Rick Sternbach, Moonbase in Hahn Crater. Acrylic, 30"x40". Painted sometime in the 1980s. A lunar base sometime in the future, set into the crater Hahn near the northeastern limb. Two base operations workers are conversing in front of a giant multi-screen video display (both characters were portrayed by IAAA colleague Don Dixon). In the original painting, the scene was looking out an enormous glass window, which in hindsight seems somewhat impractical. :) On the desk can be seen a copy of Michael Collins’ CARRYING THE FIRE, a fresh copy of LUNAR magazine, and a marker sketch in progress.

Marc Ward, LOLA Moon. This image was made from a NASA LOLA false color topo map. I took a false color topo map from the Lunar Orbiting Laser Altimeter that assigns colors to specific heights. The colors where then all neutralized and given new output levels. I then treated the new map with lighting techniques in Photoshop to create a 3 dimensional look.

Jackie Twine, Moon Boots - Where Do We Go From Here? It asks the question who, or what, steps into the shoes of NASA now that they are no longer planning manned exploration of our Moon.

Samuel Dietz, Orange Moon. Oil on panel, 24"x32", 2011

Ken Davy, Tycho, oil on panel. 11 x 20". This is the central peak of Tycho Crater. Reference images included photo from the Lunar Reconnaissance Orbiter, the Clementine Orbiter and the Selene mission.
From the Editor

Greetings!

We have some wonderful articles this time for the Pulsar, including member activities at the Space 2016 Forum and exhibition and our member Corrine Cowan’s accounting of attending a dark sky festival in Canada. Also in the last 6 months, our membership has grown in leaps and bounds! I will be catching up on new member bios in the coming issues!

Also, the last six months have brought sad news to the space community. I have included a few short biographies on our beloved astronauts that we lost this year, John Glenn and Gene Cernan. Ad Astra, gentlemen.

Erika McGinnis, Pulsar Editor, Pulsar-editor@iaaa.org

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Cover art: David A. Hardy, Moon Rock ’09, acrylics, impasto. An astronaut climbs to the top of a giant boulder in the low lunar gravity, silhouetted against a full Earth.
Kudos for members of IAAA


- **Pat Rawlings**—Ordway Award for Sustained Excellence in Spaceflight History! The Ordway Award is named in memory of Frederick I. Ordway III (1927-2014), human spaceflight advocate and chronicler of the history of rocketry and space travel. The award recognizes exceptional, sustained efforts to inform and educate on spaceflight and its history through one or more media, including (1) writing, editing, or publishing, (2) preparation and/or presentation of exhibits; or (3) production for distribution through film, television, art, or other non-print media. The award is managed by the AAS History Committee. [http://astronautical.org/awards/ordway/](http://astronautical.org/awards/ordway/)


- **Aldo Spadoni**—created a space art glossary page on our website. Where else will you find the definitions of words like Bonestellosphere, Millerite or Swirly? Find the page here: [http://iaaa.org/glossary/](http://iaaa.org/glossary/)

- **Dana Berry**—his Pluto VR got a write-up in the Huffington Post. You can see it here: [http://www.huffingtonpost.com/entry/pluto-virtual-reality_us_57f5642be4b05f39c51e05bc?guiaiva5xchqs4i](http://www.huffingtonpost.com/entry/pluto-virtual-reality_us_57f5642be4b05f39c51e05bc?guiaiva5xchqs4i)

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The lunar flights give you a correct perception of our existence. You look back at Earth from the moon, and you can put your thumb up to the window and hide the Earth behind your thumb. Everything you’ve ever known is behind your thumb, and that blue-and-white ball is orbiting a rather normal star, tucked away on the outer edge of a galaxy. —Jim Lovell
Welcome New Members!

Dave Ginsberg—My artwork combines my passions for visual art, spaceflight, astronomy, science, and teaching. Selections of my artwork have been shown in galleries, have been used in educational programs, and have flown in space. My depiction of the Solar System is displayed as a wall-sized mural in the space exhibit at Seattle’s Museum of Flight. My passion and skill as an artist began to develop at an early age. I grew up in the presence of art. My father was an illustrator for the U.S. Air Force for much of his career. There were always magazines about art and graphics around the house, and many of them were aviation and space related.

I believe the things that capture your imagination when you are between the ages of seven and twelve (in my case, 1967-1972) are the things that are most likely to become your life’s passions. You may not have ended up following your true passions when you chose your career path for whatever reasons, but you will always want to come back to them. If you are searching for your passions in your adult life, look back to those childhood years to find them.

Chris Starr—FRAS FBIS, IAAA Associate Member, is a space activist, writer and speaker. He worked as Head of Geography and Space Science at an international school in Switzerland until 2011, where he built a small observatory and organized public outreach events in the Alps, including the design and installation of an outdoor exhibition for IYA 2009 in the ski resort of Villars. He left secondary teaching in 2011 to continue working in STEM outreach in the UK. He founded the Wells & Mendip Astronomers in Somerset, of which he is Chairman. A Fellow of both the Royal Astronomical Society and the British Interplanetary Society, he is also a contributing writer for the BIS’ ‘Spaceflight’ magazine.

Sorin Sorin—The creator of Astrobox, which we have seen posts of on the listserv. The mission of AstroBox is to make space and astronomy fun, accessible, and inspiring. AstroBox is targeted towards STEM educators, students, and space enthusiasts. AstroBox provides an in-depth but accessible experience connected with active space missions and astronomical events. It is a quarterly subscription, where each box contains 5-8 high quality products with an exclusive t-shirt, artist print, mission patch, and a mix of other products according to that quarter’s theme. We also include our own Astronomy Unboxed magazine, with stories on active missions, upcoming astronomical events, and other fun activities to engage kids and adults in the wonders of discovery. Learn more at www.AstroBox.Rocks

Doug Forrest—As an artist, I’m interested in the human side of the early missions, and also, the geometry of the machines and equipment. I like the engineering of the launch towers, the spacesuits and the rocket engines. I’ve always been fascinated by the complexity of them and think that they can be looked at as pieces of art in themselves.

I’m a member of the British Interplanetary Society and in 2001, I wrote an article for their magazine, “Spaceflight” about preserving the last Saturn V launch umbilical tower (LUT). The tower had been dismantled and sat, in pieces, in a restricted area of the Kennedy Space Center, since 1980, when the mobile base was needed for the Space Shuttle program. I learned that it was to be scrapped, so I decided to write an article that was intended to increase awareness for the tower. I wanted to preserve it, and see it rebuilt again as a monument to the program, with a full scale mock-up of a Saturn V standing next to it.

Now I hope, through my art, to help preserve the most amazing chapter of human exploration, ingenuity and achievement. One of my lifelong regrets is that I wasn’t able to attend a Saturn V launch, but I feel lucky to have witnessed the missions, as they happened.

Ron Garan—Ron is a highly decorated Fighter Pilot and Test Pilot, Explorer, Entrepreneur and Humanitarian who believes that appropriately designed and targeted social enterprise can solve many of the problems facing our world. He is currently the Chief Pilot for World View Enterprises, a pioneering high altitude and space company bringing communications technology, sensors and passengers to the edge of space.

Continued on p. 6
Welcome New Members (continued from p.5)

Ron is a retired NASA astronaut who has traveled 71,075,867 miles in 2,842 orbits of our planet during more than 178 days in space and 27 hours and 3 minutes of EVA during four spacewalks.

He flew on both the US Space Shuttle and the Russian Soyuz spacecraft. Ron is also an aquanaut and participated in the joint NASA-NOAA, NEEMO-9 mission, an exploration research mission held in Aquarius, the world’s only undersea research laboratory. During this mission he and the crew spent 18 continuous days living and working on the ocean floor. More about Ron Garan here: http://www.rongaran.com/bio/

Marina Montes— is an emerging artist with a love of landscapes and an eye for the astronomical. 2016 Graduate of the Kang-O’Higgins Atelier at Gage Academy in Seattle, WA. In my paintings I seek to capture the beauty of Science and Spirit together. I find immense beauty in the radio astronomy instruments – humankind created them from refined and molded Earth with knowledge passed down through centuries. Like our ancestors before us, with their stone observatories and calendars. Alters to curiosity. Whether we be divining the will of gods or measuring the composition of particles, observing the Space is an ancient meditation.

What it means to be an observer is what moves me. Of a painting. Of a subject. Of a universe. My intentions with my paintings are: To observe us observing the universe—to communicate the Spirit that sings within the heart of Scientific inquiry. www.marinamontes.com

Justinas Viktus—I am a 25 year old guy, born in Lithuania. Since my childhood I was fascinated by space exploration, planets and worlds so distant that the only way to visit them is to use your imagination. I used to draw for as long as I remember. Drawing/painting always used to be my favorite activity and reflected my other hobbies and interests. So then my imagination and curiosity got caught into a starry skies, it was only matter of time until that affected my paintings. I became increasingly interested in astronomy. I started reading books and articles about solar system and places way beyond the boundaries of our stellar neighborhood. And that's when I stumbled upon a space art paintings used to illustrate the visions of distant planets. I was deeply amazed by breathtaking and fantastic landscapes depicted in those paintings. I felt an urge to try and paint my version of space. So I began working on space art illustrations and continue to do so till this day.

Artist Spotlight—Jim Scotti

Jim Scotti graduated from the University of Arizona and is a planetary scientist and operates the Spacewatch telescopes on Kitt Peak, which scans the night sky looking for NEOs (Near Earth Objects) and comets, cataloging and keeping track of objects which could collide with Earth. Jim has discovered 11 comets with Spacewatch, and many of the over 900 Near-Earth Asteroids discovered by Spacewatch.

He is also an accomplished artist and photographer and is also an avid space enthusiast, interested in the history of space exploration and particularly of the Apollo Program. He has contributed to the Apollo Lunar Surface Journal, which details the Apollo lunar explorations.

Callisto Crater Chains

Come On Down Pete
During the week of September 12-16, 2016, the International Association of Astronomical Artists (IAAA) put on an art show at the American Institute of Aeronautics and Astronautics (AIAA) SPACE 2016 Forum and Exposition, held at the Long Beach Convention Center in Southern California. The AIAA SPACE 2016 brings together Space industry and government leaders as well as the broader space community.

The event is focused on policy and management issues as well as a strong technical program featuring technical paper presentations on space operations, space systems, space history, space transportation, space and Earth science, space exploration, and many other topics. This collaboration was a first for the IAAA and AIAA, after several years of hard work. Participating artists, who are also AIAA Professional members included Mark Pestana, Michelle Rouch, and Aldo Spadoni.

AIAA hosted IAAA with a booth placed in the high traffic zone in the Exposition Hall nestled between the cool NASA/JPL Juno display and a dynamic group from University of California, San Diego students, who recently demonstrated a successful liquid fueled rocket launch using a 3-D printed rocket engine. Like the International Space Station, the artists utilized every inch of space, transforming the 10’x10’ booth into the finest Aerospace Art Exhibition.

The art show stopped people in their tracks, dazzling them with a display that they have never seen at an AIAA Conference before. It was a hit! There were many interested visitors from across the space community. People commented on the uniqueness of the display compared to more traditional aerospace industry exhibits. VIP visitors NASA Administrator Charles Bolden, who worked with Mark Pestana, and AIAA Executive Director Sandy Magnus enjoyed the display.

The artists were visited by a few local high school students, giving an opportunity to engage in conversation of STEAM outreach perspective. An evening reception and luncheons were held in the same area as the Exposition, providing the booth and artists with considerable amount of foot traffic and networking opportunities.
Artist Spotlight—Reid Silvern

Reid Silvern dedicated himself to art after retirement from a career in the Defense Department. He is best known for his ‘Columiere’ work. He has been featured at the Flandreau Science Center at the University of Arizona. He has been shown in and around Tucson, Arizona including The Solar Culture Gallery, ToScana Gallery, Borderlands Brewery and other venues.

Artist Statement: Galaxies is an artwork in Columiere, the interaction of colored light with colors in art. As the light changes color, the galaxies change their shape, appear to shift location and background colors darken and lighten. Enjoy this new experience in art.
Featured Artist: Joan Tripp

“We are the stuff of stars: Those that were and those that will be: Points of light that shine throughout eternity.“ Joan Tripp

Joan was born and raised in Sag Harbor, Long Island. Her paternal Grandfather had shown in the Royal Academy in England, her father had studied at Ecole Des Beaux Arts in Paris and art was always a part of her life. As a teenager she studied oil painting with Madam Marec who ,above all else, taught her to LOOK! "Look at what you are painting and then look and look again. When you cannot see anything else in the object or subject you are seeing then paint what you see. Always paint to represent exactly , then when you have mastered that, you may interpret however you wish.

She painted off and on as time permitted raising three children and working. She took graduate art studies at Hofstra University and later took painting and drawing with a variety of painters. When PBS first aired many of the Hubble photographs of outer space she was struck by their beauty and inspired by what space exploration would hold for the future. She began to paint Nebulae and other space related objects and became a member of the International Association of Astronomical Artists.

She was greatly inspired by Salvador Dalí’s depiction of space in his paintings, by Georgia O’Keefe’s color use in her flower paintings and by the sense of loneliness in Edward Hoppers works. It is a love of the paint itself which most involves her, the creation of color fused with color that creates varied forms, real or abstract. A fascination with space, planets, galaxies, and stardust provide the impetus to experiment with pure color to reproduce in paint some of the most magnificent forms in the universe. It is her hope than rather than curtail space exploration ,the journey will be expanded , for in space lies the hope of the future.

Jupiter's Great Red Spot, 30" x 40" – Oil on Canvas

The Visitor
16" x 20" – Oil on canvas

Orion
12" x 12" – Oil on Canvas

Variable Star
12" x 12" – Oil on Canvas

The Visitor
16" x 20" – Oil on canvas

Orion
12" x 12" – Oil on Canvas

Variable Star
12" x 12" – Oil on Canvas

The Visitor
16" x 20" – Oil on canvas

Orion
12" x 12" – Oil on Canvas

Variable Star
12" x 12" – Oil on Canvas
Celebrating Jasper’s Dark Skies

By Corrine Cowan

Canada’s 6th annual Dark Sky Festival was held in Jasper Alberta from October 14-23, 2016. Jasper National Park is the world’s second largest Dark Sky Preserve. It was surpassed by the 2013 designation of Wood Buffalo National Park as the largest. Wood Buffalo’s 44,800 sq km or 17,300 sq miles of parkland, borders Alberta and the NWT.

Throughout the 10 day festival, visitors had the opportunity to attend a variety of events as well as star gazing through specialized telescopes courtesy of the Royal Astronomical Society of Canada – Edmonton Centre. Activities included nighttime photography and art workshops, Telus World of Science videos, trips to the Columbia Icefields, outdoor evening performances by the Edmonton Symphony Orchestra at Fairmont Jasper Park Lodge, fireside yoga, night sky viewing from Lake Annette, Marmot Meadows, Athabasca Glacier, Maligne Canyon, the Glacier Skywalk, and Jasper SkyTram, a showcase by All-Star Telescopes and lectures by experts in the study and exploration of Space. Bill Nye and George Takei were among the many guest celebrities.

Memorable speakers were Ross Lockwood, Bobak Ferdowsi, Nadia Drake, Alan Dyer and Jaymie Matthews. Ross Lockwood, Edmontonian with a PhD in Condensed Matter Physics, has applied for one of two new positions of Astronaut with the Canadian Space Agency. Training is scheduled to begin in August 2017. Lockwood believes he has met the recruitment requirements. In 2014 he spent 4 months living in the NASA Mars Simulator Environment in Hawaii along with 5 other crew members. Bobak Ferdowsi, a Systems Engineer at NASA’s JPL worked as mission planner for the Mars rover Curiosity flight and landing. His current focus is on a mission of Jupiter flybys where a spacecraft will attempt to capture images of the entirety of its moon, Europa. The prospective launch date for the mission is the mid 2020’s.

Nadia Drake, science journalist with a PhD in Genetics writes for Science News, Wired, National Geographic, Nature Medicine and other publications. Her topics of interest are exoplanets, their moons, human space exploration and the ongoing search for extraterrestrial life. In her presentation she spoke about her father’s lifelong interest in the quest to find communicative extraterrestrial life. In 1961 he formulated the Drake Equation, which he presented at the first meeting of SETI with the hope that it would stimulate scientific dialogue. The equation multiplies a number of odds that would supposedly indicate the number of civilizations that might be within radio contact. Nadia grew up listening to her father’s stories and theories on all matters of Space. She remembers the walls of their home being filled with astronomy related artworks.

Jamie Matthews, Astrophysicist at the UBC Dept. of Physics & Astronomy spoke about his work on Canada’s space telescope MOST (Microvariability & Oscillations of Stars), launched from northern Russia in June 2003. As mission scientist and primary investigator, Matthews designed the suitcase sized telescope to take thousands of images of a single star for durations as long as 2 months. Observations of Proxima Centauri, closest star to our Sun and its Earth-like planet have been closely imaged by MOST. Matthew’s approach to physics and astronomy is enlivened by his colourful and often comical attire. Gadgets hang from loops on his vests and cargo pants and sometimes he appears wearing thought provoking types of head gear. He has earned the name of “Astronomer Extraordinaire” and refers to MOST as the ‘Humble Space Telescope’ because of its modest size and budget.

Alan Dyer, Alberta author, photographer and lecturer (AmazingSky.com) writes for Sky News, Sky & Telescope and has authored a number of books. He has traveled the globe to photograph lunar and solar eclipses with a focus on accuracy rather than fantasy. Dyer has found that the best vantage point from which to photograph eclipses is a sailboat on the open sea.
Fallen Stars . . .

Italian painter Fernando Leschiera, who was a member of the IAAA, died on 5 February 2017 at the age of 61.

His works are permanently exhibited at the Astronomical Observatory of Arcetri, Florence; Astronomical Observatory of Acquaviva delle Fonti; and Regional Archaeological Museum of Aosta, Italy.

As reported in his website (www.leschierafernando.net), Fernando Leschiera believed human life to be transient on Earth. His spirit left the body the day in which, from the astronomical observatories of Italy, it was possible to see the bright orange Aldebaran star disappear behind the dark side of the waxing moon, and then reappear from behind its uneven edge.

You cannot look up at the night sky on the Planet Earth and not wonder what it's like to be up there amongst the stars. And I always look up at the moon and see it as the single most romantic place within the cosmos.

Tom Hanks
John Glenn  July 18, 1921—Dec. 8, 2016

Glenn, who served four terms as a U.S. senator from Ohio, was one of NASA's original seven Mercury astronauts. His flight on Friendship 7 on Feb. 20, 1962, showed the world that America was a serious contender in the space race with the Soviet Union. It also made Glenn an instant hero. His mission of almost nine days on the space shuttle orbiter Discovery, launched Oct. 29, 1998, when he was 77, made him the oldest human to venture into space. On Discovery he participated in a series of tests on the aging process. The aging population was one focus of his work as a U.S. senator.

Glenn will always be remembered as the first American to orbit the Earth during those tentative, challenging, daring days when humans were just beginning to venture beyond the atmosphere that had nurtured them since the species began. While Glenn's flight on Friendship 7 was a glorious national triumph, problems arose that could have spelled disaster. The first was a failure of the automatic control system. A scheduled 30-minute test to determine whether Glenn could fly the capsule manually became a matter of life and death when the automatic system went out at the end of the first orbit. "I went to manual control and continued in that mode during the second and third orbits, and during re-entry," Glenn recalled later. He had been confident he could do it. "The malfunction just forced me to prove very rapidly what had been planned over a longer period of time."

John Herschel Glenn Jr. was born July 18, 1921, in Cambridge, Ohio. He received a bachelor of science degree in engineering from Muskingum College in New Concord. Muskingum College is among nine colleges or universities that subsequently awarded him honorary doctoral degrees.

Glenn entered the Naval Aviation Cadet Program in March 1942. He graduated and was commissioned in the Marine Corps in 1943. After advanced training, he joined Marine Fighter Squadron 155 and spent a year flying F-4U fighters in the Marshall Islands. He flew 59 combat missions during World War II. After the war, he was a member of Marine Fighter Squadron 218 on the North China patrol and served on Guam. From June 1948 to December 1950 he served as an instructor in advanced flight training at Corpus Christi, Texas. He then attended Amphibious Warfare Training at Quantico, Va. In Korea he flew 63 missions with Marine Fighter Squadron 311. As an exchange pilot with the Air Force Glenn flew 27 missions in the F-86 Sabre. In the last nine days of fighting in Korea, Glenn shot down three MiGs in combat along the Yalu River.

Glenn attended Test Pilot School at the Naval Air Test Center, Patuxent River, Md. After graduation, he was project officer on a number of aircraft. He was assigned to the Fighter Design Branch of the Navy Bureau of Aeronautics (now Bureau of Naval Weapons) in Washington from November 1956 to April 1959. During that time he also attended the University of Maryland. In July 1957, while he was project officer of the F-8U Crusader, he set a transcontinental speed record from Los Angeles to New York -- 3 hours and 23 minutes. It was the first transcontinental flight to average supersonic speed. Glenn accumulated nearly 9,000 hours of flying time, about 3,000 of it in jets.

After his selection as a Mercury astronaut, Glenn was assigned to the NASA Space Task Group at Langley, Va., in April 1959. The Space Task Group was moved to Houston and became part of the NASA Manned Spacecraft Center (now Johnson Space Center in Houston) in 1962. Before his 4-hour, 55-minute flight in the Friendship 7 capsule, Glenn had served as backup pilot for astronauts Alan Shepard, the first American in space who flew on May 5, 1961, and to Virgil "Gus" Grissom, who followed Shepard on a suborbital flight of his own. When astronauts were assigned to provide pilot input for the design and development of spacecraft, Glenn specialized in cockpit layout and control functioning, including some of the early designs for the Apollo Project.

In 1998, Glenn flew on the STS-95 Discovery shuttle flight, a 9-day mission during which the crew supported a variety of research payloads including deployment of the Spartan solar-observing spacecraft, the Hubble Space Telescope Orbital Systems Test Platform, and Glenn's investigations on space flight and the aging process.
Eugene Cernan

March 14, 1934—Jan. 16, 2017

Cernan, a Captain in the U.S. Navy, left his mark on the history of exploration by flying three times in space, twice to the moon. He also holds the distinction of being the second American to walk in space and the last human to leave his footprints on the lunar surface.

Cernan was one of 14 astronauts selected by NASA in October 1963. He piloted the Gemini 9 mission with Commander Thomas P. Stafford on a three-day flight in June 1966. Cernan logged more than two hours outside the orbiting capsule. In May 1969, he was the lunar module pilot of Apollo 10, the first comprehensive lunar-orbital qualification and verification test of the lunar lander. The mission confirmed the performance, stability, and reliability of the Apollo command, service and lunar modules. The mission included a descent to within eight nautical miles of the moon’s surface.

Cernan concluded his historic space exploration career as commander of the last human mission to the moon in December 1972. En route to the moon, the crew captured an iconic photo of the home planet, with an entire hemisphere fully illuminated -- a "whole Earth" view showing Africa, the Arabian peninsula and the south polar ice cap. The hugely popular photo was referred to by some as the "Blue Marble," a title in use for an ongoing series of NASA Earth imagery. Cernan and crewmate Harrison H. (Jack) Schmitt completed three highly successful excursions to the nearby craters and the Taurus-Littrow mountains, making the moon their home for more than three days. As he left the lunar surface, Cernan said, "America's challenge of today has forged man's destiny of tomorrow. As we leave the moon and Taurus-Littrow, we leave as we came, and, God willing, we shall return, with peace and hope for all mankind."

"Apollo 17 built upon all of the other missions scientifically," said Cernan in 2008, recalling the mission as the agency celebrated its 50th Anniversary. "We had a lunar rover, we were able to cover more ground than most of the other missions. We stayed there a little bit longer. We went to a more challenging unique area in the mountains, to learn something about the history and the origin of the moon itself."

"What is the real meaning of seeing this picture? I've always said, I've said for a long time, I still believe it, it's going to be -- well it's almost fifty now, but fifty or a hundred years in the history of mankind before we look back and really understand the meaning of Apollo. Really understand what humankind had done when we left, when we truly left this planet, we're able to call another body in this universe our home. We did it way too early considering what we're doing now in space. It's almost as if JFK reached out into the twenty-first century where we are today, grabbed hold of a decade of time, slipped it neatly into the (nineteen) sixties and seventies (and) called it Apollo."

On July 1, 1976, Cernan retired from the Navy after 20 years and ended his NASA career. He went into private business and served as television commentator for early flights of the space shuttle.

Cernan was born in Chicago on March 14, 1934. He graduated from Proviso Township High School in Maywood, Ill., and received a bachelor of science degree in electrical engineering from Purdue University in 1956. He earned a master of science degree in aeronautical engineering from the U.S. Naval Postgraduate School in Monterey, Calif.

Both biographies from NASA.gov.
Mark Maxwell, Luna Cognita—Skycrane

David Ginsberg, Around the Moon and Back Again, 2013, 3ds max, phototshop. This image commemorates the 45th anniversary of Apollo 8 which launched on December 21, 1968. For the first time in history, humans escaped the Earth’s direct gravitational pull and entered into orbit around the Moon. Three days later, astronaut William Anders would take the famous “Earthrise” photograph as their spacecraft rounded the Moon during its fourth orbit. The rocket depicted here is rounding the Earth for another figure eight circuit from the Earth to the Moon and back.

Dan Durda, “Lunar orbit EVA” https://vimeo.com/140681196. This was an experiment inspired by GoPro footage from Terry Virts’ Space Station spacewalk (e.g., https://www.youtube.com/watch?v=-ysPOJepOw) combined with lighting reference from the Kaguya HD footage from lunar orbit. I thought it’d be fun to be able to replicate that look for a variety of different scenarios (a near-Earth asteroid mission, etc.). So I rigged up a quick test in modo for lunar orbit (simple scene, simple lighting). I grabbed some handheld camera motion with my Canon 5D3 and tracking solutions in SynthEyes and then brought that into modo, setting the camera lens to be more like a GoPro (specifically, the ‘medium’ fov setting of the HD Hero 3). I built an in-space lens flare in Video Copilot’s Optical Flares and then comped that in in After Effects. I used some tests with a real GoPro to empirically determine the correct angular size of the Earth as seen from the Moon (it turns out that a 8.5-inch paper plate viewed from 27.3 feet away is the right size) and then used a simple environment image to put the Earth in the frame where I wanted it.
Luna is a constant companion in our skies, and has always been a source of fascination, giving rise to myths, legends and stories. It is the only other world on which humans have walked (12 of them). But no one has been back there since 1972. Without it and its gravitational attraction our world would be very different, and life might not exist.

Dan Durda, Lunar Exploration. This is a crop from an image I made for the cover of a lunar landing site study report that I recently edited for the LPI-JSC Center for Lunar Science and Exploration (http://www.lpi.usra.edu/exploration/CLSE-landing-site-study/). The background image is from an Apollo mission but with some significant Photoshopping to clean it up and patch in some additional detail. I matched the lighting environment from that background image in my Modo scenes that set up the astronauts and rover and lander (with associated shadow catchers). For the astronaut in the shadow of the rock I had to create a (hidden) mesh object to shadow the lower half of his body that the image shows should be in shadow. It was all about ‘reading’ the image and trying to fit the astronauts etc. into the scene in a semi-believable way and have all the lighting match as best I could.
A note from our President

Going... going... gone! That's right, the Sun is gone! Or it soon will be, but don't worry, it'll be back in a couple minutes. The real question is, will you be somewhere you can watch when it disappears? August 21st! Idaho! Right on the center line of totality! Have I used enough exclamation points to get your attention?!? Yes, the next great IAAA Workshop is going "into the shadow" this August. We have a couple of open slots still, so if you are interested, e-mail me at ramerj@att.net. Otherwise, you will miss out of the best IAAA workshop yet! So, come on and join the fun.

We have a new IT Director, Trond Abrahamson, who has already upgraded our website with several new and wonderful features. Thanks and welcome Trond! And to go along with the new changes, everyone PLEASE LOG IN to the web site and update your contact info. The membership database is now on-line and we need everyone to make sure your contact info, social media links, and mailing addresses are correct. That's it for now, look for the Annual Report to the membership in the website Archive soon. 'Till next time....

Jon Ramer

Erika McGinnis, Phases of the Moon, graphite on paper