

2017 August 20, 21, 22 (Sun, Mon, Tue)

GMT	SUN			MOON				Lat	Twilight		Sunrise	Moonrise			
	GHA	Dec		GHA	v	Dec	d		HP	Nautical		Civil	20	21	22
Sunday	00	179° 08'.4	12° 27'.0 N	203° 00'.3	6'.0	17° 31'.3 N	5'.4	59'.7	N 72°	-	-	03:03	-	01:57	04:03
	01	179° 08'.5	26'.1	217° 25'.3	6'.1	25'.9	5'.4		N 70°	-	01:46	03:27	00:34	02:29	04:22
	02	209° 08'.7	25'.3	231° 50'.4	6'.1	20'.5	5'.6		68°	-	02:25	03:45	01:10	02:52	04:36
	03	224° 08'.8	24'.5	246° 15'.5	6'.1	14'.9	5'.7		66°	-	02:51	03:59	01:35	03:10	04:47
	04	239° 09'.0	23'.7	260° 40'.6	6'.3	09'.2	5'.8	59'.6	64°	01:33	03:11	04:11	01:55	03:25	04:57
	05	254° 09'.1	22'.8	275° 05'.9	6'.2	03'.4	5'.9		62°	02:08	03:27	04:20	02:11	03:37	05:05
	06	269° 09'.3	22'.0	289° 31'.1	6'.3	16° 57'.5 N	6'.0		60°	02:32	03:40	04:29	02:25	03:47	05:12
	07	284° 09'.4	21'.2	303° 56'.4	6'.4	51'.5	6'.2		N 58°	02:51	03:51	04:36	02:36	03:56	05:18
	08	299° 09'.6	20'.4	318° 21'.8	6'.5	45'.3	6'.2		56°	03:06	04:01	04:43	02:46	04:04	05:24
	09	314° 09'.7	19'.5	332° 47'.3	6'.5	39'.1	6'.3		54°	03:19	04:09	04:49	02:55	04:11	05:29
	10	329° 09'.9	18'.7	347° 12'.8	6'.5	32'.8	6'.5		52°	03:30	04:17	04:54	03:03	04:17	05:33
	11	344° 10'.0	17'.9	1° 38'.3	6'.6	26'.3	6'.5		50°	03:40	04:24	04:59	03:10	04:23	05:37
	12	359° 10'.2	12° 17'.1 N	16° 03'.9	6'.7	16° 19'.8 N	6'.7	59'.5	45°	03:59	04:38	05:09	03:25	04:35	05:46
	13	14° 10'.3	16'.2	30° 29'.6	6'.7	13'.1	6'.8		N 40°	04:14	04:49	05:17	03:37	04:45	05:53
	14	29° 10'.5	15'.4	44° 55'.3	6'.8	06'.3	6'.8		35°	04:27	04:58	05:25	03:48	04:54	05:59
	15	44° 10'.6	14'.6	59° 21'.1	6'.8	15° 59'.5 N	7'.0		30°	04:37	05:06	05:31	03:57	05:01	06:05
	16	59° 10'.8	13'.7	73° 46'.9	6'.9	52'.5	7'.0		20°	04:52	05:19	05:42	04:13	05:14	06:14
	17	74° 10'.9	12'.9	88° 12'.8	7'.0	45'.5	7'.2		N 10°	05:04	05:30	05:51	04:27	05:25	06:22
	18	89° 11'.1	12'.1	102° 38'.8	7'.0	38'.3	7'.2	59'.4	0°	05:14	05:39	06:00	04:39	05:36	06:30
	19	104° 11'.2	11'.3	117° 04'.8	7'.1	31'.1	7'.4		S 10°	05:22	05:47	06:08	04:52	05:47	06:37
	20	119° 11'.4	10'.4	131° 30'.9	7'.2	23'.7	7'.4		20°	05:29	05:55	06:17	05:06	05:58	06:46
	21	134° 11'.5	09'.6	145° 57'.1	7'.2	16'.3	7'.6		30°	05:35	06:03	06:27	05:22	06:11	06:55
	22	149° 11'.7	08'.8	160° 23'.3	7'.3	08'.7	7'.6		35°	05:38	06:07	06:33	05:31	06:18	07:00
23	164° 11'.8	07'.9	174° 49'.6	7'.4	01'.1	7'.7	59'.3	40°	05:41	06:12	06:40	05:42	06:27	07:06	
								45°	05:43	06:17	06:47	05:54	06:36	07:13	
Monday	00	179° 12'.0	12° 07'.1 N	189° 16'.0	7'.4	14° 53'.4 N	7'.8	59'.3	S 50°	05:46	06:23	06:56	06:09	06:48	07:21
	01	194° 12'.2	06'.3	203° 42'.4	7'.5	45'.6	7'.9		52°	05:47	06:26	07:01	06:15	06:54	07:25
	02	209° 12'.3	05'.4	218° 08'.9	7'.5	37'.7	8'.0		54°	05:48	06:29	07:05	06:23	07:00	07:30
	03	224° 12'.5	04'.6	232° 35'.4	7'.6	29'.7	8'.1		56°	05:48	06:32	07:10	06:32	07:06	07:34
	04	239° 12'.6	03'.8	247° 02'.0	7'.7	21'.6	8'.1		58°	05:49	06:35	07:16	06:41	07:14	07:39
	05	254° 12'.8	02'.9	261° 28'.7	7'.8	13'.5	8'.2	59'.2	S 60°	05:50	06:39	07:22	06:52	07:22	07:45
	06	269° 12'.9	02'.1	275° 55'.5	7'.8	05'.3	8'.4		S 62°	05:51	06:43	07:30	07:05	07:32	07:52
	07	284° 13'.1	01'.3	290° 22'.3	7'.9	13° 56'.9 N	8'.4								
	08	299° 13'.2	00'.4	304° 49'.2	8'.0	48'.5	8'.4								
	09	314° 13'.4	11° 59'.6 N	319° 16'.2	8'.0	40'.1	8'.6	59'.1	Lat	Sunset	Twilight		Moonset		
	10	329° 13'.5	58'.8	333° 43'.2	8'.1	31'.5	8'.6				Civil	Nautical	20	21	22
	11	344° 13'.7	57'.9	348° 10'.3	8'.1	22'.9	8'.7		N 72°	20:58	23:27	-	21:01	20:48	20:38
	12	359° 13'.8	11° 57'.1 N	2° 37'.4	8'.3	13° 14'.2 N	8'.8	59'.1	N 70°	20:36	22:13	-	20:28	20:28	20:27
	13	14° 14'.0	56'.3	17° 04'.7	8'.3	05'.4	8'.8		68°	20:19	21:37	-	20:04	20:12	20:18
	14	29° 14'.2	55'.4	31° 32'.0	8'.3	12° 56'.6 N	9'.0	59'.0	66°	20:05	21:11	23:32	19:45	20:00	20:10
	15	44° 14'.3	54'.6	45° 59'.3	8'.5	47'.6	9'.0		64°	19:54	20:52	22:27	19:29	19:49	20:03
	16	59° 14'.5	53'.7	60° 26'.8	8'.5	38'.6	9'.0		62°	19:44	20:37	21:54	19:16	19:40	19:58
	17	74° 14'.6	52'.9	74° 54'.3	8'.6	29'.6	9'.2		60°	19:36	20:24	21:31	19:05	19:32	19:53
	18	89° 14'.8	52'.1	89° 21'.9	8'.6	20'.4	9'.2	58'.9	N 58°	19:28	20:13	21:13	18:56	19:25	19:48
	19	104° 14'.9	51'.2	103° 49'.5	8'.7	11'.2	9'.2		56°	19:22	20:03	20:58	18:47	19:19	19:44
	20	119° 15'.1	50'.4	118° 17'.2	8'.8	02'.0	9'.3		54°	19:16	19:55	20:45	18:40	19:13	19:41
	21	134° 15'.2	49'.6	132° 45'.0	8'.9	11° 52'.7 N	9'.4		52°	19:11	19:48	20:34	18:33	19:08	19:38
	22	149° 15'.4	48'.7	147° 12'.9	8'.9	43'.3	9'.5	58'.8	50°	19:06	19:41	20:25	18:27	19:03	19:35
23	164° 15'.6	47'.9	161° 40'.8	9'.0	33'.8	9'.5		45°	18:56	19:28	20:06	18:14	18:54	19:28	
Tuesday	00	179° 15'.7	11° 47'.0 N	176° 08'.8	9'.0	11° 24'.3 N	9'.5	58'.8	N 40°	18:48	19:17	19:51	18:03	18:45	19:23
	01	194° 15'.9	46'.2	190° 36'.8	9'.2	14'.8	9'.7		35°	18:41	19:07	19:39	17:54	18:38	19:18
	02	209° 16'.0	45'.4	205° 05'.0	9'.2	05'.1	9'.7	58'.7	30°	18:35	19:00	19:29	17:45	18:32	19:14
	03	224° 16'.2	44'.5	219° 33'.2	9'.2	10° 55'.4 N	9'.7		20°	18:24	18:47	19:13	17:31	18:21	19:07
	04	239° 16'.4	43'.7	234° 01'.4	9'.4	45'.7	9'.8		N 10°	18:15	18:36	19:02	17:19	18:11	19:00
	05	254° 16'.5	42'.8	248° 29'.8	9'.4	35'.9	9'.8		0°	18:06	18:28	18:52	17:07	18:02	18:54
	06	269° 16'.7	42'.0	262° 58'.2	9'.4	26'.1	9'.9	58'.6	S 10°	17:58	18:19	18:44	16:55	17:53	18:48
	07	284° 16'.8	41'.2	277° 26'.6	9'.6	16'.2	9'.9		20°	17:49	18:12	18:37	16:42	17:43	18:42
	08	299° 17'.0	40'.3	291° 55'.2	9'.6	06'.3	10'.0		30°	17:39	18:03	18:32	16:27	17:32	18:34
	09	314° 17'.1	39'.5	306° 23'.8	9'.7	9° 56'.3 N	10'.1		35°	17:33	17:59	18:29	16:19	17:25	18:30
	10	329° 17'.3	38'.6	320° 52'.5	9'.7	46'.2	10'.1	58'.5	40°	17:27	17:55	18:26	16:09	17:18	18:25
	11	344° 17'.5	37'.8	335° 21'.2	9'.8	36'.1	10'.1		45°	17:19	17:49	18:24	15:58	17:09	18:19
	12	359° 17'.6	11° 36'.9 N	349° 50'.0	9'.9	9° 26'.0 N	10'.2	58'.5	S 50°	17:10	17:44	18:21	15:44	16:58	18:12
	13	14° 17'.8	36'.1	4° 18'.9	9'.9	15'.8	10'.2	58'.4	52°	17:06	17:41	18:20	15:37	16:53	18:09
	14	29° 17'.9	35'.3	18° 47'.8	10'.0	05'.6	10'.2		54°	17:02	17:38	18:20	15:30	16:48	18:05
	15	44° 18'.1	34'.4	33° 16'.8	10'.1	8° 55'.4 N	10'.3		56°	16:57	17:35	18:19	15:22	16:42	18:01
	16	59° 18'.3	33'.6	47° 45'.9	10'.1	45'.1	10'.3		58°	16:51	17:32	18:18	15:13	16:35	17:57
	17	74° 18'.4	32'.7	62° 15'.0	10'.2	34'.8	10'.4	58'.3	S 60°	16:45	17:28	18:17	15:02	16:27	17:52
	18	89° 18'.6	31'.9	76° 44'.2	10'.3	24'.4	10'.4		S 62°	16:38	17:24	18:16	14:50	16:18	17:46
	19	104° 18'.7	31'.0	91° 13'.5	10'.3	14'.0	10'.4								
	20	119° 18'.9	30'.2	105° 42'.8	10'.4	03'.6	10'.5	58'.2							
	21	134° 19'.1	29'.3	120° 12'.2	10'.4	7° 53'.1 N	10'.5		SUN			MOON			
	22	149° 19'.2	28'.5	134° 41'.6	10'.6	42'.6	10'.5		Eqn. of Time		Mer.	Mer. Pass.			
23	164° 19'.4	27'.6	149° 11'.2	10'.5	32'.1	10'.6	58'.1	Day	00h	12h	Pass.	Upper	Lower	Age/ Vis	
								20	3 27	3 20	12:03	10:53	23:21	28d 2%	
								21	3 12	3 05	12:03	11:49	24:16	29d 0%	
								22	2 57	2 50	12:03	12:42	00:		