

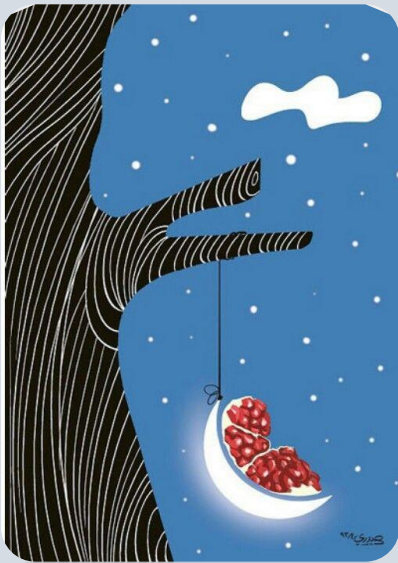


# Celebrating Winter Solstice 2020

December 21 - 5:02 am EST

Interesting & Fun Facts for the Longest Night of the Year  
More Daylight Hours to Come!

## Celebrating Winter Solstice



**Shab-e-Yalda** (Yalda Night) is one of the most ancient Persian festivals annually celebrated on winter solstice by Iranians all around the world. Yalda is a winter solstice celebration; it is the last night of autumn and the longest night of the year. Yalda means *birth* and it refers to the birth of Mitra; the mythological goddess of light. Since days get longer and nights to get shorter in winter, Iranians celebrate the last night of autumn as the renewal of the sun and the victory of light over darkness.

To pass the longest night of the year, it is common to eat nuts and fruits, read poetry, make good wishes to give a warm welcome to winter.

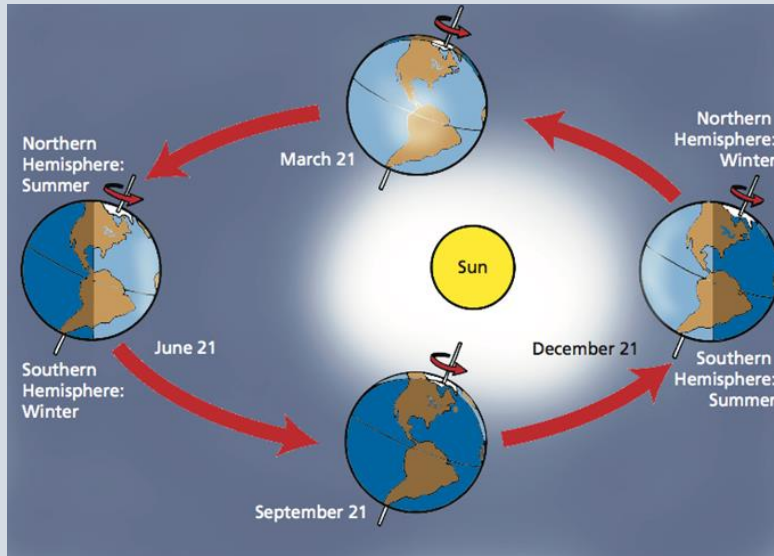
## Earth - Sun Position During Winter Solstice

In the Northern Hemisphere, the Winter Solstice is the shortest day of the year. During Winter Solstice, the Northern Hemisphere is the most inclined away from the Sun. **After the solstice, which falls on December 21 or 22 every year, the days begin to lengthen.** Probably because the day marks the beginning of the return of the Sun, many cultures celebrate a holiday near Winter Solstice, including Christmas, Hanukkah, and Kwanzaa.

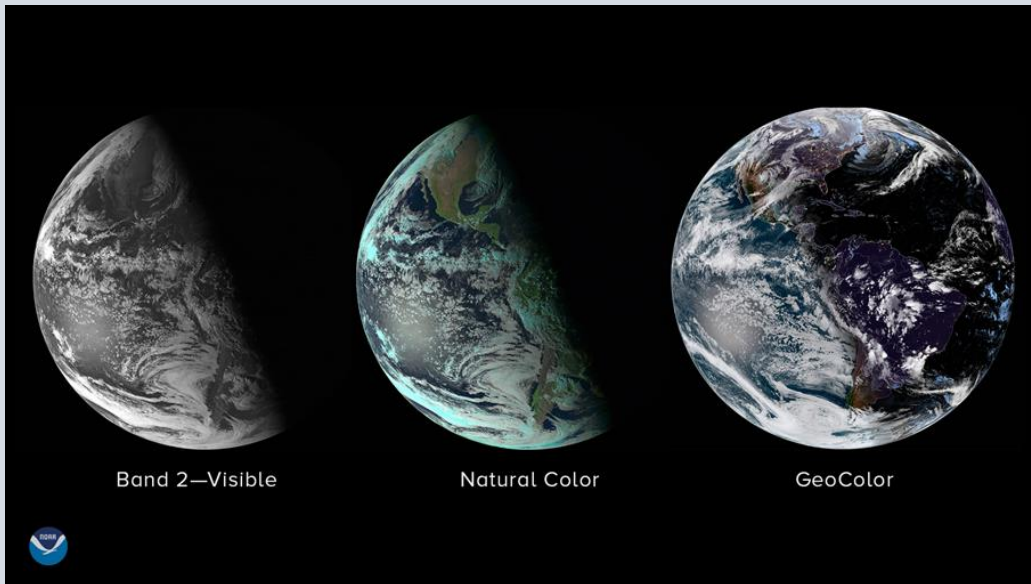


## Jupiter and Saturn Will Form Rare "Christmas Star" on Winter Solstice

On December 21, 2020 Jupiter and Saturn will appear closer in Earth's night sky than they have since 1226 A.D.



Position of the Sun and Earth During Seasonal Changes



View of Solstice from Space

*Information prepared by Dr. Sepi Yalda, Earth Sciences*

The following data was abstracted from *Philadelphia, Pennsylvania, USA-Sunrise, Sunset and Daylength* from [timeanddate.com](http://timeanddate.com). The last column pictured represents the increasing difference in daylength from the first day of winter, 2020, through the first day of spring, 2021.

2020	Sunrise/Sunset		Daylength	
Dec	Sunrise	Sunset	Length	Diff.
21 ✓	7:19 am ↘ (120°)	4:39 pm ↙ (240°)	9:19:59	< 1s
22 ✓	7:19 am ↘ (120°)	4:39 pm ↙ (240°)	9:20:02	+0:03
23 ✓	7:19 am ↘ (120°)	4:40 pm ↙ (240°)	9:20:10	+0:07
24 ✓	7:20 am ↘ (120°)	4:40 pm ↙ (240°)	9:20:21	+0:11
25 ✓	7:20 am ↘ (120°)	4:41 pm ↙ (240°)	9:20:36	+0:14
26 ✓	7:21 am ↘ (120°)	4:42 pm ↙ (240°)	9:20:54	+0:18
27 ✓	7:21 am ↘ (120°)	4:42 pm ↙ (240°)	9:21:17	+0:22
28 ✓	7:21 am ↘ (120°)	4:43 pm ↙ (240°)	9:21:44	+0:26
29 ✓	7:21 am ↘ (120°)	4:44 pm ↙ (240°)	9:22:14	+0:30
30 ✓	7:22 am ↘ (120°)	4:44 pm ↙ (240°)	9:22:49	+0:34
31 ✓	7:22 am ↘ (120°)	4:45 pm ↙ (240°)	9:23:27	+0:38

2021	Sunrise/Sunset		Daylength	
Jan	Sunrise	Sunset	Length	Diff.
3 ✓	7:22 am ↘ (120°)	4:48 pm ↙ (241°)	9:25:43	+0:49
4 ✓	7:22 am ↘ (119°)	4:49 pm ↙ (241°)	9:26:36	+0:52
5 ✓	7:22 am ↘ (119°)	4:50 pm ↙ (241°)	9:27:32	+0:56
6 ✓	7:22 am ↘ (119°)	4:51 pm ↙ (241°)	9:28:32	+0:59
7 ✓	7:22 am ↘ (119°)	4:52 pm ↙ (241°)	9:29:35	+1:03
8 ✓	7:22 am ↘ (119°)	4:53 pm ↙ (241°)	9:30:42	+1:06
9 ✓	7:22 am ↘ (118°)	4:54 pm ↙ (242°)	9:31:52	+1:10
10 ✓	7:21 am ↘ (118°)	4:55 pm ↙ (242°)	9:33:06	+1:13
11 ✓	7:21 am ↘ (118°)	4:56 pm ↙ (242°)	9:34:22	+1:16
12 ✓	7:21 am ↘ (118°)	4:57 pm ↙ (242°)	9:35:42	+1:19
13 ✓	7:21 am ↘ (118°)	4:58 pm ↙ (242°)	9:37:05	+1:22
14 ✓	7:20 am ↘ (117°)	4:59 pm ↙ (243°)	9:38:31	+1:25
15 ✓	7:20 am ↘ (117°)	5:00 pm ↙ (243°)	9:40:00	+1:28

2021		Sunrise/Sunset		Daylength	
Jan	Sunrise	Sunset	Length	Diff.	
16	7:19 am ↘ (117°)	5:01 pm ↙ (243°)	9:41:31	+1:31	
17	7:19 am ↘ (117°)	5:02 pm ↙ (244°)	9:43:06	+1:34	
18	7:19 am ↘ (116°)	5:03 pm ↙ (244°)	9:44:43	+1:37	
19	7:18 am ↘ (116°)	5:04 pm ↙ (244°)	9:46:23	+1:39	
20	7:17 am ↘ (116°)	5:06 pm ↙ (244°)	9:48:06	+1:42	
21	7:17 am ↘ (115°)	5:07 pm ↙ (245°)	9:49:51	+1:45	
22	7:16 am ↘ (115°)	5:08 pm ↙ (245°)	9:51:38	+1:47	
23	7:16 am ↘ (115°)	5:09 pm ↙ (245°)	9:53:28	+1:49	
24	7:15 am ↘ (114°)	5:10 pm ↙ (246°)	9:55:20	+1:52	
25	7:14 am ↘ (114°)	5:11 pm ↙ (246°)	9:57:15	+1:54	
26	7:13 am ↘ (114°)	5:13 pm ↙ (246°)	9:59:11	+1:56	
27	7:13 am ↘ (113°)	5:14 pm ↙ (247°)	10:01:10	+1:58	
28	7:12 am ↘ (113°)	5:15 pm ↙ (247°)	10:03:11	+2:00	
29	7:11 am ↘ (113°)	5:16 pm ↙ (247°)	10:05:13	+2:02	
30	7:10 am ↘ (112°)	5:17 pm ↙ (248°)	10:07:18	+2:04	
31	7:09 am ↘ (112°)	5:19 pm ↙ (248°)	10:09:24	+2:06	
2021		Sunrise/Sunset		Daylength	
Feb	Sunrise	Sunset	Length	Diff.	
1	7:08 am ↘ (112°)	5:20 pm ↙ (249°)	10:11:32	+2:08	
2	7:07 am ↘ (111°)	5:21 pm ↙ (249°)	10:13:42	+2:09	
3	7:06 am ↘ (111°)	5:22 pm ↙ (249°)	10:15:53	+2:11	
4	7:05 am ↘ (110°)	5:23 pm ↙ (250°)	10:18:06	+2:12	
5	7:04 am ↘ (110°)	5:25 pm ↙ (250°)	10:20:20	+2:14	
6	7:03 am ↘ (110°)	5:26 pm ↙ (251°)	10:22:36	+2:15	
7	7:02 am ↘ (109°)	5:27 pm ↙ (251°)	10:24:54	+2:17	
8	7:01 am ↘ (109°)	5:28 pm ↙ (251°)	10:27:12	+2:18	
9	7:00 am ↘ (108°)	5:29 pm ↙ (252°)	10:29:32	+2:19	

2021	Sunrise/Sunset		Daylength	
Feb	Sunrise	Sunset	Length	Diff.
10	6:59 am ↘ (108°)	5:31 pm ↙ (252°)	10:31:53	+2:21
11	6:57 am ↘ (107°)	5:32 pm ↙ (253°)	10:34:15	+2:22
12	6:56 am ↘ (107°)	5:33 pm ↙ (253°)	10:36:39	+2:23
13	6:55 am ↘ (107°)	5:34 pm ↙ (254°)	10:39:03	+2:24
14	6:54 am ↘ (106°)	5:35 pm ↙ (254°)	10:41:29	+2:25
15	6:53 am ↘ (106°)	5:36 pm ↙ (255°)	10:43:55	+2:26
16	6:51 am ↘ (105°)	5:38 pm ↙ (255°)	10:46:22	+2:27
17	6:50 am ↘ (105°)	5:39 pm ↙ (255°)	10:48:50	+2:28
18	6:49 am ↘ (104°)	5:40 pm ↙ (256°)	10:51:19	+2:28
19	6:47 am ↘ (104°)	5:41 pm ↙ (256°)	10:53:49	+2:29
20	6:46 am ↘ (103°)	5:42 pm ↙ (257°)	10:56:20	+2:30
21	6:45 am ↘ (103°)	5:43 pm ↙ (257°)	10:58:51	+2:31
22	6:43 am ↘ (102°)	5:45 pm ↙ (258°)	11:01:22	+2:31
23	6:42 am ↘ (102°)	5:46 pm ↙ (258°)	11:03:55	+2:32
2021	Sunrise/Sunset		Daylength	
Feb	Sunrise	Sunset	Length	Diff.
23	6:42 am ↘ (102°)	5:46 pm ↙ (258°)	11:03:55	+2:32
24	6:40 am ↘ (101°)	5:47 pm ← (259°)	11:06:28	+2:32
25	6:39 am → (101°)	5:48 pm ← (259°)	11:09:01	+2:33
26	6:37 am → (100°)	5:49 pm ← (260°)	11:11:35	+2:34
27	6:36 am → (100°)	5:50 pm ← (260°)	11:14:10	+2:34
28	6:35 am → (99°)	5:51 pm ← (261°)	11:16:45	+2:34

2021	Sunrise/Sunset		Daylength	
Mar	Sunrise	Sunset	Length	Diff.
1 ▾	6:33 am → (99°)	5:52 pm ← (261°)	11:19:20	+2:35
2 ▾	6:32 am → (98°)	5:53 pm ← (262°)	11:21:56	+2:35
3 ▾	6:30 am → (98°)	5:55 pm ← (262°)	11:24:32	+2:36
4 ▾	6:28 am → (97°)	5:56 pm ← (263°)	11:27:09	+2:36
5 ▾	6:27 am → (97°)	5:57 pm ← (263°)	11:29:46	+2:36
6 ▾	6:25 am → (96°)	5:58 pm ← (264°)	11:32:23	+2:37
7 ▾	6:24 am → (96°)	5:59 pm ← (264°)	11:35:00	+2:37
8 ▾	6:22 am → (95°)	6:00 pm ← (265°)	11:37:38	+2:37
9 ▾	6:21 am → (95°)	6:01 pm ← (265°)	11:40:16	+2:37
10 ▾	6:19 am → (94°)	6:02 pm ← (266°)	11:42:54	+2:38
11 ▾	6:18 am → (94°)	6:03 pm ← (266°)	11:45:32	+2:38
12 ▾	6:16 am → (93°)	6:04 pm ← (267°)	11:48:11	+2:38
13 ▾	6:14 am → (93°)	6:05 pm ← (267°)	11:50:49	+2:38
Note: hours shift because clocks				
14 ▾	7:13 am → (92°)	7:06 pm ← (268°)	11:53:28	+2:38
15 ▾	7:11 am → (92°)	7:07 pm ← (268°)	11:56:07	+2:38
2021	Sunrise/Sunset		Daylength	
Mar	Sunrise	Sunset	Length	Diff.
16 ▾	7:10 am → (91°)	7:08 pm ← (269°)	11:58:46	+2:38
17 ▾	7:08 am → (91°)	7:09 pm ← (269°)	12:01:24	+2:38
18 ▾	7:06 am → (90°)	7:10 pm ← (270°)	12:04:03	+2:38
19 ▾	7:05 am → (90°)	7:11 pm ← (270°)	12:06:42	+2:38
20 ▾	7:03 am → (89°)	7:13 pm ← (271°)	12:09:21	+2:38