



REFLECTIONS / REFRACTIONS

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University Lowbrow Astronomers

May 2020

VOLUME 44, ISSUE 5

Lowbrow Virtual Meeting Friday April 17th, 2020



Presentation Title (above)



Professor Michael Meyers (above)

The virtual meeting was a huge success with some 52 individuals either participating or watching. Jeff Kopemanis set up a “Zoom Meeting Room” to participate in the meeting and a “youtube live stream” to watch it.

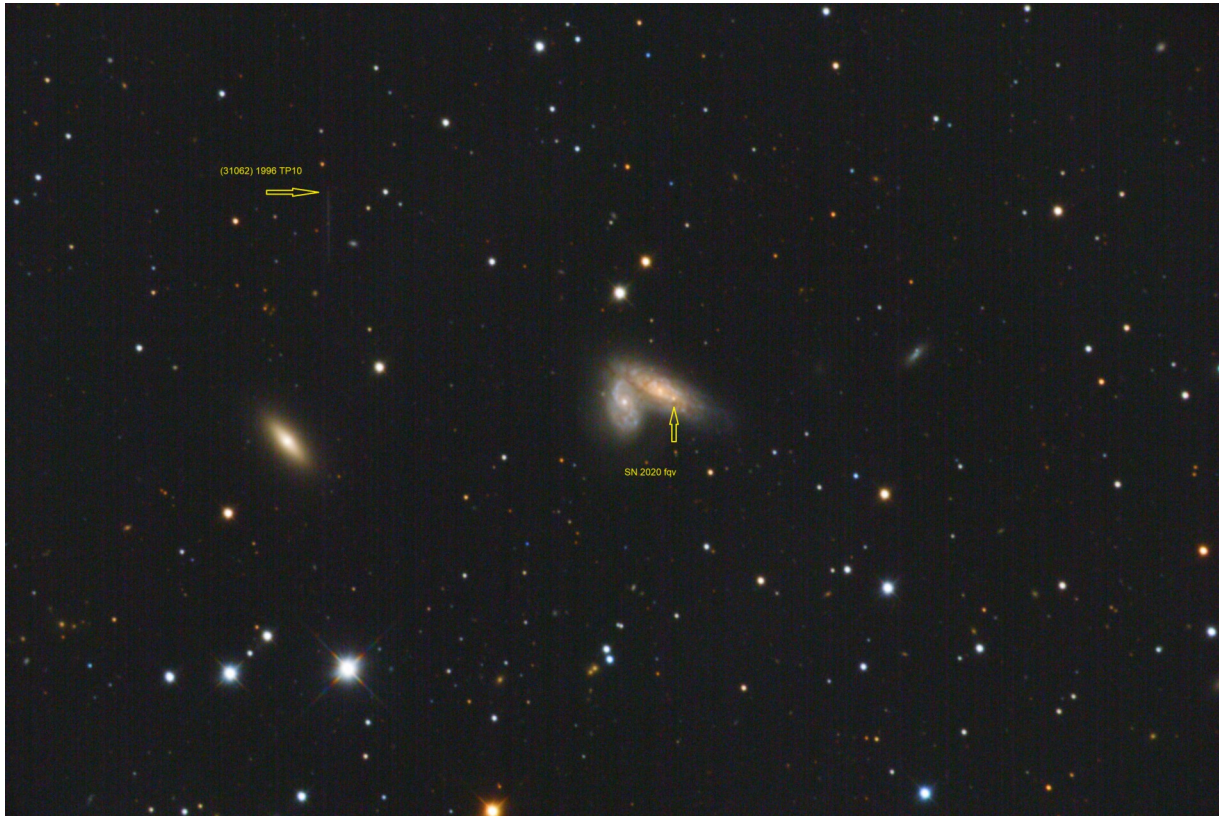
Charlie Nielsen conducted the meeting, Jeff and Adrian Bradley co-hosted and moderated the event. To prevent nefarious individuals from

disrupting the meeting a password was required. A few of our out of state members where able to participate. The meeting was recorded, so if you missed the live meeting you can watch it at the link listed below. Professor Michael Meyer’s presentation was well received and afterward he answered member questions much as he would have at an actual in person meeting. Our May meeting will likely be held again virtually.

YouTube Link: https://youtu.be/O0tCM67z1_g

Newly Discovered Super Nova

By Doug Bock



April 21, 2020, Siamese Twins Galaxies NGC 4567 and NGC 4568. Super Nova 2020fqv .
Asteroid (31062) 1996 TP10

46 x 180 second lights
35 x 300 second lights
24 x 180 second darks
24 x 300 second darks
50 flats
10" f/8
RCZWO asi071mc PRO,
gain 300, temp -5C

Doug Bock wrote to member email April 22nd: “Results from last nights run (April 21, 2020)”

“I decided to image the Siamese Twins galaxies which has a newly discovered Super Nova in it. As it happens I also captured an asteroid. Attached (above) is the image with both the SN and Asteroid identified” “I was asked how I identified that asteroid. I used TheSkyX large asteroid database .”

Information from Wikipedia:

NGC 4567 and NGC 4568 (nicknamed the Siamese Twins or the Butterfly Galaxies) are a set of unbarred spiral galaxies about 60 million light-years away[1] in the constellation Virgo. They were both discovered by William Herschel in 1784. They are part of the Virgo Cluster of galaxies. Only one supernova (SN 2004cc) was observed in the Siamese Twins until March 31 2020 when the Zwicky Transient Facility detected the rapidly-rising supernova 2020fqv [2]. These galaxies are in the process of colliding and merging with each other, as studies of their distributions of neutral and molecular hydrogen show, with the highest star-formation activity in the part where they overlap.

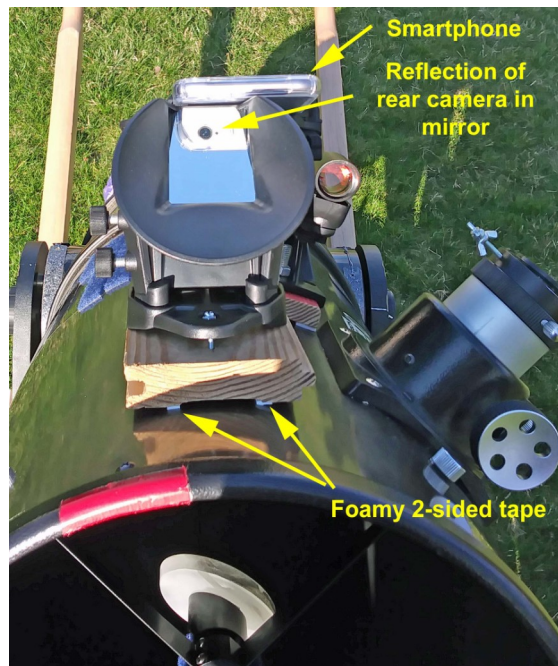
Doug Bock
Northern Cross Observatory

Getting Started With the Celestron StarSense Explorer

By John Manney

Celestron's StarSense Explorer is a new approach to aiming a "Push-To" telescope. It is marketed as a component of their entry-level telescopes. The system consists of a special smartphone bracket, and proprietary software. The user needs to provide a suitable smartphone.

I have an Orion 10" IntelliScope (a Dobsonian Push-To scope). I have found that the two-star alignment is time consuming and not very accurate. In addition, alignment can be lost due to a power glitch or an error. In an effort to make my viewing sessions more productive, I bought Celestron's 114 mm reflecting telescope with the StarSense system for \$179. I transplanted the smartphone bracket to my Dobsonian.



The bracket is shaped to fit a much smaller tube, so I fastened it to a wood block, which is secured to the tube with foamy 2-sided tape.

After a couple of setup steps, operation is quite simple: start the app, select an object, and point the telescope at any group of stars. Whenever the telescope is stationary, an image (2 seconds of stacked exposures) is taken and plate solved. It is continuously updated every 4-5 seconds. A message "Scope Position Found" is displayed. The sky map display is then centered on the scope position. An arrow appears, showing you which way to move to your selected object. While moving, guidance is provided by the phone's compass and accelerometers. As soon as motion ceases, an image-based update will aid in final positioning.

I have found that the calculated scope position is accurate, but changes randomly by 0.1 to 0.3 degrees with successive plate solution updates. With my 9 mm eyepiece (0.5-degree FOV), the object is within the field of view most of the time. With practice, I am learning which of the indications are the most reliable.

Even with this limitation, the StarSense has given me a tremendous improvement in pointing accuracy. Previously, I would move to the calculated position and explore with a wide field eyepiece. Once the object was found, I had to change eyepieces and re-focus. With StarSense, I can leave the 9 mm eyepiece in place without interruption.

Elimination of the two-star alignment saves at least 20 minutes, so the precious clear-sky time is used more efficiently.

The system performs very well, even in light-polluted skies. It has completed the plate solution in regions where no stars at all were visible to the naked eye. It can work around patchy clouds, as long as enough stars are visible. I have trouble when too many stars are blocked by houses or trees. When the sky has a medium to heavy haze, performance is spotty. (continued)

The Roman Goddess of Love Visits the Seven Sister (Lowbow Images of Venus and the Pleadies)



Venus and the Pleiades – April 2, 2020
 Canon T3i, w/300 mm lens @ f/7.1
 20 seconds @ ISO 800
 Piggy back on the 10”
 I decided to remove the flare in this version.
 Doug Bock



Venus and Pleiades April 3, 2020 by Abe Oraiqat
 Nikon D750
 Oshiro 135mm @ f/4
 ISO 1000
 Exposure 5s (stacked 40 of them)
 Processed using Deep Sky Stacker and Photoshop
 (Image Cropped by Editor)

Getting Started With the Celestron StarSense Explorer

Continued

The system requires a compatible smartphone to take the sky images, perform the plate-solve, and prompt the user which way to move the telescope. Celestron has provided a list of "compatible" smartphones, but not all phones are equal. I used an LG G6, which was on the list, but it often gave the message: "Unable to locate telescope. Please aim at a clear area", even when the sky was clear. After switching to an iPhone 6s, I had no further troubles.

The app is geared toward beginners and doesn't have a lot of our favorite features such as observing lists, or the ability to highlight groups of objects. The database includes seven of the Planets, the Messier and Caldwell objects, and a few NGC's. Stars, down to around magnitude 8.5, are included. In most cases, these stars can be used as guides to the uncatalogued deep-sky objects.

This is a real breakthrough in scopes for beginners. The StarSense Explorer is truly easy to use and has a database big enough to keep things interesting for a long time.

Celestron is tight-lipped about any "add-on" system for existing telescopes, but I don't think that they will miss this opportunity. I didn't want to wait, so now I have an extra telescope.

Using the StarSense Explorer reminded me of an event when I worked for Chrysler. We saw a prototype minivan with sliding doors on both sides. Up to that time, domestic minivans had only a single sliding door. I thought: "This will be a big seller." That was an understatement!

Here are some links for more information:

<https://www.celestron.com/pages/starsense-explorer-technology>

<https://www.celestron.com/collections/starsense-explorer-smartphone-app-enabled-telescopes>

See the Witch's Head? and 1998 OR2 Report

By Brian Ottum Ph.D.



Brian wrote in an email to members on April 10th.

“I’m still struggling to learn how to merge images to create mosaics, but here’s my latest attempt. Two frames, each 4-5 hours of exposure, taken in February (and sat there until the quarantine gave me time to process). Funny that our phones can merge individual frames within a second to make a pano, yet I take hours to merge just a couple.

Photoshop is my tool of choice.

IC 2118 is a cloud of dust that reflects the nearby Rigel’s brightness, scattering to create blue the same way our sky does.”

1998 OR2 Observing Report

1998 OR2 is a “potentially hazardous asteroid,” 1.5 mile in diameter and on an orbit that has it fly by Earth. It will make its closest approach April 29, about 4 million miles from Earth (16 lunar distances). I’ve previously shared my video showing the asteroid moving against the starry background.

Last night (Sunday the 26th) the weather was uncharacteristically clear here in Saline. So I rolled out my 14.5” Starmaster from the garage. There was a bit of dust on its cover, due to lack of use. The twenty year old scope had been giving me fits, so I replaced all the wiring and computer last year. Works great now.

As twilight faded, I consulted SkySafari on my phone. It was not hard to star-hop into the field. But which “star” is the asteroid? It was supposed to be about mag 11.

I put in the 7mm Nagler that was once John Causland’s, in order to get some higher power. The field did not match SkySafari. One star was not where it was supposed to be. So I checked the SkySafari time and confirmed it was correct. I stared for a few minutes and noted that one star was very slowly moving. Kinda like closely watching the minute hand of a wall clock. Barely perceptible motion, if you get your nose right up to it.

SkySafari was about 6 arc-minutes off in its prediction. But that was good, because at about 10:30pm, the asteroid almost occulted a 12th magnitude star (GAIA 3767243152512195072 in Sextans). It was amazing to watch the asteroid creep up to and then pass the star. For that, I used an eyepiece that gave 325X.

It’s so rare that we actually see things move while watching in the eyepiece!

April Observing by Awni Hafedh

April 2nd, 3rd and 5th - 2020

We had three beautiful days with clear skies in the beginning of April. The main events were Comet ATLAS C-2019 Y4, Venus alignment with Pleiades M45, Pink Super Moon and last but not least Solar activities with two huge Prominences.

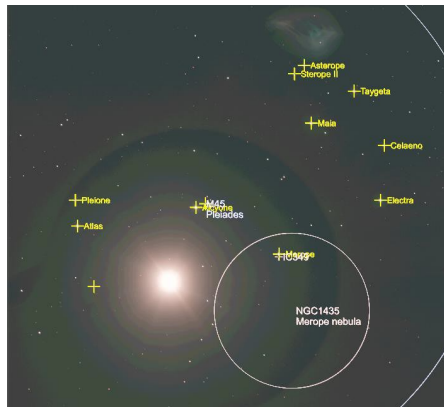
Equipment used are:

For the Comet and Venus-Pleiades M45 alignment - Celestron EdgeHD 9.25 with hyperstar adapter and ASI1600MC-cool.

For Venus and Lunar images - Skywatcher 180 Mak and ASI224MC, I used a Televue 2.5x powermate barlow for Venus.

For Solar time-lapse - Lunt LS60THa solar telescope and ASI290MM

Let us start with the most boring image in my list which is the Venus-Pleiades M45 alignment using the hyperstar setup, as you can see the bright star there is Venus and you definitely see Pleiades M45 stars in the background. I would usually throw this data in the garbage, but it is a once in a life time event and who knows I might learn some new technique in the future to enhance it.



Comet ATLAS C-2019 Y4

Next was capturing the Comet ATLAS C-2019 Y4. I decided to capture a time-lapse of the comet, captured 30sec sub with 15sec delay in between, started at 9:45pm and ended at 5:35am with almost 500 subs. I ended up stacking 200 subs to create the single image of the comet and created the video using PixInSight Blink process. I am amazed on how fast this thing is moving, unfortunately I heard that it is getting close to the Sun and it is starting to break up, I hope I can capture it again when there is no Moon. I did include a video of the Comet time-lapse below and a bonus image of the comet and meteor together ... really cool.



Time-Lapse Video is in the below link:
<https://bit.ly/C-2019Y4>



Comet and Meteor Image



Venus

Some were discussing that Venus looked like a half moon and made me curious so I imaged it. This was 5000 frames video stacked 15% using Autostakkert3 with sharpening in PixIn-Sight. I have to say that I do like the Skymaster 180 collimation with the help of the Tri-Bahtinov mask.

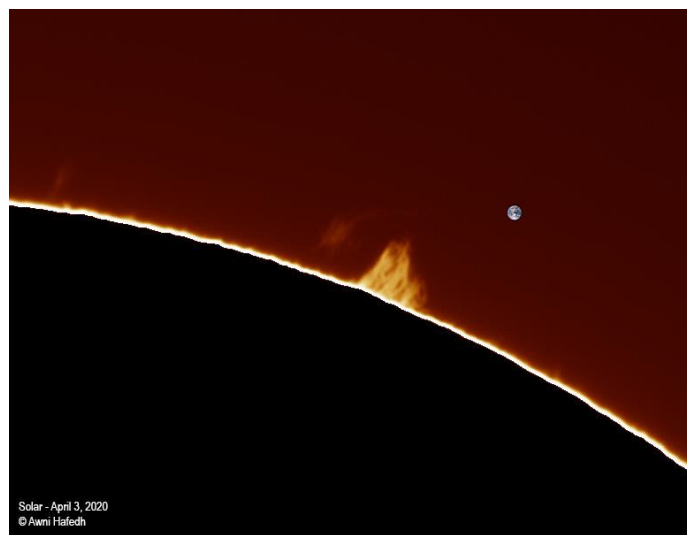
April Observing (continued)



I also slewed to the Moon on the same night that I imaged Venus, I did remove the 2.5x Powermate barlow and put on a Red filter (I should have used IR pass filter ... next time), captured three parts of the moon where the crater shadow were very interesting and I have to say the final images looked amazing.

Now to the finale! I did see that the sun was having some cool activities, so I took out the solar telescope. I was very happy that everything was still working especially my DIY remote focuser and pressure tuner. For two days I captured two prominence time-lapse using FireCapture. Each one was 200 videos 10sec each with 30sec delay in between. Now processing it was a nightmare and I will definitely write the details in a different email. A couple of cool things is how fast those prominences move within a two hours time-lapse. I also scaled Earth next to those prominences, just look at how small are we next to the Sun's mighty activity, simply speechless. I did include a video link to the time-lapse below, hope you like it.

<https://bit.ly/Solar20200402> <https://bit.ly/Solar20200403>



Upcoming Events

Note May Open House and other events have been canceled.

DATE	EVENT	LOCATION	
Friday May 15th. 7:30 pm	Monthly Meeting	By Video Conference. Instructions will be emailed to members,	Professor and Chair David Cinabro, WSU Physics & Astronomy Dept., Topic: Zowada Observatory

University Lowbrow Astronomers

Monthly Club Meeting Minutes

17 April 2020, 7:36pm, Individual Live Connections via conferencing tools

After some chatter to allow for late arrivals, President Charlie Nielsen called the meeting to order and then introduced our speaker.

Speaker

Who

Professor Michael Meyer, U/M LSA Astronomy

Details

A Wider Perspective on Our World: Searching for Earth-like Planets

A Q&A session occurred afterwards with audience members using multiple formats to ask questions. Charlie thanked our speaker for the presentation and also for his patience and cooperation while we learned to work with these new tools.

Business Meeting

Name	Topic
Vice President Adrian Bradley	Wanted to give an update about Astronomy At The Beach. GLAAC will continue to hold off on it's decision about whether or not to cancel the September event.
Treasurer Doug Scobel	<p>After the meeting by email:</p> <p>My report:</p> <ul style="list-style-type: none"> • 151 memberships • \$7423.32 in treasury • Sent \$60.00 to sponsor Peach Mtn Clear Sky Chart for another year • Paid \$118.00 to renew PO box for another year • Paid Don for some recent newsletter printing and mailing costs • Will mail two caps to guest speaker Mike Meyer tomorrow (Saturday) <p>Doug</p>

Addendum

Special thanks to our two conferencing videographers, Jeff Kopmanis and Adrian Bradley.

Over 50 devices attended tonight's virtual meeting.

Adjourned

8:43pm

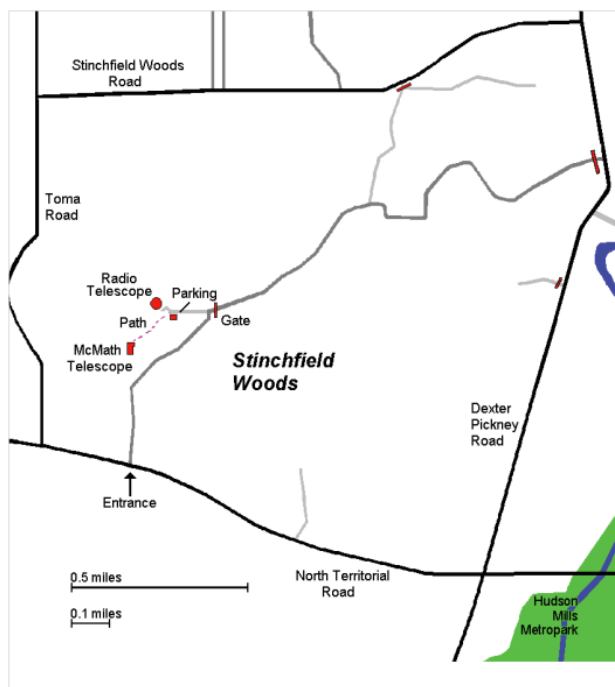
Minutes taken and transcribed by

Joy Poling

Places & Times

Monthly meetings of the University Lowbrow Astronomers are held the third Friday of each month at 7:30 PM. The location is usually Angel Hall, ground floor, Room G115. Angell Hall is located on State Street on the University of Michigan Central Campus between North University and South University Streets. The building entrance nearest Room G115 is the east facing door at the south end of Angell Hall.

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 radio telescope, 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 cancelled if the forecast is for clouds or temperature below 10° F. For the most up to date info on the Open House / Star Party status call: (734) 975-3248 after 4pm. 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. Evening can be cold so dress accordingly

Lowbrow's Home Page

<http://www.umich.edu/~lowbrows/>

Membership

Annual dues are \$30 for individuals and families, \$20 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula. Membership entitles you online access to our monthly Newsletters and use of the 24" McMath telescope (after some training). A mailed copy of the newsletter can be obtained with an additional \$18 annual fee to cover printing and postage. Dues can be paid by PayPal (contact the treasurer to find out how) or by check made out to "University Lowbrow Astronomers" and mailed to:

The University Lowbrow Astronomers

P.O. Box 131446

Ann Arbor, MI 48113-1446

Lowbrow members can obtain a discount on these magazine subscriptions:

Sky & Telescope - \$32.95/year or \$65.90/2 years

Astronomy - \$34.00/year, \$60.00/2 years or \$83.00/3 years

For more information about dues or magazines 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: Don Fohey donfohey@gmail.com to discuss format. Announcements, articles 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:	Adrian Bradley (313) 354 5346
	Jim Forrester (734) 663-1638
	Joy Poling
	Dave Jorgensen
Treasurer:	Doug Scobel (734) 277-7908
Observatory Director:	Jack Brisbin
Newsletter Editor:	Don Fohey (734) 812-3611
Key-holders:	Jim Forrester
	Jack Brisbin
	Charlie Nielsen
Webmaster	Krishna Rao

A NOTE ON KEYS: The club currently has three keys each to the Observatory and the North Territorial Road gate to Peach Mountain. University policy limits possession of keys to those who 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



University Lowbrow Astronomers



Member Club



Astronomical League Member Society
#201601, Great Lakes Region

University Lowbrow Astronomers
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STAMP