FOCAL POINT

The Newsletter of the Milwaukee Astronomical Society April 2000

Getting Your Feet Wet

Coming up this weekend, April 1, is the Messier hunt at the club's observatory. It is meant to be a good training exercise (for all of us) in finding and observing Messier objects (galaxies, clusters and nebulae, most of which are not visible to the naked eye) by learning their precise locale amongst the constellations, and pattern of stars and studying them with binoculars and telescopes. If it is your intent to do nothing more than amaze your family and friends with your skill in finding these hidden objects, this is the place to learn. If your going to help educate the public at our open houses, this is basic training to show them that the universe has other fascinating objects, besides the typical lunar and planetary fare. In fact, this is really good basic training for almost all aspects of amateur astronomy activity including serious scientific data collection

An example of applying this type of training is illustrated in the Variable Star Observing article on page 5 of this issue. If you read the article closely, you'll see that same techniques for locating a variable star (to be studied) are used as in Messier object location. The same approach holds true for field observation of grazes and occultation's of various types. What about setting circles , you say? Scopes with accurately mounted and calibrated setting circles reduce the localized hunting for a star or object (most of the time)....but any serious amateur worth his/her salt should be well aquainted with the night sky.

You may be too busy or lack desire to get this skilled in amateur astronomy...and that's okay; but if you want to maximize the observing opportunities that this club's superb facilities offer...then its time to "strap the training wheels on" and get up to speed so you can progress to using the more sophisticated equipments the club provides. Recognize that, at todays prices, the club's observatory represents several hundred thousand dollars in observing facilities. The founding fathers obviously felt that astronomical observing, both casual and serious, was a basic "tent pole "of this club.

MAS Election on May 19, 2000

Nominations for President, Vice President, Secretary, Treasurer and 3 Board Directors are open for nomination. Please make your nominations to the Nominating Committee prior to the election process.

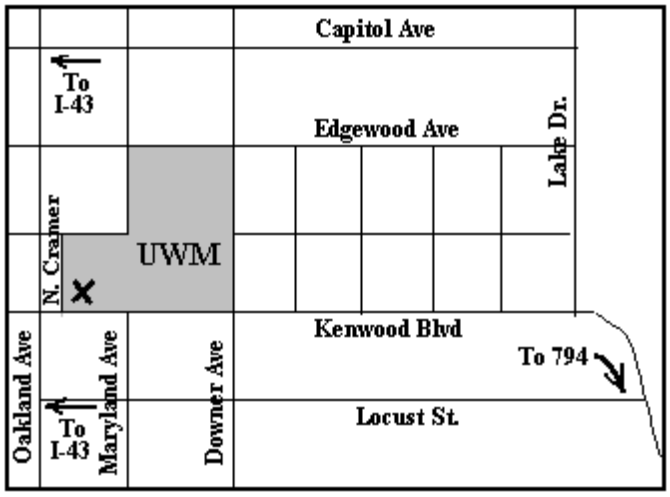
We meet Friday, April 21, 8:00 PM at UWM

We meet at the above time at the Kenwood Campus of UWM in Room 133 (first floor) of the Physics Building located on the corner of Kenwood Boulevard and N. Cramer Street.

Our featured speaker will be Gerry Samolyk, MAS Observatory Director. His talk is entitled "RU Mon; An Interstellar Detective Story". The editor was unable to glean more detail but suspects it has something to do with a set of variable star observations and its usefulness in deducing certain phenomena. There are two good reasons for showing up for this talk;...to solve the mystery, and to hear what undoubtedly will be another excellent presentation by Gerry.

There is plenty of off - street parking east (but next to) the Physics building. Ignore the reserved parking place signs. They don't apply after 5:00 PM.

The MAS Board meeting will precede the regular meeting at 7:00 PM. All board members are urged to be there. Please call the President (Phone number on back page) if you are unable to attend.



NOTE: The April meeting is the last meeting of the season at UWM. The May monthly meeting will return to the Observatory in New Berlin

Bits and Pieces

The following items of interest were discussed at the March 17 Board meeting.

*The Annual MAS Picnic will be held on July 22nd and $400 was again budgeted for food & drink. Last year, it was felt that the attendance was held down by threatening weather in the morning. On the hope for better weather this year, the budget was not reduced. Last year also had a large variety of Astronomical accessory door prizes that wound up being a bonanza to those in attendance.

* A tour package for 10 or more people at our observatory will be donated to the local PBS TV Station for there annual fund raising auction.

* Our observatory site passed its annual fire inspection per Scott Laskowski.

*Member Carlos Garces accepted the appointment as MAS Membership Chairman. The membership database will be maintained by Lee Keith in support of Carlos.

*A new interactive MAS Web site will be designed under the auspices of Member Bob Manske. the site is intended to be another source alerting members to various local astronomical events, recent Imaging efforts, forthcoming activities etc. Priority will be given to currency and usefulness to MAS members.

*An Observatory site clean up will be scheduled on one of the forthcoming weekends. Object is to clean up debris from the recent C shed rebuild, teardown and removal of the old Satellite shed (and contents). as well as reworking lawn damage resulting from new pads , cement truck ruts etc.- Stay tuned....

C Scope going Operational

C shed is not slated to be dedicated until the May meetingback at the observatory. Work still remains to be done in terms of equiping the shed with reference desks, shelves, and a lockup console for imaging work. All that not with standing, Scott Jamieson has done such an outstanding job refurbishing rhe mount, adapting the digital pickoffs, donating the 10" F/6 Scope, etal that members are informally getting themselves checked out on the "simple to use " scope with its Orion Sky Wizard 3 digital control. The little hand held Wizard control has a catalog of all 110 Messier objects, the entire NGC catalog, selected objects from the IC, ESO, UGC catalogs, 837 stars including double and some variables, plus all the planets.

Operational use of the scope with digital control is a "cakewalk". The German Polar mount is so well aligned that scope requires finding one known star, selecting it out of the catalog, punching enter , and you're in business. Call up any of the above listed objects , and move the RA & DEC axes to zero the displayed deltas from your present position, and the selected object is usually in the field of view or right next to it. Even some of the German mount "bugaboos" of getting the eyepiece and finder underneath the scope at certain orientations are avoided. If the focuser and finder are in an awkward position, just grab the scope tube, rotate the tube about its tube axis (on precision ring bearings) until the eyepiece is convenient. There seems to be no accuracy degradation with tube rotation. Get in line guys & gals!

Library News

The following book was recently purchased under the club's library budget and is now available for loan.

Tektites: Witnesses of Cosmic Catastrophes - Guy Heinen -1998, published in Luxembourg, translated from German, and autographed by the author in English).

This is a rare, authoritative book about the origin and study of these enigmatic objects. Tektites, 99% glass, resemble obsidian, an earth rock of volcanic origin, but contain far less water. Thought to be of Lunar volcanic meteorite impacts, they did not contain the abundances of minerals on the Moon by the Apollo missions. Tektites are now thought to be impact ejecta that has been melted from an Earth impact site, thrown sub-orbital, through the atmosphere, 100's - 1000's of miles , melted and resolidified and, according to spin and orientation, determining the shape, color and the strewn field where they land and are found.They contain microscopic particles of the impactor.

People have seen meteorites fall but never a tektite. Is our understanding factual, or still a mystery? Documentation and evidence conclude an impact origin. Highly scientific, this book is replete wiyh graphs, maps, data, and bibliographies - a fine resource for study.

A " teardrop" indochinite formed 770.000 years ago, that accompanied this book purchase, will be added to our display at the observatory.

Scott Laskowski, MAS Librarian

Thank you Julie

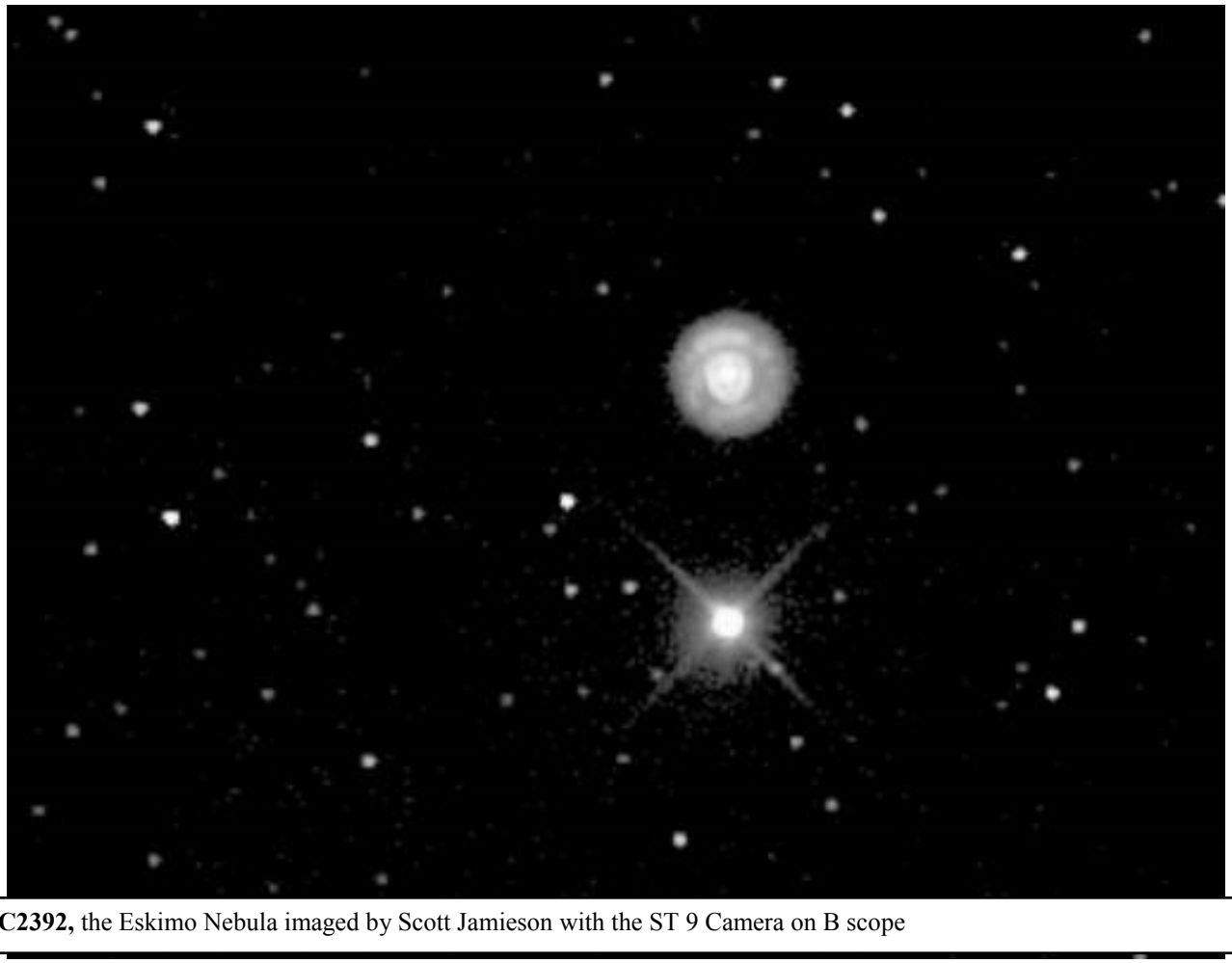
Julie Frey recently resigned her post as MAS Membership Chairperson after several years of doing a yeomans job of running our new member and member renewal programs. Julie volunteered to tackle this job at a time when volunteers where hard to come by, and has had the satisfaction of watching a declining membership slowly turn around as part of the club's rebuild process.

The Officers and Board of MAS thank Julie for her dedicated efforts.

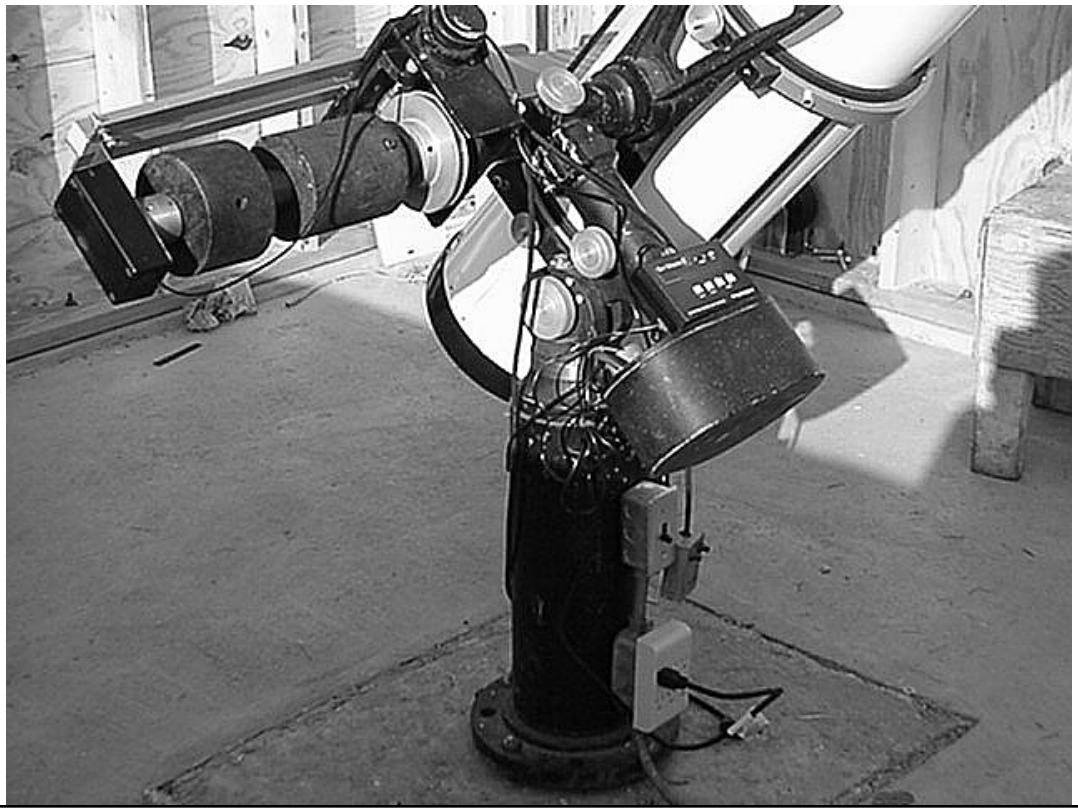
Saturday Nite Observatory Activity picking up

On March 11, I was the keyholder on duty at the clubs observatory site. by 10:30 PM , eight people had come out to use the site. two were doing variable star observing, three were having a lark tracking down Messier objects with C-Scope, one was working on facility repairs, and lastly a member brought his neighbor out to conduct a tour. Things are picking up.

Editor



NGC2392, the Eskimo Nebula imaged by Scott Jamieson with the ST 9 Camera on B scope

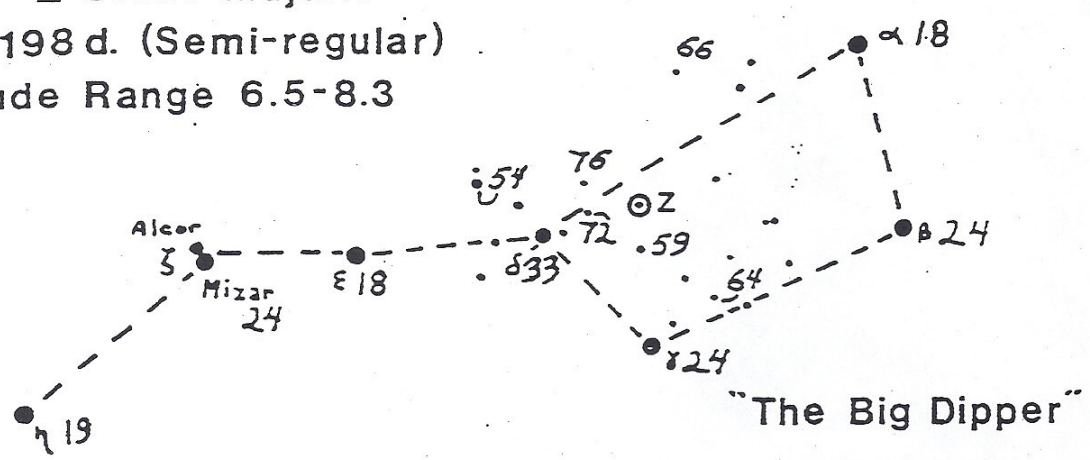


Digitized C Scope. Note the Declination digital pickoff box , cantelevered over the weights (via aluminum bracket). RA pickoff is inside the housing at the lower end of the RA shaft. The Orion Sky Wizard control/data base is at the top edge of this housing. See related C scope article on page 2.

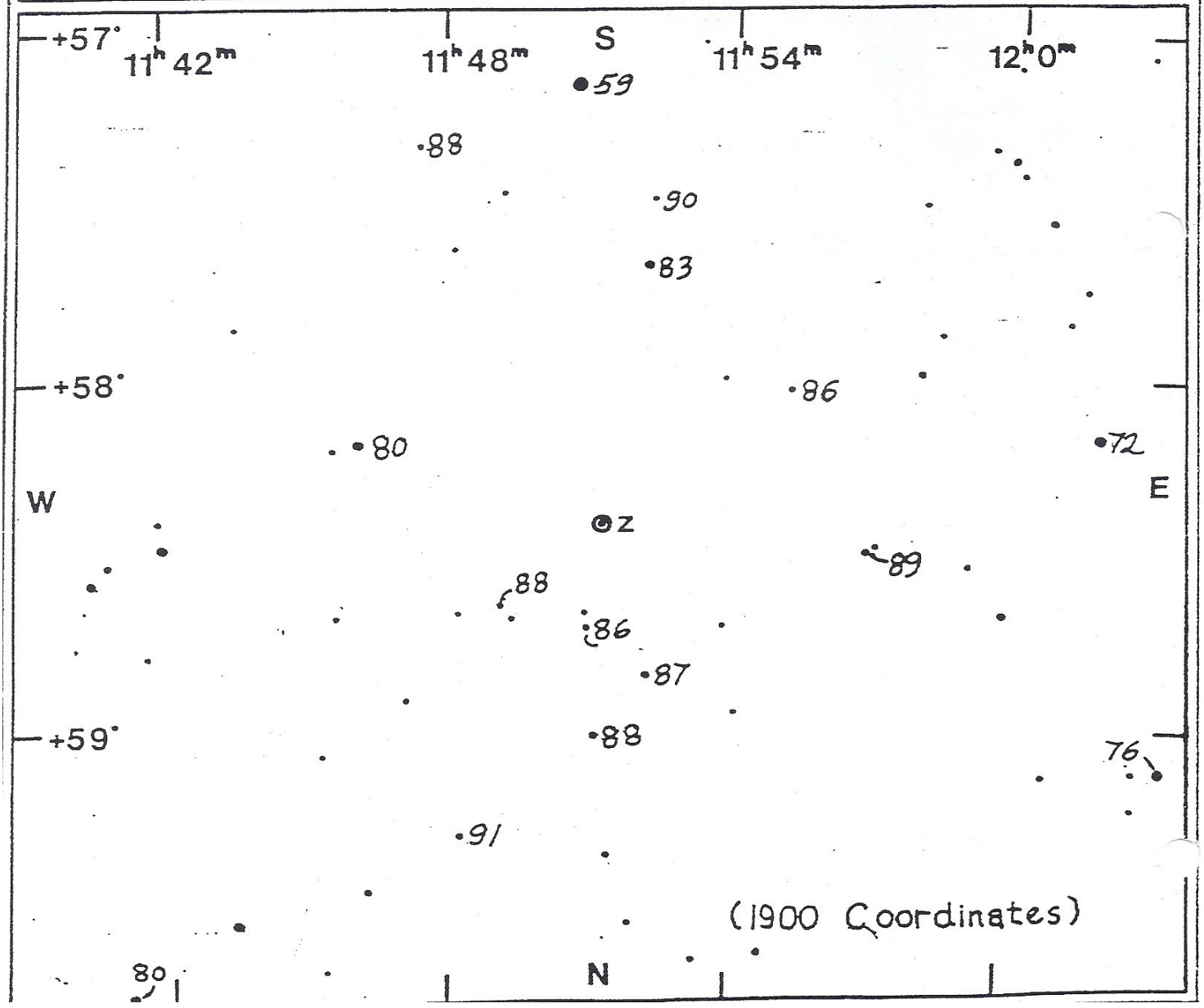
115158 Z Ursae Majoris

Period 198 d. (Semi-regular)

Magnitude Range 6.5-8.3



A.A.V.S.O. Practice Chart



Observing Variable Stars

Observing and recording the magnitude variations of certain types of stars over time is a serious scientific endeavor that is supported by a group of amateurs, including some in our own MAS organization. These collected observations (thru organizations such as AAVSO) provide a data base for use by both professional and amateur astronomers needed in the study of the nature of the universe. Its an activity that uses and sometimes tests, the observing skills but provides a sense of accomplishment and provides a reason for sustained observing activity.There are several classifications of variables that include stars such as eclipsing stars, pulsating variables (RR Lyrae, Cepheids) and eruptive variables (Novae and Supernovae) to name a few.

The following is an excerpted description of "Learning to observe variable stars" written by the American Association of Variable Star Observers.

Stars that vary in brightness are the neon lights of the Universe. Their brightness can change in minutes, in hours, in days, or years. Observers all over the world watch them carefully, compare their brightness with that of "comparison" stars which do not vary, and send their estimates to the AAVSO or other variable star organizations.

First, LEARN THE CONSTELLATIONS. For this, a good Star Atlas is your best friend. Although their are a number of variable stars visible to the naked eye a telescope (or binoculars for bright stars only) and some AAVSO Star Charts These charts show the "field" of a variable. An actual sample of an AAVSO chart for the variable Z UMa is shown on page 4 As you study your Atlas, the instructions become clearer.To help you find the position of stars, find formations squares, triangles, etc. to point the way to the variable, which is shown as a circle with a dot - while other stars are shown as different sized dots. An important thing to remember if you use a telescope with the usual eyepieces (not diagonals) is that the star fields are seen upside down. So your chart must be inverted; the end marked N must be pointed away from the North Pole. There are different kinds of charts for use with different size telescopes. Type "a" charts are used with binoculars and they need not be used upside down. They show variables 7th magnitude or brighter at maximum.

At first, it may take you along while to find a variable. But take your time- check back and forth between chart and sky to be sure you have the right position. When you are sure, compare the stars brightness with the known light of comparison stars. Stars of magnitude 1 are brightest, 2nd magnitude not quite so bright, 3rd magnitude stars a little fainter and so on. Sixth magnitude stars is the limit of naked eye seeing and optical aid (binoculars, telescope) is needed to go fainter. The brightness between magnitudes is given in tenths (with a decimal point as 5.1, 5.2, 5.3, down to 5.9 magnitude which is followed by 6.0 magnitude). For example, a star halfway between magnitude 5 and 6 will be given as 5.5, and a star a tiny bit brighter than 6.0 will be 5.9.

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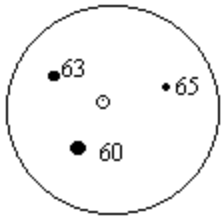

Let us take an imaginary variable with a triangle of 3 comparison stars: the numbers are the magnitudes of the comparison stars. One is 60 (6.0, decimal left out so you won't confuse it with another star), the next is 63, the third 65. Quickly glance back and forth between the 60 star and the variable. Is the star fainter? Try 63. Fainter still? Perhaps 65 is the one. No, its a little brighter than 65, but dimmer than 63. So 64 is the magnitude you will report.

Don't stare at stars too long or they will seem brighter. Do as experts: look back and forth quickly between stars. In your notebook, record the time you made observations and the comparison stars used .a Sample line from the AAVSO reporting form is shown at the bottom of this page.

End of excerpts

MAS is inviting all members with a yen to do some observing to find out what variable star observing is all about. We are inviting willing members to conduct variable observations of the variable star Z Ursae Majoris (AAVSO chart shown on page 4) over the next several months and turn the data over to the Observatory director, Gerry Samolyk It is a fairly bright variable (varies roughly 6.5 to 8.5) with a period of over 200 days. Hence, over a period of several months we would encompass a good portion of its cyclic nature. It is located in the the "cup'"of the Big Dipper . For the purists, Z UMa 's coordinates are 11h56m RA and +57 Deg 52' Dec. If we get enough participants, we will print a "composite" graph of the combined data later this year. The observing could be done with with a good set of binoculars or a telescope even in the light polluted city night skies. This is a fun way to give variable observing a try and contribute to science at the same time. It will also help to "demystify" the art of observing variables.

Gerry Samolyk stands ready to help you get started on this project with either a one on one tutorial on finding this variable or, if enough members respond, a group learning session will be scheduled. Try to let Gerry know of your interest in this project in the next couple of weeks. He can be reached at:

Phone 414-529-9051
Email samolyk@ix.netcom.com

Another in-depth source of variable star observing can be found on the Web at aavso@aavso.org .

If you have not done much observing at all, try getting into activities like the Messier hunt on April 1 to start learning night sky search techniques. This type of activity will help get ready for more serious observing like variable stars.....good hunting!

MAS Officers/ Staff

President	Scott Jamieson	262-896-0119
Vice President	Lee Keith	414-425-2331
Treasurer	Dan Yanko	414-453-3382
Secretary	Margaret Warner	414-327-7427
Observatory Director	Gerry Samolyk	414-529-9051
Assistant Observatory Director	Paul Borchardt	262-781-0169
Focal Point	Rudy Poklar, Editor	262-786-8931

Future MAS Events

April 1 Messier Hunt
May 19 Election of Officers and three Board members
July 22 MAS Picnic at the observatory

MAS Membership is open to all with an interest in Astronomy and expanding their knowledge of the Universe.Yearly Membership Dues are:
Individual $28/yr.; Family $32; Non-resident (individual $18, Family $22);
Student (under 18) $12.
For more information, contact Membership Chairman, Carlos Garces,

Focal Point Publishing Guidelines
Focal Point Newsletter is published monthly from Sept through May with a Mid-summer issue in July. Articles, Announcements, Graphics, Photos, Swap/Sale Ads etc. should be submitted at least 10 days prior to the first of the month (of the desired issue).Article inputs are preferred via E-Mail, or diskette in a text or Word compatible format, if possible. Submit FP inputs to:

MAS Focal Point c/o Rudy Poklar
12905 W. Crawford Drive

Saturday Keyholders

April

1	Gerry Samolyk	414-529-9051
8	Tom Schmidtkunz	414-352-1674
15	Neil Simmons	414-889-2039
22	Chris Weber	262-789-7128
29	Dan Yanko	414-453-3382

May

6	Wanda Burner	262-646-8229
13	Paul Borchardt	262-781-0169
20	Tim Burrus	262-783-6572
27	Brian Ganiere	414-961-8745

** If members want to be assured of observatory access on a given Saturday nite, they should call the keyholder ahead of time.*

Loaner Telescopes (available to members for local use)

MAS Observatory 542-9071

The Milwaukee Astronomical Society
2933 N.68th Street
Milwaukee, WI. 53210-1208

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****We meet at 8:00 PM, UWM Kenwood Campus on Friday, Apr.21***
- Gerry Samolyk will Speak on R U Mon, An Interstellar Detective Story

**** Messier Hunt at MAS April 1***