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 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

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 Hα 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 Hα 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 windscreen. 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.

Ramswamy

Glens Falls, NH
I ended up traveling to Queensbury,
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.

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...
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.

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.

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!

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.

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.

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, Ted 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 Hα 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!

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

Officer’s 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 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

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

Paul Winalski
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, Hookset Library, Portsmouth Library, and General Scannell Bridge in Dover Point. We want at least six solar scopes at the sites. Hookset 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. Naeye 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 | |

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
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 Cocchiaro, Tim Printy, Joel Harris, David Speltz, John Blackwell, Bob Gillette, Ted Blank, Dave McDonald, Marion Hochuli

New Hampshire Astronomical Society
P.O. Box 5823
Manchester, NH 03108-5823

NHAS Upcoming Events

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