

REFLECTIONS / REFRACTIONS

REFLECTIONS \ REFRACTIONS

University Lowbrow Astronomers Monthly Newsletter

June-July, 2026, Vol 50, Issue 6

IN THIS ISSUE

Milky Way with Dinosaur Tracks
by Adrian Bradley 1

North Star Scientific Travel Telescope Kit
by Timothy Miller 2

Milky Way Arch
photo by Ginia Forrester 3

Summer '26 Siril Workflow
by Jeff Kopmanis 5

The Long Way Round: Moving 20 Years of Logs Into SkySafari Using AI: PART 1
by Roger Wade 8

Speaker Schedule 7

May Minutes 9

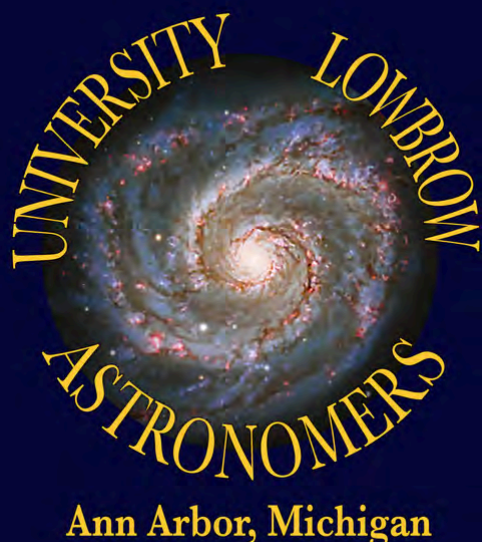
June Minutes 10

Club Information 12



MILKY WAY WITH DINOSAUR TRACKS

BY ADRIAN BRADLEY



"This is a ground-level image I took of dinosaur tracks at Black Mesa State Park and Nature Preserve just outside Kenton, Oklahoma. Sadly, this area is no longer open to the public.

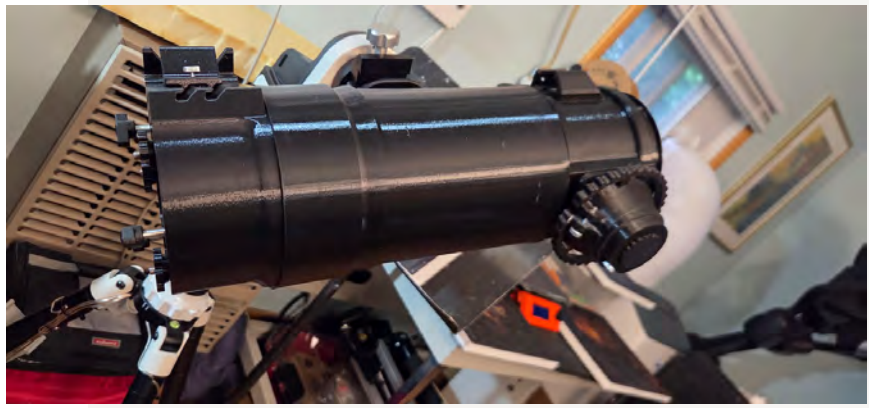
This image could have very well been repeated 150 million years ago with an allosaurus limping away and other dinosaurs in the distance, with absolutely no indication of any humans on the planet. It was an eerie feeling taking the photo, and perhaps the only time I felt uneasy out in the open under the night sky."

NORTH STAR SCIENTIFIC TRAVEL TELESCOPE KIT: BUILD & REVIEW

BY TIMOTHY MILLER

Astrophotography was the first destination since rekindling my passion for the night sky. I'll admit that there are times when visual observing can seem anticlimactic when one's internal concept of a DSO is the pretty picture you just took. But I have since re-discovered the joy of going back to the eyepiece through attending open house events, member only sessions, and showing visitors even the simplest of objects and realizing it is immensely satisfying. On a personal level, there is also connection, an inclusion in a community of people which is just as important. A shout-out to fellow Lowbrows Jim Forrester and Don Foley is in order here. Both have modeled the "way" of an observer and have been there to answer my incessant questions.

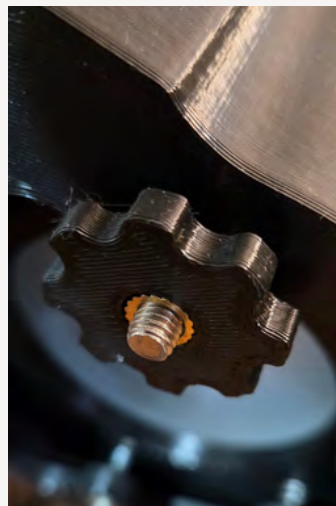
I always seem to gravitate towards hobbies that stress my wallet, so where does one go from here? I have had an old Meade 6" Schmidt Newtonian since college, and a Meade ETX-90 Mak. The SN6 has decent optics and gives nice views but is heavy and too much scope for my Skywatcher AZ gti. The ETX-90 performs well for what it's made for. I wanted a scope I could use with the AZ gti, was large enough to be useful in visual observing, was light and didn't take up too much space. As luck would have it, I ran across an ad on facebook for a company, North Star Scientific (nstarscientific.com). This is not a "company" but an individual marketing a 114 mm f/3.9 Travel Telescope he designed and sells kits for. The scope is 3D-printed and can be purchased fully built, as parts in a kit, or by purchasing the printer files, optics, and hardware where you do the printing and assembly. I chose the latter. The total cost including filament, optics, and parts was roughly \$275. While this is close to the price for a new commercial 114mm scope, the finish, quality, and portability are the deciding factors here. The optics provided seem to be similar to



SCOPE WITH SHROUD, SIDE VIEW

the standard for the commercial 114mm small scopes sold by Celestron and others.

Performance was above what I expected. Jim and Don helped me collimate it and both remarked that it performed very well for a scope of its size and had a clean fit and feel to the design and construction. The designer has a discord channel which I joined that has become a micro community of folks building this thing. Most of the folks here, like myself, are building and printing the whole thing and have been sharing tweaks and other improvements. The maker, Anders, as I know him on discord, has a community license on the files of no remixes, alterations etc. While some folks have posted accessories and such on [printables.com](https://www.printables.com), others, including myself, have done some modifications but have not shared them outside the discord community. I have shared my mods with the maker for him to decide how and if he will use these mods in future iterations of the scope.



ABOVE: COLLIMATION KNOB
LEFT: PRIMARY COLLIMATION SCREWS,

I made two large changes to the design, mostly in the layout of where the focuser goes and the focuser itself. The AZ gti mount has had the firmware update to allow it to operate in EQ mode. When Skywatcher did this, they forced the scope to the right side of the mount in AZ mode.

The focuser position on the stock travel scope upper OTA was designed to put the scope on the left. The stock part puts the focuser pointing toward the mount on the inside for me, so I had to move it and the finder

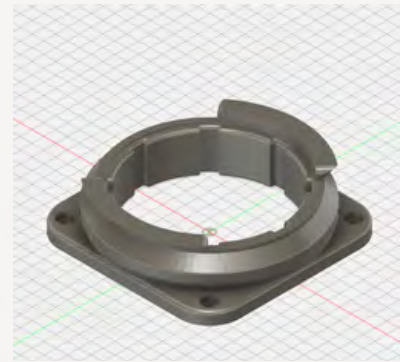
NORTH STAR KIT continues, p. 3





shoe so that I would not be looking over the mount to reach the eyepiece. One of the users on the discord had done some other mods to use it for photography and shared a parametric fusion 360 file he created of the whole upper OTA. It was quite simple to move stuff around, keeping all the design dimensions constant with the original. I ended up moving the position of the focuser to be parallel to the ground pointing 180 degrees away from the mount. In this configuration, I can sit on a stool and view all altitudes without having to slouch or reach because the scope only moves the eyepiece about 8" in vertical travel in AZ mode.

I found the stock focuser itself to be the most problematic. With the original position of the focuser on the OTA being roughly on top of the scope, the stock focuser simply sat in the focus box with gravity holding it in place. The large focus nut sat on the mating surface of the focus box. One simply inserted the focus tube and nut assembly into the focus box. There was too much movement especially viewing toward the zenith. The fact that it could also just pop out with an eyepiece in it wasn't too cool either. I also discovered that with the stock focuser, I could not reach focus unless I moved the top ota closer to the primary. But when doing so, the image from the primary was truncated in the secondary losing some aperture. With a small 114mm primary I figured it needed all the aperture it could get to be useful. The solution was to build a low profile focuser and include a flange on the focus box that interfaces with the focus knob to form a mechanical attachment to the scope itself. I polished both the mating surfaces of the knob and focus box using a series of 120, 229, 400 and 600 wetdry sandpaper, and with some dry lubricant I use on my bike chain, the focuser really works well. The knob is large enough and the threads are such that fine adjustments are quite easy and once focus is reached a simple turn of the knob lock screw locked it in place with absolutely no wobble. The focus tube itself has been shortened and I



FOCUS TUBE, LEFT AND FOCUS BOX

eliminated the 2" to 1.25" reducer and integrated the 1.25" port into the focus tube itself. In my humble opinion, there was no need for using a 2" eyepiece in this scope, and without the reducer I gained about a 1/4" of focus point reduction.

The last upgrade I made was to the middle segment that holds the aluminum extrusion and connects to either a tripod or mount. The stock part has an integrated vixen style bar to connect to the clamp mount. I didn't like this so chose to connect a small vixen bar to the segment via the threaded inserts. However, when doing this the integrated vixen bar sticks into the light path. My solution was to simply remove the integrated vixen bar.

You will see a light shroud in the finished picture (p.2, top). This was an accessory by another user. I remixed it into two parts as it was too tall for my printer. I printed this in TPU flex filament. It attaches easy with clips. I didn't mention but the scope comes with a tripod and short legs, to be used without a mount on a table or such. Some users have created adapters to this mount to be used with a standard photographic tripod.



STOCK VS MODIFIED UPPER OTA

NORTH STAR KIT continues, p. 4



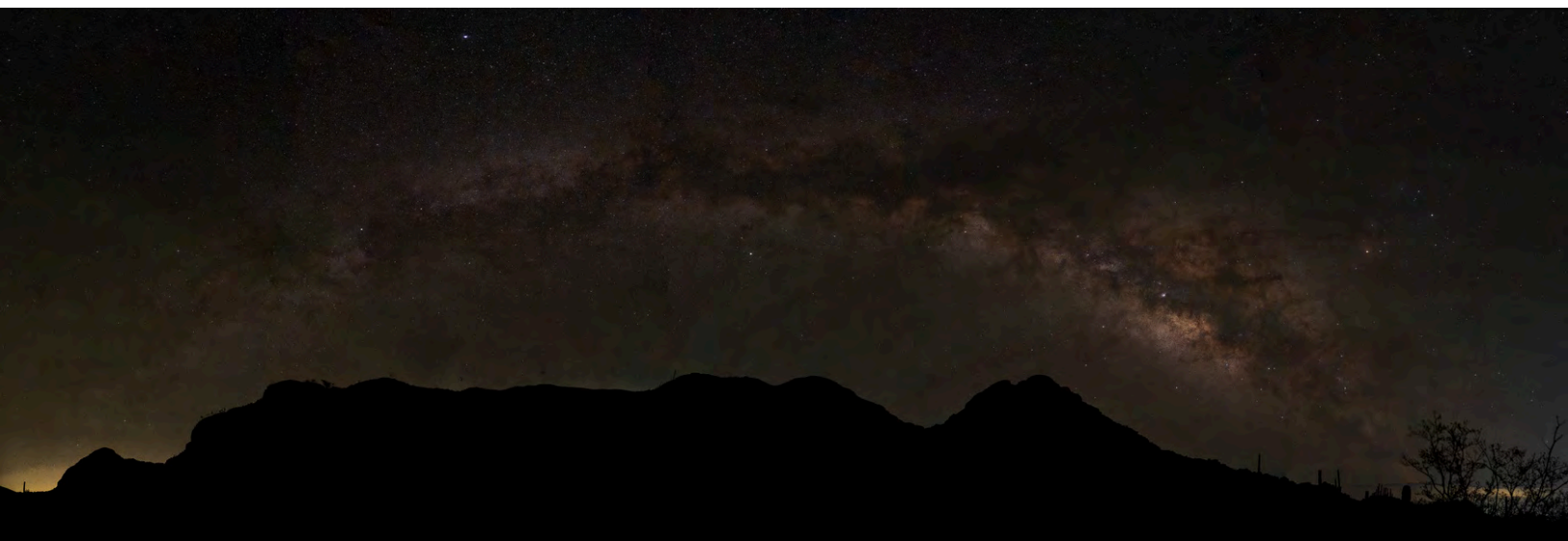
OPEN SCOPE

The scope comes with dust caps for the mirror box, and caps for both sides of the upper OTA assembly. There are parts that have a collimation ring that attaches to the mirror clips to find the primary center easily. All of the screws are easily put in with 3mm and 6mm threaded inserts. I had to purchase insert tips for my soldering iron (\$8 on amazon) to use with the inserts.

These worked very well with the PETG filament I used. The inserts are very well melted in and solid. The screws that came with the kit are quality with larger knobs for the 3mm screws that are used in the secondary mount and finder shoe. The collimation nuts and locking screws for the primary are 6mm and very easy to adjust.

All in all I'm very happy with the result. If anyone is choosing to make this, I can provide the .stl printing files, or the fusion parametric files for the mods I have made. I can also provide some of the printing tricks I used to get better accuracy with the focus box. Contact me a robotiger14670@gmail.com if interested in building this.

I feel this little gem performs a good as a small aperture scope could. Its build and design are solid and clean, the optics are completely adequate. I am looking forward to this being my observation scope for now. ☐



MILKY WAY ARCH

BY GINIA FORRESTER

This panorama of the Milky Way was shot in the Organ Pipe Cactus National Monument in Arizona. (Bortale 2) The light dome on the right (west) is caused by the lights from a border crossing that is about 10 miles away. I am not sure what caused the light dome on the left (east). Perhaps it was the lights from the ranger station. There are no towns within 30 miles.

8 frames stitched together and processed in LR
ISO-6400, f2.2, 10 secs

SUMMER '26 SIRIL WORKFLOW

BY JEFF KOPMANIS

This is (currently) my basic workflow for using Siril and the two toolsets, SyQon and VeraLux. All can be loaded from Siril's Get Scripts. With these new tools, I can usually work through a Seestar 4K image (2472 x 1390) in about 20-25 minutes on average. Naturally, if you have a full image from an ASI2600MC camera, it'll take "longer". 😊 Scripts are found in the Scripts menu in Siril. Note that this workflow has changed three times in the last four months as new, amazing add-ons for Siril have appeared!

1. Stacking Script

(Seestar_Preprocessing_w2xDrizzle.ssf)

Whether you use this script, the normal Seestar_Preprocessing script, or one of the OSC variations for other setups, get your subframes stacked and into a .fits file that you can Load into Siril and begin your journey. You can check on this stage by turning on AutoStretch display mode, but it's best to leave things in Linear, mostly for ease of saving intermediate files. You can download it at <http://www.kopmanis.com/> and copy it to the proper location. In MacOS or Linux, it goes in the ~/.siril/scripts directory, which Siril will pick up. I'm in contact with Cyril Richard to get it included in the Get Scripts menus.

2. AutoGradientRemoval (Python > Processing)

This is a new Python script that just came out from Cyril Richard himself, and it works quite well, notably, without having to choose points to mark your gradient or background/foreground areas. I've started using it instead of AutoBGE, as it seems to do a better job without artifacts that SyQon Prism will trip on.

3. Plate solve and Spectrophotometric Color Calibration (SPCC)

Plate Solving (Tools > Astronomy) is needed mostly so you can use the superior Spectrophotometric Color Calibration tool, which requires things to be plate-solved. The SPCC will adjust your colors to established norms, so that you won't have to worry about Green Noise or other aberrations.

4. SyQon Prism (denoise)

I've tended to use Prism before star removal, simply to get rid of noise that might confuse the star removal routines. Prism also has proven to do some enhancement on its own, and gives further



modification a leg up of sorts. The "Mini" model is free of charge; the "Deep" (paid) model takes the "Mini" model to the next level. All of the SyQon tools have a fun "slider" that allows you to quickly compare the before and after of what the tool will do.

5. SyQon Starless (star removal)

This separates the image into a star mask and a starless image, so that you can stretch and work on the nebulosity of your image without blowing out your stars. Obviously, if you're working on a star cluster, you'll want to remove this step! The "Zenith" model is free of charge (and v2 is coming soon); the "Axiom" model (paid) just came out with v3.

6. VeraLux HyperMetric Stretch

This is the primary place where you'll pull out details and color. Beware of over-saturating when setting the controls; use the zoom and drag features to be sure. Be sure to set your Sensor Profile to match your camera. There are 4 controls: a Target Bg control to set how much background you want; Log D which is your primary "strength"; Protect b which roughly controls how much your background gets stretched with the primary image; Color Strategy which can help you dial in the Log D setting. Fiddle with all 4 controls to reach your most pleasing image, then hit the Process button.



SIRIL WORKFLOW continues, p. 6

SIRIL WORKFLOW continues ...

7. SyQon Parallax (object sharpening)

This is the newest of SyQon's excellent tools, and does an excellent job of sharpening without over-doing it, which is common in other sharpening tools. Since we already removed the stars, turn OFF the first two controls (you'll find out why later) The "Nano" model is free of charge and does a marvelous job; the "Pro" model is about \$84, but I have not purchased it yet, since Nano is doing so great.

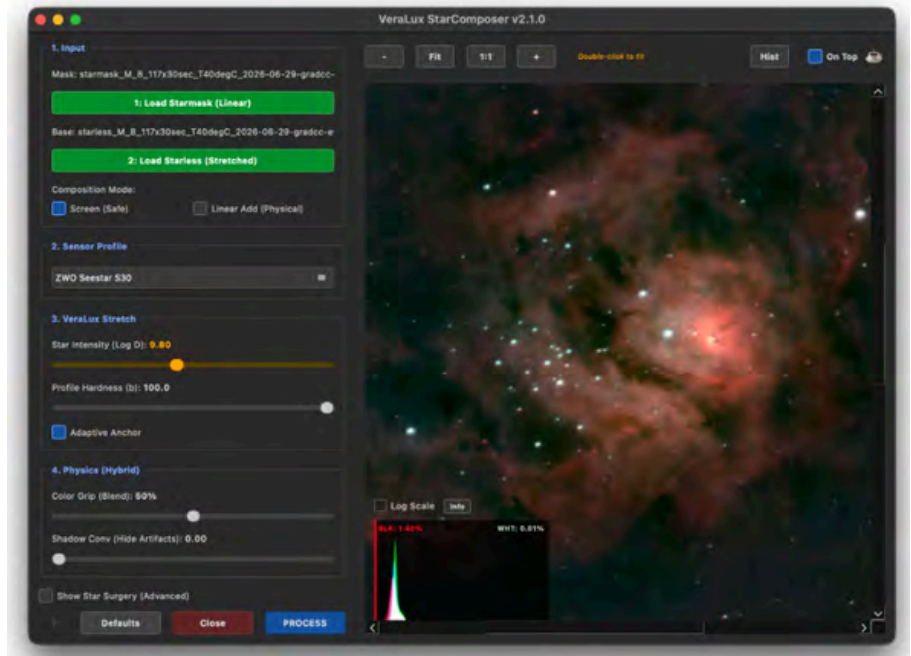
8. VeraLux Revela (feature enhancement)

I have mixed results with Revela. Sometimes it's able to pull out subtle details and features and other times, it doesn't seem to be able to find much. Worth checking into to enhance detail in the nebulosity. There are 3 sliders: **Texture**, **Structure** and **Shadow (Noise Gate)**. I generally use the **Structure** control as a "rough" adjustment and slide it about $\frac{7}{8}$ to the right. **Texture** is the fine-level control, but together with **Structure** will reveal subtle details. You can use the Space Bar to see the original vs. "proposed" modifications. If you see a "ring" of effect around the center image, it's time to bump up the **Shadow/Noise Gate** slider until it goes away.

9. VeraLux Vectra (color saturation)

This is basically a saturation control, but gives you not only the usual RGB combinations, but a secondary palette of Yellow, Cyan and Magenta. It has a cool "vector" display to show you the effects of your adjustments, but its a little gimmicky. You can vary the Hue as well, but my attempts at using it have been worthy of the Reset button. Note that bumping the Yellow saturation can brighten and blow out your image if you're not careful!

10. **Save** a copy of your starless file so you can load it into VeraLux StarComposer.



11. VeraLux StarComposer (star recombination)

This is a really fun tool. It allows you to load your star mask, and then the starless image you saved. Make sure the sensor setting is set to match your sensor. There are 2 primary controls: **Star Intensity**, and **Star Hardness**. **Intensity** is fun, because you can control how many stars will be put back into your image and how "intense" they will be. **Hardness** is a control that will make them appear more point-like, or more diffuse. I tend to prefer Hardness to the most point-like. If you're careful with these two adjustments, you'll find that the original stars' colors are revealed! The other two controls control how color blending and shadows work, but in my photos, I've not found them to have much effect.

12. **SyQon Parallax** (star aberration and reduction, sharpness) "Hey, Jeff, you already used Parallax!?" Well, now is the time to turn ON those **Aberration** and **Reduction** controls, because our star mask never gets sharpened or processed, and could have fuzzy stars, or other ill effects that Parallax can fix. Like the other SyQon tools, they have a fun "wand" to let you see the changes before you make them permanent. You can re-**Process** the Parallax tool until you like what you see, and only then, do you have to **Import to Siril**.

13. **Siril Curves Transformation** final touches (optional?) I'll usually call up the Siril Curves Transformation tool (Image Processing > Stretches) and take care of any last-minute tweaks to reduce excess background, or enhance one color or another. Sometimes, it's not needed, but it's a last chance to clean up.

SIRIL WORKFLOW continues, p. 7

Final Results

The following is an image of M8 (Lagoon Nebula), which was taken using Alt-Az Mode on a Seestar S30 (not EQ Mode due to a firmware bug). It was on a mildly hazy and cloudy night, so it wasn't the cleanest sample. I processed this image again while writing this article. □



UPCOMING SPEAKER SCHEDULE

July 17: Dr. Rudi Lindner, UofM Professor Emeritus

Topic: The Rise and Fall of an Astronomical Fact

August 21: Club Potluck Picnic!

September 18: canceled (conflict with AATB)

October 16: Jim Shedlowski

Topic: Peenemunde: The Birthplace of Space Travel

November 20: Sebastian Garcia

Topic: Telescopius Software Update

December 18: Jim Shedlowski

Topic: From Peenemunde to the Moon

THE LONG WAY ROUND: MOVING TWENTY YEARS OF LOGS INTO SKYSAFARI WITH AI: PART 1

BY ROBERT WADE



Manually re-entering three thousand observations was not a serious option. AstroPlanner has no export path into SkySafari, and SkySafari has no import path

For many years I was an active visual observer, and like most serious observers I kept logs. My first logging software was SkyTools. Developed by Greg Crinklaw, it was a capable Windows planning and logging package that doubled as telescope control software. I was using it first on a Coulter Odyssey 13.1-inch, the classic blue-tube dobsonian, and later on a 20-inch f/4.5 Obsession with a ServoCat drive. When I made the switch from Windows to Apple Mac in the mid-2000s, I found myself without an equivalent system.

AstroPlanner, available for both operating systems and developed by Paul Rodman, turned out to be the answer. Paul even wrote a custom importer to bring my SkyTools logs across, something I came to appreciate more with time once I understood what that kind of migration actually entails. AstroPlanner served me well for many years, and I settled into a stable hybrid: SkySafari for telescope control and planning, AstroPlanner for logging, with AstroPlanner exporting .skylist files that SkySafari could consume for goto sessions. SkySafari did eventually add logging capability, but it remained, in my view, less refined than AstroPlanner for that purpose.

Fast forward to today. Fellow Lowbrows will have noticed that electronic assistant scopes have arrived in force: the mailing list has become a lively exchange of Seestar and similar images. I picked one up myself, and it rekindled an old itch. My observing life was split across two programs, each doing half the job well, and I wanted it consolidated into one. SkySafari 8 Pro, with its own logging and its tight integration with exactly this kind of hardware, looked like the natural home. The obstacle was twenty years of AstroPlanner logs with nowhere to go.

So what, exactly, was I proposing to move? By the time I began looking seriously at this problem, my AstroPlanner database held 3,108 observations across 224 sessions, spanning telescopes from the Coulter 13.1-inch through the current 20-inch Obsession, objects drawn from more than sixty catalogues, and notes going back to visual impressions I'd recorded at the eyepiece in the dark. It was not a trivial amount of data, and it was not disposable. It was two decades of a hobby.

for anything resembling AstroPlanner's format. There is no menu command, no plugin, no documented file format bridging the two. The options, as I saw them, were to abandon the AstroPlanner logs, to re-enter them by hand over some unthinkable number of evenings, or to find another way in.

I am not a software developer. I have minimal experience with reverse engineering. What I did have was Claude, curiosity, and enough stubbornness to see whether an AI could substitute for the programming skill I lacked. This series is the story of what that partnership actually looked like: not an AI doing homework for me, but an iterative back-and-forth between a problem neither of us had solved before.

The first task was not what I had imagined. Before a single observation could be migrated, SkySafari's data even had to be located. It turned out that SkySafari on the Mac is not a native Mac application at all, and its data lives in a location no ordinary user would think to look.

A note for fellow Mac users: SkySafari 8 Pro no longer exists as a native Mac application. Simulation Curriculum now ships it as an iPad app running under Apple's Mac Catalyst compatibility layer, which means the application is sandboxed: its files sit inside a private container directory, several levels deep, that other applications, and casual inspection, cannot ordinarily reach.

The working setup throughout the project was straightforward: SkySafari open on the Mac, a Claude Code session running in Terminal alongside it, and a great deal of copying files back and forth between the two. Nothing exotic, just patience and a willingness to look at raw data.

The moment I knew this was going to work came relatively early, and somewhat quietly. After some exploratory digging, Claude and I managed to log a single fabricated observation, of M22, directly into SkySafari's own data file, and have the application accept it without complaint. That moment, more than any of the technical detail that followed, told me the project was possible.

Could an AI help a non-programmer reverse-engineer a closed application and migrate twenty years of observing history into it? The answer is a resounding yes. □

LOOK FOR PART 2 IN THE NEXT ISSUE OF REFLECTIONS!

05/15/2026 General meeting Minutes

Tim Miller acting secretary.

Officers Present: Jack B, Jeff K, Charlie N, Jim F.

Reports:

President Announcements:

Speaker for June: Brian Ottum

July - Room Conflict. (note; has been resolved)

August Picnic

Jeff K.

Still have 3 RASC handbooks \$26, 6 Calendars \$21

Tim M.

Web Report: Progress has slowed, allowing Barry to get his feet under him in his new job.

Jack B, No report

Jim - Openhouse status for May. Shared a Booklet by Ginia Forrester. "Astronomy Primer"

Discussion:

Doug Warshaw asked about the suggestion from Doug Scobel of a Deputy Treasurer to take care of Inventory and Merch. Charlie reported that this "died on the vine"

Question for Jack on how the McMath Shroud is holding up. Jack will investigate.

Move to Adjourn by Kurt H.

Meeting adjourned at 9:21

University Lowbrow Astronomers - Meeting Minutes June 19, 2026 7:30pm

Our June 2026 meeting at the Detroit Observatory began at 7:35 PM with Brian Ottum's fascinating presentation on Observing with Bionic Eyes. He discussed and compared infra-red (IR) and "white light" image intensifiers. IR is useful for spotting warm bodies such as animals or people. Since most faint astronomy objects are very cold they don't show up very well in IR. The white light image intensifier produces a live monochrome image which makes many astronomical objects visible. They amplify most visible light allowing one to see large nebulas in the sky. Brian purchased a military grade image intensifier from Superior Tactical and he let meeting attendees look through it. While the lenses are fixed at unity power, Televue has created a stack of adapters to attach the unit to an eyepiece for magnified afocal views through a telescope. Using standard astronomy (Nebula, O-III, H α) filters can improve contrast and allow viewing structure within some nebulas.

At 8:32 PM Charlie Nielsen began our business meeting.

Charlie has confirmed our own Jim Shedlowski as speaker for the October and December meetings.

Michigan Math and Science Scholars (MMSS) plan to visit Peach Mountain on 6/28/2026 with raindate on 6/25/2026. This is a private event. Please let Charlie know if you can help with this large group.

With Art Fair taking over Ann Arbor, our July 17th meeting will be held at the Duderstadt Center on the U of M North Campus in room 1180. Look for emails regarding parking. Dr. Rudy Lidner will be our guest speaker.

Friday August 21st will be our summer picnic at Brian Ottum's house. Look for email with details and directions as we get closer.

VP Tim Miller reported that he and Barry Wissman know that events on our website calendar disappear on the date they occur. They are looking into a solution, in the meantime Tim posts our meeting notice on the main page.

Tim has the ASlair controller and plate solving working on the Watson refractor. With target selection, slewing, and tracking performing beautifully. Our other club scopes have a few eyepieces included, but the Watson scope does not. The officers have discussed possible eyepieces and barlow to match the optics. These items will exceed the officers spending authorization. Jim Forrester volunteered to write a proposal for visual observing eyepieces that the members can vote on at our next meeting.

VP Ken Cook reported our last open house was very successful with 25 visitors and 11 lowbrows, and pretty good seeing. Visitors found us via many different sources: our website, discord chat, the Ann Arbor Observer both web and print editions, and friends of members.

Ken mentioned that Christine Cook sent the wrong events to the Observer this past month. She emailed to correct them but had not heard back. She had been using the google calendar on the old website but that is no longer available and she found the new format confusing. Ken will get more feedback and relay the details to Tim.

VP Brian Ottum found a new tool to collimate fast reflectors (an f/2.8 specifically). The OCAL4 is a digital camera with integrated laser that connects to a cellphone. It allows you to adjust your scope while you watch the realtime alignment image. Very easy collimation on finicky scopes.

Observatory Director Jack Brisbin reported the observatory is in good shape. He noted that U of M is looking to restart/restore the radio observatory and they have projects building cubesats for moon research.

There was discussion about recent difficulties with SeeStar WiFi on the field near the radio dish, but not near our McMath observatory. The U of M has a WiFi system that interferes with the default 5GHz WiFi band. Tim mentioned that setting the SeeStar to use the 2.4GHz band before you go to Peach Mountain will allow the SeeStar to function.

Online Coordinator Jeff Kopmanis reported that U of M turned off the system that hosted our website and it is now gone completely. We have backups of the site data and if time permits, content might be reformatted and added to our new website.

Jeff mentioned we still have three RASC handbooks and six 2026 calendars. Please email Doug Scobel or Jeff Kopmanis if you are interested in purchasing either.

Jeff recommended Jim Lovells book Apollo 13, noting that the movie was very faithful to the events in the book.

Free image processing tools keep evolving and improving. Jeff used Claude Code to rebuild an image processing script porting it to Siril. It uses many tools to rapidly improve, stack, and correct collected images. Look for an email to judge interest in an updated image processing guide and workshop, similar to our previous event.

VP Ken Cook recommended the book "Gemini - Stepping stone to the moon" by Jeffry Kluger. Also Christine Cook had submitted our activities to the Ann Arbor Observer online and print calendar.

By email, Treasurer Doug Scobel submitted his report.

We have 217 memberships.

Doug did the following:

- Made our usual monthly payment to AT&T for our Open House "hotline".
- Made a donation of \$400.00 to the Vatican Observatory Foundation (think Brother Guy Consolmagno) \$200.00 each for 2025 (which was missed), and for 2026.
- Made a donation of \$500.00 to Dark Sky International, \$250.00 each for 2025 (which was missed), and for 2026.
- Made our annual donation of \$500.00 to GLAAC in support of Astronomy at the Beach 2026.
- Reimbursed Charlie Nielsen \$52.53 to ship NSN award pins to a few recipients.
- Sold a couple long sleeve t-shirts and a hoodie to a couple of Lowbrow members.

As always, the records he keeps are open for any and all Lowbrow members to examine.

Meeting adjourned at 9:12, motion by Tim Miller, support from Jack Brisbin.

REMINDER: MEMBERS PLEASE HELP!

Plan on attending an open house this summer. Your presence with or without a scope is helpful. Come and share the night sky with the public, they appreciate learning about and seeing the stars that are fading away in our overly bright suburban nights.

Minutes respectfully submitted,
Ken Cook, VP

PLACES & TIMES

Monthly meetings of the University Lowbrow Astronomers are held on the third Friday of each month at 7:30 p.m. The location is usually the Judy & Stanley Frankel Detroit Observatory. The Observatory is located at 1398 E. Ann St., Ann Arbor. The Ann Street Parking Structure (M86), the Catherine Street Structure (M5), the Glen Street Structure (M61), and the School of Public Health II Lot are usually open after 6:00 p.m. Mon-Fri. The M86 structure is closest to the Detroit Observatory.

Peach Mountain Observatory is the home of the University of Michigan's 25-meter radio telescope and McMath 24" telescope, which is maintained and operated by the Lowbrows. The entrance is addressed at 10280 North Territorial Road, Dexter MI, which is 1.1 miles west of Dexter-Pinckney Rd. A maize and blue sign marks the gate. Follow the gravel road to the top of the hill to a parking area south of the radiotelescope, then walk about 100 yards along the path west of the fence to reach the McMath Observatory.



PUBLIC OPEN HOUSE / STAR PARTIES

Public Open Houses / Star Parties are generally held on the Saturdays before and after the New Moon at the Peach Mt. Observatory but are usually canceled if the forecast is for clouds or temperatures below 10 degrees F. For the most up-to-date info on the Open House / Star Party status call: (734) 975-3248 after 4 pm. Many members bring their telescope to share with the public and visitors are welcome to do the same. Mosquitoes can be numerous, so be prepared with bug repellent. Evenings can be cold so dress accordingly.

Lowbrow's Home Page
<http://www.umich.edu/~lowbrows/>

MEMBERSHIP

Annual dues are \$30 for individuals and families, or \$20 for full time students and seniors age 55+. If you live outside of Michigan's Lower Peninsula then dues are just \$5.00. Membership lets you access our monthly newsletter online and use the 24" McMath telescope (after some training). Dues can be paid by PayPal or by mailing a check. For details about joining the Lowbrows, contact the club treasurer at: lowbrowdoug@gmail.com

Newsletter Contributions:

Members and non-members are encouraged to write about any astronomy-related topic. Contact the Newsletter Editor: Amy Cantu cantu.amy@gmail.com to discuss format. Announcements, article, and images are due by the 1st day of the month as publication is the 7th.

Telephone Numbers:

President:	Charlie Nielsen (734) 747-6585
Vice President:	Don Fohey Brian Ottum Ken Cook Tim Miller
Treasurer:	Doug Scobel
Observatory Director:	Jack Brisbin
Newsletter Editor:	Amy Cantu
Key-holders:	Jim Forrester Jack Brisbin Charlie Nielsen
Webmaster:	Barry Chapman
Online Coordinator	Jeff Kopmanis

A NOTE ON KEYS: The Club currently has three keys to the Observatory and the North Territorial Road gate to Peach Mountain. University policy limits possession of keys to those whom they are issued. If you desire access to the property at an unscheduled time, contact one of the key-holders. Lowbrow policy is to provide as much member access as possible.

Email to all members
Lowbrow-members@umich.edu