

The Maria Mitchell Association

2017 Annual Report

Nantucket's Science Center

mariamitchell.org

AUGUST 21 SOLAR ECLIPSE PARTY - VESTAL STREET



Mission Statement



The mission of the Nantucket Maria Mitchell Association is to promote the legacy of Maria Mitchell and exploration, education, and enjoyment of Nantucket's land, waters, and skies beyond. In fulfilling our mission, we recognize the historic persona of Maria Mitchell, the foremost American woman scientist and educator of the nineteenth century, and her potential impact on contemporary thought by passing on her legacy of intellectual curiosity, respect for and love of nature, learning by doing, and the ideal of individualism.

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Executive Director's Report

Dear Friends and Members of the Maria Mitchell Association:

How Do You Define Impact?

If you have the data, it is relatively easy.
For instance, the MMA Astronomy Research
Experience for Undergraduates attracted
over 200 applications for six positions in
2017. Or, over 150 applicants for seven Natural
Science internship positions at the Hinchman
House Natural Science Museum and Aquarium, and

even thirty applicants for the one Mitchell House internship available for summer 2017.

The MMA has a national reputation of providing meaningful and potentially life changing internship opportunities for college students from around the U.S. that are essential to the operation of the Maria Mitchell Association throughout the year. Each one of these students works with the public directly and supports programs and active research. A large, intelligent, and energetic group of interns work with the 600 or so Summer Discovery Program children, maintain our natural science collections and live animal exhibits, lead workshops and walks, host Open Nights and take on in-depth astronomical research. and the Mitchell House curatorial intern expertly interprets the life and times of Maria Mitchell and her family during tours. Including all the middle and high school volunteers and high school interns, almost eighty students are directly impacted by our internship programs every year. Many of our interns use the experiences gained in our programs and become educators, researchers, advocates, and of course, astronomers. Amazingly, five out of the six astronomy students went on to astrophysics graduate programs in 2017. And we have had MMA interns go on to become Fulbright Scholars, professors, teachers, research scientists, and museum staff. That is guite an impact!

But impact can also be defined qualitatively. You can see it in the enthusiasm and commitment of the children and young adults in our year round and summer programs. According to Dr. Regina Jorgenson, MMA's Director of Astronomy, "My summer as an astronomy research intern at the MMO changed my life. It was my first opportunity to do

Executive Director's Report

real hands-on research under the expert guidance of a professional astronomer. I discovered not only the high level of dedication and hard work required to succeed in a research career, but also the passion and excitement possible with such a pursuit. It was a thrilling summer in all ways — and for the first time I could really envision myself becoming a scientist."

And Skylar Kardell, a Nantucket High School sophmore, states that, "The Maria Mitchell Association has changed my life in numerous ways. It has not only helped me to become a better naturalist, humanitarian, and citizen of my community, but it has also aided me in becoming a better person. . . I was inexperienced, but there were many people who supported and enlightened me." The Maria Mitchell Association "feeds" the curious minds of young and old alike. Our programs nurture that yearning sensation and create new worlds of opportunities.

So whether you look at the "hard" numbers or just spend the time and listen to the stories from our students and young adults, the Maria Mitchell Association clearly has a profound impact! Something we can all feel good about. The MMA provides these experiences thanks to your generous support – from you, our members and donors.

With our deepest appreciation,

David Gagnon



Astronomy

This year saw much excitement in the world of astronomy: From the opening of a new window on the Universe with the first ever detection of gravitational waves and electromagnetic radiation from the same event – a distant neutron starneutron star merger – to the event that captured the attention and awe of millions of Americans, the Great American Total Solar Eclipse. While millions of people travelled to experience the path of totality, millions more – in fact, more Americans than watched the Super Bowl – tuned in to television coverage of this spectacular astronomical event, proving yet again that nature's capability to inspire wonder is alive and well.

In 2017, the National Science Foundation sponsored Research Experiences for Undergraduates (REU) program received a record 204 applications from students around the country. After an extensive review process, including phone interviews of the short-listed candidates, six excellent students were selected:

Megan Ayers (Lewis and Clark College) • Hayley Beltz (Kalamazoo College) • Telvin Benjamin (Suffolk University) • Rachel Bowyer (Rice University) • Bryan Brzycki (Harvard College) • Eydon (Niko) Thomashow (Oberlin College).

Each student was paired with an individual research project - with topics ranging from stars to quasars and galaxy formation to cosmology - and was mentored by Dr. Jorgenson, Gary Walker, and in some cases an additional affiliated astronomer. This summer, we were joined by five affiliated astronomers:

Dr. Terri Brandt (NASA, Goddard Space Flight Center) • **Dr. Suvi Gezari** (University of Maryland) • **Dr. Lindsay King** (University of Texas, Dallas) • **Dr. Devin Silvia** (Michigan State University) • **Dr. Vladimir Strelnitski** (MMO Director Emeritus).

We note with great excitement and pleasure that Dr. Gezari was herself an MMO NSF-REU intern - in the summer of 1998 - and we were thrilled to be able to welcome her back to the island, this time as a mentor to the REU interns. In addition to their traditional science research talk, each affiliated astronomer gave a professional development-style talk to the students. Topics ranged from "Getting into Graduate School," to "Confronting Stereotype Threat" and these talks proved useful to expanding the scope of the professional development of our MMO students.

At the end of the summer, all students presented short, public talks on their research as part of the MMA Science Speaker Series. In addition, this year saw two students, Niko Thomashow and Hayley Beltz, awarded grants from their own universities to return to the MMO during their fall/winter breaks to continue working on their research projects. Several students turned their MMO research projects into senior theses and all of the rising seniors have applied to continue their studies in graduate programs in Fall 2018.

Astronomy

All students successfully presented research posters at the American Astronomical Society (AAS) meeting in Washington D.C. from January 8-12, 2018. We are proud to report that Hayley Beltz won the prestigious Chambliss Astronomy Achievement Student Award for best poster – one of five awarded out of 100 entrants. Her research poster, entitled, "A High Redshift Survey of Lyman Limit Systems," was completed under the guidance of Dr. Jorgenson. The AAS also saw the occurrence of the third annual MMO alumni breakfast. Generously sponsored by Princeton Instruments, Planewave, Ball Aerospace, and the Giant Magellan Telescope, the breakfast brought together over thirty MMO alumni and friends.

Despite the unusually foggy summer that forced the cancellation of one of every three Open Nights at Loines Observatory, these events continue to be popular, bringing in about 2,100 visitors and about \$17,500 in income. Daytime tours of the Vestal Street Observatory and solar observing brought a more intimate experience to abut 150 daytime visitors. And as usual, the Observatories hosted many private and special events, including an overnight visit by the Harvard College Astronomy Club. February 14 saw the first ever wedding to take place at Loines Observatory – a chilly yet memorable event!

The biggest event of the summer for the Astronomy Department, and indeed for astronomers and many others across the country, was the Great American Total Solar Eclipse, which crossed the country on August 21. In honor of the event, the MMO hosted "Eclipse Week" consisting of talks, pinhole camera making workshops, and the culminating eclipse day event during which MMA staff graciously hosted approximately 2,000 visitors to Vestal Street to observe the eclipse. Support for this event was made possible in part by a generous grant from the AAS in the form of 1,000 free solar viewing glasses that MMA staff distributed. While Nantucket was unfortunately not in the path of totality, Dr. Jorgenson live- streamed her experience of totality in Redmond, Oregon back to the excited crowd at Vestal Street.

Further exciting news for 2017, included a collaboration that spanned several years – and MMO Directors! – and produced a research paper published in the peer-reviewed *Astrophysical Journal*. The work was started as the summer project of 2015 REU student Patrick Drew, advised by the MMO Director Emeritus, Vladimir Strelnitski. After arriving at the MMO, Dr. Jorgenson obtained complimentary observations using the Keck telescope in Hawaii and was able to supplement the results found by Drew and Strelnitski. Drew, now a graduate student at the University of Texas, Austin, is the first author of the resultant publication entitled "MWC349A and B Are Not Gravitationally Bound: New Evidence," which includes both Drs. Strelnitski and Jorgenson as co-authors.

Natural Science

In 2017, the Natural Science Department continued its goals of preserving and displaying the biodiversity of Nantucket County and conducting research on invertebrates, snakes, birds, and marine biodiversity. The Aguarium and Natural Science Museum were open from June 8 through September 1. Visitation at both the Aquarium and Museum eclipsed 2016's totals with a modest increase of 143 visitors at the Aguarium and a larger increase of 366 visitors at the Museum. Museum visitation had not been that high since before the introduction of the properties pass system. By all accounts, this was a summer with exceptional weather and

very few rainy days - this negatively impacts admission levels guite strongly. The Aguarium remains the main entry point of guests into the MMA properties. This year's Aquarium interns did a particularly great iob of guiding people to visit other properties with their passes and were especially successful at selling memberships.

Research programs consisted of ongoing projects and new projects. The MMA continued to collaborate with the Nantucket Conservation Fundation. on the long running Whip-poor-will survey and regional horseshoe crab survey. The American Burying Beetle project was reinvigorated this year with excellent captures of adult beetles in the early summer trapping period when Lou Perrotti, Director of Conservation Programs at the Roger Williams Park Zoo, journeyed out to the island between June 12 - 23. Nineteen new beetles were caught during this trapping period, none of them recaptures from the previous year. Following this success, we provisioned nine pairs and three

> individuals. In late summer, we captured ninety teneral (freshly molted) beetles. well above 2016's total of two tenerals



Natural Science

Our major new research program of the year was undertaken in collaboration with the Nantucket Land Council and the Town of Nantucket Natural Resources Department. We piloted a study to assess the population of green crabs on Hussey Shoal in

Nantucket Harbor using capture-mark-recapture (CMR) techniques. Our first trial in June did not succeed – we attempted to mark the crabs with white waterproof paint on their carapaces. The marks were not readable after one day so the trial was halted early. We continued to research techniques used by researchers in the field and we purchased specialty crab marking tags from Floy Tags. These are small synthetic tags with unique numbers that can be harmlessly superglued to the carapace of the crab. These worked well in our second, third, and fourth trials in July, August, and September and we generated green crab population estimates for each month from the program called Density 5.0 based on our data collection. We hope to continue and expand this research and collaboration in the summer of 2018 and add a management component in the summer of 2019.

The Nantucket Science Festival was held March 18 from 10 am - 2 pm at the Cyrus Pierce Middle School. Over 375 island children and adults explored science through hands-on activities in robotics, renewable energy and electricity, magnetism, potential energy in engineering, space

exploration, sensory crafts, and more. Many organizations across the island also supported this year's event including the Nantucket High School Tech Club, the Linda Loring Nature

Foundation, the Nantucket Conservation Foundation, ACK Smart, SmartPower, and the Exploration Station.

School Programs in 2017

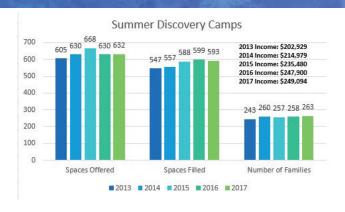
Director of Education, Kim Botelho, continued to provide education programs throughout the school year for island children in grades K-5. The MMA offered two afterschool series including "Art Forms" and "Animal Encounters" for grades K-2 and a traveling "Aftershool Discovery" series for children ages 7-11 years. Classroom programs included "Bird Adaptations" for all 4th grade classes at the Nantucket Elementary School, "Trees and the Community" for all 5th grade classes in both public and private schools, and "All About Reptiles" for the Montesori Children's House of Nantucket. We also provided several field trips including "Beach Exploration" for all public school kindergarteners, "Marine Invertebrates" for 1st graders from the Nantucket Lighthouse School, "Salt Marsh Ecology" for 7th and 8th graders from New Canaan Country Day School, and a "Stars & Senses Night Hike" for 8th graders from the Lake Champlain Waldorf School.

Thanks to the generosity of EGCF, a nonprofit foundation, we were able to provide eight partial scholarships and fourteen full scholarships totaling \$10,636 for out summer Discovery Programs. Patricia Harding, from the Nantucket Elementary School, once again helped make this program possible by connecting us to families with the greatest need. Between the scholarships and discounts for island families, the MMA provided \$40,700 worth of assistance to the Nantucket community.

During the fall of 2017, the Director of Education took significant steps to further enhance the true educational nature of the MMA's Summer Discovery Camps by developing all new sessions for 2018 that are aligned with the Next Generation and Massachusetts Science Standards, as well as other Core Curriculum Standards, and that meet the National Association for Environmental Education's Guidelines for Excellence in Environmental Education. This was done in an effort to form partnerships with colleges and universities in the future that will enable the MMA to hire the best interns enrolled in leading environmental education and science programs around the country. Because of this, the MMA will be rebranding camps to Summer Discovery Programs.

In 2017, the MMA education programs reached more families and generated more income than ever before, and nearly reached the same number of children as 2016. We also provided more discounts to island families and for the first time; 50% of our scholarships were awarded to female campers.

Education

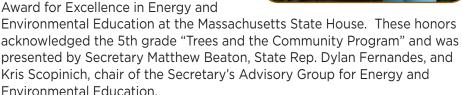


The MMA once again offered camps during April and December vacations. "Explore and Play" was held April 17-21, filled completely with ten children, and had a waiting list. "Ecosystem Engineers" was held December 27-29, and had nine children enrolled. Thanks to the generosity of the Adam Bloom Scholarship Fund, we provided three full scholarships to the spring session

and one full scholarship to the winter

session.

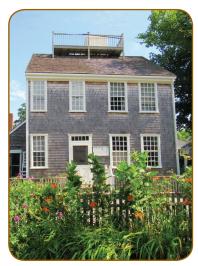
On March 8, 2017, the Maria Mitchell Association, Director of Education Kim Botelho, and community partner Annie Mendelsohn received recognition from the Massachusetts House of Representatives along with a Secretary's Award for Excellence in Energy and



In 2017, the MMA's Director of Education, Kim Botelho, continued to serve as a Board Member and Environmental Literacy Representative for the Massachusetts Environmental Education Society (MEES). Share and Shine, an effort launched by Kim in 2016, to share environmental education programs and acknowledge the work of formal and non-formal teachers promoting environmental literacy across the Commonwealth continued to grow. Now, when visiting the MEES website, massmees.org, you can read about environmental education efforts in every county in Massachusetts.

Mitchell House, Archives & Special Collections

The Mitchell House was off and running even by the beginning of January as it hosted numerous programs, special activities, classes, and as always, conducted research, conservation projects, and some special events. One new collaboration was a stone cleaning workshop with the Nantucket Girl Scouts in which we cleaned the stones of the Nantucket veterans in the Veterans' Cemetery at Prospect Hill shortly before the Memorial Day commemorations at the cemetery. The American Legion provided a grant for supplies and all of the stones were cleaned of the lichen and dirt. This gave the Scouts a deeper connection and understanding for their participation in the Memorial Day observance. The curator has been conducting stone cleaning workshops for over a decade.



At the end of June, the Mitchell House along with Wellesley alum, Sally Charpie, hosted a "Seven Sister Tea" to celebrate Maria and graduates of the Seven Sister colleges. A fun afternoon event, we hope to see this expand over the coming years as Maria played an integral role in women's higher education. Further celebrations included Maria's 199th birthday which was a great success again this year with cookies donated by numerous bakeries around the island and our wonderful board members serving the Mitchell House punch – and cookies! Live music, animal demonstrations, and special exhibits were all a part of the celebration.

Classes continued for families and children, as well as several preservation related workshops and walking tours. Tours were conducted by the curator, Mitchell House intern, and volunteers to a larger group than 2016. This included several special group tours. Through outreach via classes, programs, tours, and workshops, the Mitchell House reached almost 1,000 people in 2017. The Mitchell House intern, Sabrina Smith, worked on several initiatives outside of tours and teaching children's classes. She conducted research concerning the family portraits and silhouettes in the Mitchell House and then created bookmark "take-aways" of this information for the public. Smith also worked on conservation projects with the curator and developed some new classes for children. In the fall, the curator worked closely with the MMA's Worcester Polytechnic Institute's student team as they worked on assessing the needs of brand-identification for the MMA, as well as wayfinding issues for the Association. Additionally, she developed and planned a conference off-site for the New England Museum Association with other island non-profits. This off-site was to include a panel discussion and site visits but unfortunately due to an October storm, was cancelled. However, one intrepid attendee from the Vineyard made

Mitchell House, Archives & Special Collections

it over so an abbreviated off-site was hosted by the groups with the curator bringing the attendee to various sites – and future collaborations and ideas developed from this off-site of one!

Mitchell House had numerous research inquiries and requests for use of historic images in multiple publications. Happily, *American Eclipse* by David Baron and published by W.W. Norton, was released in June in time for the eclipse. Maria was one of five featured astronomers in the book and it is a must read! David Baron will speak for the MMA in 2018 for the Birthday Speaker Series. Maria and the



MMA were also featured in Dava Sobel's *The Glass Universe* which was released in December 2016. Sobel will be speaking for the 2018 Birthday Speaker Series as well. *The New York Times' T Magazine* featured an article on splatter paint, featuring the Mitchell House's own splatter painted floors and a travel writer wrote a piece on women's history on Nantucket for *Condé Nast Traveler* and mentioned the curator's book, *The Daring Daughters of Nantucket Island*. A Canadian newspaper also highlighted the Mitchell House and Maria in one of its travel pieces. The Mitchell House Curator was asked to write and narrate a piece of the Nantucket Historical Association's exhibit "Out of the Box" concerning Walter Folger's telescope – he being a cousin of Maria Mitchell. And, several exhibitions and exhibits that featured the eclipse and the history of eclipses in the U.S. brought numerous requests for information on Maria and also the use of historic images. Further requests came across the curator's desk from authors and professors in need of information and images for lectures and upcoming books and numerous student requests came from those in the third grade to those at the graduate level.

In addition to her research, writing, and conservation projects for the House and its collection, the curator continued to focus on the historic renovation of the MMA Science Library into the MMA's Research Center and plan and implement numerous initiatives for the 200th birthday of Maria Mitchell. These include a scholarship in Maria's name for a graduating senior from Nantucket High School; bringing back a Maria Mitchell book award for a Nantucket High School junior; an exhibit to be held at the Nantucket Historical Association's Whaling Museum in 2018 for which she is writing the text, labels, and panels and choosing the items for display as well as mounting the exhibit with the NHA's curator; locating and inviting speakers for the Birthday Speakers Series in 2018; an expanded August 1 celebration; a women in science on Nantucket panel for Women's History Month and Maria's 200th in March 2018; and the Maria Mitchell Women in Science Symposium and Award. The Symposium is to be held in the Boston area in October 2018 and focus on women in the STEM fields including issues and retention. We hope that it will be successful with up to 225 in attendance and something that will continue in future years as a iennial event. So, it was a busy 2017 – and will be a busy 200th Birthday year!

Facilities



In 2017, the MMA continued to focus on the preservation and repair of all of its buildings, particularly on Vestal Street. The sites have regular repairs that happen every year from wear and tear and then purchases for cleaning supplies for interns and visiting groups, plumbing and electrical repairs, and other minor carpentry repairs. And then each year, we have larger planned improvements.

Research Center: Work continued with the installation of the HVAC system and we had heat by December with the dehumidification, air conditioning, and humidification systems awaiting the plumber's final work in January

2018. A new accessible slope and path to the west side of the building, as well as an accessible door were completed – all of which is required by law. Lab tables were built and existing 1920s cabinets and shelves were retrofitted for the lab space while preserving their historic integrity. Additionally, the cabinetmaker built a microscope station that looks out over Vestal Street fitting it into the existing shelving and window sill. The bathroom was rebuilt to meet accessibility requirements using the original doors, framing, and baseboards. The lathe that was removed from the bathroom walls was saved and re-used when re-plastering the walls that had to be altered to receive the plumbing and new bathroom accessible fixtures. We re-plastered with lime and hair plaster as had originally existed on these walls. The basement was connected by a doorway access created by the mason allowing for easier access to collections and one basement zone for the HVAC system. Interior rooms were painted and new electrical wiring and lighting began to be installed to meet code and the electrical loads that the building will need with the HVAC system and the appliances required for the collections. The MMA is indebted to all the women and men who have been making this project happen in time for our opening in May 2018. They have been generous with their time and attention.

Hinchman House: Work included making updates to the dorm spaces with new curtains, mattress pads, lamps, and where needed, mattresses and bedframes for the interns; repairs to the lab room ceiling and plumbing repairs; painting of the two rear rooms of the House and the halls and rear stairwell; all windows professionally washed inside and outside; mildew cleaned from front trim, gutters, and MMA sign; cleaning of rug in rear



Facilities

museum room, replacement of sewer line to the Town main line; replacement of two front downspouts with copper; structural repairs to front porch; repair of two broken historic sashes. Several of these items were grant funded.

Drake Cottage: This building received some focus as well in 2017 with new carpeting installed in the Administrative offices replacing the original and much worn carpet, replacement of a rotted rear door, repairs to the building's sprinkler system, and new stone for the parking area.

Maria Mitchell (MMO) and Loines Observatories: These buildings saw some minor behind the scenes repairs and removal of the peastone in the driveway at Loines to make it better for solid footing and accessibility.

Aquarium: Repairs were made to replace missing and rotted deck planking and balustrades, the broken trellises under the decks were removed, post caps were replaced where needed, repairs were made to the doors on the rear buildings, the front building's door threshold was replaced because it was rotted as was some of the trim, repairs were made to the front post and porch, holes were made in the rear east building so that the chillers used for the tanks could be placed outside so that they do not overheat nor heat up the building and the aquarium tanks inside.

Washington Street Properties: At this site, we had our annual staff cleanup of the main building that is used for programs and lectures, kayak racks were built by James "Ben" Miles at cost, and a new mini-fridge was purchased for the cottage used for summer staff.

Astronomer's Cottage: In early 2017, we wrapped up the re-shingling and re-roofing of the building, added a gutter to the rear dormer for better rainwater runoff from the roof, made some minor interior and exterior repairs, made repairs to the furnace which also serves the MMO, installed a new picket in the rear yard, replaced the rotted front door with a "new" front door—a gift from our neighbor at 5 Vestal Street which was once on their house. Several items completed were grant funded.



Work on the new Research Center is nearly complete and is due to open in the spring of 2018.

Development & Communications

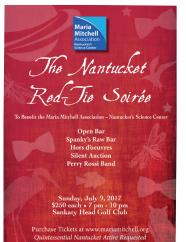
The Department continued to expand on opportunities for individual and corporate sponsorship. A new Business Opportunities booklet was created in advance of the 2018 season. The new booklet was resized to make it more user-friendly. It also provides ten different sponsorship opportunities (compared to six) with a range of support from \$250 to \$25,000.

The Nantucket Red-Tie Soirée remains the largest fundraising event of the MMA. The 2017 event was a sold-out event with 250 guests in attendance. A robust silent auction, along with business and individual sponsors made the event the most sucessful to date.



The special guest at this year's Nantucket Red Tie Soirée was *National Geographic* photographer, Michael Melford. While on Nantucket, he offered a field photography

course for ten individuals with program fees benefitting the MMA.



This year, the MMA hosted fifteen separate friendraisers. Each event was designed to strengthen our existing donor base while also broadening our circle of influence. Friendraisers were held by several past and present board members. They were also incorporated into public events, such as "Release Day" at the Aquarium and the breakfast meeting at the American Astronomical Society.

To raise additional funds, the MMA has started an Adopt-An-Animal Program. Each adoption is \$75, with a choice of a barn owl, painted turtle, milk snake,

Adopt An Animal
For The Love Of Nature

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Help us feed and provide for the animals that live with us throughout the year.

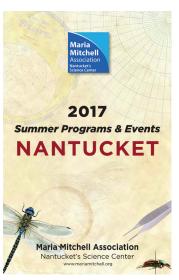
lobster, or spring peeper. Each kit comes with a certificate of adoption, a stuffed animal representing the adopted species, a guide to amphibians on Nantucket, a metal button, a fact sheet about the animal, a note from the Executive Director and property passes to MMA. The kits will be sold in the gift shop seasonally and online all year long.

Development & Communications

The Department is preparing to maximize the publicity surrounding the 200th birthday of Maria Mitchell in 2018. Plans are underway to hold a series of events, each to honor and celebrate her milestone birthday. These events include a new fundraiser along the harbor front, an expansion of the Nantucket Red-Tie Soirée, a special speaker series, and other smaller friendraiser events. The goal is to use the upcoming birthday year to maximize donations and awareness of both the MMA and her legacy.



The Department prepared the 2017 Summer Program & Events Guide. The Guide lists all of the summer programs, camps and special events for the upcoming summer season. The book production and distribution was supported by thirty-two island businesses, each paying \$250 as a sponsor. A total of 3,000 books were printed and distributed.



The MMA has had substantial success with grants this year. While a good portion of the grants were from familiar sources, we have made gains with new foundations that will potentially help the MMA expand this area of support in the future.

Advertising for the 2017 season included the use of print, multi-media, electronic, and radio. The MMA also had a double-page spread in the November issue of *Nantucket Today* magazine. Ads specific to camp registration ran weekly from April through mid-July in the *Inquirer & Mirror*. Print ads were placed in the calendar sections of the island's newspapers, each advertising a program or special event. Aboard the HyLine Ferry, ads were displayed on monitors aboard the ferry and in the terminals. Radio ads ran from June through the end of August and focused on a variety of programs and events.

The department continues to work at establishing the brand of "The Maria Mitchell Association – Nantucket's Science Center. The advertising and marketing materials have started to have a consistent and clear style associated with the MMA. Font types, colors, and styles continue to be refined in the MMA's collateral material and advertising. Discussions for replacing older signs and exhibit materials are underway for implementation in 2018.

2017 Donors and Supporters

We strive for accuracy in this list. If your name has been omitted or listed incorrectly, please let us know at (508) 228-9198 or by email to gdonnelly@mariamitchell.org.

The Nantucket Red-Tie Soirée

Individual Sponsors

Corona Borealis (\$15,000) Bebe Archibald Poor, D.V.M., M.S.

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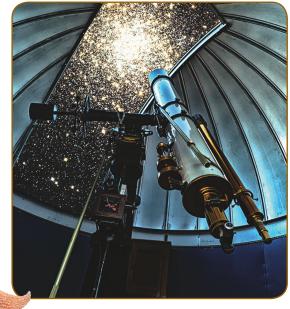
Supernova (\$500)

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Jeanine & Alastair Borthwick
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SCIENCE SPEAKER SERIES Location: 33 Washington Street 7:00 PM - 8:00 PM

Free for Members • \$10 for Non-Members					
Date	Presenter	Topic			
May 31	Ginger Andrews	Barn Owls Were My Siblings			
June 7	Owen Nichols	The Effects Of Environmental Variables On The Distribution Of Squid			
June 14	Dr. John L. Koprowski	Everything You Wanted To Know About Squirrels But Was Afraid To Ask			
June 21	Dr. Emily Goldstein Murphy	Invasive Species And Island Ecology			
June 26*	Cindy Pease Roe	Upsculpting Plastic Flotsam Into Works Of Art			
June 28	Jonathan White	A First-Hand Account Of Tides From Around The World			
July 5	Dr. Thomas Oliver	Tracking Coral Reefs In A Changing Ocean: The National Coral Reef Monitoring Program			
July 12	Dr. Phil Duffy	What's Next For Climate Change In A World Of "Alternate Facts?"			
July 19	Jill Talladay	Creating A Responsible And Sustainable Environment			
July 26	Julia Blyth	Behind The Scenes At The MMA Natural Science Museum			
Aug. 2	Dave Remsen	A Science-Watcher's View Of The Biodiversity Of Nantucket Sound			
Aug. 9	NSF-REU Student Presentations	Students Astronomy Research Conducted At MMA			
Aug. 16	Dr. Regina Jorgenson, Jascin Finger	The Great American Solar Eclipse of 2017			
Aug. 23	Laura Ludwig	Plastic Pollution - A Global Problem With Local Solutions			
Aug. 30	Dr. Dick Veit	Using Birding Data In Science			
Sept. 6	Dr. Marko Horb	The Crispr Revolution: Applications For Biomedical Research			
Sept. 13	Dr. Loretta Roberson	Coral Reefs In A Changing World			
Sept. 20	Sarah McGrath	Importance Of The Microbiome: Lessons From The World Of Amphibians			

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Donations and Gifts

Mitchell House and the Archives and Special Collections received several gifts this year. They included:

Virginia Andrews – photograph of her mother, Edith Folger Andrews, former Mitchell House curator and MMA Ornithologist, sitting on the front stoop of Mitchell House with Maria Mitchell's Dolland telescope, ca. 1945.

Nancy Giragosian – plants for the Mitchell House garden, front door of 5 Vestal Street.

Nina and Robert Hellman – ten natural science related books from their personal collection for the MMA Special Collection.

Toni B. McKerrow – Ward's How to Make an Insect Collection booklet for the MMA Special Collection.



Financial Report

The Nantucket Maria Mitchell Association, Inc. Statement of Financial Position December 31, 2017 (With Summarized Audited Financial Information for 2016)

Assets		2017		2016	
Cash and cash equivalents	\$	743,360		\$ 872,830	
Inventories		1,318		1,318	
Prepaid expenses		7,892		-	
Pledges receivable		126,376		155,876	
Grants receivable		-		12,350	
Other receivables		45,051		143,260	
Investments		3,056,066		2,890,421	
Real estate interests		235,000		235,000	
Remainder interest in property		1,205,568		1,205,568	
Property, plant, and equipment, net		5,281,822	5,087,953		
Liabilities and Net Assets Accounts payable and accrued liabilities	\$ <u> </u>	10,604,576 \$ 173,268	\$ <u>1</u>	117,937	
Net assets					
Unrestricted	\$	6,660,461	\$	5,275,633	
Temporarily restricted		1,940,085		3,282,367	
Permanently restricted		1,928,639		1,928,639	
Total net assets	1	10,529,185		10,486,639	
\$	1	10,702,453	\$ =	10,604,576	

Financial Report

Revenue and Support	Unrestricted		emporary Permanently Inrestricted Unrestricted		2016	
				2017		
Programs	\$ 302,421	\$ -	\$ -	\$ 302,421	\$ 308,657	
Admissions	55,988	-	-	55,988	61,152	
Museum Shop	16,665	-	-	16,665	15,033	
Memberships	93,895	-	-	93,895	104,925	
Grants	84,895	137,965	-	222,860	236,649	
Contributions	320,075	21,272	-	341,347	313,591	
Special events	160,027	-	-	160,027	140,958	
Investment return designated for operations	142,550	-	-	142,550	162,500	
Rental income	70,145	-	-	70,145	59,965	
Interest income	2,782	-	-	2,782	3,527	
Net assets released from restriction						
Satisfaction of program restrictions	582,635	_ (582,635)	<u>·</u>			
Total revenue and support	1,832,078	(423,398)		1,408,680	1,406,957	
Expenses						
Program services	1,026,070	-	-	1,026,070	952,64	
Management and general	391,737	-	-	391,737	365,086	
Development	309,420			309,420	288,958	
Total expenses	1,727,227			1,727,227	1,606,308	
Change in net assets from operating activities	104,851	(423,398)	-	(318,547)	(199,351)	
Non-constant was all the con-						
Non-operating activities: Investment return, less amounts						
	246.024			246 021	F0.00¢	
designated for operations	346,821		-	346,821	50,006	
Contributions & grants restricted for capital activities	-	36,722	-	36,772	315,725	
Loss on uncollectible pledges	-	(22,500)	-	(22,500)	(485,000)	
Donation of remainder interest in property	-	-	-	-	644,839	
Net assets released from restriction		(022.156)				
Satisfaction of capital related restrictions	933,156	(933,156)				
Change in net assets from non-operating activities	1,279,977	(918,884)	-	361,093	525,570	
Change in net assets	1,384,828	(1,342,282)	-	4 2,546	326,219	
Net assets, beginning of year	_5,275,633	3,282,367	1,928,639	1 <u>0,486,63</u> 9	10,160,420	
Net assets, end of year	6,660,461	1,940,085	1,928,639	10,529,185	10,486,639	

Board, Staff, Interns & Volunteers

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Mitchell House, Archives & Special Collections

MMA Deputy Director and Mitchell House Curator Jascin N. Leonardo Finger

Mitchell House Intern Sabrina Smith

Volunteer Tour Guide Pat Michaelson, Ph.D.

Student Volunteers Avery Hylton Keira Reidy-Dack

Natural Sciences

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Natural Science Affiliated Staff

Senior Research Fellow Robert S. Kennedy, Ph.D.

Research Associate
Andrew McKenna-Foster, M.S.

Research Associate, Scallops Valerie A. Hall, Ph.D.

Natural Science Program Assistant Virginia Andrews

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Sara Schoen
Celeste Venolia

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Collaborators

The Maria Mitchell Association is proud to establish collaborations with other non-profit organizations and universities in order to offer the best in programs and to conduct research vital to undertanding and preserving Nantucket's natural areas and to pursue cutting edge research in astronomy using the MMA's telescopes and leading telescopes around the world and in space.

American Society of Mammalogists

American Arachnology Society

American Association of Variable Star

Observers

Artists Association of Nantucket

Willis Blount, Ruthie B

Boston University

Cape Cod Museum of Natural History

City University of New York

Connecticut College

Egan Maritime Institute

European Southern Observatory

International Astronomical Union Josh Eldridge, "Critter Cruises"

Mark Genthner, Just Do It, Too

Harvard-Smithsonian Center for Astrophysics

Harvard University Museum of

Comparative Zoology

The Irish Wildlife Trust

Keck Observatory

Linda Loring Nature Foundation

Long Island University

The Mammal Society (UK)

Massachusetts Audubon Society

Massachusetts Division of Marine Fisheries

Massachusetts Space Grant Consortium

Massachusetts Institute of Technology

Roger Williams Park Zoo

U.S. Fish and Wildlife Service

Massachusetts Division of Marine Fisheries

Nantucket Conservation Foundation Museum of Comparative Zoology

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Nantucket Biodiversity Initiative

Nantucket Boys and Girls Club

Nantucket Community Sailing

Nantucket Community Television

Nantucket Conservation Foundation

Nantucket Girl Scouts

Nantucket Historical Association

Nantucket Islands Land Bank

Nantucket Land Council

Nantucket Lighthouse School

Nantucket Marine & Coastal Resources

Department

Nantucket Preservation Trust

Nantucket Public Schools

Nantucket Shellfish Association

Nantucket Shipwreck & Lifesaving Museum

National Collaborative of Women's

History Sites

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University of Paris, France

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University of Western Australia

U.S. Fish and Wildlife Service

The Wildlife Society

Woods Hole Oceanographic Institute

Vassar College Yale University

Research

2017 Research/Program Collaborators By Subject

American Burying Beetle

Lou Perrotti, Director of Conservation Programs, *Roger Williams Park Zoo*

Cynthia Corsair, U.S. Fish and Wildlife Service
Anita Barstow, U.S. Fish and Wildlife Service
Brandon Quinby, Purdue University Ph.D. student

Snakes, Birds

Danielle O'Dell, Research Technician/Field Supervisor, Nantucket Conservation Foundation **Scott Smyers**, Environmental Consultant,

Oxbow Associates Inc.

Joe Martinez, Curatorial Assistant, Museum of Comparative Zoology

Horseshoe Crabs, Insects, Bats

Dr. Derek Perry, Massachusetts Division of Marine Fisheries

Dr. Jennifer Karberg, Research Supervisor Nantucket Conservation Foundation

Danielle O'Dell, Research Technician/Field Supervisor, Nantucket Conservation Foundation

Other

Jessica Cundiff, Curatorial Associate/Collections Manager, Museum of Comparative Zoology, Sankaty fossils

Annie Mendelsohn, Rotary Club of Nantucket , 5th Grade Tree Program

Karen Beattie, Manager of the Department of Science and Stewardship, Nantucket Conservation Foundation

Jason Bridges, Nantucket Bike Tours

Dr. Kevin Esvelt and Joanna Buchthal, MIT,
Mice Against Ticks Project

Scallops, Shellfish

Dr. Steve Estabrooks, Scallop Researcher Tara M. Riley, Nantucket Town Shellfish Biologist Dr. Valerie Hall, Scallop Research, MMA



Green Crabs

Emily Molden, Nantucket Land Council Cormac Collier, Nantucket Land Council Jeff Carlson, Town of Nantucket Natural Resources Department

J.C. Johnsen, Town of Nantucket Natural Resources Department

Herbarium

Roberta Lombardi, Herbarium Assistant, UMass Amherst

Pam Polloni, Research Assistant, Woods Hole Oceanographic Institute Kelly Omand, Research Technician/Field Supervisor, Nantucket Conservation Foundation

Publications & Presentations

Astronomy Publications:

Jorgenson, R. A., Monthly astronomy column for *The Inquirer and Mirror*.

Ayers, M., Gezari, S., & Liu, T. "Searching for Signatures of Supermassive Black Hole Binaries." 2018, American Astronomical Society Meeting Abstracts #231, #347.18.

Beltz, H., Jorgenson, R. A., & Rafelski, M. "A High Redshift Survey of Lyman Limit Systems." 2018, American Astronomical Society Meeting Abstracts #231, #357.02.

Benjamin, T., & Brandt, T. J. "Investigating γ-ray Emission from the Westerlund 1 Massive Star Cluster." 2018, American Astronomical Society Meeting Abstracts #231, #344.14.

Bowyer, R. "Mapping Dark Matter in Simulated Galaxy Clusters." 2018, American Astronomical Society Meeting Abstracts #231, #252.10.

Brzycki, B., & Silvia, D. "Observational Tracers of Hot and Cold Gas in Isolated Galaxy Simulations." 2018, American Astronomical Society Meeting Abstracts #231, #149.53.

Drew, P., Strelnitski, V., Smith, H. A., Mink, J., Jorgenson, R. A., & O'Meara, J. M., "MWC349A and B Are Not Gravitationally Bound: New Evidence." 2017, Astrophysical Journal, 851, 136.

Foord, A., Gueltekin, K., Reynolds, M., Ayers, M., Liu, T., Gezari, S., & Runnoe, J., "A Multiwavelength Analysis of Binary-AGN Candidate PSO J334.2028+01.4075." 2017, Astrophysical Journal, 851, 106.

Thomashow, E., Jorgenson, R. A., Strelnitski, V., Walker, G., & Maria Mitchell Observatory (MMO) Research Experiences for Undergraduate (REU) Interns, "Two- Decade Monitoring of MWC349 in Optical and Radio: New Results." 2018, American Astronomical Society Meeting Abstracts #231, #136.10.

Astronomy Presentations:

Space Telescope Science Institute Spring Symposium "Lifecycles of Metals Throughout the Universe," April 2017.

Cosmopolitan Club Presentation, Nantucket Yacht Club: "Research at MMO and Understanding Solar Eclipses," July 2017.

Tuckernuck Land Trust Summer Program Presentation: "Stargazer's Delight," August 2017.

Jascin Leonardo Finger

Publications:

"Maria Mitchell's Attic" blog for MMA

Presentations:

Nantucket Book Festival "Author's Tent," June 2017.

Nantucket Lightship Basket Museum, lecture on Nantucket women.

MMA Science Lecture Series: "The Great American Eclipse" a talk with Regina Jorgenson, Ph.D., MMA Director of Astronomy.

Nantucket High School Nantucket History Class presentation on Nantucket Women.

Charlemont Academy "Maria Mitchell and the MMA."



