

Gemini

a publication of the Minnesota Astronomical Society



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LLCC Dark Sky Observing Schedule Announced

By Greg Haubrich

On behalf of the MAS' Dark Sky Site Committee, I'm happy to announce that the MAS has a new Dark Sky Site! Thanks to the efforts of the MAS' Dark Sky Site Committee, the MAS Board, and the LLCC; the Long Lake Conservation Center (LLCC) between Aitkin and McGregor, MN has signed a Memorandum of Agreement with the MAS to provide for 17 weekends (Friday and Saturday nights: 34 total nights) during the two darkest weekends per month during March through November 2007. (The LLCC Star Parties are limited to MAS members only and their immediate family members per legal agreement with the LLCC).

These are some of the Darkest Skies available in MN. The Zodiacal Light was clearly visible in the east one night and faintly visible another. It rivals the skies I've seen at the Okie-Tex Star Party and the Texas Star Party. I'm thrilled at this opportunity for the MAS!

Overnight accommodations at LLCC are provided at no cost to MAS Members attending scheduled MAS Star Parties (including bunks, flush toilets, and showers).

Observing at the LLCC will be limited to scheduled MAS Star Parties at LLCC which are called "ON". Check out: <http://www.llcc.org/> for more information on the LLCC.

Please check out the MAS dark sky site information page for much more detail on LLCC at: <http://www.mnastro.org/facilities/llcc.htm>.

To attend a MAS Star Party at LLCC, you must be a MAS Member and also have a signed LLCC Parking Permit. The LLCC Parking permits and "LLCC Rules of Use" will be available at the February and March MAS Monthly Meetings. If you have further questions about the LLCC parking permits, please contact Greg Haubrich at greghaubrich@comcast.net

The MAS Star Parties at LLCC will begin next spring, on March 9 and 10, 2007. Please see the 2007 schedule for MAS Star Parties at LLCC listed in Gemini's 2007 MAS Star Party Schedule. Note: due to these being "members only" star parties, they are listed in Gemini and on the MAS event calendar, but not on the MAS' Star Party webpage.

Clear, Dark, DARK, Skies!

Greg Haubrich

MAS Dark Sky Site Committee Chairman

P.S. The MAS' "Anonymous Benefactor" has come through for the MAS once again: A donation of a new 30" Obsession Dobsonian Telescope which we will be sure to use at the LLCC! Stay tuned....

February Business Meeting

The upcoming general meeting of the MAS will be especially important as the 2007 budget will be presented and approved. Be sure to attend this meeting.

The meeting will be held on Feb 1, 2007. Stay tuned to the email and forum information sites for details. ■

New Member Orientation

By Michael Kibat

Members of the MAS are invited to attend a 'new member orientation' on Saturday, February 10th from 9:30 - 11:30 am. The orientation will be held in room 329 of the Eisenhower Community Center in Hopkins.

The full range of MAS benefits and activities will be discussed — special interest groups, observing facilities, loaner equipment, etc. This is a great way to learn about all the MAS has to offer and to get specific questions answered.

Preregistration is not required, but appreciated to facilitate planning. To express your interest, contact Mike Kibat (kibatme@visi.com). Coffee and pastries will be provided. Both 'new' and 'old' members welcome! ■

30 Years Ago in Gemini

From the archives of Bob Schmidt

A fall banquet, to be held annually in the Members' Lounge of the Science Museum, was suggested.

TAKE NOTE!!!TAKE NOTE!!!TAKE NOTE!!!TAKE NOTE:

The month when your TCAC dues are due was printed in the lower left corner of the mailing label on your January Gemini. It was printed again in the same location on this Gemini, and shall henceforth and forever more be printed each edition in the same location (or until we do otherwise) as a reminder to pay your dues promptly. Dues are \$16 for regular members, \$5 for students.

By special arrangement of the club, a small cloud will hover over the telescope of any member who's dues remain unpaid. ■

ATM SIG Update

By Ben Mullin

Looking forward to the ATM SIG in 2007 you will have to be looking back for the first meeting. Between the time this article was written and the time this issue is delivered to you the ATM SIG will have held

its first meeting of the year. Once again the meeting will be/was held at Bill Volna's shop. This time MAS member and machinist Dan Maciej showed the German equatorial mount he designed, machined, and assembled.

In 2007 I would like to continue holding SIG meetings approximately every two months (look for the next meeting in March). They tend to fall on weeks that don't include the general monthly meeting (first

Thursday) or the board meeting (third Tuesday). To find out about upcoming meetings keep an eye on the ATM SIG area of the web forums, the general MAS email list, and the ATM SIG email list. I will also try

to get the meetings on the MAS homepage and web calendar this year.

We have had several excellent meetings in the past year including a hands on pitch lap pouring demo by Carl Anderson, an interferometry demonstration by Dale Eason, a video camera equipped focault tester

from Mark Austin, a homebuilt mount from Dan Maciej, and an at least moderately successful mirror grinding workshop. I hope to continue the past success in having interesting meetings, but I need your help.

If you have a project or knowledge that you think you could share with the group I would love to hear from you. It doesn't have to be a full two hour lecture, it could be as simple as a five minute show and

tell session. It also doesn't have to be optics related. I am open to any DIY astro project you have in mind.

If there is interest in holding another mirror grinding workshop I would like to hear that as well. I think the one last year was moderately successful though we did not produce a single finished mirror by the end of the two days. If there is sufficient interest I would be willing to coordinate another such event, though this time I think it makes more sense to have more time and spread it out over more than two consecutive Saturdays. So if you think you might like to grind your own mirror, or perhaps you attended the last workshop and your mirror still isn't finished just like mine, let me know and perhaps we'll try again. Ben Mullin ATM SIG Coordinator ■

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Send all MAS membership dues, change of address cards, subscriptions and renewals to the current MAS Membership Coordinator. See "How to pay your dues" on the last page of this newsletter.

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Stone Soup Astronomy

by Ben Huset, MAS President

MAS is now open under new 'Old Management'.

After some time off for good behavior and term limits I'm back.

I'm pleased that while I was gone the Onan and Cherry Grove sites have grown and we now have a 4th viewing site. However I was disappointed in the 5% voter turnout in the last MAS election.

I remember hearing as a kid the story of 'Stone Soup'. A tale of how a band of travelers were able to get themselves fed as well as all the local people by getting EVERYBODY to contribute just a little bit of food to help add to the Stone Soup.

Well I see my running MAS in the same way.

I see myself as the stone and the MAS Board as the big cooking pan. What else we eat will depend on what the rest of the members contribute.

MAS is what it is because of its members' volunteer efforts. From the basic paying of dues, the more generous patron dues, the various donated materials and the most precious contribution of their

time and knowledge.

Running this 400 member group and all of its facets is an honor. I know that no single member will be TOTALLY interested in ALL of the MAS activities but with the general meetings, star parties, web site, newsletter, outreach and Special Interest Groups (SIGs) activities there should be something to interest EVERYBODY. If there isn't something that interests you, why don't you start another SIG that deals with your area of interest? Personally I hope to see a return of the radio astronomy SIG.

I encourage everybody to subscribe to the MAS e-mail list and scan the MAS web site forums to stay current with club activities.

I also encourage everybody to get a friend to join too. The more the merrier. Maybe get them a gift membership for their birthday??

With all the space probes and earth based telescopes returning more and more info about the cosmos combined with the falling prices and increased abilities on amateur telescope hardware we do live in interesting times.

There are challenges ahead but I'm sure that with small contributions from all of us we will dine well this year. Soups on! 🍲

9th Annual Messier Marathon and Virgo Venture Spring Astronomy Events

By Bill Kocken, Observing Chairperson

Messier Marathon

It's that time of the year again. The Seasonal Affective Disorder is kicking in, the snow is turning brown and ugly and if it's not cloudy at night it's so cold that observing is only for those with remote control observatories of the very hardy. But the days are already getting longer, the snow will melt and the sun will be moving from Aquarius and into Pisces. Trust me, this has nothing to do with astrology, but everything to do with the best time of the year to see almost all of the Messier Objects in a single night. Since the sun will be in the region of the sky with almost no Messier objects, that means we'll have the best chance of the year to see up to 109 of the 110 most beautiful deep sky objects in the universe, the Messier Objects!

Details:

What/Where: 9th annual Messier Marathon at Cherry Grove, 20 miles south of Canon Falls

When: March 16, 2007, with March 17 as the backup. Call the MAS message line 952-467-2426 or check the MAS bulletin board for go/no go announcements.

Who: You. The event is open to all observers of any skill or stamina and any type of equipment. Bring just your naked eyes or binoculars or any telescope you wish to use. All are welcome!

Why: It is a wonderful chance to get together, to compete a little if you wish, and jump start the 2007 observing season. We will also award prizes, courtesy of Dan Fish at Radio City, in Mounds View.

Messier Marathon Hints:

A few days before, check out your scope to make sure it will be ready for the big night. You may want to check your dew (or frost) control strategy and make sure your batteries are fresh.

Gather your finder charts. This is a must for a successful marathon. There are many great resources, but I highly recommend The Year_Round Messier Marathon Guide, by H.C. Pennington. We will provide logging sheets from SEDs

(www.seds.org) for you to record your finds. These sheets list the Messier objects in a suggested viewing order.

Dress warmly, very warmly. This time of the year it can be downright cold. Warm boots, hats, gloves and layers of everything else are the key. I also recommend that you pick up a few chemical hand and foot warmers. If the weather is dangerously cold, we will postpone the event.

In the afternoon of the big night, take a nap, but don't blame us if your boss gets upset.

On the big night, try to arrive early. The sun sets at 6:20 on March 16, and I suggest you try to arrive 30 minutes before that. This will give you time to sign in, set up your equipment, move your vehicle out of everyone's way and socialize a bit as we nervously wait for it to get dark enough to begin.

When your observing has ended, please turn in your log sheet. Pack up your gear and go home or take a nap before hitting the road. If you've pulled a really late night, try not to plan too much for the next day.

Have fun! I saved the most important hint for last. This is the year's best opportunity to see as many of the Messiers as possible in one night. But the key thing is to get out there and re-introduce yourself to the wonderful night sky and your fellow astronomers.

Virgo Venture

If you're like me, the Virgo cluster of galaxies can be the biggest challenge during the Messier Marathon. During the Marathon, the Virgos come after midnight when you may be getting a bit cold and tired. Maybe you'll get through them all or maybe not. Well don't worry because we have a follow-up event in April that will give you an excellent chance to observe the Virgo Galaxies in a more leisurely setting.

On April 13, Cherry Grove will be the site of the MAS Virgo Venture. We will provide the ever popular Virgo Bingo competition, an excellent Virgo finder chart, (developed by Greg Haubrich) and the best group of amateur astronomers around to help us all through the evening. We also expect to have the 24" Starmaster big aperture dob up and running for those fantastic views of springtime's best galaxies. Plan to join us! 🍲

Telescope, Larson

Age unknown. On Dec 9, 2006, of Norwood, MN, formerly of Duluth, MN due to complications of new equipment acquisitions. Survived by two Celestron C14's and a Meade LX200GPS. Memorial services Saturday, Dec 9, 2006 at Onan Observatory.

Sired by Al Ominsky and Andrew Frazer who arranged the purchase. Named after Keith Larson who obtained the financing for the new baby. Keith and son, Dr William Larson transported the new baby from Duluth to the Twin Cities in a van. Further details can be found in earlier issues of the Gemini.

Larson will enjoy an afterlife at Staring Lake Outdoor Center in Eden Prairie, MN. Those who wish may visit possibly as early as this spring. Reference <http://www.edenprairie.org/vCurrent/live/article.asp?r=1580> for a description and location. 📌

MAS Board Meeting Summary, November and December 2006 Our thanks to retiring Board Secretary, Steve Emert. Well done, Steve!

Progress toward creating a paved handicap access path to Onan Observatory from the parking area continues, albeit slowly. During the November board meeting, a consultant proposal to the Carver County Park Board was reviewed. A motion was passed to request clarifying information and to ensure the MAS is included in all project decisions and deliverables. With the motion, the MAS made the commitment to spend \$1000 for the consultant study to determine how (and if) the MAS may go forward with the plans for construction of the paved handicap access path.

With the donation from our Anonymous Benefactor of the 16" Meade SCT for use at Onan Observatory, the Larson telescope has been decommissioned and removed from Onan and has been donated to the City of Eden Prairie for public education and outreach use at their Staring Lake Outdoor Center. The Larson telescope will be placed in its new home at Staring Lake this spring.

The Memorandum of Agreement between the MAS and Long Lake Conservation Center has been signed by both parties, paving the way for MAS star parties at our new, "darkest sky site" beginning this spring the weekend of March 9th and 10th. By the time you read this, the schedule will have been established and published both in Gemini and on the MAS web site.

The MAS has learned that Metcalf will soon be changing ownership. The Science Museum of Minnesota is transferring ownership of Metcalf to Belwin. Per Belwin's web page: "Belwin is a non-profit organization, whose programs are based on the care and use of property it owns in Washington County, Minnesota. Belwin's primary mission is to preserve, manage and protect the property it owns so it will remain as open space that benefits the community through selective programs of environmental education, environ-



Larson being disassembled

mental research or recreation." The MAS board has initiated contact with Belwin, describing MAS use of the Metcalf observing field and requesting continued access to the site. Preliminary indications are that the MAS will be able to continue using Metcalf as an observing site. A "Memorandum of Agreement" will soon be drafted, to be voted upon by Belwin's board in the spring.

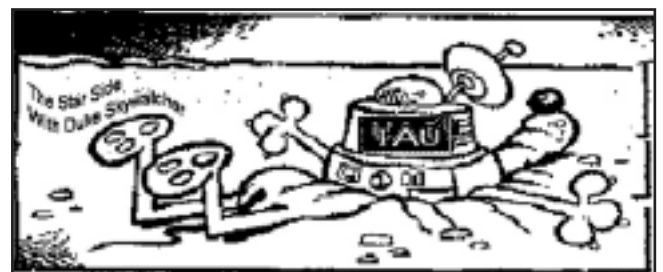
A 6" Newtonian OTA has been donated to the MAS. During discussions, it appeared the best use for this OTA would be to mate it with an equatorial mount and make it available to members as a loaner scope (the two other loaner scopes are Dobs). Subsequently, a CG-5 type EQ mount with dual drive motors was purchased for use with the scope. The scope is now available for loan to MAS members. As with all loaner scope requests contact our Vice President, Ben Mullin, if you would like to borrow this scope.

Earlier this year, the board had begun planning a winter MAS "social event", perhaps a dinner with a speaker for entertainment. After several unsuccessful attempts over the course of several months to locate people willing to participate on a task force to plan the event, the idea was dropped during the December meeting.

MAS membership trends were reviewed briefly in both the November and December board meetings. It appears that over the last two years, MAS membership has declined by approximately 60 members, and is holding at just under 400. Means to improve involvement by new members and means to improve retention of existing members were discussed. If you have any good ideas to contribute, please contact any board member either in person, by phone, or via email.

In the December meeting, duties were transferred to the incoming board members - Ben Huset (President), Bill Kocken (Secretary) and Ron Bubany (Member at Large). In addition to the normal transfer of responsibilities, Bob Benson volunteered to be the MAS' Astronomical League Coordinator. Greg Haubrich will continue to review and present the Astronomical League Observing Awards. 📌

Duke Skywatcher



BSIG Update

By Bill Bynum

Between attendees and presenters, 10 of us braved the wilds of Brooklyn Park for the December BSIG meeting. Some new faces as well as some familiar ones were there to hear Jo n Hickman give a great presentation on astrogadgets from planispheres to the latest whiz-bang SkyScout from Celestron. Jo n was even kind enough to donate some planispheres and a Lunar and Planetary imager as a door prize which Tom Youngblood won. Tom has promised to show us some Hubble-like pictures of the moon and planets by next meeting (and is just finding that out as he reads this!).

We handed out the BSIG observing list and did a short bit on logging entries, with handouts on what questions you should be asking yourself for each class of object you are observing. The list is below and should be observable with modest aperture telescopes under suburban skies, though two of the objects probably will require at least moderately dark skies to see. Unfortunately the long-winded presenter went on and on about the list and handouts and time ran out before we got to the winter constellations. The after-meeting observing session consisted entirely of the star Capella, which was the only thing that could penetrate the cloud cover. It was kind of a short observing session.

Next meeting will Wednesday, February 21st from 7:00-9:00 PM. Since it's February, this one will also be an indoor meeting. The location is the Caribou Coffee at 3354 Rice Street in Little Canada MN, which is just south of 694. Their phone number is 651-481-7137, and WIFI will be available. We will be talking about Observing Tips, Tricks and Tools. We will also have an informal Q&A session and hopefully some time to talk about things learned and troubles experienced working on the BSIG observing list. If you are going to the meeting and have logged some of the list objects, please bring your logs to share! Your BSIG coordinators are busily working on the next observing list for Spring objects.

Thanks again to Mr. Hickman for the kind donation of his time, knowledge and stuff!

BSIG Mid-Winter Observing list

Seen	Catalog	Name	Object Type	Constellation
<input type="checkbox"/>	NGC 7789		Open Cluster	Cassiopeia
<input type="checkbox"/>	NGC 457	ET Cluster	Open Cluster	Cassiopeia
<input type="checkbox"/>	NGC 884 & 869	Double Cluster	Open Cluster (s)	Perseus
<input type="checkbox"/>	M15		Globular Cluster	Pegasus
<input type="checkbox"/>	M31/32/110	Andromeda Galaxy	Galaxies	Andromeda
<input type="checkbox"/>	Almach	Gamma Andromedae	Double Star	Andromeda
<input type="checkbox"/>	NGC 7662	Blue Snowball	Planetary Nebula	Andromeda
<input type="checkbox"/>	M36		Open Cluster	Auriga
<input type="checkbox"/>	M37		Open Cluster	Auriga
<input type="checkbox"/>	M38		Open Cluster	Auriga
<input type="checkbox"/>	M45	Pleiades	Open Cluster	Taurus
<input type="checkbox"/>	M1	Crab Nebula	Supernova Remnant	Taurus
<input type="checkbox"/>	M42	Great Orion Nebula	Emission Nebula	Orion
<input type="checkbox"/>	Rigel	Beta Orionis	Double Star	Orion
<input type="checkbox"/>	M50		Open Cluster	Canis Major
<input type="checkbox"/>	M46 & M47		Open Cluster (s)	Canis Major
<input type="checkbox"/>	M35	Shoe Buckle Cluster	Open Cluster	Gemini
<input type="checkbox"/>	Castor	Alpha Geminorum	Double Star	Gemini
<input type="checkbox"/>	NGC 2392	Eskimo Nebula	Planetary Nebula	Gemini
<input type="checkbox"/>	(Lunar)	Clavius	Crater	(Moon)

And one last thing - Beginners – if you have internet access please stop by the Beginner's SIG forum on the MNAstro website and introduce yourself. Just go to <http://www.mnastro.org/forums/index.php> and click on Beginners SIG to start the conversation. ■

Onan Public Night Schedule

Public nights are scheduled for Saturdays only. Astronomy Days are Friday evening and Saturday. Public Nights and Astronomy Days are held whether it is clear or cloudy. For Directions to the Onan Observatory, at Baylor Regional Park, please see the Star Party Schedule

Date	Starts	Ends	Comments
3/10/07	7PM	10PM	Public Night at Onan
3/24/07	7PM	10PM	Public Night at Onan
4/14/07	7PM	10PM	Public Night at Onan
4/20/07	7PM	11PM	Astronomy Day at Onan
4/21/07	Noon	11PM	Astronomy Day at Onan
4/28/07	7PM	10PM	Public Night at Onan
5/12/07	7PM	10PM	Public Night at Onan
5/26/07	7PM	10PM	Public Night at Onan
6/9/07	7PM	10PM	Public Night at Onan
6/23/07	7PM	10PM	Public Night at Onan
7/14/07	7PM	10PM	Public Night at Onan
7/28/07	7PM	10PM	Public Night at Onan
8/11/07	7PM	10PM	Public Night at Onan
8/25/07	7PM	10PM	Public Night at Onan
9/8/07	7PM	10PM	Public Night at Onan
9/22/07	7PM	10PM	Public Night at Onan
10/13/07	7PM	10PM	Public Night at Onan
10/27/07	7PM	10PM	Public Night at Onan
11/10/07	7PM	10PM	Public Night at Onan
11/24/07	7PM	10PM	Public Night at Onan

Directions to the Star Party Locations

For maps and further details about the sites, please go to our website at www.mnastro.org/facilities.

Baylor Regional Park

To reach Baylor Regional Park, head west on Minnesota Highway 5, through Chanhassen and Waconia, to the town of Norwood-Young America. Turn right onto Carver County Road 33 and continue approximately two miles north. Baylor Regional Park is on the right side of the road, marked with a prominent sign. When entering the park, stay to the right and follow the road approx 1/4 mile.

When visiting the Baylor Regional Park, MAS members are requested NOT TO PARK OR DRIVE on the grass. There is a parking lot just past the observatory.

For an alternate route from the southern suburbs, take U.S. Highway 212 west to Norwood-Young America. Turn right at the second traffic light onto Carver County Road 33. Continue two miles north to the park entrance.

For an alternate route from the northern suburbs, take Minnesota Highway 7 west approximately 30 miles from I-494. Turn left to go south on Carver County Road 33. Approximately 8 miles south, Baylor Regional Park will be on your left after a short series of curves.

Cherry Grove Observatory

Cherry Grove is located south of the Twin Cities, in Goodhue County, about 20 miles south of Cannon Falls. To reach Cherry Grove, head south on Highway 52. On 52 about six miles south of Cannon Falls, and just past the Edgewood Inn, is a large green highway sign for Goodhue County Rd. 1 "WEST". Turn right, and follow County 1 straight south for about sixteen miles until you arrive at a "T" intersection with County A. The observatory is immediately at your right, nestled in the shoulder of the "T". Parking is permitted on the site or along the road, preferably on County A.

Metcalf Observing Field

To reach Metcalf, head east from St. Paul along Hwy. 94. About four miles east of the I-694 / I-494 crossing is Minnesota State Highway 95, also known as Manning Avenue (exit 253). Turn south (right turn) and then almost immediately turn left onto the frontage road (Hudson Road S). Continue east on the frontage road for about one and one-half miles. Turn right onto Indian Trail, checking the odometer as you turn. Follow Indian Trail south for just about one and one-tenth miles, where you'll see an unmarked and unlocked chain-link gate on the right, opening onto a dirt driveway with a slight up-slope. This is the the entrance to Metcalf.

Long Lake Conservation Center from Western Twin Cities

Take I-94 west to Rogers/MN 101. Go north/right on MN 101 through Elk River, where MN 101 becomes US 169. Continue north on US 169 approximately 90 miles to Aitkin. At stoplight in Aitkin, turn east/right onto US 169/MN 210 and go out of town eight miles. Then turn east/right, following MN 210 toward Duluth. Proceed seven miles. A large green highway sign marks the turn off 210 to Long Lake Conservation Center. Turn north/left on County Rd. 5. After three miles, turn east/right on gravel County Rd. 88. It is approximately one mile to the LLCC gate.

Long Lake Conservation Center from Eastern Twin Cities

Go north on I-35 to Finlayson/Exit 195. Turn west/left and go one mile to County Rd. 61 and MN 18. At stop sign turn right/north and go two miles. Follow MN 18 west/left and continue 19 miles to MN 65. Turn north/right on MN 65 and proceed 30 miles to McGregor. Intersect with MN 210 and follow 210 west/left (through McGregor) for seven miles. A large green highway sign marks the turn off MN 210 to Long Lake Conservation Center. Turn north/right on County Rd. 5. After three miles, turn east/right on gravel County Rd. 88. It is approximately one mile to the LLCC gate.

Minnesota Astronomical Society 2007 Star Party Schedule

Date*	Location	Special Event	Long Lake Conservation Center Dates**	Astronomical Twilight Begins	Moon Rise	Moon Set	% Illuminated
9-Feb	Metcalf			7:12 PM	12:28 AM	10:05 AM	61%
16-Feb	Cherry Grove			7:21 PM	6:56 AM	4:35 PM	3%
23-Feb	Onan			7:30 PM	9:45 AM	12:46 AM	38%
9-Mar	Onan	Inaugural LLCC event**	09-Mar and 10-Mar	7:49 PM		8:33 AM	77%
16-Mar	Cherry Grove	Messier Marathon at CG	16-Mar and 17-Mar	8:58 PM	6:21 AM	4:26 PM	11%
23-Mar	Metcalf			9:09 PM	9:21 AM	1:00 AM	23%
6-Apr	Onan			9:31 PM	12:26 AM	8:04 AM	89%
13-Apr	Cherry Grove	Virgo Venture at CG	13-Apr and 14-Apr	9:42 PM	4:45 AM	3:19 PM	24%
20-Apr	Metcalf		20-Apr and 21-Apr	9:55 PM	7:59 AM	12:55 AM	19%
4-May	Metcalf			10:22 PM	11:22 PM	6:41 AM	97%
11-May	Cherry Grove		11-May and 12-May	10:36 PM	3:10 AM	2:17 PM	38%
18-May	Onan			10:50 PM	6:39 AM	11:38 PM	3%
8-Jun	Onan		08-Jun and 09-Jun	11:27 PM	1:34 AM	1:21 PM	53%
15-Jun	Cherry Grove		15-Jun and 16-Jun	11:34 PM	5:22 AM	10:18 PM	0%
22-Jun	Metcalf			11:37 PM	1:33 PM	1:00 AM	47%
6-Jul	Metcalf			11:29 PM	12:19 AM	12:27 PM	66%
13-Jul	Cherry Grove		13-Jul and 14-Jul	11:20 PM	4:11 AM	8:56 PM	2%
20-Jul	Onan		20-Jul and 21-Jul	11:08 PM	12:24 PM	11:35 PM	31%
10-Aug	Cherry Grove		10-Aug and 11-Aug	10:25 PM	3:08 AM	7:33 PM	8%
17-Aug	Onan		17-Aug and 18-Aug	10:10 PM	11:14 AM	9:57 PM	17%
24-Aug	Metcalf			9:54 PM	6:18 PM	1:33 AM	80%
7-Sep	Onan		07-Sep and 08-Sep	9:22 PM	2:10 AM	6:08 PM	18%
14-Sep	Cherry Grove	Mini Messier Marathon at CG	14-Sep and 15-Sep	9:07 PM	10:07 AM	8:21 PM	7%
21-Sep	Metcalf			8:52 PM	4:50 PM	1:00 AM	65%
5-Oct	Onan		05-Oct and 06-Oct	8:24 PM	1:14 AM	4:39 PM	31%
12-Oct	Cherry Grove		12-Oct and 13-Oct	8:11 PM	9:01 AM	6:48 PM	1%
19-Oct	Metcalf			8:00 PM	3:19 PM	12:28 AM	49%
2-Nov	Onan		02-Nov and 03-Nov	7:40 PM	1:00 AM	3:06 PM	46%
9-Nov	Cherry Grove		09-Nov and 10-Nov	6:32 PM	6:58 AM	4:17 PM	1%
16-Nov	Metcalf			6:26 PM	12:48 PM	10:28 PM	33%
30-Nov	Metcalf			6:18 PM	11:24 PM	12:30 PM	63%
7-Dec	Cherry Grove			6:18 PM	5:55 AM	2:48 PM	6%
14-Dec	Onan			6:18 PM	11:16 AM	9:31 PM	19%

* The Onan, Cherry Grove and Metcalf Star parties take place on the date listed in the schedule above, which is always a Friday. If the event is clouded out, the following night is used as a backup.

** LLCC events are for members only. Vehicle ID card is required - contact Board of Directors or Dark Sky Committee members for a pass.

Due to the relative distance and driving time to LLCC, in 2007 the MAS will include both Onan or Cherry Grove and LLCC parties on LLCC weekends in order to accommodate those who can take the time to travel to very dark skies as well as those who wish to observe closer to home. LLCC weekends will include both Friday and Saturday night.

This schedule is subject to change. You can also check the MAS online calendar at www.mnastro.org/events for a complete schedule of all MAS star parties, Onan Public Observing nights, monthly meetings and other events.

In 2007, daylight saving time begins on March 11 and ends on Nov 4. The times listed above are adjusted for DST.

Onan Public Nights are shown on a separate schedule.



MN ASTRONOMICAL SOCIETY

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How to pay your dues

Your MAS membership expires at the beginning of the month shown on your Gemini mailing label. Send your payments to the MAS Membership Coordinator at: Minnesota Astronomical Society, Attn: Membership Coordinator, P.O. Box 14931, Minneapolis, MN 55414. Make checks payable to MAS or you can pay by PayPal on the MAS web page. The current annual membership dues and subscription fees are: \$24 for regular memberships (\$56.95 including a Sky and Telescope subscription discounted to the annual member subscription rate of \$32.95), \$60 for patron memberships (\$92.95 including Sky and Telescope subscription) and \$12 for student memberships (\$44.95 including Sky and Telescope subscription).

To Renew Your Sky and Telescope Subscription

If you get Sky and Telescope at the club's discounted rate, you must renew your subscription through the club. When you get a renewal notice from S&T, send the notice along with a check for the amount indicated on the notice (currently \$32.95) to the MAS Membership Coordinator at: Minnesota Astronomical Society, Attn: Membership Coordinator, P.O. Box 14931, Minneapolis, MN 55414. Make your check payable to MAS. If desired, you may renew your MAS membership at the same time, and write one check to cover both payments.

To subscribe to the MAS e-mail list visit:
<http://lists.mnastro.org/mnastro/listinfo/>
and follow the subscription instructions.

There is a general list (MAS) as well as special interest group (SIG) lists. Archives of the lists are also available by visiting the listinfo page for a specific list.

The MAS list has about 40% of the membership on it.