

2022

Times are Central Standard Time, except from Sunday, March 13 to Sunday, Nov. 6, during which Daylight Saving Time is observed. Boldface times for moonrise and moonset indicate p.m. Times are figured for the point 31° 08' N 99° 20' W, the approximate geographical center of the state. See page 138 for explanation of how to get the approximate time at any other Texas point.

1st Month		January 2022		31 Days			
Moon Phases — New Moon Jan. 2, 12:33 pm; First Qtr. Jan. 9, 12:11 pm; Full Moon Jan. 17, 5:48 pm; Last Qtr. Jan. 25, 7:41 am; New Moon Jan. 31, 11:46 pm							
Day of		Planetary Configurations and Phenomena	Hour of				
Year	Month		Week	Sunrise	Sunset	Moon-rise	Moon-set
1	1	Sat	☾ at perigee (5 pm)	7:35	5:46	6:30	4:40
2	2	Sun	New ☾	7:36	5:46	7:40	5:46
3	3	Mon	☽ ☾ ☾ (7 pm)	7:36	5:47	8:42	6:57
4	4	Tue	☉ at perihelion (1 am)	7:36	5:48	9:35	8:09
5	5	Wed	☽ ☾ ☾ (6 pm)	7:36	5:49	10:19	9:17
6	6	Thu		7:36	5:50	10:56	10:22
7	7	Fri	☽ gr. elongation E (5 am)	7:36	5:50	11:29	11:22
8	8	Sat	♀ in inferior ☽ (7 pm)	7:36	5:51	11:58	
9	9	Sun	First qtr. ☾	7:36	5:52	12:27	12:20
10	10	Mon		7:36	5:53	12:55	1:17
11	11	Tue	♁ ☾ ☾ (5 am)	7:36	5:54	1:25	2:12
12	12	Wed		7:36	5:55	1:57	3:08
13	13	Thu	☽ stationary (7 pm)	7:36	5:55	2:33	4:04
14	14	Fri	☾ at apogee (3 am)	7:36	5:56	3:14	5:00
15	15	Sat		7:36	5:57	4:00	5:55
16	16	Sun		7:36	5:58	4:51	6:48
17	17	Mon	Full ☾	7:35	5:59	5:46	7:36
18	18	Tue		7:35	6:00	6:45	8:20
19	19	Wed		7:35	6:01	7:44	9:00
20	20	Thu		7:35	6:02	8:43	9:35
21	21	Fri		7:34	6:02	9:42	10:07
22	22	Sat		7:34	6:03	10:42	10:37
23	23	Sun	☽ in inferior ☽ (4 am)	7:33	6:04	11:42	11:07
24	24	Mon		7:33	6:05		11:38
25	25	Tue	Last qtr. ☾	7:33	6:06	12:44	12:11
26	26	Wed		7:32	6:07	1:50	12:48
27	27	Thu		7:32	6:08	2:58	1:32
28	28	Fri		7:31	6:09	4:08	2:23
29	29	Sat	♀ ☽ ☽ ☾	7:31	6:10	5:18	3:23
30	30	Sun	☽ ☽ ☾ (6 pm)	7:30	6:11	6:23	4:31
31	31	Mon	New ☾	7:29	6:11	7:20	5:42

2nd Month		February 2022		28 Days			
Moon Phases — First Qtr. Feb. 8, 6:50 am; Full Moon Feb. 16, 10:56 am; Last Qtr. Feb. 23, 4:32 pm							
Day of		Planetary Configurations and Phenomena	Hour of				
Year	Month		Week	Sunrise	Sunset	Moon-rise	Moon-set
32	1	Tue		7:29	6:12	8:08	6:53
33	2	Wed	♁ ☽ ☾ (3 pm)	7:28	6:13	8:49	8:01
34	3	Thu	☽ stationary (4 pm)	7:28	6:14	9:24	9:05
35	4	Fri	♁ ☽ ☾ (1 pm)	7:27	6:15	9:56	10:06
36	5	Sat		7:26	6:16	10:26	11:05
37	6	Sun		7:25	6:17	10:54	
38	7	Mon	♁ ☽ ☾ (2 pm)	7:25	6:18	11:24	12:02
39	8	Tue	First qtr. ☾	7:24	6:18	11:56	12:59
40	9	Wed		7:23	6:19	12:31	1:56
41	10	Thu	☾ at apogee (9 pm)	7:22	6:20	1:10	2:52
42	11	Fri		7:21	6:21	1:54	3:48
43	12	Sat	♀ gr. illumination (4 pm)	7:21	6:22	2:43	4:41
44	13	Sun		7:20	6:23	3:37	5:31
45	14	Mon		7:19	6:24	4:35	6:17
46	15	Tue		7:18	6:24	5:35	6:58
47	16	Wed	Full ☾	7:17	6:25	6:35	7:35
48	17	Thu		7:16	6:26	7:35	8:08
49	18	Fri		7:15	6:27	8:35	8:40
50	19	Sat		7:14	6:28	9:36	9:10
51	20	Sun		7:13	6:28	10:38	9:40
52	21	Mon		7:12	6:29	11:42	10:12
53	22	Tue		7:11	6:30		10:48
54	23	Wed	Last qtr. ☾	7:10	6:31	12:49	11:28
55	24	Thu		7:09	6:31	1:57	12:16
56	25	Fri		7:08	6:32	3:05	1:11
57	26	Sat	☾ at perigee (4 pm)	7:07	6:33	4:10	2:14
58	27	Sun	♀ ☽ ☽ ☾	7:06	6:34	5:08	3:22
59	28	Mon	☽ ♁ ☽ ☾	7:04	6:35	5:59	4:32

3rd Month		March 2022		31 Days			
Moon Phases — New Moon Mar. 2, 11:35 am; First Qtr. Mar. 10, 4:45 am; Full Moon Mar. 18, 2:18 am; Last Qtr. Mar. 25, 12:37 am							
Day of		Planetary Configurations and Phenomena	Hour of				
Year	Month		Week	Sunrise	Sunset	Moon-rise	Moon-set
60	1	Tue		7:03	6:35	6:42	5:40
61	2	Wed	New ☾; ☽ ☽ ♁ (7 am)	7:02	6:36	7:19	6:46
62	3	Thu		7:01	6:37	7:52	7:49
63	4	Fri		7:00	6:37	8:23	8:49
64	5	Sat	♁ ☽ ☾ (8 am)	6:59	6:38	8:52	9:48
65	6	Sun		6:58	6:39	9:22	10:46
66	7	Mon	♁ ☽ ☾ (12 am)	6:56	6:40	9:53	11:44
67	8	Tue		6:55	6:40	10:27	
68	9	Wed		6:54	6:41	11:04	12:42
69	10	Thu	First qtr. ☾ at apogee	6:53	6:42	11:46	1:38
70	11	Fri		6:52	6:42	12:34	2:33
71	12	Sat	♀ ☽ ☽ (8 am)	6:50	6:43	1:26	3:24
72	13	Sun	DST begins (2 am)	7:49	7:44	3:22	5:11
73	14	Mon		7:48	7:44	4:21	5:54
74	15	Tue		7:47	7:45	5:22	6:32
75	16	Wed		7:45	7:46	6:22	7:07
76	17	Thu		7:44	7:46	7:24	7:39
77	18	Fri	Full ☾	7:43	7:47	8:26	8:10
78	19	Sat		7:42	7:48	9:29	8:41
79	20	Sun	Equinox (10:33 am)	7:41	7:48	10:34	9:13
80	21	Mon		7:39	7:49	11:41	9:40
81	22	Tue		7:38	7:50		10:27
82	23	Wed	☾ at perigee (7 pm)	7:37	7:50	12:50	11:13
83	24	Thu		7:36	7:51	1:59	12:05
84	25	Fri	Last qtr. ☾	7:34	7:52	3:04	1:06
85	26	Sat		7:33	7:52	4:04	2:11
86	27	Sun	♁ ☽ ☾ (10 pm)	7:32	7:53	4:55	3:19
87	28	Mon	♀ ♁ ☽ ☾ (6 am)	7:31	7:54	5:40	4:27
88	29	Tue	♀ ☽ ♁ (8 am)	7:29	7:54	6:18	5:32
89	30	Wed	♁ ♁ ☽ ☾	7:28	7:55	6:51	6:34
90	31	Thu		7:27	7:56	7:22	7:35

Astronomical Calendar for 2022

4th Month				April 2022				30 Days			
Moon Phases — New Moon Apr. 1, 1:24 am; First Qtr. Apr. 9, 1:48 am; Full Moon Apr 16, 1:55 pm; Last Qtr. Apr 23, 6:56 am; New Moon Apr. 30, 3:28 pm											
Day of			Planetary Configurations and Phenomena	Hour of							
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set				
91	1	Fri	New ☾	7:26	7:56	7:51	8:34				
92	2	Sat	☾ in superior ☉ (6 pm)	7:24	7:57	8:20	9:33				
93	3	Sun	☽ ☉ ☾ (12 pm)	7:23	7:57	8:51	10:31				
94	4	Mon	☽ ☉ ♃ (5 pm)	7:22	7:58	9:23	11:30				
95	5	Tue		7:21	7:59	9:59					
96	6	Wed		7:19	7:59	10:40	12:27				
97	7	Thu	☾ at apogee (2 pm)	7:18	8:00	11:25	1:23				
98	8	Fri		7:17	8:01	12:15	2:16				
99	9	Sat	First qtr. ☾	7:16	8:01	1:10	3:05				
100	10	Sun		7:15	8:02	2:07	3:49				
101	11	Mon		7:13	8:03	3:06	4:29				
102	12	Tue	♃ ☉ ♀ (3 pm)	7:12	8:03	4:06	5:04				
103	13	Wed		7:11	8:04	5:07	5:37				
104	14	Thu		7:10	8:05	6:09	6:08				
105	15	Fri		7:09	8:05	7:12	6:39				
106	16	Sat	Full ☾	7:08	8:06	8:17	7:10				
107	17	Sun		7:07	8:07	9:26	7:44				
108	18	Mon		7:05	8:07	10:37	8:23				
109	19	Tue	☾ at perigee (10 am)	7:04	8:08	11:48	9:07				
110	20	Wed		7:03	8:09		9:59				
111	21	Thu		7:02	8:09	12:57	10:58				
112	22	Fri		7:01	8:10	2:00	12:03				
113	23	Sat	Last qtr. ☾	7:00	8:11	2:54	1:11				
114	24	Sun	♃ ☉ ☾ (4 pm)	6:59	8:11	3:40	2:19				
115	25	Mon	☽ ☉ ☾ (5 pm)	6:58	8:12	4:19	3:24				
116	26	Tue	♀ ☽ ☉ ☾ (9 pm)	6:57	8:13	4:53	4:26				
117	27	Wed	♃ ☉ ☾; ♀ ☉ ♀	6:56	8:13	5:24	5:26				
118	28	Thu		6:55	8:14	5:53	6:25				
119	29	Fri	☽ gr. elongation E (3 am)	6:54	8:15	6:21	7:23				
120	30	Sat	New ☾; ☽ eclipse (5 pm)	6:53	8:15	6:51	8:21				

5th Month				May 2022				31 Days			
Moon Phases — First Qtr. May 8, 7:21 pm; Full Moon May 15, 11:14 pm; Last Qtr. May 22, 1:43 pm; New Moon May 30, 6:30 am											
Day of			Planetary Configurations and Phenomena	Hour of							
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set				
121	1	Sun	☽ ☉ ☾ (9 am)	6:52	8:16	7:22	9:19				
122	2	Mon		6:51	8:17	7:57	10:17				
123	3	Tue		6:50	8:17	8:35	11:14				
124	4	Wed		6:50	8:18	9:19					
125	5	Thu	☾ at apogee (8 am)	6:49	8:19	10:07	12:09				
126	6	Fri		6:48	8:19	11:00	12:59				
127	7	Sat		6:47	8:20	11:56	1:45				
128	8	Sun	First qtr. ☾	6:46	8:21	12:54	2:26				
129	9	Mon		6:45	8:22	1:52	3:02				
130	10	Tue	☽ stationary (6 pm)	6:45	8:22	2:51	3:35				
131	11	Wed		6:44	8:23	3:51	4:06				
132	12	Thu		6:43	8:24	4:53	4:36				
133	13	Fri		6:43	8:24	5:56	5:06				
134	14	Sat		6:42	8:25	7:03	5:39				
135	15	Sun	Full ☾; eclipse (11 pm)	6:41	8:26	8:14	6:15				
136	16	Mon		6:41	8:26	9:27	6:57				
137	17	Tue	☾ at perigee (10 am)	6:40	8:27	10:40	7:47				
138	18	Wed		6:39	8:28	11:49	8:45				
139	19	Thu		6:39	8:28		9:51				
140	20	Fri		6:38	8:29	12:48	11:00				
141	21	Sat	☽ in inferior ☉ (2 pm)	6:38	8:30	1:39	12:10				
142	22	Sun	♃ ☉ last qtr. ☾ (12 am)	6:37	8:30	2:21	1:17				
143	23	Mon		6:37	8:31	2:56	2:20				
144	24	Tue	♂ ♃ ♀ ☾	6:36	8:31	3:28	3:21				
145	25	Wed		6:36	8:32	3:57	4:19				
146	26	Thu	♀ ☉ ☾ (10 pm)	6:36	8:33	4:25	5:17				
147	27	Fri		6:35	8:33	4:54	6:14				
148	28	Sat	♃ ☉ ☾; ♂ ☉ ♃	6:35	8:34	5:24	7:11				
149	29	Sun		6:34	8:34	5:57	8:09				
150	30	Mon	New ☾	6:34	8:35	6:34	9:07				
151	31	Tue		6:34	8:36	7:15	10:02				

6th Month				June 2022				30 Days			
Moon Phases — First Qtr. Jun. 8, 7:21; Full Moon Jun. 14, 6:52 am; Last Qtr. Jun. 20, 10:11; New Moon Jun. 28, 9:52 pm											
Day of			Planetary Configurations and Phenomena	Hour of							
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set				
152	1	Wed	☾ at apogee (8 pm)	6:34	8:36	8:02	10:54				
153	2	Thu	☽ stationary (7 pm)	6:33	8:37	8:53	11:41				
154	3	Fri		6:33	8:37	9:48					
155	4	Sat		6:33	8:38	10:45	12:24				
156	5	Sun	♃ stationary (9 am)	6:33	8:38	11:42	1:01				
157	6	Mon		6:33	8:39	12:40	1:35				
158	7	Tue	First qtr. ☾	6:33	8:39	1:38	2:06				
159	8	Wed		6:33	8:40	2:37	2:35				
160	9	Thu		6:32	8:40	3:38	3:04				
161	10	Fri		6:32	8:40	4:41	3:34				
162	11	Sat	♀ ☉ ♂ (8 am)	6:32	8:41	5:49	4:08				
163	12	Sun		6:32	8:41	7:01	4:46				
164	13	Mon		6:32	8:42	8:15	5:32				
165	14	Tue	Full ☾ at perigee (6 pm)	6:33	8:42	9:27	6:26				
166	15	Wed		6:33	8:42	10:33	7:30				
167	16	Thu	☽ gr. elongation W (10 am)	6:33	8:43	11:30	8:40				
168	17	Fri		6:33	8:43		9:53				
169	18	Sat	♃ ☉ ☾ (7 am)	6:33	8:43	12:17	11:04				
170	19	Sun		6:33	8:43	12:56	12:11				
171	20	Mon	Last qtr. ☾	6:33	8:44	1:30	1:14				
172	21	Tue	Solstice (4:14 am)	6:34	8:44	2:00	2:14				
173	22	Wed	♂ ☉ ☾ (1 pm)	6:34	8:44	2:28	3:12				
174	23	Thu	☽ ☉ Aldebaran (9 am)	6:34	8:44	2:57	4:09				
175	24	Fri	♃ ☉ ☾ (5 pm)	6:34	8:44	3:26	5:06				
176	25	Sat		6:35	8:45	3:58	6:04				
177	26	Sun	♀ ☉ ☾ (3 am)	6:35	8:45	4:34	7:01				
178	27	Mon	☽ ☉ ☾ (3 am)	6:35	8:45	5:14	7:57				
179	28	Tue	New ☾	6:36	8:45	5:59	8:50				
180	29	Wed	☾ at apogee (1 am)	6:36	8:45	6:49	9:39				
181	30	Thu		6:36	8:45	7:43	10:23				

☉ The Sun ● The Earth ☾ The Moon ☿ Mercury ♀ Venus ♂ Mars ♃ Jupiter ♄ Saturn ♅ Neptune ♆ Uranus ☽ = in conjunction ♂ = opposition to the ☾

Astronomical Calendar for 2022

7th Month July 2022 31 Days
Moon Phases — First Qtr. Jul. 6, 9:14 pm; Full Moon Jul. 13, 1:38 pm; Last Qtr. Jul. 20, 9:19 am; New Moon Jul. 28, 12:55 pm

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
182	1	Fri	♀♂♂ Aldebaran (7 pm)	6:37	8:45	8:39	11:02
183	2	Sat		6:37	8:45	9:36	11:36
184	3	Sun		6:38	8:45	10:34	
185	4	Mon	● aphelion (2 am)	6:38	8:45	11:31	12:07
186	5	Tue		6:38	8:44	12:28	12:36
187	6	Wed	First qtr. ☾	6:39	8:44	1:26	1:05
188	7	Thu		6:39	8:44	2:27	1:34
189	8	Fri		6:40	8:44	3:30	2:04
190	9	Sat		6:40	8:44	4:38	2:39
191	10	Sun		6:41	8:44	5:49	3:20
192	11	Mon		6:41	8:43	7:02	4:09
193	12	Tue		6:42	8:43	8:12	5:07
194	13	Wed	Full ☾ at perigee (4 am)	6:42	8:43	9:13	6:15
195	14	Thu		6:43	8:42	10:16	7:28
196	15	Fri	♄♂♂ ☾ (3 pm)	6:44	8:42	10:50	8:42
197	16	Sat	♃ in superior ☿ (3 pm)	6:44	8:42	11:27	9:53
198	17	Sun	♃♂♂ ☾ (8 pm)	6:45	8:41	11:59	11:00
199	18	Mon	♃♂♂ ☾ (8 pm)	6:45	8:41		12:03
200	19	Tue	Pluto♂♂ (9 pm)	6:46	8:40	12:29	1:03
201	20	Wed	Last qtr. ☾	6:46	8:40	12:59	2:02
202	21	Thu	♂♂♂ ☾ (12 pm)	6:47	8:39	1:28	3:00
203	22	Fri	♄♂♂ ☾ (1 am)	6:48	8:39	2:00	3:58
204	23	Sat		6:48	8:38	2:34	4:55
205	24	Sun		6:49	8:38	3:13	5:52
206	25	Mon		6:50	8:37	3:56	6:46
207	26	Tue	♀♂♂ ☾ (9 am)	6:50	8:36	4:44	7:36
208	27	Wed		6:51	8:36	5:37	8:22
209	28	Thu	New ☾	6:51	8:35	6:33	9:02
210	29	Fri	♃♂♂ stationary (7 am)	6:52	8:34	7:31	9:38
211	30	Sat		6:53	8:34	8:29	10:10
212	31	Sun		6:53	8:33	9:26	10:40

8th Month August 2022 31 Days
Moon Phases — First Qtr. Aug. 5, 6:07 am; Full Moon Aug. 11, 8:36 pm; Last Qtr. Aug. 18, 11:36 pm; New Moon Aug. 27, 3:17 am

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
213	1	Mon	♂♂♂♂♂ (4 am)	6:54	8:32	10:23	11:08
214	2	Tue		6:55	8:31	11:20	11:36
215	3	Wed		6:55	8:30	12:19	
216	4	Thu	♃♂♂ Regulus (12 am)	6:56	8:30	1:20	12:05
217	5	Fri	First qtr. ☾	6:56	8:29	2:24	12:37
218	6	Sat		6:57	8:28	3:32	1:14
219	7	Sun	♀♂♂ Pollux (5 am)	6:58	8:27	4:42	1:58
220	8	Mon		6:58	8:26	5:51	2:50
221	9	Tue		6:59	8:25	6:55	3:52
222	10	Wed	☾ at perigee (12 pm)	7:00	8:24	7:52	5:02
223	11	Thu	♄♂♂ Full ☾ (11 pm)	7:00	8:23	8:40	6:16
224	12	Fri		7:01	8:22	9:20	7:29
225	13	Sat		7:02	8:21	9:55	8:39
226	14	Sun	♃♂♂ ☾ (5 am); ♄♂♂♂ (12 pm)	7:02	8:20	10:27	9:46
227	15	Mon	♃♂♂ ☾ (5 am)	7:03	8:19	10:57	10:49
228	16	Tue		7:03	8:18	11:27	11:50
229	17	Wed		7:04	8:17	11:59	12:50
230	18	Thu	Last qtr. ☾	7:05	8:16		1:49
231	19	Fri	♂♂♂☾ (7 am)	7:05	8:15	12:32	2:48
232	20	Sat		7:06	8:14	1:10	3:45
233	21	Sun		7:06	8:13	1:52	4:40
234	22	Mon	☾ at apogee (5 pm)	7:07	8:12	2:39	5:32
235	23	Tue		7:08	8:11	3:31	6:19
236	24	Wed		7:08	8:10	4:26	7:01
237	25	Thu	♀♂♂☾ (4 pm)	7:09	8:08	5:23	7:39
238	26	Fri		7:09	8:07	6:22	8:12
239	27	Sat	New ☾; ♃ gr. elongation E	7:10	8:06	7:20	8:42
240	28	Sun		7:11	8:05	8:17	9:11
241	29	Mon	♃♂♂☾ (6 am)	7:11	8:04	9:15	9:39
242	30	Tue		7:12	8:02	10:14	10:08
243	31	Wed		7:12	8:01	11:14	10:39

9th Month September 2022 30 Days
Moon Phases — First Qtr. Sep. 3, 1:08 pm; Full Moon Sep. 10, 4:59 am; Last Qtr. Sep. 17, 4:52 pm; New Moon Sep. 25, 4:55 pm

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
244	1	Thu		7:13	8:00	12:17	11:14
245	2	Fri		7:14	7:59	1:23	11:54
246	3	Sat	First qtr. ☾	7:14	7:58	2:31	
247	4	Sun	♃♂♂ Regulus (8 pm)	7:15	7:56	3:38	12:42
248	5	Mon		7:15	7:55	4:43	1:39
249	6	Tue		7:16	7:54	5:41	2:44
250	7	Wed	☾ at perigee (1 pm)	7:17	7:53	6:31	3:54
251	8	Thu	♄♂♂☾ (6 am)	7:17	7:51	7:13	5:06
252	9	Fri	♃♂♂ stationary (3 pm)	7:18	7:50	7:50	6:17
253	10	Sat	Full ☾	7:18	7:49	8:23	7:25
254	11	Sun	♃♂♂☾ (10 am)	7:19	7:47	8:54	8:30
255	12	Mon		7:19	7:46	9:24	9:33
256	13	Tue		7:20	7:45	9:56	10:35
257	14	Wed	♄♂♂☾ (6 pm)	7:21	7:44	10:29	11:36
258	15	Thu		7:21	7:42	11:05	12:36
259	16	Fri	♃♂♂♂♂ (5 pm); ♂♂♂☾ (9 pm)	7:22	7:41	11:46	1:35
260	17	Sat	Last qtr. ☾	7:22	7:40		2:32
261	18	Sun		7:23	7:38	12:32	3:26
262	19	Mon	☾ at apogee (12 pm)	7:23	7:37	1:22	4:15
263	20	Tue		7:24	7:36	2:16	4:59
264	21	Wed		7:25	7:35	3:13	5:37
265	22	Thu	Equinox (8:04 pm)	7:25	7:33	4:11	6:12
266	23	Fri	♃♂♂ in inferior ☿ (2 am)	7:26	7:32	5:10	6:43
267	24	Sat		7:26	7:31	6:08	7:13
268	25	Sun	New ☾	7:27	7:29	7:06	7:41
269	26	Mon	♃♂♂♂♂ (3 pm)	7:28	7:28	8:06	8:10
270	27	Tue		7:28	7:27	9:07	8:41
271	28	Wed		7:29	7:26	10:10	9:14
272	29	Thu		7:29	7:24	11:16	9:52
273	30	Fri		7:30	7:23	12:23	10:39

Bright stars: Aldebaran, Antares, Spica, Pollux, Regulus. **Minor planets or asteroids:** Pluto, Ceres, Pallas, Juno, Vesta. ☿ = in conjunction by 10° or < ♁ = opposition to the ☾

Astronomical Calendar for 2022

10th Month **October 2022** 31 Days

Moon Phases — First Qtr. Oct. 2, 7:14 pm; Full Moon Oct. 9, 3:55 pm; Last Qtr. Oct. 17, 12:15 pm; New Moon Oct. 25, 5:49 am

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
274	1	Sat	♃ stationary (10 am)	7:31	7:22	1:31	11:32
275	2	Sun	First qtr. ☾	7:31	7:21	2:36	
276	3	Mon		7:32	7:19	3:35	12:34
277	4	Tue	☾ at perigee (12 pm)	7:32	7:18	4:26	1:41
278	5	Wed	♄♃ ☾ (11 am)	7:33	7:17	5:10	2:51
279	6	Thu		7:34	7:16	5:48	4:01
280	7	Fri	♃♃ ☾ (10 pm)	7:34	7:14	6:21	5:08
281	8	Sat	♃♃ ☾ (1 pm)	7:35	7:13	6:52	6:13
282	9	Sun	Full ☾	7:36	7:12	7:22	7:16
283	10	Mon		7:36	7:11	7:53	8:18
284	11	Tue		7:37	7:10	8:25	9:20
285	12	Wed	♄♃ ☾ (2 am)	7:38	7:08	9:00	10:21
286	13	Thu		7:38	7:07	9:40	11:22
287	14	Fri		7:39	7:06	10:24	12:21
288	15	Sat	♃♃ ☾ (12 am)	7:40	7:05	11:12	1:17
289	16	Sun		7:40	7:04		2:08
290	17	Mon	Last qtr. ☾ at apogee	7:41	7:03	12:05	2:54
291	18	Tue		7:42	7:02	1:01	3:35
292	19	Wed		7:42	7:01	1:59	4:10
293	20	Thu		7:43	7:00	2:57	4:43
294	21	Fri		7:44	6:58	3:55	5:13
295	22	Sat	♃ in superior ☾ (4 pm)	7:45	6:57	4:53	5:41
296	23	Sun	♃ stationary (4 am)	7:45	6:56	5:52	6:10
297	24	Mon		7:46	6:55	6:53	6:40
298	25	Tue	New ☾; ☽ eclipse (6 am)	7:47	6:54	7:56	7:13
299	26	Wed		7:48	6:53	9:02	7:50
300	27	Thu		7:48	6:53	10:12	8:34
301	28	Fri		7:49	6:52	11:22	9:27
302	29	Sat	☾ at perigee (10 am)	7:50	6:51	12:30	10:27
303	30	Sun	♃ stationary (6 am)	7:51	6:50	1:31	11:33
304	31	Mon		7:52	6:49	2:25	

11th Month **November 2022** 30 Days

Moon Phases — First Qtr. Nov. 1, 1:37 am; Full Moon Nov. 8, 6:02 am; Last Qtr. Nov. 16, 7:27 am; New Moon Nov. 23, 4:57 pm; First Qtr. Nov. 30, 8:37 am

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
305	1	Tue	♃♃ first qtr. ☾ (4 pm)	7:52	6:48	3:10	12:43
306	2	Wed		7:53	6:47	3:49	1:51
307	3	Thu	Juno ☾ (3 am)	7:54	6:46	4:22	2:58
308	4	Fri	♃♃ ☾	7:55	6:46	4:53	4:02
309	5	Sat		7:56	6:45	5:23	5:04
310	6	Sun	DST ends (2 am)	6:56	5:44	4:52	5:05
311	7	Mon		6:57	5:43	5:23	6:06
312	8	Tue	Full ☾; eclipse (5 am)	6:58	5:43	5:57	7:07
313	9	Wed	♄♃♂ (2 am)	6:59	5:42	6:34	8:08
314	10	Thu		7:00	5:41	7:16	9:08
315	11	Fri	♃♃ ☾ (8 am)	7:01	5:41	8:04	10:06
316	12	Sat		7:01	5:40	8:55	11:00
317	13	Sun		7:02	5:40	9:50	11:48
318	14	Mon	☾ at apogee (1 am)	7:03	5:39	10:47	12:31
319	15	Tue		7:04	5:39	11:44	1:08
320	16	Wed	Last qtr. ☾	7:05	5:38		1:41
321	17	Thu		7:06	5:38	12:41	2:12
322	18	Fri		7:07	5:37	1:38	2:40
323	19	Sat		7:07	5:37	2:36	3:08
324	20	Sun		7:08	5:36	3:35	3:37
325	21	Mon		7:09	5:36	4:37	4:08
326	22	Tue		7:10	5:36	5:42	4:43
327	23	Wed	New ☾	7:11	5:35	6:51	5:25
328	24	Thu	♃ stationary (7 am)	7:12	5:35	8:03	6:15
329	25	Fri	☾ at perigee (8 pm)	7:13	5:35	9:14	7:14
330	26	Sat		7:13	5:35	10:21	8:21
331	27	Sun		7:14	5:35	11:20	9:32
332	28	Mon	♃♃ ☾ (11 pm)	7:15	5:34	12:09	10:43
333	29	Tue		7:16	5:34	12:50	11:51
334	30	Wed	Juno ☾ first qtr. ☾	7:17	5:34	1:25	

12th Month **December 2022** 31 Days

Moon Phases — Full Moon Dec. 7, 10:08 pm; Last Qtr. Dec. 16, 2:56 am; New Moon Dec. 23, 4:17 am; First Qtr. Dec. 29, 7:21 pm

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
335	1	Thu	♃♃♂ ☾	7:18	5:34	1:56	12:56
336	2	Fri		7:18	5:34	2:26	1:58
337	3	Sat		7:19	5:34	2:55	2:58
338	4	Sun	♃ stationary (4 am)	7:20	5:34	3:24	3:58
339	5	Mon	♄♃ ☾ (12 pm)	7:21	5:34	3:56	4:58
340	6	Tue		7:22	5:34	4:32	5:58
341	7	Wed	♃♃ full ☾ (10 pm)	7:22	5:34	5:12	6:58
342	8	Thu	♃♃♂ (12 am)	7:23	5:34	5:57	7:56
343	9	Fri		7:24	5:35	6:48	8:52
344	10	Sat		7:24	5:35	7:42	9:42
345	11	Sun	☾ at apogee (6 pm)	7:25	5:35	8:38	10:27
346	12	Mon		7:26	5:35	9:35	11:06
347	13	Tue		7:27	5:36	10:31	11:41
348	14	Wed		7:27	5:36	11:27	12:12
349	15	Thu		7:28	5:36		12:40
350	16	Fri	Last qtr. ☾	7:28	5:37	12:23	1:07
351	17	Sat		7:29	5:37	1:20	1:35
352	18	Sun		7:30	5:37	2:18	2:04
353	19	Mon		7:30	5:38	3:20	2:36
354	20	Tue		7:31	5:38	4:26	3:14
355	21	Wed	Solstice (3:48 pm)	7:31	5:39	5:36	3:59
356	22	Thu		7:32	5:39	6:49	4:54
357	23	Fri	New ☾	7:32	5:40	8:00	5:59
358	24	Sat	♃♃♂ ☾ at perigee	7:33	5:40	9:05	7:11
359	25	Sun		7:33	5:41	10:00	8:25
360	26	Mon	♃♃ ☾ (10 am)	7:33	5:42	10:46	9:38
361	27	Tue		7:34	5:42	11:25	10:46
362	28	Wed	♃♃ ☾; ☽ stationary	7:34	5:43	11:58	11:51
363	29	Thu	♃♃♂; ♃♃ first qtr. ☾	7:35	5:43	12:29	
364	30	Fri		7:35	5:44	12:58	12:52
365	31	Sat		7:35	5:45	1:27	1:53

☉ The Sun ● The Earth ☾ The Moon ☿ Mercury ♀ Venus ♂ Mars ♃ Jupiter ♄ Saturn ♅ Neptune ♆ Uranus ☽ = in conjunction ☽ = opposition to the ☾

2023

Times are Central Standard Time, except from Sunday, March 12 to Sunday, Nov. 5, during which Daylight Saving Time is observed. Boldface times for moonrise and moonset indicate p.m. Times are figured for the point 31° 08' N 99° 20' W, the approximate geographical center of the state. See page 138 for explanation of how to get the approximate time at any other Texas point.

1st Month			January 2023		31 Days						
Moon Phases — Full Moon Jan. 6, 5:08 pm; Last Qtr. Jan. 14, 8:10 pm; New Moon Jan. 21, 2:53 pm; First Qtr. Jan. 28, 9:19 am											
Day of			Planetary Configurations and Phenomena				Hour of				
Year	Month	Week	Sunrise	Sunset	Moon-rise	Moon-set	Sunrise	Sunset	Moon-rise	Moon-set	
1	1	Sun	♁♂♄ (4 pm)	7:35	5:46	1:58	2:52				
2	2	Mon		7:36	5:46	2:32	3:52				
3	3	Tue	♂♂♄ (2 pm)	7:36	5:47	3:11	4:51				
4	4	Wed	● at perihelion (10 am)	7:36	5:48	3:54	5:50				
5	5	Thu		7:36	5:49	4:42	6:46				
6	6	Fri	Full ♁	7:36	5:49	5:35	7:38				
7	7	Sat	♃ in inferior ♂ (7 am)	7:36	5:50	6:31	8:24				
8	8	Sun	♁ at apogee (3 am)	7:36	5:51	7:28	9:05				
9	9	Mon		7:36	5:52	8:24	9:41				
10	10	Tue		7:36	5:53	9:20	10:13				
11	11	Wed		7:36	5:53	10:16	10:42				
12	12	Thu	♂♂ stationary (2 pm)	7:36	5:54	11:11	11:09				
13	13	Fri		7:36	5:55		11:35				
14	14	Sat	Last qtr. ♁	7:36	5:56	12:07	12:03				
15	15	Sun		7:36	5:57	1:06	12:32				
16	16	Mon		7:36	5:58	2:07	1:06				
17	17	Tue		7:35	5:59	3:13	1:46				
18	18	Wed	♃ stationary (6 am)	7:35	6:00	4:23	2:35				
19	19	Thu		7:35	6:00	5:34	3:34				
20	20	Fri	♃♂♄ (2 am)	7:35	6:01	6:42	4:42				
21	21	Sat	New ♁ at perigee (3 pm)	7:34	6:02	7:42	5:57				
22	22	Sun	♃♂♄ (2 pm)	7:34	6:03	8:34	7:13				
23	23	Mon	♃♂♄ (2 am)	7:34	6:04	9:17	8:26				
24	24	Tue		7:33	6:05	9:54	9:35				
25	25	Wed	♃♂♄♄	7:33	6:06	10:27	10:40				
26	26	Thu		7:32	6:07	10:58	11:43				
27	27	Fri		7:32	6:08	11:28					
28	28	Sat	First qtr. ♁	7:31	6:09	11:59	12:45				
29	29	Sun		7:31	6:09	12:33	1:45				
30	30	Mon	♂♂♄ (10 pm)	7:30	6:10	1:10	2:45				
31	31	Tue		7:30	6:11	1:52	3:44				

2nd Month			February 2023		28 Days						
Moon Phases — Full Moon Feb. 5, 12:29 pm; Last Qtr. Feb. 13, 10:01 am; New Moon Feb 20, 1:06 am; First Qtr. Feb 27, 2:06 am											
Day of			Planetary Configurations and Phenomena				Hour of				
Year	Month	Week	Sunrise	Sunset	Moon-rise	Moon-set	Sunrise	Sunset	Moon-rise	Moon-set	
32	1	Wed		7:29	6:12	2:38	4:41				
33	2	Thu		7:28	6:13	3:30	5:34				
34	3	Fri		7:28	6:14	4:25	6:22				
35	4	Sat	♁ at apogee (3 am)	7:27	6:15	5:22	7:05				
36	5	Sun	♂♂♄ Aldebaran; full ♁	7:26	6:16	6:19	7:42				
37	6	Mon		7:26	6:17	7:15	8:15				
38	7	Tue		7:25	6:17	8:11	8:45				
39	8	Wed		7:24	6:18	9:06	9:12				
40	9	Thu		7:23	6:19	10:02	9:39				
41	10	Fri		7:22	6:20	10:58	10:05				
42	11	Sat		7:22	6:21	11:58	10:33				
43	12	Sun		7:21	6:22		11:05				
44	13	Mon	Last qtr. ♁	7:20	6:22	1:00	11:41				
45	14	Tue		7:19	6:23	2:06	12:24				
46	15	Wed	♃♂♄ (6 am)	7:18	6:24	3:14	1:16				
47	16	Thu	♃♂♄ (11 am)	7:17	6:25	4:21	2:18				
48	17	Fri		7:16	6:26	5:24	3:28				
49	18	Sat	♃♂♄ (3 pm)	7:15	6:27	6:19	4:43				
50	19	Sun	♁ at perigee (3 am)	7:14	6:27	7:06	5:58				
51	20	Mon	New ♁	7:13	6:28	7:46	7:10				
52	21	Tue	♃♂♄ (12 pm)	7:12	6:29	8:22	8:19				
53	22	Wed	♃♂♄♄	7:11	6:30	8:54	9:25				
54	23	Thu		7:10	6:31	9:25	10:30				
55	24	Fri		7:09	6:31	9:57	11:33				
56	25	Sat	♃♂♄ (7 am)	7:08	6:32	10:30					
57	26	Mon		7:07	6:33	11:07	12:35				
58	27	Sun	♂♂♄ first qtr. ♁ (11 pm)	7:06	6:34	11:48	1:36				
59	28	Tue		7:05	6:34	12:33	2:35				

3rd Month			March 2023		31 Days						
Moon Phases — Full Moon Mar. 7, 6:40 am; Last Qtr. Mar. 14, 9:08 pm; New Moon Mar. 21, 12:23 pm; First Qtr. Mar. 28, 9:32 pm											
Day of			Planetary Configurations and Phenomena				Hour of				
Year	Month	Week	Sunrise	Sunset	Moon-rise	Moon-set	Sunrise	Sunset	Moon-rise	Moon-set	
60	1	Wed		7:04	6:35	1:24	3:30				
61	2	Thu	♃♂♄ (5 am)	7:03	6:36	2:18	4:20				
62	3	Fri	♁ at apogee (12 pm)	7:01	6:37	3:14	5:04				
63	4	Sat		7:00	6:37	4:11	5:43				
64	5	Sun		6:59	6:38	5:08	6:17				
65	6	Mon		6:58	6:39	6:05	6:47				
66	7	Tue	Full ♁	6:57	6:39	7:01	7:15				
67	8	Wed		6:56	6:40	7:57	7:42				
68	9	Thu		6:54	6:41	8:53	8:09				
69	10	Fri		6:53	6:41	9:52	8:36				
70	11	Sat		6:52	6:42	10:54	9:07				
71	12	Sun	DST begins (2 am)	7:51	7:43		10:41				
72	13	Mon		7:49	7:44	12:58	11:21				
73	14	Tue	Last qtr. ♁	7:48	7:44	2:04	12:08				
74	15	Wed	♃♂♄ (7 pm)	7:47	7:45	3:10	1:05				
75	16	Thu		7:46	7:46	4:13	2:10				
76	17	Fri	♃ in superior ♂ (6 am)	7:45	7:46	5:09	3:21				
77	18	Sat		7:43	7:47	5:57	4:34				
78	19	Sun	♃♂♄ at perigee (10 am)	7:42	7:48	6:39	5:45				
79	20	Mon	Equinox (4:24 pm)	7:41	7:48	7:16	6:55				
80	21	Tue	New ♁	7:40	7:49	7:49	8:03				
81	22	Wed	♃♂♄ (3 pm)	7:38	7:50	8:21	9:09				
82	23	Thu		7:37	7:50	8:52	10:14				
83	24	Fri	♃♂♄♄	7:36	7:51	9:25	11:18				
84	25	Sat		7:35	7:52	10:01					
85	26	Sun		7:33	7:52	10:41	12:22				
86	27	Mon		7:32	7:53	11:26	1:24				
87	28	Tue	♂♂♄ first qtr. ♁; ♃♂♄	7:31	7:53	12:15	2:21				
88	29	Wed		7:30	7:54	1:09	3:14				
89	30	Thu		7:28	7:55	2:05	4:01				
90	31	Fri	♃♂♄♄; ♁ at apogee	7:27	7:55	3:02	4:42				

Astronomical Calendar for 2023

4th Month				April 2023				30 Days			
Moon Phases — Full Moon Apr. 5, 11:35 pm; Last Qtr. Apr. 13, 4:11 am; New Moon Apr. 19, 11:13 pm; First Qtr. Apr. 27, 4:20 pm											
Day of			Planetary Configurations and Phenomena	Hour of							
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set				
91	1	Sat		7:26	7:56	3:59	5:17				
92	2	Sun		7:25	7:57	4:56	5:49				
93	3	Mon		7:23	7:57	5:52	6:18				
94	4	Tue		7:22	7:58	6:48	6:45				
95	5	Wed	Full ☾	7:21	7:59	7:45	7:11				
96	6	Thu		7:20	7:59	8:44	7:39				
97	7	Fri		7:18	8:00	9:46	8:08				
98	8	Sat		7:17	8:01	10:50	8:41				
99	9	Sun		7:16	8:01	11:57	9:20				
100	10	Mon		7:15	8:02		10:05				
101	11	Tue	☿ gr. elongation E (5 pm)	7:14	8:03	1:04	10:59				
102	12	Wed		7:13	8:03	2:07	12:01				
103	13	Thu	Last qtr. ☾	7:11	8:04	3:04	1:09				
104	14	Fri		7:10	8:04	3:54	2:20				
105	15	Sat	♄ ♂ ☾ at perigee (10 pm)	7:09	8:05	4:37	3:30				
106	16	Sun		7:08	8:06	5:14	4:38				
107	17	Mon	♃ ♂ ☾ (12 pm)	7:07	8:06	5:47	5:44				
108	18	Tue		7:06	8:07	6:18	6:50				
109	19	Wed	New ☽; ☽ eclipse	7:05	8:08	6:49	7:54				
110	20	Thu		7:04	8:08	7:21	8:59				
111	21	Fri	♄ ♂ ☾; ☿ stationary	7:02	8:09	7:55	10:04				
112	22	Sat		7:01	8:10	8:34	11:08				
113	23	Sun	♀ ♂ ☾ (8 am)	7:00	8:10	9:17					
114	24	Mon		6:59	8:11	10:05	12:09				
115	25	Tue	♂ ♂ ☾ (9 pm)	6:58	8:12	10:58	1:05				
116	26	Wed		6:57	8:13	11:54	1:55				
117	27	Thu	First qtr. ☾	6:56	8:13	12:51	2:38				
118	28	Fri	☾ at apogee (2 am)	6:55	8:14	1:48	3:16				
119	29	Sat		6:54	8:15	2:45	3:49				
120	30	Sun		6:53	8:15	3:41	4:18				

5th Month				May 2023				31 Days			
Moon Phases — Full Moon May 5, 12:34 pm; Last Qtr. May 12, 9:28 am; New Moon May 19, 10:53 am; First Qtr. May 27 10:22 am											
Day of			Planetary Configurations and Phenomena	Hour of							
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set				
121	1	Mon	☿ in inferior ♂ (6 pm)	6:52	8:16	4:37	4:46				
122	2	Tue		6:52	8:17	5:33	5:12				
123	3	Wed		6:51	8:17	6:32	5:39				
124	4	Thu		6:50	8:18	7:33	6:08				
125	5	Fri	Full ☾; eclipse	6:49	8:19	8:37	6:40				
126	6	Sat		6:48	8:19	9:45	7:17				
127	7	Sun		6:47	8:20	10:54	8:01				
128	8	Mon		6:46	8:21		8:53				
129	9	Tue	♄ ♂ ☽ (3 pm)	6:46	8:21	12:00	9:54				
130	10	Wed	♂ ♂ ☾ Pollux (3 pm)	6:45	8:22	1:00	11:01				
131	11	Thu	☾ at perigee (12 am)	6:44	8:23	1:53	12:11				
132	12	Fri	Last qtr. ☾	6:43	8:23	2:37	1:21				
133	13	Sat	♄ ♂ ☾ (8 am)	6:43	8:24	3:15	2:29				
134	14	Sun	☿ stationary; ♃ ♂ ☾	6:42	8:25	3:48	3:34				
135	15	Mon		6:41	8:25	4:19	4:38				
136	16	Tue		6:41	8:26	4:49	5:41				
137	17	Wed	☿ ♃ ♂ ☾	6:40	8:27	5:20	6:44				
138	18	Thu		6:40	8:27	5:53	7:48				
139	19	Fri	New ☾	6:39	8:28	6:29	8:52				
140	20	Sat		6:38	8:29	7:10	9:55				
141	21	Sun		6:38	8:29	7:56	10:53				
142	22	Mon		6:37	8:30	8:47	11:46				
143	23	Tue	♀ ♂ ☾ (7 am)	6:37	8:31	9:42					
144	24	Wed	♂ ♂ ☾ (1 pm)	6:36	8:31	10:40	12:33				
145	25	Thu	☾ at apogee (9 pm)	6:36	8:32	11:37	1:13				
146	26	Fri		6:36	8:32	12:34	1:48				
147	27	Sat	First qtr. ☾	6:35	8:33	1:30	2:18				
148	28	Sun		6:35	8:34	2:25	2:46				
149	29	Mon	☿ gr. elongation W (1 am)	6:35	8:34	3:20	3:13				
150	30	Tue	♀ ♂ Pollux (11 am)	6:34	8:35	4:17	3:39				
151	31	Wed		6:34	8:35	5:16	4:07				

6th Month				June 2023				30 Days			
Moon Phases — Full Moon Jun. 3, 10:42 pm; Last Qtr. Jun. 10, 2:31 pm; New Moon Jun 17, 11:37 pm; First Qtr. Jun. 26, 2:50 am											
Day of			Planetary Configurations and Phenomena	Hour of							
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set				
152	1	Thu		6:34	8:36	6:19	4:37				
153	2	Fri		6:33	8:36	7:26	5:11				
154	3	Sat	Full ☾	6:33	8:37	8:36	5:52				
155	4	Sun	☿ ♂ ♄ (12 am)	6:33	8:38	9:45	6:42				
156	5	Mon		6:33	8:38	10:50	7:41				
157	6	Tue	☾ at perigee (6 pm)	6:33	8:39	11:47	8:48				
158	7	Wed		6:33	8:39		10:00				
159	8	Thu		6:33	8:39	12:35	11:12				
160	9	Fri	♄ ♂ ☾ (3 pm)	6:32	8:40	1:16	12:21				
161	10	Sat	Last qtr. ☾	6:32	8:40	1:51	1:28				
162	11	Sun	♃ ♂ ☾ (3 am)	6:32	8:41	2:22	2:32				
163	12	Mon		6:32	8:41	2:52	3:34				
164	13	Tue		6:32	8:42	3:22	4:36				
165	14	Wed	♃ ♂ ☾ (2 am)	6:33	8:42	3:53	5:39				
166	15	Thu	♄ ♂ ☾ (5 am)	6:33	8:42	4:28	6:42				
167	16	Fri	♃ ♂ ☾ (4 pm)	6:33	8:43	5:06	7:44				
168	17	Sat	New ☾	6:33	8:43	5:50	8:44				
169	18	Sun	♄ stationary	6:33	8:43	6:39	9:39				
170	19	Mon		6:33	8:43	7:33	10:28				
171	20	Tue		6:33	8:44	8:30	11:10				
172	21	Wed	Solstice (9:58 am); ♃ ♂ ☾	6:34	8:44	9:28	11:47				
173	22	Thu	♂ ♂ ☾ at apogee	6:34	8:44	10:25					
174	23	Fri		6:34	8:44	11:21	12:19				
175	24	Sat		6:34	8:44	12:15	12:47				
176	25	Sun		6:35	8:44	1:10	1:14				
177	26	Mon	First qtr. ☾	6:35	8:45	2:05	1:39				
178	27	Tue		6:35	8:45	3:02	2:06				
179	28	Wed		6:35	8:45	4:02	2:34				
180	29	Thu		6:36	8:45	5:06	3:06				
181	30	Fri		6:36	8:45	6:13	3:43				

☉ The Sun ● The Earth ☾ The Moon ☿ Mercury ♀ Venus ♂ Mars ♃ Jupiter ♄ Saturn ♅ Neptune ♆ Uranus ♂ = in conjunction ♁ = opposition to the ☉

Astronomical Calendar for 2023

7th Month July 2023 31 Days
Moon Phases — Full Moon Jul. 3, 6:39 am; Last Qtr. Jul. 9, 8:48 pm; New Moon Jul. 17, 1:32 pm; First Qtr. Jul. 25, 5:07 pm

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
182	1	Sat	☾ in superior ☾ (12 am)	6:37	8:45	7:23	4:28
183	2	Sun		6:37	8:45	8:32	5:23
184	3	Mon	Full ☾	6:37	8:45	9:34	6:28
185	4	Tue	☾ at perigee	6:38	8:45	10:27	7:40
186	5	Wed		6:38	8:44	11:12	8:54
187	6	Thu	● at aphelion (3 pm)	6:39	8:44	11:50	10:07
188	7	Fri	☽ gr. illumination (3 pm)	6:39	8:44		11:17
189	8	Sat	☽ ☾ (9 am)	6:40	8:44	12:24	12:24
190	9	Sun	Last qtr. ☾	6:40	8:44	12:55	1:28
191	10	Mon	♂ ☽ Regulus (3 am)	6:41	8:44	1:25	2:30
192	11	Tue	♂ ☽ ☾ (4 pm)	6:41	8:43	1:56	3:33
193	12	Wed	♂ ☽ ☾ (1 pm)	6:42	8:43	2:29	4:35
194	13	Thu		6:42	8:43	3:06	5:37
195	14	Fri		6:43	8:42	3:47	6:37
196	15	Sat		6:43	8:42	4:35	7:33
197	16	Sun		6:44	8:42	5:27	8:24
198	17	Mon	New ☾	6:45	8:41	6:22	9:08
199	18	Tue		6:45	8:41	7:20	9:46
200	19	Wed	☽ ☽ ☾ (4 am)	6:46	8:40	8:17	10:20
201	20	Thu	☽ ☽ ☾ at apogee	6:46	8:40	9:14	10:49
202	21	Fri	Pluto ♂♂ (11 pm)	6:47	8:39	10:09	11:16
203	22	Sat		6:48	8:39	11:03	11:42
204	23	Sun		6:48	8:38	11:57	
205	24	Mon		6:49	8:38	12:52	12:07
206	25	Tue	First qtr. ☾	6:49	8:37	1:49	12:34
207	26	Wed	☽ ☽ ☽ (8 am)	6:50	8:36	2:50	1:03
208	27	Thu		6:51	8:36	3:54	1:37
209	28	Fri	☽ ☽ Regulus (8 pm)	6:51	8:35	5:02	2:17
210	29	Sat		6:52	8:34	6:10	3:06
211	30	Sun		6:53	8:34	7:15	4:05
212	31	Mon		6:53	8:33	8:13	5:14

8th Month August 2023 31 Days
Moon Phases — Full Moon Aug. 1, 1:32 pm; Last Qtr. Aug. 8, 5:28 am; New Moon Aug. 16, 4:38 am; First Qtr. Aug. 24, 4:57 am; Full Moon Aug. 30, 8:36 pm

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
213	1	Tue	Full ☾	6:54	8:32	9:02	6:28
214	2	Wed	☾ at perigee (1 am)	6:54	8:31	9:44	7:44
215	3	Thu	♂ ☽ ☾ (5 am)	6:55	8:31	10:21	8:58
216	4	Fri	☽ ☽ ☾ (5 pm)	6:56	8:30	10:54	10:08
217	5	Sat		6:56	8:29	11:25	11:15
218	6	Sun		6:57	8:28	11:56	12:21
219	7	Mon		6:58	8:27		1:25
220	8	Tue	♂ ☽ ☽ last qtr. ☾	6:58	8:26	12:29	2:28
221	9	Wed	☽ gr. elongation E (9 pm)	6:59	8:25	1:05	3:31
222	10	Thu		6:59	8:25	1:46	4:32
223	11	Fri		7:00	8:24	2:31	5:30
224	12	Sat		7:01	8:23	3:22	6:22
225	13	Sun	☽ in inferior ☽ (6 am)	7:01	8:22	4:17	7:07
226	14	Mon		7:02	8:21	5:14	7:47
227	15	Tue		7:03	8:20	6:11	8:22
228	16	Wed	New ☾ at apogee (7 am)	7:03	8:19	7:08	8:52
229	17	Thu		7:04	8:18	8:04	9:20
230	18	Fri	☽ ♂♂ Pallas ☽ ☾	7:04	8:16	8:58	9:45
231	19	Sat		7:05	8:15	9:52	10:11
232	20	Sun		7:06	8:14	10:46	10:36
233	21	Mon		7:06	8:13	11:42	11:04
234	22	Tue		7:07	8:12	12:40	11:35
235	23	Wed	☽ stationary (12 am)	7:08	8:11	1:42	
236	24	Thu	Antares ☽ first qtr. ☾	7:08	8:10	2:46	12:12
237	25	Fri		7:09	8:09	3:52	12:55
238	26	Sat		7:09	8:08	4:57	1:48
239	27	Sun	♂ ☽♂ (3 am)	7:10	8:06	5:57	2:51
240	28	Mon	♂ stationary (10 pm)	7:11	8:05	6:50	4:01
241	29	Tue		7:11	8:04	7:35	5:16
242	30	Wed	♂ ☽ full ☾ at perigee	7:12	8:03	8:14	6:31
243	31	Thu		7:12	8:02	8:49	7:44

9th Month September 2023 30 Days
Moon Phases — Last Qtr. Sep. 6, 5:21 pm; New Moon Sep. 14, 8:40 pm; First Qtr. Sep. 22, 2:32 pm; Full Moon Sep. 29, 4:58 am

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
244	1	Fri	☽ ☽ ☾ (2 am)	7:13	8:00	9:21	8:54
245	2	Sat	☽ stationary (11 pm)	7:13	7:59	9:53	10:02
246	3	Sun		7:14	7:58	10:27	11:09
247	4	Mon	♂ stationary ☽ ☽ (4 pm)	7:15	7:57	11:03	12:16
248	5	Tue	♂ ☽ ☾ (4 am)	7:15	7:55	11:42	1:21
249	6	Wed	Last qtr. ☾	7:16	7:54		2:24
250	7	Thu		7:16	7:53	12:27	3:24
251	8	Fri		7:17	7:52	1:17	4:18
252	9	Sat		7:18	7:50	2:11	5:06
253	10	Sun		7:18	7:49	3:08	5:48
254	11	Mon	☽ ☽ ☾ (8 am)	7:19	7:48	4:05	6:24
255	12	Tue	☾ at apogee (11 am)	7:19	7:46	5:02	6:55
256	13	Wed		7:20	7:45	5:58	7:23
257	14	Thu	☽ stationary; new ☾	7:20	7:44	6:53	7:50
258	15	Fri		7:21	7:43	7:47	8:15
259	16	Sat	♂ ☽ ☽ (2 pm)	7:22	7:41	8:42	8:40
260	17	Sun		7:22	7:40	9:37	9:07
261	18	Mon		7:23	7:39	10:35	9:37
262	19	Tue	☽ gr. illumination (2 am)	7:23	7:37	11:35	10:11
263	20	Wed		7:24	7:36	12:38	10:52
264	21	Thu	Antares ☽ ☾ (3 am)	7:24	7:35	1:42	11:40
265	22	Fri	First qtr. ☾	7:25	7:34	2:46	
266	23	Sat	Equinox (1:50 am)	7:26	7:32	3:46	12:37
267	24	Sun		7:26	7:31	4:40	1:42
268	25	Mon		7:27	7:30	5:26	2:53
269	26	Tue	♂ ☽ ☾ (8 pm)	7:27	7:28	6:07	4:06
270	27	Wed	☾ at perigee (8 pm)	7:28	7:27	6:43	5:18
271	28	Thu	☽ ☽ ☾ (12 pm)	7:29	7:26	7:16	6:29
272	29	Fri	Full ☾	7:29	7:25	7:48	7:39
273	30	Sat		7:30	7:23	8:21	8:47

Bright stars: Aldebaran, Antares, Spica, Pollux, Regulus. **Minor planets or asteroids:** Pluto, Ceres, Pallas, Juno, Vesta ☽ = in conjunction by 10° or < ☽ = opposition to the ☾

Astronomical Calendar for 2023

10th Month **October 2023** 31 Days

Moon Phases — Last Qtr. Oct. 6, 8:48 am; New Moon Oct. 14, 12:55 pm; First Qtr. Oct. 21, 10:29 pm; Full Moon Oct. 28, 3:24 pm

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
274	1	Sun	☾ ☽ ☾ (10 pm)	7:30	7:22	8:57	9:55
275	2	Mon	♁ ☽ ☾ (12 pm)	7:31	7:21	9:36	11:03
276	3	Tue		7:32	7:20	10:19	12:10
277	4	Wed		7:32	7:18	11:08	1:13
278	5	Thu		7:33	7:17		2:11
279	6	Fri	Last qtr. ☾	7:34	7:16	12:02	3:02
280	7	Sat		7:34	7:15	12:59	3:47
281	8	Sun		7:35	7:13	1:57	4:24
282	9	Mon		7:35	7:12	2:54	4:57
283	10	Tue	♀ ☽ ☾ at apogee	7:36	7:11	3:51	5:26
284	11	Wed		7:37	7:10	4:46	5:53
285	12	Thu		7:37	7:09	5:41	6:19
286	13	Fri		7:38	7:08	6:35	6:44
287	14	Sat	New ☾; ☉ eclipse (12:36 pm)	7:39	7:06	7:31	7:11
288	15	Sun		7:40	7:05	8:28	7:40
289	16	Mon		7:40	7:04	9:28	8:13
290	17	Tue		7:41	7:03	10:31	8:51
291	18	Wed	Antares ☽ ☾ (9 am)	7:42	7:02	11:36	9:37
292	19	Thu		7:42	7:01	12:40	10:31
293	20	Fri	♁ ☽ in superior ☽ (1 am)	7:43	7:00	1:40	11:33
294	21	Sat	First qtr. ☾	7:44	6:59	2:35	
295	22	Sun		7:45	6:58	3:22	12:41
296	23	Mon	♀ gr. elongation W (6 pm)	7:45	6:57	4:04	1:51
297	24	Tue	♁ ☽ ☾ (3 am)	7:46	6:56	4:40	3:01
298	25	Wed	♁ ☽ ☾ at perigee (9 pm)	7:47	6:55	5:13	4:10
299	26	Thu		7:47	6:54	5:44	5:17
300	27	Fri		7:48	6:53	6:16	6:25
301	28	Sat	Full ☾; eclipse (3 pm)	7:49	6:52	6:50	7:32
302	29	Sun	♁ ☽ ☾ (3 am)	7:50	6:51	7:27	8:41
303	30	Mon		7:51	6:50	8:09	9:49
304	31	Tue		7:51	6:49	8:57	10:55

11th Month **November 2023** 30 Days

Moon Phases — Last Qtr. Nov. 5, 2:37 am; New Moon Nov. 13, 3:27 am; First Qtr. Nov. 20, 4:50 am; Full Moon Nov. 27, 3:16 am

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
305	1	Wed		7:52	6:48	9:50	11:58
306	2	Thu		7:53	6:47	10:47	12:53
307	3	Fri	♁ ☽ (12 am)	7:54	6:47	11:46	1:41
308	4	Sat	♁ stationary (12 pm)	7:55	6:46		2:22
309	5	Sun	DST ends (2 am); last qtr. ☾	6:55	5:45	12:44	1:57
310	6	Mon	☾ at apogee (4 pm)	6:56	5:44	12:41	2:27
311	7	Tue		6:57	5:44	1:37	2:55
312	8	Wed		6:58	5:43	2:31	3:21
313	9	Thu	♀ ☽ ☾ (3 am)	6:59	5:42	3:26	3:46
314	10	Fri		7:00	5:42	4:21	4:12
315	11	Sat		7:00	5:41	5:18	4:40
316	12	Sun		7:01	5:40	6:17	5:12
317	13	Mon	New ☾; ☽ ☽ (11 am)	7:02	5:40	7:20	5:49
318	14	Tue	Antares ☽ ☾ (2 pm)	7:03	5:39	8:26	6:33
319	15	Wed		7:04	5:39	9:31	7:26
320	16	Thu	♁ ☽ Antares (12 pm)	7:05	5:38	10:34	8:26
321	17	Fri		7:06	5:38	11:32	9:33
322	18	Sat	♁ ☽ ☽ (12 am)	7:06	5:37	12:21	10:42
323	19	Sun		7:07	5:37	1:04	11:51
324	20	Mon	♁ ☽ first qtr. ☾ (8 am)	7:08	5:36	1:41	
325	21	Tue	☾ at perigee (3 pm)	7:09	5:36	2:13	12:59
326	22	Wed	♁ ☽ ☾ (2 am)	7:10	5:36	2:44	2:05
327	23	Thu		7:11	5:36	3:15	3:10
328	24	Fri		7:12	5:35	3:47	4:15
329	25	Sat	♁ ☽ ☾ (5 am)	7:12	5:35	4:22	5:22
330	26	Sun	Full ☽ ☾ (3 am)	7:13	5:35	5:01	6:29
331	27	Mon	Full ☾	7:14	5:35	5:46	7:36
332	28	Tue	♀ ☽ Spica (3 am)	7:15	5:34	6:37	8:41
333	29	Wed		7:16	5:34	7:33	9:40
334	30	Thu		7:17	5:34	8:32	10:32

12th Month **December 2023** 31 Days

Moon Phases — Last Qtr. Dec. 4, 11:49 pm; New Moon Dec. 12, 5:32 pm; First Qtr. Dec. 19, 12:39 pm; Full Moon Dec. 26, 6:33 pm

Day of			Planetary Configurations and Phenomena	Hour of			
Year	Month	Week		Sunrise	Sunset	Moon-rise	Moon-set
335	1	Fri		7:17	5:34	9:31	11:17
336	2	Sat		7:18	5:34	10:30	11:54
337	3	Sun		7:19	5:34	11:26	12:27
338	4	Mon	♁ gr. elong. E (8 am); Last qtr. ☾	7:20	5:34		12:55
339	5	Tue		7:21	5:34	12:21	1:22
340	6	Wed	♁ stationary (6 pm)	7:21	5:34	1:15	1:47
341	7	Thu		7:22	5:34	2:09	2:19
342	8	Fri		7:23	5:34	3:05	2:32
343	9	Sat	♀ ☽ ☾ (11 am)	7:24	5:35	4:03	3:09
344	10	Sun		7:24	5:35	5:04	3:44
345	11	Mon		7:25	5:35	6:09	4:25
346	12	Tue	New ☾; ♁ stationary	7:26	5:35	7:16	5:15
347	13	Wed	♁ ☽ ☾ (11 pm)	7:26	5:36	8:22	6:14
348	14	Thu		7:27	5:36	9:23	7:21
349	15	Fri		7:28	5:36	10:17	8:32
350	16	Sat	☾ at perigee (1 pm)	7:28	5:37	11:03	9:43
351	17	Sun	♁ ☽ ☾ (4 pm)	7:29	5:37	11:42	10:52
352	18	Mon		7:30	5:37	12:16	11:58
353	19	Tue	First qtr. ☾	7:30	5:38	12:47	
354	20	Wed		7:31	5:38	1:17	1:03
355	21	Thu	Solstice (9:27 pm)	7:31	5:39	1:48	2:07
356	22	Fri	♁ ☽ ☾; ♁ in inferior ☽	7:32	5:39	2:21	3:11
357	23	Sat	♁ ☽ ☾ (9 am)	7:32	5:40	2:57	4:17
358	24	Sun		7:33	5:40	3:39	5:22
359	25	Mon		7:33	5:41	4:27	6:27
360	26	Tue	Full ☾	7:33	5:41	5:21	7:28
361	27	Wed		7:34	5:42	6:19	8:23
362	28	Thu		7:34	5:43	7:19	9:10
363	29	Fri		7:34	5:43	8:18	9:51
364	30	Sat		7:35	5:44	9:16	10:25
365	31	Sun	♁ stationary (9 am)	7:35	5:45	10:11	10:55

☉ The Sun ● The Earth ☾ The Moon ☿ Mercury ♀ Venus ♂ Mars ♃ Jupiter ♄ Saturn ♅ Neptune ♆ Uranus ☽ = in conjunction ☽ = opposition to the ☾