



WASP

Warren Astronomical Society Paper



Volume 29, Number 8

<http://www.eaglequest.com/~bondono/WAS/>

August, 1997



14th Annual Summer Solstice Star Party - 1997

by Doug Bock

The first indicator that the star party was going to happen soon, came when Richard Brenz from Cadillac, dropped off his equipment here, on Thursday night. Friday brought mostly clear weather. I took the day off to finish up the preparations for the weekend. I spent a couple of hours on the lawnmower cutting the grass over the observing field. Next was trimming all the weeds around the house and the observatory. Especially the 10 foot dome, we were to work on over the weekend.

Friday evening brought partly cloudy skies, and some of the campsites were taken by those who would spend the weekend. About a dozen scopes were set-up by dusk, and we waited for the sky to improve. Just patches of sky from time to time opened up, but we managed to observe a few things. I packed it in about 3:30am Saturday.

Saturday morning brought crystal clear blue sky and dry conditions. It was gorgeous. Blaine fired up the grill and made pancakes, and sausage for breakfast. Everyone chowed down by 11:30am.

Now it was time to start one of several optional projects. The group decided to work on observatory #2. It needed the flooring and joists to be pulled out and replaced. Ripping the old foundation out, was pretty easy, since it was quite rotten. Once that was done, we measured out what wood we needed. I then went down to the lumberyard and picked it up. I bought all treated wood, including the plywood for the floor. We measured the wood, cut it and put the floor framework together. Next we moved it to the 6 supporting posts from the original building, and set it there. Now we cut the plywood out to fit the Hexagon shape of the building. The flooring went down without a hitch. All this got done in about 3 hours. That included getting the wood from the lumberyard. The next item on the agenda was to replace the 10 foot diameter ring on the bottom of the walls. This had rotted out also. We drew the arcs on the plywood and started with the saber saw. The plywood is 3/4 inch treated, so it was

see **DOUG** on page 2



Computer Chatter

by Larry Kalinowski

Just saw Carl Sagan's and Ann Druyan's two and a half hour movie CONTACT. It's a must see movie for amateur astronomers. It really captures the essence of the astronomer's drive to understand the universe. There's some very good graphics in the scenes at Cape Kennedy, where there's an attempt to test a new space vehicle. Jodie Foster plays the astronomer who has to fight politics and prejudice. She's a radio astronomer in the SETI program, looking for evidence of extraterrestrial life. The developing understanding of a signal from a planet around Vega will keep you spellbound. Four stars for this one. Bring your wife or girlfriend to see it. You'll be glad you did.

Intel made a startling announcement about the Pentium chip. It claims it will lower Pentium prices as much as 60% during the month of July. That can only mean that

See **LARRY** on page 3



An evening of Globulars and Galaxies

by Jeff Bondono

I enjoyed a nice clear night Monday, June 10 and did some deep-sky observing with my 14.5" dob from my site just north of Imlay City, Michigan. I rated the sky 7/10 in both seeing and transparency.

As darkness fell, I observed the globular **M53**. It was pretty compressed, with a 2' diameter glow and stars resolved easily at x262 from the center out to a diameter of 4'.

From there I moved just one degree to **NGC 5053**, another globular. It was easy to find off a few nearby stars, but difficult to see. At x131, it appeared as an extremely faint barely-detectable 10' glow. About 30 extremely faint stars peppered the glow, the brightest of which is 14th magnitude or maybe a bit fainter. The

see **JEFF** on page 4

The WASP

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1995 Officers

| | | |
|-----------|-------------------|--------------|
| President | Dave D'Onofrio | 313-563-6652 |
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| 2nd VP | Blaine McCullough | 810-573-8699 |
| Secretary | Glenn Wilkins | 810-528-8235 |
| Treasurer | Ben Tolbert | 810-790-2823 |

The Warren Astronomical Society, Inc., is a local, non-profit organization of amateur astronomers. The Society holds meetings on the first and third Thursdays of each month, starting at 7:30 p.m.

First Thursday meeting:

Cranbrook: Institute of Science
1221 North Woodward Ave
Bloomfield Hills, Michigan

Third Thursday meeting:

Macomb Community College
South campus, Bldg. B, Room 209
14600 Twelve Mile Rd.
Warren, Michigan

Membership and Annual Dues

| | | | | |
|---------|---------|------------|---------|----------------|
| Student | College | Individual | Family | Senior Citizen |
| \$12.00 | \$17.00 | \$25.00 | \$30.00 | \$17.00 |

Send membership applications and dues to the treasurer:

Ben Tolbert
20206 Vermander
Clinton Twp. MI 48035

Among the many benefits of membership are

Discount magazine subscription:

| | |
|----------------------------|-----------------------------|
| <i>Astronomy</i> | \$20.00 (12 monthly issues) |
| <i>Sky & Telescope</i> | \$27.00 (12 monthly issues) |
| CCD Astronomy | \$27.00 |

Loaner telescopes (with deposit). See 2nd VP.

Free copy of each WASP newsletter.

Free use of Stargate Observatory.

Special interest subgroups. See chairpersons.

Free use of W.A.S. library. See librarian.

Call list: don't miss unexpected events.

Free membership in Astronomical League, including *Reflector* newsletter.

More benefits are listed in Member Booklet

The Warren Astronomical Society Paper (WASP) is the official monthly publication of the Society. Each new issue of the WASP is made available at the Macomb meeting on the third Thursday. Non-members will be charged \$1.00 for each new issue. Back issues, when available are free. Requests by other clubs to receive the WASP and other correspondence should be addressed to the editor.

Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the first Thursday of each month. Any format of submission is accepted, however the easiest forms for this editor are files in plain text format, and graphics in PCX format. Materials can either be transmitted in person, via US Mail, via direct modem connection at the phone number listed below (call using voice first), or E-mailed on the Internet to bondono@eaglequest.com

For further information on contribution, see or call the editor:

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Disclaimer: The articles presented herein represent the opinion of their authors and are not necessarily the opinion of the Warren Astronomical Society or this editor. The WASP reserves the right to edit or deny publication of any submission.

Stargate Observatory is owned and operated by the Society. Located on the grounds of Camp Rotary on 29 Mile Road, 1.8 miles east of Romeo Plank Road, Stargate features a 12.5 inch f/17 club built telescope under a steel dome. The observatory is open to all club members in accordance to the "Stargate Observatory Rules" published in the member handbook. Those wishing to use the observatory must call the 2nd VP by 7:00 p.m. on the evening of the session. The coordinates for Stargate Observatory are 82° 56' 0.4" W, 42° 46' N.

Library. The Society maintains a library of astronomy-related books and periodicals at the Macomb meeting room. See the librarian, Louis Namee, to check out a book.

Special interest groups

| | | |
|-----------------|------------------|--------------|
| Computers | Larry Kalinowski | 810-776-9720 |
| Deep Sky | Doug Bock | 810-750-0273 |
| Lunar/Planetary | Riyad Matti | 810-548-2323 |
| Solar | Marty Kunz | 810-477-0546 |
| Math | John Herrgott | 810-548-1442 |
| Telescope | Fred Judd | 810-758-7458 |

→ **DOUG**, from page 1

difficult to cut. We ended up burning out the motor on the saw. We only got one of the 4 pieces necessary to complete the ring. So this project came to an abrupt halt. We packed all the tools away, and cleaned up the area. This project will be continued at a later date, once I get some better tools. Stay tuned. By the way, we videotaped this fire drill.

By now it was time for dinner, so we fired up the grills. Many more people arrived over the next several hours. About 25 to 30 scopes were up on the observing field. The 20" was setup for all to use, along with the 12.5". We put the 27" TV in the garage that evening so people could watch the Red Wings win game 4 of the Stanley Cup finals.

The sky conditions were great all day long. Come dusk, a cloud bank rolled in for about an hour, then cleared away, leaving a high, choppy haze. We seem to have a ribbon of clear overhead for the first half of the night, and finally it cleared all around, the rest of the night. Still somewhat bright, as the moisture in the atmosphere, was significant.

We had an observing contest, of which Marty Kunz won. He was the only one who turned in the list. Marty, you will get your prize the next time I see you. Observing went on all night, with some leaving at dawn. In the morning we had a handful of people left, which Blaine made breakfast for.

I would like to thank everyone who came out to the star party last weekend. I think I've finally recovered. It was great fun, and we actually accomplished some things.

I especially would like to thank all of you who helped out with rebuilding the foundation for the 10 foot dome. That was a real treat to get that done. After sitting there for 3 years rotting away, we can now put this observatory back into service. I hope someone would like to use it. But if not, we will put the 8" f/6 in there.

The next project will be putting up a building for the 20".

We had 44 registrations, with a total of about 50 people. The participant who came the farthest was from Northwest of Chicago. (More details about participants can be found in Doug's original article.)

The next event schedule for NCO is September 27th, here, then Oct 3-5 at the Northern Wilderness location west of Cadillac. ★

production of their new chip, the Pentium II, will be going full bore by then. The Pentium II is capable of 233 and 300 Mhz.

The plaques that will be presented to Frank McCullough and mounted on the 22 inch Dobsonian telescope are now ready. Bob Watt showed the June Cranbrook group the completed plaques. It's a fitting award for a job well done. Since Frank won't be around for a formal presentation, his plaque will be mailed to him. On Saturday, June 14, Bob Watt mounted the McCullough plaque on the 22 inch telescope base. Five programs were placed on the 386 computer out at Stargate. They are SKYGLOBE, MESSIER, JUPITER, SATURN and MOON. The Jupiter and Saturn programs are satellite programs that help locate the positions of those planets satellites. Skyglobe is a planetarium program with a search capability for finding many deep sky objects. Messier and Moon are programs to help locate the Messier objects and lunar craters. Once the computer warms up and the C: drive symbol appears, all you have to do is type one of the names mentioned above and press the enter key to start the programs. The program will start automatically. At the present time the computer is being stored in the cabinet near the west door, so it must be removed and assembled on the table near the east door before it can be used. The connectors on the back of the computer are clearly marked, so there should be no problem determining which cables go where. Windows 3.1 will be installed at a later date. A 12 foot extension cord (supplied) is required to plug the computer into the outside, south, wall socket.

Like to play games on your company's computer? That may not happen much longer. Software designed to detect who is playing on the system is in the making. It'll tell your boss who's playing and for how long. There's also going to be a built in software scratcher. It'll take about twenty seconds to detect your game software, then poof, it goes to la-la land.

I saw my first DVD (digital video disk) drive at the last Gibraltar Trade Center computer show. It was about as big as a CD-ROM drive, but the price was a little bit higher (\$329.95). In case you haven't been keeping up, the DVD drive uses the new 6 gigabyte CD video disks, as well as the old style CD music and computer ROMS. They're going to replace the present CD-ROM drives and revolutionize the audio and video world.

On Saturday, July 26th, the society will have its Summer outing at Stargate Observatory, now officially located within the bounds of Walcott Mill Metropark. Festivities begin about 2:00 pm. There will be a picnic (bring a plate of food to pass), observatory training on the new computer outfitted telescope and of course, a star party, featuring our new 22 in. Dobsonian. Rocket launchings are planned. Swap tables of astronomical and computer goodies are planned, as well as other festivities, for the afternoon. Hot dogs and coffee will be

available from the society, for all that attend.

Morning viewers can catch an occultation of the star Aldebaran by the Moon, on July 29th (Tuesday). The disappearance will occur about 5:32 AM EDT, on the bright limb. Reappearance takes place in daylight about 6:26 AM, on the dark limb, during sunrise. Reappearance is easier to see because of less brilliance by the Moon's limb. Allow about plus or minus ten minutes for unexpected errors in calculations.

Wasps are no longer a problem at Stargate observatory. The nests were removed with the help of the park ranger, Glen Wilkins and myself. It was a battle royal but we won (for now). There was only one casualty. Glen got the Purple Heart for his bravery facing the enemy the week before. If you ask him, he may even show you his wound.

Computer shows for July are in Livonia, on Saturday, the 19th, at The Livonia Elks Hall, 3117 Plymouth Rd., one block east of Merriman and one mile south of I-96. Also in Madison Heights, on Sunday, the 20th, at The UF and CW Hall, 876 Horace Brown Dr., one block east of I-75 and one block south of 13 Mile Rd. A five dollar entrance fee is required for regular adults. One dollar less for seniors.

By the way, July 20th marks the 28th anniversary of mankind's first walk on the Moon.

The July computer meeting will be at Gary Gathen's home, on Thursday the 24th, as well as the rest of the fourth Thursday meetings through, and including, October. All new visitors will receive a free Windows planetarium program. Gary lives in Pleasant Ridge, at 21 Elm Park, three blocks south of I-696 and a half block west of Woodward Ave. His number is 810-543-3366. ★



Astro-Facts

By Greg Milewski

Did you know that....

the Cassini division in Saturn's rings is created by its small moon, Mimas? Mimas orbits in the division and partly sweeps the zone clear with its gravity, which is amplified by that of the rings themselves!

from *The Cosmic Mind Boggling Book*, by Neil Macleer, Warner Books, New York, © 1982. ★

cluster was quite loose, not compressed at all. x239 showed about 30 resolved stars with slight central compression. At that power, the glow all but disappears, only appearing in the central 1' or so. At x53, the glow is not quite as difficult, and lies a bit north of the line connecting a 9th magnitude star and an 11th magnitude star which nearly precede and follow the globular.

Next up was the galaxy **NGC 5016**. Again some nearby stars made it easy to find. It appeared as a faint round 1.5' glow, brighter in the middle to a small core, with a stellar nucleus which was barely brighter than the core.

Just 30' south from **NGC 5016** was another faint galaxy, **NGC 5012**. This moderately edge-on galaxy was pretty faint, and about 2'x0.75' in pa 165. It grew slightly brighter toward the middle to a core with a stellar nucleus. The surface appeared slightly mottled, but I couldn't make out any definite arms or dust lanes. There was a pretty persistent superimposed 13th magnitude star within the glow nearly at the PA 345 edge. The galaxy appeared to be inclined about 45 degrees to the line of sight.

I found **NGC 5116** very difficult to find. Once I succeeded, the x131 view showed a very faint, very small 1.5'x0.3' edge-on in pa 45. No details appeared to me; no brighter core, no stellar nucleus; just a brushstroke. I tried higher powers, but it didn't improve the view and the galaxy became more difficult to observe. An arc of 3 10th to 11th magnitude stars guarded the galaxy on its preceding and north side.

Next was a quick peek at **M51**. The galaxy was quite detailed and beautiful, but I didn't want to spend an hour on it so I moved on to the galaxy I was really after: **NGC 5198**. Located just 30' south, I saw it as a pretty faint 1.5' round glow which became much brighter in the middle to a 0.5' core, then a stellar nucleus. The core was quite sharply defined in this galaxy, rather than the gradual brightening which is evident in most galaxies.

My next target was **NGC 5297**. At x262, a bit faint but large, highly-inclined galaxy, 5'x1' in pa 150, just slightly brighter in the middle to a core, with a stellar nucleus. The core and nucleus are just a bit offset toward the preceding from the centroid of the glow. The preceding edge is more sharply cutoff than the following edge, and the entire disk is slightly mottled. A 14th magnitude star is superimposed just inside the edge of the glow at pa 150. A 10th magnitude star lies just beyond the edge in pa 330, and there's a 9th magnitude star 3' away in position angle 60. As I repeatedly recentered the galaxy, I often suspected an extremely faint very small glow just 1 or 2 arcminutes preceding this galaxy, and that might have been its

companion **NGC 5296**, but this is a very uncertain observation.

While I was looking at Uranometria chart 76, I noticed a tight group of galaxies near the lower-left corner and decided to hop over there. Boy am I glad I did. As it turns out, I've observed this group before, but haven't really appreciated it as I did on this night. The **NGC 5350/3/4/5 group** is an easy, excellent, attractive, fairly tight group of bright galaxies. They are all located within a 10' circle, and easily fit in a moderately high power eyepiece. Two of the galaxies (NGC 5353/4) are touching, and form one corner of an equilateral triangle completed by the remaining two galaxies. NGC 5350 is the largest and 3rd brightest in the group. It stands at the north-preceding corner of the triangle, and is almost round, 2' in diameter, oriented in pa 105, somewhat mottled, and very slightly and gradually brighter in the middle. NGC 5353 is the south-more of the 5353/4 pair which forms the south-preceding corner the triangle. The two galaxies are angled such that they're leaning toward each other. NGC 5353 is about 2'x1' in pa 150, much brighter in the middle to an elongated core with a stellar nucleus. NGC 5354 is about 1.5'x1.3' in pa 75, much brighter in the middle to a round core with a stellar nucleus. The following corner of the triangle is anchored by NGC 5355, which is the faintest and smallest of the 4. It appeared as a 1' round pretty-faint glow, brighter in the middle to a core, but without a stellar nucleus. This group is one which should not be missed.

Heck, if you can just pick a great group of 4 from a glance at a chart, why not continue that way? A short sweep over to the spot marked **NGC 5371** showed a beautiful face-on spiral, about 4' in diameter, almost round but slightly elongated north-south. It was pretty faint, but suddenly brighter in the middle to a small core with a stellar nucleus. A 14th magnitude star was superimposed 1.5' in pa 105 from the nucleus. The galaxy had a smooth disk and I couldn't make out arms or dark lanes, but the small core and large round halo made this a dead giveaway for a spiral, and I was convinced they must be there. Gotta get more aperture one of these years and come back to this one.

Pushing my luck further, I went over to **NGC 5311/3**. These two were a lot less spectacular. NGC 5313 was the brighter of the two, being a fairly bright glow elongated 3'x1.5' in pa 45, gradually brighter in the middle to a pretty bright stellar nucleus which was a bit offset toward pa 315 of the centroid glow. I didn't see any superimposed **. NGC 5311 was smaller and had a fainter halo, appearing as a 1.5'x1' glow in pa 120, brighter in the middle to a stellar nucleus which outshone the nucleus of NGC 5313.

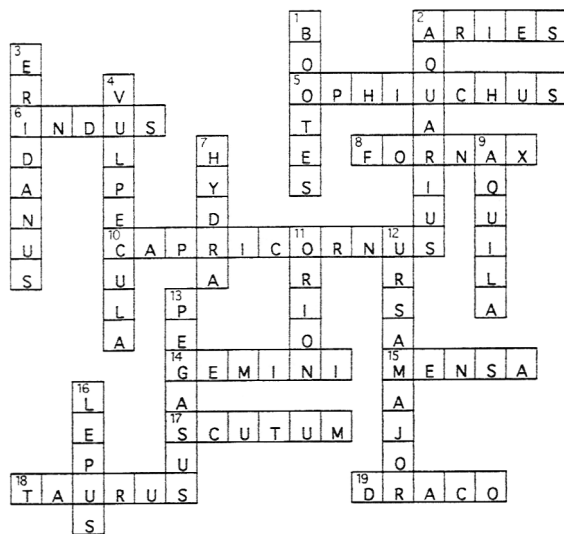
NGC 5326 was next. At x262, it was a fairly bright 1'x0.5' glow in pa 135, brighter in the middle to a stel-

lar nucleus. No core was seen, just an 11th magnitude nucleus. No superimposed stars were seen. After observing this for a while, I noticed that it is surrounded by a very faint 2' round glow, suggesting that the glow I originally saw might be the bar in a face-on barred spiral. (After reviewing this observation with picture, I think fatigue must have been setting in).

Nearby **NGC 5337** appeared as a very soft, pretty faint 1.5' round glow with a very faint stellar nucleus superimposed. **NGC 5346** was not seen, marking my first complete failure of the night.

I wrapped up the night with **M7** and **M6**, then packed up for the too-long too-late drive home. ★

Last Month's Puzzle



V I R G O H F X U R C Y G N U S U H P E C Z R
 V O L A N S U H C U I H P O D X F O R N A X O
 U S E G E M I N I S U N I H P L E D E Q E S V
 H E O E Q U U L E U S L S C O R P I U S L I A
 Y X M U S C A K A I F Y C A R I N A E S U L P
 D T I C O M A B E R E N I C E S R V L U M A I
 R A N D R O M E D A T X S M O I N D U S U E C
 U N O A E E L A R T U S A M U L U G N A I R T
 S S R R C L J I I T C U U S E I U A V G P O O
 N U M D O A N T L I A D S A U S G M G E O B R
 A N A Y N R S U R G N R T U A E U O B P C A X
 T A U H O O Z S W A A A R A N N S V L A S N I
 C D V E M J O E I S F P I R L R O R R O O N
 O I U R S A M I N O R O N G O E O R E O R R E
 P R L C U M V R O T P L U C S J V C O P C O O
 I E P U T A S A C A N E S V E N A T I C I C H
 S T E L E S C O P I U M I L Y R A M A R M Y P
 C I C E C R N O E L E A M A H C G L S S P O C
 E C U S S U N I C R I C H R O N I M S I N A C
 S U L B O O T E S E R P E N S U R U A T N E C
 U L A C E R T A L U P U S L Q M U T U C S A M
 P U P P I S U P E L I B R A C R A T E R O O C
 A M P Y X I S N O I R O C A R D O R A D O K Q

They have been made before; they will be made again.... Here is a word search puzzle of all 88 constellations. Words can be in all directions, forward or backward. (At least this little exercise will help you learn their names.)

- | | | |
|-----------------|--------------|--------------------|
| ANDROMEDA | CYGNUS | PAVO |
| ANTLIA | DELPHINUS | PEGASUS |
| APUS | DORADO | PERSEUS |
| AQUARIUS | DRACO | PHOENIX |
| AQUILA | EQUULEUS | PICTOR |
| ARA | ERIDANUS | PISCES |
| ARIES | FORNAX | PISCISAUSTRINUS |
| AURIGA | GEMINI | PUPPIS |
| BOOTES | GRUS | PYXIS |
| CAELUM | HERCULES | RETICULUM |
| CAMELOPARDUS | HOROLOGIUM | SAGITTA |
| CANCER | HYDRA | SAGITTARIUS |
| CANESVENATICI | HYDRUS | SCORPIUS |
| CANISMAJOR | INDUS | SCULPTOR |
| CANISMINOR | LACERTA | SCUTUM |
| CAPRICORNUS | LEO | SERPENS |
| CARINA | LEOMINOR | SEXTANS |
| CASSIOPEIA | LEPUS | TAURUS |
| CENTAURUS | LIBRA | TELESCOPIUM |
| CEPHUS | LUPUS | TRIANGULUM |
| CETUS | LYNX | TRIANGULUMASUTRALE |
| CHAMAELEON | LYRA | TUCANA |
| CIRCINUS | MENSA | URSAMAJOR |
| COLUMBA | MICROSCOPIUM | URSAMINOR |
| COMABERENICES | MONOCEROS | VELA |
| CORONAAUSTRALIS | MUSCA | VIRGO |
| CORONABOREALIS | NORMA | VOLANS |
| CORVUS | OCTANS | VULPECULA |
| CRATER | OPHIUCHUS | |
| CRUX | ORION | |





Minutes of Meetings

by Glenn Wilkins, Secretary

Cranbrook July 3, 1997

Dave opened the meeting to 21 members and guests at 7:44. Due to ongoing interest in astronomy events like the Comet Party, Kensington officials have agreed to meet with Dave, and Bob McFarland of the Ford Astronomy Club, to discuss possible future activities. Ford is especially interested in investigating Kensington as a possible regular viewing site for their club which is presently meeting at nearby Island Lake.

A committee was established to negotiate the future of Stargate with Metro Park representatives. It will be led by John Herrgott and will pursue the following immediate objectives: Establish our objectives

- Determine what Metro wants from the WAS
- Merge our goals with a plan
- Determine what structural improvements/new facilities are feasible
- Determine costs & timing

Immediate support for this team was offered by Larry Kalinowski, Ben Tolbert, Bob Watt & Blaine McCullough. Anyone else who is interested should contact John.

Glenn noted that wasps have been building nests at Stargate. Six nests were removed from the inside and outside of the building but observatory users should be alert to the possibility of new nests. Glenn can attest to the fact that they don't like the noises made by opening the dome!

Lou reported that the family night theme at the Cranbrook Planetarium on 8-7 will be Stars & Mars. There will be a gravity funnel demonstration as well as hands-on activities in the Physics Lab. Groups will be taken through the observatory 12 at a time. Comet making is also being considered. A total of 4 or 5 volunteers are needed. The entire museum will NOT be open for this free event.

Dave noted that the cabin, which we usually rent for our picnic (7-26), was condemned! Other accommodations are being investigated. A swap table will be set up and a resolution contest will be conducted for home-made scopes of various apertures. Please do not bring beverages in glass containers, but do bring a dish to pass. WAS will supply the buns. Blaine will offer observatory training.

Ben reported a balance of \$4,771.74 in our treasury as of 7-3.

A board meeting is scheduled at Blaine's for 7-7.

A 28 minute break commenced at 8:26 and then Jeff Bondono gave us a fine presentation of the famous Hubble long-exposure deep sky photograph with an analysis. The meeting adjourned at 10:17. ★

Officer's Meeting July 7, 1997

All of the society officers were present plus John Herrgott. It was announced that Frank McCullough was very happy to receive our telescope dedication plaque and has since had it mounted on his bedroom wall.

PICNIC - July 26

Dave will extend an invitation to Bob Haward and his Metro-Park staff to join us.

FAMILY NIGHT - August 7

Dave will provide beverages for the guests at WAS expense. Doug Goudie will be asked to provide "background" slides. Volunteers include John Herrgott, Blaine McCullough, Jeff Bass & Doug Goudie.

CHRISTMAS BANQUET - December 18

It was decided to schedule this event (Blaine) at the same location, without assigned seats. Soft background music will be used to allow conversation. The presentation last year by a WAS member(s) was considered successful and we are now accepting suggestions for this year. However, if a popular outside speaker becomes available, we will certainly consider recruiting him/her. The secretary will send out "beg" letters for raffle items about 10-1.

STARGATE COMMITTEE

The Metro Park management has shown a keen interest in considering any proposals by the WAS for improved facilities and/or observatory or observing sites. The committee will inspect the Camp Rotary/Walcott Mills grounds and have a meeting during the picnic. The proposal(s) must be in a "professional" format. Anyone with architectural ability or connections, and a willingness to get involved, should contact John Herrgott. Contribution of small articles for the quarterly Metro Park publication would be appreciated and help establish us as partners in their organization. Can you help? ★



WAS Calendar of Events

| | | | | |
|------|----------------|---------|---|----------------------|
| July | Sat 26 | 2:00 pm | Stargate Summer Outing Picnic, Star Party, and Observatory Training Program Swap Meet | Bring a dish to pass |
| | Wed 30-Sun 2 | | SMURFS '97 | |
| Aug | Sun 2-Sun 9 | | 4th Annual Nebraska Star Party | |
| | Thu 7 | 7:30 pm | Meeting: Downstairs at Cranbrook Institute of Science Family Night: a public-oriented meeting with a planetarium show, observing, and a tour of the museum. | |
| | Fri 8- Sun 10 | | Perseid Meteor Shower campout at Port Crescent State Park As of June 1st, Port Crescent State Park was full for the weekend of Aug 8 till the 10th. Reservation are still available at Sleeper State Park which is about 7 miles down M-25. Anybody that has not made reservation for the campout and is planning on going might want to check at Sleeper or elsewhere. The state park's reservation line is 1-800-44-PARKS. | |
| | Tue 12- Wed 13 | | Peak of Perseid Meteor Shower (continued camping for those that wish) | |
| | Thu 21 | 7:30 pm | Meeting: Macomb Community College South Campus, Bldg. B, Room 209 Cepheid Variable Stars, by Ray Travis | |
| | Sat 23 | dusk | Lecture at Stargate | |
| | Thu 29 | 8:00 pm | Computer Subgroup Meeting, contact Larry Kalinowski | |
| Sept | Thu 4 | 7:30 pm | Meeting: Downstairs at Cranbrook Institute of Science | |
| | Fri 5- Sun 7 | | Astrofest, at Kankakee, Illinois | |
| | Sat 6 | | Island Lake Star Party | |
| | Thu 18 | 7:30 pm | Meeting: Macomb Community College South Campus, Bldg. B, Room 209 | |
| | Thu 25 | 8:00 pm | Computer Subgroup Meeting, contact Larry Kalinowski | |
| | Sat 27 | | Star Party at Doug Bock's Northern Cross Observatory | |
| Oct | Thu 2 | 7:30 pm | Meeting: Downstairs at Cranbrook Institute of Science | |
| | Fri 3 - Sun 5 | | Cadillac Star Party, contact Doug Bock | |
| | Thu 16 | 7:30 pm | Meeting: Macomb Community College South Campus, Bldg. B, Room 209 | |
| | Thu 23 | 8:00 pm | Computer Subgroup Meeting, contact Larry Kalinowski | |
| Nov | Thu 6 | 7:30 pm | Meeting: Downstairs at Cranbrook Institute of Science | |
| | Thu 20 | 7:30 pm | Meeting: Macomb Community College South Campus, Bldg. B, Room 209 | |



WASP

Warren Astronomical Society, Inc.
 P.O Box 1505
 Warren, MI 48090-1505

1997 August 1997

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--|--|--|---------------------------------------|---|---|--|
| | | | | | 1 6:25 4:56 8:51p 7:36p | 2 6:26 5:51 8:50p 8:16p |
| 3 ● 6:27 6:47 8:49p 8:51p | 4 6:28 7:44 8:48p 9:24p | 5 6:29 8:41 8:47p 9:53p | 6 6:30 9:38 8:45p 10:22p | 7 6:31 10:34 8:44p 10:50p | 8 6:32 11:31 8:43p 11:18p | 9 6:33 12:29p 8:41p 11:48p |
| 10 6:34 1:27p 8:40p XX:XX | 11 ● 6:35 2:26p 8:39p 12:21 | 12 6:36 3:26p 8:37p 12:58 | 13 6:37 4:25p 8:36p 1:40 | 14 6:38 5:24p 8:34p 2:29 | 15 6:39 6:18p 8:33p 3:25 | 16 6:41 7:09p 8:31p 4:29 |
| 17 6:42 7:55p 8:30p 5:38 | 18 ○ 6:43 8:37p 8:28p 6:51 | 19 6:44 9:16p 8:27p 8:06 | 20 6:45 9:53p 8:25p 9:20 | 21 6:46 10:30p 8:24p 10:33 | 22 6:47 11:07p 8:22p 11:45 | 23 6:48 11:46p 8:21p 12:54p |
| 24 ● 6:49 XX:XX 8:19p 1:59p | 25 6:50 12:27 8:18p 3:01p | 26 6:51 1:12 8:16p 3:57p | 27 6:52 2:01 8:14p 4:49p | 28 6:53 2:52 8:13p 5:35p | 29 6:54 3:46 8:11p 6:16p | 30 6:55 4:42 8:09p 6:53p |
| 31 6:56 5:38 8:08p 7:26p | | | | | | |

Key to times:
 SunRise MoonRise
 SunSet MoonSet