

Image of the Month



The Whirlpool Galaxy in Canes Venatici, discovered by Charles Messier in 1773 and designated M51, interacting with a companion galaxy NGC 5195. Distance estimates had placed it in the range of 15 to 35 million light-years, but the Type II-P supernova SN 2005cs gives an estimate of 23 ± 4 Mly. The cigar-shaped edge-on galaxy at the bottom-left corner is IC 4263. (Image: Gardner Gerry, C9.25 @ f/6.3 with QHY9C (-25°C), 37 x 300 sec stacked)

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Goffstown High School, Goffstown NH, May 13

I was there with Pat Adams, Gardner Gerry and Steve Rand. Mike Veilleux was there with 10 of his students. The weather was uncooperative. The Clear Sky Chart had predicted one of those "and a miracle happens" sky-clearing events starting around 8 PM. But it was a couple of hours late. Skies were mostly overcast, but there were sucker holes that let us show a very nice early crescent Moon (with lots of high-contrast detail on the terminator), Jupiter with all four Galilean moons visible, a gibbous Venus, Saturn and its moon Titan. I also showed the students double stars Mizar, Polaris and Gamma Leonis. I used the Polaris viewing as an opportunity to explain to some of the students the methodology of stellar distance measure via direct parallax and via Cepheid variables.

We packed up at about 10pm under almost completely overcast skies, and wouldn't you know it – half an hour later back in Merrimack the skies were almost crystal clear.

- *Paul Winalski*

Brown Memorial Library, Bradford NH, May 16

This event took place under clear, steady skies, and a first-quarter Moon. Steve Rand gave the indoor presentation to a small but enthusiastic crowd. I (with the 14" Mr. T), John Bishop (6" off-axis reflector), Herb Bubert (12.5" Starmaster), and Gardner Gerry (9.5" Celestron SCT) set up scopes in the parking lot of the church adjacent to the Brown Memorial Library. Tall trees blocked the western horizon, but we had unobstructed view to the east. There was considerable ambient light, this being downtown, but intrinsically the skies of Bradford

are very dark, and seeing was good. There were mutterings among some of the locals about getting us a site away from the ambient light.

I started out with the near-first-quarter Moon and Saturn (three moons visible), then Gamma Leonis, Mizar, and Epsilon Boötis as double stars. Once it got decently dark I concentrated on deep-sky objects: globular clusters M3, M13, M92; galaxies M81 and M82; M65 and M66; M51 and its companion (a fine view--I saw spiral detail in M51). I also did the trick of just pointing the scope to a random place in the Virgo Galaxy Cluster and picking up three galaxies in the field of view. I had a great time looking at objects, and having the public nearly as delighted as I was just made everything better. These really are good instruments, and with these dark skies could pull in several of the Messier galaxies.

We also got to see several satellites, including a NASA rocket launch that provided an excellent flare. And, to cap the night off, a truly spectacular bolide meteor!

I was also able to assist one of the locals in the operation of his 6" GEM Newtonian reflector. This scope was 15+ years old with an adequate and properly aligned finder, and the mount was in excellent condition. The primary mirror needed re-aluminizing, but more pressing but easily remedied, the scope was VERY badly out of collimation. With a laser collimator in place, the reflection from the secondary was at the far edge of the primary and its reflection missed the secondary mirror entirely. Unfortunately I didn't have the screwdrivers necessary to make the adjustments. Stars were smeared out into streaks. I did find Vega and Epsilon Lyrae for the scope's owner and showed him how to align an equatorial mount.

I advised him to go to one of our MSDC First Friday events, where it's likely someone with the proper screwdrivers will be able to sort out the collimation problem.

- *Paul Winalski*

4-H Solar Observing Day, Weare NH, May 19

Unfortunately skies were overcast and we were unable to do any solar observing. However Herb Bubert, John Bishop, Gerry and Pete Smith (and I) set up our solar telescopes indoors for the participants (about a dozen people) to look at. I also had my laptop running movies of solar activity from the NASA SOHO and SDO missions. Our hostess, NHAS member Emma Lowe, put together an impressive set of educational displays and activities, including how to construct a spectroscope.

- *Paul Winalski*

Fitzwilliam Town Library, Fitzwilliam NH, May 20

With overcast skies and rain in the forecast, I gave an extended indoor presentation to about 20 attendees. I also demonstrated how to use the Library's new LTP scope. It turned out that skies were not as bad as had been forecast, so we took the LTP scope and my TeleVue 85mm refractor outside and got in some excellent observing of the Moon, Saturn, and Mizar.

We set up on the walkway next to the Library. Horizon view was not good, and neither was the ambient light, but given the sky conditions and the excitement over the new LTP scope, that didn't matter. The Library plans to have us back again in the fall and has some ideas regarding a better observing spot.

- *Paul Winalski*

Salem High School, Salem NH, May 30

Unfortunately the publicity didn't take place as expected and only one person showed up for Gary Duranko's indoor presentation. We had maybe 10-15 students and others show up for the skywatch itself. A member of the press was present taking photographs (including a nice afocal image of Saturn through one of the scopes) and interviewing NHAS members.

- *Paul Winalski*

Daland Memorial Library, Mont Vernon NH, May 31

Lamson Farm is an excellent location for observing – no artificial lighting, good drive-up access, and quite wide horizon views. Ed Ting kicked off the proceedings with a presentation to about 20 people. There were enough other telescopes there that I didn't bother setting anything up. In the early evening I was manning the Daland Memorial Library's library telescope and showing views of Venus and Mercury.

Later on I helped a girl unpack and set up her brand new 4" Meade reflector. She had a great time learning how to use the scope while looking at Saturn.

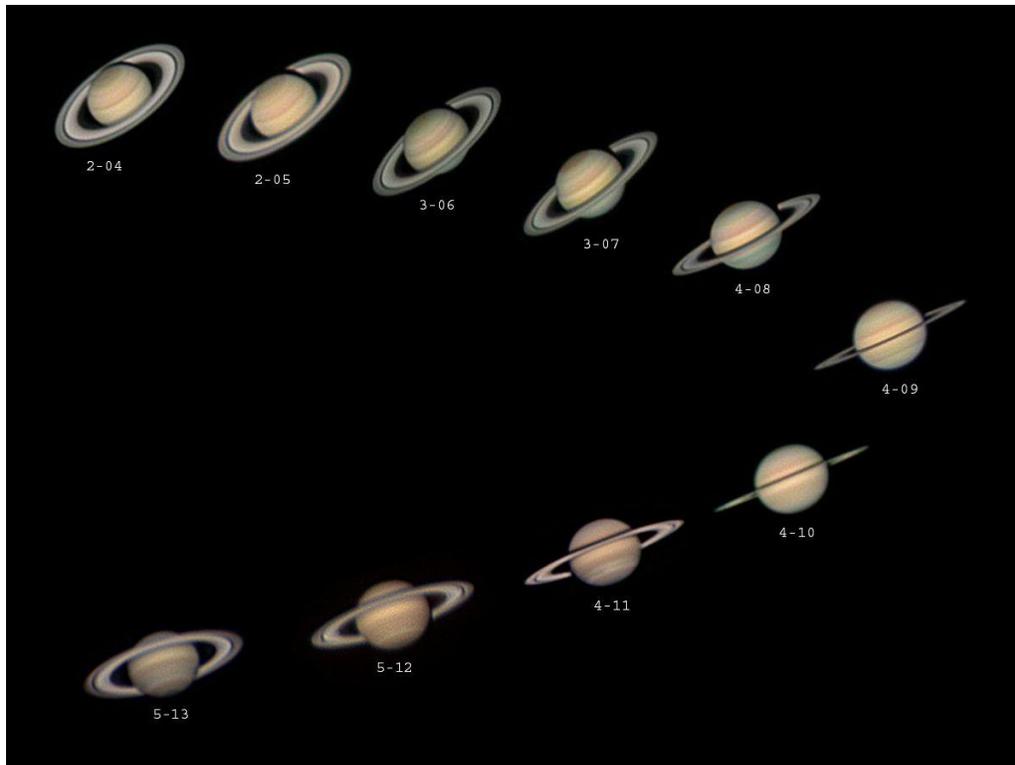
I spent the rest of the evening answering people's questions and pointing out major constellations. We had a very impressive mag -5 Iridium flare at about 10:15pm.

- *Paul Winalski*

[A curiously All Paul 6-pack of reports this month! -Ed.]

Celestial Activities

Saturn at Opposition



When he started this exercise about a decade ago, it was a rite of mid- and late-Winter, and then became a Rite of Spring.

But these days it is early Summer before Saturn is at opposition and we get to see one more instance of the artistry of **Herb Bubert**.

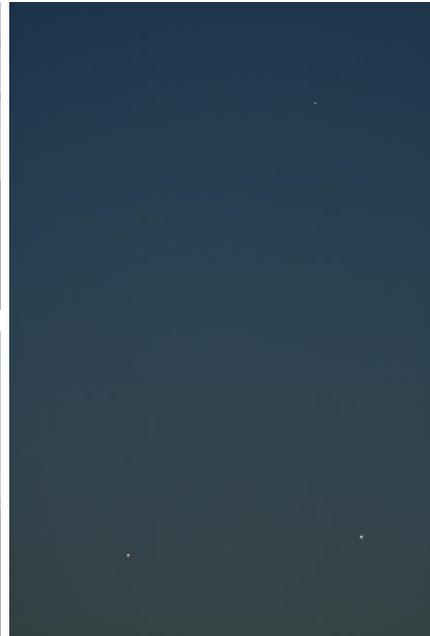
With this year's effort imaging the Ringed planet, he is a third of the way around the orbit. Only two more decades to go now, Herb!

A Planetary Triangle

The last week of the month threw up a marvelous triple conjunction of Mercury, Venus and Jupiter. With the 2 inner planets heading for greatest elongation and Jupiter heading toward a conjunction with the Sun, we witnessed the trio form a multitude of triangles and then go back to being a stretched out like a string above the western horizon. The configurations on the evenings of May 26 and May 27 are shown below:



From atop a hill in Epping NH, an almost equilateral triangle was seen on May 26 (top), but the next day it had been transformed into a right-angled triangle. Mercury at the top, Jupiter and Venus as base. (Both images: Joel Harris)



A perfect right-angled triangle on May 27 which could have proved the Pythagorean theorem, as seen from Manchester NH. (Image: Gardner Gerry)

The truly impressive aspect of the triple conjunction was the elevation of Mercury, aided in part by the ecliptic being at an almost 45° angle. Mercury could be observed for more than an hour after detection.



*The Leo Trio
(Image: Herb Bubert)*

It will be the 2nd week of January, 2021 before Mercury will be involved in another triple conjunction like this one, with Jupiter and Saturn for company. However since Mercury will be ‘at the bottom,’ it is unlikely to be as spectacular. Even otherwise, the event will probably be overshadowed by a conjunction on December 21, 2020, when Jupiter and Saturn will be about 6 arc-minutes apart an hour after sunset. Both planets, all Galilean moons and Titan will fit in any FOV.

While on the subject of trios, there is always the everlasting *Leo Trio* – with spiral galaxies M66 and M65 forming the base, and the edge-on galaxy NGC 3628 (with its narrow dust lane) the apex. Somehow Messier managed to miss it!

- *Ramaswamy*

NHAS May 2013 Business Meeting Report

The monthly business meeting was held at St. Anselm College, Manchester NH on May 24th, with our President **Rich DeMidio** presiding. The Treasurer's report by "**Rags**" follows (next page).

President's Report

Rich will be out of town for the June meeting and **AeroSpace Fest**, so Tom will preside next month.

Q1 Officers Meeting update:

- * Twitter and Facebook are now connected from the NHAS Website.
- * Use of PayPal is now available for LTP and Club donations, and for joining NHAS. By Fall, membership renewals should be linked as well.
- * A working lab session by Matt Marulla was conducted to enable self-service by Officers for admin and the use of Google Docs.
- * Asset database migration done to the Forums will reduce the cost of ownership and maintenance.

Webcasting update:

Access to free web conferencing through IBM SmartCloud is being considered, but other options are also being looked at. The Audio option is still not settled upon.

Membership Committee update:

Rich DeMidio is now the acting chair, **Ken Charles** has volunteered to handle new membership requests, and **Bill Steele** and **April South** have volunteered to assist them.

Astronomy League update:

AL offers formal, yet self-paced programs with guidance, training and materials to help reach your observing goals in observing, for example: Messier Objects, Globular clusters, Carbon Stars and the like. NHAS will pay membership fee for those who wish to join; Ken Charles is our ALCOR (AL Coordinator).

EOC Activities

Pete Smith reported that 19 libraries on the request list for LTP scopes. We have started purchasing next round of scopes, and there will be a Mod Party in late June.

Joel Harris showed some metal brackets that he has fabricated for the Finder on the LTP scopes, which should solve some of its problems.

Rich Schueller has scheduled an in-reach skywatch at Benedictine Park on June 20. There will be a cookout beforehand at the nearby house of Don and Melinde Byrne. We might even try a solar imaging workshop.

Emma Lowe proposed her idea to acquire a portable planetarium to bring the Heavens to those who otherwise would not have a chance. Children's hospitals, assisted living facilities, nonprofit organizations such as boys/girls clubs, YMCA etc. would benefit. EOC will research the project's feasibility and to report back to the Officers and Board.

What's on Your Mind?

Herb Bubert: wants to conduct Part 2 of his imaging workshop on Saturday June 1 (Coffee House at YFOS) 9 PM-midnight, Saturday June 22 being the alternative date. He will send out email soon and put the event on the website calendar.

Gerry Smith: said Emma did a great job with the 4-H club presentation – very professional and impressive!

AeroSpace Fest 2013

AeroSpace Fest at MSDC is now a one-day event on Saturday, June 15. We need many volunteers, so please do sign-up. Setup begins at 8am, and there will 3 shifts from 10am onward. NHAS booth and educational tables and demos will be inside; the Solar observing sessions in the dome and outside will be manned 10am to 5pm.

Astronomy Shorts

Rich DeMidio: discovered how fun it can be hunting double stars with his TV102. Now he needs new EPs.

John Bishop: experienced REALLY dark skies in downeast Maine. He could see M44 naked-eye.

Rags: imaged Saturn for the first time; his camera only captures green
Curtiss Rude: showed a book on the Physics of Stars by a professor at Manchester University.

Rich Schueller: reported that a library telescope is going into Massachusetts (Athol) in the near future, a first.

Ted Blank: spent a week in New Mexico and was able to see Omega Centauri at 12° above the horizon.

Ramaswamy: was in Australia and saw naked-eye: M13, Omega CEN, and 47 TUC, and on the last night in Alice Springs held sky watch for the people in the motel and got to see and show a near lunar occultation (miss) of a star (29 CnC) in real-time.

The Evening Presentation

NHAS's own **Matt Marulla** talked about SLOOH, with a live interactive demonstration of its user interface.

NHAS Treasurer's Report

(as of May 19, 2013)

Starting Checking Balance:	\$10,019.63	Membership:	130
Deposits:		Renewals:	1x30.00 30.00
Membership	90.00	New Members:	2x30.00 60.00
Donations	1,136.00	Total:	3 \$90.00
Interest	0.40	Current Members:	133
Total:	\$1,226.40	New Members:	
Expenses Paid:		Alan & Dottie Larsson	Waterville Valley NH
Rymes Propane & Oil	98.57	Arias Talari	Nashua NH
Cynric Company LLC	468.60	Donations:	
Postmaster	52.51	Scott McCartney	GEN 10.00
Marc Stowbridge	57.10	Friends of Frost Free Library	GEN 40.00
Pro Portsmouth, Inc. (MarketSqDay)	235.00	Tina Gleisner	GEN 61.00
Pro Portsmouth, Inc.	75.00	Fitzwilliam Town Library	LTP 325.00
Total:	\$986.78	North Hampton Public Lib.	LTP 325.00
Current Checking Balance:	\$10,259.25	Friends of Library	LTP 325.00
Petty Cash:	\$100.00	of Hudson, Hudson NH	
Current Cash Balance:	\$10,359.25	David Gilmore	GEN 50.00
EOC Share:	\$5,728.63	Total:	\$1,136.00

Contact Information

How to join NHAS

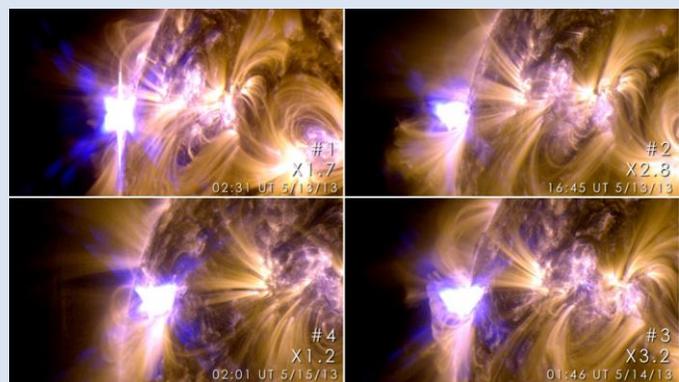
Write to us: **NHAS**
P. O. Box 5823
Manchester, NH 03108-5823

Send Email to: info@nhastro.com

Visit our web site: <http://www.nhastro.com>

How to contribute to the Observer

Email articles and snapshots to the Editor:
ramax.astro@yahoo.com



A group of sunspots designated as Active Region AR1748 produced the first four X-class solar flares of 2013, and in less than 48 hours in mid-May. In time-sequence clockwise from the top left, flashes from the four were captured in extreme ultraviolet images from the Solar Dynamics Observatory (SDO). (Credit: NASA/SDO/GSFC)

Event	Date	Time	Location
Coffee House Night at YFOS	Saturday, June 1	5:00pm	YFOS
Alton Central School Skywatch	Tuesday, June 4	5:00pm	Alton Central School, Alton NH
NEFAF Fundraiser at Margaritas	Thursday, June 6	4:00pm	775 Lafayette Rd, Portsmouth NH
First Friday Skywatch for MSDC	Friday, June 7	7:00pm	MSDC, Concord NH
Market Square Day Skywatch	Saturday, June 8	9:00am	Market Square, Portsmouth NH
Rey Center Skywatch	Saturday, June 8	9:30pm	Waterville Valley NH
Goffstown High School Skywatch	Monday, June 10	8:30pm	Goffstown HS, Goffstown NH
NHAS Business Meeting	Saturday, June 15	9:00am	MSDC, Concord NH
AeroSpaceFest at MSDC	Saturday, June 15	10:00am	MSDC, Concord NH
Sidewalk Astronomy Skywatch	Saturday, June 15	6:00pm	Market Square, Portsmouth NH
NHAS EOC Meeting	Thursday, June 20	6:30pm	City Library, Manchester NH
InReach Skywatch	Saturday, June 22	7:00pm	Benedictine Park, Bedford NH
Morning Star at Montfort Retreat Skywatch	Sunday, June 23	8:30pm	436 King Street, Washington, NH
Morning Star at Montfort Retreat Skywatch (backup date)	Tuesday, June 25	8:30pm	436 King Street, Washington, NH
Lincoln Public Library Skywatch	Friday, June 28	8:00pm	72 Linwood Drive, Lincoln NH
LTP Modification Party	Sunday, June 30	11:30am	MSDC, Concord NH
Lincoln Public Library Skywatch (backup date)	Tuesday, July 2	8:00pm	72 Linwood Drive, Lincoln NH
First Friday Skywatch for MSDC	Friday, July 5	7:00pm	MSDC, Concord NH
Coffee House Night at YFOS	Saturday, July 6	5:00pm	YFOS
Rey Center Skywatch	Saturday, July 6	9:30pm	Waterville Valley NH
Goffstown Public Library Skywatch	Monday, July 8	8:30pm	180 North Mast Rd, Goffstown NH
Gafney Library Skywatch	Thursday, July 11	8:00pm	Turntable Park, Rt 109, Sanbornville NH
Weare Public Library Skywatch	Friday, July 12	8:00pm	10 Paige Memorial Lane, Weare NH
Sidewalk Astronomy Skywatch	Saturday, July 13	6:00pm	Market Square, Portsmouth NH
YMCA of Greater Nashua Solar Observing	Wednesday, July 17	10:00am	YMCA of Nashua, Merrimack NH
NHAS EOC Meeting	Thursday, July 18	6:30pm	City Library, Manchester NH
InReach Skywatch	Saturday, July 20	7:00pm	Benedictine Park, Bedford NH
NHAS Business Meeting	Friday, July 26	7:30pm	St. Anselm, Manchester NH

Credits

Contributors to this month's **Observer**:

- Ted Blank, Herb Bubert, Rich DeMidio, Gardner Gerry, "Rags" Gilmore, Joel Harris and Paul Winalski.