What’s Up
December 2022

The month with the longest nights is upon us. This month the night sky is graced with Mars and Jupiter arcing across the southern sky as they are chased by Orion. Early in the month Mars is the “star” of the night. On the first of the month Mars is closest to the Earth and it is at opposition on the 8th. The full moon occults Mars on the 7th. Start looking at the pair around 8 pm on this night as the glare of the full moon may make it difficult to find Mars during occultation. The occultation should start about 9 PM and last about an hour.

On the first of December the Moon will slide about 3 degrees below Jupiter. The Moon will be about 65% illuminated and Jupiter will have a magnitude of about -2.3 making this an interesting pairing for the night sky. Anything shorter than a 200mm lens should be able to capture the two in a single frame. The pair will get together again on the 28th when the Moon will be about 7 degrees below Jupiter and only 40 percent illuminated.

The Geminid meteor shower should peak on the night of Dec. 13. With up to 120 meteors per hour being predicted and a 70% illuminated Moon not rising until 9:15 PM the show could be spectacular. Dress warm and enjoy the show. Most meteor showers are associated with debris from a comet but the Geminid meteors are associated with the asteroid 3200 Phaethon. This asteroid is very unusual in both its composition and its orbit. Something to do some research on during a cloudy December night if you are interested.

Winter Solstice is Dec. 21st. With the new moon a few days away, this night will offer 11 hours and 39 minutes of dark skies. It could be a good night for some kind of a marathon. Not all of the Messier items will be visible during the dark sky hours, but the Astronomical League has a winter Messier List that includes a mix of 23 objects that should be visible that night. I have included that list on page 7 for anyone who wishes to take the challenge.

On the evening of the 26th a young Moon will pass within a few degrees of Saturn. It should produce a nice pairing that will be visible from sunset until Moon set at 8:20 PM.

On Dec. 28th a conjunction of Venus and Mercury will occur. It can be seen shortly after sunset low in the southwestern sky. Venus, the much brighter planet of the two, should be easy to spot in the glow of the setting sun. Mercury, at a magnitude of 1.2, will sit approximately 1.5 degrees above Venus this night and may be a challenge to pick out with the unaided eye. Binoculars should show the pair very nicely.

I most likely have missed some interesting events for the month of December but these should keep you busy, providing we have some clear nights this month. Have a good month and enjoy the holidays.
The 2023 NPMAS Holiday/Christmas Party has been setup on Wednesday January 11th, **there will be no club meeting on January 4th.** We are going back to Mackinaws at 2925 Voyager Dr. on Green Bay's East side as most members seemed to like the room and the food. Mackinaws also gives me more flexibility in setting up the dinner choices, allowing me to offer a couple of less expensive options.

Drinks start at 6:00 and dinner at 7:00. We will have a cheese, cracker, and meat platter for the cocktail hour. Like in the past, please pay for drinks when you order them. We will have a limited menu of five options;

All the dinners include the house salad and dinner roll.

1. **New York Strip** $37
   14 oz Certified Angus beef strip chargrilled to perfection. Cooked between medium to medium rare.

2. **Baked Icelandic Cod** $23
   A 12 oz. steamed cod filet, seasoned with lemon pepper butter, sliced lemon and our homemade tartar sauce.

3. **Cheddar Broccoli Stuffed Chicken** $25
   An 8 oz. chicken breast stuffed with cheddar cheese and broccoli. Topped with a creamy white sauce.

4. **Shrimp Scampi** $26
   Fresh jumbo Gulf shrimp sautéed in a white wine garlic sauce with onions and bell peppers. served over linguine topped with parmesan cheese.

5. **Pasta Primavera** $20
   A creamy parmesan white sauce over fettuccine noodles, topped with mixed vegetables and parmesan cheese.

You will be billed individually at Mackinaws, you don’t need to pay in advance. **The gratuity of 20% will be automatically added to the bills.**

I will need to give them the number attending and a breakout of dinners by Friday Jan 6th. A sign-up sheet will be passed around at the December meeting. If you don’t sign up the December meeting, and still want to come please drop me an email at dfancini@att.net with who is coming and entree selections. **BRING THE WHOLE FAMILY!**

**WE HAVE A LARGE NUMBER OF NEW MEMBERS, so pay special attention to this section.** We will continue with the recent tradition, of having a white elephant gift exchange. For those of you not familiar with this tradition, you bring one wrapped gift for each person from your family attending. They are put on a table and people go up and select a gift. If they don’t like it, you can “trade it” for a gift already taken by someone else. So please pay attention to who gets what gift, the better gifts sometimes get hidden. As you can probably guess the few best gifts make the rounds around the room. It has turned out to be a fun and highly anticipated tradition. It is entirely up to you to buy/bring any gift you would like, use your creativity. As a guide, in the past only about 60% of gifts turn out to be “good” gifts, and the balance are tongue in cheek, gag type gifts. You are NOT required to spend a lot of money, it’s totally up to you; make something, re-gift that turkey gift you got for Christmas last year, or buy an actual good gift or a crazy gift. This is what makes it fun. IMPORTANT, you need to have a gift for each person attending who wants to get a gift. If you don’t want to participate in the white elephant gift exchange, that’s fine, please come anyway and just inform me so we will end up with the correct number of gifts.

**One more very important issue; if you have signed up and can’t make it at the last minute, you must call me and cancel or email me the cancellation. If you fail to do so the club will be expected to pay, and you guessed it, I will expect you to pay anyway.**

See you at Mackinaws for the January 11th Holiday Party! Dick Francini.
Message from the club treasurer.

Dues for membership in 2023 are coming due and that they made be paid either by going on-line paying by credit card or paying by check or cash at the November or December meeting or mailing in a check to:

NPMAS Treasurer,
1418 Chicago St.,
Green Bay, WI. 54301-3840.

Dues are still the same - $25.00 for single membership and $35.00 for family. If dues for 2023 have already been paid, then please disregard this notice.

As a dues paying member of NPMAS you receive The Astronomical League's Reflector magazine. You have four options as to how you wish to receive your copy. They are:

1. Mailed edition only
2. Digital edition only
3. Have both mailed and digital edition sent
4. Member doesn't want either edition.

Please let me know how you wish to receive your copy of the Reflector magazine.

Thank You.

Sincerely,

Tom C.
NPMAS Treasurer
In November, our club organized an event for a Christian Home School Co-op in Green Bay. The group consists of around 30 children ages four through high school.

One of their units of study was on space. The students had learned about each planet, the phases of the moon, parts of the sun, constellations, and more. We were invited to be a part of this space program.

During the event, Bob Nelezen gave a presentation on the motion of the stars and planets, which was particularly timely because a total lunar eclipse had occurred the morning before. Tom Cashman and Lynn Ward were also on hand, and bought crafts for the kids and telescopes with targets.

It was a fun morning and a great outreach activity for our club.
After the Q & A, the kids had different projects to choose from.

The rocket table was very popular

Coloring with chalk on black construction paper.

Kids colored the Sun and planets to make a mobile.

Everyone took turns and was excited to look through the telescopes

Tom Cashman answers questions about telescopes
Sky Events - December 2022

August Moon Phases

<table>
<thead>
<tr>
<th>Moon Phase</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Moon, Cold Moon</td>
<td>Dec. 7</td>
</tr>
<tr>
<td>Third Quarter</td>
<td>Dec. 16</td>
</tr>
<tr>
<td>New Moon</td>
<td>Dec. 23</td>
</tr>
<tr>
<td>First Quarter</td>
<td>Dec. 29</td>
</tr>
</tbody>
</table>

December Meteor Showers

<table>
<thead>
<tr>
<th>Name</th>
<th>Peak Dates</th>
<th># per hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geminids</td>
<td>Dec. 13-14</td>
<td>120</td>
</tr>
<tr>
<td>Ursids</td>
<td>Dec. 21</td>
<td>10</td>
</tr>
</tbody>
</table>

2022 Planet Opposition Dates

<table>
<thead>
<tr>
<th>Planet</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mars</td>
<td>Dec. 7</td>
</tr>
<tr>
<td>Jupiter</td>
<td>Sept. 26</td>
</tr>
<tr>
<td>Saturn</td>
<td>Aug. 14</td>
</tr>
<tr>
<td>Uranus</td>
<td>Nov. 9</td>
</tr>
<tr>
<td>Neptune</td>
<td>Sept. 16</td>
</tr>
</tbody>
</table>

Astro Twilight Times

<table>
<thead>
<tr>
<th>Date</th>
<th>Ends</th>
<th>Begins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec. 1</td>
<td>17:59</td>
<td>05:24</td>
</tr>
<tr>
<td>Dec. 15</td>
<td>17:57</td>
<td>05:35</td>
</tr>
<tr>
<td>Dec. 31</td>
<td>18:06</td>
<td>05:42</td>
</tr>
</tbody>
</table>

Rise Time / Meridian Time / Set Time for the Brighter Planets

<table>
<thead>
<tr>
<th>Planet</th>
<th>12/1</th>
<th>12/15</th>
<th>12/31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venus</td>
<td>7:50/12:19/16:47</td>
<td>8:16/12:40/17:05</td>
<td>8:30/13:04/17:38</td>
</tr>
<tr>
<td>Jupiter</td>
<td>13:09/19:05/01:01</td>
<td>12:15/18:12/00:09</td>
<td>11:15/17:15/23:14</td>
</tr>
</tbody>
</table>

Source: [in-the-sky.org](https://in-the-sky.org)

A nice web site that gives the current relative positions of the planets, dwarf planets, moons, comets, and space crafts is [https://solarsystem.nasa.gov/planets/overview/](https://solarsystem.nasa.gov/planets/overview/).
Astronomical League Winter Messier List

<table>
<thead>
<tr>
<th>NGC</th>
<th>R.A.</th>
<th>Dec.</th>
<th>Mag.</th>
<th>Typ</th>
<th>Con</th>
<th>Size</th>
<th>Messier</th>
</tr>
</thead>
<tbody>
<tr>
<td>224</td>
<td>0</td>
<td>42.8</td>
<td>41</td>
<td>16</td>
<td>4.5</td>
<td>Gal And</td>
<td>178'</td>
</tr>
<tr>
<td>221</td>
<td>0</td>
<td>42.8</td>
<td>40</td>
<td>52</td>
<td>10.0</td>
<td>Gal And</td>
<td>8' X 6'</td>
</tr>
<tr>
<td>205</td>
<td>0</td>
<td>40.4</td>
<td>41</td>
<td>41</td>
<td>10.0</td>
<td>Gal And</td>
<td>17' X 10'</td>
</tr>
<tr>
<td>598</td>
<td>1</td>
<td>33.9</td>
<td>30</td>
<td>40</td>
<td>7.0</td>
<td>Gal Tri</td>
<td>73' X 45'</td>
</tr>
<tr>
<td>7654</td>
<td>23</td>
<td>24.2</td>
<td>61</td>
<td>35</td>
<td>8.0</td>
<td>OCI Cas</td>
<td>13.0'</td>
</tr>
<tr>
<td>581</td>
<td>1</td>
<td>33.2</td>
<td>60</td>
<td>42</td>
<td>7.0</td>
<td>OCI Cas</td>
<td>6.0'</td>
</tr>
<tr>
<td>1039</td>
<td>2</td>
<td>42.0</td>
<td>42</td>
<td>47</td>
<td>6.0</td>
<td>OCI Per</td>
<td>35.0'</td>
</tr>
<tr>
<td>650</td>
<td>1</td>
<td>42.4</td>
<td>51</td>
<td>34</td>
<td>12.0</td>
<td>PIN Per</td>
<td>163'' X 107''</td>
</tr>
<tr>
<td>1952</td>
<td>5</td>
<td>34.5</td>
<td>22</td>
<td>1</td>
<td>9.0</td>
<td>PIN Tau</td>
<td>6' X 4'</td>
</tr>
<tr>
<td>1432</td>
<td>3</td>
<td>47.0</td>
<td>24</td>
<td>7</td>
<td>1.4</td>
<td>OCI Tau</td>
<td>110.0'</td>
</tr>
<tr>
<td>1960</td>
<td>5</td>
<td>36.1</td>
<td>34</td>
<td>8</td>
<td>6.5</td>
<td>OCI Aur</td>
<td>12.0'</td>
</tr>
<tr>
<td>2099</td>
<td>5</td>
<td>52.4</td>
<td>32</td>
<td>33</td>
<td>6.0</td>
<td>OCI Aur</td>
<td>24.0'</td>
</tr>
<tr>
<td>1912</td>
<td>5</td>
<td>28.7</td>
<td>35</td>
<td>50</td>
<td>7.0</td>
<td>OCI Aur</td>
<td>21.0'</td>
</tr>
<tr>
<td>1976</td>
<td>5</td>
<td>35.3</td>
<td>-5</td>
<td>23</td>
<td>5.0</td>
<td>DfN Ori</td>
<td>85' X 60'</td>
</tr>
<tr>
<td>1982</td>
<td>5</td>
<td>35.5</td>
<td>-5</td>
<td>16</td>
<td>7.0</td>
<td>DfN Ori</td>
<td>20' X 15'</td>
</tr>
<tr>
<td>2068</td>
<td>5</td>
<td>46.8</td>
<td>0</td>
<td>4</td>
<td>8.0</td>
<td>DfN Ori</td>
<td>8' X 6'</td>
</tr>
<tr>
<td>1904</td>
<td>5</td>
<td>24.5</td>
<td>-24</td>
<td>33</td>
<td>8.5</td>
<td>GCI Lep</td>
<td>8.7'</td>
</tr>
<tr>
<td>2168</td>
<td>6</td>
<td>8.9</td>
<td>24</td>
<td>20</td>
<td>5.5</td>
<td>OCI Gem</td>
<td>28.0'</td>
</tr>
<tr>
<td>2323</td>
<td>7</td>
<td>3.2</td>
<td>-8</td>
<td>20</td>
<td>7.0</td>
<td>OCI Mon</td>
<td>16.0'</td>
</tr>
<tr>
<td>2287</td>
<td>6</td>
<td>47.0</td>
<td>-20</td>
<td>44</td>
<td>5.0</td>
<td>OCI CMa</td>
<td>38.0'</td>
</tr>
<tr>
<td>2437</td>
<td>7</td>
<td>41.8</td>
<td>-14</td>
<td>49</td>
<td>6.5</td>
<td>OCI Pup</td>
<td>27.0'</td>
</tr>
<tr>
<td>2422</td>
<td>7</td>
<td>36.6</td>
<td>-14</td>
<td>30</td>
<td>4.5</td>
<td>OCI Pup</td>
<td>30.0'</td>
</tr>
<tr>
<td>2447</td>
<td>7</td>
<td>44.6</td>
<td>-23</td>
<td>52</td>
<td>6.5</td>
<td>OCI Pup</td>
<td>22.0'</td>
</tr>
</tbody>
</table>
Club Monthly Meetings

The NPMAS monthly meetings are open to the public and are held at the Neville Public Museum on the first Wednesday of each month from 6:30 to 8:30 PM.

TELESCOPE WORKSHOP

Before each monthly meeting Gerry Kocken is offering to meet with club members who have questions about their telescopes or have telescopes that need adjustments or repairs. If you would like to meet with Gerry for this service he requests that you contact him prior to the meeting so that he knows what he needs to bring and to schedule his time. You can contact Gerry at gerryk@kockenwi.com

New Member Welcome

No new members this month

CLUB PUBLIC OUTREACH

The education of the public about astronomy is one aspect of our mission. Our public viewing sessions are one way we achieve this goal. Another is by accommodating requests from organizations in the region for astronomy related speakers or demonstrations. Types of organizations that have made requests are schools, public libraries, and scout troops. The club is always looking for individuals who would like to contribute to these activities. Ways that individuals can contribute is by preparing or giving presentations, assisting at public viewing sessions or by answering questions from the public. If you are interested in contributing to the club’s public outreach activities you can contact any of the board members or the Public Outreach Coordinator Robert Nelezen at robertn330@gmail.com.
Loaner Telescopes

NPMAS members are welcome to use, free of charge for a one month period, one of the six club telescopes. Please contact one of the board members to make arrangements. The six telescopes available are:
- 10 inch Dobsonian Telescope
- 60 mm Bushnell Voyager
- 12 inch Orion SkyQuest IntelliScope
- Meade ETX125 Cassegrain Telescope with AutoStar
- 4” Meade Schmidt Cassegrain
- 8” F10 Celestron Schmidt-Cassegrain

Club Library

NPMAS has a collection of astronomy related books and videos covering a wide variety of topics including observing, the solar system, stars and more. Items can be checked out at monthly club meetings or by contacting Tom Cashman at 920-432-2261

NPMAS OBSERVING SITES

Parmentier Observatory
Parmentier Observatory is home to a 30 inch classical Cassegrain telescope, the largest private observatory in Wisconsin. Members may view through the 30 inch or setup their own telescopes in the adjoining field.
Address:
N4175 Doell Road
Luxemburg, WI 54217
Observatory Representative
Mike Monfils – 920-435-7350

NPMAS BOARD

Officers
President
Gerry Kocken
president@npmas.org
Vice President
Scott Dickson
vicepresident@npmas.org
Treasurer
Tom Cashman
treasurer@npmas.org
Secretary
Mark Wells
secretary@npmas.org

Board Members
Jerry Schaefer
Trevor Dammon
Dick Francini

Staff/Committee Chairs
ALCOR Representative...........Rodrigo Roesch
Awards Coordinator .............
Camp U-Nah-Li-Ya ..................Wayne Kuhn
Einstein Science Expo ............Gerry Kocken
Historian ............................George McCourt
Holiday Party ......................Dick Francini
Librarian ............................Tom Cashman
Membership ........................Tom Cashman
Messier Marathon ..............Bill Hennessy
Observatory Rep ..................Mike Monfils
Observatory Key Holders ........Dick Francini
.......................................Wayne Kuhn
.......................................Brian Chopp
.......................................Gerry Kocken
.......................................Mike Monfils
.......................................John Lyon
.......................................Scott Dickson
Properties ............................David Wagner
Public Outreach ....................Robert Nelezen
Website ..............................Scott Dickson
Newsletter Editor .................John Lyon

The Eyepiece
Editor : John Lyon
Circulation : 70

Submissions can be emailed to LYON@UWGB.EDU or mailed to N6618 Hillside Rd. Casco, WI 54205
The Eyepiece is a monthly publication of the Neville Public Museum Astronomical Society. Material in the Eyepiece may be reprinted for nonprofit use with proper credit and consent from both the editor and writer. The editor reserves the right to accept or refuse, edit for content, etc., any article or image submitted for publication.