The W.A.S.P. is the official publication of the Warren Astronomical Society and is available free to all club members. Requests by other clubs to receive the W.A.S.P. and all other correspondence should be addressed to the editor. Articles should be submitted at least one week prior to the general meeting.

Warren Astronomical Society
P.O. Box 474
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President: Ken Strom 977-9489
1st V.P.: John Root 464-7908
2nd V.P.: Steve Franks 535-2675
Secretary: Alan Rothenberg 355-5844
Treasurer: Alice Strom 977-9489
Librarian: John Wetzel 882-6816

Membership is open to those interested in astronomy and its related fields. Dues are as follows and include a year's subscription to Sky and Telescope.

Student .......... $21.00
Individual ..... $30.00
College........... $25.00
Family.......... $35.00
Senior Citizen .... $25.00

Stargate Observatory Chairman: Steve Franks 535-2675 or 478-8389 (store)

Stargate Observatory is owned and operated by the Warren Astronomical Society in conjunction with Rotary International. Located on the grounds of Camp Rotary, Stargate features a 12½” club-built Cassegrainian telescope under an aluminum dome. The observatory is open to all club members in accordance with the “Stargate Observatory Code of Conduct”.

Lectures are given at Stargate Observatory each weekend. The lecture will be either Friday or Saturday night, depending on the weather and the lecturer's personal schedule. If you cannot lecture on your scheduled weekend, please call the Chairman as early as possible or contact an alternative lecturer. Those wishing to use Stargate must call by 7:00 p.m. on the evening of the observing session. The lecturers for the coming month are:

Feb 1/2 ..... Riyad Matti ..... 548-7511
Feb 8/9 ..... Steve Franks ..... 255-7215
Feb 15/16 ....Frank McCullough ......254-1786
Feb 22/23 ... Alan Rothenberg ...355-5844
Mar 1/2 ..... Ken Strom ................. 977-9489
Mar 8/9 ..... John Root ................. 464-7908
Mar 15/16 ... Riyad Matti... ........ 548-7511
Mar 22/23 ... Steve Franks .......... 255-7215
Mar 29/30 ... Frank McCullough ...... 254-1786

Apr 5/6 ..... Alan Rothenberg...... 355-5844
Apr 12/13 .... Ken Strom ................. 977-9489
Apr 19/20 .... John Root ................. 464-7908
Apr 26/27 .... Riyad Matti............ 548-7511
COMING EVENTS

February 21- Meeting at Macomb College
Program: Marty Kunz and F. Llyod-
Talk on history of W.A.S.

February 23- Freeze-out at University of Michigan
in Ann Arbor, Michigan

March 7- Meeting at Cranbrook Institute
Program to be announce.

March 21- Meeting at Macomb College
Program to be announce.

March 23- Star Party at Doug Bock's home
at 7:00 p.m.

March 30- Starbowl at Michigan State University

FOR SALE

Odyssey 1 13.1 inch telescope
excellent condition,
cost- $400.
call Mark Olenzek at 293-1258 for
more details.

May - Labor Day weekend / subject to change
Venus slightly, smaller than the earth moves about the sun at a mean distance of 67,000,000 miles in 225 of our days. Its synodical revolution-its return to the same relationship with the earth and the sun, which is a result of the combination of its own motion and that of the earth-is 584 days. Every 19 months, then, Venus will be nearer to the earth than any other planet of the solar system. [he planet is covered with a dense, white, cloudy atmosphere that conceals whatever is below it. This same cloud reflects sunlight efficiently so that when Venus is favorably situated it is the third brightest object is the sky, exceeded only by the sun and, the moon.

Spectral analysis of sunlight reflected from Venus' cloud tops has shown features that can best be explained by identifying the material of the clouds as sulphuric acid (oil of vitriol). Infrared spectroscopy from a balloon-borne telescope nearly 20 miles above the earth's surface gave indications of a small amount of water vapor present in the same region of the atmosphere of Venus. In 1956, radio astronomers at the Naval Research Laboratories in Washington, D.C., found a temperature for Venus of about 600 degrees F., in marked contrast to -125 degrees F., previously found at the cloud tops. Subsequent radio work confirmed a high temperature and produced evidence for the temperature to be associated with the solid body of Venus. With this peculiarity in mind space scientists devised experiments for the U.S. space probe Mariner 2 to perform when it flew by in 1962. Mariner 2 confirmed the high temperature and the fact that it pertained to the ground rather than to some special activity of the atmosphere. In addition, Mariner 2 was unable to detect any radiation belts similar to the earth's so-called Van Arlen belts. Nor was it able to detect the existence of a magnetic field even as weak as 1/100,000 of that of the earth.

In 1967, a Russian space probe, Venera 4, and the American Mariner 5 arrived at Venus within a few hours of each other. Venera 4 was designed to allow an instrument package to land gently on the planet's surface via parachute. It ceased transmission of information in about 75 minutes when the temperature it read went above 500 degrees F. After considerable controversy, it was agreed that it still had 20 miles to go to reach the surface. The U.S. probe Mariner 5, went around the dark side of Venus at a distance of about 66,000 miles. Again, it detected no significant magnetic field but its radio signals passed to earth through Venus' atmosphere twice-once on the night side and once on the day side. The results are startling. Venus' atmosphere is nearly all carbon dioxide and must exert a pressure at the planet's surface of up to 100 times the earth's normal sea-level pressure of one atmosphere. Since the earth and Venus are about the same size, and were presumably formed at the same time by the same general process from the same mixture of chemical elements, one is faced with the question: which is the planet with the Unusual history earth or Venus?
Radar astronomers using powerful transmitters as well as sensitive receivers and computers have succeeded in determining the rotation period of Venus. It turns out to be 243 days clockwise—in other words, contrary to the spin of most of the other planets and to its own motion around the sun. If it were exactly 243.166 days, Venus would always present the same face: toward the earth at every inferior conjunction. This rate and sense of rotation allows a "day" on Venus of 117.4 earth days. Any part of Venus will receive sunlight on its clouds for over 58 days and will be in darkness for 58 days. Recent radar observations have shown surface features below the clouds. Large craters have been identified.

Mariner 10 passed Venus before traveling on to Mercury in 1974. The carbon dioxide molecule found in such abundance in the atmosphere is rather opaque to certain ultraviolet wavelengths, enabling sensitive television earners to take pictures of the Venusian cloud cover. Photos radioed to earth show a spiral pattern in the clouds from equator to the poles.

In December, 1978, two U.S. Pioneer probes arrived at Venus. One went into orbit about Venus, the other split into 5 separate probes targeted for widely-spaced entry points to sample different conditions. The instrumentation ensemble was selected on the basis of previous missions that had shown the range of conditions to be studied. The probes confirmed expected high surface temperatures and high winds aloft. Winds of about 200 miles per hour, there, may account for the transfer of heat into the night side in spite of the low rotation speed of the planet. Surface winds were light at the time, however. Atmosphere and cloud chemistries were examined in detail, providing much data for continued analysis. The probes detected 4 layers of cloud and more light on the surface than expected solely from sunlight. This light allowed Russian scientists to obtain at least two photos showing rocks on the surface. Sulphur seems to play a large role in the chemistry of Venus and reactions involving sulphur may be responsible for the glow. To learn more about the weather and atmospheric circulation on Venus, the orbiter takes daily photos of the daylight side cloud cover. It confirms (the cloud pattern and its circulation shown by Mariner 10. The ionosphere shows large variability. The orbiter's radar operates in 2 modes: one, for ground elevation variability, and the second for ground reflectivity in 2 dimensions, thus "imaging" the surface. Radar maps of the entire planet are expected to be produced.

Written by
Steve Franks
WARREN ASTRONOMICAL SOCIETY
LIBRARY

LISTING OF BOOKS, MAGAZINES AND MISCELLANY

1954

LENDING LIBRARY INVENTORY:

LIST 1: HARD COVERED BOOKS

- ABELL, GEOGE - EXPLORATION OF THE UNIVERSE 2ND EDITION - 1969
- BAEK, FRANK G. - THE EARTH A RING AROUND IT? - ABOUT 1956
- CALK, JAMES P. - THE PERSPECTIVE UNIVERSE - 1959
- HAWKING, GERALD S. - BEYOND STONEHENGE - 1973
- HIRSCH, RICHARD - THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION - 1973
- HOE, PATRICK - AMATEUR ASTRONOMY - 1968
- NASA - LANDSAT VIEWS THE WORLD (A COLLECTION OF PHOTOS TAKEN BY SATELLITE) - BOOK CONTAINS 450 PAGES AND MEASURES 10 1/2 X 14
- NOURSE, ALAN E. - THE PLANETS (ASTRONOMY FOR THE SPACE AGE - 1960
- OHRING, GEORGE - WEATHER ON THE PLANETS (WE KNOW ABOUT THEIR ATMOSPHERE) - ABOUT 1964
- SIDWICK, J.B. - THE HEAVENS ABOVE - 1950 (SLIGHTLY WATER DAMAGED)
- THOMPSON, ALLYN J. - MAKING YOUR OWN TELESCOPE - 1967
- NAVAL OBSERVATORY - THE AMERICAN EPHemerides AND NAVAL ALMANAC - 1967

LIST 2: PAPERBACK BOOKS

- ADLER, IRVING - THE STARS - STEPPINGSTONES INTO SPACE - 1962
- ARMITAGE, ANGUS - THE WORLD OF COPERNICUS - 1954
- BARNETT, LINCOLN - THE UNIVERSE AND DR. EINSTEIN - 1950
- FRANKLIN, RICHARD - BIRTH & DEATH OF STARS - 1964
- FRANKLIN, BRADLEY M. - EXPLORATION OF THE MOON - 1966
- HOYLE, FRED - FRONTIERS OF ASTRONOMY - 1966
- LEY, WILL - MARINER IV TO MARS - 1966
- CONDON, EDWARD U. - SCIENTIFIC STUDIES OF UNIDENTIFIED OBJECTS - 1969
- TURGEON, RICHARD - INDEX OF ASTRONOMY & TELESCOPE MAKERS - 1950 TO 1975
- SHIELDS, JOHN POTTER - RADIO ASTRONOMY - 1976
- DENEV, DON - TO THE EDGES OF THE UNIVERSE - 1978
- FREEMAN, RAE & IRA - FUN WITH ASTRONOMY - 1958
- HOYLE, FRED - FRONTIERS OF ASTRONOMY - NOT RECENT - POOR CONDITION, FIRST 64 PAGES MISSING
- JONES, SPENCER H - LIFE ON OTHER WORLDS - 1951
- LEY, WILLY - "FOR YOUR INFORMATION" ON EARTH AND IN THE SKY - 1967

MAYALL, NEWTON & MARGARET - THE SKY OBSERVER'S GUIDE - 1965
RCA - PHOTOMultiPLIER (TECHNICAL SERIES PT-61) - 1970
SCIENTIFIC AMERICA - COSMOLOGY + 1 - 1977
TERRERRA, JEAN - HOW TO MAKE A TELESCOPE - 1963
WELLS, H.G. - BEST STORIES OF - 1963
WELLS, H.G. - THE WAR OF THE WORLDS - ABOUT 1920
WHITEHEAD, A.N. - SCIENCE AND THE MODERN WORLD - 1949
ZADON, ARTHUR J. - MAKING FRIENDS WITH THE STARS - 1963

LIST 3 a. - NASA REPORTS

- ANNUAL REPORT 'SPINOFF 1976'
- APOLLO 8 - MAN AROUND THE WORLD
- CHEMISTRY BETWEEN STARS
- EXTRAGALACTIC ASTRONOMY
- NEW HORIZONS
- SURVEYOR III - A PRELIMINARY REPORT
- WHAT'S NEW ON THE MOON
- THE LONDON PLANETARIUM BY JOHN ERDON

LIST 3 b. NASA CASSETTE TAPES

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NATIONAL GEOGRAPHIC: MOON CHARTS (2 COPIES), THE RED PLANET MARS:
JOURNEY TO THE MOON; GEMINI PICTORIAL; THE SPECTRUM EXPOSURE GUIDE; DEVELOPED BY L. KALININ.

LISTS 4 AND 5 - ARCHIVES: ITEMS NOT TO BE LOADED OUT

LIST 41:
- BOOKS - 2 COLLECTOR'S ITEMS:
  - LOCKER, NORMAN J. - ELEMENTS OF ASTRONOMY - 1884 (VERY OLD)
  - PROCTOR, RICHARD A. - OTHER WORLDS THAN OURS - 1870 (VERY OLD)
- PHOTOGRAPHY:
  - THREE ENLARGED BLACK & WHITE PHOTOS OF SUNSPOTS (FOR DISPLAY)
- POSTERS:
  - NATIONAL GEOGRAPHIC: MOON CHARTS (2 COPIES), THE RED PLANET MARS: JOURNEY TO THE MOON, GEMINI PICTORIAL, THE SPECTRUM EXPOSURE GUIDE; DEVELOPED BY L. KALININ.
LIST 5- COPIES, WARREN ASTRONOMICAL SOCIETY'S PUBLICATION

THE WASP - JAN 75
THE WASP - FEB 75
THE WASP - APR 75
THE WASP - MAY 75
THE WASP - JUL 75
THE WASP - AUG 75
THE WASP - SEP 75
THE WASP - NOV 75

THE WASP - JAN 76
THE WASP - FEB 76
THE WASP - JUL 76 (5 1/2 X 8 1/2) COLLECTOR'S ITEM?

VESPA - JUL 77 COLLECTOR'S ITEM?
VESPA - AUG 77 COLLECTOR'S ITEM?

THE WASP - MAR 80
THE WASP - APR 80
THE WASP - MAY 80
THE WASP - JUL 80
THE WASP - AUG 80
THE WASP - SEP 80
THE WASP - OCT 80
THE WASP - NOV 80
THE WASP - DEC 80

THE WASP - SEP / OCT 81

THE WASP - APR 82
THE WASP - MAY 82
THE WASP - DEC 82 / JAN 83

THE WASP - FEB 83 (IN PLASTIC FOLDER)
THE WASP - MAR 83 (IN PLASTIC FOLDER)
THE WASP - APR 83 (IN PLASTIC FOLDER)
THE WASP - SEP 83

THE WASP - MAR 84
THE WASP - MAY 84
THE WASP - JUN 84
THE WASP - SEP 84

LIST 6:
11 EXPOSURE GUIDE BOOKS - DEVELOPED BY LARRY KALINOWSKI AND DONATED TO THE W.A.S. LIBRARY. CAN BE DRAWN UP FOR A PERIOD OF ONE MONTH, SAME AS THE OTHER W.A.S. LIBRARY ITEMS.

PAGE 4

J.J. WETZEL
LIBRARIAN

THE WASP - MAR 69, "HAPPY BIRTHDAY WASP 6"

THE WASP - MAR 70 / JAN 71
THE WASP - JAN / FEB 71

THE WASP - JUL / AUG 71
THIS IS THE WASP - AUG 71 COLLECTOR'S ITEM?

THE WASP - SEP 71
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THE WASP - DEC 71 / JAN 72 (2 COPIES)

THE WASP - FEB 72
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THE WASP - DEC 73

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THE WASP - MAR 74
THE WASP - APR 74
THE WASP - MAY 74
THE WASP - JUN 74
THE WASP - JUL 74
THE WASP - AUG 74

THE WASP - OCT 74
THE WARREN ASTRONOMICAL SOCIETY PAPER VOLUME 6 #10 OCT 74 a collector's item?

THE WASP - NOV 74
THE WASP - DEC 74
HARDWARE

=7 Hinges
   1) brass hinge thru plate (2)
   2) cabinet door
=7 Handles
   1) 6 handles (brass) NOS
   2) 1 door handle

1 - ON/OFF 110 V Toggle
1 - NEON Pilot Light
1 - Power Cord (10') @ grid/110 V
8 - 6 Light Bulb Bases
3 - 15 Watt Bulbs
1 - Double Outlet Box
1 - Double Outlet Box
4 - Casters - 3" (2" wheels) high
1 - 1/4" Tempered Glass + Window Glass
1 - Plastic - 1/8"

3" Foam Sheet
1/2" Foam Sheet
Construction Paper / Mat Board
Teflon Strip
Red Acetate
Wood

5/8" Ext Plywood
1/8" Masonite
1x2, 1x3, 1x4
2x4 Clock
1/4" Pine Strips
1/4 Round 5/8"
Adventures in Astronomy

Welcome to the science of astronomy. You say you would like to learn more about astronomy? What areas are you interested in? Constellation identification, Deep-sky observing, Astrophotography, Solar and lunar eclipses, Asteroids, Variable Star Observing' Occultations, Mirror-grinding, Telescope Making, Spectroscopy, Astrometry, Double Stars, Aurora, Meteors, Planetary observing, Cosmological research (ENOUGH OPTIONS YET?.

You could always record the passage of the solstice and equinoxes. Maybe build a fire to celebrate. You could photograph Pluto as it becomes the most distant planet again.

Let's try building a telescope. First we have to decide what size we want. Big is better, Right? Let's make it an 80 inch, We can handle that. I hear there is one for sale somewhere south of here. I believe it is somewhere in the range of an F/1.8, That would mean we would only need a 12 foot ladder if we just lay the mirror on the ground pointing at the zenith. Hey, that would be great, standing on the top of the ladder with a 13.5mm Nagler watching the sky go by in an 80 inch. And in the winter time you could fill it with water and use it for a skating pond. And in the summer time you could have a solar barbeque at noon every day, as long as you make a sliding grill to account for the change in altitude. of the Sun from day to day. See, this is Very simple and versatile at the same time.

I think we would get tired of that after a while because the scope isn't really transportable or movable to other parts of the sky, So we will designate this telescope the Zenith Observing Telescope (ZOT).

Now. we must build another telescope to better suit our needs, or at least our desires. Needs is such a strong word and is really irrelevant in this hobby. Desires better expresses the need. The need is there because of the desire, How's this conversation sound. Reminds me of a famous astronomer. I think his initials are C.S. This of course is becoming confusing due to the fact we have deviated slightly from the original course of this paragraph. Ah, yes, the other telescope should be portable and do everything we wish it to do. So, we will make it have the following specifications:

1) Six inch diameter mirror, so it will have more light gathering capabilities than a four inch.

2) Zoom focal length from f/1.2 to f/10 to allow for fast Schmidt camera type photography at prime focus and for high magnification prime focus photography for eclipses. etc. The key words are PRIME FOCUS, so we don't have unnecessary optics in the system.

3) An array of flat mirrors of minor axis .6 in. to 5 in.
to allow for Newtonian focus at all of the above focal ratios. We
don't want to miss any of that light cone, do we.

4) Dobsonian type mounting should be used with complete foldability of
all parts. This is so we can put it in a briefcase.

5) A dual axis friction driven drive computerized and linked with the
rotating film plane, and photo-detection correction system on an
off-axis Guide star, with complete computer control based on all
inputs previously given. This should run off of AC or DC voltage,
and should have alternate automatic recharging power systems, like
solar collection panels for battery charging. This unit should set
itself up in 5 minutes, set up the warmup tent and start the coffee
before we get out of the car.

Now that we have decided on the specifications, we must now figure
out the cost of the project... So much for that project. I
guess we ought to start a little simpler than that.

We will build a simple 8" f/7 Newtonian. Since that is intuitively
obvious we will assume you have done that.

It is now Saturday night and you are aware something different is
occurring tonight. You haven't experienced it in several weeks: It
comes over you very slowly. Maybe it is the lack of: glow outside. Or
the fact that the windows aren't wet. In fact, you see a light outside
your window and you suddenly realize you are staring at a crescent
moon and, yes, it is CLEAR out. Remember that word. CLEAR. It catches
you by surprise every few weeks. Now you realize that you must get
outside and catch some rays of starlight before it clouds over.
Otherwise you will be fretting for another couple of weeks at how bad
the weather has been for the past two months.

Now you have set up all of that great equipment, it only took an
hour, and you try to cram a month's worth of observing plans into one
night. But first: you must remember what those plans were. Did you
write them down as you were thinking of them? NOOOO. Of course not.
Your mind is like a black hole. Everything goes in, and nothing much
comes out. So you resort to an hour of observing the same things you
did last year at this time. And marveled at them just like you did
last time. Of course when the clouds rolled in an hour later, you
cursed at them because you didn't get a chance to work on those
observing plans you keep talking about, again. It's always something.

By the way, this article has no scientific value at all and is
merely here as a narrative of situations I have either thought about
or have actually experienced or have exaggerated for filler space for
no particular reason. In other words, who needs other words, ditto the
last sentence.
If you have read this carefully, you must be asking yourself, 'What is wrong with this person'. Actually that's none of your business. but the only thing I am wondering about is if anyone in this club is actually reading this stuff. If so I expect a rebuttal or refusal or disclaimer or something in response as long as it is non-violent, cultural serious and educational. In other words, everything this article isn't.

That is the end of this edition of 'ADVENTURES IN ASTRONOMY'.

For the current list of scheduled Observing Meetings at my house, see additional page hopefully listed in this newsletter.

Douglas H. Bock
Director, Resident Astronomer,
Senior Sanitation Eng.
Keeper of the Keys
of the _______ Observatory
(313) 750-9369