After attending a lecture by Edward Charles Pickering, William T. Olcott developed an interest in observing variable stars. In 1911, he founded the American Association of Variable Star Observers (AAVSO). He also published several books to popularize the field of amateur astronomy. One, the Field Book of the Skies served as a primary source for publication in the WASP over the years.

Background image: View of the Olcott Crater. Taken during the Apollo 16 mission.
The Warren Astronomical Society Paper

Published by
Warren Astronomical Society, Inc.
P.O. Box 1505
Warren, Michigan 48090-1505

Dale Thieme, Editor

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

First Monday meeting:  Third Thursday meeting:
Cranbrook: Institute of Science  Macomb Community College
1221 North Woodward Ave  South campus, Bldg. J, Room J221
Bloomfield Hills, Michigan  14600 Twelve Mile Rd.
Warren, Michigan

Membership and Annual Dues
Student  $17.00  Individual  $30.00  Senior Citizen  $22.00  for families  add $7.00

Astronomical League (optional)!$7.50

Send membership applications and dues to the treasurer:
c/o Warren Astronomical Society, Inc.
P.O. Box 1505
Warren, Michigan 48090-1505
Pay at the meetings
Also via PayPal (send funds to treasurer@warrenastro.org)

Among the many benefits of membership are
Loaner telescopes (with deposit). See 2nd VP.
Free copy of each WASP newsletter.
Free use of Stargate Observatory.
Special interest subgroups. See chairpersons.

The Warren Astronomical Society Paper (WASP) is the official monthly publication of the Society.
Articles for inclusion in the WASP are strongly encouraged and should be submitted to the editor on or before the end of each month. Any format of submission is accepted. Materials can either be transmitted in person, via US Mail, or by email (publications@warrenastro.org)

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 an 8-inch refractor telescope under a steel dome. The observatory is open according to the open house schedule published by the 2nd VP.

Snack Volunteer Schedule
The Snack Volunteer program is suspended for the duration. When it resumes, volunteers already on the list will be notified by email.

Discussion Group Meeting
Come on over, and talk astronomy, space news, and whatnot!

CANCELLED UNTIL FURTHER NOTICE

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My first telescope came in the kiddie meal of a restaurant chain of very little renown. It was, I believe, 1986, and I was visiting Memphis, Tennessee in order to be the flower girl in my aunt’s wedding. Danvers had a salad bar with crunchy “bacon” bits and faux-Tiffany lamps above every booth, which pleased my five-year-old palate and eyes, but in place of a collectible plush or knockoff Transformer, the establishment presented me with a tiny collapsible telescope of hunter-green plastic. This was, after all, the year of Halley’s Comet.

I thought that my toy telescope actually worked. At least it worked as well as the toilet-paper tube telescopes I’d played with before receiving this plastic trinket. I’m sure there was some “averted imagination” at work, but in any event I was delighted with this, my very first telescope.

Two decades later, Jonathan and I got ourselves a telescope to ring out 2006. We bought an Orion XT8—no go-to, no push-to, all manual—and it saw first light in Alcona County in the winter of 2007, after we hauled it over a snowbank to get a look at the Trapezium. Telescope fever being what it is, the XT8 was joined in short order by a 4.5” Starblast, a 66mm refractor, a Coronado Personal Solar Telescope, a second-hand 10” reflector with magnificent optics and a terrible focuser, and then finally an XT10 that could do everything that XT8 could do, but better. The XT8 went from being our pride to an exile, plonked in the garage Up North while the XT10 became our outreach workhorse and personal instrument of choice.

Well, as it happens, on a new-moon weekend in June the XT10 was suffering from some persistent collimation issues and I was Up North by myself. I picked up that XT8—I can haul the tube and base in one go, which is NOT true of the XT10—and set it down a few paces outside the garage, where I’d have some adequate distance from the trash pandas raiding our bird feeders. The XT8, decked out in glow tape bought at WAS meetings from another decade, felt like an old companion. Everything was just to my scale, and if M57 didn’t quite have the same quality it does in a 10” mirror, it made a fine showing against the true dark skies of Alcona Township. M27 looked better than I’d seen it in years; it’s not a favorite of mine, but that night I forgave it for some terrible Astronomy at the Beach experiences. Globular clusters M3 and M13 dazzled, and though the clouds rolled in even as I searched for M92 and cut the evening short, I was curiously satisfied by those forty-odd minutes of observing.

Sure, the 10” scopes can do what that XT8 can’t, just as the PST and the 66mm have been to desert and mountaintop while the XT8 remained by one Great Lake or another, but I love that XT8...perhaps in the way I loved my first car. It cannot, it fact, take me everywhere I want to go in the universe, any more than my ’95 Escort could go above 65 mph without feeling like it was going to come apart at the frame. But it still gives me a fun ride through the skies, and it just feels like my trusty old "scope in a way the XT10 never has.

**Prizes (U.S. only)**

- 5 CELESTRON TELESCOPES
- 5 CELESTRON STARGAZING BINOCULARS
- 5 FAMILY MEMBERSHIPS TO THE ANTELOPE VALLEY ASTRONOMY CLUB
- 5 FAMILY MEMBERSHIPS TO THE KERN COUNTY ASTRONOMY CLUB
- 5 FAMILY MEMBERSHIPS TO THE SAN BERNARDINO ASTRONOMERS CLUBS
- 5 FAMILY MEMBERSHIPS TO THE LOS ANGELES ASTRONOMICAL SOCIETY
- 10 - $50 GIFT VOUCHERS AT THE NASA SPACE STORE
- 20 SPACECRAFT LEGO KITS
- 40 SOLAR SYSTEM CANVAS PRINTS

[https://www.borax.com/borax-operations/stars-challenge](https://www.borax.com/borax-operations/stars-challenge)
Letters

The Strange Light Curve Saga continues-
Gary Ross forwarded an email with this comment:

The SECOND picture.

a) Female charms come naturellement to some.

b) The other can not believe definitive Jupiter observations can be made by such an instrument.

-----Original Message-----
From: Joe McBride
To: beezoll@aol.com
Cc: Gary Ross
Date: Saturday, May 30, 2020
Subject: The silly light curve of R AUR

The gathering of great minds and great imagination at Kissing Rock Farm...gathering of Ford and Edison or E.E. Barnard and Einstein...but much more casual. Miss M and GM Ross discuss the light curve She has submitted of R AUR. Later in the day She and Mr B. posed with the mighty Ross reflec-tor...deployed on the front lawn of the Veen awaiting nightfall. Mr B’s it appears is trying to preserve his dark adaption...lol

June Number of WASP

Once again I have concluded the Warren newsletter is the finest in a 50 light-year radius. The only feature truly missing is Kalinowski’s "Astro-Chatter".

HALL: I noticed in her north country observing re-port, with mild annoyance, "Michigan" appeared three times. In recent years the lament "it's Michigan" has started to wear. Oh? Try Ontario, and probably Wisconsin. As a (former) member of the learned class, it is a high commission to point out, yes, Mid-Latitude Cyclone Belt is a mouthful, but more on point.

THE PLAID MAN. When he does any thing it is full stop! First, his literary/ editorial pursuits, now lunar science. Rik Hill w/o a fancy rig.

LEVY, Master of the Universe. Those who discover sky things by stumbling upon them are a source of envy. "Fortune favours the prepared mind", but dammit do you lot have to be so successful? (Even if beaten to the punch.) I recall from 1962 an airline pilot, Capt. Lines, discovering Comet Seki-Lines. Compare to my spasm of psychosis ten years later at the Veen Observatory, when I thought a star in the "foot" of Gemini had completely disappeared. I caused a furor at the Marrons’ house below, a sin for which I paid for years. Denouement: What possessed me was fatigue, plus the 2nd Trudeau government was my "days of wine and roses", but I was better looking than Jack Lemmon.

JONATHAN, former friend. When some cheap lout asks what one "get[s] out of" joining the Society, the proper reply is John P. Morgan’s when asked how much it cost to operate his yacht: If you have to ask, you can’t afford it.

G. M. ROSS, undeniably the Greatest Observer in Michigan.
Charles Messier has nothing on my telescope!

GM Ross Waiting For Night-Fall
Happy 4th of July

NGC 6946 (also known as the Fireworks Galaxy) is a face-on intermediate spiral galaxy with a small bright nucleus, whose location in the sky straddles the boundary between the constellations of Cepheus and Cygnus, and is part of the Virgo Supercluster of galaxies. Its distance from Earth is about 25.2 million light-years. Discovered by William Herschel on September 9, 1798, this well-studied galaxy has a diameter of approximately 40,000 light-years, about one-third of the Milky Way’s size, and it contains roughly half the number of stars as the Milky Way.

What makes this galaxy so interesting is that ten supernovae have been observed in NGC 6946 in the last century: SN 1917A, SN 1939C, SN 1948B, SN 1968D, SN 1969P, SN 2002hh, SN 2004et, SN 2008S, and SN 2017eaw. For this reason NGC 6946 in 2005 was nicknamed the “Fireworks Galaxy”.

Supernova SN2017eaw was discovered on May 14, 2017 by Patrick Wiggins (USA), and at that time it was magnitude 12.8. I took this photo on June 10, 2018, over a year after it was first discovered, when it had dimmed down to a 17.6 magnitude. So you can see that SN2017eaw was a very powerful supernova that was visible for over 600 days! Added note: the letter designations of supernova are calculated using a Base 26 naming convention system, where the first discovery of a given year for example would be 1=A, then 2=B,... 26=Z, 27=aa,...etc. So that means SN2017eaw was the 3429 supernova to be discovered in 2017.

NGC6946 is best observed in the summer months when it is highest in the sky. With a magnitude of 9.6, using a medium to large size telescope should reveal a good portion of the galaxy, using a wide field eyepiece. But in darker sky locations and using a 12” or larger telescope, you should be able to see plenty of spiral structure. Happy hunting and Happy 4th of July!

-Bill Beers

About CW Sirius Observatory:
C.W. (Cadillac West) Sirius Observatory is located 15 west of Cadillac Michigan. Owned and operated by WAS member Bill Beers. The dome is an 8’ Clear Skies Inc dome which houses an 11” f/10 SCT telescope, a 102mm f/7 refractor telescope, Celestron CGEM DX mount, and uses an ASI ZWO 071 color CMOS camera, as well as a QHY8L color CCD camera. The telescope can be remotely operated from inside Bills house. Anyone interested in learning about astrophotography, or any questions regarding equipment, or how to take astrophotos using your iPhones, or any related questions, can contact Bill at: BEEZOLL@AOL.COM
June 24, 2020

Collecting data on Abell galaxy clusters usually means running a few nights to accumulate enough data that some of the tiny structures start to come forth. Galaxy clusters are one of my pet projects I like to do. Each year I try to improve on what I’ve done before, and/or add data to previous data to go deeper in magnitude and details. This rendering does not encompass all of the Hercules Cluster, due to the small field of view of the system being used.

The Hercules Cluster (Abell 2151) is a cluster of about 200 galaxies some 500 million light-years distant in the constellation Hercules. It is rich in spiral galaxies and shows many interacting galaxies. The cluster is part of the larger Hercules Supercluster, which is itself part of the much larger Great Wall super-structure. The cluster’s brightest member is the giant elliptical galaxy NGC 6041.

- 10" f/8 RC
- ZWO asi071mc PRO camera @ 0°C and gain of 240
- 92 x 300 second light frames (7 hours, 40 minutes)
- 24 x 300 second dark frames
- 50 flats
- FOV: 33.1 x 24.3 arcmin

The data was stacked in DeepSkyStacker and processed in PixInsight.

(Continued on page 8)
This annotation of galaxies within this image was generated using the PixInsight ImageSolver, and Annotation functions. The Red items are NGC (New General Catalog) objects, while the Blue are PGC (Catalog of Principle Galaxies) objects. The yellow items are Tycho designations on the stars.

-Doug Bock

W.A.S.P. Photo and Article Submissions
We’d like to see your photos and articles in the W.A.S.P. Your contribution is ESSENTIAL!
This is YOUR publication!
Send items to: publications@warrenastro.org

Documents can be submitted in Microsoft Word (.doc or .docx), Open Office (.ods), or Text (.txt) formats, or put into the body of an email. Photos can be embedded in the document or attached to the email and should be under 2MB in size. Please include a caption for your photos, along with dates taken, and the way you’d like your name to appear.
Presentations

Monday, July 6, 2020
Cranbrook Presentation

“Mars Debate”
Should we send people to Mars by 2070?

Refereed by Jon Blum
Streaming a raging debate on the internet, what could go wrong? Join the fun via Webex and YouTube as Jim Shedlowsky and Dale Partin present the “let’s go” view while Ken Bertin and Bob Trembley object vociferously. Dale mentioned he could argue both sides, we’re not sure how well that will set with Jim.

Moderator
Since his retirement as a dermatologist in 2001, Jon Blum has owned two telescopes, started two astronomy clubs, belonged to ten astronomy clubs, and enjoyed great times with the smart, friendly and helpful people he has met through this wonderful hobby. Among the best of those times was when he moderated WAS debates in 2010 and 2011, so he is excited to be moderating this debate in 2020.

Pro
After a career in automotive engineering, WAS mainstay and rockabilly legend Jim Shedlowsky turned his energy back to music, astronomy, and historical research. Jim has been dreaming of travel to Mars since he was in high school, reading Heinlein, Bradbury, & Asimov, and hopes to see it happen before his centennial birthday in 2037. He treasures the Space Age can-do mentality and would like to see a new Mars mission rekindle it.

WAS First VP Dale Partin retired from a long and busy career in applied physics and engineering and mysteriously became even busier, teaching at Macomb Community College, becoming a student at Oakland University and rejoining the W.A.S. board. He could argue both sides of this debate and mean it, but he does firmly believe there is a good case for trying to go sooner rather than later.

Con
Ken Bertin is a hobbyist astronomer for over 65 years, Past President and VEEP of WAS, Solar System Ambassador, 10 Total Solar Eclipses, 4 Annular eclipses, 6 Transits of Mercury, 2 transits of Venus. 15 Lunar eclipses. He doesn't particularly want to see humans ever go to Mars.

Outreach Director Bob Trembley works for the for the Vatican Observatory Foundation doing website development and writing about astronomy and space science. Bob says the job title “factotum” best describes the numerous things he does. Bob is an avid computer gamer, and has been spending hours playing No Man’s Sky and Kerbal Space Program - so Bob’s involved with astronomy

(Continued on page 10)
and space science almost every moment of every day. He's arguing against going to Mars now because he's seen enough of his Kerbanauts die, and he doesn't want to see any NASA astronauts follow suit; on Mars, there's no reloading from the last save.

Thursday, July 16, 2020
Virtual Presentation

Interstellar Objects
I Have (Sort of) Known

By Jonathan Kade

Every current member of the Warren Astronomical Society was born and grew up in a world that had never seen an interstellar object. Now we have seen four: two that humans launched and two that came from other solar systems. In my presentation, we'll talk about these interstellar objects and what we've learned about our solar system and about solar systems in general from studying them.

First, we'll quickly review the Voyager 1 and 2 probes, which launched four years before I was born but only became interstellar objects in 2012 and 2018 respectively. We'll talk about what we've learned so far from their journeys beyond the sun's heliosphere, and what we still hope to learn in their extended missions.

In 2017, Canadian astronomer Rob Weryk (who got his degrees at Western University in London, Ontar-
Movie Review

with Diane Hall

Astronaut Wives Club
https://abc.com/shows/the-astronaut-wives-club

Episode 1: Launch

The penultimate episode of From the Earth to the Moon inspired me to check out the 2015 ABC series The Astronaut Wives Club, which focuses on the home-front drama of the Mercury Seven. It’s available for free online right now, which is a pretty good deal.

First we get a teaser, which immediately establishes that Alan B. Shepard is a cheatin’ dog beneath his clean-cut Navy whites and that Louise (Dominique McElligott, a veteran of Moon) stands by him anyway. Snazzy credits serve in place of exposition, setting up American’s woeful second place in the Space Race at the time the Mercury Seven make their debut at a press conference. It’s fun but the guy playing Gus Grissom is too damned tall.

A party scene establishes that Louise hates bridge and hanging out with other military wives, that Gordo Cooper and his wife Trudy (Odette Annable) are engaged in a sham of a relationship, and that some bald guy from NASA thinks that astronaut wives being celebrities will be a key part of winning the Cold War. Wally Schirra deploys two tired practical jokes in the space of 30 seconds of screen time, but even his Jo (Zoe Boyle) doesn’t find Jolly Wally amusing so I guess that was supposed to be stupid. Anyway, Louise and Trudy immediately get to catty fighting about whose husband is the better pilot and bring the other wives into it. Rene Carpenter (Yvonne Strahovski) is explaining to the other wives that she has a college degree, thank you, and has more in her life than being Scotty’s mindless cheering squad, but then the dude from Life magazine shows up to explain the deal: half a million dollars split seven ways for exclusive access to the “astro wives” and their thoughts. For America... and for the advancement of their husbands’ careers. Of course.

By the time the Astro Wives have their first photo shoot we learn Rene refuses to obey the dress code and Trudy harbors dreams of being an astronaut herself one day; the former is treated as a more serious transgression than the latter. Of course, there are perks— Astro Wives all get a standard-issue sedan with a “Moonglow” paint job while the men get customized hot rods, the better to pick up beach bunnies. More personality quirks emerge; Rene is always late to the party, Betty Grissom (JoAnna Garcia Swisher) has sharp edges, and Annie Glenn (Azure Parsons) seems on the fringes of the developing Astro Wife scene. As for Marge Slayton (Erin Cummings), secrets about her past begin leaking out one hint at a time— explosive by the standards of NASA in 1961, perhaps, but utterly tame by today’s standards.

Anyway, Trudy realizes that Gordo and the other men are, predictably, messin’ around down in Florida while the Wives maintain a perfect image in Houston, so she convinces the NASA Guy (I don’t know who he’s supposed to be and don’t care at the moment) that it’d be a great day for America if the Wives showed up unannounced for the first (unmanned) launch of the Mercury-Redstone combo. So, the Wives bust in on a scene of water, booze, beach bunnies, and some rather naughty astronauts. Cue a cold, cold glare from Alan Shepard as he takes sight of Louise.

Will Louise torpedo Al’s career on account of his “Cape Cookie”? Of course not. Will Rene save poor stuttering Annie from abuse at the hands of an authorized journalist? Yes, actually. The second half of the episode has some twists and turns— one of them literally explosive— but this episode doesn’t entirely pass the test of a good drama. Contemporary media culture has become obsessed with the ills of the “spoiler,” but of course to a classic the ending itself doesn’t matter, it’s the means by which one gets to a catharsis. Astronaut Wives Club isn’t quite able to pull that off, at least not in this episode, but it’s enjoyable enough and ends on a very sweet note. We’ll keep watching, so stay tuned for next month.

Four Moons out of five because I’m feeling generous tonight
Join Your Local Astronomy Club.

By a long shot, the best way to get into and enjoy astronomy is to become affiliated with your local astronomy club. Not only do you get access to a ton of knowledge about how to find constellations, and to choose and use your first telescope, but also you get a firsthand look at what is happening at the sky from the people who love it the most.

When I was a young teenager, one had to be sixteen years of age to join the society in Montreal. (Thank goodness, that rule no longer applies.) But younger people could indeed attend most of the meetings, and on October 8, 1960, I attended my first meeting. Isabel K. Williamson was in charge, and she gave me my first assignment, to create a map of the Moon based on my own observations. Even though I couldn’t be a member yet, I embarked on a project that took me 3 years to complete. (The map is pictured in figure 1.) In Canada, most of the astronomy clubs are under the single banner of the Royal Astronomical Society of Canada. There are “centers” within most major Canadian cities. In the United States, the local clubs are independent, and I have a member of the Tucson Amateur Astronomy Association (TAAA) since 1979, and served as its President from 1980 to 1983.

The observatory that Wendee and I operate from our home is called Jarnac Observatory. Unlike almost everything NASA does, Jarnac is not an acronym. But if it were, Jarnac could be short for Join A Really Neat Astronomy Club.

In recent months, astronomy clubs have stopped having in-person meetings because of the Coronavirus pandemic. But that hasn’t stopped them from indulging in online events. Using platforms like Zoom cloud, Cisco Webex, or Facebook, online meetings have had an explosion in popularity. I’ve been attending one meeting or another almost every night this week. They have been so successful that when the pandemic is over, they may continue in some manner.

The most important thing you can get out of an astronomy club is friends. Almost all of my friends are members of one astronomy club or another. They enrich my life and increase my own enjoyment of the night sky a millionfold. I cherish their always welcome insights. In fact, Tim Hunter, one of my closest friends, recently made an independent discovery of a supernova, or exploding star, in the faraway galaxy labelled UGC 10509 and which is hundreds of millions of light years away from us. He may not have been the first to spot it, but his observation has added important new information about the Universe. That star blew up a very long time ago. Its light travelled across space and time until it landed as a speck on one of his pictures, and it is now called Supernova 2020 LQL. This is one of the best things about astronomy. It is an area of study where amateur astronomers can add to our understanding of how the Universe works. Nice work, my friend.

When you next go outside to look at the night sky, enjoy your eyeful of stars. The time after that, try it with your local astronomy club. You couldn’t give yourself a better gift.

When I was a young teenager, one had to be sixteen years of age to join the society in Montreal. (Thank goodness, that rule no longer applies.) But younger people could indeed attend most of the meetings, and on October 8, 1960, I attended my first meeting. Isabel K. Williamson was in charge, and she gave me my first assignment, to create a map of the Moon based on my own observations. Even though I couldn’t be a member yet, I embarked on a project that took me 3 years to complete. (The map is pictured in figure 1.) In Canada, most of the astronomy clubs are under the single banner of the Royal Astronomical Society of Canada. There are “centers” within most major Canadian cities. In the United States, the local clubs are independent, and I have a member of the Tucson Amateur Astronomy Association (TAAA) since 1979, and served as its President from 1980 to 1983.

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Over the Moon

Almost Full

About a day before full moon you can see this amazing landscape in the center of the terminator. The large dark crater just left of center is Grimaldi (228km diameter) one of the stepping stones to Mare Orientale when the libration is right. There’s a cluster of craters east (right) of Grimaldi. The easternmost one is Damoiseau (37km). South of this is a well defined crater near the bottom of the image, Sirsalis (43km). In the lower right corner is the dark crater Billy (48km) distinctive for its dark floor, darker than the surrounding Oceanus Procellarum making it stick out visually.

Above Grimaldi is another large crater Hevelius (109km) with the small crater Lohrmann (32km) just below. Above Hevelius is a deeper crater, Cavalerius (60km). Notice the apparent gash between Hevelius and Grimaldi. There is a shallow valley here, seen on the LROC Quick Map, and a couple of small craters that add to the effect, but it looks more dramatic than the true topography at this lighting. On both sides of Lohrmann note the unnamed system of rimae. I’m quite surprised they are not named. Another curious gash is below the right of Grimaldi. It appears to pass through two craters but in fact is a linear alignment of around 10 eroded craters. Then south of Grimaldi are more rimae. These are named Rimae Grimaldi. They lead out into a flat area further to the south that is Rocca W (102km). As big as Hevelius but, alas, only a satellite crater to Rocca. This is definitely a region worthy of careful examination...just when you thought the moon was almost full and there was nothing left to see!

This montage was made from two images each stacked from a subset of frames from 1800 frame AVIs using AVIStack2 (IDL). Further processing was done with GIMP and IrfanView.
History S.I.G.

July 1982
The cover features another group photo of the club, ostensibly taken at a Cranbrook meeting (looks like the one from 1980 that we have in color).

The issue leads off with information regarding the 1982 A.L. Great Lakes Regional Convention hosted at Cranbrook, reprinted from the June issue.

We are then treated to “An Almanac for Computers Subroutine” by Ken Kelly and part 6 of “Some Astronomical Reflections” from John J. Wetzel. A calendar for the month of July graces the back cover in case the reader wonders what day of the week each date falls on. There is no other information offered.

July 1992
Cover features: Joel Wise opines about binoculars in “A Telescope Alternative” and “Journal Roundup” by Scott Jorgensen gets underway.


NASA Space Link: “COBE Detects Structure of Early Universe” rounds out the articles and we finish the issue with an actually useful calendar for July.

From the Scanning Room
What have I wrought? Adventures in Armchair Astronomy wasn’t meant to be a regular column, but comments filtering in suggest that this may have fed an expectation. This is an open invitation to write something for the column, be it a book review or your own mental rabbit holes, welcome to it. Just preface your message with “Armchair”.

Dale Thieme,
Chief scanner
July 6, 1936, marked the passing of William Tyler Olcott.

What does he have to do with the Warren Astronomical Society? After all, he was gone long before we got started. What is the link to the W.A.S. that gets him on our cover? To answer that, let me put on my chief scanner hat.

For many issues during the early years of the WASP, a consistently occurring article concerned the acquainting the readers with the various constellations (Constellation of the Month.) Those who endured my presentation on the scanning process know that the results of the early issues were a mixed bag, especially the rendering of Greek letters (usually hand-drawn). I needed the source for the articles to fill in the gaps created by the OCR misses. The source of the information? Olcott’s Field Book of the Skies. I found the Field Book of the Stars on Project Gutenberg and thought I had it. But the descriptions weren’t as verbose the WASP articles indicated but close. Realizing the error in the book title, I located a copy of the Skies book and that proved to be the material source, and by material source, I mean material copied verbatim.

As to the man, himself, Tyler Olcott (apparently preferring to go by his middle name) was an amateur astronomer of the first order (a lawyer by profession). Never enjoying robust health, he wintered in warmer climes: Florida, where he “gave himself to the rehabilitation of the Southern Cross Astronomical Society” (where he published a little booklet called “The Southern Cross”); and out west, visiting Lowell, Steward, Mt. Wilson and Lick observatories. Tyler was notable for founding the American Association of Variable Star Observers (AAVSO), a direct result of inspiration at a lecture by Edward C. Pickering. Note to our outreach specialists, you never know when the seed of inspiration will sprout.

He authored several books on astronomy. We will let the writer of his obituary, David B. Pickering (no relation to Edward), enumerate them:

His interest in astronomy once awakened, he made an intensive study of the subject and in 1907 appeared the first edition of his now famous book "A Field Book of the Stars." This little volume, published by Putnam and Sons, has been several times revised and has probably achieved a wider distribution than any similar work of its kind. This was followed in time by "In Starland with a Three-inch Telescope," "Star Lore of All Ages," "Sun Lore of All Ages," "The Book of the Stars for Young People," and "Field Book of the Skies." The latter, published in 1931, gives promise of being the most successful of them all. There are members of certain groups of amateur astronomers who refer to this latter work as their "Bible."

(Continued on page 16)
Tyler had a crater on the moon named for him. It is on the far side of the moon, though, so put that scope away and finish this article. He also got bonus satellite craters, E, L, and M.

In his years with the AAVSO, he helped develop the AAVSO star charts and had an award named after him, the William Tyler Olcott Distinguished Service Award (est. in 2000, David Levy was first recipient.)

Returning to David Pickering’s accounting of the life of W.T. Olcott, we finish with these words:

William Tyler Olcott was a gentleman of the old school—a man of gentle birth and breeding. Not strong of body, but strong of soul and purpose. A man to be respected and admired. A staunch and loyal friend. His life will long continue to be an example of steadfast adherence to principle.

Sources:
Popular Astronomy, October 1936:  
(http://articles.adsabs.harvard.edu/full/1936PA.....44..409P/0000409P001.html)

AAVSO:  
“In Starland with a three-inch telescope” by M. Saladyga, 12/01/2010  
https://www.aavso.org/starland-three-inch-telescope

Sky & Telescope:  
https://skyandtelescope.org/astronomy-news/new-director-aavso-110414/

AAVSO award:  
https://www.aavso.org/william-tyler-olcott-distinguished-service-award

<table>
<thead>
<tr>
<th>Crater</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Diameter</th>
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</thead>
<tbody>
<tr>
<td>Olcott</td>
<td>20.6° N</td>
<td>117.8° E</td>
<td>81 km</td>
</tr>
<tr>
<td>Olcott E</td>
<td>20.9° N</td>
<td>119.8° E</td>
<td>59 km</td>
</tr>
<tr>
<td>Olcott L</td>
<td>18.3° N</td>
<td>118.6° E</td>
<td>36 km</td>
</tr>
<tr>
<td>Olcott M</td>
<td>17.9° N</td>
<td>117.6° E</td>
<td>46 km</td>
</tr>
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</table>

History of AAVSO star charts-Part 1, 1880s to 1950s:  

-Dale Thieme,  
Chief scanner and chair warmer

Join the Astronomical League!

The mission of the Astronomical League is to promote the science of Astronomy. The major benefit of belonging to this organization is receiving the quarterly newsletter, The Reflector, which keeps you in touch with amateur activities all over the country.

Also:
- Participate in the Observing Program  
- Avail yourself of the League Store  
- Astronomy Books at a discount  
- Attend Astronomical League Conventions

Only $7.50 annually,  
(Membership starts July 1)

alcor@warrenastro.org
Scale Model Review by Jonathan Kade

Model:
Hubble Space Telescope

Manufacturer: Metal Earth
Cost: $6.95
Value: 5/5
Challenge level: 3.5/5
Visual Appeal: 5/5
Durability: 3.5/5
Overall Rating: 4.5/5

I've built four of these before, and this one definitely was the most challenging. Compared to rectilinear kits like the Empire State Building or the Golden Gate Bridge, it's a whole different world. Even compared to the curvy and highly detailed SR-71 Blackbird, this one is a challenge. It's the only Metal Earth model kit to date where I had to widen the slots to fit a piece on - the solar panel assembly was way too tight a fit until I did. A number of online reviewers noted issues with pieces breaking off. I fortunately didn't have an issue there, but I'm afraid the solar panels won't take more than one or two more disasters.

The final product is top-heavy, but surprisingly stable when it's actually on a level surface. You may notice in a couple photos there are some ugly angles to the solar panels - that's because I kept butternutting it. Despite being dropped several times, it kept its shape well.

However, I think the results speak for themselves - somebody who sees it on your desk will scarcely believe it cost $7 and a couple hours of assembly! The design is quite accurate in most ways and includes some impressive details, like the assembly inside the tube.

I wouldn't do this one as your first kit, but it's not that hard, and it's a great value for the price. Highly recommended.

Tip: A good pair of nippers and an extremely fine-tipped needle nose plier will make building these kits much more fun and much more rewarding. I also recommend getting some round metal cylinders to roll cylindrical pieces around, but I made it work pretty well with ordinary whiteboard markers.

Over the years, I've accumulated a stack of Metal Earth metal models of various spacecraft. After talking about building space-related models with Parker Huellmantel, I decided I'd start building them for the enjoyment of fellow club members. At first, I planned to video-record the assembly process, but after this one, I'm not comfortable being recorded swearing that often. That being said, I did most of the assembly during our last virtual open house on June 27 - if you watch the replay of that, you will see me showing off each stage in succession.

Buy it here: https://smile.amazon.com/Metal-Earth-Fascinations-MM5093-502513-Construction/dp/B010SJZN2W (make sure to select the W.A.S. as your charity of choice!)

The final product is top-heavy, but surprisingly stable when it's actually on a level surface. You may notice in a couple photos there are some ugly angles to the solar panels - that's because I kept butternutting it. Despite being dropped several times, it kept its shape well.

However, I think the results speak for themselves - somebody who sees it on your desk will scarcely believe it cost $7 and a couple hours of assembly! The design is quite accurate in most ways and includes some impressive details, like the assembly inside the tube.

I wouldn't do this one as your first kit, but it's not that hard, and it's a great value for the price. Highly recommended.

Tip: A good pair of nippers and an extremely fine-tipped needle nose plier will make building these kits much more fun and much more rewarding. I also recommend getting some round metal cylinders to roll cylindrical pieces around, but I made it work pretty well with ordinary whiteboard markers.
Stargate Observatory

Special Notice
Due to the measures taken during the Covid-19 pandemic On-site Star Parties and group events are cancelled.
During this time, you are encouraged, when the skies co-operate, to join the livestream with Northern Cross Observatory on the open house schedule (4th Saturday of the month)
Past livestream are available on the Warren Astronomical Society’s YouTube channel: https://www.youtube.com/channel/UC12jUX4Gmweg6fTtUuqa8CQ

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 586-909-2052.
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 (secondvp@warrenastro.org).
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.

Advisory: Concerns are circulating in the amateur astronomy community about COVID-19 being passed from one person to another via contact of different persons' eyes with a telescope eyepiece. While we are not medical experts, we thought we should pass on this concern. Sharing telescopes may be considered by some to be high-risk due to the possibility of eyes touching eyepieces.
Stargate Report

Stargate observatory and the Dob shed along with all equipment are in good condition as of June 17 at 4:21 pm.

The observatory will remain closed until further notice due to the COVID-19 pandemic.

Riyad I. Matti
2020 WAS 2nd VP, Observatory Chairperson

Treasurer’s Report

Treasurer’s Report for 6/30/2020

MEMBERSHIP
We have 84 current members

INCOME AND EXPENDITURES (SUMMARY)
We took in $1,876 and spent/transferred $510 We have $22,104 in the bank $103 in checks and $677 in cash, totaling $22,913 as of 6/30/2020.

INCOME

<table>
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EXPENSE

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<td>PO Box 2020</td>
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<td>Snack Reimbursement</td>
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<td>Speaker Expense, Driving</td>
<td>261.00</td>
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</table>

GLAAC REPORT 6/30/2020

Beginning Balance: $2,237

INCOME
No activity

EXPENSES
No activity

Ending Balance: $2,237

Mark Jakubisin
Treasurer

Astronomical Events for July 2020
Add one hour for Daylight Savings Time
Source:

<table>
<thead>
<tr>
<th>Day</th>
<th>EST (h:m)</th>
<th>Event</th>
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<tr>
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<td>22:18</td>
<td>Moon at Descending Node</td>
</tr>
<tr>
<td>04</td>
<td>08:00</td>
<td>Earth at Aphelion: 1.01669 AU</td>
</tr>
<tr>
<td>04</td>
<td>23:30</td>
<td>Pen. Lunar Eclipse; mag=0.355</td>
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<tr>
<td>04</td>
<td>23:44</td>
<td>FULL MOON</td>
</tr>
<tr>
<td>05</td>
<td>16:37</td>
<td>Jupiter 1.9’N of Moon</td>
</tr>
<tr>
<td>06</td>
<td>03:45</td>
<td>Saturn 2.5’N of Moon</td>
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<tr>
<td>10</td>
<td>07:00</td>
<td>Venus at Aphelion</td>
</tr>
<tr>
<td>11</td>
<td>07:10</td>
<td>Venus 1.0’N of Aldebaran</td>
</tr>
<tr>
<td>11</td>
<td>14:36</td>
<td>Mars 2.0’N of Moon</td>
</tr>
<tr>
<td>12</td>
<td>14:27</td>
<td>Moon at Apogee: 404201 km</td>
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<tr>
<td>12</td>
<td>18:29</td>
<td>LAST QUARTER MOON</td>
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<tr>
<td>14</td>
<td>02:00</td>
<td>Jupiter at Opposition</td>
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<td>16</td>
<td>20:21</td>
<td>Aldebaran 3.8’S of Moon</td>
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<td>17</td>
<td>02:26</td>
<td>Venus 3.1’S of Moon</td>
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<td>07:33</td>
<td>Moon at Ascending Node</td>
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<td>18</td>
<td>22:54</td>
<td>Mercury 3.9’S of Moon</td>
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<td>20</td>
<td>12:33</td>
<td>NEW MOON</td>
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<tr>
<td>20</td>
<td>17:00</td>
<td>Saturn at Opposition</td>
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<td>22</td>
<td>10:00</td>
<td>Mercury at Greatest Elong: 20.1’W</td>
</tr>
<tr>
<td>22</td>
<td>15:50</td>
<td>Regulus 4.3’S of Moon</td>
</tr>
<tr>
<td>24</td>
<td>23:54</td>
<td>Moon at Perigee: 368367 km</td>
</tr>
<tr>
<td>27</td>
<td>07:32</td>
<td>FIRST QUARTER MOON</td>
</tr>
<tr>
<td>27</td>
<td>16:00</td>
<td>Delta-Aquarid Meteor Shower</td>
</tr>
<tr>
<td>31</td>
<td>04:32</td>
<td>Moon at Descending Node</td>
</tr>
</tbody>
</table>

July 2020
The Warren Astronomical Society Paper
Page 19
First Meeting of July & W.A.S.P. Member Spotlight

Doug Bock gave a presentation to the Seven Ponds Astronomy Club on Saturday June 27th.
Check out Doug’s YouTube Channel: https://www.youtube.com/user/Mooselips56
Check out Jeff MacLeod’s AstroChat on Facebook: https://www.facebook.com/pg/Jeffs-Astro-Chat-102700051378313/videos/
If you are giving presentations or doing other astronomy outreach, please let me know!
Use this link to send me a quick email report.

Astronomy at the Beach 2020 Planning

For the public's safety, the GLAAC board has decided to host the 2020 Astronomy at the Beach event as an online / virtual event this year. The GLAAC board is looking for suggestions for pre-recorded presentations, as well as volunteers to give live presentations online.

AATB Planning Meeting: Thursday July 9 2020, at 7:00PM  - Everyone is Welcome!
Online at: https://umich.zoom.us/j/584733345 (Password: 0000)
W.A.S. Calendar Entry: [LINK]
Even if you can't make it to the July planning meeting, you can join the groups.io site to get emails and updates from the planning committee. https://glaac.groups.io/g/main.

GLAAC Board Meeting Minutes
June 11, 2020 - ONLINE, 7pm
https://umich.zoom.us/j/584733345

Call to order: 7:10pm
Online:
• Jeff Kopmanis
• Mike Ryan
• Brian Ottum
• John Wallbank
• Bob Trembley

Old Business:
Incorporation status - John
John will be temporarily assuming Treasurer duties w.r.t. Incorporation and bank accounts

New Discussion:
Discussion on Issues of Online or In-Person
John:
Safety in the foreseeable future is probably not going to happen
I’m in risk group
Mike:
Checked out Island Lake and the Mill Pond - no social distancing being enforced. No parking; crowded

(Continued on page 21)
In risk group

Jeff:

- Re-iterate Adrian's sentiments: Safety is our first concern

Decide Online or In-Person: **Online**

**Particulars**

- Times: 1Q Moon; dusk at 6:30-7pm
- Flexibility in timing of live events (solar, dso, planetary)
- Simulcasting security
  - password or waiting rooms
  - Guest password can be coded in URL
  - Muting automatically
- To clubs: Recommend a co-host in your session to prevent Zoom-bombing
- Zoom.us: free, $15/mo, $20/mo, 20/mo - # of hosts?
- Collect donations and door prizes? Registration needed.

**Content**

**Live**

- Solar
- Planetary
- DSO
- Webinars (Teaching webinar: Bob Trembley)

**Pre-recorded**

- How-to/tutorials
- Club talks and presentations

**Online Resources (available on GLAAC Site--permanently?)**

- Google Maps Space
- Astrospheric
- Stellarium Web ([https://stellarium-web.org/](https://stellarium-web.org/))
- Space Engine (star hopping)

**Bank Account and Incorporation**

- $20 for LLC ($50 for expedited)
- Open bank account

**Adjourn:** JW move to adjourn, JK 2nd, 8:27pm

**JUNE TASK LIST**

- JK: Contact ITS regarding more widespread use of UM Zoom/BlueJeans/Meet resources for AATB Virtual event
- JK: Get program of events (Live, Pre-recorded, Online resources) compiled from clubs
- JK: Get club participation in July 9 meeting (in announcement)
- JW: Incorporation and Bank Account (get with Bob Trombley for treasurer)
- BO/BT: Publicity for event: social and electronic media
- JK: Registration for Zoom (and other systems) -- how cumbersome?
- AB: Check with Comerica about bank account
- BT: GLAAC/AATB page updated for 2020

**After the GLAAC board meeting**, I stayed online with Jeff Kopmanis and showed him some highlights of my “Tour of the Solar System with SpaceEngine” presentation - he was impressed, and thought that would be a good fit for an AATB online presentation.

(Continued on page 22)
I'm updating the GLAAC website - I'm working on a page with info on all the member clubs: https://www.glaac.org/test/, and an “astronomy resources” page https://www.glaac.org/astronomy-resources/. I'm looking for suggestions for astronomy websites: news and info, educational, utility, smartphone apps, and any other things that you use frequently others might like to know about.

GLAAC YouTube Channel: https://www.youtube.com/channel/UCCahSGAlibkXkAEhi7aghSg. GLAAC now has a YouTube channel - Please Subscribe! I'm looking for suggestions for video playlists, and I need to make a “default GLAAC intro video” for the channel - I want to include several images and video clips from the Astronomy at the Beach event, and other member events.

# Kerbal Space Program Partners with European Space Agency

KSP v1.10 includes Ariane rocket parts, Comets, Rosetta and BepiColombo probe parts and missions!

Astronomer and KSP deity Scott Manley produced this video showing a recreation of the BepiColombo mission to Mercury using KSP, while discussing the mission with an ESA mission specialist! https://youtu.be/Q9oaesxGbE8

This free update to KSP became available as I was writing this report!

-Bob Trembley
Outreach Report (June 2020)

I mentioned in my last two reports about how libraries (and presumably other institutions) are looking for online astronomy presentations, and how I thought this is something our outreach team might want to consider; that being said, I’ve already given my Sun lecture to Connie’s students via Zoom, and will do a tour of the solar system with them the first week of June. I could do those for whoever might want it.

Speaking of online sessions - Br. Guy told me a humorous story about a Zoom session he attended with some notable astronomers and astrophysicists; one of them “sounded like Darth Vader” the entire session, and that person was “so venerable” no one wanted to tell him.

Astronomy at the Beach 2020 Planning

GLAAC is requesting that member clubs provide some sort of hands-on activity to be hosted at their tables this year’s event. Suggestions are welcome! GLAAC is looking into becoming a 501(c)(3) in their own right. Minutes from the latest AATB planning meeting are below.

AATB Planning Meeting: Thursday June 11 2020, at 8:00PM
- Everyone is Welcome!
Online at: https://umich.zoom.us/j/4519748388 (Password: 0000)
W.A.S. Calendar Entry: [LINK]
Even if you can’t make it to the June planning meeting, you can join the groups.io site to get emails and updates from the planning committee. https://glaac.groups.io/g/main.

(Continued on page 24)
Call to order: 8:28pm

Online:
- Jeff Kopmanis
- Adrian Bradley
- John Wallbank
- Bridget Harwood
- Brian Ottum

Old Business:
Tent status
- No change

Comm status (Brian):
- Telescope participant letter - WENT OUT TO ALL CLUBS
- w/Bob: Flashlight/Lighting blurb for FB/AATB web site - SITES UPDATED
- Email Planewave contact for poss. Demo - NO RESPONSE

Incorporation status - Geof/John
- NEWS: Geof stepping down as Treasurer due to concerns over incorporation and other financial issues (AB talked with him)

Parks status - Bridget
- Events can start on July 1, with distancing (>250 people)
- Situation is highly fluid - could change anytime
- Things are being ramped up slowly, due to limited staff; layoffs, etc
- Targeting a Memorial Day opening

New Discussion:
Virtual AATB: Decision Criteria and Contingencies
- Live sessions
- EAA
- Pre-captured/processed images & lecture
- Bandwidth - multiple sites
- It’s becoming clear that spending more time on an online AATB is probably reasonable
- Brian’s Demo is an example of the kinds of things we can do: https://youtu.be/E3uZQO-Fvns
- Over the summer, stream our own live streams
- Offer up Lowbrow presentations as astronomy events for AATB
- Costs? If any?
- JW: contact sponsors about building a fund for the following year, and/or presenting a session at the event
- JK: perhaps sponsors can be featured in materials, opening screens, etc
- Norb Vance at EMU, UM club
- Jack @ Peach Mountain
- GLAAC site has Agenda; individuals produce and present their offerings, possibly at multiple times
- Online ZoomBombers in events has to be considered and talked about with presenters

AB: Motion: Support for a virtual event? All are in favor, none against. RETRACTED
- Concerns about crowds if we have a live event. (JK: sell tickets?)
- Opening Presentation from Island Lake to preserve continuity with past and future AATB

AB/BO: Letter to clubs advising that we’re going virtual for 2020. Outline vision for how it will be presented.
- Solicit donations online, through banners on presentations, etc

Contingencies for an in-person Event
- Large screens so that distancing could be maintained
- Power?
- Social distancing with the traditional large crowds is going to be very difficult to safely hold 2020 AATB, especially with an anticipated Fall outbreak

(Continued on page 25)
Financials

Getting incorporated
Transferring bank accounts - Diane was a signer from WAS
Insurance concerns?

Brian:
Michigan Science Center wants to stay involved

Adjourn: AB at 10:07pm

JUNE TASK LIST

- JK: Contact ITS regarding more widespread use of UM Zoom/BlueJeans/Meet resources for AATB Virtual event
- BO/AB: produce outline of vision for a virtual event based on our discussion - Done. 5/18
- JW/JK/AB: work on incorporation
- AB: Check out accounts with Comerica
- JK: Club Directory email - DONE 5/16

In order to have another successful year of Astronomy at the Beach, we need the W.A.S. to give an interactive demonstration at our table inside the big tent. Our surveys have shown that the public LOVES the astronomy and science-related demonstrations staffed by the Michigan Science Center, Cranbrook, Wayne State, some planetaria and some of the clubs. Just make sure it is simple, impactful and interactive. These demonstrations are critical for the nights that may be cloudy. There will be no keynote speaker.

Brian Ottum - V.P. Communications, AatB

NITARP, the NASA/IPAC Teacher Archive Research Program

Applications for NITARP for 2021 are now available! http://nitarp.ipac.caltech.edu/

NITARP, the NASA/IPAC Teacher Archive Research Program, gets teachers involved in authentic astronomical research. We partner small groups of educators with a mentor professional astronomer for an original research project. The educators incorporate the experience into their classrooms and share their experience with other teachers. The program runs January through January. Applications for the 2021 class of educators are available now and due on Monday, September 14, 2020. The program is funded completely via NASA ADAP, and is contingent on the availability of funding.

Some things that make our program different from many (if not most) other astronomy pro-
grams for educators:

(1) Each team does original research using real astronomical data, not canned labs or reproductions of previously done research.

(2) Each team writes up the results of their research and presents it in a science poster session at an American Astronomical Society meeting (the AAS is the professional organization for astronomers in the US). The posters are distributed throughout the meeting, in amongst other researchers' work; the participants are not "given a free pass" because they are educators and students. Each team also presents the educational results of their experience in the program.

(3) The program runs over 13 months, not just a few days or weeks.

(4) Teachers are encouraged to involve their students from the beginning of the program.

Most of our educators are high school classroom educators, but 8th grade, community college, and informal educators have participated as well. The kinds of educators we are looking for are those who already know the basics of astronomy, and are interested in learning exactly how astronomy research is conducted. All educators must be US-based.

This program involves three trips — to an American Astronomical Society (AAS) meeting in January 2021, to Pasadena, CA in summer 2021, and to the AAS meeting in January 2022. The January 2021 meeting is in Phoenix, AZ; the January 2022 meeting is in Salt Lake City, UT.

While most of the work on these teams is done remotely using video conferencing and other online collaboration tools, the structure of the program heavily relies on three different face-to-face visits, necessarily requiring interstate travel and meeting in groups. If the January 2021 AAS meeting is held online because of the pandemic, we may not be able to have a NITARP class of 2021. We will monitor the situation closely and inform applicants of progress as decision points come up.

The application itself consists of short answers to a few questions. We release the questions in May so that you have time both to hear about the program and to get started writing; the website to which you need to upload your PDF answers will be available no later than early August. Please let us know if you wish to be explicitly notified via email when the site is open for submissions.

For more information, please see our website (http://nitarp.ipac.caltech.edu), or if you have any questions, please feel free to contact us at our central email, nitarp@ipac.caltech.edu.

OSIRIS-REx TAG is a GO!

From Dolores Hill: We have an official target date for the OSIRIS-REx Asteroid Sample Return Mission’s Touch-and-Go (TAG) maneuver first attempt at the Nightingale site: October 20, 2020! For more information: NASA’s OSIRIS-REx Ready for Touchdown on Asteroid Bennu

Bob Trembley
JUNE MEETING MINUTES
VIRTUAL BOARD MEETING
June 1, 2020

Members present: Diane Hall, Dr. Dale Partin, Riyad Matti, Glenn Wilkins, Mark Jakubisin, Jonathan Kade, Bob Trembley and Dale Thieme. Diane called the meeting to order at 6:31

Officer Reports
Dr. Partin reported that we are still in good shape with presenters; however, it is proving to be more difficult to recruit speakers without talking to people in person. Please contact me if you would like a slot, or if you know of someone who might be interested. David Levy has agreed to a presentation in September.

Riyad reported that everything was in good shape at Stargate as of 11 days ago.

Mark reported that he has some checks that are expired or due to expire soon. He is concerned that there may be a late fee attached, or even an outright bank rejection.

Glenn noted that he is actually finding it easier to take minutes on a desk at home than at normal meetings. He agreed to search for current addresses for beg letters that were undeliverable last year.

Bob reported that almost nothing is going on with Outreach and those that would normally ask for help are not willing to deal with social distancing or the complexities of virtual presentations. Since it is uncertain if we will even have a joint star party this year, what does the Board advise? Bob recommended waiting for an update from our meeting with GLAAC on June 4.

Diane reported that Governor Whitmer announced Phase 4 of her restart will begin on June 8. This will allow gatherings up to 100 people as long as individuals can maintain at least 6’ between each other. This holds promise for future star parties. However, even if we were able to comply, we cannot resume normal meetings without authorization from Cranbrook and the Community College as well as the Metro Park Authority. Concerns about disease transmission from sharing eyepieces might be avoided utilizing video monitors as long as the screen brightness is not bothersome to others nearby.

Old Business
Jonathan reported that the 2020 mailer has not been sent as our membership is about 20 short. Mark proposed that the Board consider providing dues relief due for the hardships created by the current medical emergency. Board members agreed in principal but were unsure of the best plan of action. Numerous proposals were discussed before a final position was drafted. The Dues Proposal was unanimously agreed on as follows:

“In view of the extraordinary circumstances we are living in, we are extending everyone’s paid-up membership for one year. Those who wish to contribute their dues this year are welcome to do so.”

This announcement will be printed in the annual dues flyer.

Our Form 990 postcard has been filed.

The WAS projector is still missing. Jonathan will first check in our storage area and then contact the Ukrainian Banquet office.

OCR results for meeting minutes

New Business
Diane noted that the GLAAC treasurer resigned on May 14 and also that we have not yet paid our dues. Since it is uncertain if we will even have a joint star party this year, what does the Board advise? Bob recommended waiting for an update from our meeting with GLAAC on June 4.

CRANBROOK VIRTUAL
GENERAL MEETING
June 1, 2020

Diane called this meeting to order at 7:32. 24 members participated on Webex and an additional 13 watched on You Tube.

In the News/Sky was presented by Diane

SpaceX successfully launched two astronauts last weekend and the Dragon capsule is now docked to the ISS. Tensions were high due to the explosive failure (aka a rapid disassembly) of an engine on test just a few days earlier!

The sun seems to be waking up lately as a large flare was seen recently, the greatest since 2017. A baryon census study was recently completed utilizing the unique light dispersion characteristics offered by Fast Radio Bursts, and new equipment which can accurately determine the galaxy that the burst came from. The results reinforce the current understanding that baryonic (ordinary) matter only represents about 5% of all matter.

Pluto and Jupiter will shortly provide a conjunction offering a rare photo opportunity as well as a Pluto finding aid.

Diane remarked in conclusion on how proud she

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was about the extraordinary accomplishments of the Board and Team members who have tirelessly worked to enable the WAS to not only continue but flourish under conditions that nobody could have expected just a few months ago.

Officer reports
Dale reported that final appointments were made at this meeting for participants in the July debate regarding if it is feasible/sensible to send live astronauts to Mars.
Riyad reported that the WAS expects to continue with Open House events on line.
Mark reported that we have 82 paid memberships. A complete financial report is in the current WASP.
Jonathan reported that the June WASP includes a report by David Levy as well as the May minutes.

Viewing and Special Interest reports
Jonathan & Marty reported only insignificant sun spots since the last meeting.
Dale T. indicated that the History report is ongoing
On May 31, Gary Ross provided an uncharacteristic written report from the Veen Observatory regarding his comprehensive observations of the atmosphere of Jupiter though his largely handmade Newtonian scope guided by hand and viewed at 100X through hand-made down eye pieces.
Bill Beers posted his address, BEEZOLL@aol.com, for anyone with astrophotography questions.

Short talk – Dr. Partin introduced Mark Jakubisin and his presentation Seeing is Believing
This talk addressed the impact of various factors on “seeing level” such as given by the widely-used Pickering Scale. Examples of viewing the same star at the different “seeing” levels were shown. A medium, such as our atmosphere, refracts the various wavelengths within light and can be compared to seeing though 30 ft. of water! Some other factors include wind, tube currents in different scope designs, and the impact of various land forms on turbulence at the viewing location. Several recommendations were offered to maximize the viewing experience.

Break – 8:36 to 8:51

Main Talk – Dr. Partin introduced Dr. Alan Kaplan, retired M.D., discussing Space Medicine
The talk was delayed almost 15 minutes due to the difficulties in uploading the presentation on Webex. The problem was apparently caused by insufficient bandwidth as it became necessary for most everyone to log off for a short time. The following topics were explored in depth:

- Risks to astronauts from meteorites, radiation etc.
- Problems created by temperature variations in flight and on planetary surfaces
- Risks due to slow/rapid pressure changes
- Physical effects of zero gravity and isolation (noted recent comparison of the Kelly identical twins)
- Need to bring significant amounts of medical equipment for emergencies, and train everyone on their use

The meeting was closed at 10:15, sadly without the opportunity to continue discussions at the Red Coat

MACOMB VIRTUAL MEETING
June 18

Diane Hall called this meeting to order at 7:30 for 23 viewers on You Tube and 29 participants on Webex.

IN-THE-NEWS/IN-THE-SKY presented by Diane News

O’umuamua, the recent deep space interloper, appears to be a frozen hydrogen iceberg.
The extraordinary number of hits noted in a Xenon collector supports the postulation that dark matter could largely be composed of Axions.
The nested craters on Triton appear to be from vulcanism rather than from impacts.
The equatorial bright spots on Cassini photos are probably dry ice beds
Repeating fast radio bursts of 4 days on & 16 days off have been discovered. The source appears to be a baby magnetar, a strong dead sun with strong magnetic fields.
The rising solstice sun event at Stonehenge will be live-streamed this year.
The annular solar eclipse this June (southern hemisphere) may present a Bailey’s Beads viewing opportunity.

Sky –
The Jupiter/Pluto conjunction will repeat on June 30.

OFFICER REPORTS – Diane
The reasons why Astronomy at the Beach will be a virtual event this year are presented in the WASP. Presentations by amateurs and youth are being solicited by GLAAC.
Jim Shedlowsky noted that a report by Jon Blum has been circulated regarding the success of a similar virtual gathering recently at the Grand Canyon.
On July 6 our feature Cranbrook presentation will be the pros/cons debate about sending astronauts, rather than robots, to Mars. A lively debate is expected so be sure to join the event!
Riyad reported that all is well at Stargate. The Park

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has formally agreed to allow observing for WAS members as long as government safety guidelines are adhered to.

Limited Outreach continues – Ken Bertin will make a presentation for the Low Brows and Jim Shedlowsky will present to the Ford club.

Jonathan noted that Astro League dates for June are in the WASP

Dale Thieme reported that 12 additional history reports have been scanned.

**OBSERVING REPORTS**

Nothing of note was reported on the sun

Several members remarked about the current extraordinary stretch of good observing weather.

Gary Ross presented a detailed observing report on Jupiter which was forwarded to members by E-mail.

Diane talked about the benefits of filters for enhancing objects with various albedos

Jonathan spoke about the importance of dark adaptation and how it can degrade the viewing experience, even at dark sites.

Bill Beers shared his recent photo of the Draco Trio (NGC 5981, 5982 & 5985) which are actually at considerably different distances.

Adrian Bradley shared his recent natural light photos at Lake Hudson with Jupiter & Saturn embedded in the Milky Way.

Doug Bock shared some recent nebula photos.

**BREAK** - 8:15 to 8:30

**MAIN PRESENTATION** - Dr. Dale Partin introduced Mark O’Malley who presented the life story of Wernher von Braun.

Wernher had an early fascination with amateur liquid-fueled rockets and astronomy but surprisingly he did not initially have much interest in math & physics. However, he later realized the importance of these fields of study and went on to achieve an ME at age 20 and a PHD in physics at age 22 from recognized German universities. His interests and degrees were quickly recognized and led to leadership positions in rocket design & development.

Following WWII, the U.S. quickly decided to keep this team intact and under their control. So, they brought most of the group together to the U.S. under Operation Paper Clip. Of course, the combined team work with American scientists and engineers was a major factor in winning the race to the moon. Running out of time, Diane closed the meeting at 9:34

Glenn Wilkins, Secretary - from Florida

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**Saw a Fireball?**

Report it to the American Meteor Society!


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**Club Member Name Tags**

Email publications@warrenastro.org for your personalized name tag
The Warren Astronomical Society is a Proud Member of the Great Lakes Association of Astronomy Clubs (GLAAC)

GLAAC is an association of amateur astronomy clubs in Southeastern Michigan who have banded together to provide enjoyable, family-oriented activities that focus on astronomy and space sciences.

GLAAC Club and Society Meeting Times

<table>
<thead>
<tr>
<th>Club Name &amp; Website</th>
<th>City</th>
<th>Meeting Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy Club at Eastern Michigan University</td>
<td>Ypsilanti/EMU</td>
<td>Every Thursday at 7:30PM in 402 Sherzer</td>
</tr>
<tr>
<td>Capital Area Astronomy Club</td>
<td>MSU/Abrams Planetarium</td>
<td>First Wednesday of each month 7:30 PM</td>
</tr>
<tr>
<td>Farmington Community Stargazers</td>
<td>Farmington Hills</td>
<td>Members: Last Tuesday of the month Public observing: 2nd Tuesday of the month</td>
</tr>
<tr>
<td>Ford Amateur Astronomy Club</td>
<td>Dearborn</td>
<td>Fourth Thursday of every month (except November and December) at 7:00 PM</td>
</tr>
<tr>
<td>Oakland Astronomy Club</td>
<td>Rochester</td>
<td>Second Sunday of every month (except May)</td>
</tr>
<tr>
<td>Seven Ponds Astronomy Club</td>
<td>Dryden</td>
<td>Monthly: generally the Saturday closest to new Moon</td>
</tr>
<tr>
<td>Sunset Astronomical Society</td>
<td>Bay City/Delta College Planetarium</td>
<td>Second Friday of every month</td>
</tr>
<tr>
<td>University Lowbrow Astronomers</td>
<td>Ann Arbor</td>
<td>Third Friday of every month</td>
</tr>
<tr>
<td>Warren Astronomical Society</td>
<td>Bloomfield Hills/ Cranbrook &amp; Warren/ MCC</td>
<td>First Monday &amp; third Thursday of every month 7:30 PM</td>
</tr>
</tbody>
</table>

GLAAC Club and Society Newsletters

Warren Astronomical Society: [http://www.warrenastro.org/was/newsletter/](http://www.warrenastro.org/was/newsletter/)
Oakland Astronomy Club: [http://oaklandastrology.net/](http://oaklandastrology.net/)
University Lowbrow Astronomers: [http://www.umich.edu/~lowbrows/reflections/](http://www.umich.edu/~lowbrows/reflections/)

WAS Member Websites

Jon Blum: [Astronomy at JonRosie](http://www.warrenastro.org/was/newsletter/)
Bob Trembley: [Balrog’s Lair](http://www.oaklandastrology.net/)
Bill Beers: [Sirius Astro Products](http://www.fordastronomyclub.com/starstuff/index.html)
Jeff MacLeod: [A Life Of Entropy](http://www.sunsetastronomicalsociety.com/)
Bob Trembley: [Vatican Observatory Foundation Blog](http://www.umich.edu/~lowbrows/reflections/)
Doug Bock: [https://boonhill.org](https://boonhill.org)
Facebook: Northern Cross Observatory [https://www.facebook.com/NorthernCrossObservatory](https://www.facebook.com/NorthernCrossObservatory)
Boon Hill and NCO Discussion [https://www.facebook.com/groups/369811479741758](https://www.facebook.com/groups/369811479741758)
YouTube channel: [https://www.youtube.com/channel/UC-gG8v4It39oc-bl0TgPS6w](https://www.youtube.com/channel/UC-gG8v4It39oc-bl0TgPS6w)
TELESCOPES & ACCESSORIES FOR SALE
From the Estate of John Causland
*(beloved Ann Arbor Lowbrow astronomer observer)*
Additional items have been found and are included here. All items must be out of the house by the 7/10 closing! Send us your offer. **Cash only.**
**Pick-up only.**
The items are available for inspection & purchase ONLY by prior arrangement (location is 4733 Midway Dr, Ann Arbor MI 48103). This listing is being shared with amateur astronomers throughout SE Michigan and NW Ohio. Send your offers and questions to: ottum@comcast.net

Brian Ottum, estate representative
Once you’ve been told the item is yours, please coordinate pickup time with Debbie Smith: Dsmith956@hotmail.com

Executor

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**TeleVue 3mm-6mm Zoom Eyepiece (1.25”)**
Legendary TeleVue quality. Nagler provides wide field, fifty degrees in this zoom. Good condition. Just Google for more information. Perfect for a small refractor. $410 new, price is $200. Pick-up only. [see Astromart ad 98430 for reference price]

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**Filters**

*Lumicon 2” Eyepiece Deep-Sky Filter $80 [see Astromart ad 8968]*

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*Aluminized mylar solar filters for binoculars (2.25” ID) $20*
Catseye Collimation Tools

Original 2" CATSEYE collimation tool. Just Google for more information. Also includes 3’x3’ transparency to aid in collimation of Newts and Cats. Triangle mirror center stickers. Price is $30.

Celestron 8mm-24mm Zoom Eyepiece
This is a 1.25" eyepiece in fair condition. Model 93230. New $80, price is $20.

(Continued on page 33)
DewGuard for Large Secondary Mirror

This is a 9-12VDC warming device to be placed on the backside of a large Newtonian secondary. The elliptical major axis is 4.75”, so that Newt needs to be BIG. Includes sophisticated circuitry to turn on/off based on temperature difference between glass and air. Uses either conventional 9V battery or onboard 12V battery. These were installed on Starmaster telescopes. $20

Old Fashioned Camera-to-Telescope Adapter

Clamps onto eyepiece. Uses either 37mm or 52mm male threads to attach to camera. Seems like it uses the “afocal” method, so this is threading into the female threads on outside of a LENS. $15
Mars’s Latest Visitor: NASA’s Perseverance Rover
David Prosper

NASA’s latest Mars rover, Perseverance, is launching later this month! This amazing robot explorer will scout the surface of Mars for possible signs of ancient life and collect soil samples for return to Earth by future missions. It will even carry the first off-planet helicopter: Ingenuity. Not coincidentally, Perseverance will be on its way to the red planet just as Mars dramatically increases in brightness and visibility to eager stargazers as our planets race towards their closest approach in October of this year.

Perseverance’s engineers built upon the success of its engineering cousin, Curiosity, and its design features many unique upgrades for a new science mission! In February of 2021, Perseverance will land at the site of an ancient river delta inside of Jezero Crater and ready its suite of seven primary scientific instruments. The rover will search for traces of past life, including possible Martian fossils, with WATSON and SHERLOC, two advanced cameras capable of seeing tiny details. The rover also carries an amazing instrument, SuperCam, to blast rocks and soil outside of the rover’s reach with lasers to determine their chemical makeup with its onboard suite of cameras and spectrometers. Perseverance will also take core samples of some of the most promising rocks and soil, storing them for later study with its unique caching system. Future missions will retrieve these samples from the rover and return them for detailed study by scientists on Earth. Perseverance also carries two microphones so we can hear the sounds of Mars and the noises of its instruments at work. It will even launch a small helicopter - Ingenuity - into the Martian atmosphere as a trial for future aerial exploration!

Would you like to contribute to Mars mission science? You can help NASA’s rover drivers safely navigate the Martian surface by contributing to the AI4Mars project! Use this tool to label terrain features on photos taken of the Martian surface by NASA missions to help train an artificial intelligence algorithm to better read their surrounding landscape: bit.ly/AI4Mars

The launch of Mars Perseverance is, as of this writing, scheduled for July 20, 2020 at 9:15am EDT. More details, updates, and livestreams of the event are available on NASA’s official launch page: bit.ly/Mars2020Launch. Dig deep into the science of the Mars 2020 mission and the Perseverance rover at: mars.nasa.gov/mars2020/. Find out even more about past, present, and future Mars missions at nasa.gov.

Observe Mars yourself over the next few months! Mars can be found in early morning skies throughout July, and by the end of the month will rise before midnight. Mars gradually brightens every night until the close approach of Mars in October. The pre-dawn skies of July 17 present an especially nice view, as the waning crescent Moon will appear near Venus and Aldebaran.
What Kind of Telescope Should I Get?

Oh, the eternal question - one that I think we all both love and dread hearing. Love, because it means someone things you know what you’re talking about, and you have the opportunity to help them get started in the hobby. Dread, because you feel responsible for whether they have a good experience in astronomy or whether they join the ranks of so many who have given up on it.

The old advice is: DON'T. Come to an open house instead, and check out different types of telescopes in person before taking the plunge. Since we're not having large events, that advice isn't practicable. And sometimes people really want to buy a scope! (Most of us were like that once.) So you can probably go with it. DO make sure to recommend they get decent binoculars too, and do a naked-eye trip to true dark skies so they can visualize themselves hauling and setting up a telescope.

And, well, relax a little. You can't control what your friends, coworkers, relatives, and total strangers feel when they look through that eyepiece for the first time. A lot of times, people have an idea of what they want already, and they're just looking to you for validation of that idea. But there are some things you can do to increase the odds they don't end up with a terrible telescope, or a telescope that totally mismatches their life situation. Here are some tips, and some anecdotes from somebody who just gave a lot of this advice.

First off, try to make sure that the telescope they get fits their living space, their car, and their pocketbook. We've all known - or been - the person with a huge telescope and a tiny apartment or car. If a telescope becomes a source of stress and frustration because of the space it takes up, it probably doesn't bode well for their future commitment to the hobby. Likewise, if they spend their whole telescope budget on the scope and don't have money for good eyepieces, red dot finder scopes, and so on, they will have a pretty limited experience. If they get a telescope and have to leave their kids home to take it up to dark skies, they might enjoy the experience, but the kids might not so much!

Case study: A friend of mine is new to the hobby. He lives in an apartment and has a smaller car. He wanted to get a telescope that would let him see the planets well, but also see an assortment of other objects. He was really interested in some kind of guiding assistance, but also wanted to be able to easily pilot it himself without having to worry about powering it. After we discussed extensively, we agreed that he probably wanted something in the 4.5” to 6” range - small enough to fit in his car with other stuff, but big enough to give a distinct impression of celestial objects in dark skies. After examining prices and options, we settled on the Celestron StarSense Explorer DX 130AZ. This new telescope line cleverly uses your portable camera and supercomputer - your smartphone - to plate-solve the view where your telescope is pointing, giving you push-to support at a very affordable price. I look forward to hearing his review and trying it out myself one of these days!

Finally, when they actually take the plunge, check in! See if they're having trouble with anything, recommend objects that will knock their socks off, maybe lend some of your second-tier eyepieces out, and, depending on your risk factors and comfort level, try observing together - it's easy to effectively social distance while telescoping. (At this point, the jury is out about whether it's safe to share an eyepiece, but I recommend against it.) For many of us, it's social support and other people's enthusiasm that keeps the hobby fun, so try to be that support for your loved ones who starting out.

I hope that's helpful advice, and I wish you and all the new telescope owners out there clear skies. Jonathan