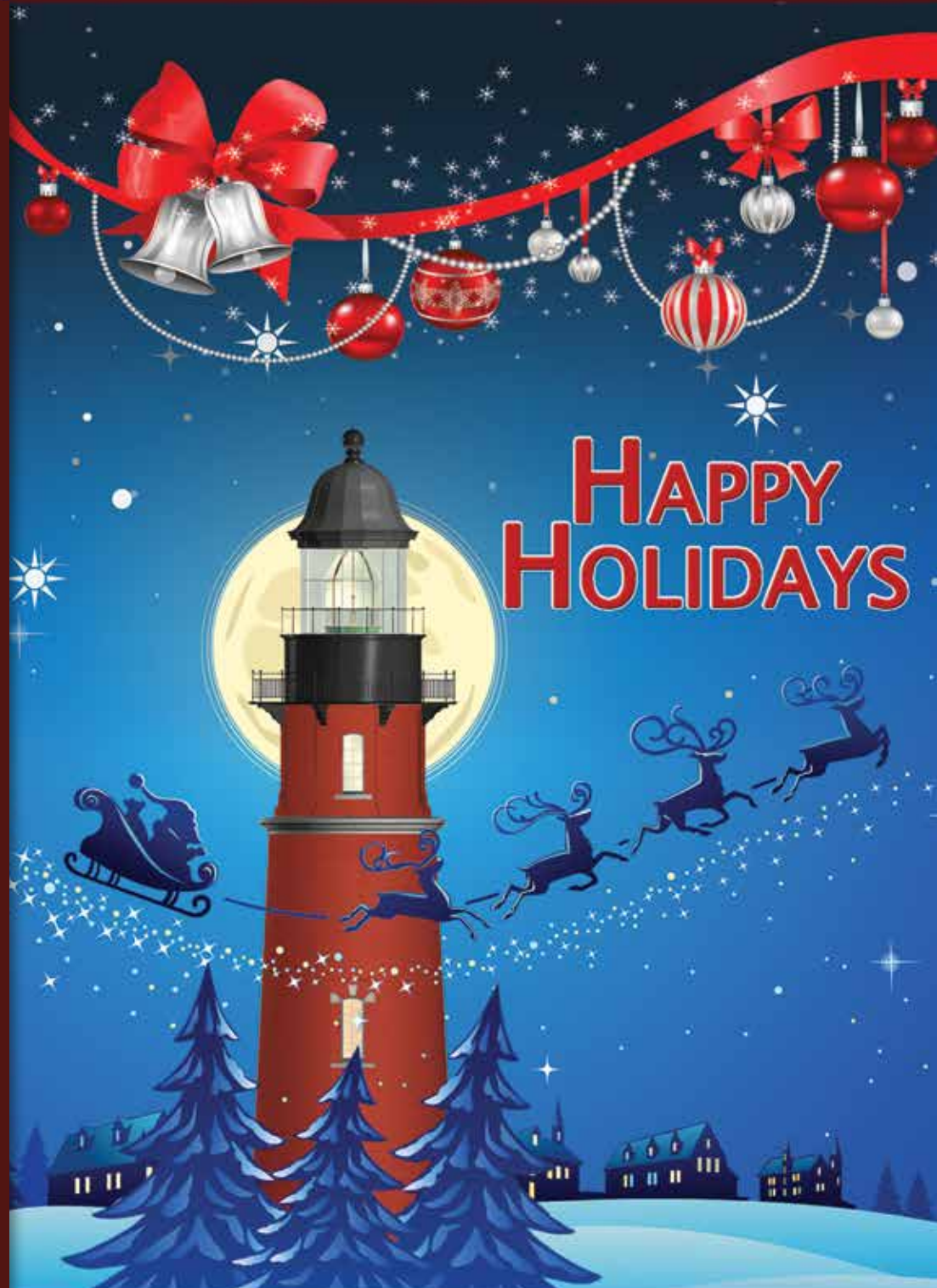




# PONCE DE LEON INLET LIGHTHOUSE ILLUMINATIONS

4931 South Peninsula Drive • Ponce Inlet, Florida 32127 • [www.ponceinlet.org](http://www.ponceinlet.org) • [www.lighthouselocker.org](http://www.lighthouselocker.org) • (386) 761-1821 • [lighthouse@ponceinlet.org](mailto:lighthouse@ponceinlet.org)  
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- 2 FROM THE EXECUTIVE DIRECTOR
- 6 EVENT CALENDAR
- 7 FEATURE ARTICLE  
THE GENIUS OF  
AUGUSTIN FRESNEL
- 15 OBJECT OF  
THE QUARTER
- 16 VOLUNTEER OF  
THE QUARTER
- 17 THANK YOU AND  
WISH LIST
- 18 FROM THE PRESIDENT OF  
THE BOARD OF TRUSTEES:  
ROBERT RIGGIO
- 20 GIFT SHOP





Dear Members,

On November 1st, 1887, Principle Keeper William Rowliniski officially lit the kerosene lamp atop the Mosquito Inlet Lighthouse (now Ponce Inlet) for the first time. This momentous event established the Light Station as an active aid to navigation. Since that day, the continued illumination of this magnificent beacon has guided mariners along the Florida coast. This newsletter commemorates the 128th Anniversary of the Ponce Inlet Light Station and the 43rd year of the Association's trusted stewardship.

Due to the rising cost associated with the ongoing restoration, preservation, and interpretation of this important National Historic Landmark, the Association turns to you, its members, for much needed support.

As a self-sufficient, non-profit 501(c)(3) corporation, the Ponce De Leon Inlet Lighthouse Preservation Association takes great pride in its ability to operate without tax-funded support at the federal, state, or local levels.

Please consider the value of the educational programming provided to students, the museum's many interpretive exhibits, the site's incredible beauty, and the historic importance of this venerable Light Station when deciding which organizations to support during this and the coming year. As always, membership dues and donations are 100% tax-deductible.

The Association depends on the generosity of members like you to continue its ongoing

mission to preserve and disseminate the maritime and social history of the Ponce de Leon Inlet Light Station. Your contribution will help ensure this beacon continues to shine for generations to come.

Those wishing to donate to either the Lighthouse Endowment Fund or Lighthouse General Operating Fund may do so by filling out the donation form attached to the enclosed envelope and mailing it along with your method of payment to the Ponce Inlet Lighthouse at 4931 South Peninsula Drive, Ponce Inlet, FL 32127. Donations may also be made online at [www.lighthouselocker.org](http://www.lighthouselocker.org) under the "Donate" tab.

Looking for that perfect gift? Great news! The Lighthouse Gift Shop is receiving unique and exciting merchandise daily. We encourage all our members to browse our extensive selection of nautical and lighthouse-themed products for their holiday shopping needs.

Have a friend, spouse, or relative who is impossible to shop for? Consider a Lighthouse Memorial Brick. Featuring the light station's official logo and up to three lines of text, memorial bricks are a unique and personal way to express your love and appreciation during the holiday season. Each laser-engraved brick is guaranteed for life and will remain installed in the light station's memorial walkway in perpetuity. Additional full-size and miniature duplicate bricks are available at the time of purchase. Measuring 4"x8" and 1.5"x3" respectively, duplicate bricks are wonderful conversation pieces in either the office or home. Be sure to order your bricks today to ensure they

arrive before the holidays.

For those searching for gift that continues giving all year long, an annual lighthouse membership could be exactly what you are searching for. One of the more popular methods of supporting the Ponce Inlet Lighthouse, membership dues help fund the Association's ongoing operations. Benefits of membership include free admission to the lighthouse and museum, discounts on gift shop purchases, a subscription to the Association's quarterly journal *Illuminations*, and more. With several levels to choose from, a membership option is available to fit almost anyone's budget.

As the Lighthouse adapts to meet the challenges of the 21st century, we remain committed to our mission and to the local communities. Whether on-site, via the web, or through educational outreach, the Association will continue to foster a wholesome, family-oriented environment that encourages people to come together to discover and appreciate our unique and fascinating history.

On behalf of the Association's Board of Trustees, I would like to express my heartfelt appreciation for your continued support and wish you a happy holiday season.

With warm regards,

*Ed Gunnlaugsson*

Ed Gunnlaugsson  
Executive Director  
Ponce Inlet Lighthouse

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ILLUMINATIONS is published quarterly by the Ponce de Leon Inlet Lighthouse Preservation Association, Inc.

Subscription is a benefit of membership in the Association. ILLUMINATIONS welcomes letters and comments from our readers.

## REGULAR HOURS OF OPERATION

**Sept. 8, 2015 – May 25, 2016**  
OPEN DAILY FROM 10:00 AM UNTIL 6:00 PM  
(LAST MUSEUM ADMISSION SOLD AT 5:00 PM)

**May 30, 2016 – Sept 5, 2016**  
OPEN DAILY FROM 10:00 AM UNTIL 9:00 PM  
(LAST MUSEUM ADMISSION SOLD AT 8:00 PM)

## FALL 2015 TOWER CLOSURES

**OCTOBER 27, 2015 (TUESDAY)**  
TOWER CLOSED FROM 5:30 PM UNTIL 6:00 PM  
MUSEUM AND GIFT SHOP OPEN UNTIL 6:00 PM  
(LAST MUSEUM ADMISSION SOLD AT 5:00 PM)

**NOVEMBER 25, 2015 (WEDNESDAY)**  
TOWER CLOSED FROM 4:15 PM UNTIL 6:00 PM  
MUSEUM AND GIFT SHOP OPEN UNTIL 6:00 PM  
(LAST MUSEUM ADMISSION SOLD AT 5:00 PM)

## FALL 2015 SPECIAL HOURS OF OPERATION

**OCTOBER 9, 2015 (FRIDAY)**  
OPEN FROM 10:00 AM UNTIL 8:30 PM  
(LAST MUSEUM ADMISSION SOLD AT 7:30 PM)

**DECEMBER 24, 2015 (THURSDAY)**  
MUSEUM AND GIFT SHOP  
OPEN FROM 10:00 AM UNTIL 4:00 PM  
(LAST MUSEUM ADMISSION SOLD AT 3:00 PM)

**OCTOBER 17, 2015 (SATURDAY)**  
OPEN FROM 10:00 AM UNTIL 8:30 PM  
(LAST MUSEUM ADMISSION SOLD AT 7:30 PM)

**DECEMBER 25, 2015 (FRIDAY)**  
MUSEUM CLOSED FOR CHRISTMAS HOLIDAY

**NOVEMBER 26, 2015 (THURSDAY)**  
MUSEUM CLOSED FOR THANKSGIVING HOLIDAY

**DECEMBER 26 & 27, 2015 (SATURDAY & SUNDAY)**  
MUSEUM AND GIFT SHOP  
OPEN FROM 10:00 AM UNTIL 7:00 PM  
(LAST MUSEUM ADMISSION SOLD AT 6:00 PM)

**NOVEMBER 27 & 28, 2015 (FRIDAY & SATURDAY)**  
MUSEUM AND GIFT SHOP  
OPEN FROM 10:00 AM UNTIL 7:00 PM  
(LAST MUSEUM ADMISSION SOLD AT 6:00 PM)

## UPCOMING MEETINGS

**OCTOBER 19, 2015 (MONDAY)**  
BOARD OF TRUSTEES AND QUARTERLY MEMBERSHIP MEETING  
(OPEN TO GENERAL MEMBERSHIP)

**DECEMBER 21, 2015 (MONDAY)**  
BOARD OF TRUSTEES MEETING  
(CLOSED TO GENERAL PUBLIC AND MEMBERSHIP)

**NOVEMBER 16, 2015 (MONDAY)**  
BOARD OF TRUSTEES MEETING  
(CLOSED TO GENERAL PUBLIC AND MEMBERSHIP)

## FALL 2015 CLIMB TO THE MOON SCHEDULE

**OCTOBER 27, 2015 (THURSDAY)**  
6:00 PM – 7:30 PM

**JANUARY 23, 2016 (SATURDAY)**  
5:30 PM – 7:00 PM

**NOVEMBER 29, 2015 (FRIDAY)**  
4:45 PM – 6:15 PM

JOURNEY TO THE TOP OF THE PONCE INLET LIGHTHOUSE AND EXPERIENCE THIS NATIONAL HISTORIC LANDMARK IN ALL ITS GLORY. JOIN THE OLD LIGHTHOUSE KEEPER ON A PERSONAL TOUR OF LIGHTHOUSE AND LANTERN ROOM, AND ENJOY BREATHTAKING VIEWS OF THE ATLANTIC OCEAN, PONCE INLET, AND SCENIC INLAND WATERWAYS.

TOAST THE SETTING SUN WITH A SPARKLING BEVERAGE AND ENJOY DELICIOUS HORS D'OEUVRES BY THE LIGHT OF THE FULL MOON WITH YOUR SIGNIFICANT OTHER AND FRIENDS. OFFERED ONLY ON THE EVE OF EACH FULL MOON, THIS SPECIAL EVENT IS LIMITED TO 25 PARTICIPANTS ONLY. TICKETS MUST BE PURCHASED IN ADVANCE BY CALLING KAREN AT (386) 761-1821 EXT. 10. PRICES ARE \$25 FOR NON-MEMBERS AND \$20 FOR MEMBERS





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**OCTOBER 9, 2015 (FRIDAY) 6:00 PM - 8:30 PM ... MUSEUM AT NIGHT: HISTORY FRIENDS AT THE LIGHTHOUSE**

Originally conceived in the United Kingdom as a way to develop public appreciation for the nation's rich cultural heritage, Museum at Night has become a world-wide campaign to improve museum, gallery, and cultural site accessibility by extending normal hours of operation on specific dates and holding special evening events. Join us at the Ponce Inlet Lighthouse for an evening of history on October 9th from 6:00 pm until 8:30 pm. Talk with staff/volunteers from Daytona's historic Lilian Place, the Ponce Inlet Historical Society, and the Halifax Historical Society in Daytona Beach. Teachers will be admitted free of charge during the event with proof of employment with either the Volusia County School District or local private institution. All activities are included with regular admission, no advance reservation required. Please contact Mary Wentzel by email at [mwentzel@ponceinlet.org](mailto:mwentzel@ponceinlet.org) or by phone at (386) 761-1821 ext. 18, for more information.

**OCTOBER 15-18, 2015 (THURSDAY– SUNDAY) 12:00 PM TO 2:00 PM BIKETOBERFEST AT THE LIGHTHOUSE**

Visit the Ponce Inlet Lighthouse and Museum during Daytona's 2015 Biketoberfest. Enjoy fun-filled activities and learn about early motorcycle racing on the World's Most Famous Beach. Explore the Light Station's historic structures, discover the site's unique maritime and social history, and climb to the top of Florida's tallest lighthouse.

**NOVEMBER 12, 2015 (THURSDAY) 10:00 AM – 2:00 PM BI-ANNUAL HOMESCHOOL DAY - *Yesterday & Today***

The Ponce Inlet Lighthouse will host its Fall Homeschool Day on November 12, 2015 from 10:00 until 2:00 pm. Join us on this fun-filled day of educational workshops and hands-on activities focusing on local lighthouse and maritime history. Learn about Volusia County's the three historic lighthouses and learn the story of Miss Ida Lewis, the renowned female heroine who saved numerous lives during her long tenure as Principal Keeper of the Rhode Island's Lime Rock Lighthouse for 57 years. Learn about family life at the Light Station during the 1890s, and what attending a one room school house in Ponce Inlet was like at the turn-of-the-century. Advance reservations are required. Registration commences at 1:00 on October 13, 2015. To register, visit us online at [www.lighthouselocker.org](http://www.lighthouselocker.org). Select the Events tab in the vertical navigation bar on the left side of the page and click on Homeschool Day. This unique program is open to the first 75 students who register. Please contact Mary Wentzel via email at [mwentzel@ponceinlet.org](mailto:mwentzel@ponceinlet.org), or by phone at (386) 761-1821 ext. 18, for more information.

**NOVEMBER 21, 2015 (SATURDAY) 1:00 PM – 3:00 PM ..... GIRL SCOUT SATURDAY**

Calling all Girl Scouts! Come visit and learn about the ways lighthouse keepers communicated with lighthouses and ships at sea. Learn a boatload of maritime information and earn a Girl Scout badge at the same time. Girl Scouts who complete the half day Lighthouse communications activities will earn their official Girl Scout Badge. Online pre-registration is required for this event. The program is limited to 25 participants. For registration please contact Jocelyn Ludwig at [JLudwig@citrus-gs.org](mailto:JLudwig@citrus-gs.org). To find these activities and much more visit our website at [www.ponceinlet.org](http://www.ponceinlet.org).

**NOVEMBER 27, 2015 (FRIDAY) 10:00 AM TO 2:00 PM ..... THANKSGIVING GIFTS AT THE LIGHTHOUSE**

Participate in family-oriented activities and try your hand at making turn-of-the-century ornaments. Visit with the "Old Lighthouse Keeper" and learn about nineteenth century life at the historic Ponce Inlet Lighthouse. All activities are included with the price of regular admission, no advanced registration is required.

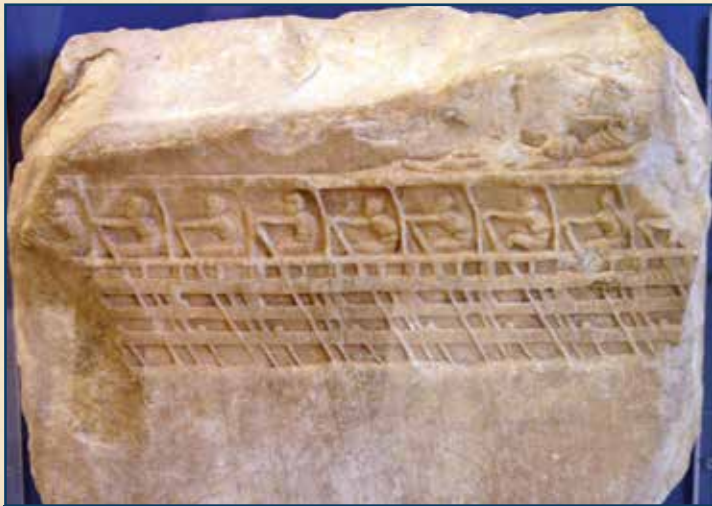
**DECEMBER 26, 2015 (FRIDAY) 10:00 AM TO 2:00 PM ..... WINTER HOLIDAY PROGRAM**

Ring in the new year with a trip to the Ponce Inlet Lighthouse on December 26th. Participate in family-oriented activities including the Artifact Table and Kids Crafts. Visit with the "Old Lighthouse Keeper" and learn about turn-of-the-century life at the historic Ponce Inlet Lighthouse. All activities are included with the price of regular admission, no advanced registration is required.



# The Genius of Augustin Fresnel

Shipwrecks have remained the biggest threat to mariner safety since humankind first took to the water on crude rafts nearly 10,000 years ago. In fact, archaeologists and historians working with the United Nations Educational, Scientific, and Cultural Organization (UNESCO) estimate that more than 4 million ships have sunk around the world since the dawn of recorded history. The threat of shipwreck ran so high from the Age of Antiquity through the Middle Ages that most mariners were reluctant to leave the sight of land for fear of perishing on the unforgiving sea.



*Ancient Athenian Trireme depicted in a fragment of a Greek bas relief dating to approximately 400-410 BC.*

Regardless of a vessel's location at the time, be it far out to sea or within sight of land, losing a ship was essentially a death sentence for all on board. At the mercy of the raging sea following the sinking of their vessel, the vast majority of mariners found themselves pummeled by debris, dashed upon jagged rocks, or simply slipping beneath the waves because they could not swim. Prior to modern times, few lived to sail another day.

Although sinking far from shore did occur with alarming frequency, most shipwrecks occurred closer to the shore where ledges, unseen reefs, and violent surf could reduce a stout ship to splinters faster than the men upon her decks could lower their lifeboats. As intimidating as the open sea could be, mariners knew that it was the land that would kill you.

It is impossible to really know the exact number of ships that have been lost over the ages because records of this nature were not consistently kept until the latter part of the eighteenth century. Horrifically, Great Britain lost more than 300 merchant and naval vessels in 1800 alone, most within sight of shore. By no means unique, the high loss rate experienced by the world's largest maritime power was a problem experienced by all seafaring nations of the time.

As far back as the Mesolithic Era, humans have worked to mitigate the hazards of life on the sea. Hugging the coast, the world's earliest mariners utilized landmarks on shore to guide them during the day. At night, bonfires would be lit to help locate harbor entrances or to identify the location of unseen hazards. Commonly known only to those who lived and worked in a particular region, the identities of these important local aids to navigation were often held as closely guarded secrets in an effort to protect the local fishermen and merchants from outside competition. Of course, this secrecy only led to a higher frequency of shipwrecks and disaster.

Constructed in the third century BC, the world's first known lighthouse was constructed by the Egyptians in the port city of Alexandria. Named the *Pharos of Alexandria*, the stone tower soared an estimated 450 feet above the



*Commissioned by King Ptolemy 1 in the 3rd century BC, the Pharos Lighthouse marked the entrance to the Harbor of Alexandria, Egypt, from approximately 250 BC until 1323 AD when it was toppled by an earthquake. The Pharos served as the model for most Roman lighthouses.*

>> CONTINUED ON NEXT PAGE



## The Genius of Augustin Fresnel *(continued)*

harbor below. Commissioned by King Ptolemy I shortly after the death of Alexander the Great, the massive structure consisted of a three-tiered tower set inside a massive stone base. Topped with a lantern room capped with a statue of Poseidon or Zeus, the tower's bonfire beacon would have been visible from nearly 50 miles away. One of the Seven Wonders of the Ancient World, the Pharos Lighthouse guided mariners in and out of Alexandria's harbor from approximately 250 B.C. it was toppled by an earthquake in 1323 AD.

The birth of Rome and its subjugation of the "civilized world" initiated a period of substantial lighthouse construction throughout the Mediterranean. Possessing the skills of both warrior and stone mason, Roman Legionnaires built lighthouses throughout the empire to facilitate the continued growth and prosperity of the Empire. Observing the economic benefit of this system of navigational aids, other maritime cultures followed suit.

While the Romans modeled their towers after Pharos, they were less ornate. Located at the entrance of nearly every Roman harbor in the Mediterranean, these early stone lighthouses usually consisted of several stories, round or polygonal, each smaller than the story below it. Typically capped with an open-air stone lantern room housing an iron brazier, most Roman beacons burned whatever fuel was handy; wood, coal, dried vegetation soaked in tar, even olive oil. Often tended to by monks, hermits, and religious penitents, the open fires were practically useless on rainy and windy nights.

History also tells us that Britain's Eddystone Lighthouse featured the world's first glass-enclosed lantern room. Built atop a small chain of wave swept rocks fourteen miles offshore of Plymouth, England, Eddystone Light was also the first offshore light. Featuring a hanging chandelier lit with sixty tallow candles arranged in a concentric pattern, the tower's beacon soon became a welcome sight for English sailors returning home from long voyages abroad.

While English lighthouses continued to use tallow candles, braziers, and simple oil lamps (rope wicks inserted into pools of oil) as their principal light sources, the Swedish were experimenting with reflectors and oil lamps of varying sophistication. Unlike the bare tallow candles utilized in British beacons, the Swedish incorporated



*In addition to being some of the world's most highly trained soldiers, Roman legionnaires were also accomplished stone masons. Towers, such as this 1st century lighthouse constructed atop the Cliffs of Dover overlooking the English Channel, marked harbors and ports throughout the Roman Empire.*

highly polished parabolic reflectors into their lantern designs to increase the beacons' visible range. Set behind each candle, the reflectors focused the light produced into a concentrated beam that could be seen farther out to sea.

By the end of the seventeenth century, tallow candles were being replaced with oil-fired lamps as the light source of choice in lighthouses around the world. Unlike the candles which were costly and difficult to store, oil lamps were easier to maintain and far more economical to operate. Fueled with fish, seal, or whale oil, these early lamps possessed their own inherent maintenance problems for keepers including the need to frequently

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## The Genius of Augustin Fresnel (continued)



*Prior to the introduction of Argand's oil lamp, most eighteenth century lighthouse beacons were illuminated by either coal or wood fires set in iron braziers, tallow candles set in hanging chandeliers, or with simple oil lamps made of rope wicks set in oil baths.*

trim the lantern's wicks and regularly clean soot from the lantern's polished reflectors.

In 1781, a Swiss scientist named Aimee Argand transformed lighthouse illumination with the invention of the Argand lamp. Featuring a hollow circular wick inserted into a hollow brass tube (the tube fed air to the flame) was affixed to an elevated oil reservoir, the Argand lamp produced a relatively steady soot-free flame. Emitting a light that was far brighter than that produced by candles or earlier versions of the oil lamp, Argand's design incorporated the use of both parabolic reflectors and convex lenses to reflect and focus the light into a beam that could be seen from much farther away than any of its predecessors. Later, dozens of these Argand lamps would be installed in large rotating wheels or "chandeliers" to allow lighthouses to exhibit a flashing characteristic. The invention and use of Argand's lamps were steps in the right direction, but not the complete answer.

Even with the best of polished mirrors, improved air flow, cleaner burning fuel, and curved glass, the Argand apparatus lost more than half the light it produced. A form of energy that travels in waves, light radiates out

from its source in all directions. These light waves, unless harnessed and focused, are quickly scattered by suspended particles in the air in a process known as diffusion or scattering. Posing a real dilemma for lighthouse engineers and physicists alike, compensating for the effects of diffusion in an Argand lamp could only be achieved by manipulating the light produced by each and every flame.

A labor-intensive process, focusing the light required keepers to manually aim both the parabolic reflector and glass lens mounted to each lamp. Although helpful, the process was both labor intensive and inexact. Despite the lighthouse keepers' best efforts, the visible range of the Argand lamp beacon remained mediocre and shipwrecks continued to occur at an alarming rate.

### Augustin Fresnel Changes Everything

The beginning of the nineteenth century was a revolutionary era in human history. On the heels of the Age of Enlightenment, the scientific revolution broadened humankind's understanding of the natural world and fueled a period of innovation that culminated in technological advancements over the full spectrum of the human experience. Powered by water and steam, the industrial revolution witnessed the demise of the cottage industry and the rise of the factory system where products were mass produced by unskilled laborers rather than hand-made by individual craftsmen. On the political home front, social injustice and class disparity fueled revolutionary movements that often led to full scale revolutions that redrew maps, overthrew monarchs, toppled governments, and forged new alliances.

Born in the Norman village of Broglie, France on May 10, 1788, Augustin Fresnel was the second son of Jacques and Augustine Fresnel. Raised in a strict religious home, Augustin was a frail and sickly child who struggled to communicate with those around him. Barely able to read his own native French by his eighth birthday, many considered Augustin to be slow and dimwitted. Suspected of being autistic by modern psychiatric standards, the young boy struggled with the classical approach to education and performed badly.

Quite by luck, Augustin was sent to accompany his older

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## The Genius of Augustin Fresnel *(continued)*

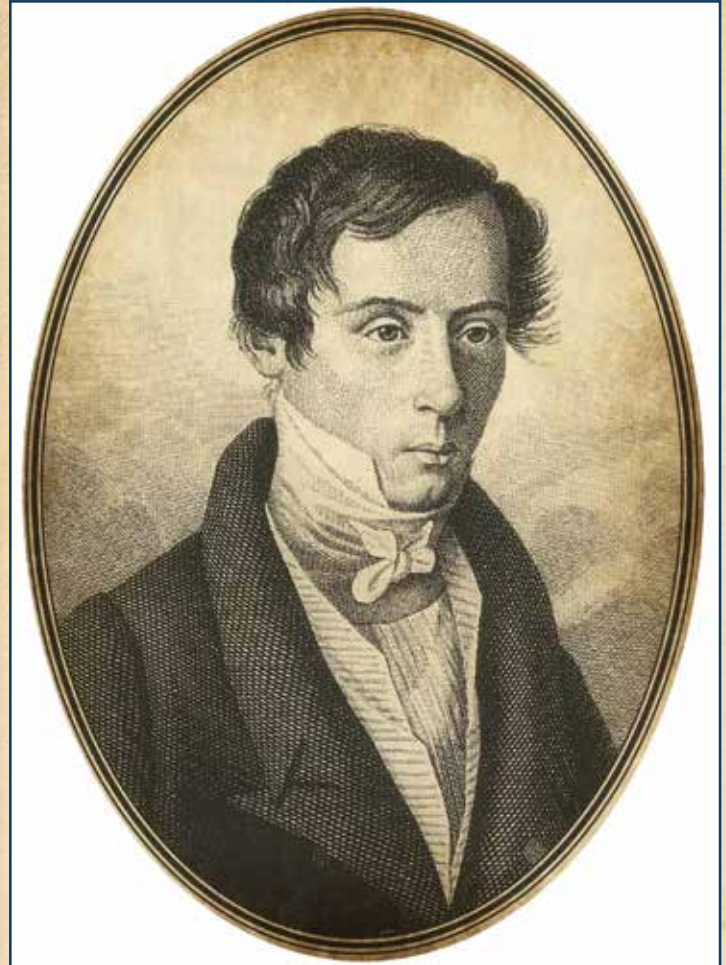
brother Louis (who was considered the scholarly one in the family) to a science and mathematics school in Caen. Despite his learning disabilities, Fresnel showed remarkable promise and astonished his teachers with his natural mathematical ability. In 1804, the two brothers were selected to attend Ecole Polytechnique in Paris, the best of all French engineering universities.

It was here that Augustin flourished at geometry, graphic arts and technical drawing. At the height of the Napoleonic era in France, many of Fresnel's classes dealt with artillery and plotting strategy, chart and map making, and geography. Since he was not considered robust enough for the rigors of military life, Augustin was selected to attend the French National School of Bridges and Highways, the world's oldest school of civil engineering.

After completing his studies, Fresnel was assigned by the government to repair canals and roads which were essential to the quick deployment of soldiers throughout France to squelch revolts and impose imperial law. He worked hard at his projects and did well but was uncomfortable in communicating with the men working for him. On his own and in collaboration with family members, Fresnel began experimenting with light and optics.

At that time, many within the scientific community (including professors at the prestigious engineering university Ecole Polytechnique) still embraced Sir Isaac Newton's theory that light was a swarm of individually colored particles called "corpuscles" that moved through Aristotle's "ether." Presented to the Royal Society of London in 1672, Newton stated that the 44th trial in a series of experiments he had conducted earlier that year had proven that light is made of particles and not waves.

Although well over a century old by the time of Fresnel's birth, Newton's particle theory on light remained widely accepted despite his failure to adequately explain how the diffraction of light occurred. A common phenomenon of light, diffraction is the change in the direction of light's travel when it passes through an opening or goes around an obstacle in its path. Although recognizing that diffraction occurred, no one, including Newton himself, could explain how or why it did.



*Born May 10, 1788, Augustin Fresnel was a brilliant French scientist who proved that light traveled in waves. He later applied his theories in the development of the Fresnel lens which substantially improved the effectiveness of lighthouses around the world.*

Fresnel believed that he could shed light on the issue by considering light as a wave rather than a particle. This was highly unorthodox and contrary to the accepted Newtonian theory of the day. Fresnel sent his ideas in the form of an unpublished essay to Andre Ampere (the physicist from whom we get the term ampere). Deliberately or not, Ampere lost the unread essay. However, a young member of the French Academy of Science named Francois Arago tested Augustin's theories and proved them to be correct.

Fresnel presented his work on diffraction as an entry in a competition on the subject sponsored by the French Academy of Sciences in 1819. The committee of judges included a number of prominent advocates of Newton's corpuscular model of light, one of whom, mathematician Siméon-Denis Poisson, pointed out that Fresnel's model predicted a seemingly absurd result: if a

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## The Genius of Augustin Fresnel *(continued)*



*Located in Paris, Ecole Polytech is France's premier school of engineering. Selected to attend the university at the age of 16, Fresnel went on to become one of the institution's most influential and accomplished graduates.*

parallel beam of light falls on a small spherical obstacle, there will be a bright spot at the center of the circular shadow—a spot nearly as bright as if the obstacle was not there at all. An experiment was subsequently performed by François Arago, and the spot (subsequently called Poisson's spot) was seen, vindicating Fresnel, who won the competition.

Fresnel was appointed Secretary to the Commissioner of Lighthouses in 1819 at the urging of Arago who had become one of his closest friends and advocates. Although still required to design and repair roads and bridges for the French government, Augustin continued his research on the characteristics of light and in the development of ways to apply his findings in a practical manner to lighthouse optics. In 1821, Fresnel presented his research in a second paper that succeeded in convincing many more skeptics that Newton's theory on light was incorrect.

### The Fresnel lens is Born

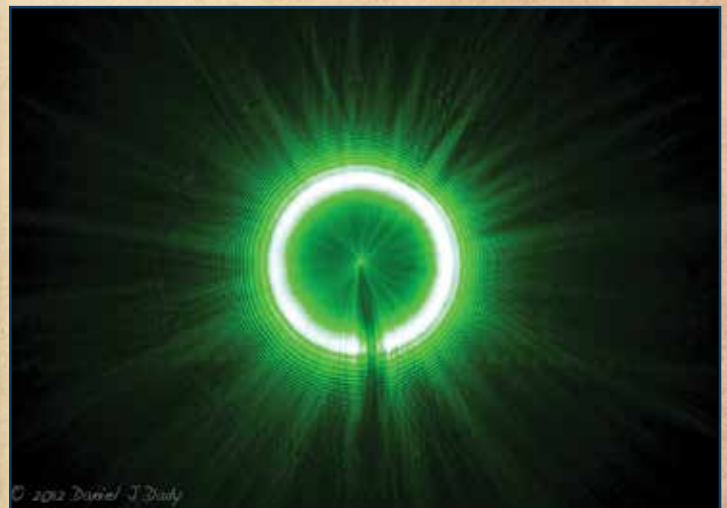
In 1819, Fresnel applied his theory of light traveling in waves to the maritime industry's desperate need for a lighthouse beacon with far greater range. Fresnel theorized that the inherent flaw in lighthouse optics of the time resided in the way light was being captured and focused. Reflectors captured only a small percentage of

the light produced while the lenses fitted in front of the light source were of such poor quality that they often degraded its intensity.

Fresnel believed that the solution lay in replacing reflectors with lenses to reflect and refract the light emanating from a central source. Fresnel believed that a glass lens would be far more efficient than a parabolic reflector in capturing the light and directing it into a concentrated beam. Yet, there was a problem with this approach: the sheer size and weight of the glass pane needed to do the job was impractical for lighthouse applications.

Fresnel's solution to this dilemma was to "stack" concentric sections of individual prisms set in bronze frames and individually aimed to produce a bright concentrated beam of light. Collectively, the individual prisms would do the job of a big lens, and yet weigh much less. He called this concept "step lenses," made with prism segments arranged in rings around a central light source.

In order to prove the validity of his theory to the French Lighthouse Commission, Fresnel knew he had to construct a model or even a lens that worked. His next hurdle was finding the right type of glass. Although leaded glass (also known as flint glass) was the most common material used in the production of optics at the time, it was far too heavy and dense for use in a lens that would be installed at the top of a lighthouse. Dismissing leaded glass from the list of possibilities, Fresnel chose crown glass as the material



*Named in dubious honor of the French scientist who publicly disagreed with Fresnel's findings, Poisson's Spot (the white dot in the center of the circle) proved that light was a wave that could curve around objects.*

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## The Genius of Augustin Fresnel *(continued)*

from which to fashion his lenses. Harder, lighter, and easier to work with, crown glass contained fewer bubbles and imperfections than lead crystal and was far easier to mold. This latter quality was of special importance to Fresnel given that fact that he was attempting to create prisms of a size, shape, and form that had never been attempted before.

To achieve this, Fresnel secured the services of Francois Soleil Sr., a manufacturer of high quality medical and scientific optical instruments. Working closely with Augustin, Soleil developed a process for molding and polishing the large optical quality prisms used in Fresnel's prototype lens. Initially composed of flat glass segments, it was Soleil who developed the process for making the nearly flawless curved dioptric and catadioptric prisms used in later versions of Fresnel's revolutionary lens. Although the process used by Soleil remains somewhat of a mystery to this day, it is known that the process included reheating the glass prisms in a way that eliminated nearly all imperfections.



*Augustin Fresnel's first lens featured flat rather than curved panels. Note the flat panels mounted at an angle at the top of the lens.*

The issue of prism design and manufacturing resolved, Fresnel turned his attention to developing a light source of sufficient brilliance, size, efficiency, and robustness to be of practical use in a harsh coastal environment. Borrowing from Argand's hollow wick concept, Fresnel settled on a lamp that incorporated concentric wicks into its design to produce a bright clean flame.

In the spring of 1820, Fresnel demonstrated the performance of his new glass lens panel to the French Commission of Lighthouses. According to Fresnel the commission members were, "dazzled by the spectacle I gave them." The single panel worked so well that the chief commissioner immediately ordered a full apparatus be constructed of seven identical panels to be arranged in an octagon around the central light source.

Completed one year later, Fresnel demonstrated his lens to the citizens of Paris on Friday, April 13th, 1821. It certainly could have been an inauspicious day to try out the eight-sided optic that disputed Newton's laws had it not been for the fact that the single test panel of the year before far out-shown all forms of reflectors. Huge crowds of Parisians including the entire membership of the Commission of Lighthouses, as well as sailors, and curious citizens were gathered at opposite ends of the city, some at the Paris Observatory and some on the distant hills of Montmartre. The event was staged as a competition between manufacturers of "new and improved" mirrored reflectors and Fresnel's lens. Everyone in attendance marveled at the brilliance of the Fresnel lens. Installed in nearly every lighthouse in the world at the time, the Argand Lamp was rendered obsolete in a single night.

*(Note: European lighthouses were quick to adopt the Fresnel lens. Because of the politics involved, stubborn resistance to change, and costs, the United States Lighthouse Establishment continued using the Argand-Lewis Lamp reflector design for another twenty-five years despite the universal condemnation of the Argand-Lewis Apparatus by American mariners who had sailed to Europe and witnessed the far superior performance of Fresnel's new lens firsthand.)*

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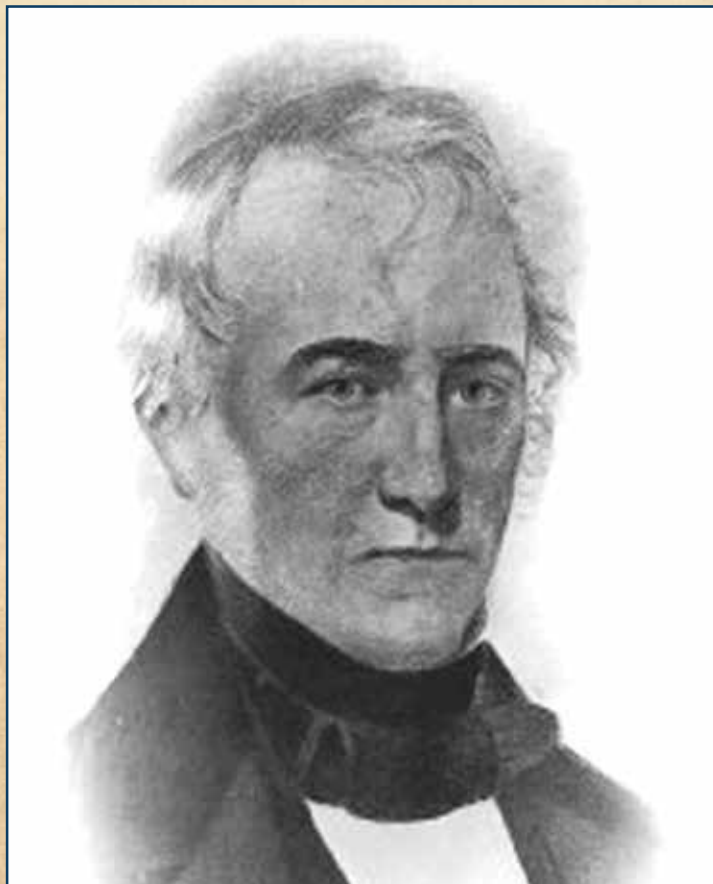


## The Genius of Augustin Fresnel *(continued)*

### Cordouan, the “Versailles of the Sea”

Extending more than 100 km inland from the Bay of Biscayne to the port city of Bordeaux, the Gironde River is the primary shipping artery for both the city and much of southwestern France. Flanked by two narrow channels alive with treacherous reefs, rocky outcroppings, and shifting sand bars, the river's entrance is marked by one of the world's most beautiful lighthouses.

Constructed in 1611 on a rocky outcropping in the middle of the river's estuary more than four miles out to sea, the Cordouan Lighthouse originally stood 162 feet tall and featured a grand entrance hall, four keeper apartments, a king's chamber, a chapel, and a lantern room built in the Renaissance style. In 1790, the height of the tower was raised to 223 feet. Still standing after more than four hundred years, La Tour de Cordouan features the architectural styles of both the Renaissance and the Louis XVI era. Commonly referred to as the Patriarch of Lighthouses, La Tour de Cordouan is both the oldest



*Developed by Parisian glass artisan Francois Soleil Sr., curved prisms led to the traditional beehive shape commonly associated with historic Fresnel lenses today.*

operating lighthouse in France and tenth tallest traditional lighthouse in the world.

Fittingly, it was at La Tour de Cordouan that Augustin Jean Fresnel personally supervised the installation of his first Fresnel lens in 1823. Revolutionary for its time, the first order dioptric lens ushered in a new era in safety and security for the maritime industry.

In 1854, Fresnel's first lens was removed from the Cordouan Lighthouse and replaced by an updated Fresnel lens which is still in use today. The original historic first order Fresnel lens is now safely on exhibit at the Musée des Phares et Balises on the island of Quessant approximately thirty-kilometers southwest of the coast of Normandy.

In 1862, the Cordouan Lighthouse was the second building in France to be classified as a National Historic Monument. The other structure to be granted this prestigious designation was the Cathedral of Notre Dame in Paris.

The winter before his death, Fresnel produced another series of papers which would provide the framework for physics research throughout the latter half of the nineteenth century. Honors from many countries including France's own Legion of Honor were bestowed on him in recognition for his important research and contributions to the maritime industry. Fresnel continued to directly supervise the construction of newer lenses and clockwork mechanisms. Since the Fresnel lens concept was so unique, Fresnel had no choice but to personally supervise the installation of his lens in lighthouses throughout France.

Fresnel's health began a rapid period of decline in the winter of 1826. Plagued with an uncontrollable cough and weakened lungs, the young scientist found it harder and harder to continue his work. Now recognized as classic symptoms of tuberculosis, Fresnel's deteriorating health eventually left him bedridden.

Augustin Fresnel died on Bastille Day, 1827, at the age of thirty-nine. His chief regret was that his illness took away his sense of duty to both France and science. Shortly before his death, the brilliant physicist wrote “I could have wished to live longer; perhaps I might have had the happiness of finding the answers to some of these questions.”

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## The Genius of Augustin Fresnel *(continued)*



*Situated at the mouth of Gironde River a stone's throw from Normandy, the Cordouan Lighthouse was the first of its kind to utilize a Fresnel lens as its beacon*

### The Basis for All Modern Optics

The Fresnel lens is considered by many to be one of the major inventions of the 19th century. Allowing ships to safely navigate the world's coastlines, the Fresnel lens was invented just in time to meet the growing needs of the maritime industry that transported the vast majority of goods manufactured during the Industrial Revolution. Originating in France, the new technology was quickly adopted by Britain's Trinity House and other European nations. The renowned lighthouse-building Stevenson family (which included author Robert Louis Stevenson) installed more than a hundred of these revolutionary

lenses in the towers they built throughout England, Wales, and Scotland.

Reluctant to abandon the much inferior Winslow Lewis Apparatus employed in America's beacons, the US Lighthouse Establishment installed its first Fresnel lens in the Navesink Lighthouse in 1841. The lens was so well received by the maritime industry that by the mid-1850s, every lighthouse in the United States was equipped with one.

The impact of Fresnel's theories on light and the practical application of these concepts in the form of the lens he invented can still be felt across multiple sciences and throughout modern industry. Radical for their time, Augustin Fresnel's ideas helped pave the way for advances across the spectrum of human activity including the use of lasers in medicine, communication technology, warfare, geology, commerce, and even deep space exploration.

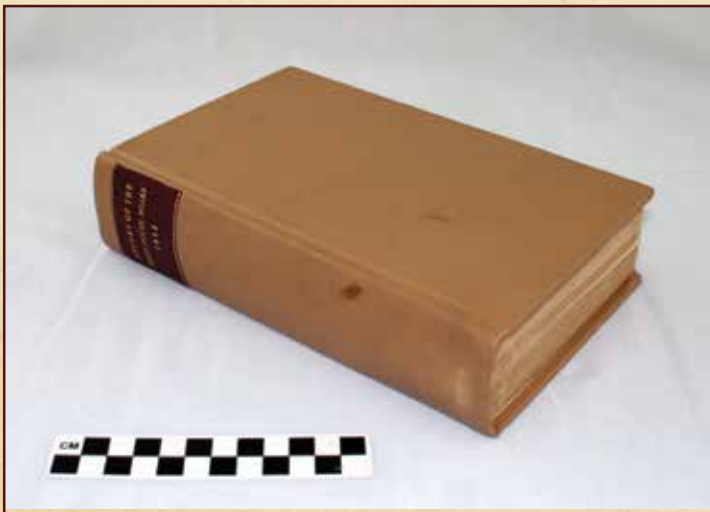


*Augustin Fresnel's contribution to lighthouse technology and maritime safety was so profound the French government commissioned a bust of Fresnel for every lighthouse in the country.*



## 1852 LIGHT-HOUSE BOARD REPORT

In 1835, a 45-foot masonry lighthouse was constructed on the south shore of Mosquito (now Ponce) Inlet. The planned illuminant for this lighthouse was a chandelier holding an array of oil lamps, backed by silvered reflectors. Typical for American lighthouses of this time, these systems were inadequate and, by 1859, following many years of complaints, most United States lighthouses had been converted to Fresnel lenses. This technological upgrade, and many other recommendations, had been suggested in the 1852 landmark report to the US Congress entitled, *Report of the Officers Constituting The Light-House Board, Convened Under Instructions from The Secretary of the Treasury, to Inquire into The Condition of the Light-House Establishment of the United States, Under the Act of March 3, 1851.* (House of Representatives, Ex Doc. No. 55.) Those familiar with lighthouse history will recognize this report and its importance to US lighthouse history and development.



The Museum holds a vintage copy of the report, (2014-2504-010), which is an impressive 760 pages long and includes a detailed index. The report contains a wealth of information on lighthouses and all aids-to-navigation devices. The report includes many images, technical drawings, graphs, charts, tables, and fold-out plates. Printed in 1852, this document is now 163 years old! The Museum is fortunate to have a copy that is in very good condition. The printed text is clear, and the paper is in well-preserved. At some time in the past before the Museum acquired it, the report was rebound in a modern library-style tan cloth binding.

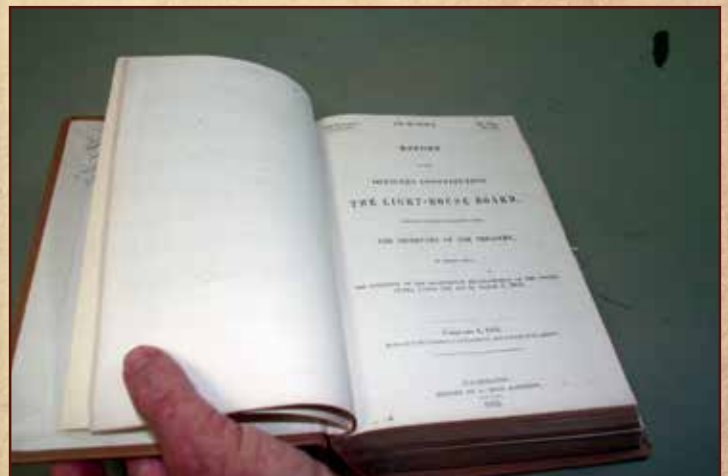
The Report was researched and written by a newly-created Light-House Board to review complaints, to investigate current conditions, and to make recommendations for future improvements. Congress required the US Treasury to create this board and that it should be comprised of two naval officers, two US Army engineering officers, a civilian scientist, and a junior naval officer to act as secretary.

In addition to the Fresnel lens upgrade, the Board also made two additional major recommendations. It recommended that an expanded Light-House Board should be created, and that this new Board should govern the US Light-House Establishment. And, it recommended that the new Board should study and create a light classification system.

On October 9, 1852, Congress approved the Report's recommendations, and a new nine-member Light-House Board was created to lead the Light-House Establishment and to enact the Report's recommendations. The new Board was comprised of three additional members; an additional civilian scientist, an additional secretary from the US Army Engineers, and the Secretary of the Treasury to function as President of the Board.

When the new Mosquito Inlet Lighthouse on the north shore of the Inlet began service on November 1, 1887, the kerosene lamp lit a first-order fixed Fresnel lens.

N.B. A full-text digital copy of this Report is available online at [Google Books](#).





## John Mann V.I.P Volunteer



A longtime volunteer at the Ponce De Leon Inlet Lighthouse and Museum, Dr. John Mann is as essential to the ongoing development and implementation of the Preservation Association's educational programming as any member of its paid staff.

With more than 3,400 hours of volunteer service donated to the Lighthouse since becoming a docent in 2005, Dr. Mann's contributions to the museum's mission to preserve and disseminate the maritime and social history of the Ponce De Leon Inlet Light Station is evident in the many services he has performed in its behalf.

A former high school teacher, department chair, district administrator, and school superintendent, Dr. Mann has utilized his extensive knowledge in the educational sciences to assist staff in the development, implementation, and revision of many of its current educational programs. These programs include the award winning Keeper in the Classroom and USLHE Traveling Library Box program, the recently unveiled Science of Light and Lighthouse Illumination interactive program, and many more.

Having served as a school Department Chair for numerous years, Dr. Mann's expertise in teacher mentoring and staff development serves him well as the Lighthouse's lead docent. Working closely with the Preservation Association's Programs Manager, John's contributions to volunteer recruitment, training, and retention are invaluable.

As a School District Administrator and Superintendent in New Jersey, John's many responsibilities included public relations. His years of experience in this capacity are evident in his success as one of the Lighthouse's most recognizable spokesman and public advocates. Armed with a melodious voice that served him well in his younger years as the vocal

talent in commercials promoting *Emerson Quiet Cool* and *Rexall Superplenimin* Vitamins in his home state of New Jersey, Dr. Mann has become a regular guest of numerous radio programs throughout the greater Daytona Beach area where he promotes the Ponce Inlet Lighthouse and its many offerings for young and old alike. Dr. Mann is also an ordained minister who serves as the officiant of many Lighthouse weddings while dressed as a historic lighthouse keeper.

In addition to earning master's degrees in Secondary Reading Supervision, Curriculum and Supervision, as well as a doctorate in education, John's lifelong love of theater has manifested itself in the field of historic reenactment. As the museum's Principal Keeper, Dr. Mann interpretation of a historic lighthouse keeper at the Ponce Inlet Lighthouse has delighted young and old alike for more than a decade. His warm demeanor, infectious laugh, and gentle mannerisms have not only made him the museum's most recognizable and sought after Lighthouse ambassador but have also resulted in requests for his humorous, insightful, and educational presentations throughout northeast Florida.

Additional historic figures portrayed by John include Edward Murphy, captain of the Cuban filibuster SS Commodore which sank off the coast of Ponce De Leon (then Mosquito) Inlet in 1897. Immortalized by a young author named Stephen Crane who was working as an able seaman aboard the vessel at the time of its sinking, the harrowing experience of Captain Murphy,



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John Mann V.I.P. Volunteer *(continued)*

Stephen Crane, and the remainder of the ship's crew and passengers was later immortalized in the Crane's critically acclaimed short story *The Open Boat*. Dr. Mann has also spent numerous hours assisting the museum's curator with Fresnel lens restoration.

When he isn't leading a tour, developing a new lighthouse program, or visiting a local school or civic group John loves to travel with his wife Jackie. Self-proclaimed lighthouse aficionados and amateur pharologists, the typical itinerary for a John and Jackie Mann trip abroad usually includes a tour of the host nation's coastline where the couple's beloved

lighthouses are located. Having visited more than 1,400 beacons around the world to date, very few people in the world have personally experienced more lighthouses than John and Jackie Mann.

Dr. Mann's love of historic aids to navigation is evident in the thousands of hours he has donated to the Preservation Association over the years. His tours of the light station are informative and entertaining and his enthusiasm for the subject of lighthouses is both infectious and inspiring.

Anyone privileged enough to join him on one of his tours or participate in one of his educational workshops walks away with not only a better understanding of our nation's historic lighthouses and aids to navigation system, but a true appreciation of the impact that one man armed with generous heart and a spirit of volunteerism can have on his community.

Epitomizing the qualities that embody the altruistic nature of volunteerism, John Mann's contributions to the Ponce De Leon Inlet Lighthouse Preservation Association are immeasurable, making him the obvious choice for this issue's Volunteer of Quarter.

## THANK YOU AND WISH LIST

This quarter we would like to thank once again our faithful regular donors for their wonderful contributions to our collection. Jacques and Marion Jacobsen donated a group of insignia including a Coast Guard Warrant Officer hat insignia that would have been used by an officer at either a lighthouse or a life-saving station. Earl and Gladys Davis have enhanced our collection with a smelling salts bottle that any elegant lady would have been proud to possess. They also provided us with vintage toys and games and an eye cup dating from about 1935. Julie Davis donated a pair of hand mirrors and also a vintage umbrella with a silvered metal handle that will be used by our docents on interpretive tours. John and Jackie Mann provided us with more items for our artifact box activity including a fireplace starter. This handy gadget containing a small cylindrical wick would have sat in a small pot of kerosene by the fireplace. Once wood had been piled up for a fire, the starter would be lit with a match and then used to ignite the wood – an ingenious way to avoid burning one's fingers while trying to get the fire going! Thank you everyone.

Our wish list again starts off with a need for two vintage fireplace screens - the simple, non-decorative kind. We are also in need of items for our Generator Room. Vintage motor oil cans, gas cans and bottles, and other original garage items dating from 1920-1945 would be most welcome. And we are always interested in vintage Lighthouse Service items, old navigational lanterns, and early (1915-1925) Coast Guard insignia or uniforms.





And now for a word from the President

As I write these lines, threatening weather is once again in the offing. There is no doubt that during its 127 years of service, our lighthouse has certainly seen and ridden out its share of storms. Nevertheless, there is always a certain sense of unease that cannot help but arise among those who maintain a 175-foot tall structure which, out of necessity, must sit on the very edge of the sea perched at the end of a peninsula. The only way to lessen that unease is to be as ready as possible for whatever may come, and that requires constant preparation and maintenance.

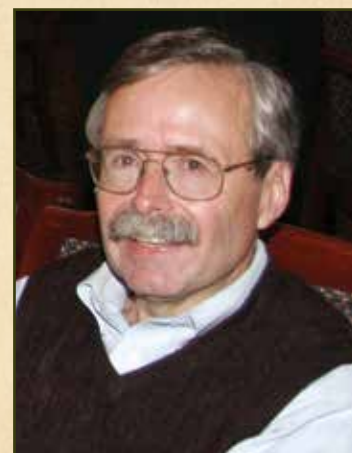
Maintaining the Lighthouse and its grounds is a fulltime undertaking. In addition to the day-to-day maintenance that is normal for all structures, there are the specialized requirements unique to the Lighthouse itself and to the other historical structures on the grounds. For example, the recent painting of the Lighthouse required retaining a European paint company to prepare the special mineral-based paint capable of standing up to the "sandblasting" which the Lighthouse endures on an almost daily basis from oceanic winds. To properly apply this coating it was necessary to avail ourselves of the services of a company with experience in applying such special paints and with expertise in working on structures like the Lighthouse. Not surprisingly, there are significant extra costs associated with contracting for such specialized work.

The Association takes pride in not having to rely on the fickle nature of grants and government handouts. We run a tight fiscal ship. We work hard to ensure that we have a balanced budget and do not spend money we do not have, no matter how tempting it might be to do so. However, as the custodians of a National Historical Landmark we have always considered it a *sine qua non* that we make sure that the admission rates are affordable to all. The legions of children who

visit us each year are testament to that. I dare say there are few other, if any, places in Florida that even come close in that regard.

As to you who are reading this as a member of the Association, we thank you for being a participant in the Ponce Inlet Lighthouse community. We hope that you find our efforts to have been worthwhile and our goals of preserving this wonderful structure and making it available to all who want to see it, to be your goals. With you at our side, we look forward to another productive year.

With Warm Regards,  
Robert Riggio  
President  
Ponce De Leon Inlet  
Lighthouse Preservation  
Association





# JOIN THE PONCE DE LEON INLET LIGHTHOUSE PRESERVATION ASSOCIATION

## A GENERAL ANNUAL MEMBERSHIP INCLUDES:

- Free admission to the museum and lighthouse during regular hours of operation
- 10 percent discount in the museum gift shop and online store
- One subscription to The Light Station quarterly newsletter
- Invitations to special events
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## MEMBERSHIP CATEGORIES:

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- Immediate family is limited to one or two adults and your children under age 18. Grandchildren are not eligible.
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- Child under 12 must be accompanied by an adult

**2nd Assistant Keeper** ..... \$100

- All privileges of General or Family Membership
- Recognition of your membership in the quarterly newsletters' 2nd Assistant Keeper List

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- A personalized guided tour of the Light Station
- Recognition of your support in the quarterly newsletters' Principal Keeper List

**Corporate Lampist** ..... \$500

- All privileges of General or Family Membership for up to five company principals
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- Use of the Light Station's conference room for one meeting.
- Recognition of your companies support in the quarterly newsletters' Corporate Lampist List

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## UNIQUE CHRISTMAS GIFT IDEAS

NOW IS THE PERFECT TIME TO GET AN EARLY START ON ALL OF YOUR HOLIDAY SHOPPING NEEDS. AVOID THE HOLIDAY RUSH AND THE HUSTLE AND BUSTLE OF MALLS BY PURCHASING MANY OF YOUR GIFTS FROM THE PONCE INLET LIGHTHOUSE. THE PONCE DE LEON INLET LIGHTHOUSE GIFT SHOP SPECIALIZES IN UNIQUE LIGHTHOUSE AND NAUTICAL THEMED GIFTS FOR PEOPLE OF ALL AGES. OUR WIDE SELECTION INCLUDES CLOTHING, HOUSE WARES, TOYS, AND COLLECTIBLES INCLUDING A WIDE SELECTION OF CUSTOM PRODUCTS MADE ESPECIALLY FOR THE PONCE INLET LIGHTHOUSE.

DO YOU HAVE A FRIEND OR RELATIVE WHO IS DIFFICULT TO SHOP FOR? CONSIDER AN ANNUAL MEMBERSHIP OR MEMORIAL BRICK INSTEAD OF A TRADITIONAL GIFT THAT MAY NEVER BE USED. WITH ALL PROCEEDS GOING TOWARDS THE ONGOING PRESERVATION AND RESTORATION OF THE HISTORIC PONCE DE LEON INLET LIGHTHOUSE, YOUR THOUGHTFUL GIFT WILL NOT ONLY BRING A SMILE TO THE FACE OF ITS RECIPIENT BUT WILL HELP THE PRESERVATION ASSOCIATION CONTINUE ITS IMPORTANT MISSION OF PRESERVING AND DISSEMINATING THE MARITIME AND SOCIAL HISTORY OF THE PONCE INLET LIGHTHOUSE FOR YEARS TO COME.

MERCHANDISE, ANNUAL MEMBERSHIPS, AND MEMORIAL BRICKS MAY BE PURCHASED ONSITE IN THE LIGHTHOUSE GIFT SHOP OR ONLINE AT [WWW.PONCELIGHTHOUSESTORE.ORG](http://WWW.PONCELIGHTHOUSESTORE.ORG). ORDERS MAY BE PROCESSED OVER THE PHONE BY CALLING THE GIFT SHOP MANAGER AT (386) 761-1821 EXT. 21. THOSE WISHING TO PURCHASE AN ANNUAL MEMBERSHIP BY MAIL MAY DO SO BY FILLING OUT THE MEMBERSHIP FORM ON PAGE 22 AND MAILING IT ALONG WITH PAYMENT TO THE PONCE INLET LIGHTHOUSE AT 4931 SOUTH PENINSULA DRIVE, PONCE INLET, FL 32127.

## PONCE INLET LIGHTHOUSE MEMORIAL BRICKS

THE PONCE INLET LIGHTHOUSE MEMORIAL BRICK PROGRAM

IS A UNIQUE AND THOUGHTFUL WAY TO HONOR FRIENDS AND LOVED ONES OR CELEBRATE SPECIAL EVENTS INCLUDING WEDDINGS, BIRTHDAYS, AND FAMILY VACATIONS. EACH LASER-ENGRAVED BRICK FEATURES THE PONCE DE LEON INLET LIGHTHOUSE LOGO AND UP TO THREE LINES OF TEXT. EACH PERSONALIZED BRICK IS INSTALLED IN THE LIGHT STATION'S MEMORIAL WALKWAY LEADING OUT ONTO THE HISTORIC GROUNDS WHERE IT WILL REMAIN IN PERPETUITY. BEST OF ALL, A PORTION OF YOUR BRICK PURCHASE PRICE IS TAX-DEDUCTIBLE.

LIGHTHOUSE MEMORIAL BRICK	ITEM #: 0289	PRICE: \$100
FULL SIZE DUPLICATE MEMORIAL BRICK:	ITEM #: 0290	PRICE: \$85 (+S&H)
MINIATURE DUPLICATE MEMORIAL BRICK:	ITEM #: 0291	PRICE: \$40 (+S&H) o



### BRASS PONCE INLET LIGHTHOUSE ORNAMENT

PLATED IN BRILLIANT BRASS, THIS WONDERFUL CHRISTMAS TREE ORNAMENT FEATURES THE PONCE INLET LIGHTHOUSE MOUNTED IN A YULETIDE WREATH OF HOLLY.

ITEM #: 0439  
PRICE: \$11.99 (+S&H)



### CUSTOM PONCE INLET LIGHTHOUSE ORNAMENT

NO CHRISTMAS TREE IS COMPLETE WITHOUT A CUSTOM ORNAMENT FROM THE HISTORIC PONCE INLET LIGHTHOUSE. MADE ESPECIALLY FOR THE PRESERVATION ASSOCIATION, THIS UNIQUE UNBREAKABLE ORNAMENT FEATURES A DECOUPAGE IMAGE OF THE BEAUTIFUL PONCE INLET LIGHT STATION.

ITEM #: 2706 (+S&H)  
PRICE: \$9.99

**Non-Profit Organization  
U.S. Postage Paid  
Daytona Beach, FL  
Permit 400**

PONCE DE LEON INLET LIGHTHOUSE  
PRESERVATION ASSOCIATION, INC.  
4931 SOUTH PENINSULA DRIVE  
PONCE INLET, FLORIDA 32127  
(386) 761-1821  
[WWW.PONCEINLET.ORG](http://WWW.PONCEINLET.ORG)



### PONCE INLET LIGHTHOUSE STATUE ORNAMENT

ADD A NAUTICAL FLAIR TO YOUR YULETIDE TREE WITH THIS MINIATURE STATUE ORNAMENT FEATURING FLORIDA'S TALLEST

LIGHTHOUSE AND THE LIGHT STATION'S HISTORIC GROUNDS.

ITEM #: 1293  
PRICE: \$7.99 (+S&H)



### PONCE INLET LIGHTHOUSE ORNAMENT

PRODUCED SPECIFICALLY FOR THE PONCE INLET LIGHTHOUSE, THIS BEAUTIFUL SHATTERPROOF ORNAMENT FEATURES A COLLAGE OF IMAGES TAKEN AT THE HISTORIC LIGHT STATION.

ITEM #: 0013 TO 2706  
PRICE: \$10.99 TO \$9.99 (+S&H)



**PONCE INLET LIGHTHOUSE  
MEMBERSHIP COUPON  
20% OFF ANY  
SINGLE ITEM**

Limit one coupon per member. Coupon may not be used in conjunction with any other discount. Proof of membership must be shown at time of purchase. Not valid for purchase of Memorial Bricks.  
Good from October 1, 2015 through December 31, 2015.

The Ponce de Leon Inlet Lighthouse Gift Shop specializes in unique lighthouse and nautical themed gifts for people of all ages. Our wide selection includes clothing, house wares, toys, and collectibles. Customers may also shop online at [LIGHTHOUSELOCKER.ORG](http://LIGHTHOUSELOCKER.ORG), and place orders by phone at (386) 761-1821 ext. 21. Please contact the Gift Shop at (386) 761-1821 ext. 21 or via email at [valair@ponceinlet.org](mailto:valair@ponceinlet.org) for more information. Usual UPS shipping charges apply to all orders.