Astral Projections A Polyfusion of Media

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Introduction

Survival Arts Media was first introduced to Central Maine Power Music Company at the original Kitchen, an experimental media center located in New York City. This introduction evolved into a series of collaborations in which we explored various video processing systems, seeking to create a visual metaphor for the sound experience. Assisted by artists from Media Bus, we produced a number of concerts in our studio in Manhattan. These concerts extended our concept of live music/video performances to encompass multimedia (or environmental) presentations.

Utilizing media facilities across New York State, we further explored video imaging systems. Work with the Paik/Abe synthesizer in the Experimental Television Center in Binghamton was followed by a number of live performances at the Synapse studios in Syracuse. These performances at Syracuse extended the television studio out into the adjoining Watson Theatre, enabling the student audience to participate in the event. Through this experience, we discovered possibilities for integrating slides, film, and other special effects



into our video recordings. But it was apparent that monitor display systems were not sufficient for the presentation of live music and video performances.

Simultaneously, Central Maine Power Music Company was evolving a ritualistic performance to celebrate the coming of Comet Kahoutek. A planetarium seemed to be an ideal media environment for the performance of this ritual. There had been some precedent for multimedia experimentation in planetariums, notably the Vortex Concerts in the Morrison Planetarium in San Francisco, conducted by Jordan Belson and Henry Jacobs; and Stan VanDerBeek's Cine Dreams, performed in the Strasenburgh Planetarium in Rochester, New York.

Don Hall, Director of the Strasenburgh Planetarium, responded favorably to our proposal; and we approached GE for the loan of two color video projectors. GE agreed. Now we needed a video sythesizer with a direct audio/video interface and a high degree of control over the television image.

We invited Bill Etra, a video artist and systems designer, to collaborate on the project. He agreed to perform with the recently developed Rutt/Etra video synthesizer. During the next several months, we obtained commitments from artists and media facilities for the necessary resources to produce the event. These were made available by ZBS Media, Synapse, Media Bus, Portable Channel, and Visual Studies Workshop.

In the interim, Comet Kahoutek had come and gone, leaving us without a central theme for the performances. However, the capability of projecting the music/video transformation onto the dome brought to mind the phenomenon of astral projection. Essentially, this phenomenon refers to the ability of a person to project a nonmaterial aspect of his being on a journey into another dimension. Metaphorically, this journey would be communicated through the content and structure of our multimedia performance, which would employ the dome surface to reflect and reinforce the ritual nature of the event. Don Hall, turning his attention toward the reality of the coming together of

The Planetarium and the Special Programs By Donald Hall

The Strasenburgh Planetarium opened to the public in 1968 after three years of planning and development. The result of this careful study, and having Planetarium staff on the job, working with the architects and engineers, is that we built a planetarium that is pretty nearly flawless.

many artists and media systems, described the event as a polyfusion, resulting in the title Astral Projections: A Polyfusion of Media.

The normal operation of a planetarium is to present programs on astronomy and space sciences to the public, and of course we do that here. Since October of 1969, however, the Strasenburgh Planetarium has experimented in unusual uses of its domed Star Theatre. The first departure from a planetarium's usual fare of star shows was the production of Bertold Brecht's play Galileo. A stage was constructed in the center of the Star Theatre, replacing the giant star machine, which was lowered on its elevator to the basement level. This gave the Planetarium a "theatre in the round" but with a difference-the actors were above the heads of the audience and seen against projected backgrounds on the surrounding dome.

Encouraged by the overwhelming positive response to this experimental programming, the Strasenburg Planetarium has now produced almost two dozen specials in the past five years. These have included music in all its forms-from Bach to jazz to avant gardedance, six plays, and some which can only be classified as experimental mixed media. It is into this last category that Polyfusion falls. This presentation combined music, experimental television, and the Planetarium environment in a way never done before. Polyfusion represented a logical evolution of ideas for the utilization of the Planetarium space and gives the Strasenburgh Planetarium another successful production on which to build even more exciting uses of the Star Theatre for the future.



The Star Theatre

The Star Theatre is a multimedia projection environment which seats 240 people in concentric circles around the center. For the Planetarium star shows, the Zeiss Universal projector is raised from a pit in the center of the theatre. The Zeiss instrument coordinates 160 projection systems to project 9,600 pinpoints of light representing the stars onto the surface of the 65 foot diameter dome. The dome is made of perforated aluminum and is about 15 percent transparent, so that in addition to projection on the front surface of the dome, rear projection is also possible. People or objects may also be placed behind the dome and lit with spotlights, and they will appear to be suspended in the stars or in space.

Surrounding the Star Theatre, at the circumference of the dome, is a continuous projection gallery composed of hundreds of specially

modified slide projectors. These projectors are coordinated into systems which are aimed at various segments of the dome. They include a panorama system which projects 360 degree images on the Planetarium horizon.

During the production of a Planetarium show, the staff utilizes the control console in the theatre to direct the movements of the Zeiss projector, constellation figures, planets, solar and lunar eclipses, cloud formations, and other special effects. Once these effects are manually coordinated in the appropriate sequences, this information is recorded on a computer tape. This tape is played back on the computer, which automatically controls the various switching and dimming operations of the projection systems along with the music and narration systems. The Strasenburgh Planetarium is the first in history to offer completely automated programming to the public.



Preparations for the Performances

The physical setup for Astral Projections was, to a great extent, influenced by the architecture of the Planetarium and the schedules for the public star shows. Throughout the week of the event, these schedules made it necessary to reset the musical stage and elements of the video and sound systems before beginning our evening's performances.

The space within the Star Theatre is so precisely designed that it was necessary to forfeit the use of the Zeiss projector. We lowered it into the basement so a stage for the musicians could be installed at the center of the dome. The loss of the Zeiss projector was a disappointment, since we were looking forward to employing it in order to create a moving star field for the slide and video projections.

Artists from all over New York State began arriving on Monday, September 16th, bringing with them much of the hardware necessary for the event. We spent the next several days installing media systems and exploring the Planetarium. Since time was at a premium, there was considerable pressure to create a suitable live presentation for the public by Friday night. This production involved over two dozen artists, many of whom had never worked together before. Everyone was enthusiastically committed to realizing the event. The involvement of several individuals took

on a special character. Don Hall and the Planetarium staff were incredibly cooperative, considering the number of people and the amount of hardware interfaced with the Planetarium's resources. Louise Etra helped provide logistics and good vibrations necessary in



rounding out the rough edges, enabling the public performances to run smoothly. Andor Orand (Uniting Flow Associates) was distinguished as the spiritual guide for the event. Andor's task was to transform the metacultural and technological concepts of the event into poetry and assemblages. (Note the picture above-the mandala serving tray with the square matzo, topped by a candle in the center, placed next to loops of coaxial cable that was later used in connecting the video system.)

The two GE color projectors arrived on Tuesday; and by Wednesday afternoon, sound and video systems were operational. We were all excited by the projected video images; and in response to increasing pressures to create a performance, we had a music/video jam session. After the session, we quickly began to

evolve the sequences of Planetarium effects and Lee Post's mandala slides, which were to be integrated into the performances. Kevin Atkins, a member of the Zeiss Squad (Planetarium staff), collaborated with Howie Gutstadt to produce the cyclic transitions involving the sunset, the blast-off and journey into space, and the return to Earth at sunrise, which completed the performances.

Five performances were sold out, two on Friday and three on Saturday night. Astral Projections: A Polyfusion of Media was presented to approximately 1,500 people.



- 4 ZBS sound making console
- 5 video synthesizer
- 6 video switching and mixing systems 7 colorizer

Overhead View of Star Theatre and Media Systems

- 10 GE video projector
- slide projection galleries 11
- 12 sound speakers
- 13 Planetarium control console

























Central Maine Power Music Company

Central Maine Power Music Company began their journey together in 1967. Connie Demby was hanging her sculpture show in a New York City gallery, A Fly Can't Bird But a Bird Can Fly. when she discovered that her sheet metal sculptures, hung with nylon strings, could also be played as musical instruments. The "metal cellos" gave out strange, resonating sounds when the nylon strings were plucked or bowed. David Demby and Bob Freeman added other dimensions to Connie's sculpture/music environment-electronic sound effects and a light show. In 1970, with help from gallery-owner Bob Rutman, the group performed a more ambitious event called Space Mass with dancers, actors, light, slide, and film projections. and space music. The effect of this merging of the arts, on audience and performers alike. was the feeling of being totally enveloped by the many sensations from the environment and of being taken on a trip into another dimension.

In 1971 the group began to concentrate on the musical aspects of their performances. Dorothy Carter and Sally Hilmer added strings and voice; Richard Slamm, saxaphone and flute. Hugh Robbins added his homemade electronic music synthesizer consisting of sine, square, and sawtooth tone generators and a therimen–all Army/ Navy discards. The electronics section has evolved organically and now uses voltage-controlled oscillators and filters. Membership in the group varies greatly over time, although there is a central core of four musicians. Other persons presently associated with the group are Lee Post, Ben Levine, and Gail Edwards. For the Astral Pro*jections* show, Steve Baer played clarinet and a group of unusual Eastern and homemade instruments, and Tom Zafian contributed electronic music.

Living in Central Maine during the warmer months, the group spends at least half of the year in New York and other eastern cities performing their music and linking up with other media and arts groups, such as Pablo Light Show and Survival Arts Media. Central Maine worked for several years with Survival Arts Media to produce numerous music/media events, culminating in *Astral Projections* in the Strasenburgh Planetarium.

Central Maine's music tends to be meditative -long singular sounds and rhythm patterns with violent eruptions here and there-in Bob Rutman's words, "A searching for hypnotic resonances to expose the inner ear." The music always has a spontaneous, momentto-moment quality. The improvisational nature of the music has led the musicians to evolve an exceptionally responsive attitude toward one another in a performing situation. Most of the pieces develop from improvisation upon a predetermined element-a musical scale, a mantra, or a concept such as the four seasons, in which steel cellos create the sound of winter wind, and the stringed instruments, the spring thaw. Developing from an earlier music piece celebrating the appearance of Comet Kahoutek, the musical concept for Astral Projections is that of a journey into space, which is, at the same time, a quest for the light beyond the Bevond.

At present Central Maine is continuing its experimentation with interarts performances in a series entitled *Cosmic Resonances* to be performed at the Hayden Planetarium in Boston and other spaces across the country.









The Video System

The stage was illuminated with deep red light, so the images of Central Maine Power Music Company could be picked up with red-sensitive (Tivicon) cameras, operated by Bart Friedman, Nancy Caine, and Pierre Jouchmans. The low-level red lighting was also necessary since any ambient light transmitted to the dome surface would diminish the visual impact of the Planetarium's effects and the color video projections. The lighting created interesting aesthetic effects by illuminating the metal cellos, which in turn cast shadows on the dome, provoking images of a Stonehenge landscape.

The camera images of the musicians were simultaneously routed, for selection and mixing, to the initial special effects generator (SEG), operated by Danny Bucciano, and to a video switcher allocated for the selection of inputs to the Rutt/Etra synthesizer. Using this method, Danny and Bill Etra were able to work independently with any of the Tivicon camera images. The synthesizer was also fed images from a fourth camera which was generating mandala feedback patterns being controlled by Mollie Hughes. In addition, Bill was capable of generating totally abstract images within the synthesizer. The Rutt/Etra synthesizer fed its altered images to a high-resolution display. A rescan camera was used to pick up images off this display and route them to a second SEG operated by Skip Blumberg. The mandala feedback camera was also routed to this SEG along with the output of the first SEG. The configuration of this system gave Skip the option of choosing and mixing any images generated by these three sources. The output of Skip's SEG was routed through the Eric Siegel colorizer. Essentially, the colorizer adds preselected colors according to the grey scale within a monochromatic picture. The colorized video image was then routed through videotape recording machines, operated by Chuck Heuer and Carl Geiger, and then out to two light-gate color video projectors.

The two projectors were placed 180 degrees apart across the dome. Each projected a 40 foot diagonal television picture. Since the images were projected against the virtually black background of the dome, the processed images of the musicians appeared to be floating in space among the star fields.

The mandala feedback camera provided a constantly available thematic image, which allowed us to fade back and forth from the live action and gave us time to set up camera shots and synthesizer variations during the live performance.

The Rutt/Etra synthesizer excercises a great degree of control over images that are fed to it from video cameras, videotapes, and graphics. It is also capable of interfacing signals from external sources such as sound systems and biofeedback monitoring instruments. The synthesizer manipulates the television raster. Simplistically speaking, the raster is the time/ space patterning of a beam of electrons which are fired onto the inside surface of the television tube. Picture information is arrayed on the raster, creating the moving television image.

Manipulation of the television raster can be illustrated when a person adjusts the vertical and horizontal controls on a normal television receiver. The effect created is a stretching or squeezing of the image on the television display. The synthesizer functions in a similar manner but in more complex and sophisticated ways. Its basic controls manipulate height, width, depth, and both vertical and horizontal position of the image on a highresolution display. When these control functions are combined, they create complex animations with a television image. The synthesizer is also capable of creating multiple pictures from the original image fed to it and independently animating them. Utilizing an audio interface module, it is possible to use qualities of sound to alter the video images. This audio interface, the capabilities of the Rutt/Etra synthesizer, the scale of video projections, and the Planetarium's resources gualified Astral Projections as a significant multimedia event.







The Design of ZBS Media's Sound System

The recording of the music was approached from two different perspectives. The first was a direct quad recording taken from the main console outputs, which fed the Phase Linear-Bose horizon system. The mix was "dry" without any reverberation from the dome.

The second approach was to capture more of the ambience of the space with a full audience. A pair of condenser microphones was placed 15 feet up and 30 feet back from the stage area. The mikes were used in the M-S stereo mode. M-S is a popular European technique used for classical music recording. In M-S the mikes are mounted as close together as possible, but one of the mikes (cardiod) has its pickup pattern facing the stage, whereas the pickup pattern of the other mike (bidirectional) is facing left to right, nulling out the stage. The two mikes, one direct and the other ambience, are then matrixed to obtain the actual left-right information. The mikes were AKG C-12 a's, the recorder was an Ampex AG-440-2, and the DBX noise-reduction unit

was used. The recorders were located in the Planetarium's downstairs sound studio. Tie lines carried the six audio feeds the 125 feet to the basement.

The public address sound-reinforcement part of the system consisted of a pair of 8 input mixers strapped together, providing 16 mike level inputs assignable through pan pots to 4 main output channels. These outputs then fed the quad speaker system located at 90 degree positions around the dome at the horizon. The quad system was 2 Phase Linear power amps and 4 Bose reflecting speaker systems. The speakers were positioned facing into and using the surface of the dome as a reflector. The image produced was very close to the horizon, so to raise the apparent position of the sound sources, a mono signal from the reverb bus output of the console was used to feed the Planetarium's "in house" system, which consisted of Altec horns and bass cabinets positioned at the apex of the dome. This did raise the sound image considerably. Also this combined mono signal was used to feed the VTR and supplied voltage control for the video synthesizer.





The Role of Audio Synthesis in the Performance

The two Electro-Comp synthesizers used by Tom Zafian were valuable and flexible performance instruments. They were used as solo instruments and in unison with Central Maine Power Music Company. During the beginning of the show, as the audience entered the Star Theatre dome, they could discern low moaning-and-groaning sounds-a consistent ritualistic drone-complimenting the blue-grey clouds of dusk. As the sun set and the journey began, Tom interacted with Hugh Robbins' audio synthesizing system to create a blast-off sequence which simulated the rushing and roaring sounds of a rocket taking off from the Earth. Throughout the show, Tom processed the musicians' sound, creating tremolo effects in various rhythms with voice and instruments. The electronic effects were particularly evident

during drum sequences in which the synthesizers were employed to ring-modulate low percussion sounds, creating the effect of clapping huge wooden blocks together in rhythm with the drum beats.

audio feed to VTR and video synth.

In addition, the mixing components of the synthesizer were used to distribute the audio signal from ZBS Media's sound reinforcement system to the videotape machines for recording an audio track on the videotapes, which were later edited into a television program. The synthesizers also fed the audio signal to a special audio-interface module. This interface was a key element in the performance systems, because it gave Bill Etra the ability to interact with the varying sound intensities-to expand, zoom, and change the brightness of any combination of realistic or abstracted images of the musicians. These images were projected in real time onto the surface of the dome, giving the musicians the ability to interact with their own images.















The Event

As the audience entered the theatre, the low, subtle drone of an audio synthesizer had already begun. One had time to become relaxed in the reclining, swivel seats on the carpeted floor of the dome. In the center, on a raised circular stage, stood an array of instruments that invited the viewer's scrutiny and stimulated his curiosity.

Moments later, the lights slowly dimmed and the white surface of the dome expanded into a late evening sky, with fluffy clouds gently moving from horizon to horizon. As these clouds slowly changed from white to gold to crimson, the sky deepened from an evening blue into the twilight that precedes darkness. One became aware of strange, deep, primeval sounds that entered his consciousness almost imperceptibly.

The musicians entered in a solemn procession, carrying instruments and wearing loosefitting garments made of unbleached material. They would stop periodically to blow long, single notes on a conch shell and various other horns. One felt that he was being summoned to a special ceremony.

As the musicians assumed their places, one realized that the evening sky had gradually been transformed into the black of night. And the gently moving clouds had been replaced by a myriad of stars.

From this point, one's attention became fixed upon the musicians performing under the cosmic canopy. The rushing sounds of a blast-off into outer space began, accompanied by meteor showers and streaks of lightning. As though straining against the pull of gravity, this sound built up to an incredible intensity; and at its climax, a mandala from the video systems appeared in the sky to herald the beginning of a journey.

After a brief silence, the resonant, searching sounds of the steel cellos began. The images of the musicians themselves, now projected among the stars, were transformed into lissajous, synthesized abstractions which moved with the rhythms of the music and were again resolved into real images. Mandalas from the religions of many cultures appeared overhead

A mantra is a sound vibration essential to the creation and dissolution of all forms. In meditation it is used to raise the consciousness to higher and higher levels, and finally, to the clear light of the void or union with God. The sound of the basic mantra Om brought all the worlds into being, and all other sounds are derived from it. Thousands of years ago, Hindu mystics discovered the Om vibration and its derivatives; and they devised a special language, Sanscrit, to put themselves in touch with the powers radiating from particular sounds. Other cultures, too, developed mantra-like sounds, such as Ah and the Christian Amen.

Meditation upon a specific combination of mantra sounds brings about the presence of energies relating to those sounds, and, if repetition is precise and very intense, even the visible forms of the energies. Each mantra, then, has its corresponding form and design, or yantra. In a Tantric form of meditation, one draws the design of a yantra while repeating its corresponding mantra. These designs contain a circle, or mandala, often a series of concentric forms suggesting a passage through different dimensions. In its essence the mandala pertains to macrocosm and microcosm-the universe and the self. The mandala is the gatepost between the two. Ultimately, the mandala leads the contemplator to a realization of the source of energy within the self.

as if to act as guideposts on the journey. Then the voices of the musicians were heard in their cosmic circus music, "Is this life reality or is it all a dream?" and a chant which seemed to express the pain and confusion of life and its final acceptance.

A sublime mantra signalled the end of their search-Gate, paragate, parasamgate, bodhi swaha (Gone, gone beyond, gone beyond the Beyond-so be it!). At the end of the performance, one was brought back to Earth with the joyous sound of strings and voices celebrating God's love. The night sky lightened, stars faded, and the morning clouds appeared in their endless journey across the sky.

Mantras and Mandalas



During the Astral Projections event, the theme of mantras and mandalas was reflected in the music of Central Maine Power Music Company and in the performance environment. The musicians performed a variation on the mantra Om, a groaning, primeval sound —an invocation to a journey into the self symbolized by a journey into outer space. The mandala form was repeated in the design of the Planetarium—its spiral floorplan, the dome over the circular Star Theatre with its circular stage at the center.

Within the Star Theatre environment, one of the visual themes of the performance was the mandala, seen in the form of the Planetarium's celestial events, slides of mandalas from many cultures photographed by Lee Post, and video feedback mandalas, all projected onto the dome of the Planetarium along with video images of the musicians and lissajous abstractions from the video synthesizer.

The video feedback image was created by turning the eye of the camera onto the face of a TV monitor displaying the camera signal. The camera was tilted sideways and focused at the exact center of the tube, so that a mandala shape appeared on the screen. The feedback was also fed with an audio generator and with a live audio signal from the musicians, so that the mandala pulsated and changed design in relation to the audio-generated signal and the mantra sounds of the musicians.





















































































Strictly My Own Opinion By Sally Hilmer

My interests have always been of a creative nature-making things which I feel are beautiful; so it seemed only natural that I turn to music, one of the most beautiful ways of expressing oneself. I have never studied music, never even played it, until about four years ago. Then suddenly God gave me this beautiful gift-What can I say? All of Central Maine Power's music comes from the Lord, and He continues to be good to us. Our music grows and grows, as does each one of us and our love for our music. Nothing makes us happier than to share our music with others and make them happy too. (Of course, if it doesn't make them happy, that's another story!) That's why the performances at Rochester were so successful, because the Lord gathered so many people together to share much work, much joy, much watching and listening and making of music in a beautiful environment. The more people that share that space, that oneness (audience and performers alike) the happier we shall all be!

Our music now, as I mentioned before, continues to grow. I hope it never stops. The Lord is good. His mercy is everlasting. I will let Him lead the way. It's easier that way!

METABIZICS • POETICAL ECONOMY • BIZART



TIME=MONEY: CIRCULAR TIME SQUARED QUARTER $(25)^2 \times 20$ SQUARING THE CIRCLE—CIRCLING THE SQUARE COMPLEMENTING CURRENCY SHARE FOR SPIRIT/MATTER EXCHANGE BACKED BY GOLD OF THE STONE: MANDALA—METACULTURAL ARCHETYPE OF ORIENTATION IN SPACE AND TIME TRANSPERSONAL SYMBOL OF INTEGRATION AND SYNTHESIS. UNION OF OPPOSITES. **RETURNITY OF CIRCOLUTION**

ROTATE THE UP AND THE DOWN CIRCULATE THE IN AND THE OUT **REVOLVE THE LEFT AND THE RIGHT** RETURN THE BACK TO THE FORTH. ANDOR ORAND



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Participants in the Astral Projections Event in the Strasenburgh Planetarium

Survival Arts Media: Howard Gutstadt, Mollie Hughes, Danny Bucciano, and Pierre Jouchmans, in cooperation with Bill and Louise Etra.

The Strasenburgh Planetarium: Donald Hall, Kevin Atkins, Jerry Baker, Elmer Bataitis.

Central Maine Power Music Company: Bob Rutman, Connie Demby, Hugh Robbins, Sally Hilmer, Steve Baer.

ZBS Media: Bob Bielecki, Pat Anderson

Media Bus: Skip Blumberg, Nancy Caine, Bart Friedman

Portable Channel: Chuck Heuer, Sanford Rockowitz, Bonnie Klein, John Camelio.

Visual Studies Workshop: Laddy Kite, Howard Spector, Jeremy Ross, Andre Strong, Ron Kohn, Art Hynes.

Synapse: Carl Geiger, Paul Dowerty, Bobby Burns, Lance Wisniewski.

General Electric Company: Bill Baldwin.

Andor Orand, Lee Post, Kathy Wheland, Tom Zafian.

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