

THE GRAPHIC TIMETABLE OF THE HEAVENS

Every year the publishers of *Sky and Telescope Magazine* produce the *Sky Gazer's Almanac*. The center page of the *Sky Gazer's Almanac* is a graphic timetable giving the (predictable) nighttime astronomical events throughout the year. Using the small timetable on your table, the instruction on the cover, the legend at the bottom, and the information on the sides, answer the following.

- 1.³ Why is the chart shaped the way it is? Why are the North American, European and Southern Hemisphere charts shaped differently?

The chart shows the events of the night and the night at 40° N is shortest in June, July and August. In Europe the night is longer in the winter and shorter in the summer. In the southern hemisphere, the night is longest in June, July and August so it's wide in the middle.

- 2.⁴ Why are all the white lines parallel and why do they slant upward to the right?

The stars all rise 4 minutes earlier each night so the white lines show this. The planets move with respect to the stars so their rising times vary less regularly.

- 3.² Why do the lines for Mercury and Venus not cross the chart, but only appear along the sides?

Since Mercury and Venus are closer to the Sun than Earth, they are always close to the sun in our sky. The objects in the middle of the chart are opposite the sun at midnight ... neither Mercury nor Venus ever gets there!

- 4.³ On what days do the latest sunrise and earliest sunset occur? Why don't they occur on the same day?

The latest sunrise occurred on January 5 and the earliest sunset is on December 7. They don't occur on the same day due to the fact that clock midnight occurs after solar midnight in early December.

- 5.² When in February was or will the moon be at perigee? Apogee?

The moon was a perigee on 2/10 and will be at Apogee on 2/25.

- 6.³ At what time and date was Earth at perihelion? How far from the Sun was it?

At 7:38 am EST on January 2, Earth was at perihelion, 91,404,095 miles from the Sun.

- 7.³ At what time and date will Earth be at aphelion? How far from the Sun will it be?

At 1:06 am EDT on July 5, Earth will be at aphelion, 94,510,539 miles from the Sun.

- 8.² When will official (Gregorian) Spring arrive this year?

Official spring will arrive with the vernal equinox at 11:06 pm EDT, on March 19, 2024.

THE EVENTS OF A SINGLE NIGHT

For next Sunday night (February 18 - February 19), use the *Sky Gazer's Almanac* to determine the events that will occur and their Local Mean Time (LMT) time to within 1 or 2 minutes.²⁰

EVENTS FOR SUNDAY NIGHT, FEBRUARY 18 - FEBRUARY 19, 2024		
	Local Time (EST)	Event
1	5:39 PM	Sunset
2	5:53 PM	Pleiades Transit
3	6:19 PM	Saturn Sets
4	7:10 PM	End of Evening Twilight
5	7:41 PM	Orion Nebula Transits
6	7:49 PM	Neptune Sets
7	8:52 PM	Sirius Transits
8	9:53 PM	Pollux Transits
9	11:25 PM	Jupiter Sets
10	12:00 AM	Clock Midnight EST
11	12:14 AM	Regulus Transits
12	12:15 AM	Solar Midnight
13	12:17 AM	Uranus Sets
14	2:12 AM	Antares Rises
15	4:07 am	Waxing Gibbous Moon Sets
16	5:06 AM	Lower Culmination of Polaris
17	5:17 AM	Start of Morning Twilight
18	5:34 AM	Venus Rises
19	5:42 AM	Mars Rises
20	6:41 AM	Mercury Rises
21	6:48 AM	Sunrise

