THE space-art journal

mar-apr
1990

INTERNATIONAL ASSOCIATION FOR THE ASTRONOMICAL ARTS
FORGET ME NOT...

Nocturnal skies of frosty air well settled in
As fluffets of misty chill kiss the skin of all nature's kin.
Spanned from the fearless ship, mighty swords of shimmering, bubbled glass
Pouring down like an old man's wrinkly mustache.
Standing tall and proud awaiting its cosmic trip.
Knowing soon into twilight she will slip.
As darkness floods to dawn,
Not knowing lives they are preparing will soon be gone.
Still, with life they are ready to board.

While mother nature busy early that morn,
Swelling and shrinking the allot's of man's best try.
Forfeit, it had to happen. The spherical ring was torn.

No one hearing the silent cry.
Because time was of value, they had to fly.
The last count was finally heard—with oceans of smoke and roar they cheered.
Obedient the fearless ship set sail for the new sea.
Thrusting, starbound, like a dart,
Acceleration a must to succeed.

When, suddenly, nine mile high,
A world watching, man's best blown apart.
That moment, silence then shock.
A memory of seven great heroes.
"Forget me not."

Though the goal for which they fell was not lost nor gained,
To let the dream die would be humanity's shame.
A quest for mankind—we can't ignore that thirst.
He has to explore.
Seas, stars, planets and more were the dreams that sparked them to soar.
Answers to questions they lay away.
For that our seven explorers laid their lives on the line.
For the answers we must fly.
For a better understanding our children will seek someday in their time.

by Kurt C Burmann

copyright—January 16, 1997
POEMS of DISTANT SKIES \ ART and SPACE EXPLORATION

by Paul Hartal

FORWARD:

If you ask me, 'How did I become a member of the IAAA?', my answer is this: By sheer good luck!

Through a chain of events I became acquainted with the IAAA some time ago. I heard about it from its present distinguished President, Kara Szathmary, who happens to be a very dear friend of mine.

I am thoroughly grateful to Kara for introducing me to the IAAA because it is a magnificent organization. Indeed, it is quite stimulating to have so many new contacts and inspirational challenges. Space artists are not too common; and I am glad that I have joined this fascinating and unique creative community.


The paper presented here deals with the cultural dimensions of space exploration, with actual artistic involvements and projects in celestial and interplanetary development, including some aspects of my own work as an interdisciplinary researcher and space artist.

Best regards to you all! Paul Hartal

INTRODUCTION

In our predominantly science-based-technological civilization, the cognitive status of art is underrated. The significant potential of art to contribute to the development of a balanced, well-founded and healthy technological society is overlooked.

A careful examination of the history of culture, however, can correct the error. For, artists from

Giotto to Adelbert Ames contributed a great deal to the advancement of human knowledge in general and to scientific progress in particular. Leonardo da Vinci was an early pioneer of aerospace engineering, and the mathematical studies of Durer exerted a considerable influence on Kepler’s astronomical schemes. Galileo was not only an eminent scientist but also a gifted painter and musician. His drawings of the Moon represent early examples of space art.

It was the science fiction writer Arthur C. Clarke who, in 1945, published an article on “Extra-Terrestrial Relays” proposing the idea of satellite communications. Jules Verne’s classic, JOURNEY to the MOON (1865), inspired generations of scientists for more than a century before the actual lunar expedition of APOLLO 11. And Verne, of course, was not the first to write about voyages in space. Lucian of Samosata authored VERA HISTORIA, the story of a fantastic visit to another planet. In the second century! Cyrano de Bergerac (1619-1655) described journeys to the Moon and the Sun propelled by rockets in accordance with the laws of gravity before Newton actually formulated them.

The discoverer of thousands of binary stars and nebulae, the father of the modern evolutionary theory of the universe and the maker of the best telescopes of the early nineteenth century was Sir William Herschel, a musician who emigrated to England from Germany. The poet, Edgar Allan Poe, also made important contributions to astronomy in the same century. His cosmological ideas mediate between the contemporary Big Bang theory and the Steady State view of the Universe.

Indeed, artists can contribute to science in a variety of ways. In addition to their traditional function as image and symbol makers, as agents of catharsis and healing, they should participate in interdisciplinary endeavors where innovative ideas are needed.

This study is concerned with the interaction of art and science in space exploration. It deals with selected aspects of the cultural dimensions of an evolving new science based technology.
DEFINING PROPERTIES

Space is not the final frontier but a rapidly expanding and challenging realm of exciting new beginnings. Humans are moving from the phase of passive star gazing to the actual celestial experience of being there. In the unfolding process of mankind's changing position in the universe, artists mirror and hammer the evolving new cosmic condition.

For the artist, travelling through space is travelling through spacelessness as well. It is so because all art is a voyage through consciousness, which is nowhere and everywhere. Consciousness lacks focus and coordinates. Nevertheless, to my mind's eye, it appears to be a dimensionless ether that somehow transcends space and time, an elusive cosmic agent that binds everything together in the universe.

Image and symbol making is an essential defining property of the artist's trade. The space artist expresses visions of the universe. He/she shows things that, without him/her, others cannot see. He/she expands the boundaries of the human eye. He/she corrects the distorted forms and colors arriving in Earth from the pattern recognizing technology used in planetary missions.

However, the specificity of space art transcends the domain of image and symbol making. As a new genre, space art is concerned with the visual, scientific and philosophical investigation of the universe, the launching of objects into space, or the execution of projects on the Earth to be used or viewed from space.

PRACTICE and INTUITION

By the year 2007, the American National Aeronautics and Space Administration (NASA) plans a human landing on Mars. According to Douglas O'Handley, Chief of NASA's exploration office, the goal is to establish human settlements on the Red Planet. In order to accomplish this, NASA first wants to build a permanent lunar outpost to test all systems. It also wants to develop space stations to simulate long planetary treks.

In these and other projects, artists can play a pivotal role. They can make, for example, important contributions to the development of space architecture as members of interdisciplinary teams engaged in the planning and design of space habitats and colonies.

A case in point is Ronald Dale Resch. An artist and computer scientist at the University of Utah, Resch has already designed prefabricated modules for NASA's Langley Research Center in Virginia. These modules can be lifted into outer space and combined to form gigantic space stations.

In contrast to the abstract, deductive and analytical approach of trained mathematicians and engineers, Resch's problem solving method is practical, inductive and intuitive.

He designed and built the famous egg monument at Vegreville, Alberta, Canada. Prior to the erection of the monument, there were no mathematically designed egg structures in existence on which the artist could rely for reference and constructing the apparently simple architectural form proved to be extremely difficult. After working for several months on the project, Resch threw out in frustration his computer program and started to build the egg from identical tiles.

As a sculptor, he specializes in folded sheet patterns and transforms two dimensional surfaces into three dimensional structures. In the construction of the egg statue Resch used 2,208 identical equilateral triangles and 524 equilateral three pointed stars varying in width. With these he tiled the surface of the egg. Never before in history had a similar three dimensional surface been tessellated in this manner.

Resch points out that the shuttle designers could have applied his identical tiling system had they known about it. for, when the shuttle speeds through the atmosphere its different covering tiles often fall off and must be replaced after landing by individually machined new pieces. Resch's method has the advantage that 'ready to use', identical tiles can be lifted up with the vehicle itself and replaced in space if need be.
In 1979 the French artist Pierre Comte extended the idea of Conceptual Art into space. Inspired by the works of such artists as Michael Heizer and Robert Smithson, Comte began to work on the problem of carrying the message of Land Art into the cosmos. He coined the term ‘Space Art’ and established contacts with the European Space Agency (ESA). In collaboration with ESA, he designed models of huge art satellites (ARSAT), dwarfing the Eiffel Tower, that would inflate in space after deployment.

Comte wanted to create a beautiful man made star in the sky, a system that illuminates specific areas at night on the Earth’s surface with the intensity of ten full moons. The ARSAT was meant also to be used as a photon propulsion space vessel for planetary exploration. By way of solar sailing, ARSAT might fly over the Sun’s poles in order to carry out a series of scientific observations and collect subsidiary data.

It is noteworthy that solar sailing as a deep-space transportation technology was already suggested by the Russian space visionaries Arturovich Tsiander and Konstantin Tsiolkovsky in the 1920’s. The idea is based on the observation that sunlight, moonbeams, as well as all other forms of light exert a certain amount of pressure on reflecting surfaces. Thus, extremely thin and huge reflectors could use the propellant pressure of sunlight to travel through planetary systems as solar sailing vessels, carrying with them cargo and people.

An additional important feature of ARSAT is that its inflatable model has the potential to contribute toward the design of orbital stations and the field of space architecture. The implementation of the ARSAT project would allow the investigation of maintenance, storage and habitat capacities of structures constructed in outer space.

VALLES MARINERIS

In 1962 the Israeli sculptor Ezra Orion advanced the idea of using radio signals to make a stone sculpture on Mars. His proposal involved the reactivation of the
Orion wanted to use these radio controlled robots to make sculptural marks in the solar system. The technocesthetic act would establish a dialogue between the artist and the environment of the red planet. The proposed project could extend the distance of human art from Earth almost by 400,000,000km into the solar system.

In 1989, Orion made an attempt to create an intergalactic sculpture. This technocelestial thrust found its expression in a laser beam that the sculptor aimed at a fixed point in the plane of the Milky Way almost an hour.

**QUIET AXIS**

The American artist Lowry Burgess began to work on his grandiose Quiet Axis project in 1968. Its central premise seems to be concerned with the inextricable ties that exist between the external and the internal; the sky and the cosmos on one hand, the infinite universe of our inner world on the other. Burgess' vision is dedicated to the potentiality of entities, to the invisible matrix in which the dynamic flux of nature is intertwined with ethics and morality. "Love can find no resting place, it lifts and expands into intergalactic dimensions."10

The Quiet Axis consists of the Inclined Galactic Light Pond, holographic plates of water lilies and stars; The Utopic Vessel, a holographic glass book; and, the Gates Into Aether. The latter, a torus-like work, is eighteen inches in diameter and is made of eighteen sections of frozen water collected from the Mississippi, Indus, St.Lawrence, Tigris-Euphrates, Rhine, Danube, Yang Tse, Amazon, Congo and nine other great rivers. Between the water cells are inserted sonic holograms of sounds of singing peoples and of animals.

Part of Burgess' project was carried on board the US Space Shuttle in March 1989. Invisible from the ground, the self contained art work was made of elements originating from Massachusetts, Afghanistan and the Seychelles.

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1. The Cassini Diviner experiment on the Cassini spacecraft was designed to study the environment of the Saturnian moon Dione. It has contributed to our understanding of the moon's geological and compositional diversity.
2. The Mariner 9 mission was a series of spacecraft that orbited Mars from November 1971 to July 1972. The Mariner 9 images of Mars allowed scientists to study the planet's geology and climate in detail.
3. The Viking program was a series of spacecraft sent to Mars by NASA to study the planet's atmosphere, surface, and geology. The first Viking mission, launched in 1975, consisted of two spacecraft:
4. The Voyager 2 mission was a spacecraft sent by NASA to study the outer planets of the solar system. It was launched in 1977 and reached Neptune in 1989.
5. The Voyager spacecraft was a series of spacecraft sent by NASA to study the outer planets of the solar system. The Voyager 1 spacecraft was launched in 1977 and reached Jupiter in 1979, while the Voyager 2 spacecraft was launched in 1977 and reached Saturn in 1981.
6. The Cassini Huygens mission was a spacecraft sent by NASA to study the planet Saturn and its moons. The Cassini Huygens spacecraft was launched in 1997 and reached Saturn in 2005.
7. The Kepler spacecraft was a spacecraft sent by NASA to study exoplanets. The Kepler spacecraft was launched in 2009 and has been studying exoplanets ever since.
8. The Cassini orbiter was a spacecraft sent by NASA to study the planet Saturn and its moons. The Cassini orbiter was launched in 1997 and reached Saturn in 2004.
9. The Cassini probe was a spacecraft sent by NASA to study the planet Saturn and its moons. The Cassini probe was launched in 1997 and reached Saturn in 2005.
10. The Gates Into Aether is a torus-like work that is eighteen inches in diameter and is made of eighteen sections of frozen water collected from the Mississippi, Indus, St.Lawrence, Tigris-Euphrates, Rhine, Danube, Yang Tse, Amazon, Congo and nine other great rivers. Between the water cells are inserted sonic holograms of sounds of singing peoples and of animals.
During the summer of 1989, I spent some time in the West Indies. By mid-August I was back in Montreal. Among the letters that I found in my mailbox, one opened with the intriguing question: "When was the last time someone offered you a satellite?"

It was signed Arthur Woods.

A member of the IAAA, Woods is an American living in Switzerland. He is a multi-media artist who, in 1984, initiate the Orbiting Unification Ring Satellite project. The OURS project is introduced under the slogan: "Peace on Earth and Peace with Earth". It emphasizes the notion that global peace and environmental protection are interwoven issues. Woods plans to send into orbit a series of anchor-ring shaped peace sculptures. The first one of these is scheduled to be deployed in 1992. In the technological sense, the OURS project relies on the expertise of Contraves AG, a Swiss firm that collaborates with the European Space Agency in the development of lightweight Inflatable Space Rigidized Structures (ISRS) These are made of metallic foil laminates treated with chemicals that harden when exposed to sunlight. According to plans, the first ring sculpture will be ten meters in diameter and weigh less than ten kilograms. Suspended on a cross of flexible cables from its center of a symbolical miniature Earth, the anchor ring is designed to carry art works, messages and signatures into outer space.

Woods has negotiated the deployment of his space sculptures with NASA, Glavcosmos (the Soviet Space Agency), as well as with EPA.

Preparations have already started to put into orbit a gigantic inflatable torus -- one km in diameter -- which is intended to circle the Earth to sensitize the awareness of humanity unity, global cooperation and peace.

The OURS project is a conceptual art work, an endless painting, an abstract sculpture, an artificial asteroid, an idea in motion, a concrete poem and a symbol of good will. Unlike scientific and military satellites, this project is concerned with human unity.

The Orbiting Unification Ring Satellite (OURS) model was proposed by Arthur Woods. The inflating torus is planned to circle the Earth in 2000. Flying 500 kilometers high in a polar orbit, it would be seen from the ground about one quarter the size of the moon. The huge, one kilometer in diameter, brilliant celestial ring would slowly depart from our planet and travel through space indefinitely, propelled by sunlight.

with the cultural dimensions of outer space and its development. Beyond the peace sculptures and the art works dedicated to the OURS project unfolds a profound creative and eco-political process with humanity, our children and the safety of the future.

I decided to accept Arthur's challenging invitation to become actively involved in the OURS project because I identify myself with its objectives. For my part, the attempt to fuse art, science, and environmental
rejuvenation with space exploration is a fascinating endeavour which is thoroughly meaningful and fires the imagination. The effort to save our endangered planet is the great holistic and moral imperative of our time. OURS is a most inspiring, significant and noble cause.

THE ANCHOR RINGS of SPACE SHIP EARTH

In joining OURS, I became a team member, along with Judy Asbury, Carter Emmart, Ruggero Magri, Laurent Posse and other space artists. Recently, I received a letter from Bibbi Ahrnstedt. She exhibited in Stockholm in various galleries in 1989, and will participate in an OURS show scheduled for March 1990 at Montreux, Switzerland.

OURS artists have already displayed their ouvre at the international art fair of Basel as well as at other forums.

In honour of the OURS project, I have created a series of images rendered in oil, watercolour and multimedia. "How to Make a Painting Out of a Torus?" features the topological transformation of a picture within a picture into anchor ring flying in a cosmic sky (oil on canvas, 18"x24", 1989). This painting and additional images have been shown at Swiss galleries and are part of the Space Commerce 90 exhibition to be held at Montreux, March 26-29. Other works that I developed specifically for the OURS project feature optical illusions.

A QUEST for INCLUSIVE WISDOM

We need science. Our civilization depends on it.

However, in its present stage, science is not scientific enough. It tries to grasp the inextricable complexities of actuality by inventing an abstract universe of generalized concepts and mathematical symbols. But reality is always richer and more dynamic than its fragmentary symbols and static concepts. Science is always a human affair. Its glorification of logic as the ultimate tool of reason is a dangerous fallacy. For, an adequate model of the human mind must take into consideration the intuitive, associative, emotional and sensory qualities as well. By ignoring the subjective aspects of the way we experience reality, science does not make the world more objective but more biased.

Moreover, the application of science is always a political act. Science is morally neutral. It transcends ethics and its abuse is consequent. Social irresponsibility has even been raised to the level of collective scientific philosophy. "Von Neumann gave me an interesting idea that you don't have to be responsible for the world that you're in" says the eminent physicist Richard P. Feynman in his autobiography. The advice came when both scientists were working on the development of the atomic bomb at Los Alamos.
Paul Hartal, ORION NEBULA TREE: THE Anchor Rings of Space Ship Earth Series. Honoring the Ours Project, this work contains also an alternating figure-ground configuration (profile and tree). The original is an oil on canvas, 46cm x 61cm painted in 1989.

Paul Hartal, Ours Wheel: Ink on Paper, 1990. By spinning the disk, the black and white abstract composition produces a variety of colors. This optical illusion similar to the sort known as Benham's top-generated subjective color phenomena. This work mediates between art and science.

Unlike science, art has the built-in potential of being moral. After all, the traditional role of art has always been associated with social criticism and catharsis. The tradition lives on. It finds its expression, for instance, in Judy Asbury's cogent call: "Mother Earth needs our help. As space artists, we are in a unique position to help in healing a planet in need." 10

Thus, space art is an important step toward the synergic fusion of art and science. It is a peculiar form of knowledge and practice, an exciting and meaningful aspect of the evolving new culture of inclusive wisdom. 11
REFERENCES


7. Various authors differ in providing size descriptions concerning Mars land features. Carl Sagan, for instance, estimates the length of the Vallis Marineris at 5000 km and its width at 100 km. See COSMOS (New York: Random House, 1960), pp. 119.


Dr. Paul Hartl is a director of the Center for Art and Technology, Box 1012, St. Lawrence, Quebec, Canada, HRL 4W5.
The International Association for the Astronomical Arts

The IAAA was founded in 1982 by a small group of artists who journeyed through the fascinating and seldom tread territory where science and art overlap.

For these pioneering astronomical artists, a firm foundation of knowledge and research is the basis for each painting. Striving to accurately depict scenes presently beyond the range of human eyes, they communicate a binding dream of adventure and exploration as they focus on the final frontier of space.

Since its founding the organization has grown to number over one hundred fifty members represented by fourteen countries. The work has also grown to incorporate a variety of styles and viewpoints. At times the art may step outside the bounds of scientific rendering to address the broader implications that space poses for humanity. However, no matter which form of expression the artist chooses to take, the common inspirations held by all are astronomy and space exploration.

In addition to painting skills, the diverse allies of an astronomical artist include personal computers, NASA photographs, field geologists, space scientists, astronomers, astrophysicists, science writers, and travel agents. They may find themselves in a training simulator at Johnson Space Center, camped in a windy desert ravine studying erosion patterns, or talking with an Apollo astronaut about subtleties of color in lunar shadows. At the workshops, knowledge and techniques are shared while new landscapes are explored for useful detail.

From this fertile background of research and imagination comes the body of artwork known generally as the genre of SPACE ART.

For more information, write:
the International Association for the Astronomical Arts,
Box 354, Richford, VT 05476
HEALING BEGINS AT HOME...or...LET FREE ENTERPRISE WORK FOR US

by Gail Szathmary

I was working in my studio last week at a frantic pace preparing for a show. My silk was stretched taut on the frame. My "piece de resistance" was in progress and I was orchestrating the whole, was completely caught up in a dance. I grabbed my bottle of rinse water, now too "contaminated" with dyes to use, and threw the content into my studio sink. At that moment, my world came crashing down around me, again and as it had many times in the past, while committing that very act...my dyes and nasty implements of my trade flushed into my septic system (we live very deep in the woods, on a mountain in the middle of nowhere and everywhere), eventually into the ecosystem. In that very second, the Earth had communicated its message to me...again. "You are part of the problem. You are polluting."

Now I've been through this scenario before, and I talk it over with Kara and friends. But what are you going to do!? Quit painting? Gather up all your paint discards, empty tubes and turpentine and truck it all off to a toxic waste dump where its not wanted anyway! Set art aside, again, while you try to figure out how to make your own environment friendly paints etc!?

Well, it's not likely that any one of us wants to give up either our art or our "fast food" convenient art supply stores. Nor do we wish to take on yet another project to try to get biodegradable paint and tubes invented and marketed. BUT somewhere out there is an enterprising soul who will see the value in creating just such a product if there is the demand for it. This is the spirit of free enterprise. Our forefathers developed nations with this ingenuity. Now let's use it to develop a healthier globe.

Would it be too inconvenient to, let's say, take jars or containers to your local art store and refill jars with a biodegradable, environment friendly paint or dye if such a beast existed? Not only existed, but offered the necessary and desirable qualities you look for in your regular products? Would you mind slowing down j
a little to do this? Would you mind even having less of a ready made “fast food” colour palette and perhaps mixing a few pigments of your own to get exclusively your colours? And while you slow down to do this, could you “think lovely thoughts” and slowly, individually, change the atmosphere of our planet?

If you see value in this, just photocopy this article, extract any part of it or write your own ideas and submit it to your local paper. Post it at university book shops, art supply stores or wherever. Put the idea that there is a demand for such a product out into the marketplace. Let someone who’s creativity abounds in inventing, manufacturing, and marketing take on this challenge. This may even encourage people from other professions to write about ways manufacturers and entrepreneurs can alleviate their pollution problems. None of us can right all wrongs, but we can accept responsibility for our own actions (or non actions). And don’t let any one fool you. Every action counts... and every action has a reaction.

If you are aware of a product that already fulfills these goals or if you have comments you wish to pass along, then please write and let us know. Set it in PULSAR. Let networking perform. You, the PULSAR reader, have access to a creative audience in eighteen countries around the globe should you wish to write.

REMINDES

LUNAR and PLANETARY INSTITUTE: A call for art for a book, see PULSAR Sept/Oct 1989

PARALLAX: This publication can not exist without submissions from our members. Articles on art, space art, history, technique, Earth analogues, art physics/philosophy, etc. are welcome.

SPACE EXTRAVAGANZA: Proposed by Mark Mercury in the May/June issue of PULSAR. A fantastic concept, well worth thought and action.

Mark Mercury.
Space Extravaganza.
6361 Waring Ave.
Los Angeles, CA 90038

IAA ARCHIVES: In the Sept/Oct. 1989 issue of PULSAR, Laurie Ortiz lists categories of reference slides available, as well as asks for specific submissions. Laurie Ortiz.

Reuben H. Fleet Space Theatre.
P.O. Box 33303.
San Diego, CA 92130
(619) 233-1233

NATIONAL SPACE SOCIETY ANNUAL CONFERENCE: To be held in Anaheim, California. May 25 - 26 1990

National Space Society.
922 Pennsylvania Avenue, S.E.
Washington, DC 20003 (202) 543-1000 Fax: (202) 546-4189

AGENTS & GUILDS

Several of you have written asking about art reps, agents and guilds. I published a call for help on this matter because we are unfamiliar with that territory. Carter Emmart was visiting us last weekend (a memorable weekend!) and was kind enough to bring us some info:

SPAR:
Society of Photographers and Artist Representatives Inc.
1123 Broadway, Room 914.
New York, N.Y. 10012 (212) 924-6023

Briefly, SPAR is a “not-for-profit” organization that appears to offer the following services:
1) Portfolio reviews by top representatives
2) Mailing labels for the U.S. markets
3) SPAR Membership directory
4) Classified ads in SPAR newsletter

GRAPHIC ARTISTS GUILD:
11 West 20th Street.
New York, N.Y. 10011

The guild publishes a most wonderful handbook called Pricing & Ethical Guidelines for graphic, computer and textile artists, book and editorial illustrators, record album and fashion illustrators and much, much more.
J.J. Van Ellinckhuijzen writes "due to my isolation in Swakopmund, Namibia. I’ve had ample time to concentrate and develop this new art form" (stereo painting for 3-D viewing). The following is an excerpt from his fascinating letter.

The original stereo pair of paintings are 3'x 4' oils on canvas, facing each other on easels 5 yards apart, with a relatively large stereocope on a pedestal midway between them. Two 45 degree, first-surface mirrors behind a modified diving goggle window allow each eye to view the paintings separately, thus creating a superimposed 3-D image. The end windows on the wings of the box exactly frame the pictures at X distance in order to isolate the image from its immediate surroundings.

As I have endeavored to render most objects transparent, the total effect "down the tube" is pretty holographic. Yet, unlike a hologram, this image is of course crisp clear, not as "ethereal", and allows me to create a deeper field and a wider angle of vision than either reality or photo-stereography will portray. The image "zooms" in a singular view, so to speak, and consequently creates a sense of motion while adjusting the eyes between near and far field focusing. Within the context of theme, I also found that the levitation of objects in its applicable space environment expresses gravitation, and vice-versa. "Up" or "down" really is of no consequence here.

Titled "NATIVITY", the work endeavors to portray the transition of ideological man into the intellectual era. Symbolism, puzzles, riddles and contents are left to the observer to discover. (We are truly sorry to be unable to print a copy of Mr. Van Ellinckhuijzen's excellent art works. editors)

Due to mirror-imaging, the canvasses obviously had to be reverse-painted.

Quite unlike the sculptural approach, planning this kind of composition in 3 dimensions can bug the mind itself. It is one thing to "see" the same hypothetical image from two different angles, but another to try and physically sketch two projections for a visual. This constitutes and warrants the "art" in my opinion. Because, even as photo-stereography cannot place a transparent man in space, so are 3-D "montages" unavailable to even holography. Hopefully, it is yet another long outstanding real marriage of art and science in our era. In this context, I believe that members of your association could stimulate, collaborate, advise and review my attempts.

Two methods for viewing these prints:

ONE: Even though it takes more practice, the most effective way of viewing is to cross-eye across the two pictures and have the images float together as a single 3-D picture. This means that the left eye is looking at the right hand picture, and the right eye at the left hand picture. It is important to level line the pictures with the eye level line. This "registers" the images correctly. One ends up with "halo images" to the
left and right of a centre 3-D picture. The secret is to be patient, concentrate and relax while focus comes to that central image. Eye distance should be +24 inches, with the surface square to the eyes. With more practice this becomes automatic and a whole lot of fun, even with identical objects like tiled floors (while sitting on the "loo") or wine glasses placed apart, for instance, in one's own surroundings.

These objects "jump" perspective and create pseudo or hyper visual realities, and even transcend regular depth perception.

TWO: In order to simplify explanation, the following sketch demonstrates a single mirror viewing. Simultaneously look at the right image and mirror reflection of the left image (one of which has obviously been reverse-painted). Mirror is facing left for viewing transparencies on a light table; right for viewing reversed printed photocopies.

The mirror should be rather larger and thus higher (12 plus inches) for the older farsighted person's benefit. This eye distance from the paper makes a world of difference even with 20/20 vision because the eyes can more easily hold for in-depth focal detail. While a first-surface mirror is the ideal, please keep in mind that a second-surface "bathroom" mirror will create a halo image due to refraction and front-surface reflection. Thinner glass yields better results.

While the original piece and stereoscope is the ideal, the first method, even though more difficult to master, is recommended for viewing.

While wanting to share my work with the right fraternity, I cannot think of a more feasible avenue than your association to further this new art form beyond my individual self. With my collection of books, and having subscribed for so long to so many astronomy related magazines, I cannot help but think that those who's talents I've admired for years could not exploit this method better, or at least along with me.

Given time to convey what I term "lateral-visual-thinking". I could teach others how all this can only be achieved by, and very much beyond the technical, because no-one can initially master dual thinking in the visual, non-verbal context. It develops very slowly in the subconscious to eventually "click" into reality and a creative excitement which I think very few will ever taste.

At the moment I am psyching up to a "Penrose-Escher-Einstein" piece of TRI-BAR image which I believe will be the first visual 4-D to be observed and mentally acceptable - that is art-wise and without incorporating motion as per computer graphics.

JJ Van Ellinckhuizen
Art Studio Swakopmund.
1427 Swakopmund, Namibia 9000

NEVER TOO LATE

The following are artistic statements written and submitted sometime ago. They surfaced during our recent filing blitz and call for publication. Our apology that they did not appear earlier...the editors.
PORTRAITS OF INFINITY

by Geoffrey Chandler

Ten years ago I began painting astronomical and fantasy "spacescapes". Painting known nebulas: galaxies, planets, moons, comets, and stellar events, this was the norm of most space artists.

Four years ago I embarked onto a completely new and original approach to painting space and these paintings are the result. Matter-antimatter, micro-macro, yang-yang, light-dark, negative-positive, future-past, life-death, up-down, left-right, in-out, and good-bad are all working forces that define the cosmos in this realm. The hourglass or parabolic form was the grand outline of this universe expansion scale. From this point of departure, the endless possibilities of these new horizons, both inside and beyond this sphere, take place.

Another perspective to this thought was a conceivable continuance of infinity. This, the result of a black hole, is the birth of a new universe: for in this known universe are the infinite holes of new universes defined only by time itself. Possibly the death of every galaxy, gives creation to a new universe.

Symmetry was the seed, and words and present understanding had to be put aside. This "blind" inspiration was a spiritual quest as well. For forgetting the "truth" the light and forms become an altar of what could be - within inner and outer space. Why would God be a singular defined entity? Should he not be light itself, encompassing the whole universe?

These stellar - mandalas are only a whisper of this new "visual cosmology".

(editors: Sorry, we do not have any photos of the works referred to in this article. We would have enjoyed publishing them.)

PERSONAL STATEMENT

by Doug Czor

I first created metal sculpture of cosmic objects because astronomy has always been my favorite hobby. Today, my main theme of art parallels the spirit of Leonardo da Vinci, that is the combination of art and science. I have discovered that there is fear of scientists and scientific art in our community by non-scientific personalities, and also fear of art in general by engineering and scientific personalities. Art and science combined provide a friendly art window with which to view science and, at the same time, an educational scientific window to view art. Thus, the combination of art and science provides a medium for educating all in a positive direction.

Since space art is a major subset of art and science, and also my favorite subject, I have found myself providing an educational role with my space art sculpture. I have also curated several exhibitions in Albuquerque, New Mexico, involving space art, including Art and Science Exhibition 1987, Space '88, The New Mexico State University Centennial celebration, and the University of New Mexico Centennial celebration.

PERSONAL STATEMENT

by Greg West

The fundamental reason (for doing space art) probably goes back to a childhood fascination with the sky (in all her moods) and science in general. I remember when I was in grade school, discovering things: one was the analogy of seeing the expanding universe as an expanding dot covered balloon: the other was a Bonestell painting in Look or Life magazine showing explorers on the surface of Mars. Never has my "sense of wonder" been more acute than on these two occasions. I've been trying to understand that sense of wonder ever since.

For me, space art is one way to express the sense that 1 and the universe are the same stuff and both are
ultimately couched in ineffable mystery. Also, if the poet can sing praises for a field of poppies, if countless artists can portray the beauty of sunsets and flowers, is it any less legitimate an art form to laud the majesty of the Orion Nebula where stars are being born? I think not. The universe may be contained in a mustard seed, but the mustard seed isn't all there is to the universe; nor does the universe end at the stratosphere.

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**IAAA CALENDER 1990**

**March 20-June 15:** "Dialogue:..." International Space Art exhibition:
Alabama Rocket and Space Centre

**April 22:** Earth Day 1990

**May 25-28:** 9th Annual International Space Conference
Anaheim, California

**June 4-8:** The Case for Mars IV, Boulder Colorado

**July 16-20:** Space Art Exhibit
Barnesberg Air Force Base, California

**October 6-13:** 41st International Astronautical Congress
Dresden, East Germany

**October:** Crimean Workshop, USSR (tentative)
Soviet All Artist Union/ IAAA

**December:** Soviet/American and IAAA exhibition at KSC

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**NEW MEMBERS:**

James Heckman
1019 Delwood St.
Vallejo, CA 94591

John Hiatt (713) 464-4010
1438 Oak Tree
Houston, TX 77055

Joe Hopkins (206) 329-9022
453 26th Ave E
Seattle, WA 98112

Jamie Hudson
1010 N Van Ness #A
Santa Ana, CA 92701

Frank Lurz (415) 389-8311
309 Todd Way
Mill Valley, CA 94941

Dr Roger Malina
Chairman IAA subcommittee on the Arts & Literature
1442 A Walnut St. #75
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2400 Foshay Tower
Minneapolis MN 55402

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111 24th St #302
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PO Box 101
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LILIKA PAPANICOLACU
Monte Carlo Star #79
15 Boul Louis II
Monte Carlo. 98000
MONACO
The International Association for the Astronomical Arts

The IAAA was founded in 1982 by a small group of artists who journeyed through the fascinating but seldom trod territory where Science and Art overlap.

For these pioneering astronomical artists (unlike their colleagues in science fiction and fantasy, with whom they are sometimes confused by the uninformed), a firm foundation of knowledge and research is the basis for each painting. Striving to depict accurately scenes which are at present beyond the range of human eyes, they communicate a binding dream of adventure and exploration as they focus on the final frontier — space.

Since its founding the IAAA has grown to number over 150 members, representing fourteen countries. Their work has also grown, to incorporate a variety of styles and viewpoints. At times the art may step outside the bounds of scientific rendering, to address the broader implications that space poses for humanity. However, no matter which form of expression the artist chooses to take, the common inspirations held by all are astronomy and space exploration.

In addition to painting skills, the diverse allies of an astronomical artist include personal computers, NASA photographs, field geologists, space scientists, astronomers, astrophysicists, science writers, and travel agents. (Of course, some artists may also hold positions as any of the above.) They may find themselves in a training simulation at Johnson Space Center, exploring an active volcanic crater in Iceland or Hawaii, studying the erosion patterns in the USA's canyons, or talking to an Apollo astronaut about subtleties of color in lunar shadows. Workshops are held, at which knowledge and techniques are shared, friendships among many nationalities are forged, at the same time as new landscapes are explored for future use literally.

From this fertile background of research and imagination comes the body of artwork known generally as the genre of

SPACE ART

The object of the IAAA, as a non-profit foundation, is to implement and participate in space art projects, including the development of cultural enrichment and to promote further international co-operation in artistic exploration. Associate Membership fee is currently $35.00, Active Membership $100.00.

If you wish to become an Active member, it would be helpful if you could send examples (slides or print) of your space art to me at the address below.

For a membership information package and the most recent issue of our journal, Pulsar, please write to:

The International Association for the Astronomical Arts,
Membership DATA Centre, P.O.Box 354, Richmond, VT 03470, USA.
INTERNATIONAL ASSOCIATION for the ASTRONOMICAL ARTS

Non-profit Foundation

MEMBERSHIP Application:

Name: ______________________________________
Address: ____________________________________

$35

$100

Associate

Active

I wish to be a member of the IAAA. PLEASE send me the most recent issue of PULSAR along with a membership information package.

I want to contribute more to help the IAAA carry on its important work.

I am enclosing an additional tax-deductible contribution of

$20  $30  $50  Other $ __________

Please make your check payable to the IAAA