



The W.A.S.P. Newsletter

April 2012

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The Warren Astronomical Society Paper
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The President's Field of View

Two of the many fun times I have had in this club were when I got to be the moderator of our debates. In September of 2010, Ken Bertin, Jerry Kuchera, Jim Shedlowsky, and Dave Bailey, debated manned vs unmanned space exploration. In April of 2011, Diane Hall, Jonathan Kade, Phil Martin, and Gary Ross, debated the merits of science fiction. In both cases, I got to be the moderator, organizer, and timekeeper. I even bought a referee shirt at a Halloween costume store. These were two of our most popular meetings, generating plenty of excitement and conversation before, during, and after each event.



I would love to have another debate among our club members. In order to do that, we need a topic for which there are four club members, two to debate each of the two sides of some astronomy-related issue. One topic that some of us have been considering is the question of whether humans will have contact with some intelligent extra-terrestrial civilization within the next 100 years. Ken is willing to debate on the "no" side. Jim is willing to take either side, but in reality mostly agrees with Ken. Phil's position is that this is all speculation and so is not debatable. So far, we don't have any club member who says he believes "yes" and is willing to debate from that side.

If you are an ardent supporter of the "yes" side of the above issue, or if you have any other debate topic to suggest AND you have club members willing to take opposing sides on that topic, please email me at president@warrenastro.org.

- Jon

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The SWAP SHOP

This column is for those interested in buying, trading or selling. Ads run for six months. The month and year the ad will be removed is shown. Submit ads to publications@warrenastro.org.

WANTED: Coarse mirror-lens grinding powder (60 to 80 grit), carborundum (silicon carbide) preferred. For a coarse, glass grinding, crafting application/experimentation. It doesn't have to be optical grade--I won't be mirror-grinding. I just need to take a rough glass surface down. If you have any such abrasive that's taking up space and you want to unload it, please let me know. Contact Brian Klaus [8-5012] alecbmdb1836ce@gmail.com (586) 731-0011

FOR SALE: 12" Meade Lightbridge Dob with light shroud and shipping boxes. Also, 16" Meade Lightbridge with light shroud, rain cover and shipping boxes. Best offer on one or both. Contact John Rasmussen 248-858-3559 [5-2012]

FOR SALE: 75 mm Unitron achromatic refractor. Doublet primary. 1200 mm focal length (f16). Alt Az tripod. Excellent visual scope. Collectable, due to high quality everything. New & unused condition & in original box. Chuck Peters at 586-445-8596.

FOR SALE: Excellent condition classic LX-200 Meade 12" (not GPS) with a good collection of Meade eyepieces and accessories. DSI Meade camera. Also: a Russian Maksutov of around a 5" aperture. Joe Tringali 586-663-0816 or BlipsterJoe@gmail.com [5-2012]

FOR SALE: Meade 10" LX200 Goto SCT with heavy duty field tripod and accessories. Asking \$2500.00 for everything. More photos all items. Call Tom, noon to 7 pm: 248-446-0072 t_zimmerman@ameritech.net [4-2012]



FOR SALE: 18 inch Starmaster Telescope with f/4.3 Zambuto mirror and Strehl Ratio: 0.987 Everything is in good to excellent condition. It comes with the Sky Commander DSC's, dew heater, Telrad finder, Televue Paracorr, wheel barrow handles, custom truss pole carrying covers, StarStep Observing Chair, and Starmaster oak mirror storage box. NOW \$5,995 or Best Offer! Scope Located in Plymouth, Michigan 48170... Pick up only. w8tu@comcast.net Jim Frisbie [5-2012]



WAS Discussion Group

The WAS Discussion Group meetings take place at the home of Gary and Patty Gathen from 8 to 11 PM on the fourth Thursday of the month from January through October. Different dates are scheduled for November and December due to Thanksgiving and the holidays. The Gathens live at 21 Elm Park Blvd in Pleasant Ridge, which is three blocks south of I-696 and about a half block west of Woodward Ave. A map can be found at http://maps.yahoo.com/maps_result.php?q1=21+Elm+Park+Blvd.%2C+Pleasant+Ridge%2C+MI.

The agenda is centered around discussing one science topic at a time by all. A science video is shown from 9 to 10 PM, usually about astronomy, and selected by a vote. Soft drinks are furnished while snacks are contributed by attendees. We usually have from 4 to 16 members and guests, so come on over (and bring some snacks for the group). Gary can be reached at 248.543.5400 and at gary@gathen.net.

<http://tinyurl.com/6zo6jt6> **WAS Club logo wear**



(Photos and modeling by Jon Blum)

Diane Worth,
dianewsky-night@yahoo.com
or 248-980-7832 sells club logo
clothing (hats, shirts, sweatshirts, jackets).
Stephen Uitti brings the catalog to meetings.

Astronomical Phenomena April 2012

d	h	
3	6	Mercury stationary
3	13	Regulus 5.5N of Moon
6	19	FULL MOON
7	5	Spica 1.4N of Moon
7	10	Saturn 6.0N of Moon
7	16	Moon at perigee
10	7	Antares 4.8S of Moon
10	14	Pluto stationary
10	21	Moon furthest South (-21.9)
12	9	Pluto 1.1N of Moon Occn
13	10	LAST QUARTER
15	12	Mars stationary
15	18	Saturn at opposition
16	10	Neptune 5.7S of Moon
18	19	Mercury greatest elong W(27)
19	3	Uranus 5.1S of Moon
21	7	NEW MOON
22	13	Moon at apogee
22	17	Jupiter 2.4S of Moon
22	19	Mercury 2.0S of Uranus
24	13	Aldebaran 5.1S of Moon
25	3	Venus 5.6N of Moon
25	5	Moon furthest North (21.8)
29	9	FIRST QUARTER
30	23	Regulus 5.7N of Moon

All times are in UTC

2012 Stargate Observatory Open House
April 21 & 28 (Astronomy Day), May 19

2012 WAS Meetings
Cranbrook Meetings: 1st Mondays
April 2, May 7, June 4, July 2

Macomb Meetings: 3rd Thursdays
April 19, May 17, June 21, July 19



Observatory Rules

1. Closing time depends on weather, etc.
2. May be closed one hour after opening time if no members arrive within the first hour.
3. Contact the 2nd VP for other arrangements, such as late arrival time. Call 586-992-0498.
4. An alternate person may be appointed to open.
5. Members may arrive before or stay after the scheduled open house time.
6. Dates are subject to change or cancellation depending on weather or staff availability.
7. Postings to the Yahoo Group and/or email no later than 2 hours before starting time in case of date change or cancellation.
8. It is best to call or email the 2nd VP at least 2 hours before the posted opening with any questions. Later emails may not be receivable.
9. Generally, only strong rain or snow will prevent the open house... the plan is to be there even if it is clouded over. Often, the weather is cloudy, but it clears up as the evening progresses.

- Riyad Matti, 2nd VP

W.A.S. History S.I.G.



On the digitizing front: the packet of 1982 and 1983 is done, 1983 is posted on our website, 1982 should be up soon. I'm getting ready to dive in to the next packet, the scanner all dusted off and glass cleaned. Meanwhile, here are some more gleanings from past issues.

April 1970, a special eclipse edition, shows us that the Warren Astronomical Society dipped its toes in the radio astronomical waters well before the arrival of our own Sai Rajagopalan (Radio Astronomy SIG leader): "Radio Telescope Report" by Jim Trombly, from the solar eclipse. In this issue is the tale of two cities, two astronomers or the agony and the ecstasy: reports on the eclipse from Frank McCullough and Chris Edsall. Not to be outshone, Jim Trombly reported on the Lunar Eclipse.

April 1975, a real "can do" issue: Calculating Your Image Size by Larry Kalinowski; "Star Light - Star Bright" But How Bright is the Star Light? by Lou Faix; in the DIY corner, A Home Brewed Camera Adapter by Carl Noble.

April 1977 features Phobos and Deimos -The tiny moons of the planet Mars.

Finally in April 1983, we see that the W.A.S. has a long history of "Great Debates", Judy Butcher reports on a debate between astronomy and astrology. In "The Calculating Astronomer" by Kenneth Wilson, the formula for Dawes' limit is discussed.
- Dale Thieme

Oakland Astronomy Club Newsletter

<http://oaklandastronomy.ulmb.com/oacnews.html>

Clear skies, - Bill MacIntosh

Newsletter Topics

We know that not everyone likes to talk in public, but we also know that our members have a lot of things they want to say. Please consider writing an article to share with your fellow astronomers!

Need a topic? Here are some suggestion:

Topics:	Due Date:
May: Seeing in the Dark	April 25
June: My Most Stellar Moment	May 25
July: Home Built	June 25

If you have an idea for an article that isn't one I have listed, please submit that at any time and we'll make room for it.

- Debra Chaffins

Seven Ponds Open Invitation

WAS members are invited to The Seven Ponds Astronomy Club monthly meetings. More information about upcoming meetings, maps to Seven Ponds Nature Center, etc. is available at <http://bhmich.com/sevenpondsac/>. Please let me know if you might attend so that appropriate plans can be made. Any questions, please contact me.

- John Lines

Upcoming Talks

April 19 M	Ken Bertin (w/ Jon Blum)	Astronomy Apps for iPhone and iPad
May 7 C	Jim VanProoyen	Low Frequency Radio Astronomy - The New Frontier!
May 17 M	Bob Berta	Astrophotography 99
June 4 C	Phil Martin	A Brief History Of Astro photography
	Jon Blum (short talk)	Beijing Ancient Observatory

The iPhone Telescope Adaptor Formerly Known as MX-1



Astrophotography on the cheap? I already have a telescope, and the iPhone comes with a built-in camera, all that is needed is a way to hold the phone up to the eyepiece. I've tried holding it by hand with mixed results. When I first saw mention of this specialized camera adaptor in *Astronomy Technology Today Magazine* (Vol 5, Issue 1; Jan-Feb 2011), I had to give it a go.

The MX-1 was introduced by Magnilux and is currently sold by Orion as the "[SteadyPix Photo Adaptor for iPhone](#)" for \$59.99, a fifteen dollar bump up from Magnilux's introductory price that I paid. There are some improvements over the original version, the thumbscrew and wingnut on my adaptor are now tri-lobed knobs. Much easier on cold finger tips. I'm definitely making the trip to the hardware store to upgrade mine. It fits the iPhone original, 3G, 3GS, 4 and 4S (The 4 series fit best with their flat backs)

When it arrived, I tried it out by imaging the sun out of my living room window with my iPhone 3GS on my Celestron NexStar 4SE. It was harder than I figured on. Getting the iPhone camera lens on axis with the lens projection was dicey and even when I had the alignment right, tightening the assembly down would generally throw it right back off. After a few tries, I had the sun in view and it looked terrific, even showed off a couple sunspots for my enjoyment.



The user guide advises that the brighter objects, sun, moon, planets are the best targets and I agree. The iPhone camera would have a hard time displaying even the Orion Nebula in real time (I haven't tried that yet). Since greater magnification equals dimmer images, camera noise becomes a factor. I used a 2x Barlow with a 15mm eyepiece for my shot of Jupiter and the graininess is huge. Of course, in real time viewing, atmospheric distortions and the iPhone's auto focus kind of smooth out the image as you watch it on the phone. Since the iPhone can take video, it would be interesting to see what a program like Registax would produce.

Now that its rings are opening, I'm looking forward to getting some shots of Saturn, once Saturn starts getting up at a reasonable time.

-Dale Thieme

Object of the Month: NGC 3242

NGC 3242, commonly known as the Ghost of Jupiter, is a planetary nebula located in the constellation of Hydra. It gets its name from the fact that, like many planetary nebulae, it has a disc-like shape that resembles a planet through amateur telescopes. The Ghost of Jupiter particularly resembles its namesake in that it has a diameter of 35", which is a value similar to that of the planet Jupiter. Although it has a magnitude of only 8.6, NGC 3242 exhibits a surprisingly high surface brightness due to its miniscule size. This makes it readily within reach of modest sized telescopes from even the most light-polluted of observing sites. In fact, the main difficulty associated with finding this object (as well as other similarly-sized planetary nebulae) derives from the fact that it is quite small. At the low magnifications used for finding objects, most planetary nebulae appear rather star-like and may be easily passed over without the observer realizing their true nature. At higher magnifications where the disc-shape would be more apparent, the field of view becomes small enough through most telescopes to make the object difficult to locate.

During the month of April, NGC 3242 can be found about 30° above the horizon in the southern evening sky. It is only a short star-hop from the nearby magnitude 3.8 star μ Hydrae, which lies about 2° due north of the nebula. At the eyepiece it should appear as a ghostly translucent blue-green disk. At higher magnifications and optimal conditions, an outer portion of the disk and a faint central star might also be visible. Planetary nebulae form as the result of certain star types that eject a shell of ionized gas during the late stages of their life cycle. Only about 3000 such nebulae are known in the Milky Way galaxy, with their scarcity mostly due to the short lifespan of the ejected gas shell relative to the life expectancy of the stars that create them.

This column is a new feature written with the intention of introducing a new object each month that is visible from Stargate Observatory using a small to medium sized telescope typical of beginner and intermediate level amateur astronomers. In particular, special focus will be given to objects that are not among the common showpiece objects that most observers already know about, but instead articles will mainly give attention to "hidden gems" or underappreciated features of the night sky.

-Chuck Dezelah



Members are encouraged to join the [Warren Astronomy Society Yahoo Group](#) for messages, photo posting and more.

Treasurer's Report

NONPROFIT STATUS

No activity this month.

MEMBERSHIP

We currently have 76 members (15 of which are family memberships).

INCOME AND EXPENDITURES (SUMMARY)

We took in \$452.12 and spent \$236.76. We have \$10191.26 in the bank account and \$185.07 in cash, totaling of \$10376.33.

COSTS AND REIMBURSEMENTS

\$17.17 snack reimbursements
\$52.00 rent post office box for one year
\$31.79 purchase web cam
\$133.90 magazine subscriptions
\$1.90 miscellaneous

INCOME

\$312.00 new memberships and renewals
\$30.00 Astronomical League memberships
\$31.12 miscellaneous donations
\$34.00 magazine subscriptions
\$45.00 calendars

- Dale Partin

WAS Board Meeting March 5, 2012

Board members: Jon Blum (via Skype), Diane Hall, Riyad Matti, Dale Partin, Dale Thieme, Bob Berta

Visitors: Brian Klaus, Ken Bertin, Gary Ross, Jonathan Kade

The meeting was brought to order by Diane Hall at 6:35

President: will be back in Michigan on March 20th.

1VP: one gap in schedule, Most of the fall slots are filled. Astrophotography, Solar filters, radio astronomy among the upcoming topics.

2VP: More scouts lined up, Feb open house clouded out, scouts cancelled. Need to get the floor repairs going with warmer weather coming. Riyad suggests we install a refractor in the observatory, 8" diameter. \$3,700-3,800 for the OTA.

Treasurer: Membership renewals coming in. \$10,160 total finances.

Secretary: Received email from Cranbrook's Director of Annual Giving Program, Helen Harding. She states: "Please know that we will donate a membership and tickets for any upcoming fundraisers you may have. You have been such a great partner, it's the least we can do."

Outreach: 2 additional scout groups, High school groups coming. FAAC Swap meet sign-up sheet / Metro Beach to be passed around at meeting. Need to talk to Cranbrook about Astronomy Day.

Publications: NA

Old Business:

Banquet: vote tally: Thursday, 17; Saturday, 21 votes/ October, 11; November 11; December, 17 votes. (Dec 8, Nov 10 or Oct 27/Dec 1) Dale Thieme to call for availability.

By-Laws change: "The Treasurer shall carry a maximum amount of petty cash to be determined by the Board of Directors." vote tonight.

New Business:

GLAAC funding is in trouble. Recommendation that we at least maintain our current level of support of \$300.

Macomb time constraints are an issue. Need more time for group participation. Diane suggested that we have the officer and SIG reports at the Cranbrook meetings, have president give summary reports at Macomb. .

Dale Partin moved to pay for the webcam, Bob Berta seconded. Motion carried with one vote against.

Riyad moved that the board designate \$800 for floor repairs in the observatory. Diane seconded. Motion carried.

Dale Thieme moved that we award Mark Kalinowski and his mother, Joann, a family lifetime honorary membership. Jon Blum seconded, Unanimous.

The Board meeting dismissed at 7:30

Speaker's Corner - April 19, Macomb

"There's an App for That!"

Ken Bertin (with Jon Blum) There are some 100 applications and rising for astronomy. My presentation will be reviewing the many types of astronomy applications and demonstrations of how they work. About a dozen of them are GPS orientation programs where one can point the device at the sky and identify planets, stars, and nebula along with finding specific satellites. There are many applications which are for information about objects in space, historical figures, definitions and the like. Also there are applications where one can download books, articles and even each Warren Astronomical Society Publication. Apparently, many of these applications are available for other devices including the BlackBerry and Razor devices.

WAS Cranbrook Meeting March 5, 2012

Meeting began at 7:34, 59 present

Officer Reports:

President: WASP needs articles. Suggested articles. We have closed the banquet poll on the web site.

1VP: arranges for speakers, call for volunteers.

2VP: Last month's open house, bad weather, bad gate. Riyadh will be out this Sat with scouts, open house the next.

Treasurer: 10,160 dollars in funds, membership renewals coming in. Details in WASP.

Secretary: Received email from Cranbrook's Director of Annual Giving Program, Helen Harding. She states: "Please know that we will donate a membership and tickets for any upcoming fundraisers you may have. You have been such a great partner, it's the least we can do."

Outreach: Scout groups coming to Stargate, two big events coming, FAAC swap meet this Sat., March 10; Lake St Clair Metropark on 31st. Bob Trembley was awarded the Night Sky Network of the Astronomical Society of the Pacific award for outstanding efforts in public outreach and assistance to the club.

Publications: Wasp for March is up.

SIG Reports

Discussion Group: NA

Solar Group: Sun has big spots again. possibly this Sunday at Cranbrook.

Hands On: Sat March, 17 at Stargate.

History: 1983 issues are up on site, 1982 is nearly done, we expect them to be online by the March Macomb meeting.

Astro Photo: Phil Martin will be speaking on his personal history of astrophotography.

Radio Astronomy: NA

Astronomical League: Mentioned articles in the magazine. Alcon 2012, Chicago

Observing Reports:

Dave Bailey: bipolar regions of magnetism clustered around equator of the sun.

8:30 a.m., Oxford. Snow falling from clear sky.

Gary Ross: watched Mars Polar Cap shrink in only a month.

Dale Partin: attended Winter Star Party in FL, encourages the membership to make the effort to attend.

Short Talk: Steve Uitti, Telescope Review: Celestron 60LCM.

Announcement of bylaw change vote. Change the bylaws to read: The Treasurer shall carry a maximum amount of petty cash to be determined by the Board of Directors.

Vote on the By-laws change: 24 in favor, 2 against

In The News:

Earthshine holds clues to exoplanet aliens

Planetary scientists battle over NASA's Mars budget

Underground oasis found below Earth's driest desert

Light's speed limit is safe for now

'Missing link' black hole is stress eater

Blame dark matter for missing lithium

Presentation: Bill Margolin, Einstein and Newton: Two different views of the kinetics of motion



Speaker's Corner - April 2, Cranbrook

Main Talk: "Ole Romer"

Ken Bertin: Ole Romer, or Olaus Romer (1644–1710) was a Danish astronomer whose most significant contribution was to demonstrate conclusively that light travels in a finite speed. For 9 years starting in 1672 he worked at the new Royal Observatory in Paris. In 1679 he traveled to England to meet with Sir Isaac Newton, John Flamsteed and Edmund Halley. In 1681, he returned to Denmark where he was appointed Royal mathematician and professor of astronomy at the University of Copenhagen. Through his life, he held several public offices including Mayor of Copenhagen in 1705.

Ken says, "My interest in astronomy is far ranging, but I am intensely interested, along with eclipses, in the history of the science. My past lecturing has been on the historical figures: Galileo, Kepler, Tycho Brahe, Newton, the William Herschel family, Edward Emerson Barnard, Christian Huygens, Giovanni Cassini (plus his progeny) and George Ellery Hale. I also did a lecture on the minor astronomers through history. Also, I did a long lecture on the complete history of astronomy." After this talk on Ole Romer, Ken plans to tackle the illustrious Sir Edmund Halley.

Short Talk: "Alcyone Days"

Jonathan Kade: You've all seen them first-hand. Nearly every culture recognizes them. Tennyson wrote of them, as did Homer, Hesiod, and the ancient Mesopotamians and Chinese. In most translations, YHVH challenges Job to bind them; King Lear proves himself a fit fool by showing why the sisters are no more than seven. A statue of one can be found at the Detroit Institute of Arts. Alcyone Days is an aesthetic appreciation of the Pleiades: their history, their cultural meaning, and the joys of observing them.

Jonathan Kade is a repeat officer of the WAS and a fan of observing objects that can be appreciated despite the light-polluted skies of Dearborn.

WAS Macomb Meeting March 15, 2012

The meeting began at 7:33 with 29 present

General announcements:

Annual Banquet

Tonight in the news

Short talk on solar filters

Officer Reports:

2VP: Open house this Saturday

Treasurer: Bylaws announcement- Diane Hall reported on the passing of the bylaw amendment:

The Treasurer shall carry a maximum amount of petty cash to be determined by the Board of Directors.

Other Reports

Astronomy League: Working on the Chicago Field trip.

Observing: Jupiter/Venus conjunction, Venus at Quarter phase, Looked at Mars, polar cap is shrinking, M42 at 48x showed a lot of nebulosity.

Short Talk: Bob Berta, How to make a solar filter.

In The News:

Coronal Mass Ejection 3/7-3/8 2012

Space is bad for astronauts' eyes

Bob Berta: Story from S&T- the sinking of the Titanic

Presentation:

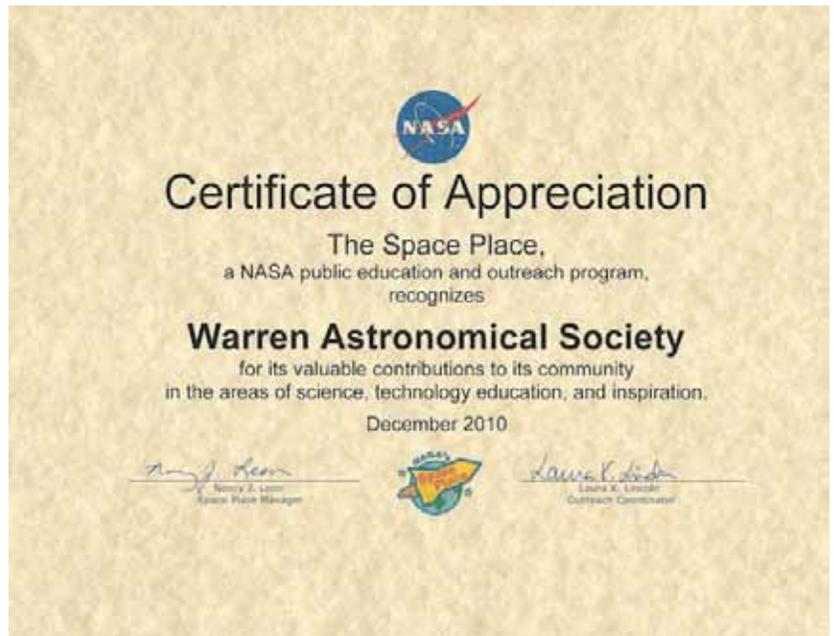
Ken Bertin, 10 Best of In The News of 2011, with Fred Gluckson, Ken Bertin, Bob Berta, Dale Thieme, Steve Uitti, Diane Hall,

The meeting ended at 9:33

-Dale Thieme, WAS Secretary

Proud Moments

The Space Place was started in February 1998 as an education and public outreach project of NASA's New Millennium Program, which continues to be its primary supporter. Its target audience is elementary-school-age kids. We wanted to reach this young audience with the message that science and technology and learning about space are fun and within their grasp. We designed it with a kid-friendly look and feel. It is modular, so visitors can pick and choose different standalone projects or activities that interest them at the moment.



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

March 20, 2012

Mark Kalinowski
33 Plymouth Rd
Clifton, NJ, 07103

Dear Mark,

In recognition of the many contributions of your father Larry to the Warren Astronomical Society, of your mother JoAnn's ongoing participation in the Society, and of your generous donations in Larry's memory, the W.A.S. Board has awarded honorary lifetime family memberships to you and JoAnn.

With gratitude,

Dale Thieme
Secretary, Warren Astronomical Society

Jon Blum, President
Diane Hall, 1st Vice President
Riyad Matti, 2nd Vice President
Dale Partin, Treasurer
Bob Berta, Outreach Director
Debra Chaffins, Publications Director

Double Star Report

14th of March -- 16" Borr Telescope @ 130X

B 230 Hya -- Could not split it. Becvar's ATLAS CATALOGUE = 5.4/ 12.2 mags, 1.6" (1926). Hirshfeld and Sinnott = 11.4 mag. companion, 1.3" (1959). This double is closing and the latest datum available is fifty years old, probably now a second of arc and beyond even the mighty Borr at the elevation.

18th of March -- 4" refractor @ 60X

Pi Pup -- Not shown as a double star on any star maps but I consider it so, or at least a fine sight for big binoculars, attractive with distinctly reddish "primary" and white-blue neighbour of perhaps 7th mag. Pi is an interloper in a non-cluster grouping which is striking to see when south of 30 deg. latitude.

Beta 757 Pup -- Immediately W. of the above. Could do nothing with this star because of combination of aperture and extinction., but even the Borr might not prevail. H & S = 6.0/ 8.5, 2.5" sep. (1881) -- but they give no data from 1943. (?) Becvar, however, lists 2.6" (1937).

f Pup -- SKYATLAS 2000 and Tirion's CAMBRIDGE ATLAS show "f" as double but the Field Edition of SKLANATE PLESO does not, probably from how long ago it went to bed. H & S = 5.6/ 6.1, 0.2" (1953) while Becvar's ATLAS CATALOGUE show twice that separation, from the same year. Naturally the refractor could not hope to split it even in with the best environmental conditions.

Rst 4855 Pup -- Failed. Again, the atlases are mixed re 4855 as double. Hirshfeld and Sinnott = 6.7/ 8.0, 0.3" (1942) and Becvar has the same data the star is @ 07h 32m; -35 deg. 58', segue to . . .

Jsp 167 Pup -- and real confusion with the above: 07h 32m; -35 deg. 53'. This small field is well in the Galaxy and repeated references to maps/ catalogues was necessary. Frankly I am still not sure if I looked at 167 instead of the star above but tend to doubt it.

If I identify rightly, this star is not plotted as multiple on 2000 or Becvar's ATLAS OF THE HEAVENS (a.k.a. Skalnate Pleso). It is not listed in his ATLAS CATALOGUE, and a possible match with another star yielded nothing.

H & S = 6.6/ 11.0 mag, 92" (1929), an easy target for the refractor -- except for its elevation at culmination. They also enumerate a 13th magnitude 3rd star in this system. To emphasise: I did not examine 167 with telescope because no star chart showed a multiple. However the two on top of one another are easy to see on a decent chart of the area immediately N.E. of Pi Pup. This confusing situation merits study with a bigger instrument on a more transparent night but sorry to say this region is getting away from us, a disadvantage of early evening observing.

21st of March -- 50 mm. refractor @ 45X

Algeiba -- Watson's SELECT DOUBLE STARS gives a 4.4 arc-sec. separation for this really yellowish 2nd/ 3rd mag. pair. He calls it a "great double star" and it is. FIELD BOOK OF THE SKIES also says 4". This object is not split but an obvious "elongation," even pinched. Therefore at high elevation this pair represents what my excellent 50mm with orthoscopic eyepiece cannot fully split. A couple of magnitudes dimmer for both components would probably yield a different result.

Omicron Sigma 215 Leo -- Watson invites the telescopist to check the seeing with this pair located to the S. of the above. In Royal Oak on a turbid night I cannot comment on both as "whitish or pale yellow." Both are in the 7th magnitude. At a little over 1 arc-sec. apart, however, it was a nonetheless interesting waste of time, the author citing the test for a "4 inch aperture."

- G. M. Ross

Theories crumble, but good observations never fade.

— Harlow Shapley, Director of the
Harvard College Observatory.