

Gemini

a publication of the Minnesota Astronomical Society



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Upcoming Events

April

- 1 Star Party, Cherry Grove, Messier Marathon (alternate date)
- 2 Daylight Savings Time begins, lose one hour of observing at 2:00 AM
- 4 MAS Meeting, Science Museum of Minnesota
- 7 Star Party, Metcalf
- 8 Astronomy Day
Star Party, Metcalf (alternate)
- 21 Lyrid Meteor Shower
- 28 Onan Observatory Night, Star Party at Baylor/Onan
- 29 Observatory Night, Star Party, Baylor (alternate)

May

- 2 MAS Meeting, Science Museum of Minnesota.
- 5 Star Party, Cherry Grove
Eta Aquarid Meteor Shower
- 5-6 North Central Region of Astronomical League Meeting, LaCrosse WI.
- 12 Star Party, Metcalf
- 13 Onan Observatory Night, Baylor Regional Park
- 26 Star Party, Onan/Baylor

A Listing of Astronomical Resources:

Minneapolis Planetarium: 612-630-6150

Eisenhower Community Center Observatory:

Open for viewing for about 10 days each month. Call for reservations: **612-988-4077**. Night sky tours for the general public with a 12-inch reflector on the rooftop in Hopkins.

University of Minnesota:

Observing from the telescope on top of the Physics building, East Bank. Open to the general public. Fridays during the school year: **612-626-0034** for more info.

MAS Star Parties:

The Minnesota Astronomical Society hosts star parties, open to the general public. Come on out, get a look through a telescope, enjoy the view. Call **651-649-4861** for more info or log-on to the web at <http://www.mnastrd.org>.

Meeting Minutes

Robert Schmidt, MAS Secretary

Minutes of the General Meeting of the Minnesota Astronomical Society, February 1, 2000 in the Auditorium of the Science Museum of Minnesota.

The Annual Business Meeting of the Minnesota Astronomical Society was called to order by Vice President Dave Olmstead at 7:32 PM.

Society Treasurer Chuck Jorgensen distributed copies of the proposed budget and moved that it be adopted, the motion was seconded and following discussion was accepted as presented by voice vote of the members present.

There being no other business, the business meeting was closed.

Following the business meeting President Ben Huset showed pictures of the new Onan Observatory doors that had just recently been installed.

William Glass then talked about and showed pictures of his trip to Turkey to observe the total eclipse of the Sun. Following this, Bill also showed pictures of his trip to Mount Graham Observatory. Bill then described some of the difficulties and restrictions the builders had had getting permission to construct the observatory on Mount Graham.

Lauren Nelson then finished the evening by showing videos of the recent total lunar eclipse which he had taken while on vacation in Florida. Lauren also showed a video of the launch of a rocket from Kennedy Space Center.

Robert H. Schmidt, Secretary

Minutes of the meeting of the Board of the Minnesota Astronomical Society held at the home of Vice President Dave Olmstead, Tuesday, February 15, 2000.

Persons in attendance: John Treadwell, John Connery, Chuck Jorgensen, Dave Runkle, Dave Olmstead, Ben Huset, Tim Harincar, Bob Schmidt.

Meeting convened at 7:35 PM.

Gemini

Editor

Thor Olson

Circulation

John Treadwell

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MAS Gemini

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Send all MAS membership dues, change of address cards, subscriptions, and renewals to the current MAS treasurer.

Subscriptions alone cost \$4.50 annually for members of astronomy clubs or \$9.00 for other persons. Materials for Gemini are due on the 10th of the month

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Meeting Minutes, cont'd

Bob Schmidt, MAS Secretary

Minutes of the January Board meeting read and approved after being amended to correct the location of the laser collimator.

Treasurer's report: Checking account has \$6389. MAS e-mail provider has billed for the next year's services. Moved by Bob Schmidt to accept the report, second by John Treadwell. Motion carried.

Gemini report noted that the next issue would be published about March 10, 2000. Get your news in to Thor Olson.

Dave Runkle gave The Web Master report.

Ben Huset reported on future meetings, Jim Fox will talk on variable stars on March seventh and that April is still open.

Outreach items discussed: Hobbs Observatory in Wisconsin, TCRSF

(science fair), Bailey Elementary School on April 4th, Astronomy Day on April 8th, Star Parties at Radio City, Dave Runkle's outreach activities, MAS Star Party Schedule, and MARSCON on May 11th to the 14th at Radisson South.

Onan Report: Dave Runkle reported on the Larson Scope and his plans if the Larson scope is not ready for Astronomy Day or public events at the Onan site. Dave Olmstead reported on progress on the Onan Observatory Building.

For the record: Rod Luhman of Vapor Coat 1474 120 Av. NW, Coon Rapids, 612-754-5726.

Cherry Grove report: John Connery and Bob Schmidt plan an inspection tour February 26, 2000. The possibility of concrete pads for scope setup was discussed.

Metcalf: No report.

Warling scope report: Tentative plan to move the scope and trailer to Michael Kauper's garage on Saturday, February 19th and the mirrors to Vapor Coat on Thursday, February 24th reported by Bob Schmidt.

Tim Harincar gave a report on billboard plans for the city of St. Paul, MN and wondered if this would be a chance to press for more efficient lighting and energy saving plans as suggested by the Dark Sky Association. This led to a discussion on how to work for Dark Skies without jeopardizing the tax-exempt status of Minnesota Astronomical Society. A statement was made that if we lobby a political entity, city, county, state etc., then Minnesota Astronomical Society could lose tax-exempt status and thus lose donors who then lose tax deduction for donations. The idea needs more study before MAS does anything else.

Meeting minutes, continued page 4

Patron Members

MAS offers a patron membership to anyone who wants to help support our activities by paying a slightly higher annual membership fee (\$40 instead of the regular \$16). We would like to thank the following patron members who helped support MAS during 1999:

James A. Bowditch

Chris Cowen

Jon A. Geiss

J. Mark Gilbert

William H. Glass

Barry R. Jensen

Denny Johnson

Michael E. Kibat

John R. LeVasseur

Gerald L. McDougal, Jr.

Beverly D. Miller

Rick Richardson

Mark D. Sawyer

Paul Schroeder

Timothy A. Sinks

For many years, the MAS has been building a public observatory at Baylor Regional Park located in Norwood/Young America, Minnesota. Now all the planning, money gathering, hard work and sweat have paid off as the MAS/Onan observatory nears completion.

With the new observatory nearly ready to support public events, the time has come to layout a staffing solution and generate public programs.

Public Event Nights at the MAS/Onan Observatory will be held once per month from April through November. The MAS will hold two different type of public viewing programs.

In the months of April, June, August and October; *Public Event Nights* have been scheduled in conjunction with a normally scheduled MAS Star Party for that month. On these nights, the public is invited to attend a formal program at the observatory and view through the *Group 128* telescope located there. If any of the public members who attended the formal program wish to learn more about amateur astronomy, they will be invited to visit the adjacent viewing field setup next to the observatory. Anyone interested in becoming an amateur astronomer can see a range of personal telescopes and ask questions. On these combined Public/Star Party event nights, the observatory will follow the normal star party schedule of holding the event on the Friday evening. If the weather is bad on Friday night, we try again on Saturday night.

Events scheduled in the months of

May, July, September and November will sport *Public Event Nights* held on nights **not** normally scheduled for an MAS Star party at the Baylor location. In addition, *Public Event Nights* in these months will be held only on Saturday evenings. This is done to allow MAS members to hold Star Party Nights at Baylor without the general public in attendance at the observatory. MAS members will have private use of the facilities of the MAS/Onan observatory.

Public Event Nights are only held when the skies are clear enough to see something! Public nights will start at 7:00pm with a program on the basics of astronomy, a little star history and some Q&As. Once it gets dark enough, we move to the telescopes and start viewing some of the many wonders of the universe. Viewing continues until midnight. To start with, we will be limiting the public group sizes to around 40 participants.

The plan for staffing the observatory is based around a team approach. Eight teams will be recruited to man each of the eight *Public Event Nights* throughout the year. The teams will be made up of a Team Leader, a Backup to the Leader, and two to four Support Team Members.

The Team Leader is in charge of the particular night they have signed up for. A minimum of four team members (which includes the Team Leader) are required to run any particular night at the Onan Observatory. Why four? This is the minimum number of people needed to roll the roof off for viewing!

If there are fewer than the minimum number of members signed up one week prior to the scheduled event date, the Team Leader will need to recruit for the balance of team members needed. If, for some reason, a Team Leader can not complete their duties for their assigned night, the Backup assigned for that night will take over. The Team Leader may also call upon their Backup team member to help if needed during the weeks before the event.

The Backup supports the Team Leader as needed and must be ready to assume all functions of the Team Leader should the requirement arise. The Backup in most cases will function as a Team Member.

A Team Member needs only to show up at the assigned time, on the scheduled date of the event they signed up for. Team Members will receive their assignment from the active Team Leader the date of the event or shortly before. Team Members should contact their Team Leader if any questions or cancellations should arise. Although it is not a requirement, if a team member wishes to bring their personal equipment to use at the event, they are encouraged to do so. On dual Event/Star party nights, Team members are requested to setup on the observatory plaza and to work the Public Event until the Public Event ends around midnight.

For any given team, it is important to have one or two team members that will perform the function of presenting a formal program to the public. It is important to note that the presenters can be any or all team members and should NOT be considered the responsibility of only the Team Leader or Backup. The team leader only needs

Onan, continued, page 4

to assure that the team presenters will be on-site the night of the scheduled event.

Below is the list of scheduled public event nights at the MAS/Onan Observatory, along with its team number. Any interested MAS member may sign up for any number of team nights. Please sign up even if you can do only one event night:

- Team 1 - April 28th or 29th (This team is FULL)
- Team 2 - May 13th (This team is FULL)
- Team 3 - June 23rd or 24th (This team is FULL, Team Leader is Mike Kibat)
- Team 4 - July 8th (One team member open, Team Leader is Dave Runkle)
- Team 5 - August 25th or 26th (Three team members open, Team Lead is John Treadwell)
- Team 6 - September 2nd (Three Team members open, Team Leader is Dave Runkle)
- Team 7 - October 20th or 21st (Backup is open, Two team members open, Team Leader is John Connery)
- Team 8 - November 4th (Four Team members open, Team Leader is Dave Runkle)

If you are interested in signing up for any of the eight teams, please let the assigned Team Leader or myself know. You can also find the latest information about the MAS/onan Observatory on the MAS web site at:

<http://www.mnastro.org/onan/index.html>

This is the first time that MAS has had to staff, and operate, a Public Observatory. We will most likely learn many new things along the way. I, for one, look forward to the challenges ahead as well as the opportunity to share my love of astronomy with others. The above guidelines do just that. Guidelines! As we

Minutes, continued from page 2

Dave Runkle presented a plan for staffing the Onan Observatory using a Team concept that would do a good job of that without causing burnout of staff members. Motion was made by Chuck Jorgensen and seconded by Dave Olmstead to accept the report and that Mr. Runkle implement the plan.

The need of an Assistant Outreach ChairPerson was discussed. Suggestions for candidates for the job are requested.

Adjourned at 10:25 PM.

Bob Schmidt, Secretary

The front door for the Onan Observatory, shown in its open, folded-up position. The door was installed in January after extensive planning and fabrication efforts. The mount for the Group 128 telescope is shown in its winterized wrappings in this photo taken on a sunny day in January.



*This article appeared in the West Central Tribune, Sept. 8, 1999.
by Pat Thibault*

SEPT. 8 - If you think you've discovered a comet or an asteroid, who do you call?

Whether you're an amateur astronomer or a professional, Brian G. Marsden is your man. Director of planetary sciences at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Mass., for the last 31 years, Marsden keeps track of the activity of transient objects - exploding stars, comets and asteroids.

Keeping track of transient objects means doing orbital calculations in some cases. Orbital calculations help astronomers know which way and how fast an object is moving.

For example, it is important to keep track of PHAs (potentially hazardous asteroids), which revolve around the sun and potentially could hit the earth some day. If these are the types of objects that destroyed the dinosaurs, we better keep watch to give us a chance, Marsden stated.

Recently, Marsden was embroiled in a controversy involving a PHA. In March of 1998, Marsden calculated an orbit on an asteroid called 1997

XF11, a PHA, which perhaps could come "uncomfortably close" to Earth in 30 years.

Some in the astronomy community and media, however, jumped on this, and rumors of Earth's demise spread like wildfire.

Marsden wrote an article on March 29, 1998, for the Boston Globe describing the chain of events which lead to this debacle. In essence, Marsden attributes much of the problem to some colleagues rushing to judgement and to the quick and easy spread of information by e-mail (electronic mail).

"E-mail is a wonderful tool - often better than the telephone - for getting quick answers to urgent questions," Marsden wrote.

But e-mail isn't just sent between colleagues; it is copied to a dozen other people and so on.

Marsden describes the process like a pyramid scheme, in this case both information and misinformation spread rapidly.

Eventually, Paul Chodas of the Jet Propulsion Laboratory admitted to an error in his calculation and the problem was resolved.

To avoid a future snafu involving an "end of world" scenario, a meeting was held

March 17 in Houston by NASA to discuss potential options.

Some astronomers suggested a committee to "verify the orbit computations," as well as alerting other astronomers to make further observations of the PHA and to search their archives for past photos of such an object.

Marsden, however, feels that "science by consensus" is not the way to go, and "decisions by committees are the food for cover-ups."

Ultimately, Marsden believes that all the right steps were taken to provide accurate information for 1997 XF11.

"It is surely naive to believe one can stop everyone everywhere from talking to his or her favorite reporter."

Marsden doesn't plan to be around in 2028 when XF11 approaches Earth at its closest. But, he hopes that the debacle of 1998 becomes a turning point.

Perhaps, XF11 would signal a genuine breakthrough in significantly improving the quality of math and science in the U.S. And the passage of XF11 in 2028 would be treated with the knowledge and respect it deserves, with Heavensgate-type behavior and its associated ignorance a thing of the past.

Information for the article: Phone interview with Brian G. Marsden; "How the Asteroid Hit: An Astronomer Reveals How a Discovery Spun Out of Control," Boston Globe, ~~March 29, 1998~~, 0

Member of the Month

Michael Koppelman

During an email discussion on the MAS mail list, I mentioned the idea of a "Member of the Month" column, where we could, one at a time, describe our interests, activities, and equipment in detail for the benefit of like-minded individuals. What follows is my contribution to this concept.

Like a lot of people, my first interest in astronomy came when I got a cheap department store telescope as a gift. It was so bad that seeing anything out of it was almost impossible and it left me very unsatisfied. As a result my interest went dormant until I was over thirty years old. At that point I asked for a telescope as a gift again, forgetting what folly it was the first time. Luckily, by girlfriend had the foresight to get some advice and she gave me a Celestron 4.5" Newtonian reflector with an equatorial mount.

While certainly not a first-class instrument, it is a great beginner's scope for the uninitiated and it completely resuscitated my interest in astronomy. I began reading astronomy books and magazines voraciously and probing the heavens with my modest aperture. It was at that point that I joined the Minnesota Astronomical Society.

As I made my way through the Messier list I felt both the thrill of discovery and the slight disappointment at the lack of detail I was seeing. Thanks to the MAS star parties, I have been able to look through some very fine instruments. More aperture and finer optics make a huge difference in the quality of amateur observing. Even so, I need more photons. I started to look more and more at imaging as a pursuit that could satiate my interests. Over the

course of about 8 months I assembled all the things I needed to create what I think is a first-rate setup for wide-field astrophotography. It consists of:

- 1) 4.5" Newtonian optical tube (for guiding only)
- 2) Losmandy GM-8 equatorial mount with dual-axis motors
- 3) Side-by-side mount for the camera and optical tube.
- 4) Olympus OM-1 35-mm camera with 50mm - 300mm lenses.
- 5) Telrad
- 6) Home-made dew heaters
- 7) Celestron Micro-Guide illuminate reticle eyepiece
- 8) Star Atlas 2000 Deluxe
- 9) Howie Glatter laser collimator.
- 10) SBIG ST-4 autoguider

Setup takes about 60 minutes including polar alignment. The dovetail hardware on the Losmandy mount slides in and clamps tight with no tools required. The mount has a polar

scope which makes polar alignment a snap, but I usually double-check it with the drift method. The computer runs off of a 12-volt power source, either from my car or from an AC converter. The ST-4 autoguider is nice in that it does not require a PC. It is easy to use and tracks very well. I spent about \$20 in parts making dew heaters for my camera lens, eyepiece, and

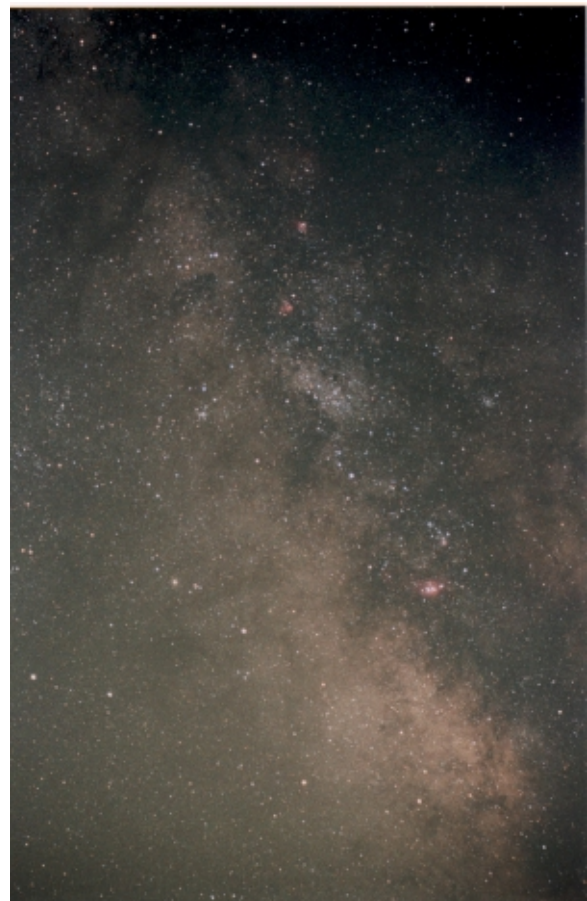
*A view of the
Sagittarius region of
the Milky Way. Photo
by Michael
Koppelman.*

secondary mirror. It plugs into an output on the Losmandy computer.

Even though I'm relatively new to astronomy, I've already acquired some prejudices:

- 1) You need a Telrad (or similar). I never use my finder scopes. Telrad's rule.
- 2) You need a laser collimator. Collimation is vital to observing. You can't get by with half-ass collimation. Spend the c-note and make sure you are collimated.
- 3) Keep it simple. I find it helps to reduce barriers to astronomy. This includes setups so heavy or complicated that you don't want to bother. Less or no tools, less cords.

For now I am going to keep experimenting with piggy-back photography. I'm sort of curious how it would look enlarged and framed or mounted — like art. In the future, I'll stick with a



traditional camera and start doing prime focus and eyepiece projection stuff. Someday, when the prices get reasonable, I'll move into CCD imaging and perhaps even photometry or spectroscopy. I've started taking some calculus and physics in night school, just to keep edging towards actual under-standing of modern astronomy. This is fun stuff, and I consider it a hobby for a lifetime. I expect my interests to change as my experience and budget (hopefully) grow.

You can check out my works at <http://www.lolife.com/astrophotos>.
A shot of the Lagoon nebula. Photo by Michael Koppelman using the equipment described in the article.



2000 Star Parties

Star parties are held on Friday if weather permits, otherwise on Saturday. Call (651) 649-4861 after 6:00 PM on a star party date to hear whether it will be held.

Metcalfe

Metcalfe is the grassy parking lot of Metcalfe Nature Center, about 20 miles east of St. Paul along highway 94. About 6 miles E of the 694/494 crossing is county road 15 (Manning Ave.). Turn right, then left onto the frontage road and continue east, crossing over county road 71. Turn right (south) onto Indian Trail; follow it 1.1 miles to an chicken-wire gate on the right, (marked by three blue reflectors), opening onto a dirt driveway, which is the entrance to Metcalfe.

Baylor Regional Park

Baylor Regional Park is roughly 25 miles W of the SW corner of 494. Head west on highway 5, through Waconia, to Young America. Turn right onto county road 33 and follow it about 2 miles to the park, a right turn. The observing site is through the gate and roughly 100 yards beyond. Card-carrying MAS members may observe at Baylor at any time; call the park keepers in advance at 448-6082.

Cherry Grove

Cherry Grove is about 20 miles south of Cannon Falls. Head south on Hwy 52. Around 6 miles south of Cannon Falls, take a right onto Goodhue County 1 and follow it around 16 miles, where it ends in a T with Dodge County A. The observatory and warming house are at your right, nestled in the corner of the T.

Date	Site	Sunset	Moon
25-Feb	ONAN/BAYLOR	17:33	rises 0:23
3-Mar	CHERRY GROVE	18:04	rises 5:40
10-Mar	METCALF	18:13	sets 23:25
25-Mar	ONAN/BAYLOR	18:33	rises 0:24
31-Mar	CHERRY GROVE	18:40	rises 4:13
7-Apr	METCALF	19:49	sets 23:26
8-Apr	ASTRONOMY DAY	19:50	sets 0:38
28-Apr	ONAN/BAYLOR	20:15	rises 3:45
5-May	CHERRY GROVE	20:24	sets 22:22
12-May	METCALF	20:32	sets 3:58
26-May	ONAN/BAYLOR	20:47	rises 2:16
2-Jun	CHERRY GROVE	20:53	rises 5:53
9-Jun	METCALF	20:58	sets 2:30
23-Jun	ONAN/BAYLOR	21:03	rises 0:48
30-Jun	CHERRY GROVE	21:03	rises 4:28
7-Jul	METCALF	21:01	sets 1:00
21-Jul	ONAN/BAYLOR	20:51	rises 23:44
28-Jul	CHERRY GROVE	20:44	rises 3:05
4-Aug	METCALF	20:35	sets 23:28
11-Aug	PERSEIDS	20:25	sets 3:35
18-Aug	ONAN/BAYLOR	20:14	rises 21:22
25-Aug	CHERRY GROVE	20:02	rises 1:49
1-Sep	METCALF	19:55	sets 19:54
22-Sep	ONAN/BAYLOR	19:10	rises 0:03
29-Sep	CHERRY GROVE	18:57	sets 20:20
6-Oct	METCALF	18:44	sets 1:06
20-Oct	ONAN/BAYLOR	18:19	rises 0:43
27-Oct	CHERRY GROVE	18:08	rises 7:51
3-Nov	METCALF	16:58	sets 22:51
17-Nov	ONAN/BAYLOR	16:42	rises 22:46
24-Nov	CHERRY GROVE	16:37	rises 5:45
1-Dec	METCALF	16:33	sets 21:38
15-Dec	ONAN/BAYLOR	16:33	rises 20:31

how to pay your dues

Your MAS membership expires at the beginning of the month shown on your Gemini mailing label and your membership card. Send your payments to the MAS treasurer (Chuck Jorgensen) at 1615 E. River Rd. Minneapolis, MN 55414-3627. Make checks payable to MAS. The current annual membership dues and subscription fees are:

Regular membership	\$ 16.00
Patron membership	\$ 40.00
Student membership	\$ 10.00
Subscription to Gemini for members of other astronomy clubs	\$ 4.50
Subscription to Gemini for other persons	\$ 9.00

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 \$29.95) to the MAS Treasurer (Chuck Jorgensen). Make checks payable to MAS. If desired, you may renew your MAS membership at the same time, and write one check to cover both payments.

GEMINI

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ADDRESS SERVICE REQUESTED

To subscribe to the MAS e-mail list send e-mail to:
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in the body (not subject) of the message.

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

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