

Transit of Venus

Highlights for This Month

NHAS members share their experiences of this month's transit of Venus. Members traveled as far as Arizona and Australia to get a good view.

We also had a successful and crowd-packed sidewalk observing event as part of Portsmouth Market Day.

✧ Paul Winalski
NHAS Secretary 2012

Bedford High School Sky Watch, Bedford NH, 17 May 2012

Originally this event was scheduled for 10 May. It eventually took place on 17 May. Sky conditions were good, and the students got to see a wide variety of objects.

NHAS members present: **John Bishop, Don and Melinde Byrne, John Pappas, Bob St. Pierre, John Russell, John Shonle, Paul Winalski.**

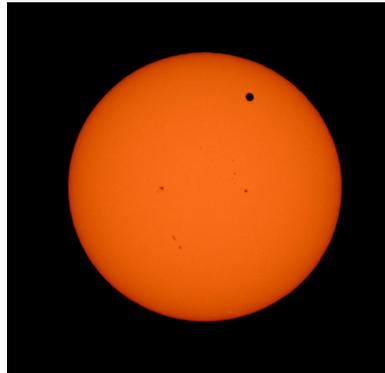
✧ Paul Winalski

Transit of Venus Observing, 5 June 2012

The second of the current pair of transits of Venus across the disk of the Sun occurred on 5 June (the first was in June 2004). There will not be another one until December 2117. From the US East Coast, only the beginning of the transit was visible, as the sun had set by the time of third and fourth contact. Weather in New Hampshire was mostly overcast, but some lucky NHAS members got to observe the

event. Some traveled great distances to see it.

✧ Paul Winalski



Transit of Venus from Exeter NH (John Blackwell photo)

Ayer's Rock, Australia

I was at the Yulara resort at Ayer's Rock. I put up my Short-tube 80 with a "Sun Funnel" made by **Ted Blank** and graciously lent to me for the trip. I got about twenty viewers before one told me that there was a bigger display at another part of the resort.

I took the shuttle bus to that point. There were two employees who were also amateur astronomers using a 9-inch SCT on a driven tripod and an undriven 60 mm Lunt to show the transit. We had a steady stream of viewers.

At both the beginning and ending of the transit I set up my telescope for private viewing by just me and my family. We saw the "black drop" but not the atmospheric horns.

The weather was clear and the whole transit was visible. This was a great location (if a bit far for a casual visit!).

✧ John Bishop

Hooksett, NH

Clear, skies, trouble free viewing from Hooksett! I got there at 7:15 with Mike T's PST, which I mounted on my CG-5. Several people looked through the scope. **David Gilmore** was there, as was **Matt Amar**. We had a crowd of about 30-40 people.



Observing the transit in H α light (Ed Ting photo)

I really wanted to image the transit, but the DMK will not find focus in the PST, which has *extremely* limited focus travel. I was told by someone at OPT that an optical flat made by QSI, when inserted into the nosepiece, would in fact find focus with a PST. Unfortunately, with all the rainy weather, I had no opportunities to test this. So in essence I had about 45 minutes to learn to use the new setup, in between showing the transit visually to all the people who showed up.

✧ Ed Ting

We four (me, wife, two teenage sons) just got back from Hooksett. The clouds were starting to break at home as we finished dinner at 7, so we dove in the car and headed down. The sun broke out on the way there.

Three scopes were set up when we arrived. Ed Ting had a Coronado there, and we saw a few flares as well as the transit. There was a big reflector—sorry, not sure whose—and it had a small reflector with sun funnel attached. When he got it lined up and in focus, it gave pretty good views of the transit and sunspots. Neat.



Transit observing in Hooksett (Andrew Jaffe photo)

The third scope was **Andrew Jaffe's** TeleVue with a nice Ha filter. All three telescopes gave very different views, and it was even pretty cool when clouds began to pass in front of the sun. We got a good half hour of viewing in, and the sun was near setting before the clouds occluded.

Thanks to the three of you that were there, sharing with all of us newbies. Our family had a great time. (If it had been up to me, I would have stayed to see Saturn.)

✧ The Eitreims

Narrandera, New South Wales, Australia

Having missed the 2004 Transit, I made plans to travel to Australia, where the entire transit would be visible from the east coast. And when Fred Espenak published a list of local circumstances for International spots that included Blacktown, NSW (practically next door from my friend Mike's suburb in Sydney)

I had talked Mike into buying an 8" Dob by Bin-Tel (an Orion Skyquest look-alike), and I brought a Kendrick Baader filter with a Sun

Finder for it. All set and nowhere to go. Fortunately, my brief stint as an amateur meteorologist was a successful one – I looked up forecasts for locales up to 500Kms away by highway, and found a clearing for the morning of June 6th around Gundagai, NSW. Mike was game but I kept looking further west because the 1st and 2nd contacts were around 8:30AM in the eastern skies, just where the coastal weather front was dumping rain. In the end, we aimed for Narrandera, NSW. It took about 7 hours to drive the 600Kms, most of it in rain, but things looked promising as we got there. A couple of hours after we had settled in at the motel, we saw the Moon rise. We had arrived. The only drawback was that I didn't have contact timing information for Narrandera. I had to use Melbourne's times, based on proximity.

I was up before 5AM that morning to a clear starlit sky, and frost on the windshield. Dawn broke behind some gum trees, but we had a clear shot at the Sun at 10° altitude. By 7AM we had setup the equipment – we opted to use only the 26mm wide-view 2" eyepiece (46x) because the disk of the Sun looked the right size and it worked better with passers-by.

We had decided against photography with the telescope, especially at the contacts. Mike observed the first two, and I got to see them within a minute. The dimple on the solar disk after 1st contact was crisp and mind-blowing; my first thought was of the surface of a most peculiar golf ball. Nothing like a black drop effect was visible to Mike at 2nd contact. Perhaps we should have tried higher magnification, but no regrets. A triangle of sunspots was also a welcome feature, though we couldn't really call it a "summer triangle" down under. I was also glad we went with Baader film instead of the regulation Orion filter the Bin-Tel folks were recommending (thank you, Mike Townsend!).

We had more than a dozen adults and two kids stop by for a look in

the morning, but later on it was mostly the cleaning staff and delivery folks. Most of them were aware of the event, but not of the 105-year wait to the next one. Mike did the presentations and I took pictures..

At about 10 o'clock a reporter from the local paper dropped by for a chat, and took copious notes and made sure he had the correct spelling of the proper nouns. We were photographed in front of the telescope and I started wondering. After a look at Venus, he wanted to shoot through the eyepiece but things didn't work out, so I showed him my shot and was asked if I could sent it over by email.

Thankfully, I had the proper cables in the bag, so the motel owner's PC was pressed into service and we made their noon deadline. The unintended consequence of this exercise was that I got to see my shot on a 15" screen and it wasn't half bad. The camera bug had been awakened from its hibernation and the latter half of the transit was photographed at intervals, to mixed results.

The 3rd contact occurred at about 2:26PM and this time I was lead watcher. And I saw no smearing of the disk, no black drop effect. Perhaps I should have gone for higher magnification, based on the look of the 2nd contact, but in the words of Emperor Franz Josef II, there it is! I took snapshots before and after the contact and continued as Venus sailed past the Sun. The next couple of hours were lost in contemplation of the incongruity of it all. Just 30 hours had elapsed since we had left Sydney in heavy overcast, driving into light to heavy rain en route to Narrandera. And the last seven of those hours had been spent witnessing a wonder.

We hit the road by 7:30 the next morning and took the scenic way back to Sydney. Breakfast was at a local bakery and I went looking for the Narrandera Argus at the newsagent across the street. Not only was our story featured on the front page, it was the entire front page. And the shopkeeper

recognized me from the paper! I had unknowingly made another sound decision—staying on overnight. The Argus is published only twice a week, on Tuesdays and Thursdays, and we were lucky to have the Transit on a Wednesday. The strange ways of the week continued as we headed east, into increasing overcast. The best Wednesday in recent memory had come and gone.

✧ Ramaswamy

Glens Falls, NH

I ended up traveling to Quensbury, NY—it was a worthwhile trip! The Sun was out once I got in the Rutland VT area.

I didn't get to see first and second contact, due to some clouds when that occurred. The clouds finally gave way to beautiful clear skies up until almost sunset. It was about 3 hours and 20 minutes of driving each way! I didn't get back until midnight...

✧ Dave Weaver

Burlington, VT

I was one of the crazies who traveled to Burlington. Had to drive 13 miles north to hit sun. Got an hour and a half of imaging and observing before being rained on.

✧ Tom Cocchiaro

Yesterday, at 10AM, Polly and I left for Burlington, VT, because it looked like the best chance for clear skies using the clear sky clock. I had planned to observe the transit from a state park on RT 2 just before you got into the islands in the middle of Lake Champlain. We arrived into Vermont with patches of blue peaking through the overcast. By the time we reached Burlington, the skies were rapidly improving although there were low gray clouds coming out of the north. When we reached my initial site, I noticed it was very windy in the parking lot and the skies were not exactly clear to my liking. Looking at the satellite image, I decided to head to northern NY state by going up the island chain. Just as we neared the Canadian border, Polly decided to stop in a local shop to get some syrup. As is her custom, she

then began to talk to the storekeeper and she said that the local astronomy club had a get together at an observatory about 7 miles south of town. Rather than look for a new site someplace in upstate NY, I felt this was a good site. Additionally, the entire western sky was a clear blue with a few patches of cumulus. I had been communicating with **Al Navarro**, who was about two hours behind us, via text and when I sent him a pic of the western sky, he declared he was "sold" and would meet us at the observatory once I gave him the address.

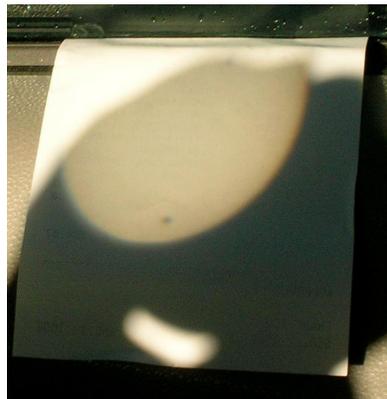
When we got to the site, I discovered that Joe was a member of the Vermont Astronomical society and he had his observatory set up. He graciously allowed us to participate in their transit viewing party. As I set up the scope, it started to rain as a shower passed over. I was beginning to question my choice but I could see blue behind it. Sure enough, by 1st contact, it was clear and we had about two hours of good viewing and imaging of the event.

✧ Tim Printy

Newmarket NH

Here is my last minute prep of a bino projection of Venus, in Newmarket, on grapevine hill.

Got it, seen it, for the second time in two years. It was raining 15 mins. before this shot.



Bino projection (Joel Harris photo)

✧ Joel Harris

Portsmouth, NH

At the Portsmouth library with my scope and dozens of people looking

through my Stowaway in the parking lot.. Beautiful!! We lucked out.

✧ David Speltz

Exeter, NH

At 4:30PM I called the viewing session off, pretty well convinced that the weather was not going to cooperate in any way. I, being the astrophotographer maniac that I am, had the car packed and ready to go, no matter what: scope, imager, camera, tripod, power, backup power, cables, table, towels, you name it. This all because the observatory on campus is blocked to the west by trees (Elms, so we do not cut them) and the town itself.

I drove out to the playing fields which give us a better westerly view. From there we should see the sun until about 7:40pm. I brought a good book and waited. Rain. Rain. RAIN.... <sigh> I set up and broke down the scope a bunch of times.

At about 6:45pm a friend called from Portsmouth saying it was clearing there, and that I should drive on up. Well, the weather in Exeter comes from the Portsmouth direction given typical northeasterly flows, so I decided to wait. It was a good decision. We had about an hour of good viewing before sunset, many visitors and even a rainbow! Happy astronomers.

✧ John Blackwell

Ossipee, NH

Set up the 9" Mak Cass at an Ossipee town view site and rest stop on Route 16 overlooking the Ossipee Mountains. Drew a drive-by crowd of about 15 people including three children.

We were socked in at 15:00, but clouds began to disperse about 17:00, and came and went until 19:30.

Most of the time was devoted to viewing, but I managed a few images with a new Canon 30D. Focus was a challenge (not quite overcome). Didn't realize it, but I was shooting at a slow 1/20th of a second at ISO 200. Think I got some mirror-shake. I'll be better prepared the next time...

✧ Bob Gillette

Phoenix, Arizona

I made it to Phoenix by mid-day (the 3 hour time difference made it possible) and set up with the Phoenix Area Astronomy Club, one of several here with scheduled outreach programs. We set up in the parking lot of a local community college. There were about 10 telescopes of various kinds set up and we had a steady stream of people totaling several hundred from 3pm until sunset at 7:30. We then took a short break for dinner and resumed with an evening skywatch (mostly Saturn) from 8:30. I only stayed about an hour for that.

Amazingly, there were some amateur astronomers at this site who had come from Texas, Vancouver Island, and a couple of other cloudy locations, in order to improve the odds of seeing the event. The guy from Vancouver had to sleep in San Francisco airport on Monday night due to a flight being cancelled, then United Airlines lost the bag containing his mount! It was supposed to be delivered to the viewing site but never arrived...hope he gets it back. At least he hand carried his scope.



Charting the transit's progress on a sun funnel (Ted Blank photo)

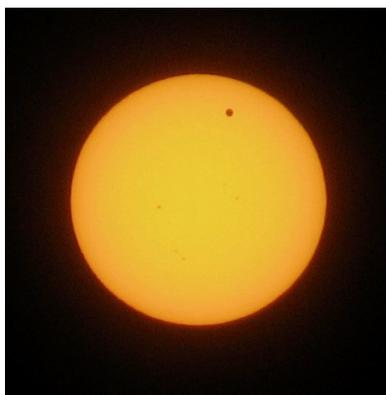
I had a Lunt 60mm Ha and the 80mm WO refractor with sun funnel. I recorded the ingress for about 30 minutes in Ha with a Watec 120N camera and video time inserter for the Occultation Timing group's measurements, using a Canon ZR80 DV video camera. This will be analyzed later to identify the time of contact as closely as possible and combined with other measurements.

In one picture you can see a dark circle on the white plastic projection screen of the sun funnel. That is not Venus, but a magic marker circle around the location of Venus. The actual image of Venus was easily visible on the projection screen along with some nice sunspots, but about every 45 minutes I would mark the location of where Venus was on the plastic with a purple magic marker and note the time. This way as people came along over the course of the 4.5 hours we had until sunset they could see where Venus had been earlier in the day. It was pretty low tech, but people enjoyed being able to get an idea of the progress of Venus across the sun even no matter when they got there.

✧ Ted Blank

Concord, NH

The McAuliffe-Shepard Discovery Center reports 360 attending. Nice views at various times.



From Concord NH (Dave McDonald photo)

I took this photo with a Canon Power Shot S3 handheld behind handheld welders glass. Not as nice a John's but I was pleased to get something quick before the next cloud came along. Thanks to NHAS's Peter Smith and wife for being such a great help in the observatory. Hope everyone had a good time at your various venues.

Thanks for all you all do!

✧ Dave McDonald

Nashua, NH

It was touch and go with dark clouds looming from the N and NE heading SW. Rain, drizzle, then brightening...then voila! The sun

with Venus as large as I saw it in 2004. Two scopes : one in the back by the stone wall and one at the top of my driveway. Happy to have seen it, if only for several minutes. The most remarkable phenomenon was the rapidity with which the clouds broke at the moment of sunset. When I was putting my scopes back in the house, there wasn't a cloud in the sky.

✧ Marion Hochuli

Market Square Day, Portsmouth NH, 9 June 2012

MSD 2012 was a huge and sunny success—third time's a charm I guess!

On "staff" were Tom Cocchiaro, David Speltz, Tom and Gerry Smith, ✧ Dave McDonald, Bob Veillieux, David "Rags" Gilmore, Ken Charles, Mark Stowbridge, his daughter Jenny, and Ted Blank. The new club pop-up tent with our name and logo was very well received. Lots of eclipse glasses were given out and probably at least 500 or more people looked at solar prominences, sunspots, and Tom's poster of his photo of the Venus transit. It was the best attended MSD event in years.



Young Jack Worobel and his Dad show off their prize from this year's Solar System Scavenger Hunt at Market Square Day 2012 in Portsmouth, New Hampshire. Jack was chosen in a drawing from more than 30 young people

who took the time to hunt down the planet stickers pasted down on Congress St. (Tom Cocchiaro photo)



NHAS's new booth in action (Ted Blank photo)



Marc Stowbridge offers both Ha and white light solar views (Ted Blank photo)



Visitors check out "Smokey Joe," a telescope demonstrator that uses lasers to show how light from astronomical objects is reflected through the telescope to the

observer's eye. (Tom Cocchiaro photo)



Gerry Smith shows a young visitor a hologram illustrating the explosive power of a coronal mass ejection on the sun. (Tom Cocchiaro photo)

Thanks to Tom for again organizing a great day, to Ken for getting the paperwork done again, and everyone for volunteering!

✧ Ted Blank

Jaffrey Public Library Sky Watch, Jaffrey NH, 14 June 2012

The event was held as scheduled on June 14th. The town graciously turned off the parking lot lights for us. Attending were myself with my C9.25 and **Stephen Rand** with his 10" dob. The library folks brought their library scope and it performed well. About twenty-five folks came by and saw Saturn and Mars. The library is looking to hold another sky watch in the fall.

✧ Gardner Gerry

Henniker Community School Sky Watch, Henniker NH, 14 June 2012

The event took place on Thursday 14 June. About 20 6th graders and parents attended. I was the only NHAS member present. I only showed a limited number of objects (Saturn, Mars, Albireo, M13, Gamma Leonis) due to the long line

for the scopes. Skies were clear and very dark, but sodium lamps on the school and in the parking lot near the ball field where I was set up were a problem. There is an open field nearby without lights that we can possibly use next time.

✧ Paul Winalski

NHAS May 2012 Business Meeting

The May business meeting was held at St. Anselm College on 11 May 2012, our President, **John Bishop**, presiding.

Officers' Meeting

The officers authorized the purchase of Telrads for the club loaner scopes.

A special membership rate of \$15 per year was authorized for students under the age of eighteen.

It was noted that the duties of the officers, board members, and committee chairs isn't written down anywhere. The officers will seek to rectify this.

It was noted that the current President and Vice President are both in their second consecutive term, and therefore are ineligible to run for those offices in 2013.

Board of Directors

Gardner Gerry reports that a club tent, with the NHAS logo, has been ordered for use at public events such as Market Square Day.

We have a new tarp for the big canopy. It was used at this year's AeroSpaceFest.

A Telrad finder and two bases has been acquired for the loaner scopes.

The club's Lunt solar scope has been repaired and fitted with a pressure etalon tuner. The scope is on its way back to us.

We have three club scopes (6", 8", 10") available for loan. The default scope on the Titan mount at YFOS will henceforth be an 8" Schmidt-Cassegrain.

Educational Outreach

Rich Schueller reported that we sent an urgent warning to all of the Library Telescope Program libraries not to let patrons use library

telescopes to look at the Venus transit. If libraries can avoid loaning scopes out for the week of June 5 that would be best.

NHAS is planning four public outreach sites for the 2012 Venus transit: Stratham Hill Park, Hooksett Library, Portsmouth Library, and General Scannell Bridge in Dover Point. We want at least six solar scopes at the sites. Hooksett Library will allow us to go onto the internet to watch the transit on SLOOH. We need to put together media announcements and promotional materials for these events.

At NEAF, we delivered a plaque to Craig Weatherwax of Oceanside Photo and Telescope, in thanks for the gift of twenty-five telescopes to our Library Telescope Program.

Membership

Bill Steele was not present, but he sent John Bishop a message requesting that members submit their suggestions for Astro 101 and 201 workshops. Let Bill know what workshops you'd like to attend, or what workshops you'd like to teach.

Astrophotography

Gardner Gerry reported that Canon is making an astro DSLR again.

Herb Bubert, Rich Schueller, and Gardner met to discuss planetary imaging.

Rich Schueller suggested an expansion of the current Astro 101 Astrophotography workshop to break it up into video, lunar, planetary; DSLR; and CCD courses.

Public Observing

Paul Winalski reports that we continue to have a full schedule of sky watches scheduled. Please attend if you can. The weather this spring has generally been unfavorable, but we have managed to hold some events.

Miscellaneous Business

Gardner Gerry suggested that we consider holding some sky watches for members-only vs. the public, as a way to get newer members more involved. The general consensus is that this is a good idea.

We still need guest speakers for some of the 2012 meetings. We need a scope/book of the month for every month. Send your ideas to John Bishop.

Herb Bubert noted that solar filters are very hard to get, due to the solar eclipse and Venus transit. Agena Astro still has them. Herb showed how to make a hand-crafter solar finder.

Marc Stowbridge reported that our Library Telescope Program partners, Cornerstones of Science, have five clubs in Maine involved in the LTP there. They have prepared twenty-two scopes, four or five of which have already been placed. CoS hopes to put a scope into every town library in Maine. At NEAF Marc met someone from Kalamazoo Michigan who has placed five or six library scopes. The program is expanding in Canada.

Meteorite of the Month

Bob Veilleux showed the club fragments of the famous 1947 iron meteorite that fell in Russia.

Evening Presentation

Robert Naeye, Editor in Chief for *Sky & Telescope*, gave a presentation entitled "Few and Far Between: Transits of Venus". Transits of Venus across the disk of the Sun occur in pairs, eight years apart, separated by intervals of 105.5 or 121.5 years. We currently have a pair in June of 2004 and 2012. The next Venus transit will take place in December 2117. Mr. Naye discussed the orbital mechanics of the Venus transits, the history of scientific observations of Venus transits, which led to the discovery of Venus's atmosphere and the measure of the Earth's distance from the Sun, and tips on observing the transit safely.

The Bottom Line

Starting Balance:	\$11307.98
Deposits/Credits:	
Membership:	135.00
Donations:	280.00
Bank interest:	0.82
Logo Sportswear Commission	
	65.48

Total :	481.30
Accounts/Paid:	
Rackspace Cloud:	22.72
Rymes Propane	249.41
Orion Telescopes (Astro Bowl prizes)	429.96
Total:	21.92
Net Account Balance:	\$11087.19
Petty cash drawer:	\$100.00
Cash Balance:	\$11187.19
EOC Share:	5366.49

Membership: 136

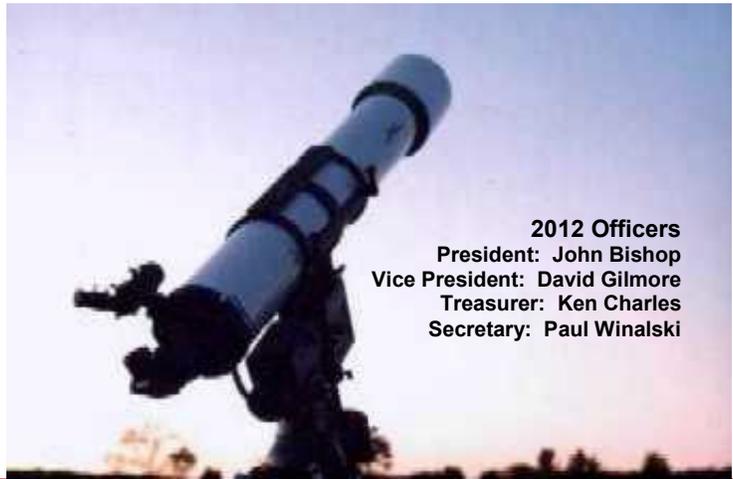
New Members:

Harry Jacobson, Harvard MA
JJ Traversy, Sandown NH
David Charron, Nashua NH
Mark Siebert, Hollis NH

Donations:

Hampstead Library 270.00 LTP
 David Charron 10.00 YFOS

* Ken Charles
 NHAS Treasurer 2012



2012 Officers
President: John Bishop
Vice President: David Gilmore
Treasurer: Ken Charles
Secretary: Paul Winalski

DEADLINE July 2012 Issue: 5 PM July 13

E-mail articles to the Editor.

CHANGE OF ADDRESS – Notify the Treasurer of changes to postal or e-mail address.

How to Join N.H.A.S.

Write to us:

NHAS
P.O. Box 5823
Manchester, NH 03108-5823
Attn: Treasurer

Send E-mail to:

info@nhastro.com

Use our web site:

<http://www.nhastro.com/>

This month's contributors:

John Bishop, Ed Ting, The Eitreims, Andrew Jaffe, Ramaswamy, Dave Weaver, Tom Cocchiario, Tim Printy, Joel Harris, David Speltz, John Blackwell, Bob Gillette, Ted Blank, Dave McDonald, Marion Hochuli

New Hampshire Astronomical Society
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NHAS Upcoming Events

Event	Date	Time	Location
Rey Center Sky Watch	June 16	8:30 PM	Curious George Cottage, Waterville Valley NH
Lincoln Ackerman School Sky Watch	June 16	8:30 PM	Lincoln Ackerman School, Hampton Falls NH
Sandown Public Library Sky Watch	June 18	8:00 PM	Sandown Central School, Sandown NH
Griffin Free Public Library Sky Watch	June 19	8:30 PM	22 Hooksett Road, Auburn NH
Dunbar Free Library Sky Watch	June 20	8:00 PM	Junpier Hill Road, Grantham NH
Harvey Mitchell Library Sky Watch	June 21	9:00 PM	151 Main Street, Epping NH
Coffee House Night	June 22	5:00 PM	YFOS
YFOS Orientation	June 22	6:30 PM	YFOS
Astro 201: Stellar Evolution	June 22	7:30 PM	YFOS
Sidewalk Astronomy	June 23	6:00 PM	Market Square, Portsmouth NH
Daniel Webster Council Sky Watch	June 29	8:30 PM	Newington Public School, Newington NH
Educational Outreach Committee Meeting	July 5	6:30 PM	Manchester City Library, Manchester NH