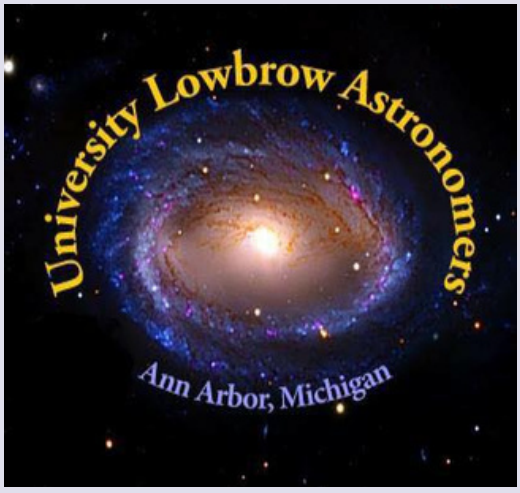
REFLECTIONS / REFRACTIONS

University Lowbrow Astronomers Monthly Newsletter

January, 2026, Vol 50, Issue 1

Inside this issue:

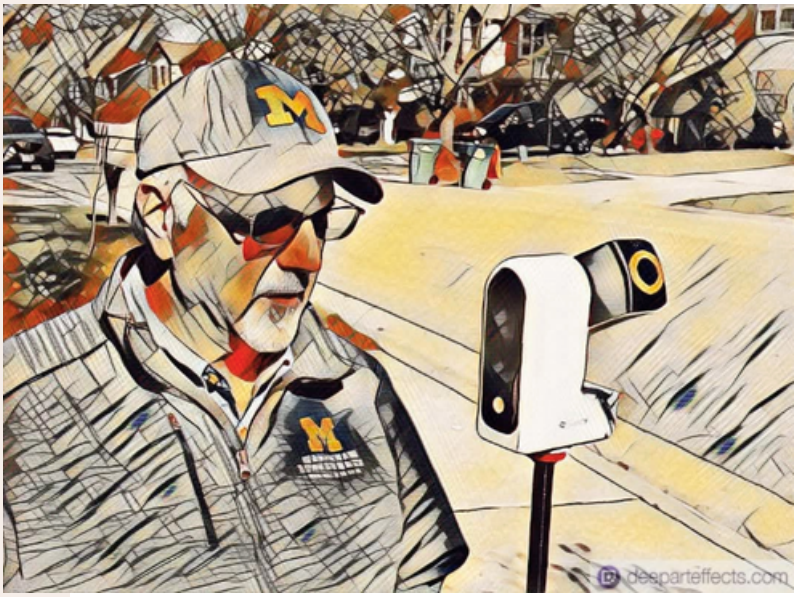


IC59-61, GAMMA CASSIOPEIA

BY TIM MILLER

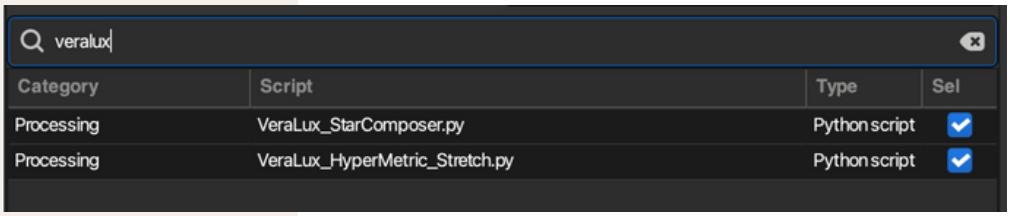
PROCESSING SEESTAR FILES WITH SIRIL

BY JEFF KOPMANIS



So what do you do after you've finished capturing and gone through all of the tweaking and futzing in the Seestar app and the result you've been looking for is still elusive? It means it's time to step out of the automated Seestar world and into the artsy alchemy of traditional astrophotography post-processing. Fortunately, in the past month or so, two Siril plug-in tools, the **VeraLux HyperMetric Stretch** and its companion, **VeraLux StarComposer**, have burst on the scene and thrust high-quality, easy-to-use tools into our hands–for free!

Installing the Tools



Download and install Siril 1.4.0 from https://siril.org. Versions previous to 1.4.0 do not have the Python support the new tools require. Be sure to get the correct variation for your OS and CPU architecture.

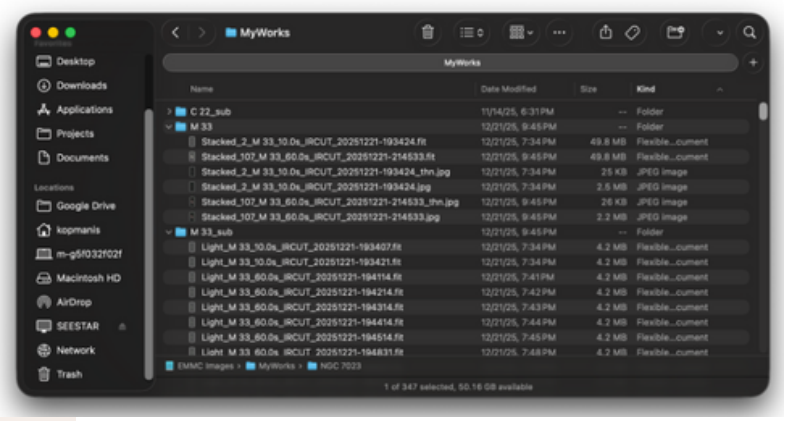
From within Siril, both of the VeraLux tools come as Python scripts that are run in Siril, which you install from the Scripts > Get Scripts dialog.

For some of the final finishing steps, I also recommend and use the CosmicClarity Suite of Python scripts and the binaries they call upon. The scripts are installed using the same Scripts facility as above. The binaries need to be installed from https://www.setiastro.com/cosmic-clarity, and are available for Windows, macOS, and Linux. Install them anywhere you like, but beware, you'll need to tell each tool where those binaries are located.

Additionally, there are two native Siril scripts to perform the initial registration, alignment, and stacking processes automatically for Seestar files. You install them in the same way as above, but under Siril Scripts. They are Seestar_Preprocessing and DSA-Seestar_Mosaic_Preprocessing.

Priming the Pump

You'll need to pull all of the subframes off of your



Seestar and put them into a directory structure that Siril understands. I recommend creating a directory for the object ("M33" in my example case), and inside that directory a subdirectory named lights. Siril will look into that "lights" directory in its processes.

To download the files, you'll need to connect your computer to your Seestar, either through USB, or through Wifi (using either the built-in

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PROCESSING WITH SIRIL continues ...

hot-spot or Station Mode and your home network) – I recommend USB simply for speed. My examples are from macOS, but Windows and Linux will still show the same structure inside your Seestar.

Once your Seestar is connected, you'll see a **My Works** directory, which contains pairs of directories for each object you've imaged. I'm going to use M33 as my target image, so I'll see an **M 33** and **M 33**_sub directories. The "M 33" directory is for finished results, and typically contains the same images that you download on your phone. The "M 33_sub" directory is where the subframes are kept, and the directory we're interested in. Copy only the .fit files from the "M 33_sub" directory into the "lights" subdirectory you created above. Once the files are copied, you can disconnect from your Seestar and shut it down.

First Steps

Siril has to have a Home directory set. Click on the blue House button in the upper left of the Siril window and choose your project directory. In this example, the "M33" I created contains the "lights" subdirectory.

Next, in **Scripts > Siril Scripts,** choose **Seestar_Preprocessing**. Use the mosaic variant if you captured a mosaic. Watch the console lines fly by, and when they finish, they'll generate a .fit file with the stacked result. Use the **Open** button at the top to open that newly created file.

Basic Workflow

Now comes the fun part! Run the following tools according to the notes next to each, usually with the OK or Process button in the dialogs. Close the dialogs when they finish and use default values unless noted.

- **Tools > Astrometry > Image Plate Solver**

In the top-left corner, type in the name of the object for it to plate solve for, "M33" in our case.

- **Scripts > Python Scripts > AutoBGE**

You can also use the native Siril Background Extraction tool, but the Python script seems a little better.

- **Image Processing > Color Calibration > Spectrophotometric Color Calibration (SCCM)**

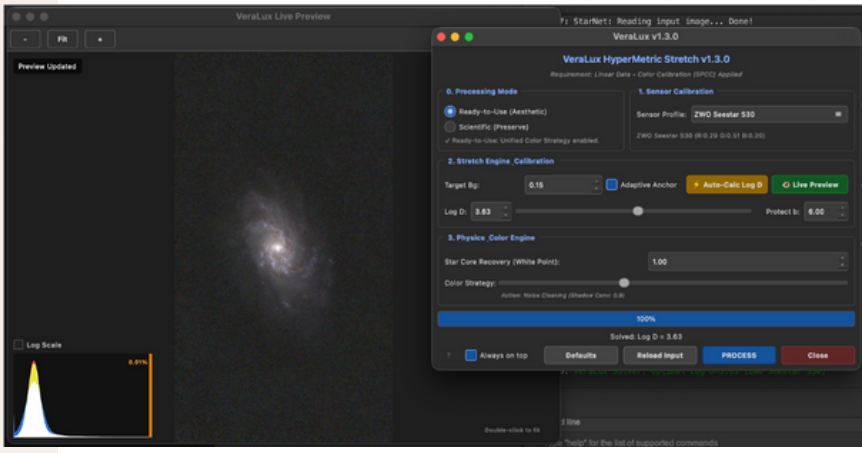
Make sure your OSC camera is the correct model of Seestar, and that the filter used matches the model of Seestar you chose.

- **Image Processing > Star Processing > StarNet Star Removal**

This will automatically load the starless version of the image and leave a star mask file on disk.

- **Scripts > Python Scripts > VeraLux HyperMetric Stretch**

You'll use this tool to stretch the starless image first. With the stars separated out, you can stretch without blowing out your stars.



- **Scripts > Python Scripts > CosmicClarity Denoise**

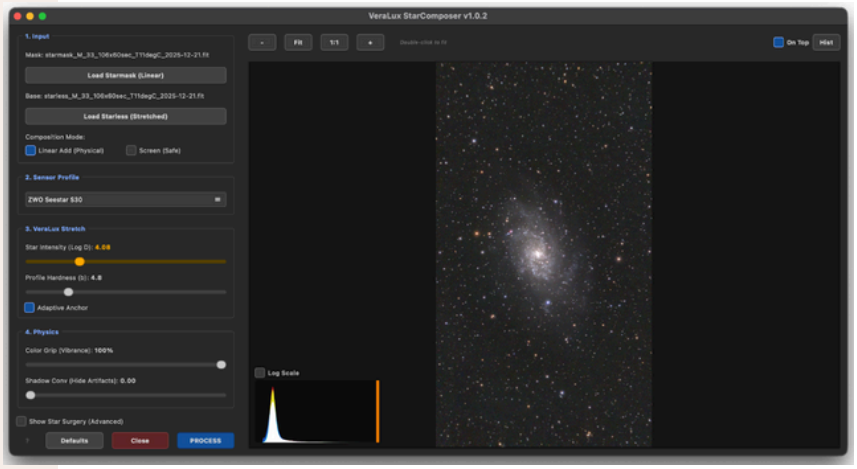
Choose "Full"

- **Scripts > Python Scripts > VeraLux StarComposer**

Use the Star Intensity slider to boost the prominence (or not!) of the star mask.

Use the Profile Hardness for how "point-like" you'd like your stars.

Note: StarComposer will automatically load its resultant file, VeraLux_StarComposer_result.fit

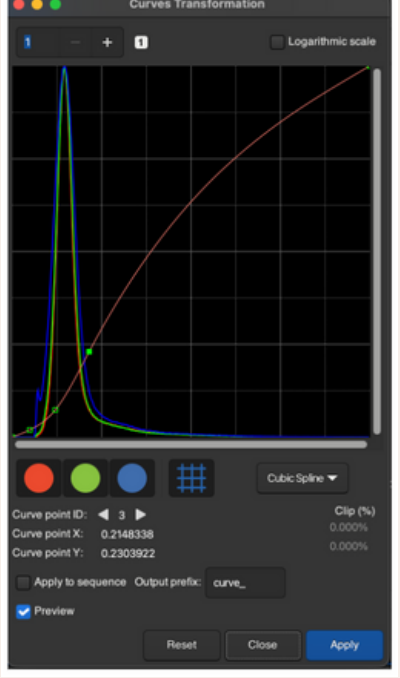


PROCESSING WITH SIRIL continues, page 4

PROCESSING WITH SIRIL continues ...

- **Image Processing > Stretches > Curves Transformation**

Use the Curves tool to pull down the regions on the left of the curve and boosting some of the middle ranges to take out the haze and boost colors.



- **Optional**: If you want to crop your final photo, use your mouse cursor to select what you'd like to crop and then right-click to choose the crop menu.

- Be sure to save to another file (the button to the right of the Save button). And if you want to publish on the web or a fine publication like the Lowbrow Reflector/Refractor, use the Snapshot tool to save to a unique file (.png)! ❑

MANDATORY: Enjoy your results!

THINK OUTREACH IS NOT IMPORTANT? THINK AGAIN!

BY ADRIAN BRADLEY

On June 14, 2024, the Lowbrows held a joint event with the Solar Sisters and the Ann Arbor District Library. This was a 'back to the moon' night where we set up all kinds of telescopes and EAA equipment and pointed it at the moon. We were on a busy corner next to the AADL, and many passersby stopped to look at our equipment, through our equipment to the moon, and asked many questions.

This is the sort of outreach that the Lowbrows are known for, and the primary reason I joined the Lowbrows myself.

I submitted my memories of that night to Chief Editor of Sky & Telescope's Dr Diana Hannikainen, at a chance meeting during the Astronomical League's conference at Bryce Canyon. She loved the idea, especially of three young 'bucks' who came in full of the type of energy you might expect from the coolest kids around, and watched as that persona changed into wide-eyed, childlike wonder when they stared at the moon through Jim Forrester's 14" telescope.

I did my best to document that event. Dr Diana applied a lot of edits, but kept my voice in the final draft. I told her I loved it and to send it in. You will read the results in the February 2026 issue of Sky & Telescope, all the way at the back of the issue where she usually writes her 'focal point' essays.

I do have one painful regret about this article. In it, I stated 'one of my clubs...' which is true because I belong to a few, not just the Lowbrows. But I feel as though I botched an opportunity to put the University Lowbrow Astronomers' name in this article. It's written as a more general outreach article that any club could do any time the moon is visible, on any street corner, in any city. Fellow Lowbrows, you *are* that club, and you, along with the Solar Sisters and AADL, did deserve mention in that article along with the town and campus. Because without all of you, the event would not have taken place, and those three 'bros' would never have taken the time to do something that I'm sure they won't easily forget.

If you aren't so good with the general public and would rather not deal with them, then we have just the thing: Open Houses! These are our opportunities to share the night sky with those who come out to view it under darker conditions than where they live. They have questions about telescopes, astroimaging devices, and the science of astronomy. Come learn about outreach and how to interact with the public. Especially for those of you who love taking astrophotos, this is an opportunity to use those photos for more than just posting to social media and email groups. These photos do not just have to be 'good for show.' They can help educate a public that needs more real interaction with science. When people choose to put down their phones and come look up at the real sky, we should be there to greet them and guide them along in this journey. ❑

YOU'RE INVITED TO ...
ASTRONOMER DEAN REGAS'
ONLINE CLASSES

The Winter Sky and 2026 Sky Highlights
Wednesday January 14, 2026 07:00 PM
Eastern Time

Learn how to identify the stars, constellations, planets (and a few challenging objects) of the season with stargazing expert Dean Regas. Great for all ages. Beginners to experts.

Link:
https://us06web.zoom.us/j/83219059782?pwd=hKwhzHgsb3916gaSD4UaPuVpRArMa8.1

Passcode:055185

Dean Regas, Your Astronomer
Host of the Looking Up podcast
https://www.astrodean.com

UPCOMING SPEAKER SCHEDULE

January 16: Dr. Fred Adams

Topic: The Formation of Jupiter and Other Gas Giants

February 20: Dr. John Monnier

Topic: about new CubeSat project

March 20: Jim Shedlowski

Topic: The Way We Found the Universe

April 17: TBD

May 15: TBD

June 19: TBD

University Lowbrow Astronomers - Meeting Minutes December 19, 2025 7:30 pm - Revised

Our December meeting at the Detroit Observatory began at 7:34 PM with returning guest speaker Dr David Levy joining us from Arizona via Zoom. His PhD dissertation combined Astronomy and Literature, and included a review of all references to the night sky in the works of Shakespeare. A life-long comet hunter, he is most famous for collaborating with the Shoemaker's in discovering periodic comet Shoemaker-Levy 9. Its spectacular demise by crashing into Jupiter was captured by the Hubble Space Telescope, creating impact spots on Jupiter larger than the earth. His talk covered the discovery and subsequent scientific and media attention of that famous comet. Dr Levy continues to search the night sky for comets from his home in Arizona.

At 8:46 PM Charlie Nielsen began our business meeting.

The Lowbrows will participate in an evening event with the Chelsea Elementary School PTO on January 30th 5:30 PM to 7:30 PM. This event is closed to the public, only participating lowbrows, students, and parents of Chelsea Elementary may attend. Contact Charlie if interested in helping.

The Belleville Library asked the lowbrows to help with an astronomy related event in late Winter or early Spring, no date has yet been set.

Doug Warshow found a Christmas card from the Vatican Observatory in our mail thanking us for our support.

Newsletter Editor Amy Cantu, via email, had no report other than requesting photos and articles for the January newsletter

Don Fohey, via email, continues to work on the tri-fold brochure for the club.

VP Tim Miller, with Jeff Kopmanis and Barry Chapman, continue to work on improving the design, relevance, and utility of our "new" new website. Portions of our web presence still relies upon U of M infrastructure, which we will eventually lose access to. The team continues work to ensure our web based assets will be independent of changes at U of M.

Observatory Director Jack Brisbin reported the observatory is in good shape and the heaters are working. Jack may give a talk on the history of the Hulbert-McMath telescope to the Windsor RASC.

Jeff Kopmanis thanked Tim Miller and Barry Chapman for their ongoing work supporting our website. He also mentioned that UK based Brite Publishing sent us a paper copy of their first book: The Living Universe by Brian G Turner. It is available for anyone to read.
For more information see their website: https://www.britepublishing.com/

Brian Ottum had 2026 calendars with his photos inside for sale. Contact him if you are interested in purchasing one. He intends to speak at a future Lowbrow meeting about the "Bionic Eye" night vision device.

VP Ken Cook reported that Christine Cook sent information for our upcoming events to the Ann Arbor Observer. He continues working on the Watson APO refractor and scheduling speakers.

Jim Forrester has sent proposed 2026 open house dates to the officers. There are many available dates this year and we need member support for each openhouse date we publish. The new moon is September 9th and that has moved other star parties (Oakie-Tex) into October. The schedule also avoids Astronomy At The Beach and the Great Lakes Star Gaze.

There was discussion about supporting open houses: watching the weather conditions, coordinating members, updating our social media and hot line.

PLEASE HELP: If you are in the area, please attend an open house. 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.

The "new" new website was shown on the projection screens in the meeting room. A goal is to allow uploads of member content so there is a place to share our images and astronomy related activity. Jim Forrester pointed out we need to be careful about copyrighted material, perhaps with moderator review prior to publishing content.

Reminder: August 12, 2026 will be a total solar eclipse beginning in the Arctic and ending in Europe. This may change our August meeting location.

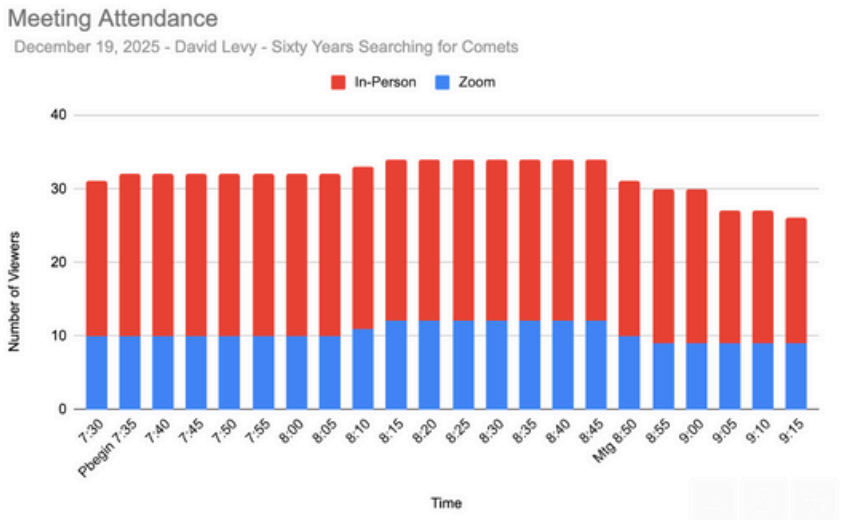
Treasurer Doug Scobel emailed his report:
We have 215 memberships.
He made our usual monthly payment to AT&T for our Open House "hotline".
He paid the USPS $8.89 to mail a low profile cap to November speaker Jeff MacLeod.
We have 10 and 7 RASC wall calendars and observer's handbooks, respectively, available to order.
Please email Doug or Jeff Kopmanis if you are interested in purchasing any of the RASC items.

As always, the records he keeps are open for club members to examine.

At 9:18 PM Adrian Bradley made a motion to adjourn, supported by Kurt Hillig.

Minutes respectfully submitted,
Ken Cook, VP

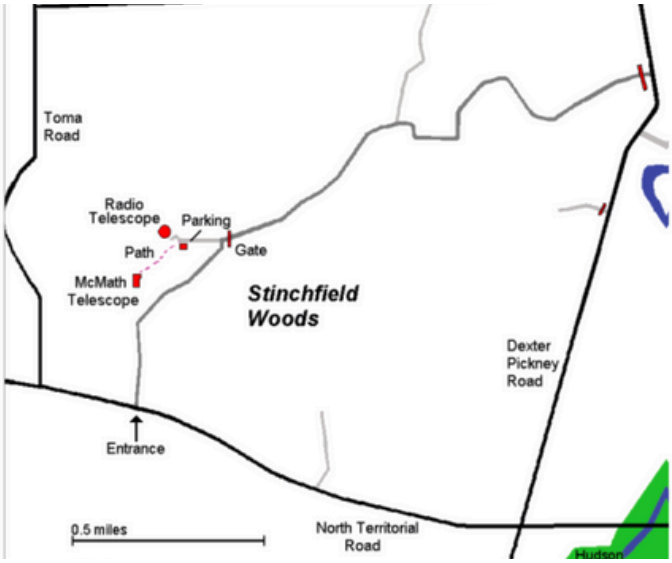
Max	**12**	**22**
Percent	35.29%	64.71%
Total	34	



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.

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.

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

Email to all members
Lowbrow-members@umich.edu