THE BEAUTY OF SPACE

SPACE ART FROM
THE INTERNATIONAL ASSOCIATION
OF ASTRONOMICAL ARTISTS

FOREWORD BY ALAN BEAN
EDITED BY JON RAMER
Herschel Crater (front cover) by Ron Miller, FIAAA.
A view of Saturn from above Herschel Crater on Mimas.

Meltdown (back cover) by Mark Garlick, FIAAA.
A planet too close to a star would melt....

For Beth and Sean, out exploring the cosmos....

Quasar (right) by Don Dixon, FIAAA
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## Table of Contents:

- **Introduction** by Jon Ramer .............................................. 7
- **Foreword** by Alan Bean, Apollo 12 Astronaut ......................... 9
- **Chapter 1: Astronomical Art History: From Renaissance to The Space Age** by Don Davis .... 13
  - by Don Davis ..................................................................... 13
- **Chapter 2: IAAA History: From Planetfest ’81 to the Wilds of the World**
  by Pat Rawlings, BE Johnson and Kara Szathmáry .................. 31
- **Chapter 3: Planetary Analogues: Our Solar System on Earth** by Steven Hobbs ............. 45
- **Chapter 4: Deep Space: Stars, Galaxies, and the Distant Cosmos**
  by Matt Colborn, Mark A. Garlick, Richard Bizley and Dana Baird ........................................ 57
- **Chapter 5: Rocks and Balls: Classical/Naturalistic Paintings, Techniques and Masterpieces of the Realists** by David A. Hardy and Joe Tucciarone .............................................................. 71
- **Chapter 6: Swirly Art: Techniques and Masterpieces of the Experimental and Abstract**
  by Kara Szathmáry, Judy Broome-Riviere, and Bettina Forget. .... 83
- **Chapter 7: Hardware Art: Our Contraptions and How We Get There** by Aldo Spadoni .......... 97
- **Chapter 8: Three Dimensions: Sculpting the Astronomical** by BE Johnson ...................... 113
- **Chapter 9: Going Digital** by Paul S. Hoffman, Lynette Cook, Kees Veenenbos, and Don Davis 127
- **Chapter 10: Patrons of the (Space) Arts** by Jon Ramer ...................... 143
- **Chapter 11: Tomorrow Today** by Jon Ramer .......................... 157
- **Summary** by Kara Szathmáry ............................................ 171
- **Notes / Bibliography** ......................................................... 173

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**Ringnight** by John Kaufmann. In the shadow of Saturn’s ring, day can become night.
by Jon Ramer, Vice President, IAAA

Art is as old as humanity itself. For as long as humans have existed, we have created pictures of the world around us. Walls of caves in the south of France are covered in visions of animals that have been dated to 17,000 years old. Similar rock drawings in Australia have been dated to nearly 40,000 years ago. Long before we wrote, we painted.

Those artists from millennia ago painted with crude implements, mere sticks and tufts of animal fur. The pigments they used were made from natural resources, colored mud, animal fat, ash, and plant extracts. Yet if one of them were miraculously transported to today, they would have no problem painting with the tools we now use. The “art” of making “art” hasn’t changed much. The subject of what we paint, though, has changed considerably.

Humans have moved from painting the animals on the plains around them to painting the very heavens themselves. Our mastery of our world has advanced to where we have begun sending machines to explore other worlds in our solar system, machines that return digital images every bit as amazing to us as a tube of paint would have been to that ancient cave artist. But as incredible as these achievements are, human imagination has gone even farther.

“Space” or “Astronomical” Art is the embodiment of that leap in human imagination. It is a genre of artistic expression that strives to show the wonders of the Universe, despite the artist having never been to the place they are depicting. Inspiring, uplifting, even mesmerizing, space art helps to fulfill a deep-set need in the human spirit to go and see. We are a species of explorers; it is in our very nature to wonder about what is over the next hill, across the river, beyond that mountain, on the next planet. And when we can’t go there ourselves, we send the imagination of an artist.

The International Association of Astronomical Artists (IAAA) is a group of artists who specialize in bringing those distant dreams back for all to marvel at. Founded in 1982, the IAAA today has nearly 150 members across the world, all working to expand the boundaries of the human mind. Chances are that you’ve seen the work of an IAAA member without even knowing it. From book and magazine covers to movie effects to artistic images illustrating the newest astronomical discoveries, the IAAA is truly the vanguard of artistic space exploration.

This book commemorates all the artists who make dreams of the beauty of space into visions of reality. We hope that you find the images on these pages as inspiring to see as they were to make.
foreword

by Alan Bean, Apollo 12 Astronaut

Most of the art that we see around us, and hangs in the world’s great museums, are what we would see if we lived at the time of the artist on Earth. A record from the distant past to the present, we can see what animals and humans looked like, and what they were doing centuries ago, decades before, and yesterday.

For example, all of us seem to enjoy seeing what life was like in France as painted by Impressionist artists the likes of Claude Monet, August Renoir, Edgar Degas, Alfred Sisley and others at turn of the 20th century. I know I love that period of time.

Others are entertained by seeing what it was like at the time of the opening of the American West, painted so brilliantly by Fredrick Remington and Charles Russell, among others. I know I do.

The artists’ work you will see in this amazing and tradition breaking book are all about our future. What our descendants will see, as the centuries unfold and they travel the vast distances to distant worlds, we can view right now through the eyes and imagination of the Artist.

These paintings are not just a simple flight of fancy, but are based on thorough scientific research and study. The artists visualize the world that probably exists, not that might exist. These are worlds our children’s, children’s, children’s, children will explore someday in future generations.

I am one of twelve lucky human beings to have ever experienced the breathtaking awe of stepping onto the shores of an alien world. That world was hauntingly familiar because of art that I had seen over the years created by some of the great artists in this magnificent book. I am forever in their debt for making me feel more comfortable in a dangerous and distant world.

The twelve of us that moved about on the Moon’s surreal terrain acknowledge a spiritual beauty in the mysterious rocks and craters. We had been sent to this cratered rocky and dusty world and left our footprints where there is no wind, nor rain to erase them. They will remain as they were when we first made them for the next thirty million Earth years.

I went as an Astronaut, but with the heart of an explorer and the eyes of an artist. The most incredible adventure of our generation left us somewhat transformed when we returned home.

I now paint pictures of what we humans did, and will do, when we first encounter worlds other than our own. When we go to the distant worlds depicted in this wondrous book, these same

Reaching For The Stars by Alan Bean, FIAAA.
Photograph of the large mural painted by Alan in the Astronaut Hall of Fame.
activities will be repeated because they are the best way discovered so far that allow us to understand how these new worlds were formed, and if they can be of value to the people on Earth.

I include artifacts from my spacesuit, still retaining magical sprinklings of dust from the Ocean of Storms, and from the spaceship that carried me there. I have embedded these sacred objects in my paintings. It is my dream that these first paintings of another world created by an artist who has actually been there, will document experiences that can be forever shared by humanity.

I hope this book, The Beauty of Space, will enlighten the general public of the islands beyond our atmosphere and gravity, and will create an intense desire to go there.

As centuries unfold, we will surely visit other planetary neighbors around our beautiful star, the Sun. We will then travel out to near-by stars, a few of the hundreds of billions of worlds within our Milky Way galaxy.

We artists bring dreams to life; and we’ve only begun to dream.

Alan Bean, Fellow, IAAA
September, 2010

That’s How it Felt to Walk on the Moon

by Alan Bean, FIAAA.

Alan’s favorite self portrait and NASA source photo, AS12-49-7281.
Unlike many other genres, astronomical artists number only in the hundreds and are scattered across the globe. Until the early 1980s, informal professional relationships had existed based upon geography or common projects such as Carl Sagan’s landmark television series Cosmos. The popular awareness of space, strongly enhanced by the Apollo lunar landings, was further heightened by the images of Mars returned by the Viking program. Seeing the surfaces of other worlds whetted the appetite of the public and artist alike for views of the previously unviewable. This new generation of baby-boomer artists, building upon the seminal works of Lucien Rudaux, Chesley Bonestell, Ludek Pesek, and Robert McCall began producing hypothetical images of extraterrestrial environments. Some were immersive, intended to place the viewer in the scene as accurately as possible. Others were abstract, emotionally driven pieces informed by an in-depth awareness of the subject matter.

In 1981 a group of dedicated yet independent astronomical artists met at a comprehensive space art show sponsored by The Planetary Society for the Society’s gathering “Planetfest,” held during the live transmission of close-up photos of Saturn by Voyager II. Artists exhibited a mixture of art styles, from science fiction to representational realism. The seeds of the IAAA were thus germinated.

The artists all got along famously, and for the first time were able to "talk shop" with others who understood their art. It was here that a trial balloon was first floated with the idea for a space art workshop. A year later, Dr. William K. (Bill) Hartmann organized the first space art workshop held on the island of Hawaii in 1982. This group had a common sympathetic appreciation for the accuracy of science in their art work. The volcanic landscapes of the Big Island provided perfect analogues for the planetary geologies found on the Moon, Mars, and Jupiter’s volcanic moon Io. By experiencing the harsh landscape together, the artists were able to create more believable landscapes of those distant Jovian satellites as well as the newly discovered Saturnian worlds.

Towards the end of 1983, artist Michael Carroll organized a second, larger workshop held in Death Valley, California, which was attended by 19
artists. The large body of classic works generated from these first two workshops toured the United States and Canada for the next three years as the “Other Worlds” show, appearing in many natural science museums across North America. At the Death Valley workshop, a discussion began about forming a space art guild, electing officers and a steering committee, and launching a newsletter in order to formalize and perpetuate the group. With a mandate voiced for such an organization, Michael Carroll, Don Dixon, Joel Hagen, Kim Poor, and Rick Sternbach set the wheels into motion for the creation of the International Association of Astronomical Artists.

Subsequent workshops held in the American southwest and then Hawaii kept the dialogue going with a third wave of new artists joining the ranks of a growing IAAA. Proposals were made to conduct workshops at Johnson Space Center in Houston in 1987 and Iceland in 1988.

With the workshop successes and the rapidly growing membership, the IAAA was formally registered in 1986. The steering committee moved to elect its first president - Kim Poor.

NASA received the newly created IAAA at Johnson Space Center for the fifth workshop in the summer of 1987 with the theme: Space Hardware.

**Uranus and Miranda** by Joel Hagen, FIAAA

**Pistachio Crater** by Kim Poor, FIAAA.

Pistachio colored ice lines the walls of a crater on a hypothetical moon.
This workshop was also different in that the PBS network filmed the artists as they toured the Center. PBS then requested that a small group return to Death Valley in order to cover the natural planetary analogue type of workshops that are more the norm for our locations.

In August of 1987, seven space artists, Michael Carroll, Don Davis, Pamela Lee, Jon Lomberg, Robert McCall, Ron Miller and Kim Poor, were invited to attend the Space Future Forum in Moscow at the USSR Academy of Sciences along with a contingent of astronauts and scientists. The artists were asked to bring some of their artwork to participate in a joint exhibition with their Soviet counterparts in celebration of the 30th anniversary of Sputnik.

During their stay, The Planetary Society initiated the concept of an artistic collaboration between American and Soviet astronomical artists by inviting the Cosmic Group of the Soviet Union of Artists to attend an IAAA workshop in Iceland in the summer of 1988. Such a joint venture in the exotic landscape of fire and ice, the volcanism and the glacial ice fields of Iceland, would certainly appeal to all astronomical artists rendering the planets and the moons of the solar system.

Iceland, the eighth IAAA workshop, was billed as the first International Space Art Workshop with 30 artists gathered from the USA, the USSR, Canada, and Great Britain. There, a historic agreement was struck between The Planetary Society, the IAAA, and the Soviet Cosmic Group to launch a joint five-year project. The groups would have reciprocal workshops in Senezh-Moscow in Spring 1989, Utah in Summer 1989, and Gurzuf-Crimea

*Together to Mars* by Pam Lee, FIAAA. Russian cosmonauts and American astronauts work together to explore Mars.
in Fall 1990. These workshops would also be associated with exhibitions. Beginning in Moscow during the USSR Mars Phobos Mission, the show of art created at the workshops traveled to Pasadena, CA during Planetfest and the Voyager 2 encounter with Neptune, followed by display at San Diego’s Reuben H. Fleet Space Theater, before arriving for a year sojourn at the Smithsonian Air and Space Museum in 1991. The intent of the project was to demonstrate the common ideal of international collaboration.

**PASADENA HIGH JINX**

The 1989 space art workshop marked a high point in international cooperation. Thanks to a generous grant from The Planetary Society and the OURS Foundation, the IAAA was able to fly a delegation of Soviet space artists to Pasadena in time to witness the historic Voyager 2 flyby of the planet Neptune.

During the three day encounter, IAAA artists stayed in student dorms on the campus of the California Institute of Technology. One evening, two American artists were strolling when they spotted the head of the Soviet delegation, the respected Andre Sokolov, sitting in his room with another member of the Soviet group. The artists heard a rustling in the bushes, and spotted a bit of American wildlife: an opossum.

Seizing the opportunity and grabbing the door mat next to Sokolov’s room, the artists guided the disoriented little creature through the front door of the apartment, then closed the door. Over the next several minutes, they heard much shouting, slamming of doors and moving of furniture. They didn’t stay to see the final result, but the story made it into the Canadian Broadcasting News of the Voyager encounter!

The next morning, one of the Soviet delegates asked, “What is this creature with face of death?” It was, the artist replied, part of the American wildlife experience.
cooperation and open dialogue for the better understanding of ourselves.

In Iceland, Kara Szathmáry, a Canadian artist, was elected as the first international President of the IAAA along with a newly created Board of Trustees. Their mandate was to incorporate the IAAA as a public benefit, educational, non-profit corporation and to see to it that the contracts with The Planetary Society and the Soviet Cosmic Group were established on a legal foundation.

By the end of 1988 the IAAA was incorporated and the five-year project, titled “Dialogues: Communication through the Art of the Cosmos,” was secured, positioning astronomical art as an international genre. The attraction of international artists to the IAAA helped bloom vital links to parallel organizations of related art shows in Europe with the OURS Foundation and contacts with the MIR Space Station, Case for Mars and NASA affiliates.

To better gauge the aspirations of all astronomical artists around the globe, the IAAA produced a Manifesto and engaged in a period of reflection through a dialogue with the membership to define astronomical art and to establish the direction our collective interest in space art in general at the threshold of the 21st century. The central and main tenant of the genre is to produce art works having a solid basis in scientific fact.
or theory that would depict realistic landscapes of other worlds, planets, space scenes and the human exploration of space settings in whatever style or medium the artist chooses, yet distinct from fantasy, scientific illustration and science fiction. In short, an art form that is inspired by the astronomical sciences and the exploration of space and that renders the aesthetic beauty of the heavens.

Meanwhile, Beth Avary, Director of Exhibitions, continued to navigate the “Art of the Cosmos” exhibition throughout the USA with numerous stops at space science centers such as the Hayden Planetarium, Discovery Museum in Bridgeport Connecticut, Alabama Rocket and Space Center, and the Maryland Science Center among others.

In 1992, Dennis Davidson, then artist for the Hayden Planetarium in New York City, was elected President. IAAA workshops continued to flourish at sites rich in Earth analogues of the moons and planets of the solar system.

**Mercury Corona** by Don Dixon, FIAAA

**Epsilon Eridani** by Lyn Perkins

The appeal of digitally created art was especially strong for a group of scientifically oriented artists. Even though several IAAA artists had used high-end digital graphic systems, most of the members employed traditional painting and airbrush techniques. With the growing widespread access to personal computers in the late 80s and early 90s, many artists began a gradual transition from mainly traditional to mainly digital art or a hybrid of both. This created a certain amount of discussion and debate in the group. Many artists continue painting their personal work while creating digital works for publications and other media.

In 1994, the Board helped foster the membership’s communication by going to e-mail and the internet. At the beginning of 1998, the IAAA acquired its own domain, www.iaaa.org which is still in use today. This, along with the now developed listserver, has grown the IAAA into a global community of Space Artists that converse on a daily basis about the art topics of the hour and the paintings of the ages.

IAAA artists continued to participate, in cooperative spirit, with parallel space art groups in Europe. The OURS Foundation invited astronomical artists to participate in the historic 1995 EuroMIR “The 1st Art Exhibition in Earth Orbit” on the MIR

**Rhea’s Sigh** by Marilynn Flynn
Space Station and subsequent world tour. A year later, invitations were sent to the IAAA to participate in Ars Astronautica Forums in concert with Leonardo - the Journal of the International Society of Art Sciences and Technology and the International Academy of Astronautics. The IAAA continues to be an international guild in the genre of astronomical art whose artworks and visions of the cosmos respect admiration, inspiration and artistic craftsmanship.

Meanwhile, workshops at exotic locations continued: White Mountain at a 13,000 foot altitude on the east slope of California’s Owen Valley in 1996 where the landscape is similar to Iceland and Mars analogues and is surrounded by the highest human habitation and the oldest living things. The island of Tenerife in the Canary Islands in 1996 and Mount St. Helens in Washington in 1997 hosted the next workshops.

David A. Hardy was elected President at Tenerife to become the first European head of the IAAA even as artists scrambled all over the island’s volcano. Volcanoes were still on the mind at the Mount St. Helen’s workshop where special permits were obtained so members could hike out into the protected blast zone to see its other-worldly landscape first hand, and experience the power of the scene as it surrounds the viewer in all directions. It was a truly sobering expedition.

In 1999, 15 artists returned to the hardware side of work shopping with extensive tours of Cape Canaveral and Kennedy Space Center where they received several behind-the-scenes tours and painted for the public directly beneath a Saturn V rocket. September 2000 marked the last workshop

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**Beacon for a New Millennium** by Robin Hart. The Cape Canaveral light house gets a new mission....
of the 20th Century at Yellowstone and the Grand Tetons in Wyoming. With homage to the Old West, 11 artists gathered high in the Rocky Mountains to experience and paint the formations and features unique to this area.

Our first workshop of the 21st Century was also the first European workshop, conducted in England. It covered Stonehenge and the Stevenage division

**Rosetta Lander** by Erik Victor

**THE BURNING SANDS....**

Death Valley is filled with unusual geological formations, so much so that people who go there often do not know what they are walking amidst - which makes a perfect setting for some harmless trickery. Artist Joel Hagen created some very official looking flyers warning people about the dangers of “Sand Fires.”

The posters announced to rookie snowbirds and experienced tourists alike that the colorful rocks which make up Death Valley were in fact highly combustible compounds like potassium permanganate and sodium nitrate. A carelessly thrown match could start an uncontrollable sand fire, destroying all in its path!

Fake flyers were posted at every viewpoint and pitstop workshop attendees came to. The artists secretly watched as tourists read the flyers with surprise, then quickly and carefully doused their cigarettes. They even watched as park rangers read and re-read the signs, scratching their heads, with the roguish band of space artists giggling from a distance. It was nearly a week before they figured out that it was only a prank and began pulling the signs down!
of Astrium, one of Europe’s foremost spacecraft constructors. The second workshop of the new millennium was a third visit to Death Valley attended by 34 artists. The IAAA’s 23rd workshop found our members amid the volcanoes and jungles of Nicaragua in 2007. The story continued with the next workshop at Capitol Reef and Bryce National Parks in Utah, June 2008. The one key factor in all of the IAAA’s workshop locations is stimulation to produce more and better art to inspire the population at large.

IAAA artists have provided preproduction and concept art for dozens of space and science fiction films and television productions, including renditions of astronomical art scenes for the movie Contact, based on Carl Sagan’s book of the same name. Practically every major astronomical discovery made today is illustrated by an IAAA artist as are most astronomical scenes in books and magazines.

The IAAA continues to strive for the truest expression of astronomical art through a variety of techniques and media, based upon a common desire to express the nature and beauty of the heavens through creative detective work, skill, imagination, and an uncanny sense of “being there.”

Uranus by Kevin Davies
CRITIQUES IN THE DESERT

Astronomical artists are serious about their craft and about the communication of science and beauty. Nevertheless, they are not above the occasional practical joke, even during a focused activity like an art critique.

The art critique provides an important opportunity for both professional and personal growth for the artist. Critiques are a critical and hallowed tradition in IAAA workshops. Artists from all over the world view each other’s work, share techniques, and make constructive criticism.

Not all artists have the opportunity to partake of such valuable sharing. Most artists from the Soviet Union who attended the 1989 IAAA workshop in Utah were unfamiliar with this particular brand of professional meeting, so some U.S. and European members of the IAAA took it upon themselves to give their Soviet colleagues an “initiation of fire.”

The evening before the first workshop critique was to take place, Michael Carroll painted a small, very rough sketch based on a postcard of a famous arch in the park. Plans were drawn. The next evening, after a productive day of painting and sketching in the field, artists congregated in what had become known as the “little Kremlin”, the house where the Soviet delegation was camped. Kara Szathmáry introduced the group to the concept of critique, gave a few guidelines as to professional etiquette, then introduced Mike as the first volunteer.

Mike placed his faked painting on the mantelpiece of the fireplace and people began to make comments. Most of the Americans and Europeans were in on the joke, and gave fairly innocuous comments about color usage, value, etc. Joel Hagen then stepped up to the painting, commented about how the composition would have been stronger had the arch been placed “just so”, and proceed to draw ugly black lines all over the little painting with a heavy marker. Hartmann was next, declaring that all the painting really needed was less empty space on the right side. Using a long pair of kitchen shears he had discovered the night before, Hartmann sliced three inches of illustration board from the right side. Carroll then stepped up, humbly thanked the group, and turned to the Soviet delegation. “Who would like to go next?”

A good laugh, and not a small degree of international camaraderie, was cemented that evening with art as the glue.
**The Conquest of Space** by Chesley Bonestell.
An iconic image of the early space age, a winged rocket on a rugged lunar landscape.
Homage to Bonestell
by William K. Hartmann, FIAAA.
Here Bill depicts the reverse of Dave’s image, Chesley’s winged-rocketship on a lunar landscape as seen by the Apollo astronauts.

The Way It Should Have Been by
David A. Hardy, FIAAA.
Here Dave depicts the Apollo lander on a rugged Moon as imagined by Chesley Bonestell.