

NavSoft's

2012

Nautical Almanac

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Formulae

$$\text{Dip} = 0.971 \times \text{Ht}^{1/2}$$

Ht in feet

or

$$\text{Dip} = 1.758 \times \text{Ht}^{1/2}$$

Ht in meters

$$\text{Refraction} = 0.96 / \text{Tan(Alt)}$$

Altitude > 11°

$$\text{Parallax} = \text{HP} \times \text{Cos(Alt)}$$

$$\text{Cos(Zenith Distance)} = \text{Sin(Lat)} \times \text{Sin(Dec)} + \text{Cos(Lat)} \times \text{Cos(Dec)} \times \text{Cos(LHA)}$$

$$\text{Tan(Azimuth)} = \text{Sin(LHA)} / [\text{Cos(Lat)} \times \text{Tan(Dec)} - \text{Sin(Lat)} \times \text{Cos(LHA)}]$$

ABC Tables

$$A = \text{Cos(Lat)} \times \text{Tan(Dec)}$$

$$B = \text{Sin(Lat)} \times \text{Cos(LHA)}$$

$$C = \text{Sin(LHA)} / \text{Tan(Azimuth)}$$

or

$$\text{Azimuth} = \text{Atan}[C / \text{Sin(LHA)}]$$

Increments

$$\text{Sun} = 15^\circ / \text{hour}$$

$$\text{Moon} = 15^\circ.041666' / \text{hour}$$

$$\text{Aries} = 14^\circ.316666' / \text{hour}$$

Sailings

$$d\text{Lat} = \text{Dist} \times \text{Cos(Course)}$$

$$d\text{Long} = \text{Tan(Course)} \times \text{DMP}$$

or

$$\text{Departure} = \text{Dist} \times \text{Sin(Course)}$$

$$d\text{Long} = \text{Departure} / \text{Cos(Mean Lat)}$$

Horizontal Parallaxes and Semi-Diameters for 2012

	Sun SD	Venus		Mars		Jupiter SD	Saturn SD
		HP	SD	HP	SD		
Jan 1	16'.3	0'.11	0'.11	0'.14	0'.08	0'.34	0'.12
Jan	16'.3	0'.12	0'.12	0'.16	0'.09	0'.32	0'.13
Feb	16'.2	0'.15	0'.14	0'.21	0'.11	0'.29	0'.13
Mar	16'.1	0'.18	0'.18	0'.21	0'.11	0'.27	0'.14
Apr	15'.9	0'.26	0'.25	0'.18	0'.09	0'.26	0'.14
May	15'.8	0'.41	0'.40	0'.14	0'.07	0'.26	0'.14
Jun	15'.7	0'.48	0'.46	0'.11	0'.06	0'.26	0'.13
Jul	15'.7	0'.31	0'.30	0'.10	0'.05	0'.27	0'.13
Aug	15'.8	0'.21	0'.20	0'.09	0'.05	0'.29	0'.12
Sep	15'.9	0'.16	0'.15	0'.08	0'.04	0'.32	0'.12
Oct	16'.0	0'.13	0'.12	0'.07	0'.04	0'.35	0'.11
Nov	16'.2	0'.11	0'.10	0'.07	0'.04	0'.38	0'.11
Dec	16'.3	0'.10	0'.09	0'.07	0'.04	0'.38	0'.12
Dec 31	16'.3	0'.09	0'.09	0'.07	0'.04	0'.37	0'.12

15th day of each month unless stated

Sun's HP = 0'.15

HP for Jupiter and Saturn < 0'.05

2012 January 4, 5, 6 (Wed, Thu, Fri)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN		MOON					Twilight		Sunrise			Moonrise		
																						Lat	Nautical	Civil		4	5	6	4	5	6		
Wednesday		GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:20	10:32	-	-	-	-	-	-	-			
	00	103° 01'.3	142° 30'.0	17° 18'.3 S	290° 16'.6	6° 25'.5 N	74° 11'.6	10° 30'.7 N	255° 41'.5	8° 39'.4 S	Acamar	315° 18'.9	40° 15'.6 S	178° 52'.7	22° 48'.0 S	63° 38'.8	13'.0	18° 14'.8 N	6'.9	54'.3	N 70°	08:02	09:44	-	-	09:12	-	-	-	-			
	01	118° 03'.8	157° 29'.4	17.4	305° 18'.6	25.4	89° 14'.0	30.7	270° 43'.8	39.4	Acnarnar	335° 27'.4	57° 10'.8 S	173° 52'.4	47.8	78° 10'.8	13'.0	21.7	6.8	68°	07:47	09:13	11:34	-	10:05	09:54	-	-	-	-			
	02	133° 06'.2	172° 28'.6	16.4	320° 20'.5	25.2	104° 16'.4	30.8	285° 46'.2	39.4	Acrux	173° 10'.4	63° 09'.7 S	208° 52'.1	47.5	92° 42'.8	12'.9	28.5	6.7	66°	07:35	08:50	10:21	10:38	10:48	11:13	-	-	-	-			
	03	148° 08'.7	187° 28'.3	15.4	335° 22'.4	25.1	119° 18'.8	30.8	300° 48'.5	39.5	Achara	255° 12'.9	28° 59'.5 S	223° 51'.8	47.3	107° 14'.7	12'.8	35.2	6.6	64°	07:25	08:32	09:45	11:02	11:21	11:54	-	-	-	-			
	04	163° 11'.1	202° 27'.7	14.5	350° 24'.4	24.9	134° 21'.1	30.8	315° 50'.8	39.5	Aldebaran	290° 50'.2	16° 32'.0 N	238° 51'.5	47.0	121° 46'.5	12'.8	41.8	6.6	62°	07:16	08:17	09:20	11:21	11:45	12:22	-	-	-	-			
	05	178° 13'.6	217° 27'.1	13.5	5° 26'.3	24.8	149° 23'.5	30.9	330° 53'.1	39.6				253° 51'.3	46.8	136° 18'.3	12'.7	48.4	6.5	60°	07:08	08:04	09:00	11:37	12:04	12:43	-	-	-	-			
	06	193° 16'.1	232° 26'.5	12.5	20° 28'.3	24.6	164° 25'.9	30.9	345° 55'.5	39.6	Alioth	166° 21'.5	55° 53'.3 N	268° 51'.0	46.5	150° 50'.0	12'.7	54.9	6.4	54.4	N 58°	07:01	07:53	08:44	11:50	12:20	13:01	-	-	-	-		
	07	208° 18'.5	247° 26'.0	11.6	35° 30'.2	24.5	179° 28'.3	31.0	0° 57'.8	39.7	Alkaid	152° 59'.8	49° 14'.9 N	283° 50'.7	46.3	165° 21'.7	12'.6	19° 01'.3 N	6'.3	56°	06:55	07:44	08:30	12:02	12:34	13:16	-	-	-	-			
	08	223° 21'.0	262° 25'.4	10.6	50° 32'.2	24.3	194° 30'.7	31.0	16° 00'.1	39.7	Alnair	27° 45'.3	46° 54'.2 S	298° 50'.4	46.0	179° 53'.3	12'.6	07.6	6.2	54°	06:49	07:35	08:18	12:12	12:46	13:29	-	-	-	-			
	09	238° 23'.5	277° 24'.8	09.6	65° 34'.1	24.2	209° 33'.1	31.0	31° 02'.4	39.7	Alnilam	275° 47'.1	1° 11'.8 S	313° 50'.1	45.7	194° 24'.9	12'.5	13.1	6.2	52°	06:44	07:27	08:07	12:21	12:56	13:40	-	-	-	-			
	10	253° 25'.9	292° 24'.2	08.6	80° 36'.0	24.0	224° 35'.5	31.1	46° 04'.8	39.8	Alphard	217° 56'.8	8° 42'.8 S	328° 49'.8	45.5	208° 56'.4	12'.5	20.0	6.0	50°	06:39	07:20	07:58	12:29	13:06	13:50	-	-	-	-			
	11	268° 28'.4	307° 23'.7	07.7	95° 38'.0	23.9	239° 37'.9	31.6	61° 07'.1	39.8				343° 49'.5	45.2	223° 27'.9	12'.4	26.0	6.0	45°	06:28	07:05	07:38	12:47	13:25	14:11	-	-	-	-			
	12	283° 30'.9	322° 23'.1	17° 06'.7 S	110° 39'.9	6° 23'.8 N	254° 40'.3	10° 31'.2 N	76° 09'.4	8° 39'.9 S	Alphecca	126° 12'.1	26° 40'.3 N	358° 49'.3	22° 45'.0 S	237° 59'.3	12'.4	19° 32'.0 N	5'.9	54.4	N 40°	06:18	06:52	07:22	13:01	13:41	14:28	-	-	-	-		
	13	298° 33'.3	337° 22'.5	05.7	125° 41'.9	23.6	269° 42'.7	31.2	91° 11'.7	39.9	Alpheratz	357° 44'.6	29° 09'.6 N	13° 49'.0	44.7	252° 30'.7	12'.3	37.9	5.8	35°	06:09	06:41	07:08	13:13	13:55	14:42	-	-	-	-			
	14	313° 35'.8	352° 22'.0	04.7	140° 43'.8	23.5	284° 45'.1	31.2	106° 14'.1	39.9	Altair	62° 09'.6	8° 54'.1 N	28° 48'.7	44.5	267° 02'.0	12'.2	43.7	5.7	30°	06:01	06:30	06:57	13:24	14:07	14:55	-	-	-	-			
	15	328° 38'.2	7° 21'.4	03.7	155° 45'.8	23.3	299° 47'.4	31.3	121° 16'.4	40.0	Ankaa	353° 16'.7	42° 14'.6 S	43° 48'.4	44.2	281° 33'.2	12'.2	49.4	5.7	54.5	20°	05:45	06:12	06:36	13:42	14:27	15:16	-	-	-	-		
	16	343° 40'.7	22° 20'.8	02.8	170° 47'.7	23.2	314° 49'.8	31.3	136° 18'.7	40.0	Antares	112° 27'.8	26° 27'.4 S	58° 48'.1	43.9	296° 04'.4	12'.2	55.1	5.5	53°	05:29	05:56	06:18	13:58	14:45	15:35	-	-	-	-			
	17	358° 43'.2	37° 20'.3	01.8	185° 49'.7	23.0	329° 52'.2	31.4	151° 21'.0	40.1				73° 47'.8	43.7	310° 35'.6	12'.1	20° 00'.6 N	5'.5	0°	05:13	05:39	06:01	14:13	15:01	15:52	-	-	-	-			
	18	13° 45'.6	52° 19'.7	00.8	200° 51'.7	22.9	344° 54'.6	31.4	166° 23'.4	40.1	Arcturus	145° 56'.8	19° 07'.0 N	88° 47'.6	43.4	325° 06'.7	12'.0	06.1	5.3	S 10°	04:55	05:22	05:44	14:28	15:18	16:09	-	-	-	-			
	19	28° 48'.1	67° 19'.1	16° 59'.8 S	215° 53'.6	22.8	359° 57'.0	31.5	181° 25'.7	40.1	Alraia	107° 31'.0	69° 02'.7 S	103° 47'.3	43.2	339° 37'.7	12'.0	11.4	5.3	20°	04:33	05:02	05:26	14:44	15:36	16:28	-	-	-	-			
	20	43° 50'.6	82° 18'.6	58.8	230° 55'.6	22.6	14° 59'.4	31.5	196° 28'.0	40.2	Avior	234° 17'.8	59° 32'.9 S	118° 47.0	42.9	354° 08'.7	11'.9	16.7	5.2	30°	04:05	04:38	05:05	15:02	15:56	16:49	-	-	-	-			
	21	58° 53'.0	97° 18'.0	57.9	245° 57'.5	22.5	30° 01'.8	31.5	211° 30'.3	40.2	Bellatrix	278° 32'.8	6° 21'.5 N	133° 46'.7	42.6	8° 39'.6	11'.9	21.9	5.1	35°	03:47	04:23	04:52	15:13	16:08	17:02	-	-	-	-			
22	73° 55'.5	112° 17'.4	56.9	260° 59'.5	22.3	45° 04'.2	31.6	226° 32'.7	40.3	Betelgeuse	271° 02'.1	7° 24'.4 N	148° 46'.4	42.4	23° 10'.5	11'.9	27.0	5.0	40°	03:24	04:05	04:38	15:26	16:22	17:16	-	-	-	-				
23	88° 58'.0	127° 16'.9	55.9	276° 01'.4	22.2	60° 06'.5	31.6	241° 35'.0	40.3				163° 46'.1	42.1	37° 41'.4	11'.7	32.0	4.9	54.6	45°	02:55	03:44	04:21	15:41	16:39	17:34	-	-	-	-			
Thursday		104° 00'.4	142° 16'.3	16° 54'.9 S	291° 03'.4	6° 22'.1 N	75° 08'.9	10° 31'.7 N	256° 37'.3	8° 40'.4 S	Canopus	263° 56'.0	52° 42'.3 S	178° 45'.9	22° 41'.8 S	52° 12'.1	11'.8	20° 36'.9 N	4.8	54.6	S 50°	02:13	03:15	03:59	15:59	16:59	17:55	-	-	-	-		
	01	119° 02'.9	157° 15'.7	53.9	306° 05'.3	21.9	90° 11'.3	31.7	271° 39'.6	40.4	Capella	280° 35'.5	46° 00'.6 N	193° 45'.6	41.6	66° 42'.9	11'.6	41.7	4.8	52°	01:48	03:01	03:49	16:07	17:09	18:05	-	-	-	-			
	02	134° 05'.4	172° 15'.2	52.9	321° 07'.3	21.8	105° 13'.7	31.7	286° 42'.0	40.4	Deneb	49° 32'.6	45° 19'.6 N	208° 45'.3	41.3	81° 13'.5	11'.7	46.5	4.6	54°	01:11	02:44	03:37	16:17	17:20	18:17	-	-	-	-			
	03	149° 07'.8	187° 14'.6	51.9	336° 09'.3	21.6	120° 16'.1	31.8	301° 44'.3	40.5	Denebola	182° 34'.6	14° 30'.1 N	223° 45'.0	41.0	95° 44'.2	11'.5	51.1	4.5	56°	01:-	02:24	03:23	16:28	17:32	18:30	-	-	-	-			
	04	164° 10'.3	202° 14'.1	51.0	351° 11'.2	21.5	135° 18'.5	31.8	316° 46'.6	40.5	Diphda	348° 56'.9	17° 55'.3 S	238° 44'.7	40.8	110° 14'.7	11'.5	55.6	4.5	58°	-	01:57	03:08	16:40	17:47	18:45	-	-	-	-			
	05	179° 12'.7	217° 13'.5	50.0	6° 13'.2	21.4	150° 20'.8	31.9	331° 48'.9	40.6				253° 44'.5	40.5	124° 45'.2	11'.5	21° 00'.1 N	4.3	54.7	S 60°	-	01:17	02:49	16:55	18:04	19:03	-	-	-	-		
	06	194° 15'.2	232° 12'.9	49.0	21° 15'.2	21.2	165° 23'.2	31.9	346° 51'.3	40.6	Dubhe	193° 52'.6	61° 40'.8 N	268° 44'.2	40.2	139° 15'.7	11'.4	04.4	4.3	54.7	S 62°	-	-	02:25	17:12	18:25	19:26	-	-	-	-		
	07	209° 17'.7	247° 12'.4	48.0	36° 17'.1	21.1	180° 25'.6	32.0	1° 53'.6	40.6	Elnath	278° 13'.5	28° 37'.0 N	283° 43.9	40.0	153° 46'.1	11'.4	08.7	4.1														
	08	224° 20'.1	262° 11'.8	47.0	51° 19'.1	21.0	195° 28'.0	32.0	16° 55'.9	40.7	Elainin	90° 47'.1	51° 29'.2 N	298° 43'.6	39.7	168° 16'.5	11'.3	12.8	4.1														
	09	239° 22'.6	277° 11'.3	46.0	66° 21'.1	20.8	210° 30'.4	32.1	31° 58'.2	40.7	Enif	33° 48'.4	9° 56'.0 N	313° 43.3	39.4	182° 46'.8	11'.3	16.9	3.9														
	10	254° 25'.1	292° 10'.7	45.0	81° 23'.0	20.7	225° 32'.8	32.1	47° 00'.6	40.8	Fomalhaut	15° 25'.3	29° 33'.6 S	328° 43'.1	39.1	197° 17'.1	11'.2	20.8	3.9														
	11	269° 27'.5	307° 10'.2	44.0	96° 25'.0	20.5	240° 35'.1	32.1	62° 02'.9	40.8				343° 42'.8	38.																		

2012 January 7, 8, 9 (Sat, Sun, Mon)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN		MOON				Twilight		Sunrise		Moonrise								
7 F r i d a y	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:16	10:21	-	-	-	-											
	105° 58'.7	141° 50'.0	16° 06'.7 S	292° 38'.4	6° 15'.8 N	77° 03'.0	10° 33'.8 N	258° 29'.1	8° 42'.2 S	Acamar	315° 18'.9	40° 15'.6 S	178° 32'.5	22° 28'.2 S	27° 54'.5	9.8	22° 32'.1 N	0.3	55.4	N 70°	07:58	09:37	-	-	-	-											
	01	121° 01'.2	156° 49'.5	05.7	307° 40'.4	15.7	92° 05'.4	33.9	273° 31'.5	42.3	Acnarnar	335° 27'.4	57° 10'.8 S	193° 32'.3	27.9	42° 23'.3	9.6	31.8	0.5	55.5	68°	07:45	09:08	11:12	-	-	12:41	13:55									
	02	136° 03'.6	171° 49'.0	04.6	322° 42'.4	15.6	107° 07'.8	33.9	288° 33'.8	42.3	Acruz	173° 10'.4	63° 09'.8 S	208° 32'.0	27.6	56° 51'.9	9.7	31.3	0.5	66°	07:33	08:47	10:14	12:07	13:32	15:11											
	03	151° 06'.1	186° 48'.4	03.6	337° 44'.4	15.4	122° 10'.2	34.0	303° 36'.1	42.4	Adhara	255° 12'.9	28° 59'.5 S	223° 31'.7	27.2	71° 20'.6	9.6	30.8	0.7	64°	07:23	08:29	09:41	12:48	14:04	15:33											
	04	166° 08'.6	201° 47'.9	02.6	352° 46'.4	15.3	137° 12'.5	34.0	318° 38'.5	42.4	Aldebaran	290° 50'.2	16° 32'.0 N	238° 31'.5	26.9	85° 49'.2	9.7	30.1	0.8	62°	07:14	08:15	09:17	13:16	14:27	15:51											
	05	181° 11'.0	216° 47'.4	01.6	7° 48'.4	15.2	152° 14'.9	34.1	333° 40'.8	42.4				253° 31'.2	26.6	100° 17'.9	9.6	29.3	0.9	60°	07:07	08:02	08:57	13:37	14:46	16:05											
	06	196° 13'.5	231° 46'.8	00.5	22° 50'.4	15.1	167° 17'.3	34.1	348° 43'.1	42.5	Alioth	166° 21'.5	55° 53'.3 N	268° 30'.9	26.3	114° 46'.5	9.5	28.4	1.0	55.6	N 58°	07:00	07:52	08:42	13:55	15:01	16:18										
	07	211° 16'.0	246° 46'.3	15° 59'.5 S	37° 52'.5	15.0	182° 19'.6	34.2	3° 45'.5	42.5	Alkaid	152° 59'.8	49° 14'.9 N	283° 30'.6	26.0	129° 15'.0	9.6	27.4	1.2	56°	06:54	07:42	08:28	14:10	15:15	16:28											
	08	226° 18'.4	261° 45'.8	58.5	52° 54'.5	14.8	197° 22'.0	34.2	18° 47'.8	42.5	Alnair	27° 45'.3	46° 54'.2 S	298° 30'.4	25.7	143° 43'.6	9.5	26.2	1.3	54°	06:48	07:34	08:17	14:22	15:26	16:38											
	09	241° 20'.9	276° 45'.3	57.5	67° 56'.5	14.7	212° 24'.4	34.3	33° 50'.1	42.6	Alnilam	275° 47'.1	1° 11'.8 S	313° 30'.1	25.4	158° 12'.1	9.5	24.9	1.3	52°	06:43	07:26	08:06	14:33	15:36	16:46											
	10	256° 23'.4	291° 44'.7	56.4	82° 58'.5	14.6	227° 26'.7	34.3	48° 52'.5	42.6	Alphard	217° 56'.8	8° 42'.8 S	328° 29'.8	25.1	172° 40'.6	9.5	23.6	1.5	50°	06:38	07:19	07:57	14:43	15:45	16:54											
	11	271° 25'.8	306° 44'.2	55.4	98° 00'.5	14.5	242° 29'.1	34.4	63° 54'.8	42.7				343° 29'.6	24.8	187° 09'.1	9.5	22.1	1.7	55.7	45°	06:28	07:04	07:38	15:04	16:04	17:10										
	12	286° 28'.3	321° 43'.7	15° 54'.4 S	113° 02'.5	6° 14'.4 N	257° 31'.5	10° 34'.4 N	78° 57'.1	8° 42'.7 S	Alphecca	126° 12'.1	26° 40'.3 N	358° 29'.3	22° 24'.5 S	201° 37'.6	9.5	22° 20'.4 N	1.7	55.7	N 40°	06:18	06:52	07:22	15:21	16:20	17:23										
	13	301° 30'.7	336° 43'.2	53.3	128° 04'.5	14.3	272° 33'.8	34.5	93° 59'.5	42.7	Alpheratz	357° 44'.6	29° 09'.6 N	13° 29'.0	24.2	216° 06'.1	9.4	18.7	1.9	35°	06:09	06:41	07:09	15:35	16:33	17:34											
	14	316° 33'.2	351° 42'.6	52.3	143° 06'.5	14.1	287° 36'.2	34.5	109° 01'.8	42.8	Altair	62° 09'.5	8° 54'.1 N	28° 28'.8	23.8	230° 34'.5	9.4	16.8	1.9	30°	06:01	06:31	06:57	15:47	16:44	17:44											
	15	331° 35'.7	6° 42'.1	51.3	158° 08'.5	14.0	302° 38'.6	34.6	124° 04'.1	42.8	Ankaa	353° 16'.7	42° 14'.6 S	43° 28'.5	23.5	245° 02'.9	9.5	14.9	2.1	55.8	20°	05:46	06:13	06:37	16:09	17:04	18:00										
	16	346° 38'.1	21° 41'.6	50.2	173° 10'.6	13.9	317° 40'.9	34.6	139° 06'.5	42.8	Antares	112° 27'.8	26° 27'.4 S	58° 28'.2	23.2	259° 31'.4	9.4	12.8	2.3	58.8	N 10°	05:30	05:57	06:19	16:27	17:21	18:15										
	17	1° 40'.6	36° 41'.1	49.2	188° 12'.6	13.8	332° 43'.3	34.7	154° 08'.8	42.9				73° 27'.9	22.9	273° 59'.8	9.4	10.5	2.3	0°	05:14	05:40	06:03	16:44	17:36	18:29											
	18	16° 43'.1	51° 40'.6	48.2	203° 14'.6	13.7	347° 45'.6	34.7	169° 11'.2	42.9	Arcturus	145° 56'.7	19° 07'.0 N	88° 27'.7	22.6	288° 28'.2	9.4	08.2	2.5	59.0	S 10°	04:56	05:23	05:46	17:01	17:52	18:42										
	19	31° 45'.5	66° 40.0	47.1	218° 16'.6	13.6	2° 48'.0	34.8	184° 13'.5	42.9	Arctua	107° 31'.0	61° 02'.7 S	302° 56'.6	23.3	302° 56'.6	9.3	05.7	2.5	55.9	20°	04:35	05:04	05:28	17:19	18:09	18:56										
	20	46° 48'.0	81° 39'.5	46.1	233° 18'.6	13.5	17° 50'.4	34.8	199° 15'.8	43.0	Avior	234° 17'.8	59° 32'.9 S	118° 27'.1	21.9	317° 24'.9	9.4	03.2	2.7	30°	04:07	04:40	05:07	17:40	18:28	19:13											
	21	61° 50'.5	96° 39.0	45.1	248° 20'.6	13.4	32° 52'.7	34.9	214° 18'.2	43.0	Bellatrix	278° 32'.8	6° 21'.5 N	133° 26'.9	21.6	331° 53'.3	9.4	00.5	2.9	35°	03:50	04:26	04:55	17:53	18:40	19:22											
22	76° 52'.9	111° 38'.5	44.0	263° 22'.7	13.2	47° 55'.1	34.9	229° 20'.5	43.1	Betelgeuse	271° 02'.0	7° 24'.4 N	148° 26'.6	21.3	346° 21'.7	9.3	21° 57'.6 N	2.9	40°	03:28	04:08	04:41	18:07	18:53	19:33												
23	91° 55'.4	126° 38'.0	43.0	278° 24'.7	13.1	62° 57'.5	35.0	244° 22'.8	43.1				163° 26'.3	21.0	0° 50'.0	9.4	54.7	3.1	45°	02:59	03:47	04:24	18:24	19:08	19:46												
8 S a t u r d a y	106° 57'.8	141° 37'.4	15° 41'.9 S	293° 26'.7	6° 13'.0 N	77° 59'.8	10° 35'.0 N	259° 25'.2	8° 43'.1 S	Canopus	263° 56'.0	52° 42'.3 S	178° 26'.1	22° 20'.7 S	15° 18'.4	9.3	21° 51'.6 N	3.1	56.0	S 50°	02:18	03:20	04:03	18:44	19:26	20:02											
	122° 00'.3	156° 36.9	40.9	308° 28'.7	12.9	93° 02'.2	35.1	274° 27'.5	43.2	Capella	280° 35.5	46° 00'.6 N	193° 25'.8	20.3	29° 46'.7	9.4	48.5	3.3	52°	01:54	03:06	03:53	18:54	19:35	20:09												
	02	137° 02'.8	171° 36'.4	39.9	323° 30'.8	12.8	108° 04'.5	35.1	289° 29'.8	43.2	Deneb	49° 32'.6	45° 19'.6 N	208° 25'.5	20.0	44° 15'.1	9.3	45.2	3.5	54°	01:21	02:49	03:41	19:05	19:45	20:17											
	03	152° 05'.2	186° 35.9	38.8	338° 32'.8	12.7	123° 06'.9	35.2	304° 32'.2	43.7	Denebola	182° 34.6	14° 30'.1 N	223° 32'.4	19.7	58° 43'.4	9.3	41.7	3.5	56°	-	02:29	03:28	19:18	19:56	20:26											
	04	167° 07'.7	201° 35'.4	37.8	353° 34'.8	12.6	138° 09'.3	35.2	319° 34'.5	43.3	Diphda	348° 56'.9	17° 55'.3 S	238° 25'.0	19.4	73° 11'.7	9.4	38.2	3.6	56.1	58°	-	02:04	03:13	19:32	20:09	20:36										
	05	182° 10'.2	216° 34'.9	36.7	8° 36'.8	12.5	153° 11'.6	35.3	334° 36'.9	43.3				253° 24'.7	19.0	87° 40'.1	9.3	34.6	3.8	58.2	S 60°	-	01:28	02:54	19:50	20:23	20:47										
	06	197° 12'.6	231° 34'.3	35.7	23° 38'.9	12.4	168° 14'.0	35.3	349° 39'.2	43.3	Dubhe	193° 52'.5	61° 40'.8 N	268° 24'.5	18.7	102° 08'.4	9.4	30.8	3.9	58.2	S 62°	-	-	02:31	20:11	20:41	21:01										
	07	212° 15'.1	246° 33'.8	34.6	38° 40'.9	12.2	183° 16'.3	35.4	4° 41'.5	43.4	Elnath	278° 13'.5	28° 37'.0 N	283° 24'.2	18.4	116° 36'.8	9.3	26.9	4.0	58.2	-	-	-	-	-	-											
	08	227° 17'.6	261° 33'.3	33.6	53° 42'.9	12.1	198° 18'.7	35.4	19° 43'.9	43.4	Elainin	90° 47'.1	51° 29'.2 N	289° 23'.9	18.1	131° 05'.1	9.3</																				

2012 January 10, 11, 12 (Tue, Wed, Thu)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON					Twilight		Sunrise		Moonrise		
																							Lat	Nautical	Civil		10	11	12				
Tuesday		GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:10	10:10	-	15:38	17:56	20:01						
	00	108° 56'.1	141° 13.3	14° 51'.2 S	295° 04'.9	6° 08'.1 N	79° 52'.8	10° 37'.6 N	261° 17'.5	8° 44'.8 S	Acamar	315° 18'.9	40° 15'.6 S	178° 13'.5	22° 04'.3 S	350° 08'.1	10.0	17° 09'.4 N	8.5	57.1	N 70°	07:54	09:30	-	16:11	18:12	20:08						
	01	123° 58'.6	156° 12'.8	50.2	310° 07'.0	08.1	94° 55'.1	37.7	276° 19'.9	44.8	Acnarnar	335° 27'.4	57° 10'.8 S	193° 13'.2	04.0	4° 37'.1	10.0	00.9	8.7	68°	07:41	09:03	10:56	16:35	18:25	20:13							
	02	139° 01'.1	171° 12'.3	49.1	325° 09'.0	08.0	109° 57'.5	37.7	291° 22'.2	44.9	Acrux	173° 10'.3	63° 09'.8 S	208° 13'.0	03.6	19° 06'.1	10.0	16° 52'.2 N	8.7	66°	07:30	08:42	10:06	16:53	18:36	20:17							
	03	154° 03'.5	186° 11'.9	48.0	340° 11'.1	07.9	124° 59'.8	37.8	306° 24'.6	44.9	Adhara	255° 12'.9	28° 59'.5 S	223° 12'.7	03.3	33° 35'.1	10.1	43.5	8.8	64°	07:20	08:26	09:35	17:08	18:44	20:21							
	04	169° 06'.0	201° 11'.4	46.9	355° 13'.2	07.8	140° 02'.2	37.8	321° 26'.9	44.9	Aldebaran	290° 50'.2	16° 32'.0 N	238° 12'.5	02.9	48° 04'.2	10.1	34.7	8.9	57.2	62°	07:12	08:12	09:12	17:20	18:52	20:24						
	05	184° 08'.5	216° 10'.9	45.9	10° 15'.2	07.7	155° 04'.5	37.9	336° 29'.2	45.0				253° 12'.2	02.5	62° 33'.3	10.1	25.8	9.0	60°	07:05	08:00	08:54	17:31	18:58	20:27							
	06	199° 10'.9	231° 10'.4	44.8	25° 17'.3	07.6	170° 06'.9	38.0	351° 31'.6	45.0	Alioth	166° 21'.5	55° 53'.3 N	268° 11'.9	02.2	77° 02'.4	10.1	16.8	9.1	N 58°	06:58	07:49	08:39	17:40	19:04	20:30							
	07	214° 13'.4	246° 09'.9	43.7	40° 19'.4	07.5	185° 09'.2	38.0	6° 33'.9	45.0	Alkaid	152° 59'.7	49° 14'.8 N	283° 11'.7	01.8	91° 31'.5	10.2	07.7	9.2	56°	06:53	07:40	08:26	17:48	19:09	20:32							
	08	229° 15'.8	261° 09'.4	42.6	55° 21'.5	07.4	200° 11'.6	38.1	21° 36'.3	45.1	Alnair	27° 45'.3	46° 54'.2 S	298° 11'.4	01.4	106° 00'.7	10.2	15° 58'.5 N	9.2	54°	06:47	07:32	08:15	17:55	19:14	20:34							
	09	244° 18'.3	276° 08'.9	41.5	70° 23'.5	07.3	215° 13'.9	38.1	31° 38'.6	45.1	Alnilam	275° 47'.1	1° 11'.8 S	313° 11'.2	01.1	120° 29'.9	10.2	49.3	9.4	57.3	52°	06:42	07:25	08:05	18:01	19:18	20:36						
	10	259° 20'.8	291° 08'.5	40.5	85° 25'.6	07.3	230° 16'.2	38.2	51° 41'.0	45.1	Alphard	217° 56'.8	8° 42'.8 S	328° 10'.9	00.7	134° 59'.1	10.3	39.9	9.5	50°	06:38	07:18	07:56	18:07	19:21	20:37							
	11	274° 23'.2	306° 08'.0	39.4	100° 27'.7	07.2	245° 18'.6	38.3	66° 43'.3	45.2				343° 10'.7	00.4	149° 28'.4	10.2	30.4	9.5	45°	06:27	07:04	07:37	18:19	19:29	20:41							
	12	289° 25'.7	321° 07'.5	14° 38'.3 S	115° 29'.8	6° 07'.1 N	260° 20'.9	10° 38'.3 N	81° 45'.7	8° 45'.2 S	Alphecca	126° 12'.1	26° 40'.3 N	358° 10'.4	22° 00'.0 S	163° 57'.6	10.3	15° 20'.9 N	9.6	57.3	N 40°	06:18	06:51	07:21	18:29	19:36	20:44						
	13	304° 28'.2	336° 07'.0	37.2	130° 31'.8	07.0	275° 23'.3	38.4	96° 48'.0	45.2	Alpheratz	357° 44'.6	29° 09'.6 N	13° 10'.2	59.6	178° 26'.9	10.4	11.3	9.8	57.4	35°	06:09	06:41	07:08	18:37	19:42	20:46						
	14	319° 30'.6	351° 06'.5	36.1	145° 33'.9	06.9	111° 50'.4	36.3	111° 50'.4	36.3	Altair	62° 09'.5	8° 54'.1 N	62° 09'.9	59.2	192° 56'.3	10.3	01.5	9.8	30°	06:01	06:31	06:57	18:45	19:47	20:48							
	15	334° 33'.1	6° 06'.1	35.1	160° 36'.0	06.8	305° 27'.9	38.5	126° 52'.7	45.3	Ankaa	353° 16'.8	42° 14'.6 S	43° 09'.7	58.9	207° 25'.6	10.4	14° 51'.7 N	9.9	20°	05:46	06:14	06:37	18:58	19:55	20:52							
	16	349° 35'.6	21° 05'.6	34.0	175° 38'.1	06.7	320° 30'.3	38.5	141° 55'.0	45.3	Antares	112° 27'.8	26° 27'.4 S	58° 09'.4	58.5	221° 55'.0	10.5	41.8	9.9	N 10°	05:32	05:58	06:20	19:09	20:03	20:56							
	17	4° 38'.0	36° 05'.1	32.9	190° 40'.2	06.7	335° 32'.6	38.6	156° 57'.4	45.4				73° 09'.2	58.1	236° 24'.5	10.4	31.9	10.1	0°	05:16	05:42	06:04	19:20	20:10	20:59							
	18	19° 40'.5	51° 04'.6	31.8	205° 42'.3	06.6	350° 35'.0	38.7	171° 59'.7	45.4	Arcturus	145° 56'.7	19° 07'.0 N	88° 08'.9	57.8	250° 53'.9	10.5	21.8	10.1	57.5	S 10°	04:58	05:25	05:48	19:30	20:17	21:02						
	19	34° 42'.9	66° 04'.2	30.7	220° 44'.3	06.5	5° 37'.3	38.7	187° 02'.1	45.4	Arctia	107° 31'.0	61° 02'.7 S	103° 08'.6	57.4	265° 23'.4	10.5	11.7	10.3	20°	04:37	05:06	05:30	19:41	20:24	21:05							
	20	49° 45'.4	81° 03'.7	29.6	235° 46'.4	06.4	20° 39'.6	38.8	202° 04'.4	45.5	Avior	234° 17'.8	59° 33'.0 S	118° 08'.4	57.0	279° 52'.9	10.5	01.4	10.3	30°	04:10	04:43	05:10	19:54	20:33	21:09							
	21	64° 47'.9	96° 03'.2	28.6	250° 48'.5	06.3	35° 42'.0	38.8	217° 06'.8	45.5	Bellatrix	278° 32'.8	6° 21'.5 N	133° 08'.1	56.7	294° 22'.4	10.6	13° 51'.1 N	10.3	35°	03:53	04:28	04:58	20:01	20:37	21:11							
22	79° 50'.3	111° 02'.7	27.5	265° 50'.6	06.2	50° 44'.3	38.9	232° 09'.1	45.5	Betelgeuse	271° 02'.0	7° 24'.4 N	148° 07'.9	56.3	308° 52'.0	10.5	40.8	10.5	40°	03:31	04:12	04:44	20:10	20:43	21:14								
23	94° 52'.8	126° 02'.3	26.4	280° 52'.7	06.2	65° 46'.7	39.0	247° 11'.5	45.6				163° 07'.6	55.9	323° 21'.5	10.6	30.3	10.6	57.6	45°	03:04	03:51	04:27	20:20	20:49	21:17							
Wednesday	00	109° 55'.3	141° 01'.8	14° 25'.3 S	295° 54'.8	6° 06'.1 N	80° 49'.0	10° 39'.0 N	8° 45'.6 S	Canopus	263° 56'.0	52° 42'.3 S	178° 07'.4	21° 55'.5 S	337° 51'.1	10.7	13° 19'.7 N	10.6	57.6	S 50°	02:24	03:24	04:07	20:31	20:57	21:20							
	01	124° 57'.7	156° 01'.3	24.2	310° 56'.9	06.0	95° 51'.3	39.1	277° 16'.2	45.6	Capella	280° 35'.5	46° 00'.6 N	193° 07'.1	16.2	352° 20'.8	10.6	09.1	10.7	52°	02:02	03:11	03:57	20:37	21:00	21:22							
	02	140° 00'.2	171° 00'.8	23.1	325° 59'.0	05.9	110° 53'.7	39.1	292° 18'.5	45.7	Deneb	49° 32'.6	45° 19'.6 N	208° 06'.9	54.8	6° 50'.4	10.7	12° 58'.4 N	10.7	54°	01:31	02:55	03:46	20:43	21:04	21:24							
	03	155° 02'.7	186° 00'.4	22.0	341° 01'.1	05.8	125° 56'.0	39.2	307° 20'.9	45.7	Denebola	182° 34'.5	14° 30'.0 N	223° 06'.6	54.4	21° 20'.1	10.7	47.7	10.9	56°	00:24	02:36	03:33	20:49	21:09	21:26							
	04	170° 05'.1	200° 59'.9	20.9	356° 03'.2	05.8	140° 58'.3	39.3	322° 23'.2	45.7	Diphda	348° 56'.9	17° 55'.3 S	238° 06'.4	54.0	35° 49'.8	10.8	36.8	10.9	57.7	58°	-	02:12	03:18	20:57	21:13	21:28						
	05	185° 07'.6	215° 59'.4	19.8	11° 05'.3	05.7	156° 00'.7	39.3	337° 25'.6	45.8				253° 06'.1	53.6	50° 19'.6	10.8	25.9	11.0		S 60°	-	01:39	03:01	21:05	21:18	21:30						
	06	200° 10'.1	230° 58'.9	18.7	26° 07'.3	05.6	171° 03'.0	39.4	352° 27'.9	45.8	Dubhe	193° 52'.5	61° 40'.8 N	268° 05'.9	53.3	64° 49'.4	10.7	14.9	11.0		S 62°	-	00:25	02:39	21:14	21:24	21:33						
	07	215° 12'.5	245° 58'.5	17.7	41° 09'.4	05.5	186° 05'.4	39.4	7° 30'.3	45.8	Elnath	278° 13'.5	28° 37'.0 N	283° 05'.6	52.9	79° 19'.1	10.9	03.9	11.2														
	08	230° 15'.0	260° 58'.0	16.6	56° 11'.5	05.4	201° 07'.7	39.5	22° 32'.6	45.8	Elainin	90° 47'.1	51° 29'.2 N	298° 05'.4	52.5	93° 49'.0	10.8	11° 52'.7 N	11.2														
	09	245° 17'.4	275° 57'.5	15.5	71° 13'.6	05.4	216° 10'.0	39.6	37° 35'.0	45.9	Enif	33° 48'.4	9° 56'.0 N	313° 05'.1	52.1	108° 18'.8	10.9	41.5	11.2	57.8	Lat	Sunset	Twilight										
	10	260° 19'.9	290° 57'.1	14.4	86° 15'.7	05.3	231° 12'.4	39.6	52° 37'.3	45.9	Fomalhaut	15° 25'.3	29° 33'.6 S	328° 04'.9	51.7	122° 48'.7	10.9	30.3	11.4														
	11	275° 22'.4	305° 56'.6	13.3	101° 17'.8	05.2	246° 14'.7	39.7	67° 39'.7	45.9				343° 04'.6	51.3	137° 18'.6	10.9	18.9	11.4														
	12	290° 24'.8	320° 56'.1	14° 12'.2 S	116° 19'.9	6° 05'.1 N	261° 17'.0	10° 39.7 N	82° 42'.0	8° 46'.0 S	Gacrux	172° 01'.9	57° 10.7 S	358° 04'.4	21° 51.0 S	151° 48.5	10.9	11° 07.5 N	11.4	57.8	N 70°	-	14:06	16:06	10:54	10:21	09:59						
	13	305° 27'.3	335° 55'.7	11.1	131° 22'.1	05.1	276° 19'.4	39.8	97° 44'.4	46.0	Gienah	175° 53'.2	17° 36'.6 S	13° 04'.2	50.6	168° 18'.4	11.0	10° 56'.1 N	11.6	68°	13:20	15:13	16:35	09:54	09:48	09:43							
	14																																

2012 January 13, 14, 15 (Fri, Sat, Sun)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN		MOON					Twilight		Sunrise		Moonrise		
																						Lat	Nautical	Civil		13	14	15				
		GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:04	09:58	-	22:04	-	00:09					
13	00	111° 53.5	140° 39.7	13° 32.3 S	297° 36.3	6° 02.7 N	82° 40.9	10° 42.0 N	264° 06.7	8° 47.1 S	Acamar	315° 18.9	40° 15.6 S	177° 55.6	21° 36.6 E	313° 57.4	11.4	3° 42.6 N	13.1	58.4	N 70°	07:49	09:22	-	22:02	23:58	-					
	01	126° 56.0	155° 39.3	31.2	312° 38.4	02.6	97° 43.2	42.1	279° 09.1	47.1	Acnarnar	335° 27.4	57° 10.8 S	192° 55.4	36.2	328° 27.8	11.5	29.5	13.1	68°	07:36	08:57	10:40	22:00	23:49	25:43						
	02	141° 58.5	170° 38.8	30.1	327° 40.6	02.6	112° 45.5	42.1	294° 11.4	47.1	Acrux	173° 10.3	63° 09.8 S	207° 55.2	35.8	342° 58.3	11.4	16.4	13.1	66°	07:26	08:37	09:58	21:59	23:42	25:28						
	03	157° 00.9	185° 38.4	29.0	342° 42.7	02.5	127° 47.8	42.2	309° 13.8	47.1	Adhara	255° 12.9	28° 59.5 S	222° 54.9	35.4	357° 28.7	11.5	03.3	13.1	58.5	64°	07:17	08:21	09:29	21:58	23:36	25:17					
	04	172° 03.4	200° 38.0	27.8	357° 44.8	02.4	142° 50.1	42.3	324° 16.1	47.2	Aldebaran	290° 50.2	16° 32.0 N	237° 54.7	35.0	11° 59.2	11.4	2° 50.2 N	13.1	62°	07:09	08:08	09:07	21:57	23:31	25:07						
	05	187° 05.9	215° 37.5	26.7	12° 47.0	02.4	157° 52.5	42.3	339° 18.5	47.2				252° 54.4	34.6	26° 29.6	11.4	37.1	13.2	60°	07:02	07:57	08:50	21:56	23:27	24:58						
	06	202° 08.3	230° 37.1	25.6	12° 47.0	02.4	172° 54.8	42.4	354° 20.8	47.2	Alioth	166° 21.4	55° 53.3 N	267° 54.2	34.1	41° 00.0	11.5	23.9	13.2	N 58°	06:56	07:47	08:35	21:56	23:23	24:51						
	07	217° 10.8	245° 36.6	24.5	42° 51.3	02.3	187° 57.1	42.5	9° 23.2	47.3	Alkaid	152° 59.7	49° 14.8 N	282° 54.0	33.7	55° 30.5	11.4	10.7	13.2	56°	06:51	07:38	08:23	21:55	23:19	24:45						
	08	232° 13.3	260° 36.2	23.4	57° 53.4	02.2	202° 59.4	42.5	24° 25.6	47.3	Alnair	27° 45.3	46° 54.2 S	297° 53.7	33.3	70° 00.9	11.5	1° 57.5 N	13.2	54°	06:45	07:30	08:12	21:55	23:16	24:39						
	09	247° 15.7	275° 35.8	22.2	72° 55.6	02.2	218° 01.7	42.6	39° 27.9	47.3	Alnilam	275° 47.1	1° 11.8 S	312° 53.5	32.9	84° 31.4	11.4	44.3	13.2	52°	06:41	07:23	08:02	21:54	23:13	24:34						
	10	262° 18.2	290° 35.3	21.1	87° 57.7	02.1	233° 04.1	42.7	54° 30.3	47.3	Alphard	217° 56.8	8° 42.8 S	327° 53.3	32.5	99° 01.8	11.4	31.9	13.2	50°	06:36	07:17	07:54	21:54	23:11	24:29						
	11	277° 20.7	305° 34.9	20.0	102° 59.9	02.0	248° 06.4	42.7	80° 32.6	47.4				342° 53.0	32.1	113° 32.2	11.4	17.1	13.3	58.6	45°	06:26	07:03	07:36	21:53	23:05	24:19					
	12	292° 23.1	320° 34.4	13° 18.9 S	118° 02.0	6° 02.0 N	263° 08.7	10° 42.8 N	84° 35.0	8° 47.4 S	Alphecca	126° 12.0	26° 40.3 N	357° 52.8	21° 31.6 S	128° 02.6	11.4	1° 04.6 N	13.3	58.6	N 40°	06:17	06:51	07:21	21:52	23:01	24:11					
	13	307° 25.6	335° 34.0	17.7	133° 04.2	01.9	278° 11.0	42.9	99° 37.3	47.4	Alpheratz	357° 44.7	29° 09.6 N	12° 52.6	31.2	142° 33.0	11.4	0° 51.3 N	13.2	35°	06:09	06:40	07:08	21:51	22:57	24:03						
	14	322° 28.0	350° 33.6	16.6	148° 06.3	01.9	293° 13.3	42.9	114° 39.7	47.5	Altair	62° 09.5	8° 54.1 N	27° 52.3	30.8	157° 03.4	11.4	38.1	13.3	30°	06:02	06:31	06:57	21:50	22:53	23:57						
	15	337° 30.5	5° 33.1	15.5	163° 08.5	01.8	308° 15.7	43.0	129° 42.1	47.5	Ankaa	353° 16.8	42° 14.6 S	42° 52.1	30.4	171° 33.8	11.4	24.8	13.3	20°	05:47	06:14	06:38	21:49	22:47	23:47						
	16	352° 33.0	20° 32.7	14.4	178° 10.6	01.8	323° 18.0	43.1	144° 44.4	47.5	Antares	112° 27.7	26° 27.4 S	57° 51.9	30.0	186° 04.2	11.4	11.5	13.3	N 10°	05:32	05:58	06:21	21:49	22:42	23:37						
	17	7° 35.4	35° 32.3	13.2	193° 12.8	01.7	338° 20.3	43.1	159° 46.8	47.5				72° 51.6	29.5	200° 34.6	11.3	0° 01.8 S	13.3	0°	05:17	05:43	06:05	21:48	22:37	23:29						
	18	22° 37.9	50° 31.8	12.1	208° 14.9	01.7	353° 22.6	43.2	174° 49.1	47.6	Arcturus	145° 56.7	19° 07.0 N	87° 51.4	29.1	215° 04.9	11.4	15.1	13.3	S 10°	05:00	05:27	05:49	21:47	22:33	23:20						
	19	37° 40.4	65° 31.4	11.0	223° 17.1	01.6	8° 24.9	43.3	189° 51.5	47.6	Arctia	107° 30.9	69° 02.7 S	102° 51.1	28.7	229° 35.3	11.3	28.4	13.3	58.7	20°	04:39	05:08	05:32	21:46	22:28	23:11					
	20	52° 42.8	80° 30.9	09.8	238° 19.3	01.6	23° 27.2	43.3	204° 53.9	47.6	Avior	234° 17.8	59° 33.0 S	117° 50.9	28.3	244° 05.6	11.4	41.7	13.3	30°	04:13	04:45	05:12	21:45	22:22	23:01						
	21	67° 45.3	95° 30.5	08.7	253° 21.4	01.5	38° 29.6	43.4	219° 56.2	47.7	Bellatrix	278° 32.8	6° 21.5 N	132° 50.7	27.8	258° 36.0	11.3	55.0	13.3	35°	03:56	04:32	05:00	21:45	22:19	22:55						
	22	82° 47.8	110° 30.1	07.6	268° 23.6	01.5	53° 31.9	43.5	234° 58.6	47.7	Betelgeuse	271° 02.0	7° 24.4 N	147° 50.4	27.4	273° 06.3	11.3	1° 08.3 S	13.3	40°	03:56	04:15	04:47	21:44	22:15	22:48						
23	97° 50.2	125° 29.6	06.4	283° 25.7	01.4	68° 34.2	43.5	250° 00.9	47.7				162° 50.2	27.0	287° 36.6	11.2	21.6	13.3	45°	03:08	03:55	04:31	21:44	22:11	22:40							
14	00	112° 52.7	140° 29.2	13° 05.3 S	298° 27.9	6° 01.4 N	83° 36.5	10° 43.6 N	265° 03.3	8° 47.7 S	Capellus	263° 56.0	52° 42.3 S	177° 50.0	21° 26.5 S	302° 06.8	11.3	1° 34.9 S	13.2	58.7	S 50°	02:30	03:29	04:11	21:43	22:06	22:31					
	01	127° 55.1	155° 28.8	04.2	313° 30.1	01.3	98° 38.8	43.7	280° 05.7	47.8	Canopus	280° 35.5	46° 00.6 N	192° 49.8	26.1	316° 37.1	11.2	48.1	13.3	52°	02:09	03:16	04:01	21:42	22:04	22:27						
	02	142° 57.6	170° 28.4	03.0	328° 32.2	01.3	113° 41.1	43.7	295° 08.0	47.8	Deneb	49° 32.6	45° 19.6 N	207° 49.5	25.3	331° 07.3	11.3	2° 01.4 S	13.3	54°	01:41	03:01	03:51	21:42	22:01	22:22						
	03	158° 00.1	185° 27.9	01.9	343° 34.4	01.2	128° 43.4	43.8	310° 10.4	47.8	Denebola	182° 34.5	14° 30.0 N	242° 49.3	25.7	345° 37.6	11.2	14.7	13.3	58.8	56°	00:53	02:43	03:39	21:42	21:58	22:17					
	04	173° 02.5	200° 27.5	00.8	358° 36.6	01.2	143° 45.8	43.9	325° 12.7	47.8	Diphda	348° 56.9	17° 55.3 S	237° 49.1	24.8	0° 07.8	11.1	28.0	13.2	58°	-	02:20	03:24	21:41	21:55	22:11						
	05	188° 05.0	215° 27.1	12° 59.6 S	13° 38.7	01.1	158° 48.1	43.9	340° 15.1	47.9				252° 48.8	24.4	14° 37.9	11.2	41.2	13.3	S 60°	-	01:50	03:08	21:41	21:52	22:05						
	06	203° 07.5	230° 26.6	58.5	173° 50.4	01.1	173° 50.4	44.0	355° 17.5	47.9	Dubhe	193° 52.4	61° 40.8 N	267° 48.6	24.0	29° 08.1	11.1	54.5	13.2	58°	-	00:57	02:47	21:40	21:48	21:57						
	07	218° 09.9	245° 26.2	57.4	43° 43.1	01.0	188° 52.7	44.1	10° 19.8	47.9	Elnath	278° 13.5	28° 37.0 N	282° 48.4	23.5	43° 38.2	11.2	3° 07.7 S	13.2	S 62°	-	-	-	-	-	-						
	08	233° 12.4	260° 25.8	56.2	203° 45.2	01.0	203° 55.0	44.1	25° 22.2	48.0	Elainon	90° 47.1	51° 29.2 N	297° 48.1	23.1	58° 08.4	11.0	20.9	13.3													
	09	248° 14.9	275° 25.4	55.1	73° 47.4	00.9	218° 57.3	44.2	40° 24.5	48.0	Enif	33° 48.4	9° 55.9 N	312° 47.9	22.7	72° 38.4	11.1	34.2	13.2													
	10	263° 17.3	290° 24.9	54.0	88° 49.6	00.9	233° 59.6	44.3	55° 26.9	48.0	Fomalhaut	15° 25.3	29° 33.6 S	327° 47.7	22.2	87° 08.5	11.0	47.4	13.1													
	11	278° 19.8	305° 24.5	52.8	103° 51.8	00.8	249° 01.9	44.3	70° 29.3	48.0				342° 47.4	21.8	101° 38.5	11.1	4° 00.5 S	13.2													
	12	293° 22.3	320° 24.1	12° 51.7 S	118° 53.9	6° 00.8 N	264° 04.3	10° 44.4 N	85° 31.6	8° 48.1 S	Gacrux	172° 01.9	57° 10.7 S	357° 47.2	21° 21.4 S	116° 08.6	10.9	4° 13.7 S	13.1	58.8	N 70°	-	14:21	16:14	09:41	09:23	09:03					
	13	308° 24.7	335° 23.7	50.5	133° 56.1	00.7	279° 06.6	44.5	100° 34.0	48.1	Gienah	175° 53.2	17° 36.6 S	12° 47.0	20.9	130° 38.5	11.0	26.8	13.2	58.9	68°	13:38	15:22	16:42	09:37	09:32	09:26					
	14	323° 27.2																														

2012 February 3, 4, 5 (Fri, Sat, Sun)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON			Twilight		Sunrise		Moonrise													
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	07:01	08:28	10:08	-	-	-																
3 Fri day	00	132° 35.5	137° 58.6	3° 12.7 S	317° 58.8	6° 33.4 N	101° 32.7	11° 28.0 N	284° 15.1	8° 53.5 S	Acamar	315° 19.0	40° 15.6 S	176° 34.6	16° 45.3 S	59° 25.0	10.3	22° 21.2 N	0.8	55.1	N 70°	06:54	08:11	09:32	-	-	-															
	01	147° 37.9	152° 58.4	11.4	333° 01.5	33.6	116° 34.8	28.1	299° 17.6	53.5	Acnarnar	335° 27.6	57° 10.8 S	191° 34.6	44.6	73° 54.3	10.3	22.0	0.6	55.2	N 68°	06:48	07:57	09:07	-	-	09:59															
	02	162° 40.4	167° 58.2	10.1	348° 04.2	33.8	131° 37.0	28.2	314° 20.0	53.5	Acruz	173° 10.0	63° 09.9 S	206° 34.5	43.9	88° 23.6	10.2	22.6	0.6		66°	06:43	07:46	08:48	09:55	11:06	12:38															
	03	177° 42.9	182° 58.0	08.8	3° 07.0	34.0	146° 39.2	28.3	329° 22.5	53.5	Adhara	255° 12.9	28° 59.6 S	221° 34.4	43.1	102° 52.8	10.2	23.2	0.4		64°	06:39	07:37	08:32	10:35	11:41	13:05															
	04	192° 45.3	197° 57.8	07.5	18° 09.7	34.2	161° 41.4	28.4	344° 24.9	53.5	Aldebaran	290° 50.3	16° 32.0 N	236° 34.3	42.4	117° 22.0	10.2	23.6	0.3		62°	06:35	07:29	08:19	11:03	12:07	13:25															
	05	207° 47.8	212° 57.5	06.2	33° 12.5	34.4	176° 43.5	28.5	359° 27.3	53.5				251° 34.3	41.7	131° 51.2	10.1	23.9	0.2	55.3	N 60°	06:31	07:21	08:08	11:25	12:27	13:41															
	06	222° 50.3	227° 57.3	04.9	48° 15.2	34.6	191° 45.7	28.7	14° 29.8	53.5	Alioth	166° 21.2	55° 53.3 N	266° 34.2	40.9	146° 20.3	10.1	24.1	0.1		N 58°	06:28	07:15	07:59	11:43	12:43	13:55															
	07	237° 52.7	242° 57.1	03.6	63° 18.0	34.7	206° 47.9	28.8	29° 32.2	53.5	Alkaid	152° 59.5	49° 14.8 N	281° 34.1	40.2	160° 49.4	10.1	24.2	0.1		56°	06:25	07:10	07:50	11:57	12:57	14:07															
	08	252° 55.2	257° 56.9	02.3	78° 20.7	34.9	221° 50.0	28.9	44° 34.7	53.5	Alnair	27° 45.3	46° 54.1 S	296° 34.1	39.5	175° 18.5	10.0	24.1	0.1		54°	06:22	07:04	07:43	12:10	13:09	14:17															
	09	267° 57.6	272° 56.7	01.0	93° 23.4	35.1	236° 52.2	29.0	59° 37.1	53.5	Alnilam	275° 47.1	1° 11.8 S	311° 34.0	38.8	189° 47.5	10.0	24.0	0.3	55.4	52°	06:19	07:00	07:36	12:21	13:20	14:26															
	10	283° 00.1	287° 56.5	2° 59.7 S	108° 26.2	35.3	251° 54.4	29.1	74° 39.6	53.5	Alphard	217° 56.7	8° 42.9 S	326° 33.9	38.0	204° 16.5	10.0	23.7	0.4		50°	06:17	06:55	07:30	12:31	13:29	14:35															
	11	298° 02.6	302° 56.3	58.4	123° 28.9	35.5	266° 56.6	29.2	89° 42.0	53.5				341° 33.8	37.3	218° 45.5	10.0	23.3	0.5		45°	06:11	06:46	07:17	12:52	13:49	14:52															
	12	313° 05.0	317° 56.0	2° 57.1 S	138° 31.7	6° 35.7 N	281° 58.7	11° 29.3 N	104° 44.4	8° 53.5 S	Alphecca	126° 11.9	26° 40.2 N	356° 33.8	16° 36.6 S	233° 14.5	9.9	22° 22.8 N	0.6	55.4	N 40°	06:06	06:38	07:06	13:09	14:05	15:06															
	13	328° 07.5	332° 55.8	55.8	153° 34.4	35.9	297° 00.9	29.5	119° 46.9	53.5	Alpheratz	357° 44.7	29° 09.6 N	11° 33.7	35.8	247° 43.4	9.9	22.5	0.7	55.5	35°	06:00	06:31	06:57	13:24	14:19	15:19															
	14	343° 10.0	347° 55.6	54.5	168° 37.2	36.1	312° 03.1	29.6	134° 49.3	53.5	Altair	62° 09.5	8° 54.1 N	26° 33.6	35.1	262° 12.3	9.9	21.2	0.8		30°	05:55	06:24	06:49	13:36	14:31	15:28															
	15	358° 12.4	2° 55.4	53.2	183° 40.0	36.3	327° 05.2	29.7	149° 51.8	53.5	Ankaa	353° 16.9	42° 14.6 S	41° 33.6	34.4	276° 41.2	9.8	20.7	1.0		20°	05:45	06:12	06:35	13:57	14:51	15:47															
	16	13° 14.9	17° 55.2	51.9	198° 42.7	36.5	342° 07.4	29.8	164° 54.2	53.5	Antares	112° 27.6	26° 27.4 S	56° 33.5	33.6	291° 10.0	9.8	19.7	1.7		N 10°	05:35	06:00	06:22	14:16	15:08	16:03															
	17	28° 17.4	32° 55.0	50.6	213° 45.5	36.7	357° 09.6	29.9	179° 56.7	53.5				71° 33.4	32.9	305° 38.8	9.8	18.6	1.2	55.6	0°	05:24	05:49	06:10	14:33	15:25	16:17															
	18	43° 19.8	47° 54.8	49.3	228° 48.2	36.9	12° 11.7	30.0	194° 59.1	53.5	Arcturus	145° 56.5	19° 06.9 N	86° 33.4	32.2	320° 07.6	9.8	17.4	1.3		S 10°	05:11	05:36	05:58	14:50	15:41	16:32															
	19	58° 22.3	62° 54.6	48.0	243° 51.0	37.1	27° 13.9	30.2	210° 01.5	53.5	Arctia	107° 10.0	65° 02.7 S	101° 33.3	31.4	334° 36.4	9.8	16.1	1.4		20°	04:55	05:22	05:46	15:08	15:59	16:47															
	20	73° 24.7	77° 54.4	46.7	258° 53.7	37.3	42° 16.1	30.3	225° 04.0	53.5	Avior	234° 17.8	59° 33.1 S	116° 33.2	30.7	349° 05.2	9.7	14.7	1.5		30°	04:34	05:05	05:31	15:30	16:19	17:05															
	21	88° 27.2	92° 54.2	45.4	273° 56.5	37.5	57° 18.3	30.4	240° 06.4	53.5	Bellatrix	278° 32.8	6° 21.5 N	131° 33.2	30.0	3° 33.9	9.7	13.2	1.7	55.7	35°	04:21	04:55	05:22	15:42	16:31	17:16															
	22	103° 29.7	107° 53.9	44.1	288° 59.3	37.6	72° 20.4	30.5	255° 08.9	53.4	Betelgeuse	271° 02.1	7° 24.4 N	146° 33.1	29.2	18° 02.6	9.7	11.5	1.8		40°	04:06	04:42	05:12	15:56	16:44	17:27															
23	118° 32.1	122° 53.7	42.8	304° 02.0	37.8	87° 22.6	30.6	270° 11.3	53.4				161° 33.0	28.5	32° 31.3	9.6	09.7	1.9		45°	03:46	04:27	05:00	16:13	17:00	17:41																
4 Sat day	00	133° 34.6	137° 53.5	2° 41.5 S	319° 04.8	6° 38.0 N	102° 24.8	11° 30.7 N	285° 13.8	8° 53.4 S	Canopus	263° 56.1	52° 42.4 S	176° 33.0	16° 27.7 S	46° 59.9	9.7	22° 07.8 N	2.0	55.7	S 50°	03:20	04:08	04:46	16:35	17:20	17:58															
	01	148° 37.1	152° 53.3	40.2	334° 07.6	38.2	117° 26.9	30.9	300° 16.2	53.4	Capella	280° 35.5	46° 00.6 N	191° 32.9	27.0	61° 28.6	9.6	05.8	2.1	55.8	52°	03:06	03:59	04:39	16:45	17:29	18:06															
	02	163° 39.5	167° 53.1	38.9	349° 10.3	38.4	132° 29.1	31.1	315° 18.7	53.4	Deneb	49° 32.6	45° 19.5 N	206° 32.8	26.3	75° 57.2	9.6	03.7	2.3		54°	02:51	03:49	04:32	16:56	17:39	18:15															
	03	178° 42.0	182° 52.9	37.6	4° 13.1	38.6	147° 31.3	31.0	330° 21.1	53.4	Denebola	182° 34.4	14° 30.0 N	221° 32.8	25.5	90° 25.8	9.6	01.4	2.3		56°	02:32	03:37	04:23	17:09	17:51	18:25															
	04	193° 44.5	197° 52.7	36.3	19° 15.9	38.8	162° 33.4	31.2	345° 23.5	53.4	Diphda	348° 57.0	17° 55.3 S	236° 32.7	24.8	104° 54.4	9.5	21° 59.1 N	2.5		58°	02:07	03:23	04:14	17:23	18:05	18:36															
	05	208° 46.9	212° 52.5	35.0	34° 18.7	39.0	177° 35.6	31.3	30° 28.0	53.4				251° 32.7	24.0	119° 22.9	9.6	56.6	2.6	55.9	S 60°	01:30	03:07	04:03	17:41	18:21	18:49															
	06	223° 49.4	227° 52.3	33.7	49° 21.4	39.2	192° 37.8	31.4	15° 26.4	53.4	Dubhe	193° 52.2	61° 40.8 N	266° 32.6</																												

2012 February 9, 10, 11 (Thu, Fri, Sat)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON			Lat	Twilight		Sunrise	Moonrise		
	-4.1			-0.8			-2.3			+0.6												Nautical	Civil	9		10	11				
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	06:38	08:00	09:27	19:29	21:36	23:49					
g 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	138° 30.3	137° 30.6	0° 04.5 S	324° 46.1	7° 05.2 N	106° 43.0	11° 45.3 N	290° 08.4	8° 52.4 S	Acamar	315° 19.0	40° 15.6 S	176° 27.7	14° 55.8 S	344° 36.5	10.5	5° 27.3 N	13.1	59.0	N 70°	06:33	07:47	09:01	19:31	21:29	23:31					
	153° 32.8	152° 30.4	03.2	339° 49.0	05.4	121° 45.1	45.5	305° 10.9	52.4	Acnarnar	335° 27.7	57° 10.8 S	191° 27.7	55.0	359° 06.0	10.5	14.2	13.1	68°	66°	06:30	07:37	08:42	19:32	21:23	23:17					
	168° 35.2	167° 30.3	01.9	354° 51.9	05.7	136° 47.3	45.6	320° 13.4	52.4	Acruz	173° 09.9	63° 09.9 S	206° 27.7	54.2	13° 35.5	10.5	01.1	13.1	66°	66°	06:27	07:28	08:26	19:33	21:18	23:05					
	183° 37.7	182° 30.1	00.6	9° 54.8	05.9	151° 49.4	45.5	255° 12.9	28° 59.6 S	Adhara	255° 12.9	28° 59.6 S	221° 27.7	53.4	28° 05.0	10.5	4° 48.0 N	13.2	64°	64°	06:24	07:20	08:13	19:34	21:14	22:56					
	198° 40.2	197° 29.9	00.7	24° 57.8	06.2	166° 51.6	45.8	350° 18.3	52.3	Aldebaran	290° 50.3	16° 31.9 N	236° 27.6	52.6	42° 34.5	10.5	34.8	13.2	59.1	62°	62°	06:21	07:14	08:02	19:34	21:10	22:48				
	213° 42.6	212° 29.8	02.0	40° 00.7	06.5	181° 53.7	46.0	5° 20.8	52.3				251° 27.6	51.8	57° 04.0	10.5	21.6	13.3	60°	60°	06:19	07:08	07:53	19:35	21:07	22:41					
	228° 45.1	227° 29.6	03.3	55° 03.6	06.7	196° 55.8	46.1	20° 23.2	52.3	Alioth	166° 21.1	55° 53.3 N	266° 27.6	51.0	71° 33.5	10.5	08.3	13.3	N 58°	58°	06:16	07:03	07:45	19:36	21:05	22:35					
	243° 47.5	242° 29.4	04.7	70° 06.5	07.0	211° 58.0	46.2	35° 25.7	52.3	Alkaid	152° 59.4	49° 14.8 N	281° 27.6	50.2	86° 03.0	10.5	3° 55.0 N	13.3	56°	56°	06:14	06:58	07:38	19:36	21:02	22:29					
	258° 50.0	257° 29.2	06.0	85° 09.5	07.2	227° 00.1	46.4	50° 28.2	52.3	Alnair	27° 45.3	46° 54.1 S	296° 27.6	49.4	100° 32.5	10.6	41.7	13.3	54°	54°	06:12	06:54	07:31	19:36	21:00	22:24					
	273° 52.5	272° 29.1	07.3	100° 12.4	07.5	242° 02.2	46.5	65° 30.6	52.3	Alnilam	275° 47.1	1° 11.8 S	311° 27.5	48.6	115° 02.1	10.5	28.4	13.4	52°	52°	06:10	06:50	07:26	19:37	20:58	22:20					
	288° 54.9	287° 28.9	08.6	115° 15.3	07.7	257° 04.4	46.6	80° 33.1	52.3	Alphard	217° 56.7	8° 42.9 S	326° 27.5	47.8	129° 31.6	10.5	15.0	13.4	59.2	50°	50°	06:08	06:47	07:20	19:37	20:56	22:16				
	303° 57.4	302° 28.7	09.9	130° 18.3	08.0	272° 06.5	46.7	95° 35.6	52.3				341° 27.5	47.0	144° 01.1	10.5	01.6	13.4	45°	45°	06:04	06:39	07:09	19:38	20:53	22:08					
	318° 59.9	317° 28.5	0° 11.2 N	145° 21.2	7° 08.3 N	287° 08.6	11° 46.9 N	110° 38.1	8° 52.2 S	Alphecca	126° 11.8	26° 40.2 N	356° 27.5	14° 46.2 S	158° 30.6	10.5	2° 48.2 N	13.4	59.2	N 40°	06:00	06:32	07:00	19:39	20:49	22:01					
	334° 02.3	332° 28.4	12.5	160° 24.1	08.5	302° 10.8	47.0	125° 40.5	52.2	Alpheratz	357° 44.7	29° 09.6 N	11° 27.5	45.4	173° 00.1	10.5	34.8	13.4	35°	35°	05:56	06:26	06:52	19:39	20:47	21:55					
	349° 04.8	347° 28.2	13.8	175° 27.1	08.8	317° 12.9	47.1	140° 43.0	52.2	Altair	62° 09.4	8° 54.0 N	26° 27.4	44.6	187° 29.6	10.5	21.4	13.5	30°	30°	05:52	06:20	06:45	19:40	20:44	21:49					
	4° 07.3	2° 28.0	15.1	190° 30.0	09.0	332° 15.0	47.2	155° 45.5	52.2	Ankaa	353° 16.9	42° 14.6 S	41° 27.4	43.8	201° 59.1	10.5	07.9	13.5	20°	20°	05:43	06:09	06:32	19:41	20:40	21:40					
	19° 09.7	17° 27.9	16.5	205° 33.0	09.3	347° 17.2	47.4	170° 47.9	52.2	Antares	112° 27.5	26° 27.4 S	56° 27.4	43.0	216° 28.6	10.5	1° 54.4 N	13.5	59.3	N 10°	05:34	06:00	06:21	19:41	20:36	21:32					
	34° 12.2	32° 27.7	17.8	220° 35.9	09.6	2° 19.3	47.5	185° 50.4	52.2				71° 27.4	42.2	230° 58.1	10.4	40.9	13.5	0°	0°	05:25	05:49	06:11	19:42	20:33	21:25					
	49° 14.7	47° 27.5	19.1	235° 38.8	09.8	17° 21.4	47.6	200° 52.9	52.2	Arcturus	145° 56.5	19° 06.9 N	86° 27.4	41.4	245° 27.5	10.5	27.4	13.5	S 10°	10°	05:13	05:38	06:00	19:43	20:30	21:18					
	64° 17.1	62° 27.3	20.4	250° 41.8	10.1	32° 23.6	47.8	215° 55.3	52.1	Arctia	107° 30.4	69° 02.6 S	101° 27.4	40.6	259° 57.0	10.5	13.9	13.6	20°	20°	04:59	05:26	05:49	19:44	20:26	21:10					
	79° 19.6	77° 27.2	21.7	265° 44.7	10.3	47° 25.7	47.9	230° 57.8	52.1	Avior	234° 17.8	59° 33.1 S	116° 27.3	39.8	274° 26.5	10.4	00.3	13.5	30°	30°	04:40	05:10	05:36	19:45	20:22	21:01					
	94° 22.0	92° 27.0	23.0	280° 47.7	10.6	62° 27.8	48.0	246° 00.3	52.1	Bellatrix	278° 32.8	6° 21.5 N	131° 27.3	39.0	288° 55.9	10.5	0° 46.8 N	13.6	35°	35°	04:29	05:01	05:28	19:45	20:20	20:56					
	109° 24.5	107° 26.8	24.3	295° 50.6	10.9	77° 30.0	48.1	261° 02.7	52.1	Betelgeuse	271° 02.1	7° 24.4 N	146° 27.3	38.2	303° 25.4	10.4	33.2	13.5	40°	40°	04:15	04:50	05:19	19:46	20:18	20:51					
124° 27.0	122° 26.7	25.6	310° 53.6	11.1	92° 32.1	48.3	276° 05.2	52.1				161° 27.3	37.4	317° 54.8	10.5	19.7	13.6	45°	45°	03:57	04:37	05:09	19:47	20:15	20:44						
10 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	139° 29.4	137° 26.5	0° 26.9 N	325° 56.5	7° 11.4 N	107° 34.2	11° 48.4 N	291° 07.7	8° 52.1 S	Canopus	263° 56.2	52° 42.5 S	176° 27.3	14° 36.6 S	332° 24.3	10.4	0° 06.1 N	13.6	59.4	S 50°	03:34	04:20	04:56	19:48	20:11	20:37					
	154° 31.9	152° 26.3	28.2	340° 59.5	11.7	122° 36.4	48.5	306° 10.2	52.1	Capella	280° 35.6	46° 00.7 N	191° 27.3	35.8	346° 53.7	10.4	0° 07.5 S	13.5	52°	52°	03:22	04:12	04:51	19:48	20:10	20:33					
	169° 34.4	167° 26.2	29.6	356° 02.4	11.9	137° 38.5	48.6	321° 12.6	52.1	Deneb	49° 32.6	45° 19.4 N	206° 27.2	35.0	1° 23.1	10.4	21.0	13.6	54°	54°	03:09	04:03	04:44	19:49	20:08	20:29					
	184° 36.8	182° 26.0	30.9	11° 05.4	12.2	152° 40.6	48.8	336° 15.1	52.0	Denebola	182° 34.3	14° 30.0 N	221° 27.2	34.2	15° 52.5	10.4	34.6	13.6	56°	56°	02:53	03:53	04:37	19:49	20:06	20:25					
	199° 39.3	197° 25.8	32.2	26° 08.3	12.5	167° 42.8	48.9	351° 17.6	52.0	Diphda	348° 57.0	17° 55.3 S	236° 27.2	33.4	30° 21.9	10.4	48.2	13.6	58°	58°	02:33	03:41	04:29	19:50	20:04	20:20					
	214° 41.8	212° 25.6	33.5	41° 11.3	12.7	182° 44.9	49.0	6° 20.0	52.0				251° 27.2	32.6	44° 51.3	10.3	1° 01.8 S	13.6	S 60°	60°	02:07	03:27	04:20	19:50	20:02	20:15					
	229° 44.2	227° 25.5	34.8	56° 14.2	13.0	197° 47.0	49.2	21° 22.5	52.0	Dubhe	193° 52.2	61° 40.8 N	266° 27.2	31.8	59° 20.6	10.3	15.4	13.5	S 62°	62°	01:29	03:10	04:09	19:51	19:59	20:09					
	244° 46.7	242° 25.3	36.1	71° 17.2	13.3	212° 49.1	49.3	36° 25.0	52.0	Elnath	278° 13.6	28° 37.0 N	281° 27.2	31.0	73° 49.9	10.4	28.9	13.6													
	259° 49.2	257° 25.1	37.4	86° 20.2	13.5	227° 51.3	49.4	51° 27.4	52.0	Elainor	90° 46.9	51° 29.1 N	296° 27.2	30.2	88° 19.3	10.3	42.5	13.6													
	274° 51.6	272° 25.0	38.7	101° 23.1	13.8	242° 53.4	49.5	66° 29.9	51.9	Enif	33° 48.4	9° 55.9 N	311° 27.2	29.4	102° 48.6	10.3	56.1	13.5													
	289° 54.1	287° 24.6	40.0	116° 26.1	14.1	257° 55.5	49.7	81° 32.4	51.9	Fomalhaut	15° 25.3	29° 33.5 S	326° 27.1	28.6	117° 17.9	10.3	2° 09.6 S	13.6	59.5	59.5	03:57	04:47	05:39	19:51	20:04	20:18					
	304° 56.5	302° 24.8	41.4	131° 29.0	14.3	272° 57.7	49.8	96° 34.9	51.9				341° 27.1	27.8	131° 47.2	10.2	23° 19.2	13.5													
	319° 59.0	317° 24.5	0° 42.7 N	146° 32.0	7° 14.6 N	287° 59.8	11° 49.9 N	111° 37.3	8° 51.9 S	Gacrux	172° 01.6	57° 10.8 S	356° 27.1	14° 26.9 S	146° 16.4	10.3	2° 36.7 S	13.5	59.5	N 70°	15:28	16:43	17:57	07:57	07:46	07:35					
	335° 01.5	332° 24.3	44.0	161° 35.0	14.9	303° 01.9	50.1	126° 39.8	51.9	Gienah	175° 53.0	17° 36.																			

2012 February 12, 13, 14 (Sun, Mon, Tue)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON			Lat	Twilight		Sunrise	Moonrise		
	GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec		Name	SHA	Dec	GHA	Dec		GHA	v	Dec		d	HP		Nautical	Civil	12
12 S a t u r d a y	00	141° 27.7	137° 18.6	1° 29.8 N	328° 19.6	7° 24.6 N	109° 16.3	11° 54.6 N	293° 06.5	8° 51.3 S	Acamar	315° 19.1	40° 15.6 S	176° 27.0	13° 57.5 S	307° 31.9	9.1	10° 24.8 S	12.2	59.6	N 72°	06:25	07:47	09:09	-	02:21	-				
	01	156° 30.2	152° 18.4	31.1	343° 22.6	24.8	124° 18.4	54.7	308° 08.9	51.3	Acnarnar	335° 27.7	57° 10.7 S	191° 27.0	56.7	322° 00.0	9.1	37.0	12.1	68°	N 70°	06:23	07:35	08:46	-	01:42	04:20				
	02	171° 32.6	167° 18.3	32.4	358° 25.6	25.1	139° 20.5	54.9	323° 11.4	51.3	Acrux	173° 09.9	63° 09.9 S	206° 27.0	55.9	336° 28.1	9.1	49.1	12.0	66°	N 68°	06:20	07:26	08:29	-	01:15	03:19				
	03	186° 35.1	182° 18.1	33.7	13° 28.6	25.4	154° 22.6	55.4	255° 13.0	51.3	Adhara	255° 13.0	28° 59.6 S	221° 27.0	55.1	350° 56.2	9.0	11° 01.1 S	11.9	64°	N 66°	06:18	07:18	08:15	-	00:55	02:45				
	04	201° 37.6	197° 18.0	35.0	28° 31.6	25.7	169° 24.7	55.1	353° 16.4	51.3	Aldebaran	290° 50.3	16° 31.9 N	236° 27.0	54.2	5° 24.2	8.9	13.0	11.9	62°	N 64°	06:16	07:12	08:03	-	00:39	02:20				
	05	216° 40.0	212° 17.8	36.4	43° 34.6	26.0	184° 26.9	55.3	8° 18.8	51.2											60°	N 62°	06:14	07:06	07:54	-	00:25	02:01			
	06	231° 42.5	227° 17.6	37.7	58° 37.6	26.3	199° 29.0	55.4	23° 21.3	51.2	Alioth	166° 21.1	55° 53.3 N	266° 27.0	52.6	34° 20.0	8.9	36.7	11.8	58°	N 58°	06:12	07:01	07:45	-	00:14	01:45				
	07	246° 45.0	242° 17.5	39.0	73° 40.7	26.6	214° 31.1	55.5	38° 23.8	51.2	Alkaid	152° 59.4	49° 14.8 N	281° 27.0	51.8	48° 47.9	8.8	48.5	11.7	56°	N 56°	06:10	06:56	07:38	-	00:04	01:32				
	08	261° 47.4	257° 17.3	40.3	88° 43.7	26.8	229° 33.2	55.7	53° 26.3	51.2	Alnair	27° 45.3	46° 54.1 S	296° 27.0	50.9	63° 15.7	8.8	12° 00.2 S	11.5	54°	N 54°	06:07	06:48	07:25	23:56	-	01:20				
	09	276° 49.9	272° 17.2	41.6	103° 46.7	27.1	244° 35.3	55.8	68° 28.8	51.2	Alnilam	275° 47.1	1° 11.9 S	311° 27.0	50.1	77° 43.5	8.8	11.7	11.6	52°	N 52°	06:05	06:45	07:20	23:48	-	01:10				
	10	291° 52.4	287° 17.0	42.9	118° 49.7	27.4	259° 37.4	55.9	83° 31.2	51.2	Alphard	217° 56.7	8° 42.9 S	326° 27.0	49.3	92° 11.3	8.7	23.3	11.4	50°	N 50°	06:04	06:42	07:15	23:36	-	00:53				
	11	306° 54.8	302° 16.9	44.2	133° 52.7	27.7	274° 39.6	56.1	89° 33.7	51.1											45°	N 45°	06:00	06:35	07:05	23:23	-	00:36			
	12	321° 57.3	317° 16.7	1° 45.5 N	148° 55.8	7° 28.0 N	289° 41.7	11° 56.2 N	113° 36.2	8° 51.1 S	Alphecca	126° 11.8	26° 40.2 N	356° 27.0	13° 47.6 S	121° 06.6	8.6	12° 46.1 S	11.3	59.6	N 40°	05:57	06:28	06:56	23:12	-	00:23				
	13	336° 59.7	332° 16.5	46.8	163° 58.8	28.3	304° 43.8	56.3	128° 38.7	51.1	Alpheratz	357° 44.7	29° 09.6 N	11° 27.0	46.8	135° 34.2	8.6	57.4	11.2	35°	S 35°	05:53	06:23	06:49	23:03	-	00:01				
	14	352° 02.2	347° 16.4	48.1	179° 01.8	28.6	319° 45.9	56.5	143° 41.2	51.1	Altair	62° 09.4	8° 54.0 N	26° 27.0	46.1	150° 01.8	8.5	13° 08.6 S	11.1	30°	S 30°	05:49	06:18	06:42	22:55	-	00:11				
	15	7° 04.7	2° 16.2	49.4	194° 04.8	28.9	334° 48.0	56.6	158° 43.7	51.1	Ankaa	353° 16.9	42° 14.6 S	41° 27.0	45.1	164° 29.3	8.5	19.7	11.1	59.5	N 20°	05:42	06:08	06:31	22:41	23:43	24:45				
	16	22° 07.1	17° 16.1	50.7	209° 07.9	29.1	349° 50.1	56.7	173° 46.1	51.1	Antares	112° 27.5	26° 27.4 S	56° 27.0	44.3	178° 56.8	8.4	30.8	10.8	58°	N 10°	05:34	05:59	06:20	22:30	23:28	24:28				
	17	37° 09.6	32° 15.9	52.1	224° 10.9	29.4	4° 52.3	56.9	188° 48.6	51.0											0°	N 0°	05:25	05:50	06:11	22:19	23:14	24:11			
	18	52° 12.1	47° 15.8	53.4	239° 13.9	29.7	19° 54.4	57.0	203° 51.1	51.0	Arcturus	145° 56.5	19° 06.9 N	86° 27.0	42.7	207° 51.6	8.3	52.6	10.8	50°	S 10°	05:14	05:39	06:01	22:08	23:00	23:55				
	19	67° 14.5	62° 15.6	54.7	254° 17.0	30.0	34° 56.5	57.1	218° 53.6	51.0	Alra	107° 30.4	69° 02.6 S	101° 27.0	41.8	222° 18.9	8.3	14° 03.4 S	10.7	20°	S 20°	05:01	05:28	05:50	21:56	22:45	23:38				
	20	82° 17.0	77° 15.5	56.0	269° 20.0	30.3	49° 58.6	57.3	233° 56.1	51.0	Avior	234° 17.8	59° 33.2 S	116° 27.0	41.0	236° 46.2	8.2	14.1	10.6	30°	S 30°	04:43	05:13	05:38	21:43	22:28	23:18				
	21	97° 19.5	92° 15.3	57.3	284° 23.0	30.6	65° 00.7	57.4	248° 58.5	51.0	Bellatrix	278° 32.8	6° 21.5 N	131° 27.0	40.2	251° 13.4	8.2	24.7	10.5	35°	S 35°	04:32	05:04	05:31	21:35	22:19	23:07				
	22	112° 21.9	107° 15.1	58.6	299° 26.1	30.9	80° 02.8	57.5	264° 01.0	50.9	Betelgeuse	271° 02.1	7° 24.4 N	146° 27.0	39.3	265° 40.6	8.2	35.2	10.5	40°	S 40°	04:19	04:54	05:23	21:27	22:07	22:54				
23	127° 24.4	122° 15.0	59.9	314° 29.1	31.2	95° 05.0	57.6	279° 03.5	50.9											45°	S 45°	04:02	04:42	05:13	21:17	21:54	22:38				
13 S u n d a y	00	142° 26.9	137° 14.8	2° 01.2 N	329° 32.1	7° 31.5 N	110° 07.1	11° 57.8 N	294° 06.0	8° 50.9 S	Canopus	263° 56.2	52° 42.5 S	176° 27.1	13° 37.7 S	294° 34.9	8.0	14° 56.0 S	10.3	59.5	S 50°	03:41	04:26	05:02	21:05	21:38	22:19				
	01	157° 29.3	152° 14.7	02.5	344° 35.2	31.8	125° 09.2	57.9	309° 08.5	50.9	Capella	280° 35.6	46° 00.7 N	191° 27.1	36.8	309° 01.9	8.0	15° 06.3 S	10.1	52°	S 52°	03:30	04:19	04:56	20:59	21:31	22:10				
	02	172° 31.8	167° 14.5	03.8	359° 38.2	32.1	140° 11.3	58.0	324° 11.0	50.9	Deneb	49° 32.6	45° 19.4 N	206° 27.1	36.0	323° 28.9	8.0	16.4	10.1	54°	S 54°	03:18	04:10	04:50	20:53	21:23	22:00				
	03	187° 34.2	182° 14.4	05.1	14° 41.3	32.4	155° 13.4	58.2	339° 13.4	50.9	Denebola	182° 34.3	14° 30.0 N	221° 27.1	35.2	337° 55.9	7.9	26.5	9.9	56°	S 56°	03:03	04:01	04:44	20:47	21:14	21:49				
	04	202° 36.7	197° 14.2	06.4	29° 44.3	32.7	170° 15.5	58.3	354° 15.9	50.8	Diphda	348° 57.0	17° 55.3 S	236° 27.1	34.3	352° 22.8	7.8	36.4	9.9	58°	S 58°	02:45	03:50	04:36	20:39	21:03	21:36				
	05	217° 39.2	212° 14.1	07.7	44° 47.4	33.0	185° 17.6	58.4	9° 18.4	50.8											58°	S 60°	02:23	03:37	04:28	20:30	20:51	21:21			
	06	232° 41.6	227° 13.9	09.0	59° 50.4	33.3	200° 19.7	58.6	24° 20.9	50.8	Dubhe	193° 52.1	61° 40.8 N	266° 27.1	32.6	21° 16.5	7.7	56.1	9.6	59.4	S 62°	01:52	03:22	04:18	20:21	20:37	21:03				
	07	247° 44.1	242° 13.8	10.4	74° 53.4	33.5	215° 21.9	58.7	39° 23.4	50.8	Elnath	278° 13.6	28° 37.0 N	281° 27.1	31.8	35° 43.2	7.7	16° 05.7 S	9.6												
	08	262° 46.6	257° 13.6	11.7	89° 56.5	33.8	230° 24.0	58.8	54° 25.9	50.8	Elainon	90° 46.9	51° 29.0 N	296° 27.2	31.0	50° 09.9	7.7	15.3	9.4												
	09	277° 49.0	272° 13.4	13.0	104° 59.5	34.1	245° 26.1	59.0	69° 28.3	50.7	Enif	33° 48.3	9° 55.9 N	311° 27.2	30.1	64° 36.6	7.6	24.7	9.4												
	10	292° 51.5	287° 13.3	14.3	120° 02.6	34.4	260° 28.2	59.1	84° 30.8	50.7	Fomalhaut	15° 25.3	29° 33.5 S	326° 27.2	29.3	79° 03.2	7.6	34.1	9.2												
	11	307° 54.0	302° 13.1	15.6	135° 05.4	34.7	275° 30.3	59.2	99° 33.3	50.7																					
	12	322° 56.4	317° 13.0	2° 16.9 N	150° 08.7	7° 35.0 N	290° 32.4	11° 59.4 N	114° 35.8	8° 50.7 S	Gacrux	172° 01.5	57° 10.8 S	356° 27.2	13° 27.6 S	107° 56.4	7.4	16° 52.5 S	9.0	59.4	N 70°	15:21	16:44	18:05	07:02	06:24	-				
	13	337° 58.9	332° 12.8	18.2	165° 11.7	35.3	305° 34.5	59.5	129° 38.3	50.7	Gienah	175° 53.0	17° 36.7 S	11° 27.2	26.8	122° 22.8	7.5	17° 01.5 S	8.9	68°	N 68°	16:01	17:04	18:10	07:38	07:32	07:25				
	14	353° 01.3	347° 12.7	19.5	180° 14.8	35.6	320° 36.6	59.6	144° 40.8	50.6	Hadar	144° 40.8	60° 25.7 S	26° 27.2	25.9	136° 49.3	7.4	10.4	8.9	66°	N 66°	16:15	17:11	18:12	07:51	07:54	08:00				
	15	8° 03.8	2° 12.5	20.8	195° 17.9	35.9	335° 38.8	59.8	159° 43.2	50.6	Hamal	328° 01.9	23° 31.2 N	41° 27.2	25.1	151° 15.7	7.3	19.3	8.7	64°	N 64°	16:26	17:18	18:14	08:02	08:11	08:25				
	16	23° 06.3	17° 12.4	22.1	210° 20.9	36.2	350° 40.9	59.9	174° 45.7	50.6	Kaus Aust.	83° 45.3	34° 22.6 S	56° 27.3	24.3	165° 42.0	7.3	28.0	8.6	62°	N 62°	16:36	17:24	18:16	08:11	08:25	08:45				
	17	38° 08.7	32° 12.2	23.4	225° 24.0	36.5	5° 43.0	12° 00.1 N	189° 48.2	50.6											60°	N 60°	16:44	17:29	18:18	08:19	08:37	09:02			
	18	53° 11.2	47° 12.1	24.7	240° 27.0	36.8	20° 45.1																								

2012 February 15, 16, 17 (Wed, Thu, Fri)

GMT	ARIES			VENUS -4.2			MARS -0.9			JUPITER -2.3			SATURN +0.6			STARS			SUN		MOON					Twilight		Sunrise		Moonrise		
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	06:13	07:33	08:51	-	-	-				
Wednesday	00	144° 25'.1	137° 07'.6	3° 03'.9 N	331° 59'.4	7° 46'.0 N	111° 48'.3	12° 04'.2 N	296° 05'.4	8° 49'.9 S	296° 05'.4	Acamar	315° 19'.1	40° 15'.6 S	176° 27'.9	12° 57'.2 S	267° 24'.4	6.2	21° 02'.4 S	4.5	59.0	N 70°	06:11	07:23	08:32	-	-	-				
	01	159° 27'.6	152° 07'.4	05.2	347° 02'.5	46.3	126° 50'.4	04.4	311° 07'.8	49.9	311° 07'.8	Acnarnar	335° 27'.7	57° 10'.7 S	191° 27'.9	56.4	281° 49'.6	6.1	06.9	4.4	68°	06:10	07:15	08:16	05:36	-	07:48					
	02	174° 30'.1	167° 07'.3	06.5	2° 05'.6	46.6	141° 52'.5	04.5	326° 10'.3	49.9	326° 10'.3	Acrux	173° 09'.9	63° 09'.9 S	206° 27'.9	55.5	296° 14'.7	6.2	11.3	4.3	66°	06:08	07:08	08:04	04:30	05:52	06:35					
	03	189° 32'.5	182° 07'.2	07.8	17° 08'.7	46.9	156° 54'.6	04.7	341° 12'.8	49.9	341° 12'.8	Adhara	255° 13'.0	28° 59'.6 S	221° 27'.9	54.6	310° 39'.9	6.1	15.6	4.1	64°	06:07	07:03	07:54	03:55	05:10	05:58					
	04	204° 35'.0	197° 07'.0	09.1	32° 11'.8	47.2	171° 56'.7	04.8	356° 15'.3	49.9	356° 15'.3	Aldebaran	290° 50'.3	16° 31'.9 N	236° 28'.0	53.8	325° 05'.0	6.1	19.7	4.0	62°	06:06	06:58	07:45	03:29	04:41	05:32					
	05	219° 37'.4	212° 07'.0	10.4	47° 14'.9	47.6	186° 58'.8	04.9	11° 17'.8	49.8	11° 17'.8		251° 28'.0	52.9	339° 30'.1	6.1	23.7	3.9	60°	06:05	06:53	07:37	03:09	04:19	05:11							
	06	234° 39'.9	227° 06'.7	11.7	62° 18'.0	47.9	202° 00'.9	05.1	26° 20'.3	49.8	26° 20'.3	Alioth	166° 21'.1	55° 53'.3 N	266° 28'.0	52.1	353° 55'.2	6.0	27.6	3.7	58.9	N 58°	06:03	06:49	07:30	02:53	04:01	04:54				
	07	249° 42'.4	242° 06'.6	13.0	77° 21'.1	48.2	217° 03'.0	05.2	41° 22'.8	49.8	41° 22'.8	Alkaid	152° 59'.4	49° 14'.8 N	281° 28'.0	51.2	8° 20'.2	6.1	31.3	3.6	56°	06:02	06:46	07:24	02:39	03:46	04:40					
	08	264° 44'.8	257° 06'.4	14.3	92° 24'.2	48.5	232° 05'.1	05.3	56° 25'.3	49.8	56° 25'.3	Alnair	27° 45'.3	46° 54'.1 S	296° 28'.1	50.4	22° 45'.3	6.0	34.9	3.4	54°	06:01	06:42	07:19	02:27	03:33	04:27					
	09	279° 47'.3	272° 06'.3	15.6	107° 27'.3	48.8	247° 07'.2	05.5	71° 27'.8	49.8	71° 27'.8	Alnilam	275° 47'.1	1° 11'.9 S	311° 28'.1	49.5	37° 10'.3	6.0	38.3	3.3	52°	06:00	06:39	07:14	02:16	03:22	04:16					
	10	294° 49'.8	287° 06'.1	16.9	122° 30'.4	49.1	262° 09'.3	05.6	86° 30'.3	49.7	86° 30'.3	Alphard	217° 56'.7	8° 42'.9 S	326° 28'.1	48.7	51° 35'.3	6.0	41.6	3.1	50°	05:59	06:37	07:10	02:07	03:12	04:07					
	11	309° 52'.2	302° 06'.0	18.2	137° 33'.5	49.4	277° 11'.4	05.7	101° 32'.8	49.7	101° 32'.8		341° 28'.1	47.8	66° 00'.3	6.0	44.7	3.1	45°	05:56	06:30	07:00	01:47	02:51	03:46							
	12	324° 54'.7	317° 05'.8	3° 19'.5 N	152° 36'.6	7° 49'.8 N	292° 13'.5	12° 05'.9 N	116° 35'.3	8° 49'.7 S	116° 35'.3	Alphecca	126° 11'.8	26° 40'.2 N	356° 28'.2	12° 47.0 S	80° 25'.3	6.0	21° 47.8 S	2.8	58.9	N 40°	05:53	06:25	06:52	01:31	02:34	03:30				
	13	339° 57'.2	332° 05'.7	20.8	167° 39'.7	50.1	307° 15'.6	06.0	131° 37'.8	49.7	131° 37'.8	Alpheratz	357° 44.7	29° 09'.6 N	11° 28'.2	46.1	94° 50'.3	6.0	50.6	2.7	58.8	35°	05:50	06:20	06:46	01:17	02:19	03:16				
	14	354° 59'.6	347° 05'.6	22.1	182° 42'.8	50.4	322° 17.7	06.2	146° 40'.2	49.6	146° 40'.2	Altair	62° 09'.4	8° 54'.0 N	109° 15'.3	45.2	109° 15'.3	6.0	53.3	2.6	30°	05:47	06:15	06:40	01:05	02:07	03:03					
	15	10° 02'.1	2° 05'.4	23.4	197° 45'.9	50.7	337° 19'.8	06.3	161° 42'.7	49.6	161° 42'.7	Ankaa	353° 16'.9	42° 14'.5 S	41° 28'.3	44.4	123° 40'.3	6.0	55.9	2.5	20°	05:41	06:06	06:29	00:45	01:45	02:43					
	16	25° 04'.6	17° 05'.3	24.7	212° 49'.0	51.0	352° 21'.9	06.4	176° 45'.2	49.6	176° 45'.2	Antares	112° 27'.5	26° 27'.4 S	56° 28'.3	43.5	138° 05'.3	5.9	58.4	2.3	N 10°	05:33	05:58	06:20	00:28	01:27	02:24					
	17	40° 07'.0	32° 05'.1	26.0	227° 52'.2	51.3	7° 24'.0	06.6	191° 47'.7	49.6	191° 47'.7		71° 28'.3	42.7	152° 30'.2	6.0	22° 00'.7 S	2.1	0°	05:25	05:49	06:11	00:11	01:10	02:08							
	18	55° 09'.5	47° 05'.0	27.3	242° 55'.3	51.7	22° 26'.1	06.7	206° 50'.2	49.6	206° 50'.2	Arcturus	145° 56'.4	19° 06'.9 N	86° 28'.3	41.8	166° 55'.2	6.0	02.8	2.0	S 10°	05:15	05:40	06:02	-	00:52	01:51					
	19	70° 11'.9	62° 04'.8	28.6	257° 58'.4	52.0	37° 28'.2	06.8	221° 52'.7	49.5	221° 52'.7	Arctia	107° 30'.3	69° 02'.6 S	101° 28'.4	41.0	181° 20'.2	6.0	04.8	1.9	20°	05:02	05:29	05:52	-	00:34	01:32					
	20	85° 14'.4	77° 04'.7	29.9	273° 01'.5	52.3	52° 30'.3	07.0	236° 55'.2	49.5	236° 55'.2	Avior	234° 17'.8	59° 33'.2 S	116° 28'.4	40.1	195° 45'.2	5.9	06.7	1.7	58.7	30°	04:46	05:16	05:41	-	00:13	01:12				
	21	100° 16'.9	92° 04'.5	31.2	288° 04'.6	52.6	67° 32'.4	07.1	251° 57'.7	49.5	251° 57'.7	Bellatrix	278° 32'.8	6° 21'.5 N	131° 28'.4	39.2	210° 10'.1	6.0	08.4	1.6	35°	04:36	05:08	05:34	-	00:01	00:59					
	22	115° 19'.3	107° 04'.4	32.5	303° 07'.8	52.9	82° 34'.5	07.3	267° 00'.2	49.5	267° 00'.2	Betelgeuse	271° 02'.1	7° 24'.4 N	146° 28'.5	38.4	224° 35'.1	6.0	10.0	1.4	40°	04:23	04:58	05:27	23:47	-	00:45					
23	130° 21'.8	122° 04'.3	33.8	318° 10'.9	53.2	97° 36'.6	07.4	282° 02'.7	49.4	282° 02'.7		161° 28'.5	37.5	239° 00'.1	6.0	11.4	1.3	45°	04:08	04:46	05:18	23:30	-	00:29								
Thursday	00	145° 24'.3	137° 04'.1	3° 35'.1 N	333° 14'.0	7° 53'.6 N	112° 38'.7	12° 07'.5 N	297° 05'.2	8° 49'.4 S	Capopus	263° 56'.2	52° 42'.5 S	176° 28'.5	12° 36.7 S	253° 25'.1	5.9	22° 12.7 S	1.2	58.7	S 50°	03:48	04:32	05:07	23:09	-	00:08					
	01	160° 26'.7	152° 04'.0	36.4	348° 17.1	53.9	127° 40'.8	07.7	312° 07.7	49.4	312° 07.7	Canopus	280° 35'.6	46° 00'.7 N	191° 28'.6	35.8	267° 50'.0	6.0	13.9	1.0	52°	03:38	04:25	05:02	22:59	23:58	25:06					
	02	175° 29'.2	167° 03'.8	37.7	3° 20'.2	54.2	142° 42'.9	07.8	327° 10'.2	49.4	327° 10'.2	Deneb	49° 32'.6	45° 19'.4 N	206° 28'.6	34.9	282° 15'.0	6.0	14.9	0.8	54°	03:26	04:17	04:57	22:48	23:47	24:45					
	03	190° 31'.7	182° 03'.7	39.0	18° 23'.4	54.5	157° 45'.0	07.9	342° 12'.7	49.3	342° 12'.7	Denebola	182° 34'.3	14° 30'.0 N	221° 28'.6	34.1	296° 40'.0	6.1	15.7	0.7	58.6	56°	03:13	04:08	04:51	22:36	23:35	24:56				
	04	205° 34'.1	197° 03'.5	40.3	33° 26'.5	54.8	172° 47'.1	08.1	357° 15'.2	49.3	357° 15'.2	Diphda	348° 57'.0	17° 55'.3 S	236° 28'.6	33.2	311° 05'.1	6.0	16.4	0.6	58°	02:57	03:58	04:44	22:21	23:20	24:32					
	05	220° 36'.6	212° 03'.4	41.6	48° 29'.6	55.2	187° 49'.2	08.2	12° 17'.7	49.3	12° 17'.7		251° 28'.7	32.4	325° 30'.1	6.0	17.0	0.5	58°	S 60°	02:37	03:47	04:36	22:04	23:03	24:17						
	06	235° 39'.1	227° 03'.3	42.9	63° 32'.8	55.5	202° 51'.3	08.4	27° 20'.2	49.3	27° 20'.2	Dubhe	193° 52'.1	61° 40'.8 N	266° 28'.7	31.5	339° 55'.1	6.1	17.5	0.2	S 52°	02:11	03:33	04:27	21:43	22:42	23:59					
	07	250° 41'.5	242° 03'.1	44.2	78° 35'.9	55.8	217° 53'.4	08.5	42° 22'.7	49.3	42° 22'.7	Elath	278° 13'.6	28° 37'.0 N	281° 28'.7	30.6	354° 20'.2	6.1	17.7	0.2												
	08	265° 44'.0	257° 03'.0	45.5	93° 39'.0	56.1	232° 55'.5	08.6	5° 25'.2	49.2	5° 25'.2	Elnath	90° 46'.9	51° 29'.0 N	296° 28'.8	29.8	8° 45'.3	6.0	17.9	0.0												
	09	280° 46'.4	272° 02'.8	46.8	108° 42'.1	56.4	247° 57'.6	08.8	72° 27'.7	49.2	72° 27'.7	Enif	33° 48'.3	9° 55'.9 N	311° 28'.8	28.9	23° 10'.3	6.2	17.9	0.1	58.5	Lat	Sunset	Twilight	Moonset							
	10	295° 48'.9	287° 02'.7	48.1	123° 45'.3	56.8	262° 59'.7	08.9	87° 30'.2	49.2	87° 30'.2	Fomalhaut	15° 25'.3	29° 33'.5 S	326° 28'.8	28.0	37° 35'.6	6.1	17.8	0.3												
	11	310° 51'.4	302° 02'.5	49.4	138° 48'.4	57.1	278° 01'.7	09.0	102° 32'.6	49.2	102° 32'.6		341° 28'.9	27.2	52° 00'.6	6.1	17.5	0.4														
	12	325° 53'.8	317° 02'.4	3° 50'.7 N	153° 51'.5	7° 57'.4 N	293° 03'.8	12° 09.2 N	117° 35'.1	8° 49'.1 S	117° 35'.1	Gacrux	172° 01'.5	57° 10'.8 S	356° 28'.9	12° 26.3 S	66° 25'.7	6.2	22° 17.1 S	0.6	58.5	N 72°	15:39	16:57	18:18	-	-	-				
	13	340° 56'.3	332° 02'.3	52.0	168° 54'.7	57.7	308° 05'.9	09.3	132° 37'.6	49.1	132° 37'.6	Gienah	175°																			

2012 February 18, 19, 20 (Sat, Sun, Mon)

GMT	ARIES		VENUS		MARS		JUPITER		SATURN		STARS			SUN		MOON				Twilight		Sunrise		Moonrise			
				-4.2		-1.0		-2.2		+0.5										Lat	Nautical	Civil		18	19	20	
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	06:00	07:19	08:34	-	08:41	07:57	
18 Fri day	00	147° 22.5'	136° 57.4	4° 37.3 N	335° 45.2	8° 09.2 N	114° 19.1	12° 14.2 N	299° 05.2	8° 48.3 S	Acamar	315° 19.1	40° 15.6 S	176° 30.4	11° 55.0 S	225° 55.3	7.7	20° 31.2 S	5.3	57.9	N 70°	06:00	07:11	08:17	08:43	07:52	07:15
	01	162° 25.0'	151° 57.3	38.6	350° 48.3	09.6	129° 21.2	14.4	314° 07.7	48.2	Acnarnar	335° 27.7	57° 10.7 S	191° 30.4	54.1	240° 22.0	7.8	25.9	5.5	68°	06:59	07:04	08:04	07:28	07:21	07:33	
	02	177° 27.5'	166° 57.1	39.9	5° 51.5	09.9	144° 23.3	14.5	329° 10.2	48.2	Acrux	173° 09.8	63° 10.0 S	206° 30.5	53.2	254° 48.8	7.9	20.4	5.5	66°	05:59	06:58	07:53	06:51	06:57	07:00	
	03	192° 29.9'	181° 57.0	41.2	20° 54.7	10.2	159° 25.4	14.6	344° 12.7	48.2	Adhara	255° 13.0	28° 59.6 S	221° 30.5	52.3	269° 15.7	7.9	14.9	5.7	57.8	64°	05:58	06:54	07:44	06:24	06:39	06:48
	04	207° 32.4'	196° 56.8	42.5	35° 57.9	10.6	174° 27.5	14.8	359° 15.2	48.1	Aldebaran	290° 50.3	16° 31.9 N	236° 30.6	51.4	283° 42.6	8.0	09.2	5.8	62°	05:58	06:49	07:36	06:04	06:24	06:37	
	05	222° 34.9'	211° 56.7	43.8	51° 01.0	10.9	189° 25.5	14.9	14° 17.7	48.1				251° 30.6	50.6	298° 09.6	8.0	03.4	5.8	60°	05:57	06:46	07:29	05:47	06:11	06:28	
	06	237° 37.3'	226° 56.6	45.1	66° 04.2	11.2	204° 31.6	15.1	29° 20.2	48.1	Alioth	166° 21.0	55° 53.3 N	266° 30.6	49.7	312° 36.6	8.1	19° 57.6 S	6.1	N 58°	05:57	06:42	07:23	05:32	06:00	06:20	
	07	252° 39.8'	241° 56.4	46.4	81° 07.4	11.6	219° 33.7	15.2	44° 22.7	48.1	Alkaid	152° 59.3	49° 14.8 N	281° 30.7	48.8	327° 03.7	8.2	51.5	6.5	56°	05:56	06:39	07:17	05:20	05:50	06:13	
	08	267° 42.3'	256° 56.3	47.7	96° 10.6	11.9	234° 35.8	15.3	59° 25.2	48.0	Alnair	27° 45.3	46° 54.1 S	296° 30.7	47.9	341° 30.9	8.3	45.4	6.2	57.7	54°	05:55	06:36	07:13	05:09	05:42	06:07
	09	282° 44.7'	271° 56.2	49.0	111° 13.8	12.3	249° 37.9	15.5	74° 27.7	48.0	Alnilam	275° 47.1	1° 11.9 S	311° 30.8	47.0	355° 58.2	8.3	39.2	6.3	50°	05:54	06:34	07:08	05:00	05:34	06:01	
	10	297° 47.2'	286° 56.0	50.3	126° 17.0	12.6	264° 40.0	15.6	89° 30.2	48.0	Alphard	217° 56.7	8° 42.9 S	326° 30.8	46.2	10° 25.5	8.3	32.9	6.5	50°	05:54	06:31	07:04	04:51	05:27	05:56	
	11	312° 49.7'	301° 55.9	51.6	141° 20.1	12.9	279° 42.1	15.8	104° 32.7	48.0				341° 30.9	45.3	24° 52.8	8.5	26.4	6.5	45°	05:52	06:26	06:56	04:33	05:12	05:45	
	12	327° 52.1'	316° 55.8	4° 52.8 N	156° 23.3	8° 13.3 N	294° 44.1	12° 15.9 N	119° 35.2	8° 47.9 S	Alphecca	126° 11.7	26° 40.2 N	356° 30.9	11° 44.4 S	39° 20.3	8.5	19° 19.9 S	6.7	57.7	N 40°	05:49	06:21	06:49	04:18	05:00	05:36
	13	342° 54.6'	331° 55.6	54.1	171° 26.5	13.6	309° 46.2	16.0	134° 37.7	47.9	Alpheratz	357° 44.7	29° 09.5 N	11° 31.0	43.5	53° 47.8	8.6	13.2	6.8	35°	05:47	06:17	06:42	04:06	04:49	05:28	
	14	357° 57.0'	346° 55.5	55.4	186° 29.7	13.9	324° 48.3	16.2	149° 40.2	47.9	Altair	62° 09.4	8° 54.0 N	26° 31.0	42.6	68° 15.4	8.6	06.4	6.8	57.6	30°	05:45	06:13	06:37	03:55	04:40	05:21
	15	12° 59.5'	1° 55.4	56.7	201° 32.9	14.3	339° 50.4	16.3	164° 42.7	47.9	Ankaa	353° 16.9	42° 14.5 S	41° 31.1	41.8	82° 43.0	8.7	18° 59.6 S	7.0	20°	05:39	06:05	06:27	03:36	04:24	05:09	
	16	28° 02.0'	16° 55.2	58.0	216° 36.1	14.6	354° 52.5	16.5	179° 45.2	47.8	Antares	112° 27.4	26° 27.4 S	56° 31.1	40.9	97° 10.7	8.8	52.6	7.1	N 10°	05:32	05:57	06:19	03:19	04:10	04:58	
	17	43° 04.4'	31° 55.1	59.3	231° 39.3	15.0	9° 54.6	16.6	194° 47.7	47.8				71° 31.2	40.0	111° 38.5	8.9	45.5	7.2	0°	05:25	05:49	06:10	03:04	03:57	04:48	
	18	58° 06.9'	46° 55.0	5° 00.6 N	246° 42.5	15.3	24° 56.6	16.8	209° 50.2	47.8	Arcturus	145° 56.4	19° 06.9 N	86° 31.2	39.1	126° 06.4	8.9	38.3	7.3	S 10°	05:16	05:41	06:02	02:48	03:44	04:38	
	19	73° 09.4'	61° 54.8	01.9	261° 45.7	15.6	39° 58.7	16.9	224° 52.8	47.8	Arctia	107° 30.2	69° 02.6 S	101° 31.3	38.2	140° 34.3	9.0	31.0	7.4	57.5	20°	05:04	05:31	05:53	02:32	03:30	04:27
	20	88° 11.8'	76° 54.7	03.2	276° 48.9	16.0	55° 00.8	17.0	239° 55.3	47.7	Avior	234° 17.8	59° 33.2 S	116° 31.3	37.4	155° 02.3	9.0	23.6	7.4	30°	04:49	05:18	05:43	02:13	03:14	04:14	
	21	103° 14.3'	91° 54.5	04.5	291° 52.1	16.3	70° 02.9	17.2	254° 57.8	47.7	Bellatrix	278° 32.8	6° 21.5 N	131° 31.4	36.5	169° 30.3	9.2	16.2	7.6	35°	04:39	05:11	05:37	02:01	03:05	04:07	
	22	118° 16.8'	106° 54.4	05.7	306° 55.3	16.7	85° 05.0	17.3	270° 00.3	47.7	Betelgeuse	271° 02.1	7° 24.4 N	146° 31.4	35.6	183° 58.5	9.2	08.6	7.7	40°	04:28	05:02	05:30	01:49	02:54	03:59	
23	133° 19.2'	121° 54.3	07.0	321° 58.5	17.0	100° 07.1	17.5	285° 02.8	47.6				161° 31.5	34.7	198° 26.7	9.2	00.9	7.8	45°	04:13	04:51	05:22	01:33	02:41	03:50		
19 Sat urday	00	148° 21.7'	136° 54.1	5° 08.3 N	337° 01.7	8° 17.3 N	115° 09.1	12° 17.6 N	300° 05.3	8° 47.6 S	Canopus	263° 56.2	52° 42.5 S	176° 31.5	11° 33.8 S	212° 54.9	9.4	17° 53.1 S	7.8	57.4	S 50°	03:54	04:37	05:12	01:15	02:26	03:38
	01	163° 24.2'	151° 54.0	09.6	352° 04.9	17.7	130° 11.2	17.7	315° 07.8	47.6	Capella	280° 35.6	46° 00.7 N	191° 31.6	32.9	227° 23.3	9.4	45.3	8.0	52°	03:45	04:31	05:08	01:06	02:18	03:33	
	02	178° 26.6'	166° 53.9	10.9	7° 08.1	18.0	145° 13.3	17.9	330° 10.3	47.6	Deneb	49° 32.5	45° 19.4 N	206° 31.7	32.0	241° 51.7	9.4	37.3	8.0	54°	03:34	04:24	05:03	00:56	02:10	03:20	
	03	193° 29.1'	181° 53.7	12.2	22° 11.3	18.4	160° 15.4	18.0	345° 12.8	47.5	Denebola	182° 34.3	14° 30.0 N	221° 31.7	31.2	256° 20.1	9.6	29.0	8.2	56°	03:22	04:16	04:57	00:45	02:01	03:27	
	04	208° 31.5'	196° 53.6	13.5	37° 14.5	18.7	175° 17.5	18.2	0° 15.3	47.5	Diphda	348° 57.0	17° 55.3 S	236° 31.8	30.3	270° 48.7	9.6	21.1	8.2	58°	03:08	04:07	04:51	00:32	01:51	03:12	
	05	223° 34.0'	211° 53.5	14.8	52° 17.7	19.0	190° 19.5	18.3	15° 17.8	47.5				251° 31.8	29.4	285° 17.3	9.7	12.9	8.3	57.3	S 60°	02:50	03:56	04:44	00:17	01:39	03:04
	06	238° 36.5'	226° 53.3	16.1	67° 20.9	19.4	205° 21.6	18.5	30° 20.3	47.5	Dubhe	193° 52.1	61° 40.8 N	266° 31.9	28.5	299° 46.0	9.8	04.6	8.4	50°	02:27	03:43	04:36	-	01:25	02:54	
	07	253° 38.9'	241° 53.2	17.3	82° 24.1	19.7	220° 23.7	18.6	45° 22.8	47.4	Elnath	278° 13.6	28° 37.0 N	281° 31.9	27.6	314° 14.8	9.8	16° 56.2 S	8.5	56°	02:16	03:32	04:25	00:00	01:15	02:30	
	08	268° 41.4'	256° 53.1	18.6	97° 27.3	20.1	235° 25.8	18.7	60° 25.4	47.4	Elainor	90° 46.8	51° 29.0 N	296° 32.0	26.6	328° 43.6	9.9	47.7	8.6	57.2	20°	02:05	03:21	04:14	00:00	01:15	02:30
	09	283° 43.9'	271° 52.9	19.9	112° 30.5	20.4	250° 27.9	18.9	75° 27.9	47.4	Enif	33° 48.3	9° 55.9 N	311° 32.0	25.8	343° 12.5	10.0	39.1	8.7	57.2	Lat	Sunset	Twilight				
	10	298° 46.3'	286° 52.8	21.2	127° 33.7	20.7	265° 29.9	19.0	90° 30.4	47.3	Fomalhaut	15° 25.3	29° 33.5 S	326° 32.1	25.0	357° 41.5	10.0	30.4	8.7	57.2	N 72°	15:55	17:11	18:30	-	11:55	14:22
	11	313° 48.8'	301° 52.7	22.5	142° 36.9	21.1	280° 32.0	19.2	105° 32.9	47.3				341° 32.1	24.1	12° 10.5	10.1	21.7	8.9	57.2	N 70°	16:12	17:19	18:30	10:01	12:42	14:44
	12	328° 51.3'	316° 52.5	5° 23.8 N	157° 40.1	8° 21.4 N	295° 34.1	12° 19.3 N	120° 35.4	8° 47.3 S	Gacrux	172° 01.5	57° 10.9 S	356° 32.2	11° 23.2 S	26° 39.6	10.2	16° 12.8 S	8.9	57.2	N 70°	16:12	17:19	18:30	10:01	12:42	14:44
	13	343° 53.7'	331° 52.4	25.1	172° 43.3	21.8	310° 36.2	19.5	135° 37.9	47.3	Gienah	175° 53.0	17° 36.7 S	11													

2012 February 21, 22, 23 (Tue, Wed, Thu)

GMT	ARIES		VENUS		MARS		JUPITER		SATURN		STARS			SUN		MOON				Lat	Twilight		Sunrise	Moonrise			
											Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d		HP	Nautical		Civil	21	22	23
21 T u e s d a y	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	05:46	07:04	08:18	07:34	07:16	07:00	
	150° 20.0	136° 47.8	6° 09.9 N	339° 36.4	8° 33.9 N	116° 48.8	12° 24.5 N	302° 05.8	8° 46.2 S	Acamar	315° 19.1	40° 15.6 S	176° 34.4	10° 51.0 S	188° 53.0	12.5	10° 10.2 S	11.0	56.5	N 70°	05:47	06:58	08:03	07:21	07:10	07:00	
	01	165° 22.4	151° 47.7	11.2	354° 39.6	34.3	131° 50.9	24.6	317° 08.4	46.2	Acnarnar	335° 27.7	57° 10.7 S	191° 34.5	50.1	203° 24.5	12.6	9° 59.2 S	11.1	56.4	N 68°	05:48	06:53	07:51	07:10	07:05	07:01
	02	180° 24.9	166° 47.6	12.5	9° 42.9	34.6	146° 52.9	24.8	332° 10.9	46.2	Acrux	173° 09.8	63° 10.0 S	206° 34.5	49.2	217° 56.1	12.7	48.1	11.1	66°	05:49	06:48	07:42	07:01	07:01	07:01	
	03	195° 27.4	181° 47.4	13.8	24° 46.1	35.0	161° 55.0	24.9	347° 13.4	46.2	Adhara	255° 13.0	28° 59.6 S	221° 34.6	48.3	232° 27.8	12.7	37.0	11.2	64°	05:49	06:44	07:33	06:53	06:58	07:01	
	04	210° 29.8	196° 47.3	15.1	39° 49.4	35.3	176° 57.1	25.1	2° 15.9	46.1	Aldebaran	290° 50.4	16° 31.9 N	236° 34.7	47.4	246° 59.5	12.7	25.8	11.2	62°	05:49	06:41	07:26	06:47	06:55	07:02	
	05	225° 32.3	211° 47.2	16.3	54° 52.6	35.7	191° 59.2	25.2	17° 18.4	46.1				251° 34.7	46.5	261° 31.2	12.8	14.6	11.3	60°	05:49	06:38	07:20	06:41	06:52	07:02	
	06	240° 34.8	226° 47.0	17.6	69° 55.9	36.0	207° 01.2	25.4	32° 20.9	46.1	Alioth	166° 21.0	55° 53.3 N	266° 34.8	45.6	276° 03.0	12.9	03.3	11.2	56.3	N 58°	05:49	06:35	07:15	06:36	06:50	07:02
	07	255° 37.2	241° 46.9	18.9	84° 59.1	36.4	222° 03.3	25.5	47° 23.4	46.0	Alkaid	152° 59.3	49° 14.8 N	281° 34.9	44.7	290° 34.9	12.9	8° 52.1 S	11.3	56°	05:49	06:32	07:10	06:32	06:48	07:02	
	08	270° 39.7	256° 46.8	20.2	100° 02.4	36.7	237° 05.4	25.7	62° 26.0	46.0	Alnair	27° 45.3	46° 54.1 S	296° 34.9	43.8	305° 06.8	13.0	40.8	11.4	54°	05:49	06:30	07:06	06:28	06:46	07:02	
	09	285° 42.1	271° 46.7	21.4	115° 05.6	37.1	252° 07.4	25.8	77° 28.5	46.0	Alnilam	275° 07.1	1° 11.9 S	311° 35.0	42.9	319° 38.8	13.1	29.4	11.3	52°	05:49	06:28	07:02	06:24	06:44	07:03	
	10	300° 44.6	286° 46.5	22.7	130° 08.9	37.4	267° 09.5	25.9	92° 31.0	45.9	Alphard	217° 56.7	8° 43.0 S	326° 35.1	42.0	334° 10.9	13.0	18.1	11.4	50°	05:48	06:26	06:59	06:21	06:42	07:03	
	11	315° 47.1	301° 46.4	24.0	145° 12.1	37.8	282° 11.6	26.1	107° 33.5	45.9				341° 35.2	41.1	348° 42.9	13.2	06.7	11.5	56.2	45°	05:47	06:21	06:51	06:13	06:39	07:03
	12	330° 49.5	316° 46.3	6° 25.3 N	160° 15.4	8° 38.2 N	297° 13.6	12° 26.2 N	122° 36.0	8° 45.9 S	Alphecca	126° 11.7	26° 40.2 N	356° 35.2	10° 40.2 S	3° 15.1	13.1	7° 55.2 S	11.4	56.2	N 40°	05:46	06:17	06:44	06:07	06:36	07:03
	13	345° 52.0	331° 46.1	26.5	175° 18.6	38.5	312° 15.7	26.4	137° 38.6	45.8	Alpheratz	357° 44.8	29° 09.5 S	11° 35.3	39.3	17° 47.2	13.3	43.8	11.5	35°	05:44	06:13	06:39	06:02	06:34	07:04	
	14	0° 54.5	346° 46.0	27.8	190° 21.9	38.9	327° 17.8	26.5	152° 41.1	45.8	Altair	62° 09.4	8° 54.0 N	26° 35.4	38.4	32° 19.5	13.3	3.3	11.5	30°	05:42	06:10	06:34	05:57	06:31	07:04	
	15	15° 56.9	1° 45.9	29.1	205° 25.2	39.2	342° 19.8	26.7	167° 43.6	45.8	Ankaa	353° 16.9	42° 14.5 S	41° 35.4	37.5	46° 51.8	13.3	20.8	11.5	20°	05:37	06:03	06:25	05:49	06:28	07:04	
	16	30° 59.4	16° 45.8	30.4	220° 28.4	39.6	357° 21.9	26.8	182° 46.1	45.8	Antares	112° 27.4	26° 27.5 S	56° 35.5	36.6	61° 24.1	13.4	09.3	11.6	56.1	N 10°	05:32	05:56	06:18	05:42	06:24	07:05
	17	46° 01.9	31° 45.6	31.6	235° 31.7	39.9	12° 24.0	27.0	197° 48.6	45.7				71° 35.6	35.7	75° 56.5	13.4	6° 57.7 S	11.6	0°	05:25	05:49	06:10	05:36	06:21	07:05	
	18	61° 04.3	46° 45.5	32.9	250° 34.9	40.3	27° 26.1	27.1	212° 51.1	45.7	Arcturus	145° 56.4	19° 06.9 N	86° 35.7	34.8	90° 28.9	13.5	46.1	11.6	18°	05:16	05:41	06:03	05:29	06:18	07:05	
	19	76° 06.8	61° 45.4	34.2	265° 38.2	40.6	42° 28.1	27.3	227° 53.7	45.7	Atria	107° 30.2	69° 02.6 S	101° 35.7	33.9	105° 01.4	13.5	34.5	11.6	20°	05:06	05:32	05:55	05:22	06:14	07:06	
	20	91° 09.2	76° 45.3	35.5	280° 41.5	41.0	57° 30.2	27.4	242° 56.2	45.6	Avior	234° 17.8	59° 33.2 S	116° 35.8	33.0	119° 33.9	13.5	22.9	11.6	56.0	30°	04:52	05:21	05:45	05:13	06:11	07:06
	21	106° 11.7	91° 45.1	36.7	295° 44.7	41.3	72° 32.3	27.5	257° 58.7	45.6	Bellatrix	278° 32.9	6° 21.5 N	131° 35.9	32.0	134° 06.4	13.6	11.3	11.7	35°	04:43	05:14	05:40	05:09	06:08	07:06	
22	121° 14.2	106° 45.0	38.0	310° 48.0	41.7	87° 34.3	27.7	273° 01.2	45.6	Betelgeuse	271° 02.1	7° 24.4 N	146° 35.9	31.1	148° 39.0	13.7	5° 59.6 S	11.6	40°	04:32	05:05	05:34	05:03	06:06	07:07		
23	136° 16.6	121° 44.9	39.3	325° 51.3	42.1	102° 36.4	27.8	288° 03.7	45.5				161° 36.0	30.2	163° 11.7	13.7	48.0	11.7	45°	04:18	04:56	05:26	04:57	06:03	07:07		
22 W e d n e s d a y	151° 19.1	136° 44.7	6° 40.6 N	340° 54.5	8° 42.4 N	117° 38.5	12° 28.0 N	303° 06.3	8° 45.5 S	Canopus	263° 56.2	52° 42.5 S	176° 36.1	10° 29.3 S	177° 44.4	13.7	5° 36.3 S	11.7	56.0	S 50°	04:01	04:43	05:18	04:49	05:59	07:08	
	01	166° 21.6	151° 44.6	41.8	355° 57.8	42.8	131° 08.8	28.1	318° 08.8	45.5	Capella	280° 35.6	46° 00.7 S	192° 17.1	13.8	24.6	11.8	55.9	52°	03:52	04:37	05:13	04:46	05:58	07:08		
	02	181° 24.0	166° 44.5	43.1	11° 01.1	43.1	147° 42.6	28.3	333° 11.3	45.4	Deneb	49° 32.5	45° 19.4 N	206° 36.2	27.5	206° 49.9	13.8	12.8	11.7	54°	03:42	04:31	05:09	04:42	05:56	07:08	
	03	196° 26.5	181° 44.4	44.4	26° 04.3	43.5	162° 44.6	28.4	348° 13.8	45.4	Denebola	182° 34.3	14° 30.0 N	221° 36.3	26.6	221° 22.7	13.8	10.1	11.7	56°	03:31	04:23	05:04	04:38	05:54	07:08	
	04	211° 29.0	196° 44.2	45.6	41° 07.6	43.8	177° 46.7	28.6	3° 16.3	45.4	Diphda	348° 57.0	17° 55.3 S	236° 36.4	25.7	235° 55.5	13.9	4° 49.4 S	11.8	58°	03:18	04:15	04:58	04:33	05:52	07:09	
	05	226° 31.4	211° 44.1	46.9	56° 10.9	44.2	192° 48.8	28.7	18° 18.9	45.3				251° 36.5	24.8	250° 28.4	14.0	37.6	11.8	S 60°	03:02	04:05	04:52	04:28	05:49	07:09	
	06	241° 33.9	226° 44.0	48.2	71° 14.1	44.5	207° 50.8	28.9	33° 21.4	45.3	Dubhe	193° 52.1	61° 40.9 N	266° 36.5	23.9	265° 01.4	13.9	25.8	11.8	55.8	S 62°	02:42	03:54	04:45	04:22	05:47	07:09
	07	256° 36.4	241° 43.9	49.5	86° 17.4	44.9	222° 52.9	29.0	48° 23.9	45.3	Elmath	278° 13.6	28° 37.0 N	281° 36.6	23.0	279° 34.3	14.0	14.0	11.8								
	08	271° 38.8	256° 43.7	50.7	101° 20.7	45.3	237° 55.0	29.2	63° 26.4	45.3	Elnath	90° 46.8	51° 29.0 N	296° 36.7	22.1	294° 07.3	14.1	02.2	11.8								
	09	286° 41.3	271° 43.6	52.0	116° 24.0	45.6	252° 57.0	29.3	78° 28.9	45.2	Enif	33° 48.3	9° 55.9 N	311° 36.8	21.2	308° 40.4	14.1	3° 50.4 S	11.8								
	10	301° 43.7	286° 43.5	53.3	131° 27.2	46.0	267° 59.1	29.5	93° 31.5	45.2	Fomalhaut	15° 25.3	29° 33.5 S	326° 36.8	20.3	323° 13.5	14.1	38.6	11.8								
	11	316° 46.2	301° 43.3	54.5	146° 30.5	46.3	283° 01.2	29.6	108° 34.0	45.2				341° 36.9	19.3	341° 36.9	14.1	26.8	11.8	55.7							
	12	331° 48.7	316° 43.2	6° 55.8 N	161° 33.8	8° 46.7 N	298° 03.2	12° 29.7 N	123° 36.5	8° 45.1 S	Gacrux	172° 01.5	57° 10.9 S	356° 37.0	10° 18.4 S	352° 19.7	14.2	3° 15.0 S	11.8	55.7	N 72°	16:11	17:25	18:43	16:24	18:16	20:03
	13	346° 51.1	331° 43.1	57.1	176° 37.1	47.0	313° 05.3	29.9	138° 39.0	45.1	Gienah	175° 52.9	17° 36.7 S	11° 37.1	17.5	6° 52.9	14.2	03.2	11.8	68°	16:37	17:36	18:41	16:44	18:21		

2012 February 24, 25, 26 (Fri, Sat, Sun)

GMT	ARIES		VENUS		MARS		JUPITER		SATURN		STARS			SUN		MOON			Lat	Twilight		Sunrise	Moonrise			
											Name	SHA	Dec	GHA	Dec	GHA	v	Dec		d	HP		Nautical	Civil	24	25
24 Thurs day	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	05:32	06:50	08:01	06:44	06:27	06:05
	153° 17.4	136° 38.7	7° 41'.3 N	343° 32.3	8° 59'.6 N	119° 17.4	12° 35'.1 N	320° 07.4	8° 43'.9 S	Acamar	315° 19'.1	40° 15'.6 S	176° 39.9	9° 45'.5 S	156° 29.7	14.9	3° 47'.1 N	11'.4	55.0	N 70°	05:35	06:45	07:49	06:51	06:40	06:29
	01 168° 19.8	151° 38.6	42.6	358° 35.6	9° 00'.0 N	134° 19.4	35.2	320° 09.9	43.9	Acnarnar	335° 27.8	57° 10'.7 S	191° 40.0	44.6	171° 03.6	14.9	58.5	11'.4		68°	05:37	06:41	07:39	06:56	06:52	06:47
	02 183° 22.3	166° 38.5	43.9	13° 38'.9	00.4	149° 21'.5	35.4	335° 12'.4	43.9	Acrux	173° 09.8	63° 10'.0 S	206° 40.1	43.7	185° 37.5	14.9	4° 09'.9 N	11'.4		66°	05:39	06:38	07:30	07:01	07:01	07:02
	03 198° 24.8	181° 38.4	45.1	28° 42'.2	00.7	164° 23'.6	35.5	350° 15'.0	43.8	Adhara	255° 13.0	28° 59'.7 S	221° 40.2	42.8	200° 11'.4	14.9	21.3	11'.4		64°	05:40	06:35	07:23	07:05	07:09	07:15
	04 213° 27.2	196° 38.2	46.4	43° 45'.5	01.1	179° 25'.6	35.7	5° 17'.5	43.8	Aldebaran	290° 50'.4	16° 31'.9 N	236° 40.3	41.8	214° 45.3	14.9	32.7	11'.3	54.9	62°	05:41	06:32	07:17	07:08	07:16	07:25
	05 228° 29.7	211° 38.0	47.6	58° 48'.8	01.4	194° 27'.7	35.8	20° 20'.0	43.8				251° 40.3	40.9	229° 19.2	15.0	44.0	11'.4		60°	05:42	06:30	07:12	07:11	07:22	07:34
	06 243° 32.2	226° 38.0	48.9	73° 52'.1	01.8	209° 29.7	36.0	35° 22'.6	43.7	Alioth	166° 21.0	55° 53'.3 N	266° 40.4	40.0	243° 53.2	14.9	55.4	11'.4		N 58°	05:42	06:27	07:07	07:14	07:27	07:42
	07 258° 34.6	241° 37.9	50.2	88° 55'.5	02.2	224° 31'.8	36.1	50° 25'.1	43.7	Alkaid	152° 59.3	49° 14'.8 N	281° 40.5	39.1	258° 27.1	14.9	5° 06'.6 N	11'.3		56°	05:42	06:25	07:03	07:17	07:32	07:49
	08 273° 37.1	256° 37.7	51.4	103° 58'.8	02.5	239° 33'.8	36.3	65° 27'.6	43.7	Alnair	27° 45.3	46° 54'.1 S	296° 40.6	38.2	273° 01.0	15.0	17.9	11'.2		54°	05:43	06:23	06:59	07:19	07:36	07:55
	09 288° 39.6	271° 37.6	52.7	119° 02'.1	02.9	254° 35'.9	36.4	80° 30'.1	43.6	Alnilam	275° 47.2	1° 11'.9 S	311° 40.7	37.2	287° 35.0	14.9	29.1	11'.2		52°	05:43	06:22	06:56	07:21	07:40	08:01
	10 303° 42.0	286° 37.5	53.9	134° 05'.4	03.3	269° 37.9	36.6	95° 32'.7	43.6	Alphard	217° 56.7	8° 43'.0 S	326° 40.8	36.3	302° 08.9	14.9	40.3	11'.2	54.8	50°	05:43	06:20	06:53	07:23	07:43	08:06
	11 318° 44.5	301° 37.4	55.2	149° 08'.7	03.6	284° 40.0	36.7	110° 35'.2	43.6				341° 40.9	35.4	316° 42.8	15.0	51.5	11'.1		45°	05:42	06:16	06:46	07:27	07:51	08:17
	12 333° 46.9	316° 37.2	7° 56'.4 N	164° 12.0	9° 04'.0 N	299° 42.1	12° 36'.9 N	125° 37.7	8° 43'.5 S	Alphecca	126° 11'.7	26° 40'.2 N	356° 41.0	9° 34'.5 S	331° 16.8	14.9	6° 02'.6 N	11'.1	54.8	N 40°	05:42	06:13	06:40	07:30	07:57	08:26
	13 348° 49.4	331° 37.1	57.7	179° 15.3	04.4	314° 44.1	37.0	140° 40.3	43.5	Alpheratz	357° 44.8	29° 09'.5 N	11° 41.1	33.6	345° 50.7	15.0	13.7	11'.1		35°	05:40	06:10	06:35	07:33	08:03	08:34
	14 3° 51.9	346° 37.0	59.0	194° 18.6	04.7	329° 46.2	37.1	155° 42.8	43.4	Altair	62° 09.4	8° 54'.0 N	0° 26'.4	32.6	0° 24.7	14.9	24.8	11'.0		30°	05:39	06:07	06:31	07:36	08:08	08:41
	15 18° 54.3	1° 36.9	8° 00'.2 N	209° 22'.0	05.1	344° 48.2	37.4	170° 45.3	43.4	Ankaa	353° 16.9	42° 14'.5 S	41° 41.2	31.7	14° 58.6	14.9	35.8	11'.0		20°	05:35	06:01	06:23	07:40	08:16	08:54
	16 33° 56.8	16° 36.8	01.5	224° 25'.3	05.4	359° 50.3	37.3	185° 47.8	43.4	Antares	112° 27.4	26° 27'.5 S	56° 41.3	30.8	29° 32.5	14.9	46.8	10'.9		N 10°	05:31	05:55	06:16	07:44	08:24	09:04
	17 48° 59.3	31° 36.6	02.7	239° 28'.6	05.8	14° 52.3	37.6	200° 50.4	43.3				71° 41.4	29.9	44° 06.4	15.0	57.7	11'.0	54.7	0°	05:25	05:49	06:10	07:48	08:31	09:15
	18 64° 01.7	46° 36.5	04.0	254° 31'.9	06.2	29° 54.4	37.7	215° 52.9	43.3	Arcturus	145° 56.4	19° 06'.9 N	86° 41.5	28.9	58° 40.4	14.9	7° 08'.7 N	10'.9		S 10°	05:17	05:42	06:03	07:52	08:38	09:25
	19 79° 04.2	61° 36.4	05.2	269° 35.2	06.5	44° 56.4	37.9	230° 55.4	43.3	Alraia	107° 30.1	69° 02'.6 S	101° 41.6	28.0	73° 14.3	14.9	19.6	10'.8		20°	05:07	05:33	05:56	07:56	08:46	09:36
	20 94° 06.7	76° 36.3	06.5	284° 38'.6	06.9	59° 58'.5	38.0	245° 58'.0	43.2	Avior	234° 17.9	59° 33'.2 S	116° 41.7	27.1	87° 48.2	14.9	30.4	10'.8		30°	04:54	05:23	05:48	08:01	08:55	09:48
	21 109° 09.1	91° 36.1	07.7	299° 41'.9	07.3	75° 00'.5	38.2	261° 00'.5	43.2	Bellatrix	278° 32.9	6° 21'.5 N	131° 41.8	26.2	102° 22.1	14.9	41.2	10'.8		35°	04:46	05:17	05:43	08:03	09:00	09:55
	22 124° 11.6	106° 36.0	09.0	314° 45.2	07.6	271° 02'.1	38.3	276° 03'.0	43.2	Betelgeuse	271° 02'.1	7° 24'.4 N	146° 41.9	25.2	116° 56.0	14.9	52.0	10'.7		40°	04:36	05:09	05:37	08:07	09:05	10:04
23 139° 14.0	121° 35.9	10.2	329° 48'.5	08.0	105° 04'.6	38.5	291° 05'.6	43.1				161° 42.0	24.3	131° 29.9	14.9	8° 02'.7 N	10.7	54.6	45°	04:23	05:00	05:31	08:10	09:12	10:14	
25 Fri day	154° 16.5	136° 35.8	8° 11'.5 N	344° 51.8	9° 08'.4 N	120° 06.7	12° 38'.6 N	306° 08.1	8° 43'.1 S	Canopus	263° 56.3	52° 42'.5 S	176° 42.1	9° 23'.4 S	146° 03.8	14.9	8° 13'.4 N	10.7	54.6	S 50°	04:07	04:49	05:23	08:15	09:20	10:21
	01 169° 19.0	151° 35.7	12.7	359° 55.2	08.7	151° 08.7	38.8	321° 10.6	43.1	Capella	280° 35.7	46° 00'.7 N	191° 42.1	22.5	160° 37.7	14.8	24.1	10.6		52°	03:50	04:43	05:19	08:17	09:24	10:35
	02 184° 21.4	166° 35.5	14.0	14° 58'.5	09.1	150° 10.8	38.9	336° 13.2	43.0	Deneb	49° 32.5	45° 19'.4 N	206° 42.2	21.5	175° 11.5	14.9	34.7	10.6		54°	03:50	04:37	05:15	08:19	09:28	10:37
	03 199° 23.9	181° 35.4	15.3	30° 01'.8	09.4	165° 12.8	39.1	351° 15.7	43.0	Denebola	182° 34.3	14° 30'.0 N	221° 42.3	20.6	189° 45.4	14.8	45.3	10.4		56°	03:50	04:31	05:11	08:21	09:33	10:44
	04 214° 26.4	196° 35.3	16.5	45° 05'.1	09.8	180° 14.9	39.2	6° 18'.2	43.0	Diphda	348° 57.0	17° 55'.3 S	236° 42.4	19.7	204° 19.2	14.9	55.8	10.5		58°	03:28	04:23	05:06	08:24	09:38	10:51
	05 229° 28.8	211° 35.2	17.8	60° 08'.5	10.2	195° 16.9	39.4	21° 20'.7	42.9				251° 42.5	18.8	218° 53.1	14.8	9° 06'.3 N	10.4		S 60°	03:13	04:14	05:00	08:27	09:44	11:00
	06 244° 31.3	226° 35.1	19.0	75° 11'.8	10.5	210° 19.0	39.5	36° 23'.3	42.9	Dubhe	193° 52.1	61° 40'.9 N	266° 42.6	17.8	233° 26.9	14.8	16.7	10.4		S 62°	02:56	04:04	04:54	08:31	09:51	11:10
	07 259° 33.8	241° 34.9	20.3	90° 15'.1	10.9	225° 21'.0	39.7	51° 25'.8	42.8	Elnath	278° 13.6	28° 37'.0 N	281° 42.7	16.9	248° 00.7	14.8	27.1	10.4	54.5							
	08 274° 36.2	256° 34.8	21.5	105° 18'.4	11.3	240° 23.1	39.8	66° 28'.3	42.8	Elainin	90° 46.8	51° 29'.0 N	296° 42.8	16.0	262° 34.5	14.8	37.5	10.3								
	09 289° 38.7	271° 34.7	22.8	120° 21'.8	11.6	255° 25'.1	40.0	81° 30'.9	42.8	Enif	33° 48.3	9° 55'.9 N	311° 42.9	15.1	277° 08.3	14.8	47.8	10.3								
	10 304° 41.2	286° 34.6	24.0	135° 25'.1	12.0	270° 27.2	40.1	96° 33'.4	42.7	Fomalhaut	15° 25.3	29° 33'.5 S	326° 43.0	14.1	291° 42.1	14.7	58.1	10.2								
	11 319° 43.6	301° 34.4	25.3	150° 28'.4	12.4	285° 29.2	40.3	111° 35.9	42.7				341° 43.1	13.2	306° 15.8	14.8	10° 08'.3 N	10.1								
	12 334° 46.1	316° 34.3	8° 26'.5 N	165° 31'.8	9° 12'.7 N	300° 31.3	12° 40'.4 N	126° 38'.5	8° 42'.7 S	Gacrux	172° 01'.5	57° 10'.9 S	356° 43.2	9° 12'.3 S	320° 49.6	14.7	10° 18'.4 N	10.2	54.5	N 70°	16:39	17:43	18:54	21:39	23:21	25:08
	13 349° 48.5	331° 34.2	27.8	180° 35'.1	13.1	315° 33.3	40.6	141° 41'.0	42.6	Gienah	175° 52.9	17° 36'.7 S	11° 43.3	11.3	335° 23.3	14.7	28.6	10.0		68°	16:49	17:47	18:51	21:29	23:03	24:40
	14 4° 51.0	3																								

2012 March 1, 2, 3 (Thu, Fri, Sat)

GMT	ARIES			VENUS -4.2			MARS -1.2			JUPITER -2.2			SATURN +0.5			STARS			SUN		MOON					Twilight		Sunrise			Moonrise		
	GHA	GHA	Dec	GHA	Dec	9° 52' N	GHA	Dec	9° 52' N	GHA	Dec	8° 38' S	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	05:03	06:21	07:29	1	2	3	1	2	3	
Wednesday	00	159° 12.2	136° 21' 6	10° 39.3 N	351° 34' 6	9° 52' N	124° 11' 5	12° 57.0 N	311° 13' 0	8° 38' 4 S	326° 15.5	38.4	Acamar	315° 19' 2	40° 15' 6 S	176° 55.0	7° 30.8 S	90° 37.9	11.1	21° 54.8 N	1.7	54.6	N 70°	05:09	06:19	07:21	-	-	-	-	-	-	
	01	174° 14.7	151° 21' 4	40.6	6° 38' 0	57.1	139° 13' 5	57.1	191° 55.1	57° 10' 7 S	326° 15.5	38.4	Acnarnar	335° 27.8	57° 10' 7 S	191° 55.1	29.8	105° 08' 0	11.1	56.5	1.6	54.7	68°	05:13	06:18	07:14	06:24	07:31	09:25				
	02	189° 17.1	166° 21' 3	41.8	21° 41' 4	52.9	154° 15' 5	57.3	341° 18' 1	38.4	346° 20.6	38.3	Acru	173° 09.7	63° 10' 0 S	206° 55.2	28.9	119° 38' 1	11.1	58.1	1.4	64°	05:17	06:16	07:08	07:53	08:48	10:09					
	03	204° 19.6	181° 21' 2	43.0	36° 44' 8	53.3	169° 17' 6	57.4	356° 20' 6	38.3	356° 20.6	38.3	Adhara	255° 13.0	28° 59' 7 S	221° 55.3	27.9	134° 08' 2	11.1	59.5	1.4	66°	05:20	06:15	07:03	08:31	09:25	10:39					
	04	219° 22.1	196° 21' 1	44.2	51° 48' 2	53.7	184° 19' 6	57.6	11° 23' 2	38.3	26° 25' 7	38.2	Aldebaran	290° 50' 4	16° 31' 9 N	236° 55.4	27.0	148° 38' 3	11.0	22° 00' 9 N	1.2	62°	05:23	06:14	06:58	08:58	09:51	11:01					
	05	234° 24.5	211° 21' 0	45.4	66° 51' 6	54.0	199° 21' 6	57.7	26° 25' 7	38.2	26° 25' 7	38.2		251° 55' 6	26.0	163° 08' 3	11.0	02.1	1.2	60°	05:25	06:13	06:55	09:18	10:12	11:19							
	06	249° 27.0	226° 20' 9	46.6	81° 55' 0	54.4	214° 23' 6	57.9	41° 28' 3	38.2	41° 28' 3	38.2	Alioth	166° 20' 9	55° 53' 3 N	266° 55.7	25.1	177° 38' 3	10.9	03.3	1.0	54.8	N 58°	05:27	06:12	06:51	09:35	10:29	11:34				
	07	264° 29.5	241° 20' 8	47.8	96° 58' 3	54.7	229° 25' 7	58.1	56° 30' 8	38.2	56° 30' 8	38.2	Alkaid	152° 59' 2	49° 14' 8 N	281° 55.8	24.1	192° 08' 2	10.9	04.3	1.0	56°	05:28	06:11	06:48	09:50	10:43	11:47					
	08	279° 31.9	256° 20' 6	49.0	112° 01' 7	55.1	244° 27' 7	58.2	71° 33' 4	38.1	71° 33' 4	38.1	Alnair	27° 45' 3	46° 54' 0 S	296° 55.9	23.2	206° 38' 1	10.9	05.3	0.8	54°	05:29	06:10	06:45	10:02	10:55	11:58					
	09	294° 34.4	271° 20' 5	50.2	127° 05' 1	55.5	259° 29' 7	58.4	86° 35' 9	38.1	86° 35' 9	38.1	Alnilam	275° 47' 2	1° 11' 9 S	311° 56.1	22.2	221° 08' 0	10.9	06.1	0.7	52°	05:30	06:09	06:43	10:13	11:06	12:08					
	10	309° 36.8	286° 20' 4	51.4	142° 08' 5	55.8	274° 31' 8	58.5	101° 38' 5	38.0	101° 38' 5	38.0	Alphard	217° 56' 7	8° 43' 0 S	326° 56.2	21.3	235° 37.9	10.8	06.8	0.7	50°	05:31	06:08	06:41	10:23	11:16	12:16					
	11	324° 39.3	301° 20' 3	52.6	157° 11' 9	56.2	289° 33' 8	58.7	316° 41' 0	38.0	316° 41' 0	38.0		341° 56' 3	20.3	250° 07' 7	10.8	07.5	0.5	54.9	45°	05:32	06:06	06:36	10:44	11:36	12:35						
	12	339° 41' 8	316° 20' 2	10° 53' 8 N	172° 15' 3	9° 56' 6 N	304° 35' 8	12° 58' 8 N	131° 43' 6	8° 37' 9 S	131° 43' 6	8° 37' 9 S	Alphecca	126° 11' 6	26° 40' 2 N	356° 56.4	7° 19.4 S	264° 37.5	10.8	22° 08' 0 N	0.4	54.9	N 40°	05:33	06:04	06:31	11:00	11:52	12:50				
	13	354° 44.2	331° 20' 1	55.0	187° 18' 7	56.9	319° 37' 8	59.0	146° 46' 1	37.9	146° 46' 1	37.9	Alpheratz	357° 44.8	29° 09' 5 N	11° 56' 6	18.4	279° 07.3	10.7	08.4	0.3	35°	05:33	06:02	06:28	11:14	12:06	13:03					
	14	9° 46' 7	346° 20' 0	56.2	202° 22' 1	57.3	334° 39' 9	59.1	161° 48' 7	37.4	161° 48' 7	37.4	Altair	62° 09' 3	8° 54' 0 N	26° 56' 7	17.4	293° 37' 0	10.8	08.7	0.2	30°	05:33	06:01	06:25	11:27	12:18	13:14					
	15	24° 49' 2	1° 19' 8	57.4	217° 25' 4	57.6	349° 41' 9	59.3	176° 51' 2	37.8	176° 51' 2	37.8	Ankaa	353° 16' 9	42° 14' 5 S	41° 56' 8	16.5	308° 06' 8	10.6	08.9	0.0	20°	05:31	05:57	06:19	11:47	12:39	13:33					
	16	39° 51' 6	16° 19' 7	58.6	232° 28' 8	58.0	4° 43' 9	59.5	191° 53' 8	37.8	191° 53' 8	37.8	Antares	112° 27' 3	26° 27' 5 S	56° 56' 9	15.5	322° 36' 4	10.7	08.9	0.0	55.0	N 10°	05:28	05:53	06:14	12:06	12:57	13:49				
	17	54° 54' 1	31° 19' 6	59.9	247° 32' 2	58.4	19° 45' 9	59.6	206° 56' 4	37.7	206° 56' 4	37.7		71° 57' 1	14.6	337° 06' 1	10.6	08.9	0.1	0°	05:24	05:48	06:09	12:23	13:13	14:05							
	18	69° 56' 6	46° 19' 5	11° 01' 1 N	262° 35' 6	58.7	34° 48' 0	59.8	221° 58' 9	37.7	221° 58' 9	37.7	Arcturus	145° 56' 3	19° 06' 9 N	86° 57' 2	13.6	351° 35.7	10.7	08.8	0.3	S 10°	05:18	05:43	06:04	12:40	13:30	14:20					
	19	84° 59' 0	61° 19' 4	02.3	277° 39' 0	59.1	49° 50' 0	59.9	237° 50' 0	37.6	237° 50' 0	37.6	Arctria	107° 30' 0	69° 02' 6 S	101° 57' 3	12.7	6° 05' 4	10.5	08.5	0.3	20°	05:10	05:36	05:58	12:58	13:48	14:37					
	20	100° 01' 5	76° 19' 3	03.5	292° 42' 4	59.5	64° 52' 0	13° 00' 1 N	252° 04' 0	37.6	252° 04' 0	37.6	Avior	234° 17' 9	59° 33' 3 S	116° 57' 4	11.7	20° 34' 9	10.6	08.2	0.5	30°	04:59	05:28	05:52	13:19	14:08	14:55					
	21	115° 04' 0	91° 19' 2	04.7	307° 45' 8	59.8	79° 54' 0	00.2	267° 06' 6	37.6	267° 06' 6	37.6	Bellatrix	278° 32' 9	6° 21' 5 N	131° 57' 6	10.8	35° 04' 5	10.5	07.7	0.6	55.1	35°	04:52	05:22	05:48	13:31	14:20	15:06				
	22	130° 06' 4	106° 19' 0	05.9	322° 49' 2	10° 00' 2 N	94° 56' 1	00.4	282° 07' 1	37.5	282° 07' 1	37.5	Betelgeuse	271° 02' 2	7° 24' 4 N	146° 57' 7	09.8	49° 34' 0	10.6	07.1	0.7	40°	04:43	05:16	05:44	13:46	14:34	15:19					
23	145° 08' 9	121° 18' 9	07.1	337° 52' 6	00.5	109° 58' 1	00.5	297° 11' 7	37.5	297° 11' 7	37.5		161° 57' 8	08.9	64° 03' 6	10.4	06.4	0.8	45°	04:33	05:09	05:39	14:02	14:51	15:34								
Thursday	00	160° 11' 3	136° 18' 8	11° 08' 3 N	352° 56' 0	10° 00' 9 N	125° 00' 1	13° 00' 7 N	312° 14' 2	8° 37' 4 S	327° 16' 8	37.4	Canopus	263° 56' 3	52° 42' 5 S	176° 57' 9	7° 07' 9 S	78° 33' 0	10.5	22° 05' 6 N	0.9	55.1	S 50°	04:19	05:00	05:33	14:23	15:11	15:52				
	01	175° 13' 8	151° 18' 7	09.5	7° 59' 3	01.3	140° 02' 1	00.9	327° 16' 8	37.4	327° 16' 8	37.4	Capella	280° 35' 7	46° 00' 7 N	191° 58' 1	07.0	93° 02' 5	10.5	04.7	1.0	55.2	S 52°	04:12	04:55	05:30	14:33	15:20	16:00				
	02	190° 16' 3	166° 18' 6	10.7	23° 02' 7	01.6	155° 04' 2	01.0	342° 19' 3	37.3	342° 19' 3	37.3	Deneb	49° 32' 5	45° 19' 4 N	206° 58' 2	06.0	107° 32' 0	10.4	03.7	1.2	54°	04:05	04:50	05:27	14:44	15:31	16:10					
	03	205° 18' 7	181° 18' 5	11.9	38° 06' 1	02.0	170° 06' 2	01.2	357° 21' 9	37.3	357° 21' 9	37.3	Denebola	182° 34' 2	14° 30' 0 N	221° 58' 3	05.0	122° 01' 4	10.4	02.5	1.0	56°	03:56	04:45	05:24	14:57	15:43	16:20					
	04	220° 21' 2	196° 18' 4	13.1	53° 09' 5	02.3	185° 08' 2	01.3	12° 24' 4	37.3	12° 24' 4	37.3	Diphda	348° 57' 1	17° 55' 3 S	236° 58' 5	04.1	136° 30' 8	10.4	01.3	1.4	58°	03:46	04:39	05:20	15:12	15:57	16:33					
	05	235° 23' 7	211° 18' 2	14.3	68° 12' 9	02.7	200° 10' 2	01.5	27° 27' 0	37.2	27° 27' 0	37.2		251° 58' 6	03.1	151° 00' 2	10.3	21° 59' 9 N	1.4	55.3	S 60°	03:35	04:31	05:16	15:29	16:14	16:47						
	06	250° 26' 1	226° 18' 1	15.5	83° 16' 3	03.1	215° 12' 3	01.6	42° 29' 6	37.2	42° 29' 6	37.2	Dubhe	193° 52' 1	61° 40' 9 N	266° 58' 7	02.2	165° 29' 5	10.4	58.5	1.6	26°	03:21	04:23	05:11	15:51	16:34	17:04					
	07	265° 28' 6	241° 18' 0	16.6	98° 17' 9	03.4	230° 14' 3	01.8	57° 32' 1	37.1	57° 32' 1	37.1	Elnath	278° 13' 7	28° 37' 0 N	281° 58' 0	01.2	179° 58' 9	10.3	56.9	1.7	S 62°	03:21	04:23	05:11	15:51	16:34	17:04					
	08	280° 31' 1	256° 17' 9	17.8	113° 23' 1	03.8	245° 16' 3	02.0	72° 34' 7	37.1	72° 34' 7	37.1	Elain	90° 46' 7	51° 29' 0 N	296° 59' 0	00.3	194° 28' 2	10.3	55.2	1.8												

2012 March 4, 5, 6 (Sun, Mon, Tue)

GMT	ARIES			VENUS -4.2			MARS -1.2			JUPITER -2.2			SATURN +0.5			STARS			SUN		MOON				Lat		Twilight		Sunrise		Moonrise		
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	04:47	06:06	07:14	-	12:15	14:32					
Sunday	00	162° 09.6	136° 13.4	12° 05.3 N	355° 39.0	10° 18.1 N	126° 37.1	13° 08.3 N	314° 17.0	8° 35.3 S	315° 19.2	40° 15.6 S	177° 04.3	6° 21.9 S	53° 50.7	9.9	19° 14.9 N	6.3	56.6	N 70°	04:55	06:06	07:07	10:36	12:46	14:47							
	01	177° 12.1	151° 13.3	06.5	10° 42.4	18.4	141° 39.1	08.4	329° 19.5	35.3	335° 27.8	57° 10.7 S	180° 04.4	20.9	68° 19.6	10.0	08.6	6.4	68°	05:01	06:06	07:01	11:17	13:08	15:00								
	02	192° 14.6	166° 13.1	07.7	25° 45.8	18.8	156° 41.1	08.6	344° 22.1	35.2	Acruax	173° 09.7	63° 10.0 S	207° 04.6	20.0	82° 48.6	9.9	02.2	6.5	66°	05:06	06:05	06:56	11:45	13:26	15:10							
	03	207° 17.0	181° 13.0	08.9	40° 49.2	19.1	171° 43.1	08.7	359° 24.7	35.2	Adhara	255° 13.0	28° 59.7 S	222° 04.7	19.0	97° 17.5	10.0	18° 55.7 N	6.7	56.7	64°	05:10	06:05	06:52	12:06	13:40	15:18						
	04	222° 19.5	196° 12.9	10.1	55° 52.6	19.5	186° 45.1	08.9	14° 27.2	35.1	Aldebaran	290° 50.4	16° 31.9 N	237° 04.8	18.0	111° 46.5	9.9	49.0	6.7	62°	05:13	06:05	06:49	12:23	13:52	15:25							
	05	237° 21.9	211° 12.8	11.2	70° 56.0	19.9	201° 47.1	09.0	29° 29.8	35.0		252° 05.0	17.1	126° 15.4	9.9	42.3	6.9			60°	05:16	06:04	06:46	12:37	14:02	15:31							
	06	252° 24.4	226° 12.7	12.4	85° 59.4	20.2	216° 49.2	09.2	44° 32.3	35.0	Alioth	166° 20.9	55° 53.3 N	267° 05.1	16.1	140° 44.3	10.0	35.4	6.9	56.8	N 58°	05:18	06:04	06:43	12:49	14:11	15:36						
	07	267° 26.9	241° 12.6	13.6	101° 02.8	20.6	231° 51.2	09.4	59° 34.9	35.0	Alkaid	152° 59.2	49° 14.8 N	282° 05.3	15.1	155° 13.3	9.9	28.5	7.1	56°	05:20	06:03	06:40	12:59	14:18	15:41							
	08	282° 29.3	256° 12.5	14.8	116° 06.2	20.9	246° 53.2	09.5	74° 37.5	34.9	Alnair	27° 45.3	46° 54.0 S	297° 05.4	14.2	169° 42.2	10.0	21.4	7.1	54°	05:22	06:03	06:38	13:08	14:25	15:45							
	09	297° 31.8	271° 12.4	15.9	131° 09.6	21.3	261° 55.2	09.7	89° 40.0	34.9	Alnilam	275° 47.2	1° 11.9 S	312° 05.5	13.2	184° 11.2	9.9	14.3	7.3	56.9	52°	05:24	06:03	06:36	13:17	14:31	15:49						
	10	312° 34.3	286° 12.3	17.1	146° 13.0	21.6	276° 57.2	10.0	104° 42.6	34.8	Alphard	217° 56.7	8° 43.0 S	327° 05.7	12.2	198° 40.1	10.0	07.0	7.4	50°	05:25	06:02	06:34	13:24	14:37	15:53							
	11	327° 36.7	301° 12.1	18.3	161° 16.4	22.0	291° 59.2	10.8	119° 45.2	34.8		302° 05.8	11.3	342° 05.8	11.3	213° 09.1	9.9	17° 59.6 N	7.5	45°	05:27	06:01	06:30	13:39	14:48	16:00							
	12	342° 39.2	316° 12.0	12° 19.5 N	176° 19.8	10° 22.3 N	307° 01.2	13° 10.2 N	134° 47.7	8° 34.7 S	Alphecca	126° 11.6	26° 40.2 N	357° 06.0	6° 10.3 S	227° 38.0	10.0	17° 52.1 N	7.5	57.0	N 40°	05:29	06:00	06:27	13:52	14:58	16:07						
	13	357° 41.7	331° 11.9	20.6	191° 23.2	22.7	322° 03.3	10.3	149° 50.3	34.7	Alpheratz	357° 44.8	29° 09.5 N	12° 06.1	09.3	242° 07.0	9.9	46.6	7.7	35°	05:29	05:59	06:24	14:03	15:06	16:12							
	14	12° 44.1	346° 11.8	21.8	206° 26.6	23.0	337° 05.3	10.5	164° 52.8	34.7	Altair	62° 09.3	8° 54.0 N	27° 06.2	08.4	256° 35.9	10.0	36.9	7.8	57.1	30°	05:30	05:57	06:21	14:12	15:14	16:17						
	15	27° 46.6	1° 11.7	23.0	221° 30.0	23.4	352° 07.3	10.6	179° 55.4	34.6	Ankaa	353° 16.9	42° 14.5 S	42° 06.4	07.4	271° 04.9	10.0	29.1	7.9	20°	05:29	05:54	06:16	14:29	15:26	16:25							
	16	42° 49.0	16° 11.6	24.1	236° 33.4	23.7	7° 09.3	10.8	194° 58.0	34.6	Antares	112° 27.3	26° 27.5 S	57° 06.5	06.5	285° 33.9	9.9	21.2	8.0	N 10°	05:27	05:51	06:12	14:43	15:37	16:32							
	17	57° 51.5	31° 11.5	25.3	251° 36.8	24.1	22° 11.3	10.9	210° 00.5	34.5				72° 06.7	05.5	300° 02.8	10.0	13.2	8.1	57.2	0°	05:23	05:47	06:08	14:56	15:47	16:39						
	18	72° 54.0	46° 11.4	26.5	266° 40.2	24.8	37° 13.3	11.1	225° 03.1	34.5	Arcturus	145° 56.3	19° 06.9 N	87° 06.8	04.5	314° 31.8	10.0	05.1	8.3	S 10°	05:18	05:43	06:04	15:09	15:58	16:45							
	19	87° 56.4	61° 11.3	27.7	281° 43.6	24.8	52° 15.3	11.3	240° 05.7	34.4	Alra	107° 29.9	69° 02.6 S	102° 06.9	03.6	329° 00.8	10.0	16° 56.8 N	8.3	20°	05:11	05:37	05:59	15:23	16:09	16:52							
	20	102° 58.9	76° 11.1	28.8	296° 47.0	25.1	67° 17.4	11.4	255° 08.2	34.4	Avior	234° 17.9	59° 33.3 S	117° 07.1	02.6	343° 29.8	9.9	48.5	8.4	57.3	30°	05:01	05:30	05:54	15:39	16:21	17:00						
	21	118° 01.4	91° 11.0	30.0	311° 50.4	25.5	82° 19.4	11.6	270° 10.8	34.3	Bellatrix	278° 32.9	6° 21.5 N	132° 07.2	01.6	357° 58.7	10.0	40.1	8.5	35°	04:55	05:25	05:51	15:49	16:28	17:05							
	22	133° 03.8	106° 10.9	31.2	326° 53.8	25.8	97° 21.4	11.7	285° 13.4	34.3	Betelgeuse	271° 02.2	7° 24.4 N	147° 07.4	00.7	12° 27.7	10.0	31.6	8.6	40°	04:47	05:20	05:47	15:59	16:36	17.10							
23	148° 06.3	121° 10.8	32.3	341° 57.2	26.2	112° 23.4	11.9	300° 15.9	34.2				162° 07.5	5° 59.7 S	26° 56.7	10.0	23.0	8.7	57.4	45°	04:37	05:13	05:43	16:12	16:46	17.16							
Monday	00	163° 08.8	136° 10.7	12° 33.5 N	357° 00.6	10° 26.5 N	127° 25.4	13° 12.1 N	315° 18.5	8° 34.2 S	263° 56.3	52° 42.5 S	177° 07.6	5° 58.7 S	41° 25.7	10.0	16° 14.3 N	8.8	57.4	S 50°	04:25	05:05	05:38	16:27	16:57	17:24							
	01	178° 11.2	151° 10.6	34.7	142° 27.4	12.0	130° 20.1	12.1	130° 20.1	34.1	Canopus	260° 35.7	46° 00.7 N	192° 07.8	57.8	55° 54.7	10.0	05.5	8.9	57.5	52°	04:19	05:01	05:36	16:34	17:02	17.27						
	02	193° 13.7	166° 10.5	35.8	27° 07.4	27.2	157° 29.4	12.4	345° 23.6	34.1	Deneb	49° 32.5	45° 19.3 N	207° 07.9	56.8	70° 23.7	10.0	15° 56.6 N	9.0	54°	04:12	04:57	05:33	16:41	17:08	17.31							
	03	208° 16.2	181° 10.4	37.0	42° 10.8	27.6	172° 31.4	12.5	0° 26.2	34.0	Denebola	182° 34.2	14° 30.0 N	222° 08.1	55.8	84° 52.7	10.1	47.6	9.0	56°	04:04	04:52	05:30	16:50	17:14	17.35							
	04	223° 18.6	196° 10.3	38.2	57° 14.2	27.9	187° 33.4	12.7	15° 28.7	34.0	Diphda	348° 57.1	17° 55.3 S	237° 08.2	54.9	99° 21.8	10.0	38.5	9.2	57.6	58°	03:55	04:46	05:27	17:00	17:21	17.39						
	05	238° 21.1	211° 10.1	39.3	72° 17.6	28.3	202° 35.5	12.9	30° 31.3	34.0				252° 08.4	53.9	113° 50.8	10.0	29.3	9.3	S 60°	03:45	04:40	05:23	17:11	17:29	17.44							
	06	253° 23.5	226° 10.0	40.5	87° 21.0	28.6	217° 37.5	13.0	45° 33.9	33.9	Dubhe	193° 52.1	61° 40.9 N	267° 08.5	52.9	128° 19.8	10.0	20.0	9.4		S 62°	03:32	04:33	05:19	17:24	17:39	17.50						
	07	268° 26.0	241° 09.9	41.7	102° 24.4	29.0	232° 39.5	13.2	60° 36.4	33.9	Elnath	278° 13.7	28° 37.0 N	282° 08.6	52.0	142° 48.8	10.1	10.6	9.5	57.7													
	08	283° 28.5	256° 09.8	42.8	117° 27.8	29.3	247° 41.5	13.3	75° 39.0	33.8	Elainin	90° 46.7	51° 29.0 N	297° 08.8	51.0	157° 17.9	10.0	01.1	9.6														
	09	298° 30.9	271° 09.7	44.0	132° 31.2	29.7	262° 43.5	13.5	90° 41.6	33.8	Enif	33° 48.3	9° 55.9 N	312° 08.9	50.0	171° 46.9	10.0	14° 51.5 N	9.7														
	10	313° 33.4	286° 09.6	45.1	147° 34.7	30.0	277° 45.5	13.7	105° 44.1	33.7	Fomalhaut	15° 25.3	29° 33.4 S	327° 09.1	49.1	186° 15.9	10.1	41.8	9.7	57.8													
	11	328° 35.9	301° 09.5	46.3	162° 38.1	30.4	292° 47.5	13.8	120° 46.7	33.7				342° 09.2	48.1	200° 45.0	10.0	32.1	9.9														
	12	343° 38.3	316° 09.4	12° 47.5 N	177° 41.5	10° 30.7 N	307° 49.5	13° 14.0 N	135° 49.3	8° 33.6 S	Gacrux	172° 01.4	57° 10.9 S	357° 09.4	5° 47.1 S	215° 14.0	10.1	14° 22.2 N	9.9	57.9	N 70°	17:11	18:19	19:30	07:02	06:39	06:25						
	13	358° 40.8	331° 09.3	48.6	192° 44.9	31.1	322° 51.5	14.1	150° 51.8	33.6	Gienah	175° 52.9	17° 36.8 S	12° 09.5	46.2	229° 43.1	10.1	12.3	10.1	68°	17:23	18:19	19:24	06:20	06:16	06:11							
	14	13° 43.3	346° 09.1	49.8	207° 48.3	31.4	337° 53.5	14.3	165° 54.4	33.5</																							

2012 March 10, 11, 12 (Sat, Sun, Mon)

GMT	ARIES			VENUS -4.3			MARS -1.2			JUPITER -2.1			SATURN +0.4			STARS			SUN		MOON				Twilight		Sunrise		Moonrise						
	Lat	Nautical	Civil	10	11	12	Name	SHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	04:15	05:36	06:43	23:26	-	-							
10 S a t u r d a y	00	168° 04'.4	135° 57'.7	14° 49'.9 N	3° 48'.4	11° 06'.7 N	131° 25'.6	13° 31'.4 N	320° 27'.2	8° 28'.3 S	320° 27'.2	8° 28'.3 S	320° 27'.2	8° 28'.3 S	320° 27'.2	8° 28'.3 S	320° 27'.2	8° 28'.3 S	177° 25'.9	4° 01'.9 S	338° 50'.4	8'.3	8° 32'.5 S	12'.9	60'.5	N 72°	04:15	05:36	06:43	23:26	-	-			
	01	183° 06'.9	150° 57'.6	51'.0	146° 27'.6	07'.0	146° 27'.6	31'.5	335° 29'.8	28'.2	335° 29'.8	28'.2	335° 29'.8	28'.2	335° 29'.8	28'.2	335° 29'.8	28'.2	177° 26'.1	00'.9	353° 17'.7	8'.2	45'.4	12'.9	68'.0	N 70°	04:26	05:39	06:39	22:59	-	01:23			
	02	198° 09'.4	165° 57'.5	52'.1	33° 55'.2	07'.3	161° 29'.6	31'.7	350° 32'.4	28'.2	161° 29'.6	31'.7	350° 32'.4	28'.2	161° 29'.6	31'.7	350° 32'.4	28'.2	207° 26'.3	3° 59'.9 S	7° 44'.9	8'.3	58'.3	12'.8	66°.4	N 66°	04:43	05:43	06:34	22:22	-	00:15			
	03	213° 11'.8	180° 57'.4	53'.2	48° 58'.6	07'.6	176° 31'.6	31'.9	5° 34'.9	28'.1	176° 31'.6	31'.9	5° 34'.9	28'.1	176° 31'.6	31'.9	5° 34'.9	28'.1	222° 26'.4	59'.0	22° 12'.2	8'.1	9° 11'.1 S	12'.7	64°.0	N 64°	04:49	05:44	06:31	22:09	23:54	25:34			
	04	228° 14'.3	195° 57'.3	54'.3	64° 02'.0	08'.0	191° 33'.6	32'.0	20° 37'.5	28'.0	191° 33'.6	32'.0	20° 37'.5	28'.0	191° 33'.6	32'.0	20° 37'.5	28'.0	237° 26'.6	58'.0	36° 39'.3	8'.2	23'.8	12'.7	62°.0	N 62°	04:54	05:45	06:29	21:58	23:38	25:11			
	05	243° 16'.8	210° 57'.2	55'.4	79° 05'.3	08'.3	206° 35'.6	32'.2	35° 40'.1	28'.0	206° 35'.6	32'.2	35° 40'.1	28'.0	206° 35'.6	32'.2	35° 40'.1	28'.0	252° 26'.7	57'.0	51° 06'.5	8'.0	36'.5	12'.6	60°.0	N 60°	04:58	05:46	06:28	21:49	23:24	24:53			
	06	258° 19'.2	225° 57'.1	56'.5	94° 08'.7	08'.6	221° 37'.5	32'.4	50° 42'.7	27'.9	221° 37'.5	32'.4	50° 42'.7	27'.9	221° 37'.5	32'.4	50° 42'.7	27'.9	267° 26'.9	56'.0	65° 33'.5	8'.1	49'.1	12'.6	58°.0	N 58°	05:02	05:47	06:26	21:40	23:12	24:38			
	07	273° 21'.7	240° 57'.0	57'.6	109° 12'.1	08'.9	236° 39'.5	32'.5	65° 45'.3	27'.9	236° 39'.5	32'.5	65° 45'.3	27'.9	236° 39'.5	32'.5	65° 45'.3	27'.9	282° 27'.1	55'.0	80° 00'.6	8'.0	10° 01'.7 S	12'.5	56°.0	N 56°	05:05	05:48	06:25	21:33	23:02	24:25			
	08	288° 24'.2	255° 56'.9	58'.7	124° 15'.5	09'.2	251° 41'.5	32'.7	80° 47'.8	27'.8	251° 41'.5	32'.7	80° 47'.8	27'.8	251° 41'.5	32'.7	80° 47'.8	27'.8	297° 27'.2	54'.1	94° 27'.6	7'.9	14'.2	12'.4	54°.0	N 54°	05:08	05:49	06:24	21:27	22:53	24:13			
	09	303° 26'.6	270° 56'.8	59'.8	139° 18'.9	09'.5	266° 43'.5	32'.8	95° 50'.4	27'.8	266° 43'.5	32'.8	95° 50'.4	27'.8	266° 43'.5	32'.8	95° 50'.4	27'.8	312° 27'.4	53'.1	108° 54'.5	7'.9	26'.6	12'.4	52°.0	N 52°	05:10	05:49	06:23	21:21	22:45	24:03			
	10	318° 29'.1	285° 56'.6	15° 00'.9 N	154° 22'.3	09'.8	281° 45'.5	33'.0	110° 53'.0	27'.7	281° 45'.5	33'.0	110° 53'.0	27'.7	281° 45'.5	33'.0	110° 53'.0	27'.7	327° 27'.6	52'.1	123° 21'.4	7'.9	39'.0	12'.3	50°.0	N 50°	05:12	05:49	06:22	21:16	22:37	23:54			
	11	333° 31'.6	300° 56'.5	02'.0	169° 25'.7	10'.2	296° 47'.5	32'.2	125° 56'.6	27'.7	296° 47'.5	32'.2	125° 56'.6	27'.7	296° 47'.5	32'.2	125° 56'.6	27'.7	342° 27'.7	51'.1	137° 48'.3	7'.8	51'.3	12'.2	45°.0	N 45°	05:16	05:50	06:19	21:05	22:22	23:36			
	12	348° 34'.0	315° 56'.4	15° 03'.1 N	184° 29'.0	11° 10'.5 N	311° 49'.5	13° 33'.3 N	140° 58'.2	8° 27'.6 S	311° 49'.5	13° 33'.3 N	140° 58'.2	8° 27'.6 S	311° 49'.5	13° 33'.3 N	140° 58'.2	8° 27'.6 S	357° 27'.9	3° 50'.1 S	152° 15'.1	7'.8	11° 03'.5 S	12'.2	60'.5	N 40°	05:19	05:51	06:17	20:56	22:09	23:20			
	13	3° 36'.5	330° 56'.3	04'.2	199° 32'.4	10'.8	326° 51'.5	33'.5	156° 00'.8	27'.6	326° 51'.5	33'.5	156° 00'.8	27'.6	326° 51'.5	33'.5	156° 00'.8	27'.6	12° 28'.0	49'.1	166° 41'.9	7'.7	15'.7	12'.1	35°.0	S 35°	05:21	05:51	06:16	20:48	21:59	23:06			
	14	18° 38'.9	345° 56'.2	05'.3	214° 35'.8	11'.1	341° 53'.5	35'.3	171° 03'.3	27'.5	341° 53'.5	35'.3	171° 03'.3	27'.5	341° 53'.5	35'.3	171° 03'.3	27'.5	27° 28'.2	48'.2	181° 08'.6	27'.7	8° 54'.0 N	30°.0	30°.0	S 30°	05:23	05:50	06:14	20:41	21:49	22:58			
	15	33° 41'.4	0° 56'.1	06'.4	229° 39'.2	11'.4	356° 55'.5	33'.8	186° 05'.9	27'.5	356° 55'.5	33'.8	186° 05'.9	27'.5	356° 55'.5	33'.8	186° 05'.9	27'.5	42° 28'.4	47'.2	195° 35'.3	7'.6	39'.8	11'.9	20°.0	S 20°	05:24	05:50	06:12	20:30	21:33	22:37			
	16	48° 43'.9	15° 56'.0	07'.5	244° 42'.6	11'.7	11° 57'.4	34'.0	201° 08'.5	27'.4	11° 57'.4	34'.0	201° 08'.5	27'.4	11° 57'.4	34'.0	201° 08'.5	27'.4	57° 28'.5	46'.2	210° 01'.9	7'.6	51'.7	11'.9	N 10°	05:24	05:48	06:09	20:19	21:20	22:21				
	17	63° 46'.3	30° 55'.9	08'.6	259° 45'.9	12'.0	26° 59'.4	34'.1	216° 11'.1	27'.4	26° 59'.4	34'.1	216° 11'.1	27'.4	26° 59'.4	34'.1	216° 11'.1	27'.4	72° 28'.7	45'.2	224° 28'.5	7'.5	12° 03'.6 S	11'.7	0°.0	S 0°	05:22	05:46	06:07	20:10	21:07	22:05			
	18	78° 48'.8	45° 55'.8	09'.7	274° 49'.3	12'.3	42° 01'.4	34'.3	231° 13'.7	27'.3	42° 01'.4	34'.3	231° 13'.7	27'.3	42° 01'.4	34'.3	231° 13'.7	27'.3	Arcturus	145° 56'.3	19° 06'.9 N	87° 28'.9	44'.2	238° 55'.0	7'.5	15'.3	11'.7	S 10°	05:19	05:43	06:04	20:00	20:54	21:50	
	19	93° 51'.3	60° 55'.7	10'.8	289° 52'.7	12'.7	57° 03'.4	34'.5	246° 16'.3	27'.3	289° 52'.7	12'.7	57° 03'.4	34'.5	289° 52'.7	12'.7	57° 03'.4	34'.5	102° 29'.0	43'.3	253° 21'.5	7'.4	27.0	11'.6	20°.0	S 20°	05:13	05:39	06:01	19:50	20:40	21:33			
	20	108° 53'.7	75° 55'.6	11'.9	304° 56'.1	13'.0	72° 05'.4	34'.6	261° 18'.8	27'.2	304° 56'.1	13'.0	72° 05'.4	34'.6	304° 56'.1	13'.0	72° 05'.4	34'.6	Avior	234° 18'.0	59° 33'.3 S	117° 29'.2	42'.3	267° 47'.9	7'.4	38'.6	11'.6	30°.0	S 30°	05:06	05:34	05:58	19:39	20:25	21:15
	21	123° 56'.2	90° 55'.5	13'.0	319° 59'.5	13'.3	87° 07'.4	34'.8	276° 21'.4	27'.2	319° 59'.5	13'.3	87° 07'.4	34'.8	319° 59'.5	13'.3	87° 07'.4	34'.8	Bellatrix	278° 32'.9	6° 21'.5 N	132° 29'.4	41'.3	282° 14'.3	7'.4	50'.2	11'.4	35°.0	S 35°	05:01	05:31	05:56	19:33	20:16	21:04
	22	138° 58'.7	105° 55'.4	14'.1	335° 02'.9	13'.6	102° 09'.4	34'.0	291° 24'.0	27'.1	335° 02'.9	13'.6	102° 09'.4	34'.0	335° 02'.9	13'.6	102° 09'.4	34'.0	Betelgeuse	271° 02'.2	7° 24'.4 N	147° 29'.4	40'.3	296° 40'.7	7'.3	13° 01'.6 S	11'.4	40°.0	S 40°	04:54	05:26	05:54	19:25	20:06	20:52
23	154° 01'.1	120° 55'.3	15'.1	350° 06'.2	13'.9	117° 11'.4	35'.1	306° 26'.6	27'.0	350° 06'.2	13'.9	117° 11'.4	35'.1	306° 26'.6	27'.0	350° 06'.2	13'.9	162° 29'.7	39'.3	311° 07'.0	7'.2	13'.0	11'.3	45°.0	S 45°	04:46	05:21	05:51	19:17	19:54	20:37				
11 S u n d a y	00	169° 03'.6	135° 55'.2	15° 16'.2 N	5° 09'.6	11° 14'.2 N	132° 13'.4	13° 35'.3 N	321° 29'.2	8° 27'.0 S	321° 29'.2	8° 27'.0 S	321° 29'.2	8° 27'.0 S	321° 29'.2	8° 27'.0 S	321° 29'.2	321° 29'.2	3° 38'.4 S	325° 33'.2	7'.2	13° 24'.3 S	11'.1	60'.5	S 50°	04:36	05:15	05:48	19:07	19:40	20:19				
	01	184° 06'.0	150° 55'.1	17'.3	20° 13'.0	14'.5	147° 15'.3	35'.8	336° 31'.8	26'.9	147° 15'.3	35'.8	336° 31'.8	26'.9	147° 15'.3	35'.8	336° 31'.8	26'.9	192° 30'.0	37'.4	339° 59'.4	7'.2	35'.4	11'.1	57°.0	S 57°	04:31	05:12	05:46	19:02	19:33	20:11			
	02	199° 08'.5	165° 55'.0	18'.4	35° 16'.4	14'.8	162° 17'.3	35'.6	351° 34'.3	26'.9	162° 17'.3	35'.6	351° 34'.3	26'.9	162° 17'.3	35'.6	351° 34'.3	26'.9	207° 30'.2	36'.4	354° 25'.6	7'.1	46'.5	11'.0	54°.0	S 54°	04:25	05:09	05:45	18:57	19:26	20:02			
	03	214° 11'.0	180° 54'.9	19'.5	50° 19'.7	15'.1	177° 19'.3	35'.8	6° 36'.9	26'.8	177° 19'.3	35'.8	6° 36'.9	26'.8	177° 19'.3	35'.8	6° 36'.9	26'.8	Deneb	49° 32'.4	45° 19'.3 N	207° 30'.2	36'.4	354° 25'.6	7'.1	46'.5	11'.0	56°.0	S 56°	04:19	05:05	05:43	18:51	19:17	19:51
	04	229° 13'.4	195° 54'.8	20'.6	65° 23'.1	15'.4	192° 21'.3	35'.9	21° 39'.5	26'.8	192° 21'.3	35'.9	21° 39'.5	26'.8	192° 21'.3	35'.9	21° 39'.5	26'.8	Denebola	182° 34'.2	14° 30'.0 N	222° 30'.4	35'.4	8° 51'.7	7'.1	57'.5	10'.9	60'.4	S 60°	04:12	05:01	05:41	18:45	19:08	19:39
	05	244° 15'.9	210° 54'.7	21'.7	80° 26'.5	15'.7	207° 23'.3	36'.1	36° 42'.1	26'.7	207° 23'.3	36'.1	36° 42'.1	26'.7	207° 23'.3	36'.1	36° 42'.1	26'.7	Diphda	348° 57'.1	17° 55'.3 S	237° 30'.5	34'.4	23° 17'.8	7'.0	14° 08'.4 S	10'.9	58°.0	S 58°	04:12	05:01	05:41	18:45	19:08	19:39
	06																																		

2012 March 13, 14, 15 (Tue, Wed, Thu)

GMT	ARIES			VENUS -4.3			MARS -1.1			JUPITER -2.1			SATURN +0.4			STARS			SUN		MOON					Twilight		Sunrise		Moonrise			
	Lat	Nautical	Civil	13	14	15	Name	SHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	03:57	05:20	06:27	-	-	-						
Monday	00	171° 01.9	135° 50.3	16° 07.9 N	7° 51.3	11° 28.6 N	133° 48.6	13° 43.2 N	323° 33.4	8° 24.4 S	323° 33.4	8° 24.4 S	323° 33.4	8° 24.4 S	323° 33.4	8° 24.4 S	177° 37.9	2° 51.1 S	297° 44.5	5.5	20° 16.4 S	5.4	59.8	N 70°	04:11	05:25	06:25	-	-	-			
	01	186° 04.3	150° 50.2	09.0	22° 54.7	28.9	148° 50.6	43.3	338° 35.9	24.3	338° 35.9	24.3	338° 35.9	24.3	338° 35.9	24.3	192° 38.1	5° 10.6 S	312° 09.0	5.4	21° 5.4 S	5.4	68°	60°	04:22	05:28	06:24	02:53	-	05:51			
	02	201° 06.8	165° 50.1	10.0	37° 58.0	29.2	163° 52.6	43.5	353° 38.5	24.3	353° 38.5	24.3	353° 38.5	24.3	353° 38.5	24.3	207° 38.4	49.2	326° 33.4	5.5	27.2	5.1	59.7	66°	04:30	05:31	06:22	02:05	03:36	04:32			
	03	216° 09.3	180° 50.0	11.1	53° 01.4	29.5	178° 54.5	43.7	378° 54.5	24.2	378° 54.5	24.2	378° 54.5	24.2	378° 54.5	24.2	222° 38.4	48.2	340° 57.9	5.4	32.3	5.1	64°	64°	04:37	05:34	06:21	01:34	02:57	03:54			
	04	231° 11.7	195° 49.9	12.2	68° 04.7	29.8	193° 56.5	43.8	393° 56.5	24.2	393° 56.5	24.2	393° 56.5	24.2	393° 56.5	24.2	237° 38.6	47.2	355° 22.3	5.4	37.4	4.8	62°	62°	04:43	05:36	06:20	01:11	02:30	03:28			
	05	246° 14.2	210° 49.8	13.2	83° 08.1	30.0	208° 58.5	44.0	38° 46.3	24.1	38° 46.3	24.1	38° 46.3	24.1	38° 46.3	24.1	252° 38.8	46.2	9° 46.7	5.5	42.2	4.8	60°	60°	04:49	05:37	06:19	00:53	02:09	03:07			
	06	261° 16.6	225° 49.7	14.3	98° 11.5	30.3	224° 00.5	44.2	53° 48.9	24.1	53° 48.9	24.1	53° 48.9	24.1	53° 48.9	24.1	267° 39.0	45.2	24° 11.2	5.4	47.0	4.6	58°	N 58°	04:53	05:39	06:18	00:38	01:52	02:50			
	07	276° 19.1	240° 49.6	15.3	113° 14.8	30.6	239° 02.5	44.3	68° 51.5	24.0	68° 51.5	24.0	68° 51.5	24.0	68° 51.5	24.0	282° 39.1	44.2	38° 35.6	5.4	51.6	4.5	59.6	N 56°	04:57	05:40	06:17	00:25	01:37	02:36			
	08	291° 21.6	255° 49.5	16.4	128° 18.2	30.9	254° 04.4	44.5	83° 54.1	24.0	83° 54.1	24.0	83° 54.1	24.0	83° 54.1	24.0	297° 39.3	43.3	53° 00.0	5.4	56.1	4.3	54°	54°	05:00	05:41	06:16	00:13	01:25	02:23			
	09	306° 24.0	270° 49.4	17.4	143° 21.5	31.2	269° 06.4	44.7	98° 56.7	23.9	98° 56.7	23.9	98° 56.7	23.9	98° 56.7	23.9	312° 39.5	42.3	67° 24.4	5.4	21° 00.4 S	4.1	52°	52°	05:03	05:42	06:16	00:03	01:14	02:12			
	10	321° 26.5	285° 49.3	18.5	158° 24.9	31.5	284° 08.4	44.8	113° 59.3	23.8	113° 59.3	23.8	113° 59.3	23.8	113° 59.3	23.8	327° 39.6	41.3	81° 48.8	5.3	04.5	4.1	50°	50°	05:05	05:43	06:15	-	01:04	02:02			
	11	336° 29.0	300° 49.2	19.6	173° 28.2	31.8	299° 10.4	45.0	129° 01.9	23.8	129° 01.9	23.8	129° 01.9	23.8	129° 01.9	23.8	342° 39.8	40.3	96° 13.1	5.4	08.6	3.8	59.5	45°	05:11	05:45	06:14	-	00:43	01:42			
	12	351° 31.4	315° 49.1	16° 20.6 N	188° 31.6	11° 32.1 N	314° 12.4	13° 45.1 N	144° 04.4	8° 23.7 S	144° 04.4	8° 23.7 S	144° 04.4	8° 23.7 S	144° 04.4	8° 23.7 S	Alphecca	126° 11.6	26° 40.2 N	357° 40.0	2° 39.3 S	110° 37.5	5.4	21° 12.4 S	3.8	59.5	N 40°	05:14	05:46	06:13	-	00:26	01:25
	13	6° 33.9	330° 49.0	21.7	203° 34.9	32.3	329° 14.3	45.3	159° 07.0	23.7	159° 07.0	23.7	159° 07.0	23.7	159° 07.0	23.7	Alpheratz	357° 44.8	29° 09.5 N	12° 40.2	38.3	125° 01.9	5.4	16.2	3.6	35°	35°	05:17	05:46	06:12	-	00:12	01:11
	14	21° 36.4	345° 48.9	22.7	218° 38.3	32.6	344° 16.3	45.3	174° 09.6	23.6	174° 09.6	23.6	174° 09.6	23.6	174° 09.6	23.6	Altair	62° 09.3	8° 54.0 N	27° 40.3	37.3	139° 26.3	5.4	19.8	3.4	30°	30°	05:19	05:47	06:11	-	00:00	00:59
	15	36° 38.8	0° 48.8	23.8	233° 41.6	32.9	359° 18.3	45.6	189° 12.2	23.6	189° 12.2	23.6	189° 12.2	23.6	189° 12.2	23.6	Ankaa	353° 17.0	42° 14.4 S	42° 40.5	36.4	153° 50.7	5.4	23.2	3.3	20°	20°	05:21	05:47	06:09	23:39	-	00:38
	16	51° 41.3	15° 48.7	24.8	248° 45.0	33.2	14° 20.3	45.8	204° 14.8	23.5	204° 14.8	23.5	204° 14.8	23.5	204° 14.8	23.5	Antares	112° 27.2	26° 27.5 S	57° 40.7	35.4	168° 15.1	5.3	26.5	3.1	59.4	N 10°	05:22	05:46	06:07	23:21	-	00:20
	17	66° 43.8	30° 48.6	25.9	263° 48.3	33.5	29° 22.3	46.0	219° 17.4	23.5	219° 17.4	23.5	219° 17.4	23.5	219° 17.4	23.5	Arcturus	145° 56.3	19° 06.9 N	87° 41.0	33.4	197° 03.8	5.4	32.6	2.9	18°	18°	05:19	05:43	06:04	22:48	23:46	24:44
	18	81° 46.2	45° 48.5	26.9	278° 51.7	33.8	44° 24.2	46.1	234° 20.0	23.4	234° 20.0	23.4	234° 20.0	23.4	234° 20.0	23.4	Alraia	107° 29.8	69° 02.7 S	102° 41.2	32.4	211° 28.2	5.5	35.5	2.7	20°	20°	05:14	05:40	06:02	22:30	23:28	24:27
	19	96° 48.7	60° 48.4	28.0	293° 55.0	34.0	59° 26.2	46.3	249° 22.6	23.3	249° 22.6	23.3	249° 22.6	23.3	249° 22.6	23.3	Avior	234° 18.0	59° 33.3 S	117° 41.4	31.4	225° 52.7	5.4	38.2	2.6	59.3	30°	05:08	05:36	06:00	22:09	23:07	24:08
	20	111° 51.1	75° 48.3	29.0	308° 58.4	34.3	74° 28.2	46.5	264° 25.2	23.3	264° 25.2	23.3	264° 25.2	23.3	264° 25.2	23.3	Bellatrix	278° 32.9	6° 21.5 N	132° 41.5	30.4	240° 17.1	5.4	40.8	2.4	35°	35°	05:03	05:33	05:58	21:57	22:55	23:56
	21	126° 53.6	90° 48.2	30.1	324° 01.7	34.6	89° 30.2	46.6	279° 27.8	23.2	279° 27.8	23.2	279° 27.8	23.2	279° 27.8	23.2	Betelgeuse	271° 02.2	7° 24.4 N	147° 41.7	29.4	254° 41.5	5.4	43.2	2.3	40°	40°	05:03	05:30	05:57	21:43	22:41	23:43
	22	141° 56.1	105° 48.1	31.1	339° 05.1	34.9	104° 32.1	46.8	123° 01.9	23.8	123° 01.9	23.8	123° 01.9	23.8	123° 01.9	23.8	Canopus	263° 56.4	52° 42.5 S	177° 42.1	2° 27.5 S	283° 30.4	5.5	21° 47.6 S	2.0	59.2	S 50°	04:41	05:20	05:53	21:07	22:04	23:09
23	156° 58.5	120° 48.0	32.2	354° 08.4	35.2	119° 34.1	47.0	309° 33.0	23.1	309° 33.0	23.1	309° 33.0	23.1	309° 33.0	23.1	Capella	280° 35.8	46° 00.7 N	192° 42.2	26.5	297° 54.9	5.5	49.6	1.8	52°	52°	04:37	05:18	05:52	20:58	21:54	23:00	
Tuesday	00	172° 01.0	135° 47.9	16° 33.2 N	9° 11.8	11° 35.5 N	134° 36.1	13° 47.1 N	324° 35.6	8° 23.1 S	324° 35.6	8° 23.1 S	324° 35.6	8° 23.1 S	324° 35.6	8° 23.1 S	177° 42.1	2° 27.5 S	283° 30.4	5.5	21° 47.6 S	2.0	59.2	S 50°	04:41	05:20	05:53	21:07	22:04	23:09			
	01	187° 03.5	150° 47.8	34.3	24° 15.1	37.3	149° 38.1	47.3	339° 38.1	23.0	339° 38.1	23.0	339° 38.1	23.0	339° 38.1	23.0	Deneb	49° 32.4	45° 19.3 N	207° 42.4	25.5	312° 19.4	5.5	51.4	1.7	54°	54°	04:32	05:15	05:50	20:47	21:43	22:49
	02	202° 05.9	165° 47.7	35.3	39° 18.4	36.0	164° 40.0	47.5	354° 40.7	22.9	354° 40.7	22.9	354° 40.7	22.9	354° 40.7	22.9	Denebola	182° 34.2	14° 30.0 N	222° 42.6	24.5	326° 43.9	5.5	53.1	1.5	56°	56°	04:26	05:12	05:49	20:35	21:31	22:38
	03	217° 08.4	180° 47.6	36.4	54° 21.8	36.3	179° 42.0	47.6	9° 43.3	22.9	9° 43.3	22.9	9° 43.3	22.9	9° 43.3	22.9	Diphda	348° 57.1	17° 55.2 S	237° 42.7	23.5	341° 08.4	5.5	54.6	1.4	59.1	58°	04:20	05:08	05:48	20:21	21:17	22:25
	04	232° 10.9	195° 47.5	37.4	69° 25.1	36.6	194° 44.0	47.8	24° 45.9	22.8	24° 45.9	22.8	24° 45.9	22.8	24° 45.9	22.8	Dubhe	193° 52.1	61° 41.0 N	267° 43.1	21.6	9° 57.5	5.6	57.2	1.1	59.0	S 62°	04:12	05:04	05:46	20:05	21:00	22:09
	05	247° 13.3	210° 47.4	38.4	84° 28.5	36.9	209° 46.0	48.0	39° 48.5	22.8	39° 48.5	22.8	39° 48.5	22.8	39° 48.5	22.8	Elnath	278° 13.7	28° 37.0 N	282° 43.3	20.6	24° 22.1	5.6	58.3	1.0	59.0	S 62°	04:03	04:59	05:44	19:45	20:39	21:51
	06	262° 15.8	225° 47.3	39.5	99° 31.8	37.1	224° 48.0	48.1	54° 51.1	22.7	54° 51.1	22.7	54° 51.1	22.7	54° 51.1	22.7	Enif	33° 48.3	9° 55.8 N	312° 43.6	18.6	53° 11.3	5.7	22° 00.1 S	0.7	59.0	Lat	Sunset	Twilight	13	Moonset	14	15
	07	277° 18.3	240° 47.2	40.5	114° 35.2	37.4	239° 49.9	48.3	69° 53.7	22.7	69° 53.7	22																					

2012 March 22, 23, 24 (Thu, Fri, Sat)

GMT	ARIES			VENUS -4.3			MARS -0.9			JUPITER -2.1			SATURN +0.3			STARS			SUN		MOON					Twilight		Sunrise		Moonrise		
	Lat	Nautical	Civil	22	23	24	Name	SHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	02:57	04:32	05:41	05:03	04:47	04:29					
Thurs day	00	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v <td>Dec</td> <td>d <td>HP</td> <td>N 72°</td> <td>02:57</td> <td>04:32</td> <td>05:41</td> <td>05:03</td> <td>04:47</td> <td>04:29</td> </td>	Dec	d <td>HP</td> <td>N 72°</td> <td>02:57</td> <td>04:32</td> <td>05:41</td> <td>05:03</td> <td>04:47</td> <td>04:29</td>	HP	N 72°	02:57	04:32	05:41	05:03	04:47	04:29	
	01	179° 54'.1	135° 30'.7	19° 41'.9 N	19° 40'.5	12° 20'.8 N	140° 53'.0	14° 19'.3 N	332° 55'.5	8° 11'.6 S	332° 55'.5	8° 11'.6 S	332° 55'.5	8° 11'.6 S	Acamar	315° 19'.3	40° 15'.6 S	178° 16'.8	0° 42'.2 N	186° 28'.7	15'.0	2° 23'.5 N	11'.4	54.9	N 70°	03:20	04:42	05:44	05:07	04:58	04:48	
	02	194° 56'.6	150° 30'.7	42'.8	34° 43'.7	21'.0	155° 55'.0	19'.4	347° 58'.2	11'.6	347° 58'.2	11'.6	347° 58'.2	11'.6	Acnarnar	335° 27'.9	57° 10'.6 S	193° 17'.0	43'.2	201° 02'.7	14'.9	34.9	11'.4		N 68°	03:38	04:49	05:46	05:11	05:07	05:03	
	03	209° 59'.0	165° 30'.6	43'.7	49° 46'.9	21'.2	170° 56'.9	19'.6	3° 00'.8	11'.5	170° 56'.9	19'.6	3° 00'.8	11'.5	Acrux	173° 09'.6	63° 10'.1 S	208° 17'.1	44'.2	215° 36'.6	15'.0	46.3	11'.4		N 66°	03:51	04:56	05:48	05:14	05:14	05:16	
	04	225° 01'.5	180° 30'.5	44'.7	64° 50'.0	21'.4	185° 58'.9	19'.6	185° 03'.4	11'.4	185° 58'.9	19'.6	185° 03'.4	11'.4	Adhara	255° 13'.1	28° 59'.7 S	223° 17'.3	45'.2	230° 10'.6	15'.0	57.7	11'.3		N 64°	04:02	05:01	05:49	05:16	05:21	05:26	
	05	240° 04'.0	195° 30'.4	45'.6	79° 53'.2	21'.6	201° 00'.8	19'.9	33° 06'.0	11'.4	201° 00'.8	19'.9	33° 06'.0	11'.4	Aldebaran	290° 50'.5	16° 31'.9 N	238° 17'.5	46'.2	244° 44'.6	15'.0	3° 09'.0 N	11'.4		N 62°	04:11	05:06	05:50	05:18	05:26	05:35	
	06	255° 06'.4	210° 30'.4	46'.5	94° 56'.4	21'.7	216° 02'.8	20'.1	48° 08'.6	11'.3	216° 02'.8	20'.1	48° 08'.6	11'.3				253° 17'.7	47'.2	259° 18'.6	15'.0	20'.4	11'.3	54'.8	N 60°	04:19	05:10	05:52	05:20	05:31	05:43	
	07	270° 08'.9	225° 30'.3	47'.4	109° 59'.6	21'.9	231° 04'.7	20'.3	63° 11'.2	11'.3	231° 04'.7	20'.3	63° 11'.2	11'.3	Alioth	166° 20'.8	55° 53'.4 N	268° 17'.9	48'.2	273° 52'.6	15'.1	31'.7	11'.2		N 58°	04:26	05:13	05:53	05:22	05:35	05:50	
	08	285° 11'.4	240° 30'.2	48'.3	125° 02'.8	22'.1	246° 06'.7	20'.4	78° 13'.8	11'.2	246° 06'.7	20'.4	78° 13'.8	11'.2	Alkaid	152° 59'.1	49° 14'.9 N	283° 18'.1	49'.1	288° 26'.7	15'.0	42.9	11'.3		N 56°	04:32	05:16	05:53	05:24	05:39	05:56	
	09	300° 13'.8	255° 30'.2	49'.2	140° 06'.0	22'.3	261° 08'.6	20'.6	93° 16'.5	11'.1	261° 08'.6	20'.6	93° 16'.5	11'.1	Alnair	27° 45'.2	46° 53'.9 S	298° 18'.3	50'.1	303° 00'.7	15'.0	54.2	11'.3		N 54°	04:37	05:19	05:54	05:25	05:42	06:01	
	10	315° 16'.3	270° 30'.1	50'.1	155° 09'.1	22'.5	276° 10'.6	20'.8	108° 19'.1	11'.1	276° 10'.6	20'.8	108° 19'.1	11'.1	Alnilam	275° 47'.3	1° 11'.9 S	313° 18'.4	51'.1	317° 34'.7	15'.0	4° 05'.5 N	11'.2		N 52°	04:41	05:21	05:55	05:27	05:46	06:06	
	11	330° 18'.7	285° 30'.0	51'.0	170° 12'.3	22'.7	291° 12'.5	20'.9	123° 21'.7	11'.0	291° 12'.5	20'.9	123° 21'.7	11'.0	Alphard	217° 56'.7	8° 43'.0 S	328° 18'.6	52'.1	332° 08'.7	15'.0	16.7	11'.1		N 50°	04:45	05:23	05:56	05:28	05:48	06:11	
	12	345° 21'.2	300° 29'.9	51'.9	185° 15'.5	22'.8	306° 14'.5	21'.1	208° 24'.3	10'.9	306° 14'.5	21'.1	208° 24'.3	10'.9				138° 18'.8	53'.1	346° 42'.7	15'.0	27.9	11'.2		N 45°	04:53	05:28	05:57	05:30	05:55	06:20	
	13	0° 23'.7	315° 29'.9	19° 52'.8 N	200° 18'.7	12° 23'.0 N	321° 16'.4	14° 21'.3 N	153° 26'.9	8° 10'.9 S	321° 16'.4	14° 21'.3 N	153° 26'.9	8° 10'.9 S	Alphecca	126° 11'.5	26° 40'.2 N	358° 19'.0	0° 54'.1 N	1° 16'.7	15'.0	4° 39'.0 N	11'.2	54'.7	N 40°	04:59	05:31	05:58	05:33	06:00	06:28	
	14	15° 26'.1	330° 29'.8	53'.7	215° 21'.9	23'.2	336° 18'.4	21'.4	168° 29'.5	10'.8	336° 18'.4	21'.4	168° 29'.5	10'.8	Alpheratz	357° 44'.8	29° 09'.5 N	13° 19'.2	55'.1	15° 50'.7	15'.1	50.2	11'.1		N 35°	05:04	05:34	05:59	05:35	06:04	06:35	
	15	30° 28'.6	345° 29'.7	54'.6	230° 25'.0	23'.4	345° 29'.7	23'.4	183° 32'.1	10'.8	345° 29'.7	23'.4	183° 32'.1	10'.8	Altair	62° 09'.2	8° 54'.0 N	28° 19'.4	56'.1	30° 24'.8	15'.0	5° 01'.3 N	11'.1		N 30°	05:08	05:36	06:00	05:36	06:08	06:41	
	16	45° 31'.1	0° 29'.6	55'.6	245° 28'.2	23'.6	6° 22'.3	21'.8	198° 34'.8	10'.7	6° 22'.3	21'.8	198° 34'.8	10'.7	Ankaa	353° 16'.9	42° 14'.4 S	43° 19'.6	57'.0	44° 58'.8	15'.0	12.4	11'.1		N 20°	05:14	05:39	06:01	05:39	06:15	06:52	
	17	60° 33'.5	15° 29'.6	56'.5	260° 31'.4	23'.7	21° 24'.2	22'.0	213° 37'.4	10'.6	21° 24'.2	22'.0	213° 37'.4	10'.6	Antares	112° 27'.2	26° 27'.5 S	58° 19'.8	58'.0	59° 32'.8	15'.0	23'.5	11'.1		N 10°	05:17	05:41	06:02	05:42	06:21	07:02	
	18	75° 36'.0	30° 29'.5	57'.4	275° 34'.6	23'.9	36° 26'.2	22'.1	228° 40'.0	10'.6	36° 26'.2	22'.1	228° 40'.0	10'.6				73° 19'.9	59'.0	74° 06'.8	15'.0	34.5	11'.0		N 0°	05:19	05:43	06:03	05:44	06:27	07:11	
	19	90° 38'.5	45° 29'.4	58'.3	290° 37'.7	24'.1	51° 28'.1	22'.3	243° 42'.6	10'.5	51° 28'.1	22'.3	243° 42'.6	10'.5	Arcturus	145° 56'.2	19° 06'.9 N	88° 20'.1	00'.0	88° 40'.8	15'.0	45.5	11'.0		S 10°	05:19	05:43	06:04	05:47	06:33	07:20	
	20	105° 40'.9	60° 29'.4	59'.2	305° 40'.9	24'.3	60° 30'.1	22'.5	258° 45'.2	10'.4	60° 30'.1	22'.5	258° 45'.2	10'.4	Atria	107° 29'.6	69° 02'.7 S	103° 20'.3	1° 01'.0 N	103° 14'.8	15'.0	56.5	10'.9		N 20°	05:17	05:43	06:05	05:50	06:39	07:29	
	21	120° 43'.4	75° 29'.3	20° 00'.1 N	320° 44'.1	24'.5	81° 32'.0	22'.6	273° 47'.8	10'.4	81° 32'.0	22'.6	273° 47'.8	10'.4	Avior	234° 18'.1	59° 33'.3 S	118° 20'.5	02'.0	117° 48'.8	15'.0	6° 07'.4 N	10'.9	54'.6	N 30°	05:14	05:42	06:05	05:53	06:47	07:40	
	22	135° 45'.9	90° 29'.2	01'.0	335° 47'.2	24'.6	96° 34'.0	22'.8	288° 50'.1	10'.3	96° 34'.0	22'.8	288° 50'.1	10'.3	Bellatrix	278° 33'.0	6° 21'.5 N	133° 20'.7	03'.0	132° 22'.8	15'.0	18.3	10'.9		N 35°	05:11	05:41	06:06	05:55	06:51	07:47	
23	150° 48'.3	105° 29'.1	01'.9	350° 50'.4	24'.8	111° 35'.9	22'.0	303° 53'.1	10'.2	111° 35'.9	22'.0	303° 53'.1	10'.2	Betelgeuse	271° 02'.2	7° 24'.4 N	148° 20'.9	03'.9	146° 56'.8	14'.9	29.2	10'.9		N 40°	05:08	05:39	06:06	05:57	06:56	07:54		
24	165° 50'.8	120° 29'.1	02'.8	5° 53'.6	25'.0	126° 37'.9	23'.1	318° 55'.7	10'.2	126° 37'.9	23'.1	318° 55'.7	10'.2				163° 21'.1	04'.9	161° 30'.7	15'.0	40.1	10'.8		N 45°	05:03	05:37	06:07	05:59	07:01	08:03		
Fri day	00	180° 53'.2	135° 29'.0	20° 03'.7 N	20° 56'.7	12° 25'.2 N	141° 39'.8	14° 23'.3 N	333° 58'.3	8° 10'.1 S	333° 58'.3	8° 10'.1 S	333° 58'.3	8° 10'.1 S	Canopus	263° 56'.5	52° 42'.6 S	178° 21'.2	1° 05'.9 N	176° 04'.7	15'.0	6° 50'.9 N	10'.8	54'.6	S 50°	04:57	05:35	06:07	06:02	07:08	08:13	
	01	195° 55'.7	150° 28'.9	04'.5	35° 59'.2	25'.3	156° 41'.8	23'.5	349° 00'.9	10'.1	35° 59'.2	25'.3	349° 00'.9	10'.1	Capella	280° 35'.8	46° 00'.7 N	193° 21'.4	06'.9	190° 38'.7	14'.9	7° 01'.7 N	10'.8		S 52°	04:54	05:34	06:07	06:03	07:11	08:18	
	02	210° 58'.2	165° 28'.9	05'.4	51° 03'.1	25'.5	171° 43'.7	23'.6	4° 03'.5	10'.0	51° 03'.1	25'.5	4° 03'.5	10'.0	Deneb	49° 32'.3	45° 19'.3 N	208° 21'.6	07'.9	205° 12'.6	14'.9	12.5	10'.7		N 56°	04:51	05:32	06:07	06:05	07:14	08:23	
	03	226° 00'.6	180° 28'.8	06'.3	66° 06'.2	25'.7	186° 45'.7	23'.8	19° 06'.2	9'.9	66° 06'.2	25'.7	186° 45'.7	23'.8	Denebola	122° 34'.2	14° 30'.0 N	223° 21'.8	08'.9	219° 46'.5	15'.0	23.0	10'.7	54'.5	N 54°	04:47	05:31	06:08	06:06	07:18	08:29	
	04	241° 03'.1	195° 28'.7	07'.2	81° 09'.4	25'.9	201° 47'.6	24'.0	34° 08'.8	9'.9	81° 09'.4	25'.9	34° 08'.8	9'.9	Diphda	348° 57'.1	17° 55'.2 S	238° 22'.0	09'.9	234° 20'.5	14'.9	33.9	10'.6		N 58°	04:42	05:29	06:08	06:08	07:22	08:36	
	05	256° 05'.6	210° 28'.7	08'.1	96° 12'.5	26'.0	216° 49'.5	24'.2	49° 11'.4	9'.8	96° 12'.5	26'.0	49° 11'.4	9'.8				253° 22'.2	10'.8	248° 54'.4	14'.9	44.5	10'.6		N 50°	04:37	05:27	06:08	06:10	07:27	08:43	
	06	271° 08'.0	225° 28'.6	09'.0	111° 15'.7	26'.2	231° 51'.5	24'.3	64° 14'.0	9'.7	111° 15'.7	26'.2	64° 14'.0	9'.7	Dubhe	193° 52'.1	61° 41'.0 N	268° 22'.4	11'.8	263° 28'.3	14'.9	55.1	10'.6		N 52°	04:31	05:24	06:08	06:13	07:32	08:52	
	07	286° 10'.5	240° 28'.5	09'.9	126° 18'.9	26'.4	246° 53'.4	24'.5	79° 16'.6	9'.7	126° 18'.9	26'.4	79° 16'.6	9'.7	Elnath	278° 13'.8	28° 37'.0 N	283° 22'.6	12'.8													

2012 March 25, 26, 27 (Sun, Mon, Tue)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON			Lat	Twilight		Sunrise	Moonrise		
																										Nautical	Civil		25	26	27
		GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	02:34	04:15	05:25	04:03	02:53	-				
25 00		182° 51'.5	135° 25'.9	20° 45'.8 N	23° 27'.4	12° 33'.0 N	143° 13'.1	14° 31'.4 N	336° 04'.0	8° 07'.0 S	Acamar	315° 19'.3	40° 15'.6 S	178° 30'.2	1° 53'.2 N	154° 56'.1	14'.0	14° 38'.6 N	8'.4	54'.1	N 70°	03:01	04:27	05:30	04:36	04:17	-				
01		197° 54'.0	150° 25'.9	46'.7	38° 30'.5	33'.1	158° 15'.1	31'.6	351° 06'.6	07'.0	Acnarnar	335° 27'.9	57° 10'.6 S	193° 30'.4	54'.1	169° 29'.1	14'.0	47'.0	8'.3		N 70°	03:22	04:36	05:33	05:00	04:57	04:55				
02		212° 56'.4	165° 25'.8	47'.5	53° 33'.6	33'.3	173° 17'.0	31'.8	6° 09'.3	06'.9	Acruz	173° 09'.6	63° 10'.2 S	208° 30'.6	55'.1	184° 02'.1	13'.9	55'.3	8'.3		N 66°	03:37	04:44	05:36	05:18	05:24	05:35				
03		227° 58'.9	180° 25'.7	48'.4	68° 36'.7	33'.4	188° 18'.9	32'.0	21° 11'.9	06'.9	Adhara	255° 13'.1	28° 59'.7 S	223° 30'.8	56'.1	198° 35'.0	13'.9	15° 03'.6 N	8'.2		N 64°	03:50	04:50	05:38	05:34	05:45	06:03				
04		243° 01'.4	195° 25'.7	49'.2	83° 39'.8	33'.5	203° 20'.9	32'.1	36° 14'.5	06'.8	Aldebaran	290° 50'.5	16° 31'.9 N	238° 31'.0	57'.1	213° 07'.9	13'.9	11'.8	8'.2		N 62°	04:00	04:56	05:41	05:46	06:02	06:24				
05		258° 03'.8	210° 25'.6	50'.1	98° 42'.9	33'.7	218° 22'.8	32'.3	51° 17'.1	06'.7				253° 31'.2	58'.1	222° 40'.8	13'.8	20'.0	8'.0		N 60°	04:09	05:00	05:42	05:57	06:16	06:42				
06		273° 06'.3	225° 25'.6	50'.9	113° 46'.0	33'.8	233° 24'.8	32'.5	66° 19'.7	06'.7	Alioth	166° 20'.8	55° 53'.4 N	268° 31'.4	59'.1	247° 13'.6	13'.8	28'.0	8'.0		N 58°	04:17	05:05	05:44	06:07	06:28	06:56				
07		288° 08'.8	240° 25'.5	51'.8	128° 49'.1	34'.0	248° 26'.7	32'.6	81° 22'.4	06'.6	Alkaid	152° 59'.1	49° 14'.9 N	283° 31'.6	2° 00'.0 N	258° 46'.4	13'.8	36'.0	8'.0		N 56°	04:23	05:08	05:46	06:15	06:39	07:09				
08		303° 11'.2	255° 25'.5	52'.6	143° 52'.2	34'.1	263° 28'.6	32'.8	96° 25'.0	06'.5	Alnair	27° 45'.2	46° 53'.9 S	298° 31'.8	01'.0	271° 19'.2	13'.7	44'.0	7'.8		N 54°	04:29	05:11	05:47	06:23	06:48	07:20				
09		318° 13'.7	270° 25'.4	53'.5	158° 55'.3	34'.3	278° 30'.6	33'.0	111° 27'.6	06'.5	Alnilam	275° 47'.3	1° 11'.9 S	313° 31'.9	02'.0	285° 51'.9	13'.8	51'.8	7'.8		N 52°	04:34	05:14	05:48	06:29	06:57	07:30				
10		333° 16'.2	285° 25'.4	54'.4	173° 58'.4	34'.4	293° 32'.5	33'.1	126° 30'.2	06'.4	Alphard	217° 56'.7	8° 43'.0 S	328° 32'.1	03'.0	300° 24'.7	13'.6	59'.6	7'.7		N 50°	04:38	05:17	05:49	06:35	07:04	07:38				
11		348° 18'.6	300° 25'.3	55'.2	189° 01'.5	34'.6	308° 34'.5	33'.3	141° 32'.8	06'.3				343° 32'.3	04'.0	314° 57'.3	13'.7	16° 07'.3 N	7'.7		N 45°	04:47	05:22	05:51	06:48	07:20	07:57				
12		3° 21'.1	315° 25'.2	20° 56'.1 N	204° 04'.6	12° 34'.7 N	323° 36'.4	14° 33'.5 N	156° 35'.5	8° 06'.3 S	Alphecca	126° 11'.5	26° 40'.2 N	358° 32'.5	2° 04'.9 N	329° 30'.0	13'.6	16° 15'.0 N	7'.6	54'.1	N 40°	04:54	05:26	05:53	06:59	07:33	08:12				
13		18° 23'.6	330° 25'.2	56'.9	219° 07'.7	34'.9	338° 38'.3	33'.6	171° 38'.1	06'.2	Alpheratz	357° 44'.8	29° 09'.5 N	13° 32'.7	05'.9	344° 02'.6	13'.6	22'.6	7'.5		N 35°	05:00	05:30	05:55	07:08	07:45	08:25				
14		33° 26'.0	345° 25'.1	57'.8	234° 10'.8	35'.0	353° 40'.3	33'.8	62° 09'.2	06'.1	Altair	62° 09'.2	8° 54'.0 N	28° 32'.9	06'.9	358° 35'.2	13'.5	30'.0	7'.4		N 30°	05:04	05:32	05:56	07:17	07:55	08:36				
15		48° 28'.5	0° 25'.1	58'.6	249° 13'.9	35'.1	8° 42'.2	34'.0	201° 43'.3	06'.1	Ankaa	353° 16'.9	42° 14'.4 S	43° 33'.1	07'.9	13° 07'.7	13'.6	37'.5	7'.4		N 20°	05:11	05:37	05:59	07:31	08:12	08:55				
16		63° 30'.9	15° 25'.0	59'.4	264° 17'.0	35'.3	23° 44'.2	34'.2	216° 46'.0	06'.0	Antares	112° 27'.1	26° 27'.5 S	58° 33'.3	08'.9	27° 40'.3	13'.5	44'.9	7'.3		N 10°	05:15	05:40	06:01	07:43	08:27	09:12				
17		78° 33'.4	30° 25'.0	21° 00'.3 N	279° 20'.1	35'.4	38° 46'.1	34'.3	231° 48'.6	05'.9				73° 33'.4	09'.9	42° 12'.8	13'.4	52'.2	7'.2		0°	05:18	05:42	06:02	07:55	08:41	09:28				
18		93° 35'.9	45° 24'.9	01'.1	294° 23'.2	35'.6	53° 48'.0	34'.5	246° 51'.2	05'.9	Arcturus	145° 56'.2	19° 06'.9 N	88° 33'.6	10'.8	56° 45'.2	13'.4	59'.4	7'.1		S 10°	05:19	05:43	06:04	08:07	08:55	09:43				
19		108° 38'.3	60° 24'.9	02'.0	309° 26'.3	35'.7	60° 50'.2	34'.7	261° 53'.8	05'.8	Arctua	107° 29'.6	69° 02'.7 S	103° 33'.8	11'.8	71° 17'.6	13'.4	17° 06'.5 N	7'.1		N 20°	05:18	05:44	06:06	08:19	09:10	10:00				
20		123° 40'.8	75° 24'.8	02'.8	324° 29'.4	35'.8	83° 51'.9	34'.8	276° 56'.4	05'.7	Avior	234° 18'.1	59° 33'.3 S	118° 34'.0	12'.8	85° 50'.0	13'.4	13'.6	7'.0	54'.0	N 30°	05:16	05:43	06:07	08:34	09:27	10:20				
21		138° 43'.3	90° 24'.8	03'.7	339° 32'.5	36'.0	98° 53'.9	35'.0	291° 59'.1	05'.7	Bellatrix	278° 33'.0	6° 21'.5 N	133° 34'.2	13'.8	100° 22'.4	13'.3	20'.6	6'.9		N 35°	05:14	05:43	06:08	08:42	09:37	10:31				
22		153° 45'.7	105° 24'.7	04'.5	354° 35'.6	36'.1	113° 55'.8	35'.2	307° 01'.7	05'.6	Betelgeuse	271° 02'.3	7° 24'.4 N	148° 34'.4	14'.8	114° 54'.7	13'.3	27'.5	6'.8		N 40°	05:11	05:42	06:09	08:52	09:49	10:44				
23		168° 48'.2	120° 24'.7	05'.4	9° 38'.7	36'.2	128° 57'.7	35'.3	322° 04'.3	05'.6				163° 34'.6	15'.7	129° 27'.0	13'.2	34'.3	6'.8		N 45°	05:07	05:41	06:10	09:03	10:03	11:00				
26 00		183° 50'.7	135° 24'.6	21° 06'.2 N	24° 41'.7	12° 36'.4 N	143° 59'.7	14° 35'.5 N	337° 06'.9	8° 05'.5 S	Canopus	263° 56'.5	52° 42'.6 S	178° 34'.8	2° 16'.7 N	143° 59'.2	13'.3	17° 41'.1 N	6'.7	54'.0	S 50°	05:02	05:40	06:12	09:17	10:19	11:19				
01		198° 53'.1	150° 24'.6	07'.0	159° 01'.6	35'.7	352° 09'.6	35'.5	352° 09'.6	05'.4	Capella	280° 35'.8	46° 00'.6 N	193° 35'.0	17'.7	158° 31'.5	13'.2	47'.8	6'.6		S 52°	04:59	05:39	06:12	09:24	10:27	11:28				
02		213° 55'.6	165° 24'.5	07'.9	54° 47'.9	36'.7	174° 03'.6	35'.9	7° 12'.2	05'.4	Deneb	49° 32'.3	45° 19'.3 N	208° 35'.1	18'.7	173° 03'.7	13'.1	54'.4	6'.5		N 54°	04:56	05:38	06:13	09:31	10:36	11:38				
03		228° 58'.0	180° 24'.5	08'.7	69° 51'.0	36'.8	189° 05'.5	36'.0	22° 14'.8	05'.3	Denebola	182° 34'.2	14° 30'.0 N	223° 35'.3	19'.7	187° 35'.8	13'.1	18° 00'.9 N	6'.4		N 56°	04:53	05:37	06:14	09:39	10:46	11:50				
04		244° 00'.5	195° 24'.4	09'.5	84° 54'.1	36'.9	204° 07'.4	36'.2	37° 17'.4	05'.2	Diphda	348° 57'.1	17° 55'.2 S	238° 35'.5	20'.6	202° 07'.9	13'.1	07'.3	6'.4		N 58°	04:49	05:35	06:15	09:48	10:58	12:03				
05		259° 03'.0	210° 24'.4	10'.4	99° 57'.1	37'.1	219° 09'.4	36'.4	52° 20'.1	05'.2				253° 35'.7	21'.6	216° 40'.0	13'.1	13'.7	6'.3		S 60°	04:45	05:34	06:15	09:58	11:11	12:19				
06		274° 05'.4	225° 24'.3	11'.2	115° 00'.2	37'.2	234° 11'.3	36'.5	67° 22'.7	05'.1	Dubhe	193° 52'.1	61° 41'.0 N	268° 35'.9	22'.6	231° 12'.1	13'.0	20'.0	6'.2		S 62°	04:40	05:32	06:16	10:10	11:27	12:37				
07		289° 07'.9	240° 24'.3	12'.1	130° 03'.3	37'.3	249° 13'.2	36'.7	82° 25'.3	05'.0	Elnath	278° 13'.8	28° 37'.0 N	283° 36'.1	23'.6	245° 44'.1	13'.0	26'.2	6'.1												
08		304° 10'.4	255° 24'.2	12'.9	145° 06'.4	37'.5	264° 15'.2	37'.5	97° 27'.9	05'.0	Elainin	90° 46'.5	51° 29'.0 N	298° 36'.3	24'.6	260° 16'.1	12'.9	32'.3	6'.0												
09		319° 12'.8	270° 24'.2	13'.7	160° 09'.5	37'.6	279° 17'.1	37'.0	112° 30'.5	04'.9	Enif	33° 48'.2	9° 55'.8 N	313° 36'.5	25'.5	274° 48'.0	12'.9	38'.3	6'.0												
10		334° 15'.3	285° 24'.1	14'.6	175° 12'.5	37'.7	294° 19'.1	37'.2	127° 33'.2	04'.8	Fomalhaut	15° 25'.2	29° 33'.4 S	328° 36'.6	26'.5	289° 19'.9	12'.9	44'.3	5'.9												
11		349° 17'.8	300° 24'.1	15'.4	190° 15'.6	37'.8	309° 21'.0	37'.4	142° 35'.8	04'.8				343° 36'.8	27'.5	303° 51'.8	12'.9	50'.2	5'.7												
12		4° 20'.2	315° 24'.0	21° 16'.2 N	205° 18'.7	12° 38'.0 N	324° 22'.9	14° 37'.6 N	157° 38'.4	8° 04'.7 S	Gacrux	172° 01'.3	57° 11'.1 S	358° 37'.0	2° 28'.5 N	318° 23'.7	12'.8	18° 55'.9 N	5'.8	54'.0	N 70°	18:44	19:48	21:14	-	00:29	-				
13		19° 22'.7	330° 24'.0																												

2012 April 6, 7, 8 (Fri, Sat, Sun)

Table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Twilight (Nautical, Civil), Sunrise, Moonrise (6, 7, 8), Moonset (6, 7, 8). Rows include celestial data for days 6, 7, and 8, covering stars, planets, and the moon's position and phases.

Table with columns for GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), and various astronomical data points like Right Ascension, Declination, Magnitude, and Time. Includes a detailed Moon phase table at the bottom right.

2012 April 12, 13, 14 (Thu, Fri, Sat)

Table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, and various astronomical data including coordinates, magnitudes, and twilight times.

2012 Apr 30, May. 1, 2 (Mon, Tue, Wed)

Table with columns for celestial objects (Planets, Stars, Sun, Moon), astronomical data (Right Ascension, Declination, Magnitude, Distance), and twilight/sunrise data. Includes sections for Sunday, Monday, Tuesday, and specific data for Venus, Mars, Jupiter, Saturn, and various stars.

2012 May 12, 13, 14 (Sat, Sun, Mon)

Table with 24 columns: GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN), STARS, SUN, MOON, and sunrise/moonset times. Includes rows for planets and stars, with a large section for star observations.

2012 May 27, 28, 29 (Sun, Mon, Tue)

Table with columns for planet names (ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), GMT, and astronomical data including RA, Dec, Mag, and celestial coordinates.

Main table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Lat, Twilight (Civil, Nautical), Sunrise, Moonrise (30, 1), and Moonset (30, 1). Includes rows for dates 30, 31, and 1, with sub-headers for 'Tuesday', 'Wednesday', and 'Thursday'.

2012 June 2, 3, 4 (Sat, Sun, Mon)

Table with columns for GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN), STARS, SUN, MOON, and astronomical data including lat, twilight, sunrise, moonset, and moon phase. Rows are organized by day of the week and planet/star.

2012 June 5, 6, 7 (Tue, Wed, Thu)

GMT	ARIES			VENUS -3.7			MARS +0.6			JUPITER -2.0			SATURN +0.5			STARS			SUN			MOON					Twilight		Sunrise		Moonrise		
	Lat	Nautical	Civil	Sunrise	5	6	7																										
Monday	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	-	-	-	-	-	01:58							
	253° 49.5	178° 38.1	23° 08.6 N	85° 57.8	6° 17.6 N	197° 25.7	19° 03.3 N	51° 27.5	6° 30.3 S	Acamar	315° 19.3	40° 15.2 S	180° 22.8	22° 33.8 N	352° 10.7	3.2	21° 38.9 S	1.2	60.8	N 70°	-	-	-	-	-	00:41							
	Tuesday	254° 48.6	180° 16.4	22° 50.6 N	86° 34.0	6° 06.3 N	198° 10.6	19° 06.3 N	52° 28.5	6° 29.8 S	Canopus	263° 57.0	52° 42.4 S	180° 20.1	22° 40.1 N	337° 16.9	4.6	20° 26.8 S	4.9	60.3	S 50°	06:33	07:14	07:52	17:28	18:42	19:58						
		255° 36.9	181° 44.2	22° 41.5 N	86° 16.1	5° 57.7 N	197° 59.4	18° 57.7 N	52° 15.6	6° 29.8 S	Capella	280° 36.0	40° 00.5 N	195° 20.0	40.4	351° 40.5	4.6	21° 29.9 S	5.0	60.2	S 52°	06:38	07:21	08:01	17:19	18:34	19:52						
		Wednesday	255° 47.8	181° 54.6	22° 32.4 N	87° 10.0	5° 55.0 N	198° 55.4	19° 09.4 N	53° 29.5	6° 29.3 S	Mirfak	308° 41.8	49° 54.1 N	180° 17.4	22° 46.1 N	323° 07.7	6.8	17° 55.0 S	7.7	59.5	N 40°	19:26	19:59	20:40	05:27	06:35	07:45					
			256° 14.9	182° 21.9	22° 13.0 N	87° 10.0	5° 55.0 N	198° 55.4	19° 09.4 N	53° 29.5	6° 29.3 S	Nunki	75° 58.9	26° 16.7 S	195° 17.3	46.3	337° 33.5	7.0	47.3	7.9	59.4	S 35°	19:12	19:41	20:18	05:41	06:48	07:56					

2012 June 8, 9, 10 (Fri, Sat, Sun)

Main table containing astronomical data for planets (Aries, Venus, Mars, Jupiter, Saturn), stars, sun, moon, twilight, sunrise, moonset, and moon phase. Includes columns for GMT, planet names, coordinates, magnitudes, and times.

Main table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Lat, Twilight (Civil, Nautical), Sunrise, 17, Moonrise (18, 19). Includes data for days 17, 18, and 19.

2012 July 8, 9, 10 (Sun, Mon, Tue)

Table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Lat, Twilight (Nautical, Civil), Sunrise, Moonrise (8, 9, 10). Rows include planetary data for Venus, Mars, Jupiter, Saturn, and various stars like Acamar, Altair, Sirius, and the Moon's position over three days.

2012 July 17, 18, 19 (Tue, Wed, Thu)

Table with columns for GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), and various astronomical data including Right Ascension, Declination, Magnitude, and Time of Day for twilight and sunrise.

2012 July 26, 27, 28 (Thu, Fri, Sat)

Main data table containing astronomical information for various planets (Aries, Venus, Mars, Jupiter, Saturn) and stars, organized by date (GMT) and including details on twilight, sunrise, moonrise, and moonset.

2012 July 29, 30, 31 (Sun, Mon, Tue)

Table with columns for GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN), STARS, SUN, MOON, and Time events (Twilight, Sunrise, Moonrise, Moonset). It lists astronomical data for the days of July 29, 30, and 31, including coordinates, magnitudes, and visibility times.

2012 August 4, 5, 6 (Sat, Sun, Mon)

Main data table with columns for planets (ARIES, VENUS, MARS, JUPITER, SATURN), STARS, SUN, MOON, and twilight data. Includes rows for days 4, 5, and 6.

2012 August 7, 8, 9 (Tue, Wed, Thu)

Table with columns for planetary positions (GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), twilight times (Civil, Nautical), sunrise, and moon phases (7, 8, 9). Includes a detailed star list with names and coordinates, and a section for planetary data at the bottom.

2012 August 13, 14, 15 (Mon, Tue, Wed)

Main table containing astronomical data for planets (Aries, Venus, Mars, Jupiter, Saturn), stars, sun, moon, and twilight. Columns include GMST, planet names, coordinates (GHA, Dec), magnitudes, and twilight times (Civil, Nautical, Sunrise).

2012 August 25, 26, 27 (Sat, Sun, Mon)

Table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, and various astronomical data including Right Ascension, Declination, magnitude, and visibility details.

2012 Aug 31, Sep. 1, 2 (Fri, Sat, Sun)

Main table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Lat, Twilight (Civil, Nautical), Sunrise, 31, Moonrise (1, 2). Rows include star names like GHA, Dec, SHA, and star names like Acamar, Alhena, etc.

2012 September 3, 4, 5 (Mon, Tue, Wed)

Main data table with columns for GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), and Twilight/Sunrise/Moonrise times. Includes sub-headers for 'Day', 'Eqn. of Time', and 'Mer. Pass.'.

2012 September 27, 28, 29 (Thu, Fri, Sat)

Main table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Lat, Twilight (Nautical/Civil), Sunrise, 27, Moonrise (29), Day, Eqn. of Time, Mer. Pass., Moonset (29), Mer. Pass., Age/Vis.

2012 October 6, 7, 8 (Sat, Sun, Mon)

Table with columns for GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), and various astronomical data like RA, Dec, Mag, and twilight times. Includes a 'Moonset' section with a moon phase icon.

2012 October 9, 10, 11 (Tue, Wed, Thu)

Table with columns for GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, and twilight/sunrise data. Includes planetary positions, star names, and moon phases for Oct 9-11, 2012.

2012 October 12, 13, 14 (Fri, Sat, Sun)

Main table containing astronomical data for planets (Aries, Venus, Mars, Jupiter, Saturn), stars, sun, moon, twilight, sunrise, and moonrise. Includes columns for GM, planet name, magnitude, RA, Dec, and various time-based observations.

2012 October 21, 22, 23 (Sun, Mon, Tue)

Main table containing astronomical data for planets (Aries, Venus, Mars, Jupiter, Saturn), stars, sun, moon, twilight, sunrise, and moonrise/sets for days 21, 22, and 23.

2012 October 24, 25, 26 (Wed, Thu, Fri)

Table with columns for celestial bodies (GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), twilight times (Nautical, Civil), sunrise, moonrise, and moonset. Rows are organized by day (24, 25, 26) and include specific object names like Alpha Centauri, Sirius, and Vega.

2012 October 27, 28, 29 (Sat, Sun, Mon)

Table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Lat, Twilight (Nautical, Civil), Sunrise, Moonrise (27, 29), and Moonset (27, 29). Rows include planetary positions and star details for dates 27, 28, and 29.

2012 Oct 30, 31, Nov. 1 (Tue, Wed, Thu)

Table with columns for planets (ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), twilight (Nautical, Civil, Sunrise), and moonrise data (30, 31, 1). Rows include planet positions and star details for each day from Oct 30 to Nov 1.

2012 November 2, 3, 4 (Fri, Sat, Sun)

GMT	ARIES			VENUS			-4.0 MARS			+1.2 JUPITER			-2.7 SATURN			+0.6 STARS			SUN				MOON				Lat		Twilight		Sunrise		Moonrise									
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	06:15	07:40	09:12	2	3	4												
Thurs day	00	41° 40' 3	216° 04' 3	0° 39' 5 S	144° 02' 6	24° 00' 1 S	327° 48' 0	21° 46' 3 N	189° 51' 5	10° 30' 0 S	Acamar	315° 18' 2	40° 15' 1 S	184° 06' 5	14° 48' 2 S	328° 23' 0	11' 9	20° 52' 0 N	0.7	54.0																						
	01	56° 42' 8	231° 04' 0		159° 03' 0	00' 2	342° 50' 7	46' 3	204° 53' 7	30' 1	Achernar	335° 26' 5	57° 10' 3 S	199° 06' 5	49' 0	342° 53' 9	11' 8	52° 7' 0	0.7	68°																						
	02	71° 45' 2	246° 03' 6	41' 9	174° 03' 5	00' 4	357° 53' 4	46' 3	219° 55' 9	30' 2	Acruz	173° 10' 4	63° 10' 1 S	214° 06' 5	49' 8	357° 24' 7	11' 9	53' 4	0.5	66°																						
	03	86° 47' 7	261° 03' 3	43' 0	189° 03' 9	00' 6	12° 56' 1	46' 3	234° 58' 1	30' 3	Adhara	255° 12' 7	28° 59' 3 S	229° 06' 5	50' 6	11° 55' 6	11' 8	53' 9	0.5	64°																						
	04	101° 50' 2	276° 02' 9	44' 2	204° 04' 4	00' 8	27° 58' 8	46' 2	250° 00' 2	30' 4	Aldebaran	290° 49' 6	16° 32' 1 N	244° 06' 5	51' 4	26° 26' 4	11' 9	54' 4	0.4	62°																						
	05	116° 52' 6	291° 02' 6	45' 3	219° 04' 8	00' 9	43° 01' 5	46' 2	265° 02' 4	30' 5				259° 06' 5	52' 1	40° 57' 3	11' 8	54' 8	0.2	60°																						
	06	131° 55' 1	306° 02' 2	46' 5	234° 05' 3	01' 1	58° 04' 2	46' 2	280° 04' 6	30' 6	Alioth	166° 21' 6	55° 53' 3 N	274° 06' 5	52' 9	55° 28' 1	11' 8	55' 0	0.2	58°																						
	07	146° 57' 5	321° 01' 9	47' 6	249° 05' 7	01' 3	73° 06' 9	46' 1	295° 06' 8	30' 7	Alkaid	152° 59' 7	49° 14' 9 N	289° 06' 5	53' 7	69° 58' 9	11' 8	55' 2	0.1	56°																						
	08	162° 00' 0	336° 01' 5	48' 8	264° 06' 2	01' 4	88° 09' 6	46' 1	310° 08' 9	30' 8	Alnair	27° 44' 1	46° 53' 9 S	304° 06' 5	54' 5	84° 29' 7	11' 9	55' 3	0.0	54°																						
	09	177° 02' 5	351° 01' 2	49' 9	279° 06' 6	01' 6	105° 12' 3	46' 1	325° 11' 1	30' 9	Alnilam	275° 46' 6	1° 11' 6 S	319° 06' 5	55' 3	99° 00' 2	11' 8	55' 3	0.2	52°																						
	10	192° 04' 9	6° 00' 8	51' 1	294° 07' 1	01' 8	118° 15' 0	46' 1	340° 13' 3	31' 0	Alphard	217° 56' 6	8° 42' 9 S	334° 06' 6	56' 1	113° 31' 4	11' 8	55' 1	0.2	50°																						
	11	207° 07' 4	21° 00' 5	52' 2	309° 07' 5	01' 9	133° 17' 8	46' 0	355° 15' 5	31' 1				349° 06' 6	56' 9	128° 02' 2	11' 9	54' 9	0.3	45°																						
	12	222° 09' 9	36° 00' 1	0° 53' 4 S	324° 08' 0	24° 02' 1 S	148° 20' 5	21° 46' 0 N	10° 17' 7	10° 31' 2 S	Alphecca	126° 11' 7	26° 40' 5 N	4° 06' 6	14° 57' 6 S	142° 33' 1	11' 8	20° 54' 6 N	0.4	54' 0																						
	13	237° 12' 3	50° 59' 8	54' 5	339° 08' 4	02' 3	163° 23' 2	46' 0	25° 19' 8	31' 3	Alpheratz	357° 43' 7	29° 10' 0 N	19° 06' 6	58' 4	157° 03' 9	11' 8	54' 2	0.5	35°																						
	14	252° 14' 8	65° 59' 5	55' 7	354° 08' 9	02' 4	178° 25' 9	46' 0	40° 22' 0	31' 4	Altair	62° 08' 8	8° 54' 4 N	34° 06' 6	59' 2	171° 34' 7	11' 8	53' 7	0.6	54' 1																						
	15	267° 17' 3	80° 59' 1	56' 8	9° 09' 3	02' 6	193° 28' 6	46' 0	55° 24' 2	31' 5	Ankaa	353° 15' 8	42° 14' 2 S	49° 06' 6	00' 0	186° 05' 5	11' 9	53' 1	0.7	20°																						
	16	282° 19' 7	95° 58' 8	58' 0	24° 09' 8	02' 7	208° 31' 3	45' 9	70° 26' 4	31' 6	Antares	112° 27' 1	26° 27' 5 S	64° 06' 6	15° 00' 8 S	200° 36' 4	11' 8	52' 4	0.8	N 10°																						
	17	297° 22' 2	110° 58' 4	59' 1	39° 10' 2	02' 9	223° 34' 0	45' 9	85° 28' 5	31' 7				79° 06' 6	01' 6	215° 07' 2	11' 9	51' 6	0.9	0°																						
	18	312° 24' 7	125° 58' 1	1° 00' 3 S	54° 10' 7	03' 1	238° 36' 7	45' 9	100° 30' 7	31' 8	Arcturus	145° 56' 5	19° 07' 0 N	94° 06' 6	02' 3	229° 38' 1	11' 8	50' 7	1' 0	S 10°																						
	19	327° 27' 1	140° 57' 7	01' 4	69° 11' 1	03' 2	253° 39' 4	45' 9	115° 32' 9	31' 9	Alria	107° 29' 8	69° 03' 0 S	109° 06' 6	03' 1	244° 08' 9	11' 8	49° 7	1' 1	20°																						
	20	342° 29' 6	155° 57' 4	02' 6	84° 11' 6	03' 4	268° 42' 2	45' 8	130° 35' 1	32' 0	Avior	234° 18' 1	59° 32' 9 S	124° 06' 6	03' 9	258° 39' 7	11' 9	48' 6	1' 2	30°																						
	21	357° 32' 0	170° 57' 0	03' 8	99° 12' 0	03' 6	283° 44' 9	45' 8	145° 37' 2	32' 1	Bellatrix	278° 32' 2	6° 21' 6 N	139° 06' 6	04' 7	273° 10' 6	11' 8	47' 4	1' 3	35°																						
	22	12° 34' 5	185° 56' 7	04' 9	114° 12' 5	03' 7	298° 47' 6	45' 8	160° 39' 4	32' 2	Betelgeuse	271° 01' 5	7° 24' 5 N	154° 06' 6	05' 5	287° 41' 4	11' 9	46' 1	1' 4	40°																						
23	27° 37' 0	200° 56' 3	06' 1	129° 12' 9	03' 9	313° 50' 3	45' 8	175° 41' 6	32' 3				169° 06' 6	06' 2	302° 12' 3	11' 9	44' 7	1' 4	45°																							
Fri day	00	42° 39' 4	215° 56' 0	1° 07' 2 S	144° 13' 4	24° 04' 0 S	328° 53' 0	21° 45' 7 N	190° 43' 8	10° 32' 4 S	Canopus	263° 56' 0	52° 42' 9 S	184° 06' 6	15° 07' 0 S	316° 43' 2	11' 8	20° 43' 3 N	1' 6	54' 1																						
	01	57° 41' 9	230° 55' 6	08' 4	159° 13' 8	04' 2	343° 55' 7	45' 7	205° 45' 9	32' 5	Capella	280° 34' 7	46° 00' 5 N	199° 06' 6	07' 8	331° 14' 0	11' 9	41' 7	0.7	S 50°																						
	02	72° 44' 4	245° 55' 3	09' 5	174° 14' 2	04' 4	358° 58' 4	45' 7	220° 48' 1	32' 6	Deneb	49° 31' 8	45° 20' 0 N	214° 06' 6	08' 6	345° 44' 9	11' 9	40' 0	1' 7	54°																						
	03	87° 46' 8	260° 54' 9	10' 7	189° 14' 7	04' 5	14° 01' 1	45' 7	235° 50' 3	32' 7	Denebola	182° 34' 3	14° 30' 0 N	229° 06' 6	09' 3	0° 15' 8	11' 9	38' 3	1' 9	56°																						
	04	102° 49' 3	275° 54' 6	11' 8	204° 15' 1	04' 7	29° 03' 9	45' 6	250° 52' 5	32' 8	Diphda	348° 56' 0	17° 54' 9 S	244° 06' 6	10' 1	14° 46' 7	11' 9	36' 4	2' 0	58°																						
	05	117° 51' 8	290° 54' 2	13' 0	219° 15' 6	04' 8	44° 06' 6	45' 6	265° 54' 6	32' 9				259° 06' 6	10' 9	29° 17' 6	11' 9	34' 4	2' 0	S 60°																						
	06	132° 54' 2	305° 53' 9	14' 1	234° 16' 0	05' 0	59° 09' 3	45' 6	280° 56' 8	33' 0	Dubhe	193° 52' 6	61° 40' 6 N	274° 06' 6	11' 7	43° 48' 5	11' 9	32' 4	2' 2	54' 2																						
	07	147° 56' 7	320° 53' 5	15' 3	249° 16' 5	05' 2	74° 12' 0	45' 6	295° 59' 0	33' 1	El Nath	278° 12' 9	28° 37' 0 N	289° 06' 6	12' 5	58° 19' 4	11' 9	30' 2	2' 2	60°																						
	08	162° 59' 2	335° 53' 2	16' 4	264° 16' 9	05' 3	89° 14' 7	45' 5	311° 01' 2	33' 2	Elnath	90° 46' 7	51° 29' 6 N	304° 06' 6	13' 2	72° 50' 3	11' 9	28' 0	2' 4</																							

2012 November 5, 6, 7 (Mon, Tue, Wed)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON				Lat	Twilight		Sunrise	Moonrise		
	-4.0			+1.2			-2.8			+0.6			Name			SHA			GHA			v		Dec			d	HP		Nautical	Civil	5
00	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	06:27	07:54	09:33	19:09	21:11	23:05				
M o n d a y	00	44° 37.7	215° 39.0	2° 02.7 S	144° 34.5	24° 11.2 S	331° 03.6	21° 44.5 N	192° 28.2	10° 37.2 S	Acamar	315° 18.2	40° 15.2 S	184° 06.2	15° 43.9 S	293° 36.6	12.4	17° 42.1 N	5.9	54.7	N 70°	06:21	07:37	08:58	19:47	21:32	23:17					
	01	59° 40.2	230° 38.6	03.8	159° 34.9	11.4	346° 06.3	44.5	207° 30.4	37.3	Acemnar	335° 26.5	57° 10.3 S	199° 06.1	44.6	308° 08.0	12.5	36.2	6.1	68°	66°	06:15	07:24	08:34	20:13	21:49	23:26					
	02	74° 42.6	245° 38.3	05.0	174° 35.4	11.5	1° 09.0	44.4	222° 32.6	37.4	Acxra	173° 10.3	63° 10.1 S	214° 06.1	45.4	322° 39.5	12.4	30.1	6.1	54.8	66°	06:10	07:13	08:15	20:33	22:02	23:33					
	03	89° 45.1	260° 37.9	06.1	189° 35.8	11.7	16° 11.8	44.4	237° 34.8	37.5	Achura	255° 12.7	28° 59.3 S	237° 10.9	46.2	337° 10.9	12.5	24.0	6.3	64°	64°	06:06	07:04	07:59	20:49	22:13	23:40					
	04	104° 47.6	275° 37.6	07.3	204° 36.3	11.8	31° 14.5	44.4	252° 36.9	37.6	Aldebaran	290° 49.6	16° 32.1 N	244° 06.1	46.9	351° 42.4	12.5	17.7	6.3	62°	62°	06:02	06:56	07:47	21:02	22:22	23:45					
	05	119° 50.0	290° 37.2	08.4	219° 36.7	11.9	46° 17.2	44.4	267° 39.1	37.7				259° 06.1	47.7	6° 13.9	12.5	11.4	6.3	60°	60°	05:59	06:49	07:36	21:14	22:30	23:50					
	06	134° 52.5	305° 36.9	09.6	234° 37.1	12.1	61° 20.0	44.3	282° 41.3	37.8	Alioth	166° 21.6	55° 53.3 N	274° 06.0	48.4	20° 45.4	12.6	05.1	6.5	58°	N 58°	05:56	06:43	07:27	21:23	22:37	23:54					
	07	149° 55.0	320° 36.5	10.8	249° 37.6	12.2	76° 22.7	44.3	297° 43.5	37.9	Alkaid	152° 59.7	49° 14.9 N	289° 06.0	49.2	35° 17.0	12.5	16° 58.6 N	6.6	54.9	56°	05:53	06:38	07:18	21:32	22:43	23:58					
	08	164° 57.4	335° 36.1	11.9	264° 38.0	12.4	91° 25.4	44.3	312° 45.6	38.0	Alnair	27° 44.2	46° 53.9 S	304° 06.0	49.9	49° 48.5	12.6	52.0	6.6	54°	54°	05:50	06:33	07:11	21:39	22:49	24:01					
	09	179° 59.9	350° 35.8	13.1	279° 38.4	12.5	106° 28.1	44.2	327° 47.8	38.1	Alnilam	275° 46.5	1° 11.7 S	319° 06.0	50.7	64° 20.1	12.5	45.4	6.7	52°	52°	05:48	06:28	07:04	21:46	22:54	24:04					
	10	195° 02.4	5° 35.4	14.2	294° 38.9	12.6	121° 30.9	44.2	342° 50.0	38.2	Alphard	217° 56.5	8° 42.9 S	334° 06.0	51.4	78° 51.6	12.6	38.7	6.8	50°	50°	05:45	06:24	06:58	21:52	22:58	24:07					
	11	210° 04.8	20° 35.1	15.4	309° 39.3	12.8	136° 33.6	44.2	357° 52.2	38.3				349° 05.9	52.2	93° 23.2	12.6	31.9	6.9	48°	48°	05:40	06:15	06:46	22:05	23:08	24:13					
	12	225° 07.3	35° 34.7	2° 16.5 S	324° 39.7	24° 12.9 S	151° 36.3	21° 44.2 N	12° 54.3	10° 38.4 S	Alphecca	126° 11.7	26° 40.4 N	4° 05.9	15° 53.0 S	107° 54.8	12.6	16° 25.0 N	7.0	55.0	N 40°	05:34	06:07	06:35	22:16	23:16	24:18					
	13	240° 09.7	50° 34.4	17.7	339° 40.2	13.0	166° 39.1	44.1	27° 56.5	38.5	Alpheratz	357° 43.7	29° 10.0 N	19° 05.9	53.7	122° 26.4	12.6	18.0	7.0	35°	35°	05:29	06:00	06:26	22:25	23:23	24:22					
	14	255° 12.2	65° 34.0	18.9	354° 40.6	13.2	181° 41.8	44.1	42° 58.7	38.6	Altair	62° 08.8	8° 54.4 N	34° 05.8	54.5	136° 58.0	12.7	11.0	7.1	30°	30°	05:25	05:53	06:18	22:33	23:29	24:26					
	15	270° 14.7	80° 33.6	20.0	9° 41.0	13.3	196° 44.5	44.1	58° 00.9	38.7	Ankaa	353° 15.8	42° 14.2 S	49° 05.8	55.2	151° 29.7	12.6	03.9	7.2	20°	20°	05:15	05:41	06:04	22:47	23:39	24:32					
	16	285° 17.1	95° 33.3	21.2	24° 41.5	13.4	211° 47.3	44.1	73° 03.1	38.8	Antares	112° 27.1	26° 27.5 S	64° 05.8	56.0	166° 01.3	12.7	15° 56.7 N	7.3	55.1	N 10°	05:05	05:30	05:52	22:59	23:48	24:38					
	17	300° 19.6	110° 32.9	22.3	39° 41.9	13.6	226° 50.0	44.0	88° 05.2	38.9				79° 05.8	56.7	180° 33.0	12.7	49.4	7.4	0°	0°	04:54	05:19	05:40	23:10	23:56	24:43					
	18	315° 22.1	125° 32.6	23.5	54° 42.3	13.7	241° 52.7	44.0	103° 07.4	39.0	Arcturus	145° 56.5	19° 07.0 N	94° 05.8	57.5	195° 04.7	12.7	42.0	7.4	10°	S 10°	04:41	05:06	05:28	23:21	-	00:05					
	19	330° 24.5	140° 32.2	24.6	69° 42.8	13.8	256° 55.5	44.0	118° 09.6	39.1	Atria	107° 29.8	69° 03.0 S	109° 05.7	58.2	209° 36.4	12.7	34.6	7.5	20°	20°	04:25	04:53	05:16	23:33	-	00:14					
	20	345° 27.0	155° 31.8	25.8	84° 43.2	14.0	271° 58.2	44.0	133° 11.8	39.2	Avior	234° 18.1	59° 32.9 S	124° 05.7	59.0	224° 08.1	12.7	27.1	7.6	55.2	30°	04:05	04:36	05:01	23:47	-	00:24					
	21	0° 29.5	170° 31.5	27.0	99° 43.6	14.1	287° 00.9	43.9	148° 13.9	39.3	Bellatrix	278° 32.2	6° 21.6 N	139° 05.7	59.7	238° 39.8	12.7	19.5	7.6	35°	35°	03:53	04:25	04:53	23:54	-	00:30					
	22	15° 31.9	185° 31.1	28.1	114° 44.1	14.2	302° 03.7	43.9	163° 16.1	39.4	Betelgeuse	271° 01.5	7° 24.5 N	154° 05.7	60.5	253° 11.5	12.7	11.9	7.8	40°	40°	03:37	04:13	04:43	-	-	00:37					
	23	30° 34.4	200° 30.8	29.3	129° 44.5	14.3	317° 06.4	43.9	178° 18.3	39.5				169° 05.6	01.2	267° 43.2	12.8	04.1	7.8	45°	45°	03:18	03:59	04:31	-	00:14	00:44					
T u e s d a y	00	45° 36.9	215° 30.4	2° 30.4 S	144° 44.9	24° 14.5 S	332° 09.1	21° 43.8 N	193° 20.5	10° 39.6 S	Canopus	263° 56.0	52° 42.4 S	184° 05.6	16° 01.9 S	282° 15.0	12.7	14° 56.3 N	7.9	55.3	S 50°	02:52	03:40	04:17	-	00:26	00:54					
	01	60° 39.3	230° 30.0	31.6	159° 45.3	14.6	347° 11.9	43.8	208° 22.6	39.7	Capella	280° 34.7	46° 00.5 N	199° 05.6	02.7	296° 46.7	12.8	48.8	8.0	52°	52°	02:39	03:31	04:11	00:03	00:32	00:58					
	02	75° 41.8	245° 29.7	32.7	174° 45.8	14.7	2° 14.6	43.8	223° 24.8	39.8	Deneb	49° 31.8	45° 20.0 N	214° 05.6	03.4	311° 18.5	12.8	40.4	8.0	54°	54°	02:24	03:21	04:04	00:11	00:39	01:03					
	03	90° 44.2	260° 29.3	33.9	189° 46.2	14.9	17° 17.3	43.8	238° 27.0	39.9	Denebola	182° 34.3	14° 30.0 N	229° 05.5	04.2	325° 50.3	12.7	32.4	8.1	56°	56°	02:06	03:10	03:56	00:20	00:46	01:08					
	04	105° 46.7	275° 28.9	35.1	204° 46.6	15.0	32° 20.1	43.7	253° 29.2	40.0	Diphda	348° 56.0	17° 54.9 S	244° 05.5	04.9	340° 22.0	12.8	24.3	8.2	55.4	58°	01:42	02:57	03:46	00:30	00:54	01:14					
	05	120° 49.2	290° 28.6	36.2	219° 47.1	15.1	47° 22.8	43.7	268° 31.4	40.1				259° 05.5	05.7	354° 53.8	12.8	16.1	8.3	55.4	S 60°	01:09	02:41	03:36	00:41	01:03	01:20					
	06	135° 51.6	305° 28.2	37.4	234° 47.5	15.2	62° 25.5	43.7	283° 33.5	40.2	Dubhe	193° 52.6	61° 40.6 N	274° 05.5	06.4	9° 25.6	12.8	07.8	8.3	55.5	S 62°	-	02:21	03:23	00:55	01:13	01:27					
	07	150° 54.1	320° 27.9	38.5	249° 47.9	15.4	77° 28.3	43.7	298° 35.7	40.3	Elnath	278° 12.9	28° 37.0 N	289° 05.4	07.2	23° 57.4	12.9	13° 59.5 N	8.4	55.5	S 62°											
	08	165° 56.6	335° 27.5	39.7	264° 48.4	15.5	92° 31.0	43.6	313° 37.9	40.4	Elnath	90° 46.7	51° 29.6 N	304° 05.4	07.9	38° 29.3	12.8	51.1	8.5	55.5	S 62°											
	09	180° 59.0	350° 27.1	40.8	279° 48.8	15.6	107° 33.7	43.6	328° 40.1	40.5	Enif	33° 47.5	9° 56.3 N	319° 05.4	08.6	53° 01.1	12.8	42.6	8.5	55.5	Lat	Sunset	Twilight	5	Moonset	7						
	10	196° 01.5	5° 26.8	42.0	294° 49.2	15.7	122° 36.5	43.6	343° 42.2	40.6	Fomalhaut	15° 24.3	29° 33.2 S	334° 05.3	09.4	67° 32.9	12.8	34.1	8.6	55.5	Lat	Sunset	Twilight	5	Moonset	7						
	11	211° 04.0	20° 26.4	43.2	309° 49.6	15.9	137° 39.2	43.5	358° 44.4	40.7				349° 05.3	10.1	82° 04.7	12.9	25.5	8.7	55.5	Lat	Sunset	Twilight	5	Moonset	7						
	12	226° 06.4	35° 26.1	2° 44.3 S	324° 50.1	24° 16.0 S	152° 41.9	21° 43.5 N	13° 46.6	10° 40.8 S	Gacrux	172° 01.8	57° 10.9 S	4° 05.3	16° 10.9 S	96° 36.6	12.8	13° 16.8 N	8.8	55.6	N 70°	14:28	15:49	17:05	14:21	14:13	14:06					
	13	241° 08.9	50° 25.7	45.5	339° 50.5	16.1	167° 44.7	43.5	28° 48.8	40.9	Gienah	175° 53.0	17° 36.7 S	19° 05.2	11.6	111° 08.4	12.9	08.0	8.8	68°	68°	14:52	16:02	17:11	13:54	13:55	13:55					
	14	256° 11.4	65° 25.3	46.6	354° 50.9	16.2	182° 47.4	43.4	43° 50.9	41.0	Hadar	148° 49.1	60° 26.0 S	34° 05.2	12.4	125° 40.3	12.9	12° 59.2 N	8.9	66°	66°	15:12	16:13	17:16	13:33	13:41	13:46					
	15	271° 13.8	80° 25.0	47.8	9° 51.4	16.4	197° 50.2	43.4	58° 53.1	41.1	Hamal	328° 00.9	23° 31.5 N	49° 05.2	13.1	140° 12.2	12.8	50.3	9.0	55.7	64°	15:27	16:22	17:20	13:17	13:29	13:38					
	16	286° 16.3	95° 24.6	48.9	24° 51.8	16.5	212° 52.9	43.4	73° 55.3	41.2	Kaus Aust.																					

2012 November 11, 12, 13 (Sun, Mon, Tue)

Table with 28 main columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, and three columns for twilight (Nautical, Civil, Sunrise) and Moonrise (11, 12, 13). The table is organized into daily sections for November 11, 12, and 13, with rows for each hour. It includes data for planets (GHA, Dec) and stars (Name, SHA, Dec). Special features include a 'Sunset' icon in the Moonrise column and a 'Mer. Pass.' icon for Venus and Mars. The bottom row provides a summary for the three days: M.P. 20:31, v -0.4 d 1.1, v 0.4 d 0.1, v 2.8 d 0.0, v 2.2 d 0.1, SD 16.2 d 0.7, SD 16.4 16.6 16.7.

2012 November 17, 18, 19 (Sat, Sun, Mon)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON						Lat		Twilight		Sunrise		Moonrise		
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	07:11	08:50	-	-	14:08	13:43						
Saturday	00	56° 27.4	213° 47.6	7° 33'.5 S	146° 32'.8	24° 33'.0 S	344° 19'.5	21° 35'.6 N	202° 56'.0	11° 05'.2 S	202° 56'.0	11° 05'.2 S	202° 56'.0	11° 05'.2 S	Acamar	315° 18'.2	40° 15'.2 S	183° 45'.6	19° 01'.5 S	137° 41'.5	4'.8	19° 37'.0 S	4'.8	60.3	N 70°	07:00	08:25	10:13	13:49	13:33	13:24					
	01	57° 29.8	228° 47.2	34.6	161° 33'.2	33.0	359° 22'.3	35.6	217° 58'.2	05.3	359° 22'.3	35.6	217° 58'.2	05.3	Acamar	335° 26.6	57° 10.4 S	198° 45.6	02.1	152° 05.3	4.9	32.2	5.0	60.8	N 60°	06:50	08:05	09:29	13:05	13:08	13:09					
	02	86° 32.3	243° 46.7	35.7	176° 33'.6	33.0	14° 25'.0	35.5	233° 00'.4	05.4	19° 27'.8	35.5	233° 00'.4	05.4	Acrux	173° 10.2	63° 10.0 S	213° 45.3	02.7	166° 29.2	4.9	27.2	5.0	66.0	N 66°	06:42	07:49	09:00	12:36	12:49	12:56					
	03	101° 34'.8	258° 46.3	36.9	191° 33'.9	33.0	258° 46.3	36.9	191° 33'.9	33.0	258° 46.3	36.9	191° 33'.9	33.0	Adhara	255° 12.6	28° 59.3 S	228° 45.2	03.3	180° 53.1	5.0	22.2	5.2	64.0	N 64°	06:35	07:37	08:38	12:14	12:33	12:46					
	04	116° 37.2	273° 45.9	38.0	206° 34'.3	33.0	44° 30'.6	35.5	263° 04'.7	05.6	44° 30'.6	35.5	263° 04'.7	05.6	Aldebaran	290° 49.5	16° 32.1 N	243° 45.1	03.9	195° 17.1	5.1	17.0	5.4	60.2	N 62°	06:29	07:26	08:21	11:56	12:20	12:37					
	05	131° 39.7	288° 45.5	39.1	221° 34'.7	33.1	59° 33'.4	35.4	278° 06'.9	05.7	59° 33'.4	35.4	278° 06'.9	05.7					229° 41'.2	5'.2	11.6	5.4	60.0	N 60°	06:24	07:16	08:06	11:41	12:09	12:29						
	06	146° 42.2	303° 45.0	40.2	236° 35'.1	33.1	74° 36'.2	35.4	293° 09'.1	05.8	74° 36'.2	35.4	293° 09'.1	05.8	Alioth	166° 21.5	55° 53.2 N	273° 44.8	05.1	204° 05.4	5.3	06.2	5.6	60.0	N 58°	06:19	07:08	07:54	11:28	11:59	12:22					
	07	161° 44.6	318° 44.6	41.4	251° 35'.5	33.1	89° 39'.0	35.4	308° 11'.3	05.8	89° 39'.0	35.4	308° 11'.3	05.8	Alkaid	152° 59.7	49° 14.8 N	288° 44.7	05.7	238° 29.7	5.4	00.6	5.7	60.1	N 54°	06:14	07:00	07:43	11:17	11:51	12:16					
	08	176° 47.1	333° 44.2	42.5	266° 35'.9	33.1	104° 41'.8	35.3	323° 13'.5	05.9	104° 41'.8	35.3	323° 13'.5	05.9	Alnair	27° 44.2	46° 54.0 S	303° 44.6	06.3	252° 54.1	5.4	18° 54.9 S	5.8	60.0	N 54°	06:10	06:54	07:34	11:07	11:43	12:11					
	09	191° 49.6	348° 43.8	43.6	281° 36'.3	33.1	119° 44'.6	35.3	338° 15'.6	06.0	119° 44'.6	35.3	338° 15'.6	06.0	Alnilam	275° 46.5	1° 11.7 S	318° 44.6	06.9	267° 18.5	5.6	49.1	6.0	60.0	N 52°	06:06	06:48	07:26	10:59	11:36	12:06					
	10	206° 52.0	3° 43.3	44.8	296° 36'.7	33.1	134° 47'.4	35.3	353° 17'.8	06.1	134° 47'.4	35.3	353° 17'.8	06.1	Alphard	217° 56.4	8° 42.9 S	333° 44.3	07.5	281° 43.1	5.6	43.1	6.0	60.0	N 50°	06:02	06:42	07:18	10:51	11:30	12:01					
	11	221° 54.5	18° 42.9	45.9	311° 37'.1	33.1	149° 50'.2	35.2	8° 20'.0	06.2	149° 50'.2	35.2	8° 20'.0	06.2					348° 44.2	08.1	296° 07.7	5.8	37.1	6.2	60.0	N 45°	05:54	06:30	07:02	10:34	11:17	11:52				
	12	236° 57.0	33° 42.5	7° 47.0 S	326° 37'.4	24° 33'.1 S	164° 53'.0	21° 35'.2 N	23° 22'.2	11° 06'.3 S	164° 53'.0	21° 35'.2 N	23° 22'.2	11° 06'.3 S	Alphecca	126° 11'.7	26° 40'.4 N	3° 44.1	19° 08.7 S	310° 32.5	5.8	18° 30.9 S	6.3	60.0	N 40°	05:47	06:20	06:49	10:21	11:06	11:44					
	13	251° 59.4	48° 42.0	48.1	341° 37'.8	33.1	179° 55'.8	35.2	38° 24'.4	06.4	179° 55'.8	35.2	38° 24'.4	06.4	Alpheratz	357° 43.7	29° 10.0 N	18° 43.9	09.3	324° 57.3	5.9	24.6	6.4	59.9	N 35°	05:40	06:11	06:38	10:09	10:56	11:37					
	14	267° 01.9	63° 41.6	49.3	356° 38'.2	33.1	194° 58'.6	35.1	53° 26'.6	06.5	194° 58'.6	35.1	53° 26'.6	06.5	Altair	62° 08.8	8° 54.4 N	33° 43.8	09.9	339° 22.2	6.0	18.2	6.6	60.0	N 30°	05:33	06:02	06:28	09:59	10:48	11:31					
	15	282° 04'.3	78° 41'.2	50.4	11° 38'.6	33.1	210° 01'.4	35.1	68° 28'.8	06.6	11° 38'.6	33.1	68° 28'.8	06.6	Ankaa	353° 15.8	42° 14.2 S	48° 43.7	10.5	353° 47.2	6.1	11.6	6.6	60.0	N 20°	05:21	05:47	06:11	09:42	10:33	11:20					
	16	297° 06.8	93° 40.8	51.5	26° 39'.0	33.1	225° 04'.2	35.0	83° 30'.9	06.7	26° 39'.0	33.1	83° 30'.9	06.7	Antares	112° 27.1	26° 27.5 S	63° 43.5	11.1	8° 12.3	6.1	05.0	6.8	59.8	N 10°	05:08	05:34	05:56	09:26	10:21	11:11					
	17	312° 09.3	108° 40.3	52.6	41° 39'.4	33.1	240° 07'.0	35.0	98° 33'.1	06.8	41° 39'.4	33.1	98° 33'.1	06.8					78° 43.4	11.7	22° 37.4	6.3	17° 58.2 S	6.0	0°	04:54	05:20	05:42	09:12	10:09	11:02					
	18	327° 11.7	123° 39.9	53.8	56° 39'.8	33.1	255° 09'.8	35.0	113° 35'.3	06.9	56° 39'.8	33.1	113° 35'.3	06.9	Arcturus	145° 56.4	19° 06'.9 N	93° 43.3	12.3	37° 02.7	6.4	51.4	7.0	60.0	S 10°	04:39	05:05	05:27	08:58	09:57	10:53					
	19	342° 14.2	138° 39.5	54.9	71° 40'.2	33.1	270° 12'.6	34.9	128° 37'.5	07.0	71° 40'.2	33.1	128° 37'.5	07.0	Cricta	107° 29.8	69° 03'.0 S	108° 43.1	12.9	51° 28.1	6.5	44.4	7.1	59.7	N 20°	04:20	04:48	05:12	08:42	09:44	10:44					
	20	357° 16.7	153° 39.0	56.0	86° 40'.5	33.1	285° 15'.4	34.9	143° 39'.7	07.1	86° 40'.5	33.1	143° 39'.7	07.1	Avior	234° 17'.9	59° 32.9 S	123° 43.0	13.5	65° 53.6	6.5	37.3	7.2	60.0	N 30°	03:57	04:28	04:54	08:25	09:30	10:33					
	21	12° 19.1	168° 38.6	57.1	101° 40'.9	33.1	300° 18'.2	34.9	158° 41'.9	07.2	101° 40'.9	33.1	158° 41'.9	07.2	Bellatrix	278° 32.1	6° 21.6 N	138° 42.9	14.1	80° 19.1	6.7	30.1	7.3	60.0	N 35°	03:41	04:16	04:44	08:14	09:21	10:27					
	22	27° 21'.6	183° 38.2	58.2	116° 41'.3	33.1	315° 21'.0	34.8	173° 44'.7	07.3	116° 41'.3	33.1	173° 44'.7	07.3	Betelgeuse	271° 01'.4	7° 24.5 N	153° 42.8	14.7	94° 44.8	6.7	22.1	7.4	59.6	N 40°	03:23	04:01	04:32	08:03	09:12	10:20					
23	42° 24.1	198° 37.7	59.4	131° 41'.7	33.1	330° 23.8	34.8	188° 46'.2	07.3	131° 41'.7	33.1	188° 46'.2	07.3					168° 42.6	15.3	109° 10.5	6.9	15.4	7.5	60.0	N 45°	02:59	03:43	04:18	07:49	09:00	10:11					
Sunday	00	57° 26.5	213° 37.3	8° 00'.5 S	146° 42'.1	24° 33'.1 S	345° 26'.6	21° 34.8 N	203° 48'.4	11° 07.4 S	203° 48'.4	11° 07.4 S	203° 48'.4	11° 07.4 S	Capellus	263° 55.9	52° 42'.2 S	183° 42.5	19° 15.9 S	123° 36.4	6.9	17° 07.9 S	7.5	59.6	S 50°	02:27	03:21	04:00	07:32	08:47	10:01					
	01	72° 29.0	228° 36.9	01.6	161° 42'.5	33.1	0° 29'.4	34.7	218° 50'.6	07.5	0° 29'.4	34.7	218° 50'.6	07.5	Capella	280° 34.6	46° 00'.5 N	198° 42.4	16.5	138° 02.3	7.1	00.4	7.7	59.5	S 52°	02:10	03:10	03:52	07:24	08:40	09:57					
	02	87° 31.5	243° 36.4	02.7	176° 42'.9	33.1	15° 32.2	34.7	233° 52'.8	07.6	15° 32.2	34.7	233° 52'.8	07.6	Deneb	49° 31.9	45° 20.0 N	213° 42.2	17.1	152° 28.4	7.1	16° 52.7 S	7.8	59.4	N 54°	01:50	02:57	03:43	07:15	08:33	09:51					
	03	102° 33.9	258° 36.0	03.9	191° 43'.3	33.1	30° 35'.0	34.7	248° 55'.0	07.7	30° 35'.0	34.7	248° 55'.0	07.7	Denebola	382° 34.2	14° 29.9 N	228° 42.1	17.7	166° 54.5	7.2	44.9	7.9	59.4	N 56°	01:22	02:42	03:33	07:05	08:25	09:46					
	04	117° 36.4	273° 35.6	05.0	206° 43'.6	33.1	45° 37'.8	34.6	263° 57'.2	07.8	45° 37'.8	34.6	263° 57'.2	07.8	Diphda	348° 56.1	17° 54.9 S	243° 42.0	18.3	181° 20.7	7.3	37.0	8.0	60.0	N 58°	00:36	02:24	03:21	06:53	08:16	09:39					
	05	132° 38.8	288° 35.1	06.1	221° 44.0	33.1	60° 40'.6	34.6	278° 59'.3	07.9	60° 40'.6	34.6	278° 59'.3	07.9					258° 41.8	18.8	195° 47.0	7.5	29.0	8.1	60.0	N 56°	-	02:02	03:07	06:40	08:06	09:32				
	06	147° 41.3	303° 34.7	07.2	236° 44.4	33.1	75° 43'.4	34.6	294° 01'.5	08.0	75° 43'.4	34.6	294° 01'.5	08.0	Dubhe	193° 52.4	61° 40.5 N	273° 41.7	19.4	210° 13.5	7.5	20.9	8.1	59.3	S 62°	-	01:32	02:50	06:24	07:54	09:24					
	07	162° 43.8	318° 34.3	08.3	251° 44.8	33.1	90° 46'.2	34.5	309° 03'.7	08.1	90° 46'.2	34.5	309° 03'.7	08.1	Eltanin	278° 12.8	28° 37.0 S	288° 41.5																		

2012 November 23, 24, 25 (Fri, Sat, Sun)

GMT	ARIES			VENUS -4.0			MARS +1.2			JUPITER -2.8			SATURN +0.7			STARS			SUN		MOON				Lat	Twilight		Sunrise	Moonrise			
	GHA	GHA	Dec	GHA	GHA	Dec	GHA	GHA	Dec	GHA	GHA	Dec	GHA	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	Nautical	Civil		23	24	25
F r i d a y	00	62° 22.2	212° 43.0	10° 13.1	147° 27.8	24° 29.6	351° 03.4	21° 30.4	N	208° 10.9	11° 18.4	S	Acamar	315° 18.2	40° 15.2	S	183° 24.1	20° 22.6	S	64° 42.2	14.3	3° 49.4	N	10.9	55.5	N 70°	07:17	08:47	11:17	12:57	12:50	12:43
	01	77° 24.7	227° 42.5	14.2	162° 28.2	29.5	6° 06.2	30.3		223° 13.1	18.5		Acnarnar	335° 26.6	57° 10.4	S	198° 23.9	23.1		79° 15.5	14.4	4° 00.3	N	10.9	68°	07:06	08:24	09:59	13:04	13:03	13:02	
	02	92° 27.1	242° 42.1	15.3	177° 28.6	29.5	21° 09.1	30.3		238° 15.3	18.6		Acrux	173° 10.1	63° 10.0	S	213° 23.7	23.7		93° 48.9	14.3	11.2	10.8		66°	06:57	08:06	09:23	13:09	13:13	13:18	
	03	107° 29.6	257° 41.6	16.3	192° 29.6	29.4	36° 11.9	30.2		253° 17.5	18.7		Adhara	255° 12.5	28° 59.4	S	228° 23.5	24.2		108° 22.2	14.3	22.0	10.8		64°	06:48	07:51	08:57	13:14	13:22	13:31	
	04	122° 32.1	272° 41.1	17.4	207° 29.3	29.4	51° 14.7	30.2		268° 19.7	18.8		Aldebaran	290° 49.5	16° 32.1	N	243° 23.4	24.7		122° 55.5	14.4	32.9	10.8	55.4	62°	06:41	07:39	08:37	13:19	13:29	13:42	
	05	137° 34.5	287° 40.6	18.5	222° 29.7	29.3	66° 17.5	30.2		283° 21.9	18.9						258° 23.2	25.2		137° 28.9	14.3	43.7	10.8		60°	06:35	07:28	08:21	13:22	13:36	13:51	
	06	152° 37.0	302° 40.2	19.6	237° 30.1	29.2	81° 20.3	30.1		298° 24.1	19.0		Alioth	166° 21.4	55° 53.2	N	273° 23.0	25.7		152° 02.2	14.4	54.5	10.7		N 58°	06:29	07:19	08:07	13:26	13:41	13:59	
	07	167° 39.5	317° 39.7	20.7	252° 30.5	29.2	96° 23.1	30.1		313° 26.3	19.1		Alkaid	152° 59.6	49° 14.8	N	288° 22.8	26.2		168° 35.6	14.4	5° 05.2	N	10.7	54°	06:24	07:11	07:55	13:29	13:47	14:07	
	08	182° 41.9	332° 39.2	21.8	267° 30.8	29.1	111° 26.0	30.1		328° 28.5	19.2		Alnair	27° 44.3	46° 54.0	S	303° 22.7	26.7		181° 09.0	14.3	15.9	10.7	55.3	54°	06:19	07:03	07:45	13:31	13:51	14:13	
	09	197° 44.4	347° 38.7	22.8	282° 31.2	29.1	126° 28.8	30.0		343° 30.7	22.8		Alnilam	275° 46.5	1° 11.7	S	318° 22.5	27.3		195° 42.3	14.4	27.6	10.7		52°	06:15	06:57	07:36	13:34	13:55	14:19	
	10	212° 46.9	2° 38.2	23.9	297° 31.6	29.0	141° 31.6	30.0		358° 32.8	19.3		Alphard	217° 56.4	8° 42.9	S	333° 22.3	27.8		210° 15.7	14.4	37.3	10.6		50°	06:10	06:51	07:27	13:36	13:59	14:24	
	11	227° 49.3	17° 37.8	25.0	312° 32.0	28.9	156° 34.4	29.9		3° 35.0	19.4						348° 22.1	28.3		224° 49.1	14.4	47.9	10.6		45°	06:01	06:37	07:10	13:41	14:07	14:36	
	12	242° 51.8	32° 37.3	10° 26.1	327° 32.3	24° 28.9	171° 37.2	21° 29.9	N	28° 37.2	11° 19.5	S	Alphecca	126° 11.7	26° 40.4	N	3° 22.0	20° 28.8	S	239° 22.5	14.3	5° 58.5	N	10.5	55.3	N 40°	05:53	06:26	06:56	13:45	14:14	14:46
	13	257° 54.2	47° 36.8	27.2	342° 32.7	28.8	186° 40.0	29.9		43° 39.4	19.6		Alpheratz	357° 43.7	29° 10.0	N	18° 21.8	29.3		253° 55.8	14.4	6° 09.0	N	10.6	55.2	35°	05:45	06:16	06:43	13:49	14:20	14:54
	14	272° 56.7	62° 36.3	28.2	357° 33.1	28.7	201° 42.9	29.8		58° 41.6	19.7		Altair	62° 08.8	8° 54.4	N	33° 21.6	29.8		268° 29.2	14.4	19.6	10.6		30°	05:38	06:07	06:33	13:52	14:26	15:01	
	15	287° 59.2	77° 35.9	29.3	12° 33.5	28.7	216° 45.7	29.8		73° 43.8	19.8		Ankaa	353° 15.9	42° 14.2	S	48° 21.4	30.3		283° 02.6	14.4	30.0	10.5		20°	05:24	05:51	06:14	13:57	14:35	15:14	
	16	303° 01.6	92° 35.4	30.4	27° 33.9	28.6	231° 48.5	29.7		88° 46.0	19.9		Antares	112° 27.1	26° 27.5	S	63° 21.2	30.8		297° 36.0	14.4	40.5	10.4		N 10°	05:10	05:36	05:58	14:02	14:43	15:25	
	17	318° 04.1	107° 34.9	31.5	42° 34.2	28.5	246° 51.3	29.7		103° 48.2	20.0						78° 21.1	31.3		312° 09.4	14.3	50.9	10.4	55.1	0°	04:55	05:21	05:43	14:07	14:51	15:35	
	18	333° 06.6	122° 34.4	32.6	57° 34.6	28.5	261° 54.1	29.7		118° 50.4	20.1		Arcurus	145° 56.4	19° 06.9	N	93° 20.9	31.8		326° 42.7	14.4	7° 01.3	N	10.4	S 10°	04:39	05:05	05:28	14:11	14:58	15:46	
	19	348° 09.0	137° 33.9	33.6	72° 35.0	28.4	276° 56.9	29.6		133° 52.6	20.1		Arctua	107° 29.8	69° 02.9	S	108° 20.7	32.4		341° 16.1	14.4	11.7	10.3		20°	04:19	04:47	05:11	14:16	15:07	15:57	
	20	3° 11.5	152° 33.4	34.7	87° 35.4	28.3	291° 59.8	29.6		148° 54.8	20.2		Avior	234° 17.8	59° 32.9	S	123° 20.5	32.9		355° 49.5	14.4	22.0	10.2		30°	03:54	04:26	04:52	14:22	15:16	16:10	
	21	18° 14.0	167° 33.0	35.8	102° 35.7	28.3	307° 02.6	29.6		163° 56.9	20.3		Bellatrix	278° 32.1	6° 21.6	N	138° 20.3	33.4		10° 22.9	14.3	32.2	10.2		35°	03:37	04:12	04:41	14:25	15:22	16:17	
	22	33° 16.4	182° 32.5	36.9	117° 36.1	28.2	322° 05.4	29.5		178° 59.1	20.4		Betelgeuse	271° 01.4	7° 24.5	N	153° 20.2	33.9		24° 56.2	14.4	42.5	10.3	55.0	40°	03:18	03:57	04:28	14:29	15:28	16:26	
23	48° 18.9	197° 32.0	38.0	132° 36.5	28.1	337° 08.2	29.5		194° 01.3	20.5						168° 20.0	34.4		39° 29.6	14.4	52.7	10.1		45°	02:52	03:38	04:13	14:33	15:35	16:36		
S a t u r d a y	00	63° 21.4	212° 31.5	10° 39.0	147° 36.9	24° 28.1	352° 11.0	21° 29.4	N	209° 03.5	11° 20.6	S	Canopus	263° 55.8	52° 42.1	S	183° 19.8	20° 34.9	S	54° 03.0	14.3	8° 02.8	N	10.1	55.0	S 50°	02:17	03:13	03:54	14:39	15:44	16:48
	01	78° 23.8	227° 31.0	40.1	162° 37.2	28.0	7° 13.8	29.4		224° 05.7	20.7		Capella	280° 34.6	46° 00.5	N	198° 19.6	35.4		68° 36.3	14.3	12.9	10.1		S 52°	01:57	03:01	03:45	14:41	15:48	16:54	
	02	93° 26.3	242° 30.5	41.2	177° 37.6	27.9	22° 16.7	29.4		239° 07.9	20.8		Deneb	49° 31.9	45° 20.0	N	213° 19.4	35.9		83° 09.6	14.4	23.0	10.1		54°	01:33	02:47	03:35	14:44	15:53	17:00	
	03	108° 28.7	257° 30.1	42.3	192° 38.0	27.9	37° 19.5	29.3		254° 10.1	20.9		Denebola	182° 34.2	14° 29.9	N	228° 19.3	36.4		97° 43.0	14.3	33.1	9.9	54.9	56°	00:56	02:30	03:23	14:47	15:58	17:07	
	04	123° 31.2	272° 29.6	43.3	207° 38.4	27.8	52° 22.3	29.3		269° 12.3	20.9		Diphda	348° 56.1	17° 54.9	S	243° 19.1	36.9		112° 16.3	14.3	43.0	10.0		58°	-	02:09	03:10	14:50	16:03	17:15	
	05	138° 33.7	287° 29.1	44.4	222° 38.7	27.7	67° 25.1	29.2		284° 14.5	21.0						258° 18.9	37.4		126° 49.6	14.3	53.0	9.9		S 60°	-	01:43	02:55	14:54	16:10	17:24	
	06	153° 36.1	302° 28.6	45.5	237° 39.1	27.6	82° 27.9	29.2		299° 16.7	21.1		Dubhe	193° 52.4	61° 40.5	N	273° 18.7	37.9		141° 22.9	14.3	9° 02.9	N	9.9	S 62°	-	01:03	02:36	14:58	16:17	17:35	
	07	168° 38.6	317° 28.1	46.6	252° 39.5	27.6	97° 30.7	29.2		314° 18.9	21.2		Elnath	278° 12.7	28° 37.0	N	288° 18.5	38.4		155° 56.2	14.3	12.8	9.8									
	08	183° 41.1	332° 27.6	47.6	267° 39.9	27.5	112° 33.6	29.1		329° 21.1	21.3		Elnath	90° 46.8	51° 29.5	N	303° 18.3	38.9		170° 29.5	14.3	22.6	9.7									
	09	198° 43.5	347° 27.1	48.7	282° 40.2	27.4	127° 36.4	29.1		344° 23.3	21.4		Enif	33° 47.6	9° 56.3	N	318° 18.2	39.4		185° 02.8	14.2	32.3	9.8	54.8	Lat	Sunset						
	10	213° 46.0	2° 26.7	49.8	297° 40.6	27.4	142° 39.2	29.1		359° 25.4	21.5		Fomalhaut	15° 24.4	29° 33.2	S	333° 18.0	39.9		199° 36.0	14.3	42.1	9.6									
	11	228° 48.5	17° 26.2	50.8	312° 41.0	27.3	157° 42.0	29.0		1° 27.6	21.6						348° 17.8	40.4		214° 09.3	14.2	51.7	9.7									
	12	243° 50.9	32° 25.7	10° 51.9	327° 41.3	24° 27.2	172° 44.8	21° 29.0	N	29° 29.8	11° 21.7	S	Gacrux	172° 01.6	57° 10.9	S	3° 17.6	20° 40.8	S	228° 42.5	14.3	10° 01.4	N	9.6	54.8	N 70°	12:16	14:45	16:15	02:32	04:10	05:49
	13	258° 53.4	47° 25.2	53.0	342° 41.7	27.1	187° 47.7	28.9		44° 32.0	21.7		Gienah	175° 52.9	17° 36.7	S	18° 17.4	41.3		243° 15.8	14.2	11.0	9.5		68°	13:34	15:09	16:27	02:27	03:59	05:31	
	14	273° 55.9	62° 24.7	54.1	357° 42.1	27.1	202° 50.5	28.9		59° 24.1	21.8		Hadar	148° 49.0	60° 25.9	S	33° 17.2	41.8		257° 49.0	14.2	20.5	9.5		66°	14:10	15:27	16:36	02:23	03:59	05:16	
	15																															

2012 November 26, 27, 28 (Mon, Tue, Wed)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN			MOON				Twilight		Sunrise		Moonrise												
																							Lat	Nautical	Civil	26	27	28														
Sunday		GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	07:41	09:33	-	11:49	-	-															
	00	65° 19.6	212° 07.8	11° 30.2 S	147° 54.8	24° 24.2 S	354° 26.4	21° 27.6 N	210° 48.8	11° 24.8 S	Acamar	315° 18.2	40° 15.3 S	183° 10.7	20° 58.2 S	32° 26.6	13.5	15° 11.8 N	7.5	54.3	N 70°	07:26	08:58	-	12:34	12:20	-															
	01	80° 22.1	227° 07.3	31.3	163° 55.2	24.1	9° 29.2	27.5	225° 51.0	24.9	Acernar	335° 26.6	57° 10.4 S	198° 10.5	58.7	46° 59.1	13.4	19.3	7.4		N 70°	07:13	08:33	10:15	13:04	13:08	13:20															
	02	95° 24.6	242° 06.8	32.3	177° 55.5	24.0	24° 32.0	27.5	240° 53.2	25.0	Acruz	173° 10.1	63° 10.0 S	213° 10.3	59.1	61° 31.5	13.4	26.7	7.3		N 66°	07:03	08:14	09:34	13:26	13:39	14:02															
	03	110° 27.0	257° 06.3	33.4	192° 55.9	23.9	192° 55.9	23.9	255° 55.4	25.1	Adhara	255° 12.5	28° 59.4 S	228° 10.1	59.6	76° 03.9	13.4	34.0	7.8		N 64°	06:54	07:58	09:06	13:44	14:02	14:30															
	04	125° 29.5	272° 05.8	34.5	207° 56.3	23.8	54° 37.6	27.4	270° 57.6	25.2	Aldebaran	290° 49.5	16° 32.1 N	243° 09.9	21° 00.1 S	90° 36.3	13.3	41.3	7.2		N 62°	06:47	07:45	08:44	13:58	14:21	14:52															
	05	140° 32.0	287° 05.3	35.5	222° 56.0	23.7	69° 40.5	27.4	285° 59.8	25.3				258° 09.7	00.5	105° 08.6	13.4	48.5	7.1		N 60°	06:40	07:34	08:27	14:11	14:36	15:09															
	06	155° 34.4	302° 04.8	36.6	237° 57.0	23.7	84° 43.3	27.3	301° 02.0	25.4	Alioth	166° 21.4	55° 53.1 N	273° 09.5	01.0	119° 41.0	13.3	55.6	7.1	54.2	N 58°	06:34	07:24	08:13	14:21	14:49	15:24															
	07	170° 36.9	317° 04.3	37.6	252° 57.4	23.6	99° 46.1	27.3	316° 04.1	25.5	Alkaid	152° 59.6	49° 14.8 N	288° 09.3	01.5	134° 13.3	13.2	16° 02.7 N	7.0		N 56°	06:28	07:16	08:01	14:31	15:00	15:37															
	08	185° 39.3	332° 03.8	38.7	267° 57.8	23.5	114° 48.9	27.3	331° 06.3	25.5	Alnair	27° 44.3	46° 54.0 S	303° 09.1	01.9	148° 45.5	13.3	09.7	6.9		N 54°	06:23	07:08	07:50	14:39	15:10	15:48															
	09	200° 41.8	347° 03.3	39.7	282° 58.1	23.4	129° 57.0	27.2	346° 08.5	25.6	Alnilam	275° 46.1	7° 11.7 S	318° 08.9	02.4	163° 17.8	13.2	16.6	6.8		N 52°	06:19	07:01	07:40	14:47	15:19	15:57															
	10	215° 44.3	2° 02.8	40.8	297° 58.5	23.3	144° 54.6	27.2	1° 10.7	25.7	Alphard	217° 56.4	8° 42.9 S	333° 08.7	02.9	177° 50.0	13.2	23.4	6.8		N 50°	06:14	06:55	07:32	14:53	15:27	16:06															
	11	230° 46.7	17° 02.2	41.8	312° 58.9	23.2	159° 57.4	27.1	16° 12.9	25.8				348° 08.5	03.3	192° 22.2	13.1	30.2	6.7		N 45°	06:04	06:41	07:14	15:08	15:44	16:25															
	12	245° 49.2	32° 01.7	11° 42.9 S	327° 59.2	24° 23.1 S	175° 00.2	21° 27.1 N	31° 15.1	11° 25.9 S	Alphecca	126° 11.7	26° 40.3 N	3° 08.3	21° 03.8 S	206° 54.3	13.2	16° 36.9 N	6.6	54.2	N 40°	05:56	06:29	06:59	15:20	15:58	16:40															
	13	260° 51.7	47° 01.2	43.9	342° 59.6	23.0	190° 03.0	27.1	46° 17.3	26.0	Alpheratz	357° 43.7	29° 10.0 N	18° 08.1	04.3	221° 26.5	13.1	43.5	6.6		N 35°	05:48	06:19	06:46	15:30	16:09	16:53															
	14	275° 54.1	62° 00.7	45.0	358° 00.0	22.9	205° 05.9	27.0	61° 19.5	26.1	Altair	62° 08.8	8° 54.4 N	33° 07.9	04.7	235° 58.6	13.0	50.1	6.4		N 30°	05:40	06:09	06:35	15:39	16:20	17:04															
	15	290° 56.6	77° 00.2	46.0	13° 00.4	22.8	220° 08.7	27.0	76° 21.7	26.1	Ankaa	353° 15.9	42° 14.3 S	48° 07.7	05.2	250° 30.6	13.1	56.5	6.4		N 20°	05:26	05:53	06:16	15:54	16:37	17:23															
	16	305° 59.1	91° 59.7	47.1	18° 00.7	22.7	235° 11.5	26.9	91° 23.9	26.2	Antares	112° 27.1	26° 27.5 S	63° 07.5	05.6	265° 02.7	13.0	17° 02.9 N	6.3		N 10°	05:11	05:37	06:00	16:08	16:53	17:40															
	17	321° 01.5	106° 59.2	48.1	43° 01.1	22.6	250° 14.3	26.9	106° 26.1	26.3				78° 07.3	06.1	279° 34.7	13.0	09.2	6.3	54.1	N 0°	04:56	05:22	05:44	16:21	17:08	17:55															
	18	336° 04.0	121° 58.7	49.2	58° 01.5	22.5	265° 17.2	26.9	121° 28.3	26.4	Arcturus	145° 56.4	19° 06.9 N	93° 07.1	06.6	294° 06.7	13.0	15.5	6.1		N 10°	04:39	05:06	05:28	16:34	17:22	18:11															
	19	351° 06.4	136° 58.2	50.2	73° 01.9	22.4	280° 20.0	26.8	136° 30.5	26.5	Arctua	107° 29.8	69° 02.9 S	108° 06.9	07.0	308° 38.7	12.9	21.6	6.1		N 20°	04:19	04:47	05:11	16:47	17:38	18:28															
	20	6° 08.9	151° 57.7	51.3	88° 02.2	22.3	295° 22.8	26.8	151° 32.7	26.6	Avior	234° 17.8	59° 32.9 S	123° 06.7	07.5	323° 10.6	12.9	27.7	6.0		N 30°	03:53	04:25	04:52	17:03	17:56	18:47															
	21	21° 11.4	166° 57.1	52.3	103° 02.6	22.2	310° 25.6	26.7	166° 34.9	26.7	Bellatrix	278° 32.1	6° 21.6 N	138° 06.5	07.9	337° 42.5	12.9	33.7	5.9		N 35°	03:36	04:11	04:40	17:13	18:07	18:59															
22	36° 13.8	181° 56.6	53.4	118° 03.0	22.1	325° 28.4	26.6	181° 37.1	26.8	Betelgeuse	271° 01.4	7° 24.5 N	153° 06.7	08.4	352° 14.4	12.9	39.6	5.9		N 40°	03:16	03:55	04:27	17:23	18:19	19:12																
23	51° 16.3	196° 56.1	54.4	133° 03.3	22.0	340° 31.3	26.8	196° 39.3	26.8				168° 06.1	08.8	6° 46.3	12.8	45.5	5.7		N 45°	02:49	03:35	04:11	17:36	18:33	19:27																
Monday	00	66° 18.8	211° 55.6	11° 55.5 S	148° 03.7	24° 21.9 S	355° 34.1	21° 26.7 N	191° 41.5	11° 26.9 S	Canopus	263° 55.8	52° 42.4 S	183° 05.9	21° 09.3 S	21° 18.1	12.8	17° 51.2 N	5.7	54.1	S 50°	02:12	03:10	03:51	17:51	18:50	19:46															
	01	81° 21.2	226° 55.1	56.5	163° 04.1	21.8	10° 36.9	26.6	226° 43.7	27.0	Capella	280° 34.5	46° 00.5 N	198° 05.7	09.7	35° 49.9	12.8	56.9	5.6		N 52°	01:51	02:57	03:42	17:58	18:59	19:55															
	02	96° 23.7	241° 54.6	57.6	178° 04.5	21.7	25° 39.7	26.5	241° 45.9	27.1	Deneb	49° 31.9	45° 20.0 N	213° 05.5	10.2	50° 21.7	12.7	18° 02.5 N	5.4		N 54°	01:24	02:42	03:31	18:06	19:08	20:05															
	03	111° 26.2	256° 54.1	58.6	193° 04.8	21.6	40° 42.6	26.6	256° 48.1	27.2	Denebola	182° 34.2	14° 29.9 N	228° 05.3	10.6	64° 53.4	12.7	08.0	5.5		N 56°	00:41	02:25	03:19	18:15	19:18	20:16															
	04	126° 28.6	271° 53.5	59.6	208° 05.2	21.5	55° 45.4	26.5	271° 50.2	27.3	Diphda	348° 56.1	17° 54.9 S	243° 05.1	11.1	79° 25.1	12.7	13.4	5.4		N 58°	-	02:03	03:06	18:25	19:30	20:29															
	05	141° 31.1	286° 53.0	12° 00.7 S	223° 05.6	21.4	70° 48.2	26.4	286° 52.4	27.4				258° 04.9	11.5	93° 56.8	12.7	18.8	5.3		N 60°	-	01:34	02:49	18:36	19:44	20:45															
	06	156° 33.6	301° 52.5	01.7	238° 05.9	21.2	85° 51.0	26.4	301° 54.6	27.5	Dubhe	193° 52.3	61° 40.5 N	273° 04.7	12.0	108° 28.5	12.6	24.1	5.2		N 62°	-	00:47	02:29	18:50	20:01	21:03															
	07	171° 36.0	316° 52.0	02.8	253° 06.3	21.1	100° 53.9	26.3	316° 56.8	27.5	Elnath	278° 12.7	28° 37.0 N	288° 04.4	12.4	123° 00.1	12.6	29.3	5.1		N 60°	-	-	-	-	-	-															
	08	186° 38.5	331° 51.5	03.8	268° 06.7	21.0	115° 56.7	26.3	331° 59.0	27.6	Elnath	90° 46.8	51° 29.5 S	303° 04.2	12.9	137° 31.7	12.6	34.4	5.0		N 58°	-	-	-	-	-	-															
	09	201° 40.9	346° 51.0	04.9	283° 07.0	20.9	130° 59.5	26.3	347° 01.2	27.7	Enif	33° 47.6	9° 56.3 N	318° 04.0	13.3	152° 03.3	12.6	39.4	4.9	54.0	N 54°	-	-	-	-	-	-															
	10	216° 43.4	1° 50.4	05.9	298° 07.4	20.8	146° 02.3	26.2	2° 03.4	27.8	Fomalhaut	15° 24.4	29° 33.2 S	333° 03.8	13.8	168° 34.9	12.5																									

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN		MOON					Twilight			Sunrise			Moonrise			
																					GHA	Dec	GHA	v	Dec	d	HP	N	07:49	09:47	-	-	-	29	30
29 Th urs day	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	07:49	09:47	-	-	-	-	-	-	-	-	-				
	68° 17.0	211° 30.4	12° 45.1 S	148° 21'5	24° 16.4 S	357° 49.7	21° 31.1 N	213° 26.9	11° 31'1.1 S	Acamar	315° 18.2	40° 15.3 S	182° 55.7	21° 30.3 S	358° 18.4	11.9	20° 45.3 N	1.4	54.0	N 70°	07:33	09:09	-	-	-	-	-	15:29							
	01	83° 19.5	226° 29.9	46.1	163° 21.9	16.2	12° 52.5	24.7	228° 29.1	31.2	Achernar	335° 26.7	57° 10.4 S	197° 55.5	30.7	12° 49.3	11.8	46.7	1.3	68°	07:20	08:42	10:33	13:52	14:56	16:21									
	02	98° 22.0	241° 29.3	47.2	178° 22.2	16.1	27° 55.3	24.6	243° 31.3	31.3	Acrux	173° 10.0	63° 10.0 S	212° 55.3	31.1	27° 20.1	11.8	48.0	1.1	66°	07:09	08:22	09:45	14:40	15:39	16:53									
	03	113° 24.4	256° 28.8	48.2	193° 22.6	16.0	42° 58.1	24.6	255° 33.5	31.3	Adhara	255° 12.5	28° 59.4 S	227° 55.1	31.5	41° 50.9	11.8	49.1	1.1	64°	07:00	08:05	09:14	15:11	16:08	17:17									
	04	128° 26.9	271° 28.3	49.2	208° 23.0	15.9	58° 01.0	24.5	273° 35.7	31.4	Aldebaran	290° 49.5	16° 32.1 N	242° 54.8	31.9	56° 21.7	11.8	50.2	1.0	62°	06:52	07:51	08:52	15:34	16:29	17:35									
	05	143° 29.4	286° 27.7	50.2	223° 23.3	15.7	73° 03.8	24.5	288° 37.9	31.5				257° 54.6	32.3	70° 52.5	11.8	51.2	0.9	60°	06:45	07:40	08:34	15:53	16:47	17:51									
	06	158° 31.8	301° 27.2	51.3	238° 23.7	15.6	88° 06.6	24.5	303° 40.1	31.6	Alioth	166° 21.4	55° 53.1 N	272° 54.4	32.8	85° 23.3	11.8	52.1	0.7	N 58°	06:38	07:29	08:19	16:08	17:02	18:04									
	07	173° 34.3	316° 26.7	52.3	253° 24.1	15.5	103° 09.4	24.4	318° 42.3	31.7	Alkaid	152° 59.6	49° 14.8 N	287° 54.2	33.2	99° 54.1	11.8	52.8	0.7	56°	06:33	07:20	08:06	16:21	17:14	18:15									
	08	188° 36.8	331° 26.1	53.3	268° 24.5	15.4	118° 12.3	24.4	333° 44.5	31.8	Alnair	27° 44.3	46° 54.0 S	302° 54.0	33.6	114° 24.9	11.7	53.5	0.6	54°	06:27	07:12	07:55	16:33	17:25	18:25									
	09	203° 39.2	346° 25.6	54.3	283° 24.8	15.2	133° 15.1	24.3	348° 46.7	31.8	Alnilam	275° 46.4	1° 11.7 S	317° 53.7	34.0	128° 55.6	11.8	54.1	0.5	52°	06:22	07:05	07:45	16:43	17:35	18:34									
	10	218° 41.7	1° 25.0	55.3	298° 25.2	15.1	148° 17.9	24.3	3° 48.9	31.9	Alphard	217° 56.4	8° 42.9 S	332° 53.5	34.4	143° 26.4	11.8	54.6	0.4	50°	06:18	06:58	07:36	16:52	17:44	18:41									
	11	233° 44.2	16° 24.5	56.3	313° 25.6	15.0	163° 20.7	24.3	18° 51.1	32.0				347° 53.3	34.8	157° 57.2	11.7	55.0	0.3	45°	06:07	06:44	07:17	17:11	18:02	18:58									
	12	248° 46.6	31° 24.0	12° 57.4 S	328° 25.9	24° 14.8 S	178° 23.6	21° 24.2 N	33° 53.3	11° 32.1 S	Alphecca	126° 11.7	26° 40.3 N	2° 53.1	21° 35.2 S	172° 27.9	11.8	20° 55.3 N	0.2	54.0	N 40°	05:58	06:32	07:02	17:26	18:17	19:12								
	13	263° 49.1	46° 23.4	58.4	343° 26.3	14.7	193° 26.4	24.2	48° 55.5	32.2	Alpheratz	357° 43.7	29° 10.0 N	17° 52.8	35.7	186° 58.7	11.7	55.5	0.1	35°	05:50	06:21	06:49	17:40	18:30	19:23									
	14	278° 51.5	61° 22.9	59.4	358° 26.7	14.6	208° 29.2	24.1	62° 08.8	32.3	Altair	62° 08.8	8° 54.4 N	32° 52.7	36.1	201° 29.4	11.8	56.6	0.0	30°	05:42	06:12	06:38	17:51	18:41	19:33									
	15	293° 54.0	76° 22.3	13° 00.4 S	13° 27.0	14.4	223° 32.1	24.1	78° 59.9	32.4	Ankaa	353° 15.9	42° 14.3 S	47° 52.4	36.5	216° 00.2	11.7	55.6	0.1	20°	05:27	05:54	06:18	18:11	19:00	19:51									
	16	308° 56.5	91° 21.8	01.4	28° 27.4	14.3	238° 34.9	24.1	94° 02.1	32.4	Antares	112° 27.1	26° 27.5 S	62° 52.2	36.9	230° 30.9	11.8	55.5	0.2	N 10°	05:13	05:39	06:01	18:28	19:17	20:06									
	17	323° 58.9	106° 21.2	02.4	43° 27.8	14.2	253° 37.7	24.0	109° 04.3	32.5				77° 51.9	37.3	245° 01.7	11.7	55.3	0.3	0°	04:57	05:23	05:45	18:44	19:32	20:20									
	18	339° 01.4	121° 20.7	03.5	58° 28.2	14.0	268° 40.5	24.0	124° 06.5	32.6	Arcturus	145° 56.4	19° 06.9 N	92° 51.7	37.7	259° 32.4	11.8	55.0	0.4	S 10°	04:40	05:06	05:29	19:00	19:47	20:34									
	19	354° 03.9	136° 20.2	04.5	73° 28.5	13.9	283° 43.4	23.9	139° 08.7	32.7	Altair	107° 29.8	69° 02.9 S	107° 51.5	38.1	274° 03.2	11.7	54.6	0.5	20°	04:19	04:47	05:12	19:17	20:04	20:49									
	20	9° 06.3	151° 19.6	05.5	88° 28.9	13.8	298° 46.2	23.9	154° 10.9	32.8	Avior	234° 17.8	59° 32.9 S	122° 51.3	38.5	288° 33.9	11.7	54.1	0.6	30°	03:52	04:24	04:51	19:36	20:23	21:06									
	21	24° 08.8	166° 19.1	06.5	103° 29.3	13.6	313° 49.0	23.9	169° 13.1	32.9	Bellatrix	278° 32.1	6° 21.6 N	137° 51.0	38.9	303° 04.6	11.8	53.5	0.6	35°	03:35	04:10	04:39	19:48	20:34	21:17									
22	39° 11.3	181° 18.5	07.5	118° 29.6	13.5	328° 51.8	23.8	184° 15.3	33.0	Betelgeuse	271° 01.4	7° 24.5 N	152° 50.8	39.3	317° 35.4	11.7	52.9	0.8	40°	03:14	03:54	04:26	20:01	20:46	21:26										
23	54° 13.7	196° 18.0	08.5	133° 30.0	13.4	343° 54.7	23.8	199° 17.5	33.0				167° 50.6	39.7	332° 06.1	11.8	52.1	0.9	45°	02:46	03:33	04:09	20:17	21:01	21:41										
30 F ri day	69° 16.2	211° 17.4	13° 09.5 S	148° 30.4	24° 13.2 S	358° 57.5	21° 23.7 N	214° 19.7	11° 33.1 S	Canopus	263° 55.8	52° 42.1 S	182° 50.4	21° 40.1 S	346° 36.9	11.7	20° 51.2 N	1.0	54.0	S 50°	02:08	03:07	03:49	20:36	21:19	21:57									
	01	84° 18.7	226° 16.9	10.5	163° 30.7	13.1	14° 00.3	23.7	229° 21.9	33.2	Capella	280° 34.5	46° 00.5 N	197° 50.1	40.5	1° 07.6	11.8	50.0	1.0	52°	01:46	02:54	03:39	20:45	21:28	22:05									
	02	99° 21.1	241° 16.3	11.6	178° 31.1	12.9	29° 03.1	23.6	244° 24.1	33.3	Deneb	49° 32.0	45° 20.0 N	212° 49.9	40.9	15° 38.4	11.7	49.2	1.2	54°	01:16	02:38	03:29	20:55	21:38	22:13									
	03	114° 23.6	256° 15.8	12.6	193° 31.5	12.8	44° 06.3	23.6	259° 26.3	33.4	Denebola	182° 34.2	14° 29.9 N	227° 49.7	41.3	30° 09.2	11.7	48.0	1.1	56°	00:22	02:20	03:16	21:07	21:48	22:23									
	04	129° 26.0	271° 15.2	13.6	208° 31.8	12.7	59° 08.8	23.6	274° 28.5	33.5	Diphda	348° 56.1	17° 54.9 S	242° 49.5	41.7	44° 39.9	11.8	46.7	1.3	58°	-	01:56	03:02	21:20	22:01	22:33									
	05	144° 28.5	286° 14.7	14.6	223° 32.2	12.5	74° 11.6	23.5	289° 30.7	33.5				257° 49.2	42.1	59° 10.7	11.8	45.4	1.5	S 60°	-	01:25	02:44	21:35	22:15	22:46									
	06	159° 31.0	301° 14.1	15.6	238° 32.6	12.4	89° 14.5	23.5	304° 32.9	33.6	Dubhe	193° 52.3	61° 40.5 N	272° 49.0	42.5	73° 41.5	11.8	43.9	1.5	S 62°	-	00:26	02:23	21:54	22:32	23:00									
	07	174° 33.4	316° 13.6	16.6	253° 33.0	12.2	104° 17.3	23.4	319° 35.1	33.7	El Nath	278° 12.7	28° 37.0 N	287° 48.8	42.9	88° 12.3	11.7	42.4	1.7	54.1															
	08	189° 35.9	331° 13.0	17.6	268° 33.3	12.1	119° 20.1	23.4	334° 37.3	33.8	Elninon	90° 46.8	51° 29.5 N	302° 48.6	43.3	102° 43.0	11.8	40.7	1.7																
	09	204° 38.4	346° 12.5	18.6	283° 33.7	12.0	134° 22.9	23.4	349° 39.5	33.9	Enif	33° 47.6	9° 56.3 S	317° 48.3	43.7	117° 13.8	11.8	39.0	1.9	Lat	Sunset	Twilight		Moonset											
	10	219° 40.8	1° 11.9	19.6	298° 34.1	11.8	149° 25.8	23.3	4° 41.7	34.0	Fomalhaut	15° 24.4	29° 33.2 S	332° 48.1	44.1	131° 44.6	11.9	37.1	1.9	29	30	1													
	11	234° 43.3	16° 11.4	20.6	313° 34.4	11.7	164° 28.6	23.3	19° 43.9	34.0				347° 47.9	44.5	146° 15.5	11.8	35.2	2.1	29	30	1													
	12	249° 45.8	31° 10.8	13° 21.6 S	328° 34.8	24° 11.5 S	179° 31.4	21° 23.2 N	34° 46.1	11° 34.1 S	Gacrux	172° 01.6	57° 10.9 S	2° 47.6	21° 44.9 S	160° 46.3	11.8	20° 33.1 N	2.1	54.1	N 72°	-	13:50	15:48	-	-	-								
	13	264° 48.2	46° 10.3	22.6	343° 35.2	11.4	194° 34.2	23.2	49° 48.3	34.2	Gienah	175° 52.8	17° 36.8 S	17° 47.4	45.3	175° 17.1	11.9	31.0	2.2	N 70°	-	14:28	16:04	-	-	12:54									
	14	279° 50.7	61° 09.7	23.6	358° 35.5	11.2	209° 37.1	23.2	64° 50.5	34.3	Hadar	148° 48.9	60° 25.9 S	32° 47.2	45.7	189° 48.0	11.8	28.8	2.4	68°	13:05	14:55	16:17	11:10	11:46	12:01									
	15	294° 53.2	76° 09.2	24.6	13° 35.9	11.1	224° 39.9	23.1	79° 52.7	34.4	Hamal	328° 00.9	23° 31.5 S	47° 46.9	46.1	204° 18.8	11																		

2012 December 2, 3, 4 (Sun, Mon, Tue)

Table with 23 columns: GMT, Planets (ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON), and various astronomical data points including Right Ascension, Declination, Magnitude, and Position. Includes a detailed 'SATURN' section with star names and a 'MOON' section with phase and position. Ends with a 'MOON' phase diagram and a footer for NavSoft.com.

2012 December 5, 6, 7 (Wed, Thu, Fri)

GMT	ARIES	VENUS	-4.0		+1.2		-2.8		+0.7		STARS			SUN		MOON				Lat	Twilight		Sunrise	Moonrise				
			Nautical	Civil	5	6	7	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N	08:04		10:14	-		22:26	-	00:16		
5 W e d n e s d a y	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:04	10:14	-	22:26	-	00:16		
	74° 11.9	210° 08.4	15° 06.8 S	149° 14.7	23° 53.3 S	4° 36.8	21° 18.8 N	218° 44.2	11° 43.1 S	Acamar	315° 18.2	40° 15.3 S	182° 21.2	22° 23.2 S	289° 53.9	13.5	8° 37.7 N	10.3	55.8	N 70°	07:47	09:28	-	22:32	-	00:16		
	01	89° 14.4	225° 07.8	11.9	164° 15.0	53.1	19° 39.6	18.8	335° 26.7	57° 10.5 S	Acnhar	335° 26.7	57° 10.5 S	197° 21.0	23.5	304° 26.4	13.4	27.4	10.4	55.9	N 68°	07:32	08:57	11:13	22:38	-	00:15	
	02	104° 16.8	240° 07.2	08.6	179° 15.4	52.9	34° 42.4	18.7	248° 48.6	43.2	Acnra	173° 10.0	63° 10.0 S	212° 20.7	23.8	318° 58.8	13.5	17.0	10.4	66°	07:20	08:35	10:05	22:42	-	00:14		
	03	119° 19.3	255° 06.6	09.6	194° 15.8	52.7	49° 45.2	18.7	263° 50.8	43.3	Achux	255° 12.5	28° 59.4 S	227° 20.5	24.1	333° 31.3	13.5	06.6	10.4	64°	07:10	08:17	09:30	22:46	-	00:15		
	04	134° 21.7	270° 05.9	10.5	209° 16.1	52.5	64° 48.1	18.6	278° 53.0	43.4	Aldebaran	290° 49.4	16° 32.0 N	242° 20.2	24.5	348° 03.8	13.4	7° 56.2 N	10.5	62°	07:01	08:02	09:05	22:49	-	00:14		
	05	149° 24.2	285° 05.3	11.5	224° 16.5	52.3	79° 50.9	18.6	293° 55.2	43.5				257° 19.9	24.8	2° 36.2	13.5	45.7	10.5	56.0	60°	06:53	07:49	08:45	22:52	-	00:14	
	06	164° 26.7	300° 04.7	12.4	239° 16.9	52.1	94° 53.7	18.5	308° 57.4	43.5	Alioth	166° 21.3	55° 53.1 N	272° 19.7	25.1	17° 08.7	13.4	35.2	10.6	60°	06:47	07:38	08:29	22:54	-	00:13		
	07	179° 29.1	315° 04.1	13.3	254° 17.2	51.9	109° 56.6	18.5	323° 59.6	43.6	Alkaid	152° 59.5	49° 14.7 N	287° 19.4	25.4	31° 41.1	13.5	24.6	10.7	56°	06:40	07:29	08:15	22:57	-	00:13		
	08	194° 31.6	330° 03.5	14.3	269° 17.6	51.7	124° 59.4	18.5	339° 01.9	43.7	Alnair	27° 44.3	46° 54.0 S	302° 19.2	25.7	46° 13.6	13.4	13.9	10.6	56.1	54°	06:35	07:20	08:03	22:59	-	00:13	
	09	209° 34.1	345° 02.9	15.2	284° 18.0	51.6	140° 02.2	18.4	354° 04.1	43.8	Alnilam	275° 46.4	1° 11.7 S	317° 18.9	26.0	60° 46.0	13.4	03.3	10.7	52°	06:29	07:12	07:53	23:00	-	00:13		
	10	224° 36.5	0° 02.3	16.1	299° 18.3	51.4	155° 05.0	18.4	9° 06.3	43.9	Alphard	217° 56.3	8° 43.0 S	332° 18.6	26.3	75° 18.4	13.5	6° 52.6 N	10.8	50°	06:24	07:05	07:43	23:02	-	00:12		
	11	239° 39.0	15° 01.7	17.1	314° 18.7	51.2	170° 07.9	18.3	24° 08.5	43.9				347° 18.4	26.6	89° 50.9	13.4	41.8	10.8	56.2	45°	06:13	06:50	07:24	23:06	-	00:12	
	12	254° 41.5	30° 01.1	15° 18.0 S	329° 19.1	23° 51.0 S	185° 10.7	21° 18.3 N	39° 10.7	11° 44.0 S	Alphecca	126° 11.7	26° 40.3 N	2° 18.1	22° 26.9 S	104° 23.3	13.4	6° 31.0 N	10.8	56.2	N 40°	06:04	06:37	07:08	23:09	-	00:12	
	13	269° 43.9	45° 00.5	18.9	344° 19.5	50.8	200° 13.5	18.3	54° 12.9	44.1	Alpheratz	357° 43.8	29° 10.0 N	17° 17.9	27.2	118° 55.7	13.4	20.2	10.9	35°	05:55	06:26	06:54	23:11	-	00:11		
	14	284° 46.4	59° 59.9	19.9	359° 19.8	50.6	215° 16.3	18.2	69° 15.1	44.2	Altair	62° 08.9	8° 54.4 N	32° 17.6	27.5	133° 28.1	13.4	09.3	10.9	30°	05:46	06:16	06:42	23:13	-	00:11		
	15	299° 48.8	74° 59.2	20.8	14° 20.2	50.4	230° 19.2	18.2	84° 17.3	44.3	Ankaa	353° 15.9	42° 14.3 S	47° 17.3	27.8	148° 00.5	13.4	5° 58.4 N	11.0	56.3	20°	05:31	05:58	06:22	23:17	-	00:11	
	16	314° 51.3	89° 58.6	21.7	29° 20.6	50.2	245° 22.0	18.1	99° 19.5	44.3	Antares	112° 27.1	26° 27.5 S	62° 17.1	28.1	162° 32.9	13.3	47.4	11.0	60°	N 10°	05:15	05:42	06:04	23:21	-	00:11	
	17	329° 53.8	104° 58.0	22.7	44° 20.9	49.9	260° 24.8	18.1	114° 21.7	44.4				77° 16.8	28.4	177° 05.2	13.4	36.4	11.0	0°	04:59	05:25	05:47	23:24	-	00:10		
	18	344° 56.2	119° 57.4	23.6	59° 21.3	49.7	275° 27.6	18.1	129° 23.9	44.5	Arcturus	145° 56.3	19° 06.9 N	92° 16.5	28.7	191° 37.6	13.3	25.4	11.1	56.4	S 10°	04:41	05:08	05:31	23:27	-	00:10	
	19	359° 58.7	134° 56.8	24.5	74° 21.7	49.5	290° 30.5	18.0	144° 26.2	44.6	Alraia	107° 29.8	60° 02.9 S	107° 16.3	29.0	206° 09.9	13.3	14.3	11.1	20°	04:19	04:48	05:12	23:31	-	00:10		
	20	15° 01.2	149° 56.2	25.4	89° 22.0	49.3	305° 33.3	18.0	159° 28.4	44.7	Avior	234° 17.7	59° 33.0 S	122° 16.0	29.3	220° 42.2	13.3	03.2	11.1	30°	03:51	04:24	04:51	23:34	-	00:10		
	21	30° 03.6	164° 55.6	26.4	104° 22.4	49.1	320° 36.1	17.9	174° 30.6	44.8	Bellatrix	278° 32.1	6° 21.6 N	137° 15.8	29.6	235° 14.5	13.3	4° 52.1 N	11.2	56.5	35°	03:33	04:10	04:39	23:37	-	00:09	
22	45° 06.1	179° 54.9	27.3	119° 22.8	48.9	335° 39.0	17.9	189° 32.8	44.8	Betelgeuse	271° 01.4	7° 24.2 N	152° 15.5	29.9	249° 46.8	13.3	40.9	11.2	40°	03:11	03:52	04:25	23:39	-	00:09			
23	60° 08.6	194° 54.3	28.2	134° 23.2	48.7	350° 41.8	17.8	204° 35.0	44.9				167° 15.2	30.2	264° 19.1	13.2	29.7	11.3	45°	02:42	03:31	04:07	23:42	-	00:09			
6 T h u r s d a y	75° 11.0	209° 53.7	15° 29.1 S	149° 23.5	23° 48.5 S	5° 44.6	21° 17.8 N	219° 37.2	11° 45.0 S	Capopus	263° 55.8	52° 42.4 S	182° 15.0	22° 30.5 S	278° 51.3	13.3	4° 18.4 N	11.2	56.6	S 50°	02:01	03:03	03:46	23:46	-	00:09		
	01	90° 13.5	224° 53.1	30.1	164° 23.9	48.3	20° 47.4	17.8	234° 39.4	48.3	Canella	280° 34.5	46° 00.5 N	197° 14.7	30.8	293° 23.6	13.2	07.2	11.3	52°	01:36	02:49	03:36	23:47	-	00:09		
	02	105° 16.0	239° 52.5	31.0	179° 24.3	48.1	35° 50.3	17.7	249° 41.6	45.1	Deneb	49° 32.0	45° 20.0 N	212° 14.4	31.1	307° 55.8	13.2	3° 55.9 N	11.4	54°	01:01	02:32	03:24	23:49	-	00:09		
	03	120° 18.4	254° 51.9	31.9	194° 24.6	47.9	50° 53.1	17.6	264° 43.8	45.2	Denebola	182° 34.1	14° 29.8 N	182° 14.2	31.1	322° 28.0	13.1	44° 22.4 N	11.4	56.7	56°	01:41	02:12	03:11	23:51	-	00:09	
	04	135° 20.9	269° 51.2	32.8	209° 25.0	47.7	65° 55.9	17.6	279° 46.0	45.3	Diphda	348° 56.1	17° 54.9 S	242° 13.9	31.7	337° 00.1	13.2	33.1	11.4	58°	-	01:46	02:55	23:53	-	00:08		
	05	150° 23.3	284° 50.6	33.8	224° 25.4	47.5	80° 58.7	17.6	294° 48.3	45.4				257° 13.6	32.0	351° 32.3	13.1	21.7	11.4	58°	S 60°	-	01:08	02:37	23:55	-	00:08	
	06	165° 25.8	299° 50.0	34.7	239° 25.7	47.3	96° 01.6	17.6	309° 50.5	45.5	Dubhe	193° 52.2	61° 40.5 N	272° 13.4	32.3	6° 04.4	13.1	10.3	11.4	56.8	S 62°	-	-	02:13	23:58	-	00:08	
	07	180° 28.3	314° 49.4	35.6	254° 26.1	47.1	111° 04.2	17.5	324° 52.7	45.6	Elanah	278° 12.7	28° 37.0 N	287° 13.1	32.6	20° 36.5	13.1	2° 58.9 N	11.5									
	08	195° 30.7	329° 48.8	36.5	269° 26.5	46.9	126° 07.4	17.5	339° 54.9	45.6	Elnath	90° 46.8	51° 29.4 N	302° 12.8	32.9	35° 08.6	13.0	47.4	11.5									
	09	210° 33.2	344° 48.1	37.4	284° 26.9	46.7	141° 10.0	17.4	354° 57.1	45.7	Enif	33° 47.6	9° 56.3 N	317° 12.6	33.2	49° 40.6	13.1	35.9	11.6	56.9	Lat	Sunset	Twilight		Moonset			
	10	225° 35.7	359° 47.5	38.4	299° 27.2	46.4	156° 12.9	17.4	9° 59.3	45.8	Fomalhaut	15° 24.4	29° 33.2 S	332° 12.3	33.5	64° 12.7	13.0	24.3	11.5									
	11	240° 38.1	14° 46.9	39.3	314° 27.6	46.2	171° 15.7	17.3	25° 01.5	45.9				347° 12.0	33.7	78° 44.7	12.9	12.8	11.6									
	12	255° 40.6	29° 46.3	15° 40.2 S	329° 28.0	23° 46.0 S	186° 18.5	21° 17.3 N	40° 03.7	11° 45.9 S	Gacrux	172° 01.5	57° 10.9 S	2° 11.8	22° 34.0 S	93° 16.6	13.0	2° 01.2 N	11.6	57.0	N 70°	-	13:27	15:37	12:23	12:10	11:57	
	13	270° 43.1	44° 45.6	41.1	344° 28.3	45.8	201° 21.3	17.3	55° 05.9	46.0	Gienah	175° 52.8	17° 36.8 S	17° 11.5	34.3	107° 48.6	12.9	1° 49.6 N	11.6	68°	12:29	14:45	16:10	12:07	12:06	12:04		
	14	285° 45.5	59° 45.0																									

2012 December 8, 9, 10 (Sat, Sun, Mon)

GMT	ARIES			VENUS -4.0			MARS +1.2			JUPITER -2.8			SATURN +0.7			STARS			SUN		MOON					Lat	Twilight		Sunrise	Moonrise						
	8	9	10	GHA	Dec	16° 12.8 S	GHA	Dec	23° 38' 1 S	GHA	Dec	8° 00' 2	15° 15.8 N	GHA	Dec	22° 23' 4	11° 48.8 S	Name	SHA	Dec	GHA	Dec	GHA	v	Dec		d	HP		Nautical	Civil	8	9	10		
Friday	00		GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Acamar	315° 18.3'	40° 15.3 S	182° 02.0	22° 43.9 S	256° 00' 5	11.2	5° 04.8 S	11.9	58.3	N 72°	08:11	10:27	-	02:11	04:16	06:40		
	01	77° 09.3'	209° 23.5'	16° 12.8 S	149° 41.3'	23° 38.1 S	8° 00' 2	15° 15.8 N	221° 23.4'	11° 48.8 S	221° 23.4'	11° 48.8 S	221° 23.4'	11° 48.8 S	221° 23.4'	11° 48.8 S	221° 23.4'	11° 48.8 S	Acamar	315° 18.3'	40° 15.3 S	182° 02.0	22° 43.9 S	256° 00' 5	11.2	5° 04.8 S	11.9	58.3	N 72°	08:11	10:27	-	02:11	04:16	06:40	
	02	77° 11.8'	224° 22' 9	13.7	164° 41.7	37.9	15.8	236° 25.6	48.9	236° 25.6	48.9	236° 25.6	48.9	236° 25.6	48.9	236° 25.6	48.9	236° 25.6	48.9	Acamar	335° 26.7	57° 10.5 S	173° 01.7	44.1	270° 30.7	11.2	16.7	11.8	58.0	N 70°	07:52	09:36	-	02:03	03:57	05:37
	03	107° 14.2	239° 22.2	14.6	179° 42.0	37.7	15.7	38° 05.9	48.9	38° 05.9	48.9	38° 05.9	48.9	38° 05.9	48.9	38° 05.9	48.9	38° 05.9	48.9	Acrux	173° 09.9	63° 10.0 S	212° 01.5	44.4	285° 00.9	11.1	28.5	11.9	58.4	66°	07:25	08:40	10:14	01:50	03:31	05:17
	04	122° 16.7	254° 21.6	15.4	194° 42.4	37.4	15.7	255° 12.5	48.9	255° 12.5	48.9	255° 12.5	48.9	255° 12.5	48.9	255° 12.5	48.9	255° 12.5	48.9	Adhara	275° 52.8	28° 59.4 S	227° 01.2	44.6	299° 31.0	11.1	40.4	11.8	58.4	64°	07:14	08:22	09:36	01:46	03:22	05:01
	05	137° 19.2	269° 20.9	16.3	209° 42.8	37.2	15.6	68° 11.5	49.1	68° 11.5	49.1	68° 11.5	49.1	68° 11.5	49.1	68° 11.5	49.1	68° 11.5	49.1	Aldebaran	290° 49.4	16° 32.0 N	242° 00.9	44.9	314° 01.1	11.0	52.2	11.8	58.4	62°	07:05	08:06	09:10	01:42	03:13	04:48
	06	152° 21.6	284° 20.3	17.2	224° 43.2	37.0	15.6	83° 14.3	49.2	83° 14.3	49.2	83° 14.3	49.2	83° 14.3	49.2	83° 14.3	49.2	83° 14.3	49.2	Aldebaran	290° 49.4	16° 32.0 N	242° 00.9	44.9	314° 01.1	11.0	52.2	11.8	58.4	60°	06:57	07:53	08:50	01:38	03:06	04:37
	07	167° 24.1	299° 19.6	18.1	239° 43.5	36.7	15.6	98° 17.1	49.2	98° 17.1	49.2	98° 17.1	49.2	98° 17.1	49.2	98° 17.1	49.2	98° 17.1	49.2	Alioth	166° 21.3'	55° 53.1 N	272° 00.4	45.4	328° 01.0	10.8	15.8	11.8	58.6	N 58°	06:50	07:42	08:33	01:35	03:00	04:28
	08	182° 26.6	314° 19.0	19.0	254° 43.9	36.5	15.5	113° 20.0	49.3	113° 20.0	49.3	113° 20.0	49.3	113° 20.0	49.3	113° 20.0	49.3	113° 20.0	49.3	Alkaid	152° 59.5	49° 14.7 N	287° 00.1	45.7	357° 30.8	10.8	27.6	11.8	58.6	56°	06:44	07:32	08:19	01:32	02:55	04:20
	09	197° 29.0	329° 18.3	19.9	269° 44.3	36.3	15.5	341° 41.1	49.4	341° 41.1	49.4	341° 41.1	49.4	341° 41.1	49.4	341° 41.1	49.4	341° 41.1	49.4	Alnair	27° 44.3'	46° 54.0 S	301° 59.8	45.9	12° 00.6	10.7	39.4	11.7	58.4	54°	06:38	07:24	08:07	01:30	02:50	04:12
	10	212° 31.5	344° 17.7	20.8	284° 44.6	36.0	15.4	143° 25.6	49.5	143° 25.6	49.5	143° 25.6	49.5	143° 25.6	49.5	143° 25.6	49.5	143° 25.6	49.5	Alnilam	275° 46.4	1° 11.7 S	316° 59.5	46.2	6° 11.7 S	10.6	51.1	11.7	58.2	52°	06:32	07:16	07:56	01:27	02:45	04:06
	11	227° 33.9	359° 17.1	21.7	299° 45.0	35.8	15.4	158° 28.4	49.6	158° 28.4	49.6	158° 28.4	49.6	158° 28.4	49.6	158° 28.4	49.6	158° 28.4	49.6	Alphard	217° 56.3	8° 43.0 S	331° 59.3	46.4	40° 59.9	10.6	7° 02.8 S	11.7	58.7	50°	06:27	07:09	07:47	01:25	02:41	04:00
	12	242° 36.4	374° 16.4	22.5	314° 45.4	35.6	15.3	173° 31.3	49.6	173° 31.3	49.6	173° 31.3	49.6	173° 31.3	49.6	173° 31.3	49.6	173° 31.3	49.6	Alpheratz	217° 56.3	8° 43.0 S	331° 59.3	46.4	40° 59.9	10.6	7° 02.8 S	11.7	58.7	45°	06:16	06:53	07:27	01:21	02:33	03:47
	13	257° 38.9	389° 15.8	23.4	329° 45.8	35.3	15.3	188° 34.1	49.7	188° 34.1	49.7	188° 34.1	49.7	188° 34.1	49.7	188° 34.1	49.7	188° 34.1	49.7	Alpheratz	126° 11.7'	26° 40.3 N	1° 58.7	22° 46.9 S	69° 59.0	10.4	7° 26.2 S	11.6	58.7	N 40°	06:06	06:40	07:10	01:17	02:25	03:36
	14	272° 41.3	404° 15.1	24.3	344° 46.1	35.1	15.2	203° 36.9	49.8	203° 36.9	49.8	203° 36.9	49.8	203° 36.9	49.8	203° 36.9	49.8	203° 36.9	49.8	Alpheratz	357° 43.8	29° 10.0 N	16° 58.4	47.2	84° 28.4	10.3	37.8	11.7	58.8	35°	05:57	06:28	06:56	01:14	02:19	03:20
	15	287° 43.8	59° 14.5	25.2	359° 46.5	34.9	15.3	218° 39.7	49.9	218° 39.7	49.9	218° 39.7	49.9	218° 39.7	49.9	218° 39.7	49.9	218° 39.7	49.9	Altair	62° 08.9	8° 54.4 N	31° 58.2	47.4	98° 57.7	10.3	49.5	11.5	58.5	30°	05:48	06:18	06:44	01:11	02:14	03:27
	16	302° 46.3	74° 13.8	26.1	14° 46.9	34.6	15.2	233° 42.6	49.9	233° 42.6	49.9	233° 42.6	49.9	233° 42.6	49.9	233° 42.6	49.9	233° 42.6	49.9	Ankaa	353° 15.9	42° 14.3 S	46° 57.9	47.7	113° 27.0	10.2	8° 01.0 S	11.6	58.9	20°	05:33	06:00	06:24	01:07	02:05	03:06
	17	317° 48.7	89° 13.2	26.9	29° 47.2	34.4	15.0	101° 58.8	50.0	101° 58.8	50.0	101° 58.8	50.0	101° 58.8	50.0	101° 58.8	50.0	101° 58.8	50.0	Antares	112° 27.1	26° 27.5 S	61° 57.6	47.9	61° 57.6	10.1	12.6	11.6	59.0	N 10°	05:17	05:43	06:06	01:02	01:57	02:55
	18	332° 51.2	104° 12.5	27.8	44° 47.6	34.2	15.1	117° 01.0	50.1	117° 01.0	50.1	117° 01.0	50.1	117° 01.0	50.1	117° 01.0	50.1	117° 01.0	50.1	Arcturus	145° 56.3	19° 06.9 N	91° 57.0	48.4	156° 54.3	10.0	35.7	11.4	59.0	S 10°	04:42	05:09	05:32	00:55	01:42	02:33
	19	347° 53.7	119° 11.9	28.7	59° 48.0	33.9	15.1	132° 03.2	50.2	132° 03.2	50.2	132° 03.2	50.2	132° 03.2	50.2	132° 03.2	50.2	132° 03.2	50.2	Arcturus	145° 56.3	19° 06.9 N	91° 57.0	48.4	156° 54.3	10.0	35.7	11.4	59.0	S 10°	04:42	05:09	05:32	00:55	01:42	02:33
	20	362° 57.2	134° 12.2	29.6	74° 48.4	33.7	15.0	147° 05.4	50.3	147° 05.4	50.3	147° 05.4	50.3	147° 05.4	50.3	147° 05.4	50.3	147° 05.4	50.3	Arcturus	145° 56.3	19° 06.9 N	91° 57.0	48.4	156° 54.3	10.0	35.7	11.4	59.0	S 10°	04:42	05:09	05:32	00:55	01:42	02:33
	21	377° 51.7	149° 10.6	30.5	89° 48.7	33.5	15.0	162° 07.7	50.3	162° 07.7	50.3	162° 07.7	50.3	162° 07.7	50.3	162° 07.7	50.3	162° 07.7	50.3	Avior	234° 17.7	59° 33.0 S	121° 56.5	48.9	185° 52.1	9.8	58.6	11.4	59.1	30°	03:51	04:24	04:52	00:46	01:25	02:09
	22	393° 01.0	164° 09.9	31.3	104° 49.1	33.2	14.9	177° 09.9	50.4	177° 09.9	50.4	177° 09.9	50.4	177° 09.9	50.4	177° 09.9	50.4	177° 09.9	50.4	Bellatrix	278° 32.0	6° 21.6 N	136° 56.2	49.1	200° 20.9	9.7	9° 10.0 S	11.3	59.0	35°	03:33	04:10	04:39	00:43	01:20	02:01
23	408° 03.5	179° 09.3	32.2	119° 49.5	33.0	14.9	192° 12.1	50.4	192° 12.1	50.4	192° 12.1	50.4	192° 12.1	50.4	192° 12.1	50.4	192° 12.1	50.4	Betelgeuse	271° 01.3	7° 24.2 N	151° 55.9	49.6	214° 49.6	9.6	21.3	11.4	59.0	40°	03:11	03:52	04:24	00:40	01:14	01:53	
00	63° 06.0	194° 08.6	33.1	134° 49.9	32.7	14.8	207° 14.3	50.6	207° 14.3	50.6	207° 14.3	50.6	207° 14.3	50.6	207° 14.3	50.6	207° 14.3	50.6	Betelgeuse	271° 01.3	7° 24.2 N	151° 55.9	49.6	214° 49.6	9.6	21.3	11.4	59.0	45°	02:41	03:30	04:07	00:37	01:08	01:43	
Saturday	01	78° 08.4	209° 07.9	16° 34.0 S	149° 50.2	23° 32.5 S	9° 08.0	21° 14.8 N	222° 16.5	11° 50.6 S	222° 16.5	11° 50.6 S	222° 16.5	11° 50.6 S	222° 16.5	11° 50.6 S	222° 16.5	11° 50.6 S	Canopus	263° 55.8	52° 42.2 S	181° 55.4	22° 49.9 S	243° 46.8	9.4	9° 44.0 S	11.2	59.2	S 50°	01:58	03:01	03:45	00:33	01:00	01:31	
	02	93° 10.9	224° 07.3	34.8	164° 50.6	32.3	24° 10.8	14.8	237° 18.7	50.7	237° 18.7	50.7	237° 18.7	50.7	237° 18.7	50.7	237° 18.7	50.7	Capella	280° 34.5	46° 02.5 S	196° 55.1	50.1	258° 15.2	9.4	55.2	11.2	59.2	S 50°	01:33	02:47	03:35	00:31	00:56	01:26	
	03	108° 13.4	239° 06.6	35.7	179° 51.0	32.0	39° 13.6	14.7	252° 21.0	50.8	252° 21.0	50.8	252° 21.0	50.8	252° 21.0	50.8																				

2012 December 11, 12, 13 (Tue, Wed, Thu)

Table with columns: GMT, ARIES, VENUS (-4.0), MARS (+1.2), JUPITER (-2.8), SATURN (+0.7), STARS, SUN, MOON, Lat, Twilight (Nautical, Civil), Sunrise, Moonrise (11, 12, 13), and Moonset (11, 12, 13). Rows are grouped by day (11, 12, 13) and include planetary data and star observations.

2012 December 14, 15, 16 (Fri, Sat, Sun)

Table with columns: GMT, ARIES, VENUS, MARS, JUPITER, SATURN, STARS, SUN, MOON, Twilight (Nautical, Civil), Sunrise, Moonrise (14, 15, 16), Lat, and various astronomical data points for each day (14, 15, 16).

2012 December 17, 18, 19 (Mon, Tue, Wed)

GMT	ARIES			VENUS		-4.0		MARS		+1.2		JUPITER		-2.8		SATURN		+0.7		STARS			SUN		MOON					Twilight		Sunrise		Moonrise		
	Lat	Nautil	Civil	Lat	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:24	10:54	-	11:46	11:32
Monday	00			GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:24	10:54	-	11:46	11:32	11:19	
	01			86° 01'6	206° 52'9	19° 07'3 S	151° 02'8	22° 38'1 S	18° 07'9	21° 07'0 N	166° 03'2	37.7	33° 10'7	06.9	229° 23'5	12° 04'7 S	244° 25'8	04.8	Acamar	315° 18'3	40° 15'3 S	180° 58'7	23° 21'5 S	129° 28'0	9'3	11° 13'2 S	10'7	59.1	N 70°	08:04	09:52	-	11:33	11:25	11:19	
	02			101° 04'0	221° 52'2	08.1	166° 03'2	37.7	33° 10'7	06.9	244° 25'8	04.8	244° 25'8	06.9	257° 28'0	04.9	173° 09'8	63° 10'0 S	Acarnar	335° 26'5	57° 10'5 S	195° 58'3	21.5	143° 56'3	9'4	02'5	10'8	59.0	68°	07:48	09:17	-	11:21	11:20	11:19	
	03			116° 06'5	236° 51'4	08.8	181° 03'6	37.4	48° 13'5	06.9	259° 28'0	04.9	173° 09'8	63° 10'0 S	Acarnar	335° 26'5	57° 10'5 S	195° 58'3	21.5	Acrux	173° 09'8	63° 10'0 S	210° 58'1	21.6	158° 24'7	9'6	10° 51'7 S	10'9	66°	07:35	08:52	10:32	11:02	11:16	11:19	
	04			131° 09'0	251° 50'7	09.5	196° 04'0	37.1	63° 16'3	06.8	274° 30'2	05.0	255° 12'4	28° 59'5 S	Aldebaran	290° 49'4	16° 32'0 N	240° 57'4	21.8	Adhara	255° 12'4	28° 59'5 S	172° 53'3	9'6	40° 8	10'9	58.9	64°	07:24	08:32	09:50	11:04	11:12	11:19		
	05			146° 11'4	266° 49'9	10.2	211° 04'3	36.7	78° 19'1	06.8	289° 32'5	05.0	289° 32'5	05.0	304° 34'7	05.1	255° 57'1	21.9	Aldebaran	290° 49'4	16° 32'0 N	240° 57'4	21.8	187° 21'9	9'7	29° 9	11'0	62°	07:14	08:16	09:22	10:57	11:09	11:19		
	06			161° 13'9	281° 49'1	10.9	226° 04'7	36.4	93° 21'9	06.8	304° 34'7	05.1	255° 57'1	21.9	201° 50'6	9'8	18° 9	10'9	255° 57'1	21.9					201° 50'6	9'8	18° 9	10'9	60°	07:06	08:03	09:00	10:51	11:06	11:19	
	07			176° 16'3	296° 48'4	11.6	241° 05'1	36.1	108° 24'7	06.7	319° 36'9	05.2	166° 21'2	55° 53'0 N	Alioth	166° 21'2	55° 53'0 N	270° 56'8	22.0					216° 19'4	9'8	08° 0	11'1	58.8	N 58°	06:58	07:51	08:43	10:46	11:03	11:19	
	08			191° 18'8	311° 47'6	12.3	256° 05'5	35.8	123° 27'5	06.7	334° 39'2	05.2	152° 59'4	49° 14'7 N	Alkaid	152° 59'4	49° 14'7 N	285° 56'5	22.0					230° 48'2	10'0	9° 56'9 S	11'0	56°	06:51	07:41	08:28	10:41	11:01	11:19		
	09			206° 21'3	326° 46'9	13.0	271° 05'9	35.4	138° 30'3	06.6	349° 41'4	05.3	138° 30'3	06.6	349° 41'4	05.3	27° 44'4	46° 54'0 S	Alnair	27° 44'4	46° 54'0 S	300° 56'2	22.1	245° 17'2	10'1	45° 9	11'1	54°	06:45	07:31	08:15	10:37	10:59	11:19		
	10			221° 23'7	341° 46'1	13.8	286° 06'3	35.1	153° 33'1	06.6	4° 43'6	05.4	153° 33'1	06.6	4° 43'6	05.4	275° 46'4	7° 11'8 S	Alnilam	275° 46'4	7° 11'8 S	315° 55'9	22.2	259° 46'3	10.1	34° 8	11'2	52°	06:40	07:23	08:04	10:33	10:57	11:19		
	11			236° 26'2	356° 45'4	14.5	301° 06'7	34.8	168° 35'9	06.6	19° 45'9	05.4	168° 35'9	06.6	19° 45'9	05.4	217° 56'2	8° 43'0 S	Alphard	217° 56'2	8° 43'0 S	330° 55'6	22.3	274° 15'4	10'2	23'6	11'2	50°	06:34	07:16	07:54	10:30	10:56	11:19		
	12			251° 28'7	11° 44'6	15.2	316° 07'0	34.4	183° 38'7	06.5	34° 48'1	05.5	244° 25'8	04.8	244° 25'8	04.8	244° 25'8	04.8					345° 55'3	22.4	288° 44'6	10'3	12'4	11'2	58.6	45°	06:22	07:00	07:34	10:22	10:52	11:19
	13			266° 31'1	26° 43'9	19° 15'9 S	331° 07'4	22° 34'1 S	198° 41'5	21° 06'5 N	49° 50'3	12° 05'6 S	126° 11'6	26° 40'2 N	Alphecca	126° 11'6	26° 40'2 N	0° 55'0	23° 22'4 S					303° 13'9	10'4	9° 01'2 S	11'2	58.6	N 40°	06:12	06:46	07:17	10:16	10:49	11:19	
	14			281° 33'6	41° 43'1	16.6	346° 07'8	33.8	213° 44'2	06.5	64° 52'6	05.6	357° 43'8	29° 10'0 N	Alpheratz	357° 43'8	29° 10'0 N	15° 54'7	22.5					317° 43'3	10.5	8° 50'0 S	11'3	58.5	35°	06:03	06:34	07:03	10:11	10:46	11:19	
	15			296° 36'1	56° 42'3	17.3	1° 08'2	33.4	228° 47'0	06.4	79° 54'8	05.7	62° 08'9	8° 54'4 N	Altair	62° 08'9	8° 54'4 N	30° 54'4	22.6					332° 12'8	10.5	38° 7	11'3	30°	05:54	06:24	06:50	10:06	10:44	11:19		
	16			311° 38'5	71° 41'6	18.0	16° 08'6	33.1	243° 49'8	06.4	94° 57'0	05.8	353° 16'0	42° 14'3 S	Ankaa	353° 16'0	42° 14'3 S	45° 54'1	22.7					346° 42'3	10'7	27'4	11'3	20°	05:38	06:05	06:29	09:57	10:39	11:19		
	17			326° 41'0	86° 40'8	18.7	31° 09'0	32.8	258° 52'6	05.9	109° 59'3	05.9	112° 27'0	26° 27'5 S	Antares	112° 27'0	26° 27'5 S	60° 53'8	22.8					1° 12'0	10'7	16'1	11'4	58.4	N 10°	05:21	05:48	06:11	09:50	10:36	11:19	
	18			341° 43'5	101° 40'1	19.4	46° 09'4	32.4	273° 55'4	06.3	125° 01'5	05.9	75° 53'5	22'8	15° 41'7	10'8	04'7	11'4	75° 53'5	22.8					15° 41'7	10'8	04'7	11'4	0°	05:04	05:31	05:53	09:43	10:32	11:19	
	19			356° 45'9	116° 39'3	20.1	61° 09'8	32.1	288° 58'2	06.3	140° 03'7	06.0	145° 56'3	19° 06'8 N	Arcturus	145° 56'3	19° 06'8 N	90° 53'1	22.9					30° 11'5	10'8	7° 53'3 S	11'4	58.3	S 10°	04:45	05:12	05:35	09:36	10:29	11:19	
	20			11° 48'4	131° 38'5	20.8	76° 10'1	31.8	304° 01'0	06.0	155° 06'0	06.0	107° 29'7	69° 02'8 S	Atria	107° 29'7	69° 02'8 S	105° 52'8	23.0					44° 41'3	11'0	41'9	11'5	48°	20°	04:23	04:52	05:17	09:29	10:25	11:19	
	21			26° 50'8	146° 37'8	21.5	91° 10'5	31.4	319° 03'8	06.2	170° 08'2	06.1	234° 17'6	59° 33'0 S	Avior	234° 17'6	59° 33'0 S	120° 52'5	23.0					59° 11'3	11'0	30'4	11'4	30°	03:54	04:27	04:54	09:20	10:21	11:19		
	22			41° 53'3	161° 37'0	22.2	106° 10'9	31.1	334° 06'6	06.1	185° 10'4	06.2	278° 32'0	6° 21'6 N	Bellatrix	278° 32'0	6° 21'6 N	135° 52'2	23.1					73° 41'3	11'1	19'0	11'5	58.2	35°	03:35	04:12	04:41	09:15	10:19	11:20	
23			56° 55'8	176° 36'3	22.9	121° 11'3	30.8	349° 09'4	06.1	200° 12'7	06.3	271° 01'3	7° 24'4 N	Betelgeuse	271° 01'3	7° 24'4 N	150° 51'9	23'2					88° 11'4	11'1	07'5	11'0	58.1	40°	03:12	03:54	04:26	09:10	10:16	11:20		
			71° 58'2	191° 35'5	23.6	136° 11'7	30.4	4° 12'2	06.1	215° 14'9	06.3	165° 51'6	23'3	165° 51'6	23'3	102° 41'5	11'3	165° 51'6	23'3					102° 41'5	11'3	6° 56'0 S	11'5	58.1	45°	02:41	03:31	04:08	09:03	10:13	11:20	
Tuesday	00			87° 00'7	206° 34'7	19° 24'3 S	151° 12'1	22° 30'1 S	19° 15'0	21° 06'0 N	230° 17'2	12° 06'4 S	Capopus	263° 55'7	52° 42'6 S	180° 51'3	23° 23'3 S					117° 11'8	11'3	6° 44'5 S	11'6	58.1	S 50°	01:56	03:01	03:46	08:55	10:09	11:20			
	01			102° 03'2	221° 34'0	25.0	166° 12'5	29.0	34° 17'8	06.0	245° 19'4	06.5	280° 34'4	46° 00'3 N	Canopus	280° 34'4	46° 00'3 N	195° 51'0	23.4					131° 42'1	11'4	32'9	11'6	58.0	S 52°	01:28	02:46	03:35	08:52	10:07	11:20	
	02			117° 05'6	236° 33'2	25.7	181° 12'9	29.4	49° 20'6	05.9	260° 21'6	06.5	49° 32'0	45° 19'8 N	Deneb	49° 32'0	45° 19'8 N	210° 50'7	23.5					146° 12'5	11'4	2'4	11'6	54°	00:42	02:28	03:23	08:48	10:05	11:20		
	03			132° 08'1	251° 32'4	26.4	196° 13'2	29.1	64° 23'4	05.9	275° 23'9	06.6	182° 34'0	14° 29'8 N	Denebola	182° 34'0	14° 29'8 N	225° 50'4	23.5					160° 42'9	11'6	09'8	11'6	56°	-	02:06	03:08	08:43	10:03	11:20		
	04			147° 10'6	266° 31'7	27.1	211° 13'6	28.7	79° 26'2	05.9	290° 26'1	06.7	348° 56'1	17° 55'0 S	Diphda	348° 56'1	17° 55'0 S	240° 50'1	23'6					175° 13'5	11'6	5° 58'2 S	11'6	57.9	58°	-	01:36	02:52	08:38	10:01	11:20	
	05			162° 13'0	281° 30'9	27.8	226° 14'0	28.4	94° 29'0	05.8	305° 28'3	06.7	255° 49'8	23'6	255° 49'8	23'6	189° 44'1	11'6	255° 49'8	23'6					189° 44'1	11'6	46'6	11'6	57.9	S 60°	-	00:46	02:31	08:33	09:58	11:20
	06			177° 15'5	296° 30'1	28.4	241° 14'4	28.0	109° 31'8	05.8	320° 30'6	06.8	193° 52'0	61° 40'4 N	Dubhe	193° 52'0	61° 40'4 N	270° 49'5	23'7					204° 14'7	11'8	35'0	11'6	57.8	S 62°	-	-	02:05	08:26	09:55	11:21	
	07			192° 18'0	311° 29'4	29.1	256° 14'8	27.7	124° 34'6	05.7	335° 32'8	06.9	278° 12'6	28° 37'0 N	Elnath	278° 12'6	28° 37'0 N	285° 49'1	23.8					218° 45'5	11'8	23'4	11'7	57.8	-	-	-	-	-	-	-	
	08			207° 20'4	326° 28'6	29.8	271° 15'2	27.4	139° 37'4	05.7	350° 35'0	07.0	90° 46'8	51° 29'4 N	Elainin	90° 46'8	51° 29'4 N	300° 48'8	23.8					233° 16'3	11'8	11'7	11'7	57.7	-	-	-	-	-			

2012 December 20, 21, 22 (Thu, Fri, Sat)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN		MOON				Lat	Twilight		Sunrise	Moonrise		
				-3.9			+1.2			-2.8			+0.7													20			Moonrise		
				GHA	Dec		GHA	Dec		GHA	Dec		GHA	Dec		Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d		HP	N 72°		08:26	10:58	-
Wednesday	00	88° 59.0	205° 57.5	19° 56.6 S	151° 30.8	22° 13.4 S	21° 28.9	21° 04.2 N	232° 04.6	12° 09.6 S	Acamar	315° 18.3	40° 15.4 S	180° 36.5	23° 25.6 S	94° 31.4	13.7	2° 31.3 N	11.3	56.3	N 70°	08:06	09:55	-	11:12	11:06	10:59				
	01	104° 01.4	220° 56.7	57.2	166° 31.2	13.0	36° 31.7	04.5	247° 06.8	09.7	Acnhar	335° 26.8	57° 10.5 S	195° 36.2	25.7	109° 04.1	13.7	42.6	11.2	56.2	68°	07:50	09:19	-	11:17	11:16	11:16				
	02	119° 03.9	235° 55.9	57.9	181° 31.6	12.6	51° 34.5	04.1	262° 09.0	09.8	Acrux	173° 09.7	63° 10.0 S	210° 35.8	25.7	123° 36.8	13.8	53.8	11.2		66°	07:37	08:54	10:35	11:22	11:25	11:29				
	03	134° 06.4	250° 55.2	58.5	196° 32.0	12.3	66° 37.3	04.0	277° 11.3	09.8	Adhara	255° 12.4	28° 59.5 S	225° 35.5	25.7	138° 09.6	13.7	3° 05.0 N	11.2		64°	07:26	08:34	09:52	11:25	11:32	11:41				
	04	149° 08.8	265° 54.4	59.2	211° 32.4	11.9	81° 40.1	04.0	292° 13.5	09.9	Aldebaran	290° 49.4	16° 32.0 N	240° 35.2	25.7	152° 42.3	13.8	16.2	11.2	56.1	62°	07:16	08:18	09:24	11:28	11:39	11:51				
	05	164° 11.3	280° 53.6	59.8	226° 32.8	11.6	96° 42.9	04.0	307° 15.8	10.0				255° 34.9	25.8	167° 15.1	13.8	27.4	11.1		60°	07:07	08:04	09:02	11:31	11:44	11:59				
	06	179° 13.8	295° 52.8	20° 00.5 S	241° 33.2	11.2	111° 45.7	03.9	322° 18.0	10.0	Alioth	166° 21.2	55° 53.0 N	270° 34.6	25.8	181° 47.9	13.9	38.5	11.1		N 58°	07:00	07:53	08:45	11:34	11:49	12:06				
	07	194° 16.2	310° 52.0	01.1	256° 33.6	10.8	126° 48.4	03.9	337° 20.3	10.1	Alkaid	152° 59.4	49° 14.7 N	285° 34.3	25.8	196° 20.8	13.8	49.6	11.1	56.0	56°	06:53	07:42	08:30	11:36	11:54	12:13				
	08	209° 18.7	325° 51.2	01.7	271° 34.0	10.5	141° 51.2	03.9	352° 22.5	10.2	Alnair	27° 44.4	46° 54.0 S	300° 34.0	25.8	210° 53.6	13.9	4° 00.7 N	11.1		54°	06:47	07:33	08:17	11:38	11:57	12:19				
	09	224° 21.2	340° 50.4	02.4	286° 34.4	10.1	156° 54.0	03.8	7° 24.7	10.2	Alnilam	275° 46.4	1° 11.8 S	315° 33.7	25.9	225° 26.5	13.9	11.8	11.0		52°	06:41	07:25	08:06	11:40	12:01	12:24				
	10	239° 23.6	355° 49.6	03.0	301° 34.8	09.7	171° 56.8	03.8	22° 27.0	10.3	Alphard	217° 56.2	8° 43.0 S	330° 33.4	25.9	239° 59.4	13.9	22.8	10.9	55.9	50°	06:36	07:18	07:56	11:41	12:04	12:29				
	11	254° 26.1	1° 48.8	03.7	316° 35.2	09.4	186° 59.6	03.7	37° 29.2	10.4				345° 33.1	25.9	254° 32.3	13.9	33.7	11.0		45°	06:24	07:01	07:35	11:45	12:11	12:39				
	12	269° 28.5	2° 48.1	20° 04.3 S	331° 35.6	22° 09.0 S	202° 02.4	21° 03.7 N	52° 31.5	12° 10.4 S	Alphecca	126° 11.6	26° 40.2 N	0° 32.7	23° 25.9 S	269° 05.2	14.0	4° 44.7 N	10.9	55.9	N 40°	06:14	06:48	07:18	11:48	12:17	12:48				
	13	284° 31.0	40° 47.3	04.9	346° 36.0	08.7	217° 05.2	03.7	67° 33.7	10.5	Alpheratz	357° 43.8	29° 10.0 N	15° 32.4	25.9	283° 38.2	14.0	55.6	10.9		35°	06:04	06:36	07:04	11:51	12:22	12:55				
	14	299° 33.5	55° 46.5	05.6	1° 36.4	08.3	232° 07.9	03.6	82° 08.9	10.6	Altair	62° 08.9	8° 54.4 N	30° 32.1	26.0	298° 11.2	13.9	5° 06.5 N	10.8	55.8	30°	05:56	06:25	06:52	11:53	12:27	13:02				
	15	314° 35.9	70° 45.7	06.2	16° 36.7	07.9	247° 10.7	03.6	97° 38.2	10.6	Ankaa	353° 16.0	42° 14.3 S	45° 31.8	26.0	312° 44.1	14.0	17.3	10.9		20°	05:39	06:07	06:31	11:57	12:35	13:13				
	16	329° 38.4	85° 44.9	06.8	31° 37.1	07.6	262° 13.5	03.5	112° 40.4	10.7	Antares	112° 27.0	26° 27.5 S	60° 31.5	26.0	327° 17.1	14.0	28.2	10.7		N 10°	05:23	05:49	06:12	12:01	12:42	13:24				
	17	344° 40.9	100° 44.1	07.5	46° 37.5	07.2	277° 16.3	03.5	127° 42.7	10.8				75° 31.2	26.0	341° 50.1	14.0	38.9	10.8	55.7	0°	05:06	05:32	05:55	12:04	12:49	13:33				
	18	359° 43.3	115° 43.3	08.1	61° 37.9	06.8	292° 19.1	03.5	142° 44.9	10.8	Arcturus	145° 56.2	19° 06.8 N	90° 30.9	26.0	356° 23.1	14.1	49.7	10.7		S 10°	04:47	05:14	05:37	12:08	12:55	13:43				
	19	14° 45.8	130° 42.5	08.7	76° 38.3	06.5	307° 21.8	03.4	157° 47.2	10.9	Alraia	107° 29.7	69° 02.8 S	105° 30.6	26.0	10° 56.2	14.0	6° 00.4 N	10.7		20°	04:24	04:53	05:18	12:11	13:02	13:53				
	20	29° 48.3	145° 41.7	09.4	91° 38.7	06.1	322° 24.6	03.4	172° 49.4	11.0	Avior	234° 17.6	59° 33.1 S	120° 30.3	26.1	25° 29.2	14.1	11.1	10.6	55.6	30°	03:55	04:28	04:56	12:16	13:11	14:05				
	21	44° 50.7	160° 40.9	10.0	106° 39.1	05.7	337° 27.4	03.4	187° 51.6	11.0	Bellatrix	278° 32.0	6° 21.6 N	135° 29.9	26.1	40° 02.3	14.0	21.7	10.6		35°	03:36	04:13	04:43	12:18	13:15	14:12				
	22	59° 53.2	175° 40.1	10.6	121° 39.5	05.4	352° 30.3	03.3	202° 53.9	11.1	Betelgeuse	271° 01.3	7° 24.4 N	150° 29.6	26.1	54° 35.3	14.1	32.3	10.5		40°	03:13	03:55	04:28	12:21	13:21	14:19				
23	74° 55.7	190° 39.3	11.3	136° 39.9	05.0	7° 33.0	03.3	217° 56.1	11.2				165° 29.3	26.1	69° 08.4	14.1	42.8	10.6		45°	02:42	03:32	04:10	12:24	13:27	14:29					
Thursday	00	89° 58.1	203° 58.5	20° 11.9 S	151° 40.3	22° 04.6 S	22° 35.8	21° 03.2 N	232° 58.4	12° 11.2 S	Canopus	263° 55.7	52° 42.3 S	180° 29.0	23° 26.1 S	83° 41.5	14.1	6° 53.4 N	10.4	55.5	S 50°	01:57	03:02	03:47	12:28	13:35	14:40				
	01	105° 00.6	220° 37.7	12.5	166° 40.7	12.5	37° 38.5	04.2	37° 38.5	04.2	Capella	280° 34.4	46° 00.6 N	195° 28.7	26.1	98° 14.6	14.0	7° 03.8 N	10.5		S 52°	01:29	02:47	03:36	12:30	13:38	14:45				
	02	120° 03.0	235° 36.9	13.1	181° 41.1	13.1	52° 41.3	03.2	63° 02.8	11.4	Deneb	49° 32.1	45° 19.9 N	210° 28.4	26.1	112° 47.6	14.1	14.3	10.4		54°	00:41	02:29	03:24	12:32	13:42	14:50				
	03	135° 05.5	250° 36.1	13.8	196° 41.5	13.8	67° 44.1	03.5	78° 05.1	11.4	Denebola	182° 34.0	14° 29.8 N	225° 20.7	26.1	127° 20.7	14.1	24.7	10.3	55.4	56°	-	02:07	03:10	12:34	13:46	14:57				
	04	150° 08.0	265° 35.3	14.4	211° 41.9	14.4	82° 46.9	03.1	93° 07.3	11.5	Diphda	348° 56.2	17° 55.0 S	240° 27.8	26.1	141° 53.8	14.1	35.0	10.3		58°	-	01:37	02:53	12:37	13:51	15:04				
	05	165° 10.4	280° 34.5	15.0	226° 42.3	15.0	97° 49.7	03.1	308° 09.6	11.6				255° 27.5	26.1	156° 26.9	14.1	45.3	10.3		S 60°	-	00:46	02:32	12:40	13:57	15:12				
	06	180° 12.9	295° 33.7	15.6	241° 42.7	15.6	112° 52.4	03.0	323° 11.8	11.6	Dubhe	193° 52.0	61° 40.4 N	270° 27.2	26.1	171° 00.0	14.2	55.6	10.2		S 62°	-	-	02:06	12:43	14:03	15:21				
	07	195° 15.4	310° 32.9	16.2	256° 43.1	16.2	127° 55.2	03.0	338° 14.1	11.7	Elnath	278° 12.6	28° 37.4 N	285° 26.8	26.1	185° 33.2	14.1	8° 05.8 N	10.2	55.3											
	08	210° 17.8	325° 32.1	16.9	271° 43.5	16.9	142° 58.0	02.9	353° 16.3	11.7	Elnath	90° 46.8	51° 29.4 N	300° 26.5	26.1	200° 06.3	14.1	16.0	10.1												
	09	225° 20.3	340° 31.3	17.5	286° 43.9	17.5	158° 00.8	02.9	8° 18.6	11.8	Enif	33° 47.6	9° 56.3 N	315° 26.2	26.1	214° 39.4	14.1	26.1	10.1												
	10	240° 22.8	355° 30.5	18.1	301° 44.3	18.1	173° 03.6	02.9	23° 20.8	11.9	Fomalhaut	15° 24.5	29° 33.2 S	330° 25.9	26.1	229° 12.5	14.1	36.2	10.1												
	11	255° 25.2	1° 29.7	18.7	316° 44.7	18.7	188° 06.3	02.8	38° 23.0	11.9				345° 25.6	26.1	243° 45.6	14.1	46.3	9.9	55.2											
	12	270° 27.7	2° 28.9	20° 19.3 S	331° 45.1	22° 00.2 S	203° 09.1	21° 02.8 N	53° 25.3	12° 12.0 S	Gacrux	172° 01.3	57° 10.9 S	0° 25.3	23° 26.1 S	258° 18.7	14.1	8° 56.2 N	10.0	55.2	N 70°	-	14:02	15:51	00:09	01:48	03:28				
	13	285° 30.1	40° 28.1	19.9	346° 45.5	21° 59.8 S	218° 11.9	02.8	68° 27.5	12.1	Gienah	175° 52.7	17° 36.8 S	15° 25.0	26.1	272° 51.8	14.1	9° 06.2 N	9.9		68°	-	14:37	16:07	00:06	01:40	03:10				
	14	300° 32.6	55° 27.3	20.6	1° 45.9	20.6	233° 14.7	02.7	83° 29.8	12.1	Hadar	148° 48.7	60° 25.9 S	30° 24.7	26.1	287° 24.9	14.1	16.1	9.9		66°	13:22	15:03	16:20	00:04	01:32	03:02				
	15	315° 35.1	70° 26.5	21.2	16° 46.3	21.2	248° 17.5	02.7	98° 32.0	12.2	Hamal	328° 00.9	23° 31.5 S	45° 24.4	26.1	301° 58.0	14.1	26.0	9.8	55.1	64°	14:04	15:23	16:31	00:02</						

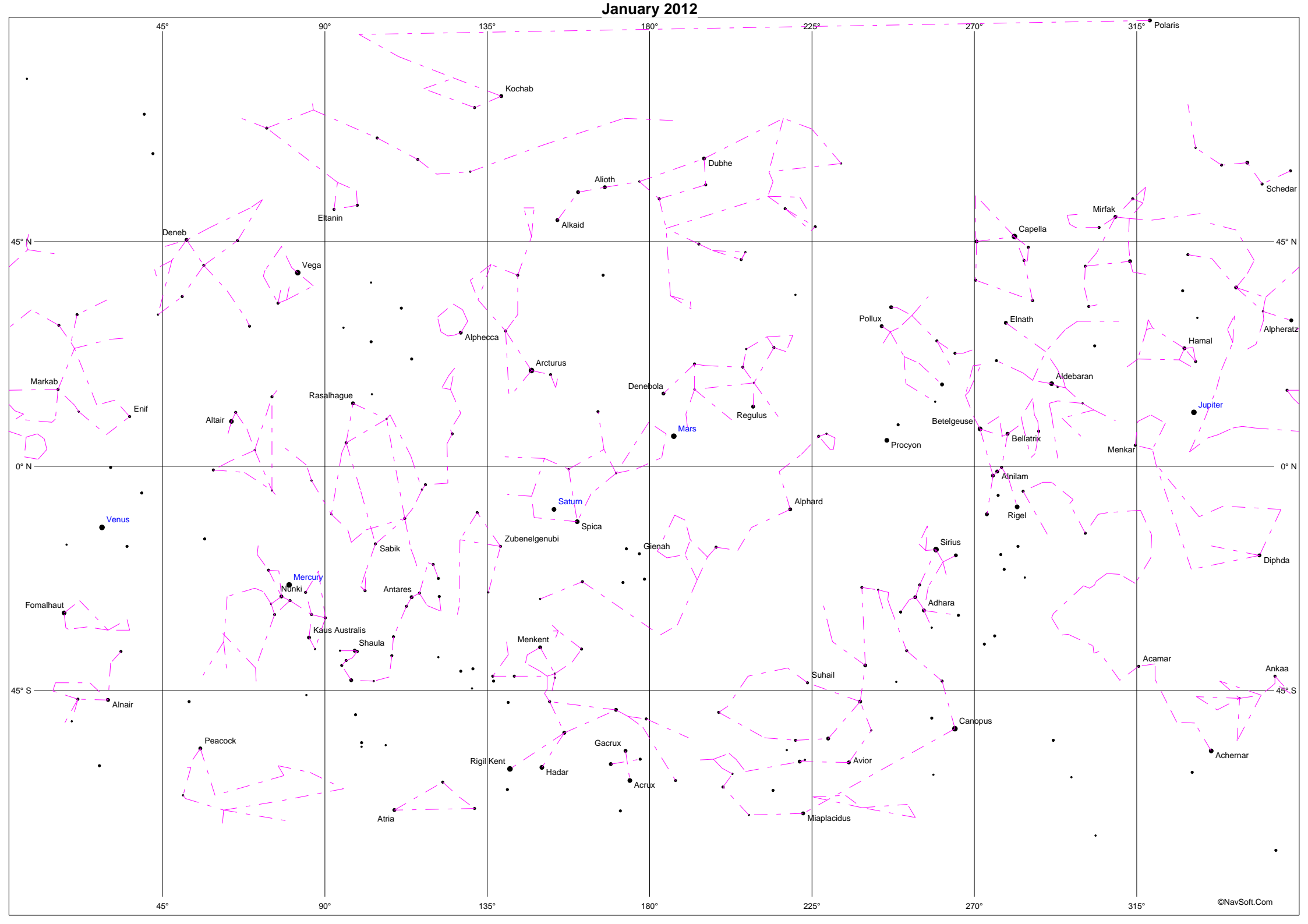
2012 December 23, 24, 25 (Sun, Mon, Tue)

GMT	ARIES			VENUS			MARS			JUPITER			SATURN			STARS			SUN		MOON			Lat	Twilight		Sunrise	Moonrise										
																				23	25																	
	Nautical	Civil		Nautical	Civil		Nautical	Civil		Nautical	Civil		Nautical	Civil		Nautical	Civil	HP	Eqn. of Time			Mer. Pass.	Mer. Pass.	Age/ Vis														
23																																						
	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	08:27	10:57	-	10:15	09:03	-								
00	91° 56'.4	204° 59'.7	20° 40'.8 S	151° 59'.5	21° 46'.4 S	24° 49'.0	21° 01'.5 N	234° 46'.1	12° 14'.3 S	Acamar	315° 18'.3	40° 15'.4 S	180° 14'.1	23° 25'.6 S	62° 04'.8	13'.7	14° 20'.7 N	7.9	54.5	N 70°	08:07	09:55	-	10:51	10:39	10:10												
01	106° 58'.9	219° 58'.9	41.4	166° 59'.9	46.0	39° 51'.8	01.4	249° 48'.4	14.4	Acnarnar	335° 26'.8	57° 10'.5 S	176° 13'.8	25.6	76° 37'.5	13'.6	28.6	7.9	68°	07:51	09:20	-	11:16	11:19	11:28													
02	122° 01'.3	234° 58'.1	41.9	182° 00'.3	45.6	54° 54'.5	01.4	264° 50'.6	14.4	Acrux	173° 09'.7	63° 10'.0 S	210° 13'.5	25.5	91° 10'.1	13'.6	36.5	7.8	66°	07:38	08:55	10:35	11:36	11:47	12:06													
03	137° 03'.8	249° 57'.2	42.5	197° 00'.7	45.2	69° 57'.0	01.4	279° 52'.9	14.5	Adhara	255° 12'.4	28° 59'.5 S	225° 13'.2	25.5	105° 42'.7	13'.6	44.3	7.7	64°	07:27	08:35	09:53	11:52	12:08	12:32													
04	152° 06'.2	264° 56'.4	43.1	212° 01'.1	44.8	85° 00'.1	01'.3	294° 55'.1	14.6	Aldebaran	290° 49'.4	16° 32'.0 N	240° 12'.9	25.5	120° 15'.3	13'.6	52.0	7.6	54.4	62°	07:17	08:19	09:25	12:06	12:25	12:53												
05	167° 08'.7	279° 55'.6	43.7	227° 01'.5	44.4	100° 02'.9	01'.3	309° 57'.4	14.6				255° 12'.6	25.4	134° 47'.9	13'.5	59.6	7.6	60°	07:09	08:06	09:03	12:17	12:40	13:10													
06	182° 11'.2	294° 54'.8	44.2	242° 01'.9	44.0	115° 05'.6	01'.2	324° 59'.6	14.6	Alioth	166° 21'.1	55° 53'.0 N	270° 12'.2	25.4	149° 20'.4	13'.6	15° 07'.2 N	7.5	N 58°	07:01	07:54	08:46	12:27	12:52	13:24													
07	197° 13'.6	309° 54'.0	44.8	257° 02'.3	43.6	130° 08'.4	01'.2	340° 01'.9	14.8	Alkaid	152° 59'.4	49° 14'.6 N	285° 11'.9	25.4	163° 53'.0	13'.5	14.7	7.4	56°	06:54	07:44	08:31	12:35	13:03	13:36													
08	212° 16'.1	324° 53'.1	45.4	272° 02'.7	43.3	145° 11'.2	01'.2	355° 04'.1	14.8	Alnair	27° 44'.4	46° 54'.0 S	300° 11'.6	25.3	178° 25'.5	13'.5	22.1	7.4	54°	06:48	07:35	08:18	12:43	13:12	13:47													
09	227° 18'.6	339° 52'.3	46.0	287° 03'.1	42.9	159° 06'.4	01'.1	10° 06'.4	14.9	Alnilam	275° 56'.7	1° 11'.8 S	315° 11'.3	25.3	192° 58'.0	13'.4	29.5	7.3	52°	06:43	07:26	08:07	12:50	13:20	13:56													
10	242° 21'.0	354° 51'.5	46.5	302° 03'.5	42.5	175° 16'.7	01'.1	25° 08'.6	14.9	Alphard	217° 56'.2	8° 43'.0 S	330° 11'.0	25.3	207° 30'.4	13'.4	36.8	7.2	50°	06:37	07:19	07:57	12:56	13:28	14:05													
11	257° 23'.5	371° 50'.7	47.1	317° 03'.9	42.1	190° 19'.5	01'.0	345° 10'.9	15.0				345° 10'.7	25.2	222° 02'.8	13'.4	44.0	7.2	54.3	45°	06:26	07:03	07:37	13:10	13:44	14:23												
12	272° 26'.0	386° 49'.8	47.7	332° 04'.3	41.7	205° 22'.2	01'.0	55° 13'.1	12° 15'.1 S	Alphecca	126° 11'.6	26° 40'.2 N	0° 10'.4	23° 25'.2 S	236° 35'.2	13'.4	15° 51'.2 N	7.0	54.3	N 40°	06:15	06:49	07:20	13:21	13:57	14:38												
13	287° 28'.4	399° 49'.0	48.2	347° 04'.7	41.3	220° 25'.0	01'.0	70° 15'.4	15.1	Alpheratz	357° 43'.8	29° 10'.0 N	15° 10'.1	25.1	251° 07'.6	13'.4	58.2	7.0	35°	06:06	06:37	07:06	13:30	14:09	14:50													
14	302° 30'.9	412° 48'.2	48.8	2° 05'.1	40.9	235° 27'.8	01'.0	85° 17'.6	15.2	Altair	62° 08'.9	8° 54'.4 N	30° 09'.8	25.1	265° 40.0	13'.3	16° 05'.2 N	7.0	30°	05:57	06:27	06:53	13:39	14:18	15:01													
15	317° 33'.4	427° 49.4	49.4	17° 05'.5	40.5	250° 30'.5	00'.9	100° 19'.9	15.3	Ankaa	353° 16'.0	42° 14'.3 S	45° 09'.5	25.1	280° 12'.3	13'.3	12.2	6.8	20°	05:40	06:08	06:32	13:53	14:36	15:20													
16	332° 35'.8	442° 49.9	49.9	32° 05'.9	40.1	265° 33'.3	00'.9	115° 22'.1	15.3	Antares	112° 27'.0	26° 27'.5 S	60° 09'.1	25.0	294° 44'.6	13'.3	19.0	6.8	N 10°	05:24	05:51	06:13	14:06	14:56	15:36													
17	347° 38'.3	457° 50.5	50.5	47° 06'.3	39.7	280° 36'.1	00'.8	130° 24'.4	15.4				75° 08'.8	25.0	309° 16'.9	13'.3	25.8	6.8	0°	05:07	05:33	05:56	14:18	15:04	15:52													
18	2° 40'.7	114° 44'.9	51.0	62° 06'.7	39.3	295° 38'.8	00'.8	145° 26'.6	15.4	Arcturus	145° 56'.2	19° 06'.8 N	90° 08'.5	24.9	323° 49'.2	13'.2	32.6	6.6	S 10°	04:48	05:15	05:38	14:30	15:19	16:07													
19	17° 43'.2	129° 44.0	51.6	77° 07'.2	38.9	310° 41'.6	00'.8	160° 28'.9	15.5	Arctria	107° 29'.6	69° 02'.8 S	103° 08'.2	24.9	338° 21'.4	13'.2	32.6	6.6	54.2	20°	04:26	04:55	05:19	14:43	15:34	16:24												
20	32° 45'.7	144° 43'.2	52.2	92° 07'.6	38.5	325° 44'.4	00'.7	175° 31'.1	15.6	Avior	234° 17'.5	59° 33'.1 S	120° 07'.9	24.8	352° 53'.6	13'.2	45.8	6.5	30°	03:57	04:30	04:57	14:58	15:51	16:43													
21	47° 48'.1	159° 42'.4	52.7	107° 08'.0	38.1	340° 47'.1	00'.7	190° 33'.4	15.6	Bellatrix	278° 32'.0	6° 21'.5 N	135° 07'.6	24.8	7° 25'.8	13'.1	52.3	6.4	35°	03:38	04:15	04:44	15:07	16:01	16:54													
22	62° 50'.6	174° 41'.6	53.3	122° 08'.4	37.7	355° 49'.9	00'.7	250° 35'.6	15.7	Betelgeuse	271° 01'.3	7° 24'.4 N	150° 07'.3	24.7	21° 57'.9	13'.2	58.7	6.3	40°	03:15	03:56	04:29	15:17	16:13	17:07													
23	77° 53'.1	189° 40'.7	53.8	137° 08'.8	37.3	10° 52'.7	00'.6	220° 37'.9	15.8				165° 07'.0	24.7	36° 30'.1	13'.1	17° 05'.0 N	6.3	45°	02:44	03:34	04:11	15:28	16:26	17:22													
24																																						
00	92° 55'.5	204° 39'.9	54.4 S	152° 09'.2	21° 36'.9 S	25° 55'.4	21° 00'.6 N	235° 40'.1	12° 15'.8 S	Canopus	263° 55'.7	52° 42'.3 S	180° 06'.7	23° 24'.6 S	51° 02'.2	13'.1	17° 11'.3 N	6.2	54.2	S 50°	01:58	03:04	03:49	15:43	16:43	17:40												
01	107° 58'.0	219° 39'.1	54.9	167° 09'.6	36.5	40° 58'.2	00'.6	250° 42'.4	15.9	Capella	280° 34'.4	46° 00'.6 N	195° 06'.4	24.6	65° 34'.3	13'.0	17.5	6.1	52°	01:31	02:49	03:38	15:49	16:51	17:49													
02	123° 00'.5	234° 38'.2	55.5	182° 10'.0	36.1	56° 01'.0	00'.5	265° 44'.6	15.9	Deneb	49° 32'.1	45° 19'.8 N	210° 06'.0	24.5	80° 06'.3	13'.0	23.6	6.0	54°	00:44	02:31	03:26	15:57	17:00	17:59													
03	138° 02'.9	249° 37'.4	56.0	197° 10'.4	35.7	71° 03'.7	00'.5	280° 46'.9	16.0	Denebola	182° 34'.0	14° 29'.8 N	225° 05'.7	24.5	94° 38'.3	13'.0	29.6	6.0	56°	-	02:09	03:11	16:05	17:10	18:10													
04	153° 05'.4	264° 36'.6	56.6	212° 10'.8	35.3	86° 06'.5	00'.4	295° 49'.1	16.1	Diphda	348° 56'.2	17° 55'.0 S	240° 05'.4	24.4	109° 10'.3	13'.0	35.6	5.8	58°	-	01:39	02:54	16:14	17:21	18:23													
05	168° 07'.9	279° 35'.8	57.1	227° 11'.2	34.9	101° 09'.3	00'.4	310° 51'.4	16.1				255° 05'.1	24.4	123° 42'.3	12'.9	41.4	5.8	S 60°	-	00:48	02:34	16:25	17:34	18:38													
06	183° 10'.3	294° 34'.9	57.7	242° 11'.6	34.5	116° 12'.0	00'.4	325° 53'.6	16.2	Dubhe	193° 51'.9	61° 40'.4 N	270° 04'.8	24.3	138° 14'.2	13'.0	47.2	5.7	54.1	S 62°	-	-	02:08	16:37	17:50	18:56												
07	198° 12'.8	309° 34'.1	58.2	257° 12'.0	34.1	131° 14'.8	00'.3	340° 55'.9	16.3	Elnath	278° 12'.6	28° 37'.0 N	285° 04'.5	24.3	152° 46'.2	12'.9	52.9	5.7																				
08	213° 15'.2	324° 33'.3	58.8	272° 12'.4	33.7	146° 17'.6	00'.3	355° 58'.1	16.3	Elainin	90° 46'.8	51° 29'.3 S	300° 04'.2	24.2	167° 18'.1	12'.8	58.6	5.5																				
09	228° 17'.7	339° 32'.4	59.3	287° 12'.8	33.3	161° 20'.3	00'.3	11° 00'.4	16.4	Enif	33° 47'.6	9° 56'.3 N	315° 03'.9	24.2	181° 49'.9	12'.9	18° 04'.1 N	5.5																				
10	243° 20'.2	354° 31'.6	59.9	302° 13'.2	32.9	176° 23'.1	00'.2	26° 02'.6	16.4	Fomalhaut	15° 24'.5	29° 33'.2 S	330° 03'.6	24.1	196° 21'.8	12'.8	19.6	5.4																				
11	258° 22'.6	370° 30.8	60.8	317° 13'.6	32.5	191° 25'.8	00'.2	41° 04'.9	16.5				345° 03'.3	24.0	210° 53'.6	12.8	15.0	5.4																				
12	273° 25'.1	386° 29'.9	61.9	332° 14'.1	32.1	206° 28'.6	00'.2	56° 07'.1	12° 16'.6 S	Gacrux	172° 01'.3	57° 10'.9 S	0° 02'.9	23° 24'.0 S	225° 25'.4	12'.7	18° 20'.3 N	5.2	54.1	N																		

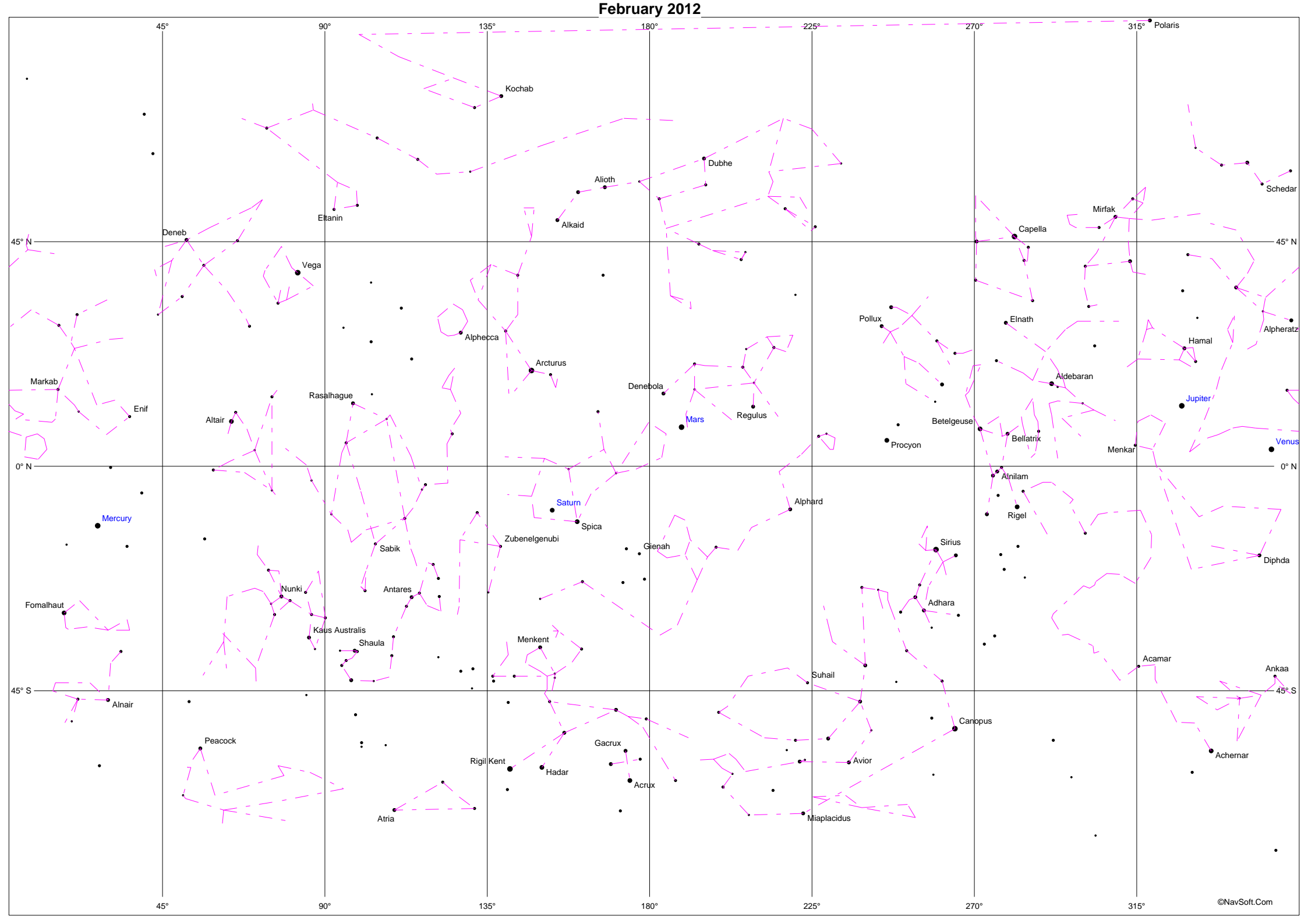
2012 December 29, 30, 31 (Sat, Sun, Mon)

GMT	ARIES			VENUS -3.9			MARS +1.2			JUPITER -2.7			SATURN +0.7			STARS			SUN		MOON				Lat	Twilight		Sunrise	Moonrise			
																Name	SHA	Dec	GHA	Dec	GHA	v	Dec	d	HP	N 72°	Nautical	Civil		29	30	31
29	00	GHA			GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Acamar	315° 18'.3	40° 15'.4 S	179° 29'.8	23° 12'.8 S	353° 09'.1	12'.0	18° 51'.9 N	4'.9	54.4	N 70°	08:06	09:52	-	14:58	16:47	18:40	
	01	97° 51'.2			202° 57'.4	21° 53'.1 S	152° 58'.9	20° 45'.9 S	31° 25'.5	20° 56'.5 N	240° 11'.0	12° 23'.0 S	46° 28'.3	53.5	46° 28'.3	335° 26'.9	57° 10'.5 S	194° 29'.5	12.7	7° 40'.1	12.1	47.0	5.0		68°	07:51	09:18	-	15:35	17:10	18:34	
	02	127° 56'.2			232° 55'.6	53.9	182° 59'.7	45.0	61° 31'.0	56.5	270° 15'.6	23.1	56.5	27.0	173° 09'.6	63° 10'.0 S	209° 29'.2	12.5	22° 11'.2	12.1	42.0	5.0	54.5	66°	07:38	08:54	10:30	16:01	17:27	18:56		
	03	142° 58'.6			247° 54'.8	54.4	198° 00'.2	44.5	76° 33'.7	56.4	285° 17'.8	23.1	56.4	28.5	255° 12'.4	28° 59'.6 S	224° 28'.2	12.4	25° 42'.3	12.1	37.0	5.2		64°	07:27	08:35	09:51	16:21	17:42	19:05		
	04	158° 01'.1			262° 53'.9	54.8	213° 00'.6	44.1	91° 36'.5	56.4	300° 20'.1	23.2	56.4	30.0	290° 49'.4	16° 32'.0 N	239° 28'.6	12.2	51° 13'.4	12.1	31.8	5.2		62°	07:18	08:19	09:24	16:37	17:54	19:13		
	05	173° 03'.6			277° 53'.0	55.2	228° 01'.0	43.6	106° 39'.2	56.4	315° 22'.4	23.2	56.4	31.5	275° 59'.6	2° 27'.2 S	254° 28'.3	12.1	65° 44'.5	12'.2	26.6	5'.3		60°	07:10	08:06	09:03	16:50	18:04	19:20		
	06	188° 06'.0			292° 52'.1	55.6	243° 01'.4	43.2	121° 41'.9	56.3	330° 24'.6	23.3	56.3	33.0	247° 51'.9	5° 53'.0 N	269° 28'.0	11'.9	80° 15'.7	12'.2	21.3	5'.4		N 58°	07:02	07:55	08:46	17:01	18:13	19:27		
	07	203° 08'.5			307° 51'.2	56.0	258° 01'.9	42.7	136° 44'.7	56.3	345° 26'.9	23.4	56.3	34.5	152° 59'.3	49° 14'.6 N	284° 27'.7	11.8	94° 46'.9	12'.2	15.9	5'.5		56°	06:56	07:45	08:32	17:11	18:20	19:32		
	08	218° 10'.9			322° 50'.4	56.5	273° 02'.3	42.3	151° 47'.4	56.3	0° 29'.2	23.4	56.3	0°	27° 44'.4	46° 53'.9 S	299° 27'.4	11.6	109° 18'.1	12'.2	10.4	5'.5		54°	06:50	07:36	08:19	17:20	18:27	19:37		
	09	233° 13'.4			337° 49'.5	56.9	288° 02'.7	41.8	166° 50'.1	56.2	15° 31'.4	23.5	56.2	15°	31° 4'.0	1° 11'.8 S	314° 27'.1	11.5	123° 49'.3	12.2	04.9	5'.7		52°	06:44	07:28	08:08	17:28	18:33	19:41		
	10	248° 15'.9			352° 48'.6	57.3	303° 03'.1	41.4	181° 52'.9	56.2	30° 33'.7	23.5	56.2	30°	33'.7	23.5	329° 26'.8	11.3	138° 20'.5	12'.2	17° 59'.2 N	5'.7		50°	06:39	07:20	07:59	17:35	18:39	19:45		
	11	263° 18'.3			7° 47'.7	57.7	318° 03'.6	40.9	196° 55'.6	56.4	45° 36'.0	23.6	56.4	45°	36'.0	23.6	344° 26'.5	11.2	152° 61'.7	12'.3	53.5	5'.9	54'.6	45°	06:27	07:04	07:38	17:50	18:51	19:54		
	12	278° 20'.8			22° 46'.8	21° 58'.1 S	333° 04'.0	20° 40'.5 S	211° 58'.3	20° 56'.1 N	60° 38'.2	12° 23'.6 S	56.3	60°	38'.2	126° 11'.5	26° 40'.2 N	359° 26'.2	23° 11'.0 S	167° 23'.0	12'.3	17° 47'.6 N	5'.9	54'.6	N 40°	06:17	06:51	07:22	18:02	19:01	20:01	
	13	293° 23'.3			37° 46.0	58.5	348° 04'.4	40.0	227° 01'.1	56.1	75° 40'.5	23.7	56.1	75°	40'.5	357° 43'.8	29° 10'.0 N	14° 25'.9	10.8	181° 54'.3	12'.3	31.7	6.0		35°	06:08	06:40	07:08	18:13	19:09	20:07	
	14	308° 25'.7			52° 45'.1	58.9	3° 04'.8	39.6	242° 03'.8	56.1	90° 42'.8	23.8	56.1	90°	42'.8	62° 08'.9	8° 54'.3 N	196° 25'.6	12.3	196° 25'.6	12.3	45.7	6.1		30°	05:59	06:29	06:55	18:22	19:17	20:12	
	15	323° 28'.2			67° 44.2	59.3	18° 05'.3	39.1	257° 06'.5	56.0	105° 45'.0	23.8	56.0	105°	45'.0	353° 16'.0	42° 14'.3 S	44° 25'.3	10.5	210° 56'.9	12'.4	29.6	6'.1		20°	05:43	06:11	06:34	18:38	19:30	20:21	
	16	338° 30'.7			82° 43'.3	59.7	33° 05'.7	38.6	272° 09'.3	56.0	120° 47'.3	23.9	56.0	120°	47'.3	112° 26'.9	26° 27'.5 S	59° 25'.0	10.4	225° 28'.3	12'.4	23.5	6'.3		N 10°	05:27	05:53	06:16	18:52	19:41	20:29	
	17	353° 33'.1			97° 42'.4	22° 00'.1 S	48° 06'.1	38.2	287° 12.0	56.0	135° 49'.6	23.9	56.0	135°	49'.6	112° 26'.9	26° 27'.5 S	74° 24'.7	10.2	239° 59'.7	12'.4	17.2	6'.3		0°	05:10	05:36	05:59	19:04	19:51	20:37	
	18	8° 35'.6			112° 41'.5	00.5	63° 06'.5	37.3	302° 14.7	55.9	150° 51'.8	24.0	55.9	150°	51'.8	145° 56'.2	19° 06'.8 N	89° 24'.4	10.0	254° 31'.1	12'.4	10.9	6'.4		S 10°	04:52	05:19	05:42	19:17	20:02	20:45	
	19	23° 38'.1			127° 40'.7	01.0	78° 07'.0	37.3	317° 17.4	55.9	165° 54'.1	24.0	55.9	165°	54'.1	107° 29'.6	69° 02'.8 S	104° 24'.1	09.9	269° 02'.5	12.4	04.5	6'.5	54'.7	20°	04:29	04:58	05:23	19:31	20:13	20:53	
	20	38° 40'.5			142° 39'.8	01.4	93° 07'.4	36.8	332° 20'.2	55.9	180° 56'.4	24.1	55.9	180°	56'.4	234° 17'.5	59° 33'.1 S	119° 23'.8	09.7	283° 33'.9	12'.5	16° 58'.0 N	6'.6		30°	04:00	04:34	05:01	19:46	20:25	21:02	
	21	53° 43.0			157° 38'.9	01.8	108° 07'.8	36.4	347° 22'.9	55.9	195° 58'.6	24.1	55.9	195°	58'.6	278° 32.0	6° 21'.5 N	134° 23'.5	09.6	298° 05'.4	12.5	51.4	6'.6		35°	03:42	04:19	04:48	19:55	20:32	21:07	
	22	68° 45.4			172° 38.0	02.2	123° 08'.2	35.9	2° 25'.6	55.9	211° 00'.9	24.2	55.9	211°	00'.9	271° 01'.3	7° 24'.4 N	149° 23'.2	09.4	312° 36'.9	12.5	44.8	6'.7		40°	03:19	04:01	04:33	20:06	20:41	21:13	
23	83° 47.9			187° 37'.1	02.6	138° 08'.7	35.4	17° 28'.4	55.8	226° 03'.2	24.3	55.8	226°	03'.2	242° 03'.2	12° 24'.3 S	164° 22'.9	09.2	327° 08'.4	12'.5	38.1	6'.8		45°	02:49	03:38	04:16	20:18	20:50	21:20		
30	00	98° 50'.4			202° 36'.2	22° 03'.0 S	153° 09'.1	20° 35'.0 S	32° 31'.1	20° 55'.8 N	241° 05'.4	12° 24'.3 S	56.3	241°	05'.4	263° 55'.7	52° 42'.6 S	179° 22'.6	23° 09'.1 S	341° 39'.9	12.6	16° 31'.3 N	6'.9	54'.7	S 50°	02:05	03:09	03:53	20:32	21:02	21:28	
	01	113° 52'.8			217° 35.4	03.0	168° 09'.5	34.5	47° 33'.8	55.8	256° 07.7	24.4	55.8	256°	07.7	280° 34.4	46° 00'.3 N	194° 22'.3	08.9	356° 11'.5	12.6	24.4	7.0		52°	01:38	02:54	03:43	20:39	21:07	21:32	
	02	128° 55'.3			232° 34'.5	03.7	183° 10'.0	34.1	62° 36'.5	55.7	271° 10'.0	24.4	55.7	271°	10'.0	49° 32'.1	45° 19'.9 N	209° 22'.0	08.7	10° 43'.1	12'.6	17.4	7.0	54'.8	54°	00:56	02:37	03:31	20:47	21:13	21:36	
	03	143° 57'.8			247° 33'.6	04.1	198° 10'.4	33.6	77° 39'.3	55.7	286° 12.2	24.5	55.7	286°	12.2	33° 39'.9	14° 29'.8 S	224° 21'.7	08.6	25° 14.7	12.6	10.4	7.2		56°	-	02:15	03:17	20:55	21:20	21:41	
	04	159° 00'.2			262° 32.7	04.5	213° 10'.8	33.1	92° 42.0	55.6	301° 14'.5	24.5	55.6	301°	14'.5	348° 56'.2	17° 55'.0 S	239° 21'.4	08.4	39° 46'.3	12.7	03.2	7.2		58°	-	01:47	03:00	21:05	21:27	21:46	
	05	174° 02'.7			277° 31'.8	04.9	228° 11'.2	32.7	107° 44'.7	55.6	316° 16'.8	24.6	55.6	316°	16'.8	16° 16'.8	24.6	254° 21'.1	08.2	54° 18'.0	12.6	15° 56'.0 N	7.2		S 60°	-	01:01	02:40	21:15	21:35	21:51	
	06	189° 05'.2			292° 30.9	05.3	243° 11'.7	32.2	122° 47.5	55.6	331° 19.0	24.6	55.6	331°	19.0	51.8	61° 40'.4 N	269° 20'.8	08.0	68° 49'.6	12.7	48.8	7.4		S 62°	-	-	02:15	21:28	21:45	21:58	
	07	204° 07'.6			307° 30.0	05.7	258° 12'.1	31.8	137° 50'.2	55.5	346° 21'.3	24.7	55.5	346°	21'.3	278° 12.6	28° 37'.0 N	284° 20'.5	07.9	83° 21'.3	12.7	41.4	7.4									
	08	219° 10.1			322° 29.1	06.1	273° 12'.5	31.3	152° 52.9	55.5	1° 23'.6	24.8	55.5	1°	23'.6	90° 46'.8	51° 29'.3 S	299° 20'.2	07.7	97° 53'.0	12.8	34.0	7.5									
	09	234° 12'.6			337° 28'.3	06.5	288° 12'.9	30.8	167° 55'.6	55.5	16° 25'.8	24.8	55.5	16°	25'.8	33° 47'.6	9° 56'.3 N	314° 19'.9	07.5	112° 24.8	12.7	26.5	7.6	54'.9	Lat	Sunset						
	10	249° 15.0			352° 27.4	06.9	303° 13.4	30.4	182° 58'.4	55.5	31° 28'.1	24.9	55.5	31°	28'.1	15° 24.5	29° 33'.2 S	329° 19'.6	07.4	126° 56'.5	12.8	18.9	7.6									
	11	264° 17.5			7° 26.5	07.2	318° 13.8	29.9	189° 01'.1	55.4	46° 30'.4	24.9	55.4	46°	30'.4	189° 01'.1	24.9	344° 19.3	07.2	141° 28'.3	12.8	11.3	7.7									
	12	279° 19'.9			22° 25'.6	22° 07'.6 S	333° 14'.2	20° 29.4 S	213° 03'.8	20° 55.4 N	61° 32'.6	12° 25'.0 S	55.3	61°	32'.6	172° 01'.2	57° 11'.0 S	359° 19.0	23° 07.0 S	156° 00'.1	12.8	15° 03'.6 N	7.8	54'.9	N 70°	-	14:14	16:00	10:56	10:45	10:37	
	13	294° 22.4			37° 24.7	08.0	348° 14.7	29.0	228° 06.5	55.4	76° 34'.9	25.0	55.4	76°	34'.9	175° 52.6	17° 36'.8 S	14° 18.7	06.8	170° 31.9	12.9	14° 55'.8 N	7.9		68°	-	14:47	16:15	10:19	10:21	10:22	
	14	309° 24.9			52° 23.8	08.4	3° 15'.1	28.5	243° 09.3	55.3	91° 37'.2	25.1	55.3	91°	37'.2	148° 48'.5	60° 25.9 S	29° 18.7	06.7	185° 03'.8	12.9	47.9	7.9		66°	13:35	15:12	16:28	09:52	10:03</		

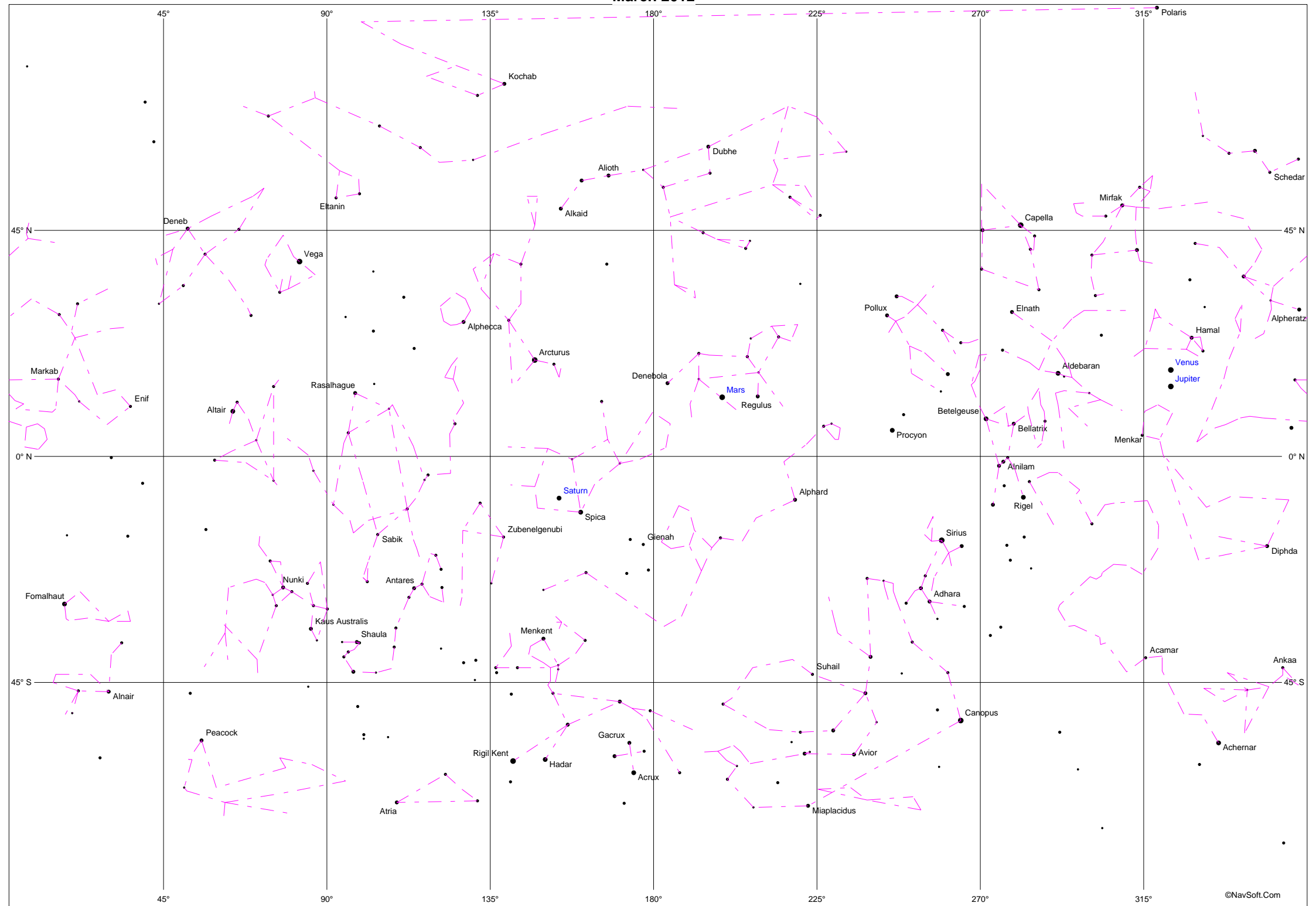
January 2012



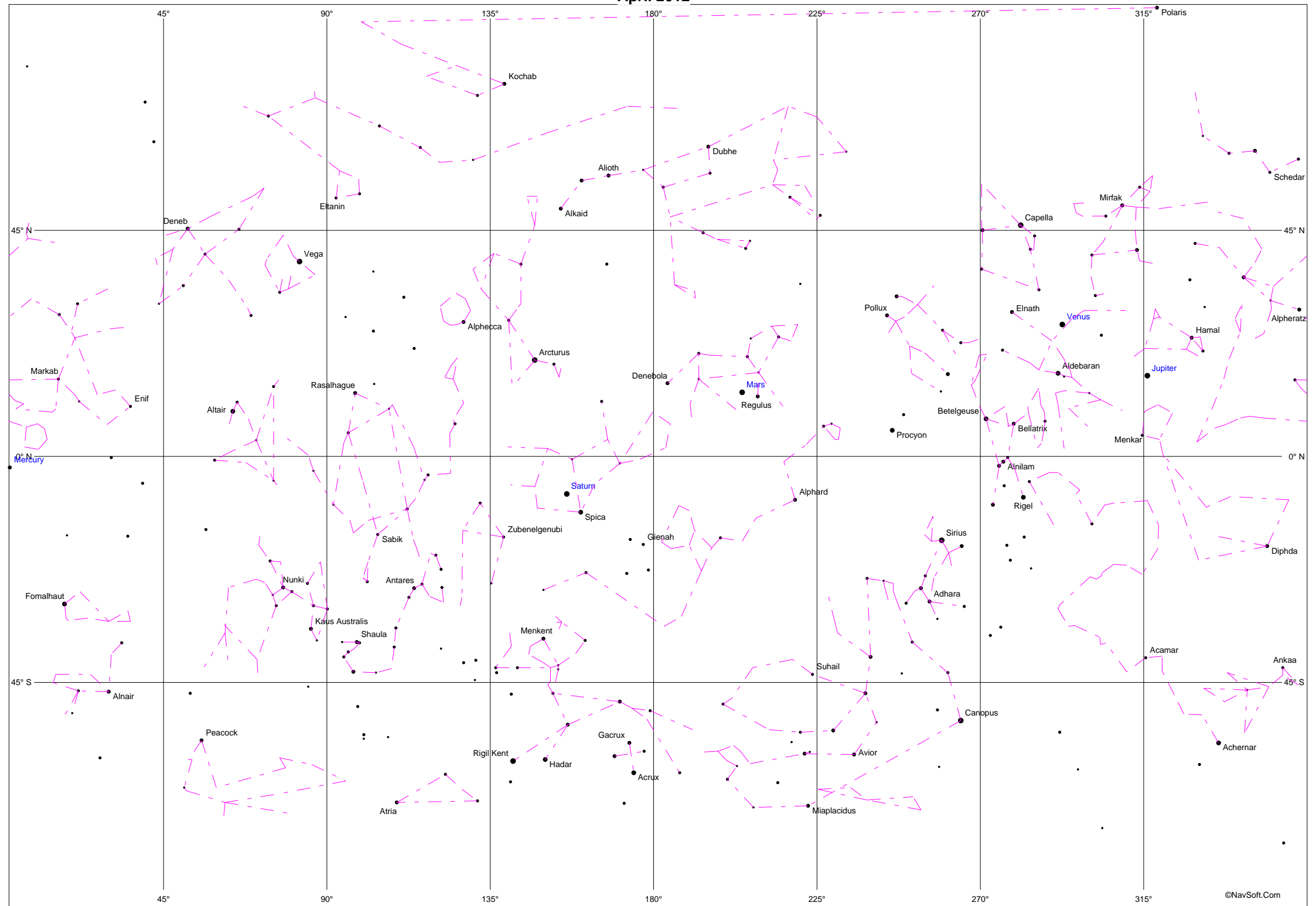
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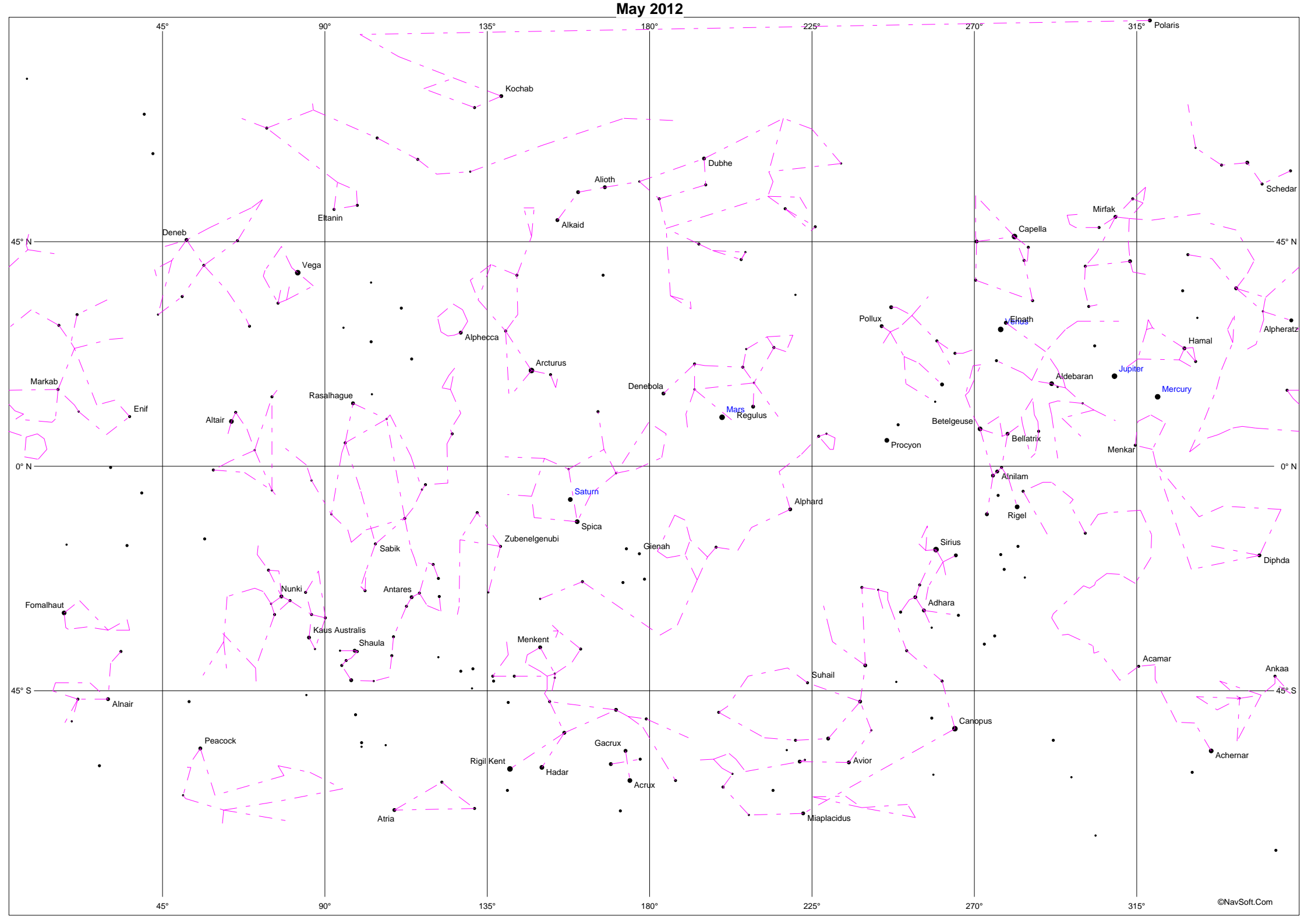


March 2012

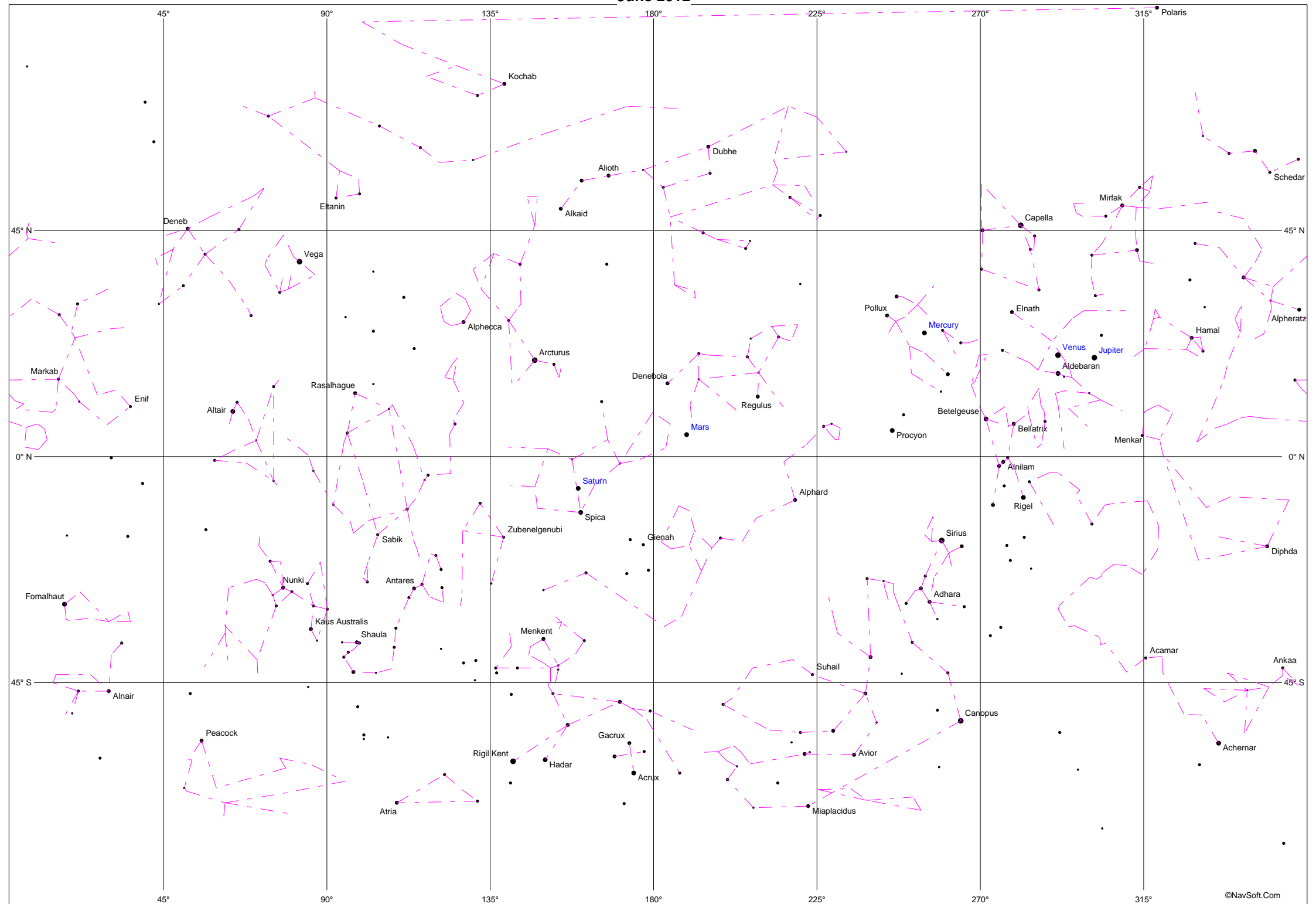


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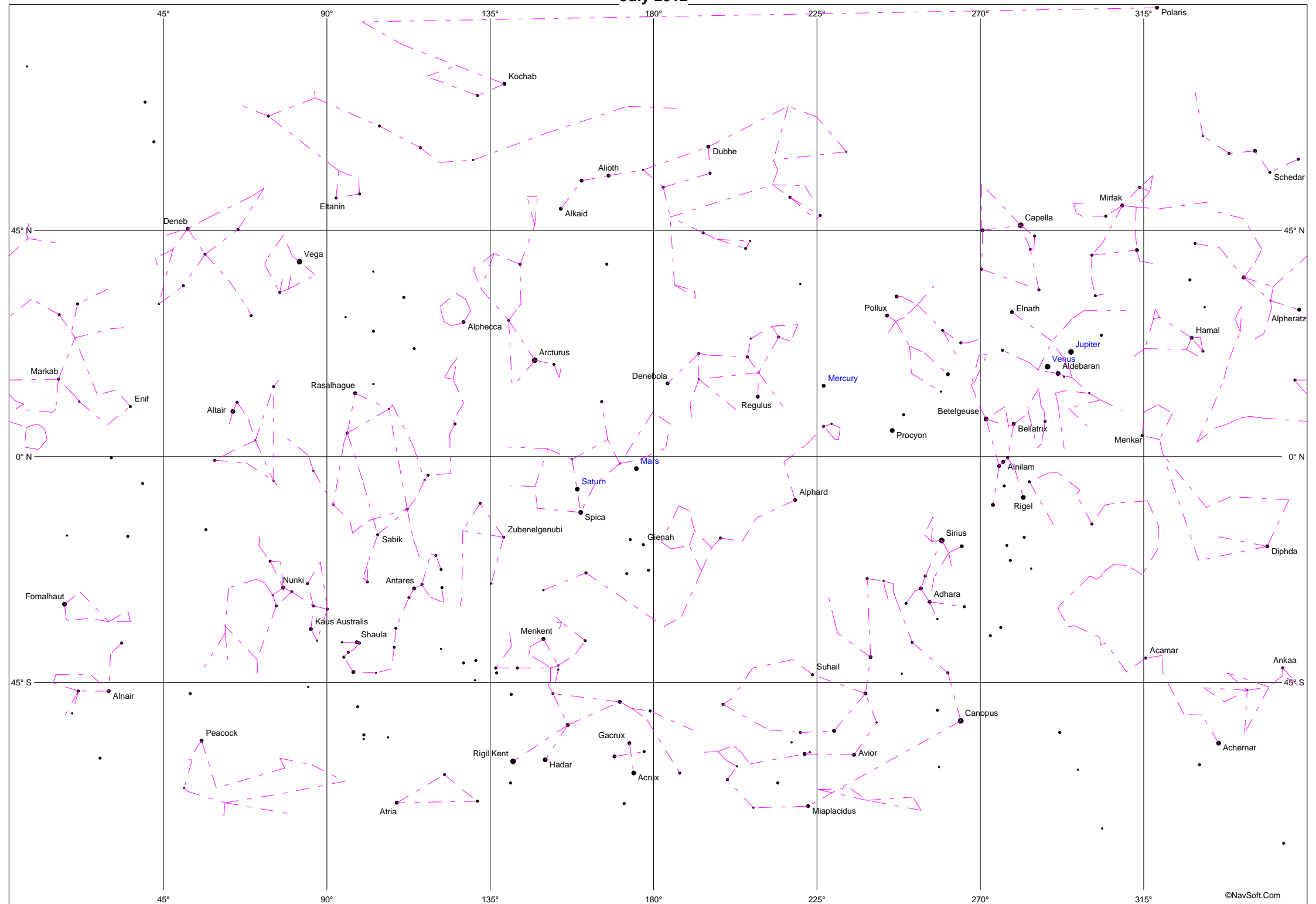




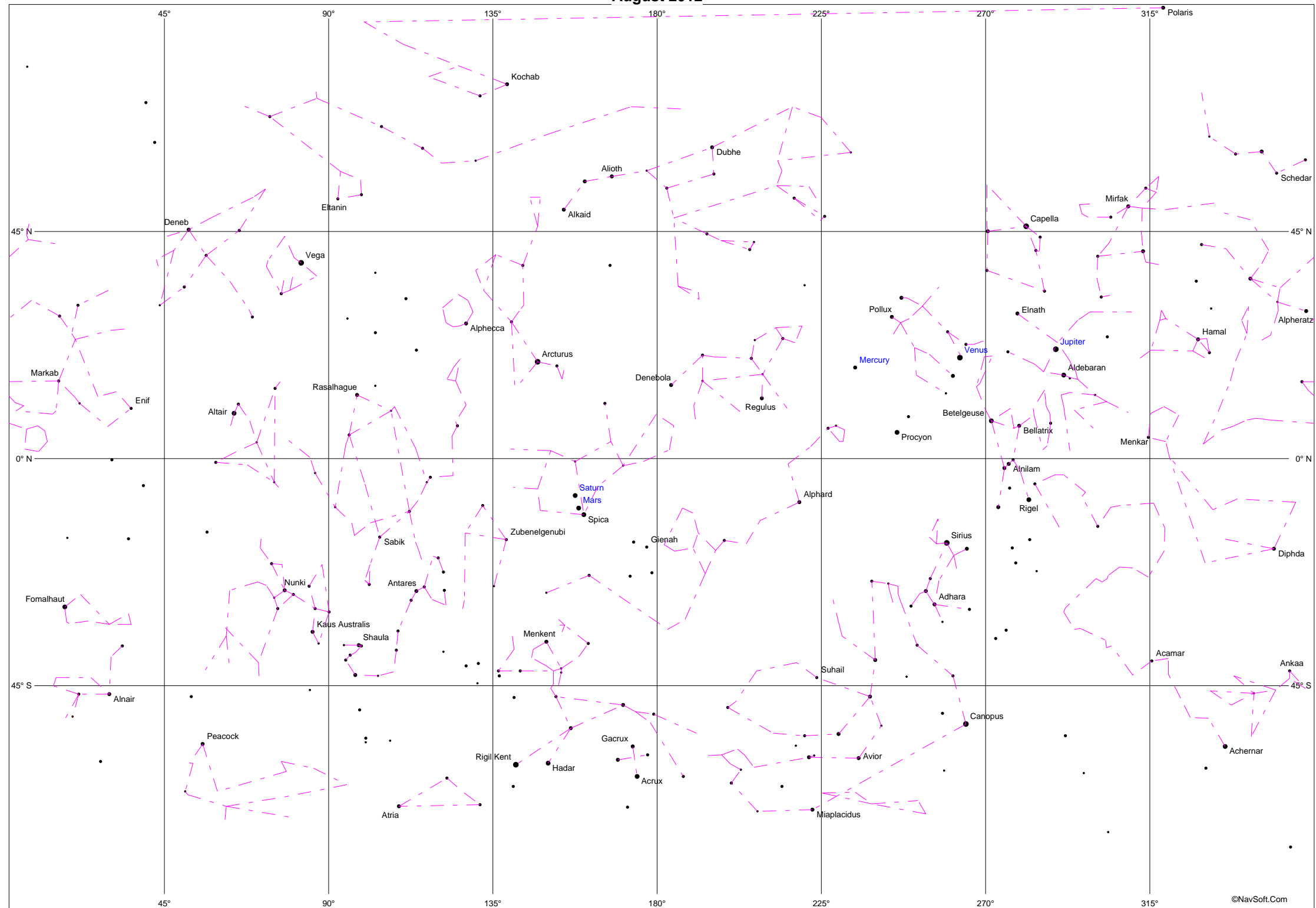
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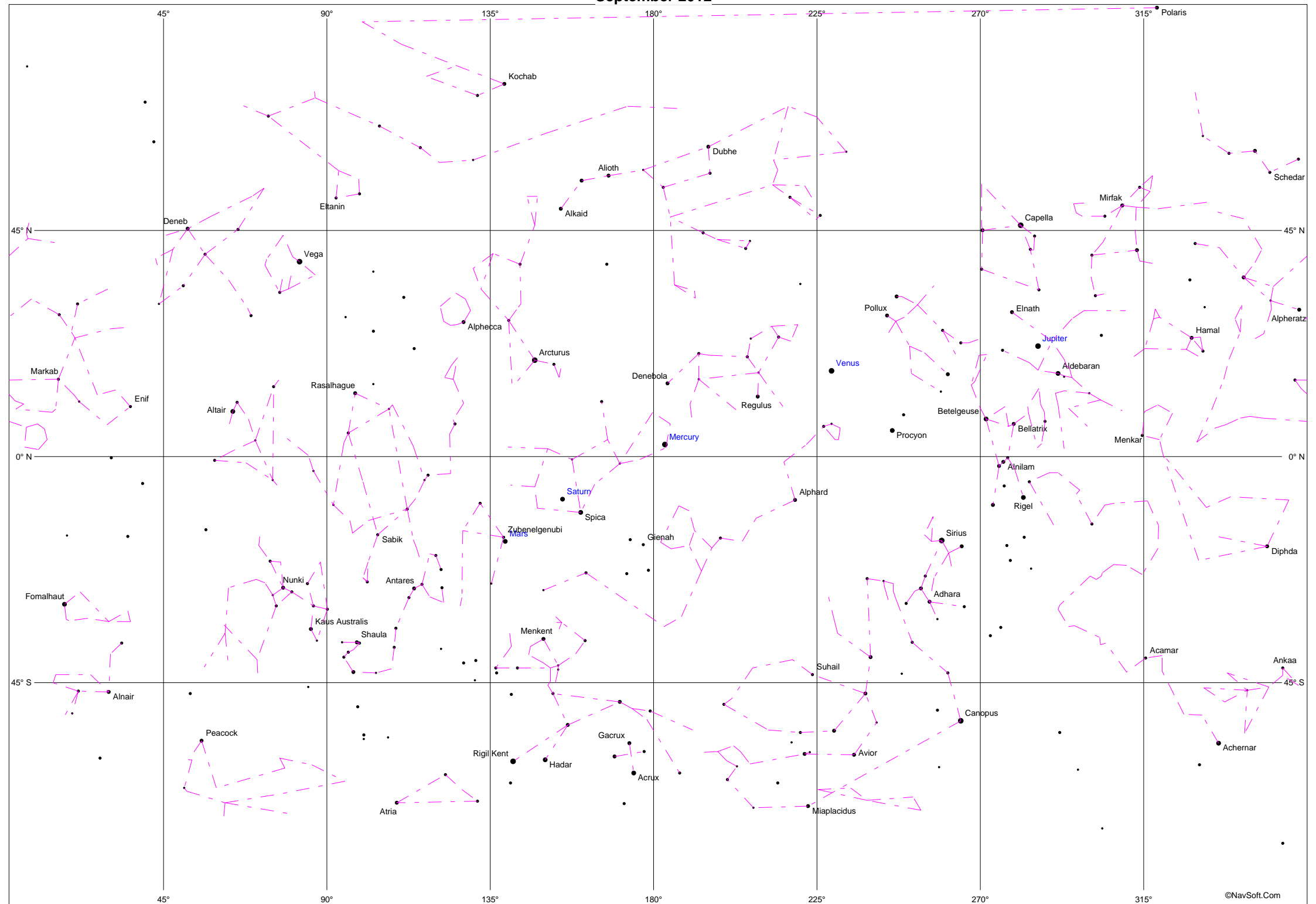
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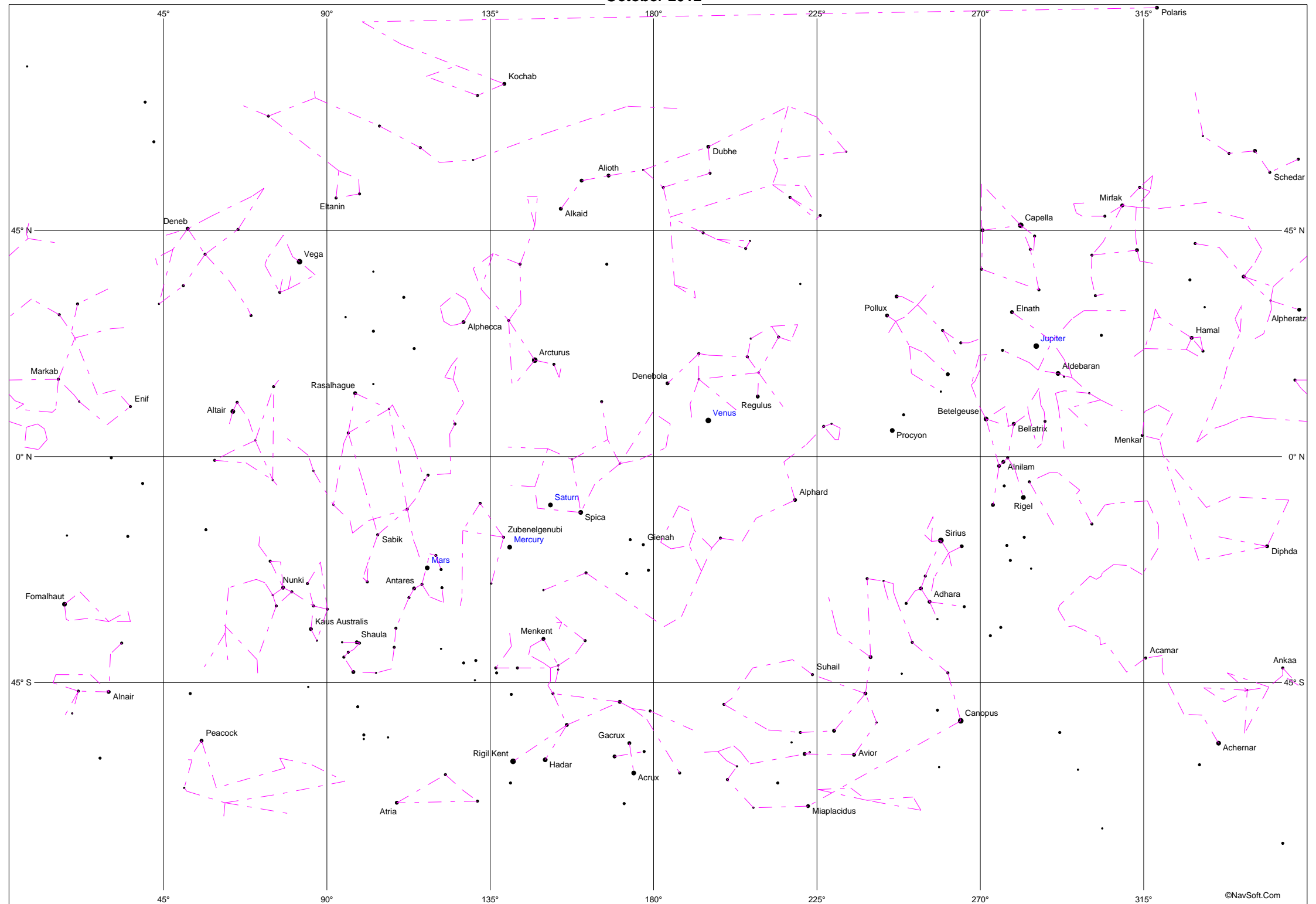
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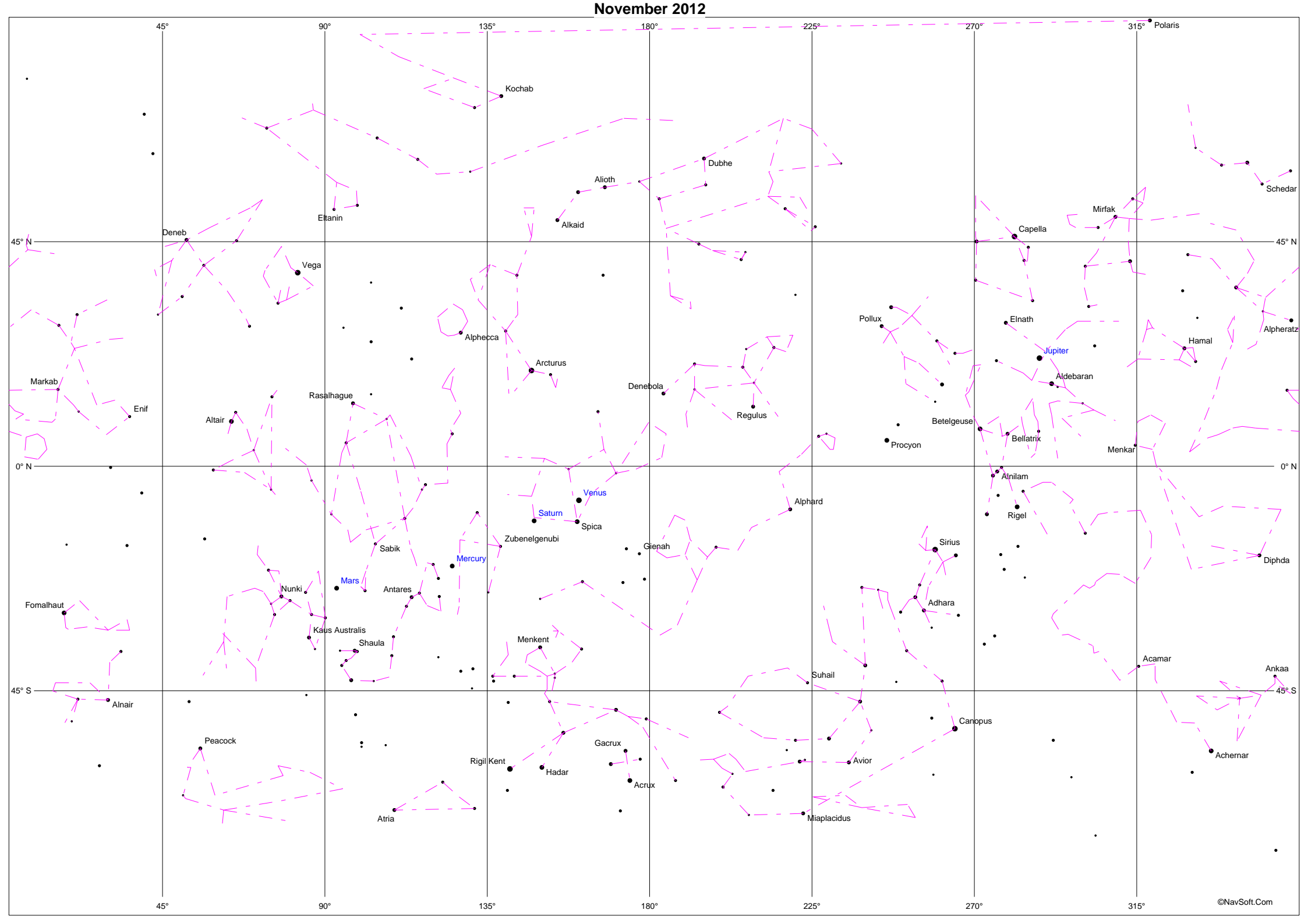
September 2012



October 2012



November 2012



December 2012

