

THE INFO AGE MARCONIGRAPH

NEWSLETTER OF THE INFORMATION AGE SCIENCE HISTORY CENTER AND MUSEUMS

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ISEC - A Space Exploration Center for Everyone! - By Lori Lauber, lead volunteer, ISEC

"ISEC, The InfoAge Space Exploration Center, is offering many new programs this year for students, children in our community, and Space enthusiasts everywhere. This year we are able to offer space exploration specific field trips during which students investigate observations with the TLM18 Radio Antenna. Students can learn to read histograms that give them information about the state of interstellar space as well as objects such as pulsars and other galaxies. They can also learn about how to observe the sun and the activity on the sun as it's happening live.

We also are open for children's birthday parties! Birthday parties can be super fun when kids make models of the Milky Way Galaxy and our Solar System. If the party is scheduled on a day when the moon is available the kids can even bounce their voice off the moon and have a video record of having done so.

Space exploration lectures led by Frank O'Brien still happen every month at ISEC. Frank's lectures are always exciting and informative. So far this year he's talked about what the best dressed astronauts wear, space suits! In April Frank may talk about what astronauts eat. And you never know, there may be treats for everyone.

Check out our website at isec.space each month for information about the upcoming lecture. The calendar lets visitors know when the moon is available for Earth-Moon-Earth transmission, also known as moon-bounce.

Stop at ISEC anytime InfoAge is open and take a look at the Universe with the TLM18 Radio Dish Antenna. You are sure to learn something new and have fun along the way. And don't forget, we are always looking for docents who can give tours. If you are a physics graduate student in need of classroom experience or an educator who can lead field trip demonstrations- We Need You! Call ISEC at 732-280-3000 for more information"



The TLM18 Radio Dish Antenna at InfoAge Space Exploration Center

InfoAge would like to thank Lori Lauber for all her hard work and dedication. Lori is a volunteer who has devoted her time and knowledge of science to InfoAge. She currently runs our Space Exploration Center (ISEC). Among Lori's many duties are training docents for the center, opening the center to visitors, running our Space Week Camp during the summer and being there for Class trips so dozens of students can learn about space and.....bounce their names off the moon!!!!

We couldn't do any of this without her and we are so grateful. Stop down at ISEC any Wednesday, Saturday or Sunday and say 'hi' and see just what she has done for us.



Kimberly Arcand at InfoAge

By Dan Lieb, InfoAge Trustee-New Jersey Historical Divers Association President.

On March 9th of this year, InfoAge had the privilege of hosting Kimberly Kowal Arcand of NASA. Kimberly is the Visualization Lead for NASA's Chandra X-ray Observatory, which has its headquarters at the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts. Arcand is an award-winning producer and director. She is a leading expert in studying the perception and comprehension of high-energy data visualization across the novice-expert spectrum. As a science data storyteller she combines her background in molecular biology and computer science with her current work in the fields of astronomy and physics. She was selected as a "Change maker" for the White House State of Women Summit in 2016. Her talk, entitled, "How to Color the Universe, in 2D and 3D," was well received by an audience of 61, including school-aged visitors – our target audience.

Though astronomy has been an inherently visual area of science for millennia, a majority of its significant discoveries take place in wavelengths beyond human vision. To visualize such data, we must translate the information into something that can be seen. The explored choices made during the image processing pipeline, and current technological innovations transforming such data from 2D into 3D and immersive experiences. The talk also touched upon the ways these processes are similar – and different -- to how a linguist translates a foreign text, or how a photographer might choose filters and lighting.

Fellow trustee Mike Ruane and I had the opportunity last October to hear a number of astronauts, astrophysicists, filmmakers and astronomers talk about what it is that they do. During this annual get-together we heard Kimberly discuss how she uses data collected from a number of observatories to image galaxies, stars and supernovas. Kimberly uses color to enhance features such as dust clouds of iron, clouds of helium and more. This color-coding allows us to better understand the makeup of astronomical bodies. Normally, most bodies would appear whitish, but her interpretation allows for a full spectrum of visible color to be used. This is the perfect bridge between those who sponsor STEM (science, technology, engineering and math) and those supporting STEAM (science, technology, engineering, art and math). What Kimberly does justifies the distinction.

Her favorite astronomical body, Cassiopeia A in the constellation of Cassiopeia, is what is left of a supernova she calculates to be only 350 years old. Through Doppler shifting of light, she is not only able to calculate the height and width of Cassiopeia A, she's also able to calculate its depth from front to back. The result is a collection of data enabling her to plot the super nova not only in two dimensions, but in three. Using virtual reality headsets one can now walk through a super nova, turn and see it from the inside looking out – and in all directs. If she can plot it virtually, she can plot it physically; she has use of a 3D-plotter and literally sculpted Cassiopeia A down to no bigger than a tennis ball. Visitors were treated with the opportunity to hold a super nova in their hands. Are you getting the feeling you missed something really good?

At the event Mike and I attended in October and at the conclusion of her talk, Kimberly took questions from the audience. One fellow asked, "Kimberly, why do you choose the colors you do?" Her answer "That is a topic of a presentation all to itself." At that moment, a light bulb turned on over my head and I thought, "I have to get her to speak at InfoAge!" And it was indeed a wonderful afternoon.



Kimberly Arcand



Kimberly Giving Her Presentation



A Captive Audience



Cassiopeia A



Pillars of Creation



Frank O'Brien, Kimberly Arcand & Dan & Theresa Lieb



Theresa Lieb Holding a "Super nova"

VCF East at InfoAge
By Evan Koblentz

If you ever worked in the computer field -- or if you ever used an iPhone -- then you've used something called Unix, which turns 50 years old this year and will be celebrated at Vintage Computer Festival East from May 3-5 at InfoAge.

Unix is a computer operating system, just like Microsoft Windows or Apple's MacOS. Most of the time Unix is behind-the-scenes, where it is massively popular in corporate data centers. But it's also the foundation for something called BSD, on which Apple's iOS is based, and also for Linux, on which Google Android is based. So, whether most people realize it or not, Unix is everywhere!

Unix development began in 1969 at Bell Labs in Murray Hill, New Jersey. Its two main developers were Dennis Ritchie, who died in 2011, and Ken Thompson, who is the VCF East keynote speaker on the morning of Saturday, May 4, right here at the former Camp Evans. Thompson will be interviewed on stage by another Unix historical superstar, Brian Kernighan, who was the VCF East keynoter a few years ago.

In addition to the Thompson/Kernighan talk, this year's edition of VCF East will also feature a huge hands-on exhibit called Unix Town. Over in Unix Town, visitors will be able to use dozens of different vintage computers running various kinds of Unix versions and applications. Brands represented will include Apple, Atari, AT&T, DEC, IBM, NeXT, Perkin-Elmer, SGI, and Sun Microsystems.

But Unix isn't the only milestone in computer history this year! It's also the 40th anniversary of Atari. Most people think of videogame consoles, however Atari also was a big player in microcomputers. The VCF East keynote speaker on Sunday, May 5 is Atari's Joe Decuir who worked on the 2600 console and the 400/800 computers, before moving to Amiga. Just like the Unix Town, there will also be a huge Atari exhibit covering everything from the original Video Computer System (2600) all the way to the Falcon 030 which was Atari's last product.

In total, VCF East will offer about 40 hands-on exhibits (way beyond just Unix and Atari!), 15 technical classes on Friday, a gigantic consignment sale, professional vendors, learn-to-solder workshops, and a single-board computer workshop by Glitchworks.

Please see <http://www.vcfed.org/vcfeast> for all the details. Proceeds benefit InfoAge and also the event producer Vintage Computer Federation.

If you can't make it to VCF East, fear not: all of the talks will be recorded and posted on the Federation's YouTube account. You can also visit their computer museum at InfoAge year-round.



**New Jersey's 9/11 Never Forgotten
Tribute and Learning Center
"The Attack on the World Trade Center"**

Our InfoAge team (Bob Perricelli, Alex Credidio and Ken Zelinski) are in the process of building an extensive 9/11 exhibit in the Marconi Hotel. Our exhibit is dedicated to the men and women who responded to the aftermath of the attack on the World Trade Center.

It will feature ground zero dioramas, uniforms worn by NJ responders, artifacts, photos and much more. In addition, we are providing display materials on the activities after the attack of the NJ National Guard and NJ Air National Guard. Service performed by NJ based responders is an integral part of the exhibit and Alex Credidio has contacted forty plus NJ based fire departments that were called upon to serve. They have responded with photos, information about their activities and department patches. The exhibit will be completed during the summer of 2019.



The Marconigraph is the Newsletter of the Information Age Science History Learning Center and Museum which is a 501 C (3) Non-Profit Corporation dedicated to preservation of Camp Evans. Membership is \$25 per year for an individual and \$45 per family.

TRUSTEES:

Mike Ruane - CEO
thejamesthomasgroup@comcast.net

M. Claire French - Secretary
mclairefrench@gmail.com

Tom Crowley - Chair of the Board
tcro0447@aol.com

John T. Cervini - Vice Chair of the Board
johntcervini@optonline.net

Michael Smith	Jules Bellisio
Shaun Golden	Dan Lieb
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For more information about InfoAge and our Museums or to become a member or volunteer your time call 732-280-3000.



Newsletter Editor - Gloria C. Kudrick
admsupport@infoage.org

The editor or InfoAge is not liable for any other use of the contents of this publication

Internet Archeology Scores Again *By Ray Chase*

Sometime ago I reported on how I was able to obtain historical WWII radar artifacts by trolling on the internet. Well, it has happened again. My quest has always been for pieces of early radar equipment to add to our InfoAge displays. This is especially appropriate as our National Landmark Designation is founded on the radar development work done on these premises. Usually this involves the Army's early radar systems such as the SCR-268 and SCR-270/271 although I am now working on parts of the first Navy airborne radar system but that is another story.

As it turns out, because of size and weight factors, the test equipment for these systems more often survives when the larger pieces of the system do not. For some time, I had two BC-438 Wavemeters for the SCR-268 radar. A Wavemeter is used to determine the operating frequency the radar and is an important item for maintenance. One unit was in pretty good condition but the second was not so good. I did not have a BC-439 Wavemeter for the SCR-270/271. These two instruments are nearly identical in appearance but operate at differing frequencies; 105 Mhz. for the SCR-270/271 and 205 Mhz. for the SCR-268. Internet contacts eventually led me to a gentleman in Illinois who had the missing instrument that was in moderate condition, but his price was a bit on the high side and shipping would be an added expense. I was about to "bite the bullet" on his offer when a last-minute e-bay search found one in better condition located in Ohio.

This seller had even checked out the instrument and made some component replacements to ensure that it was operational. His auction was for 30 days so I monitored it regularly and although there were a couple of other interested buyers; just before the auction was to end, I made an offer to the seller that was still lower than what I would have had to pay to my first contact in Illinois. The seller accepted my offer and did an excellent job packaging and shipping the unit to me and on arrival its condition was even better than I expected. Combining the best bits and pieces of the three units yielded two Wavemeters in very good condition that are now ready to be added to our radar display.



*BC-438 and 439 Radar
Wavemeters Ready for Display.*

RTM Diner **By Ray Chase**

The recording and reproduction of sound and music became fundamental to electronics technology not long after Edison introduced it to the world using purely mechanical means. Our museum displays show how Edison and Berliner perfected the mechanical devices that made it happen. Then we move on to show its more rapid evolution with electronics through radio, sound reproducers, and various recording and playback devices. Our most recent display is a small diner booth with the ubiquitous Jukebox wallbox that burst on the scene in the 1950's and 60's and is still found in some diners today.



RTM Diner Booth

So, how did this display come about? Well, in our audio area we have a full-size jukebox that we try to keep running but these older jukeboxes mainly used mechanical means to select records and feed them to a turntable.

Such mechanical mechanisms along with their host of electric relays and contacts are difficult to keep functioning especially on machines that are well over 50 years old. Our most prolific "idea man", Harry Klancer had a Seeburg Wall-O-Matic wall box that he had on display at another museum but was now languishing in his workshop. So, he decided to build a small diner booth, use the wall box as the center piece and make it operate electronically. Data Sync Engineering, a NJ company makes an adaptor for wall boxes and that combined with an IPOD and a small amplifier make the whole thing play without any significant moving parts. Actually; Harry built half a booth since our museum space is limited. The electronics are hidden in the walls and the speakers are under the seat. Other club members donated a napkin holder, a straw dispenser (advertising 5 cent Coca Cola), condiment holders, etc. A diner menu lists the music selections available. The wall box can hold up to 200 record choices but presently we only have 60 loaded in. Soon it will be fully loaded with appropriate period music selections. Stop by, try it and be transported back in time. Coins are not needed, pressing an associated button gives you two free plays. Sorry, no food can be served.



Wall-O-Matic



Harry Reads the Menu

Expanded Electronic Warfare Display Planned at InfoAge

John T. Cervini – Vice President AOC Garden State Chapter

Preparations are being made for the new Electronic Warfare and Signals Intelligence Pavilion, which will be situated in Building 9010C at InfoAge. The current display can be found in Building 9032C, and occupies a double room in that area, which has very limited space for exhibits.



Electronic Warfare Display in 9032C

The new Pavilion will consist of almost 3000 square feet of display area which will allow many additional artifacts to be exhibited; as well as an area for showing the informative video collection to visitors. This will allow the public to learn about and appreciate many of the significant technical developments that took place at Camp Evans and Fort Monmouth.



Future home of the EW and Signals Intelligence Pavilion – Building 9010C

The finished product will be a fine addition to the InfoAge family, and ensure that the critical achievements performed by the dedicated civilian, military, and contractor workers at Camp Evans and Fort Monmouth will be remembered.



Artist Rendition of planned EW and Signals Intelligence Pavilion



Commissioning a FULL-COLOR tile is a great way to say thank you to a veteran or family member. The hall of Honor is located in the central hallway of the historic WW2 H-building complex, on the Camp Evans National Historic Landmark. The InfoAge Hall of Honor is an excellent place to display your custom tile. You supply the photos and text, and we'll create your unique custom tile. Take it home, or allow us to display it in our Hall of Honor.

The cost to commission a tile is \$250, and additional copies can be made for \$100 each. You will have the opportunity to approve your tile's design.

Call 732-280-3000 today to reserve your tile, or email admsupport@infoage.org for more information.

InfoAge Happenings

NJHDA Symposium-Privateers, Patience and the Stone Harbor Wreck

Saturday, May 11, 2019 , 8 PM to 10:30 PM at InfoAge Science & History Center, 2201 Marconi Road, Wall, New Jersey. Reservations are required. Admission to the symposium is \$25 per person (\$20 for NJHDA Members). Light refreshments will be available.

The symposium will be hosted by: Dan Lieb.

Presentations by Jack Fullmer:

The Elberon Wreck: A Long-Delayed Verification

Harry Roecker The Stone Harbor Wreck

Captain Steve Nagiewicz:

Privateers on the Mullica River.

For reservations and more information, please call 732-776-6261 or e-mail NJHDA. Send checks payable to NJHDA, 107 Wilson Road, Neptune, NJ, 07753.

There will be a Silent Auction at the event. Our silent auction includes items generously donated by some of our sponsors. Cash, check or credit card is acceptable. Must be present to win. Proceeds support the New Jersey Shipwreck Museum at InfoAge.

Alterations and substitutions to the schedule may occur without notice. NJHDA, Inc. is a nonprofit charitable historical research organization. All donations are tax deductible.

ASTRONAUTICS: THE FIRST 'A' IN NASA SUNDAY, APRIL 28, 2019 AT 2:00PM

Exploration of near and distant worlds is the familiar mission of NASA, but its origins are in Aeronautics. NASA has been involved in virtually every advance in flight, from engines, aerodynamics, safety systems and air traffic control. For over 100 years, NASA and its predecessor, NACA, have created technologies that make flight safe and efficient, and have pushed the boundaries of the possible.

Lecturer

Frank O'Brien has been volunteering at InfoAge since 2003, and is a Solar System Ambassador for NASA's Jet Propulsion Laboratory. He is the author of a very successful book on the Apollo Guidance Computer, and gives monthly lectures on all aspects of spaceflight.

2300 Marconi Rd, Wall Township, NJ 07719
\$10. Donation



InfoAge

The InfoAge Science History Learning Center and Museum
at Historic Camp Evans

Join InfoAge Today!

InfoAge is preserving historic Camp Evans to honor veterans and give students and groups a place for learning more about science and history.

Your donations will help us with this work. You can become a member for \$25.00, and are invited to volunteer. Your help will give excellent programs a permanent home to benefit New Jersey science and history education.

Benefits of membership include receiving our newsletter, advance notice of events and discounts. All memberships are annual unless noted. *

Individual Membership	\$25.00
Family (up to 5 persons) Membership ...	\$45.00
Lifetime Individual Membership*	\$225.00
Lifetime Family Membership*	\$425.00
Club or Organization Membership	\$250.00

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Make checks payable to: **InfoAge**
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Pay online using PayPal on our website at InfoAge.org

Check here if you'd like to become a volunteer.

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