

Top Ten Reasons We Knew We Had A Dewy Night

by Doug Scobel

Okay, because we observe mainly in Michigan, we're all familiar with observing under dewy conditions. Nothing new here. What could I describe that would be any worse than you've already seen? Well, at CLEAR III a couple months ago, we encountered the dewiest conditions under which I have *ever* observed. Now that's saying something considering I've been doing this kind of thing for over forty years.

A number of us Lowbrows were up at Diane Ives's farm near Atlanta, MI. I was joined by Mark Deprest, John Causland, his friend Debbie, Mike Radwick, Jim Forrester, Don Fohey, Brian Ottum, and Dave Snyder. We had a lot of dew the first night, but the temperature ended up dropping below freezing (I believe it got down to the mid-20's), so the dew turned to frost. I don't mind telling you that was a cold night in the tent after I turned in! The second night was much warmer, by at least ten degrees, but the dew was tremendous. It was copious. It was prodigious. In short, it was really dewy!

So how dewy was it? Here's my list of the top ten reasons we knew we had a *very* dewy night:

Number 10: When I got my sunglasses out of the car the next morning, they were totally dewed over, and they were in the front of the car, enclosed in the console.

Number 9: When I looked at my eyepieces the next morning, they were all dewed up, and I had put the caps on and covered them when I put them away for the night.

Number 8: The removable weights inside Jim Forrester's ankle weights that he uses to balance his Dob were covered with dew – and they were *inside* their sleeves!

Number 7: While observing, my lighted magnifying glass was dewed over, and it was sitting inside the back of my car. I've never had that happen before.

Number 6: The cloth that Don Fohey uses to wipe off his Telrad window got so wet as to render it useless.

Number 5: Not only did the secondary mirror on my Dob dew up, but even the spider vanes were completely wet.

Number 4: So much dew dripped off my Dob that by morning the rocker box actually had puddles in it. It looked more like a drip pan than a rocker box.

Number 3: My Dob collected so much dew that it threw it out of balance. When pointing at low altitudes it wouldn't stay put and would slowly drop down to below the horizon.

Number 2: I had to remove the dew from my dew remover before using it. It was so wet I was afraid it would short out.

And the **Number 1** reason I knew we were having a dewy night: To understand this one you have to know how I normally do my observing. I put all my charts and other items inside the back of my car and leave the hatch open. This keeps everything dry inside while everything else is getting wet outside. So as the evening progressed, I noticed that some items inside the car were getting wet. And not just a little damp – but actually wet. Very curious, until I realized that dew was collecting on the *underside* of the open hatch, and running down and dripping into the inside of the car, and onto all my stuff. I have never seen *that* happen before!

So did we have a dewy night? I would say so. But did we have a good time? You bet. Most of us have our ways of dealing with the dewy conditions under which we often have to observe. That night certainly put all our equipment and resolve to the test, but we all were pretty much able to observe as far into the night as our stamina would let us. We may be Lowbrows, but we know how to deal with a little bit of dew. Or a lot.

For a few pictures of the CLEAR III event, here's an album of a few pictures I took there:

<https://picasaweb.google.com/djscobel/CLEARIII?authuser=0&authkey=Gv1sRgCJuomenHno2-3wE&feat=directlink>

Did you see 2005YU55?

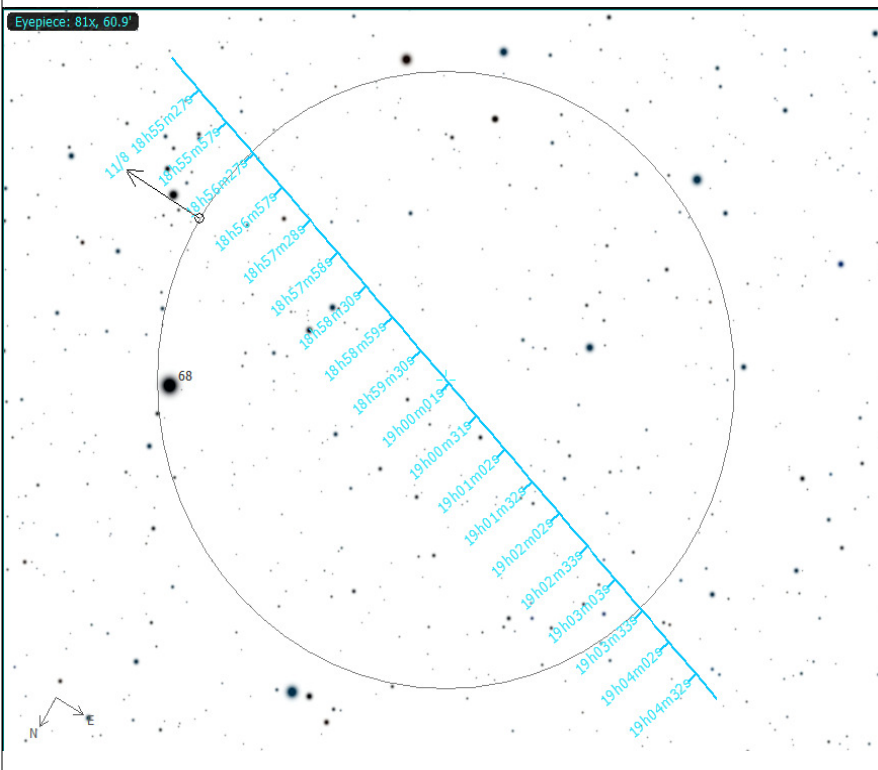
By Robert Wade

I was fortunate to meet with success grabbing about 30 minutes observing this tiny gem scoot across Delphinus on the evening of November 8 - soon after closest approach. The flyby was in all the major news outlets, including front page on the Wall Street Journal(!) online edition. So, with perfectly clear southeast Connecticut skies for the day and forecast for the night, I had earlier decided to give this a shot.

I wirelessly control my 20" Obsession using SkyTools 3.0 together with Argo Navis digital setting circles and ServoCat motion control. ASCOM 6.0 had been recently released, so I upgraded the software on my PC and needed to also upgrade the ServoCat driver, which is used by ASCOM/SkyTools. I hadn't yet ensured that everything communicated properly and so was uncertain that I'd be able to find and track the asteroid.

I set up in my driveway in Ledyard - perfectly visible from the street with all the attendant after-work traffic and headlights rounding the nearby intersection. No matter, there was an almost full moon, after all. Setting up a large scope in full view of the public is bound to draw curious glances or bystanders. No exception here as some neighbors dropped by, and after some explanations of what I was doing, kindly renewed their offer to let me observe on their extensive property any time I wanted.

After my neighbors left, I turned on all the electronics and needed to do some basic troubleshooting to get the drivers configured. It didn't take long for Kate (SkyTools synthetic voice) to announce that the scope was connected to the computer and ready to go. I then



downloaded the latest orbital elements for 2005YU55 and directed Kate to find the target.

Those who use SkyTools know that it is quite easy to get a simulated eyepiece view with background stars configurable to ambient light/seeing conditions. It also lies below conscious thought that once you select a target, the object is stationary in that simulated view. I popped in the 31mm Nagler and commenced hunting. And hunting. I had to get off the ladder multiple times and consult the eyepiece view in SkyTools because the ambient moonlight was really washing out the field and making fewer stars than predicted visible in the eyepiece. Low and behold, staring at the simulated eyepiece view - it moved! That was really startling and a novel experience, though in 20/20 hindsight, fully predictable. That near earth object was moving fast enough that SkyTools kept adjusting the simulated field of view!

To give you an idea of how fast 2005YU55 was moving, consult the attached graphic.

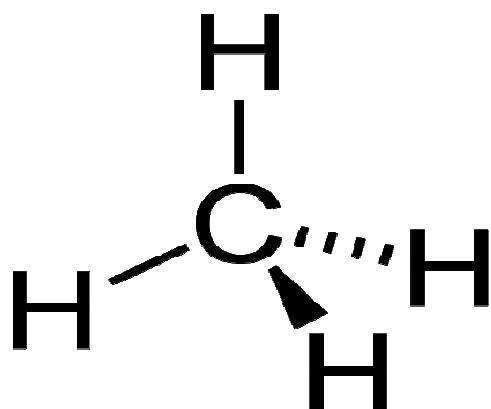
Armed with this new knowledge that I had to look *fast* in any eyepiece perusal, it took about 10 minutes to finally eyeball the rock. That puppy was *faint* - barely brighter than the dimmer stars in the eyepiece with the bright moon not too far away. During the next 30 minutes or so, I noticed distinct fluctuations in brightness. During one of its "dim" phases, I lost it after having taken my eyes away from the eyepiece for about 30 seconds. That rock was really moving - quite visibly so. With a 61 arcminute fov, it took about 6 minutes to traverse the eyepiece. Wow. Eyeballing something the size of an aircraft carrier 9/10ths of the way to moon was simply an exhilarating experience. It was far too easy to imagine a Klingon warbird giving earth a flyby and deciding we weren't worth the effort.....

Is Carbon-based Life Our Only Option?

By Marion Muzor

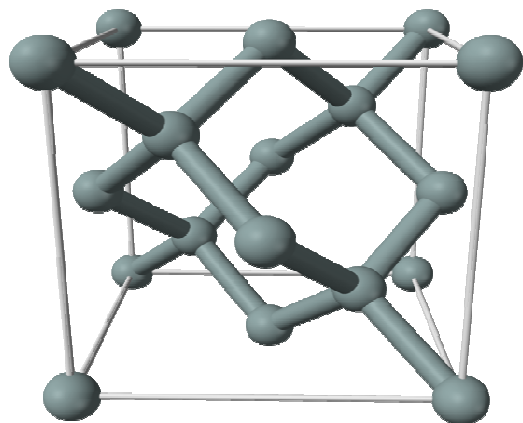
Every life form that has evolved on Earth, as far as we know, is a carbon-based life form. You know this, of course. Carbon is ideal for forming long chains in an oxygen/liquid water environment.

We say carbon "likes" to form bonds because it readily bonds in this type of environment. This is the simplest organic compound, methane.



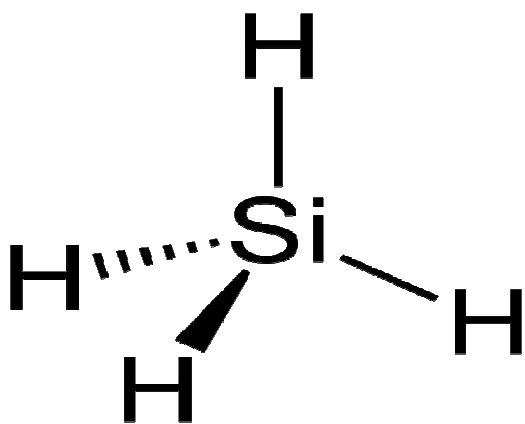
I'm not much of a carbon chauvinist, but I would expect some type of carbon-based life form in any similar environment. Why? Because although I do think it's possible to have other-based life, like silicon, they probably wouldn't evolve in our type of environment. They probably couldn't.

Take silicon, for example. In an extremely cold environment, devoid of oxygen and liquid water, with another liquid solvent (like liquid methane – sound familiar?), silicon readily bonds and forms chains, as opposed to the lattice-shape it forms here. Chains are important; you'll just have to trust me on that for now.



This represents a molecule of silicon in this atmosphere. It forms a lattice structure that's not useful for organic compounds.

Anyway, the silicon chains are called silane polymers, and they react violently when in contact with liquid water or oxygen. It produces an explosive immolation (it burns suddenly and fiercely). You certainly wouldn't want to touch anything walking around that's based on silicon. Star Trek's "Horta", a silicon-based life form that looked like a rock, would have erupted violently immediately in contact with the artificial oxygen atmosphere. Of course, the Horta supposedly had some kind of protective layer (which wouldn't have evolved in the atmosphere the Horta evolved in, but oh well).



This is silane, which will form bonds in chains (silane polymers) which are useful when forming organic compounds.

Now, who can tell me a place fairly close to the Earth that is cold, devoid of oxygen, and has liquid methane? I'll give you a hint; it's a moon in this solar system.

A Folded Six-Inch Refractor

By Tom Ryan



I spend a lot of time in places that sell used machinery. This gives me a chance to both avoid watching television and to see which machines are becoming obsolete; the better, perhaps, to focus on the ones that aren't. And because my interest is not merely academic (I like machines – they multiply my abilities), I sometimes see something that I want to buy.

Such was the case when I was wandering through the aisles in HGR Industrial Surplus in Euclid, Ohio. There, amidst the worn out air compressors, the used office furniture, the unidentifiable electronic gizmos, was a six inch folded refractor on a very heavy-duty mount.

This is not as unusual as you might think. I have found some pretty exotic optical equipment in places like this, including an 18" optical flat, a 16" f/6.5 parabolic mirror, and an 18", long focal length mirror which was gold plated for high reflectivity in the infrared. (I foolishly passed on the opportunity to buy a pair of 5" Naval binoculars.) So the refractor was not such a surprise. My problem came in getting it out of there before it was wrecked (a fork lift giveth, and it can take away), and for the lowest possible price.

So I wrote down the number on its tag (they had painted that number on the side of the refractor, too, in case some enterprising customer switched its tag with one from a box of used nuts and washers) and went in search of a salesman. When I found one, the conversation went something like this:

"Say, I found something over in aisle three. Here's its number. Can you tell me anything about it?"

The salesman turns to his computer, enters the number, and says “Yeah. Here's a picture of it we took when it came in. We've got that listed as a Laser Inspection System for \$999.00.”

“Well, I think someone stole the laser part of it, because that part shown in the picture isn't on the thing out on the floor.”

The salesman just looks at me. This happens all the time in a place that's the size of an airport hangar and is open to the public. Small parts disappear into pockets continuously, and half the salesman's job is to sell the stuff before it evaporates.

“Do you know anything else about it?”, I ask. I'm trying to see his screen to see when it came in, because the price drops every month that an item doesn't sell, but the salesman is now blocking the screen from my view.

“No, not really,” he tells me. “Are you interested in it?”

“I might be. I'm not sure what I'd use it for, but it looks kind of interesting. Would you take \$200 for it?”

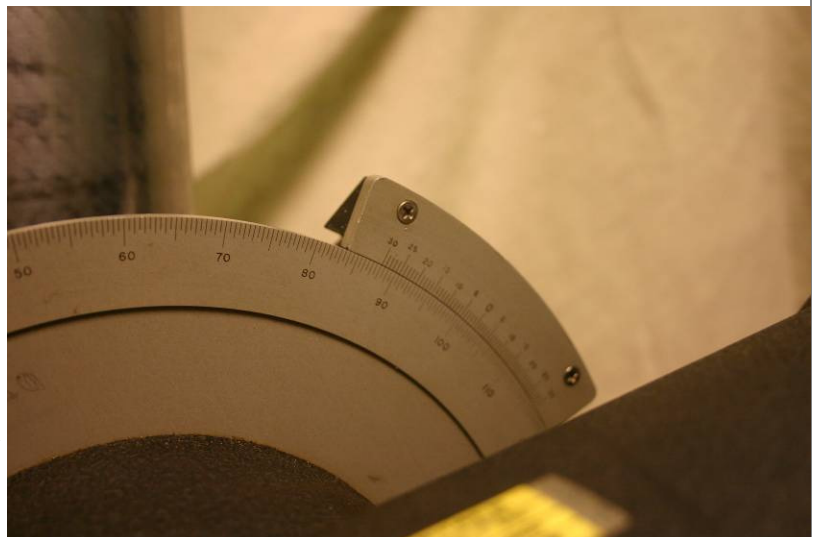
The salesman explains that he couldn't possibly sell it for that price, because his wife is starving and his kids need shoes or an operation or something like that, and eventually we settle on a price of \$500, which might or might not be a good deal for me, depending on the quality of its optics and whether or not I can ever make any money by using it. But I pay him and some guys load it into my car and I don't find out that it weighs 185 lbs until I try to take it out of my trunk.

Eventually, I get it set up on the picnic table in my back yard, with the intention of viewing some stars with it. It has a non-standard focuser, but it came with an integrated reticle eyepiece that is fairly high power, and I figure that I can modify the eyepiece holder if the lens is good. When it gets dark, I find a bright star and, sure enough, the star looks pretty sharp. At least, as sharp as I can determine while balancing the post that the refractor is mounted to on the picnic table and trying desperately to keep the extremely heavy post from tipping over. After a few minutes of this, it becomes clear that, while it might be a diffraction-limited six-inch f/8 refractor, it really needs a permanent mount to be usable. Preferably one that is a block of granite weighing upwards of one ton.

I will grant you, I can imagine mounting the post on a rotary table and tilting the whole thing up at 42 degrees, thus turning it into a compact astronomical refractor, but I don't have a sidereally-driven rotary table to spare right now, so it lives in my shop and I use it to measure prism angles, which it does very well. (Because it has a six-inch aperture, it can resolve angles many times finer than my standard 50 mm Keuffel & Esser alignment telescope, which is something I should have known, but sometimes knowledge from one field doesn't translate automatically over into another field.)

Nevertheless, it has some features (not the weight) which would be good to incorporate into a standard astronomical refractor. For one thing, it is folded. The folding flat is adjustable using screws, just like a Newtonian's diagonal mirror, and is very stable. Also, the refractor can point all over the sky, and the eyepiece only moves a few inches. This is pretty nice.

It has a fine-adjustment mechanism on what would be the declination axis, but which is presently the elevation axis. This, too, is a pretty nice feature for zeroing in on objects at high power.



And, finally, it has a vernier circle, which is marked in fractions of a degree. This is useless, but it does look

nice.

I think, if I were to design a six inch f/8 refractor from the start, I would fold it and put it in a light-weight (carbon fiber? Fiberglass?) tube, and mount the tube in a thin fork mount. That way, I could sit in a chair while looking through it.



The only thing better would be to get an Astro-Physics 6" f/8 refractor on an Astro-Physics mount. Then, I could sit in a chair while looking *at* it.



Well it's not an Astro-Physics refractor and it's not on an Astro-Physics mount, but Belinda Lee and Robert Ebling sure like to both look at and thru Robert's telescope.

Why Astronomy?

By Mark S Deprest

This has been a great series of articles that were a compilation of your notes on 3 x 5 cards handed out and then collected and presented to me by Norbert Vance over a year ago. After his talked on, why he chose astronomy to be a part of his life. Over the past year I written a number of short articles that highlighted a few of the more common reasons for being involved in astronomy and maybe you've seen your own story published. In this article I want to tell you my story.

To start with you'll need to keep in mind that like most of you; I kind of always had at least a casual interest in space & astronomy, I too, followed the US space program while growing up. I was a Boy Scout and learn a little bit about the constellations there. In school I went to a planetarium and dated girls who wanted to know my zodiacal sign to see if we were compatible (I realized then, that I was compatible but they weren't). Those of you who know me, even just a little, know that I am obsessive, driven, compulsive, and a bit anal retentive. So, it should be of no surprise to any of you, that when I get interested in something I tend to go a little overboard. That being said, here is my story of why astronomy is a big part of my life.

Jennifer, my Step-daughter never really knew her biological father. He was tragically taken from her when she was only 4 months old. The circumstances behind this tragic accident are not important to this story, but just keep in mind that Lenny, Jennifer's biological father, is legendary and bigger than life to her, because that's human nature.

Anyway, one night, about the time Jennifer was 4, I had been in her life since she was 18 months old, were out on our deck on a warm late fall evening and as the stars overhead started to come out, she looked up and noticed a bright star. She asked me if I knew what star that was? I thought she wanted to know if the star had a name, and I remembered that most of the brightest stars had names, but I wasn't sure what the name of it was.

So, I told her, "I think most of the really bright stars have names but I don't know what that one is called."

She thought about that for a moment and looked again at the star, and said, "I'm gonna call it "Lenny", because it's winkin' at me!"

This brought a tear to my eye and she was right, the star was flickering and it looked like it was winking.

Well, that settled that, I was going to need to know which star that really was and how to find it again. Because if Jennifer ever wanted to know where the "Lenny" star was again, I would have to find it for her.

So, I went online and did a little digging. I found out that the "Lenny" star was actually Deneb in the constellation of Cygnus, the Swan. Cygnus, the Swan? That called for a little more digging. I then learned the story behind Cygnus, but Cygnus was a Greek / Roman myth (these 2 cultures stole and plagiarized each other myths and legends it sometimes is hard to tell whose is whose) and Deneb is an Arabic word. Hmmm, more digging and that lead to other questions, which require more digging and you should be getting the picture about now

...

Moving to the next phase, I found myself fascinated by all these wonderfully twisted and linked stories in the night sky. I bought some magazines and thought it would be nice to have a telescope, just in case Jennifer wanted a closer look at the "Lenny" star. Besides, I always wanted a telescope, my older brother got one when we were kids but it was his and he never let me use it! The big weenie ... okay, I'll be nice, but he could have shared a little.

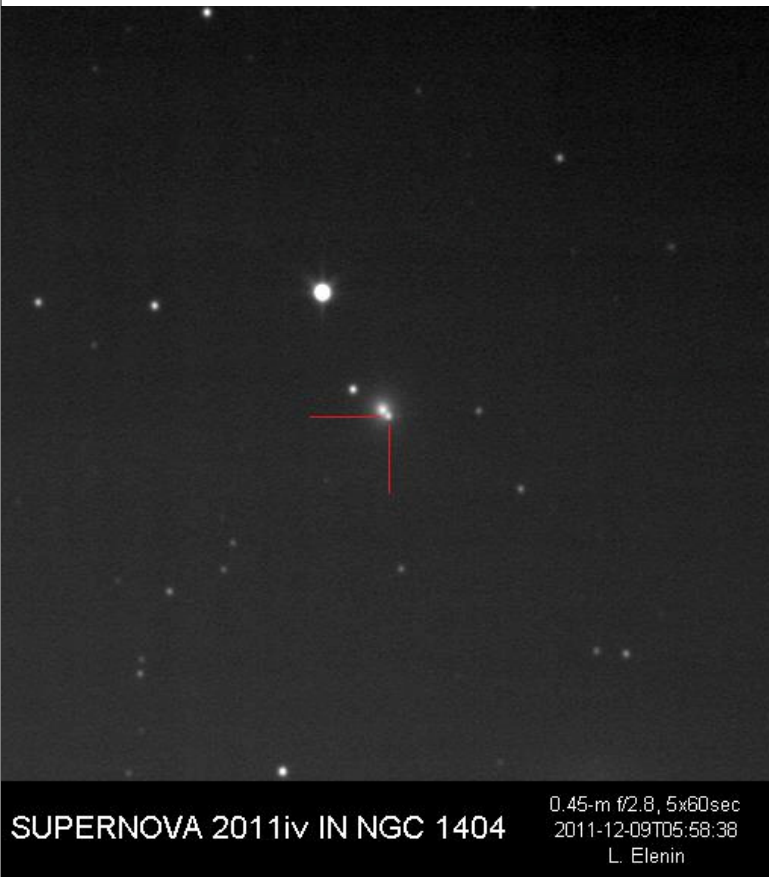
Okay, back to the story; by that Christmas my wife got me a small, rickety, over-powered Department Store refractor telescope, which I had moderately successful observing sessions with, and as you all know moderate success leads to “Aperature Fever” (which should always be said in an echo-chamber for the proper affect)! For my birthday in February, I had saved enough to get an 8” Dobsonian (you all know this by its rebuilt name today, as “Gilda”), let the fun begin ... next came software and eye pieces. Then I made the same mistake as all of you ... I joined the “UNIVERSITY LOWBROW ASTRONOMERS, and it’s been a “heluva ride” since then!

I’ve given talks and demos for almost all of Jennifer’s science classes as she made her way through grade school and middle school. She has looked through all of my scopes at one time or another. She has heard me tell this story many times. But never once has she asked me to show her the “Lenny” star again. So, as we prepare for her College Graduation this month (I am very proud of her), I asked her why she never wanted me to show her, her “Lenny” star, again? She said, “I knew it would always be there and he was probably still winkin’ at me!”

This brought another tear to my eye, and I know she’ll always have a star to keep an eye on her.

At this time of year people all over the world wish each other peace and all good things, and I’d like to wish all of you and your families, the same and may you all find a star to keep a winkin’ eye on you!

Supernova 2011iv



Well it’s not the “Lenny” star ... but it is pretty super! It is the latest BRIGHT Supernova this year. Located in NGC 1404, a galaxy near the border of Fornax and Eridanus.

Currently listed as 12.2 magnitude and listed as a type 1a supernova. Scientists and amateur astronomers have been treated to a number of very bright supernovae this year.

Supernova 2011dh in M51 which was discovered at the end of May and Supernova 2011fe in M101 which brightened to 10.0 magnitude in August and September.

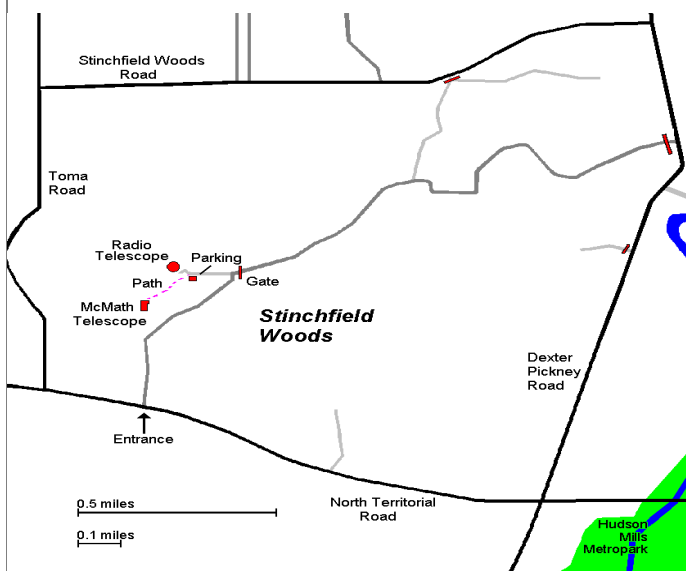
SUPERNOVA 2011iv IN NGC 1404

0.45-m f/2.8, 5x60sec
2011-12-09T05:58:38
L. Elenin

Places & Times

Dennison Hall, also known as The University of Michigan's Physics & Astronomy building, is the site of the monthly meeting of the University Lowbrow Astronomers. Dennison Hall can be found on Church Street about one block north of South University Avenue in Ann Arbor, MI. The meetings are usually held in room 130, and on the 3rd Friday of each month at 7:30 pm. During the summer months and when weather permits, a club observing session at the Peach Mountain Observatory will follow the meeting.

Peach Mountain Observatory is the home of the University of Michigan's 25 meter radio telescope as well as the University's McMath 24" telescope which is maintained and operated by the Lowbrows. The observatory is located northwest of Dexter, MI; the entrance is on North Territorial Rd. 1.1 miles west of Dexter-Pinckney Rd. A small maize & blue sign on the north side of the road marks the gate. Follow the gravel road to the top of the hill and a parking area near the radio telescopes, then walk along the path between the two fenced in areas (about 300 feet) to reach the McMath telescope building.



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 Mountain observatory, but are usually cancelled if the sky is cloudy at sunset or the temperature is below 10 degrees F. For the most up to date info on the Open House / Star Party status call: (734)332-9132. Many members bring their telescope to share with the public and visitors are welcome to do the same. Peach Mountain is home to millions of hungry mosquitoes, so apply bug repellent, and it can get rather cold at night, please dress accordingly.

Membership

Membership dues in the University Lowbrow Astronomers are \$20 per year for individuals or families, \$12 per year for students and seniors (age 55+) and \$5 if you live outside of the Lower Peninsula of Michigan.

This entitles you to the access to our monthly Newsletters on-line at our website and use of the 24" McMath telescope (after some training).

A hard copy of the Newsletter can be obtained with an additional \$12 annual fee to cover printing and postage. Dues can be paid at the monthly meetings or by check made out to University Lowbrow Astronomers and mailed to:

**The University Lowbrow Astronomers
P.O. 131446
Ann Arbor, MI 48113**

Membership in the Lowbrows can also get you a discount on these magazine subscriptions:

Sky & Telescope - \$32.95 / year

Astronomy - \$34.00 / year or \$60.00 for 2 years

For more information contact the club Treasurer at:

lowbrowdoug@gmail.com

Newsletter Contributions

Members and (non-members) are encouraged to write about any astronomy related topic of interest.

Call or Email the Newsletter Editor: **Mark S Deprest (734)223-0262 or msdeprest@comcast.net** to discuss length and format. Announcements, articles and images are due by the 1st day of the month as publication is the 7th.

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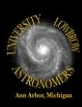
Lowbrow's Home Page

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

Email at:

Lowbrow-members@umich.edu

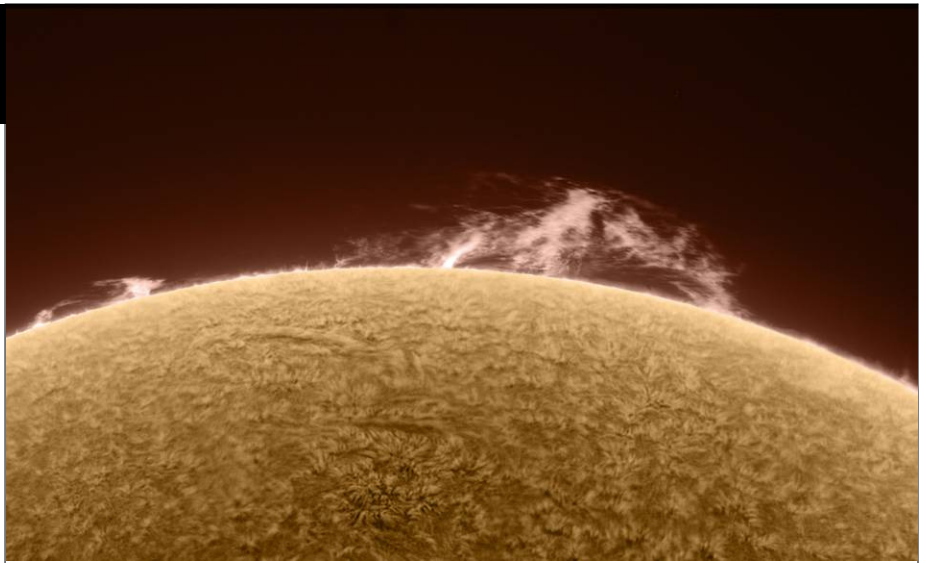
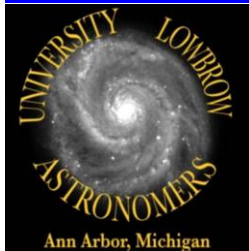




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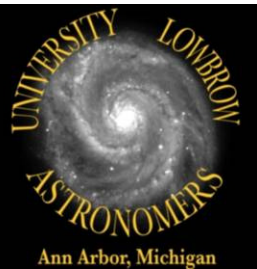
Reflections & Refractions



Those of you with solar filters and solar-scopes will want to keep checking the sun on a regular schedule now. As recently our star has been active again after a very long quiet period.

Website

www.umich.edu/~lowbrows/



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