ANNEXURE 1 DEVIATION CARD

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

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ANNEXURE 2 CONVERSION OF ARC TO TIME

Conversion of Arc to Time

0° - 59°			60° - 119°			120° - 179°			180° - 239°			240° - 299°			300° - 360°			0′ - 59′			0″ - 59″	
°	h	m	°	h	m	°	h	m	°	h	m	°	h	m	°	h	m	′	m	s	″	s
0	0	00	60	4	00	120	8	00	180	12	00	240	16	00	300	20	00	0	0	00	0	0.00
1	0	04	61	4	04	121	8	04	181	12	04	241	16	04	301	20	04	1	0	04	1	0.07
2	0	08	62	4	08	122	8	08	182	12	08	242	16	08	302	20	08	2	0	08	2	0.13
3	0	12	63	4	12	123	8	12	183	12	12	243	16	12	303	20	12	3	0	12	3	0.20
4	0	16	64	4	16	124	8	16	184	12	16	244	16	16	304	20	16	4	0	16	4	0.27
5	0	20	65	4	20	125	8	20	185	12	20	245	16	20	305	20	20	5	0	20	5	0.33
6	0	24	66	4	24	126	8	24	186	12	24	246	16	24	306	20	24	6	0	24	6	0.40
7	0	28	67	4	28	127	8	28	187	12	28	247	16	28	307	20	28	7	0	28	7	0.47
8	0	32	68	4	32	128	8	32	188	12	32	248	16	32	308	20	32	8	0	32	8	0.53
9	0	36	69	4	36	129	8	36	189	12	36	249	16	36	309	20	36	9	0	36	9	0.60
10	0	40	70	4	40	130	8	40	190	12	40	250	16	40	310	20	40	10	0	40	10	0.67
11	0	44	71	4	44	131	8	44	191	12	44	251	16	44	311	20	44	11	0	44	11	0.73
12	0	48	72	4	48	132	8	48	192	12	48	252	16	48	312	20	48	12	0	48	12	0.80
13	0	52	73	4	52	133	8	52	193	12	52	253	16	52	313	20	52	13	0	52	13	0.87
14	0	56	74	4	56	134	8	56	194	12	56	254	16	56	314	20	56	14	0	56	14	0.93
15	1	00	75	5	00	135	9	00	195	13	00	255	17	00	315	21	00	15	1	00	15	1.00
16	1	04	76	5	04	136	9	04	196	13	04	256	17	04	316	21	04	16	1	04	16	1.07
17	1	08	77	5	08	137	9	08	197	13	08	257	17	08	317	21	08	17	1	08	17	1.13
18	1	12	78	5	12	138	9	12	198	13	12	258	17	12	318	21	12	18	1	12	18	1.20
19	1	16	79	5	16	139	9	16	199	13	16	259	17	16	319	21	16	19	1	16	19	1.27
20	1	20	80	5	20	140	9	20	200	13	20	260	17	20	320	21	20	20	1	20	20	1.33
21	1	24	81	5	24	141	9	24	201	13	24	261	17	24	321	21	24	21	1	24	21	1.40
22	1	28	82	5	28	142	9	28	202	13	28	262	17	28	322	21	28	22	1	28	22	1.47
23	1	32	83	5	32	143	9	32	203	13	32	263	17	32	323	21	32	23	1	32	23	1.53
24	1	36	84	5	36	144	9	36	204	13	36	264	17	36	324	21	36	24	1	36	24	1.60
25	1	40	85	5	40	145	9	40	205	13	40	265	17	40	325	21	40	25	1	40	25	1.67
26	1	44	86	5	44	146	9	44	206	13	44	266	17	44	326	21	44	26	1	44	26	1.73
27	1	48	87	5	48	147	9	48	207	13	48	267	17	48	327	21	48	27	1	48	27	1.80
28	1	52	88	5	52	148	9	52	208	13	52	268	17	52	328	21	52	28	1	52	28	1.87
29	1	56	89	5	56	149	9	56	209	13	56	269	17	56	329	21	56	29	1	56	29	1.93
30	2	00	90	6	00	150	10	00	210	14	00	270	18	00	330	22	00	30	2	00	30	2.00
31	2	04	91	6	04	151	10	04	211	14	04	271	18	04	331	22	04	31	2	04	31	2.07
32	2	08	92	6	08	152	10	08	212	14	08	272	18	08	332	22	08	32	2	08	32	2.13
33	2	12	93	6	12	153	10	12	213	14	12	273	18	12	333	22	12	33	2	12	33	2.20
34	2	16	94	6	16	154	10	16	214	14	16	274	18	16	334	22	16	34	2	16	34	2.27
35	2	20	95	6	20	155	10	20	215	14	20	275	18	20	335	22	20	35	2	20	35	2.33
36	2	24	96	6	24	156	10	24	216	14	24	276	18	24	336	22	24	36	2	24	36	2.40
37	2	28	97	6	28	157	10	28	217	14	28	277	18	28	337	22	28	37	2	28	37	2.47
38	2	32	98	6	32	158	10	32	218	14	32	278	18	32	338	22	32	38	2	32	38	2.53
39	2	36	99	6	36	159	10	36	219	14	36	279	18	36	339	22	36	39	2	36	39	2.60
40	2	40	100	6	40	160	10	40	220	14	40	280	18	40	340	22	40	40	2	40	40	2.67
41	2	44	101	6	44	161	10	44	221	14	44	281	18	44	341	22	44	41	2	44	41	2.73
42	2	48	102	6	48	162	10	48	222	14	48	282	18	48	342	22	48	42	2	48	42	2.80
43	2	52	103	6	52	163	10	52	223	14	52	283	18	52	343	22	52	43	2	52	43	2.87
44	2	56	104	6	56	164	10	56	224	14	56	284	18	56	344	22	56	44	2	56	44	2.93
45	3	00	105	7	00	165	11	00	225	15	00	285	19	00	345	23	00	45	3	00	45	3.00
46	3	04	106	7	04	166	11	04	226	15	04	286	19	04	346	23	04	46	3	04	46	3.07
47	3	08	107	7	08	167	11	08	227	15	08	287	19	08	347	23	08	47	3	08	47	3.13
48	3	12	108	7	12	168	11	12	228	15	12	288	19	12	348	23	12	48	3	12	48	3.20
49	3	16	109	7	16	169	11	16	229	15	16	289	19	16	349	23	16	49	3	16	49	3.27
50	3	20	110	7	20	170	11	20	230	15	20	290	19	20	350	23	20	50	3	20	50	3.33
51	3	24	111	7	24	171	11	24	231	15	24	291	19	24	351	23	24	51	3	24	51	3.40
52	3	28	112	7	28	172	11	28	232	15	28	292	19	28	352	23	28	52	3	28	52	3.47
53	3	32	113	7	32	173	11	32	233	15	32	293	19	32	353	23	32	53	3	32	53	3.53
54	3	36	114	7	36	174	11	36	234	15	36	294	19	36	354	23	36	54	3	36	54	3.60
55	3	40	115	7	40	175	11	40	235	15	40	295	19	40	355	23	40	55	3	40	55	3.67
56	3	44	116	7	44	176	11	44	236	15	44	296	19	44	356	23	44	56	3	44	56	3.73
57	3	48	117	7	48	177	11	48	237	15	48	297	19	48	357	23	48	57	3	48	57	3.80
58	3	52	118	7	52	178	11	52	238	15	52	298	19	52	358	23	52	58	3	52	58	3.87
59	3	56	119	7	56	179	11	56	239	15	56	299	19	56	359	23	56	59	3	56	59	3.93
60	4	00	120	8	00	180	12	00	240	16	00	300	20	00	360	24	00	60	4	00	60	4.00

h= hours of time **m**= minutes of time **s** = seconds of time ′ = minutes of arc ″ = seconds of arc

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, particularly in the case of sunrise, sunset, etc.

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ANNEXURE 3 NAUTICAL ALMANAC – 2016 APRIL 09, 10, 11

DUT1 = UT1-UTC = -0.0964 sec ΔT = TT-UT1 = +68.2804 sec

2016 April 09 to Apr. 11 UT

h	Sun		Moon				
Sat	GHA	Dec	GHA	v	Dec	d	HP
0	179°36.1	N07°39.4	157°33.1	6.1'	N11°24.8	9.4'	61.1'
1	194°36.2	40.3	171°58.2	6.1'	11°34.2	9.3'	61.1'
2	209°36.4	41.2	186°23.2	6.1'	11°43.4	9.2'	61.1'
3	224°36.6	· · 42.2	200°48.3	6.0'	11°52.6	9.1'	61.1'
4	239°36.7	43.1	215°13.3	6.0'	12°01.7	9.0'	61.0'
5	254°36.9	44.0	229°38.3	6.0'	12°10.7	9.0'	61.0'
6	269°37.1	N07°45.0	244°03.3	6.0'	N12°19.6	8.9'	61.0'
7	284°37.2	45.9	258°28.3	6.0'	12°28.4	8.8'	61.0'
8	299°37.4	46.8	272°53.3	6.0'	12°37.1	8.7'	61.0'
9	314°37.6	· · 47.7	287°18.2	5.9'	12°45.8	8.6'	60.9'
10	329°37.8	48.7	301°43.1	5.9'	12°54.3	8.5'	60.9'
11	344°37.9	49.6	316°08.1	5.9'	13°02.7	8.4'	60.9'
12	359°38.1	N07°50.5	330°33.0	5.9'	N13°11.1	8.3'	60.9'
13	14°38.3	51.4	344°57.9	5.9'	13°19.3	8.2'	60.8'
14	29°38.4	52.4	359°22.7	5.9'	13°27.5	8.1'	60.8'
15	44°38.6	· · 53.3	13°47.6	5.9'	13°35.5	8.0'	60.8'
16	59°38.8	54.2	28°12.5	5.9'	13°43.4	7.9'	60.8'
17	74°38.9	55.1	42°37.3	5.9'	13°51.3	7.8'	60.8'
18	89°39.1	N07°56.1	57°02.2	5.8'	N13°59.0	7.7'	60.7'
19	104°39.3	57.0	71°27.0	5.8'	14°06.7	7.6'	60.7'
20	119°39.4	57.9	85°51.9	5.8'	14°14.2	7.5'	60.7'
21	134°39.6	· · 58.8	100°16.7	5.8'	14°21.6	7.4'	60.6'
22	149°39.8	07°59.8	114°41.5	5.8'	14°29.0	7.3'	60.6'
23	164°39.9	08°00.7	129°06.3	5.8'	14°36.2	7.2'	60.6'
	SD.=16.0	d=0.9	S.D.=16.6				

Sun	GHA	Dec	GHA	v	Dec	d	HP
0	179°40.1	N08°01.6	143°31.1	5.8'	N14°43.3	7.1'	60.6'
1	194°40.3	02.5	157°55.9	5.8'	14°50.3	6.9'	60.5'
2	209°40.4	03.5	172°20.8	5.8'	14°57.2	6.8'	60.5'
3	224°40.6	· · 04.4	186°45.6	5.8'	15°04.0	6.7'	60.5'
4	239°40.8	05.3	201°10.4	5.8'	15°10.6	6.6'	60.5'
5	254°40.9	06.2	215°35.2	5.8'	15°17.2	6.5'	60.4'
6	269°41.1	N08°07.2	230°00.0	5.8'	N15°23.6	6.4'	60.4'
7	284°41.3	08.1	244°24.8	5.8'	15°30.0	6.3'	60.4'
8	299°41.4	09.0	258°49.6	5.8'	15°36.2	6.2'	60.3'
9	314°41.6	· · 09.9	273°14.4	5.8'	15°42.3	6.1'	60.3'
10	329°41.8	10.8	287°39.2	5.8'	15°48.3	5.9'	60.3'
11	344°41.9	11.8	302°04.0	5.8'	15°54.2	5.8'	60.2'
12	359°42.1	N08°12.7	316°28.9	5.8'	N16°00.0	5.7'	60.2'
13	14°42.2	13.6	330°53.7	5.8'	16°05.6	5.6'	60.2'
14	29°42.4	14.5	345°18.5	5.8'	16°11.1	5.5'	60.1'
15	44°42.6	· · 15.4	359°43.4	5.9'	16°16.6	5.4'	60.1'
16	59°42.7	16.4	14°08.2	5.9'	16°21.9	5.2'	60.1'
17	74°42.9	17.3	28°33.1	5.9'	16°27.1	5.1'	60.0'
18	89°43.1	N08°18.2	42°58.0	5.9'	N16°32.1	5.0'	60.0'
19	104°43.2	19.1	57°22.9	5.9'	16°37.1	4.9'	60.0'
20	119°43.4	20.0	71°47.8	5.9'	16°41.9	4.8'	59.9'
21	134°43.6	· · 21.0	86°12.7	5.9'	16°46.6	4.7'	59.9'
22	149°43.7	21.9	100°37.6	5.9'	16°51.2	4.5'	59.9'
23	164°43.9	22.8	115°02.6	6.0'	16°55.7	4.4'	59.8'
	SD.=15.9	d=0.9	S.D.=16.4				

Mon	GHA	Dec	GHA	v	Dec	d	HP
0	179°44.1	N08°23.7	129°27.6	6.0'	N17°00.1	4.3'	59.8'
1	194°44.2	24.6	143°52.6	6.0'	17°04.3	4.2'	59.8'
2	209°44.4	25.5	158°17.6	6.0'	17°08.4	4.1'	59.7'
3	224°44.5	· · 26.5	172°42.6	6.0'	17°12.4	3.9'	59.7'
4	239°44.7	27.4	187°07.6	6.1'	17°16.3	3.8'	59.7'
5	254°44.9	28.3	201°32.7	6.1'	17°20.0	3.7'	59.6'
6	269°45.0	N08°29.2	215°57.8	6.1'	N17°23.7	3.6'	59.6'
7	284°45.2	30.1	230°22.9	6.1'	17°27.2	3.5'	59.6'
8	299°45.4	31.0	244°48.1	6.2'	17°30.6	3.3'	59.5'
9	314°45.5	· · 32.0	259°13.2	6.2'	17°33.9	3.2'	59.5'
10	329°45.7	32.9	273°38.4	6.2'	17°37.0	3.1'	59.4'
11	344°45.8	33.8	288°03.6	6.2'	17°40.1	3.0'	59.4'
12	359°46.0	N08°34.7	302°28.9	6.3'	N17°43.0	2.9'	59.4'
13	14°46.2	35.6	316°54.2	6.3'	17°45.8	2.7'	59.3'
14	29°46.3	36.5	331°19.5	6.3'	17°48.4	2.6'	59.3'
15	44°46.5	· · 37.4	345°44.8	6.4'	17°51.0	2.5'	59.3'
16	59°46.7	38.4	0°10.2	6.4'	17°53.4	2.4'	59.2'
17	74°46.8	39.3	14°35.6	6.4'	17°55.8	2.3'	59.2'
18	89°47.0	N08°40.2	29°01.0	6.5'	N17°57.9	2.1'	59.1'
19	104°47.1	41.1	43°26.5	6.5'	18°00.0	2.0'	59.1'
20	119°47.3	42.0	57°52.0	6.5'	18°02.0	1.9'	59.1'
21	134°47.5	· · 42.9	72°17.6	6.6'	18°03.8	1.8'	59.0'
22	149°47.6	43.8	86°43.1	6.6'	18°05.5	1.7'	59.0'
23	164°47.8	44.7	101°08.8	6.6'	18°07.1	1.5'	59.0'
	SD.=15.9	d=0.9	S.D.=16.2				

Lat.	Twilight Naut.	Twilight Civil	Sunrise	Sunset	Twilight Civil	Twilight Naut.
N 72°	▭	02:37	04:05	20:01	21:31	▭
N 70°	▭	03:04	04:19	19:47	21:03	▭
68°	01:39	03:24	04:29	19:36	20:42	22:32
66°	02:15	03:40	04:38	19:27	20:25	21:53
64°	02:40	03:53	04:45	19:19	20:12	21:26
62°	02:59	04:03	04:52	19:12	20:01	21:07
60°	03:14	04:12	04:57	19:07	19:52	20:51
N 58°	03:27	04:20	05:02	19:02	19:44	20:38
56°	03:38	04:27	05:06	18:57	19:37	20:27
54°	03:47	04:33	05:10	18:53	19:31	20:17
52°	03:55	04:38	05:14	18:50	19:25	20:09
50°	04:02	04:43	05:17	18:47	19:20	20:01
45°	04:17	04:53	05:24	18:40	19:10	19:46
N 40°	04:29	05:02	05:29	18:34	19:02	19:35
35°	04:38	05:08	05:34	18:29	18:55	19:25
30°	04:46	05:14	05:38	18:24	18:49	19:17
20°	04:57	05:23	05:46	18:17	18:39	19:05
N 10°	05:06	05:31	05:52	18:10	18:32	18:56
0°	05:13	05:37	05:58	18:04	18:25	18:50
S 10°	05:18	05:42	06:04	17:59	18:20	18:44
20°	05:22	05:47	06:10	17:53	18:15	18:40
30°	05:24	05:52	06:16	17:46	18:10	18:38
35°	05:25	05:55	06:20	17:42	18:07	18:37
40°	05:26	05:57	06:24	17:37	18:05	18:36
45°	05:26	06:00	06:29	17:32	18:02	18:36
S 50°	05:25	06:03	06:35	17:26	17:59	18:36
52°	05:25	06:04	06:38	17:24	17:58	18:37
54°	05:24	06:05	06:41	17:21	17:56	18:37
56°	05:23	06:06	06:44	17:17	17:55	18:38
58°	05:23	06:08	06:48	17:14	17:53	18:39
S 60°	05:21	06:10	06:52	17:10	17:52	18:40

Lat.	Moonrise Sat	Moonrise Sun	Moonrise Mon	Moonset Sat	Moonset Sun	Moonset Mon
N 72°	04:58	04:53	04:46	23:58	–:–	02:08
N 70°	05:19	05:26	05:42	23:25	–:–	01:12
68°	05:35	05:50	06:16	23:02	–:–	00:38
66°	05:48	06:09	06:40	22:44	–:–	00:14
64°	05:59	06:25	07:00	22:29	23:55	–:–
62°	06:08	06:38	07:16	22:17	23:40	–:–
60°	06:17	06:49	07:29	22:06	23:27	–:–
N 58°	06:24	06:58	07:40	21:57	23:16	–:–
56°	06:30	07:07	07:50	21:49	23:06	–:–
54°	06:36	07:14	07:59	21:42	22:58	–:–
52°	06:41	07:21	08:07	21:36	22:50	23:56
50°	06:46	07:27	08:14	21:30	22:43	23:48
45°	06:56	07:40	08:29	21:18	22:28	23:32
N 40°	07:04	07:51	08:42	21:08	22:16	23:19
35°	07:12	08:00	08:52	20:59	22:06	23:08
30°	07:18	08:09	09:02	20:52	21:57	22:58
20°	07:29	08:23	09:18	20:39	21:41	22:41
N 10°	07:39	08:35	09:32	20:27	21:28	22:27
0°	07:49	08:47	09:46	20:16	21:15	22:13
S 10°	07:58	08:59	09:59	20:06	21:02	21:59
20°	08:08	09:12	10:13	19:54	20:49	21:45
30°	08:20	09:26	10:30	19:41	20:33	21:28
35°	08:27	09:35	10:39	19:34	20:24	21:18
40°	08:34	09:45	10:50	19:25	20:14	21:07
45°	08:43	09:56	11:03	19:15	20:02	20:54
S 50°	08:54	10:10	11:19	19:03	19:48	20:37
52°	08:59	10:16	11:26	18:58	19:41	20:30
54°	09:05	10:24	11:34	18:52	19:33	20:22
56°	09:11	10:32	11:44	18:45	19:25	20:12
58°	09:18	10:41	11:54	18:37	19:15	20:02
S 60°	09:26	10:51	12:06	18:29	19:05	19:49

Day	Sun Eqn.of Time 00h mm:ss	Sun Eqn.of Time 12h mm:ss	Sun Mer. Pass hh:mm	Moon Mer.Pass. Upper hh:mm	Moon Mer.Pass. Lower hh:mm	Moon Age 2-4 6-22%
09	01:36	01:28	12:01	14:03	01:33	
10	01:20	01:12	12:01	15:01	02:32	
11	01:04	00:56	12:01	15:59	03:30	

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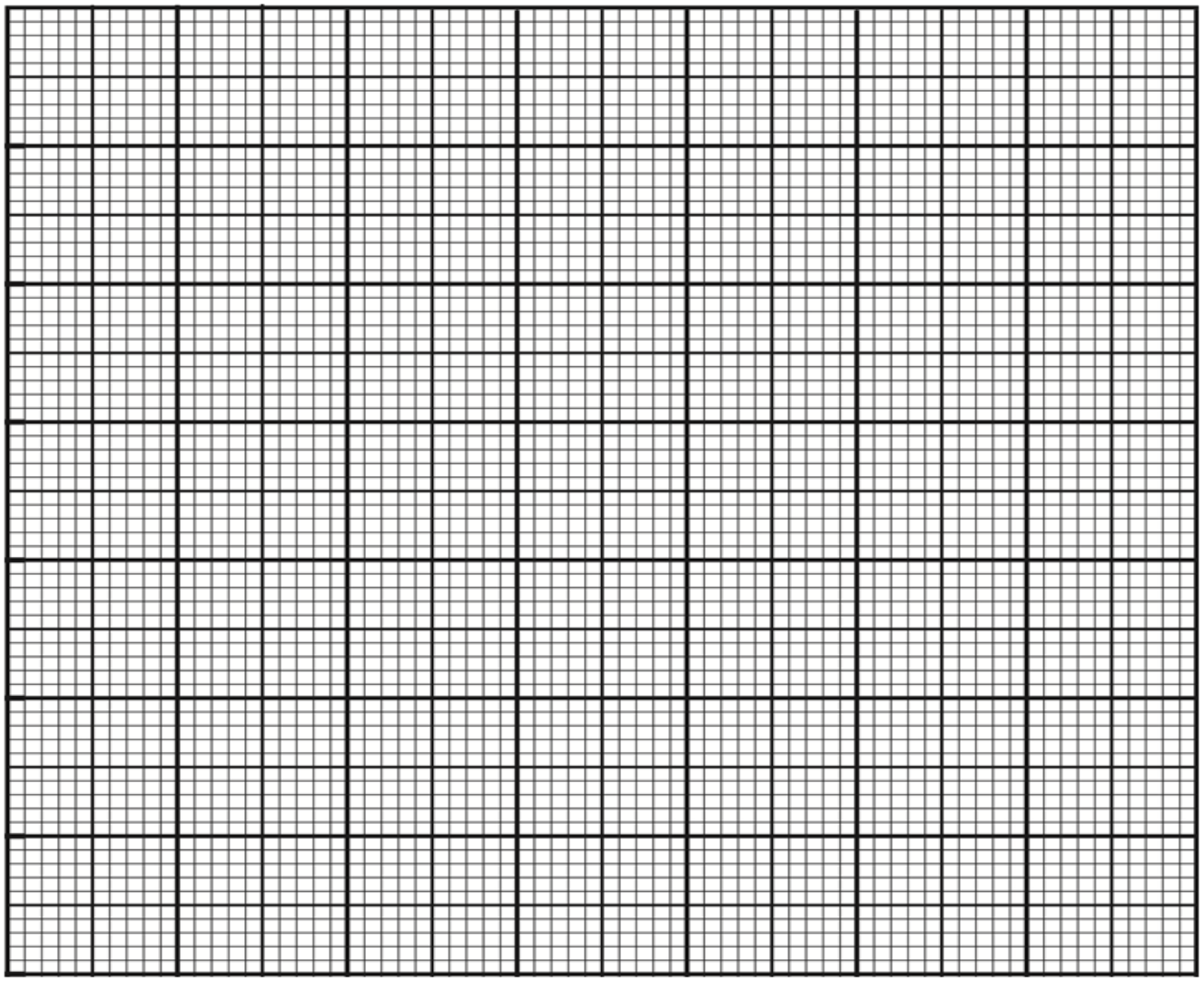
ANNEXURE 4 INCREMENTS AND CORRECTIONS – MINUTES 20 & 21

m 20	Sun Plan.	Aries	Moon	v and d corr		
0	5°00.0	5°00.8	4°46.3	0.0 - 0.0	6.0 - 2.0	12.0 - 4.1
1	5°00.2	5°01.1	4°46.6	0.1 - 0.0	6.1 - 2.1	12.1 - 4.1
2	5°00.5	5°01.3	4°46.8	0.2 - 0.1	6.2 - 2.1	12.2 - 4.2
3	5°00.8	5°01.6	4°47.0	0.3 - 0.1	6.3 - 2.2	12.3 - 4.2
4	5°01.0	5°01.8	4°47.3	0.4 - 0.1	6.4 - 2.2	12.4 - 4.2
5	5°01.2	5°02.1	4°47.5	0.5 - 0.2	6.5 - 2.2	12.5 - 4.3
6	5°01.5	5°02.3	4°47.8	0.6 - 0.2	6.6 - 2.3	12.6 - 4.3
7	5°01.8	5°02.6	4°48.0	0.7 - 0.2	6.7 - 2.3	12.7 - 4.3
8	5°02.0	5°02.8	4°48.2	0.8 - 0.3	6.8 - 2.3	12.8 - 4.4
9	5°02.2	5°03.1	4°48.5	0.9 - 0.3	6.9 - 2.4	12.9 - 4.4
10	5°02.5	5°03.3	4°48.7	1.0 - 0.3	7.0 - 2.4	13.0 - 4.4
11	5°02.8	5°03.6	4°49.0	1.1 - 0.4	7.1 - 2.4	13.1 - 4.5
12	5°03.0	5°03.8	4°49.2	1.2 - 0.4	7.2 - 2.5	13.2 - 4.5
13	5°03.2	5°04.1	4°49.4	1.3 - 0.4	7.3 - 2.5	13.3 - 4.5
14	5°03.5	5°04.3	4°49.7	1.4 - 0.5	7.4 - 2.5	13.4 - 4.6
15	5°03.8	5°04.6	4°49.9	1.5 - 0.5	7.5 - 2.6	13.5 - 4.6
16	5°04.0	5°04.8	4°50.2	1.6 - 0.5	7.6 - 2.6	13.6 - 4.6
17	5°04.3	5°05.1	4°50.4	1.7 - 0.6	7.7 - 2.6	13.7 - 4.7
18	5°04.5	5°05.3	4°50.6	1.8 - 0.6	7.8 - 2.7	13.8 - 4.7
19	5°04.7	5°05.6	4°50.9	1.9 - 0.6	7.9 - 2.7	13.9 - 4.7
20	5°05.0	5°05.8	4°51.1	2.0 - 0.7	8.0 - 2.7	14.0 - 4.8
21	5°05.3	5°06.1	4°51.3	2.1 - 0.7	8.1 - 2.8	14.1 - 4.8
22	5°05.5	5°06.3	4°51.6	2.2 - 0.8	8.2 - 2.8	14.2 - 4.9
23	5°05.7	5°06.6	4°51.8	2.3 - 0.8	8.3 - 2.8	14.3 - 4.9
24	5°06.0	5°06.8	4°52.1	2.4 - 0.8	8.4 - 2.9	14.4 - 4.9
25	5°06.3	5°07.1	4°52.3	2.5 - 0.9	8.5 - 2.9	14.5 - 5.0
26	5°06.5	5°07.3	4°52.5	2.6 - 0.9	8.6 - 2.9	14.6 - 5.0
27	5°06.7	5°07.6	4°52.8	2.7 - 0.9	8.7 - 3.0	14.7 - 5.0
28	5°07.0	5°07.8	4°53.0	2.8 - 1.0	8.8 - 3.0	14.8 - 5.1
29	5°07.3	5°08.1	4°53.3	2.9 - 1.0	8.9 - 3.0	14.9 - 5.1
30	5°07.5	5°08.3	4°53.5	3.0 - 1.0	9.0 - 3.1	15.0 - 5.1
31	5°07.7	5°08.6	4°53.7	3.1 - 1.1	9.1 - 3.1	15.1 - 5.2
32	5°08.0	5°08.8	4°54.0	3.2 - 1.1	9.2 - 3.1	15.2 - 5.2
33	5°08.3	5°09.1	4°54.2	3.3 - 1.1	9.3 - 3.2	15.3 - 5.2
34	5°08.5	5°09.3	4°54.4	3.4 - 1.2	9.4 - 3.2	15.4 - 5.3
35	5°08.7	5°09.6	4°54.7	3.5 - 1.2	9.5 - 3.2	15.5 - 5.3
36	5°09.0	5°09.8	4°54.9	3.6 - 1.2	9.6 - 3.3	15.6 - 5.3
37	5°09.3	5°10.1	4°55.2	3.7 - 1.3	9.7 - 3.3	15.7 - 5.4
38	5°09.5	5°10.3	4°55.4	3.8 - 1.3	9.8 - 3.3	15.8 - 5.4
39	5°09.7	5°10.6	4°55.6	3.9 - 1.3	9.9 - 3.4	15.9 - 5.4
40	5°10.0	5°10.8	4°55.9	4.0 - 1.4	10.0 - 3.4	16.0 - 5.5
41	5°10.3	5°11.1	4°56.1	4.1 - 1.4	10.1 - 3.5	16.1 - 5.5
42	5°10.5	5°11.3	4°56.4	4.2 - 1.4	10.2 - 3.5	16.2 - 5.5
43	5°10.7	5°11.6	4°56.6	4.3 - 1.5	10.3 - 3.5	16.3 - 5.6
44	5°11.0	5°11.9	4°56.8	4.4 - 1.5	10.4 - 3.6	16.4 - 5.6
45	5°11.3	5°12.1	4°57.1	4.5 - 1.5	10.5 - 3.6	16.5 - 5.6
46	5°11.5	5°12.4	4°57.3	4.6 - 1.6	10.6 - 3.6	16.6 - 5.7
47	5°11.8	5°12.6	4°57.5	4.7 - 1.6	10.7 - 3.7	16.7 - 5.7
48	5°12.0	5°12.9	4°57.8	4.8 - 1.6	10.8 - 3.7	16.8 - 5.7
49	5°12.2	5°13.1	4°58.0	4.9 - 1.7	10.9 - 3.7	16.9 - 5.8
50	5°12.5	5°13.4	4°58.3	5.0 - 1.7	11.0 - 3.8	17.0 - 5.8
51	5°12.8	5°13.6	4°58.5	5.1 - 1.7	11.1 - 3.8	17.1 - 5.8
52	5°13.0	5°13.9	4°58.7	5.2 - 1.8	11.2 - 3.8	17.2 - 5.9
53	5°13.2	5°14.1	4°59.0	5.3 - 1.8	11.3 - 3.9	17.3 - 5.9
54	5°13.5	5°14.4	4°59.2	5.4 - 1.8	11.4 - 3.9	17.4 - 5.9
55	5°13.8	5°14.6	4°59.5	5.5 - 1.9	11.5 - 3.9	17.5 - 6.0
56	5°14.0	5°14.9	4°59.7	5.6 - 1.9	11.6 - 4.0	17.6 - 6.0
57	5°14.2	5°15.1	4°59.9	5.7 - 1.9	11.7 - 4.0	17.7 - 6.0
58	5°14.5	5°15.4	5°00.2	5.8 - 2.0	11.8 - 4.0	17.8 - 6.1
59	5°14.8	5°15.6	5°00.4	5.9 - 2.0	11.9 - 4.1	17.9 - 6.1

m 21	Sun Plan.	Aries	Moon	v and d corr		
0	5°15.0	5°15.9	5°00.6	0.0 - 0.0	6.1 - 2.1	12.0 - 4.3
1	5°15.2	5°16.1	5°00.9	0.1 - 0.0	6.1 - 2.2	12.1 - 4.3
2	5°15.5	5°16.4	5°01.1	0.2 - 0.1	6.2 - 2.2	12.2 - 4.4
3	5°15.8	5°16.6	5°01.4	0.3 - 0.1	6.3 - 2.3	12.3 - 4.4
4	5°16.0	5°16.9	5°01.6	0.4 - 0.1	6.4 - 2.3	12.4 - 4.4
5	5°16.2	5°17.1	5°01.8	0.5 - 0.2	6.5 - 2.3	12.5 - 4.5
6	5°16.5	5°17.4	5°02.1	0.6 - 0.2	6.6 - 2.4	12.6 - 4.5
7	5°16.8	5°17.6	5°02.3	0.7 - 0.3	6.7 - 2.4	12.7 - 4.6
8	5°17.0	5°17.9	5°02.6	0.8 - 0.3	6.8 - 2.4	12.8 - 4.6
9	5°17.2	5°18.1	5°02.8	0.9 - 0.3	6.9 - 2.5	12.9 - 4.6
10	5°17.5	5°18.4	5°03.0	1.0 - 0.4	7.0 - 2.5	13.0 - 4.7
11	5°17.8	5°18.6	5°03.3	1.1 - 0.4	7.1 - 2.5	13.1 - 4.7
12	5°18.0	5°18.9	5°03.5	1.2 - 0.4	7.2 - 2.6	13.2 - 4.7
13	5°18.2	5°19.1	5°03.8	1.3 - 0.5	7.3 - 2.6	13.3 - 4.8
14	5°18.5	5°19.4	5°04.0	1.4 - 0.5	7.4 - 2.7	13.4 - 4.8
15	5°18.8	5°19.6	5°04.2	1.5 - 0.5	7.5 - 2.7	13.5 - 4.8
16	5°19.0	5°19.9	5°04.5	1.6 - 0.6	7.6 - 2.7	13.6 - 4.9
17	5°19.3	5°20.1	5°04.7	1.7 - 0.6	7.7 - 2.8	13.7 - 4.9
18	5°19.5	5°20.4	5°04.9	1.8 - 0.6	7.8 - 2.8	13.8 - 4.9
19	5°19.7	5°20.6	5°05.2	1.9 - 0.7	7.9 - 2.8	13.9 - 5.0
20	5°20.0	5°20.9	5°05.4	2.0 - 0.7	8.0 - 2.9	14.0 - 5.0
21	5°20.3	5°21.1	5°05.7	2.1 - 0.8	8.1 - 2.9	14.1 - 5.1
22	5°20.5	5°21.4	5°05.9	2.2 - 0.8	8.2 - 2.9	14.2 - 5.1
23	5°20.7	5°21.6	5°06.1	2.3 - 0.8	8.3 - 3.0	14.3 - 5.1
24	5°21.0	5°21.9	5°06.4	2.4 - 0.9	8.4 - 3.0	14.4 - 5.2
25	5°21.3	5°22.1	5°06.6	2.5 - 0.9	8.5 - 3.0	14.5 - 5.2
26	5°21.5	5°22.4	5°06.9	2.6 - 0.9	8.6 - 3.1	14.6 - 5.2
27	5°21.7	5°22.6	5°07.1	2.7 - 1.0	8.7 - 3.1	14.7 - 5.3
28	5°22.0	5°22.9	5°07.3	2.8 - 1.0	8.8 - 3.2	14.8 - 5.3
29	5°22.3	5°23.1	5°07.6	2.9 - 1.0	8.9 - 3.2	14.9 - 5.3
30	5°22.5	5°23.4	5°07.8	3.0 - 1.1	9.0 - 3.2	15.0 - 5.4
31	5°22.7	5°23.6	5°08.0	3.1 - 1.1	9.1 - 3.3	15.1 - 5.4
32	5°23.0	5°23.9	5°08.3	3.2 - 1.1	9.2 - 3.3	15.2 - 5.4
33	5°23.3	5°24.1	5°08.5	3.3 - 1.2	9.3 - 3.3	15.3 - 5.5
34	5°23.5	5°24.4	5°08.8	3.4 - 1.2	9.4 - 3.4	15.4 - 5.5
35	5°23.7	5°24.6	5°09.0	3.5 - 1.3	9.5 - 3.4	15.5 - 5.6
36	5°24.0	5°24.9	5°09.2	3.6 - 1.3	9.6 - 3.4	15.6 - 5.6
37	5°24.3	5°25.1	5°09.5	3.7 - 1.3	9.7 - 3.5	15.7 - 5.6
38	5°24.5	5°25.4	5°09.7	3.8 - 1.4	9.8 - 3.5	15.8 - 5.7
39	5°24.7	5°25.6	5°10.0	3.9 - 1.4	9.9 - 3.5	15.9 - 5.7
40	5°25.0	5°25.9	5°10.2	4.0 - 1.4	10.0 - 3.6	16.0 - 5.7
41	5°25.3	5°26.1	5°10.4	4.1 - 1.5	10.1 - 3.6	16.1 - 5.8
42	5°25.5	5°26.4	5°10.7	4.2 - 1.5	10.2 - 3.7	16.2 - 5.8
43	5°25.7	5°26.6	5°10.9	4.3 - 1.5	10.3 - 3.7	16.3 - 5.8
44	5°26.0	5°26.9	5°11.1	4.4 - 1.6	10.4 - 3.7	16.4 - 5.9
45	5°26.3	5°27.1	5°11.4	4.5 - 1.6	10.5 - 3.8	16.5 - 5.9
46	5°26.5	5°27.4	5°11.6	4.6 - 1.6	10.6 - 3.8	16.6 - 5.9
47	5°26.8	5°27.6	5°11.9	4.7 - 1.7	10.7 - 3.8	16.7 - 6.0
48	5°27.0	5°27.9	5°12.1	4.8 - 1.7	10.8 - 3.9	16.8 - 6.0
49	5°27.2	5°28.1	5°12.3	4.9 - 1.8	10.9 - 3.9	16.9 - 6.1
50	5°27.5	5°28.4	5°12.6	5.0 - 1.8	11.0 - 3.9	17.0 - 6.1
51	5°27.8	5°28.6	5°12.8	5.1 - 1.8	11.1 - 4.0	17.1 - 6.1
52	5°28.0	5°28.9	5°13.1	5.2 - 1.9	11.2 - 4.0	17.2 - 6.2
53	5°28.2	5°29.1	5°13.3	5.3 - 1.9	11.3 - 4.0	17.3 - 6.2
54	5°28.5	5°29.4	5°13.5	5.4 - 1.9	11.4 - 4.1	17.4 - 6.2
55	5°28.8	5°29.6	5°13.8	5.5 - 2.0	11.5 - 4.1	17.5 - 6.3
56	5°29.0	5°29.9	5°14.0	5.6 - 2.0	11.6 - 4.2	17.6 - 6.3
57	5°29.2	5°30.1	5°14.3	5.7 - 2.0	11.7 - 4.2	17.7 - 6.3
58	5°29.5	5°30.4	5°14.5	5.8 - 2.1	11.8 - 4.2	17.8 - 6.4
59	5°29.8	5°30.7	5°14.7	5.9 - 2.1	11.9 - 4.3	17.9 - 6.4

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ANNEXURE 5 GRAPH PAPER



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