



# the Skyscraper

vol. 42 no. 5  
May 2015

AMATEUR ASTRONOMICAL SOCIETY OF RHODE ISLAND \* 47 PEEPTOAD ROAD \* NORTH SCITUATE, RHODE ISLAND 02857 \* WWW.THESKYSCRAPERS.ORG

## In this issue

- 2 President's Message
- 3 Chester W. Siok: October 29, 1915 – April 11, 2015
- 4 Astronomy Workshops at Seagrave Memorial Observatory
- 5 Is the Most Massive Star Still Alive?
- 6 May's Planet Parade for the Astronomy Enthusiast
- 7 Spiral Galaxy in Coma Berenices M98
- 8 Secretary & Treasurer
- 9 Plans for Visual Solar Spectroscope

## Friday, May 1, 7:00pm at Seagrave Memorial Observatory

### The Beauty in Our Sky: A Look at Optical Phenomena and an Exploration of Clouds by T. J. Del Santo

Beauty in the Universe extends from the heavens to here on Earth. At night, we can see countless stars, nebulae, and galaxies. During the day, we can see rainbows, sun dogs and extraordinary sunrises and sunsets. There are dozens of types of clouds, and each offer a different meaning to approaching or departing weather systems.

The sky is an amazing place day or night. In this presentation, we'll explore various optical phenomena in our sky as well as different types of clouds, including their meaning, formation and beauty.

T.J. Del Santo is a meteorologist at WPRI and WNAC-TV. For the past 18 years he has been tackling the challenge of very changeable weather in Rhode Island. When he was 8 years old, he first looked at Venus through a telescope, and since then, he's loved all sciences, but especially astronomy.

After earning a Bachelors of Science in Atmospheric Science from Lyndon State College, he worked at Weather Routing, Inc. in Glens Falls, NY. There, he gave forecasts and routing suggestions to yachts and freighters around the world.

He then became a computer specialist at the Harvard Smithsonian Astrophysical Observatory in Cambridge, MA. He calibrated the CCD's on the Aspect Determination System aboard the Chandra Space Telescope.

It was in May of 1997 when he started at Channel 12 and Fox Providence. He's forecasted for numerous blizzards, hurricanes and a few tornadoes. He loves the challenge and excitement a good storm can bring, but he's always in awe of nature's power and beauty.

## Renew Your Membership Today

Memberships were due in April. If you haven't renewed yet, please renew online at

[www.theskyscrapers.org/join-renew](http://www.theskyscrapers.org/join-renew)

Secure Payments by

**PayPal**



## Saturday Astronomy Workshops at Seagrave Observatory begin on May 2

See page 4

## Phases of the Moon

**Full Flower Moon**  
May 4 03:42

**Last Quarter Moon**  
May 11 10:36

**New Moon**  
May 18 04:13

**First Quarter Moon**  
May 25 17:19



Seagrave Memorial  
Observatory  
Open Nights

Saturdays at 9:00 pm  
weather permitting



# President's Message

Bob Horton

Weather in New England can be so fickle. Astronomers are probably more aware of this fact than the average person. More often than we would like, celestial events that we look forward to seeing, like lunar eclipses, meteor showers, and northern lights, are hidden from our view by a curtain of clouds. But when a clear night does present itself, we New Englanders appreciate our time under the stars that much more!

Now that warmer weather is here, we can hope for the skies to be clear, too. But just in case we find ourselves contending with clouds, our speaker this month, T.J. Del Santo, will be guiding us to a closer view of our sky, by observing our changing weather, identifying different types of clouds and their meaning to storms that may come our way. We will also learn about some interesting atmospheric phenomenon that appears from time to time.

This is a great time of year to enjoy sky watching. In the early evening, the spring constellations are putting on their show for us. For the deep sky observer, this is the time to hunt down the galaxies in the Messier catalog. For the planetary observer, Jupiter is high in the south as the sky darkens, allowing for great views of the giant planet, complete with shadow transits, eclipses,

and occultations of the Galilean moons. Seagrave is open every Saturday, so please join us at the observatory to enjoy these views. Bring along your own telescope, or enjoy using one of the society's telescopes.

Beginning this Saturday, we begin a series of workshops geared towards the beginning astronomer, a list of which can be found in this newsletter. Thanks go out to Francine Jackson for coordinating these workshops, and to our members that have volunteered to run them. If you are new to this hobby and want to learn more, you will want to attend these. And if you are a seasoned amateur astronomer, please consider attending these workshops, too, and share your knowledge with others. This will be a lot of fun!

At our last meeting, the financial budget was approved by the membership for the year. When the topic of having Internet service installed at Seagrave was discussed, there was an overwhelming expression of support. In fact, several members made sizable donations, so much so, that our first year of Internet service is now paid for! On behalf of Skyscrapers, I wish to thank all of you that contributed to this project.

Finally, I must inform you of the passing of our oldest member, Chet Siok. I realize that some of our newer members might not have had the opportunity to know Chet, but many of us have known him for years and even decades. Chet died the day after our April meeting, and was 99 years old. It was only recently that Chet could not get

around like he used to. Just last year, he was still coming up to the observatory on occasions, always happy to be there and eager to see all of his friends. With Chet, you could always count on him to have a big smile that made you feel welcomed. Let's honor Chet's memory by greeting each other at Seagrave the way he greeted all of us for so long a time!

I look forward to seeing you at the observatory.



The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are held monthly, usually on the first or second Friday or Saturday of the month. Seagrave Memorial Observatory is open every Saturday night, weather permitting.

## Directions

Directions to Seagrave Memorial Observatory are located on the back page of this newsletter.

## Submissions

Submissions to The Skyscraper are always welcome. Please submit items for the newsletter no later than **May 22** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or e-mail to jim@distantgalaxy.com.

## E-mail subscriptions

To receive The Skyscraper by e-mail, send e-mail with your name and address to jim@distantgalaxy.com. Note that you will no longer receive the newsletter by postal mail.

## President

Bob Horton [Robert\\_Horton@brown.edu](mailto:Robert_Horton@brown.edu)

## 1st Vice President

Kathy Siok [kathys5@cox.net](mailto:kathys5@cox.net)

## 2nd Vice President

Steve Siok [ssiok@cox.net](mailto:ssiok@cox.net)

## Secretary

Tina Huestis [qthuestis@gmail.com](mailto:qthuestis@gmail.com)

## Treasurer

Ed Haskell [haskell.ed@gmail.com](mailto:haskell.ed@gmail.com)

## Members at Large

Matt White [ka1bqp@msn.com](mailto:ka1bqp@msn.com)

Ian Dell'Antonio [ian@het.brown.edu](mailto:ian@het.brown.edu)

## Trustees

Jim Crawford [jcrawford@cox.net](mailto:jcrawford@cox.net)

Tom Thibault [DeepSpaceViewer@aol.com](mailto:DeepSpaceViewer@aol.com)

Matt Ouellette [matt80844@yahoo.com](mailto:matt80844@yahoo.com)

## Public Outreach Coordinator

Matt White [ka1bqp@msn.com](mailto:ka1bqp@msn.com)

## Public Relations Spokesperson

Francine Jackson [Francine\\_Jackson@brown.edu](mailto:Francine_Jackson@brown.edu)

## Observatory Committee Chairperson

Jim Crawford [jcrawford@cox.net](mailto:jcrawford@cox.net)

## Membership Activities Coordinator

Pat Landers [pblanders5@gmail.com](mailto:pblanders5@gmail.com)

## Librarian

Alex Bergemann [astroalex@verizon.net](mailto:astroalex@verizon.net)

## Historian

Dave Huestis [dhuestis@aol.com](mailto:dhuestis@aol.com)

## Archivist

Jim Crawford [jcrawford@cox.net](mailto:jcrawford@cox.net)

## Editor

Jim Hendrickson [jim@distantgalaxy.com](mailto:jim@distantgalaxy.com)



# Chester W. Siok

October 29, 1915 – April 11, 2015

Chester W. Siok, a longtime resident of Greenville, passed away peacefully on Saturday, April 9, at the Brentwood Nursing Home in Warwick just seven months prior to his 100th birthday.

Born in Providence, he was predeceased by his parents Walter and Stephania (Lesinski) Siok and siblings, Walter, Stanley and Jeannie. He was the husband of the late Louise (Milewski) Siok. He is survived by his son, Stephen and his wife, Kathleen of North Kingstown and by a niece, Kathleen Yorgin of Colorado.

Chester worked at Cooley, Inc. of Pawtucket from which he retired as a superintendent in 1980.

Chester was the drummer in a musical family. He played in a variety of dance bands prior to his service in the 43rd Infantry Division of the army during WWII, and was in the army band during the war. As a civilian, he was a long-time member of the Ralph Stuart Orchestra and later joined the Joe Andre Orchestra. Chet played locally until he was into his mid 80's.

Chet was an avid fisherman, spending many hours at local rivers and ponds, and was a life member of the Smithfield Sportsman's Club. It should be noted that he passed away on opening day for trout fishing. In addition, he loved to garden and was interested in astronomy.

There was a funeral service at St. Francis de Sales Church in North Kingstown on Saturday April 25th . Donations may be made in Chet's name to Skyscraper's Inc, 47 Peepoad Road, North Scituate, RI 02857.

*"In one of the stars, I shall be living  
In one of them I shall be laughing  
And so it will be  
as if all the stars were laughing  
when you look at the sky at night."*

The Little Prince by Antoine St. Exupery



# Astronomy Workshops at Seagrave Memorial Observatory

Very often when new people come to visit Seagrave Observatory, they're struck by both the beauty of the facility and the night sky. This leads some to want to learn more about what is out there, and how better to observe if they are not able to return to Seagrave to look through our facilities. To assist in making the sky more friendly to newcomers, Skyscrapers, Inc., has created several short workshops on various aspects of observational astronomy. Each week is taught by a Skyscraper member knowledgeable in that area. Come to all, or any of your choice. Each program is free to Skyscraper members, and only \$5.00 for nonmembers. Each one starts at 6:00 P.M., and, weather permitting, the telescopes will be open for observing after each program.

## The programs:

**May 2nd – Binocular Astronomy:** The perfect portable telescope. Conrad Cardano will show you how to choose the right binoculars to find many sky objects. You'll be amazed what you can see with binoculars.

**May 9th – The Night Sky with a Small Telescope:** You don't need a large instrument to discover star clusters, nebulae, double stars and galaxies. Bob Horton will show you how to set up your equipment,

and what accessories you should have.

**May 16th – Sky Motions:** When it comes to astronomy, it appears there are so many different terms. Steve Siok will talk about the terms normally used to find our way around the sky.

**May 30th – The Sun:** Ian Dell'Antonio will introduce the Sun, and compare it with the nighttime stars. He will also introduce sun spots, the Sun's spectra, and the processes occurring in the solar interior.

**June 6th – The night Sky:** Looking up at the night sky can be a very relaxing and enjoyable pastime. But, what's actually up

there? Francine Jackson will introduce you to the constellations visible at this time, and some of the myths given to those patterns in the sky.

In addition, the membership is very interested in what might be a topic you'd like to learn more about. As these programs are slated to continue, if you have a subject you'd like to see, please let President Bob Horton know. There is probably someone in the organization willing to set up an informational session of your choice. See you Saturdays!



## Saturday, May 2

### Black Holes at the URI Planetarium!

University of Rhode Island Planetarium  
Upper College Road  
Kingston, RI

Friday, April 3rd, 2015  
6:00 P.M.

Contact: Francine Jackson: 401-527-5558

Black Holes are one of the most amazing objects in our sky. Much has been written about them, but they still remain one of the most questioned topics in astronomy. What are they? Where do they come from? Should we be worried about them coming to Earth? The University of Rhode Island, in cooperation with the Denver Science

Center, will present Black Holes, Saturday, May 2nd, at 6:00 P.M. In addition, a short program on Light Pollution will be shown, followed by The Skies of the URI campus, a live introduction to the night sky.

Admission is only \$5.00, to benefit the University of Rhode Island Planetarium fund.

The University of Rhode Island Planetarium is located on Upper College Road, on the Kingston campus, across from the Art Center.

The University of Rhode Island Planetarium is available for programming for schools and other organizations. For more information, please contact Francine Jackson at 401-527-5558.





# Is the Most Massive Star Still Alive?

By Dr. Ethan Siegel

The brilliant specks of light twinkling in the night sky, with more and more visible under darker skies and with larger telescope apertures, each have their own story to tell. In general, a star's color correlates very well with its mass and its total lifetime, with the bluest stars representing the hottest, most massive and shortest-lived stars in the universe. Even though they contain the most fuel overall, their cores achieve incredibly high temperatures, meaning they burn through their fuel the fastest, in only a few million years instead of roughly ten billion like our sun.

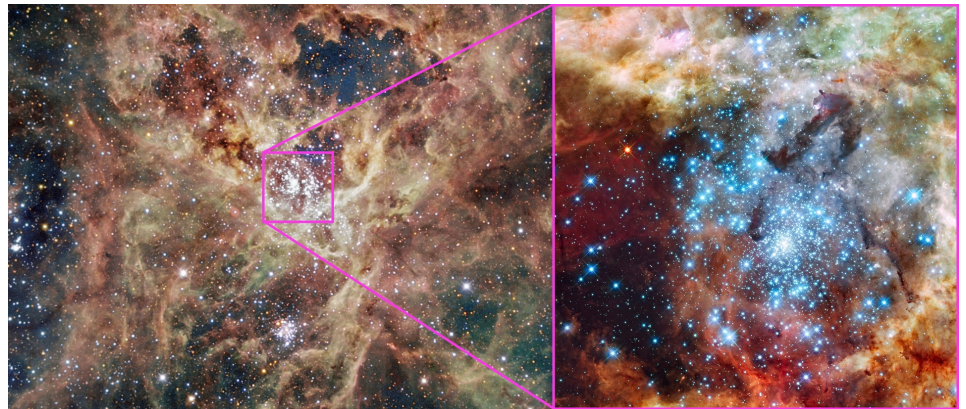
Because of this, it's only the youngest of all star clusters that contain the hottest, bluest stars, and so if we want to find the most massive stars in the universe, we have to look to the largest regions of space that are actively forming them right now. In our local group of galaxies, that region doesn't belong to the giants, the Milky Way or Andromeda, but to the Large Magellanic Cloud (LMC), a small, satellite galaxy (and fourth-largest in the local group) located 170,000 light years distant.

Despite containing only one percent of the mass of our galaxy, the LMC contains the Tarantula Nebula (30 Doradus), a star-forming nebula approximately 1,000 light years in size, or roughly seven percent of the galaxy itself. You'll have to be south of the

Tropic of Cancer to observe it, but if you can locate it, its center contains the super star cluster NGC 2070, holding more than 500,000 unique stars, including many hundreds of spectacular, bright blue ones. With a maximum age of two million years, the stars in this cluster are some of the youngest and most massive ever found.

At the center of NGC 2070 is a very compact concentration of stars known as R136, which is responsible for most of the light illuminating the entire Tarantula Nebula. Consisting of no less than 72 O-

class and Wolf-Rayet stars within just 20 arc seconds of one another, the most massive is R136a1, with 260 times the sun's mass and a luminosity that outshines us by a factor of seven million. Since the light has to travel 170,000 light years to reach us, it's quite possible that this star has already died in a spectacular supernova, and might not even exist any longer! The next time you get a good glimpse of the southern skies, look for the most massive star in the universe, and ponder that it might not even still be alive.



Images credit: ESO/IDA/Danish 1.5 m/R. Gendler, C. C. Thöne, C. Féron, and J.-E. Ovaldsen (L), of the giant star-forming Tarantula Nebula in the Large Magellanic Cloud; NASA, ESA, and E. Sabbi (ESA/STScI), with acknowledgment to R. O'Connell (University of Virginia) and the Wide Field Camera 3 Science Oversight Committee (R), of the central merging star cluster NGC 2070, containing the enormous R136a1 at the center.

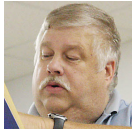


M51 by Tom Thibault



M42 by Jim Crawford





# May's Planet Parade for the Astronomy Enthusiast

Dave Huestis

The significant snow cover that blanketed our local region this past winter is now just a bad memory (though it is highly likely some snow piles may still remain). Seagrave and Ladd observatories were closed for months, and even those astronomers who had their own telescopes and/or observatories seldom ventured out. When it wasn't snowing or cloudy, many nights saw sub-zero temperatures. As the weather now continues to moderate, let's hope the skies will finally permit astronomers of all levels to train their instruments on the heavens to reveal once again the beauty of the universe. And four planets will help to kick off what promises to be a productive observing season.

During the first few weeks of May you can catch a naked-eye view of Mercury. On May 1, if you have an unobstructed view towards the west-northwest, you will find our solar system's closest planet to the Sun about ten degrees (a fist held at arm's length provides this measurement) above the horizon after sunset. It will be just less than two degrees to the left of the Pleiades star cluster (Subaru symbol), and just about ten degrees to the right of the V-shaped Hyades cluster that forms the face of Taurus the Bull.

Each night Mercury will be found higher above the horizon, reaching its highest point on the 7th. Thereafter it will begin to sink towards the horizon. On the 19th a waxing crescent Moon will be above and to the left of Mercury. Throughout this favorable apparition try using a telescope if you have one to watch Mercury's quickly changing phases.

Also during the first week of May, on the morning of the 6th, we can view a meteor shower of particles shed by Halley's Comet long ago. Unfortunately this shooting star display is best seen from the southern hemisphere. Locally we can usually expect no more than 10-15 swift and yellow Eta Aquarids per hour as they hit our upper atmosphere head-on at 41 miles per second. However, with a bright waning gibbous Moon (two days after full) prominent in the sky, those numbers will be significantly reduced.

Furthermore, Aquarius, the constel-

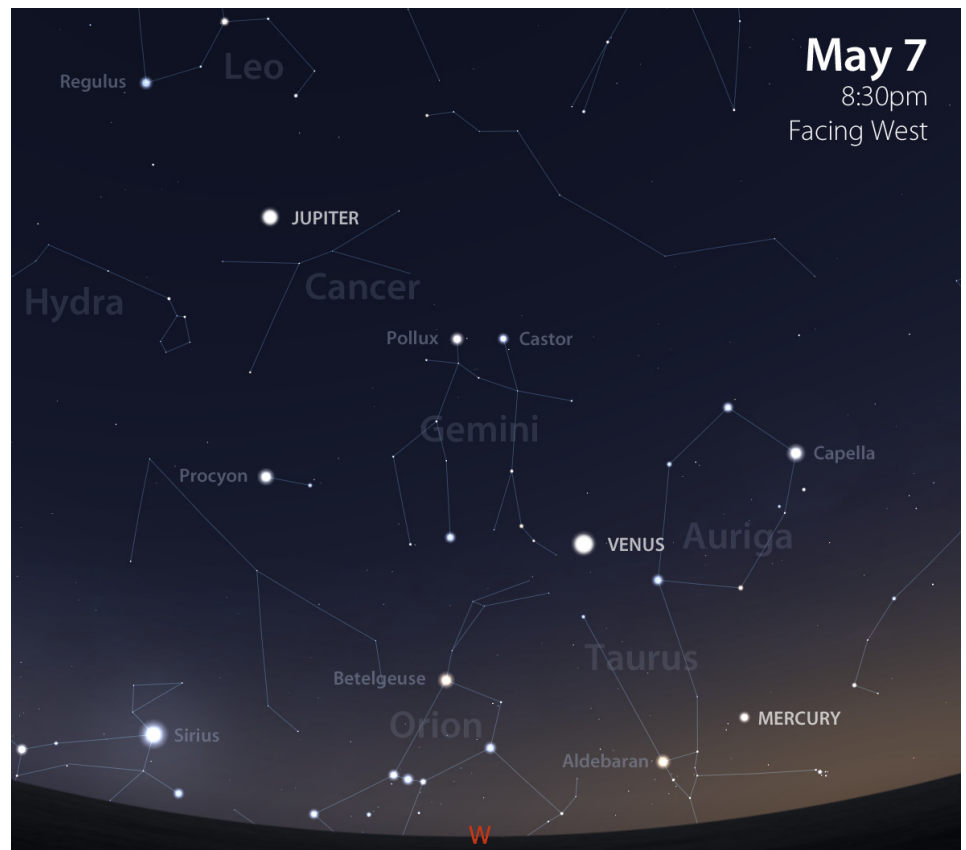
lation from where the meteors appear to emanate, is not very prominent. For many casual stargazers it can be a little difficult to recognize even without bright moonlight. Aquarius will be about 12 degrees above the east-southeast horizon at the 4:00 a.m. hour. The shower's radiant point is in the Water Urn asterism (looks like a Y-shaped group of stars). The best time to scan the sky for meteors will be between 2:00 a.m. and dawn's early light.

Even non-astronomers must have noticed a bright celestial beacon high in the western sky after sunset. It's our closest planetary neighbor Venus. Each night Venus will increase its height above the horizon. During the last week in May it will attain its highest elevation for this apparition. From the 20th through the 22nd a waxing crescent Moon will join Venus for a beautiful sky scene.

Venus goes through phases like Mercury, but the phase change occurs over a much longer period of time. During May, a telescope will show this cloud-enshrouded planet's phase appearing like a first quarter

moon. As the months progress, the phase will decrease until it looks like a thin crescent at the end of July. All the while, due to our respective orbits, the Earth and Venus will be moving closer together. So as the phase decreases, the apparent size of Venus will increase. Even a small telescope will reveal these changes over time. Every few weeks monitor Venus to see if you can follow the phase progression. Consider rendering what you observe with pad and pencil. What a novel idea!

Shifting your gaze up and to the east (left) of Venus one can find the largest planet in our solar system—Jupiter. This giant world is exciting to observe through any sized telescope. The primary bands and zones are easy to see, though the centuries old Great Red Spot is no longer very great nor as red as it once was. Jupiter's four Galilean moons parade around the planet, providing many interesting events to observe. You might see a moon disappear into Jupiter's shadow, or reappear from behind it. It's also possible to observe the shadow of one of these moons as it transits (moves across)



Jupiter's cloud tops.

In fact, on Wednesday, May 20, from approximately 8:06 to 8:35 p.m. EDT, a telescope will reveal the shadows of both Io and Callisto. A week later, on Wednesday, May 27, between approximately 10:00 p.m. and 12:18 a.m., the shadows of Io and Ganymede will be seen. At around 11:45 p.m., with Jupiter just ten degrees above the western horizon, these two shadows will appear to merge.

The most beautiful planet in our solar system is Saturn. It is noted for its exquisite system of rings. Without the rings this sixth planet from the Sun would be fairly boring, for its cloud bands are not as prominent as those of Jupiter. Saturn rises around 9:20 p.m. on May 1, but you should wait until it rises higher into the sky before observing it with a telescope. Saturn is closest to the Earth on May 22 when it will be approximately 833,500,000 miles away.

Saturn is quite bright right now (though not as bright as Jupiter) because its rings are tilted towards us at an angle of about 24 degrees, therefore reflecting more sunlight. They will reach a maximum tilt of just over 25 degrees in 2017. While the rings are most striking, try to locate a few of Saturn's brightest satellites. Titan, its largest, is even larger than the planet Mercury. Four to five additional moons of Saturn can also be seen with small telescopes.

Don't pass up an opportunity to view any of the planets highlighted in this article. While the instruments at all the local observatories provide spectacular images of these distant worlds, if you have your own telescope I strongly recommend dragging them out and putting them to good use. It should be collecting light, not dust. Or simply step outside to enjoy the beauty of the night sky with just your naked eye. And by all means, please introduce your children

to the heavens.

Throughout the year astronomers are available at Rhode Island's fine observatories to share views of the cosmos during free public open nights. Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open to the public every clear Saturday night. Also, Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence is open every clear Tuesday night. Frosty Drew Observatory (<http://www.frostydrew.org/>) in Charlestown is open every clear Friday night year-round. And don't forget the Margaret M. Jacoby Observatory at the CCRI Knight Campus in Warwick (<http://www.ccri.edu/physics/observatory.htm>) is open every clear Wednesday night. Be sure to check all the websites for the public night schedules and opening times before visiting these facilities.

Keep your eyes to the skies.



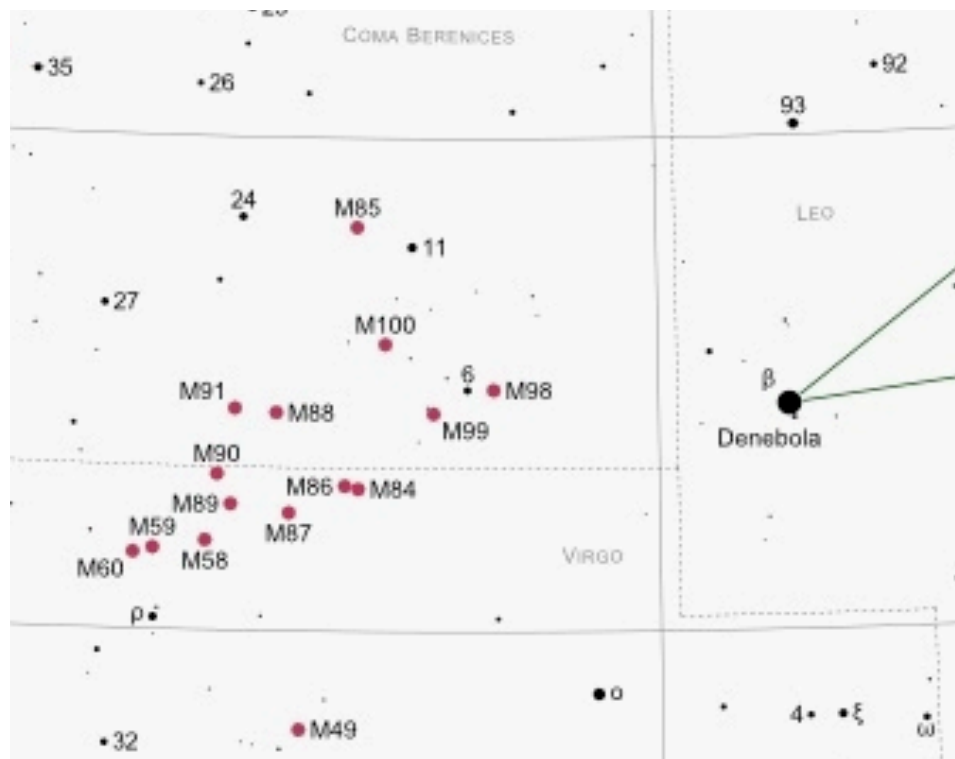
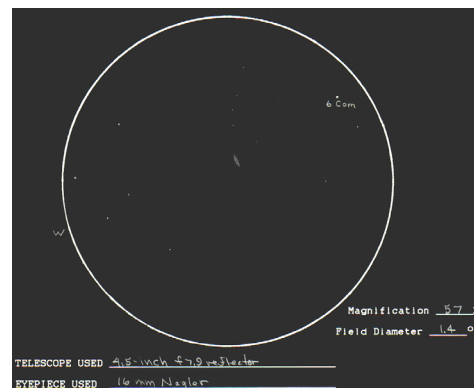
## Spiral Galaxy in Coma Berenices M98 (NGC 4192)

Glenn Chaple

This month, we journey to the edge-on spiral Messier 98, located near the westerly border of the Coma-Virgo Galaxy Cluster. M 98 and its neighbor galaxies M 99 and M 100 were discovered by Pierre Mechain on the night of March 15, 1781 and confirmed by Messier a month later. While the latter two are roundish face-on spirals, M 98 is more edge-on with apparent dimensions of 9 by 3 arc-minutes. At magnitude 10.1, it's one of the fainter Messier objects, but is still visible with small-aperture scopes. The accompanying sketch shows its appearance through a 4.5-inch reflecting telescope on an evening when the limiting magnitude was 5.0. Patience and averted vision were requisite!

Finding galaxies in this part of the sky can be a daunting task, but M 98 is relatively easily picked up just one-half degree west of 6 Comae Berenices. This 5th magnitude star forms an isosceles triangle with Denebola (beta Leonis) and omicron Virginis (see finder chart).

M 98 is somewhat of an oddball as galaxies go. While a vast majority of galaxies are moving away from us as the universe expands, this one is actually heading our way at a 125 mile per second clip. Don't expect M 98 to loom larger as the years go by. It's a whopping 55 million light-years away!





## Secretary

Tina Huestis

### Skyscrapers April Meeting Meeting Minutes 4/10/2015

President Bob Horton called the Skyscrapers' April meeting to order at 7:30 p.m.

**President Bob Horton** welcomed everyone to the annual meeting of Skyscrapers. He explained that the organization meets on the first Friday of the month and, after the evening speaker, there will be a business meeting that will include a vote on the fiscal budget and other items. • Bob noted that since it is expected to be clear tomorrow evening, Seagrave Observatory will hold its first open night of 2015. • Lastly he reminded everyone that dues are now payable and to see either Linda Bergemann or Ed Haskell after the meeting to renew.

**Treasurer Report:** Linda Bergemann introduced new member David Barber, who was voted into membership. She noted that Michael Perpall was not present and will be voted on at the next meeting in which he is in attendance.

**Second Vice President Report:** Steve Siok reported that May's program will feature a URI volcanologist who will speak on plate tectonics and active bodies in the solar system. • In June, Alan Sliski will talk about refurbishing an Alvan Clark telescope. • Junior member, Alex Bergemann, will speak about his Eagle Scout project in the month of July.

**First Vice President Report:** Kathy Siok provided some high level details on this year's AstroAssembly, which is scheduled for



Jay Dickson

the first Saturday in October (October 3). • Several presenters are under consideration but not yet confirmed. She noted that since 2015 is the "International Year of Light," there would likely be related programming. • Steve Siok reported that there will be a modification to the banquet. The theme will be Italian, which should be less expensive as well as a nice change from prior years.

**Trustee Report:** Conrad Cardano confirmed that Seagrave is now open. • He noted that April 25 is Astronomy Day and he would like to set up telescopes for solar observing. In addition, an astrophotography beginners' program is being planned. Information will be available on the Skyscrapers' website. • Jim Crawford noted that a clean-up of the property/ grounds will be needed in preparation for Astronomy Day. • Bob congratulated Conrad Cardano for his three years of service as Trustee and Linda Bergemann for her two years as Treasurer.

**2015 Budget:** The President introduced the proposed budget and indicated that printed copies are available. • Bob explained that the budget sought ways to save money yet invest in the future. He noted that 2014 was a year that tackled overdue maintenance projects (e.g., new ceiling, interior/exterior painting, replacing areas of rotted wood) and that it was money well spent. In his opinion, the Seagrave buildings and grounds are now looking especially good. Bob anticipates that these upkeep expenses would not carry into 2015. • Bob listed other ways of saving money in the budget, such as not renting the large audience tent for AstroAssembly (normally costing \$700). The Meeting Hall can once again be used for crowd seating because the work done installing cabinetry and de-cluttering has freed up space for more chairs. Also, with the new outdoor porch, refreshments can be moved outside. The organization can save money on renting a smaller tent. • Bob informed members that the utilities, etc. have been paid and no increases are expected in that regard. • He said that the cost of Internet access in the budget would be offset by these savings. The Internet would also offer new advantages, like controlled offsite remote telescope access, guest speakers from other locations, and security cameras. • The President recognized that dues and AstroAssembly proceeds are no longer sufficient and that a goal of increasing the number of donations and others ways to raise additional money would be a focus. • The motion to adopt the Budget was passed.

**For the Good of the Organization:**



## Treasurer

Linda Bergemann

Francine Jackson remarked that the next Cash Flow YTD as of April 15, 2015 (4/1/15 through 03/31/16)

### INFLOWS

Donation	
Misc Donation	\$488.70
Refreshment Donation	\$5.00
<b>TOTAL Donation</b>	<b>\$493.70</b>
Dues	
Family	\$58.38
Junior	\$15.00
Regular	\$294.40
Senior	\$149.15
<b>TOTAL Dues</b>	<b>\$516.93</b>
Misc Income	
Interest Inc	\$3.15
<b>TOTAL Misc Income</b>	<b>\$3.15</b>
<b>TOTAL INFLOWS</b>	<b>\$1,013.78</b>

### OUTFLOWS

Trustee Expense	
Property Maintenance	\$87.00
<b>TOTAL Trustee Expense</b>	<b>\$87.00</b>
Utilities	
Electric	\$15.95
Porta-John	\$99.00
<b>TOTAL Utilities</b>	<b>\$114.95</b>
<b>TOTAL OUTFLOWS</b>	<b>\$201.95</b>
<b>OVERALL TOTAL</b>	<b>\$811.83</b>

### Cash and Bank Accounts - As of 04/15/15

Capital One Bank	\$12,375.54
Checking	\$11,964.94
PayPal	\$765.63
Cash	\$0.00
<b>TOTAL Bank Accounts</b>	<b>\$25,106.11</b>

URI planetarium show will be on Saturday, May 2. • She also updated the membership that five Saturday afternoon beginners' workshops are in the planning stages. They will cover: the night sky, observing basics, the Sun, binocular astronomy, and introduction to telescopes. • Bob Horton said that this list of beginners' programs will be published in the next newsletter. • Kathy Siok asked members to consider donating their tents for use during Astro Assembly. She said that members have generously lent their tents in the past (for shade and other uses) and she'd be grateful if any could do so for October's event. • Francine noted that on Sunday, April 26, the Blackstone Valley Historical Society will present a talk on Cumberlandite, a rock found only in Rhode Island. The society is located on Louisquisset Pike off of Route 146. • Steve Siok commented that the May issue of Sky & Telescope magazine will feature an article on Harvard's DASCH project. He noted that this project is seeking volunteers to type log



books. This work can be done at one's home using Excel spreadsheets. Steve said they have now scanned their 100,000th plate and the work is about 20% complete. • Francine mentioned that this Sunday at 3:00 p.m. at Ladd Observatory is the H.P. Lovecraft annual event where his modern day descendants celebrate the author's death. Also Sky & Telescope magazine's February issue had an article on H.P. Lovecraft. • Steve Hubbard generously announced his intention to donate up to \$500 as a match for funding the organization's Internet access. The following members immediately accepted his challenge: Tracy Prell matched with a \$500 donation; Jim Crawford announced a \$100 donation, and Kathy & Steve Siok offered their donation of \$250. • Ian Dell'Antonio updated the membership on the Executive Board's discussion of the possibility of housing a large telescope (20+ inches) at Seagrave. He noted that Brown University is considering siting a large remote-access telescope at the Peep-toad property as well as at other universities in Rhode Island. Brown's research students are currently fairly limited in what they can accomplish without upgrading to a larger scope. Ian admitted that it will be a process that will take time. Bob

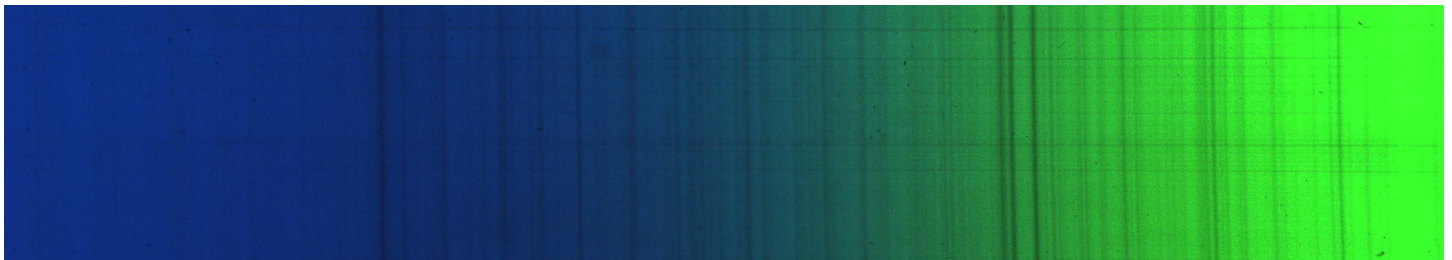
reported that the Board will be discussing details and looking at grants with the goal of it taking a year or two to make it happen. • Bob mentioned that the next meeting of the Skyscrapers Board will be from 3:00 to 5:00 p.m. on Saturday, April 18, at Seagrave. All members are welcome to attend. • Pat Landers reported on the goal of holding Friday night members' telescope observing sessions in the coming year.

**Election Committee Report:** Tracy Prell reported that ballots were sent to eligible Skyscrapers members. She noted that all ballots received were validated and tallied: Tracy announced the official results of the April annual elections: President, Bob Horton; First Vice President, Steve Siok; Second Vice President, Kathy Siok; Secretary, Tina Huestis; Treasurer, Ed Haskell; Member at Large, Matt White; Member at Large, Ian Dell'Antonio; and Trustee, Matt Ouellette were all voted in. Tracy thanked all members who participated. • Bob thanked the many volunteers who make the organization thrive. He strongly encouraged members to attend the Board meetings.

**Dr. Jay Dickson,** Brown University planetary geologist, presented his program on the Dry Valleys of Antarctica. Dr. Dick-

son explained that the landscapes of Mars and Antarctica appear to be very similar, but without actually visiting the planet, there is no way to be certain. However, understanding conditions in Antarctica can provide a three-dimensional hypothesis to test on Mars, where Gullies and Recurring Slope Lineae (sinuous channels on the planet's steep slopes) form every year, suggesting the presence of water (either in the present or the recent past). These features indicate that transient water (or perhaps more resembling a salty brine) could exist today under peak conditions, at certain locations on Mars, at certain times, despite an extremely cold and dry climate. Dr. Dickson's time-lapse photographic evidence of similar features in Antarctica is an effort towards answering the question, "Does the warmest region on Mars behave like the coldest regions on Earth?" Dr. Dickson's time-lapse images are integrated with data from a network of Dry Valley monitoring stations to record "serendipitous science" and perhaps provide scientists with an analog for Mars.

The meeting adjourned at 9:40. Submitted by Tina Huestis, Secretary.

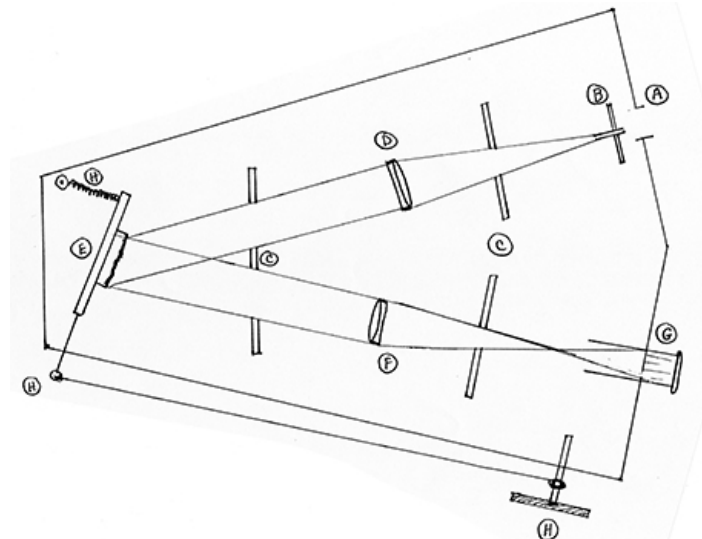


# Plans for Visual Solar Spectroscope

Gerry Dyck

## Components

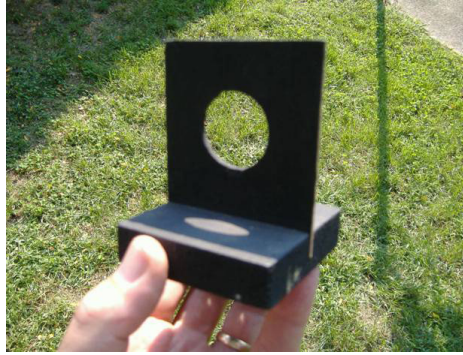
- A. Opening to optical box
- B. Entrance slit made of razor blades
- C. Baffles to reduce scattering
- D. Achromat focused on slit (old binocular objective works fine)
- E. 1-inch square reflection grating (Edmund Scientific - about \$10)
- F. Achromat focused on eyepiece (another binocular objective)
- G. Eyepiece (an old 25mm Kellner works fine)
- H. Spring tuning device and turn knob



INTERNATIONAL  
YEAR OF LIGHT  
2015

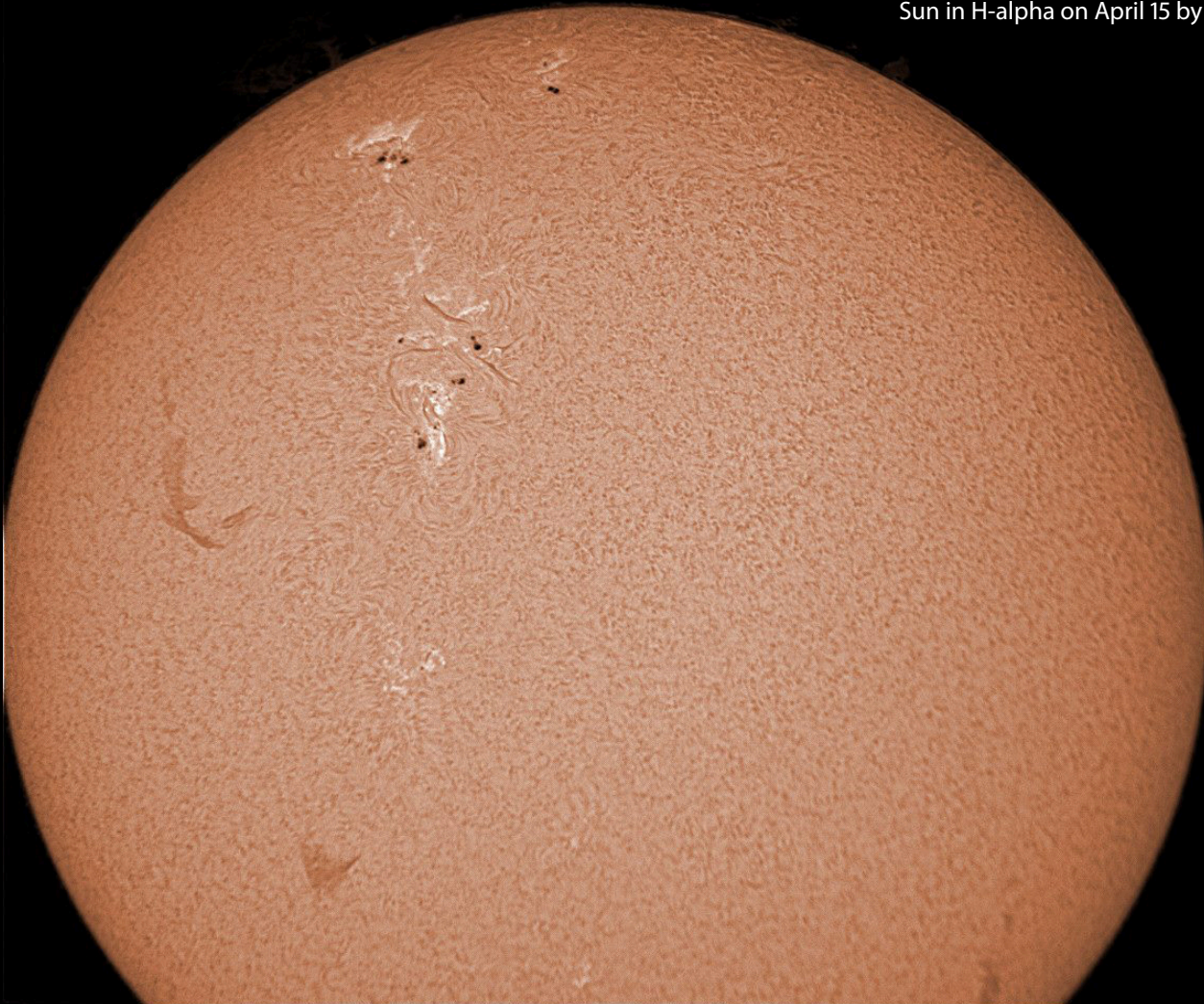
## How I built it

I mounted all the optical components onto little wooden squares like chessmen and arranged them on a large piece of cardboard in the "V" shaped light path shown. I directed a light beam from a slide projector into the slit, then adjusted the optical components until they produced a spectrum. The final size of the instrument depends upon the focal length of the achromats used. When the layout was just right I traced the positions of all components onto the cardboard, which became the floor plan for the optical box. The grating is mounted on a rotating base which can be moved back and forth to tune the instrument. Finally, I built a wooden box around the whole thing, painted the interior a flat black and mounted it on a simple tripod. Later I added a filter wheel ( yellow, red and neutral density) in front of the slit to improve the contrast in various spectral regions. I am pleased that this low-cost instrument is capable of showing many hundreds of absorption lines in the solar spectrum.





Sun in H-alpha on April 15 by Steve Hubbard.



2015-04-11 23:52:59  
HallaInCam XTreme - Color CCD  
Exposure: 15 sec., AGC: Manual 5  
n 64 stacked 15 to 91 secs



M64, the Blackeye Galaxy by Steve Hubbard.



Jupiter & shadow of Io, April 18 at 8:45 and 9:15 by Steve Hubbard.

# Directions to Seagrave Memorial Observatory

## **From the Providence area:**

Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

## **From Coventry/West Warwick area:**

Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

## **From Southern Rhode Island:**

Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

## **From Northern Rhode Island:**

Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

## **From Connecticut:**

- Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.
- or • Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

## **From Massachusetts:**

Take Interstate 295 South (off Interstate 95 in Attleboro). Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.



47 Peeptoad Road  
North Scituate, Rhode Island 02857