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from the museum of arts & sciences, in association with the smithsonian institution
spring 2020



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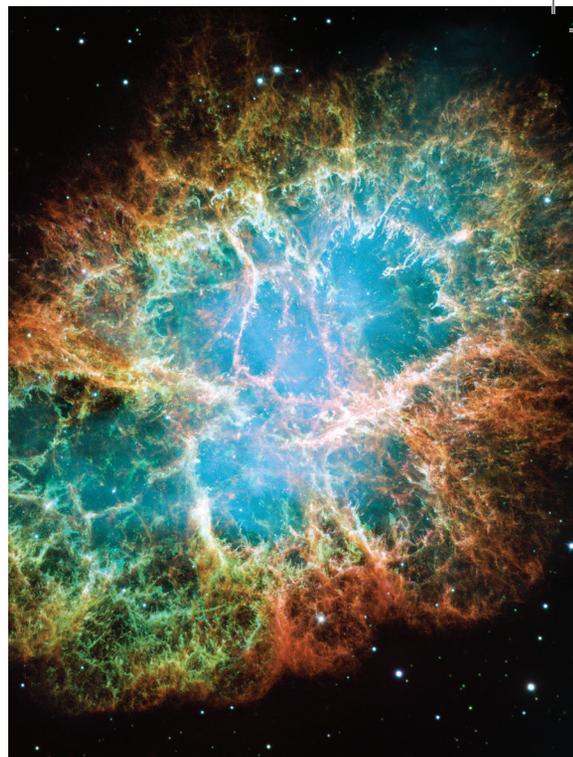
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ON THE COVER

Crab Nebula

Located about 6,500 light-years from Earth, the Crab Nebula is the remnant of a star that began its life with about 10 times the mass of our Sun. Its life ended on July 4, 1054 for observers on Earth when it exploded as a supernova. In this image, the Hubble Space Telescope has zoomed in on the center of the Crab to reveal its structure with unprecedented detail.

Image Credit: NASA and
The Hubble Heritage Team



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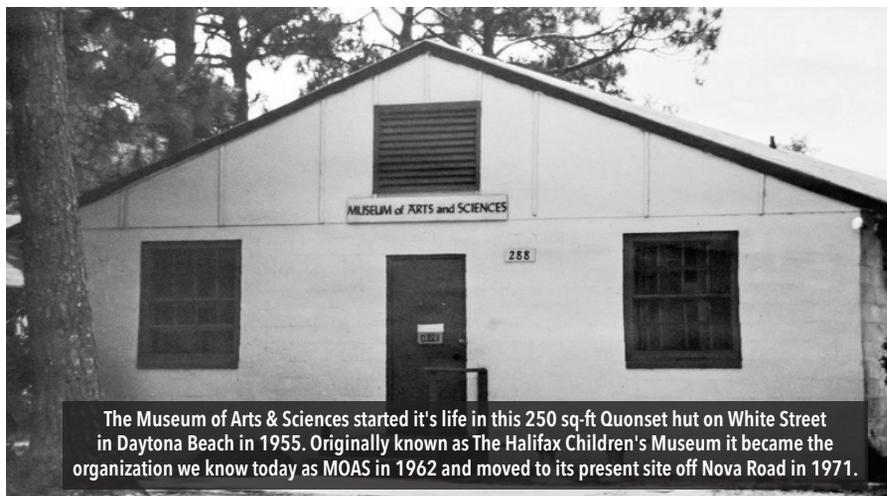
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LETTER FROM THE EXECUTIVE DIRECTOR



The Museum of Arts & Sciences started its life in this 250 sq-ft Quonset hut on White Street in Daytona Beach in 1955. Originally known as The Halifax Children's Museum it became the organization we know today as MOAS in 1962 and moved to its present site off Nova Road in 1971.



ANDREW SANDALL

It was fun to see the reaction to the picture we recently posted on our Facebook page to celebrate the Museum's 65th Anniversary on January 28, 2020. The photograph of the small, unassuming hut on White Street in Daytona Beach that was our original home back when we were the Halifax Children's Museum, only later becoming the Museum of Arts & Sciences, was for a long time on display in our library but was recently moved to a wall near our main entrance desk. It's now a regular talking point for visitors, both returning and new, who are just astonished by how much we have grown. It's something that also came across in our recent orientation session for our new incoming trustees who, despite already knowing the Museum well, do not always quite realize the scale of all of our land, buildings, staff, and operations and how they compare to other museums in the region.

A wander around the Museum of Arts & Sciences today is in many ways a walk through the history of philanthropy in our community and the generosity of local people that have helped build and grow our museum. Walking through our halls you see the family names Root, Dow, Bouchelle, Ford, Karshan, Marzullo, Gillepsy, Libby, Schulte, and Roberson along with the Batista family represented by the Cuban Foundation Museum. Other spaces within the Museum, some tucked away in staff-only areas represent the contributions to the Museum by the Gomon, Wilkinson, and Bates families, while outside of the Museum's walls you can find spaces bearing the names of Frischer and Klancke. Of course, in recent years we added a whole new building with the Cici and Hyatt Brown Museum of Art that holds the name and

world-class art collection of a family who has had perhaps the most impactful relationship with the Museum since becoming involved right as we moved to our current location in 1971.

The work we have done to raise funds for the new MOAS Endowment in the past 12 months saw new names joining our museum family and being added to the illustrious before mentioned list. The Planetarium now bears the name of the Lowell and Nancy Lohman Family, and our most recent announcement of the generous donation by Gale Lemerand is reflected in the renaming of our West Wing in his honor.

As I write this, we have recently heard of the sad passing of former trustee Linda Williams, who along with her late husband Charlie, who passed a couple of years earlier, made the lead gift and worked tirelessly on the campaign to enlarge and improve our Children's Museum. It was always a pleasure to see them when they visited the Museum, and they always quickly gravitated to the rooms that bore their names, with Charlie never failing to smile as he watched our youngest visitors at play, remarking "I just love to see the smiles on their faces!" in response.

As we continue to strive in our efforts to be the best museum and cultural organization we can be for our members and community it is always humbling to walk around the Museum and see the names up on our walls. It is especially heartwarming to see the names of the newest members of our family, drawn to support us and our endowment because they have seen the changes we have made in recent years to represent the needs of today's visitors. While we can be proud of the work we are doing, just a walk through the Museum is a reminder that we are truly standing on the shoulders of our community's giants.

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ABOUT THE MUSEUM

ABOUT THE MUSEUM OF ARTS AND SCIENCES

The Museum of Arts and Sciences is a not-for-profit educational institution, chartered by the State of Florida in 1962 and accredited by the American Alliance of Museums. Museum collections and research include Cuban and Florida art, American fine and decorative arts, European fine and decorative arts, pre-Columbian and African artifacts, Pleistocene fossils, Florida history and regional natural history. Permanent and changing exhibitions, lectures, and classes highlight educational programs. The Museum houses changing arts and sciences exhibition galleries, permanent collection galleries, a gallery of American art, paintings, decorative arts and furniture, the Charles and Linda Williams Children's Museum, the Cici and Hyatt Brown Museum of Art, the Cuban Fine and Folk Art Museum, the Lowell and Nancy Lohman Family Planetarium, library, the Frischer Sculpture Garden, maintains nature trails in a 90-acre preserve in adjacent Tusawilla Park, and operates Gamble Place in Port Orange.

The Museum of Arts and Sciences is recognized by the State of Florida as a cultural institution and receives major funding from the State of Florida, Department of State, Division of Cultural Affairs and the Florida Council on Arts and Culture.

Major Museum programs and activities for members, school children and the general public are also supported by grants from the County of Volusia, the Guild of the Museum of Arts & Sciences, Elfun Community Fund, and over 30 Major Sponsors from the community.

MUSEUM HOURS:

10 a.m. - 5 p.m. Monday through Saturday
11 a.m. - 5 p.m. Sunday

The Museum of Arts and Sciences is committed to the Americans with Disabilities Act by making our facility and programs accessible to all people. If you have any special requirements, suggestions, or recommendations, please contact our representative, Executive Director, Andrew Sandall, at 386.255.0285. If you prefer, you may contact the Cultural Council of Volusia County representative at 386.257.6000, or the Division of Cultural Affairs, The Capitol, Tallahassee 850.487.2980, or TT 850.488.5779.

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ADVERTISING INQUIRIES

All inquiries regarding advertising should be directed to the MOAS Marketing and Public Relations Department at 386.255.0285, ext. 320.

In Memoriam LINDA WILLIAMS



Everyone at the Museum of Arts & Sciences was saddened to hear of the passing of Linda Williams on January 12, 2020. Linda was a long-serving trustee of MOAS until her retirement from board service at the end of 2014, and along with her late husband Charles, was a leader and major benefactor of the project to enlarge and modernize the Children's Museum, which to this day carries their name. Both Linda and Charles, who sadly passed away in 2018, will be missed by all of us here at MOAS. We thank them for their vision and passion that made the Charles and Linda Williams Children's Museum a reality, and one which continues to be one of the most popular areas of the Museum with our visitors.

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VOLUNTEER *of the Quarter*

BARBARA SCHULDT

Barbara has been a volunteer in the Museum Store at MOAS for the past six years. For Barbara it has been nice to see the improvements to the Museum as well as the positive changes in the store merchandise and computer systems. She has enjoyed meeting people and helping them find their perfect gift or souvenir. It is always a pleasure to hear how much guests enjoyed their visit at MOAS.

Barbara moved to Florida from New Jersey via Colorado nearly 50 years ago. After living in Orlando and Miami, she moved to Edgewater. She then became a software engineer for the Space Shuttle program at Kennedy Space Center for 33 years beginning with the start of the program in 1979. Since retiring in 2012, she has enjoyed traveling and spending time with her family including three children and four grandchildren. During her free time Barbara likes to cook, go to the beach, and garden.



INTERN *Spotlights*



JAMES PARMAN | *Education Intern*

James grew up in Orange City, Florida and is currently in the final semester of his senior year at Stetson University with a major in History and minors in American Studies and Music. He started his college career as a music major playing piano but changed to history during sophomore year. Through his internship in the Education Department at MOAS, James hopes to gain great experience using historical research and applying it to real-world applications at the Museum. James is already enjoying his time at MOAS and is greatly fascinated by the Root Family Museum and the Florida Natural History Collection.



SARAH PAYNE | *Curatorial Intern*

Sarah Payne is a junior at Stetson University majoring in History with a minor in Creative Writing. During her internship at MOAS, she has enjoyed research and writing projects such as her work on *The World of Frida Comes to MOAS* and *Fragile Beauty: Cultures with Strong Porcelain Traditions* blog posts. After graduation, Sarah hopes to complete and publish the novel she is currently working on and possibly attend a GIA certification program. She has been an active member of Phi Alpha Theta, Stetson's History honors society, since 2018. Sarah also works as Stetson University's History Tutor in the Academic Success Department. In her internship at MOAS, she learned valuable skills in research, archival work, and museum operations.



GAMBLE PLACE CLEAN-UP: *Thank You to Our Volunteers!*



Gamble Place in Port Orange is a step back in time to experience the same pristine environment that James N. Gamble (of Proctor and Gamble) found so inviting during his first visit to the area in the late 1800's. The maintenance of this 175-acre property is truly a team effort and the Museum is always looking for volunteers to help assist.

During the first quarter of 2020 the Museum put together several large maintenance days that included different volunteer groups from our community. On Saturday, February 22 the Port Orange Rotary Club was instrumental in helping with one of our largest maintenance days this year. Heavy machinery, including front loaders, a 30' boom lift, tractors, and a dump trailer, were brought to the property to haul away around 10,000lbs of tree debris. All the gutters were cleared and cleaned, both front gates were repaired for better entry into the property, and the original water pump in front of Egwunalti, our Florida cracker-style house, was restored and painted. Cleaning and organizing was handled throughout

all of the houses as well as repairs to lighting and the installation of a new thermostat in the Citrus Packing House.

On Sunday, February 23 the team from Softspray Exterior Cleaning donated their time and expertise to pressure clean the entire roof, exterior walls, windows, and walkways of the both the Egwunalti House and the Citrus Packing House.

The following weekend on Saturday, February 29, Boy Scout Troop 436, led by Atlantic High School freshman and Life Scout Matthew Tarr, arrived at Gamble Place with a team of volunteers to complete a series of large projects. With a donation of fencing and other supplies by Lowe's of Port Orange, Matthew and his fellow volunteers were able to replace roughly 70 fence boards and 30 posts to reconstruct the entire fence line on the Gamble Place property. His team also repaired the boardwalk railing to the dock that was recently hit with a fallen tree. After rebuilding and securing it the walkway is now fully reopen. The Boy Scouts also removed around 6,000lbs of debris and mowed the entire property.

Their main focus though was to get the Black Forest Cottage into tip-top shape by clearing all of the coquina rock formations of ferns and leaves to get it ready for pressure washing, and by trimming the azalea bushes and making repairs to the handrails leading to the water.

On Thursday, March 5 Florida Landscape Design came back out to the property to remove another 15,000lbs of debris.

Volunteers are integral to the work we do at the Museum of Arts & Sciences and we cannot begin to thank these groups enough for their hard work. We are still astonished by what was able to be completed within just a couple of weekends.



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MUSEUM OF ARTS & SCIENCES

American MUSCLE CAR SHOW



Come one, come all to see historic American cars as they roll onto the MOAS campus for the day. The combination of memories, beauty, and engineering is what makes this annual car show so great.

DJ Frank Roberts will be playing old time fan favorites and there will be live music from the Shades of 60s tribute rock band. Enjoy food from a local food truck while browsing through Mustangs, Camaros, and Cadillacs in the front entrance courtyard.

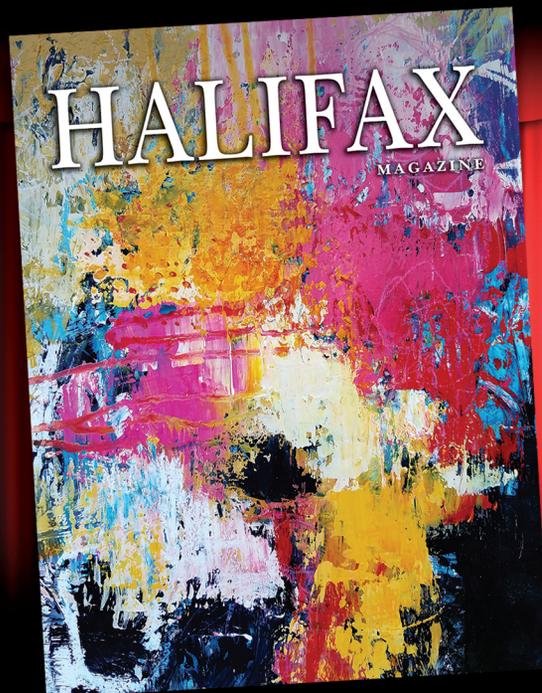
A full schedule can be found at MOAS.org.

Car Show is free to the public.
Museum entry is standard pricing.

May 16
11am - 2pm

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SPOTLIGHT ON EXHIBITIONS

Spring 2020 at the Museum of Arts & Sciences



Robert Huff, *Neva Triptych*, 1993, acrylic, pencil, oil and goldleaf on shaped canvas

SINGULAR ANGLES: THE ART OF ROBERT HUFF

Singular Angles: The Art of Robert Huff opened on February 8 in the Gary R. Libby Entry Court and gave MOAS the chance to shine the spotlight on three works by Robert Huff (1945-2014) that were donated by his widow, art librarian, and independent curator, Barbara N. Young, in 2018. We are grateful for her generosity in allowing us to be a part of his legacy for the state of Florida.

Huff was a fixture in the late 20th-century Miami art scene and he influenced generations of South Florida artists long before Art Basel Miami Beach transformed the area into an art mecca. He lived, worked, and taught in South Florida for 46 years and his body of work reflects the tremendous growth – for good or bad – of our state in the last century and the beginning of this one.

Bob Huff was born in Kalamazoo, Michigan in 1945 and moved with his family to Florida in 1957. Builders and outdoorsmen were a part of his family history and this combination is reflected in his works which exhibit both architectural precision

Over the course of decades as a practicing artist and highly influential instructor at Miami-Dade College, he captured the brilliant pinks and azure blues to be found in sunrises and sunsets of this southernmost, semi-tropic major American city. But,



Robert Huff (1945-2014), *You Can't Go Home Again*, 2006, acrylic, pencil, canvas, aluminum, ceramic — Gift of Barbara N. Young, 2018.10.003

and an exuberant sense of the great color and atmospheric sensuality to be found in Florida's natural world.

his palette changed in the 90s after a trip to Russia (known then as the Soviet Union) where he absorbed the

deep red, midnight blue, and gold leaf that dominated the tradition of Slavic icon paintings. His *Neva Triptych* from 1993 pays tribute to the Neva River which runs through St. Petersburg and is a masterpiece from this period. It shows how adept Huff was at molding his style to a completely new environment.

In 2001, Huff and his wife, Barbara Young, purchased nine acres in the mountains of western Virginia and his art changed yet again. As if responding to the woods that encircled them, he began to create pieces using OSB (Oriented Strand Board) plywood as his surface and leaving portions unpainted so that the wood chip pattern was prominent. Sometimes he would paint over it but make sure the grain was still apparent, as in *HR Pilot Mountain* in this exhibition. Sometimes he left the blonde plywood grain completely exposed. In either case, it was a new idiom for Huff as he masterfully juxtaposed solid black mountainous forms against the texture of the forest.

In addition to his powerful paintings, Bob Huff left behind an impressive body of sculptural works in wood, bronze, and other media. He seemed to enjoy bringing to life some of the buildings in his paintings and works, such as *Titan* (MOAS collection) in this exhibition, show his underlying interest in architecture. The theme of the natural combined with the man-made was a constant throughout his long career and, in this way, he bore witness to the transformation of our state in the previous decades and left behind an impressive body of work.

Special thanks go to Frank Casale, Luisa Lignarola, and Sergio Cernuda of LNS Gallery, Miami for assistance in curating this exhibition.

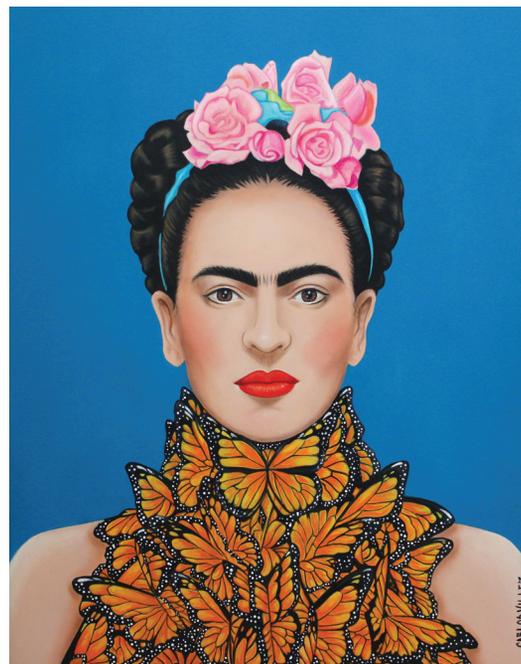
THE WORLD OF FRIDA

MOAS also opened in February *The World of Frida*, a large exhibition of contemporary art paying homage

to Frida Kahlo and organized by the Bedford Gallery in Walnut Creek, California. An exuberant exhibition full of dynamic, colorful works of art in many types of media from around the world, this exhibition celebrates one of the most iconic figures in 20th-century art. While her life was short-lived – she died at age 47 – her story continues to inspire artists of the 21st-century. The 95 artists from around the world who contributed to this exhibition reference many aspects of her art and life, from reinterpreting her famous self-portraits, to recalling her love affair with Diego Rivera and reminiscences of the physical struggles she endured after the tragic bus accident that left her crippled and in constant pain throughout her life.

As if to challenge the cruel hand that fate had dealt her, Kahlo cultivated a vibrant, expressive personal style that took much from her native Mexican traditions while giving them a new and audacious twist all her own. Many of the artists in this exhibition revel in this part of her persona, as well as her habit of occasionally dressing in drag long before the feminist movement made this more common, especially in her native land.

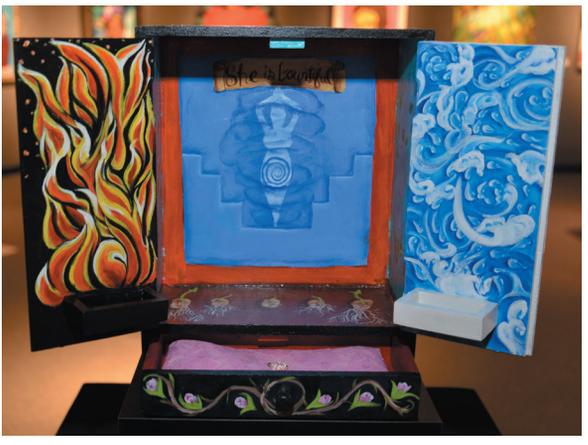
One of my favorite works in the exhibition is a lovely little painted piece in the form of a retablo, or cabinet with open doors holding devotional scenes or items and usually on altars in Catholic churches. The artist, Cheryl Abraham from Washington state, titled it *She is Bountiful* and included Goddess imagery with scenes of the four seasons as well as fruits and vegetables and the figure of Frida inside on the back wall of the cabinet. She is depicted with the eternal whorl over her pregnant abdomen reminding us that she couldn't bear children because of her accident but brought forth much beauty into the world anyway. It's a powerful piece with a striking rendition of the back of Frida's head – complete with silver



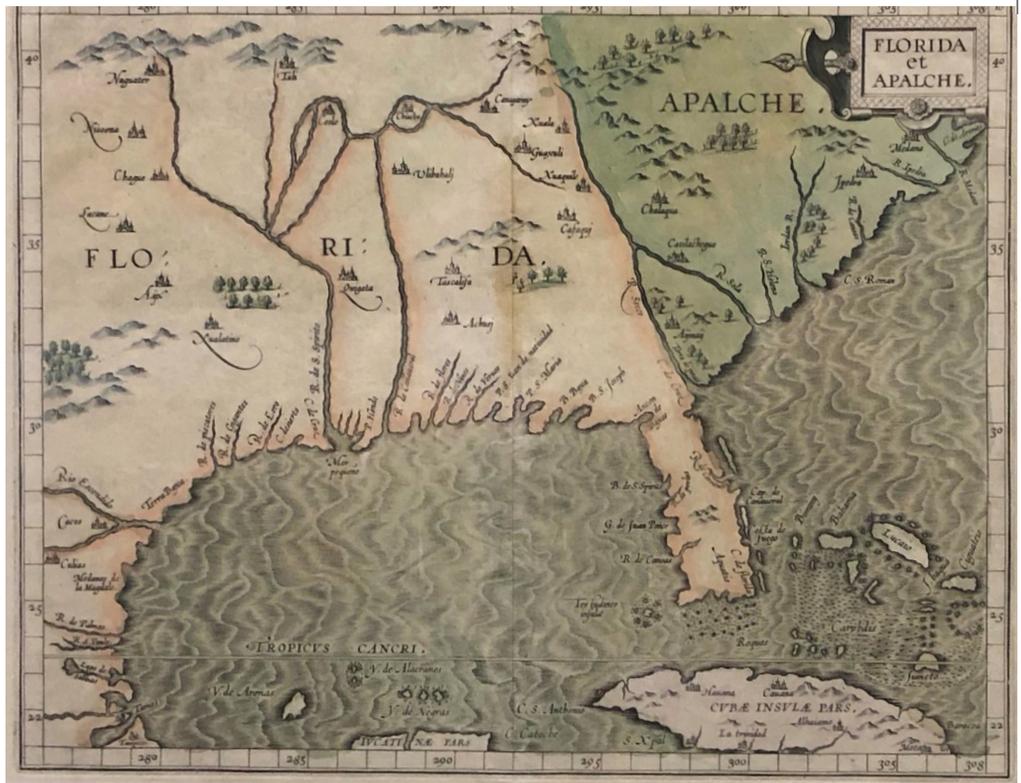
Carlos Villez, *Parakata Poderosa*, 2016, giclee on canvas



Denise Cortes, *Frida: With Wings to Fly*, 2017, acrylic, paper and gold leaf



Cheryl Abraham, *She is Bountiful*, 2018, acrylic on wood. *The World of Frida*. Organized by the Bedford Gallery, Walnut Creek, CA.



Sebastian Münster (1488/89-1522) woodcut, monochromatic print on rag paper
From the Cognetta Family Trust Map Collection, C36



Joseph Meyer (1796-1856), 1845, Steel engraving color outlining print on laid paper
From the Cognetta Family Trust Map Collection, C36

streaking through her black hair – on the verso of the cabinet.

This is only one of the nearly 100 fine pieces in an exhibition full of creativity, love, pain, and deep colorful life that are hallmarks of Frida Kahlo's own artistic legacy. One thinks she would have been pleased and maybe even a bit surprised at the outpouring of devotion embodied in this exhibition by contemporary artists so removed from her life and times. It is a testament to the power of art past and present.

THE EVOLUTION OF FLORIDA'S BORDERS

Another exhibition opening April 25 in the Karshan Center of Graphic Art is *The Evolution of Florida's Borders*, an exhibition of rare vintage maps of our state from as far back as the 1500s. This collection comes to us from Dr. Armand and Suzanne Cognetta who have amassed one of the largest collections of antique maps in the country. The exhibition starts with Sebastian Münster's 1540 map of the Western Hemisphere, the first to treat the hemisphere as a whole and

depict the Americas as distinct North and South continents. Given the relative youth of our country, and certainly our state, it is fascinating to see an image of Florida and the Southeastern U.S. as Europeans thought of it as far back as the Renaissance.

Other maps from the 16th-century are included in the exhibition including those by Netherlandish cartographers Abraham Ortelius (1527-1598), and Cornelis van Wytfliet (1555-1597) as well as the French mapmaker Jacques LeMoyne (1533-1588). Although French control of Florida was brief, its strong tradition of exploration and cartography helped to flesh out many aspects of Florida's terrain.

New tools such as the telescope, pendulum clock, and bubble levels informed mapmaking of the 17th-century so that examples of the time started to show a Florida more in keeping with reality. As the century went on, the British were challenging the French for control of the New World as is depicted in Jan Jansson's 1639 map of the Americas with the British flag. When the British took hold of Florida in 1763, they clearly divided

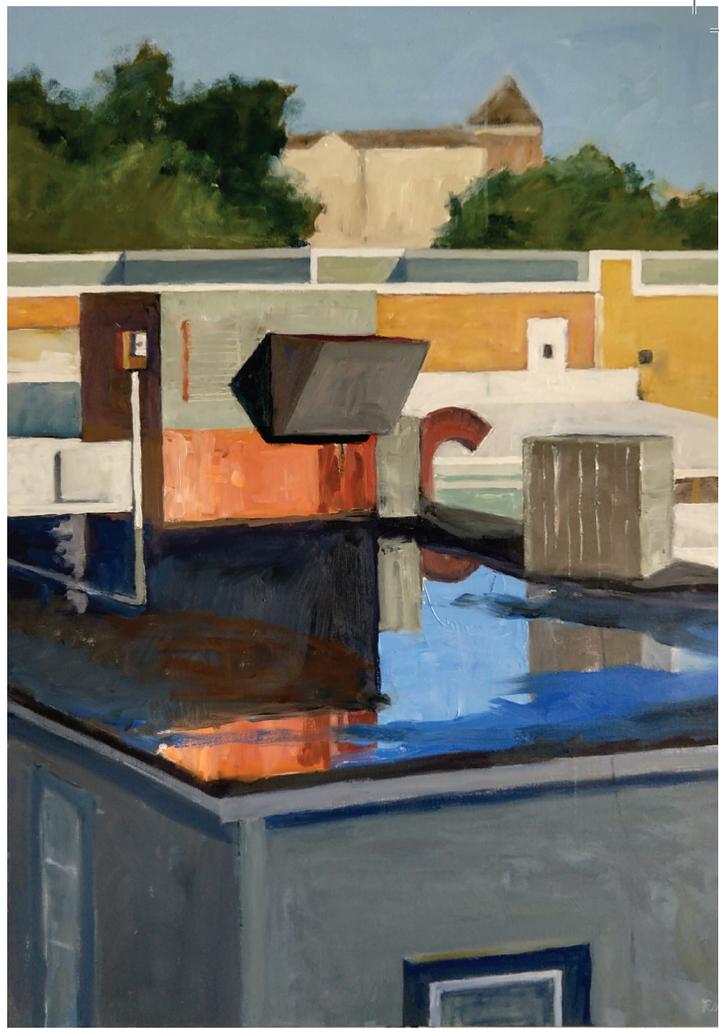
the land into East and West Florida, shown in Thomas Jeffery's chart from 1777.

19th-century maps in the exhibition show Florida marching toward statehood first with its depiction by Henry Charles Carey in 1822 as a territory followed by J. Goldsborough Bruff's 1846 map drawn up immediately following Florida's admission into the union. Later maps in the collection show increasing steps to inhabit and develop this southernmost state as towns, counties, and railroads appear. As a whole, *The Evolution of Florida's Borders* provides a rare opportunity to look back at early knowledge of the Sunshine State and to contemplate the wonder and excitement of some of the first explorers as they documented their findings on paper and parchment.

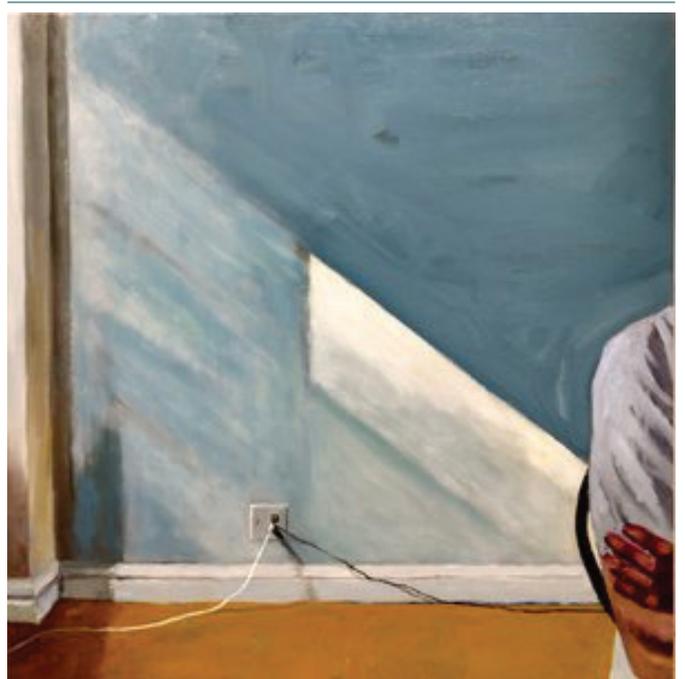
UNIQUE PERSPECTIVES: PAINTINGS BY ROBERT ROSS

Opening on May 2 in the Gary R. Libby Entry Court, *Unique Perspectives: Paintings by Robert Ross* will bring the work of this successful Orlando-based artist to Daytona Beach. With a painting style reminiscent of two prominent American artists – the Precisionist artist Charles Sheeler (1883-1965) and his successor Richard Diebenkorn (1922-1993) – Ross nevertheless gives his own twist to his architecturally-inspired paintings by including a distinct element to provide a contrast to the geometry within them. Often this comes in the form of a reflection, as in *Rooftop After the Rain*. But sometimes it comes in more unexpected ways such as electrical cords plugged into a wall or a sliver of light created by an open door. Or even an interesting shape created by a parking barrier or a blank wall fronting a demolition site. Whatever form it takes, Robert Ross sees unique, interesting perspectives in the most every day of scenes and turns them into powerful compositions based on shape, color, and light. They are simple and complex at the same time and ask the viewer to stop for a moment and see the beauty all around that happens in the most unconstructed moments.

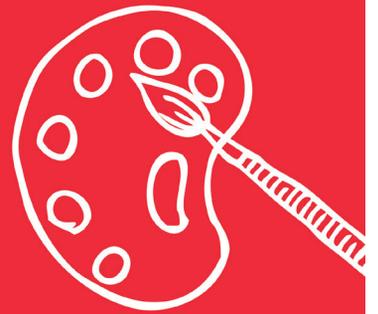
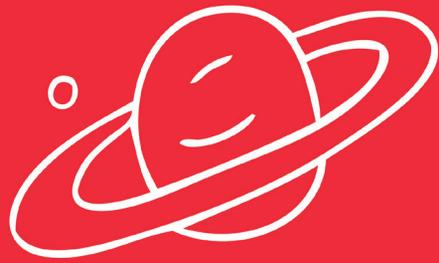
Robert Ross's paintings have been exhibited in a growing number of venues throughout Central Florida, including at Valencia State College, Winter Park City Hall, Orlando City Hall, Maitland City Hall, Orange County Chambers, Gallery at Avalon Island, and Casselberry Art House. He has been in the Winter Park Paint Out sponsored by the Albin Polasek Museum, and he has won several awards for his paintings in the Winter Park Autumn Art Festival. He received his art education at Oakland University, Crealdé School of Art in Winter Park, and in master workshops taught by Stuart Shils. He is represented by Arts on Douglas Gallery in New Smyrna Beach, Florida.



Robert Ross, *Rooftops After Rain*, 2016, oil on canvas



Robert Ross, *Morning Connection*, 2016, oil on canvas



MUSEUM OF ARTS & SCIENCES

2020 **SUMMER**

LEARNING

INSTITUTE

JUNE 8 - JULY 31



**PROGRAM GUIDE &
REGISTRATION FORM**

MOIAS

MUSEUM OF ARTS & SCIENCES



4, 5 and 6 Year Olds

Week 1: June 8-12

9am-12pm

Dinosaurs: A Lost World

Paleo-preschool students will have exciting hands-on opportunities with real prehistoric specimens and fabulous dinosaur fossils from the Museum's collection. Our junior paleontologists will enjoy activities like digging, sorting, and classifying while handling real fossils that date back 300 million years.

1pm-4pm

Junior Picasso

Paint, draw, and create art beyond your wildest imagination. Utilize the Museum's collection to explore art from around the globe. Create portraits, prints, sculptures, and draw cool animals. Take a stroll through the Museum's galleries and become inspired!

Week 2: June 15-19

9am-12pm

Science Crazy

The Museum has over 100 interactive hands-on science kits that will teach your young scientist about sound, light, physics, astronomy, paleontology, and more. Conduct your own science experiments, visit the Lohman Planetarium, and explore the Charles and Linda Williams Children's Museum.

1pm-4pm

Animal Marvels

Animals come in all shapes and sizes. They fill all corners of the world. During this class, students will learn about the diversity of animals from A to Z. Learn how animals communicate, move, and acquire food.

Week 3: June 22-26

9am-12pm

Block City

Join the wonderful world of LEGO®s and create dazzling sculptures, buildings, racecars, and many other sensational pieces. Use the Museum's impressive collection of over 200,000 LEGO®s to construct your masterpiece. Visit the Museum's galleries, the Lohman Planetarium, and Tuscawilla Preserve to inspire your creations.

1pm-4pm

Jr. Einstein

Discover a world of physics, astronomy, and fossils, and learn how science affects us throughout our every day lives. Work with electrical circuits, magnetism, robotics, and more while exploring the Museum's many hands-on science exhibits.

Week 4: No Classes June 29-July 3

Week 5: July 6-10

9am-12pm

Pirate's Life

Shiver me timbers! Dress up like a pirate, design your own pirate flag, create your own treasure coin, and learn about life at sea as a pirate. Enjoy pirate stories, arts and crafts, and a fun dress-up pirate party! Landlubbers need not apply!

1pm-4pm

Picasso's Palette

Create art that is one-of-a-kind in this class that lets you explore the world of art. Tour the Museum's galleries and be inspired to paint, sculpt, draw, and construct unique pieces of beautiful art that would make Picasso himself proud.

Week 6: July 13-17

9am-12pm

Paint, Print, and Splatter!

Paint, print, and splatter your way through the world of art. Take a trip around the world and learn about art using the Museum's extraordinary collection of fine art. Design prints, pottery, crazy art, finger paintings, and more!

1pm-4pm

Music and Art

Music and art are great for math and high-level thinking skills. Join us for this hands-on class that combines these two great arts. Learn about percussion, string instruments, and more. Learn about the different types of music and listen to live demonstrations. Enjoy listening to classical music as you create masterpieces of your own artwork from crazy sculptures to animal portraits. Take strolls through the Museum's galleries and discover your favorite pieces.

Week 7: July 20-24

9am-12pm

Space Cats

Learn about the stars, planets, and the Milky Way Galaxy, and learn about the life of an astronaut. Learn about rockets and visit the Museum's Lohman Planetarium for an incredible show. Make a solar system diorama and a cool spaceship that will whisk you away to the stars and beyond.

1pm-4pm

Junior Olympics

Join us as we celebrate the 2020 Olympic Games! Each day campers will be able to participate in fun games, crafts, and activities all focusing on the Olympics. Your junior Olympian will bring home the gold after a week full of fun games and activities.

Week 8: July 27-July 31

9am-12pm

Nature of It

Discover the world around you and learn about nature through the Museum's extensive collection of specimens ranging from insects and bones to teeth and other objects. Take a collecting trip through Tuscawilla Preserve and gather your own natural history objects while exploring the biodiversity that surrounds us.

1pm-4pm

Happy Camper

A class for children who love all things art, science, and history related. Take tours of the Museum's galleries and learn about portraits, landscapes, trains, and racecars. Explore fossils and artifacts from the Museum's collection and visit the Lohman Planetarium and learn about the stars and planets. This unique hands-on course is a great way to celebrate the diversity of knowledge!

7, 8 and 9 Year Olds

Week 1: June 8-12

9am-12pm

Fossil City

Learn about the fascinating world of fossilized animals from the past such as the giant ground sloth, mammoths, mastodons, dinosaurs, and other extinct animals. Learn how to dig up fossils and identify bone material using the Museum's extensive collection of fossils. Take a journey back in time and discover our world of ancient life.

1pm-4pm

Science Dynamo

Jumpstart your camper's future STEM career with this fun and exciting science class. Explore electrical circuits, gravity, ice age fossils, biodiversity, force, motion, and many other important sciences. Take a trip to the Lohman Planetarium and zoom through the outreaches of our universe. Learn about famous scientists and their discoveries and how to draw your own conclusions.

Week 2: June 15-19

9am-12pm

Beginners Chess Camp

Beginners can spend the morning exploring the game of chess. Join the Museum's chess camp to learn the basics of the game. Chess helps develop critical thinking skills and improves creativity, both important to the STEM fields of Science, Technology, Engineering, and Mathematics. Don't let your opponent take your queen!

1pm-4pm

LEGO® University

120,000 LEGO®s can make life just about perfect! Enjoy a build-off everyday and create buildings, towns, planes, abstract sculptures, and other LEGO® creations. Learn about the history of historic buildings and structures from all over the world and build your own version. Engineering, history, and science makes for a perfect LEGO® day!

Week 3: June 22-26

9am-12pm

History's Mysteries

Join MOAS Education Associate, Nicole Messervy, for an unusual look at history. Sometimes history can be a little weird! Some things just cannot be explained. Campers will have the chance to learn about different myths, legends, and other strange events that happened throughout history.

1pm-4pm

Artrageous

Your imagination is the limit in the painting, printing, drawing, and construction class. Art made the world, and students will learn about portraits, landscapes, sculptures, and more! Students will make their own masterpieces using a variety of art media.

Week 4: No Classes June 29-July 3

Week 5: July 6-10

9am-12pm

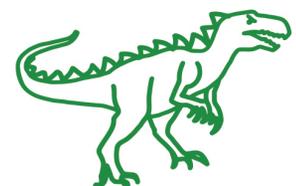
Rocket Man

Join Curator of Astronomy, Seth Mayo, and discover the basic principles behind rocketry and construct different types of simple rockets that you can launch on the Museum's grounds. Learn about propulsion, aerodynamics, and the history of space travel in the Lohman Planetarium.

1pm-4pm

Backyard Naturalist

Discover the world around you and learn about the nature of the Museum's extensive collection of specimens like insects, bones, teeth, and other objects. Take a collecting trip through Tuscawilla Preserve and collect your own natural history objects. Discover the biodiversity in your own backyard. End the week on Friday at Gamble Place in Port Orange and discover the amazing ecosystems at this amazing 200-acre preserve.



Week 6: July 13-17

9am-12pm

Mission Through the Solar System

Join Curator of Astronomy, Seth Mayo, and discover our solar system like never before. Learn about the planets, moons, and special missions both past and present that have made our place in the Milky Way Galaxy special. Visits to the Museum's Lohman Planetarium will highlight the science of discovery. Learn about geology, physics, rocketry, and more!

1pm-4pm

MOAS Archaeology Lab

If you like artifacts and ancient civilizations, this is the class for you. Learn about the science of archaeology and how societies change over time. Learn about the tools, art, and artifacts that ancient people used every day. Discover the tools, the methods, and how archaeologists excavate sites.

Week 7: July 20-24

9am-12pm

Olympic Games

Join us as we celebrate the 2020 Olympic Games! Throughout the week, campers will learn the history of the Olympic Games. Participate in fun games and activities all focusing on the Olympics.

1pm-4pm

Sea Safari

The Museum has a massive collection of oceanic artifacts and specimens for your junior scientist to explore. Learn about shells from around the world, sharks, fish, coral, and more in this hands-on class. Sort and classify specimens and look at microscopic plankton. Learn why the ocean is important for life on Earth and become a great junior marine biologist!

Week 8: July 27-July 31

9am-12pm

World of Paleontology

Become a paleontologist and discover the Museum's collection of 1000's of fossils. Your young scientist will learn about dinosaurs, giant ground sloths, and other animals dating back millions of years. Sort, classify, and learn about the amazing extinct animals that once roamed the Earth. Take a tour of the new Giant Ground Sloth Gallery and discover the science behind this magnificent beast.

1pm-4pm

LEGO® King

200,000 LEGO®s can make life just about perfect! Enjoy a build-off everyday and create buildings, towns, planes, abstracts sculptures, and other LEGO® creations. Learn about the history of historic buildings and structures from all over the world and build your own version. Visit the Museum galleries and take a trip through the universe in the Lohman Planetarium. Engineering, history, and science make for a perfect LEGO® day!

10, 11, 12 and 13 Year Olds

Week 1: June 8-12

9am-12pm

CSI Daytona

Learn what it takes to become a criminal detective. Dust, identify, and learn the science of fingerprints. Figure out how to crack codes, solve crimes, and how to investigate a crime scene. Learn how the police investigate and use evidence to solve crimes and unravel mysteries.

1pm-4pm

Sensational Science

Science makes the world go round! Young scientists will learn through hands-on experiences the science of electricity, Newton's Laws, astronomy, physics, fossils, and more. Visit the Lohman Planetarium and learn about the vastness of our universe.

Week 2: June 15-19

9am-12pm

Excelsior Comic Book Creation

Creating a comic book can be fun! Learn the skills and techniques involved in creating, penciling, inking, and coloring your very own comic book character. Students in the class will create their own superhero or character and write their own adventures. The only limitation is imagination in this new and exciting class!

1pm-4pm

Classic Games

Join us for a different type of history lesson. Try your abilities at our Atari games center. Learn how to play other great games of skill, strategy, and mental abilities such as backgammon, Yahtzee, dominoes, and other classic games. Create your own computer game that could become part of history!

Week 3: June 22-26

9am-4pm

Claymation Movie Making

Use digital special effects to create wild and wacky videos. This one-of-a-kind class teaches the young film director how to create a storyboard, edit their film digitally, use a digital video camera, set up a tripod, and how to create soundtracks using the "Garage Band" program. On Friday, film students will have a red-carpet preview of their film in the Root Family Auditorium.

Week 4: No Classes June 29-July 3

Week 5: July 6-10

9am-4pm

It's Magic

This class is a unique way to "WOW" your friends with cool illusions and magic tricks that will make you the life of the party! Learn about the science and terminology used by professional magicians. Work on your presentation skills through magic tricks with cards, cups/balls, coin tricks, and more. Learn how to create your own gimmick tricks. During a Friday afternoon performance in the Root Family Auditorium, watch your young magician showcase their talents. The final performance is optional for campers who wish to participate.

Week 6: July 13-17

9am-4pm

Short Movie Making: Twilight Zone Edition

Use digital special effects to create wild and wacky videos. This one-of-a-kind class teaches the young film director how to create a storyboard, edit their film digitally, use digital video cameras, set up tripods, and how to create soundtracks using "Garage Band." Then on Friday film students will have a red-carpet preview of their films in the Root Family Auditorium.

Week 7: July 20-24

9am-12pm

Marine Science at Rose Bay (Off-Site)

Join us at Rose Bay for a half-day of exploration and adventures in marine science and ecology. Learn how to use a seining net, how to fish with a rod and reel, and learn about the amazing biodiversity of Rose Bay and its ecosystems. Learn about the birds, flora, and fauna that make this preserve a unique place on our coast. Join us in the field for some great STEAM science. Please note: This camp class is an off-site program. Students must be dropped off and picked up at Rose Bay Pavilion in Port Orange. Please see MOAS.org for directions.

9am-12pm

Nano Fest

Zoom in the world of Nano everything! Campers will learn about nanoscale science and engineering through hands-on activities. They will observe different sizes and properties of nano, nanoscale science in nature, and how nanotechnology is used to create new and exciting things!

1pm-4pm

Science Innovation

Dive into the world of invention and design to discover your inner engineer. Think outside the box to solve problems and learn about the tools used by innovators while also taking a closer look at architecture.

Week 8: July 27-July 31

9am-12pm

Beginner and Intermediate Chess Camp

Beginners can spend the morning exploring the game of chess while learning the basics. Already know how to play? Learn new strategies and techniques to improve your game and add to your skill level. Chess helps develop critical thinking skills and improve creativity so important to the STEM fields of Science, Technology, Engineering, and Mathematics. Don't let your opponent take your queen!

1pm-4pm

Zoology Expert

Learn about animal classification, adaptations for survival, and the importance of wildlife habitat conservation. Learn about biodiversity, deadly animals, and ocean life. Explore the Museum's collection of specimens. This hands-on program brings children together who share similar interests and also focuses on proper care, handling, and maintenance of both rare and popular pets. This class will explore intriguing animals you may have never heard of and allows your child to interact and learn directly from these incredible creatures.

A one-hour supervised "bring-your-own-lunch" break between morning and afternoon sessions will be scheduled for all campers that will be staying for both morning and afternoon sessions.

Also offering Extended Care from 4pm - 5:30pm! See student registration form for details!

Thank you to
2020 Summer Learning Institute
Scholarship Sponsors:

Richard Cannizzaro and Nancy Nance

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Associates Imaging Centers

EASY REFERENCE COURSE SCHEDULE

AGE GROUPS	JUNE 8-JUNE 12	JUNE 15-JUNE 19	JUNE 22-JUNE 26	JULY 6-JULY 10	JULY 13-JULY 17	JULY 20-JULY 24	JULY 27-JULY 31
4-5-6 Years Morning	Dinosaurs: A Lost World	Science Crazy	Block City	A Pirate's Life	Paint, Print, and Splatter!	Space Cats	Nature of It
4-5-6 Years Afternoon	Junior Picasso	Animal Marvels	Jr. Einstein	Picasso's Palette	Music and Art	Junior Olympics	Happy Camper
7-8-9 Years Morning	Fossil City	Beginners Chess	History's Mysteries	Rocket Man	Mission Through the Solar System	Olympic Games	World of Paleontology
7-8-9 Years Afternoon	Science Dynamo	LEGO® University	Artrageous	Backyard Naturalist	MOAS Archaeology Lab	Sea Safari	LEGO® King
10-11-12-13 Years Morning	CSI Daytona	Excelsior Comic Book Creation				Nano Fest QR Marine Science at Rose Bay (Off-Site)	Beginner and Intermediate Chess
10-11-12-13 Years Afternoon	Sensational Science	Classic Games				Science Innovation	Zoology Expert
10-11-12-13 Years All Day			Claymation Movie Making	It's Magic	Short Movie Making: Twilight Zone Edition		

Student Registration Form 2020

Name _____ Age _____ Address _____
 City/State _____ Zip _____ Phone _____
 Parent(s) _____ Email _____

Additional registration forms, online registration, and more information can be found online at www.moas.org

NOTE: Tuition fees are indicated by museum member discount price first, followed by the general admission fee.

Programs Ages 4, 5 & 6

- Dinosaurs: A Lost World \$95/\$105
- Junior Picasso \$95/\$105
- Science Crazy \$95/\$105
- Animal Marvels \$95/\$105
- Block City \$95/\$105
- Jr. Einstein \$95/\$105
- A Pirate's Life \$95/\$105
- Picasso's Palette \$95/\$105
- Paint, Print, and Splatter! \$95/\$105
- Music and Art \$95/\$105
- Space Cats \$95/\$105
- Junior Olympics \$95/\$105
- Nature of It \$95/\$105
- Happy Camper \$95/\$105

Programs Ages 7, 8 & 9

- Fossil City \$95/\$105
- Science Dynamo \$95/\$105
- Beginners Chess \$95/\$105
- LEGO® University \$95/\$105
- History's Mysteries \$95/\$105
- Artrageous \$95/\$105
- Rocket Man \$95/\$105
- Backyard Naturalist \$95/\$105
- Mission Through the Solar System \$95/\$105
- MOAS Archaeology Lab \$95/\$105
- Olympic Games \$95/\$105
- Sea Safari \$95/\$105
- World of Paleontology \$95/\$105
- LEGO® King \$95/\$105

Programs Ages 10, 11, 12 & 13

- CSI Daytona \$95/\$105
- Sensational Science \$95/\$105
- Excelsior Comic Book Creation \$95/\$105
- Classic Games \$95/\$105
- Claymation Movie Making \$190/\$210
- It's Magic \$190/\$210
- Short Movie Making: Twilight Zone Edition \$190/\$210
- Nano Fest \$95/\$105
- Marine Science at Rose Bay (Off-Site) \$95/\$105
- Science Innovation \$95/\$105
- Beginner and Intermediate Chess \$95/\$105
- Zoology Expert \$95/\$105

Please make sure your student is enrolled at least one week prior to the start date to help educators prepare for classes.

Extended Care Program

Extended Care Program will be offered from 4:00pm - 5:30pm for \$25 per week. Extended Care students picked up after 5:30pm will be charged \$10 for every 10 minutes of additional care provided.

Please mark the weeks which your student will attend:

- June 8 - June 12 June 15 - June 19
- June 22 - June 26 July 6 - July 10
- July 13 - July 17 July 20 - July 24
- July 27 - July 31

Payment

Reservations for each class are confirmed by your payment. Fees are non-refundable, but the Museum will make every effort to find an alternative placement for a student in another session if cancellation occurs.

Total Number of Program Sessions _____ sub total \$ _____

Number of Extended Care Weeks _____ x \$25 sub total \$ _____

Enclosed is my check # _____ TOTAL \$ _____

Charge my: ___ Visa/MC ___ Discover ___ AMEX

Account# _____ Exp. Date _____ Sec. Code _____

Name as it appears on the card _____

Signature _____

Make check payable to:
MUSEUM OF ARTS AND SCIENCES
 Mail to: Museum of Arts and Sciences
 Attn: Summer Learning Institute
 352 S. Nova Road, Daytona Beach, FL 32114

THE REPULSE AT

OLUSTEE

When the Civil War broke out across the nation Florida was a backwater frontier. Florida's involvement in the history of the war is not seen as important. It is often obscured by other more prominent and influential southern states. Yet, the state contributed an equal amount of men in ratio to the state's population more than any other confederate state. Although far removed from the fighting as the war concluded, Florida would be the scene of one of the Civil War's last large-scale engagements.

The Battle of Olustee, sometimes called "Ocean Pond," started out as a small skirmish but grew into a major battle involving over 10,000 troops. The fighting took place in today's Baker County near present-day Lake City. The lead up to the battle has its roots in Union-controlled Jacksonville. The Union mostly controlled the coasts while the Confederacy controlled the interior portions of the state.

Late in the war, Florida became more important because the flow of beef had been cut off from Texas. Florida's scrub cows replaced the Texas beef for the Confederate Army. These cows roamed the interior of Florida and a special force of Confederate soldiers called the Cow Cavalry was put in charge

of them. Tallahassee, the capital of Florida, was still in Confederate control. The Union forces were intent in taking the city so the state could be brought back into the Union. The Union plan was to march soldiers across North Florida from Jacksonville in order to sever supply routes, recruit black soldiers, and march on to Tallahassee.

On February 15, 1864, Brigadier General Truman Seymour, stationed in Jacksonville, ignored orders from his commander, Major General Quincy A. Gillmore, Commander of the Union Department of the South and marched 5,500 soldiers along the Jacksonville to Lake City Road. As the soldiers neared the Olustee Train Station, the Union





FIG 01

"Repulse at Olustee," ca. 1885, Hans Dreher, oil on canvas. On display in the Permanent Gallery at the Cici and Hyatt Brown Museum of Art at the Museum of Arts & Sciences.

soldiers began skirmishing with Confederate forces. Prior skirmishes in February met minimal resistance, so General Seymour was confident the situation was well in control. He wrote to his superior General Gilmore in Hilton Head, South Carolina that he had commenced operations. Stunned upon receiving this message, Gilmore dispatched an aide south with orders for Seymour to cancel the campaign. Unfortunately, it was too late.

Opposing Union General Seymour was a rough and tough Irish immigrant, Confederate Brigadier General Joseph Finnegan, who was in command of the District of East Florida. He commanded about 1,500 men and General P.G.T. Beauregard, of South Carolina, granted his request for more men. As skirmishes broke out on the morning of February 20, 1864, more and more Confederate soldiers began arriving on trains. Each side now had approximately 5,000 men, and this set the scene for the largest and bloodiest fighting in the state. A full-scale battle, involving over 10,000 troops, was about to commence.

The Union Army, along with U.S. colored regiments, engaged in a fierce struggle near swamps bordered by pine forests at a place called Ocean Pond. Artillery fire, musket shots, improperly followed orders, and confusion raged across the Union lines as the battle waged into late afternoon. The death of one of the commanding Union officers, Colonel Charles W. Fribley, added to the chaos. Eventually, the battle stabilized as heavy losses began to mount on both sides. Near the end of the day, General Finnegan's troops began to severely cut into Seymour's lines and the Union general realized it was time to retreat. It must have dawned on Seymour that he was not fighting a ragtag army but seasoned fighters. As a retreat was called, the U.S. colored regiments fought on in a desperate situation. General Finnegan did not pursue the fleeing Union Army's retreat, and as a result, he received criticism for his poor choice.

One white soldier later noted, "The colored troops went in grandly, and they fought like devils." As the defeated white Union soldiers retreated towards Jacksonville, the 54th Massachusetts Colored Regiment, the 8th Colored Troops, and the 35th United States Colored Troops

covered their pullback. The price was heavy for these regiments as no quarter was given to them on the battlefield. Before the men could be rescued, Confederate soldiers shot and clubbed to death as many as fifty wounded black soldiers.

Losses were heavy on both sides with the Union counting 1,800 men killed, wounded, or missing. On the Confederate side, approximately 950 were killed, wounded, or missing. Union soldiers fled back to Jacksonville and occupied the city for the duration of the war. The Union would not attempt to capture or seize Florida again as authorities deemed it of no significance. Even in 1864, Lincoln was advised that emancipation should not be pursued in Florida because of this. However, Lincoln disagreed saying, "There have been men who have proposed to me to return to slavery the black warriors of Port Hudson and Olustee to their masters to conciliate the South," he told visitors in August 1864. "I should be damned in time and in eternity for so doing."

In the Permanent Gallery of the Cici and Hyatt Brown Museum of Art is a large-scale historical painting depicting a battle scene associated with Olustee. "Repulse at Olustee," ca. 1885 is an oil on canvas painted by German battle painter Hans Dreher (**FIG 1**). He shows the chaos of the battle as a Union raft drifts down the Apalachee River taking fire from the nearby mountainsides in North Florida. Brave war-horses are shown with expressions of terror, one Union soldier has fallen wounded to the floor of the raft and yet the captain of this makeshift raft is shown calmly in control and confident of their eventual safety. This climatic painting with its great use of dark and light shows the chaos of war.

Little is known about the artist Hans Dreher. He was born in Germany in 1858 before immigrating to the United States and settling in Allentown, Pennsylvania. He specialized in history paintings and was active between 1870 and 1890. The painting was a commissioned piece given to the Reading Public Museum as a



FIG 02

A monument, created on October 23, 1912. Today the Battle at Olustee is a Historic State Park and part of the Florida Park system.

gift from John A. Rigg in 1914. What makes this painting so interesting is how the painter depicts a fictional Florida with mountains and a nonexistent river called the Apalachee. In 1880, Americans knew very little about the state. Certainly, Dreher never visited Florida. Did he think to himself there are mountains in Pennsylvania, so they must exist in Florida as well? He may have painted mountains in all of his paintings as that is what he knew. The next time you are in the Cici and Hyatt Brown Museum of Art take a close look at this great Florida Civil War painting as there are lots of details to be seen.

Daughters of the Confederacy began raising funds in 1897 to commemorate the desperate battle. Survivors of the Battle of Olustee created a monument on October 23, 1912, (**FIG 2**) in a dedication ceremony including veterans from both sides. Today, the Battle at Olustee is a Historic State Park and part of the Florida Park system. Every February, a large annual historical reenactment takes place on the site of the battle which draws large numbers of reenactors and spectators alike.



Out of Central Asia

The Asian steppes were a super-highway of human migration, and homeland to the Indo-Aryan-European language tree. In waves, clans travelled westward into Europe, and south and east onto the Persian plateau and Northern India, taking their horses, languages, symbols, art, weaving and ancient customs with them. In Mesopotamia, they displaced the Elamites and became the dominant culture. In India, they brought a social organization that persists, even today..

Art flourishes. Cultures collide.



Falasiiri
ORIENTAL RUGS

WORLD CLASS CARPETS IN THE HEART OF VERO



BUY
SELL
APPRAISE
HAND WASH
RESTORE

FINE
CARPETS
&
TEXTILES

SPRING EXHIBITS



VOLUSIA CREATES ART
 OPENING MARCH 29, 2020 – APRIL 26, 2020 –
 LOHMAN PLANETARIUM LOBBY

From preschool to high school, the 48th Annual Volusia Creates Art program demonstrates the amazing pool of artistic talent through a judged exhibit featuring the best students works of art from around the county.



NASA EARTH DAY POSTER SERIES
 OPENING APRIL 1, 2020 – JUNE 28, 2020 –
 LOHMAN PLANETARIUM LOBBY

Every year since 2010, NASA has created a new piece of art to commemorate Earth Day. These vibrant posters glorify the beauty of our home planet and will be on display in the Lohman Planetarium Lobby. If you would like to own one for yourself, join us on Earth Day, April 22nd, at our showings of *Planet Earth II* and *Blue Planet II* (more info on Page 25), as two lucky winners will take home a single poster from this magnificent series.
 Image Credit: NASA



FLORIDA'S 6TH CONGRESSIONAL DISTRICT STUDENT ART SHOW
 OPENING APRIL 7, 2020 – APRIL 26, 2020 –
 ROOT HALL

Each spring, the Congressional Institute sponsors An Artistic Discovery, a nationwide competition for high school students interested in art who are looking to showcase their creativity. The contest recognizes and encourages artistic talents of young constituents across the nation. Over 100 high school students from 13 high schools in FL-6 will be featured in this exhibition of the Congressional Art Competition.



BILLIE HOLIDAY AT SUGAR HILL: PHOTOGRAPHS BY JERRY DANTZIC
 OPEN THROUGH APRIL 19, 2020 –
 KARSHAN CENTER OF GRAPHIC ART

This exhibition organized by the Smithsonian Institution Traveling Exhibition Service, in collaboration with the Jerry Dantzig Archives, offers a vivid and intimate photographic portrait of one of the 20th century's most iconic musical figures: the consummate jazz and blues

singer Billie Holiday (1915-1959). Rarely seen photographs capture Holiday's life just two years before she died at the age of 44.

In April 1957, renowned photojournalist Jerry Dantzig gained special access to Holiday during a week-long run of performances at the Newark, New Jersey nightclub, Sugar Hill. We see her joy greeting fans on the street, life at home with friends and family, her preparations backstage, and her captivating charm at the microphone. The images capture her warmth, humanity, complexity, elegance, and star power. Dantzig's images offer an unparalleled look at an American icon, one that goes beyond the tragic narrative that frequently defines her. Sixty years after her death, Billie Holiday's passion and originality come through in every song she sang - and are forever captured in these rare, spectacular photos.

All photographs © 2018 Jerry Dantzig / Jerry Dantzig Archives. All rights reserved. Image Credit: Billie Holiday on stage at Sugar Hill, Newark, New Jersey, April, 1957.



THE EVOLUTION OF FLORIDA'S BORDERS

OPENING APRIL 25 – JULY 19, 2020 –
 KARSHAN CENTER OF GRAPHIC ART

This exhibition of rare vintage maps of our state from as far back as the 1500s comes to MOAS from Dr. Armand and Suzanne Cognetta who have

amassed one of the largest collections of antique maps in the country. The exhibition starts with Sebastian Münster's 1540 map of the Western Hemisphere, the first to treat the hemisphere as a whole and depict the Americas as distinct North and South continents. Given the relative youth of our country, and certainly our state, this exhibition offers a fascinating opportunity to see images of Florida and the Southeastern U.S. as Europeans thought of it as far back as the Renaissance. This exhibition is on loan from the Cognetta Family Trust Collection of Tallahassee, Florida. The exhibition was organized by Curator Angie L. Barry and educational materials provided by archivist Peter A. Cowdry, Jr. Image credit: Sebastian Münster (1488/89-1522) woodcut, monochromatic print on rag paper. From the Cognetta Family Trust Map Collection, C36



SINGULAR ANGLES: THE ART OF ROBERT HUFF

OPEN THROUGH APRIL 26, 2020 –
 GARY R. LIBBY ENTRY COURT

Robert Huff (1945-2014) was a fixture in the late 20th century Miami art scene and he influenced generations of South Florida artists long before ArtBasel Miami Beach transformed the area into an art mecca. He lived, worked, and taught in South Florida for 46 years and his color palette evolved over the years to include the blues, oranges, and yellows of the tropics to the reds and blues, along with gold leaf, that he introduced into his work after a profoundly affecting trip to Russia. Able to envision on a grand scale, he had major public works commissions around Miami, including three at airports. His distinct brand of tropical urbanism came to signify the rapid transformation of South Florida and still seems fresh and relevant to the spirit of the area to this day. Image Credit: Robert Huff (1945-2014), *You Can't Go Home Again*, 2006, acrylic, pencil, canvas, aluminum, ceramic. MOAS Collection, Gift of Barbara N. Young



THE WORLD OF FRIDA

OPEN THROUGH APRIL 26, 2020 – FORD GALLERY

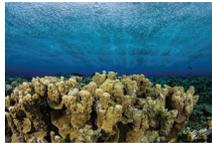
From the Bedford Gallery in California, this exhibition celebrates the culture, style, and persona of visionary painter Frida Kahlo, an artist who continues to inspire with her story of love, adventure, and pain. With over 100 works in all types of media by contemporary artists in the exhibition and record-breaking attendance during its first showing, the legacy of this iconic artist is still strong a century after her life and career. The World of Frida was organized by Carrie Lederer, Curator of Exhibitions, Bedford Gallery, Leshner Center for the Arts, Walnut Creek, CA. Image Credit: Carlos Villez, *Parakata Poderosa*, 2016, giclee on canvas, 30" x 24"

Stay in touch! For the latest exhibit and programming information, sign up for our e-newsletter on the Museum's homepage at MOAS.org!



**UNIQUE PERSPECTIVES:
PAINTINGS BY ROBERT ROSS**
OPENING MAY 2 – JULY 19, 2020 –
GARY R. LIBBY ENTRY COURT

Robert Ross is a successful Orlando-based artist with a painting style paying homage to early twentieth century Precisionist painting as well as the work of Richard Diebenkorn (1922 – 1993). However, Ross puts his own stamp on these types of architecturally inspired paintings by including a distinct element to provide a contrast to the geometry within them. Sometimes it may be in the form of a reflection in a puddle, sometimes a single sliver of light from an open door, showing us the beauty to be found all around us every day. *Image credit: Robert Ross, Rooftop After the Rain, oil on canvas, Courtesy of the artist*



BENEATH THE WAVES OF WONDER
OPENING MAY 2, 2020 – SEPTEMBER 6, 2020 –
FORD GALLERY

Celebrating the great diversity of our ocean using diverse specimens from our permanent collection of corals, mollusks and other wonders of oceanic life. Discover unique and stunning shells found from all over the world's oceans including popular ones from Florida. Corals and coral reef ecosystems provide habitat for thousands of creatures. Explore the many marine species found in Florida and around the world. This exhibit also details other wondrous creatures from beneath the waves such as sea stars, sponges, sharks, and many others. Many of these specimens are rarely exhibited and date back to the very beginning of the Museum's founding over 50 years ago. *Image Credit: Coral Reef, Yap, Micronesia; Brad Holland*



**FRAGILE BEAUTY:
MASTERWORKS OF PORCELAIN
AND GLASS FROM THE COLLECTION**
OPEN THROUGH OCTOBER 3, 2020 –
BOUCHELLE CHANGING GALLERY

Highlighting centuries of fine workmanship in porcelain and glass, this exhibition brings together some of the most beautiful pieces in these media to be found in the MOAS collection. Decorative Arts are particularly well-represented in the Museum's collection and visitors will be impressed by the wealth of intricate detail and stunning craftsmanship displayed by these fragile, sculptural pieces. With references to artistic tastes of the past, they represent traditions in porcelain and glass that have long since given way to primarily streamlined Modernism. *Image Credit: Meissen Porcelain Factory, Apollo and Chariot of the Sun, 1820, molded, hard-paste porcelain with polychrome glazes. Gift of Dorothy and John Fellenz 86.08.001*

MUSEUM NOTICE:

To do our part to safeguard the health and well-being of our visitors, staff, and volunteers and mitigate the spread of the coronavirus (COVID-19), as of March 18, 2020 the Museum has temporarily closed to the public. Until we reopen the calendar of spring exhibits should be regarded as preliminary and subject to changes, postponements, or cancellations. Please check the MOAS website for for the latest updates on these upcoming events.

**CURRENTLY ON DISPLAY IN THE
CICI AND HYATT BROWN
MUSEUM OF ART**



VOLUSIA COUNTY

Scenes from Volusia County and the importance of art schools and art venues in the development of culture within the county. *Featured painting: South Beach Street, Daytona, James Ralph Wilcox, Volusia County*



**"THE LATEST NEWS FROM FLORIDA":
WOOD ENGRAVINGS FROM
19TH CENTURY PERIODICALS**
A. WORLEY BROWN & FAMILY GALLERY

Wood engravings from 19th century illustrated magazines and journals documenting events in the remote land of Florida - a state that few northerners knew a lot about or would ever visit. *Featured Painting: Harper's Weekly, Ft. Pickens 1861*



**GONE FISHIN'
SENA H. AND THOMAS L. ZANE GALLERY**

This exhibition emphasizes Florida's reputation for being one of the greatest sport fishing areas in the world. From locals with simple cane poles to celebrities on yachts decked out for challenging sailfish and tarpon. *Featured painting: Sam Stoltz, Strife of the Sea*



**FLORIDA WEATHER
FRANCE FAMILY GALLERY**

Experience a myriad of Florida weather in just one day. The Florida Weather gallery offers a look at Florida weather as represented by art. Florida is known for weather that changes with uncanny speed. Sun, rain, wind, clouds, storms, and fog all play a part in what the artist sees and wants to capture. The color, technique, rhythm, and texture are focused to evoke the full sensation of what is Florida's revealing environmental trait. *Featured painting: Naomi Duckman (Furth); Storm on Seven Mile Bridge, Florida Keys, 1935*



**THE SEMINOLE AND THE EVERGLADES
FRANCE FAMILY GALLERY**

The Everglades is a region of tropical wetlands that occupies the southern portion of Florida. Water leaving the vast, shallow Lake Okeechobee in the wet season forms a slow-moving river 60 miles wide and over 100 miles long. Human habitation in the southern portion of the Florida peninsula dates from 15,000 years ago. The region was dominated by the native Calusa and Tequesta tribes. After European colonization, both tribes declined. The Seminole nation emerged out of groups of Native Americans, mostly Creek, from what are now the northern Muscogee peoples. Artists from the early 19th century on have found the visual characteristics of the people and the land compelling subjects for artworks. *Featured painting: James F. Hutchinson; Seminole Man, 1992*

For more information about the Cici and Hyatt Brown Museum of Art, please visit www.moas.org

SPRING PROGRAMS

MUSEUM NOTICE:

To do our part to safeguard the health and well-being of our visitors, staff, and volunteers and mitigate the spread of the coronavirus (COVID-19), as of March 18, 2020 the Museum has temporarily closed to the public. Until we reopen the calendar of spring programs should be regarded as preliminary and subject to changes, postponements, or cancellations. Please check the event calendar at MOAS.org for the latest updates on these upcoming events.

ONGOING EVENTS

Wednesday, Yoga in the Gallery

Wednesday, 5:30pm-6:30pm

Take a break from your busy day and enjoy weekly Yoga in the Gallery at the Cici and Hyatt Brown Museum of Art. Meet in the lobby to join registered yoga instructor, Ashley Brooks of Holistic Movements, for an hour-long session that will provide you with an opportunity to practice a series of gentle yoga poses. Class is open to all experience levels. Please bring a mat, towel, and water. Space is limited and registration is required. RSVP to the Museum at 386-255-0285. Check out our special session with First Watch on May 6.

\$5.00 for members, \$10.00 for future members.

APRIL

Saturday, April 4

10:00am-5:00pm

Smithsonian Museum Day

Enjoy free Museum admission when you present a Museum Day ticket. Visit Smithsonianmag.com/museumday for details and to download your ticket. Ticket does not include planetarium admission.

Free with Museum Day ticket.

Saturday, April 4

7:00pm-9:45pm

Saturday Laser Rock Concert

7:00pm Laser Beatles

8:00pm Rush 2112

9:00pm Pink Floyd – The Wall

\$5.00 for one show, \$7.00 for two shows, and \$9.00 for three shows. Tickets may be purchased in advance by calling 386-255-0285.

Thursday, April 9

5:30pm-7:30pm

Wine Tasting: Corked in California

Join us at the Cici and Hyatt Brown Museum of Art for our wine tasting series with S.R. Perrott. Spend the evening among friends while you sip up knowledge on swirling, tasting, and describing wines while learning about different pairings with light appetizers from Ravish Catering. This quarter's program will feature six wines from

different regions in California. This event is for ages 21 and older. Seating is limited. Visit MOAS.org or call the Museum at 386-255-0285 to purchase your admission. No refunds after April 6. \$30.00 for members, \$40.00 for future members.

Saturday, April 11

11:00am-5:00pm

MOAS Space Day

Join us for the Museum's biggest space event of the year as we celebrate all things space in an engaging and interactive environment for the whole family. Now in its 6th year, this stellar event coincides with the 50th anniversary of the Apollo 13 launch and a day prior to the anniversaries of the first human flight into space by cosmonaut Yuri Gagarin and the first Space Shuttle flight. Learn about the science, exploration, and beauty of space through exciting lectures, shows in the Lohman Planetarium and portable planetarium, hands-on activities, and solar observing with telescopes in our front entrance courtyard (weather permitting). Throughout the Museum, there will be displays and activities from the GE Volunteers, ERAU's ERFSEDS Rocket Club, Amateur Astronomy Club, Society of Women Engineers, and Astronomy Professors from the University's Physical Sciences Department. A food truck will also be set up in our courtyard loop for your enjoyment. We cannot wait to see you for this out-of-this-world event.

Free for members or with paid museum admission. Tickets for planetarium presentations are included with admission and are on a first-come, first-served basis.

Saturday, April 11

6:00pm-8:30pm

Movie Night in the Lohman Planetarium: Apollo 13

April 11th, 1970: the Apollo 13 mission launches from Cape Canaveral in an attempt to land on the Moon. Exactly 50 years later, join us in the Lohman Planetarium to watch this exciting mission gone wrong in *Apollo 13*. Tom Hanks stars as Astronaut Jim Lovell in this faithful retelling of historical events, which earned nine Academy Award nominations. Don't miss this Movie Night, "Failure is not an option." This film will be displayed in 16:9 aspect ratio on the planetarium dome in stunning 4K Ultra High Definition. Popcorn and snacks will be available for purchase at the concession stand. Please arrive at least 15 minutes before the event start time. Advanced purchase of tickets is recommended by calling 386-255-0285.

\$8.00 for members, \$10.00 for future members.

Thursday, April 16

2:00pm-3:30pm

Florida Vistas Book Club: *The Tropic of Cracker* by Al Burt

Join us for our next Florida history book club meeting, this time in the Library at the Museum of Arts & Sciences, where we will be discussing the book *The Tropic of Cracker*. Learn more about the book at MOAS.org. Light refreshments will be served. RSVP by calling the Museum at 386-255-0285.

Free for members, \$5.00 for future members.

Friday, April 17

2:00pm-3:00pm

Porch Talk at Gamble Place: Civil War in Florida

Florida had more than eight thousand miles of coastline to defend and eventually found itself with Confederates holding the interior and Federals occupying the coasts – a tenuous state-of-affairs for all. Join Senior Curator of Education and History, Zach Zacharias, at Gamble Place in Port Orange to learn about Florida's unique roll in the Civil War including major battles, slavery, and reconstruction. Space is limited and advanced registration is required. RSVP by calling the Museum at 386-255-0285.

Free for members, \$5.00 for future members.

Member Appreciation Week – April 19-25

Save your member guests passes during Member Appreciation Week and show your friends what you love about MOAS! Members can bring up to two guests per visit anytime between April 19-25. **Member Guest passes cannot be extended to the Member Appreciation programs.**

Tuesday, April 21

3:00pm-4:00pm

Member Appreciation: Tuscowilla Preserve Nature Walk

As a part of our MOAS Member Appreciation Week, meet Education Coordinator, Kelsey Hansen, in the MOAS Lobby and get ready to explore the Tuscowilla Nature Preserve. As one of the last hydric hammocks on Florida, Tuscowilla offers a rare glimpse into an ancient and dynamic environment. The tour will include a light hike (weather permitting) on the boardwalk through the preserve and a discussion inside Windows to the Forest. Wear your walking shoes. Space is limited. RSVP by calling the Museum at 386-255-0285. Free for members. Must be a member to attend.

Wednesday, April 22

1:00pm-1:45pm

An Ocean Mystery: *The Missing Catch*

In celebration of Earth Day, join us in the Lohman Planetarium for a special presentation of the Smithsonian Channel's *An Ocean Mystery: The Missing Catch*. Is the world running out of fish? According to an unconventional and comprehensive study by marine biologist Dr. Daniel Pauly, we have drastically underestimated the true number of fish caught globally and must change our ways soon or face disaster. Follow Dr. Pauly and his team around the globe as they talk to commercial fishermen, charter boat operators, and even seafood restaurant managers to determine just how much fish we really catch, and what we must do to help us save our seas. Popcorn and snacks will be available for purchase at the concession stand.

This event is free for members or with paid museum admission. Seating is limited and available on a first-come, first-served basis.

Wednesday, April 22

1:00pm-3:30pm

Earth Day Crafts

Come celebrate planet Earth! Join educators Kelsey Hansen and Nicole Messervy for Earth Day themed crafts and activities in the Charles and Linda Williams Children's Museum. Test your green thumb by making take-home seed bombs, learn how solar and wind energy work, and explore ways in which you can protect your home planet.

Free for members or with paid museum admission.

SPRING PROGRAMS

Wednesday, April 22
2:00pm-2:45pm

Mysteries of the Rainforest

In celebration of Earth Day, join us in the Lohman Planetarium for a special presentation of the Smithsonian Channel's *Mysteries of the Rainforest*. The island of Barro Colorado in the Panama Canal is full of mysteries, some involving the wide diversity of wildlife, and some involving the island itself. Every year, hundreds of scientists and students come here to uncover the rainforest's secrets, but this year is very different. The island is running dry and no one knows why. Follow several research teams as they observe, experiment, and conduct research in this pristine habitat, and most pressing of all, try to find out what happened to the rain and when it will come again. Popcorn and snacks will be available for purchase at the concession stand.

This event is free for members or with paid museum admission. Seating is limited and available on a first-come, first-served basis.

Wednesday, April 22
3:00pm-4:00pm and 4:15pm-5:15pm
Planet Earth II, Blue Planet II

Join us in the Lohman Planetarium for a very special presentation as we mark the 50th anniversary of the first Earth Day with one episode each of the BBC's *Planet Earth II* and *Blue Planet II*. Accompanied by the music of Hans Zimmer, both series are presented and narrated by naturalist Sir David Attenborough. View your home planet like never before in 4K Ultra High Definition. Two lucky winners will also take home a single poster from our NASA Earth Day Poster Series exhibit, on display throughout April. Popcorn and snacks will be available for purchase at the concession stand.

This event is free for members or with paid museum admission. Seating is limited and available on a first-come, first-served basis for each show.

Thursday, April 23
9:00am-11:00am

Member Appreciation: Eco Buggy Tour - Longleaf Pine Preserve

As a part of our MOAS Member Appreciation week, join MOAS Senior Curator of Education and History, Zach Zacharias, MOAS Education and Environmental Coordinator, Kelsey Hansen, and Environmental Specialist, Trey Hannah for 1.5-hour outdoor eco-adventure on the "Eco-Buggy" at Longleaf Pine Preserve, an important environmental area of Volusia County. The preserve consists of just over 12,000 acres that several natural communities, including mesic and wet flatwoods, cypress stands, cypress domes, and scrub. Space is limited and advanced registration is required by calling the Museum at 386-255-0285. The tram tour begins promptly at 9:00am at the East entrance located at 4551 Pioneer Trail, New Smyrna Beach. Free for members. Must be a member to attend.

Friday, April 24
3:00pm-4:00pm

Member Appreciation: Gamble Place Nature and History Walk

As part of our MOAS Member Appreciation Week, join Kelsey Hansen, Environmental and Education Programs Coordinator, on a special walkthrough Gamble Place's historic buildings and the natural surroundings. The importance of preserving this historical and ecological important site through cultural and environmental sustainability will be discussed. Space is limited. RSVP in advance by calling the Museum at 386-255-0285. Free for members. Must be a member to attend.

Saturday, April 25
1:00pm-3:00pm
Film Class: Cinematography Techniques for Beginners

Join award-winning filmmaker Gary Lester, and learn new techniques that will add a more cinematic look to your film projects. Space is limited and advance registration is required. RSVP by calling the Museum at 386-255-0285. \$15.00 for members, \$20.00 for future members.

Monday, April 27
5:00pm-7:00pm
MOAS After Hours & New Member Reception

Join us at the Museum of Arts & Sciences for exclusive after-hours access to all galleries, happy hour drinks specials, live music by Sweet Melissa Music, and a lecture on *The Evolution of Florida's Borders*, an exhibition of rare antique maps depicting the Sunshine State from one of the largest private collections in the country. The collectors, Dr. Armand and Suzanne Cognetta, will be guests of honor, and Peter A. Cowdrey, Jr., archivist of the collection, will give a talk on these fascinating maps of early Florida and the Southeastern United States dating back to the 1500s. Are you a new member to the Museum of Arts & Sciences? Join MOAS Development Manager, Monica Mitry, in the Prehistory of Florida Gallery for a special new member welcome presentation at 5:15pm to learn about all of the new and exciting benefits of becoming a member. Free for members, \$5.00 for future members.

Wednesday, April 29
10:00am-11:30am
On-Site with Florida History: Sugar Mill Ruins and Art Activity

Back in 1830, Henry Cruger and William de Peyster purchased 600 acres of land here and established a sugar plantation. Join Senior Curator of Education and History, Zach Zacharias, at the Sugar Mill Ruins in New Smyrna Beach and take an on-site history tour of the ruins. Guests will also be joined by Florida artist, Arnold Desmarais, who will conduct an art activity showcasing how to draw and sketch the ruins. All art supplies will be provided. Space for this tour is limited and advanced registration is required. RSVP by calling the Museum at 386-255-0285. \$7.00 for members, \$10.00 for future members.

Thursday, April 30
3:00pm-4:00pm
Talk and Walk with Preston Root

Join Preston Root for a personal tour of the Root Family Museum's collection of Coca-Cola artifacts, racecars, and other items from the collection. Listen to stories on how the family became involved in racing, how they traveled on their personal rail car, and more. Free for members or with paid museum admission.

MAY

Friday, May 1
8:00pm-10:00pm
Night Sky Viewing Party

Let's gaze into the night sky together and see what the universe has to offer. We will take a close look at the Moon and brilliant Venus, which has been dominating our recent skies above the western horizon. Weather permitting, join the planetarium staff in the MOAS courtyard as we use our telescopes and laser pointers to guide you through this wondrous evening. Guests are welcome to bring their own chairs, telescopes/binoculars, and curiosities about the universe. A special presentation of "The Sky Tonight" will take place in the Lohman Planetarium at 8:30pm (limited seating). "The Sky Tonight" show is \$5.00 for adults, \$3.00 for children. The outdoor portion is free to the public.

Saturday, May 2
11:00am-3:00pm
Fantasy Craft Day

Calling all Wizards, Jedi, superheroes, and more! Come join us for a fun-filled day of LEGO's and crafts. Tables will be set up with a variety of different themes and challenges for families to enjoy. From 12:00-2:00pm the Central Florida Zoo will have 5-6 "Zoooper Heroes" visiting to teach guests about animal adaptations with a superpower twist! Costumes are not required but are always welcome! Free for members or with paid museum admission.

Wednesday, May 6
5:30pm-6:30pm
Wednesday Yoga in the Gallery - with First Watch

Take a break from your busy day and enjoy weekly Yoga in the Gallery at the Cici and Hyatt Brown Museum of Art. Meet in the lobby to join registered yoga instructor, Ashley Brooks of Holistic Movements, for an hour-long session that will provide you with an opportunity to practice a series of gentle yoga poses. Class is open to all experience levels. Enjoy this special session in a quarterly partnership with First Watch by enjoying a build-your-own chia pudding station. Following class. Please bring a mat, towel, and water. Space is limited and registration is required. RSVP to the Museum at 386-255-0285. \$5.00 for members, \$10.00 for future members.

SPRING PROGRAMS

Saturday, May 9

7:00pm-9:45pm

Second Saturday Laser Rock Concert

7:00pm Laser Zeppelin

8:00pm Laser Queen

9:00pm Pink Floyd – The Dark Side of the Moon

\$5.00 for one show, \$7.00 for two shows, and \$9.00 for three shows. Tickets may be purchased in advance by calling 386-255-0285.

Wednesday, May 13

8:00am-5:00pm

MOAS Member Trip: St. Augustine

Let's take a trip through history! Travel to St. Augustine to visit the famous Castillo de San Marcos Fort, the oldest masonry, and the only extant 17th-century fort in North America. The history of St. Augustine is not complete without a visit to Flagler College with a historic tour of the campus that highlights the architectural heritage of the former Hotel Ponce de Leon. Enjoy lunch that day at Mojo BBQ, your southern blues kitchen, in the heart of downtown St. Augustine. You must be a MOAS member to attend. Kindly RSVP by April 28 by calling the Museum at 386-255-0285. Please meet at the Cici and Hyatt Brown Museum of Art no later than 8:00am and no earlier than 7:30am.

\$90.00 for members. Price includes bus transportation and gratuity, admission to Castillo de San Marco, and the Flagler College historic tour. Lunch at Mojo BBQ is not included.

Friday, May 15

2:00pm-3:00pm

Porch Talk at Gamble Place: Jose Marti – Florida and the Cuban Fight for Independence

Join Senior Curator of Education and History, Zach Zacharias, at Gamble Place in Port Orange and learn about the life and times in Florida of Cuban national hero, Jose Marti. Jose Marti, the leader of the Cuban revolution, traveled extensively throughout the state to unite all revolutionary factions and raise economic support for independence movement from Spain. Discover how he was crucial to the success of the movement and how Florida played a vital role. Space is limited and advanced registration is required. RSVP by calling the Museum at 386-255-0285.

Free for members, \$5.00 for future members.

Saturday, May 16

11:00am-2:00pm

MOAS Annual Muscle Car Show

Come one, come all to see historic American cars as they roll onto the MOAS campus for the day. The combination of memories, beauty, and engineering is what makes this annual car show so great. DJ Frank Roberts will be playing old-time fan favorites and there will be live music from the Shades of 60s tribute rock band. Enjoy food from a local food truck while browsing through Mustangs, Camaros, and Cadillacs in the front entrance courtyard. At 2:00pm, join Buz McKim, retired historian for the NASCAR Hall of Fame located in Charlotte, NC, in the Root Family Auditorium for a presentation on "The Crazy Early Days of Daytona's Beach Racing." Free for members. Outdoor event is free to the public. 2:00pm lecture is \$7.00 or included with paid museum admission.

Saturday, May 16

1:00pm-3:00pm

Film Class: Story Development

Back by popular demand! Join award-winning filmmaker Gary Lester to explore the many places where great story ideas might lurk. Learn how to nurture those ideas and craft them into compelling stories guaranteed to make an exciting film. Space is limited and advanced registration is required. RSVP by calling the Museum at 386-255-0285. \$15.00 for members, \$20.00 for future members.

Saturday, May 16

3:00pm-4:00pm

Ask a Planetarium Curator

Join us in the Lohman Planetarium for this audience guided show that can take you anywhere in the universe that you would like to go! Come with your questions, curiosities, and interests, as we navigate freely through the planetarium's vast digital universe. We cannot wait to explore the universe with you! Free for members or with paid museum admission.

Thursday, May 21

2:00pm-3:30pm

Florida Vistas Book Club: The Nickel Boys by Colson Whitehead

Join us for our next Florida history book club meeting at the Cici and Hyatt Brown Museum of Art where we will be discussing the book *The Nickel Boys*. Learn more about the book at MOAS.org. Light refreshments will be served. RSVP by calling the Museum at 386-255-0285. Free for members, \$5.00 for future members.

Thursday, May 28

6:00pm-8:00pm

Cocktail Works: The Gin Series

Start spreading the booze and mix up your Thursday night plans with a fun-filled evening of drink-slinging packed with history and recipes for you to enjoy at your own cocktail parties. Join Mark Woods, aka TikiTender, founder of Fun Coast Bartending, at the Cici and Hyatt Brown Museum of Art for an interactive cocktail class complete with light appetizers. Explore the history behind some of the most popular gin cocktails, like the Gimlet and Tom Collins, while mixing up your own to enjoy. The grand finale will be a special cocktail presented by MOAS Executive Director, Andrew Sandall. This event is for ages 21 and older. Space is very limited. RSVP in advance online at MOAS.org or by calling the Museum at 386-255-0285. \$35.00 for members, \$40.00 for future members.

MOAS GALLERY SPECIALIST TOURS

Tour with our Gallery Specialists from 3:00 p.m. to 4:00 p.m. on the second Tuesday and fourth Thursday of every month as they provide in-depth information on individual galleries around the Museum of Arts & Sciences and the Cici and Hyatt Brown Museum of Art. These tours are open to the public and are included with paid museum admission unless otherwise noted.

Tuesday, April 14

Gallery Specialist: Kelsey Hansen
Gamble Place Eco Walk - Must RSVP

Thursday, April 23

Gallery Specialist: Juan Junco
Cuban Gallery

Tuesday, May 12

Gallery Specialist: Zach Zacharias
Prehistory of Florida Gallery

Thursday, May 21

Gallery Specialist: Rose Swedlow
Dow Gallery of American Art

Tuesday, June 9

Gallery Specialist: Carol Ann Moritz
Cici and Hyatt Museum of Art

Thursday, June 18

Gallery Specialist: Anne Gayla
Root Family Museum

SPRING PROGRAMS

Friday, May 29
6:00pm-9:30pm

MOAS Astronomy Night at the Ballpark

Join the Museum of Arts & Sciences for a special night at the Jackie Robinson Ballpark! Bring your children to the ballpark for an evening of fun. Experiment with the Museum's science kits and be sure to be one of the first 500 fans at the ballpark to receive a free Astronomy Night t-shirt! Gates will open at 6:00pm and the Tortugas will take on the Dunedin Blue Jays at 7:00pm. Following the game, there will be a special Astronomy Night themed Fireworks Show while MOAS Curator of Astronomy, Seth Mayo sets up the unique live astronomy class. With the ball field lights turned off, Mr. Mayo and other planetarium staff members will point out the prominent spring and summer stars and constellations with a bright green laser. Following the brief live tour of the night sky, there will be telescopes set up on the field for guests to peer through and get a close-up view of the celestial wonders up above! Game tickets can be purchased at <https://www.milb.com/daytona>.

JUNE

Friday, June 5
3:00pm-4:00pm

Talk and Walk: Beneath the Waves of Wonder

Join Senior Curator of Education and History, Zach Zacharias, and Education and Environmental Programs Coordinator, Kelsey Hansen, to learn about life on the world's coral reef. The Museum has a vast collection of corals, mollusks, and other animals that showcase the diversity of life that live in these fragile ecosystems. From the Florida Keys to the Great Barrier Reef, discover how these underwater cities are important to humans and the biosphere.

Free for members or with paid museum admission.

Saturday, June 13
3:00pm-4:30pm

An Afternoon with Florida History

Join us in the Root Family Auditorium for a presentation on Florida history. Free for members, \$7.00 for future members, or included with paid museum admission.

The Ximenez-Fatio House Museum

On the oldest street, in the oldest city, in the United States lies a twenty-room home that was built in 1798, and has served as a general store, a tavern, a billiard hall, and a boarding house. It has survived every war, every plague, every economic recession, and every hurricane to hit St. Augustine. The grand structure has endured every calamity known to historic homes until the 1970s when inconvenience in maintenance nearly brought her to insurmountable decay. Learn about the history and recovery of the Ximenez-Fatio House Museum in St. Augustine by the museum's Director and Historian, Dr. Roger Smith. You will not believe what some historic homes must endure in order to survive!

Florida's Historic Mega Mansions

Join James "Zach" Zacharias, Senior Curator of Education and History and step back in time to a different era to discover many of that state's most ambitious homes. Most were built as winter residences for wealthy northern industrialists in the late part of the 19th-century. Take a trip through the state to learn about these architectural masterpieces that shed light on their owners and learn about the history of these luxury estates.

Saturday, June 13
7:00pm-10:00pm

Movie Night in the Lohman Planetarium:

Rocketman and special Rocket Man Laser Show

This semi-autobiographical musical is "based on a true fantasy." Taron Egerton portrays the *Rocketman* himself, Elton John, interweaving his music through the story of his turbulent career and personal life. Elton John and Bernie Taupin won the 2020 Academy Award for Best Original Song for "(I'm Gonna) Love Me Again." Following the movie, keep jamming to our *Rocket Man* Laser Show, with added beam effects and fog! This laser show, sponsored by Audio Visual Imagineering, is one you don't want to miss. This film will be displayed in 16:9 aspect ratio on the planetarium dome in stunning 4K Ultra High Definition. Popcorn and snacks will be available for purchase at the concession stand. Please arrive at least 15 minutes before the event start time. This film is rated R; viewer discretion is advised. Advanced purchase of tickets is recommended by calling 386-255-0285. \$8.00 for members, \$10.00 for future members.

Thursday, June 18

2:00pm-3:30pm

Florida Vistas Book Club: A Journey into Florida Railroad History by Gregg Turner

Join us for our next Florida history book club meeting at the Cici and Hyatt Brown Museum of Art where we will be discussing the book *A Journey into Florida Railroad History*. Learn more about the book at MOAS.org. Light refreshments will be served. RSVP by calling the Museum at 386-255-0285.

Free for members, \$5.00 for future members.

COCKTAIL WORKS THE GIN SERIES

THURSDAY, MAY 28
6:00PM-8:00PM

MORE INFORMATION ON PAGE 26

MOAS
MUSEUM OF ARTS & SCIENCES

SPRING PROGRAMS

Tuesday, June 23
5:30pm-8:00pm

Murder Mystery Dinner at the Museum

Join us in Root Hall at the Museum of Arts & Sciences for an interactive murder mystery - Game Show style, with the Thank You 5 theater group. Let's set the scene: Host Richard Lawson and his lovely wife and co-host Hannah White are auditioning contestants for their new TV Game Show, *Time Runs Out*. However, it turns out some unexpected "friends" turn up and the results will probably make the "News at 11." Attendees coming to this event will have a chance to play the TV games, be part of the action, ask questions of suspects, and possibly win prizes in this fun and interactive murder mystery where you decide your level of participation. This evening of entertainment that you are sure to remember includes a catered dinner by La's Bistro of Ormond Beach. This event is for ages 21 and over. Seating is limited and advanced RSVP is required. Visit MOAS.org or call the Museum at 386-255-0285 to purchase admission. No refunds after June 15. \$45.00 for members, \$50.00 for future members.

Wednesday, June 24
12:00pm-1:30pm

Lunch and Learn: Curator's Choice

Join Zach Zacharias, Senior Curator of Education and History and take a tour through the ecological and human history of Florida through the glorious landscapes of the Cici and Hyatt Brown Museum Art. Travel from one end of the state to the other and learn about plants, animals, buildings, and historical sites. Call the Museum at 386-255-0285 to RSVP and to place your lunch order. Space is limited and advanced RSVP and paid lunch are required.

Lecture is free plus the price of paid lunch for members. Lecture is \$5.00 plus the price of paid lunch for future members.

Saturday, June 27

3:00pm-4:30pm

Cultivating the Wild

Photographer, filmmaker, and long-time Daytona State College professor, Eric Breitenbach will premiere his most recent documentary, *Cultivating the Wild*, a film inspired by the American naturalist William Bartram, deemed by many to be "The South's Thoreau." The one-hour documentary focuses on six Southerners committed to reclaiming the nature of the South through art, science, culture, and personal witness. Their inspiration is William Bartram, who many consider to be America's first environmentalist. A question and answer session will be held after the viewing with filmmaker, Eric Breitenbach.

Free for members, \$5.00 for future members, or included with paid museum admission.

Saturday, June 27

7:00pm-9:45pm

Summer Saturday Laser Rock Concert

7:00pm Laser Vinyl

8:00pm Metallica

9:00pm Laser Queen

\$5.00 for one show, \$7.00 for two shows, and \$9.00 for three shows. Tickets may be purchased in advance by calling 386-255-0285.

Monday, June 29

5:00pm-7:00pm

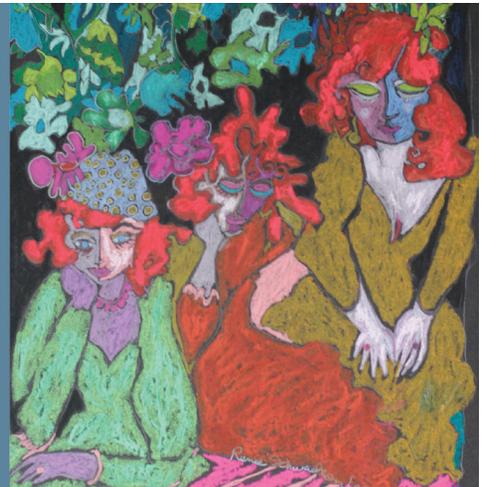
MOAS After Hours

Join us at the Museum of Arts & Sciences for exclusive after-hours access to all galleries, happy hour drink specials, and a special gallery talk with artist Robert Ross on the *Unique Perspectives: Paintings by Robert Ross* exhibit. Robert Ross is a successful Orlando-based artist with a painting style paying homage to early twentieth century Precisionist painting as well as the work of Richard Diebenkorn (1922-1993). However, Ross puts his own stamp on these types of architecturally inspired paintings by including a distinct element to provide a contrast to the geometry within them. Learn the inspiration behind the works in this beautiful exhibition of contemporary Florida paintings.

Free for members, \$5.00 for future members.

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For additional information or questions regarding this message, please contact Matthew S. Welch, Partner.



Weddings

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Your dream wedding starts with your dream venue. The Museum of Arts & Sciences and the Cici and Hyatt Brown Museum of Art in Daytona Beach feature a variety of truly unique settings for a wedding to remember. Our venues offer a modern-day bride the prestige of an artistic aesthetic while embracing the beauty of an endless color palette to play with.

From rustic elegance to contemporary sophistication and classic traditional to refined intimacy, the Museum of Arts & Sciences' stunning ceremony and reception locations offer you the wedding day backdrop that you have always wanted.

Book a single room or a whole wing, include additional galleries or utilize the entire museum.

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— NEW YEAR, NEW PRESIDENT —

Urging You to Join This Fantastic Group of Volunteers

My name is Diane Rogers and I am your Guild President for the next two years. I have been a member of the Guild since 2010 and have served as 1st Vice President and Corresponding Secretary as well as having participated in every fundraising committee. I have set a goal this year to increase our membership, and I hope that you can help with this undertaking by joining this fantastic group of volunteers.

The main purpose of the MOAS Guild is to promote our wonderful museum. We highlight the Lowell and Nancy Lohman Family Planetarium, the Charles and Linda Williams Children's Museum, and Tusawilla Preserve. We love to show off what our museum has to offer. The next purpose of the Guild is to raise funds for the Museum, which has been very successful. Being a member of the Guild is a great way

to support a worthy cause and to make life-long friends. We are a special group who always rise to the occasion.

Our first fundraiser for 2020 was a luncheon called "From My Closet to Yours" which was held on February 11, 2020. It was a huge success and an enjoyable day for all who attended. Maureen Mahoney and her committee did an outstanding job! Many thanks to everyone who supported this event.

In March we enjoyed our monthly Guild meeting which was complete with a presentation designed especially for us in the Lowell and Nancy Lohman Family Planetarium. MOAS Curator of Astronomy, Seth Mayo never disappoints as he guided us through our vast universe.

Our next fundraising event is at the Cici and Hyatt Brown Museum of Art on April 14, 2020, at 11:00 a.m. called

the "High Society Garden Party." You can purchase your tickets online through our MOAS Guild Facebook page or by contacting Lillian (LC) Tobey at lctobey@live.com.

On May 12, our general Guild membership meeting will be themed "A Celebration of America." Our guest speaker will be a General in the United States Marine Corps. A wine and cheese reception will follow the presentation. This will be our last meeting until September, and it is our membership month. You can join the Guild as a member anytime as our membership runs from January through December.

Mark your calendars for our 10th annual Children's Museum Golf Classic on October 16, 2020, this year at the Venetian Bay Golf Club in New Smyrna Beach. We will be asking for sponsors to help with this event. If you can help, please contact George

Fortuna at gfortuna0628@gmail.com. Do not forget about the 58th Halifax Art Festival on November 7 and 8. Our art festival has been ranked 18th in the country. This year may be a little different because of all of the changes on Beach Street, but I have full confidence that this festival will be another success. Please contact Andrea Pair at andreapair@cfl.rr.com with any questions and how you can help support this event.

Keep up with all of our events and progress on our MOAS Guild Facebook page (@MOASGuild).

We hope to see you soon at one of our meetings. I look forward to meeting all of our new members.

Diane Rogers, President
crogers29@cfl.rr.com

Photos from our successful February 2020 event, From My Closet to Yours ►



NIGHT SKY
Viewing Party
Friday, May 1 | 8pm-10pm
in the MOAS Front Entrance Courtyard

MOAS
MUSEUM OF ARTS & SCIENCES

More Information on Page 25



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SUNDAY, FEBRUARY 16, 2020

THE DAYTONA BEACH NEWS-JOURNAL

ALSO INSIDE: Renowned Celtic fiddler Malread Nesbitt to perform in Ormond Beach, F3

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Story in the shadows

Catapult Entertainment weaves story-telling, dance, theater in upcoming show, F2

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Pretty patterns

Orlando features international artists and exhibit celebrating the art of Daytona Beach painter Bob Ross, F1

ALSO INSIDE: Beer & Bacon Festival brings savor, F2

SUNDAY, MARCH 1, 2020

THE DAYTONA BEACH NEWS-JOURNAL

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Best of Bike Week

Top 10 things to do for both bikers and non-riders, F3

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FIND YOUR WEEKLY TV LISTINGS INSIDE!

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Your Are Invited!
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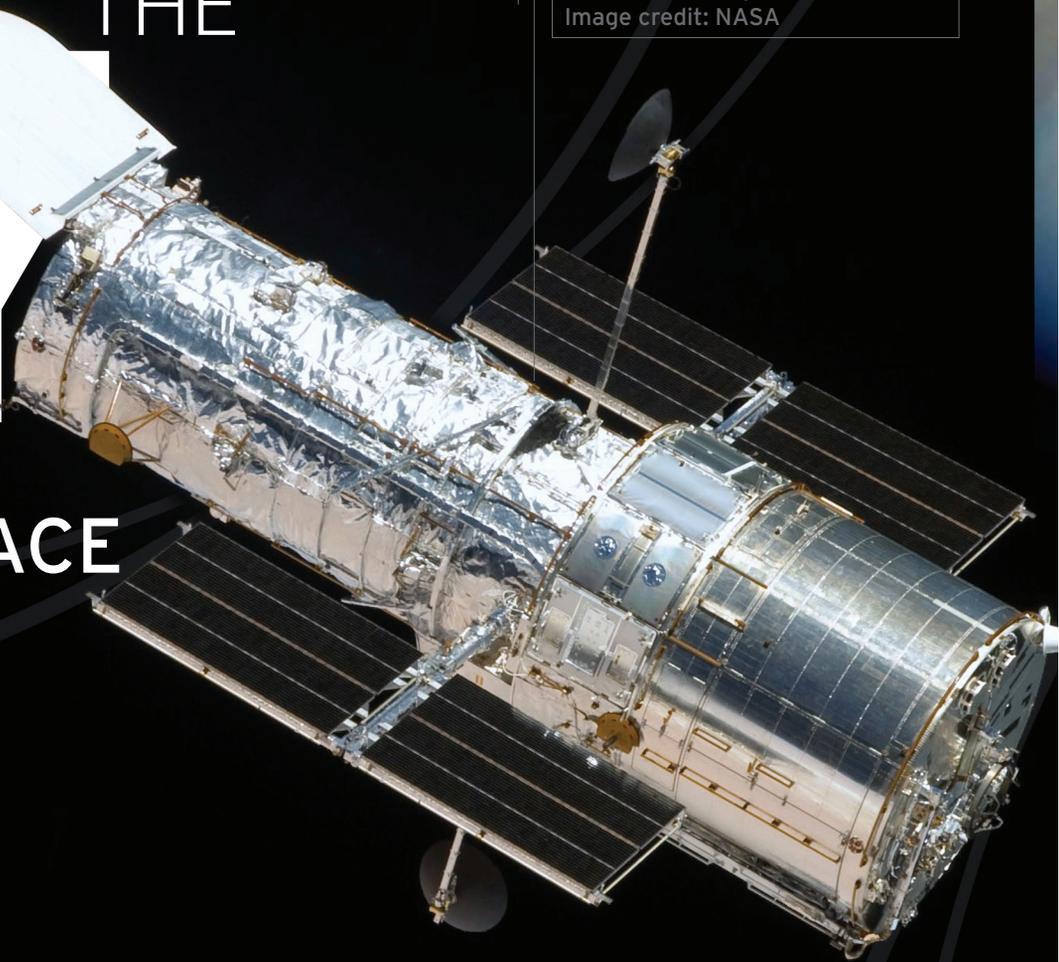
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EYE IN THE SKY

30 years of the HUBBLE SPACE TELESCOPE

The Hubble Space Telescope photographed after the last Space Shuttle servicing mission in 2009. Image credit: NASA



When you gaze up at the sky on a clear night, the enormity of the universe is in full view. Even though most of those celestial objects are at distances well beyond the scope of human comprehension, a floating telescope - merely 340 miles above the Earth - has been able to bring these far-off wonders closer to home. This amazing piece of technology is none other than the orbiting observatory, the Hubble Space Telescope.

2020 marks 30 years since the launch of Hubble, when it hitched a ride aboard the Space Shuttle Discovery in 1990. Since this school-bus-sized telescope was placed into low Earth orbit above our light-distorting atmosphere, the observatory has made more than 1.3 million observations, been involved

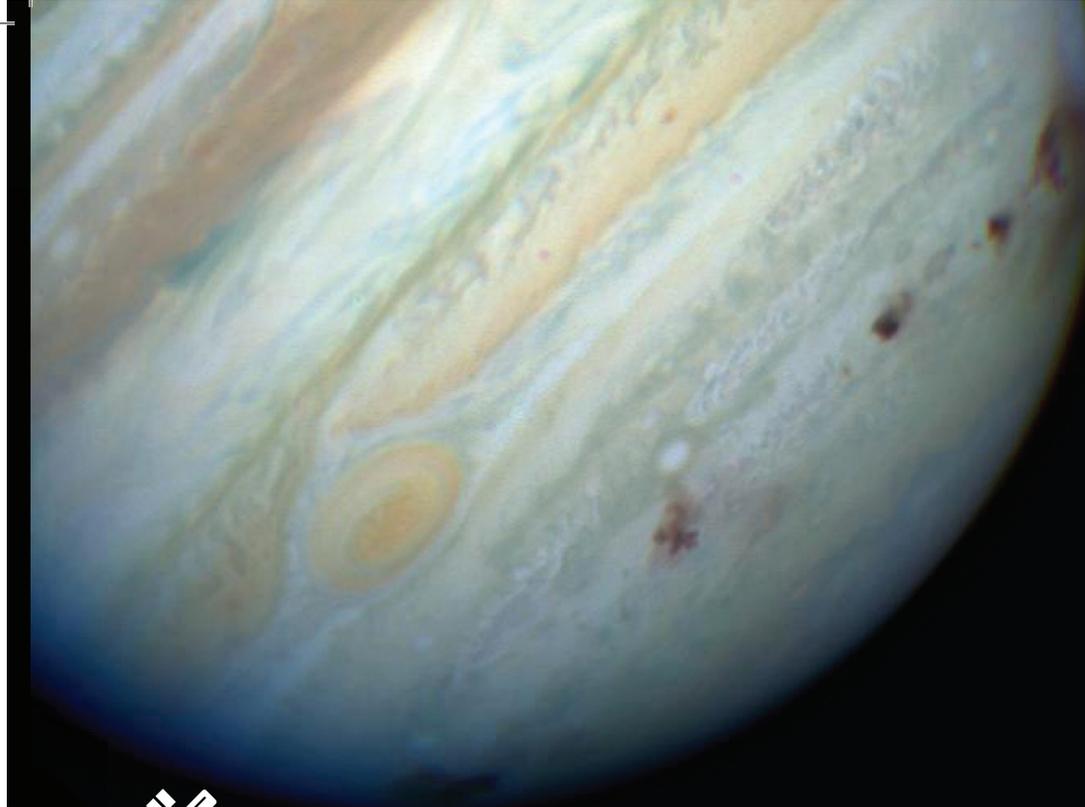
in over 15,000 scientific papers, and helped humanity understand the universe from the Solar System, all the way out to the farthest objects ever observed.

Even though Hubble is associated with the discovery that our universe is expanding due to its naming in recognition of Edwin Hubble - the early 20th-century astronomer who discovered the ever-enlarging state of space - this great observatory has revealed so much more, covering a broad spectrum of astronomical subjects.

Although there are tremendous accomplishments made by Hubble these past three decades, the mission has not been without great

challenges to overcome. Through the years, scientists and engineers dealt with a flaw in the large light-gathering mirror that was incorrectly ground during manufacturing, the failures of gyroscopes as part of the pointing control system, and some of its primary cameras failing or malfunctioning. Thanks to the five servicing missions during NASA's Space Shuttle program and vigilant maintenance efforts made by engineers on the ground, it has been possible to run an observatory that is twice as old as most people's cars.

With 30 years behind us, let's take a look at some of the major achievements that this electronic eye on the universe has accomplished.



As one of the first major breakthroughs in Solar System exploration by Hubble, this image shows the atmospheric impacts of the comet Shoemaker-Levy 9 that collided with the gas giant Jupiter in 1994. Image credit: HST Comet Team, NASA



Exploring Earth's Neighborhood

With a fairly large 7.8-foot diameter mirror that serves as its primary light-gathering source, Hubble is not only suited to observe extreme distances billions of light-years away but has also been extraordinary at peering at objects within our own Solar System.

In 1994, just after the completion of Servicing Mission 1 by the Space Shuttle Endeavour mission (STS-61) that fixed the manufacturing flaw in the primary mirror and restored clear vision to Hubble, one of the first major observations was made in our planetary neighborhood.

This was the impact of a sizable comet known as Shoemaker-Levy 9 in the colorful gas clouds of Jupiter. Before Hubble made this fortuitous observation of the collision, a huge impact such as this had never been witnessed, especially as it was occurring.

Jupiter's large gravitational field draws in many asteroids and comets into close proximity to the planet, but only once or twice a century does a major collision occur. Hubble was able to watch this event unfold over six days in July of 1994 and revealed 21 massive dark splotches that were created by the impacts. Shoemaker-Levy 9's collision revealed to scientists for the first time the chemicals that are found underneath Jupiter's uppermost cloud layer as it was churned upwards from the cometary bombardment.

Jupiter has continually been a reliable target due to its dynamic atmosphere. On numerous occasions, the telescope has focused its attention on the Great Red Spot - a massive swirling storm as large as two to three Earth's.

Hubble's cameras have shown that the Great Red Spot is continually shrinking - a process that is still a mystery to scientists today. These cloud observations have not only helped us understand the atmospheres of Jupiter and other gas planets but also have aided in our ability to forecast and model storms that form on our own planet Earth.

Looking farther out into the Solar System, the Hubble Space Telescope has also narrowed in on the dwarf planet Pluto from time-to-time.

Before 2015, when NASA's New Horizons spacecraft flew by Pluto taking the first up-close images, Hubble had the most detailed picture of this tiny, very dim world. Hubble's observations gave us a general understanding of Pluto's size and a very rough image of its geologic features. This, in turn, helped mission planners on the New Horizons team to determine how the spacecraft flyby would pan out after the long nine-year journey to the Kuiper Belt Object.

Hubble's arguably most significant contribution to the understanding of Pluto is its discovery of four of its five moons. Up until 2005, the only moon known around Pluto was Charon, discovered in 1978. Charon is half the size of Pluto with a very tight orbit, making it an object easier to find early on. In 2005, astronomers found two more moons, Hydra and Nix, using the powerful optics of Hubble. Subsequently, in 2011, Hubble was used to discover Kerberos, and the moon Styx in 2012.

These moon discoveries made around Pluto indicated that this system was much more complex and interesting than previously thought.

The Interstellar Medium ❖

Some of the most iconic images and observations by Hubble have come from the study of the starry neighborhood of our own Sun.

Within the numerous pockets of stars spread out over thousands of light-years away, giant clouds of gas and dust - also known as nebulae - imbue the universe with these painting-like structures.

One of the most famous and studied of these gas clouds is the Orion Nebula, that sits just below the belt of the constellation of the same name. In 2006, the most detailed view from Hubble of the Orion Nebula was released, providing the best and closest example of a star-forming region to Earth.

At close to 1,500 light-years away (about 8.8 quadrillion miles) the complex layers of gas clouds captured by Hubble lie home to thousands of stars that are formed by the gravitational collapse of material within the nebula. Most notably, a small collection of stars in the heart of the nebula that is shaped like a trapezoid - aptly named the Trapezium - are new and radiating intensely in ultraviolet light. This light exerts an extremely powerful stellar wind, carving out and pushing on the gas around the young, luminous stars, and creating a cavernous landscape in the surrounding region. This has given scientists a snapshot of the violent nature of young stars as they push their constituent gas away.

A closer inspection of this very active star-forming region has given light to dusty disks that have formed around numerous new stars. Hubble revealed these disks - known as protoplanetary disks or "proplyds" - to be the primordial materials that would likely form into planets. Our own Solar System is thought to have formed in this way, and Hubble's detailed view of these proplyds has helped us to understand this planetary forming process.

As with life, eventually comes death, and this is no different for stars in our universe.

Hubble has captured the death throes of stars on numerous occasions - none more famous than the stellar remnant known as the Crab Nebula.

The twisted, almost knotted up appearance of chaotically stretched out bands of gas reveal the extremely violent explosion of a star, an event known as a supernova. This was seen as an oddly bright spot in the sky by the Chinese about 1,000 years ago and is located about 6,500 light-years from Earth. The exploded remnants of a star much larger than our Sun is stretched over six light-years across the image, and with many of these nebulous observations, the materials within the gas clouds have been enhanced with color to differentiate the elements found within the Crab Nebula. In Hubble's image, blue represents neutral oxygen, green as singly ionized sulfur, and red as doubly ionized oxygen. Many of the heavy elements found throughout the universe and even in our own bodies come from these supernovae.

Embedded deep within the Crab Nebula, is the monumentally dense core of the dead star left behind - a spinning neutron star known as a pulsar. Astronomers utilized Hubble, along with another orbiting telescope, the Chandra X-ray Observatory, to combine optical and x-ray observations to better understand this extremely dense, rotating ball of matter. The pulsar is as massive as our Sun, but squished down to the size of Manhattan, all while spinning 30 times per second.

Even though gas clouds like the Crab Nebula, and countless other stellar remnants imaged by Hubble, are fraught with violence and destruction, they have also been found to kick start new star and planet formation as the expanding material develops shockwaves that spark gaseous collapse.



This stunning mosaic made from Hubble images reveals the death throes of a star much larger than our own Sun after it underwent a massive supernova explosion, known as the Crab Nebula. The elements within the twisted and knotted strands of gas may seed new stars and planets at some point with the orange filaments indicating hydrogen, blue as neutral oxygen, green as singly-ionized sulfur, and red represents doubly-ionized oxygen. Image credit: NASA, ESA, J. Hester and A. Loll (Arizona State University)

The combined optical and x-ray image produced by the Hubble Space Telescope and the Chandra X-ray Observatory of the pulsar, or spinning neutron star, that is found in the heart of the Crab Nebula. As the left over dense core of a massive star after a supernova explosion, this pulsar has the mass of our Sun compacted down to about the size of Manhattan, and rotating 30 times per second. Image credit: NASA, HST, CXC, ASU, J. Hester et al

The Orion Nebula is the most well studied star forming region to Earth at about 1,500 light years away, and this image is the most detailed ever attained by Hubble. Thousands of stars can be found within the nebula, formed by the massive cloud of gas and dust as it has gravitationally coalesced over time. Hubble has also found numerous proto-planetary disks, or "proplyds," in the Orion Nebula, that are new "solar systems" still in the process of forming. Image credit: ASA, ESA, M. Robberto (Space Telescope Science Institute/ESA) and the Hubble Space Telescope Orion Treasury Project Team

The Deep Universe 🌌

Perhaps the grandest and most fundamental discoveries made by the Hubble Space Telescope involve the farthest and oldest objects ever observed, and the scale of the expansion and size of the universe.

One tradition of the Hubble team is to point the orbiting observatory at a small and dark region of the sky and taking very prolonged exposures, collecting a great deal of light from the most distant galaxies.

This has culminated in the release of the "Deep Field" images, the first set revealed to the world in the mid-1990s. Initially released were the Hubble Deep Field North and South, with each exposure taken in one area of the northern and southern celestial hemisphere skies over an approximately 10-day period. What was revealed was an abundant collection of diverse galaxies spread across the expansive images. And with all telescopic viewings, the farther away the celestial object, the further back in time that can be seen. The images went so far back in time that many of the galaxies observed were smaller and much more irregular shaped, indicating the state of the youngest galaxies that formed after the beginning of the universe.

In 2004, Hubble made an even longer and impressive exposure, known as the Ultra Deep Field. This revealed even more galaxies - close to 10,000 - and further back in time. This image was taken over 11.3 days, and at the time, revealed the oldest galaxies ever seen, some dating back to when the universe was about 800 million years old. As with earlier observations, the youngest galaxies are smaller and irregular, while the newer galaxies are more well defined with prominent spiral and elliptical shapes.

Looking even deeper, the Hubble eXtreme Deep Field was released

in 2012 and was created by the combination of other Deep Field observations through the years. This "combo" image equated to 22 days of exposure and became one of the most detailed views of the galactic landscape of our universe.

These types of observations have led us to refine the age of the universe to the highest accuracy available and to determine its future.

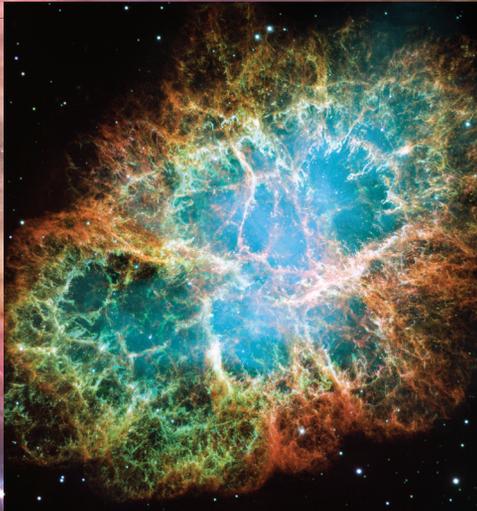
When Edwin Hubble discovered the true scale of the universe and its expanding nature - as described in his Hubble constant in the 1920s - the discovery fundamentally changed our understanding of cosmology.

Before the era of the Hubble Space Telescope, astronomers believed that the universe was anywhere from 10 to 20 billion years old after the initial Big Bang that started everything.

Hubble's comprehensive study of Cepheid stars - variable stars that shift up-and-down in brightness in a predictable manner - has led them to be used as standard candles (an object with known brightness that is used for astronomical distance measuring), which have helped scientists constrain the expansion rate of the universe, along with other cosmological studies. This has helped us to refine the Hubble constant, giving us the age of the universe at just under 13.8 billion years old.

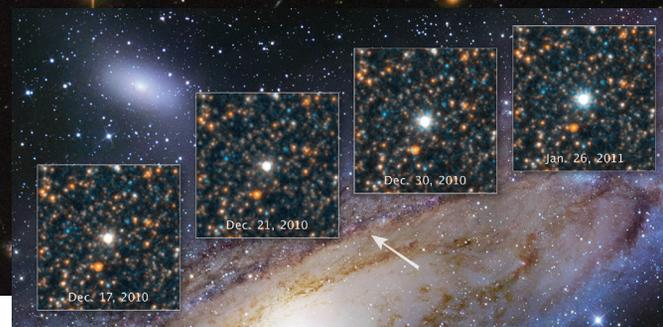
Even more startling was the revelation on how the expansion of the universe was progressing. In 1998, astronomers from the High-z Supernova Search Team and the Supernova Cosmology Project published their results on their study of what are called Type Ia supernovae, a type of stellar outburst that has a predictable brightness, also used as a standard candle to compare objects at different distances and time periods.

This led to a Nobel prize in 2011 for three members of these supernovae teams, and surprisingly, Hubble's observations revealed that the universe



The eXtreme Deep Field is one of the deepest images ever obtained of our universe. By combining Deep Field images made over time by Hubble, this resulting picture shows a vast swath of over 5,000 galaxies in a very dark and tiny section of the sky in the constellation Fornax. Some of the galaxies seen in the image date back to when the universe was less than 5 percent of its current age. Image credit: NASA, ESA, G. Illingworth, D. Magee, and P. Oesch (University of California, Santa Cruz), R. Bouwens (Leiden University), and the HUDF09 Team

A series of images of a Cepheid variable star inside our galactic neighbor, the Andromeda Galaxy, imaged by Hubble. Cepheid variables such as these have a known brightness as they shift up-and-down in intensity and are fairly reliable distance measuring sources, known as standard candles in astronomy. These type of stars have been used to help constrain the age of the universe to just under 13.8 billion years old. Image credit: NASA, ESA, Hubble Heritage Team (STScI/AURA), R. Gendler



was not only expanding but accelerating in its expansion. This helped astronomers to form the idea that there is some type of repelling force by something that cannot be measured with current tools. As a placeholder to describe this unknown repelling force, the name dark energy has been given to this utterly mysterious thing. It turns out that whatever dark energy actually is, it happens to make up 70 percent of all the energy and matter in the universe.

This has continued to be one of the greatest mysteries in all of modern cosmology, and Hubble has led the way in helping us get closer to an understanding.

Looking Beyond Hubble 🚀

With 30 years of astounding science by Hubble, this observatory is still heavily relied upon by the astronomy community today. Even though it is high above most of Earth's atmosphere, there is still a very small amount of gas molecules that imports some drag on Hubble over time. Without constant orbital boosting, the space telescope's orbit will slowly degrade until it re-enters Earth's atmosphere.

Barring any kind of systems or technological problems that may occur, Hubble may be able to continue its amazing exploration of the universe for a good part of the next decade.

Looking toward the future, Hubble may be the last of its kind of orbiting observatories that studies a wide swath of wavelengths of light, from infrared to ultraviolet parts of the spectrum.

Currently, many ground-based telescopes can counteract the effects of the atmosphere by employing a technique called adaptive optics, avoiding the need to put them in space. This has allowed for much bigger and more cost effective observatories on the ground, some being as large as 40 meters across (about 130 feet) or more.

In more specific wavelengths of light, such as infrared, the next space-based telescope that is thought of as a successor to Hubble is NASA's James Webb Space Telescope.

James Webb has a light-gathering mirror about 2.7 times the size of Hubble at 21 feet in diameter and will be placed a million miles from Earth.

This new generation of observatory will primarily see the universe in

infrared light and will be able to look even farther out into the universe and further back in time. It will be able to image even younger galaxies and stellar objects than ever before, reveal more star-forming regions in unprecedented detail and observe the atmospheres of exoplanets beyond our Solar System.

James Webb was slated for launch back in 2018, but due to engineering issues and delays, the space telescope is now planned for a 2021 launch.

For its profound exploration of the universe, the Hubble Space Telescope will be included with some of the greatest scientific tools humanity has ever created.

30 years may seem like a long time in human terms, but its legacy and contributions to our understanding will last for ages, well beyond our time.



To celebrate the Hubble Space Telescope at MOAS, the new live show, *Hubble's Eye on the Universe*, will be unveiled in the Lohman Planetarium in April.

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