

ANNEXURE 1**EXAMINATION NOTES AND DEVIATION CARD**

1. **All** relevant working must be shown in the Answer Book.
2. **All** work done on the chart must be done lightly, using a 2B pencil.
3. Corrections applicable to courses and bearings must be calculated correct to the nearest $\frac{1}{2}^\circ$ and plotted to a similar accuracy.

DEVIATION CARD

Mag. Head	Dev.	Comp. Head	Mag. Head	Dev.	Comp. Head
000	4° E	356	180	3° E	177
010	5° E	005	190	4° E	186
020	4° E	016	200	5° E	195
030	3° E	027	210	4° E	206
040	2° E	038	220	3° E	217
050	1° E	049	230	2° E	228
060	1° W	061	240	1° E	239
070	2° W	072	250	0°	250
080	3° W	083	260	1° W	261
090	4° W	094	270	2° W	272
100	5° W	105	280	3° W	283
110	4° W	114	290	4° W	294
120	3° W	123	300	5° W	305
130	2° W	132	310	4° W	314
140	1° W	141	320	3° W	323
150	0°	150	330	2° W	332
160	1° E	159	340	1° W	341
170	2° E	168	350	2° E	348

ANNEXURE 2

ALTITUDE CORRECTION TABLES 10°-90° – SUN, STARS, PLANETS

OCT.—MAR. SUN			APR.—SEPT.			STARS AND PLANETS				DIP				
App. Alt.	Lower Limb	Upper Limb	App. Alt.	Lower Limb	Upper Limb	App. Alt.	Corr ⁿ	App. Alt.	Additional Corr ⁿ	Ht. of Eye	Corr ⁿ	Ht. of Eye	Ht. of Eye	Corr ⁿ
9 34	+10.8	-21.5	9 39	+10.6	-21.2	9 56				m		ft.	.m	
9 45	+10.8	-21.5	9 51	+10.6	-21.2	10 08	-5.3			2.4	-2.8	8.0	1.0	1.8
9 56	+10.9	-21.4	10 03	+10.7	-21.1	10 20	-5.2			2.6	-2.9	8.6	1.5	2.2
10 08	+11.0	-21.3	10 15	+10.8	-21.0	10 33	-5.1			2.8	-3.0	9.2	2.0	2.5
10 21	+11.1	-21.2	10 27	+10.9	-20.9	10 46	-5.0			3.0	-3.1	9.8	2.5	2.8
10 34	+11.2	-21.1	10 40	+11.0	-20.8	11 00	-4.9			3.2	-3.2	10.5	3.0	3.0
10 47	+11.3	-21.0	10 54	+11.1	-20.7	11 14	-4.8			3.4	-3.3	11.2	See table	
11 01	+11.4	-20.9	11 08	+11.2	-20.6	11 29	-4.7			3.6	-3.4	11.9	←	
11 15	+11.5	-20.8	11 23	+11.3	-20.5	11 45	-4.6			3.8	-3.5	12.6	m	
11 30	+11.6	-20.7	11 38	+11.4	-20.4	12 01	-4.5			4.0	-3.6	13.3	20	7.9
11 46	+11.7	-20.6	12 10	+11.6	-20.2	12 18	-4.4			4.3	-3.7	14.1	22	8.3
12 02	+11.8	-20.5	12 28	+11.7	-20.1	12 35	-4.3			4.5	-3.8	14.9	24	8.6
12 19	+11.9	-20.4	12 46	+11.8	-20.0	12 54	-4.2			4.7	-3.9	15.7	26	9.0
12 37	+12.0	-20.3	13 05	+11.9	-19.9	13 13	-4.1			5.0	-4.0	16.5	28	9.3
12 55	+12.1	-20.2	13 24	+12.1	-19.7	13 33	-4.0			5.2	-4.1	17.4		
13 14	+12.3	-20.0	13 45	+12.2	-19.6	13 54	-3.9			5.5	-4.2	18.3	30	9.6
13 35	+12.4	-19.9	14 07	+12.3	-19.5	14 16	-3.8			5.8	-4.3	19.1	32	10.0
13 56	+12.5	-19.8	14 30	+12.4	-19.4	14 40	-3.7			6.1	-4.4	20.1	34	10.3
14 18	+12.6	-19.7	14 54	+12.5	-19.3	15 04	-3.6			6.3	-4.5	21.0	36	10.6
14 42	+12.7	-19.6	15 19	+12.6	-19.2	15 30	-3.5			6.6	-4.6	22.0	38	10.8
15 06	+12.8	-19.5	15 46	+12.7	-19.1	15 57	-3.4			6.9	-4.7	22.9		
15 32	+12.9	-19.4	16 14	+12.8	-19.0	16 26	-3.3			7.2	-4.8	23.9	40	11.1
15 59	+13.0	-19.3	16 44	+12.9	-18.9	16 56	-3.2			7.5	-4.9	24.9	42	11.4
16 28	+13.1	-19.2	17 15	+13.0	-18.8	17 28	-3.1			7.9	-5.0	26.0	44	11.7
16 59	+13.2	-19.1	17 48	+13.1	-18.7	18 02	-3.0			8.2	-5.1	27.1	46	11.9
17 32	+13.3	-19.0	18 24	+13.2	-18.6	18 38	-2.9			8.5	-5.2	28.1	48	12.2
18 06	+13.4	-18.9	19 01	+13.3	-18.5	19 17	-2.8			8.8	-5.3	29.2	ft.	
18 42	+13.5	-18.8	19 42	+13.4	-18.4	19 58	-2.7			9.2	-5.4	30.4	2	1.4
19 21	+13.6	-18.7	20 25	+13.5	-18.3	20 42	-2.6			9.5	-5.5	31.5	4	1.9
20 03	+13.7	-18.6	21 11	+13.6	-18.2	21 28	-2.5			9.9	-5.6	32.7	6	2.4
20 48	+13.8	-18.5	22 00	+13.7	-18.1	22 19	-2.4			10.3	-5.7	33.9	8	2.7
21 35	+13.9	-18.4	22 54	+13.8	-18.0	23 13	-2.3			10.6	-5.8	35.1	10	3.1
22 26	+14.0	-18.3	23 51	+13.9	-17.9	24 11	-2.2			11.0	-5.9	36.3	See table	
23 22	+14.1	-18.2	24 53	+14.0	-17.8	25 14	-2.1			11.4	-6.0	37.6	←	
24 21	+14.2	-18.1	26 00	+14.1	-17.7	26 22	-2.0			11.8	-6.1	38.9	ft.	
25 26	+14.3	-18.0	27 13	+14.2	-17.6	27 36	-1.9			12.2	-6.2	40.1	70	8.1
26 36	+14.4	-17.9	28 33	+14.3	-17.5	28 56	-1.8			12.6	-6.3	41.5	75	8.4
27 52	+14.5	-17.8	30 00	+14.4	-17.4	30 24	-1.7			13.0	-6.4	42.8	80	8.7
29 15	+14.6	-17.7	31 35	+14.5	-17.3	32 00	-1.6			13.4	-6.5	44.2	85	8.9
30 46	+14.7	-17.6	33 20	+14.6	-17.2	33 45	-1.5			13.8	-6.6	45.5	90	9.2
32 26	+14.8	-17.5	35 17	+14.7	-17.1	35 40	-1.4			14.2	-6.7	46.9	95	9.5
34 17	+14.9	-17.4	37 26	+14.8	-17.0	37 48	-1.3			14.7	-6.8	48.4		
36 20	+15.0	-17.3	39 50	+14.9	-16.9	40 08	-1.2			15.1	-6.9	49.8		
38 36	+15.1	-17.2	42 31	+15.0	-16.8	42 44	-1.1			15.5	-7.0	51.3	100	9.7
41 08	+15.2	-17.1	45 31	+15.1	-16.7	45 36	-1.0			16.0	-7.1	52.8	105	9.9
43 59	+15.3	-17.0	48 55	+15.2	-16.6	48 47	-0.9			16.5	-7.2	54.3	110	10.2
47 10	+15.4	-16.9	52 44	+15.3	-16.5	52 18	-0.8			16.9	-7.3	55.8	115	10.4
50 46	+15.5	-16.8	57 02	+15.4	-16.4	56 11	-0.7			17.4	-7.4	57.4	120	10.6
54 49	+15.6	-16.7	61 51	+15.5	-16.3	60 28	-0.6			17.9	-7.5	58.9	125	10.8
59 23	+15.7	-16.6	67 17	+15.6	-16.2	65 08	-0.5			18.4	-7.6	60.5		
64 30	+15.8	-16.5	73 16	+15.7	-16.1	70 11	-0.4			18.8	-7.7	62.1	130	11.1
70 12	+15.9	-16.4	79 43	+15.8	-16.0	75 34	-0.3			19.3	-7.8	63.8	135	11.3
76 26	+16.0	-16.3	86 32	+15.9	-15.9	81 13	-0.2			19.8	-7.9	65.4	140	11.5
83 05	+16.1	-16.2	90 00			87 03	-0.1			20.4	-8.0	67.1	145	11.7
90 00						90 00	0.0			20.9	-8.1	68.8	150	11.9
										21.4		70.5	155	12.1

App. Alt. = Apparent altitude = Sextant altitude corrected for index error and dip.

ANNEXURE 3

CONVERSION OF ARC TO TIME

0°-59°		60°-119°		120°-179°		180°-239°		240°-299°		300°-359°		0°-00	0°-25	0°-50	0°-75	
a	h m	o	h m	o	h m	o	h m	o	h m	o	h m	m s	m s	m s	m s	
0	0 00	60	4 00	120	8 00	180	12 00	240	16 00	300	20 00	0	0 00	0 01	0 02	0 03
1	0 04	61	4 04	121	8 04	181	12 04	241	16 04	301	20 04	1	0 04	0 05	0 06	0 07
2	0 08	62	4 08	122	8 08	182	12 08	242	16 08	302	20 08	2	0 08	0 09	0 10	0 11
3	0 12	63	4 12	123	8 12	183	12 12	243	16 12	303	20 12	3	0 12	0 13	0 14	0 15
4	0 16	64	4 16	124	8 16	184	12 16	244	16 16	304	20 16	4	0 16	0 17	0 18	0 19
5	0 20	65	4 20	125	8 20	185	12 20	245	16 20	305	20 20	5	0 20	0 21	0 22	0 23
6	0 24	66	4 24	126	8 24	186	12 24	246	16 24	306	20 24	6	0 24	0 25	0 26	0 27
7	0 28	67	4 28	127	8 28	187	12 28	247	16 28	307	20 28	7	0 28	0 29	0 30	0 31
8	0 32	68	4 32	128	8 32	188	12 32	248	16 32	308	20 32	8	0 32	0 33	0 34	0 35
9	0 36	69	4 36	129	8 36	189	12 36	249	16 36	309	20 36	9	0 36	0 37	0 38	0 39
10	0 40	70	4 40	130	8 40	190	12 40	250	16 40	310	20 40	10	0 40	0 41	0 42	0 43
11	0 44	71	4 44	131	8 44	191	12 44	251	16 44	311	20 44	11	0 44	0 45	0 46	0 47
12	0 48	72	4 48	132	8 48	192	12 48	252	16 48	312	20 48	12	0 48	0 49	0 50	0 51
13	0 52	73	4 52	133	8 52	193	12 52	253	16 52	313	20 52	13	0 52	0 53	0 54	0 55
14	0 56	74	4 56	134	8 56	194	12 56	254	16 56	314	20 56	14	0 56	0 57	0 58	0 59
15	1 00	75	5 00	135	9 00	195	13 00	255	17 00	315	21 00	15	1 00	1 01	1 02	1 03
16	1 04	76	5 04	136	9 04	196	13 04	256	17 04	316	21 04	16	1 04	1 05	1 06	1 07
17	1 08	77	5 08	137	9 08	197	13 08	257	17 08	317	21 08	17	1 08	1 09	1 10	1 11
18	1 12	78	5 12	138	9 12	198	13 12	258	17 12	318	21 12	18	1 12	1 13	1 14	1 15
19	1 16	79	5 16	139	9 16	199	13 16	259	17 16	319	21 16	19	1 16	1 17	1 18	1 19
20	1 20	80	5 20	140	9 20	200	13 20	260	17 20	320	21 20	20	1 20	1 21	1 22	1 23
21	1 24	81	5 24	141	9 24	201	13 24	261	17 24	321	21 24	21	1 24	1 25	1 26	1 27
22	1 28	82	5 28	142	9 28	202	13 28	262	17 28	322	21 28	22	1 28	1 29	1 30	1 31
23	1 32	83	5 32	143	9 32	203	13 32	263	17 32	323	21 32	23	1 32	1 33	1 34	1 35
24	1 36	84	5 36	144	9 36	204	13 36	264	17 36	324	21 36	24	1 36	1 37	1 38	1 39
25	1 40	85	5 40	145	9 40	205	13 40	265	17 40	325	21 40	25	1 40	1 41	1 42	1 43
26	1 44	86	5 44	146	9 44	206	13 44	266	17 44	326	21 44	26	1 44	1 45	1 46	1 47
27	1 48	87	5 48	147	9 48	207	13 48	267	17 48	327	21 48	27	1 48	1 49	1 50	1 51
28	1 52	88	5 52	148	9 52	208	13 52	268	17 52	328	21 52	28	1 52	1 53	1 54	1 55
29	1 56	89	5 56	149	9 56	209	13 56	269	17 56	329	21 56	29	1 56	1 57	1 58	1 59
30	2 00	90	6 00	150	10 00	210	14 00	270	18 00	330	22 00	30	2 00	2 01	2 02	2 03
31	2 04	91	6 04	151	10 04	211	14 04	271	18 04	331	22 04	31	2 04	2 05	2 06	2 07
32	2 08	92	6 08	152	10 08	212	14 08	272	18 08	332	22 08	32	2 08	2 09	2 10	2 11
33	2 12	93	6 12	153	10 12	213	14 12	273	18 12	333	22 12	33	2 12	2 13	2 14	2 15
34	2 16	94	6 16	154	10 16	214	14 16	274	18 16	334	22 16	34	2 16	2 17	2 18	2 19
35	2 20	95	6 20	155	10 20	215	14 20	275	18 20	335	22 20	35	2 20	2 21	2 22	2 23
36	2 24	96	6 24	156	10 24	216	14 24	276	18 24	336	22 24	36	2 24	2 25	2 26	2 27
37	2 28	97	6 28	157	10 28	217	14 28	277	18 28	337	22 28	37	2 28	2 29	2 30	2 31
38	2 32	98	6 32	158	10 32	218	14 32	278	18 32	338	22 32	38	2 32	2 33	2 34	2 35
39	2 36	99	6 36	159	10 36	219	14 36	279	18 36	339	22 36	39	2 36	2 37	2 38	2 39
40	2 40	100	6 40	160	10 40	220	14 40	280	18 40	340	22 40	40	2 40	2 41	2 42	2 43
41	2 44	101	6 44	161	10 44	221	14 44	281	18 44	341	22 44	41	2 44	2 45	2 46	2 47
42	2 48	102	6 48	162	10 48	222	14 48	282	18 48	342	22 48	42	2 48	2 49	2 50	2 51
43	2 52	103	6 52	163	10 52	223	14 52	283	18 52	343	22 52	43	2 52	2 53	2 54	2 55
44	2 56	104	6 56	164	10 56	224	14 56	284	18 56	344	22 56	44	2 56	2 57	2 58	2 59
45	3 00	105	7 00	165	11 00	225	15 00	285	19 00	345	23 00	45	3 00	3 01	3 02	3 03
46	3 04	106	7 04	166	11 04	226	15 04	286	19 04	346	23 04	46	3 04	3 05	3 06	3 07
47	3 08	107	7 08	167	11 08	227	15 08	287	19 08	347	23 08	47	3 08	3 09	3 10	3 11
48	3 12	108	7 12	168	11 12	228	15 12	288	19 12	348	23 12	48	3 12	3 13	3 14	3 15
49	3 16	109	7 16	169	11 16	229	15 16	289	19 16	349	23 16	49	3 16	3 17	3 18	3 19
50	3 20	110	7 20	170	11 20	230	15 20	290	19 20	350	23 20	50	3 20	3 21	3 22	3 23
51	3 24	111	7 24	171	11 24	231	15 24	291	19 24	351	23 24	51	3 24	3 25	3 26	3 27
52	3 28	112	7 28	172	11 28	232	15 28	292	19 28	352	23 28	52	3 28	3 29	3 30	3 31
53	3 32	113	7 32	173	11 32	233	15 32	293	19 32	353	23 32	53	3 32	3 33	3 34	3 35
54	3 36	114	7 36	174	11 36	234	15 36	294	19 36	354	23 36	54	3 36	3 37	3 38	3 39
55	3 40	115	7 40	175	11 40	235	15 40	295	19 40	355	23 40	55	3 40	3 41	3 42	3 43
56	3 44	116	7 44	176	11 44	236	15 44	296	19 44	356	23 44	56	3 44	3 45	3 46	3 47
57	3 48	117	7 48	177	11 48	237	15 48	297	19 48	357	23 48	57	3 48	3 49	3 50	3 51
58	3 52	118	7 52	178	11 52	238	15 52	298	19 52	358	23 52	58	3 52	3 53	3 54	3 55
59	3 56	119	7 56	179	11 56	239	15 56	299	19 56	359	23 56	59	3 56	3 57	3 58	3 59

The above table is for converting expressions in arc to their equivalent in time; its main use in this Almanac is for the conversion of longitude for application to L.M.T. (added if west, subtracted if east) to give G.M.T. or vice versa.

ANNEXURE 4

1987 FEB. 27, 28, MAR. 1 (FRI., SAT., SUN.)

49

G.M.T. (UT)	SUN		MOON				Lat.	Twilight		Sunrise	Moonrise						
	G.H.A.	Dec.	G.H.A.	<i>v</i>	Dec.	<i>d</i>		H.P.	Naut.		Civil	27		28		1	
												h	m	h	m	h	m
27 00	176 46.3	S 8 37.5	188 47.8	8.3	S17 12.6	14.4	60.1	N 72	05 18	06 35	07 45	09 28	08 28	07 48	07 12		
01	191 46.4	36.6	203 15.1	8.4	16 58.2	14.5	60.1	N 70	05 22	06 32	07 35	08 57	08 15	07 45	07 17		
02	206 46.5	35.7	217 42.5	8.5	16 43.7	14.6	60.0	68	05 25	06 29	07 26	08 33	08 04	07 42	07 21		
03	221 46.6	34.7	232 10.0	8.6	16 29.1	14.7	60.0	66	05 28	06 27	07 19	08 15	07 56	07 40	07 25		
04	236 46.7	33.8	246 37.6	8.6	16 14.4	14.8	60.0	64	05 30	06 25	07 13	08 00	07 48	07 38	07 28		
05	251 46.8	32.9	261 05.2	8.8	15 59.6	14.8	60.0	62	05 32	06 23	07 08	07 47	07 41	07 36	07 31		
06	266 47.0	S 8 31.9	275 33.0	8.9	S15 44.8	15.0	60.0	60	05 33	06 21	07 03	07 36	07 36	07 35	07 33		
07	281 47.1	31.0	290 00.9	9.0	15 29.8	15.0	60.0	N 58	05 34	06 20	06 59	07 27	07 31	07 33	07 36		
08	296 47.2	30.0	304 28.9	9.1	15 14.8	15.1	60.0	56	05 35	06 18	06 56	07 18	07 26	07 32	07 38		
09	311 47.3	29.1	318 57.0	9.2	14 59.7	15.2	59.9	54	05 36	06 17	06 52	07 11	07 22	07 31	07 39		
10	326 47.4	28.2	333 25.2	9.3	14 44.5	15.3	59.9	52	05 36	06 15	06 49	07 04	07 18	07 30	07 41		
11	341 47.5	27.2	347 53.5	9.4	14 29.2	15.3	59.9	50	05 37	06 14	06 47	06 58	07 15	07 29	07 43		
12	356 47.6	S 8 26.3	2 21.9	9.5	S14 13.9	15.4	59.9	45	05 37	06 11	06 41	06 45	07 08	07 27	07 46		
13	11 47.7	25.3	16 50.4	9.6	13 58.5	15.5	59.9	N 40	05 37	06 09	06 36	06 34	07 01	07 26	07 48		
14	26 47.8	24.4	31 19.0	9.7	13 43.0	15.6	59.8	35	05 37	06 06	06 32	06 25	06 56	07 24	07 51		
15	41 47.9	23.5	45 47.7	9.8	13 27.4	15.6	59.8	30	05 36	06 04	06 28	06 16	06 51	07 23	07 53		
16	56 48.0	22.5	60 16.5	9.8	13 11.8	15.7	59.8	20	05 33	05 59	06 21	06 02	06 43	07 21	07 57		
17	71 48.1	21.6	74 45.3	10.0	12 56.1	15.7	59.8	N 10	05 29	05 54	06 15	05 50	06 36	07 19	08 00		
18	86 48.2	S 8 20.6	89 14.3	10.0	S12 40.4	15.8	59.8	0	05 24	05 48	06 09	05 38	06 29	07 17	08 03		
19	101 48.4	19.7	103 43.3	10.2	12 24.6	15.9	59.8	S 10	05 17	05 42	06 03	05 26	06 22	07 15	08 06		
20	116 48.5	18.8	118 12.5	10.2	12 08.7	15.9	59.7	20	05 09	05 35	05 57	05 13	06 15	07 13	08 10		
21	131 48.6	17.8	132 41.7	10.3	11 52.8	15.9	59.7	30	04 57	05 25	05 50	04 58	06 06	07 11	08 14		
22	146 48.7	16.9	147 11.0	10.4	11 36.9	16.1	59.7	35	04 49	05 20	05 46	04 50	06 01	07 10	08 16		
23	161 48.8	15.9	161 40.4	10.5	11 20.8	16.0	59.7	40	04 40	05 13	05 41	04 40	05 56	07 09	08 19		
28 00	176 48.9	S 8 15.0	176 09.9	10.6	S11 04.8	16.1	59.6	45	04 28	05 05	05 35	04 28	05 49	07 07	08 22		
01	191 49.0	14.1	190 39.5	10.7	10 48.7	16.2	59.6	S 50	04 13	04 54	05 28	04 14	05 42	07 05	08 25		
02	206 49.1	13.1	205 09.2	10.7	10 32.5	16.2	59.6	52	04 06	04 49	05 25	04 08	05 38	07 04	08 27		
03	221 49.2	12.2	219 38.9	10.8	10 16.3	16.3	59.6	54	03 58	04 44	05 21	04 00	05 34	07 03	08 29		
04	236 49.4	11.2	234 08.7	10.9	10 00.0	16.2	59.6	56	03 48	04 38	05 17	03 52	05 30	07 02	08 31		
05	251 49.5	10.3	248 38.6	11.0	9 43.8	16.4	59.5	58	03 37	04 31	05 13	03 43	05 25	07 01	08 33		
06	266 49.6	S 8 09.3	263 08.6	11.1	S 9 27.4	16.3	59.5	S 60	03 25	04 23	05 08	03 32	05 19	07 00	08 36		
07	281 49.7	08.4	277 38.7	11.1	9 11.1	16.4	59.5	Lat.	Sunset	Twilight		Moonset					
08	296 49.8	07.5	292 08.8	11.2	8 54.7	16.5	59.5	Civil	Naut.	27	28	1	2				
09	311 49.9	06.5	306 39.0	11.3	8 38.2	16.4	59.4	h m	h m	h m	h m	h m	h m	h m			
10	326 50.0	05.6	321 09.3	11.4	8 21.8	16.5	59.4	N 72	16 42	17 52	19 10	14 42	17 29	19 51	22 10		
11	341 50.1	04.6	335 39.7	11.4	8 05.3	16.5	59.4	N 70	16 53	17 55	19 06	15 11	17 38	19 50	21 58		
12	356 50.3	S 8 03.7	350 10.1	11.5	S 7 48.8	16.6	59.4	68	17 01	17 58	19 02	15 32	17 46	19 49	21 47		
13	11 50.4	02.7	4 40.6	11.6	7 32.2	16.5	59.3	66	17 08	18 00	18 59	15 49	17 53	19 48	21 39		
14	26 50.5	01.8	19 11.2	11.7	7 15.7	16.6	59.3	64	17 14	18 02	18 57	16 02	17 58	19 47	21 32		
15	41 50.6	8 00.8	33 41.9	11.7	6 59.1	16.6	59.3	62	17 19	18 04	18 55	16 14	18 03	19 46	21 26		
16	56 50.7	7 59.9	48 12.6	11.7	6 42.5	16.7	59.2	60	17 23	18 05	18 54	16 23	18 07	19 46	21 21		
17	71 50.8	58.9	62 43.3	11.9	6 25.8	16.6	59.2	N 58	17 27	18 07	18 52	16 32	18 11	19 45	21 17		
18	86 50.9	S 7 58.0	77 14.2	11.9	S 6 09.2	16.7	59.2	56	17 31	18 08	18 51	16 39	18 14	19 45	21 13		
19	101 51.1	57.1	91 45.1	12.0	5 52.5	16.6	59.2	54	17 34	18 10	18 51	16 45	18 17	19 44	21 09		
20	116 51.2	56.1	106 16.1	12.0	5 35.9	16.7	59.1	52	17 37	18 11	18 50	16 51	18 19	19 44	21 06		
21	131 51.3	55.2	120 47.1	12.1	5 19.2	16.7	59.1	50	17 39	18 12	18 49	16 56	18 22	19 44	21 03		
22	146 51.4	54.2	135 18.2	12.1	5 02.5	16.7	59.1	45	17 45	18 15	18 49	17 07	18 27	19 43	20 57		
23	161 51.5	53.3	149 49.3	12.2	4 45.8	16.7	59.1	N 40	17 50	18 17	18 49	17 17	18 31	19 42	20 52		
1 00	176 51.6	S 7 52.3	164 20.5	12.3	S 4 29.1	16.8	59.0	35	17 54	18 20	18 49	17 24	18 35	19 42	20 47		
01	191 51.7	51.4	178 51.8	12.3	4 12.3	16.7	59.0	30	17 58	18 22	18 50	17 31	18 38	19 41	20 43		
02	206 51.9	50.4	193 23.1	12.4	3 55.6	16.7	59.0	20	18 05	18 27	18 52	17 43	18 43	19 41	20 36		
03	221 52.0	49.5	207 54.5	12.4	3 38.9	16.7	58.9	N 10	18 10	18 32	18 56	17 53	18 48	19 40	20 30		
04	236 52.1	48.5	222 25.9	12.5	3 22.2	16.7	58.9	0	18 16	18 37	19 01	18 02	18 52	19 39	20 25		
05	251 52.2	47.6	236 57.4	12.5	3 05.5	16.8	58.9	S 10	18 22	18 43	19 08	18 12	18 56	19 38	20 19		
06	266 52.3	S 7 46.6	251 28.9	12.6	S 2 48.7	16.7	58.8	20	18 28	18 50	19 16	18 22	19 01	19 38	20 13		
07	281 52.5	45.7	266 00.5	12.6	2 32.0	16.7	58.8	30	18 35	18 59	19 28	18 33	19 06	19 37	20 07		
08	296 52.6	44.7	280 32.1	12.6	2 15.3	16.7	58.8	35	18 39	19 05	19 36	18 39	19 09	19 36	20 03		
09	311 52.7	43.8	295 03.7	12.7	1 58.6	16.7	58.8	40	18 44	19 12	19 45	18 47	19 12	19 36	19 58		
10	326 52.8	42.8	309 35.4	12.8	1 41.9	16.7	58.7	45	18 50	19 20	19 56	18 55	19 16	19 35	19 53		
11	341 52.9	41.9	324 07.2	12.8	1 25.2	16.6	58.7	S 50	18 56	19 30	20 11	19 05	19 20	19 34	19 47		
12	356 53.0	S 7 41.0	338 39.0	12.8	S 1 08.6	16.7	58.7	52	18 59	19 35	20 18	19 10	19 22	19 34	19 45		
13	11 53.2	40.0	353 10.8	12.9	0 51.9	16.6	58.6	54	19 03	19 40	20 26	19 15	19 25	19 33	19 42		
14	26 53.3	39.1	7 42.7	12.9	0 35.3	16.7	58.6	56	19 07	19 46	20 35	19 20	19 27	19 33	19 38		
15	41 53.4	38.1	22 14.6	12.9	0 18.6	16.6	58.6	58	19 11	19 53	20 46	19 26	19 30	19 32	19 35		
16	56 53.5	37.2	36 46.5	13.0	S 0 02.0	16.5	58.5	S 60	19 16	20 00	20 58	19 33	19 33	19 32	19 31		
17	71 53.6	36.2	51 18.5	13.0	N 0 14.5	16.6	58.5	Day	SUN			MOON					
18	86 53.8	S 7 35.3	65 50.5	13.1													

ANNEXURE 5

1987 NOV. 30, DEC. 1, 2 (MON., TUES., WED.)

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G.M.T. (UT)	SUN		MOON				Lat.	Twilight		Sunrise	Moonrise				
	G.H.A.	Dec.	G.H.A.	v	Dec.	d		H.P.	Naut.		Civil	30	1	2	3
									h		m	h	m	h	m
30 00	182 55.0	S21 31.2	66 07.4	13.4	N 1 11.5	16.3	58.2	07 50	09 48	■	13 03	12 22	11 17	□	
01	197 54.7	31.7	80 39.8	13.4	1 27.8	16.3	58.2	07 33	09 09	■	13 09	12 38	11 56	□	
02	212 54.5	32.1	95 12.2	13.4	1 44.1	16.3	58.2	07 20	08 42	10 33	13 14	12 52	12 23	11 28	
03	227 54.3	32.5	109 44.6	13.4	2 00.4	16.2	58.2	07 10	08 22	09 45	13 18	13 03	12 44	12 15	
04	242 54.1	32.9	124 17.0	13.5	2 16.6	16.2	58.1	07 00	08 05	09 15	13 22	13 12	13 01	12 46	
05	257 53.9	33.3	138 49.5	13.4	2 32.8	16.2	58.1	06 52	07 52	08 52	13 25	13 20	13 15	13 09	
06	272 53.6	S21 33.7	153 21.9	13.5	N 2 49.0	16.2	58.1	06 45	07 40	08 34	13 28	13 27	13 27	13 28	
07	287 53.4	34.2	167 54.4	13.4	3 05.2	16.2	58.1	N 58	06 39	07 30	13 30	13 33	13 37	13 44	
08	302 53.2	34.6	182 26.8	13.5	3 21.4	16.1	58.1	56	06 33	07 21	13 33	13 39	13 46	13 57	
09	317 53.0	35.0	196 59.3	13.4	3 37.5	16.2	58.0	54	06 27	07 13	13 35	13 43	13 54	14 09	
10	332 52.7	35.4	211 31.7	13.5	3 53.7	16.0	58.0	52	06 22	07 05	13 36	13 48	14 02	14 19	
11	347 52.5	35.8	226 04.2	13.4	4 09.7	16.1	58.0	50	06 18	06 59	13 38	13 52	14 08	14 28	
12	2 52.3	S21 36.2	240 36.6	13.4	N 4 25.8	16.0	58.0	45	06 08	06 44	13 42	14 01	14 22	14 48	
13	17 52.1	36.6	255 09.0	13.5	4 41.8	16.0	58.0	N 40	05 58	06 32	13 45	14 08	14 34	15 04	
14	32 51.8	37.0	269 41.5	13.4	4 57.8	16.0	58.0	35	05 50	06 21	13 48	14 15	14 44	15 17	
15	47 51.6	37.4	284 13.9	13.4	5 13.8	15.9	57.9	30	05 42	06 12	13 50	14 21	14 53	15 29	
16	62 51.4	37.9	298 46.3	13.4	5 29.7	15.9	57.9	20	05 27	05 55	13 54	14 31	15 09	15 50	
17	77 51.2	38.3	313 18.7	13.4	5 45.6	15.9	57.9	N 10	05 13	05 39	13 58	14 39	15 22	16 08	
18	92 50.9	S21 38.7	327 51.1	13.4	N 6 01.5	15.8	57.9	0	04 57	05 23	14 02	14 48	15 35	16 24	
19	107 50.7	39.1	342 23.5	13.4	6 17.3	15.8	57.9	S 10	04 40	05 06	14 05	14 56	15 48	16 41	
20	122 50.5	39.5	356 55.9	13.3	6 33.1	15.7	57.8	20	04 19	04 47	14 09	15 05	16 02	17 00	
21	137 50.3	39.9	11 28.2	13.4	6 48.8	15.7	57.8	30	03 52	04 24	14 14	15 16	16 18	17 21	
22	152 50.0	40.3	26 00.6	13.3	7 04.5	15.7	57.8	35	03 35	04 10	14 17	15 22	16 27	17 33	
23	167 49.8	40.7	40 32.9	13.3	7 20.2	15.6	57.8	40	03 14	03 54	14 20	15 29	16 38	17 48	
1 00	182 49.6	S21 41.1	55 05.2	13.3	N 7 35.8	15.6	57.8	45	02 46	03 33	14 23	15 37	16 51	18 05	
01	197 49.4	41.5	69 37.5	13.3	7 51.4	15.5	57.7	S 50	02 07	03 07	14 27	15 46	17 06	18 26	
02	212 49.1	41.9	84 09.8	13.2	8 06.9	15.5	57.7	52	01 46	02 54	14 29	15 51	17 14	18 36	
03	227 48.9	42.3	98 42.0	13.3	8 22.4	15.5	57.7	54	01 16	02 38	14 31	15 56	17 22	18 48	
04	242 48.7	42.7	113 14.3	13.2	8 37.9	15.4	57.7	56	00 22	02 20	14 34	16 02	17 31	19 01	
05	257 48.4	43.1	127 46.5	13.1	8 53.3	15.3	57.7	58	///	01 56	14 36	16 08	17 41	19 17	
06	272 48.2	S21 43.5	142 18.6	13.2	N 9 08.6	15.3	57.6	S 60	///	01 24	14 39	16 15	17 54	19 35	
07	287 48.0	43.9	156 50.8	13.1	9 23.9	15.2	57.6								
08	302 47.8	44.3	171 22.9	13.1	9 39.1	15.2	57.6	Lat.	Sunset	Twilight	Moonset				
09	317 47.5	44.7	185 55.0	13.1	9 54.3	15.1	57.6	h m	h m	h m	30	1	2	3	
10	332 47.3	45.1	200 27.1	13.0	10 09.4	15.1	57.6	o	h m	h m	h m	h m	h m	h m	
11	347 47.1	45.5	214 59.1	13.0	10 24.5	15.0	57.6	N 72	■	13 49	15 47	01 59	04 18	07 02	□
12	2 46.8	S21 45.9	229 31.1	13.0	N10 39.5	15.0	57.5	N 70	■	14 28	16 04	01 56	04 04	06 25	□
13	17 46.6	46.3	243 03.1	12.9	10 54.5	14.9	57.5	68	13 04	14 55	16 17	01 54	03 53	06 00	08 37
14	32 46.4	46.7	258 35.0	12.9	11 09.4	14.8	57.5	66	13 52	15 15	16 28	01 53	03 44	05 41	07 51
15	47 46.1	47.0	273 06.9	12.9	11 24.2	14.8	57.5	64	14 23	15 32	16 37	01 52	03 37	05 25	07 21
16	62 45.9	47.4	287 38.8	12.8	11 39.0	14.7	57.5	62	14 45	15 46	16 45	01 50	03 30	05 12	06 59
17	77 45.7	47.8	302 10.6	12.8	11 53.7	14.6	57.4	60	15 03	15 57	16 52	01 49	03 25	05 01	06 41
18	92 45.4	S21 48.2	316 42.4	12.8	N12 08.3	14.6	57.4	N 58	15 19	16 08	16 59	01 49	03 20	04 52	06 26
19	107 45.2	48.6	331 14.2	12.7	12 22.9	14.5	57.4	56	15 31	16 17	17 05	01 48	03 16	04 44	06 14
20	122 45.0	49.0	345 45.9	12.7	12 37.4	14.5	57.4	54	15 43	16 25	17 10	01 47	03 12	04 37	06 03
21	137 44.7	49.4	0 17.6	12.7	12 51.9	14.4	57.4	52	15 53	16 32	17 15	01 46	03 08	04 30	05 53
22	152 44.5	49.8	14 49.3	12.6	13 06.3	14.3	57.3	50	16 01	16 39	17 19	01 46	03 05	04 24	05 44
23	167 44.3	50.2	29 20.9	12.5	13 20.6	14.2	57.3	45	16 20	16 53	17 30	01 45	02 58	04 12	05 26
2 00	182 44.0	S21 50.5	43 52.4	12.5	N13 34.8	14.2	57.3	N 40	16 35	17 05	17 39	01 44	02 53	04 02	05 11
01	197 43.8	50.9	58 23.9	12.5	13 49.0	14.1	57.3	35	16 48	17 16	17 47	01 43	02 48	03 53	04 59
02	212 43.6	51.3	72 55.4	12.4	14 03.1	14.0	57.3	30	17 00	17 26	17 55	01 42	02 43	03 45	04 48
03	227 43.3	51.7	87 26.8	12.4	14 17.1	13.9	57.2	20	17 19	17 43	18 10	01 40	02 36	03 32	04 29
04	242 43.1	52.1	101 58.2	12.4	14 31.0	13.9	57.2	N 10	17 36	17 59	18 25	01 39	02 30	03 21	04 13
05	257 42.9	52.5	116 29.6	12.2	14 44.9	13.8	57.2	0	17 53	18 15	18 41	01 38	02 24	03 10	03 58
06	272 42.6	S21 52.8	131 00.8	12.3	N14 58.7	13.7	57.2	S 10	18 09	18 32	18 58	01 37	02 18	02 59	03 43
07	287 42.4	53.2	145 32.1	12.2	15 12.4	13.6	57.2	20	18 26	18 51	19 19	01 35	02 11	02 48	03 28
08	302 42.2	53.6	160 03.3	12.1	15 26.0	13.6	57.1	30	18 47	19 14	19 46	01 34	02 04	02 35	03 09
09	317 41.9	54.0	174 34.4	12.1	15 39.6	13.4	57.1	35	18 59	19 28	20 03	01 33	02 00	02 28	02 59
10	332 41.7	54.3	189 05.5	12.1	15 53.0	13.4	57.1	40	19 12	19 44	20 25	01 32	01 55	02 19	02 47
11	347 41.5	54.7	203 36.6	12.0	16 06.4	13.3	57.1	45	19 29	20 05	20 52	01 31	01 50	02 10	02 33
12	2 41.2	S21 55.1	218 07.6	11.9	N16 19.7	13.2	57.1	S 50	19 49	20 32	21 32	01 30	01 43	01 58	02 16
13	17 41.0	55.5	232 38.5	11.9	16 32.9	13.1	57.0	52	19 59	20 45	21 54	01 29	01 40	01 53	02 08
14	32 40.7	55.9	247 09.4	11.8	16 46.0	13.0	57.0	54	20 10	21 01	22 24	01 29	01 37	01 47	01 59
15	47 40.5	56.2	261 40.2	11.8	16 59.0	13.0	57.0	56	20 23	21 20	23 25	01 28	01 33	01 40	01 49
16	62 40.3	56.6	276 11.0	11.7	17 12.0	12.8	57.0	58	20 37	21 43	///	01 27	01 29	01 33	01 38
17	77 40.0	57.0	290 41.7	11.7	17 24.8	12.8	57.0	S 60	20 55	22 16	///	01 26	01 25	01 24	01 25
18	92 39.8	S21 57.3	305 12.4	11.6	N17 37.6	12.6	56.9								
19	107 39.5	57.7	319 43.0	11.6	17 50.2	12.6	56.9	Day	SUN	MOON					
20	122 39.3	58.1	334 13.6	11.5	18 02.8	12.5	56.9	Eqn. of Time	Mer.	Mer.	Pass.	Age	Phase		
21</															

ANNEXURE 6

42^m

INCREMENTS AND CORRECTIONS

43^m

42 ^m	SUN PLANETS	ARIES	MOON	v or Corr ⁿ d	v or Corr ⁿ d	v or Corr ⁿ d
00	10 30-0	10 31-7	10 01-3	0-0 0-0	6-0 4-3	12-0 8-5
01	10 30-3	10 32-0	10 01-5	0-1 0-1	6-1 4-3	12-1 8-6
02	10 30-5	10 32-2	10 01-8	0-2 0-1	6-2 4-4	12-2 8-6
03	10 30-8	10 32-5	10 02-0	0-3 0-2	6-3 4-5	12-3 8-7
04	10 31-0	10 32-7	10 02-3	0-4 0-3	6-4 4-5	12-4 8-8
05	10 31-3	10 33-0	10 02-5	0-5 0-4	6-5 4-6	12-5 8-9
06	10 31-5	10 33-2	10 02-7	0-6 0-4	6-6 4-7	12-6 8-9
07	10 31-8	10 33-5	10 03-0	0-7 0-5	6-7 4-7	12-7 9-0
08	10 32-0	10 33-7	10 03-2	0-8 0-6	6-8 4-8	12-8 9-1
09	10 32-3	10 34-0	10 03-4	0-9 0-6	6-9 4-9	12-9 9-1
10	10 32-5	10 34-2	10 03-7	1-0 0-7	7-0 5-0	13-0 9-2
11	10 32-8	10 34-5	10 03-9	1-1 0-8	7-1 5-0	13-1 9-3
12	10 33-0	10 34-7	10 04-2	1-2 0-9	7-2 5-1	13-2 9-4
13	10 33-3	10 35-0	10 04-4	1-3 0-9	7-3 5-2	13-3 9-4
14	10 33-5	10 35-2	10 04-6	1-4 1-0	7-4 5-2	13-4 9-5
15	10 33-8	10 35-5	10 04-9	1-5 1-1	7-5 5-3	13-5 9-6
16	10 34-0	10 35-7	10 05-1	1-6 1-1	7-6 5-4	13-6 9-6
17	10 34-3	10 36-0	10 05-4	1-7 1-2	7-7 5-5	13-7 9-7
18	10 34-5	10 36-2	10 05-6	1-8 1-3	7-8 5-5	13-8 9-8
19	10 34-8	10 36-5	10 05-8	1-9 1-3	7-9 5-6	13-9 9-8
20	10 35-0	10 36-7	10 06-1	2-0 1-4	8-0 5-7	14-0 9-9
21	10 35-3	10 37-0	10 06-3	2-1 1-5	8-1 5-7	14-1 10-0
22	10 35-5	10 37-2	10 06-5	2-2 1-6	8-2 5-8	14-2 10-1
23	10 35-8	10 37-5	10 06-8	2-3 1-6	8-3 5-9	14-3 10-1
24	10 36-0	10 37-7	10 07-0	2-4 1-7	8-4 6-0	14-4 10-2
25	10 36-3	10 38-0	10 07-3	2-5 1-8	8-5 6-0	14-5 10-3
26	10 36-5	10 38-2	10 07-5	2-6 1-8	8-6 6-1	14-6 10-3
27	10 36-8	10 38-5	10 07-7	2-7 1-9	8-7 6-2	14-7 10-4
28	10 37-0	10 38-7	10 08-0	2-8 2-0	8-8 6-2	14-8 10-5
29	10 37-3	10 39-0	10 08-2	2-9 2-1	8-9 6-3	14-9 10-6
30	10 37-5	10 39-2	10 08-5	3-0 2-1	9-0 6-4	15-0 10-6
31	10 37-8	10 39-5	10 08-7	3-1 2-2	9-1 6-4	15-1 10-7
32	10 38-0	10 39-7	10 08-9	3-2 2-3	9-2 6-5	15-2 10-8
33	10 38-3	10 40-0	10 09-2	3-3 2-3	9-3 6-6	15-3 10-8
34	10 38-5	10 40-2	10 09-4	3-4 2-4	9-4 6-7	15-4 10-9
35	10 38-8	10 40-5	10 09-7	3-5 2-5	9-5 6-7	15-5 11-0
36	10 39-0	10 40-7	10 09-9	3-6 2-6	9-6 6-8	15-6 11-1
37	10 39-3	10 41-0	10 10-1	3-7 2-6	9-7 6-9	15-7 11-1
38	10 39-5	10 41-3	10 10-4	3-8 2-7	9-8 6-9	15-8 11-2
39	10 39-8	10 41-5	10 10-6	3-9 2-8	9-9 7-0	15-9 11-3
40	10 40-0	10 41-8	10 10-8	4-0 2-8	10-0 7-1	16-0 11-3
41	10 40-3	10 42-0	10 11-1	4-1 2-9	10-1 7-2	16-1 11-4
42	10 40-5	10 42-3	10 11-3	4-2 3-0	10-2 7-2	16-2 11-5
43	10 40-8	10 42-5	10 11-6	4-3 3-0	10-3 7-3	16-3 11-5
44	10 41-0	10 42-8	10 11-8	4-4 3-1	10-4 7-4	16-4 11-6
45	10 41-3	10 43-0	10 12-0	4-5 3-2	10-5 7-4	16-5 11-7
46	10 41-5	10 43-3	10 12-3	4-6 3-3	10-6 7-5	16-6 11-8
47	10 41-8	10 43-5	10 12-5	4-7 3-3	10-7 7-6	16-7 11-8
48	10 42-0	10 43-8	10 12-8	4-8 3-4	10-8 7-7	16-8 11-9
49	10 42-3	10 44-0	10 13-0	4-9 3-5	10-9 7-7	16-9 12-0
50	10 42-5	10 44-3	10 13-2	5-0 3-5	11-0 7-8	17-0 12-0
51	10 42-8	10 44-5	10 13-5	5-1 3-6	11-1 7-9	17-1 12-1
52	10 43-0	10 44-8	10 13-7	5-2 3-7	11-2 7-9	17-2 12-2
53	10 43-3	10 45-0	10 13-9	5-3 3-8	11-3 8-0	17-3 12-3
54	10 43-5	10 45-3	10 14-2	5-4 3-8	11-4 8-1	17-4 12-3
55	10 43-8	10 45-5	10 14-4	5-5 3-9	11-5 8-1	17-5 12-4
56	10 44-0	10 45-8	10 14-7	5-6 4-0	11-6 8-2	17-6 12-5
57	10 44-3	10 46-0	10 14-9	5-7 4-0	11-7 8-3	17-7 12-5
58	10 44-5	10 46-3	10 15-1	5-8 4-1	11-8 8-4	17-8 12-6
59	10 44-8	10 46-5	10 15-4	5-9 4-2	11-9 8-4	17-9 12-7
60	10 45-0	10 46-8	10 15-6	6-0 4-3	12-0 8-5	18-0 12-8

43 ^m	SUN PLANETS	ARIES	MOON	v or Corr ⁿ d	v or Corr ⁿ d	v or Corr ⁿ d
00	10 45-0	10 46-8	10 15-6	0-0 0-0	6-0 4-4	12-0 8-7
01	10 45-3	10 47-0	10 15-9	0-1 0-1	6-1 4-4	12-1 8-8
02	10 45-5	10 47-3	10 16-1	0-2 0-1	6-2 4-5	12-2 8-8
03	10 45-8	10 47-5	10 16-3	0-3 0-2	6-3 4-6	12-3 8-9
04	10 46-0	10 47-8	10 16-6	0-4 0-3	6-4 4-6	12-4 9-0
05	10 46-3	10 48-0	10 16-8	0-5 0-4	6-5 4-7	12-5 9-1
06	10 46-5	10 48-3	10 17-0	0-6 0-4	6-6 4-8	12-6 9-1
07	10 46-8	10 48-5	10 17-3	0-7 0-5	6-7 4-9	12-7 9-2
08	10 47-0	10 48-8	10 17-5	0-8 0-6	6-8 4-9	12-8 9-3
09	10 47-3	10 49-0	10 17-8	0-9 0-7	6-9 5-0	12-9 9-4
10	10 47-5	10 49-3	10 18-0	1-0 0-7	7-0 5-1	13-0 9-4
11	10 47-8	10 49-5	10 18-2	1-1 0-8	7-1 5-1	13-1 9-5
12	10 48-0	10 49-8	10 18-5	1-2 0-9	7-2 5-2	13-2 9-6
13	10 48-3	10 50-0	10 18-7	1-3 0-9	7-3 5-3	13-3 9-6
14	10 48-5	10 50-3	10 19-0	1-4 1-0	7-4 5-4	13-4 9-7
15	10 48-8	10 50-5	10 19-2	1-5 1-1	7-5 5-4	13-5 9-8
16	10 49-0	10 50-8	10 19-4	1-6 1-2	7-6 5-5	13-6 9-9
17	10 49-3	10 51-0	10 19-7	1-7 1-2	7-7 5-6	13-7 9-9
18	10 49-5	10 51-3	10 19-9	1-8 1-3	7-8 5-7	13-8 10-0
19	10 49-8	10 51-5	10 20-2	1-9 1-4	7-9 5-7	13-9 10-1
20	10 50-0	10 51-8	10 20-4	2-0 1-5	8-0 5-8	14-0 10-2
21	10 50-3	10 52-0	10 20-6	2-1 1-5	8-1 5-9	14-1 10-2
22	10 50-5	10 52-3	10 20-9	2-2 1-6	8-2 5-9	14-2 10-3
23	10 50-8	10 52-5	10 21-1	2-3 1-7	8-3 6-0	14-3 10-4
24	10 51-0	10 52-8	10 21-3	2-4 1-7	8-4 6-1	14-4 10-4
25	10 51-3	10 53-0	10 21-6	2-5 1-8	8-5 6-2	14-5 10-5
26	10 51-5	10 53-3	10 21-8	2-6 1-9	8-6 6-2	14-6 10-6
27	10 51-8	10 53-5	10 22-1	2-7 2-0	8-7 6-3	14-7 10-7
28	10 52-0	10 53-8	10 22-3	2-8 2-0	8-8 6-4	14-8 10-7
29	10 52-3	10 54-0	10 22-5	2-9 2-1	8-9 6-5	14-9 10-8
30	10 52-5	10 54-3	10 22-8	3-0 2-2	9-0 6-5	15-0 10-9
31	10 52-8	10 54-5	10 23-0	3-1 2-2	9-1 6-6	15-1 10-9
32	10 53-0	10 54-8	10 23-3	3-2 2-3	9-2 6-7	15-2 11-0
33	10 53-3	10 55-0	10 23-5	3-3 2-4	9-3 6-7	15-3 11-1
34	10 53-5	10 55-3	10 23-7	3-4 2-5	9-4 6-8	15-4 11-2
35	10 53-8	10 55-5	10 24-0	3-5 2-5	9-5 6-9	15-5 11-2
36	10 54-0	10 55-8	10 24-2	3-6 2-6	9-6 7-0	15-6 11-3
37	10 54-3	10 56-0	10 24-4	3-7 2-7	9-7 7-0	15-7 11-4
38	10 54-5	10 56-3	10 24-7	3-8 2-8	9-8 7-1	15-8 11-5
39	10 54-8	10 56-5	10 24-9	3-9 2-8	9-9 7-2	15-9 11-5
40	10 55-0	10 56-8	10 25-2	4-0 2-9	10-0 7-3	16-0 11-6
41	10 55-3	10 57-0	10 25-4	4-1 3-0	10-1 7-3	16-1 11-7
42	10 55-5	10 57-3	10 25-6	4-2 3-0	10-2 7-4	16-2 11-7
43	10 55-8	10 57-5	10 25-9	4-3 3-1	10-3 7-5	16-3 11-8
44	10 56-0	10 57-8	10 26-1	4-4 3-2	10-4 7-5	16-4 11-9
45	10 56-3	10 58-0	10 26-4	4-5 3-3	10-5 7-6	16-5 12-0
46	10 56-5	10 58-3	10 26-6	4-6 3-3	10-6 7-7	16-6 12-0
47	10 56-8	10 58-5	10 26-8	4-7 3-4	10-7 7-8	16-7 12-1
48	10 57-0	10 58-8	10 27-1	4-8 3-5	10-8 7-8	16-8 12-2
49	10 57-3	10 59-0	10 27-3	4-9 3-6	10-9 7-9	16-9 12-3
50	10 57-5	10 59-3	10 27-5	5-0 3-6	11-0 8-0	17-0 12-3
51	10 57-8	10 59-6	10 27-8	5-1 3-7	11-1 8-0	17-1 12-4
52	10 58-0	10 59-8	10 28-0	5-2 3-8	11-2 8-1	17-2 12-5
53	10 58-3	11 00-1	10 28-3	5-3 3-8	11-3 8-2	17-3 12-5
54	10 58-5	11 00-3	10 28-5	5-4 3-9	11-4 8-3	17-4 12-6
55	10 58-8	11 00-6	10 28-7	5-5 4-0	11-5 8-3	17-5 12-7
56	10 59-0	11 00-8	10 29-0	5-6 4-1	11-6 8-4	17-6 12-8
57	10 59-3	11 01-1	10 29-2	5-7 4-1	11-7 8-5	17-7 12-8
58	10 59-5	11 01-3	10 29-5	5-8 4-2	11-8 8-6	17-8 12-9
59	10 59-8	11 01-6	10 29-7	5-9 4-3	11-9 8-6	17-9 13-0
60	11 00-0	11 01-8	10 29-9	6-0 4-4	12-0 8-7	18-0 13-1