

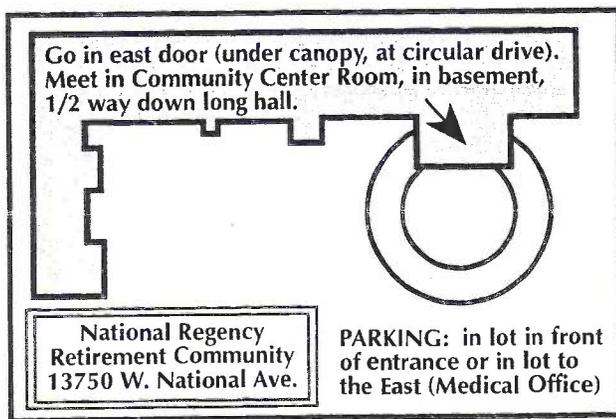
The Newsletter of the Milwaukee Astronomical Society

March 1995

**"DISTANT GALAXIES AND THE ECHO OF CREATION", MARCH 17**

The new generation of electronic imaging equipment, coupled with the increased availability of very powerful telescopes (like the Hubble Space Telescope) has allowed astronomers to peer farther into space -- and time -- than ever before. By probing ever deeper into the universe, astronomers are able to look billions of years back in time to observe and study objects as they existed during a much earlier age. Our speaker for the March 17 Membership Meeting will be Dr. David Meyer, professor of astronomy at Northwestern University in Evanston, IL. Dr. Meyer will discuss his research with some of the most distant objects known to man. Do join us for an interesting, informative, and enjoyable St. Patrick's Day evening. Don't forget about the "post meeting" get - together at an area establishment after 10:00 p.m. (location to be determined that night).

-★Tom Renner



Use the main entrance on the east end of the building and facing south toward National Avenue. Upon entering the complex, turn right and proceed downstairs to the Community Meeting Room located about one-half of the way down the long corridor, on the left. Please arrive by 8:00 p.m. (the start of the business meeting) as the exterior doors are locked shortly thereafter for security purposes. Our speaker's presentation will begin immediately following the business portion of the meeting, at about 8:25 p.m.

**FROM THE EDITORS' DESK**

*Apply your mind to at least one problem which has never been solved, which in general is considered impossible of solution, but which, being solved, would help humanity. Do with your life something that has never been done, but which you feel needs doing.*

*Dr. Harvey Harlow Nininger*

Nininger was a courageous man. In the depths of the Great Depression that ruined the U.S. economy in the early 1930's, he left a comfortable position as a successful biology professor and began a spectacular career as the first person to make a living finding, studying, and selling meteorites. From about 1932 to 1942, Nininger doubled the number of known meteorites in the world. He identified numerous meteorite craters in North America, analyzed the structure and formation of the Barringer Crater in Arizona, taught thousands of midwesterners to recognize meteorites, and contributed immensely to our modern understanding of the nature and importance of "rocks from space".

He owned one of the five greatest collections of meteorites prior to 1960, lectured widely in the U.S., authored 10 books and publications on the topic of meteoritics, and operated a museum and research institute specifically devoted to the study of meteorites. He died in 1986 at the age of 99.

Nininger became a legend in his field because he applied his determination, intelligence, perseverance, and common sense to the problems and challenges of meteoritics. He often implored his biology students to "do something that needs doing". Nininger practiced what he preached. I have been captivated by Nininger's life, and his quotation above, ever since I first read his 1972 autobiography, Find A Falling Star.

H. H. Nininger's words continue to ring just as true for each of us today as they did for his students over six decades ago. We are all constantly presented with challenges -- and opportunities -- in our professional lives, in family situations, and, yes, *even in our hobbies*. The M.A.S. became a successful astronomical organization

because of the determination, intelligence, perseverance, and common sense its members have devoted to it over the past 63 years. Each person who has contributed time, talent, and energy to the M.A.S. has truly answered Nininger's challenge to do what needs doing. In 1995, there is no shortage of opportunities to continue this tradition.

On April 14 the 1995 Open House season at the Observatory begins. May 6 is National Astronomy Day. On May 19 our Society will elect three new people to the Board of Directors. The new Board, in turn, will elect a new President. The new President will select chairman for the six standing committees defined in our by-laws. The committee chairman will need members to serve on the committees. Then, there is the matter of new legislation before the Wisconsin State Assembly to curb excessive light pollution. It needs the support of amateur astronomers and non-amateurs alike. The North Central Region of the Astronomical League needs people to fill the Region's executive positions in June. And the craftsmanship and handiwork at the M.A.S. Observatory -- the product of the labor and love of astronomy imparted by three generations of M.A.S. members -- languishes far too many clear evenings due to a lack of users.

Do what needs doing, and do what you can to help the common cause of advancing amateur astronomy and the M.A.S. Each member has something to contribute to our organization from his or her own unique perspective. You don't have to be an experienced amateur astronomer to make a contribution to the M.A.S. -- you need only possess a willingness to help.

The greatest need right now is for Board members and officers as we are critically short of candidates for the May elections. If you feel you can help -- if you want to take up a great challenge and make a real difference within our organization -- you are urged to call one of the Nominating Committee members immediately: Matthew McNeely (354-5347), Brian Ganiere (961-8745), or Ken Waraczynski (321-

0918). Time is of the essence as the committee would like to publish the names and biographies of the candidates in the April *Focal Point*.

-★*Dan Koehler*

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## LIBRARY NEWS

Finished with your Messier list and ready for a new challenge? Now in the vertical file is Observe: The Herschel Objects. This 1992 revision of the original 1980 Astronomical League publication may be found in the folder: HERSCHEL OBJECTS and may be signed out as a book.

Two new books from Kalmbach Publications have been purchased:

Beginner's Guide to Amateur Astronomy (Eicher, 1993). This compact manual couldn't have been more aptly named. In the forward, Robert Burnham describes the book as a "call" to anyone wondering what amateur astronomy might have to offer. The author assumes that by page 10 the beginner has a telescope, and that's a good enough excuse to display a generous collection of planetary and deep sky images. Speaking of photographs, there is a chapter on recording your observations with tools ranging from graphite to silicon. Appendixes list solar system data, the Messier catalog, telescope manufacturers, and amateur clubs.

Will Black Holes Devour the Universe? & 100 Other Questions & Answers About Astronomy (Melton, 1994). Anyone who plans to talk to school groups about astronomy would do well to take this book along. The author is Education Program Director at the Mt. Wilson Observatory, and must have been asked these questions "billions" of times. Her answers come in three sizes: minimal, simple, and some detail. Come to think of it, quizzing yourself and your family members might be fun. For instance, how would you answer the title question?

**A REMINDER TO ALL!** These and any other Kalmbach publications may be ordered through your

librarian at a substantial discount. What are you waiting for? Call me at 321-0918 for details!

-★*Sally Waraczynski*

**Ed Note:** M.A.S. members who are subscribers to *Sky and Telescope* receive a 10% discount on all Sky Publishing books and materials. Call 800-253-0245 8:30 a.m. to 5:00 p.m. EST for details and to order. All M.A.S. members are eligible for the Astronomical League Book Service 10% discount on any astronomically-related book directly from the publisher. Write to Paul Castle, AL Book Service, 2535 45th Street, Rock Island, IL 61201 (309-786-6119). Paul needs the book title, publisher's name and address (if known), and a check (made payable to the Astronomical League) for the retail price of the book less 10% (there's no shipping or handling charge!) You should also mention that you're a member of the Milwaukee Astronomical Society as this is a service for League members only.

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## MORE MESSIER AND HERSCHEL CLUB MEMBERS TO BE INDUCTED AT THE MARCH MEETING

The M.A.S. has yet another accomplished observer. **Dick Adduci** has observed and logged the entire 400 object Herschel catalog! He is only the second M.A.S. member to do so (**Ed Note:** M.A.S. Observing Clubs Coordinator Lee Keith is the other and has H-Club certificate #20) and is the 117th in the U.S. to earn this prestigious observing award by the Astronomical League. While Dick did observe some of the H objects with a 17.5-inch Dobsonian Newtonian, he observed most of them with an 8-inch Schmidt Cassegrain 'scope. This is proof that you do not need a big instrument to do this list. You do, however, need organization, perseverance, patience, and lots of time.

Speaking of lots of time, **Dan Koehler** has finally observed and logged 76 Messier objects, enough to receive the regular Messier Club Certificate

(No. 1287). His taking eleven years to do so should not detract from the fact that he finally accomplished a goal he set over a decade ago! (*Ed. Note:* OK Lee, so it took me 10 years to figure out which end of the 'scope to look through . . .).

In January, **Wanda Berner** was awarded M Club certificate No. 1247; **Vern Hoag** received certificate No. 1248 and a Binocular Messier certificate.

Please join me at the March Membership Meeting at National Regency in congratulating our new recipients on their observing accomplishments. They will each receive their certificates at the meeting. For more information on the Messier, Herschel, or Burnham Observing Clubs, call me at 425-2331.

-★Lee Keith

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## ADVENTURES IN ASTRONOMY

How can you tell time using the stars in the Big Dipper? Why do some planets reverse their motion in the sky? What is the future of our Sun? What is a Black Hole? a Neutron Star? a Pulsar? a Quasar? How do astronomers determine the distances to stars and galaxies? What is the structure and future fate of the universe? Learn the answers to these and other questions in astronomy by enrolling in the "Adventures in Astronomy" class at the UW-Waukesha County Center. Class dates are March 13, 20, 27 and April 3, 10, 17 (all Mondays) from 6:30 to 9:00 p.m. Call the Center's Non-Credit/Continuing Education office at 521-5460, and ask for Don Bracco. Our own **Lee Keith** is the course instructor.

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## ASTRONOMY DAY 1995

National Astronomy Day (N.A.D.), sponsored annually by the Astronomical League, will occur this year on May 6. As the name implies, it is the day on which nationwide activities are conducted by amateur astronomers to promote their hobby

among the general public. In past years, the M.A.S. has celebrated N.A.D. by opening the Observatory for extended hours of inspection and observing by our guests. Unfortunately, even during good weather and with plenty of advertising, our efforts have usually met with limited success. Attendance has more often than not been low. So this year, I would like to encourage members to do something different.

In keeping with N.A.D.'s generally implied themes of "Astronomy is Fun" and "Taking Astronomy to the People" I want to suggest that you set aside some time during the day or evening hours on May 6, find a place with lots of people (especially children) and show them the sky! If you plan to view the Sun, be certain to practice safe observing by using a metal-on-glass solar filter, or projecting the solar image on a card or screen. Projection is best as a large group can view the Sun at one time this way. You should have a ready supply of Open House schedules (two Open House nights are scheduled at the M.A.S. Observatory for Friday, May 5 and Friday, May 12 in lieu of Saturday May 6 for N.A.D.). The schedules will be available very soon.

If you decide to take up this challenge, please remember that you are an ambassador of amateur astronomy as well as for the M.A.S. Relate to others what a joy our hobby is, and the fun and excitement you derive from studying and viewing celestial phenomena. If the weather does not cooperate on May 6, try picking another date. Good luck!

-★Lee Keith

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## HAVE WE GOT A PLAN!

Do we ever, and as promised, here it is -- a complete listing of all M.A.S. events for March through December 1995:

**MEMBERSHIP MEETINGS** (At National Regency unless otherwise noted): **Mar 17, Apr 21, May 19** (Elections), **Sep 29** (at the Observatory), and **Nov 17**.

**SPECIAL MEMBER EVENTS:** Chili Dump/Messier Marathon (at the Observatory), **Apr 1** (see article elsewhere in this issue); Family Picnic (at the Observatory), **Jul 15**; Annual Dinner (at an area restaurant to be determined), **Oct 29**; annual Holiday Party (location to be determined), **Dec 8**. 27

**BOARD MEETINGS:** **Mar 13** (at Koehler's), **Apr 10, May 19** (1/2-hour before the Membership Meeting), **Jun 12, Jul 10, Aug 14, Sep 29** (1/2-hour before the Membership Meeting), **Oct 9, Nov 13, and Dec 8** (before the Holiday Party).

**ASTRONOMICAL LEAGUE EVENTS:** 49th Annual North Central Region Convention, Moorhead (MN) State University, **Jun 23-24**; ALCON '95, the 48th annual convention of the Astronomical League, San Antonio, TX, **Jul 20-22**.

**OTHER REGIONAL CONVENTIONS, STAR PARTIES, AND MEETINGS OF INTEREST** (these are the ones I know about as of Mar 01): 107th annual meeting of the Astronomical Society of the Pacific, College Park, MD, **Jun 24-25**; 2nd annual Nebraska Star Party, Merritt Reservoir, 27 miles south of Valentine, NB, **Jul 25-30** (see article in the April issue); 16th annual Astrofest, **Sep 15-17**. Stay tuned -- there will be others as the year progresses.

**CAMPING TRIPS AND DARK SKY OBSERVING NIGHTS:** Canis Major Club/Ottawa Dog Trial Grounds: **Mar 03, Apr 04, May 21, Jun 01, Jul 15**; Camping Trips: **GREENBUSH**, Apr 28-30 and Sep 22-24; **BRUSH CREEK**, Aug 24-27; **PINEWOODS**, Oct 20-21.

**PUBLIC OPEN HOUSES** at the Observatory; all programs begin at 8:00 p.m. on the following Fridays: **Apr 14, May 05** (the M.A.S. Astronomy Day observance), **May 12, Jul 21, Aug 04, Aug 18, Sep 08, Oct 06**. See article elsewhere in this issue.

The official National Astronomy Day is **May 06**. The M.A.S. Observatory will be open on Friday evening, **May 05 ONLY**. Also consult the bi-

monthly M.A.S. Event Calendar in the February, April, June, August, October, and December issues of the newsletter for reminders and changes concerning the above listed events, as well as for the current Keyholder schedules each month.

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## CHILI DUMP/MESSIER MARATHON SET FOR APR 1

So what's a "Chili Dump"? Better yet, what's a "Messier Marathon"? Find the answer to these and other questions about the universe at dusk on April 1 at the M.A.S. Observatory.

This will be the third annual spring star party held at the Observatory to help all members get started (or rekindle interest) in completing an observing list. Lee Keith will provide Messier object information and observing log forms at the March 17 meeting at National Regency so you can prepare ahead of time.

The Chili Dump is a "go" RAIN OR (star) SHINE! You should bring a batch of your favorite chili to feed yourself and any family members or friends you bring along. Also, please provide your own dishes and utensils. All chili brought to the party will be dumped into a large pot and simmered all evening. Toppings will be provided, as will coffee and hot chocolate. For those so inclined, a few desserts would be nice too.

A plan of attack for observing all 107 M objects is being developed, just in case the weather actually turns out to be clear! Volunteers are needed to help our novice observers begin finding the objects. There will be slides and a chart of the Messier objects in the meeting hall. In case of cloudy weather, video tapes of last year's Astrofest and the M.A.S. Equipment Tour will be shown. If you have a "show-and-tell" astronomy gadget, you're encouraged to bring it along. There will be food, fun, information, and good conversation, regardless of the weather.

Dress appropriately for a long night of observing. Lee and I are prepared to stay all night if the sky cooperates!

Bring your star charts, red flashlight, 'scope (or binoculars – many of the M objects can be viewed with binocs too - 50 objects gets the League's Binocular Messier Certificate!), eyepieces and whatever else you'll need. If you don't have your own 'scope you can choose from two 12-1/2-inch Newtonian reflectors ('A' and 'B'-scopes), at least half a dozen 10-inch Portascopes, or the 18-inch Wiesen Memorial Obsession – such a dilemma!

Call me with questions at 646-8229 or 691-2360. Happy hunting!

-★Wanda Berner

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## 1995 OPEN HOUSE SCHEDULE IS ANNOUNCED

"Opening Night" for the 1995 Public Open House programs is nearly upon us! It all starts **Apr 14** at 8:00 p.m. with a program concerning "Mars". Local schools and scout groups are being notified of a unique opportunity to visit our wonderful, fully-functioning astronomical observatory. With good publicity and cooperative skies, we'll need lots of extra help this year.

Please consider taking time out of your busy schedule to help us direct traffic in the parking lots, operate a 'scope (yours or one at the Observatory), sell books and other items, or discuss your interest in astronomy and the benefits of M.A.S. membership with our interested guests. I also need people to give a short, illustrated talk (15-20 minutes in length) on the topic of the evening. All of the listed dates are Fridays. The first program of the evening begins at 8:00 p.m. and is usually repeated at least once (and sometimes twice). Observing can run until 11:30 p.m. or later if the sky is clear.

Join your fellow members under the stars for an evening of enjoyment, camaraderie, and fulfillment in passing your love of astronomy on to others. Few things in life are more rewarding than introducing someone (especially a child) to the wonderment of the universe.

Here's the schedule and subject for each evening (The familiar Open House brochures will be available soon. We'll announce how you can get a supply of them in the April newsletter.):

**Apr 14** - "Mars"

**May 05** - "Amateur Astronomy"

**May 12** - "Constellation Tales"

**Jul 21** - "The Great Comet Crash of '94"

**Aug 04** - "The Perseid Meteor Shower"

**Aug 18** - "The Milky Way"

**Sep 08** - "The Northern Lights"

**Oct 06** - "Where Are Saturn's Ring?"

Again, I am in great need of help at all Open Houses, whether clear or not. Call me at 425-2331 to volunteer or if you have questions.

-★Lee Keith

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## EYE ON THE SKY FOR APRIL

Mercury passes through superior conjunction on **Apr 14** and should become visible low in the west-northwest just after sunset by the end of the month, in the Aries / Taurus border region. This is the beginning of Mercury's finest evening apparition of 1995. On **May 12**, the date of greatest eastern elongation, it will stand 19 degrees above the western horizon at sunset (owing to the steep angle the ecliptic makes with our horizon in the spring) and will set nearly two hours after the Sun from about **May 07 to 14**. A good naked-eye or binocular observing project (assuming skies cooperate) involves recording the earliest sighting of Mercury after conjunction. Can you see it one week after? 10 days? Two weeks? Telescopically, Mercury will show a gibbous disk. The young crescent Moon will join Mercury in the evening twilight on **Apr 30**.

Mars remains visible in the evening sky, now near the meridian at dusk. Its apparent diameter will drop below 10 arc seconds after the first week in April, making observations of surface details increasingly difficult. We won't see Mars this size again until the early part of 1997. Viewed through the telescope, the planet will

appear noticeably gibbous. Its magnitude declines during the month also, from -2 to +5. Mars is moving back (via prograde motion) into the neighborhood of Regulus and the sickle of Leo from Cancer throughout the month.

Jupiter rises near midnight at the beginning of April and is relatively well-placed for observing around dawn, northeast of Antares. Pluto is on the Ophiuchus / Libra border. If you are so inclined, it is well placed for searching by telescope after midnight. You'll need a star chart showing Pluto's position to compare with your field of view. Uranus and Neptune, neither of which will stray far from the other throughout the year, are in Capricorn. They present another inviting opportunity for binocular observation, especially since they are very close to M-75, the globular cluster on the Sagittarius / Capricornus border. Attempt your search in the second half of the month, an hour or so before dawn. Look southwest of Alpha and Beta Capricorni.

Venus and Saturn make a beautiful pair in the early part of April, both occupying the east-southeast sky at dawn. On **Apr 13** Venus passes to within .6 degree of Saturn, forming a striking "double" planet configuration. The waning crescent Moon will join the pair from **Apr 25 - 27**. Saturn passes a mere 21 arc seconds north of a 7th-magnitude star (SAO 146724) about 1:00 p.m. on **Apr 23**. By the end of April, Saturn will appear to have moved more than 10 degrees to the southwest of its brighter twin. For its part, Venus will appear to remain almost stationary over this same time period.

#### April's Lunar Events:

**Apr 08** -- First Quarter at 12:35 a.m. CDT

**Apr 15** -- Wow! A wild night and morning for lunar observers in the western U.S and Pacific region! (The east will essentially get "skunked", however.) The Full "Grass" or "Egg" Moon occurs at 7:09 CDT but . . .

The first partial lunar eclipse visible in the U.S. since May 25, 1994 occurs on the morning of **Apr 15**.

The lunar limb makes first contact with Earth's penumbral shadow at 5:08 a.m. CDT., less than an hour before moonset in Milwaukee. This and all subsequent events will be essentially unobservable from the metropolitan area. The partial eclipse begins with second contact at 6:41 a.m. CDT, after the Moon has set here. Mid-eclipse occurs at 7:18 a.m. CDT. At maximum, 12% of the Moon's surface area will be occulted by Earth's umbral shadow. Third contact (the end of the partial eclipse) happens at 7:55 a.m. CDT, and the penumbral phase ends with fourth contact at 9:28 a.m. With two excellent central solar eclipses this year we'll have to contend with two poor lunar eclipses. The other, a penumbral eclipse, happens on **Oct 08** over Asia. With no central solar eclipses, next year will be different. In the early evening of Apr 03, most of the U.S. (especially the eastern half) will enjoy a total lunar eclipse, the first one visible here since November 29, 1993.

While the April eclipse is progressing, the Moon (about 10 degrees above the western horizon in eastern Wisconsin) occults Spica at about 5:10 a.m. and after the onset of morning twilight. Reappearance occurs about an hour later, just after moonset, so we'll have a chance to see part but not all of this event. Disappearance occurs on the east-southeast limb. This is somewhat of a repeat of the lunar occultation of Spica on Jan 23 that most Wisconsin observers missed because of clouds. This time, however, the occultation takes place through the Moon's southern hemisphere rather than the northern hemisphere as was the case in January. The April 1995 issues of *Astronomy* (p. 61 & 63) and *Sky and Telescope* (p. 68) each contain good feature articles about both the eclipse and the occultation.

**Apr 22** -- Third Quarter at 11:18 p.m. CDT

**Apr 29** -- New Moon at 12:36 p.m. CDT

On **Apr 29**, the fourth central solar eclipse to touch a portion of the South American continent in less than four years will occur. This one is an annular eclipse (the Moon being too far away from the Earth to

completely cover the Sun's disk) that cuts a swath across northern Peru, extreme southern Ecuador and Columbia, and northern Brazil. The path of annularity falls near a portion of the same region that will experience 1998's total solar eclipse. How do these people rate, anyway! The southern half of Florida will see a 10% partial eclipse in the early afternoon. This event is not visible from the remainder of the United States.

-★DLK

## Messier Objects for March and April

Here's the list of the best placed M Objects observable in March and April during the early evening hours as determined by M.A.S. Observing Clubs Coordinator **Lee Keith**:

### March

**M-41** Open Cluster in Canis Major (R. A. 6 h 47.0 m / Dec. - 20 d 46 m)

**M-46** Open Cluster in Puppis (R. A. 7 h 41.9 m / Dec. -14 d 49 m)

**M-47** Open Cluster in Puppis (R. A. 7 h 36.6 m / Dec. -14 d 29 m)

**M-50** Open Cluster in Monoceros (7 h 03.0 m / Dec. - 8 d 21 m)

**M-93** Open Cluster in Puppis (R. A. 7 h 44.6 m / Dec. -23 d 53 m)

### April

**M-44** Open Cluster in Cancer (R. A. 8 h 40.4 m / Dec. +19 d 41 m)

**M-48** Open Cluster in Hyrda (R. A. 8 h 13.8 m / Dec. - 5 d 48 m)

**M-67** Open Cluster in Cancer (R. A. 8 h 13.8 m / Dec. - 5 d 48 m)

**M-81** Spiral Galaxy in Ursa Major (R. A. 9 h 55.8 m / Dec. +69 d 04 m)

**M-82** Irregular Galaxy in Ursa Major (R. A. 9 h 56.2 m / Dec. +69 d 42 m)

To receive the M.A.S. Messier Observing Club Handbook (with tips on reading star charts and finding these objects), send one 8-1/2 x 11-inch SASE with \$1.01 postage attached to Lee at 8150 South Legend Drive, Franklin, WI 53132. By following his prescribed observing program listed here each month, you can obtain your Messier Certificate and lapel pin in one year's time!

## "NICK'S NICEST LIST" OF OPEN CLUSTERS

**Nick Nichols**, amateur astronomer extraordinaire in the town of Richfield, northwest of Milwaukee, and a long-time M.A.S. member has found a new observing challenge. Here are some excerpts of a letter he recently sent to the *Focal Point* editors:

In all the years I have spent observing the heavens, I have often wondered what the sky has to offer beyond just the usual Messier objects, the planets, and the Moon. After viewing all the familiar objects an evening's observing session had to offer, I was usually finished for the night. Maybe this was due to laziness, or just a lack of knowledge about other objects I could view.

So to rediscover the night sky, I designed a winter and early spring observing project. I decided to study all the open clusters in the constellations of Orion, Monoceros, Gemini, Canis Major, Lepus, Puppis, Taurus, and Auriga that are not Messier objects. There are 86 open clusters within the boundaries of these constellations. They truly "reign supreme" in the winter night sky!

To encourage other M.A.S. members to give this project a try, I've condensed the list of potential observing targets down to the following favorites. Observing the whole list would be very time consuming, so I've chosen just the ones I feel are the most worthwhile to track down, and placed them in two categories: "Fair to Good", and "Good to Excellent".

Some of the listed N.G.C. objects are very bright. You'll wonder, as you view them, why they're not on the Messier list. Some are very large and very open -- use your widest field eyepiece -- while others are more compact. Many have interesting shapes or patterns.

All of these objects are visible in small 'scopes (I used a 12-inch SCT mounted in my observatory in the town of Richfield) and will be easy to find and observe. R.A. (in hrs and min) and Dec. (in deg and min) have been included. Good hunting!

## THE GOOD TO EXCELLENT GROUP

| NGC  | R.A.  | Dec.   | Constellation |
|------|-------|--------|---------------|
| 1664 | 04:51 | +43 40 | Auriga        |
| 1778 | 05:08 | +37 01 | Auriga        |
| 1981 | 05:35 | -04 27 | Orion         |
| 2129 | 06:01 | +23 18 | Gemini        |
| 2169 | 06:08 | +13 58 | Orion         |
| 2244 | 06:32 | +04 53 | Monoceros     |
| 2264 | 06:41 | +09 55 | Monoceros     |
| 2281 | 06:49 | +41 07 | Auriga        |
| 2301 | 06:51 | +00 30 | Monoceros     |
| 2343 | 07:08 | -10 37 | Monoceros     |
| 2360 | 07:17 | -15 16 | Canis Major   |
| 2362 | 07:18 | -24 55 | Canis Major   |
| 2539 | 08:10 | -12 45 | Puppis        |
| 2567 | 08:18 | -30 29 | Puppis        |

## THE FAIR TO GOOD GROUP

| NGC  | R.A.  | Dec.   | Constellation |
|------|-------|--------|---------------|
| 1807 | 05:10 | +16 30 | Taurus        |
| 1817 | 05:12 | +16 40 | Taurus        |
| 2017 | 05:40 | -17 00 | Lepus         |
| 2251 | 06:34 | +08 23 | Monoceros     |
| 2266 | 06:43 | +27 00 | Gemini        |
| 2286 | 06:47 | -03 00 | Monoceros     |
| 2302 | 06:51 | -07 02 | Monoceros     |
| 2311 | 06:57 | -04 33 | Monoceros     |
| 2335 | 07:06 | -10 00 | Monoceros     |
| 2345 | 07:08 | -13 00 | Canis Major   |
| 2353 | 07:14 | -10 15 | Monoceros     |
| 2421 | 07:36 | -20 30 | Puppis        |
| 2423 | 07:37 | -13 48 | Puppis        |
| 2506 | 08:00 | -10 43 | Monoceros     |
| 2571 | 08:18 | -29 35 | Puppis        |

-★Nick Nichols

## BON VOYAGE!

Wanda Berner and Tom Renner wish to remind all members about the Windjammer Barefoot Cruise they're planning (in association with a local travel agency) to view the February 26, 1998 total solar eclipse in the Caribbean. Details were disclosed at the Feb 17 membership meeting. If you didn't make it to that meeting but would like to learn more, Tom and Wanda will be available for questions at the Mar 17 meeting at National Regency. Or you can call Wanda at 691-2360 or 646-8229. Tom can be reached evenings at 524-0932.

If you'd like to participate, Wanda and Tom would like to hear from you very soon.

## ON THE LIGHTER SIDE

As reported here last month, Rep. Jim Baumgart of Sheboygan has completed a draft of a new bill to succeed AB 344, Wisconsin's first light pollution legislation defeated in the last session of the state legislature.

The new bill is currently known as LRB-2483/1 (LRB = Legislative Reference Bureau). Baumgart is seeking co-authors until March 10, and urges M.A.S. members to contact their Assembly representatives to consider co-sponsorship with him. Baumgart can be reached in his Madison office at 608-266-0656. To obtain the name and phone number of your Assembly Rep. call the legislative hotline at 1-800-362-WISC (9472).

Here is the analysis by the LRB with respect to Baumgart's bill:

This bill requires the department of Industry, Labor, and Human Relations (DILHR) to promulgate rules regulating the design and installation of outdoor lighting to improve energy efficiency and to reduce inappropriate lighting.

The bill also allows a municipality to enact outdoor lighting standards that are stricter than those promulgated by the DILHR. Finally, the bill allows a municipality to apply its standards to outdoor light fixtures installed or constructed before the date on which the municipal standards become effective.

A state and local fiscal estimate will be printed as an appendix to this bill.

This issue of *The Focal Point* went to the printer before I was able to obtain a copy of the bill. I may have copies at the Mar 17 meeting. I would like to reiterate the urgent need for all M.A.S. members to begin formulating letters that can be sent to the members of the Environmental Resources, Energy, and Utilities Committee who will be the first to decide the fate of this legislation.

The list of EREUC members will appear in this column next month.

-★Dan Koehler