

# The WASP



Orion nebula



## NOVEMBER 1976

**THE JOURNAL OF THE WARREN  
ASTRONOMICAL SOCIETY**



THE WARREN ASTRONOMICAL SOCIETY PAPER (W.A.S.P.)  
IS PUBLISHED BY THE W.A.S., MONTHLY AS A PRIVILEGE  
OF MEMBERSHIP. THE W.A.S. IS ALSO A CAMPUS CLUB OF  
MACOMB COMMUNITY COLLEGE-SOUTH CAMPUS, WARREN MICH.

The Warren Astronomical Society (W.A.S.) is a local nonprofit organization of amateur astronomers. Membership is open to all interested persons. Annual dues are as follows: Student, K-12 \$9.00, College \$11.00, Senior Citizen \$13.50, Individual \$16.00, Family \$21.00. The fees listed here include a one year subscription to Sky & Telescope Magazine.

Meetings are held on the first Thursday at Cranbrook, and the third Thursday of each month at Macomb County Comm. College, in the student union bldg.

Subscriptions and advertisements are free of Charge to all members. Non-member subscriptions and advertisements are available upon arrangement with the Editor of the W.A.S.P. Contributions of any kind are always welcome and should be submitted to the Editor before the second Thursday of the month.

THE EDITOR: Roger A. Civic (775-6634)  
26335 Beaconsfield  
Roseville, Michigan 48066

The Editor of the W.A.S.P. will exchange copies of this publication for other Astronomy club publications on an even exchange basis.

The Warren Astronomical Society maintains contact, sometimes intermittent, with the following Organizations:

The Adams Astronomical Society  
The Astronomical League  
The Detroit Astronomical Society  
The Detroit Observational and Astrophotographic Assoc.  
The Fort Wayne Astronomical Society  
The Grand Rapids Amateur Astronomical Society  
The Kalamazoo Astronomical Society  
The M.S.U. Astronomy Club  
The Miami Valley Astronomical Society  
The Oglethorpe Astronomical Society  
The Orange County Astronomers  
The Peoria Astronomical Society  
The Saint Joseph County Astronomical Society  
The Sunset Astronomical Society

Other Amateur Astronomical Clubs are invited to join this exchange of publications.

# CLUB NEWS

The class conducted by Pete Kwentus, "How to use and maintain your telescope" was a complete success. The class was enjoyed by 12 W.A.S members. The course was composed of 8 classes, 2 a week, one in a classroom and one in the field (Stargate). There were many guest lecturers, each in his or her chosen field.

The October general meeting will have a special awards presentation of a certificate of achievement to each person who attended the class.

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The Christmas Banquet will be held Saturday, Dec, 18, 1976 at Sheppard's Inn- It will start at 7:30. Sheppard's Inn is located on Groesbeck Hwy. at Utica Rd. in Roseville Michigan.

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One of our most active members, Mr. Lou Faix is in the hospital with a back problem. Lou will be laid up for about 6 weeks. The hospital is St. Joseph East-Mt. Clemens, room 1812. Get well soon Lou!

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Dave Harrington has become a TV star. With the completion of his back yard observatory in Troy Michigan) TV-2 sent a camera crew to watch the dome raising on a sunny Sunday afternoon about two weeks ago. There were 15 to 20 people on hand to attend the local happening. Many club members were there to lend a strong back for lifting the 600 lb. dome into place. TV-2 broadcast a 5 minute story that following Tuesday night, Thanks Dave, you did a great P.R. job for Amateur Astronomy.

# MINUTES OF THE WARREN ASTRONOMICAL SOCIETY

## SEPT. 16, 1976

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Pete Kwentus, president, called the meeting to order. Don Mission, treasurer, gave the treasurer's report, Rik Hill, 1st vice president, proposed an astronomical Halloween Costume Party to be discussed at the next executive meeting. (The meeting will be held at 7:00 P.M. at the home of Pete Kwentus).

Diane McCullough invited members to attend an astrophotography meeting of the Kalamazoo Astronomical Society on October 1.

A Sunday News supplement was distributed by Ray Bullock.

Roger Civic, 2nd vice president, observatory chairman, announced that Stargate will not have Boy Scouts for a few weeks, therefore, members may wish to use the telescope before it is reserved on Friday and Saturday nights,

Dolores Hill, secretary, distributed copies of the June survey to those who didn't receive one in June.

Pete Kwentus announced a meeting of the Inter-Club Council of the MCCC at 7:00, Sept. 30.

The program included a discussion of the Sky Patrol Program by Rik Hill. Observing packages were distributed to interested members.

Dave Dobrzelewski gave a talk on the construction of an illuminated star finder.

Lou Faix presented a slide show on AstroCon'76. It was composed of slides taken by members of WAS who attended the convention.

Frank McCullough displayed his award winning aurora composite photograph along with the award he received at AstroCon'76 for it.

Pete Kwentus gave a talk on Gear Making which was heard at AstroCon'76, Lou Faix also gave a talk on Tracking Errors of Gears also heard at the Astronomical League convention.

The meeting was adjourned by president Pete Kwentus.

Minutes respectfully submitted,

*Dolores H. Hill* Sec'y.

## How to Make a Cheap Cassegrain Mirror from Knotty Pine

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Reprinted from another well known Newsletter.

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Select a properly sized piece of pine with a 1" hole the center of the piece (for the purposes of this article we will, use an 8"X8"X2" piece). Use a compass to scribe a circle with a diameter of 8" on the selected piece of wood and cut the circle out using a band saw. Now comes the fun part. Using a ball peen hammer, pound the \*#&\*#\* out of it until a rough sphere is formed. Don't add water as this will warp your mirror and you will have to start over. Now, using #90 grit emery or Dow Bathtub Cleaner on a sponge, polish the mirror until you can see your face in it. This will take approximately one year. A better figure can be achieved by holding it up to a mirror and glancing down at the surface. This method is especially good if you can see down to less than 1/2 wave of light.

Now punch out the knot for your Cassegrain hole.

Aluminizing: Grab an 8 1/4"X8 1/4" piece of Reynolds Wrap and gently but firmly press it against the highly polished surface of your mirror. Then place the whole schmear in a micro-wave oven and heat for one hour until the aluminum is melted. Your mirror is now aluminized if the wood does not catch fire in this process. If it does, you'll have to start over.

If the center hole in your mirror does not melt through, use a hacksaw to remove that area of aluminum. Your Cassegrain mirror is now complete.

NOTE: about the author; Issaac Assimuth is currently residing in a home for the Mentally Bewildered under the alias of Russell Smith. His latest literary offerings consist of "How to grind a wooden mirror using Only Your Tongue" And "First Aid for splintered Tongue and Lips". He is presently working on the finishing stages of grinding a Newtonian from a garbage can lid (with handle).

# The Unveiling of Venus: Hot and Stifling



*Venera 10's photo of its landing site shows an expanse of smooth terrain like sandy places on earth, more or less as expected.*



*Venera 9's picture gave the big surprise. It landed on a steep and rocky hillside.*

The surface of Venus is hellishly hot. At 470°C lead would melt there. It is also dry: no evidence for large amounts of surface water is found. Gone from our imaginations are the oceans and steamy swamps of science fiction. The atmosphere is extremely heavy, with a surface pressure about 100 times that of the earth. And there is hardly a breeze to cool the sweating sinner's brow: One of the landers measured a surface wind of half a meter per second; the other measured one meter per second (corresponding to 1.8 and 3.6 kilometers per hour respectively).

Given these extreme conditions, the great technological achievement of the Venera program was the design of landing vehicles that could reach the surface and function long enough to take pictures and take other measurements there. A. D. Kuzmin of the Radioastronomical Division of Moscow's Lebedev Institute describes it as similar to a bathyscaphe designed to sink to one kilometer depth in the ocean, but able to withstand temperatures higher than the melting point of lead. "There never had been any such apparatus."

The most spectacular achievement was the taking of the actual pictures of the

surface of Venus, a major end toward which the whole Venera series had been pointed. The pictures raise more questions and mysteries than they answer. Venera 9 landed on Oct. 22, 1975, and Venera 10 on Oct. 25. The landing sites were about 2,000 kilometers apart, both on the sunlit side of the planet. The photos, the first ever of the Venusian surface (SN: 11/1/75, p. 276), have now been computer enhanced. The improved versions were shown at the COSPAR meeting.

The two pictures show quite different topography. Venera 10's shows a relatively smooth terrain extending to about one kilometer from the lander. Venera 9's shows a rock-strewn terrain. The picture extends only a few meters from the lander which came down on a 30° slope. (This seems to indicate topographical variations in height of at least a few kilometers from the mean surface level.)

What made the rocks in the Venera 9 picture? One answer is tectonic activity, possibly volcanism. M. V. Keldysh, former president of the USSR Academy of Sciences, proposes (in a paper actually delivered by his collaborator, M. Ya. Marov of the Academy's Institute of Applied

Mathematics) that they look like erupted basalts. Avduevsky points out that another opinion is that the rocks are surface melts produced by the great heat.

Marov would like to see seismic studies of Venus to determine if the rocks indeed mean that Venus is a young planet still undergoing tectonic activity. "Your people [NASA] are planning a Pioneer Venus mission for 1978," Marov reminds us, "and they intend seismic measurements just after touchdown." Marov is not enthusiastic about their chances of being lucky. To be sure of getting seismic measurements, he believes, requires landers that will last a while on the surface, and the prospect of designing these caused everyone on the panel to shake his head.

Another mystery in the Venera 9 pictures is the apparent shadows cast by the rocks. Avduevsky points out that as the lander descended it took continual measurements of the illumination from all sides. It recorded the sort of diffuse light expected under a cloud cover. "Then it landed, and all of a sudden these shadows." If they are shadows, they would indicate a directed light source in the Venus atmosphere, possibly a rift in the clouds or something more exotic. A facetious suggestion that got laughter all around was a Venusian standing over the lander with a floodlight. Marov points out that the black spots may not be shadows but depressions or differences in coloration of the surface. But then, why are they all on the same side of the lander and of the rocks?

The Venus clouds turn out to be more tenuous than anybody had thought. Nephelometer measurements show them to be made of aerosols or droplets about one micron in size that appear to be something like sulfuric acid. Their concentration is about one or two parts per million of the carbon dioxide that is the major atmospheric constituent. So they are actually more like a haze than heavy clouds. As a result, the surface illumination is brighter than anyone expected, and photography is much easier there. With the sun at a 30° angle from the zenith, the light flux at the surface is about 100 watts per square meter, an illuminacy of about 14,000 lux. "This value corresponds to the illuminacy at the terrestrial mean latitude in the daytime with overcast clouds," Keldysh writes.

On the way down, the landers also measured the upper atmosphere winds. M.

K. Rozhdestvensky of the Moscow Physical and Technical Institute points out that this could not be done with the anemometers that measured the surface winds, since the parachutes by which the landers descended partook of the winds' motion. The measurement by Doppler shift of radio signals between lander and orbiter required large corrections, but still indicates upper atmosphere winds up to 100 meters per second.

What was most surprising in the findings? Everything, says Avduevsky, but especially the lower limit of the cloud cover (at 49 kilometers above the surface. Higher than anyone had expected), the surface illumination and the surface pictures. Marov has a slightly different list. He agrees about the Venera 9 picture. The Venera 10 picture, he says, is what one would have expected: It looks something like sandy regions on earth. He also thinks the transparency of the Venus clouds is a big surprise. Everyone had expected them to be dense. But he adds the "quite interesting and unexplained spectra of Venus." There is no indication of hydroxyl or oxygen bands that one would expect from studies of Earth and Mars, nor even the known bands of carbon dioxide. There is quite another system of bands, possibly carbon dioxide in some strange state in the upper atmosphere of Venus. Finally Marov mentions the interaction of Venus with the solar wind. The planet has no measurable magnetic field and so no magnetosphere, and the way the solar wind flows around it is quite strange.

# Science and Pseudoscience: Response

## Reprinted from Science News.

**The story** on the establishment of the Committee to Scientifically Investigate Claims of Paranormal and Other Phenomena brings welcome news. Too many cultists have been able to argue that "orthodox science" is ignoring or stifling unorthodox ideas such as ESP or Kirlian photography. In our own investigations of such claims, we have yet to find the kind of evidence that a scientist would accept as convincing.

It is especially heartening to see science fiction writers such as L. Sprague de Camp and Isaac Asimov among the committee membership. Their broad range of interests and open mindedness cannot but help the committee to conduct its investigations fairly, honestly and rigorously.

*Ben Bova*  
*Editor, ANALOG Science*  
*Fiction/Science Fact Magazine*  
*New York, N. Y.*

**May I remind those** who deplore the increasing interest in the occult, as evidenced by the proliferation of occult books, that the number one all-time best seller remains the Holy Bible, the manifesto of those bastions of occultism, the established churches.

As I pointed out to Mr. Kurtz last fall, if he must persist in this silly witch-hunt, let him take on an enemy big enough to pose a serious threat to science and society. In the name of its peculiar form of occultism the Christian church set up the Holy Inquisition to silence all heretics including scientists. It burned them at the stake and burned their books as well. It forbade and forbids all practical means of population control. In California it even forbids the teaching of evolution as fact. The "parascience cults" have done none of these things.

If scientists really want to banish irrationalism from the world, let them hurl their challenge at the citadel of occultism-the Church.

*P. E. Pothier*  
*Bethesda, Md.*

A few notes on your recent article concerning the pseudosciences. Despite your mention of UFO'S' as one of the areas of pseudoscience, you made no assessment of the work of J. Allen Hynek in that area. His impressive credentials, coupled with his advocacy of what you deemed to be a non-science, certainly deserved at least a note.

Perhaps the lack of attention paid to debunking efforts is due, at least in part, to the fact that they sometimes use the same approach as those they seek to condemn. For example, my paperback copy of *Some Trust In Chariots*, which was one of the 12 debunking books you recommended, proclaims on its cover: "The bombshell book that goes far beyond *Chariots of fire Gods* to reveal the startling, irrefutable truth about ancient marvels!" And on the back, reveals to the general public for the first time that (sic) amazing truth that *Chariots of the Gods* only hinted at." Both of these statements are true, of course, but deceptively worded--only by chance did I happen to further investigate and see what it really was.

*Michael Donahue*  
*Chicago, Ill.*

**Having digested** your article, "Science and the Parascience Cults," I forward my congratulations on a job well done and offer to Professor Paul Kurtz and the members of the newly formed Committee to Scientifically Investigate Claims of Paranormal and Other Phenomena my best wishes in fulfilling what may be a never-ending task

For the far-side of 20 years (in what once appeared a losing cause) I have investigated and studied man's immemorial imaginary phenomena. Based on the evidence, I have concluded that when dealing with irrational reasoning and illogical nonsense, there are two distinctive groups. One consists of hardcore "occultidiots" - overly antiscientific and pseudoscientific irrationalists. It was toward such people that Sir William Matthew Flinders Pettrie the Younger directed the following quotation:

"It is useless to state the real truth of the matter, as it has no effect on those who are subject to this kind of hallucination."

The second group: a large proportion of those consuming and believing such claims are not antiscientific or pseudoscientific irrationalists, but rather are lacking in knowledge or awareness, a condition that may be uplifted. If such nonsense as occultism is seriously challenged by scientific and educational means, in a responsible fashion, we may, to our delight, discover that a large proportion of these irrationalists, may become antioccultists and rationalists.

*L. West Perrine*  
*Winter Haven, Fla.*



## OBSERVATORY SCHEDULE

Lectures for the coming month are listed below.

Nov. 5/6 ••••• Dennis Jozwik ••••••• 754-2037

Nov. 12/13 ••• Frank McCullough •••••791-8752

Nov. 19/20 ••• Diane McCullough •••••791-8752

Nov. 26/27 ••• Dave Harrington •••••879-6765

The lecturer may select either the Friday or Saturday depending on the weather and their personal schedule. W.A.S. members wishing to be instructed on the operation of observatory and telescope controls should contact the lecturers directly. Additional lecturers and assistants are needed to lessen the load on these faithful old time members. Thank you.

Observatory Report: Roger Civic, Observatory Chairman.

We wish to thank Mr. Russ Evans for giving up his Saturday night and working late to change the locks at Stargate observatory. While Mr. Evans was working on the locks at his home, the observatory was kept under the watchful eye of Kim Dyer. I personally wish to thank Mr. Russ Evans and Mr. Kim Dyer for their extra effort in a time consuming job. Thank you Gentlemen!

The door locks on Stargate observatory now require a new key to open them. Any lecturer for the Friday or Saturday night Scout sessions who does not have a new key, please contact Pete Kwentus or Roger Civic.

Any W.A.S. member is entitled to use Stargate observatory by appointment. Call Pete Kwentus or Roger Civic.

There has been some discussion among the W.A.S. members who use the 12½" Cass. at Stargate on a regular basis about the primary mirror cell. It is not holding the mirror as securely as it should be held --- allowing some movement. This problem has been discussed by the powers that be and a solution will be forth coming as soon as possible.

The finder scope on the 12½" has been tuned up by Dennis Jozwik. You can now find the object you are looking for much easier. Thanks a lot, Dennis.

# Messier Objects~

Reprinted from Sky & Telescope

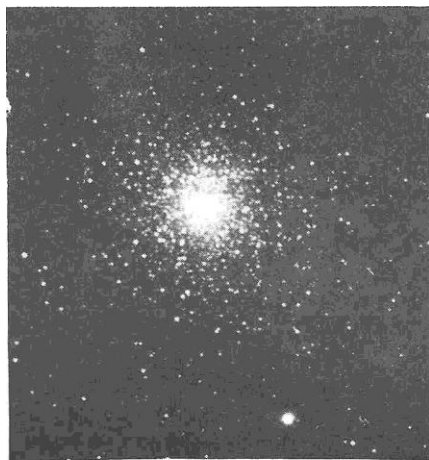


**M51** NGC 5194 13<sup>h</sup> 27<sup>m</sup>.8 +47° 27'  
Galaxy in Canes Venatici

**Basic data.** This is the famous Whirlpool galaxy, with its companion NGC 5195 just 4' to the north. M51 is approximately 11' by 7' and has a total magnitude of 8.

The spiral structure of M51 was first seen in 1845 with the 72-inch reflector of the Earl of Rosse.

**NGC description.** M51: A magnificent object, great spiral nebula. NGC 5195: Bright, pretty small, little extended, very gradually brighter toward the middle, involved in M51.

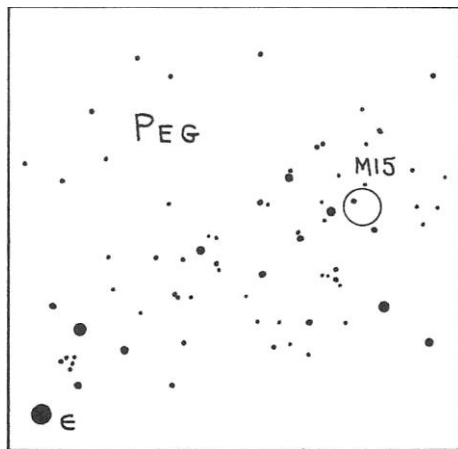
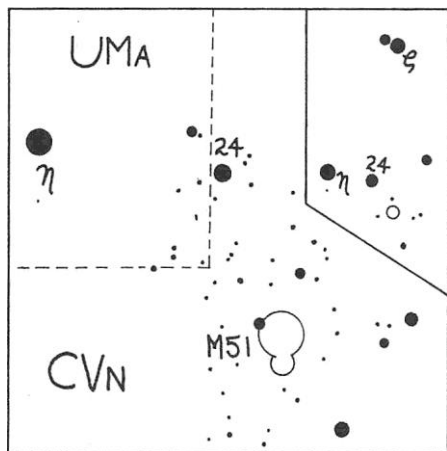


**M15** NGC 7078 21<sup>h</sup> 27<sup>m</sup>.6 +11° 57'  
Globular cluster in Pegasus

**Basic data.** Lying at a distance of roughly 40,000 light-years, Messier 15 has an apparent diameter of 12' (though visually it may appear only half as large) and shines at magnitude 7.

**NGC description.** Remarkable cluster, very bright and large, irregularly round, very suddenly much brighter in the middle, well resolved into very small [faint] stars.

**Visual appearance.** The slightest optical aid reveals this grand globular. In the 4-inch, M15 appears circular, nestled in a fine star field. The center of the cluster is very intense, with quick fading toward the edges.



# •buy- sell- trade•

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6" R.F.T. Reflector Telescope, tube only. Coulter mirror, Parks fiberglass tube, diagonal holder by Novak, spiral focus eyepiece holder. Only \$100.00, FIRM. Contact: Bill Whitney 588-1073.

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The L.F.K. Astrophotographic guide. Special price to all club members, \$1.00. Other guides not as complete are priced at \$4.00 & \$6.00. Contact: Larry Kalinowski, 776-9720.

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Camera lens- perfect condition, like new-55mm f/1.7 Rexatar automatic, straw coated lens, Pentax threads. Only \$40.00. Contact: Roger Civic-775- 6634.

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For Sale: Tasco 2.4" f.13 refractor. Alt-Azimuth head 3 eyepieces, erector lens star prism, wooden case. Metal 3 leg tripod, Good condition. Only \$65.00. Call Mike Grellman, 264-0745.

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For sale: Beautifully sculptured full relief models of the Moon's central section, 30" square. Full color plaster castings- 4"X4"X1/2" thick. Great for framing. Special price for all club members, \$6.00, Contact: Roger Civic, 775-6634.

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K-Mart spotting scope, 20X to 60X Zoom. 60mm Obj. Alt-azimuth table top tripod with slow motion controls. A steal at \$20.00, contact Ken Wilson, 268-9337.

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For sale: Ramsden 18mm Eyepiece, achromatic. Ramsden 9mm Eyepiece, achromatic. A good buy at \$6.00 each or better yet both for \$15.00 Call, Ken Wilson, 268-9337.

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35mm SLR Miranda Automex III f.1.9 lens, removable penta prism, 3X tele-extender, T-adaptor for screw threaded lens, Great condition, \$75.00 Call Ron Kwentus, 771-3283

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For Sale; A 10"- f/7.2 Newtonian telescope. Factory mirror, yoke equatorial mount, portable, 70 power eyepiece. Only \$300.00 Also a 40 mm Polaris finder telescope-12 power, \$25, 18mm Kellner eyepiece- \$18. All good condition. Call Doug Tracy ,882-4499.

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