



BACK BAY observer

The Official Newsletter of the Back Bay Amateur Astronomers
P.O. Box 9877, Virginia Beach, VA 23450-9877

EPHEMERALS april 2018

04/05, 7:30 pm
BBAA Monthly Meeting
TCC Campus, VA Beach
Building J, Rm JC-13

04/07, 7:30 PM
Skywatch
Northwest River Park

04/13 & 04/20
Club-only observing sessions
Cornland Park, Chesapeake, VA

04/14, 7:30 pm
Nightwatch
Chippokes Plantation

04/21, 10:00 AM
Saturday "Sun" Day
Elizabeth River Park, Chesapeake, VA

04/21, 10:00 AM– 2:00 PM
International Astronomy Day
Virginia Beach Central Library

04/27, 7:00 PM— 9:00 PM
Mentoring Young Scientists
Virginia Aquarium
Virginia Beach, VA



Looking Up!

Hard to believe I am several months into my second term as the President of the BBAA. We have many new members in the club this year and I hope that we can all have a very mutually beneficial year. My greatest challenge is finding folks who would be inclined to come speak or make a presentation at a meeting. So if you have something you would like to share, please let me know.

In November we held our officer elections, and our newly elected brood of Officers did not change. Myself as President, Shawn Loesch as VP, Treasurer is Bruce Powers and the Secretary is Jeff Goldstein. In November of this year two of the four have to go! As with the new BBAA constitution we are required to offset elections of the officers such that only two can be replaced at one time. This would help to avoid the calamity of four experienced officers leaving and four brand new ones coming into office and having to hit the road running with no experience or "corporate knowledge" available to help. If memory serves, I believe that Bruce and I will have to cycle out of our present duties and let someone else have a chance. So keep it in the back of your mind that you could become the next BBAA officer if you would like.

2017 was a banner year in Scholarship income. As we had several good sized donations, we also held another successful raffle for the Georgie June scholarship and we were able to execute all five Boardwalk Astronomy dates. On the other hand, we had to cancel a record number of Sky Watch events in

[Continued on page 2](#)

CONTENTS

Looking Up	1
VAAS Report	2
Observer's Corner	3
Joys of Astronomy	5
Cosmic Woodstock	6
Falcon Heavy Launch	8
Messier Marathon	10
Meeting Summaries	13
Calendar	14

VAAS Convention Report

By Kayce Cover

The Virginia Association of Astronomical Societies (VAAS) Convention on October 21, 2018 was the first astronomy event in a while, for Dave and I, and, it was a really good one! Thank goodness for the bright signs leading us right to the registration tables. Those were really helpful. Thanks, George Reynolds.

The club took really good care of participants. We were greeted, fed, refreshed, and hydrated. Karen Jagow and Jeff Goldstein welcomed and registered us, and President Chuck Jagow started the day and oriented the group.

I really resonated with the presentation of Joseph Zawodny, PhD Hmmm... he talked about immediate gratification - and how that can relate to astronomy. Lots of insightful inspirations. I reflected on his two studies of the moon a number of times during the day. I like the idea of enjoying the less complicated aspects of astronomy.

Bob Beuerlein gave an introduction to 3D printing. After explaining the multiple complications involved with 3D printers, he then tantalized us with numerous cool astronomy gadgets. He gave attendees a red 'cap light', which were hugely popular. People were playing with them all day, and



they were a major feature at the cookout afterwards, even lighting the dinner table.

There were a number of great planetarium shows and vignettes. Like many, I arrived with too little sleep, and the planetarium, with its lean-back chairs, is a compelling invitation to zone out while watching beautiful animations of star nurseries narrated by Neil de Grasse Tyson. I think the day was a score even if I only got to see the planetarium presentations and hear the repartee of Professor Ken Broun.

[Continued on page 4](#)

Looking Up [continued from page 1](#)

2017. I know I only went to two Night Watch events at Chippokes and a handful of Corn Watch nights.

Sadly, the trend is continuing this year with Skywatch cancellations in January, February and March. The weather is probably the worst I have experienced in my association with the club. Let's hope for clear skies this month so we can finally have another Skywatch!

We did have a very successful Virginia Association of Astronomical Societies (VAAS) Convention back in October! For the first VAAS Convention that the BBAA hosted a number of years ago, a single person tried to organize and get everything done, and he was not so successful (that would have been me). This time we set up a committee with five or six members, held regular meetings, and made it a team effort, and the

effort and work paid off in a very successful event. Tip your red headlights to Leigh Anne Lagoe, Shawn Loescher, Jeff Goldstein, and George Reynolds for their hard work (I helped too, mainly complaining about what did not work for the previous VAAS).

We have some neat opportunities coming up this year that are worth noting. Hampton University professor, Dr. Kunio Sayanagi, has requested that folks take videos of Jupiter to help detect impact events on the planet. Also, through the very persistent work of "Bird" Taylor, we are finally able to start submitting imaging requests for the [Rapid Remote Response Telescope](#) (RRRT) located on Fan Mountain. Stay tuned for more information on each of these topics in the very near future. Until then, remember to keep looking up!

Chuck Jagow

The Back Bay Amateur Astronomers Observer

The BBAA Observer is published monthly; the monochrome version is mailed to members who do not have internet access. Members who do have Internet access can acquire the full color version on the Internet at <http://www.backbayastro.org/observer/newsletter.shtml>

Please submit articles and items of interest no later than the date of the monthly meeting in order to be in the next month's edition.

Please submit all items to:
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BBAA Meetings

The BBAA meet the first Thursday of every month except for July. While school is in session, we meet at the VA Beach TCC Campus. The April 5, 2017 meeting will be held at TCC in Virginia Beach, Building J, Rm JC-13 (or nearby room) at 7:30 PM. Directions are on our [Night Sky Network page](#).

BBAA Internet Links

BBAA Website
www.backbayastro.org

Yahoo! Groups
<https://groups.yahoo.com/neo/groups/backbayastro>

BBAA Observer Newsletter
www.backbayastro.org/observer/newsletter.shtml

Observer's Corner



Dan Pelzel's spectacular image of the Sunflower Galaxy was taken on March 14, 2018 from the wonderful dark skies of Scottsburg, VA.

I'LL FOLLOW THE SUN

"The Sunflower Galaxy (aka M63) is a spiral galaxy in the constellation Canes Venatici. It is 27 million light-years away. This image is only 2.5 hours of data. That is usually not enough, but I captured the data from the spring Staunton River Star Party in Scottsburg, Virginia, which is an official dark sky location. It's the first star party I have been to in a couple of years. Fortunately, in that time I have improved my gear and have a better understanding on how to acquire images."

- Dan Pelzel

However, there was more. I really enjoyed meeting astronomers from all over Virginia, and I think they were right at home and well cared for. John Voss gave a presentation on the Astronomical League. He inspired us to want to join! Oh wait, it is included with our BBAA membership. Score 2. Our membership is such a bargain.

George Reynolds had a beautiful presentation on BBAA. It was really nice - like something I would expect to see at a major facility. I wanted to join BBAA too. But wait, I am already a member, I just need to participate and appreciate! (I am seeing a theme here).

I loved the talk by Gene Tracy, PhD. He systematically explained a subject that has long mystified me: how do we KNOW how far away stars are? And, oh, by the way, what is a parsec? He seamlessly laid out a very understandable explanation of how we use two major tools and a number of known associations to map our entire observable universe, relying on overlapping measurements to confirm our conclusions. I took lots of notes, and revisited them this morning, to refresh my newly gained insight. I had avoided this subject, and feel like a new door opened before me.

The last presentation of the day was Michelle Shinn, PhD, BBAA member from the Department of Energy. This presentation was extremely timely, as

she spoke with passion about the recently discovered merging neutrino stars. So much information - not just about the paper, but the whole detection process: collaboration, anticipation from predictions, the prospect of finding three to five of these a year, and the pending construction of a new collider. The excitement in the room was palpable, and the information was intense. Michelle gave lots of background information, links to further support, and more. Wow! Talk about hot off the press.

Many of us met again at the cookout, where Bob Beuerlein's night-vision scope binoculars penetrated the dark and the clouds, allowing us to see things - albeit green things - that seemed impossible to see with all the clouds. And back at the picnic table, Michelle graciously gave further explanation and answered yet more questions, while trying to get a chance to eat.

And there was a lot of tasty food, ready as soon as we arrived. One might say, too much food. Today I started the day with my gym machine.

The whole event was welcoming, really well organized, fun, and inspiring. I loved learning so much, in such a wonderful way. Thanks very much to Leigh Anne for the organization, and the many other club members who worked hard to make this event memorable. It was great!

The BBAA would like to thank the following companies for supporting the 2017 Virginia Association of Astronomical Associations (VAAS) Convention through the generous donation of the following items:

Orion

- Orion 10X50 Binocular Stargazing Kit
- Orion Star Target Planisphere
- Orion DeepMap 600 Folding Star Chart
- Orion MoonMap 260
- Orion Jupiter Map & Observing Guide
- Orion Mars Map & Observing Guide
- Orion Saturn Map & Observing Guide
- Orion Solar System, Moon, and Meteors Poster Kit
- Orion Binocular Astronomy Field Guide
- Orion Telescope Observer's Guide
- Orion Exploring the Cosmos: An Introduction to the Night Sky

Celestron

- PowerTank Lithium

Bob's Knobs

- Gift Certificate for one free set of Bob's Knobs for a telescope

Sky and Telescope

- Sky and Telescope Jumbo Pocket Sky Atlas by Roger Sinnott



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The Many Joys of Amateur Astronomy

By Mel Spruill

I have always been fascinated with the night sky. Looking up on a clear dark night and gazing at the distribution of light always gives me a feeling of awe and wonder. I feel the same way about the skies during the day. I'll admit that out of curiosity I have glanced at the Sun without protecting my eyes, even knowing it was not a good idea!

During my military career, I did not spend much time engaged in hobbies. Now that I am retired from the military, I have begun to pursue some of my interests in earnest.

At my final military assignment, I met Chuck Jagow and noticed that he had some fine astronomical images posted in his office. He mentioned BBAA and I kept that in the back of my mind. I went to a Boardwalk Astronomy event and saw Saturn for the first time! A combination of procrastination and nervousness kept me from going to a meeting. After I retired at the end of 2013, several months passed before I finally decided to go. I was cordially greeted by several of the members. Everyone seemed pleasant and happy to be there. There were snacks, prizes, and a fascinating lecture. The planetarium shows were also very entertaining. All my worries and concerns were put to rest!



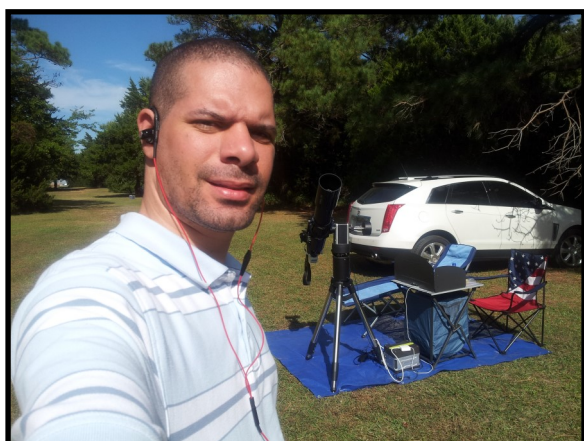
Mel Spruill at a BBAA Boardwalk Astronomy outreach event on the Virginia Beach Boardwalk.

seem insignificant on the cosmic scale, we can still contemplate and experience the Cosmos. It is exciting to learn and amazing to realize just how immense and powerful the Universe really is!

Second is the citizen scientist efforts. I find it amazing that the scientific and research community appreciates and even relies upon amateurs who have the skill and opportunity to contribute real research and scientific knowledge through their own efforts.

My particular interest is in photography - to synergize artistic expression and scientific discovery. I pursue knowledge about many astronomy related topics and have a variety of photographic and astronomical equipment. I look forward to continuous learning, developing competency with the equipment, and sharing my discoveries!

Fellowship with BBAA is an enjoyable experience. I appreciate and respect how BBAA is committed to outreach and bringing astronomy to the public. I am encouraged by others' testimony about their first outreach experiences. Being able to bring the same passion for learning and experiencing the Cosmos with others is an enriching experience for everyone. I look forward to contributing in some way to that effort!



Mel with his impressive equipment, getting ready for a busy evening of observing and imaging at a recent East Coast Star Party.

Astronomy is a fascinating endeavor. Two aspects of it are of particular interest to me. First is the awe and wonder in learning and discovering the magnificence of the Universe. There is so much we have learned about our Universe, yet so much that we don't know. It's humbling and remarkable that, although we may

A Total Solar Eclipse Cosmic Woodstock in Idaho

By Bruce Powers

I traveled to Boise, Idaho for the August 21, 2017 Total Solar Eclipse and to visit my sister's family farm there. I made sure to arrive two days in advance since the airlines seem to frequently be challenging for me!

On the day of the eclipse, we left my sister's farm at 6:00 AM, since the eclipse was to start north of Boise at 11:30 AM. We avoided the interstate, and instead four wheeled it on fire roads through public land in the middle of Idaho. This was beautiful country for me, as I had never ventured out in this part of the country before. There were only a few groups of people along the fire roads in central Idaho; hardly the throngs of people my friends on the east coast wrote me about later. We navigated our way towards the central line of the eclipse to try to maximize our totality time to 2 minutes and 10 seconds, the longest duration possible in central Idaho. We finally settled on a picturesque location overlooking a scenic valley. There were only about 20 folks gathered along the road where we stopped, and fortunately for me, there was an amateur astronomer there with a small refractor set up to view the eclipse. He provided me some telescopic pictures of totality after the event since I couldn't fit my telescopes into my airline carry-on luggage.

This was the third eclipse I have been fortunate enough to see in my life, with the first in 1970 in Portsmouth, VA when I was only seven, and again in 1991 on the big island of Hawaii, when I was 28. Since I had photographed the '91 eclipse through a telescope, I wanted to take a different approach to recording the 2017 eclipse. I knew there would be thousands of pictures of totality from various cameras nationwide at multiple locations, but I wanted to get



Bruce Powers and his sister Carolyn prepare for the 2017 total eclipse in the back country of central Idaho.

some unique and personal perspectives, in contrast to how I thought most would shoot the eclipse. I ran four movie cameras from different perspectives and shot some still photos before and after the eclipse. I aimed a movie camera at

[Continued on page 7](#)

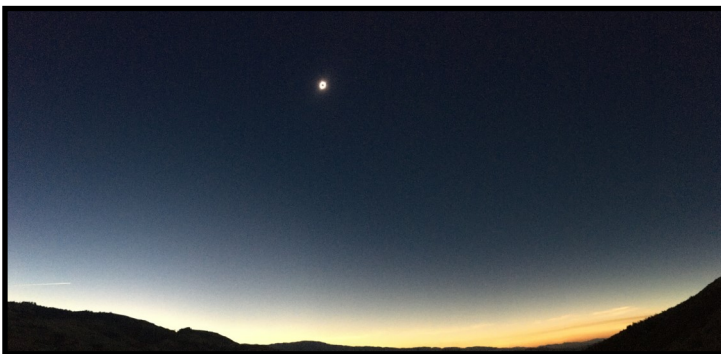


Equipped with eclipse glasses, Bruce's family enjoys views of the partially eclipsed sun.

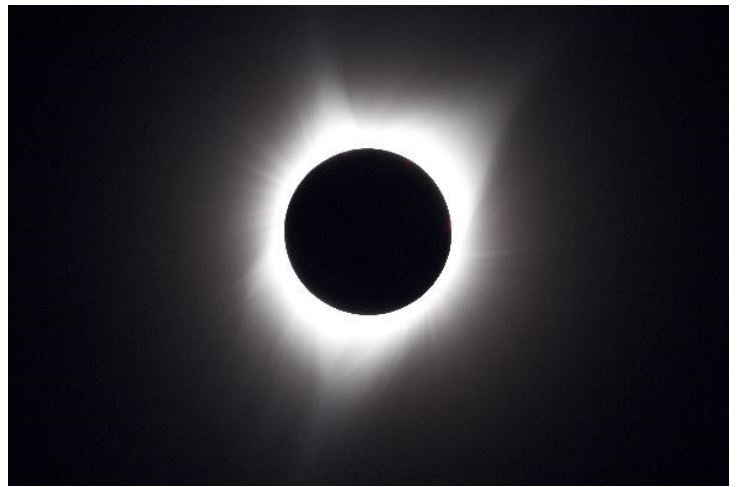
Cosmic Woodstock continued from [page 6](#)

my sister's family to record their reactions, aimed a Go Pro camera to get wide angle shots, used another camera for narrow angle shots, and took movies and still pictures with my iPhone. Fortunately, three of the four cameras got some good movies and stills, which my sister and I edited into a short 10 minute solar eclipse video with a sound track. I have shown the video at BBAA meetings where it was well received.

One of the most interesting phenomena I observed was the change in color of the surrounding landscape just before the eclipse, and of course, the 360 degree sunset that occurs during totality.



In these three shots, Bruce was able to capture the change in color of the surrounding landscape as the eclipse progressed. The top image shows the normal daytime view of the scenery. The middle image was taken just before totality, when pinkish hues were just becoming apparent. The bottom photo shows the scenery and totally eclipsed sun.



The telescopic view of totality from central Idaho as taken by Bruce's new amateur astronomer friend.

The Idaho valley in front of us turned a brilliant shade of pinkish-orange just before and just after the eclipse. I had coached my 13 year old niece where Venus would be during totality, which she was able to pick out easily. Thankfully there were no clouds at all in the dry Idaho summer, which was largely what was predicted for eclipse viewers in the western U.S. During totality the temperature dropped a few degrees and the crickets and birds started to tentatively chirp in their confusion.

We were able to enjoy an awe inspiring 2 minutes and 7 seconds of totality along the central eclipse line in central Idaho. And just as soon as it seemed like it had begun, it was over. The main mid-eclipse impression I had, as I had experienced in 1991, was the intricacy of the rotations and revolutions of the Sun, the Moon, and the Earth that were on display in plain sight. As amateur astronomers, we already appreciate these, but for most, this event was a cosmic Woodstock event where people could really appreciate these intricate movements for the first time. We hear much about S.T.E.M. events now; I think the 2017 eclipse was a nationwide, coast to coast S.T.E.M. outreach event. I can't wait for the next 2024 U.S. eclipse!

Editors Note: We would like to continue featuring more member-submitted eclipse stories from The Great American Eclipse of 2017. If you have a story or image you'd like to share, please send it to hbbaa.newsletter@gmail.com.

A Trip of a Lifetime

The Inaugural Launch of the SpaceX Falcon Heavy

By Grant Wylie

On February 7, 2018 I got to experience one of the greatest thrills of my life. I was at Cape Kennedy Space Center in Florida for the inaugural launch of the SpaceX Falcon Heavy rocket. I had never been to a rocket launch (other than the old Estes backyard variety) but had always wanted to. I had been watching the SpaceX and Kennedy Space Center sites for some time, and when tickets became available I immediately bought the "Feel The Heat" package (with the approval of the finance director — my wife, Kristine).

On February 6 we loaded up my car for the trip and began the 11 hour journey with fingers crossed that the launch would go off on time. The weather forecast showed a 90% favorable forecast, and 70% for the following day.

On February 7, with passes in hand, we headed to Kennedy Space Center at the time advised on our paperwork. The Center had been closed down to all but ticketed guests, due to the expected high turnout. After passing through the gate, we headed to the bus, which took us to the Saturn V/Apollo Launch Center.

Once there we found some seats in the bleachers looking out at [historic launch pad 39A](#), where the Apollo missions were launched. We made quick friends in the stands with some other folks who of course had similar interests. Food and drinks were provided by the facility.

One really cool thing was that [Bill Nye](#) was the entertainment for our seating area, and he promoted JPL and the Planetary Society while taking pictures, giving autographs, and emceeing.

8 After several delays due to high upper level winds, fear set in that the launch was not going to go off as planned, but finally, with the launch window down to 15-minutes, authorization was given to fuel the rocket!



Grant and his wife Kristine touring Kennedy Space Center during their February trip to watch the first SpaceX Falcon Heavy Launch.

Excitement mounted as the countdown got closer and closer. The SpaceX video feed kicked in on the jumbo screen. The final countdown began and then,,,,you saw it before you heard it,,,,the clouds kicked up around the base of the rocket as it slowly began to rise. Knowing this was an initial launch there was a good chance of

[Continued on page 9](#)



Bill Nye the Science Guy provided insight and entertainment in the spectator stands where Grant viewed the launch.



Moments before launch, excitement mounted as upper level winds subsided enough to let the launch count proceed.

failure. I counted the seconds in my head. Then the rumble began to roll across the water, hitting me in the chest. It was an awesome sensation feeling the rumble. The crowd in the stands was cheering, and so was I, as the rocket climbed higher and higher. After a minute I realized that it hadn't exploded, and the launch was successful. Once the main engine shut down it became harder to see in the sky. I began watching on the jumbo screen as the boosters successfully released and began their trek back to Kennedy. On the screen the fairings fell away, revealing ["Starman" in the Tesla roadster](#) preparing to begin his long journey. The

cheering in the stands continued and grew as the boosters re-fired to slow their descent.

Finally, from our seats we saw the boosters begin their final fire almost directly behind the Vehicle Assembly Building as they came to a landing. Incredible!

Despite the [loss of the central core](#), the mission was a huge success! Champagne was provided for everyone as we prepared to board our buses back to the main center.

I got to spend two more days at Kennedy Space Center, a trip I highly recommend. We visited the Rocket Garden, Astronaut Museum, Atlantis Shuttle Building, and more. With the new [Astronaut Training Experience](#), you could easily spend 3 to 4 days there and not be bored.

If you have not seen a rocket launch it is an experience I encourage you to try. It was the trip of my life!



After the launch Grant spent two days touring Kennedy Space Center. This photo he took shows the granite plaque alongside Runway 15 at the Shuttle Landing Facility that marks the place where the nose gear wheel of the Space Shuttle Atlantis came to a stop on its last flight in 2011, marking the end of the Space Shuttle Program.



Grant and Kristine made quick friends with other rocket enthusiasts in the spectator stands.

Getting Ready for the Messier Marathon (Part 2)

By George Reynolds

Authors Note: In [part 1](#) of this series, we discussed timing, location, and practice, as well as some history and references for performing a Messier marathon. That article was published in the May 2017 issue of the Observer which can be downloaded from <http://backbayastro.org/documents/observer/2017-05-observer.pdf>

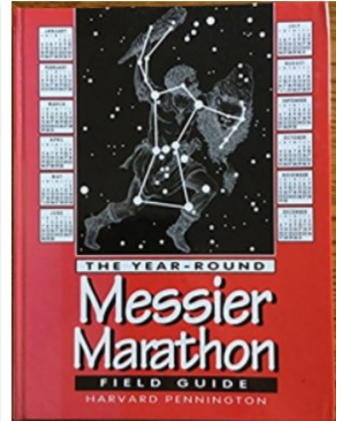
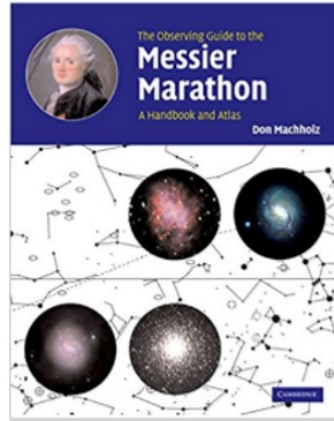
Charles Messier was a comet hunter, perhaps one of the first, in the 18th century. He kept coming across faint, fuzzy objects which at first glance appeared to be comets, but which turned out to be nebulae, galaxies, star clusters, and even a double star or two. He cataloged more than 100 of these objects for other comet hunters to avoid when searching for real comets. Ironically, today, more than 200 years later, we seek out those objects he cataloged to be avoided. Finding all the objects in the Messier catalog has become almost a rite of passage for serious amateur astronomers. The Astronomical League [offers pins and certificates](#) for those who identify 70 to 110 M-objects with binoculars or a telescope.

Some ambitious amateur astronomers even try to find all 110 objects in one night of observing. They call it a Messier Marathon, and you too can do it! In our first article ([May 2017](#)) we talked about planning for location, Moon phase, and time of year to do your Messier Marathon. This time we will deal with honing your skills at searching, finding, and identifying them all, with references for search sequence and tips for building your experience level, so you can participate in such a marathon next year.

There are so many books and references for the Messier Marathon that it may take a third article on this topic. We will mention two of them here: [The Observing Guide to the Messier Marathon](#) by Don Machholz and [The Year-Round Messier Marathon Field Guide](#) by the late Harvard Pennington. Reading these books and following their guidance will give you experience in finding and recognizing Messier objects.

Don Machholz was one of the earliest founders of the Messier Marathon. In his book, on page 65, he says this about experience:

"If you can, right now, tell the person



nearest you what M1 looks like through your telescope, or what type of object M107 is, or which Messier Object is close to M65, then you have more than enough experience to do well in the Messier Marathon. If you can't, then the best way to gain the experience is to go out tonight and see some Messier Objects. This is not the type of thing you can learn from a book (even this one), but comes from nights out under the stars."

A book I highly recommend is Pennington's book, which I abbreviate "TYRMMFG". Not only does it tell you, with sketches, sky charts, and simulated finder views, how to find the Messier objects, it has enough description to help you identify the objects when you find them.

The order in which you try to find the M objects, called the "search sequence", is important. You will want to catch objects before they set in the west and are gone from view, or before they disappear in the early morning twilight. The books and several online sources have several alternative search sequences, differing mainly in the first and last objects to look for. In general, M74, M77, M33, and M31 will be among the first items you attempt in evening twilight, while M15, M2, M72, M73, and M30 will be the ones you try to catch in the early dawn. A complete search sequence can be found in Machholz, Pennington, and any number of online links, such as that of the organization, Students for the Exploration and Development of Space (SEDS): <http://messier.seds.org/xtra/marathon/marath2.html>

Messier Marathon continued from page 10

According to Pennington and Machholz, you can do a “mini-marathon” any time of the year. Any given night there are fifty to sixty Messier objects visible in the night sky. Good advice for your potential marathon is to search them out now, whichever ones are available, and practice your skills at locating and identifying. To make it more fun, try a cooperative effort with another amateur astronomer or two. You can help each other, and enjoy the camaraderie, the joint adventure, and the satisfaction. This applies to your Messier Marathon in March as well.

Some considerations to keep in mind dealing with the search: 1) Get familiar in the fall and winter with those objects that will be the first to set early in the evening in March, so you can find them quickly at the start of your marathon. 2) By the same token, practice finding the early-rising objects by locating them in prime time in the spring and summer. 3) Since the Messier objects are not evenly spread across the sky, there will be very busy search times, like in the Virgo cluster of galaxies in late evening, then a lull after midnight, when there are no objects to find. You might want to take a nap, or get some refreshment and prepare for the spate of early morning objects in Scorpius and Sagittarius, when you will need to locate some 25 objects in a short period of time, ahead of the brightening dawn (and you will be really tired).

The Astronomical League has awards for both binocular and telescopic Messier searches. I suggest you use both in your practice for the marathon. The binoculars will help you locate your targets in their starry context, and you can zero in on them with your telescope and fully identify them. Log them as you find them, even for practice, and indicate “binocular” and/or

“telescope”. You can find the requirements for the A.L. awards at <https://www.astroleague.org/al/obsclubs/messier/mess.html>.

Send a copy of your logs to the club’s ALCor (Astronomical League Correspondent – Bill McLean for the BBAA) when you have logged 70 (binocular) or all 110 (telescope) Messier objects. Practice finding the M-objects throughout the year, so that you can quickly locate and log them for your Messier Marathon in March. I suggest you use BOTH binoculars and a telescope, and log your observations. That way, you can earn both the Binocular Messier award and the telescope awards with not much extra effort.

A few Links for Messier Marathon

SEDS site

<http://messier.seds.org/xtra/marathon/marathon.html>

Stargazer Online

<http://www.richardbell.net/marathon.html>

Star Hopping Guide to the Messier Marathon

[http://www.robhawley.net/Messier Marathon/](http://www.robhawley.net/Messier%20Marathon/)
(You can print star-hopping charts.)

What's Out Tonight? -- A general astronomy site to help beginners get started

<http://www.kenpress.com/messiermarathon.html>

Some Hints on Strategy

Don Machholz, one of the originators of the “Messier Marathon” concept, says in his book,

“A well-designed search sequence should take you from one Messier Object to the next with minimum movement; it should also get you through the list without missing anything. This means it is important to find evening objects before they set, and morning objects just after they rise. * * * Even though March and April are the best months for logging the greatest number of Messier Objects, a Marathon can be held during other times of the year too. * * * We have become

familiar with the traditional March Messier Marathon . . . that is when the sun is near 14 hours of right ascension and it blocks out very few of the Messier Objects. It is also south of the equator, giving longer nights to northern hemisphere observers. In March the globular cluster M30 is difficult to see. In the fall Messier Marathon M30 is easy, and the southern galaxy M83 replaces M30 as the hardest to find.” (pp. 66 -67, *The Observing Guide to the Messier Marathon: A Handbook and Atlas* by Don Machholz).

[Continued on page 12](#)

A Suggested Messier Marathon Search Sequence

Compiled online by Hartmut Frommert, using the work of Don Machholz. This list should be good for northern latitudes 20 to 40 degrees. Depending on geographic location, it may be impossible to find them all, and may be better to slightly modify this list. In case of doubt, consult Don Machholz’s book.

1	M77	2	M74	3	M33	4	M31	5	M32	6	M110	7	M52	8	M103	9	M76	10	M34
11	M45	12	M79	13	M42	14	M43	15	M78	16	M1	17	M35	18	M37	19	M36	20	M38
21	M41	22	M93	23	M47	24	M46	25	M50	26	M48	27	M44	28	M67	29	M95	30	M96
31	M105	32	M65	33	M66	34	M81	35	M82	36	M97	37	M108	38	M109	39	M40	40	M106
41	M94	42	M63	43	M51	44	M101	45	M102	46	M53	47	M64	48	M3	49	M98	50	M99
51	M100	52	M85	53	M84	54	M86	55	M87	56	M89	57	M90	58	M88	59	M91	60	M58
61	M59	62	M60	63	M49	64	M61	65	M104	66	M68	67	M83	68	M5	69	M13	70	M92
71	M57	72	M56	73	M29	74	M39	75	M27	76	M71	77	M107	78	M12	79	M10	80	M14
81	M9	82	M4	83	M80	84	M19	85	M62	86	M6	87	M7	88	M11	89	M26	90	M16
91	M17	92	M18	93	M24	94	M25	95	M23	96	M21	97	M20	98	M8	99	M28	100	M22
101	M69	102	M70	103	M54	104	M55	105	M75	106	M15	107	M2	108	M72	109	M73	110	M30

Harvard Pennington, in his book, *The Year-Round Messier Marathon Field Guide*, uses a slightly different order. He does not number them, as in the table above, but this is the order in which they appear on the pages of his book, arranged by constellation:

1-M74, 2-M77, 3-M31, 4-M110, 5-M32, 6-M33, 7-M34, 8-M76, 9-M79, 10-M42,
11-M43, 12-M78, 13-M50, 14-M47, 15-M46, 16-M41, 17-M93, 18-M52, 19-M103, 20-M1,
21-M45, 22-M36, 23-M37, 24-M38, 25-M35, 26-M48, 27-M44, 28-M67, 29-M65, 30-M66,
31-M95, 32-M96, 33-M105, 34-M3, 35-M53, 36-M64, 37-M85, 38-M51, 39-M101/M102, 40-M106,
41-M40, 42-M81, 43-M82, 44-M97, 45-M108, 46-M109, 47-M102(Alt.), 48-M63, 49-M94, 50-M68,
51-M83, 52-M104, 53-M61, 54-M49, 55-M58, 56-M59, 57-M60, 58-M84, 59-M86, 60-M87,
61-M88, 62-M89, 63-M90, 64-M91, 65-M98, 66-M99, 67-M100, 68-M13, 69-M92, 70-M56,
71-M57, 72-M71, 73-M27, 74-M29, 75-M39, 76-M5, 77-M10, 78-M12, 79-M107, 80-M9,
81-M14, 82-M11, 83-M26, 84-M16, 85-M17, 86-M18, 87-M6, 88-M7, 89-M19, 90-M62,
91-M4, 92-M80, 93-M8, 94-M20, 95-M21, 96-M23, 97-M24, 98-M25, 99-M22, 100-M28,
101-M54, 102-M69, 103-M70, 104-M55, 105-M75, 106-M15, 107-M2, 108-M72, 109-M73, 110-M30.

Pennington has a whole chapter (Chapter 5) on learning the constellations and their “signposts”, to make it easier for you to locate the Messier objects in those constellations. As I said previously, practice, practice, practice ahead of time, so you are familiar with the objects and where to find them. He also emphasizes that you should locate the easy objects first, and stay in order, so you don’t forget or skip any. In Chapter 8 he explains the types of objects you will be looking for: galaxies, globular clusters, open clusters, nebulae of various types, double stars, asterisms, and possible “Messier mistakes”, and a duplication.

Some Final Hints and Tips

Here are some final suggestions for a successful Messier Marathon. Pick the right date, avoid the moon, and plan alternate dates in case of bad weather. Bring warm clothes, food, extra batteries and pens or pencils and log sheets for logging your finds. Prepare for dew with a lens hood or (better) a dew heater. Know when twilight occurs, both evening and morning. Allow time to locate each object; don’t spend so much time on one object that you miss finding others.

And to add to the realtor’s emphasis on location, location, location, I’ll add (again), practice, practice, practice. Get prepared for a challenging Messier Marathon, and have fun!

February 1, 2018 Meeting Summary

The meeting was called to order at 7:30 PM by President Chuck Jagow. Chuck opened the meeting with the Treasurer's report. He mentioned again about the stipend that the City of Chesapeake has offered us beginning this year. Many events have been held without any remuneration.

Scholarship Committee Report (Ben Loyola)

- Applications will close on May 1st. We appreciate the contributions that BBAA Members have made. He mentioned that only two applied for the 2017 Scholarship. Jeff Goldstein mentioned that he would write all the area principals to request that this information be passed on to their respective high schools.

RRRT Report

- Bird Taylor Reported that the RRRT is down. Ben Loyola explained about the cable, worm gear right ascension assembly was the cause of the malfunction. It will be repaired soon although this was supposed to be repaired in early January, it has been snowing a great deal which has delayed the repair.

Old Business:

- Chuck Jagow will be ordering the eyepiece tomorrow for the VB Central Library Telescope that we donated to them. Shawn mentioned that the start-up for the telescope

was slow, since they only checked out the telescope to teachers. The telescope looks brand new, as they have checked it out only a few times. Shawn mentioned that he and Leigh Anne reiterated that the telescope should be checked out to any library card member. Our intention is to help modify other telescopes that the Library buys, and the BBAA will align the telescopes for them.

Program: (Ben Loyola presented "The Jupiter Impact Project") :

- Ben enthusiastically presented information on the Dr. Kunio Sayanagi (from Hampton University) Jupiter Impact Grant. Basically, Ben mentioned that anyone with a reasonably sized amateur telescope can take movies in any format of Jupiter. Try to capture these images when Jupiter is at least 30 degrees above the horizon. Ben passed out several charts showing the times that these transits would be available. The movies that we submit will be analyzed and synchronized by software that Dr. Sayanagi has. The images and impacts will be a coordinated effort and he is asking all astronomers in this area to participate in this project. This is a huge chance for us to individually contribute to the science of Astronomy. Your name will be mentioned in the photographic evidence.

March 1, 2018 Meeting Summary

The meeting was called to order at 7:32 PM by President Chuck Jagow. We're arranging a Star Party for the Virginia Beach Aquarium on April 27 where students stay overnight at the aquarium and we will present them the sky with our knowledge and telescopes.

RRRT Report

- Bird Taylor reported the RRRT is back online. He mentioned that the system works very well, and he has opened up more accounts to any BBAA club member. He briefly explained how it works and took names and emails of those interested in getting an account.

New Business:

- Discussions about the new top prize for the Georgie June Grand Prize. Perhaps another Telescope, eyepieces, etc. Tickets will be \$5 each and will be raffled off at the club picnic. The telescope is a GOTO WiFi scope. Chuck demonstrated the GOTO of this telescope simulating going to Sirius. The telescope

continues tracking, too. Also, the telescope comes with a cigarette power plug. We also viewed the screen on Chuck's cell phone to demonstrate the app software for the scope.

Observing Reports:

- Bird observed M-42 at the GAP
- George Reynolds - Astronomy Merit Badge observing with Troop 413 in Suffolk. April will be the 2nd session.
- Chuck reported on his observing with the 18" Ultra Compact Obsession telescope. He also showed several raw video Jupiter images. Demonstrating that we can capture images, easily. SharpCap software.

Program: (Bill Rust presented "Bill's List") :

- Bill handed out a declination and right ascension chart with rise/set times for several bright galaxies. He displayed the chart on the overhead screen. The chart is between -20 N & 75 S.

Summaries based on Minutes taken by Jeff Goldstein



April 2018

BBAA Events	Special Outreach	Astronomical Events
04/05 BBAA Monthly Meeting		04/08 Last Quarter Moon
04/07 Skywatch @ Northwest River Park		04/15 New Moon
04/13 & 04/20 Cornwatch @ Cornland Park	4/21, Int'l Astronomy Day, VA Beach Central Library	04/22 First Quarter Moon
04/14 Nightwatch @ Chippokes Plantation	4/27, Mentoring Young Scientists, Virginia Aquarium	04/22 Lyrid Meteor Shower
04/21 Saturday "Sun" Day Elizabeth River Park		04/30 Full Moon

Sneak Peek into May

Thu 5/03/2018 Monthly Meeting, Plaza Middle School, 7:30 pm

Sat 5/05/2018 Skywatch at Northwest River Park, 8:00 pm

Thu-Sat 5/10-12/2018 East Coast Star Party, Coinjock, NC

Sat 5/11/2018 & 5/18/2018 Corn Watch, Cornland Park, Chesapeake, VA

Sat 5/19/2018 Saturday "Sun" Day at Elizabeth River Park, Chesapeake, 10:00 AM

Tue 5/22/2018 Boardwalk Astronomy #1, 2401 Atlantic Ave, Virginia Beach, VA, 6:00 PM