



Capitol Skies

The newsletter of the Madison Astronomical Society

December 2002/January 2003

From the President's Desktop

by Neil Robinson

Greetings, fellow MAS'ers, lots to talk about this month, so here goes: We had a great turnout for the Moon Over Monona Terrace event, both in members and public. Well done MAS'ers! The Leonid meteor shower was very nice this year, I hope you were able to get out and enjoy it. Doc Greiner has generously agreed to re-loan his CCD camera to MAS for another year for the purpose of facilitating the training of enough MAS

members in the use of CCD equipment to justify the club buying its own CCD camera. Greg Selleck will have something to say about the training program later in this bulletin. The YRS land purchase was in fact completed as forecast in the last bulletin, so we are now driving in on our own driveway, at last. The Dec meeting is our holiday party, so come one and all. We'll have a short business meeting to start and then get on to the party.

Moon Over Monona Hugely Successful

MAS's biggest public event went off this past October 11th as well as we could have hoped for. Light afternoon haze gave way to clear skies and comfortable temperatures as over 30 telescopes and binoculars were set up on the roof of Monona Terrace that evening. Additional pictures can be found on page 4, as well as comments from a few participants.

Calendar

- December 10 Space Place guest speaker, 7:00 pm: Dr. Peter Sobol, Historian of Science, "What is the Anthropic Cosmological Principle, and Why Do Astronomers Keep Talking about It?" 1605 S. Park St.
- December 13 Annual Holiday Party, 7 pm at Space Place, 1605 S. Park St.
- December 18 Madison Metropolitan School District Planetarium – Public show. Season of Light. This delightful multicultural program will lead you through the discovery of many basic astronomy concepts as you explore the holiday traditions of several cultures and religions. Two shows, 6:30 and 7:45. Tickets \$2. Tickets go on sale approximately 20 minutes prior to the show. First come, first served. Memorial High School, 201 S. Gammon Rd., 663-6102 or www.mmsd.org/planetarium for info.
- January 10 MAS monthly meeting. 7:00 pm board meeting, 7:30 main presentation: Dr. James Lattis, "Between Copernicus and Galileo: Clavius." Space Place, 1605 S. Park St.
- January 15 Madison Metropolitan School District Planetarium – Public Show. One show only, 7:00 pm. Tickets \$2. Tickets go on sale approximately 20 minutes prior to the show. First come, first served. Memorial High School, 201 S. Gammon Rd., 663-6102 or www.mmsd.org/planetarium for info.



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Madison Astronomical Society members are active in sharing the pleasures of astronomy with the public, acting as a resource for students and teachers, and exchanging information at Society meetings which occur monthly. The

Society continues to pursue its original goal to "promote the science of astronomy and to educate the public in the wonders of the universe."

For more information about the Society, please contact one of the officers listed above.

MAS thanks

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Visit MAS on the web at:

www.madisonastro.org

From the Observatory Director

by Tim Ellestad

Winter is once again arriving at the Yanna Research Station. The chilly conditions usually result in reduced activity at the observatory but the site definitely remains open and operational. It's time to review some basic winter-use reminders.

Our clubhouse is snug and warm. The heating system uses a dual thermostat control that keeps the "maintenance" temperature (building unoccupied) from never going below about 50° F and yet allows the "in-use" temperature to rise quickly to 68° F when requested. Please - DO NOT ADJUST THE THERMOSTATS! When you want warmth in the clubhouse simply set some time on the electric timer located on the clubhouse floor just below the air conditioner. This will enable the high temperature system to quickly bring the clubhouse up to room temperature and keep it there until the timer runs out. If you should leave YRS before the timer runs out just turn the timer back to zero.

There is a snow shovel behind the clubhouse door for clearing pads, decks and doorways. A broom can usually be found there, too, which is usually preferable for clearing decking with only light snow cover. CAUTION - decking can become nearly invisibly ice-glazed and very, very slippery. Take care in any conditions that will sustain ice.

The driveway turn-in will remain open into the mowed part of YRS as long as turf conditions remain firm. Like last year, when the ground softens a barricade will be placed across the turn-in driveway and vehicle traffic will be prohibited on the mowed area until conditions dry and firm up. When driving in after dark please go slow so as to not be surprised by a newly installed barricade. Generally it's best to leave your vehicle in the parking lot if you are not carrying in equipment.

Go slow and use caution when turning off Kelley Road onto the main driveway. In snowy conditions this driveway is not always plowed and it is safest to use the existing tire tracks. Our driveways are generally quite navigable, even in fairly bad snow conditions, but if you get off the gravel on the south side of the main driveway in deep snow you will likely need help in getting out. Above all, we absolutely must leave the main driveway unobstructed. Our use of this driveway is guaranteed by an easement - we do not own it. The main driveway is the Kelley Road access for our neighbor to the west, Jon Yanna.

Winter is a quiet, peaceful time at the observatory. Make some cocoa and bundle up. Come out and enjoy some of those dark, transparent nights that winter provides.

From the Treasurer

by Mary Ellestad

MAS warmly welcomes the following new members: Jim Vriesacker, Mandy Pertzborn, Jane Conway, Steven Barthel, and Dave & Nina Werner.

Final Dues Reminder

MAS membership renewals were due in September. If you have not paid your 2003 dues, this will be your last newsletter. Thanks again to everyone who paid - we are very pleased to have you as MAS members for the coming year.

"Impressions," cont. from facing page

The Minor Planet Center web site can be found at:

<http://cfa-www.harvard.edu/cfa/ps/mpc.html>

I think projects of the sort described by Greg are a lot of fun and well within the capabilities of the MAS to undertake. I expect to participate in promotion of these activities.

CCD Cameras in Amateur Astronomy

by Greg Sellek

At the November MAS meeting I gave a presentation on how CCD's are being used in amateur astronomy to contribute to the scientific community. Amateurs are contributing greatly in the fields of variable star measurements, asteroid detection and monitoring, and even extrasolar planet research. During the presentation I demonstrated the types of research and examples of amateur research done using moderate equipment such as we have at Yanna Research Station. I also showed examples of the types of images that can be obtained with a CCD camera and how a computer can be used to completely automate an observing session. As a result, there has been significant interest generated in using a CCD camera at YRS for research and general imaging.

Previously, a CCD camera was on loan to me by R.A. Greiner, and with it I and several others have submitted hundreds of observations of asteroids and comets to the IAU Minor Planet Center. Since we have demonstrated the capabilities of a CCD camera on our current equipment, it makes sense to offer the same opportunity to other club members. Most recently, Doc Greiner has agreed to let the club use his CCD camera for a period of 1 year. Pending approval by the MAS Board and mem-

bership, this camera will be mounted on the 12" LX200 housed in the AKO. This presents a wonderful opportunity for the MAS to enter into the modern field of CCD imaging and research.

While not difficult, CCD imaging requires additional skills that have previously not been taught in our observatory orientation. As a result, I will be offering CCD instruction to MAS members in order to facilitate the use of the CCD camera at YRS. This instruction will be done in several stages and on an ongoing basis. Once an observing member has been determined qualified to use the CCD camera (per guidelines to be set forth by the board), they will be allowed to use it just like any other equipment at YRS.

The first stage of training will consist of a training session to be held at the Space Place. This will be a classroom type setting, during which I will cover the basic concepts and skills needed to use the CCD camera. Each session is limited to 10 people and is open to ALL MAS MEMBERS. Members must attend one of these sessions in order to progress to the next stage of training. Once this initial stage of training is completed, members will begin to train on the actual equipment at YRS in smaller groups.

Anyone interested in attending one of these sessions is encouraged to contact me by e-mail (preferred) at orion2598@hotmail.com or by phone at 608-848-6301. Actual dates and times of the sessions will be determined based upon availability of the Space Place and by the number of interested members. Most likely these will occur on weeknights, but a weekend session may be arranged if there are a significant number of members who are unable to attend on a weeknight.

I would encourage anyone who is interested to sign up for a class. No previous knowledge of CCD imaging is necessary, and the material will be geared towards newcomers. While I hope that all attending the class will decide to continue his/her training, it is not required.

Through these training sessions, I hope to generate significant interest in CCD imaging among club members. Since CCD imaging is often prohibitively expensive for an individual, this a great opportunity to make use of our club's equipment. More importantly, it allows members to begin to explore one of the newest fields in amateur astronomy.

Please feel free to contact me with any questions at the address listed above.

Impressions of the Program at the November MAS Meeting

by R. A. "Doc G" Greiner

I was excited by and impressed with the program given at the November MAS meeting by our former president Greg Sellek. His presentation showed members just what sort of science can be done with the facilities the MAS has available at our dark site, Yanna Research Station.

With the addition of a CCD camera to one of our 12 inch telescopes he was able to show some fine examples of capturing some asteroids and imaging comets and other objects. Greg's efforts and those of Matt Mills are paying off handsomely. The YRS observatory now has a registration number

with the Minor Planet Center. The benefit that goes with this is that our observations are considered accurate and valid. Greg showed some neat slides taken at timed intervals that demonstrated motion of asteroids. I was quite impressed by the quality of his work. While we do not yet have a minor planet discovery of our own to claim, we have a record of dozens of confirmations of new asteroids. This information which is sent to the Minor Planet Center is used both to confirm sightings and to help establish accurate orbits for asteroids.

He also discussed observation of variable stars using a CCD camera and other

uses of these cameras for photometric observations. I found the descriptions of these activities very interesting and was impressed by the level of science that can be done by amateurs. I have long been interested in CCD imaging. (I loaned my camera to the MAS for this work) Those interested in CCD cameras for amateur use might be interested in reading a paper I gave two years ago at the NCRAL 2000 meeting. It is slightly dated, but gives an overview of what sorts of cameras are appropriate for amateurs to consider for work of the kind being done by some MAS members:

<http://www.mailbag.com/users/ragreiner/ALPaper.html>

Moon Over Monona Terrace

It seems like Friday, October 11th, was probably the last really warm day that we've had in this year of the missing Indian Summer. The evening was unusually warm, the sky was clear and the moon was nearly first quarter. By 6:30 many MAS members had arrived and set up telescopes and binoculars for viewing. The public started arriving right on time at 7:00 and there was a very steady stream of people, including lots of kids, until after 9:00. At one point I took a walk around and counted 28 different instruments and I know there were at least 35 MAS members present. It's pretty hard to estimate but, based on our last event and how busy everyone was all night, the attendance was probably between 600 and 800. Would you believe that the clouds started rolling in by about 9:30 and it was rainy the entire next day. However we got this lucky is OK by me!

I want to extend a huge and sincere thank you to our members - you really came through for this event! Wynn Wacker did a great job as MC and was even interviewed by Channel 15 and got

15 seconds of fame for himself and MAS on the 10:00 News. John Rummel's monitor was a big attraction and he is certainly a pro at explaining things. Greg Sellek pointed the Dobsonian from our clubhouse at the Ring Nebula and showed a lot of people what he thought wasn't the best image (not his exact words!). I was surprised you could see it from downtown Madison at all. We all answered a lot of questions and the public response was very enthusiastic. This event was a great success because of your participation and I hope

that you all had as much fun as Tim and I did. *(Mary Ellestad)*



Moon over Monona was great. I had heard of its past success and was delighted to see it succeed first hand. I estimate 50 people observed through my C-8 that night, each taking a personal "flight" over the moon (created by me slowly slewing the scope). The staff of the Monona Terrace was very friendly and helpful; especially the gentleman at the loading bay to whom I say thanks! The "ooh's", "aah's", and questions I received were lots of fun. MAS should find more ways to be active in the community, to share our enjoyment of astronomy with others, and to continue to "educate the public about the wonders of the physical universe." *(AJ Carver)*



Book Reviews: For the Discriminating Holiday Shopper

Reviews by R. A. Greiner and John Rummel

***A Guide to the End of the World: Everything You Never Wanted to Know* by Bill McGuire (Oxford 2002).**

What has this to do with astronomy you might ask? Astronomers have been all up in arms recently about the possibility of an asteroid hitting the Earth and doing cataclysmic damage to civilization as we know it. This littlebook, a quick read at 189 pages, mentions this possibility. But, what attracted my attention is that the author discusses four other possibilities for the end of the world that are just as bad and probably much more likely. That does not include blowing ourselves up.

The author is a geologist so you might expect him to describe four ends of the world that are related to natural earthy phenomena. He starts with a short history of the earth, explaining how the earth was formed and how it is changing on the biggest scale. The author writes interestingly about plate tectonics and the everchanging, moving crust we live on. He follows with a chapter on global warming. Is it just a lot of hot air? In a very interesting way he ties

global warming with the behavior of the oceans. There is a lot of evidence that some global warming will in fact trigger another ice age in the northern climes of the earth. Canada and Europe will really get it!

I found this discussion, which takes up the central two chapters, fascinating. That is, if one can be fascinated by the end of modern civilization or the world. It seems interesting that an ice age triggered by global warming is more likely and will come on a shorter timescale than a likely hit from an asteroid in his estimation.

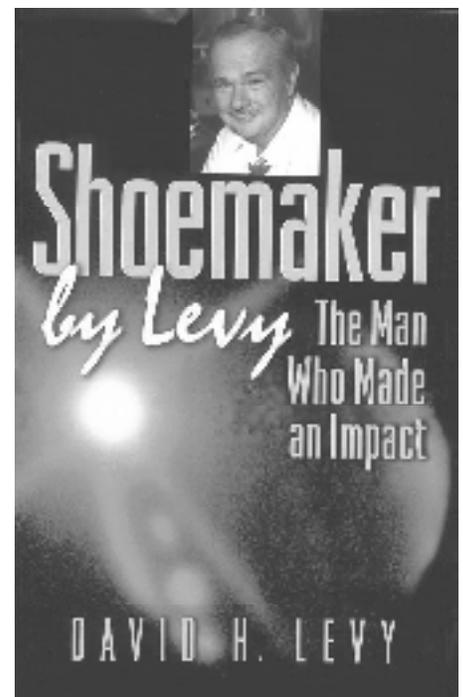
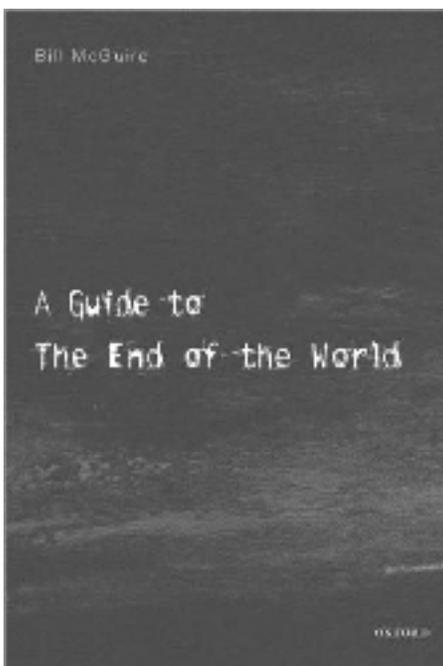
The next chapter is on the threat from within. Supereruptions, giant Tsunami and the great quake are all related to the fact that the crust of the earth rests on liquid rock and it is shrinking and moving relentlessly. Convincing descriptions of these three phenomena are given with the expertise of a geographer with a well founded academic and research base. I found the descriptions, extent of the destruction and timetable a bit frightening. All of the descriptions and predictions are based on events that have happened in the recent or more distant past. Mostly within the life time of the human animal.

Finally, he gets to the possibility of collisions between the earth and other objects. This chapter will be familiar to most astronomers, but he still throws new light onto the topic. The author has the ability to put all of these events into perspective and is able to provide a timetable for the probability of these events. He provides two nice little charts to summarize how the several events described fit together in time. While not exactly a cheery little book, it was an interesting read. We do not know which event might happen or if it will happen in many years or tomorrow. Some of the events are slow to happen and some are very quick. If one of the quick ones happens it will sure be an exciting day. (review by R.A. Greiner)

***Shoemaker by Levy: The Man Who Made an Impact* by Davis Levy (Princeton University Press 2000).**

I found this to be a wonderful book about an astronomer/geologist of interest and importance to the world of astronomy and astro-geology. Gene Shoemaker and his wife Carolyn together had an enormous influence on the comet and asteroid astronomical community. Gene Shoemaker had a much longer term and important impact on the entire world of geography. He had a long career in the study of impact craters especially on the earth. He worked extensively with the Apollo program and prospects for our landings on the moon. While I and many other amateur astronomers had never heard of Shoemaker until the astonishing comet, Shoemaker-Levy, struck Jupiter, this book points out and describes in detail his early work in geology and his very significant influence on understanding impact craters on the earth's surface.

One of the striking things about this biography is its detail about Shoemaker as



Book Reviews, cont.

a scientist and especially the man. Levy knew Shoemaker for the last ten years of his life and worked closely with Gene and Carolyn in discovering comets and asteroids. The text is very sensitive, sympathetic and even adoring of the Shoemakers as well it should be.

I have to admit that I was very excited about the work and the descriptions of the work that Gene Shoemaker did early in his career as a geologist. I had not realized how closely he was involved with preparatory work for the moon landings. His work in this area is described in considerable detail. Every reader with even a slight interest in the moon mission aspect of US space explorations will find this narrative both exciting and interesting.

Levy got to know the Shoemakers very well since he was an amateur astronomer of considerable talent himself. Levy had discovered a dozen comets and many asteroids before he got to know Gene and Carolyn. The Shoemakers were as anxious to work with him as he was with them. This mutual interest melded into a deep friendship on a human basis as it did a mutual respect for doing excellent work in asteroid and comet searches. From this relationship arises this very intimate and friendly biography. It is well written and easy to read throughout.

The book covers in some detail the roughly three parts of Shoemaker's life. He died in 1997 at the age of 69 in an automobile accident in Australia. He was rushing about on the Australian backroads going to see an impact crater. Carolyn was seriously hurt, but survived. The first part of Gene's life was devoted to impact craters on the earth. He was acting as a geologist working for the National Geological Survey in Arizona. He proved to a skeptical scientific community that the Arizona crater and many other crater like formations on the face of the earth were in fact impact craters caused by asteroids or other objects crashing into the earth from outer space. He had total and final success in promoting these correct scientific notions. This work alone made him a respected scientist. The middle years of his life, 1960 to 1980, were spent work-

ing on projects related to the moon landing program. In fact, at one time he hoped to be one of the first men on the moon. It was not to be for a variety of reasons. But he was deeply involved in the science of and preparations for the moon landing program. His knowledge of impact craters was essential to understanding the surface of the moon and choosing a landing spot. He was largely responsible for establishing the geological program for the moon landing. By 1980, he had returned to his work investigating impact craters all over the face of the earth. Additionally he devoted a great deal of time to working with his wife, Carolyn, hunting comets and asteroids. Carolyn was expert at finding objects which moved among the stars by searching photographic plates. Together they used a number of telescopes in Arizona and in particular an 18 inch Schmidt camera on Palomar. Their program of observing was a part of the national asteroid and comet search of the 1990s.

It was during this work that the comet Shoemaker-Levy was discovered in 1993. The discovery of this comet is in itself a long and twisted story. I will leave the details to the book. Briefly the discovery was done during some last minute test exposures on some film that they just wanted to use up because it had become fogged. When Carolyn searched the film, there it was, Shoemaker-Levy, one of the most important comets of recent times.

This book is full of stories and anec-

does that are well worth knowing about. It is an intimate story about two fine people. I recommend it highly. (review by R.A. Greiner)

The Planet Observer's Handbook, Fred W. Price, Second Edition (Cambridge University Press 2000).

From time to time one has the misfortune of purchasing a book that is all but useless. This is such a book. Though written in 1994 and presumably revised in 2000, it appears to me that the book could have mostly been written 20 years ago. It is a simplistic and pedantic commentary mainly about visual observations of the planets over the years.

There is nothing whatever of the technology of the last 10 years used by amateur observers to both observe and get excellent images of the planets. There is nothing significant about the planetary space program which has produced much of our current knowledge of the planets.

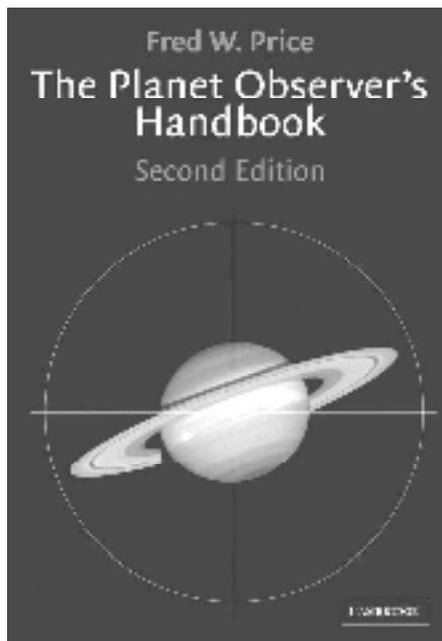
You can and will have learned MUCH MORE about planetary observing by reading Sky and Telescope over the past few years or going to any number of other sources.

This book is \$27.00 down the drain. Forget about getting it. (review by R.A. Greiner)

Seeing in the Dark: How Backyard Stargazers Are Probing Deep Space and Guarding Earth from Interplanetary Peril by Timothy Ferris (Simon & Schuster, 2002)

The publication of a new book by an author of Timothy Ferris' stature should pique the interest of most amateur astronomers. Seeing in the Dark is exceptional in this regard, since the book is all about amateur astronomers.

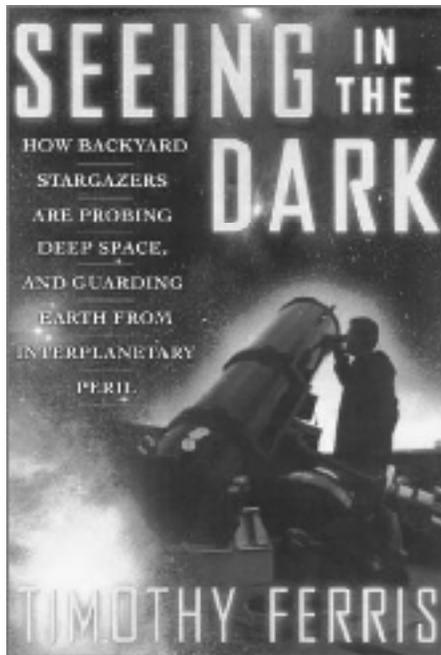
Ferris, an avid amateur observer himself, has spent the last few years visiting some prominent amateur astronomers, following them as they engage in what amounts to sophisticated research (for free), going to their star parties, looking at their photos, and just generally learning their stories. Those stories are collected in his new book



“Seeing in the Dark,” along with Ferris’ usual assemblage of science, storytelling, history, and culture.

As usual, Ferris has a knack for sound-ing quotable, as in his description of a total solar eclipse. I’ve read countless accounts of the powerful visual expe-rience of viewing to-tality, and Ferris ranks among the best in terms of capturing the raw mix of terror and fasci-nation: “*Suddenly the sky collapsed into dark-ness and a dozen bright stars appeared. In their midst hung an awful, black ball, rimmed in ruby red and sur-ounded by the dooms-day glow of the gray corona. No photograph can do justice to this appalling sight: The dynamic range from bright to dark is too great, and the colors are literally unearthly. I staggered back a few steps, like a drunken man...*”

The amateur observers that Ferris high-lights will be familiar to readers of popular astronomy publications: Jack Newton, Stephen James O’Meara, Don Parker, David Levy, and many more. But few have heard



the anecdotes told here, of the personal motivations and triumphs of a handful of legendary sky gazers. There’s even a con-versation with Brian May, the lead guitarist for the rock band Queen. How many ama-teurs know that May has a college degree in mathematics and astronomy, or that Queen’s little known but outstanding acoustic song “39” is about relativistic time dilation?

There’s a lot of good science in this book as well. The chapter on the moon contains a wonderful explanation of the tides on Earth, as well as the best summary I’ve ever read of the various theories about the “moon size” illu-sion that makes the moon seem huge when seen close to the horizon.

Ferris’ previous books have established him as a solid popularizer of science and he continues that tradition with *Seeing in the Dark*. It’s an easy blend of history, science and personal experience that is a pleasure to read. I highly recommend this book. (*re-view by John Rummel*)

Leonid Meteors Do Not Disappoint

by John Rummel

Tuesday morning, November 19th, the skies were obligingly clear, though the nearly full moon put a bit of a damper on meteor observing. I got up at 3 am and arranged a blanket in my driveway where I could ob-serve straight to the zenith while allowing my house to block the light of the moon. In the hour that I observed (3 to 4 am local), I counted 25 Leonids, many of which were quite nice and left a lingering trail. A friend from Minneapolis reorted similar numbers for the hour before 4 am but saw a jump in the rate between 4:30 and 5:00 am, coincid-ing with the predicted peak for North

America. I guess I went in too soon (but those bedsheets sure felt good after lying in the cold for an hour).

Jim Lattis reports that about 200 people gathered at Wingra Park in Madison be-tween 3 and 5:30 am and were treated to a nice show, many of the participants view-ing a meteor shower for the very first time. One telescope was set up so everybody could enjoy excellent views of Jupiter and Saturn as well.

It was not the best meteor shower, but if the experts are correct, it may have been our last chance for a Leonid storm for about the next 100 years or so.

A star to call one’s own, part II

by John Rummel

In Greg Sellek’s column last issue, here recounted his experience receiv-ing a named star from the “star naming company.” I also have a tale to tell in this regard.

A few years ago at Christmas time, I received a star named in my honor. The story is a bit amusing. It was the beginning of December and we were preparing to travel to Maryland to visit my family for Christmas, as was our tradition at the time. My mother had called a few days earlier to tell me that one of the gifts she had gotten for us was being shipped directly to Wis-consin so we wouldn’t have to carry too much stuff home with us on the plane. A few days later, I arrived home from work one day a bit early, and found a package inside our storm door. I assumed it was the gift my mother had referred to. I then noticed on the box the logo and imprimatur of the International Star Registry. With a groan, I showed it to my wife, and gave her a brief summary of the ISR’s practice of “naming” stars for people, and how they were rook-ing people out of their hard-earned cash while offering a “service” for something they had no right to offer. I said that I couldn’t believe that my mother had been taken in by their glitzy sounding advertisements. There was no mistake about the scorn in my voice.

It was about then that I noticed the look on my wife’s face. She wasn’t listening impassively to my harangue. On her face was a combination of embarrassment and hysterical amusement. She had been the giver, not my mother.

I spent most of the remainder of that evening trying to get my firmly wedged foot out of my mouth, while apologizing and explaining that I didn’t exactly mean that it was stupid or anything, just a mis-guided, er, unfortunate... no... Sigh. No escape.

A gift like this may be a hard for an astronomer to swallow, but remember, it’s always the thought that counts.



Capitol Skies
2810 Mason Street
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First Class

MAS would like to thank:

Tim Stanton and IMAGES UNLIMITED

for printing the newsletter

and



for hosting our web presence

This resource list is made up of people who have special interests which they are willing, even eager, to share with others in the Society. Many members, not listed, also are interested in particular aspects of astronomy and have considerable expertise in viewing and imaging the skies. Members are encouraged to come to the monthly meetings, not only to get to know the other members, but to discuss and enjoy their special or general interests in various aspects of astronomy. This is a Society of beginners and experienced amateurs. From time to time we have seasoned professionals attending. The meetings are a good time to meet these people as well. See you there.

Resource People and Special Interests

- Newsletter Editor: open to appointment
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- Photo Editor: Tim Ellestad 233-3305
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(tom.brissette@midplains.net)
- Minor Planet Search: Greg Sellek 848-6301
(orion98@charter.net)

MAS Membership Form	
Name:	_____
Address:	_____
City/State/Zip:	_____
Phone:	_____
Email:	_____
Please circle membership type: <i>Enclose check and make payable to the Madison Astronomical Society. Mail to MAS Attention: Mary Ellestad, 2810 Mason Street, Madison, WI 53705</i>	
Student (\$5.00)	<input type="checkbox"/>
Regular (\$25.00)	<input type="checkbox"/>
Observing (\$60.00)	<input type="checkbox"/>