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽	☽			

Date	☉		☽		Mean ☉	Date	Time H. M.	Phenomena
2	1 N 41	24 N 36	2 N 5	25 N 29	16 41	1 9 32	New Moon, D. 24° N 50'	
4	43	25	1 56	14	34 3	19 50	☽ at ☉	
6	46	11	44 24	53	28 8	14 44	☽ at First Quarter.	
8	48 23	55	29	29	22 18	51	☽ on Equator.	
10	50	35	11	0	16 11	9 0	☽ at Apogee.	
12	51	13	0	50 23 29	9 15	..	Heli. setting of ♃ in W.	
14	52 22	49	26 22	56	2 16	12 0	☽ at ☉	
16	53	21	0	21 15	56	17 35	Full Moon, D. 25° S 1'	
18	54 21	52	0 S 28	21 46	50 18	7 10	☽ at ☉	
20		20	59	12	44 22	4 20	☉ enters ☍	
22		20 46	1 31	20 37	37 23	3 14	☽ on Equator.	
24	53	10	2 3	6	31 24	..	Heli. setting of ♃ in W.	
26		19 32	36 19	36	25 1	13	☽ at Last Quarter.	
28	51 18	51 3	7	10	18 26	19 0	☽ at Aphelion.	
30	50	9	36 18	47	12 27	2 0	☽ at Perigee.	
					30 17	59	New Moon D. 23° N 39'	

JULY, 1954														S. J. O. UJJAIN	
Date	Day	Sidereal Time			Long.			D			Midnight		ψ		
		H.	M.	S.	Long.	D	cl.	Long.	Lat.	Decl.	D				
1	Th.	6	35	6	8 ^m 53	16	23N.10	18 ^m 41	0 S 22	21N 46	25 ^m 34	23 ^m 18			
2	F.		39	3	9 50	38		5 2 ^m 22	1 37	18 4	9 ^m 6	R 18			
3	S.		42	59	10 47	34		0 15 43	2 44	13 31	22 15				
4	Su.		46	56	11 44	53	22	56 28	42 3	41 8	29 3				
5	M.		50	53	12 42	5		50 11 ^m 21	4 25	3 13	17 34				
6	Tu.		54	49	13 39	17		45 23 43		56 2 S 2	29 48				
7	W.		58	46	14 36	31		39 5 ^m 51	5 13	7 7	11 ^m 51	D 18			
8	Th.	7	2	42	15 33	43		32 17 50	16 11	52 23	47 18				
9	F.		6	39	16 30	55		25 29 44		6 16 9	5 ^m 40				
10	S.		10	35	17 28	8		18 11 ^m 37	4 43	19 48	17 35				
11	Su.		14	32	18 25	22		11 23 34		7 22 39	29 35				
12	M.		18	28	19 22	35		3 5 39	3 20	24 32	11 ^m 46				
13	Tu.		22	25	20 19	47	21	54 17 56	2 23	25 16	24 10				
14	W.		26	2	21 17	1		46 0 ^m 26	1 18	24 45	6 ^m 47				
15	Th.		30	18	22 14	15		37 13 12	0 8	22 56	19 41				
16	F.		34	15	23 11	33		27 26 15	1 N 3	19 52	2 ^m 56				
17	S.		38	11	24 8	44		17 9=33	2 13	15 43	16 17				
18	Su.		42	8	25 6	0		7 23 6	3 17	10 43	29 58				
19	M.		46	4	26 3	15	20	57 6 ^m 53	4 10	5 7	13 ^m 50				
20	Tu.		50	1	59 55			46 20 50		49 0N 48	27 52				
21	W.		53	57	27 57	47		34 4 ^m 56	5 11	6 43	12 ^m 1				
22	Th.		57	54	28 5	5		23 19 7		15 12 20	26 13				
23	F.	8	1	51	29 52	23		11 3 ^m 20	4 59	17 19	10 ^m 27				
24	S.		5	47	0 ^m 49	40	19	59 17 34		25 21 19	24 41				
25	Su.		9	44	1 47	0		46 1 ^m 46	3 35	24 2	8 ^m 51				
26	M.		13	40	2 44	19		33 15 54	2 32	25 13	22 55				
27	Tu.		17	37	3 41	39		20 29 54	1 21	24 47	6 ^m 50				
28	W.		21	33	4 38	59		6 13 ^m 44	0 6	22 50	20 35				
29	Th.		25	30	5 36	21	18	52 27 22	1 S 10	19 33	4 ^m 6				
30	F.		29	26	6 33	43		38 10 ^m 46	2 19	15 19	17 22				
31	S.		33	23	7 31	17		24 23 54	3 19	10 25	0 ^m 21				

Date	ψ		θ		γ		β		δ	
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
2	1N 43	7 S 27	0N 28	22N 2	2N 31	10 S 2	0 S 2	23 N 7	4 S 37	28 S 3
4				0				5	41	8
6			21	59			1	3	45	12
8				58				1	48	14
10				57		3		0	51	17
12		28		6	30	4		22	5 ^m	54
14				55	29	5			55	56 22
16				54	28	6			53	57
18				52	27	7	0		51	58
20	42	29		51	26	9			50	59
22		30		50		11	0 N 0		48	21
24		31		49	25	12			46	58
26				47		14			44	57
28		32		46	24	16			42	56
30				45		18			40	55

EPHEMERIS														JULY, 1954														15
Date	Longitudes.														Lunar Aspects.													
	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓				
1	22 ^m 27	2 ^m 39	8 ^m 30	0	1 ^m 26	15 ^m 57	16 ^m 32																					
2	31	39	44		R 8	17	7	15	R 59																			
3	34	38	57	29	7	50	18	17	25																			
4	38	38	9	11	32	19	27	14	48																			
5	41	D	39	24	15	20	37	11																				
6	45	39	38	28	58	21	47	13	34																			
7	49	39	52	42	22	57	12	57																				
8	52	39	10	5	26	24	6	21																				
9	56	40	19	11	25	15	11	47																				
10	59	40	33	27	56	26	25	15																				
11	23	3	40	46	42	27	34	10	47																			
12	7	40	11	0	28	28	44	21																				
13	10	41	13	15	29	53	9	59																				
14	14	41	27	2	1 ^m 2	42																						
15	1 ^m	42	40	26	50	2	11	29																				
16	21	42	53	38	3	20	21																					
17	25	43	7	28	4	29	18																					
18	29	44	20	19	5	37	D	21																				
19	32	45	34	11	6	45	28																					
20	36	46	47	3	7	54	42																					
21	40	48	13	0	25	55	9	2	10	2																		
22	43	50	14	48	10	11	27																					
23	47	51	27	43	11	19	58																					
24	50	53	40	38	12	27	11	35																				
25	53	55	54	34	13	35	12	17																				
26	57	57	14	6	31	14	42	13	5	4																		
27	24	0	59	20	28	15	50	59																				
28	4	3	1	33	27	16	57	14	58																			
29	8	4	46	26	18	5	16	3																				
30	11	6	59	26	19	12	17	13																				
31	15	8	15	12	D	27	20	19	18	28																		

Date	♈		♉		Mean α	Date	Time H. M.		Phenomena
	Lat.	Decl.	Lat.	Decl.					
2	1 N 48	17N 25	4 S 2	18N 29	15 ^m 6	1	5 10	D at θ	
4	46 16	40	23	16 14	59	3	...	⊙ at Aphelion.	
6	43 15	52	39	8	53	6	2 42	D on Equator.	
8	40	3	49	5	46	8	7 4	D at First Quarter.	
10	36 14	13	52	7	40	9	3 0	D at Perigee.	
12	32 13	22	49	15	34	15	...	Heli. rising of ♀ in E.	
14	28 12	29	40	27	27	14	40	D at α	
16	24 11	35	25	43	21	16	...	Heli. rising of ♀ in East	
18	19 10	40	6 19	2	14	5	57	Full Moon, D. 20° S 38'.	
20	13 9	44	3 43	23	8	18	12 0	♀ at α	
22	7 8	47	17	46	2	20	8 45	D on Equator.	
24	1 7	50	2 48	20 9	56	23	5 44	D at Last Quarter.	
26	0	55 6	52	19	29	26	14 54	⊙ enters ♈	
28	48 5	53	1 49	48	43	17	0	D at Perigee.	
30	41 4	54	19 21	1	37	28	13 55	D at θ	
31						30	3 54	New Moon, D. 16° N 44	

Date.	Day.	Sidereal Time.			°		D			Midnight		Ψ																											
		H.	M.	S.	Long.	Decl.	Long.	Lat.	Decl.	D																													
1	Su.	8	37	20	8	28	42	18	N	9	6	45	4	S	8	5	N	12	13	4	23	29																	
2	M.		41	16	9	26	8	17	54	19	20		44	0	S	8		25	32			30																	
3	Tu.		45	13	10	23	20		38	1	40	5	6	5	20		7	45				31																	
4	W.		49	9	11	20	48		23	13	47		13	10	15		19	48				32																	
5	Th.		53	6	12	18	15		7	25	46		7	14	43		1	48				33																	
6	F.		57		2	13	15	46	16	51	7	39	4	48	18	36		13	35				34																
7	S.	9	0	59	14	13	13		34	19	32		16	21	43		25	30					35																
8	Su.		4	55	15	10	44		17	1	29	3	33	23	56		7	31					36																
9	M.		8	52	16	8	16		0	13	35	2	41	25	6		19	43					37																
10	Tu.		12	49	17	5	49	15	43	25	55	1	39		2		2	11					38																
11	W.		16	45	18	3	22		25	8	32	0	32	23	42		14	58					39																
12	Th.		20	42	19	0	57		8	21	29	0	N	39	21	6	28	6					40																
13	F.		24	38		58	34	14	50	4	49	1	49	17	S	18	11	36					42																
14	S.		28	35	20	56	0		31	18	29	2	55	12	31		25	27					43																
15	Su.		32	31	21	53	49		13	2	29	3	52	6	59		9	35					44																
16	M.		36	2	22	51	29	13	54	16	43	4	35	1	1		23	55					45																
17	Tu.		40	24	23	49	10		35	1	8	5	2	5	N	4	8	22					47																
18	W.		44	21	24	46	49		16	15	36		9	10	53		22	50					48																
19	Th.		48	18	25	44	36	12	57	0	3	4	57	16	8		7	14					49																
20	F.		52	14	26	42	21		37	14	23		27	20	24		21	30					50																
21	S.		56	11	27	39	58		17	28	34	3	40	23	25		5	36					52																
22	Su.	10	0	2	28	37	56	11	57	12	35	2	41	24	58		19	30					53																
23	M.		4	4	29	35	46		37	26	23	1	33		57		3	13					55																
24	Tu.		8	0	0	33	36		17	10	20	0	21	23	25		16	45					56																
25	W.		11	57	1	31	28	10	56	23	26	0	S	51	20	34		0	4				58																
26	Th.		15	54	2	29	22		35	6	40	2	0	16	41		13	12					55																
27	F.		19	50	3	27	17		15	19	42	3	0	12	3		26	8		24			1																
28	S.		23	47	4	25	14	9	54	2	32		51	6	59		8	52					3																
29	Su.		27	43	5	23	12		32	15	10	4	29	1	42		21	12					5																
30	M.		31	40	6	21	12		11	27	35		54	3	S	32		3	43				6																
31	Tu.		35	36	7	19	14	8	49	9	49	5	5	8	33		15	52					8																
Date.	Ψ		θ		λ		μ		δ																														
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.																			
1	1	N	41		7	S	33		0	N	28		21	N	44		2	N	23		10	S	21		0	N	1		22	N	37		4	S	53		28	S	15
3						34					42											22									32			51		13			
5						35					41											22									27			49		12			
7						36					40											25									25			47		10			
9											39											27									22			44		7			
11						37					37											30									19			41		5			
13						38					36											33									16			38		0			
15						39					35											36									3			35		0			
17						40					34											39									10			32		27			
19						41					32											43									5			29		55			
21						42					31											18									1			26		53			
23						43					30											49									21			57		45			
25						44					29											17												53		48			
27						46					28											55												50		41			
29						47					27											16												47		37			
31						48					26											11												45		17			

Date.	Longitudes										Lunar Aspects											
	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	☉	☽	♁	♂	♀	♄	♅	♆	♇	♈		
1	24	19	3	11	15	25	2	29	21	26	19	48	♈	♉	♊	♋	♌	♍	♎	♏	♐	
2	23			13	38			33	22	33	21	13	♈	♉	♊	♋	♌	♍	♎	♏	♐	
3	28			16	51			36	23	39	22	42	♈	♉	♊	♋	♌	♍	♎	♏	♐	
4	33			19	16	4		40	24	46	24	16	♈	♉	♊	♋	♌	♍	♎	♏	♐	
5	37			22	17			43	25	52	25	54	♈	♉	♊	♋	♌	♍	♎	♏	♐	
6	40			24	29			51	26	58	27	37	♈	♉	♊	♋	♌	♍	♎	♏	♐	
7	43			27	42			58	28	4	29	23	♈	♉	♊	♋	♌	♍	♎	♏	♐	
8	45			30	54	26		6	29	10	1	12	♈	♉	♊	♋	♌	♍	♎	♏	♐	
9	48			33	17	7		14	0	15	3	4	♈	♉	♊	♋	♌	♍	♎	♏	♐	
10	51			36	20			23	1	21	4	59	♈	♉	♊	♋	♌	♍	♎	♏	♐	
11	54			40	33			33	2	26	6	55	♈	♉	♊	♋	♌	♍	♎	♏	♐	
12	58			43	46			44	3	32	8	54	♈	♉	♊	♋	♌	♍	♎	♏	♐	
13	25			46	58			56	4	36	10	55	♈	♉	♊	♋	♌	♍	♎	♏	♐	
14	5			50	18	11	27	8	5	41	12	54	♈	♉	♊	♋	♌	♍	♎	♏	♐	
15	8			53	23			21	6	25	14	56	♈	♉	♊	♋	♌	♍	♎	♏	♐	
16	12			57	36			34	7	50	16	58	♈	♉	♊	♋	♌	♍	♎	♏	♐	
17	15	4		1	48			49	8	54	19	0	♈	♉	♊	♋	♌	♍	♎	♏	♐	
18	18			5	19	0	28	4	9	58	21	2	♈	♉	♊	♋	♌	♍	♎	♏	♐	
19	22			9	12			20	11	1	23	4	♈	♉	♊	♋	♌	♍	♎	♏	♐	
20	25			13	24			36	12	5	25	5	♈	♉	♊	♋	♌	♍	♎	♏	♐	
21	28			18	36			53	13	8	27	5	♈	♉	♊	♋	♌	♍	♎	♏	♐	
22	31			22	48	29		10	14	10	29	4	♈	♉	♊	♋	♌	♍	♎	♏	♐	
23	35			26	0			28	15	1	31	3	♈	♉	♊	♋	♌	♍	♎	♏	♐	
24	38			31	12			47	16	16	3	0	♈	♉	♊	♋	♌	♍	♎	♏	♐	
25	41			35	24	0	13	7	17	18	4	57	♈	♉	♊	♋	♌	♍	♎	♏	♐	
26	44			40	35			27	18	20	6	52	♈	♉	♊	♋	♌	♍	♎	♏	♐	
27	47			45	47			48	19		21	8	♈	♉	♊	♋	♌	♍	♎	♏	♐	
28	50			50	58	1		9	20	22	10	38	♈	♉	♊	♋	♌	♍	♎	♏	♐	
29	53			55	10			30	21	23	12	29	♈	♉	♊	♋	♌	♍	♎	♏	♐	
30	56	5		0	21			52	22	24	14	19	♈	♉	♊	♋	♌	♍	♎	♏	♐	
31	59			4	32	2		15	23	24	16	8	♈	♉	♊	♋	♌	♍	♎	♏	♐	

Date.	☽		☿		Mean. Ω	Date.	Time. H. M.	Phenomena.
	Lat.	Decl.	Lat.	Decl.				
1	0° N	33° 3'	0° S	50° 21'	13° 13'	2	11 24	☽ on Equator.
3	25° 2'	54° 22'		22° 11'	24° 17'	5	4 20	☽ at ♌
5	16° 1'	54° 0'	0° N	4° 3'	17° 11'	7	0 20	☽ at Apogee.
7	8° 0'	53° 28'	20° 45'		11° 9'	9	6 24	☽ at First Quarter.
9	0° S	1° 0'	5° 7'	49° 17'	5° 5'	6	40 9	☽ at Equator.
11	10° 1'	8° 1'	7° 19'	38° 12'	59° 19'	0	9 4	☽ at ♏
13	20° 2'	8° 22'	18° 49'		52° 11'	22	50 1	☽ at ♐
15	30° 3'	9° 33'	17° 50'		46° 39'			Heli. setting of ☽ in E.
17	40° 4'	9° 40'	16° 43'		39° 14'	16	31	Full Moon D. 11° S 28'.
19	51° 5'	8° 45'	15° 29'		33° 16'	16	48	☽ on Equator.
21	1° 1'	6° 8'	46° 14'	9° 12'	27° 18'	1	0 0	☽ at Apogee.
23	12° 7'	6° 44'	12° 44'		20° 21°	10	22	☽ at Last Quarter.
25	23° 8'	5° 41'	11° 16'		14° 23°	21	56	☉ enters ♏
27	35° 9'	2° 35°	9° 45'		8° 24°	18	55	☽ at ♑
29	46° 59'	27° 8'	13° 13'		1° 28°	15	52	New Moon D. 5° N 43'
31	58° 10'	55° 18'	6° 40'	11° 55'	55° 29°	19	48	☽ on Equator.

18		SEPTEMBER, 1954										S. J. O. UJJAIN	
Date	Day	Sidereal Time		☉		☽		Midnight		ψ			
				Long.	Decl.	Long.	Lat.	Decl.	ψ				
1 W.	10	H. M. S.		8m 17 18	8N28	21 53	5 S	2 13 S 11	27 52	24 10			
2 Th.		39 33		8m 17 18	8N28	21 53	5 S	2 13 S 11	27 52	24 10			
3 F.		43 29		9 15 22	6 3m 49	4 45 17	16	9m 45	11				
4 S.		47 26		10 13 29	7 44 15	40	16 20	38	21 35	12			
5 Su.		51 23		11 11 37	22 27 31	3 37 23	8	3 27	14				
6 M.		55 19		12 9 46	0 9 25	2 48 24	38	15 26	16				
7 Tu.	11	59 16		13 7 57	6 38 21	29 1 15 25	1	27 3	18				
8 W.		3 12		14 6 11	15 3 47	0 48 24	11	10 4	19				
9 Th.		7 9		15 4 26	5 53 16	25 0 N 20 22	27	27 53	21				
10 F.		11 5		16 2 43	30 29 26	1 28 18	50	6 7	23				
11 S.		15 2		17 1 2	8 12 54	2 33 14	30	19 47	25				
12 Su.		18 58		59 23 4	45 26 48	3 32 9	16	3 52	27				
13 M.		22 55		18 57 45	22 11 7	4 19 3	24	18 24	29				
14 Tu.		26 52		19 56 8	3 59 25	45 50 2 N 45	3 7 10	31					
15 W.		30 48		20 54 35	36 10 36	5 2 9	0 18	4	38				
16 Th.		34 45		21 53 3	13 25 31	4 54 14	25	2 57	35				
17 F.		38 41		22 51 32	2 50 10 20	26 19 8	17	40	36				
18 S.		42 38		23 50 4	7 24 57	3 41 22	35	2 9	38				
19 Su.		46 34		24 48 38	4 9 17	2 23 24	32	16	40				
20 M.		50 31		25 47 13	1 41 23	17 1 36	52	0 10	42				
21 Tu.		54 27		26 45 51	17 6 59	0 25 23	41	13 43	43				
22 W.	12	58 24		27 44 30	0 54 20	22 0 S 46 21	9	26 58	45				
23 Th.		2 21		28 43 2	31 3 30	1 53 17	33	9 58	47				
24 F.		6 17		29 41 55	7 16 24	2 52 13	11	12 47	50				
25 S.		10 14		0 40 40	0 S 16 29	6 3 43	8	19 5 24	52				
26 Su.		14 10		1 39 27	39 11 38	4 21 3	10	17 50	54				
27 M.		18 7		2 38 16	1 3 24	1 47 2 S 1	0 9	56					
28 Tu.		22 3		3 37 7	26 6 15	59 7 3	12	19 58					
29 W.		26 0		4 36 0	50 18 21	57 11 46	24	21 25	1				
30 Th.		29 56		5 34 55	2 13 0m 9	42 15 59	6m 15	3					
		33 53		6 33 52	36 12 11	15 19 32	18	6					

Date	ψ		♈		♉		♊		♋	
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
2	1N 40	7 S 49	0 N 29	21 N 25	2 N 16	11 S 5	0 N 4	21 N 44	4 S 4	27 S 28
4		50		24		9		40	0	23
6		52		23	15	13		36	3 56	18
8		53		22		17		32	52	12
10		55		21		21		28	48	5
12		56		20		25	6	24	44	26 58
14		58		19		30		20	41	51
16		59		18	14	35		16	37	43
18	8	1		17		39		12	33	34
20		3		16	13	43	7	15	29	25
22		4		15	12	47		11	25	15
24		6				51		7	21	5
26	39	7	30	14		55		3	17	25 54
28		9				59	8	0	13	42
30		10		13	12	4	20	58	9	30

EPHEMERIS										SEPTEMBER, 1954										19
Date	Longitudes										Lunar Aspects									
	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	☉	☽	♈	♉	♊	♋	♌	♍	♎	♏
1	26 2	5 8	21 44	2 39	24 25	17 55	Δ	♈	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
2	26 5	13	55 3	3 25	24 19	42 *	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
3	8	18 22	6	27 26	23 21	27	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
4	11	23	17	52 27	23 23	10	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
5	13	28	28 4	17 28	21 24	53	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
6	16	33	39	43 29	19 26	34	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
7	19	38	49 5	9 0m	17 28	14	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
8	22	44 23	0	36 1	14 29	53	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
9	24	49	10 6	3 2	11 1 31	8	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
10	27	55	21	30 3	7 3	8	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
11	30	6	31	58 4	3 4	43	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
12	32	6	42 7	26	58 6	19	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
13	35	11	52	55 5	54 7	51	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
14	37	17 24	2 8	24 6	48 9	23	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
15	40	23	12	54 7	43 10	54	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
16	42	28	21 9	23 8	35 12	24	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
17	44	34	31	53 9	28 13	53	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
18	47	40	41 10	23 10	21 15	21	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
19	49	46	50	54 11	12 16	48	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
20	51	52 25	0 11	26 12	3 18	14	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
21	54	58	9	58	53 19	38	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
22	56 7	4	18 12	30 13	43 21	1	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
23	58	10	27 13	2 14	31 22	23	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
24 27	0	16	36	35 15	19 23	43	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
25	2	23	45 14	8 16	7 25	3	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
26	4	30	54	41	53 26	21	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
27	6	36 26	2 15	14 17	39 27	38	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
28	8	43	11	48 18	24 28	53	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
29	10	49	19 16	21 19	7 0m	7	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
30	12	56	27	55	50 1	19	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽	☉	☽
Date	♀		♊		Mean		Date	Time		Phenomena										
	Lat.	Decl.	Lat.	Decl.	♈	♉		H.	M.											
2	2 S 10	11 S 51	1 N 7	5 N 7	11 49	2 17	0			☉ at Apogee.										
4	22 12	45	0 55	3 33	42 8	5 17	57			☉ at First Quarter.										
6	34 13	38	42 2	1	36 9	8 4	55			☉ at ☉										
8	46 14	30	29 0	29	29 12	12 0				☉ on Equator.										
10	59 15	21	15 1 S 1	23	18 0	18 0				☉ at Aphelion										
12	3 11 16	11	0 S 0	2 30	17 13	1 16				☉ on Equator.										
14	23	59	15 3	57	10 1	46				Full Moon Decl. 0° N 8'										
16	36 17	46	31 5	22	4					Heli. rising of ♄ in W.										
18	48 18	32	46 6	46	10 58	15 2				☉ at Perigee.										
20	4 0 19	15	1 2	8 6	51 19	16 43				☉ at Last Quarter.										
22	12	58	17 9	24	45 20	20 25				☉ at ☉										
24	24 20	38	33 10	39	38 22	19 0				☉ at Aphelion.										
26	36 21	17	48 11	51	32 23	19 20				☉ enters ♈ Equinox.										
28	47	54	2 12	59	26 26	2 40				☉ on Equator.										
30	58 22	29	16 14	4	20 27	6 23				New Moon Decl. 5° N 47'										
					30 5	0				☉ at Apogee.										

20		OCTOBER, 1954										S. J. O. UJJAIN									
Date	Day	Sidereal Time				☉		♂			♂			Midnight		ψ					
						Long.	Decl.	Long.	Lat.	Decl.	♂	♂									
1 F.	12	37	50	7	32	52	3 S 0	24	1	3 S 37	22 S 17	29	55	25	8						
2 S.		41	46	8	31	55	23	5	49	2	50	24	4	11	10						
3 Su.		45	43	9	30	58	46	17	42	1	54	46	23	41	12						
4 M.		49	39	10	30	3	4	10	29	43	0	54	21	5	14						
5 Tu.		53	36	11	29	1	33	11	57	0	N 11	22	43	18	16						
6 W.		57	32	12	28	20	58	24	31	1	17	19	58	0	19						
7 Th.	13	1	29	13	27	32	5	19	7	28	2	20	16	9	21						
8 F.		5	25	14	26	45	42	20	53	3	19	11	24	27	23						
9 S.		9	22	15	26	0	6	5	4	49	4	7	5	54	25						
10 Su.		13	19	16	25	17	27	19	14	42	0	N	4	26	28						
11 M.		17	15	17	24	37	50	4	7	4	59	6	12	11	30						
12 Tu.		21	12	18	23	58	7	13	19	11	56	12	5	26	32						
13 W.		25	8	19	23	22	35	4	25	32	17	16	12	2	34						
14 Th.		29	5	20	22	48	58	19	36	3	49	21	18	27	36						
15 F.		33	1	21	22	16	8	20	4	32	2	50	23	50	38						
16 S.		36	58	22	21	46	9	42	19	8	1	42	24	41	41						
17 Su.		40	54	23	21	18	9	5	3	19	0	28	23	53	43						
18 M.		44	51	24	20	52	26	17	5	0	S	44	21	38	45						
19 Tu.		48	48	25	20	28	48	0	27	1	53	18	13	7	47						
20 W.		52	44	26	20	6	10	10	13	28	2	53	14	1	50						
21 Th.		56	41	27	19	45	32	26	12	3	44	9	16	2	52						
22 F.	14	0	37	28	19	27	53	8	42	4	22	4	15	14	54						
23 S.		4	34	29	19	0	11	14	21	1	48	0	S	51	56						
24 Su.		8	30	0	18	56	35	3	11	5	1	5	52	9	59						
25 M.		12	27	1	18	44	56	15	13	4	49	10	35	21	1						
26 Tu.		16	23	2	18	35	17	17	27	11	45	14	54	3	3						
27 W.		20	20	3	18	20	37	9	4	4	18	18	36	14	5						
28 Th.		24	17	4	18	20	58	20	54	3	40	21	31	26	8						
29 F.		28	13	5	18	14	13	17	2	43	2	53	23	32	10						
30 S.		32	10	6	18	13	38	14	33	1	57	24	30	20	12						
31 Su.		36	6	7	18	12	57	26	27	0	56	24	20	2	14						
Date:		ψ		♂		♂		♂		♂		♂									
		Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.								
2	1 N 39	8 S 11	0 N 30	21 N 13	2 N 11	12 S 9	0 N 8	20 N 57	3 S 5	25 S 17											
4		13		12		13		54	2	3											
6		15			10	18		52	2	58	24	49									
8		17		11		22		49	54	34											
10		18		10		27		47	50	18											
12		20				32		44	46	2											
14		21				37	10	42	43	23	44										
16		23		9		41		40	39	26											
18		24				45		38	35	8											
20		26				49		36	31	22	48										
22		28			9	54		34	28	28											
24		30				59		33	24	7											
26		32	31	8		13	4	12	31	20	21	46									
28		33				9		30	17	23											
30		35				13		29	13	0											

EPHEMERIS.										OCTOBER, 1954.										21
Date	Longitudes.										Lunar Aspects.									
	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	☉	☽	♈	♉	♊	♋	♌	♍	♎	♏
1	27	13	8	2	26	35	17	30	20	32	2	29	☽	☽	☽	☽	☽	☽	☽	☽
2		15		9		43	18	5	21	13	3	38	☽	☽	☽	☽	☽	☽	☽	☽
3		16		15		51		40		53	4	45	☽	☽	☽	☽	☽	☽	☽	☽
4		18		22		58	19	15	22	31	5	49	☽	☽	☽	☽	☽	☽	☽	☽
5		20		28	27	6		51	23	9	6	52	☽	☽	☽	☽	☽	☽	☽	☽
6		21		35		14	20	26		45	7	51	☽	☽	☽	☽	☽	☽	☽	☽
7		23		42		21	21	2	24	19	8	48	☽	☽	☽	☽	☽	☽	☽	☽
8		24		48		28		38		54	9	42	☽	☽	☽	☽	☽	☽	☽	☽
9		25		56		35	22	15	25	27	10	33	☽	☽	☽	☽	☽	☽	☽	☽
10		26	9	2		42		51		57	11	21	☽	☽	☽	☽	☽	☽	☽	☽
11		27		9		49	23	28	26	25	12	4	☽	☽	☽	☽	☽	☽	☽	☽
12		28		16		55	24	6		54		43	☽	☽	☽	☽	☽	☽	☽	☽
13		29		23	28	2		42	27	19	13	18	☽	☽	☽	☽	☽	☽	☽	☽
14		30		30		8	25	20		44		48	☽	☽	☽	☽	☽	☽	☽	☽
15		31		37		14		57	28	6	14	12	☽	☽	☽	☽	☽	☽	☽	☽
16		33		44		20	26	35		29		30	☽	☽	☽	☽	☽	☽	☽	☽
17		34		51		25	27	13		47		42	☽	☽	☽	☽	☽	☽	☽	☽
18		35		58		30		51	29	6		46	☽	☽	☽	☽	☽	☽	☽	☽
19		36	10	5		36	28	30		20	R	43	☽	☽	☽	☽	☽	☽	☽	☽
20		37		12		42	29	8		34		32	☽	☽	☽	☽	☽	☽	☽	☽
21		38		19		47		47		44		11	☽	☽	☽	☽	☽	☽	☽	☽
22		38		26		52	0	25		54	13	43	☽	☽	☽	☽	☽	☽	☽	☽
23		39		33		57	1	4	0	7	0	4	☽	☽	☽	☽	☽	☽	☽	☽
24		40		40	29	1		43		4	12	19	☽	☽	☽	☽	☽	☽	☽	☽
25		41		47		6	2	22		7	1	28	☽	☽	☽	☽	☽	☽	☽	☽
26		41		55		10	3	2		8	10	32	☽	☽	☽	☽	☽	☽	☽	☽
27		41	11	2		14		41	R	5	9	21	☽	☽	☽	☽	☽	☽	☽	☽
28		42		9		18	4	21		1	8	0	☽	☽	☽	☽	☽	☽	☽	☽
29		42		16		22	5	1	29	m	54	6	43	☽	☽	☽	☽	☽	☽	☽
30		42		23		25		41		44	5	26	☽	☽	☽	☽	☽	☽	☽	☽
31		42		31		28	6	21		30	4	7	☽	☽	☽	☽	☽	☽	☽	☽

Date	☽		☽		Mean.	Date	Time.		Phenomena.		
	Lat.	Decl.	Lat.	Decl.			☽	☽		H.	M.
2	5 S 9	23 S 2	2 S 29	15 S 4	10	13	4	20	0	☽ at Perihelion.	
4	19	33	42	16	0	7	5	7	55	☽ at ☽	
6	29	24	2	53	51	1	11	0	0	☽ at First Quarter.	
8	39	28	3	21	36	9	54	10	11	☽ on Equator	
10	47	52	10	18	15	48	12	10	40	Full Moon D. 11° N 45'	
12	55	25	13	15	46	41	13	7	30	☽ at Perigee.	
14	6	2	32	18	19	8	35	17	21	☽ at ☽	
16	8	48	17	22	29	18	...	...	...	Heli. setting of ☽ in W.	
18	13	26	1	12	20	22	...	...	...	Heli. setting of ☽ in W.	
20	17	11	1	5	16	19	2	5	5	☽ at Last Quarter.	
22	19	18	2	45	18	35	10	23	8	☽ on Equator.	
24	19	20	21	17	47	4	24	4	24	☽ enters ♈	
26	17	19	1	50	16	45	8	57	26	23	New Moon D. 16° S 39'
28	14	14	14	15	21	50	27	14	0	☽ at Apogee.	
30	S	5	0	33	13	52	44	31	19	0	☽ at ☽

Date	Day	Sidereal Time	☉		☽			Midnight	ψ
			Long.	Decl.	Long.	Lat.	Decl.	D	
1 M.		14 40 3	8m 18	13	14 S 17	8m 29	0N 8	23 S 3	14m 34
2 Tu.		43 59 9	18 17		36 20 43	1 13 20	39	26 56	19
3 W.		47 56 10	18 22		55 3m 14	2 16 17	14	9m 37	21
4 Th.		51 52 11	18 29	15	14 16 6	3 14 12	56	22 41	23
5 F.		55 49 12	18 36		32 29 24	4 3 7	53	6m 13	26
6 S.		59 46 13	18 48		50 13m 11	41 2 17	20	15	28
7 Su.	15	3 42 14	19 0	16	8 27 27	5 3 3	N 37	4m 46	31
8 M.		7 39 15	19 14		26 12 7	5 9 30	19	41	33
9 Tu.		11 35 16	19 30		43 27 16	4 47 14	58	4m 54	35
10 W.		15 32 17	19 48	17	1 12m 33	9 19 33	20	13	37
11 Th.		19 28 18	20 8		17 27 52	3 13 22	49	5m 29	39
12 F.		23 25 19	20 29		34 13n 2	2 3 24	24	20 30	41
13 S.		27 21 20	20 52		51 27 53	0 46	11	5m 9	43
14 Su.		31 18 21	21 16	18	6 12m 19	0 S 32	22	10 19	45
15 M.		35 15 22	21 41		22 26 17	1 46 19	10	3m 5	47
16 Tu.		39 11 23	22 11		37 9m 47	2 51 15	3	16 22	49
17 W.		43 8 24	22 38		52 22 52	3 45 10	21	29 16	51
18 Th.		37 4 25	23 10	19	7 5m 36	4 27 5	19	11m 51	53
19 F.		51 1 26	23 41		21 18 2	55 0 13	24	9	55
20 S.		54 57 27	24 15		35 0m 13	5 8 4	S 48	6m 15	57
21 Su.		58 54 28	24 51		49 12 16	8 9 34	18	15	59
22 M.	16	2 51 29	25 27	20	2 24 12	4 55 13	57	0m 8	27
23 Tu.		6 47 0	26 5		15 6m 4	29 17 46	11	59	3
24 W.		10 44 1	26 45		27 17 54	3 51 20	52	23 49	5
25 Th.		14 40 2	27 27		39 29 44	3 23	5	5m 40	6
26 F.		18 37 3	28 9		51 11m 36	2 8 24	17	17 34	8
27 S.		22 33 4	28 50	21	3 23 33	1 6	23	29 33	10
28 Su.		26 30 5	29 37		14 5m 35	0 0 23	20	11m 38	12
29 M.		30 26 6	30 23		24 17 45	1 N 6	21	11 23	14
30 Tu.		34 23 7	31 11		34 0m 6	2 10 18	2	6m 21	16

Date.	ψ		♈		♉		♊		♋	
	Lat.	Decl..	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
1	1 N 39	8 S 36	0 N 31	21 N 7	2 N 9	13 S 17	0 N 12	20 N 27	2 S 10	20 S 37
3		37				22	13		6	12
5		39				27		26	2	19 47
7		40				31			1	59 22
9	40	42		8	8	35	14	25	56	18 55
11		43				39			52	29
13		45				43			49	1
15		46				47	15		45	17 33
17		48		9	7	52			42	5
19		49				56	16	26	39	16 35
21		50	32	10	8 14	0			36	6
23		52				5		27	32	15 35
25		53		11	9	9		28	29	5
27		55				13	17	29	26	14 33
29		56		12		17		30	23	2

Date	Longitudes										Lunar Aspects											
	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	☉	☽	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑
1	27	43	11m	38	29m	31	7	=	1	29m	17	2m	53	*		*						
2		43		45		34				28 R	59	1 R	51	□								
3		43		52		37	8			21	41	0	58	□								
4	R	42		59		39	9			2	19	13		□								
5		42 12		6		42				42 27	55	29m	37	□	Δ	π	□	π	□	Δ	□	□
6		42		14		44	10			23	30	14	Δ	□	Δ	□	Δ	□	Δ	□	Δ	□
7		42		21		46	11			4	3	1	□	□	Δ	□	Δ	□	Δ	□	Δ	□
8		42		28		48				45 26	32 28	58	π									
9		42		35		50	12			26	29 D	5		□								
10		41		42		51	13			7 25	29	25	□									
11		41		49		52				48 24	55	54	π		*		*					
12		40		57		53	14			39	20	0m	33	π	□	Δ	□	Δ	□	Δ	□	Δ
13		40 13		4		54	15			10 23	45	1	19		□	Δ	□	Δ	□	Δ	□	Δ
14		39		11		55				52	8	2	11	□	□	Δ	□	Δ	□	Δ	□	Δ
15		39		19		55 16				38 22	32	3	10	□	□	Δ	□	Δ	□	Δ	□	Δ
16		38		25		55 17				15 21	56	4	14									
17		38		32 R		55				20 5	56	20	5	□	*		*					
18		37		39		55 18				38 20	44	6	36									
19		36		46		55 19				20	9	7	53		Δ	Δ	*	*	Δ	Δ	*	*
20		35		54		55 20				2 19	36	9	12	*	*	*	*	*	*	*	*	*
21		34 14		1		54				44	2	10	33	Δ								
22		33		8		53 21				26 18	31	11	57	□	□	Δ	□	Δ	□	Δ	□	Δ
23		32		15		52 22				8	0	13	22									
24		31		22		51				50 17	33	14	49									
25		30		29		49 23				32	5	16	17	□	□	Δ	□	Δ	□	Δ	□	Δ
26		29		36		47 24				15 16	42	17	46		Δ	Δ	*	*	Δ	Δ	*	*
27		28		43		45				57	18	19	16		*	*	*	*	*	*	*	*
28		27		50		43 25				39 15	58	20	46		*	*	*	*	*	*	*	*
29		25		57		41 26				22	40	22	17	Δ								
30		24 15		4		39 27				4	26	23	49	□	□	Δ	□	Δ	□	Δ	□	Δ

Date	♈	♉	Mean. n	Date	Time. H. M.	Phenomena.
1	5S 59	25 S 51	0 N 18	12 S 21	8m 38	4 2 22
3	48	31	46 11	5	32	...
5	34	7	1 19	10	6	25 5 18 0
7	17 24	39	45 9	28	19	6 21 17
9	4 58	5	2 3	14	13	...
11	35 23	27	14	21	6	10 6 0
13	11 22	45	19	45	7	59 20 2
15	3 44	1	20 10	23	53	14 2 10
17	15 21	14	16 11	11	47	17 15 2
19	2 45	20 26	9 12	6	41	19 13 2
21	14 19	38	0 13	5	34	20 ...
23	1 43	18 51	1 49	14	7	28 21 ...
25	12	6	37	15	9	22 23 1 46
27	0 42	17 23	24	16	12	15 12 0
29	13 16	44	11	17	12	9 25 18 1
						28 12 0

24		DECEMBER, 1954										S. J. O. UJJAIN									
Date	Day	Sidereal Time			☉		☽					Midnight	ψ								
					Long.	Decl.	Long.	Lat.	Decl.	D											
1	W.	H. 16	M. 38	S. 20	8 32	0	21 S 44	12 41	3 N 10	13 S 58	19 5	27 18									
2	Th.		42	16	9 32	49	53	25 34	4 1	9 13	2 8	19									
3	F.		46	13	10 33	39	22	2 8 47	41 3	56	15 33	21									
4	S.		50	9	11 34	32	11	22 24	5 6	1 N 40	29 22	23									
5	Su.		54	6	12 35	24	19	6 26	15 7	22	13 36	24									
6	M.		58	2	13 36	19	26	20 52	4 12	50	28 13	26									
7	Tu.	17	1	59	14 37	14	34	5 39	4 33	17	42 13 8	28									
8	W.		5	55	15 38	10	40	20 41	3 43	21	30 28 15	29									
9	Th.		9	52	16 39	7	47	5 49	2 36	23	51 13 23	31									
10	F.		13	49	17 39	58	53	20 54	1 20	24	28 28 23	32									
11	S.		17	45	18 41	4	58	5 47	0 S	2	23 18 13 7	34									
12	Su.		21	42	19 42	5	23	3 20	21 1	21	20 34 27 28	36									
13	M.		25	38	20 43	5	7	4 29	2 34	16	39 11 23	37									
14	Tu.		29	35	21 44	5	1	18 10	3 35	11	58 24 51	38									
15	W.		33	31	22 45	8	15	1 25	4 23	6	52 7 53	40									
16	Th.		37	28	23 46	11	18	14 15	5 55	1	39 20 33	41									
17	F.		41	24	24 47	11	21	2 44	5 13	3S	30 2 53	43									
18	S.		45	21	25 48	21	23	8 57	13 8	24	14 59	44									
19	Su.		49	18	26 49	26	24	20 58	6 12	54	26 55	46									
20	M.		53	14	27 50	31	24	2 51	4 42	16	52 8 46	47									
21	Tu.		57	11	28 51	36	2	14 40	6 20	10	20 35	48									
22	W.	18	1	7	29 52	43	24	26 30	3 20	22	37 2 26	49									
23	Th.		5	4	0 53	49	24	8 22	2 25	24	5 14 21	51									
24	F.		9	0	1 54	46	24	20 21	1 23	28	26 22	52									
25	S.		12	57	2 56	4	24	2 23	0 17	23	42 8 32	53									
26	Su.		16	53	3 57	12	23	14 41	0 N 51	21	47 20 53	54									
27	M.		20	50	4 58	21	21	27 7	1 58	18	49 3 24	56									
28	Tu.		24	47	5 59	28	19	9 45	2 59	14	56 16 8	57									
29	W.		28	43	7 0	37	16	22 35	3 53	10	19 29 6	58									
30	Th.		32	40	8 1	46	12	5 40	4 36	5	9 12 18	59									
31	F.		36	36	9 2	54	8	19 0	5 5	0 N 19	25 46	28 0									

Date	♊		♈		♉		♊		♋	
	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.	Lat.	Decl.
1	1 N 40	8 S 57	0 N 32	21 N 12	2 N 9	14 S 21	0 S 18	20 N 31	1 S 20	13 S 30
3		58		13		25		33		17 12 57
5		9		14		29		35		14 24
7		1				33		37		11 11 51
9		2		15		37		39		8 18
11	41	3		16	10	40	19	41	5	10 44
13		4				43		43	2	2 9
15		4		17		46	20	45	0	59 9 34
17		5		18		49		47		56 0
19		6		19		53		50		53 8 25
21		7		20		56	21	53		51 7 49
23		8		21		59		56		48 14
25		9		22	11 15	1	22	59		45 6 38
27	42	10		23		3		21	3	43 2
29		10		24		6		5		40 5 27
31		11		24	12	4		8		38 4 50

EPHEMERIS										DECEMBER, 1954										25				
Date	Longitudes										Lunar Aspects													
	♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓	☉	☽	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓
1	27	22	15	11	29	36	27	47	15	12	25	21	*											
2	R	20		18	R	33	28	29		R	3	26	53		Δ	π	Δ	π	♄		□	♅		♅
3		19		25		30	29	12	14		54	28	25		□	π	Δ	□		Δ		Δ		π
4		17		33		27		54			49	29	58		□	π	Δ	□	♄	♄	Δ		π	□
5		16		40		23	0	37			46	1	30	Δ		π	Δ	□	♄	♄	Δ		π	□
6		14		47		19	1	19			46	3	3		♄	□	π	□	♄	♄	Δ		π	Δ
7		12		54		16	2	2			46	4	36		□	π	□	π	♄	♄	Δ		π	Δ
8		11	16		1	12		45		D	50	6	9		□	π	□	π	♄	♄	Δ		π	Δ
9		9		8		7	3	27			56	7	42		□	π	□	π	♄	♄	Δ		π	Δ
10		7		15		3	4	10	15		5	9	16	♄	□	π	□	π	♄	♄	Δ		π	Δ
11		6		22	28	59		52			17	10	49			□	π	□	♄	♄	Δ		π	Δ
12		4		29		54	5	36			30	12	22		π	□	♄	Δ	Δ	□	π	Δ		♄
13		2		36		49	6	19			46	13	56		□	π	□	♄	Δ	□	π	Δ		♄
14	26	59		43		44	7	2	16		4	15	29		□	π	□	♄	Δ	□	π	Δ		♄
15		57		49		38		45			23	17	3		*	♄	♄	♄	♄	♄	Δ		♄	♄
16		55		56		32	8	28			45	18	37		□	♄	♄	*	♄	♄	Δ		♄	♄
17		53	17		3	28	9	11	17		8	20	11		□	♄	♄	*	♄	♄	Δ		♄	♄
18		51		9		22		54			34	21	45			♄	♄	*	♄	♄	Δ		♄	♄
19		49		15		16	10	37	18		0	23	19			□	π	□	♄	♄	Δ		♄	♄
20		47		20		10	11	20			30	24	53	*	♄	□	□	□	♄	♄	Δ		♄	♄
21		45		25		4	12	3			59	26	28	Δ	♄	♄	♄	♄	♄	Δ		♄	♄	Δ
22		43		31	27	58		46	19		32	28	2	Δ	♄	♄	♄	♄	♄	Δ		♄	♄	Δ
23		40		36		51	13	29	20		4	29	37	Δ	♄	♄	♄	♄	♄	Δ		♄	♄	Δ
24		38		42		45	14	12			40	1	12	Δ	♄	♄	♄	♄	♄	Δ		♄	♄	Δ
25		36		47		38		55	21		15	2	48	♄	*	π	Δ	π	♄	♄	Δ		♄	Δ
26		34		52		31	15	38			53	4	23				*	*	*	*			□	π
27		31		57		24	16	21	22		32	5	59		□	♄	*	*	*	*			□	π
28		29	18		2	17	17	4	32		12	7	35	Δ	Δ	□	□	♄	♄	Δ		♄	♄	Δ
29		26		7		10		48			53	9	11	Δ	Δ	□	□	π	♄	♄	Δ		♄	♄
30		24		12		3	18	31	24		36	10	48	*	Δ	□	□	π	♄	♄	Δ		♄	♄
31		22		17	26	56	19	14	25		19	12	25	□	□	Δ	□	Δ	♄	♄	Δ		♄	♄

Date	☽		☽		Mean	Date	Time	Phenomena					
	Lat.	Decl.	Lat.	Decl.	Δ								
1	0 N 15	16 S	9	0 N 56	18 S 11	7	3	3	15	24	☽ at First Quarter.		
3		42	15	39	42	19	8	6	56		Heli. setting of ☽ in E.		
5	1	6		13	28	20	1		50	4	☽ on Equator.		
7		29	14	51	14		50		44	8	☽ at Perigee.		
9		50		34	0 S	0	21	36	37	9	☽ at ☽		
11	2	9		22	14	22	19		31	10	6	29	Full Moon. D. 24° N 19'.
13		27		13	27		56		25	11	11	25	☽ at ☽
15		42		9	40	23	29		18	16	19	41	☽ on Equator.
17		56		8	53		57		12	17	8	1	☽ at Last Quarter.
19	3	9		11	1	4	24	21	6	19	18	0	☽ at Aphelion.
21		20		16	15		39		0	21	1	0	☽ at Apogee.
23		29		24	25		52	15	53	22	14	40	☉ enters ☽
25		37		35	35	25	0		46	25	13	4	New Moon. D. 23° S 36'
27		44		48	43		2		40		18	0	☽ at ☽
29		50	15	2	50	24	58		34	31	10	37	☽ on Equator.
31		54		18	57		48		27				

Months and Dates.	Latitudes											
	+5°	+8°	+11°	+14°	+17°	+20°	+23°	+26°	+29°	+32°	+35°	
Jan.	3 6	9 6	14 6	19 6	24 6	30 6	36 6	42 6	48 6	54 7	1 7	8
	10 6	12 17	17 22	22 27	27 32	32 37	37 43	43 49	49 55	55 2	2 9	
	17 14	19 19	24 24	29 29	34 34	38 38	44 44	50 50	56 56	2 2	8 8	
	24 15	20 25	30 34	38 43	46 51	54 59	61 66	68 73	74 79	80 85	90 95	
	31 16	20 24	28 32	36 41	44 49	51 56	58 63	65 69	71 75	77 81	83 87	
Feb.	7 16	20 24	28 31	34 38	42 46	50 54	58 62	66 69	74 77	80 83	86 89	
	14 15	18 21	24 27	30 33	36 40	44 47	51 54	58 61	65 68	72 75	79 82	
	21 14	17 20	22 26	27 30	32 35	38 41	44 47	50 53	56 59	63 66	69 72	
	28 12	14 16	18 20	21 23	25 27	29 31	33 35	37 39	41 43	45 47	49 51	
Mar.	7 10	12 13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29	30 31	
	14 7	7 8	8 9	9 10	10 11	11 12	12 13	13 14	14 15	15 16	16 17	
	21 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	4 4	
	28 1	1 0	0 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	
Apr.	4 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	5 5	
	11 55	53 51	49 46	43 40	37 34	31 28	25 22	19 16	13 10	7 4	1 0	
	18 53	51 49	46 43	40 37	34 31	28 25	22 19	16 13	10 7	4 1	0 0	
	25 50	48 45	42 39	35 31	27 23	20 17	13 10	7 4	1 0	0 0	0 0	
May	2 48	45 42	38 34	31 27	22 17	12 7	4 1	0 0	0 0	0 0	0 0	
	9 47	43 39	35 31	27 22	17 12	7 1	0 0	0 0	0 0	0 0	0 0	
	16 46	42 38	34 29	24 19	13 7	4 1	0 0	0 0	0 0	0 0	0 0	
	23 46	42 37	32 27	22 16	10 4	4 1	0 0	0 0	0 0	0 0	0 0	
	30 45	40 35	30 25	20 14	8 2	5 5	4 8	3 11	2 14	1 17	0 20	
June	6 46	41 36	31 25	20 13	6 4	5 9	4 12	3 15	2 18	1 21	0 24	
	13 47	42 37	32 26	20 13	6 4	5 9	4 12	3 15	2 18	1 21	0 24	
	20 49	43 37	31 26	21 14	7 5	0 0	5 3	4 6	3 9	2 12	1 15	
	27 51	45 39	33 28	23 16	9 4	2 5	5 8	4 11	3 14	2 17	1 20	
July	4 53	47 41	35 30	25 18	11 4	5 7	4 10	3 13	2 16	1 19	0 22	
	11 55	49 43	37 32	27 20	13 5	6 5	5 8	4 11	3 14	2 17	1 20	
	18 55	50 45	40 35	30 25	20 14	8 2	5 5	4 8	3 11	2 14	1 17	
	25 56	51 46	41 37	32 26	20 14	8 2	5 5	4 8	3 11	2 14	1 17	
Aug.	1 56	51 47	43 39	35 30	24 19	14 8	5 3	4 6	3 9	2 12	1 15	
	8 56	52 46	43 40	37 33	28 23	18 14	8 3	5 4	4 7	3 10	2 13	
	15 56	53 50	47 43	40 36	32 28	24 19	14 8	5 3	4 6	3 9	2 12	
	22 56	53 50	47 44	42 38	34 30	27 24	19 16	12 9	5 2	4 5	3 8	
	29 55	52 50	47 45	43 41	38 35	32 30	24 19	16 12	9 5	6 2	5 5	
Sep.	5 53	51 49	47 46	45 43	41 38	35 32	30 27	24 21	18 15	12 9	6 3	
	12 52	51 50	48 47	46 44	43 41	39 37	35 32	30 27	24 21	18 15	12 9	
	19 51	50 49	49 48	48 47	47 46	46 45	45 44	44 43	43 42	42 41	41 40	
	26 48	48 49	49 49	49 50	50 51	51 52	52 53	53 54	54 55	55 56	56 57	
Oct.	3 47	48 49	49 50	51 52	53 55	57 59	61 63	65 67	69 71	73 75	77 79	
	10 46	48 49	51 52	53 55	57 59	61 63	65 67	69 71	73 75	77 79	79 81	
	17 46	47 49	51 53	55 57	59 61	63 65	67 69	71 73	73 75	75 77	77 79	
	24 45	48 50	52 55	58 61	63 66	67 70	71 74	75 78	79 82	83 86	87 90	
	31 45	48 51	54 58	60 64	66 70	72 76	78 82	84 88	87 91	90 94	93 97	
Nov.	7 46	49 52	56 60	62 66	68 72	74 78	80 84	82 86	84 88	86 90	88 92	
	14 47	51 55	59 63	66 70	70 74	76 80	82 86	84 88	86 90	88 92	90 94	
	21 50	54 58	62 66	68 72	74 78	80 84	84 88	86 90	88 92	90 94	92 96	
	28 52	57 62	66 70	72 76	78 82	84 88	88 92	90 94	92 96	94 98	96 100	
Dec.	5 55	6 0	5 10	15 19	21 25	27 31	33 37	39 43	45 49	51 55	57 61	
	12 58	3 3	8 13	19 23	25 29	31 35	37 41	43 47	49 53	55 59	61 65	
	19 58	2 7	12 17	23 27	29 33	35 39	41 45	47 51	53 57	59 63	65 69	
	26 6	11 16	21 26	32 37	39 44	46 51	53 58	60 65	67 72	74 79	80 85	

Months and Dates	Latitudes																					
	+5°	+8°	+11°	+14°	+17°	+20°	+23°	+26°	+29°	+32°	+35°											
Jan. 3	18	0	17	55	17	50	17	45	17	39	17	33	17	27	17	20	17	13	17	6	17	0
10		3		58		53		48		43		38		32		26		19		12		6
17		6	18	1		56		51		46		42		36		30		24		18		13
24		9		4		59		55		51		47		41		35		29		24		20
31		11		7	18	3		59		55		51		47		43		38		33		27
Feb. 7		13		9		5	18	1		58		55		51		47		43		39		34
14		13		10		7		4	18	1		59		56		53		50		46		41
21		21		13		11		9		7		5	18	2		59		56		53		48
28		13		11		8		6		5		4	18	2	18	0		58		56		54
Mar. 7		13		11		9		8		6		7		6		5	18	4	18	2	18	0
14		12		11		11		10		10		9		9		8		8		7		6
21		11		11		11		11		11		11		11		11		11		11		11
28		10		11		11		12		12		13		14		15		15		16		17
Apr. 4		8		10		11		12		14		15		17		19		21		22		23
11		8		10		12		14		15		17		19		21		23		25		28
18		7		10		12		15		17		19		22		25		28		31		34
25		7		10		12		16		19		21		24		27		32		36		40
May 2		6		10		13		17		20		23		27		31		36		40		45
9		6		10		14		18		22		26		31		36		41		46		51
16		7		11		15		19		24		29		35		41		47		52		57
23		8		12		17		22		27		32		38		44		50		56	19	2
30		9		14		19		24		29		35		41		48		54	19	0		7
June 6		10		15		20		25		31		37		43		49		56		3		11
13		18		18		24		30		35		40		46		52	18	59		6		14
20		13		19		25		31		36		41		48		55	19	2		9		17
27		15		21		27		33		38		43		50		57		4		11		18
July 4		17		22		27		32		38		43		50		57		4		11		18
11	18	17	18	22	18	27	18	32	18	38	18	43	18	50	18	57	19	4	19	10	19	16
18		18		23		28		33		38		42		48		54		0		6		13
25		17		22		27		31		35		40		46		52	18	58		4		9
Aug. 1		16		21		25		29		33		37		43		49		54		0		7
8		15		19		23		27		31		34		38		42		47	18	52	18	57
15		13		17		20		23		26		29		33		37		41		45		49
22		10		13		16		19		22		24		27		30		33		37		41
29		8		10		12		14		16		18		20		23		26		29		32
Sep. 5		5		7		9		10		11		12		14		16		18		20		22
12		2		3		4		5		6		7		8		10		11		12		12
19	17	58	17	58	17	59	17	59	17	59	18	0	18	0	18	0	1		2		2	
26	17	55		55		55		54		54	17	53	17	53	17	53	17	52	17	52	17	52
Oct. 3		51		51		49		49		48		47		46		45		44		43		42
10		48		46		44		43		42		41		39		37		35		34		33
17		45		43		41		39		37		36		34		31		29		27		24
24		44		41		38		35		33		31		28		45		22		19		15
31		42		39		36		33		30		27		23		19		15		11		8
Nov. 7		42		38		34		30		26		23		19		15		10		5		1
14		42		38		34		30		26		21		16		11		6		1	16	56
21		42		38		34		29		24		19		14		9		4	16	58		52
28		44		39		34		29		24		19		13		7		1		55		49
Dec. 5		46		41		36		31		26		20		14		8		1		56		48
12		49		44		39		34		28		22		16		9		3		56		49
19		52		47		42		37		32		25		18		11		4		57		51
26		56		51		46		40		34		28		21		14		7	17	0		55

28 Geocentric position of Pluto and Mean Longitudes
of the Sun and the Moon in 1954.

Month and Date.	Pluto.			Sun.			Moon.		
	Long.	Lat.	Decl.	Mean Long.	Mean Long.	Hor. Par.	Semi- Dia.		
Jan.	124 24 39 11 R 23 10 21 16 2 31 2 4	9N 57 0 23 10 0 2 2 4 4	22N 40 46 52 300 59 309	22 44 280 14 7 290 5 30 300 56 54 309	40 0 238 25 50 10 11 40 142 57 31 273	55.6 59.3 55.3 57.2	15.1 16.1 15.0 15.6		
Feb.	10 23 47 20 33 5	5 23 6 10 10 5	319 48 17 329 39 41	45 43 21 177 29 11	58.5 54.4	15.9 14.8			
March	2 18 6 12 5 5 22 22 52	6 15 20 5 20 349 4 23 359	339 31 4 22 27 81 13 50 212	15 2 59.1 0 52 57.1 46 42 54.2	16.1 15.5 14.7				
April	1 43 3 11 35 1 21 30 9	3 25 9 1 26 18 59 26 28	5 14 344 56 37 116 48 0 248	32 32 60.8 18 22 55.6 4 12 54.7	16.5 15.1 14.9				
May	1 28 57 11 28 55 21 D 31 53 31 38 51	57 25 38 55 23 48 53 20 58 51 16 68	39 24 19 30 47 151 22 11 283 13 54 55	50 3 61.4 53 54.6 44 55.8 34 60.7	16.7 14.8 15.2 16.5				
June	10 46 49 20 57 47 30 23 12	49 11 73 47 5 87 22 46 59	4 57 186 56 20 318 47 43 90	53 24 54.2 14 57.2 5 58.8	14.7 15.5 16.0				
July	10 27 45 20 43 44 30 24 1	45 53 107 44 47 117 44 40 127	39 7 222 30 30 353 21 53 125	55 54.4 45 59.9 36 56.9	14.7 16.0 14.1				
August	9 20 44 19 39 45 29 58 46	44 34 137 45 28 147 46 22 156	13 16 257 4 40 29 56 3 161	25 55.2 16 59.5 0 7 55.4	15.0 16.2 14.2				
Sep.	8 25 17 18 34 49 28 25a 51	47 17 166 49 13 178 9N 51 22N 9	26 292 50 64 13 186	45 57 56.7 47 58.8 17 37 54.4	15.4 16.0 14.7				
Oct.	8 26 5 18 18 57 28 28 10	5 54 6 57 5 206 0 4 216	21 37 328 12 59 99 4 23 231	3 27 58.7 49 18 57.5 8 54.1	15.9 15.6 14.7				
Nov.	7 36 4 17 41 7 27 43 11	4 5 225 7 235 9 245	55 46 3 47 10 135 38 33 266	20 58 59.5 49 56.1 39 54.5	16.2 15.3 14.8				
Dec.	7 R 41 17 38 18 27 32 21 31 29 23	14 13 255 18 18 265 21 23 275 23 25 279	56 38 38 20 170 43 302 9 16 354	29 61.0 24 55.0 10 55.9 30 57.7	16.6 14.9 15.1 15.7				

Ending Moments of Tithis for each date in 1954
(calculated in I. S. T.).

29

Date.	January.		February.		March.		April.		May.		June.	
	Ti.	Time.	Ti.	Time.	Ti.	Time.	Ti.	Time.	Ti.	Time.	Ti.	Time.
1	26	H. M. 6 51	27	H. M. 1 15	26	H. M. 18 13	27	H. M. 4 27	28	H. M. 10 6	30	H. M. 9 32
2	27	8 0	28	0 55	27	16 47	28	1 18	29	5 44	1	6 34
3	28	8 32	29	23 25	28	14 40	29	21 44	30	1 55	2	4 7
4	29	8 27	30	21 24	29	11 55	1	14 0	2	18 44	3	2 16
5	30	7 50	2	16 10	30	8 40	2	1 12	3	15 55	4	1 4
6	1	6 43	3	13 17	1	5 11	3	6 56	4	13 36	5	0 39
7	2	15 13	4	10 23	2	1 36	4	3 48	5	12 4	6	0 58
8	3	3 26	5	7 39	4	18 56	5	1 24	6	11 23	7	2 0
9	4	1 26	6	5 10	5	16 5	7	22 27	7	11 28	8	3 39
10	5	23 18	7	3 0	6	13 44	8	22 42	8	12 19	9	5 43
11	6	21 9	8	1 12	7	11 58	9	23 19	9	13 48	10	8 3
12	8	16 53	10	22 58	8	10 57	10	...	10	15 48	11	10 28
13	9	14 50	11	22 31	9	10 9	10	0 32	11	18 3	12	12 41
14	10	12 58	12	22 31	10	13 45	11	2 14	12	20 29	13	14 41
15	11	11 22	13	...	11	11 29	12	4 16	13	22 53	14	16 20
16	12	9 59	13	0 53	12	12 40	13	6 30	14	...	15	17 35
17	13	8 56	14	23 39	13	14 15	14	8 55	14	1 9	16	18 24
18	14	8 21	15	0 53	14	16 7	15	11 20	15	3 15	17	17 14
19	15	8 9	16	2 25	15	18 14	16	13 43	16	5 9	18	18 43
20	16	8 27	17	3 35	16	20 33	17	16 0	17	6 44	19	18 12
21	17	9 18	18	6 34	17	22 58	18	18 7	18	7 55	20	17 33
22	18	10 39	19	8 59	18	...	19	19 56	19	8 42	21	15 58
23	19	12 31	20	11 29	18	1 26	20	21 22	20	9 0	22	14 16
24	20	14 47	21	13 55	19	3 51	21	22 15	21	8 45	23	12 13
25	21	17 16	22	16 2	20	6 4	22	22 30	22	7 56	24	9 47
26	22	19 44	23	17 42	21	7 57	23	22 2	23	6 31	25	7 8
27	23	22 2	24	18 39	22	9 18	24	20 51	24	4 27	26	4 22
28	24	23 58	25	18 57	23	9 57	25	18 52	25	1 53	27	1 33
29	25	...	26	22 56	24	9 49	26	16 17	26	22 56	28	22 49
30	25	1 16	27	...	25	8 49	27	13 8	27	19 42	29	20 16
31	26	2 11	28	...	26	6 59	28	...	28	16 19	30	17 59

Date.	Aspect	Time.	Distance.	Date.	Aspect	Time.	Distance.	Date.	Aspect	Time.	Distance.
January.				March.				May.			
		H. M. °				H. M. °				H. M. °	
2	δ φ π	7 30 1	8	1	δ φ π	15 27 2	14	1	δ φ π	22 10 6	11
3	δ φ π	9 30 3	26	3	δ φ π	22 54 12	2	2	δ φ π	13 4 5	45
4	δ φ π	18 0 1	5	5	δ φ π	21 24 0	8	3	δ φ π	16 4 3	45
	δ φ π	20 1 1	1	8	δ φ π	23 5 2	52	3	δ φ π	1 55 4	15
	δ φ π	20 4 0	1	9	δ φ π	3 5 10	25	4	δ φ π	10 19 1	36
5	δ φ π	7 50 0	44	11	δ φ π	0 39 6	56	6	δ φ π	17 38 2	23
	δ φ π	20 25 0	23	14	δ φ π	14 40 3	56	7	δ φ π	1 40 1	39
8	δ φ π	5 54 12	1	16	δ φ π	18 26 2	59	8	δ φ π	19 42 1	54
12	δ φ π	0 5 0	28	17	δ φ π	3 17 0	18	9	δ φ π	18 30 0	50
13	δ φ π	3 27 1	24	19	δ φ π	22 0 0	11	10	δ φ π	4 26 0	0
	δ φ π	10 47 7	5	20	δ φ π	22 0 0	11	11	δ φ π	7 19 12	23
	δ φ π	21 13 5	36	22	δ φ π	13 58 2	27	12	δ φ π	9 55 6	19
15	δ φ π	0 0 1	55	23	δ φ π	18 14 2	55	13	δ φ π	7 31 7	1
	δ φ π	9 32 0	15	24	δ φ π	20 47 5	31	14	δ φ π	3 15 3	43
16	δ φ π	6 25 3	24	26	δ φ π	0 31 6	12	15	δ φ π	4 33 1	18
18	δ φ π	17 59 1	26	28	δ φ π	2 57 7	0	16	δ φ π	13 36 0	23
19	δ φ π	2 50 1	4	30	δ φ π	19 39 2	26	17	δ φ π	19 48 1	23
	δ φ π	8 9 0	26	31	δ φ π	21 6 0	29	18	δ φ π	13 28 2	35
	δ φ π	14 12 2	48		δ φ π	8 35 12	6	19	δ φ π	12 9 0	56
21	δ φ π	8 42 12	3		δ φ π	17 42 2	29	20	δ φ π	17 42 2	29
26	δ φ π	11 58 6	29		δ φ π	23 19 12	19	21	δ φ π	6 45 6	17
27	δ φ π	13 40 7	9		δ φ π	23 8 7	1	22	δ φ π	23 8 7	1
28	δ φ π	17 29 5	20		δ φ π	14 11 4	11	23	δ φ π	14 11 4	11
30	δ φ π	6 51 1	3					24	δ φ π		
	δ φ π	15 2 0	28					25	δ φ π		
February.				April.				June.			
		H. M. °				H. M. °				H. M. °	
1	δ φ π	10 23 8	5	1	δ φ π	19 24 5	30	1	δ φ π	0 21 2	12
2	δ φ π	4 1 0	18	3	δ φ π	17 54 4	27	2	δ φ π	9 32 2	38
3	δ φ π	21 24 1	47	4	δ φ π	12 21 6	17	3	δ φ π	21 46 1	4
	δ φ π	23 24 3	3	5	δ φ π	8 14 6	56	4	δ φ π	1 51 2	2
4	δ φ π	13 31 11	59	6	δ φ π	20 16 1	42	5	δ φ π	7 17 3	24
	δ φ π	23 32 3	50	7	δ φ π	9 20 0	32	6	δ φ π	16 2 1	35
8	δ φ π	19 46 6	24	8	δ φ π	14 44 2	4	7	δ φ π	6 5 1	12
9	δ φ π	17 57 7	4	9	δ φ π	0 59 12	6	8	δ φ π	9 6 4	51
11	δ φ π	6 36 4	47	10	δ φ π	10 49 1	37	9	δ φ π	10 10 6	34
12	δ φ π	10 17 3	25	11	δ φ π	21 5 34	12	10	δ φ π	14 7 1	20
13	δ φ π	4 8 2	31	12	δ φ π	5 13 6	14	11	δ φ π	15 45 6	17
14	δ φ π	22 58 0	4	13	δ φ π	20 4 34	12	12	δ φ π	11 26 7	6
17	δ φ π	15 14 12	1	14	δ φ π	5 25 6	55	13	δ φ π	4 33 3	41
18	δ φ π	0 53 2	51	15	δ φ π	6 37 3	58	14	δ φ π	17 35 1	42
	δ φ π	10 38 4	27	16	δ φ π	3 30 2	2	15	δ φ π	12 29 4	42
19	δ φ π	10 58 1	41	17	δ φ π	22 41 1	46	16	δ φ π	13 48 1	7
22	δ φ π	18 52 6	22	18	δ φ π	1 20 2	33	17	δ φ π	13 37 0	11
23	δ φ π	2 1 7	3	19	δ φ π	16 48 12	11	18	δ φ π	20 33 1	11
26	δ φ π	8 57 4	12	20	δ φ π	19 48 0	5	19	δ φ π	15 37 3	24
27	δ φ π	0 23 3	8	21	δ φ π			22	δ φ π	5 38 12	37
				24	δ φ π			23	δ φ π	19 8 4	15

Date.	Aspect	Time.	Distance.	Date.	Aspect	Time.	Distance.	Date.	Aspect	Time.	Distance.	
		H. M.	°			H. M.	°			H. M.	°	
25	δ φ π	13 32	6	24	$\odot$ δ φ π	8 17	5	34	δ φ π	20 0	0	
26	δ φ π	5 9	6	59	δ φ π	1 38	6	13	δ φ π	20 58	12	
30	δ φ π	5 32	5	36	δ φ π	18 54	6	42	δ φ π	10 40	4	
	δ φ π	17 59	0	27	δ φ π	7 10	7	29	δ φ π	22 2	6	
	δ φ π	18 14	0	29	δ φ π	1 46	1	38	δ φ π	19 55	6	
	$\odot$ δ φ π	23 10	0	7	23	δ φ π	17 34	5	30	δ φ π	2 31	0
July.				25	δ φ π	6 30	1	40	15	δ φ π	1 24	2
					δ φ π	16 6	1	35	18	δ φ π	1 37	3
					δ φ π	21 47	12	26	19	δ φ π	6 35	2
					δ φ π	6 2	1	21	19	δ φ π	8 39	1
					δ φ π	15 52	3	43	18	δ φ π	16 30	2
									19	$\odot$ δ φ π	23 22	1
1	δ φ π	8 27	0	33	September.				21	δ φ π	12 17	12
	δ φ π	18 38	1	15					26	δ φ π	19 15	9
3	δ φ π	17 13	4	31						δ φ π	3 23	4
4	δ φ π	2 1	12	16						δ φ π	9 43	6
6	δ φ π	10 43	4	38						δ φ π	23 19	4
8	δ φ π	23 12	6	29	1	δ φ π	5 54	3	28	δ φ π	16 5	6
9	δ φ π	17 56	7	1		δ φ π	16 36	6	8	δ φ π	17 13	3
11	δ φ π	12 36	4	48		δ φ π	17 33	2	37	δ φ π	6 22	3
14	δ φ π	5 31	6	23		δ φ π	14 51	6	47	δ φ π	2 57	0
15	δ φ π	5 8	4	51	2	δ φ π	14 41	4	31			
	δ φ π	9 4	0	14	7	δ φ π	0 18	1	6			
16	δ φ π	5 57	0	49	9	δ φ π	6 24	1	48			
	δ φ π	6 39	1	20	11	δ φ π	9 33	12	26			
	$\odot$ δ φ π	16 4	1	29	13	δ φ π	1 46	3	57			
18	δ φ π	13 12	18	18		δ φ π	20 30	5	4			
19	δ φ π	11 45	5	3	14	δ φ π	9 48	4	31			
22	δ φ π	19 11	6	16	15	δ φ π	10 46	6	9			
23	δ φ π	3 50	5	31	16	δ φ π	5 42	5	18			
27	δ φ π	4 26	6	29		δ φ π	8 59	0	49			
	δ φ π	22 57	1	3	20	δ φ π	20 19	3	22			
28	δ φ π	13 27	0	4	21	δ φ π	20 51	1	24			
	δ φ π	14 22	1	43	22	δ φ π	0 2	1	54			
29	δ φ π	6 17	1	24	24	δ φ π	5 39	12	36			
30	δ φ π	3 54	1	55	25	δ φ π	9 14	13	6			
31	δ φ π	12 7	12	16	27	δ φ π	6 33	4	32			
August.				29	δ φ π	1 25	5	55				
					δ φ π	11 33	2	24				
					δ φ π	3 19	6	10				
				30								
				October.								
2	δ φ π	18 52	1	19								
4	δ φ π	16 20	0	35								
5	δ φ π	7 33	7	57								
6	δ φ π	3 24	6	12								
10	δ φ π	12 54	6	18								
12	δ φ π	5 5	0	29								
	δ φ π	18 18	1	35	1	δ φ π	4 29	1	23			
14	δ φ π	0 32	3	45	6	δ φ π	3 49	1	57			
	δ φ π	16 31	3	0		δ φ π	17 17	5	1	40		
	$\odot$ δ φ π	22 20	11	56		δ φ π	17 16	2	4			
18	δ φ π	1 55	4	5	7	δ φ π	9 7	4	50			

Date.	Aspect	Time.	Dis- tance.	Date.	Aspect	Time	Dis- tance.	Date.	Aspect	Time	Dis- tance.
December.											
		H. M.	°	10	☿ ☉	6 29	1 28		☿ ☿	21 11	6 48
				12	☿ ☉	23 23	2 36		☿ ☉	12 49	1 22
2	☿ Pl	14 4	13 24	13	☿ Pl	2 26	2 30	25	☿ ☉	13 4	0 12
	☿ ☿	17 32	2 42	15	☿ Pl	3 22	13 36		☿ ☉	17 39	1 36
6	☿ ☿	22 41	5 57	16	☿ ☿	0 33	3 22	27	☿ ☉	10 51	2 25
8	☿ ☿	2 37	5 20	17	☿ ☿	4 30	0 41		☿ ☿	12 32	2 35
	☿ ☿	4 29	5 44	20	☿ ☿	1 45	5 16	29	☿ Pl	19 13	13 43
9	☿ ☿	15 21	2 17	21	☿ ☿	17 37	5 48	31	☿ ☿	12 26	3 16

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
January.											
		H. M.			H. M.			H. M.			H. M.
2	♂	7 30	22	♀	4 44	15	♂	8 34	25	♂	1 43
4	♂	18 0	24	♀	3 16	17	♂	21 36	26	♂	0 12
	♂	20 58	28	♂	14 22	18	♂	22 23		♂	6 55
	♂	21 48				20	♂	9 34	27	♂	22 43
6	♂	0 45	March.			24	♂	10 17	30	♂	3 9
	♂	5 54					♂	5 5		♂	15 3
	♂	23 24	1	♀	2 40	25	♂	14 53	31	♂	14 11
9	♂	4 7		♀	11 14	26	♂	20 22		♂	19 27
11	♂	5 57	2	♀	15 27		♂	4 4		♂	20 34
12	♂	0 57		♀	2 33		♂	2 34			
	♂	21 18		♀	6 0		♂	15 42			
13	♂	3 27		♀	16 20	27	♂	0 13	June.		
15	♂	0 0		♀	22 54		♂	1 20			
	♂	6 58	8	♀	1 16		♂	13 18			
	♂	9 32		♀	21 10		♂	19 48			
	♂	20 38	10	♀	12 0	May.					
16	♂	4 19	13	♀	1 22	1	♂	10 59	1	♂	0 21
	♂	19 0	14	♀	10 4		♂	15 47	2	♂	10 53
18	♂	18 0	15	♀	4 33	2	♂	21 17	5	♂	9 6
19	♂	11 41	16	♀	20 8	3	♂	0 42		♂	15 23
	♂	20 23		♀	22 0		♂	10 19	8	♂	16 30
23	♂	18 11		♀	13 36		♂	16 37	10	♂	14 7
24	♂	3 42		♀	8 34		♂	17 19	12	♂	10 2
	♂	10 3	23	♂	10 22		♂	17 19	13	♂	4 0
28	♂	6 20	25	♂	10 34		♂	3 2	14	♂	16 13
29	♂	17 17	26	♂	17 39	4	♂	15 34	15	♂	6 12
	♂	20 13	27	♂	20 26	6	♂	7 17	16	♂	4 33
30	♂	6 51		♂	8 41	9	♂	15 34	21	♂	9 42
	♂	7 33		♂	10 27	10	♂	4 26	23	♂	15 22
February.			28	♂	3 3	11	♂	7 43	24	♂	21 0
			29	♂	9 39		♂	7 58	25	♂	19 8
				♂	12 23		♂	8 38	28	♂	1 15
			31	♂	17 30	12	♂	0 54	30	♂	18 44
				♂	20 0	13	♂	18 30		♂	23 10
						14	♂	1 15	July.		
						15	♂	8 0			
			April.				♂	12 24			
							♂	15 2			
1	♂	10 23	5	♂	23 51	16	♂	23 16	1	♂	3 38
2	♂	15 32	7	♂	13 39	17	♂	5 14	6	♂	20 9
3	♂	2 7	9	♂	12 17	18	♂	18 3	7	♂	10 43
4	♂	17 41		♂	17 23		♂	18 29		♂	9 5
6	♂	0 30	10	♂	0 9	19	♂	0 41	9	♂	19 18
7	♂	13 33		♂	5 39	21	♂	2 56	9	♂	13 43
8	♂	11 14		♂	14 44	23	♂	17 42	10	♂	9 39
11	♂	3 36	12	♂	14 56	24	♂	7 58	11	♂	12 36
12	♂	8 51	13	♂	6 43						
	♂	12 21									
13	♂	4 8									
15	♂	10 49									
18	♂	11 19									
19	♂	4 50									
	♂	19 15									

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
		H. M.			H. M.	October.				H. M.	
15	♄ Δ ♄	14 17	25	♄ * ♄	7 20	2	♄ Δ ♄	1 23	30	♄ Δ ♄	19 1
	♄ □ ♄	20 0		♄ Δ ♄	16 57	5	♄ Δ ♄	0 12		♄ Δ ♄	22 40
16	♄ □ ♄	22 47	27	♄ Δ ♄	15 28	7	♄ Δ ♄	9 7	December.		
	♄ □ ♄	14 57	28	♄ Δ ♄	14 40	9	♄ Δ ♄	20 0	1	♄ Δ ♄	10 52
	♄ □ ♄	16 4	29	♄ Δ ♄	5 58	13	♄ Δ ♄	27 0	2	♄ Δ ♄	18 56
19	♄ Δ ♄	14 57	30	♄ Δ ♄	12 0	14	♄ Δ ♄	22 59	3	♄ Δ ♄	18 58
20	♄ Δ ♄	21 40	September.			15	♄ Δ ♄	23 18	4	♄ Δ ♄	20 0
21	♄ Δ ♄	3 45				18	♄ Δ ♄	1 37	5	♄ Δ ♄	21 36
22	♄ Δ ♄	22 6				19	♄ Δ ♄	16 30	6	♄ Δ ♄	4 15
25	♄ Δ ♄	20 17				20	♄ Δ ♄	23 22	7	♄ Δ ♄	10 7
26	♄ Δ ♄	17 40				21	♄ Δ ♄	12 0	8	♄ Δ ♄	4 39
27	♄ Δ ♄	22 57				22	♄ Δ ♄	9 31	9	♄ Δ ♄	7 36
August.						23	♄ Δ ♄	19 29	10	♄ Δ ♄	4 7
3	♄ Δ ♄	9 3	1	♄ Δ ♄	5 54	24	♄ Δ ♄	2 24	11	♄ Δ ♄	15 47
	♄ Δ ♄	17 47	2	♄ Δ ♄	10 19	25	♄ Δ ♄	5 34	12	♄ Δ ♄	22 13
4	♄ Δ ♄	0 39	3	♄ Δ ♄	19 27	26	♄ Δ ♄	3 23	13	♄ Δ ♄	7 27
	♄ Δ ♄	6 58	4	♄ Δ ♄	11 34	28	♄ Δ ♄	15 36	14	♄ Δ ♄	15 37
	♄ Δ ♄	10 26	5	♄ Δ ♄	3 23	30	♄ Δ ♄	2 53	15	♄ Δ ♄	10 18
5	♄ Δ ♄	16 20	6	♄ Δ ♄	16 22	31	♄ Δ ♄	8 55	16	♄ Δ ♄	23 12
	♄ Δ ♄	9 15	8	♄ Δ ♄	7 36				17	♄ Δ ♄	8 11
	♄ Δ ♄	9 41	10	♄ Δ ♄	20 44	November.			18	♄ Δ ♄	4 30
	♄ Δ ♄	10 30	12	♄ Δ ♄	11 25	5	♄ Δ ♄	6 7	19	♄ Δ ♄	6 53
9	♄ Δ ♄	18 13	13	♄ Δ ♄	8 46	6	♄ Δ ♄	8 55	20	♄ Δ ♄	12 0
10	♄ Δ ♄	19 28	14	♄ Δ ♄	20 30	8	♄ Δ ♄	11 18	21	♄ Δ ♄	10 24
12	♄ Δ ♄	16 20	15	♄ Δ ♄	22 9	9	♄ Δ ♄	18 21	22	♄ Δ ♄	18 48
14	♄ Δ ♄	1 39	16	♄ Δ ♄	4 59	11	♄ Δ ♄	10 17	23	♄ Δ ♄	2 24
16	♄ Δ ♄	16 0	17	♄ Δ ♄	8 5	15	♄ Δ ♄	14 30	24	♄ Δ ♄	13 32
17	♄ Δ ♄	9 23	18	♄ Δ ♄	8 13	19	♄ Δ ♄	19 12	25	♄ Δ ♄	16 15
	♄ Δ ♄	11 8		♄ Δ ♄	9 0	20	♄ Δ ♄	0 50	26	♄ Δ ♄	8 39
18	♄ Δ ♄	8 17		♄ Δ ♄	14 24		♄ Δ ♄	3 41	27	♄ Δ ♄	11 2
19	♄ Δ ♄	1 47	19	♄ Δ ♄	7 22	22	♄ Δ ♄	16 15	28	♄ Δ ♄	13 36
20	♄ Δ ♄	7 10	20	♄ Δ ♄	14 9	24	♄ Δ ♄	22 50	29	♄ Δ ♄	17 46
	♄ Δ ♄	16 6	22	♄ Δ ♄	12 0	25	♄ Δ ♄	3 54	30	♄ Δ ♄	12 0
22	♄ Δ ♄	1 46	25	♄ Δ ♄	1 54		♄ Δ ♄	17 30		♄ Δ ♄	8 9
	♄ Δ ♄	13 25		♄ Δ ♄	9 14	22	♄ Δ ♄	22 50		♄ Δ ♄	11 44
	♄ Δ ♄	14 34	26	♄ Δ ♄	2 37	24	♄ Δ ♄	3 54		♄ Δ ♄	17 39
23	♄ Δ ♄	7 12	27	♄ Δ ♄	1 46	25	♄ Δ ♄	22 17		♄ Δ ♄	4 9

(For the latitude 23°11' N).

Mercury.

Rises.

1st February, in West.

9th March, in East.

19th May, in West.

16th July, in East.

13th September, in West.

4th November, in East.

Sets.

22nd February, in West.

17th April, in East.

24th June, in West.

11th August, in East.

18th October, in West.

3rd December, in East.

Venus.

4th March, in West.

21st November, in East.

6th November, in West.

Jupiter.

15th July, in East.

15th June, in West.

Saturn.

20th November, in East.

18th October, in West.

Moonrise.

6th January.

5th February.

6th March.

4th April.

4th May.

2nd June.

1st July.

31st July.

29th August.

28th September.

28th October.

27th November.

26th December.

Elements of the Planetary orbits for 12 O'clock noon (I. S. T.) on 1st January, 1954.

38

Planet.	Mean Long.	Mean Daily Motion.	Per. of Revolution (Sid).	Long. of Asc. Node.	Long. of Perihelion or Perigee.	Eccentricity.	Mean Distance from Sun.	Inclination of the Orbit.
	° ' "	° ' "	Days.	° ' "				° ' "
Mercury	255 17 8	4 5 32	87.9693	47 47 10	76 44 43	0.205625	0.3870984	7 0 14
Venus	263 34 32	1 36 8	224.701	76 15 56	130 55 27	0.006789	0.7233302	3 23 29
Earth	100 22 44	0 59 8	365.256	..	282 8 58	0.016729	1.0000000	..
Mars	190 23 41	0 31 26	686.980	49 12 10	335 12 44	0.093856	1.523678	1 51 0
Jupiter	77 40 30	0 4 59	4332.59	99 59 20	13 35 25	0.048417	5.202561	1 18 21
Saturn	207 16 8	0 2 0	10759.2	113 15 42	92 9 22	0.055720	9.554747	2 29 26
Uranus	116 19 37	0 0 42	30688.5	73 44 47	172 21 0	0.046331	19.21824	0 46 22
Neptune	203 13 27	0 0 21.5	60181.3	131 16 29	47 29 48	0.00900	30.10957	1 46 28
Moon	238 40 0	13 10 35	27.3216	294 43 58	11 38 6	0.05490	..	5 8 13

Daily Motion of Moon's Node — 0 3 10.62
 Perigee + 0 6 41.05.

Timings of Lunar Aspects in 1954.

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Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
January.					H. M.			H. M.			H. M.
1	♂	5 43	10	♂	21 47	20	♂	3 40	31	♂	1 18
	♂	11 50		♂	23 18		♂	8 9		♂	4 29
	♂	13 13		♂	6 17		♂	14 12		♂	15 2
	♂	14 11		♂	8 39		♂	15 2		♂	21 52
2	♂	5 32	11	♂	11 11	21	♂	19 3	31	♂	0 11
	♂	6 32		♂	13 40		♂	21 42		♂	4 55
	♂	10 32		♂	7 44		♂	1 50		♂	5 42
	♂	12 36		♂	9 57		♂	8 42		♂	7 59
	♂	12 49		♂	16 6		♂	12 6		♂	8 31
	♂	18 49	12	♂	21 55	22	♂	17 35		♂	8 42
	♂	20 19		♂	0 7		♂	21 2			
3	♂	9 30		♂	2 37		♂	6 19			
	♂	14 31		♂	5 32		♂	6 37			
	♂	16 45		♂	5 54		♂	12 56			
	♂	18 10	13	♂	11 16	23	♂	17 22			
	♂	20 21		♂	13 54		♂	2 18			
	♂	22 43		♂	1 22		♂	5 2			
4	♂	20 1	14	♂	10 47		♂	6 2			
	♂	20 4		♂	21 13		♂	10 58			
	♂	20 10		♂	2 46		♂	12 8			
	♂	22 40		♂	5 52		♂	18 46			
5	♂	23 31	15	♂	8 20	24	♂	18 52	2	♂	4 1
	♂	7 50		♂	12 24		♂	19 26		♂	9 51
	♂	15 21		♂	12 58		♂	23 9		♂	10 41
	♂	20 25	16	♂	14 20	25	♂	11 42	3	♂	13 49
	♂	3 56		♂	17 8		♂	14 47		♂	14 19
7	♂	17 28	17	♂	10 19	26	♂	18 34	4	♂	23 39
	♂	1 17		♂	14 36		♂	1 32		♂	23 45
	♂	2 31	18	♂	15 15	27	♂	3 5	5	♂	21 24
	♂	5 48		♂	17 0		♂	6 8		♂	23 24
	♂	6 8	19	♂	17 54	28	♂	16 58	6	♂	1 2
	♂	7 46		♂	19 10		♂	2 2		♂	7 7
	♂	16 22	20	♂	3 22	29	♂	24 42		♂	13 31
8	♂	7 46		♂	6 25		♂	7 7		♂	17 2
	♂	16 22		♂	12 21		♂	11 38		♂	17 2
	♂	19 10	21	♂	15 11	30	♂	23 5	7	♂	18 46
	♂	5 54		♂	18 33		♂	2 56		♂	23 32
	♂	8 21	22	♂	19 51		♂	8 59		♂	14 44
	♂	10 24		♂	21 28		♂	13 40		♂	16 6
	♂	12 46	23	♂	23 56	28	♂	4 47		♂	17 45
	♂	19 56		♂	7 2		♂	12 17		♂	2 33
9	♂	1 42	24	♂	11 13		♂	17 29		♂	2 44
	♂	4 49		♂	17 37		♂	23 28		♂	5 41
	♂	9 49	25	♂	0 28		♂	17 39		♂	8 26
	♂	11 12		♂	3 50		♂	0 8		♂	24 44
	♂	14 17	26	♂	7 1		♂	3 1		♂	15 18
	♂	17 24		♂	10 1		♂	6 1		♂	18 18
	♂		27	♂	13 1		♂	9 1		♂	21 51
	♂			♂	16 1		♂	12 1		♂	5 7
	♂			♂	19 1		♂	15 1		♂	
	♂			♂	22 1		♂	18 1		♂	
	♂			♂	25 1		♂	21 1		♂	
	♂			♂	28 1		♂	24 1		♂	
	♂			♂	31 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1		♂	12 1		♂	
	♂			♂	18 1		♂	15 1		♂	
	♂			♂	21 1		♂	18 1		♂	
	♂			♂	24 1		♂	21 1		♂	
	♂			♂	27 1		♂	24 1		♂	
	♂			♂	30 1		♂	27 1		♂	
	♂			♂	3 1		♂	30 1		♂	
	♂			♂	6 1		♂	3 1		♂	
	♂			♂	9 1		♂	6 1		♂	
	♂			♂	12 1		♂	9 1		♂	
	♂			♂	15 1	</					

Timings of Lunar Aspects in 1954.—(contd.).

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
8	P1	H. 6	17	P1	H. 22	28	P1	H. 9	8	P1	H. 16
		M. 51			M. 40			M. 43			M. 43
		8 32			1 7			12 56			17 9
		15 18			15 14			17 29			23 3
		15 56			19 43			18 51			3 5
		23 29			0 47			16 29			5 26
		3 45			10 38			18 57			8 32
		7 39			12 31			20 11			13 41
		9 38			12 35			21 49			14 10
		10 28			21 50						16 15
9	P1	11 35	18	P1	0 5	March.	P1	0 2	9	P1	0 3
		16 2			5 59			5 39			5 48
		19 46			10 58			9 50			9 50
		1 24			11 58			14 52			14 52
		4 41			1 56			16 5			16 5
		14 33			3 30			17 30			17 30
		17 57			6 38			0 7			0 7
		5 55			17 24			4 17			4 17
		12 0			16 24			9 13			9 13
		14 1			2 54			16 11			16 11
10	P1	18 42	21	P1	5 1	1	P1	0 0	10	P1	0 4
		19 12			7 52			18 46			18 46
		22 37			9 30			16 11			16 11
		6 36			22 49			0 42			0 42
		13 56			2 14			5 51			5 51
		21 47			2 21			14 0			14 0
		23 39			5 58			18 26			18 26
		0 49			10 33			20 48			20 48
		10 17			14 1			23 24			23 24
		16 25			14 49			3 50			3 50
11	P1	22 58	22	P1	18 52	2	P1	5 17	11	P1	5 17
		23 28			6 35			8 13			8 13
		0 30			11 29			19 42			19 42
		3 33			18 16			6 50			6 50
		5 29			22 1			8 20			8 20
		14 14			9 18			22 56			22 56
		2 37			13 0			1 15			1 15
		3 44			18 23			3 17			3 17
		10 37			2 24			10 38			10 38
		11 44			7 12			10 45			10 45
12	P1	16 49	23	P1	0 9	3	P1	4 28	12	P1	4 28
		19 0			4 57			5 45			5 45
		22 58			8 57			6 56			6 56
		6 20			9 44			8 53			8 53
		8 34			12 46			16 35			16 35
		10 37			17 16			17 40			17 40
		16 33			19 4			10 52			10 52
		18 44			0 23			12 29			12 29
		20 53			5 16						
		0 20									
13	P1	11 47	24	P1	5 16	3	P1	13 51	13	P1	12 29

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
		H. M.			H. M.			H. M.			H. M.
17	♂ Pl	17 7	27	♂	0 9	5	♂	20 28	14	♂	5 26
	♂	20 10		♂	21 40		♂	0 39		♂	8 44
	♂	1 1	28	♂	0 9		♂	5 22		♂	10 51
	♂	1 27		♂	0 50		♂	8 14		♂	15 52
	♂	13 58		♂	2 14		♂	15 23		♂	5 45
18	♂	17 53		♂	21 6	6	♂	20 27	15	♂	6 38
	♂	1 54		♂	22 24		♂	2 29		♂	11 12
	♂	2 58	29	♂	2 11		♂	2 44		♂	12 14
	♂	6 29		♂	3 57		♂	6 0		♂	12 30
	♂	22 31		♂	4 41		♂	8 16		♂	16 49
19	♂	23 36		♂	8 14		♂	11 57	16	♂	1 23
	♂	0 2		♂	8 21		♂	16 12		♂	5 45
	♂	8 40	30	♂	8 14		♂	22 29		♂	12 21
	♂	9 17		♂	1 37		♂	0 58		♂	17 11
	♂	12 14		♂	7 13		♂	2 56		♂	18 44
	♂	18 14		♂	8 49		♂	8 35	17	♂	17 11
20	♂	3 34		♂	9 0		♂	12 39		♂	11 10
	♂	14 38	31	♂	15 46		♂	1 24	18	♂	0 59
	♂	15 21		♂	2 14		♂	4 8		♂	31 28
	♂	20 47		♂	3 58		♂	4 29		♂	5 13
21	♂	11 7		♂	8 35		♂	4 7		♂	11 20
	♂	11 17		♂	12 4		♂	8 9	19	♂	5 23
	♂	11 46		♂	12 22		♂	9 34		♂	8 21
	♂	14 44		♂	12 30		♂	9 48		♂	10 40
	♂	21 34		♂	12 36		♂	10 10		♂	10 40
22	♂	0 31	April.				♂	14 5	20	♂	3 13
	♂	12 11					♂	20 16		♂	6 37
	♂	17 55	1	♂	3 20		♂	29 10		♂	13 2
	♂	19 7		♂	9 42		♂	11 58		♂	15
	♂	22 19		♂	13 19		♂	12 27		♂	17 21
23	♂	2 57		♂	14 59		♂	12 4		♂	21 5
	♂	16 26		♂	15 2	10	♂	9 20	21	♂	5
	♂	21 16		♂	19 24		♂	10 36		♂	10 1
24	♂	0 22		♂	1 31		♂	13 56		♂	17 1
	♂	0 32	2	♂	5 45		♂	15 46		♂	23 2
	♂	5 50		♂	9 36		♂	21 49	22	♂	8 5
	♂	8 4		♂	9 44	11	♂	18 31		♂	13 3
	♂	12 58		♂	13 20		♂	21 7		♂	22 4
25	♂	2 3		♂	14 36		♂	22 32	23	♂	1 1
	♂	6 4		♂	16 57	12	♂	26 1		♂	1 3
	♂	6 27	3	♂	9 15		♂	9 46		♂	4 5
	♂	11 26		♂	9 20		♂	18 18		♂	21 2
	♂	14 55		♂	17 54		♂	23 53		♂	22 4
	♂	18 48		♂	22 59	13	♂	0 32	24	♂	3 4
26	♂	11 12	4	♂	3 2		♂	0 59		♂	6 9
	♂	12 8		♂	5 31		♂	5 17		♂	9 2
	♂	19 27		♂	8 43		♂	15 22	25	♂	2 4
	♂	19 39		♂	12 21		♂	16 0		♂	4 4
	♂	20 15		♂	15 15		♂	23 49		♂	10 3

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
		H. M.			H. M.			H. M.			H. M.
26	ψ	14 12	4	μ	12 26	14	Pl	0 39	25	μ	11 8
	□	16 40		λ	15 26		○	0 40		□	18 36
	Δ	8 25		π	16 35		σ	1 27		π	19 32
	⊙	10 26		σ	17 38		μ	15 5		σ	23 19
	ζ	11 38		ψ	19 49	15	μ	0 35		Δ	0 36
27	π	17 37		ψ	21 30		□	2 1		Δ	0 51
	Δ	11 55	5	μ	5 46		□	2 5		Δ	13 4
	Pl	16 48		μ	14 42		□	2 1		Δ	16 27
	ψ	20 2		Pl	15 54		□	2 1		Δ	19 15
	Δ	20 5		ψ	19 23		□	9 41		Δ	19 36
28	μ	20 29		ψ	22 14	16	ψ	9 55	26	□	22 9
	σ	3 40	6	λ	1 31		σ	4 1		□	3 12
	⊙	14 13		⊙	1 40		ζ	7 31		□	3 47
	Δ	15 51		⊙	8 24		π	10 21	27	□	21 21
	⊙	18 52		Δ	17 8	17	⊙	14 36		□	0 1
	ψ	21 35		Δ	19 42		μ	1 16		□	3 28
29	ψ	1 40		Δ	20 55		μ	1 51		□	5 21
	ζ	16 41	7	ψ	0 52		⊙	3 8		□	6 16
	Pl	19 22		⊙	7 54		Δ	14 38		□	17 10
	π	21 29		⊙	12 4		Δ	19 25	28	□	22 26
	ψ	22 20		μ	18 30	18	Pl	19 49		□	0 15
30	μ	23 26	8	Pl	0 35		⊙	3 15		□	1 53
	σ	6 8		ψ	2 22		μ	7 48	29	□	4 33
	⊙	10 6		λ	5 55		μ	20 13		□	5 42
	Δ	16 22		μ	6 56	19	□	19 38		□	1 52
	Pl	16 50		π	22 34		Δ	2 22		□	4 10
	⊙	19 34		⊙	2 18		Δ	2 50		□	5 4
		23 21		μ	11 5	20	σ	4 33		□	6 45
				⊙	23 50		λ	0 35		□	13 48
				⊙	12 30		π	2 14		□	20 32
				μ	2 8		Pl	6 45	30	□	23 8
				μ	2 15		ψ	11 15		□	5 20
				Pl	9 2		⊙	13 36		□	6 6
				σ	10 21		⊙	19 22		□	6 6
				μ	16 19	21	μ	19 48	31	□	16 37
				λ	7 26		⊙	11 49		□	19 20
				μ	7 38		⊙	13 28		□	2 17
				Δ	12 42	22	⊙	1 48		□	5 21
				Δ	15 36		⊙	2 31		□	6 0
				λ	5 20		⊙	12 9		□	6 54
				λ	13 14		Pl	16 18		□	7 28
				⊙	13 19		ψ	22 24		□	19 19
				Δ	15 48	23	⊙	2 14		□	19 46
				μ	18 25		σ	4 46		□	23 11
				μ	21 23		μ	5 15			
				Δ	2 4		⊙	9 5			
				λ	4 49		Δ	10 55			
				μ	19 14	24	□	13 56			
							□	9 48			
May.											
1	μ	12 7	11	μ	12 7	21	μ	12 7	31	μ	12 7
	□	14 44		λ	14 44		○	14 44		□	14 44
	Δ	19 21		π	19 21		σ	19 21		π	19 21
	⊙	22 10		σ	22 10		μ	22 10		σ	22 10
2	ζ	23 58		ψ	23 58		□	23 58		Δ	23 58
	π	13 4		ψ	13 4		□	13 4		Δ	13 4
	Δ	13 46		ψ	13 46		□	13 46		Δ	13 46
	⊙	16 4		ψ	16 4		□	16 4		Δ	16 4
	Δ	16 32		ψ	16 32		□	16 32		Δ	16 32
	⊙	23 53		ψ	23 53		□	23 53		Δ	23 53
3	μ	1 55		ψ	1 55		□	1 55		Δ	1 55
	Δ	14 5		ψ	14 5		□	14 5		Δ	14 5
	⊙	16 33		ψ	16 33		□	16 33		Δ	16 33
	μ	18 39		ψ	18 39		□	18 39		Δ	18 39
	Pl	21 25		ψ	21 25		□	21 25		Δ	21 25
	λ	23 57		ψ	23 57		□	23 57		Δ	23 57
June.											
1	μ	2 28	11	μ	2 28	21	μ	2 28	31	μ	2 28
	□	5 57		λ	5 57		○	5 57		□	5 57
	Δ	7 2		π	7 2		σ	7 2		π	7 2
	⊙	9 32		σ	9 32		μ	9 32		σ	9 32

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
		H. M.			H. M.			H. M.			H. M.
2	☿	23 45	12	♄	15 45	22	♄	0 7			
	♂	23 30		♂	11 26		♂	2 51		♂	8 37
	♂	3 2		♂	13 32		♂	5 24		♂	17 59
	♂	6 4		♂	16 58		♂	6 18		♂	18 3
	♂	7 34		♂	17 5		♂	8 48		♂	18 14
3	♂	21 46	13	♂	11 41	23	♂	11 23			
	♂	0 24		♂	20 13		♂	1 13			
	♂	1 51		♂	22 25		♂	7 18			
	♂	7 17		♂	0 5		♂	8 26			
	♂	8 44	14	♂	1 43		♂	10 14			
	♂	15 6		♂	2 51		♂	10 15			
	♂	16 2		♂	4 0		♂	23 35			
4	♂	6 5	15	♂	8 39	24	♂	1 13			
	♂	9 8		♂	19 16		♂	2 47			
	♂	19 17		♂	23 12		♂	2 54			
5	♂	2 44	15	♂	2 33		♂	9 55			
	♂	4 26		♂	3 34		♂	11 17			
	♂	10 10		♂	6 1		♂	11 53			
	♂	11 22		♂	9 38		♂	5 47			
	♂	11 38	16	♂	17 25	25	♂	11 31			
6	♂	0 39		♂	2 11		♂	13 8			
	♂	3 11		♂	4 29		♂	13 32			
	♂	6 40		♂	11 23	26	♂	4 5			
	♂	12 40		♂	13 51		♂	5 9			
	♂	14 48		♂	14 51		♂	7 8			
	♂	17 19		♂	17 35		♂	12 52			
	♂	18 17	17	♂	1 32	27	♂	17 49			
7	♂	10 23		♂	9 19		♂	4 23			
	♂	11 31		♂	12 29		♂	6 52			
	♂	12 7		♂	13 48		♂	9 40			
	♂	17 0		♂	18 37		♂	13 23			
	♂	19 4	18	♂	13 37		♂	14 1			
	♂	22 1		♂	20 33		♂	14 53			
8	♂	1 48		♂	22 47	28	♂	15 11			
	♂	14 44		♂	23 36		♂	4 35			
	♂	17 18		♂	6 47		♂	6 37			
	♂	18 49		♂	15 37		♂	7 4			
	♂	22 55		♂	17 17		♂	12 9			
9	♂	2 2	19	♂	19 16		♂	14 12			
	♂	3 29		♂	22 40		♂	15 9			
	♂	23 6	20	♂	12 24		♂	15 54			
	♂	23 48		♂	21 51		♂	16 40			
10	♂	5 29		♂	21 59		♂	23 44			
	♂	8 5	21	♂	2 25	29	♂	7 17			
	♂	18 44		♂	3 41		♂	7 28			
	♂	8 3		♂	5 38		♂	15 16			
11	♂	11 23		♂	6 24	30	♂	16 53			
	♂	13 39		♂	17 33		♂	3 2			
	♂	14 24					♂	5 32			

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

[illegible]

Date	Aspect	Time.	Date	Aspect	Time.	Date	Aspect	Time.	Date	Aspect	Time.
		H. M.			H. M.			H. M.			H. M.
22	Pl	20 51	2	Δ	17 17	11	ψ	0 14	21	ψ	13 58
	Pl	21 41		Δ	18 32		ψ	1 24		ψ	11 22
	ψ	0 2		Δ	6 9		ψ	1 55		ψ	12 17
	ψ	2 33		Δ	7 5		ψ	2 8		ψ	14 19
23	ψ	18 42		Δ	16 45		Pl	23 15		ψ	14 45
	ψ	5 28		Δ	18 2	12	ψ	0 3		ψ	17 0
	ψ	8 16		Δ	20 49		ψ	1 16		ψ	18 52
	ψ	8 35		Δ	0 3		ψ	10 40		ψ	19 15
24	ψ	0 38		Δ	1 3		ψ	20 4		ψ	15 25
	ψ	3 59		Δ	14 2		ψ	22 2		ψ	16 18
	Pl	5 18		Δ	16 30		Pl	23 2		ψ	19 40
	ψ	5 39		Δ	20 6	13	ψ	0 10		ψ	21 17
	ψ	8 1		Δ	23 12		ψ	1 3		ψ	21 47
	ψ	10 59		Δ	3 1		ψ	1 52		ψ	22 8
25	ψ	15 17		Δ	4 36	14	ψ	2 31		ψ	21 49
	ψ	3 47		Δ	6 27		ψ	13 21		ψ	21 2
	ψ	8 36		Δ	7 10		ψ	21 37		ψ	21 44
	ψ	8 40		Δ	1 6		ψ	21 40		ψ	22 38
	ψ	10 19		Δ	4 8		ψ	22 40		ψ	2 1
	ψ	12 47		Δ	5 7		ψ	0 43		ψ	3 44
	ψ	17 4		Δ	10 8	15	ψ	1 24		ψ	5 49
26	ψ	21 16		Δ	11 0		ψ	1 49		ψ	5 50
	ψ	6 53		Δ	3 49		ψ	15 14		ψ	8 56
	ψ	7 4		Δ	10 28		ψ	20 25		ψ	2 25
	ψ	13 48		Δ	13 29		ψ	22 4		ψ	3 4
	Pl	15 28		Δ	14 49		ψ	23 2		ψ	5 1
	ψ	15 44		Δ	17 5	16	ψ	1 10		ψ	6 56
	ψ	18 0		Δ	17 16		ψ	2 25		ψ	11 48
27	ψ	4 28		Δ	14 17		ψ	4 13		ψ	9 43
	ψ	6 23		Δ	14 38		ψ	17 52		ψ	13 1
	ψ	14 42		Δ	23 33		ψ	21 33		ψ	16 7
28	ψ	21 5		Δ	13 21		ψ	23 7		ψ	17 56
	ψ	6 42		Δ	19 17	17	ψ	0 5		ψ	23 19
	ψ	12 6		Δ	19 46		ψ	1 11		ψ	0 30
29	ψ	1 25		Δ	20 58		ψ	2 16		ψ	10 30
	Pl	3 5		Δ	23 14		ψ	3 40		ψ	16 5
	ψ	3 53		Δ	0 1		ψ	4 10		ψ	17 13
	ψ	5 40		Δ	3 53		ψ	5 48		ψ	22 39
	ψ	11 33		Δ	16 13	18	ψ	4 10		ψ	23 19
	ψ	23 37		Δ	18 54		ψ	21 44		ψ	1 49
30	ψ	3 19		Δ	21 22		ψ	1 54		ψ	5 9
	ψ	22 5		Δ	22 6		ψ	6 41		ψ	6 22
				Δ	0 40	19	ψ	7 56		ψ	16 57
				Δ	1 2		ψ	2 5		ψ	17 43
				Δ	6 58		ψ	3 36		ψ	19 19
				Δ	18 2		ψ	4 34		ψ	5 11
				Δ	20 18		ψ	6 35		ψ	5 31
				Δ	22 6		ψ	8 39		ψ	8 15
				Δ	23 11		ψ	9 58		ψ	11 44
				Δ	23 13	20	ψ	5 55		ψ	22 40

Date	Aspect	Time.	Date	Aspect	Time.	Date	Aspect	Time.	Date	Aspect	Time.
		H. M.			H. M.			H. M.			H. M.
31	ψ	1 6		Pl	11 4		ψ	15 2		Pl	18 19
	ψ	2 52		ψ	11 17		ψ	19 12		ψ	19 14
	ψ	11 33		ψ	12 29		ψ	19 31		ψ	19 48
	ψ	12 8		ψ	17 22		ψ	20 58		ψ	0 20
	Pl	14 30		ψ	10 6	18	ψ	1 17		ψ	0 25
	ψ	18 3		ψ	10 55		ψ	14 9		ψ	3 2
				Pl	10 58		ψ	0 10		ψ	11 49
				ψ	12 41	19	ψ	1 30		ψ	12 25
				ψ	14 55		ψ	3 41		ψ	12 37
				ψ	16 2		ψ	5 59		Pl	0 6
				ψ	12 15		ψ	14 43		ψ	6 25
				ψ	12 56		ψ	15 59		ψ	7 40
				ψ	20 2		ψ	23 48		ψ	19 56
				ψ	7 33		ψ	3 40		ψ	22 4
				Pl	10 4		Pl	5 3		Pl	5 26
				ψ	10 5		ψ	5 33		ψ	5 45
				ψ	11 43		ψ	5 57		ψ	6 29
				ψ	15 10		ψ	6 48		ψ	6 46
				ψ	15 22		ψ	9 23		ψ	11 7
				ψ	9 51		ψ	11 24			
				ψ	11 15		ψ	22 11			
				ψ	11 52		ψ	8 9			
				ψ	14 28		Pl	10 50			
				ψ	14 57		ψ	14 32			
				ψ	16 17		ψ	15 33			
				ψ	22 56		ψ	1 3			
				ψ	5 34		ψ	6 5			
				Pl	10 0		Pl	17 3			
				ψ	10 7		ψ	17 43			
				ψ	11 39		ψ	18 46			
				ψ	12 18		ψ	23 29			
				ψ	15 24		ψ	23 32			
				ψ	16 3		ψ	23 32			
				ψ	18 10		ψ	4 47			
				ψ	18 30		ψ	4 52			
				ψ	1 11		ψ	11 19			
				Pl	5 14		ψ	22 44			
				ψ	10 53		ψ	5 53			
				ψ	13 30		ψ	6 39			
				ψ	18 25		ψ	7 28			
				ψ	4 44		ψ	12 10			
				ψ	5 49		ψ	18 1			
				Pl	12 41		ψ	13 5			
				ψ	12 53		ψ	13 47			
				ψ	14 25		ψ	18 5			
				ψ	18 28		ψ	18 23			
				ψ	1 17		ψ	21 55			
				ψ	18 44		ψ	2 10			
				ψ	2 25		ψ	14 58			
				ψ	9 19						

December.

1	ψ	3 23
	ψ	16 38
	ψ	16 42
2	Pl	14 4
	ψ	14 42
	ψ	15 11
	ψ	15 12
	ψ	17 32
	ψ	19 12
3	ψ	15 24
	ψ	18 14
	ψ	18 18
	ψ	22 2
	ψ	22 43
	ψ	23 49
4	Pl	19 21
	ψ	20 20
	ψ	20 32
5	ψ	0 0
	ψ	0 38
	ψ	1 31
	ψ	2 3
	Pl	20 44
	ψ	23 0

Timings of Lunar Aspects in 1954.—(concl'd.).

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
		H. M.			H. H.			H. H.			H. H.
6	☿	1 52		♂	21 17		☿	23 0		♂	12 41
	♂	3 28		♂	21 43	18	♂	13 28		♂	12 49
	♂	4 2		♂	3 53		♂	14 1		♂	13 4
	♂	6 45		♂	5 35		♂	17 22		♂	19 53
	♂	21 27	12	♂	10 51	19	♂	2 0	26	♂	5 50
	♂	22 19		♂	12 27		♂	5 51		♂	13 57
	♂	2 41		♂	22 38		♂	17 28		♂	18 12
7	♂	1 1 29		♂	22 44		♂	23 25	27	♂	2 40
	♂	1 1 40		♂	23 23	20	♂	0 7		♂	10 51
	♂	5 49	13	♂	1 24		♂	0 55		♂	10 53
	♂	10 6		♂	2 26		♂	1 45		♂	12 32
8	♂	2 37		♂	14 20	21	♂	2 37		♂	13 33
	♂	3 21	14	♂	15 24		♂	4 30	28	♂	20 56
	♂	4 29		♂	6 42		♂	6 20		♂	4 13
	♂	21 3		♂	8 14		♂	10 13	29	♂	7 17
	♂	22 17		♂	9 26		♂	17 37		♂	2 31
9	♂	2 48	15	♂	19 0	22	♂	21 11		♂	3 38
	♂	1 1 26		♂	3 22		♂	12 12		♂	10 51
	♂	8 4		♂	3 56		♂	12 26		♂	14 31
	♂	15 21		♂	5 12		♂	14 40		♂	15 21
	♂	22 0	16	♂	7 0		♂	14 58		♂	18 44
10	♂	22 44		♂	0 33		♂	15 35		♂	20 20
	♂	1 1 9		♂	7 39	23	♂	19 29	30	♂	21 53
	♂	2 33		♂	9 4		♂	18 35		♂	21 37
	♂	4 32		♂	10 41		♂	20 54		♂	22 18
	♂	6 29		♂	16 57		♂	20 59	31	♂	22 31
	♂	21 18	17	♂	17 13	24	♂	22 54		♂	1 11
	♂	22 32		♂	21 36		♂	6 39		♂	8 19
	♂	22 43		♂	3 1	25	♂	12 40		♂	10 47
11	♂	1 1 5		♂	11 49		♂	0 21		♂	12 26
	♂	3 1		♂	12 18		♂	0 23		♂	23 54
	♂	4 49		♂	13 56		♂	2 34		♂	
	♂	10 27		♂	15 23		♂	2 58		♂	

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
January.											
		H. M.			H. M.			H. M.			H. M.
1	D	3 43	28	D	12 10	25	D	23 17		D	17 41
	D	5 24		D	9 17		D	23 19		D	21 36
	D	6 38		D	16 53		D	4 51	29	D	2 0
	D	9 33		D	9 0		D	5 46	31	D	7 12
	D	11 49		D	12 10	27	D	2 43		D	18 20
2	D	1 43		D	12 10					D	22 4
	D	19 31		D	13 0						
5	D	5 9	29	D	12 0	March.			April.		
	D	7 1	30	D	7 28	1	D	4 24	1	D	23 10
	D	14 35	February.				D	11 30	3	D	9 18
	D	15 57	1	D	21 6		D	11 35		D	11 12
	D	17 45	2	D	1 43	2	D	12 0	4	D	20 57
7	D	0 53	3	D	1 3	3	D	15 43	6	D	1 14
	D	15 55		D	3 26	4	D	19 18		D	1 15
8	D	0 52		D	7 23		D	11 6		D	9 25
	D	15 32		D	7 33	5	D	20 46		D	10 21
	D	19 2	4	D	12 5		D	1 34		D	11 41
11	D	0 1		D	5 7	6	D	16 37		D	17 0
12	D	0 56		D	8 34		D	8 22	9	D	17 2
	D	13 33	5	D	23 42	7	D	19 22		D	19 14
	D	17 20	7	D	6 20		D	1 23	9	D	20 18
14	D	1 55	8	D	16 34		D	16 20	10	D	24 0
	D	7 18		D	23 42	9	D	19 44		D	4 24
	D	8 24	8	D	7 50		D	23 36	11	D	24 24
	D	8 43		D	20 37	10	D	0 11	12	D	9 37
	D	10 35		D	23 0		D	5 37	13	D	0 55
	D	15 30	9	D	17 43	13	D	9 11		D	17 37
16	D	0 0	10	D	13 24		D	17 38	14	D	23 51
	D	12 0		D	14 1		D	23 53	15	D	12 46
	D	16 22	14	D	19 54	14	D	0 17		D	21 0
17	D	20 12		D	17 22		D	2 32	17	D	12 0
	D	2 51		D	22 2	16	D	17 18		D	13 38
	D	12 28	15	D	22 31	17	D	2 28	18	D	22 26
	D	15 22		D	7 12		D	3 33	19	D	23 44
	D	15 5	16	D	15 35		D	11 21	20	D	15 26
	D	17 24		D	20 53	18	D	12 0		D	21 59
	D	18 44	17	D	8 34		D	14 26	21	D	4 3
19	D	4 37		D	10 17	19	D	15 15		D	7 21
	D	20 43		D	10 20	20	D	12 0	24	D	5 37
20	D	5 57		D	11 31		D	16 15		D	13 42
	D	2 42	18	D	4 14	21	D	2 52		D	16 18
	D	19 55		D	2 52	24	D	10 32		D	21 59
25	D	2 20	20	D	9 3		D	8 15	25	D	21 0
	D	17 20	21	D	10 1		D	9 38	27	D	17 55
	D	20 46		D	17 57		D	10 52		D	19 16
27	D	1 24	22	D	21 3		D	16 32		D	5 59
			24	D	5 8	28	D	11 6		D	

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
May.			June.			H. M.			H. M.		
	H.	M.		H.	M.						
1	D	5 10	1	D	7 35	2	⊙	22 8	1	D	19 30
2	D	7 46	2	D	19 16	3	D	15 44	2	D	21 23
3	D	15 21	3	D	12 40	4	D	4 37	3	D	22 37
4	D	15 34	4	P	13 2	5	P	16 43	4	D	0 53
5	D	21 19	5	⊙	19 12	6	D	13 41	5	D	7 20
6	D	3 34	6	⊙	21 12	7	D	2 44	6	D	1 1
7	D	5 5	7	D	19 3	8	D	15 16	7	D	9 7
8	D	14 53	8	D	7 52	9	D	0 53	8	D	2 14
9	D	7 53	9	D	6 49	10	D	6 9	9	D	8 4
10	D	14 27	10	D	20 12	11	P	14 46	10	D	22 44
11	D	2 2	11	D	20 44	12	D	16 13	11	D	11 1
12	D	3 32	12	P	18 9	13	D	7 34	12	D	6 34
13	D	9 30	13	⊙	21 0	14	D	12 16	13	D	20 56
14	D	12 14	14	P	0 0	15	P	12 47	14	P	4 19
15	D	0 19	15	⊙	1 30	16	D	20 54	15	D	18 0
16	D	5 2	16	⊙	13 39	17	D	18 24	16	D	20 25
17	D	3 16	17	P	17 5	18	D	14 25	17	D	0 47
18	D	9 45	18	D	7 33	19	D	1 56	18	D	4 16
19	D	0 8	19	D	8 38	20	D	11 23	19	D	16 16
20	D	1 13	20	D	10 18	21	D	15 19	20	⊙	7 47
21	D	16 0	21	D	11 51	22	D	22 2	21	D	17 20
22	D	2 41	22	D	12 0	23	D	2 47	22	D	0 50
23	D	21 5	23	D	2 7	24	D	1 47	23	D	1 3
24	D	2 41	24	D	5 8	25	D	4 38	24	D	8 15
25	D	6 41	25	D	23 11	26	D	16 23	25	D	11 12
26	D	6 51	26	P	11 7	27	D	0 31	26	D	23 10
27	D	1 32	27	D	11 27	28	D	0 44	27	D	1 17
28	D	1 46	28	D	13 57	29	D	3 43	28	D	4 11
29	D	11 40	29	D	14 45	30	P	12 59	29	D	8 25
30	D	12 0	30	D	8 35	31	D	13 6	30	D	18 20
31	D	12 9	31	D	20 3						
	D	20 44		D	20 41	September.					
	D	6 45		D	18 31						
	D	17 35		D	19 19						
	D	17 45		D	20 23						
	D	3 10		D	22 17						
	D	7 2		D	20 24						
	D	2 7		D	22 17						
	D	12 0		D	22 45						
	D	14 38									
	D	4 5									
	D	15 23									
	D	5 48									
	⊙	12 53									
		13 59									

Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.	Date.	Aspect	Time.
H. M.			H. M.			H. M.			H. M.		
	H.	M.		H.	M.		H.	M.		H.	M.
11	D	2 21	11	D	11 12	16	D	21 59	16	D	19 47
12	D	17 28	12	D	19 25	17	D	18 12	17	D	21 13
13	D	15 8	13	D	9 46	18	D	8 5	18	D	10 50
14	D	14 4	14	⊙	14 17	19	D	8 23	19	D	21 51
15	D	4 29	15	D	18 51	20	D	17 0	20	D	0 34
16	D	8 1	16	D	7 12	21	D	19 23	21	D	9 8
17	D	23 10	17	D	15 24	22	D	2 0	22	D	22 31
18	D	4 58	18	D	19 4	23	D	5 3	23	D	1 39
19	D	4 26	19	D	4 46	24	D	8 18	24	D	5 20
20	D	22 57	20	D	18 1	25	D	23 8	25	D	13 33
21	D	3 2	21	D	15 54	26	D	9 50	26	D	15 2
22	D	9 27	22	D	18 52	27	D	10 19	27	D	19 50
23	D	10 9	23	D	1 27	28	D	12 35	28	D	0 5
24	D	2 22	24	D	1 43	29	D	19 29	29	D	19 6
25	D	10 58	25	D	22 5	30	D	22 25	30	D	23 28
26	D	11 22	26	D	3 38						
27	D	21 21	27	D	10 58						
28	D	18 42	28	D	8 51						
29	D	1 49	29	D	17 21						
30	D	13 0	30	D	3 32						
31	D	20 22	31	D	19 17						
	D	8 2		D	15 3						
	D	15 3		D	1 13						
	D	17 36		D	11 49						
	D	13 15		D	17 14						
	D	19 56		D	13 48						
	P	8 35		D	22 7						
November.			December.			H. M.			H. M.		
	H.	M.		H.	M.		H.	M.		H.	M.
1	D	21 50	1	D	9 45	1	D	0 22	1	D	0 22
2	D	7 13	2	D	14 28	2	D	9 22	2	D	9 22
3	D	7 20	3	D	13 10	3	D	18 27	3	D	18 27
4	D	13 28	4	D	15 0	4	D	22 43	4	D	22 43
5	D	13 48	5	D	19 11	5	D	22 27	5	D	22 27
6	D	7 50	6	D	9 2	6	D	22 27	6	D	22 27
7	D	0 18	7	D	20 22	7	D	22 27	7	D	22 27
8	D	8 12	8	D	22 43	8	D	22 27	8	D	22 27
9	D	8 40	9	D	22 43	9	D	22 27	9	D	22 27
10	D	11 24	10	D	22 43	10	D	22 27	10	D	22 27
11	D	5 53	11	D	22 43	11	D	22 27	11	D	22 27
12	D	7 45	12	D	22 43	12	D	22 27	12	D	22 27
13	D	18 22	13	D	22 43	13	D	22 27	13	D	22 27
14	D	23 38	14	D	22 43	14	D	22 27	14	D	22 27
15	D	6 44	15	D	22 43	15	D	22 27	15	D	22 27
16	D	19 5	16	D	22 43	16	D	22 27	16	D	22 27
17	D	11 12	17	D	22 43	17	D	22 27	17	D	22 27
18	D	13 46	18	D	22 43	18	D	22 27	18	D	22 27
19	D	20 40	19	D	22 43	19	D	22 27	19	D	22 27
20	D	14 6	20	D	22 43	20	D	22 27	20	D	22 27
21	D	22 30	21	D	22 43	21	D	22 27	21	D	22 27
22	D	8 27	22	D	22 43	22	D	22 27	22	D	22 27

Date.	JANUARY.					FEBRUARY.					MARCH.								
	D	h	m	s	°	D	h	m	s	°	D	h	m	s	°				
1	12	31	1	24	75	36	13	38	1	43	75	61	34	13	39	1	75	60	32
2	48	34	76	61	36	14	0	42	76	61	34	14	8	14	8	2	75	60	31
3	13	7	35	76	62	35	14	18	41	75	61	34	34	33	33	1	75	60	31
4	23	35	75	36	61	36	32	40	37	76	61	34	43	43	43	0	58	60	31
5	39	35	76	61	36	40	37	76	61	34	15	4	15	4	4	0	54	60	30
6	52	36	75	35	39	33	35	35	75	60	34	7	7	7	50	75	60	31	
7	14	2	86	36	61	36	33	33	31	75	60	34	14	56	31	0	45	60	31
8	10	36	75	35	22	28	23	28	75	60	34	31	0	38	74	60	30		
9	12	37	76	61	36	8	8	76	60	33	20	0	32	75	60	30			
10	13	37	76	61	35	13	52	21	75	60	33	13	57	0	24	75	60	30	
11	12	38	75	36	13	36	14	75	60	34	32	0	19	74	60	30			
12	8	38	75	35	21	8	8	75	60	33	11	13	75	60	30				
13	2	39	75	35	7	0	52	76	60	33	12	53	4	75	60	29			
14	13	53	76	35	12	54	0	75	60	33	38	0	D1	74	60	29			
15	44	40	75	35	43	45	35	75	60	33	25	7	75	59	29				
16	32	40	75	35	31	35	31	75	60	32	16	12	74	59	29				
17	19	41	76	35	22	26	26	75	60	33	9	18	75	59	29				
18	4	41	75	35	12	15	15	75	60	33	3	23	75	59	29				
19	12	50	76	35	4	6	6	75	60	32	11	57	74	59	28				
20	35	42	75	35	11	58	0	R5	75	60	32	55	32	75	59	28			
21	21	43	75	35	5	51	14	76	60	33	52	36	74	59	28				
22	9	43	76	61	34	52	24	75	60	32	11	52	41	74	59	28			
23	11	59	74	35	53	34	34	75	60	32	54	44	74	59	28				
24	54	44	76	61	35	12	0	41	75	60	32	12	1	74	59	27			
25	52	44	75	34	12	11	49	74	60	32	9	52	75	59	27				
26	55	45	76	61	35	27	54	75	60	31	23	54	74	59	27				
27	12	3	45	34	34	48	58	75	60	32	43	58	74	59	27				
28	15	45	75	35	34	13	12	1	2	75	60	31	59	26	75	59	26		
29	12	31	45	34	13	12	1	2	75	60	33	33	1	59	26	74	59	26	
30	51	44	75	34	13	12	1	2	75	60	33	33	1	59	26	74	59	26	
31	13	15	43	34	13	15	1	2	75	60	33	33	1	59	26	74	59	26	

Date.	APRIL.					MAY.					JUNE.				
	h	m	s	°	'	h	m	s	°	'	h	m	s	°	'
1	14	57	1	26	15	15	2	2	73	51	1	23	72	57	7
2	15	13	12	25	15	15	4	4	73	58	20	20	72	58	7
3	20	14	14	24	14	3	5	5	73	59	17	17	72	57	8
4	14	17	17	24	14	43	6	6	73	58	13	13	71	54	10
5	14	59	18	25	17	17	7	7	73	55	12	12	72	57	10
6	34	20	74	24	13	47	9	9	73	58	6	6	72	58	11
7	39	22	74	23	19	19	11	11	73	58	0	0	72	57	11
8	3	39	24	23	12	55	11	11	73	58	0	0	71	57	12
9	13	25	74	23	33	33	10	10	73	58	56	56	72	58	13
10	2	50	28	23	17	17	11	11	73	58	33	33	71	57	14
11	31	29	74	22	4	4	10	10	73	58	49	49	72	57	14
12	17	31	73	22	11	57	10	10	73	58	44	44	71	56	14
13	6	32	74	22	52	52	10	10	72	58	41	41	71	57	15
14	11	56	36	21	11	51	7	7	73	55	37	37	72	57	15
15	53	37	73	21	11	51	6	6	72	58	37	37	71	57	15
16	53	37	73	21	11	51	5	5	73	55	37	37	71	57	15
17	52	39	74	21	12	1	5	5	73	55	37	37	71	57	15
18	54	40	74	20	8	8	2	2	73	58	19	19	71	57	17
19	55	43	73	21	16	16	0	0	73	58	16	16	71	58	17
20	59	43	74	19	25	25	1	1	72	57	10	10	71	58	18
21	12	5	73	19	37	37	55	55	72	58	6	6	71	57	18
22	14	47	74	18	50	50	53	53	72	58	2	2	71	57	19
23	26	49	73	18	13	8	50	50	72	57	3	3	71	57	18
24	42	51	74	17	26	26	48	48	72	58	8	8	71	57	18
25	52	52	73	17	4	4	44	44	73	57	11	11	70	57	19
26	26	54	74	17	14	10	41	41	72	58	16	16	71	57	19
27	54	55	73	18	29	39	39	39	72	58	20	20	70	58	19
28	14	21	73	16	47	47	36	36	72	57	4	4	71	57	18
29	46	59	74	15	56	56	32	32	72	58	27	27	70	57	18
30	15	5	2	14	59	59	29	29	72	57	30	30	70	57	19
31	15	5	2	14	53	53	26	26	72	58	30	30	70	57	19

Date	JULY.					AUGUST.					SEPTEMBER.				
	D	h	m	s	°	D	h	m	s	°	D	h	m	s	°
1	13	41	0R33	70	58	12	35	1	25	67	11	56	1	47	59
2	2	21	34	70	57	20	29	29	66	57	51	45	59	58	24
3	2	59	37	70	57	7	34	34	66	58	51	43	60	59	24
4	4	29	37	70	57	11	59	38	66	57	54	43	58	25	25
5	22	8	37	70	57	53	43	43	66	58	54	41	58	26	26
6	8	59	36	69	57	16	57	46	66	57	12	18	40	58	26
7	11	59	34	69	57	15	12	52	65	57	8	38	39	57	27
8	54	32	32	70	57	20	55	56	65	57	9	28	37	58	27
9	53	8	26	70	57	37	56	61	65	58	10	13	35	56	28
10	57	5	26	70	58	14	12	59	66	58	11	4	35	55	28
11	12	17	22	69	57	13	13	20	65	58	12	14	38	56	29
12	13	30	17	69	57	13	40	1	65	57	12	51	32	53	29
13	46	13	13	69	57	12	14	0	64	58	13	14	31	54	30
14	3	8	8	69	58	12	14	2	65	57	13	49	30	53	30
15	13	3	3	69	58	10	25	2	64	58	15	37	29	53	30
16	18	3	3	69	57	9	28	2	64	58	15	20	22	53	31
17	33	7	7	68	57	8	27	1	63	58	16	0	27	51	31
18	47	14	14	69	58	7	11	0	63	57	16	13	26	51	32
19	57	10	10	68	58	7	1	1	62	58	17	23	24	50	32
20	14	6	25	69	57	13	48	1	59	59	18	12	22	48	32
21	11	25	31	68	57	5	37	57	63	58	19	42	20	48	33
22	13	14	37	68	58	5	26	57	62	57	20	32	20	48	33
23	14	42	42	67	57	3	14	55	62	58	21	14	17	46	33
24	8	8	54	68	58	3	2	53	61	58	21	6	15	45	34
25	0	54	59	67	57	1	12	50	61	58	21	11	14	43	34
26	13	50	1	67	57	1	38	51	61	58	22	52	12	43	35
27	38	1	5	67	58	0	23	50	60	58	22	50	10	42	35
28	24	10	15	67	57	1	14	49	61	58	23	50	10	42	35
29	8	20	20	67	58	2	4	47	60	58	24	..	..	..	..
30	12	51	..	..	..	..	..	..	..	..	..	..	..	..	..
31	12	51	..	..	..	..	..	..	..	..	..	..	..	..	..

Date	OCTOBER.					NOVEMBER.					DECEMBER.				
	D	h	m	s	°	D	h	m	s	°	D	h	m	s	°
1	11	48	1	9	41	12	14	1	2	18	12	53	1	32	9
2	53	7	38	40	59	31	52	0R53	R 18	60	13	13	32	9	61
3	12	1	3	38	59	35	36	45	22	60	41	37	33	61	42
4	14	3	3	36	59	35	47	23	24	61	40	14	32	3	60
5	34	0	59	35	59	35	13	13	25	60	41	26	33	0	61
6	57	57	54	35	60	36	14	16	27	60	41	47	33	0	61
7	13	25	54	35	59	36	43	3	30	60	41	15	33	4	61
8	56	51	33	30	59	37	15	6	30	61	41	8	33	6	61
9	14	25	48	30	59	36	17	20	33	60	41	5	34	9	61
10	50	43	28	29	60	37	19	29	34	60	41	14	33	12	61
11	15	7	39	29	59	38	10	39	35	60	41	34	33	13	61
12	14	35	25	25	59	36	14	51	46	61	41	8	34	16	61
13	11	30	25	22	60	38	26	52	37	60	42	13	33	18	61
14	56	24	22	22	59	37	13	58	36	61	42	15	34	19	61
15	36	18	23	23	60	38	30	1	36	61	42	12	34	22	61
16	11	12	18	18	59	38	5	9	36	61	41	29	34	23	61
17	13	46	4	17	60	38	12	4	36	60	42	13	34	26	61
18	22	R 3	16	16	59	39	26	17	35	61	42	1	34	26	61
19	1	11	14	14	60	38	12	11	31	60	42	1	34	30	61
20	12	44	21	10	60	39	3	21	33	61	42	11	34	30	61
21	30	28	10	6	60	39	11	53	24	61	42	50	34	32	61
22	19	39	6	6	60	39	52	25	31	61	42	52	35	32	61
23	12	10	45	4	60	39	50	28	27	61	42	59	35	35	61
24	2	51	3	3	60	39	50	28	25	61	42	5	35	35	61
25	11	58	56	1	60	40	52	29	25	61	43	15	35	38	61
26	53	1	3	R	59	39	57	30	22	61	42	26	36	39	61
27	50	21	7	7	60	40	12	2	18	60	42	28	40	41	61
28	49	17	10	10	60	40	12	31	18	60	42	50	36	41	61
29	50	17	10	10	60	40	21	32	14	61	42	13	37	43	61
30	54	19	14	14	60	40	35	33	11	61	43	20	37	43	61
31	12	2	13	13	60	40	40	..	..	..	..	37	38	43	61

Table of Ascendants for Latitudes 7° to 20°. — (contd.)

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Sta. Time.	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°															
H. M.	°	°	°	°	°	°	°	°	°	°	°	°	°	°															
0	92	48	93	12	93	34	94	9	94	25	94	50	95	15	95	40	96	5	96	30	96	56	97	22	97	47	98	14	
15	96	13	96	37	97	1	97	25	97	50	98	14	98	39	99	3	99	28	99	53	100	18	100	44	101	10	101	36	
30	99	39	100	3	100	27	100	50	101	14	101	38	102	2	102	27	102	51	103	15	103	40	104	5	104	31	104	59	
45	102	3	103	28	103	52	104	15	104	39	105	3	105	27	105	50	106	15	106	38	107	3	107	27	107	52	108	17	
1	0	106	31	106	54	107	16	107	40	108	3	108	26	108	49	109	13	109	36	110	0	110	23	110	47	111	11	111	36
15	109	58	110	20	110	42	111	5	111	28	111	51	112	13	112	36	112	59	113	21	113	45	114	8	114	31	114	54	
30	113	24	113	47	114	9	114	31	114	53	115	15	115	37	115	59	116	21	116	43	117	6	117	28	117	51	118	14	
45	116	54	117	14	117	36	117	58	118	19	118	40	119	2	119	23	119	45	120	6	120	27	120	49	121	11	121	32	
2	0	120	23	120	44	121	4	121	25	121	45	122	7	122	27	122	47	123	9	123	29	123	50	124	11	124	31	124	53
15	123	53	124	14	124	34	124	55	125	14	125	34	125	53	126	13	126	33	126	53	127	13	127	33	127	53	128	13	
30	127	26	127	45	128	4	128	24	128	42	129	1	129	24	129	39	129	58	130	17	130	37	130	56	131	15	131	34	
45	131	1	131	18	131	37	131	56	132	1	132	31	132	49	133	7	133	25	133	43	134	1	134	20	134	38	134	56	
3	0	134	37	134	54	135	12	135	29	135	45	136	2	136	19	136	36	136	53	137	10	137	26	137	43	138	0	138	17
15	138	14	138	31	138	47	139	4	139	19	139	35	139	51	140	6	140	22	140	38	140	54	141	10	141	25	141	41	
30	141	53	142	10	142	25	142	40	142	55	143	10	143	25	143	39	143	54	144	8	144	23	144	37	144	52	145	6	
45	145	36	145	50	146	4	146	19	146	31	146	45	146	59	147	12	147	27	147	39	147	52	148	5	148	19	148	33	
4	0	149	20	149	33	149	45	149	59	150	10	150	22	150	35	150	47	150	59	151	11	151	23	151	35	151	46	151	58
15	153	6	153	17	153	29	153	40	153	50	154	0	154	11	154	22	154	33	154	43	154	55	155	5	155	15	155	26	
30	156	54	157	3	157	12	157	22	157	32	157	41	157	51	158	0	158	9	158	19	158	29	158	37	158	46	158	55	
45	160	41	160	51	161	2	161	12	161	18	161	27	161	35	161	42	161	50	161	58	162	5	162	13	162	20	162	28	
5	0	164	33	164	39	164	45	164	51	164	58	165	4	165	11	165	17	165	23	165	30	165	36	165	42	165	49	165	55
15	168	22	168	28	168	33	168	38	168	43	168	47	168	52	168	57	169	2	169	7	169	11	169	16	169	20	169	25	
30	172	16	172	19	172	21	172	24	172	28	172	31	172	35	172	37	172	40	172	44	172	47	172	51	172	54	172	57	
45	176	6	176	9	176	11	176	12	176	14	176	15	176	18	176	19	176	20	176	22	176	23	176	24	176	27	176	28	
6	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0	180	0

Table of Ascendants for Latitudes 7° to 20°. — (contd.)

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Sid. Time.	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°
H. M.	°	°	°	°	°	°	°	°	°	°	°	°	°	°
6	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180
15	183 53 183	51 183	49 183	48 183	46 183	45 183	42 183	41 183	40 1 3	38 183	37 183	36 183	33 183	32 183
30	187 45 187	41 187	39 187	36 187	32 187	29 187	25 187	23 187	20 187	16 187	13 187	9 187	6 187	3 187
45	191 36 191	32 191	27 191	22 191	17 191	13 191	8 191	3 190	58 190	53 190	49 190	44 190	40 190	35 190
7	0 195 27 195	22 195	15 195	9 195	2 194	56 194	49 194	43 194	37 194	30 194	24 194	18 194	11 194	4 194
15	199 19 199	10 199	2 198	52 198	46 198	37 198	25 198	18 198	14 198	6 198	0 197	51 197	44 197	37 197
30	203 7 202	57 202	48 202	38 202	28 202	19 202	9 202	0 201	51 201	41 201	32 201	23 201	14 201	5 201
45	206 55 206	43 206	31 206	20 206	10 205	59 205	49 205	38 205	27 205	17 205	5 204	55 204	45 204	34 204
8	0 210 40 210	27 210	15 210	1 209	50 209	38 209	25 209	13 209	1 208	49 208	37 208	25 208	14 208	3 208
15	214 24 214	10 213	56 213	41 213	29 213	15 213	1 212	48 212	33 212	21 212	8 211	55 211	41 211	28 211
30	218 4 217	50 217	35 217	20 217	5 216	50 216	35 216	21 216	6 215	52 215	37 215	20 215	8 214	54 214
45	221 46 221	30 221	13 220	56 220	41 220	25 220	9 219	54 219	38 219	22 219	6 218	50 218	35 218	19 218
9	0 225 22 225	6 224	49 224	31 224	15 223	58 223	41 223	24 223	7 222	50 222	34 222	17 222	0 221	43 221
15	229 0 228	42 228	23 228	4 227	47 227	29 227	11 226	53 226	35 226	17 225	59 225	40 225	22 225	4 225
30	232 34 232	15 231	56 231	36 231	18 230	59 230	46 230	21 230	2 229	43 229	23 229	4 228	45 228	26 228
45	236 6 235	46 235	26 235	5 234	46 234	26 234	7 233	47 233	27 233	7 232	47 232	27 232	7 231	47 231
10	0 239 37 239	17 238	56 238	35 238	15 237	53 237	33 237	13 236	51 236	31 236	10 235	49 235	29 235	7 235
15	243 7 242	46 242	24 242	2 241	41 241	20 240	58 240	37 240	15 239	54 239	33 239	11 238	49 238	26 238
30	246 36 246	13 245	51 245	29 245	7 244	45 244	23 244	1 243	39 243	17 242	54 242	32 242	9 241	46 241
45	250 2 249	40 249	18 248	55 248	32 248	9 247	47 247	25 247	1 246	39 246	15 245	52 245	29 245	6 245
11	0 253 29 253	7 252	44 252	20 251	57 251	34 251	11 250	47 250	24 250	0 249	37 249	13 248	49 248	24 248
15	256 56 256	32 256	8 255	45 255	21 254	57 254	33 254	10 253	45 253	22 252	57 252	33 252	8 251	43 251
30	260 21 259	57 259	34 259	10 258	24 258	22 257	58 257	35 257	9 256	45 256	20 255	55 255	29 255	3 255
45	263 47 263	23 262	59 262	35 262	10 261	46 261	21 260	57 260	32 260	7 259	42 259	16 258	50 258	24 258
12	0 267 13 266	48 266	23 266	0 265	35 265	10 264	45 264	20 263	55 263	30 263	4 262	38 262	13 261	46 261

Table of Ascendants for Latitudes 7° to 20°.—(cont'd)

58

Sid. Time.	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°
H. M.	°	°	°	°	°	°	°	°	°	°	°	°	°	°
12 0	267	13266	48266	23266	0265	35265	10264	45264	20263	55263	30263	4262	38262	13261
15 15	270	38270	14269	49269	25269	0268	35268	10267	44267	19266	53266	27266	1265	34265
30 30	274	4273	41273	17272	51272	27272	2271	36271	11270	47270	21269	55269	27269	0268
45 45	277	34277	9276	44276	20275	55275	30275	4274	39274	13273	47273	21272	54272	27271
13 0	281	32280	38280	14279	50279	25279	0278	35278	9277	43277	17276	51276	24275	37275
15 15	284	34284	10283	45283	21282	56282	31282	6281	41281	15280	48280	22279	55279	28279
30 30	288	8287	44287	19286	55286	30286	6285	41285	15284	50284	24283	58283	3282	36
45 45	291	41291	19290	55290	32290	7289	43289	18288	53288	27288	0287	35287	8286	41286
14 0	295	19294	56294	33294	11293	46293	22292	58292	34292	8291	42291	17290	50290	23289
15 15	299	0298	38298	15297	52297	28297	5296	41296	16295	52295	27295	2294	35294	9293
30 30	302	43302	21301	59301	37301	14300	51300	25300	4299	40299	15298	50298	25297	59297
45 45	306	29306	8305	46305	27305	3304	41304	18303	55303	32303	8302	44302	19301	54301
15 0	310	17309	59309	38309	17308	56308	35308	13307	51307	28307	5306	41306	17305	52305
15 15	314	11313	52313	32313	12312	52312	32312	12311	51311	30311	6310	45310	22309	58309
30 30	318	7317	50317	32317	12316	55316	34316	13315	55315	35315	14314	53314	31314	9313
45 45	322	6321	50321	32321	18320	58320	41320	23320	3319	45319	25319	5318	45318	24318
16 0	326	11325	55325	39325	24325	7324	51324	34324	17324	0323	23223	5322	45322	25
15 15	330	14330	23329	43329	33329	20329	52328	49328	34328	18328	2327	46327	29327	52327
30 30	334	25334	11334	0333	47333	35333	22333	9332	56332	41332	28332	13331	58331	42331
45 45	338	37338	25338	15338	5337	54337	42337	31337	19337	8336	56336	43336	30336	17336
17 0	342	37342	41342	25342	15342	6341	58341	48341	38341	28341	17341	7340	56340	45
15 15	347	5346	58346	52346	47346	39346	33346	25346	18346	11346	3345	55345	47345	39345
30 30	351	22351	18351	15351	6351	1350	56350	56350	51350	46350	41350	36350	30350	25350
45 45	355	42355	40355	38355	34355	33355	31355	29355	26355	23355	20355	17355	15355	13355
18 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table of Ascendants for Latitudes 7° to 23°.—(cont'd)

59

Sid. Time.	7°	8°	9°	10°	11°	12°	13°	14°	15°	16°	17°	18°	19°	20°
H. M.	°	°	°	°	°	°	°	°	°	°	°	°	°	°
18 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 15	4	19	4	23	4	20	4	31	4	37	4	43	4	47
30 30	8	37	8	46	8	54	8	49	8	59	8	51	8	59
45 45	12	56	13	2	13	21	13	35	13	43	13	57	13	61
19 0	17	14	17	9	17	27	17	35	17	45	17	54	17	61
15 15	21	27	21	18	21	31	21	29	21	31	21	31	21	31
30 30	25	35	25	22	25	35	25	22	25	35	25	35	25	35
45 45	29	46	29	26	29	39	29	26	29	39	29	39	29	39
20 0	33	51	34	5	34	43	34	36	34	43	34	43	34	43
15 15	37	54	38	10	38	47	38	30	38	47	38	47	38	47
30 30	41	58	42	14	42	51	42	34	42	51	42	51	42	51
45 45	45	62	46	18	46	55	46	38	46	55	46	55	46	55
21 0	49	66	50	22	50	60	50	42	50	60	50	60	50	60
15 15	53	70	54	26	54	64	54	46	54	64	54	64	54	64
30 30	57	74	58	30	58	68	58	50	58	68	58	68	58	68
45 45	61	78	62	34	62	72	62	54	62	72	62	72	62	72
22 0	65	83	66	38	66	76	66	58	66	76	66	76	66	76
15 15	69	87	70	42	70	80	70	62	70	80	70	80	70	80
30 30	73	91	74	46	74	84	74	66	74	84	74	84	74	84
45 45	77	95	78	50	78	88	78	70	78	88	78	88	78	88
23 0	81	99	82	54	82	92	82	74	82	92	82	92	82	92
15 15	85	103	86	58	86	96	86	78	86	96	86	96	86	96
30 30	89	107	90	62	90	100	90	82	90	100	90	100	90	100
45 45	93	111	94	66	94	104	94	86	94	104	94	104	94	104
24 0	97	115	98	70	98	108	98	90	98	108	98	108	98	108

Table of Ascendants for Latitudes 21° to 34°.—(contd.)

Sid. Time.	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°	31°	32°	33°	34°
H. M.	°	°	°	°	°	°	°	°	°	°	°	°	°	°
0	98	41 99	8 99	35 100	3 100	31 100	59 101	27 101	56 102	34 102	57 103	26 103	57 104	29 105
15	102	2 102	28 102	55 103	22 103	49 104	17 104	45 105	18 105	43 106	26 106	41 107	11 107	42 108
30	105	22 105	48 106	14 106	40 107	7 107	33 108	2 108	29 108	58 109	26 109	54 110	24 110	53 111
45	108	42 109	7 109	32 109	57 110	23 110	49 111	16 111	43 112	11 112	38 113	6 113	34 114	2 114
1	112	0 112	24 112	49 113	14 113	39 114	5 114	31 114	56 115	22 115	49 116	16 116	43 117	10 117
15	115	18 115	42 116	16 116	30 116	54 117	19 117	44 118	9 118	34 119	0 119	25 119	50 120	18 120
30	118	39 119	0 119	23 119	46 120	10 120	33 120	57 121	21 121	46 122	11 122	35 123	0 123	25 123
45	121	54 122	17 122	38 123	2 123	24 123	47 124	9 124	32 124	56 125	21 125	44 126	8 126	32 126
2	125	14 125	35 125	57 126	18 126	39 127	1 127	23 127	45 128	8 128	31 128	54 129	17 129	37 130
15	128	31 128	53 129	14 129	34 129	54 130	15 130	36 130	57 131	19 131	40 132	2 132	24 132	45 133
30	131	54 132	13 132	35 132	51 133	10 133	30 133	50 134	9 134	29 134	50 135	11 135	30 135	51 136
45	135	15 135	32 135	50 136	7 136	26 136	44 137	3 137	22 137	41 138	1 138	18 138	37 138	57 139
3	138	34 138	52 139	9 139	26 139	43 140	0 140	17 140	34 140	51 141	11 141	28 141	45 142	3 142
15	141	57 142	13 142	29 142	45 143	1 143	17 143	33 143	49 144	5 144	23 144	39 144	55 145	12 145
30	145	20 145	35 145	50 146	5 146	19 146	33 146	48 147	3 147	18 147	33 147	49 148	13 148	19 148
45	148	45 148	59 149	12 149	26 149	38 149	51 150	5 150	19 150	33 150	46 150	59 151	13 151	28 151
4	152	10 152	22 152	32 152	46 152	58 153	10 153	22 153	35 153	47 153	59 154	11 154	24 154	36 154
15	155	36 155	47 155	58 156	8 156	19 156	30 156	40 156	51 157	27 157	33 157	46 157	45 157	55 157
30	159	4 159	13 159	22 159	31 159	40 159	50 159	59 160	8 160	18 160	27 160	36 160	45 160	35 161
45	162	35 162	44 162	50 162	26 163	3 163	10 163	18 163	25 163	33 163	41 163	49 163	57 164	6 164
5	166	21 166	8 166	14 166	20 166	26 166	32 166	38 166	44 166	50 166	57 167	3 167	9 167	16 167
15	169	30 169	35 169	40 169	44 169	48 169	53 169	58 170	2 170	7 170	13 170	17 170	22 170	26 170
30	173	0 173	3 173	6 173	9 173	12 173	15 173	19 173	21 173	24 173	28 173	31 173	34 173	37 173
45	176	29 176	32 176	33 176	34 176	36 176	38 176	40 176	41 176	43 176	44 176	45 176	47 176	50 176
6	180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180

Table of Ascendants for Latitudes 21° to 34°.—(contd.)

Sid. Time.	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°	31°	32°	33°	34°
H. M.	°	°	°	°	°	°	°	°	°	°	°	°	°	°
6	0 180	0 180	0 180	0 180	0 180	0 180	0 180	0 180	6 180	0 180	0 180	0 180	0 180	0 180
15	183	31 183	27 183	26 183	24 183	22 183	20 183	19 183	19 183	17 183	16 183	15 183	13 183	10 183
30	187	0 186	57 186	54 186	51 186	46 186	45 186	41 186	39 186	36 186	32 186	29 186	26 186	20 186
45	190	30 190	25 190	20 190	16 189	12 190	7 190	2 189	58 189	53 189	47 189	43 189	38 189	34 189
7	193	58 193	52 193	46 193	40 193	34 193	28 193	22 193	16 193	10 193	3 192	57 192	51 192	44 192
15	197	29 197	20 197	14 197	1 196	57 196	50 196	42 196	35 196	27 196	19 196	11 196	3 195	54 195
30	200	56 200	47 200	38 200	29 200	20 200	10 200	1 199	52 199	42 199	33 199	24 199	14 199	5 198
45	204	24 204	13 204	2 203	52 203	41 203	30 203	20 203	9 202	58 202	47 202	37 202	26 202	15 202
8	207	50 207	38 207	27 207	14 207	2 206	50 206	38 2 2	25 206	13 206	1 205	49 205	36 205	24 205
15	211	15 211	1 210	48 210	34 210	22 210	9 209	55 209	41 209	27 209	14 209	1 208	47 208	32 208
30	214	40 214	25 214	10 213	55 213	42 213	27 213	12 212	57 212	42 212	27 212	11 211	56 211	41 211
45	218	3 217	47 217	31 217	15 216	59 216	43 216	27 216	11 215	55 215	37 215	21 215	5 214	48 214
9	221	26 221	8 220	51 220	34 220	17 220	0 219	43 219	26 219	9 218	49 218	32 218	15 217	57 217
15	224	46 224	28 224	10 223	53 223	34 223	16 222	57 222	38 222	19 221	59 221	42 221	23 221	3 220
30	228	4 227	47 227	28 227	9 226	50 226	30 226	10 225	51 225	31 225	10 224	50 224	30 224	9 223
45	231	29 231	7 230	46 230	26 230	6 229	45 229	24 229	3 228	41 228	20 227	58 227	37 227	15 226
10	234	46 234	25 234	3 233	42 233	21 232	59 232	37 232	15 231	52 231	29 231	6 230	45 230	23 229
15	238	6 237	43 237	21 236	58 236	36 236	13 235	51 235	39 235	14 234	49 234	25 234	9 233	35 233
30	241	22 241	18 240	37 240	14 239	50 239	27 239	12 239	51 241	26 241	0 240	35 240	9 239	42 239
45	244	42 244	18 243	54 243	30 243	6 242	41 242	16 241	4 244	38 244	11 243	44 243	17 242	50 242
11	248	0 247	36 247	11 246	46 246	21 245	55 245	29 245	17 247	49 247	22 246	54 246	26 245	58 245
15	251	18 250	53 250	28 250	3 249	37 249	12 248	44 248	31 251	2 250	34 250	4 249	36 249	7 248
30	254	38 254	12 253	46 253	20 252	53 252	26 251	58 251	46 254	17 253	48 253	19 252	49 252	18 251
45	257	58 257	32 257	5 256	38 256	11 255	43 255	15 254	4 257	34 257	3 256	34 256	3 255	31 254
12	261	19 260	52 260	25 259	57 259	29 259	1 258	31 258	4 257	34 257	3 256	34 256	3 255	31 254

Table of Ascendants for Latitudes 21° to 34°.—(contd.)

Sid. Time.	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°	31°	32°	33°	34°
H. M.														
2 0	261	19 260	52 260	25 259	57 259	29 259	0 258	31 258	4 257	34 257	3 256	34 256	3 255	31 254
15	264	14 264	14 263	45 263	18 262	49 262	20 261	51 261	22 260	51 260	19 259	49 259	18 258	45 258
30	268	6 267	38 267	8 266	41 266	42 265	42 265	12 264	42 264	11 263	39 263	8 262	36 262	22 261
45	271	32 271	4 270	35 270	6 269	38 269	7 268	37 268	6 267	34 267	1 266	29 265	56 265	22 264
3 0	275	1 274	33 274	4 273	34 273	6 272	34 272	4 271	33 271	0 270	27 269	54 269	21 268	46 268
15	278	32 278	3 277	35 277	5 276	36 276	4 275	34 275	2 274	29 273	55 273	22 272	48 272	12 271
30	282	7 281	38 281	9 280	39 280	10 279	38 279	8 278	35 278	2 277	28 276	54 276	19 275	43 275
45	285	46 285	17 284	48 284	18 283	49 283	17 282	47 282	13 281	40 281	5 280	32 279	36 283	1 282
14 0	289	28 288	59 288	30 288	0 287	31 286	59 286	29 285	55 285	22 284	48 284	14 283	36 283	1 282
15	293	14 292	46 292	17 291	48 291	18 290	46 290	16 289	43 289	10 288	35 288	1 287	25 286	49 286
30	297	5 296	38 296	9 295	40 295	11 294	39 294	10 293	38 293	5 292	30 291	57 291	20 290	43 290
45	301	2 300	34 300	7 299	38 299	9 298	39 298	10 297	38 297	5 296	31 295	57 295	22 294	45 294
15	305	2 304	36 304	8 303	41 303	13 302	44 302	14 301	42 301	10 300	36 300	3 299	28 298	52 298
30	309	9 308	44 308	18 307	51 307	24 306	55 306	26 305	56 305	24 304	52 304	20 303	46 303	10 302
45	317	41 317	18 316	56 316	31 316	6 315	40 315	14 314	47 314	18 313	48 313	19 312	48 312	15 311
16 0	322	5 321	43 321	21 320	59 320	36 320	12 319	48 319	23 318	55 318	27 317	59 317	30 316	59 316
15	326	33 326	15 325	56 325	35 325	14 324	52 324	30 324	6 323	42 323	16 322	51 322	24 321	55 321
30	331	9 330	53 330	35 330	16 329	57 329	38 329	18 328	37 328	35 328	12 327	50 327	25 326	59 326
45	335	49 335	35 335	19 335	3 334	48 334	31 334	14 333	55 333	36 333	17 332	57 332	36 332	13 331
17 0	340	22 340	22 340	9 339	56 339	43 339	30 339	16 339	0 338	44 338	29 338	13 337	58 337	35 337
15	345	22 345	13 345	3 344	54 344	44 344	33 344	22 344	11 343	59 343	46 343	23 343	19 343	4 342
30	350	14 350	7 350	1 349	54 349	47 349	41 349	34 349	25 349	17 349	8 348	59 348	49 348	40 348
45	355	7 355	4 354	59 354	56 354	53 354	49 354	46 354	42 354	38 354	33 354	29 354	24 354	19 354
18 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table of Ascendants for Latitudes 21° to 34°.—(oncd.)

Sid. Time.	21°	22°	23°	24°	25°	26°	27°	28°	29°	30°	31°	32°	33°	34°
H. M.														
18 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	4 53	4 56	5 1	5 4	5 7	5 11	5 14	5 18	5 22	5 27	5 31	5 36	5 41	5 46
30	9 46	9 53	9 59	10 6	10 13	10 19	10 26	10 35	10 43	10 52	11 1	11 11	11 20	11 31
45	14 38	14 47	14 57	15 10	15 16	15 27	15 38	15 49	16 1	16 14	16 27	16 41	16 56	17 12
19 0	19 26	19 38	19 51	20 4	20 17	20 30	20 44	21 0	21 16	21 31	21 48	22 6	22 25	22 44
15	24 11	24 25	24 41	24 57	25 12	25 29	25 46	26 5	26 24	26 43	27 3	27 24	27 47	28 8
30	28 51	29 7	29 25	29 44	30 3	30 22	30 42	31 3	31 25	31 48	32 10	32 35	33 1	33 28
45	33 27	33 45	34 4	34 25	34 46	35 8	35 30	35 54	36 18	36 44	37 7	37 37	38 5	38 35
20 0	37 55	38 17	38 39	39 1	39 24	39 48	40 12	40 37	41 5	41 33	42 1	42 30	43 1	43 31
15	42 19	42 42	42 43	43 29	43 54	44 20	44 46	45 13	45 42	46 12	46 41	47 12	47 45	48 18
30	46 38	47 1	47 26	47 52	48 18	48 45	49 13	49 42	50 12	50 43	51 15	51 47	52 22	52 55
45	50 51	51 16	51 42	52 9	52 36	53 5	53 34	54 4	54 36	55 8	55 45	56 16	56 50	57 26
21 0	54 58	55 24	55 52	56 19	56 47	57 17	57 50	58 18	58 58	59 29	59 57	60 32	61 8	61 45
15	58 58	59 26	59 53	60 22	60 51	61 21	61 50	62 22	62 55	63 29	64 3	64 38	65 15	65 53
30	62 55	63 22	63 51	64 20	64 48	65 19	65 49	66 22	66 55	67 30	68 3	68 40	69 17	69 54
45	66 46	67 14	67 43	68 12	68 42	69 14	69 44	70 17	70 50	71 25	71 59	72 35	73 11	73 47
22 0	70 32	71 1	71 30	72 0	72 29	73 1	73 31	74 5	74 38	75 12	75 46	76 24	76 59	77 35
15	74 14	74 43	75 12	75 42	76 11	76 43	77 13	77 47	78 20	78 55	79 28	80 3	80 47	81 16
30	77 58	78 27	78 51	79 21	79 50	80 22	80 52	81 25	81 54	82 32	83 6	83 40	84 17	84 52
45	81 28	81 57	82 25	82 55	83 24	83 56	84 26	84 58	85 31	86 5	86 38	87 12	87 48	88 24
23 0	84 59	85 27	85 56	86 26	86 54	87 26	87 56	88 27	88 58	89 30	89 61	90 39	91 14	91 49
15	88 28	88 56	89 25	89 54	90 22	90 53	91 23	91 54	92 26	92 59	93 31	94 4	94 38	95 11
30	91 54	92 22	92 52	93 19	93 48	94 18	94 48	95 18	95 49	96 4	96 52	97 24	97 58	98 31
45	95 19	95 46	96 15	96 42	97 11	97 40	98 8	98 38	99 9	99 41	100 11	100 42	101 15	101 48
24 0	98 41	99 8	99 35	100 3	100 31	100 59	101 27	101 56	102 26	102 57	103 26	103 57	104 29	105 8

LOGARITHMIC TABLE.—(contd.)

Hours or Degrees.

Min.	0	1	2	3	4	5	6	7	8	9	10	11	Min.
0	3.1584	1.3802	1.0792	.9031	.7781	.6812	.6021	.5351	.4771	.4260	.3802	.3388	0
1	3.1584	1.3730	1.0756	.9007	.7763	.6798	.6009	.5341	.4762	.4252	.3797	.3382	1
2	2.8573	1.3660	1.0726	.8983	.7745	.6784	.5997	.5330	.4753	.4244	.3788	.3375	2
3	2.6812	1.3590	1.0685	.8959	.7728	.6769	.5985	.5320	.4744	.4236	.3780	.3368	3
4	2.5363	1.3522	1.0649	.8935	.7710	.6755	.5973	.5310	.4735	.4228	.3773	.3362	4
5	2.4594	1.3454	1.0614	.8912	.7692	.6741	.5961	.5300	.4726	.4220	.3766	.3355	5
6	2.3802	1.3388	1.0580	.8888	.7674	.6726	.5949	.5289	.4717	.4212	.3759	.3349	6
7	2.3133	1.3323	1.0546	.8865	.7657	.6712	.5937	.5279	.4708	.4204	.3752	.3342	7
8	2.2553	1.3258	1.0511	.8842	.7639	.6698	.5925	.5269	.4699	.4196	.3745	.3336	8
9	2.2041	1.3195	1.0478	.8819	.7622	.6684	.5913	.5259	.4690	.4188	.3737	.3329	9
10	2.1584	1.3133	1.0444	.8796	.7604	.6670	.5902	.5249	.4682	.4180	.3730	.3323	10
11	2.1170	1.3071	1.0411	.8773	.7587	.6656	.5890	.5239	.4673	.4172	.3723	.3316	11
12	2.0792	1.3010	1.0378	.8751	.7570	.6628	.5878	.5229	.4664	.4164	.3716	.3310	12
13	2.0444	1.2950	1.0345	.8728	.7552	.6608	.5866	.5219	.4655	.4156	.3709	.3303	13
14	2.0122	1.2891	1.0313	.8706	.7535	.6614	.5855	.5209	.4646	.4148	.3702	.3297	14
15	1.9823	1.2833	1.0280	.8683	.7518	.6600	.5843	.5199	.4638	.4141	.3695	.3291	15
16	1.9542	1.2775	1.0248	.8661	.7501	.6587	.5832	.5189	.4629	.4133	.3688	.3284	16
17	1.9279	1.2719	1.0216	.8639	.7484	.6573	.5820	.5179	.4620	.4125	.3681	.3278	17
18	1.9031	1.2663	1.0185	.8617	.7467	.6559	.5809	.5169	.4611	.4117	.3674	.3271	18
19	1.8796	1.2607	1.0153	.8595	.7451	.6546	.5797	.5159	.4603	.4109	.3667	.3265	19
20	1.8573	1.2553	1.0122	.8573	.7434	.6532	.5786	.5149	.4594	.4104	.3660	.3258	20
21	1.8361	1.2499	1.0091	.8552	.7417	.6519	.5774	.5139	.4585	.4094	.3653	.3252	21
22	1.8159	1.2445	1.0061	.8530	.7401	.6505	.5761	.5129	.4577	.4086	.3646	.3246	22
23	1.7966	1.2393	1.0030	.8509	.7384	.6492	.5740	.5110	.4568	.4079	.3639	.3239	23
24	1.7781	1.2341	1.0000	.8487	.7368	.6478	.5729	.5100	.4559	.4071	.3632	.3233	24
25	1.7604	1.2289	.9970	.8466	.7351	.6465	.5729	.5100	.4551	.4063	.3625	.3227	25
26	1.7434	1.2239	.9940	.8445	.7335	.6451	.5718	.5090	.4542	.4055	.3618	.3220	26
27	1.7270	1.2189	.9910	.8424	.7318	.6438	.5706	.5081	.4534	.4048	.3611	.3214	27
28	1.7112	1.2139	.9881	.8403	.7302	.6425	.5695	.5071	.4525	.4040	.3604	.3208	28
29	1.6960	1.2090	.9852	.8382	.7286	.6412	.5684	.5061	.4516	.4032	.3597	.3201	29

LOGARITHMIC TABLE.—(contd.)

Hours or Degrees.

Min.	0	1	2	3	4	5	6	7	8	9	10	11	Min.
30	1.6812	1.2041	.9823	.8361	.7270	.6398	.5673	.5051	.4508	.4025	.3590	.3195	30
31	1.6670	1.1993	.9794	.8341	.7254	.6385	.5662	.5042	.4499	.4017	.3583	.3189	31
32	1.6532	1.1946	.9765	.8327	.7238	.6372	.5651	.5032	.4491	.4010	.3576	.3183	32
33	1.6398	1.1899	.9737	.8300	.7222	.6359	.5640	.5023	.4482	.4002	.3570	.3176	33
34	1.6269	1.1852	.9708	.8279	.7206	.6346	.5629	.5013	.4474	.3994	.3563	.3170	34
35	1.6143	1.1806	.9680	.8259	.7190	.6333	.5618	.5003	.4466	.3987	.3556	.3164	35
36	1.6021	1.1761	.9652	.8239	.7174	.6320	.5607	.4994	.4457	.3979	.3549	.3157	36
37	1.5902	1.1716	.9625	.8219	.7159	.6307	.5596	.4984	.4449	.3972	.3542	.3151	37
38	1.5786	1.1671	.9597	.8199	.7143	.6294	.5585	.4975	.4440	.3964	.3535	.3145	38
39	1.5673	1.1627	.9570	.8179	.7128	.6282	.5573	.4965	.4432	.3957	.3529	.3139	39
40	1.5563	1.1584	.9542	.8159	.7112	.6269	.5563	.4956	.4424	.3949	.3522	.3133	40
41	1.5456	1.1540	.9515	.8140	.7097	.6256	.5552	.4947	.4415	.3942	.3515	.3126	41
42	1.5351	1.1498	.9488	.8120	.7081	.6243	.5541	.4937	.4407	.3934	.3508	.3120	42
43	1.5249	1.1455	.9462	.8101	.7066	.6231	.5531	.4928	.4399	.3927	.3501	.3114	43
44	1.5149	1.1413	.9435	.8081	.7050	.6218	.5520	.4918	.4390	.3919	.3495	.3108	44
45	1.5051	1.1372	.9409	.8062	.7035	.6205	.5509	.4909	.4382	.3912	.3488	.3102	45
46	1.4956	1.1331	.9383	.8042	.7020	.6193	.5498	.4900	.4374	.3905	.3481	.3096	46
47	1.4863	1.1290	.9356	.8023	.7005	.6180	.5488	.4890	.4365	.3897	.3475	.3089	47
48	1.4771	1.1249	.9330	.8004	.6990	.6168	.5477	.4881	.4357	.3890	.3468	.3083	48
49	1.4682	1.1209	.9305	.7985	.6975	.6155	.5466	.4872	.4349	.3882	.3461	.3077	49
50	1.4594	1.1170	.9279	.7966	.6960	.6143	.5456	.4863	.4341	.3875	.3454	.3071	50
51	1.4508	1.1130	.9254	.7947	.6945	.6131	.5445	.4853	.4333	.3868	.3448	.3065	51
52	1.4424	1.1091	.9228	.7929	.6928	.6118	.5435	.4844	.4324	.3860	.3441	.3059	52
53	1.4341	1.1053	.9203	.7910	.6915	.6101	.5424	.4835	.4316	.3853	.3434	.3053	53
54	1.4260	1.1015	.9178	.7891	.6900	.6094	.5414	.4826	.4308	.3846	.3428	.3047	54
55	1.4180	1.0977	.9153	.7873	.6885	.6081	.5403	.4817	.4300	.3838	.3421	.3041	55
56	1.4102	1.0939	.9128	.7854	.6871	.6069	.5393	.4808	.4292	.3831	.3415	.3034	56
57	1.4025	1.0902	.9104	.7836	.6856	.6057	.5382	.4798	.4284	.3824	.3408	.3028	57
58	1.3949	1.0865	.9079	.7818	.6841	.6045	.5372	.4789	.4276	.3817	.3401	.3022	58
59	1.3875	1.0828	.9055	.7800	.6827	.6033	.5361	.4780	.4268	.3809	.3395	.3016	59

LOGARITHMIC TABLE. — (cont'd.)

Hours or Degrees.

Min.	12	13	14	15	16	17	18	19	20	21	22	23	Min.
0	.3010	.2663	.2341	.2041	.1761	.1498	.1249	.1015	.0792	.0580	.0378	.0185	0
1	.3004	.2657	.2336	.2036	.1756	.1493	.1245	.1011	.0788	.0576	.0375	.0182	1
2	.2998	.2652	.2330	.2032	.1752	.1489	.1241	.1007	.0785	.0573	.0371	.0179	2
3	.2992	.2646	.2325	.2027	.1747	.1485	.1237	.1003	.0781	.0569	.0368	.0175	3
4	.2986	.2640	.2320	.2022	.1743	.1481	.1233	.0999	.0778	.0566	.0365	.0172	4
5	.2980	.2635	.2315	.2017	.1738	.1476	.1229	.0996	.0774	.0563	.0361	.0169	5
6	.2974	.2629	.2310	.2012	.1734	.1472	.1225	.0992	.0770	.0559	.0358	.0166	6
7	.2968	.2624	.2305	.2008	.1729	.1468	.1221	.0988	.0766	.0556	.0355	.0163	7
8	.2962	.2618	.2300	.2003	.1725	.1464	.1217	.0984	.0763	.0552	.0352	.0160	8
9	.2956	.2613	.2295	.1998	.1720	.1459	.1213	.0980	.0759	.0549	.0348	.0157	9
10	.2950	.2607	.2289	.1993	.1716	.1455	.1209	.0977	.0756	.0546	.0345	.0154	10
11	.2944	.2602	.2284	.1988	.1711	.1451	.1205	.0973	.0752	.0542	.0342	.0150	11
12	.2938	.2596	.2279	.1984	.1707	.1447	.1201	.0969	.0749	.0539	.0339	.0147	12
13	.2933	.2591	.2274	.1979	.1702	.1443	.1197	.0965	.0745	.0535	.0335	.0144	13
14	.2927	.2585	.2269	.1974	.1698	.1438	.1193	.0962	.0741	.0532	.0332	.0141	14
15	.2921	.2580	.2264	.1969	.1694	.1434	.1190	.0958	.0738	.0529	.0329	.0138	15
16	.2915	.2574	.2259	.1965	.1689	.1430	.1186	.0954	.0734	.0525	.0325	.0135	16
17	.2909	.2569	.2253	.1960	.1685	.1426	.1182	.0950	.0731	.0522	.0322	.0132	17
18	.2903	.2564	.2249	.1955	.1680	.1422	.1178	.0947	.0727	.0518	.0319	.0129	18
19	.2897	.2558	.2244	.1950	.1676	.1417	.1174	.0943	.0724	.0515	.0316	.0125	19
20	.2891	.2553	.2239	.1946	.1671	.1413	.1170	.0939	.0720	.0512	.0313	.0122	20
21	.2885	.2547	.2234	.1941	.1667	.1409	.1166	.0935	.0716	.0508	.0309	.0119	21
22	.2880	.2542	.2229	.1936	.1662	.1405	.1162	.0932	.0713	.0505	.0306	.0116	22
23	.2874	.2536	.2223	.1932	.1658	.1401	.1158	.0928	.0709	.0501	.0303	.0113	23
24	.2868	.2531	.2218	.1927	.1654	.1397	.1154	.0924	.0706	.0498	.0300	.0110	24
25	.2862	.2526	.2213	.1922	.1649	.1392	.1150	.0920	.0702	.0495	.0296	.0107	25
26	.2856	.2520	.2208	.1917	.1645	.1388	.1146	.0917	.0699	.0491	.0293	.0104	26
27	.2850	.2515	.2203	.1913	.1640	.1384	.1142	.0913	.0695	.0488	.0290	.0101	27
28	.2845	.2509	.2198	.1908	.1636	.1380	.1138	.0909	.0692	.0484	.0287	.0098	28
29	.2839	.2504	.2193	.1903	.1632	.1376	.1134	.0906	.0698	.0481	.0284	.0095	29

LOGARITHMIC TABLE. — (cont'd.)

Hours or Degrees.

Min.	12	13	14	15	16	17	18	19	20	21	22	23	Min.
30	.2833	.2499	.2188	.1899	.1627	.1372	.1130	.0902	.0685	.0478	.0280	.0091	30
31	.2827	.2493	.2183	.1894	.1623	.1368	.1127	.0898	.0681	.0474	.0277	.0088	31
32	.2821	.2488	.2178	.1889	.1618	.1363	.1123	.0894	.0678	.0471	.0274	.0085	32
33	.2816	.2483	.2173	.1885	.1614	.1359	.1119	.0891	.0674	.0468	.0271	.0082	33
34	.2810	.2477	.2168	.1880	.1610	.1355	.1115	.0887	.0670	.0464	.0267	.0079	34
35	.2804	.2472	.2164	.1875	.1605	.1351	.1111	.0883	.0667	.0461	.0264	.0076	35
36	.2798	.2467	.2159	.1871	.1601	.1357	.1107	.0880	.0663	.0458	.0261	.0073	36
37	.2793	.2461	.2154	.1866	.1597	.1343	.1103	.0876	.0660	.0454	.0258	.0070	37
38	.2787	.2456	.2149	.1862	.1592	.1339	.1099	.0872	.0656	.0451	.0255	.0067	38
39	.2781	.2451	.2144	.1857	.1588	.1335	.1095	.0869	.0652	.0448	.0251	.0064	39
40	.2775	.2445	.2139	.1852	.1584	.1331	.1091	.0865	.0649	.0444	.0248	.0061	40
41	.2770	.2440	.2134	.1848	.1579	.1326	.1088	.0861	.0646	.0441	.0245	.0058	41
42	.2764	.2435	.2129	.1843	.1575	.1322	.1084	.0857	.0642	.0438	.0242	.0055	42
43	.2758	.2430	.2124	.1838	.1571	.1318	.1080	.0854	.0639	.0434	.0239	.0052	43
44	.2753	.2424	.2119	.1834	.1566	.1314	.1076	.0850	.0635	.0431	.0236	.0049	44
45	.2747	.2419	.2114	.1829	.1561	.1310	.1072	.0846	.0632	.0428	.0232	.0046	45
46	.2741	.2414	.2109	.1825	.1558	.1306	.1068	.0843	.0628	.0424	.0229	.0042	46
47	.2736	.2409	.2104	.1820	.1553	.1302	.1064	.0839	.0625	.0421	.0226	.0039	47
48	.2730	.2403	.2099	.1816	.1549	.1298	.1061	.0835	.0622	.0418	.0223	.0036	48
49	.2724	.2398	.2095	.1811	.1545	.1294	.1057	.0832	.0618	.0414	.0220	.0033	49
50	.2719	.2393	.2090	.1806	.1540	.1290	.1053	.0828	.0615	.0411	.0216	.0030	50
51	.2713	.2388	.2085	.1802	.1536	.1286	.1049	.0825	.0611	.0408	.0213	.0027	51
52	.2707	.2382	.2080	.1797	.1532	.1282	.1045	.0821	.0608	.0404	.0210	.0024	52
53	.2702	.2377	.2075	.1793	.1528	.1278	.1041	.0817	.0604	.0401	.0207	.0021	53
54	.2696	.2372	.2070	.1788	.1523	.1274	.1038	.0814	.0601	.0398	.0204	.0018	54
55	.2691	.2367	.2065	.1784	.1519	.1270	.1034	.0810	.0597	.0394	.0201	.0015	55
56	.2685	.2362	.2061	.1779	.1515	.1266	.1030	.0806	.0594	.0391	.0197	.0012	56
57	.2679	.2356	.2056	.1774	.1510	.1261	.1026	.0803	.0590	.0388	.0194	.0009	57
58	.2674	.2351	.2051	.1770	.1506	.1257	.1022	.0799	.0587	.0384	.0191	.0006	58
59	.2668	.2346	.2046	.1765	.1502	.1253	.1018	.0795	.0583	.0381	.0188	.0003	59

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