Alan Bean, Simon Kregar

The Gravity of Thought, Lucy West-Binnall, 36” x 24” acrylic on canvas. Inspired by Albert Einstein’s brilliant theories and scientific contributions that originated from his famous thought experiments. Early in 2016 Einstein was back in the limelight after LIGO announced the detection of gravitational waves proving his 1916 predictions. This event motivated me to approach a painting that I’ve had bubbling in my thoughts for a long time. I rendered Einstein not as the famous, iconic white haired character but as the younger man he was when he was developing the theories of relativity.

Archimedes Contemplating the Buoyancy Problem, 35.5cm x 46cm acrylics on wood, Richard Bizley. This painting was commissioned for a book “Hand In Glove Handing Love: The Journey of Gravity from the Ocean Within”. This book is highly recommended. It is Archimedes’ discovery of buoyancy that is the mother of all eureka’s in unveiling the mechanism of how gravity actually works; so his thoughts is a direct consequence to the cosmos. I painted him lying in an overflowing bath, a shaft of light is shining on him, signifying that he is on the verge of a major discovery. On the floor are some papers showing his drawings and writing (in ancient Greek Latin). The oil lamp represents that fact he’s been dwelling on the problem for a long time.

Reaching a central peak summit in a crater on Saturn’s moon, Dione, William Hartmann. I haven’t done portraits, but here is a 1981 painting where I deliberately tried to paint an astronaut in an almost tongue-in-cheek heroic pose on the summit of a central peak of a crater on Saturn’s moon, Dione. The sun is at the point in Saturn’s year when it is shining in plane of the rings, so the there is no shadow of the rings. The rings are just barely visible in the original.

Peggy Whitson Patch, Tim Gagnon. Three years ago I created a commemorative patch as a fund raising project for the International Women’s Air & Space Museum in Cleveland, Ohio. It honors the career of astronaut Peggy Whitson. https://iwasm.org
From the Editor

Greetings! I am hoping this issue finds you all well! During this pandemic, there have been very few opportunities for shows to report and one year of a missed workshop. But, we have some great stories inside and a few featured artists. We also have our heroes, to whom we can return in times of stress to inspire us.

As we look forward to 2021, we can all be hopeful of big shows happening again, galleries opening and all of us thriving once more!

Erika McGinnis

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Cover art: Armstrong, Simon Kregar.

Carl Sagan, Simon Kregar

Galileo Galilei. (born February 15, 1564, Pisa [Italy], David A. Hardy. Galileo was an Italian astronomer, physicist and engineer, sometimes described as a polymath. He has been called the “father of observational astronomy”, the “father of modern physics”, the “father of the scientific method”, and the “father of

Johannes Kepler. Born: 27 December 1571, Weil der Stadt, Germany, David A. Hardy. Johannes Kepler was a German astronomer, mathematician, and astrologer. He is a key figure in the 17th-century scientific revolution, best known for his laws of planetary motion, and his books Astronomia nova, Harmonices Mundi, and Epitome Astronomiae Copernicanae.

Endurance: The Splendors of Exploration.
Lucy West-Binnall, 36" x 24" acrylic on canvas

I’m a big fan of Sir Ernest Shackleton. I recently stumbled on a photo (taken by Frank Hurley) that shows Shackleton standing in front of a huge icy structure, a tiny human figure interfacing with a massive wall of ice. The photo struck a deep chord in me and I found my thoughts suddenly transported into the future imagining one of Shackleton’s descendants filled with the same spirit of exploration traveling to a newly discovered icy world far from their home planet. In my futuristic painting I wanted to capture a part of the past as well and so placed two crew mates with the future Shackleton to symbolize with the two crew mates that went with the original Ernest Shackleton to get help for the men stranded on Elephant Island. On the horizon I painted jagged ice to resemble the shape of a wrecked three masted ship similar to the barquentine ‘Endurance’ that Shackleton and his crew sailed to Antarctica. In the future storyline I believe this team of scientific explorers will be successful and return to their home planet with new knowledge.
Kudos for members of IAAA


And a press release from Göttingen University about a system of ‘super-earth’ planets around the red dwarf star Gliese 887. https://www.uni-goettingen.de/en/3240.html?id=5914

♦ Ron Miller had an illustration on Space.com, in an article telling how the Moon might be 85 million years younger than we thought.

♦ Aldo Spadoni is not only creating box art illustrations for Estes Rockets, he is now designing new rocket kits for them! Here is what he shared on the listserv: “Estes subcontracted my company, Aerospace Imagineering, to brainstorm new ideas that go beyond the conventional “body tube, nose cone, and fins” rocket designs. I’m working directly with Estes Vice President & General Manager Bill Stine. I recently delivered my first concept proposal and Bill’s reaction was “I hope all your submissions are this good!” Nothing like a happy customer!

When I was a kid, building and flying Estes model rockets was a powerful influence on my interest and eventual career path in aerospace engineering. Estes is one of the original STEM companies and I’m honored to be working with this great team.”

♦ Douglas Shrock had his video recreation of the opening scene to Heavy Metal shared on Heavy Metal’s website. You can view it here: https://www.heavymetal.com/news/animation/heavy-metal-movie-corvette-soft-landing-cgi/

♦ Ronald Davison had one of his illustrations posted on APOD: https://apod.nasa.gov/apod/ap200919.html

♦ Marilyn Flynn took home an Honorable Mention Award at the The Art of Planetary Science show at the University of Arizona. https://www.lpl.arizona.edu/art/2020

♦ Tim Gagnon was interviewed for television show Xploration Outer Space and was also released for Amazon Prime.

♦ Dan Durda is one step closer to spaceflight! He has been named as Dr. Alan Stern’s backup for Virgin Galactic’s suborbital SpaceShipTwo!

Welcome New Members!

♦ Douglass M. Stewart, Jr.—He is a producer, writer, and director of a film that is featured in the Spring 2020 issue of Pulsar on pages six and seven. The article, written by IAAA member Mark Pestana, is called "A Space Artist's Legacy Orbits the Earth." Doug's film, "Chesley Bonestell: A Brush with the Future" is now onboard the ISS

♦ Linda Landers—In recent years I started to incorporate some space imagery into my work. I approach my work in a poetical way and it doesn't concentrate on the technical side of space. I'd like my work to inspire people to want to be involved in space, but also to reject those early space exploration years, and to bring that into the present day. In my space work, I have incorporated images that are familiar and juxtaposed these with images of space. This gives a sense of belonging rather than estrangement, like a familiar breakfast on the moon, or the man in his spacesuit arriving back to earth from a barren asteroid, to be surrounded by Earth’s flowers, that are reflected in his visor.

♦ Frances Babb—She is inspired and energized by the beauty of her Davis Island residence for the past 5 years. Originally a dancer, Frances brings to her visual art the aesthetic sense of flow and visual presentation from years in the theater. She studied Fine Arts at the University of Utah and had parents that were both visual artists. Frances’ love of space and other worlds evolved from years of meditation and gazing at the stars. Using textures with the paints allows her to bring to life terrains from Mars.
New Members, continued from p. 4

♦ Richard Miles - I have dabbled in astronomical painting (mostly acrylic on canvas) for the better part of 40 years. I am a lifelong amateur astronomer, the former editor, and publisher of Deep Sky Journal, and a part-time college Astronomy Instructor for the last 26 years. I am also a long-time member of Astronomers Without Borders. My other interests include High Powered Rocketry and telescope making. I have built rockets that have flown to 14,000 feet and well over twenty telescopes for deep sky observing.

My astronomical paintings began as eyepiece sketches from my telescope observations. At the time I did not have the resources to get into astrophotography, so I began doing paintings to show others what I was experiencing through my observations. Most of my early paintings were small round tiles that duplicated the round field of my telescope view, but in the 1980’s I began doing larger paintings and showing them in local art shows. For the most part, I tried to make my paintings as realistic as possible, but over time I began to introduce more artistic flair to my compositions. Rapidly, my new pastime of astronomical painting became the source of funding for furthering my obsession with astronomy, and painting profits went directly into upgrading my astronomy equipment (and buying more painting supplies).

It was through painting that my love of astronomy (and space in general) has flourished and kept my spirits among the stars even on cold rainy winter nights. Since childhood, I have been collecting books and magazines that depicted artworks of space illustration and have developed a deep love and respect of astronomical art. Along with the painting came three-dimensional art including fully functional whimsical telescopes, and planetary globes based on 19th-century astronomical illustrations.

♦ Jusmena F.T.G. Fonseca - Since adolescence, I have dreamed of making art my main goal. I feel that art is a necessity as part of myself, like the air I breathe. When I was a teenager, I made works of art for the community, but only now am I available for it. The night sky has always caught my attention since childhood because I lived on the farm where electricity did not compete with the stars. My favorite style from early on is figurative. I draw, paint in oil, acrylic, dry pastel chalk. I made artworks of the landscapes, portraits, human figure, still life. Recently I started to work with watercolor and clay. I am fascinated by the works of Michelangelo, William Bouguereau since the age of 15, touched by the life and work of Van Gogh and Space Art of Chesley Bonastell and Robert McCall. In 1992 and 2001, my family and I were at the Air and Space Museum-WDC, and we were amazed by the McCall panel, seeing the beauty of Space Art. Some IAAA artists should never be forgotten.

♦ Daniel Dahan — Daniel moved around a lot throughout his life but was always fascinated by the stars. When he was 7, he was awe-inspired by his viewing of the Hale Bopp Comet in Palo Alto. When he was 17, he was enamored by the beauty of the Perseids Meteor Shower while attending the 2007 Summer Science Program near Ojai, California. When he was 27, he was completely mesmerized by the Great American Solar Eclipse. Astronomy has always played an important role in Daniel's life, culminating in his experience at 2019 Spacefest, where he learned his passions for art and astronomy could be merged into one. Daniel has exhibited space-related art at various conventions and gallery spaces and continues to happily make astronomy art today.

♦ Kelly Smith, Ph.D. — I am pretty unusual, even for an academic philosopher. For one thing, I cling stubbornly to the idea of the Renaissance man — so stubbornly, in fact, that I went through four undergraduate majors (Astronomy, Chemistry, History, and Biology) before completing my B.A. in Philosophy at Georgia State University. Then I went on to Duke University where I still couldn’t make my mind up about what I wanted to study, so I eventually got an M.S. in Evolutionary Biology as well as a Ph.D. in Philosophy. I am currently an Associate professor in both Philosophy and Biological Sciences at Clemson University in South Carolina. I just completed five years on the faculty of the University of South Carolina School of Medicine in Greenville, where I oversaw their ethics and professionalism curriculum.
So how did I get into this lark? Freelance illustrator, writer, father, prawn-hater and – lately – computer animator. I had no idea when I was a child that this is where I’d end up. But I’m very glad I did. Let me tell you about it. Maybe not the bit about prawns.

When I was young, I had a natural talent for art. I was always drawing – especially dinosaurs. I used to get books from the library and drool at the pictures in awe – and copy them, until I could easily do them without reference. I was drawn initially to paleoart because, well, who isn’t impressed by dinosaurs? Especially kids. My teacher at school thought my art was good enough – he used to pay me to do posters advertising his band’s gigs! – to do my O-level a year early. The very next year, he pushed me to do my A-level, so this was two years early. I passed, but in hindsight an extra year would have given me a better grade. Aside from my time at school, I have had less training in art than Kojak has hair.

I left school and went to college to study maths and physics at A-level. (Note to US readers – a college in the UK is not a university. It’s where you take your secondary education further, before university). I had by this time kind of got a bit fed up with art. However, that interest in art had got me into astronomy and, in turn, maths and physics. I loved all of those astronomical paintings and ‘artist’s impressions’ that spilled from the pages of astronomy books – artwork by people such as Dave Hardy, Bill Hartmann, Michael Carroll and many others, whom I now count among my friends and colleagues. After my A-levels I had no intention of taking my studies further. I come from a working-class background. My parents still live in the London Council flat where they raised me. They have no notion of degrees, higher education and cool music. They think Metallica is a type of element. So they certainly didn’t encourage me down the university route. No, it was a friend I met at college who asked me what I was going to do at university.

I then started thinking, well, what am I going to do after my A-levels? I was quite shy back then, and the idea of going into the workplace scared the pants off me. So I started thinking about university for the first time. I decided against art, and computing, and suddenly realised, ‘What about astronomy?’ I was utterly enthralled by black holes and relativity and wanted to know more – like, how many cornflakes can you cram into a neutron star? So after I finished my A-levels I found myself studying for a Bachelor’s degree in astronomy at University College London (UCL). I was backed up by a grant from the government and worked part-time in Woolworths for extra cash. Otherwise we could never have afforded it.

One day after a lecture on high-energy astrophysics in my third and final year (1989), the lecturer announced he was looking for PhD candidates at the Mullard Space Science Laboratory. It’s an old manor house converted into a research centre, with clean rooms and labs, in the middle of nowhere. Even Hawaii is less isolated. Again, I had no idea what to do after my degree so I thought, ok, let’s do a PhD. Again, I got a grant – these days they are a thing of the past. Not only was education free back then, they paid you to study if you were not well-off!

The first two years were hell. I didn’t get on with my supervisor, and I despised the person with whom I was working most closely. I went observing with him in South Africa and was mugged on day one and to say he offered little sympathy is an understatement worse than “condom machines are rare in the Vatican”. My work suffered and I considered dropping out. But in my third year, I got a chance to go observing, twice, to La Palma, in the Canary Islands, with postdocs whom I respected. The data I got from those trips, and the encouragement from those two young postdocs, put me back on track, and I finished my PhD on magnetic cataclysmic binary stars in 1993 after four years. I was 25.
Mark Garlick—A Potted History (continued from p. 6)

My external thesis examiner, Andy Norton, who worked in the same field as me, advertised a postdoctoral job at the Open University (OU), where he still works. He had me in mind, and I applied. But I also applied for a post at Sussex University, in Brighton, in theoretical astrophysics. They offered me the post. Norton encouraged me to take it, as he could not guarantee I’d get offered the job at OU. So in October 1993, I packed up what little belongings I had – I knife and fork, I think, and a bar of Cadbury’s Dairy Milk – and headed to Brighton to start my new post as an actual qualified astronomer.

I did not enjoy it. It was theoretical, not the observational work I’d done for my PhD. I was a one-man department and felt quite isolated. And after three years, my contract ran out and I decided to give up academia and became unemployed.

That was when a friend of mine became editor of a new astronomy magazine called Modern Astronomer. I started writing him articles. Penning my thesis had got me interested in writing. Throughout all of the above my interest in art had also sparked again. I had started painting space art for the first time, in gouache, acrylics and oil pastels. I joined the IAAA in 1995 after Dave Hardy – how grateful I was for his reply to my email! - encouraged me to do so. Now I was able to back up my articles with artwork. And after a year of claiming unemployment benefit, I had enough contacts that I could go it alone. I officially became a freelance writer and illustrator in 1997.

In 1998, I discovered digital media and my artwork output exploded. I gave up traditional art and concentrated on 2D work with Photoshop and 3D work with 3DS Max. In 2000 I pitched my first book idea to Cambridge University Press. It was called The Story of the Solar System. I conceived it, wrote it, and illustrated it, and it was published in March 2002. (Note: new version coming soon.)

That year my partner and I moved to Thailand after she got offered a job teaching French. In our stifling hot house without air conditioning, and often only in my underwear, I continued my exploration of digital art and wrote two more books. We returned to the UK, again in Brighton, in 2005 to raise our daughter. And since then my career has gone from strength to strength. I started experimenting with computer animation around a decade ago, and now enjoy it as another source of income. I have written six books, most of which I illustrated, and worked as illustrator on dozens more. Nowadays I am proficient in 3DS Max, Photoshop, After Effects and Blender. I never liked vector programs like Illustrator. Most of my income is from licencing existing work, animations for documentaries, artwork commissions for press releases and books, or begging.

Recently I finished working with a Spanish company, who produced a series of 60 (yes, sixty) books on astronomy, and I provided many of the illustrations. They were great to work with. I’d do a picture, send it to them, and they’d virtually always say, ‘Great job, that’s a wrap’. Very easy to please – unlike another of my most recent clients, about whom I shared a recent post of Facebook. I was working for the new planetarium due to open soon in Shanghai. They commissioned me to do about two dozen space illustrations for public display at A1 size. Some of them are reproduced here. The trouble was two-fold: their execrable level of English, and their extreme pickiness. I respect them for being able to speak English, of course – my Shanghainese is non-existent – but it was so frustrating to be briefed in English that was so poor I barely understood what they wanted most of them time. Multiple emails crossed the ether and I’d finally get it. But then when I submitted the work, they started to show unbelievable levels of difficulty. Every artist, of course, benefits from good art direction. Much of my work has been improved because of great guidance. But they were never pleased. Some of the work required four or even five rounds of changes, back and fourth. Way more than I am used to. And often, after a wait of a month they’d comment on my latest efforts – and I’d learn that they’d actually commented on a much earlier draft, not the recent one, and so more emails surfed the ether. I am still waiting for them to come back to me with another round of ‘comments’, although I did tell them that I am prepared to do no more changes for free. Cue Chandler Bing: “Could they be any more annoying?”

I’m very proud of what I do and where I’ve come. I’ve worked at home for nearly 25 years and it’s just brilliant. I love the IAAA and its members, many of whom I have not met, and the workshops are fantastic. And I’ve branched out. Space art is what I am asked to do most often, but I also have a ton of paleo art, science fiction, surrealism, wildlife and other stuff. And sometimes … I wonder how my life would have turned out had I not had access to all that free education. I’d probably still hate prawns though.

Mark A. Garlick

3001 Earth Odyssey, 2003
In Kara Szathmary’s words: “Here is the story regarding Roy Scarfo, who was in his prime as a space artist in the 1950s and 1960s. His son asked me to get as many space artists who may have been influenced by Scarfo’s art. I found a few founding members, notably Don Davis and Ron Miller. They are being consulted by a filmmaker who is writing a documentary on Roy Scarfo’s illustrated space art book called "Beyond Tomorrow". To my surprise, my dear wife, Judy Broome-Riviere, wrote a short bit about Roy’s memory from the mid-1960s while living in Melbourne, FL, close to Cape Canaveral.”

Remembering Roy Scarfo’s Space Art, while growing up in Post WWII Florida
Roy Scarfo, 1926—2014
By Judith Broome-Riviere

With an asteroid circling within a closed orbit to the Earth and the Moon, Beyond Tomorrow can still be a valuable resource for space knowledge. With the space art originated by Roy G. Scarfo, it is a magnificent talent for me to see as I have a personal awareness of him dating back to watching black and white television as a young gal in the early 1950s and 1960s.

Beyond Tomorrow, by Dandridge M. Cole is also a sensory trip back in time. The single-spaced pages evoke “a whiff of history” within the olfactory glands. The pages are filled with a vast collection of Scarfo’s art, including the black and white illustrations from decades passed.

I’ve had the unique privilege of being raised on the southern tip of Cape Canaveral, FL. Dr. Werner Von Braun gave my graduation address to a class of 450 students. Having the last name Broome, I was seated right in front of his lectern, and I was voted Most Talented of the Class of 1964. The spouses of the NASA astronauts and engineers were our classroom instructors. There were seven foreign languages taught: Spanish, French, German, Latin, Chinese, Japanese, and Sanskrit. Each course was a year-long, and some were multi-year studies offered for students who desired more in-depth scholarity.

Many of my classmates became astronomers, astronauts, and NASA engineers. The most reliable predictions of space events came from those involved in scientific theory. We all marveled at a total eclipse of the Sun, which happened on July 20, 1963. In 2017, the IAAA convened to watch an identical event in August that had been on schedule for hundreds of years.
Roy Scarfo (continued from p. 8)

Attending that Great American Eclipse with the members of the IAAA was memorable to me for several reasons. The flight out to the location of the workshop was intriguing to me as I gazed out of the plane window while circling Mt. McKinley. Looking down on its snow-covered peak was a lasting scene etched forever in my memories.

Being on location to watch the eclipse was a treat for me to be with Kara’s friends, many of whom became personal friends to me. Kara painted scenes of the IAAA gazing upwards to the eclipse through their high powered binoculars. I was seated at a picnic table with Jon Ramer’s son and his wife. All of a sudden, the surface of that picnic table became covered with identical white lighted crescent shapes all going from left to right and covering the surface of the table in a pattern that resembled a lighted tablecloth. Kara later explained the phenomenon as light refraction, although Jon’s family and I were the only ones who saw this.

Roy Scarfo’s legacy lives on; it is still current; scientists and the IAAA are continually looking Beyond Tomorrow. In chapter 2 of his book, Roy asks why space flight is so important not only to the United States, but to the human race. Other developed countries are in sync with the USA to create space flights. SpaceX is developing trips now to send modern “explorers” into space and to open the flights to any interested consumers. The new frontier is to increase space exploration to include educational investments and on “other worthy causes.” (Chap. 2. P31) Another thing NASA is doing is to look for … “significant” discoveries which have (already) been applied on a small scale, a large extent, in an unrealizable way, or an impractically costly manner. (Chap. 2. P39)

In later chapters of Scarfo’s illustrated book, he also provides designs for life support tool jackets. The illustration in Chapter 6 portrays astronauts changing into their tool jackets: “All necessary, especially the jacket also …” (Chap. 6. P97) Finally, one of his most ambitious proposals is a design for a rocket vehicle “that is larger than the Queen Mary, carrying ten thousand passengers…” (chap. 6. P104)

Roy’s marvelous reflections include exploring science and religion in space. John Glenn was a true embodiment in the merging of such huge conglomerates in space travel as are modern thoughts in our current IAAA organization.

Our first Zoom!

IAAA Zoom Meeting-Workshop Demo, Saturday June 13, 2020

We had 33 participants from around the world including members from Canada, Germany, New Zealand, Norway, and the UK. It was truly an international hangout and it was so wonderful to interact with our friends around the planet!

We had great presentations from our IAAA Board members and officers. Our colleague and guest speaker Dr. Dan Durda provided a fascinating presentation describing asteroid impacts and the expected distribution of particle sizes resulting from such collisions.

Secondly, In October this year, I flew to Vienna to have Chief conductor of the Vienna Radio Orchestra, Marin Alsop, read through THE MOONS SYMPHONY (no choir) to check my orchestration was all that had I intended. In three hours, she conducted her orchestra through the 45 minute Symphony and the results were very pleasing. This now awaits its professional recording when it is safe to have large gatherings of over 100 musicians together.

Thirdly, THE MOONS SYMPHONY® was presented at the EPSC | DPC in Geneva in 2019 at the invitation of Dr Linda Spilker who was chair that year. https://meetingorganizer.copernicus.org/EPSC-DPS2019/orals/34132

And finally, I have been invited as a guest to talk on the Planetary Radio show with Mat Kaplan about my symphony. The release date of that interview will be on January 13th in 2021 joined in conversation with Nicole Stott (IAAA) and Dr Linda Spilker (NASA/JPL)

I have some other major news, but due to COVID I cannot announce those dates yet, but all to say that coming down the pipeline of THE MOONS SYMPHONY progress will be the unveiling of a special Launch patch I commissioned Tim Gagnon to create for me and a professional recording and video virtual world premiere with the London Symphony Orchestra with Marin Alsop conducting.
Fallen Stars

Alfred M. Worden

Former astronaut Alfred M. Worden, command module pilot on the Apollo 15 lunar landing, passed away March 18, 2020, in Texas.

As command module pilot, Worden stayed in orbit while commander David Scott and lunar module pilot James B. Irwin explored the Moon’s Hadley Rille and Appennine Mountains. Apollo 15’s command module, dubbed Endeavour, was the first to have its own module of scientific instruments. During the flight back from the Moon, Worden retrieved film from cameras in the module during a spacewalk. Altogether, Worden logged more than 295 hours in space.

“The thing that was most interesting to me was taking photographs of very faint objects with a special camera that I had on board,” Worden told Smithsonian Magazine in 2011. “These objects reflect sunlight, but it’s very, very weak and you can’t see it from Earth. There are several places between the Earth and the moon that are stable equilibrium points. And if that’s the case, there has to be a dust cloud there. I got pictures of that.”

Like other command module pilots, Worden stayed as busy as his colleagues on the surface. But he also took some time to enjoy the view. “Every time I came around the moon I went to a window and watched the Earth rise and that was pretty unique.”

After retirement from active duty in 1975, Worden became President of Maris Worden Aerospace, Inc., and was Vice-President of BF Goodrich Aerospace Brecksville, Ohio, in addition to other positions within the aerospace and aviation industries. Worden wrote several books: a collection of poetry, “Hello Earth: Greetings from Endeavour” in 1974; a children’s book, “I Want to Know About a Flight to the Moon”, also in 1974; and a memoir, “Falling to Earth,” in 2011. His interest in educating children about space led to an appearance on Mr. Rogers’ Neighborhood.

Worden was born in Jackson, Michigan, on February 7, 1932. He was appointed to the United States Military Academy at West Point, graduating in 1955. He earned master of science degrees in astronautical/aeronautical engineering and instrumentation engineering from the University of Michigan in 1963. In 1971, the University of Michigan awarded him an honorary doctorate of science in astronautical engineering. Before becoming an astronaut, Worden was an instructor at the Aerospace Research Pilots School. He had also served as a pilot and armament officer from March 1957 to May 1961 with the 95th Fighter Interceptor Squadron at Andrews Air Force Base, Maryland.

Worden was one of 19 astronauts selected by NASA in April 1966. He served as a member of the astronaut support crew for Apollo 9 and as backup command module pilot for Apollo 12. After leaving the astronaut corps, Worden moved to NASA’s Ames Research Center in Mountain View, California. He was the Senior Aerospace Scientist there from 1972-73, and then chief of the Systems Study Division until 1975.

-Statement from NASA, March 19, 2020
A heartwarming story from Richard Bizley . . .

I hope you’ll enjoy reading this as I wanted to share with you something positive...

One day I had in the window of my gallery a print of some alien life forms, a painting of astronomical scene, plus a prehistoric scene image. A lady came in, she was star-struck (no pun intended), she looked around for ages and asked if I was the artist. She said she can’t believe that she just happened to walk past the gallery. She explained that her 12 year old daughter is severely autistic and her daughter’s specialty is speculative life forms on other worlds, and also being interested in astronomy, science and prehistory. There was sadness as she wasn’t sure if her daughter would cope with visiting Lyme Regis where I live. Anyway she bought loads of prints.

A few days later, I had an email saying they would be visiting us soon. They arrived and bless her, the daughter arrived, very nervy and highly strung. The mother stood in the background and encouraged her to talk to me. I was somewhat nervous, being deaf, and she spoke very rapidly. She was wonderful though... she knew I had a disability and she did her best to make eye contact with me while we talked (this is a challenge for autistic people). The change was dramatic, she calmed down then opened up and was transfixed with me talking and explaining about each artwork she was interested in. The mother, I could see was over the moon. When they were leaving, the mother held her hand and went outside back into the bewildering world, the daughter turned round and through the window waved at me. I had a lump in my throat.

I then had an email from the mother saying the daughter had never talked to anyone like that before, and waving at another person she doesn’t normally do.

A few weeks ago, they came back again, this time they couldn’t stay in the gallery long as they were wearing masks and I li- pread... So, I locked up and we sat by the river and I had another nice chat with the daughter. She is incredible, she can conjure up habitable planets based on her profound scientific knowledge. I tested her by asking about cloud patterns and whether she’d allowed for Coriolis forces in one of her imaginary worlds. She said yes and launched into an explanation.

I just hope in my heart that through my art, I have helped this lovely, young and extremely clever girl. This sort of thing is a hammer blow reminder that it is not all about making money, and getting well-known. It is reaching out like tendrils to other people, lighting little sparks in their minds the wonders of space and science through art.

-Richard
Inception: At the Threshold of the Limits of Perception, Kara Szathmary. Albert Einstein is thoughtfully captured contemplating the primordial atom that sparked the Big Bang theory. There is an inquisitive expression, reaction, and an intuitive sense of questioning as he watches it explode in his left hand. Szathmary depicts him as a timeless rock star superimposed in front of an explosive turmoil spewing up behind him on the left side of the composition. The cosmic phenomenon so enthralls Einstein lifting in front of him that he doesn’t seem to notice the turbulence of inflation of spacetime being led to a web-like expansion of deep space of galaxies.


Konstantin Tsiolkovsky (1857-1935). David A. Hardy. For his ideas, careful research, and great vision, Tsiolkovsky has been called the Father of Modern Astronautics. He was a Russian and Soviet rocket scientist and pioneer of the astronautical theory. ‘Earth is the cradle of humanity but one cannot live in the cradle forever.’

Craig Venter, Robin Hart. Adobe illustrator. I did this for an illustration class a number of years ago. It is a surrealistic rendering of the scientist who first sequenced the human DNA molecule. Because he sequenced his own DNA I thought I would have the double helix coming out of his head Magritte style.
Chesley Bonestell, Rob Pleak. Photoshop, Corel Paint, Wacom Cintiq Tablet. My biggest inspiration was, of course, Chesley Bonestell. When I saw some of his work when I was 4, I was hooked.

Dr. Wernher von Braun, David A. Hardy

Apollo 12—It's in the Bag!, Ken Davy

Glenn, Simon Kregar

Hawking, Simon Kregar

Pluto, Michael Carroll

Astronauts, Jackie Burns
Henrietta Swan Leavitt, Simon Kregar

Somebody’s Upside Down, Mark Karvon. Inspired by Michael Collins. This is the view he would have had of Eagle as it was getting ready to descend to the lunar surface.

Reach for New Innovation Ideas, Michelle Rouch. Graphite 40” x 20”
Richard Buckminster “Bucky” Fuller, an American Architect, coined the term “Spaceship Earth.” One of popular architectural designs widely known is the geodesic dome. The artist, Michelle Rouch considers Tucson’s Biosphere 2 one of her 7 wonders of the engineering world.

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Message From the President

Greetings fellow Artists,

Half a year has passed since I took over as President of the Tribe and what a crazy year it’s been. The COVID pandemic has been hard on all of us, with most of our usual events and activities postponed indefinitely. Thankfully, we’ve been able to maintain some level of interaction via email, social media, using Zoom video-conferencing, and through Pulsar of course. But I can’t wait to see all my IAAA friends again, face-to-face!

There are glimmers of hope as we leave this turbulent year behind us and look to 2021 and beyond. The IAAA is still going strong and I’m cautiously optimistic that the new year will bring us new opportunities. The Museum of the United States Air Force is still planning to host a major IAAA Space Art exhibition in 2021 as circumstances permit. Other opportunities are in development. We’re looking forward to the forthcoming publication of our book, The Beauty of Space Art: An Illustrated Journey Through the Cosmos. I’m sure this will lift everyone’s spirits! The book should be available very soon and our membership will be offered a discount to purchase it. Stay tuned for more details.

Look for the president’s annual report to the membership sometime in January. In the meantime, enjoy this great issue of Pulsar featuring our space heroes!

Aldo

Heroes, Doug Forrest. Montage of different portraits I have drawn in the past.

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