

Gemini

a publication of the Minnesota Astronomical Society



<http://www.mnastro.org>

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2000

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25

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1

Upcoming Events

February

- 1 MAS meeting at the new Minnesota Science Museum. Annual business meeting, plus a presentations by Bill Glass: "Solar Eclipse as seen from Turkey" and "A Visit to Mount Graham"
- 11 Saturn 3 degrees North of Moon
- 14 Mercury at elongation

March

- 7 MAS Meeting: Jim Fox, "Observing variable stars".
- 10-11 Second Annual Messier Marathon (secondary choice)
- 20 Vernal Equinox
- 31-1 Second Annual Messier Marathon (primary choice)

A Listing of Astronomical Resources

Minneapolis Planetarium: 630-6150

Winter Shows Starting January 15th:

Max's Flying Saucer: Sat. and Sun. at 1300 & 1530.

The X-traterrestrial Files: Sat. and Sun. at 1415. Thurs. at 1900.

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.mnastro.org>.

Meeting Minutes

Ben Huset, MAS President

January 4th, 2000
MAS General Meeting

The MAS featured speaker for the January general meeting was Ivan Polikov. His topic for the evening was "Computer Simulations of Observatory Experiments." He discussed how he was using 'on-line' materials from the Department of Physics, Gettysburg College Gettysburg PA, 17325 in his classes. He then demonstrated some of the labs exercises he uses. Where one learned how to analyze astronomy data to learn interesting stuff.

Some of the Online-Topics included:

- Radio Astronomy of Pulsars
- Astrometry of Asteroids
- The Revolution of the Moons of Jupiter
- The Rotation of Mercury by Doppler Effect
- Photoelectric Photometry of the Pleiades
- Spectral Classification of Stars
- The Hubble RedShift-Distance Relation
- The Large Scale Structure of the Universe
- The Flow of Energy Out of the Sun
- Eclipsing Binary Stars
- The Height of Lunar Mountains

For those who missed it. At the end of the talk the CLEA link was mentioned:

<http://www.gettysburg.edu/academics/physics/clea/CLEAsoft.overview.html>

Here one will find Adobe PDF files and programs for PC and Mac of the courseware.

Editor

Thor Olson

Circulation

John Treadwell

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thor.olson@mn.efi.com

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MAS Gemini

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Minneapolis, MN 55458-3011

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 preceding the

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Meeting Minutes**Bob Schmidt, MAS Secretary**

Minutes of Executive Board,
December 14, 1999

The meeting took place at the residence of Vice President Elect Dave Olmstadt.

Those in attendance were: President Ben Huset, Vice President Gibson Batch, Secretary Bob Schmidt, board member @ Large Elect John Connery, Treasurer Elect Chuck Jorgensen, and Vice President Elect Dave Olmstadt. Also present was Mr. Marty Walsh of the Carver County Park System.

A discussion of the funding for the Onan Observatory was held with no conclusions. The matter will be a key item at the next regular Board meeting when the new budget is worked on.

As Treasurer Bill Glass was absent there was no Treasurers Quarterly Report. An annual report will be made for the next regular Board meeting

and for the coming Business meeting February 8, 2000.

The need for a permanent Editor for Gemini was discussed.

It was reported that all of our observing sites had been used by members and friends for observation of the Leonid meteor shower.

Michael Kauper has offered to allow the Marion Warling scope to be stored in his garage. Also a value of \$5299.00 be used to insure the Warling scope.

Metcalf report: Gibson Batch had policed the area, finding the latrine clean and that he had observed that the new reflectors at the gate were helpful in locating the driveway.

There was no new activity on Cherry Grove maintenance to report.

Baylor/Onan report: Mr. Walsh noted that completion and opening of the Observatory were important to the Carver Park Commission, that outreach by MAS with star parties, rain or shine, using either the Observatory or the Park buildings for lecture type presentations on rainy nights was desirable and that the Park staff is eager to help. Mr. Walsh also reported that the park was getting at least two calls a week requesting information and that there had been thirty voice mail inquiries about the 25th anniversary event.

Some landscaping will be needed at the Onan site in the spring. It was suggested that it might be an all day event with pancake breakfast and raffles as fundraiser and with tree planting (short trees) as an Arbor Day celebration and star party in the evening.

Gibson Batch made a proposal for dividing the duties of the Treasurer as now done into two parts, Treasurer and Membership Secretary. There was discussion but no action.

Robert H. Schmidt, Secretary

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

Editor's note: This article was recently recovered from the "lost stories" category of Gemini submissions. Our apologies to the author for its late publication, but as you will find out, the anecdotes are timeless.

MAS member Randy Wehler is also to be congratulated for the recent publication of one of his photographs in Astronomy Magazine.

At a recent major Midwest gathering of amateur astronomers held during the hottest (and most humid) time of summer, one participant shared a story of the "naive convenience" that may typify some of our non-astronomy-minded peers. This middle-aged woman, very knowledgeable in matters celestial, shared one of her experiences in helping to provide hosting of "public" evenings, those community times when sky-gazers like to show others the heavens. In her local newspaper, her home telephone number had been listed, she being a contact person for the lunar eclipse event coming up later that week. Several days before the eclipse, a harried woman phoned her, saying that she had something else going on that upcoming night when the Moon would darken and asked if the hosting of the eclipse could be rescheduled to another weekday night the following week!

My wife, Carla, is a nature photographer on a hobby/avocational basis and is a member of our small-city, regional arts group. This warranted her a listing in their arts fair booklet. One woman in our community who had received the booklet had heard that not only did my wife have a small business called *Carla's Cards*, which produced nature photo cards for various occasions, but that Carla and her

husband also dabbled in photographs of the twilight and night skies, including the "Northern Lights." In a short amount of time we put together a 4x6-size sampler of celestial events that had been captured on film, including some early 90's auroral pictures. I selected several "choice" photos of aurorae from the sizzling summer of 1991, with prominent and vivid main colors of green and bright-red. A meeting time at our home was agreed upon to show the photos. Our "customer" stated, "These are real nice pictures of the Northern Lights, but the decor of my living room where I'd like to hang enlargements is centered around a blue theme. Do you have any blue-colored ones?" Now how many times has anyone seen blue aurorae or captured on film dominant blue coloring? I consider this story to be of the "naive palette" variety.

A good friend of mine, Jed, works at our local, general hospital in direct patient care. During the apparitions of Comets Hyakutake and Hale-Bopp, he had taken some very nice photos, which he offered for reasonably priced sale to fellow hospital personnel. Word had even gotten around to some of the patients and their families about his hobby interests involving the sky. Upon leaving one patient's room one day during a family visitation, a patient's brother was heard to say, "So I hear you're an AMATEUR ASTROLOGER." Jed replied, "You're half right. An 'amateur' I am, but not an 'astrologer'. Rather, I'm an amateur astronomer. But don't worry, I won't put a hex on you." This story is of the greatly naive "misnomered" kind.

As a grade school lad in the mid to late 50's, the Northern Lights

were seen every once in a while. Just about each and every one of my teachers gave the then-popular explanation of the aurorae being reflections of the Sun off the ice sheets up near the North Pole. Junior high school general science classes correctly informed us of the links between the Sun, charged particles, magnetic field lines, and our atmosphere. About four years ago, our good family friend, a grade school teacher, made the same statement about auroral causality heard by my ears about 40 years ago. As I write this anecdote of a naive "misreflected" type, I wonder if some teacher will some day come up with a story about those Russian space reflectors (to reflect sunlight to light up dark cities) having fallen from outer space to beam dancing lights upward(

The visible (with naked-eye) arrival of Comets Hyakutake and Hale-Bopp brought with them notions (some of them "naively mechanical") of comet appearance and motion. It seemed understandable that many of my neighbors and co-workers could not believe that something 20 miles or less in size could be seen so well from millions of miles away. But there was another belief that I just could not fathom. I don't know how many people I talked with believed that, somehow, each comet would be seen as if moving — similar to a slow jet airliner — across the sky as you would look at it, setting in the west and rising again later in the east on a repeat-basis over night as if it were some kind of atmospheric phenomenon. Maybe too many movies had been earlier produced that imparted a sense of dramatic motion to suggest impending impact with Earth.

These foregoing stories and reminiscences were written to

Naive Notebook, to page 6

This article first appeared in the "West Central Tribune" in Willmar Mn., as part of Pat's astronomy column.

On the night of January 16, 1999, my good friend and fellow amateur, Randy Wehler and I travel along a residential street in Williams Bay, Wisconsin in search of 373 West Geneva St. As we drive, a few streetlights mark our way along the west side of this hamlet, once visited by Albert Einstein.

Eventually, we locate our destination at the edge of town. Our headlights shine on a plain brown wooden sign with white lettering: University of Chicago, Yerkes Observatory, 373 West Geneva St. Williams Bay, Wisconsin. I say to Randy, "home of the world's largest refractor telescope."

We drive down a narrow dirt road, a few stands of pine dot the terrain. Drawing closer, the three domes of the Yerkes Observatory rise high into the night sky. Yerkes opened in 1897 and was home to cutting edge astronomy at the start of the 20th century. Now, Yerkes is a reminder of what once was, and stands like a grand cathedral before us.

As we leave the car, Orion, the Hunter greets us by rising over the northern dome, where we will be observing tonight with a 24-inch Cassegrain telescope. The observatory is laid out like a cross. At the base is the largest dome, housing the 40-inch refractor, and at the other end, the north and south arms of the cross, two smaller domed observatories house reflecting telescopes.

A gargoyle watches us from his perch along the rim of the northern dome where we will be observing tonight. The Yerkes is a work of art. The exterior consists of ornate architecture including

gargoyles and zodiac sculptures along with arches and pillars giving it more an atmosphere of a gothic church than a house of science.

Inside, Richard Dreiser, our tour guide, turns on the lights. A chandelier hanging over the main lobby illuminates the marble walls and hardwood floors. Quickly, we follow him down the eastern wing toward the waiting gargoyle and a 24-inch Cassegrain telescope.

The echos of our footsteps bounce against the office doors that line the eastern wing of the observatory. I imagine great astronomers from the distant past studying in their offices: E. E. Barnard examining photos of the Milky Way he took with the great Yerkes refractor; the astrophysicist from India, Chandrasekhar, quietly pondering equations which describe the inner workings of stars; and Albert Einstein, answering questions about his theory of relativity.

We draw near to a wooden door, faintly illuminated by a red light. It opens into a narrow stairwell and we ascend a metal spiral staircase, rising about 25-feet high. It leads us to a small domed room which houses a 24-inch Cassegrain telescope. The metal dome above us caps the top of the round room like a silo top.

Wasting no time, the telescope cap is removed, and the motors which turn the dome hum softly as the slit opens to the sky. The first site we see is Orion, the Hunter, protecting the glowing stellar nursery of infant stars near his sword. A remote control directs the telescope toward the stellar nursery which is 1500 light-years away. Randy and I take turns looking through the eyepiece at the nursery, mesmerized by the sheets of stellar dust blanketing the infant stars, like swaddling clothes.

Our time is limited to one hour of observing, a gift of a lifetime from my lovely wife Karen. We quickly absorb the beauty of Saturn's rings and the diamond dust from a star cluster in Gemini. Then, Richard informs us to close up the dome. The slit quietly closes and the telescope cap is put back in place. The gargoyle, though, remains vigilant.

Richard leads us out of the small dome and across the rooftop toward the great refractor. We enter the largest of the three domes through a wooden door reminding me of a secret passageway. Once inside the lights go on and before us is the world's largest refractor, pointing up at the heavens.

Used infrequently, it sits quietly like a museum relic, now. We are allowed to walk on the 73-foot diameter hardwood elevating floor. Richard raises and lowers the floor to give Randy and me a sense of its enormity and ease of use. And like kids, we wonder if we can touch the world's largest refractor.

Over 60-feet long, we stand touching the base of the telescope which is housed in a 90-foot-diameter dome. Astronomers used the great telescope to measure star positions and the separation between double stars in its heyday. Today, a CCD (charge-couple-device), like a video camera, attaches to the eyepiece and continues to measure star positions.

Unfortunately, we are unable to use the telescope for fear of damaging it. And worst of all, Richard informs us that our time is up. We exit the large dome and walk out of the observatory along the western wing. The lights are turned off, and the doors lock behind us. The last thing I see is Orion standing majestically over the cathedral of observatories—Yerkes.

Pat Thibault

I've had lots of opportunities and have seen many wondrous things in the sky through telescopes. With a 61" computer controlled Cassegrain at 10,000 feet, I've seen the Ring Nebula fill the eyepiece. I got to see the Shoemaker-Levy 9 comet before impact. I saw all eight planets in one night, the sun in H-Alpha, the swirls in the clouds of Jupiter, and more nebula detail than I could've imagined. Telescopes have been very, **very** good to me. Even living vicariously through other astronomers, enjoying their pictures of the marvels of the cosmos. But never, with any instrument of any type, have I seen such a wonder, such a jaw dropping spectacle, as on August 11th with nothing more than my naked eye.

Any astronomer, amateur or otherwise, knows that this is not the norm. "That little gray smudge, is that what we're supposed to see?" "Yes but look...look at this picture! This is what it **really** looks like." Most often we depend on these instruments to help our wimpy light-weak eyes. Oh, to see the color of those huge nebula! No, not us little humans. We depend on long time exposures with hypersensitive film through massive instruments using filtered multiple composite exposures from locations so high, you can't function without an oxygen bottle. But none of these, no, nothing at all, has captured what I saw in the sky.

Oh, and I've seen hundreds of attempts. Your Sky & Telescope and Astronomy magazines this month are full of these feeble tries at obtaining the unobtainable. Of course, viewing some aspects of

the eclipse benefit from instrumentation, but the big picture, the eclipse itself, is not so photogenic. "But these are wonderful pictures", you say, "Coronal streamers, Bailey's beads, and have you seen this shot of the diamond ring?" Puny. Paltry compared to the view from the eye. You may as well try to taste a gourmet meal by staring at a picture of it. Nothing I've ever seen has captured the delicacy, the nuance, and the experience of totality.

And oh, the transience, the speed with which it all happens - it's so temporal. The diamond ring? As fast as you read this line out loud: "It's there and then it's gone." That's how long it lasts. More rare and precious than it's namesake. Totality sweeps over you like going over the top of the big hill on a coaster. The partial phase is the ride up the lift; "Nice view! Boy, this is gonna be neat." The diamond ring is the peak, the transition, the demarcation between the real and the surreal. And then, oh, sweet Lord, the drop on the other side. The breath stops. The heart stops. The world stops. A wave of darkness as silent as doom envelopes your reality. And even as time seems to slow, everything seems to happen so fast. So much to see, to feel, so much living to do in those two minutes.

To try and describe it in words is (as you can see) as feeble as those pictures. It's like trying to describe an emotion without referring to another emotion. I think, though, that Anne Dillard put it quite nicely. To me, this says what my own keyboard can not

You have seen photographs of the sun taken during a total eclipse. The corona fills the print. All of those photographs were taken through telescopes. The lenses of telescopes and cameras can no more cover the breadth and scale of the visual array than language can cover the breadth and simultaneity of internal experience. Lenses enlarge the sight, omit it's context, and make of it a pretty and sensible picture, like something on a Christmas card. I assure you, if you send any shepherds a Christmas card on which is printed a three-by-three photograph of the angel of the Lord, the glory of the Lord, and a multitude of the heavenly host, they will not be so afraid. More fearsome things can come in envelopes. More moving photographs than those of the sun's corona can appear in magazines. But I pray you will never see anything more awful in the sky.

Annie Dillard
"A Total Eclipse"

heighten awareness of how many of our non-astronomy-minded peers may look at and think about celestial matters in non-scientific and “no-brainer” ways. I am sure that the reader could give his/her own accounts or stories where one’s natural reaction is to simply shake one’s head (either in sympathetic compassion or nonsympathetic disbelief or rancor). Yet in their own right, such accounts could be considered sometimes rather humorous and certainly reflective of human nature, showing maybe where we were before we became more celestially correct in our perceptions, beliefs, and sense of reality as amateur astronomers.

Perhaps, you could share your own stories, anecdotes, accounts, tales, etc. They could prove to be interesting, human nature revelations at their best, whatever our emotional reaction to reading them might be.

Do not forget that when somebody says something about astronomy and makes a mis-statement that could use correction or clarification, that this is a “teachable moment.” It is our chance to educate, and in doing so, a chance to open that person’s eyes further to the limitless realm of the Universe.

Randall Wehler

Wanted/For Sale

FOR SALE

6" f 5 Newtonian. Meade primary, 2" focuser, Parks fiberglass tube with Super Polaris mount and tripod. Mount has RA and dec motors, mounting rings, paddle and battery holder. 450.00 or best offer. Mount alone worth the price. Meade ETX 90, original style with JMI Motodec and Motofocus. Very few photons have passed thru it! 425.00 or best offer.

Call (651)699-1274 and leave message if no answer.

FOR SALE

16" f/5 Dobsonian w/ Zerodur primary, 2.6" secondary, Tectron trusses w/ connectors, Astrosystems Phase IV 2" focuser w/ 1-1/4" adapter, Telrad w/base. Entire scope except trusses stores in a box 22"x23"x27-1/2". One person set-up/take-down in approximately 5 minutes. Excellent images! \$1905.00 or will discount price for a 6" dob trade-in.

Also For Sale:

Televue 35mm Panoptic eyepiece, excellent condition. \$225.00

Contact Kelly Vickerman
3685 - 221st Ave NE
East Bethel, MN 55011
Phone: 612 413-2980

The Visual Observer's SIG invites you to the 2nd Annual MAS Messier Marathon!

Do you want to test your familiarity with the night sky and hone your observing skills to the max? Join the Visual Observer's SIG for a night of fun in trying to bag all the Messier Objects in one night! Last year was a blast! (Check out the MAS Messier Webpage for last year's results.) Open to all skill levels, with individuals setting their own goals. Warm apple cider and cookies available. Sign-in on-site.

Recommended: Telescope and/or Binoculars (etc.), good Charts, warm clothes, and de-dewing equipment

(will have 12V hair dryer on-site to loan out if needed).
Date: Either March 10 or 11 (Secondary Choice), or March 31 or April 1 (Primary Choice).
Location: T.B.D. (Either Cherry Grove or Baylor -- Check Web Page or Phone Message for update).

Check the MAS phone message for a go/no-go. Please contact me (Greg) if you have any questions: greg.haubrich@medtronic.com or 612-421-4736.

The V.O. SIG looks forward to seeing you there!

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 (William Glass). 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

MN ASTRONOMICAL SOCIETY

P.O. Box 583011

Minneapolis, MN 55458-3011

ADDRESS SERVICE REQUESTED

To subscribe to the MAS e-mail list send e-mail to:
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with the single line

subscribe

in the body (not subject) of the message.

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

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