

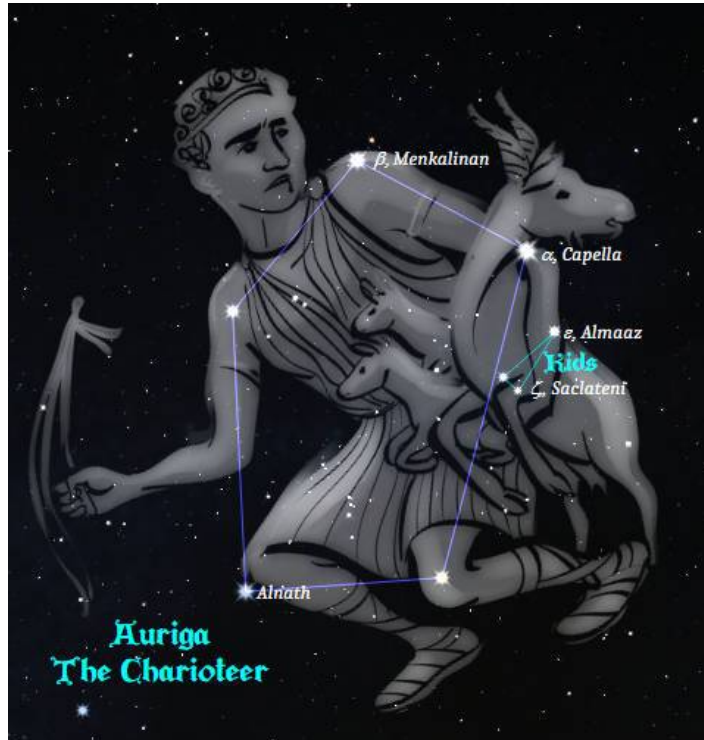
### Auriga the Charioteer

By Bob Moler

The first winter constellation to appear is also the last to disappear in the spring. This constellation is Auriga the charioteer. It is the most northerly of the winter constellations. In fact its northernmost stars don't set for those observing from Northern Michigan.

at magnitude 0.08.

Even on late summer evenings, Capella can be seen scraping the northern horizon with the promise of the return of winter. It slowly rises in the northeastern sky on autumn evenings with a large horizontal component, as if flying. This twinkly star has been the source of UFO calls.



Capella is actually a binary star some 42 light years away. Each of the stars is much brighter than the sun, but nearly the same color as our star. The stars are less than the earth's distance from the sun apart, and orbit each other in 104 days.

The name Capella means Little She Goat. Her kids are nearby. The Kids is an asterism, that is, an informal constellation, like the Big Dipper and the Belt of Orion. The most intriguing star of the Kids is Epsilon ( $\epsilon$ ) Aurigae.

*Auriga at 9 PM on February 14th. At that time Menkalinan will be less than a degree from the zenith for observers in Northern Michigan. Star field and constellation art are from Stellarium.*

Auriga depicts a Charioteer, who is crouched down and holding a nanny goat and her three kids. One could see driving a chariot, while trying to hold all those goats, could be hazardous undertaking. Perhaps after the crash the gods placed him in the heavens to warn other distracted drivers. The second century CE Greek astronomer Ptolemy called him a coachman. If so, the vehicle would have plenty of room for the goats.

Epsilon is a most interesting eclipsing binary star. Most eclipsing binaries have periods in terms of days. The period of Epsilon is 27 years, and the eclipses last nearly 2 years. The eclipses last 640 to 730 days, or 21 to 24 months. The last eclipse was in the period 2009-2011. The next eclipse is expected to occur in the 2036-2038

Continued on page 2

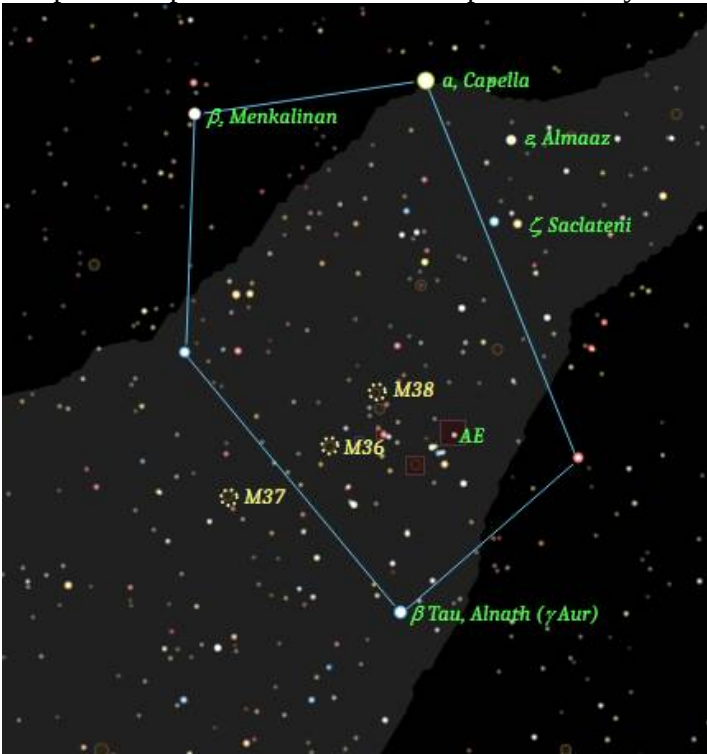
Basically, the stars of Auriga form a pentagon, with the slim triangle asterism of The Kids on the right side. Auriga's brightest star is Capella, the 6th brightest night time star

Now is the time to renew your membership for 2026. See pages 7 and 8.

## Auriga the Charioteer (Continued from page 1).

time frame.. The depth of the eclipse dims the star by 0.8 of a magnitude. It's thought that the eclipsing body is a star with a thick dust ring.

Another one of the Kids is an eclipsing variable star. It is Saclateni or Zeta ( $\zeta$ ) Aurigae. It normally shines at 5th magnitude, but during the 40 day long eclipses it dims by half a magnitude. The partial phase of the eclipse lasts about 32 hours on each end of the eclipse. The period between the eclipses is 2.66 years.



A closer look at Auriga and its three Messier open star clusters. Star field from Cartes du Ciel (Sky Charts) in equatorial orientation.

There's a third eclipsing binary in Auriga. It is Menkalinan or Beta ( $\beta$ ) Aurigae. It has a very short period compared to the others, only 95 hours, just under 4 days. The stars are nearly identical in mass and type so there is nearly an identical dip in magnitude when each is eclipsed by the other. The

magnitude dips are small, only a tenth of a magnitude., and last less than 10 hours.

The southernmost star of the pentagon is Alnath which it shares with Taurus. It is best known as Beta ( $\beta$ ) Tauri. However, it is sometimes referred to as Gamma ( $\gamma$ ) Aurigae.

Auriga lies along the Milky Way, and as such contains galactic star clusters and nebulae. The three star clusters M36, M37 and M38 are all great telescopic objects. They can also be spotted with binoculars as fuzzy spots. M37 and M38 are the richest of the three in number of stars.

For those wanting to explore deeper in Auriga, check out your favorite planetarium app, like Stellarium or many of the other free ones.

One of those faint wonders in Auriga is the star AE Aurigae, a massive blue-white variable star with a high velocity. It and the stars Mu Columbae (in Columba the dove) and 53 Arietis (in Aries the ram) seem to be fleeing the star forming region in the constellation of Orion. AE Aurigae has small irregular fluctuations in brightness. It appears to be located in a nebula, though it may only be passing through it. The nebula IC 405, aka: Flaming Star Nebula, appears to have both red and blue sections. The red parts are the light of hydrogen, while those in blue emphasize the reflection of AE's light by dust grains. See the image by Daniel Dall'Olmo on the next page. A similar blue nebula surrounds the stars of the Pleiades. The Flaming Star Nebula a challenging object for the amateur's telescope, though in photographs it shows as a big red comma.

Auriga may not be the splashiest winter constellation, but it contains many interesting wonders, well worth study. ★

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### Grand Traverse Astronomical Society - Est. June 1982 – 43 years of service

-----Officers-----		-----Directors-----	-----Patrons-----
President	Jerry Dobek	Charles Bell	Charles Bell, Robert Carroll & Terri Mills, Daniel Dall'Olmo, Jessica DeWitt, Don and Kathy Flegel, Bill Hathaway, Richard Kuschell, Mark Leugers, Judy Moler, Ronald & Jan Uthe
Vice President	Kim Dobek	Don Flegel	
Secretary	Joe Brooks	Bill Hathaway	
Treasurer	Gary Carlisle		
Editor	Bob Moler, transitioning to Mary Gribbin		

## Upcoming Society Events

Events not held at the Joseph H. Rogers Observatory depend on the weather.

**Friday, February 6 – Monthly meeting and star party** at NMC Rogers Observatory. Also available via **Zoom**. See our website <http://www.gtastro.org> for instructions and a link to click.

7 PM – Board of Directors Meeting

8 PM – General Meeting: Our annual Telescope Clinic:

9 PM – Star Party, if it is clear.

**Friday, March 6 – Monthly meeting and star party** at NMC Rogers Observatory. Also available via **Zoom**. See our website <http://www.gtastro.org> for instructions and a link to click.

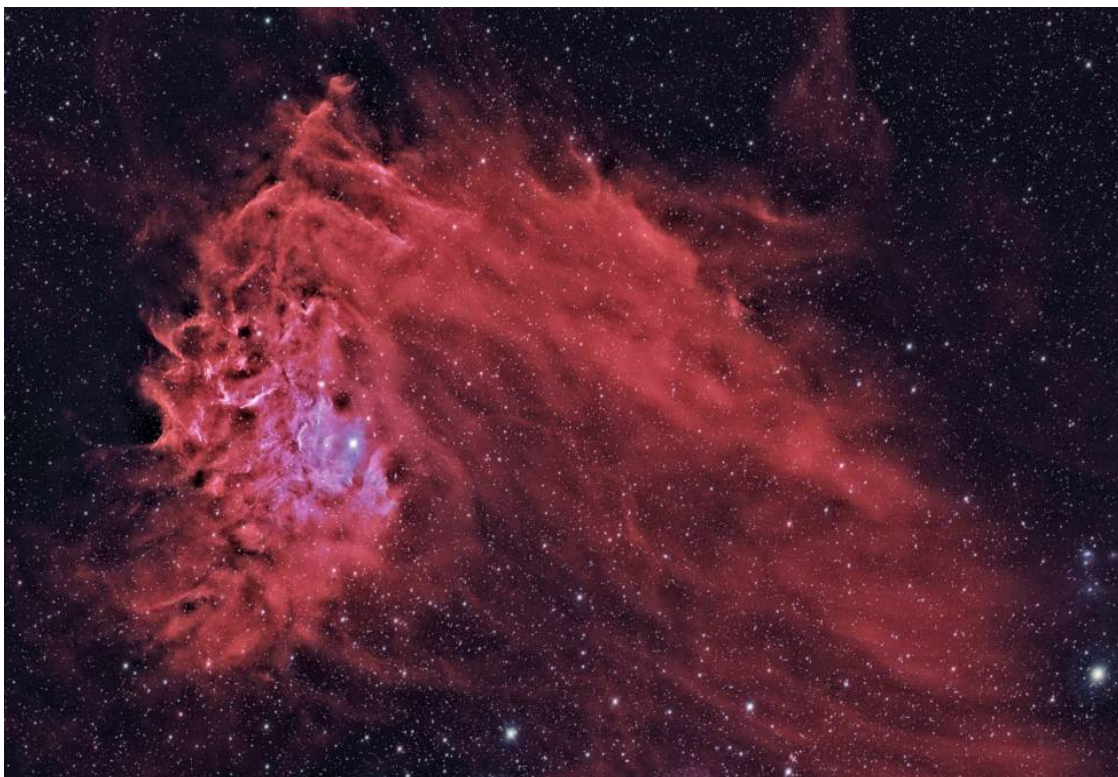
7 PM – Board of Directors Meeting

8 PM – General Meeting: Jerry Dobek presents his new book collaboration: *The Barnard Album*.

9 PM – Star Party, if it is clear.

### Zoom Meeting Link:

<https://us02web.zoom.us/j/8388913229?omn=88435646093>



**IC 405**



North

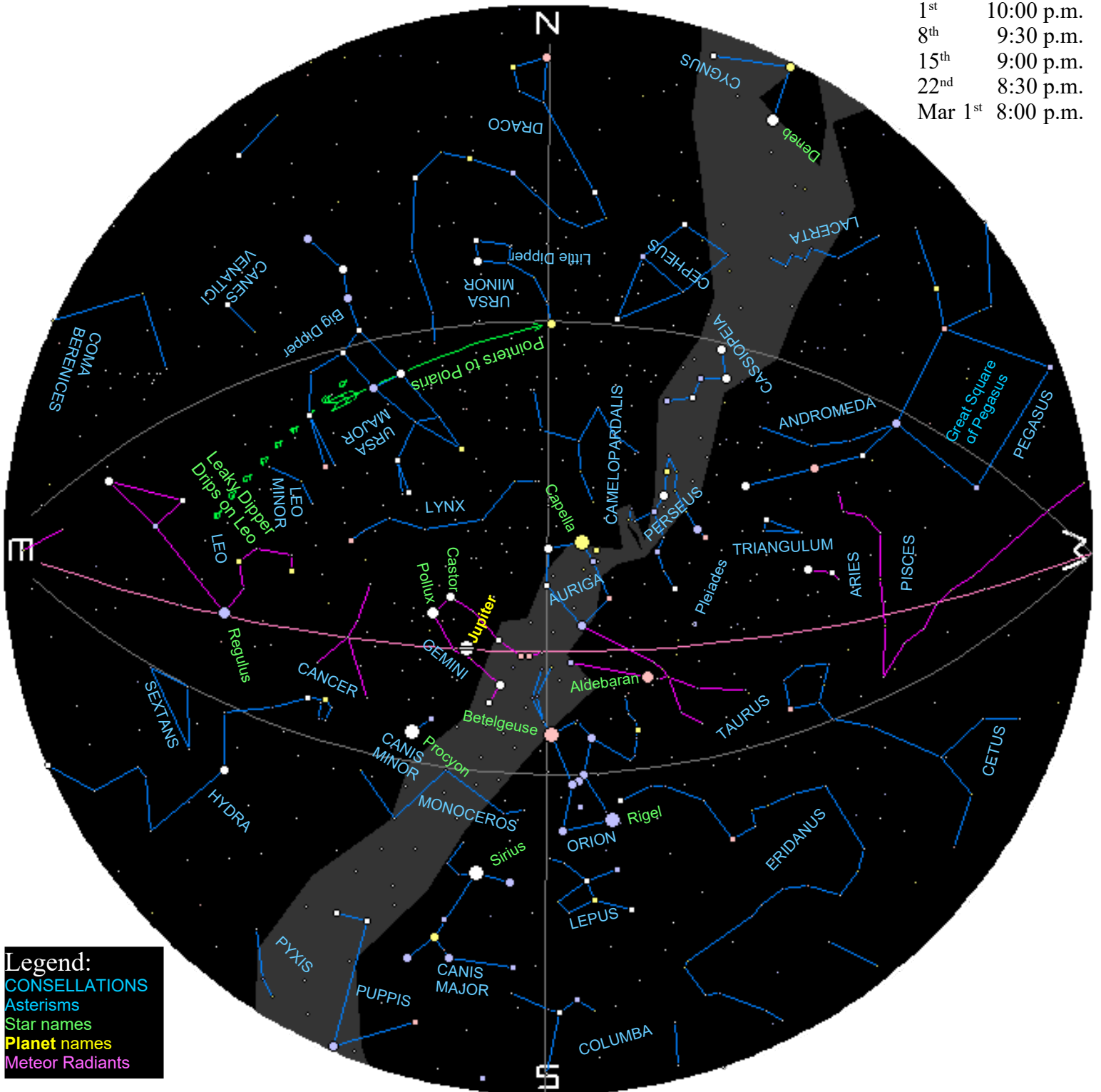
Credit:  
Daniel Dall'Olmo

# The Stars and Planets for February 2026

By Bob Moler

Planets are plotted for mid month. The star positions are correct for:

1 <sup>st</sup>	10:00 p.m.
8 <sup>th</sup>	9:30 p.m.
15 <sup>th</sup>	9:00 p.m.
22 <sup>nd</sup>	8:30 p.m.
Mar 1 <sup>st</sup>	8:00 p.m.



Orion, the central constellation of winter, is now centered in the south; and is surrounded by his entourage of other constellations containing the bright stars of the Winter Circle. With the coldest days and nights here, its comforting to see the constellations of spring just rising in the eastern sky. The Big Dipper is in the northeast, and Leo the lion in the east hint that spring will soon arrive. February 2<sup>nd</sup> is Ground Hog Day, a Cross Quarter Day near the midpoint of winter. Jupiter will be visible all month. We'll Saturn is in the west, but sets before chart time. It will be lost before the end of the month.

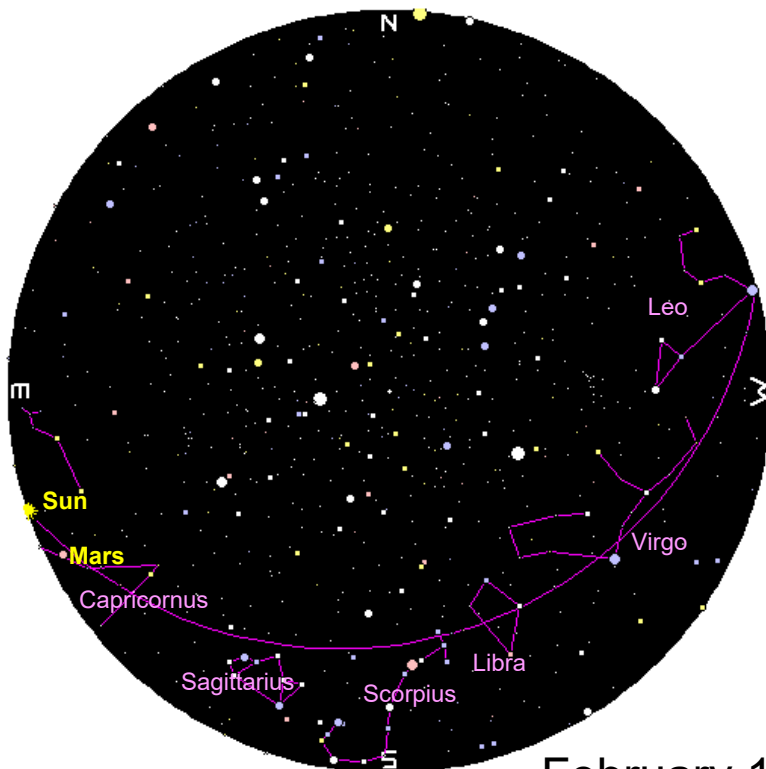
# The Naked Eye Planets

February 1st, 6th, 11th, 16th, 21st, 26th, & March 3rd

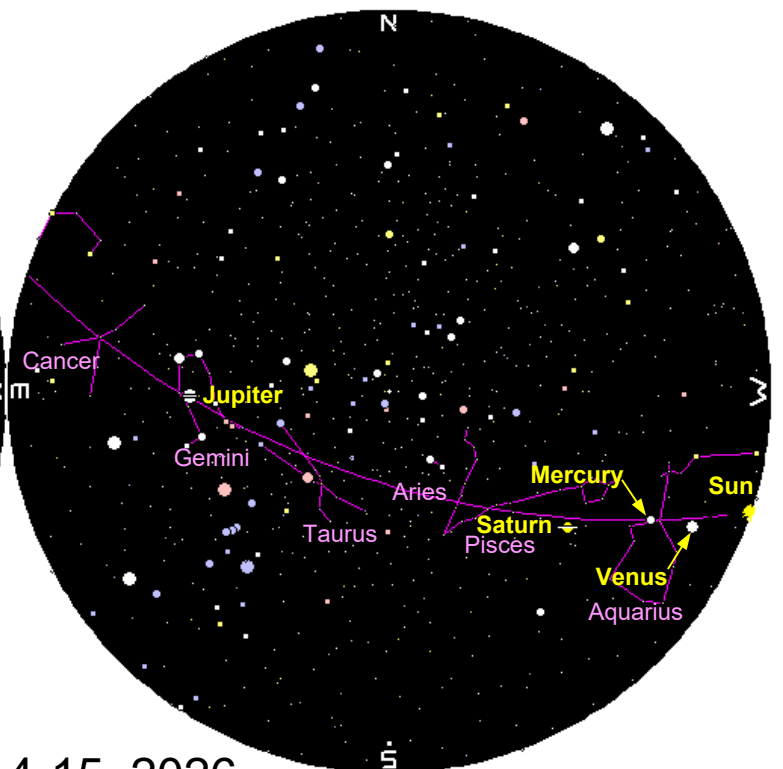


## The Planets at Sunrise and Sunset

Sunrise



Sunset



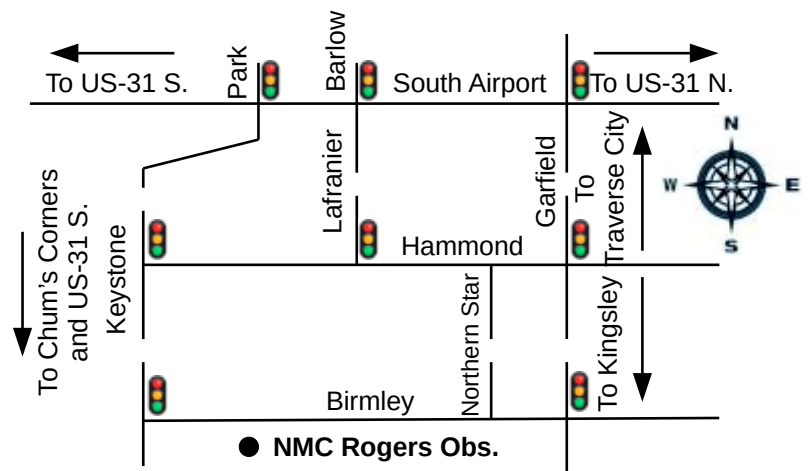
February 14-15, 2026

# CELESTIAL CALENDAR

	Date	Time	Event
Feb	1 Su		Venus: 6.3° E
	1 Su	6:41 AM	Moon-Beehive: 1.3° S
	1 Su	5:09 PM	Full Moon
	2 Mo	9:48 PM	Moon-Regulus: 0.4° S
	3 Tu	2:18 PM	Moon Descending Node
	7 Sa	3:26 AM	Moon-Spica: 2° N
	9 Mo	7:43 AM	Last Quarter
	10 Tu	11:52 AM	Moon Apogee: 404,600 km
	10 Tu	10:19 PM	Moon-Antares: 0.8° N
	12 Th	7:56 AM	Moon South Dec.: 28.4° S
	17 Tu	7:01 AM	New Moon
	17 Tu	7:13 AM	Annular Solar Eclipse Southern Ocean and Antarctica
	18 We	1:19 AM	Moon Ascending Node
	19 Th	12:59 PM	Mercury Elongation: 18.1° E
	19 Th	6:54 PM	Moon-Saturn: 4.8° S
	23 Mo	9:43 PM	Moon-Pleiades: 1.2° S
	24 Tu	7:28 AM	First Quarter
	24 Tu	6:18 PM	Moon Perigee: 370,100 km
	25 We	6:23 PM	Moon North Dec.: 28.4° N
	27 Fr	1:26 AM	Moon-Jupiter: 4° S
	28 Sa	3:07 PM	Moon-Beehive: 1.3° S
Mar	1 Su		Venus: 13° E

Sky Events Calendar by Fred Espenak and Sumit Dutta (NASA's GSFC), <http://eclipse.gsfc.nasa.gov/SKYCAL/SKYCAL.html> to make your own for any year. Some additions and clarifications were made by the editor.

The Grand Traverse Astronomical Society meets on the 1st Friday of each month except August at the Northwestern Michigan College Rogers Observatory. The public is invited to all society functions as our guests. We are a non-profit group dedicated to the study of astronomy. If you'd like more information about us, our meeting and outreach schedule, see our website: [www.gtastro.org](http://www.gtastro.org).



Map is not to scale

# Ephemeris of Sky Events for NMC Observatory

February, 2026      Local time zone: EST

DATE	SUN RISE	SUN SET	DAYLIGHT HOURS	TWILIGHT*		MOON PHASE	RISE OR SET**	ILLUM TIME	ILLUM FRACTN
Sun 1	08:01a	05:51p	09:50	06:57p	06:55a	Full	Rise	05:41p	100%
Mon 2	07:59a	05:52p	09:52	06:58p	06:54a		Rise	06:59p	99%
Tue 3	07:58a	05:54p	09:55	07:00p	06:53a		Rise	08:14p	95%
Wed 4	07:57a	05:55p	09:58	07:01p	06:52a		Rise	09:25p	89%
Thu 5	07:56a	05:57p	10:00	07:02p	06:51a		Rise	10:33p	82%
Fri 6	07:55a	05:58p	10:03	07:03p	06:49a		Rise	11:40p	73%
Sat 7	07:53a	06:00p	10:06	07:05p	06:48a		Rise	12:47a	64%
Sun 8	07:52a	06:01p	10:09	07:06p	06:47a		Rise	01:54a	55%
Mon 9	07:51a	06:02p	10:11	07:07p	06:46a	L Qtr	Rise	03:00a	46%
Tue 10	07:49a	06:04p	10:14	07:08p	06:45a		Rise	04:02a	36%
Wed 11	07:48a	06:05p	10:17	07:10p	06:43a		Rise	04:59a	28%
Thu 12	07:46a	06:07p	10:20	07:11p	06:42a		Rise	05:48a	19%
Fri 13	07:45a	06:08p	10:23	07:12p	06:41a		Rise	06:29a	12%
Sat 14	07:43a	06:09p	10:25	07:14p	06:39a		Rise	07:01a	7%
Sun 15	07:42a	06:11p	10:28	07:15p	06:38a		Rise	07:28a	2%
Mon 16	07:40a	06:12p	10:31	07:16p	06:37a		Rise	07:50a	0%
Tue 17	07:39a	06:14p	10:34	07:17p	06:35a	New	Set	06:39p	0%
Wed 18	07:37a	06:15p	10:37	07:19p	06:34a		Set	07:51p	3%
Thu 19	07:36a	06:16p	10:40	07:20p	06:32a		Set	09:05p	7%
Fri 20	07:34a	06:18p	10:43	07:21p	06:31a		Set	10:20p	14%
Sat 21	07:33a	06:19p	10:46	07:23p	06:29a		Set	11:38p	23%
Sun 22	07:31a	06:20p	10:49	07:24p	06:28a		Set	12:58a	33%
Mon 23	07:29a	06:22p	10:52	07:25p	06:26a		Set	02:17a	44%
Tue 24	07:28a	06:23p	10:55	07:27p	06:25a	F Qtr	Set	03:32a	56%
Wed 25	07:26a	06:25p	10:58	07:28p	06:23a		Set	04:36a	67%
Thu 26	07:24a	06:26p	11:01	07:29p	06:21a		Set	05:26a	77%
Fri 27	07:23a	06:27p	11:04	07:30p	06:20a		Set	06:05a	86%
Sat 28	07:21a	06:29p	11:07	07:32p	06:18a		Set	06:35a	93%

\* Nautical Twilight

\*\* Moonrise or moonset, whichever occurs between sunset and sunrise



**For renewing members, all we need is your name and email or street address to identify you, plus any information that has changed.**

## Grand Traverse Astronomical Society – Membership Application / Renewal for 2026

I am interested, please send me more information about the next GTAS meeting. (Also see [www.gtastro.org](http://www.gtastro.org))

I'll join, payment enclosed

Email Address: \_\_\_\_\_

Membership renewal

**Newsletter Delivery:**  **Email**  **Mail** (Postcard only)

Membership term runs from January to December

Interests: \_\_\_\_\_

Name(s): \_\_\_\_\_ Home Phone: \_\_\_\_\_ Cell: \_\_\_\_\_

Address: \_\_\_\_\_

(Street, City, State ZIP)

Dues:  Single Membership .....\$25.00/yr      **Mail check to:** G.T.A.S.

Family.....\$30.00/yr      Gary Carlisle, Treasurer

Student (up to 18 years age)....\$15.00/yr      1473 Birmley Road

Patron (Donation).....\$\_\_\_\_\_      Traverse City, MI 49696-8808

For new members just joining mid-year, pro rate the dues thus:  
**Annual Dues X months remaining in the year / 12.**  
 Example: Single Joining in June:  
 \$25.00 X 6 (Jul-Dec) / 12 = \$12.50

## Renew your membership for 2026

2026 is the second year that we are having everyone's dues expire at the end of the year, rather than at various times during the year. Last year due to some mix ups on our part, we have lost some members. We will endeavor to gain those members back by sending this newsletter out to everyone even those who did not renew for the current year.

I've extended the reception of the Stellar Sentinel to February for delinquent members. Only those who have paid their dues by February will receive further Stellar Sentinels, or be eligible to run for, or serve as a Board Member.

The application/renewal form is blank, so for renewals Just enter your name, email address, or street address, dues information and any other information that changed.

I've nearly completed creating an application/renewal form that can be filled in via Acrobat Reader and other PDF reader apps. The form can be saved, printed or sent via email. I have an idea I'll discuss with the Board this month to help with the dues process, and the accurate recording of the above.★

### **Eileen Carlisle**

**Avon Representative**

**1473 Birmley Road**

**Traverse City, MI 49696-8808**

**Phone: 946-8123 Fax: 929-0859**

**E-Mail: [EileenAvonRep@charter.net](mailto:EileenAvonRep@charter.net)**

### **WANTED: Astronomers interested in working with Project ASTRO POLARIS.**

**Willingness to work with K-12 students and teachers.**

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**Please contact: Jerry Dobek Site Coordinator**

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