

The Orbiting Unification Ring - Space Peace Sculptures: Progress Report on Global Art in Space

Arthur R. Woods and Marco C. Bernasconi

Arthur Woods (artist), OURS Foundation, CH-8424 Embrach, Switzerland.
Marco C. Bernasconi (engineer), OURS Foundation, CH-8424 Embrach, Switzerland.

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ABSTRACT

The authors discuss the progress of the *Orbiting Unification Ring-Space Peace Sculptures (OUR- SPS)*, a project of the OURS Foundation. The *OUR-SPS* have been designed in accord with both the astronomical sign of the planet Earth and an ancient sign of peace and unity. The sculptures also communicate to a global audience that the development of outer space is not only beneficial but also crucial to the well-being of the planet. Specific developments discussed include the evolution of launch arrangements with the space agencies of the United States and the USSR, the selection of contractors and technology and the broadening of artistic collaboration and public awareness through events and exhibitions.

Today we understand that at our level of industrialization and social development we are united by nature, and there is no more meaning to the words 'mine' and 'yours'. We must use a new word—'ours'. When we cosmonauts go out into space, this word 'ours' unites us.

- Valentin Ledebev, Soviet cosmonaut on Salyut 7

The OURS Project

The Orbiting Unification Ring Satellite (OURS) project was initiated in 1984 with the goal of realizing, in the year 2000, an orbiting structure that will be visible to the entire population of the planet as a 'circle in the sky' symbolizing planetary unity, wholeness and peace. The *OUR-Space Peace Sculptures (OUR-SPS)* are the first in a series of space sculptures leading up to the realization of the OURS. Planned for realization during 1992, the International Space Year (ISY), these sculptures are intended to research the technical and practical feasibility of the OURS concept. Due to the uniqueness of using the space environment for their realization, it is assumed that world attention will be focused on their message.

Agreements have been signed with space officials of the USSR for the manufacture, launch and deployment of *OUR- SPS 1*, to be deployed from the Mir Space Station. A group of European firms has agreed to

support the realization of a second *OUR-SPS 2*, to be deployed from an orbiting U.S. space shuttle. The plan is to televise both deployments to a world audience [1].

PEACE ON, OFF AND WITH THE EARTH

The remarkable political events in the last year have reshaped the global political order in unexpected and unparalleled ways. The lessening of East- West tensions immediately inspired visions and hopes for world peace and a subsequent retreat from the threat of a nuclear confrontation between the United States and the USSR. Military expenditures in both nations came under close review, and the words '*peace dividend*' signaled a move to redirect governmental budgets into other areas, space development among them.

Hopes for world peace took a step backwards with Iraq's invasion of Kuwait and the ensuing Persian Gulf war. As in the East-West tensions, an essential ingredient in this recent situation was the capability of delivering lethal weapons using space-related technologies. Indeed, we have discussed this aspect of space technology, especially the emerging technical capability by Third World nations to apply this technology for lethal ends, in a previous paper [2].

Also mentioned in that earlier paper was the critical environmental condition of the biosphere, which has continued to decline as the stresses of global industrialization, overpopulation and environmental irresponsibility remain unchecked. One of the major hopes of the OURS Foundation is that space technology will provide new and appropriate technology for observing and understanding our global environment from the perspective of space.

It is in this context that the *OUR-Space Peace Sculptures (OUR-SPS)* are being proposed as a cultural addition to the 1992 ISY (International Space Year) activities. As the mission of art is to transmit understanding and to communicate feeling, the supporters and organizers of the *OUR-SPS* project feel strongly that artworks symbolizing the planet Earth and a call for world peace will contribute substantially to the position expressed by many in the space community: space development is beneficial to the progress of human civilization and essential to the evolution of life beyond our planet. Furthermore, we feel that for space development to be truly successful, a cultural dimension now needs to be introduced to complement its highly technical and scientific aspects.

OVERVIEW OF RECENT DEVELOPMENTS

Developments in the *OUR-SPS* project took place in four key areas, which can be defined as organizational, public awareness activities, technological and fund-raising. On the organizational level, the most significant development was the incorporation of the OURS Foundation in Embrach, Switzerland, as a nonprofit cultural/astronautical organization. Also significant was the development of international artistic collaboration. Public awareness activities include several exhibitions organized by participating artists, the establishment of contacts with organizations with similar purposes, and participation in an international children's 'Peace Book' project and in important space conferences. Coverage of the *OUR-SPS* project in the media falls in this category as well.

Technological developments include acceptance of a proposal made by the Soviet space officials representing Glavcosmos and NPO Energiya concerning the manufacture, launch and deployment of

OUR-SPS 1. The construction and delivery of a full-scale mock-up of the sculpture was made by NPO Energiya. Developments concerning *OUR-SPS 2* deal with the process of obtaining a Getaway Special (GAS) reservation from NASA and creating a consortium of European companies willing to construct and manage the payload for deployment from a U.S. space shuttle [3]. Fund-raising has become the bottom line of the project. Thus, a new assessment of the costs involved and the process of raising funds is discussed in greater detail later in this article.

ORGANIZATIONAL DEVELOPMENTS

The OURS Foundation

To preserve the integrity of the OURS project as well as to protect its concept and to assist fund-raising, it was decided in 1987 to establish a nonprofit foundation as the organizational structure of the project. The OURS Foundation was incorporated in February 1990 and entered the Swiss commercial register as a nonprofit organization on 19 March 1990. During this process the original purpose and function of the OURS Foundation evolved from the realization of sculptures in space to a broader purpose, as stated in the charter document:

The primary purpose of the OURS Foundation will be to introduce, nurture and expand a cultural dimension to humankind's astronomical endeavors. This task will be manifested through the identification, investigation, support and realization of related cultural, astronomical, humanitarian, environmental and educational activities which may take place on and off planet Earth and which are deemed as beneficial to the development and the advancement of human civilization in this new environment.

Global Artistic Collaboration

The first artistic collaboration also occurred spontaneously at the prestigious international art fair, ART'19 1988, which took place in Basel, Switzerland. On the premises, Swiss artist Laurent Possa created two 8-m-high murals, Homage to the OURS. Since that time other artists who have heard of the project have joined with contributions of art and energy. In June 1989, the first collaborative art exhibit took place at the ART'20 in Basel. The 1987, 1988 and 1989 exhibits of space art at this important annual gathering of the art world were the first and only exhibits dedicated to art and space.

In autumn 1989, an invitation to participate in the artistic realization of the OURS project was sent to all members of the International Association for the Astronomical Arts (IAAA). Nine artists responded and became active members, or 'OURS Artists'.

EXHIBITIONS AND EVENTS 1989-1990

Sion, Switzerland, November 1989-February 1990

OURS Artist Laurent Possa organized an exhibition in Galerie de la Grenette, the Sion city museum gallery. He engaged a local group of artists in the organization and managed to obtain financial support from the city government.

Visions of Space: The First International Exhibition of Space Art in Switzerland, Space Commerce '90, Montreux, Switzerland, March 1990

Invited by Space Commerce '90, the biannual conference and technology exhibition on the industrial use of space, the OURS Foundation organized a major exhibition of space art comprising 108 artworks from 17 artists representing 7 countries. This exhibit covered more than 1,000 square meters at the entrance of the

technology exhibit. *Visions of Space* was adapted from the title of space artist David Hardy's then newly published book about space art [4]. Participating artists were Arthur Woods, Laurent Possa, Joe Godwin, Robert Andre, Stefan Blaser, Ludek Pesek and Marianne Schmidt from Switzerland, David Hardy from England, Carter Emmart, Judy Asbury, Ron Russell, Debra Corbett and Michael Bates from the United States, Paul Hartal from Canada, Bibi Ahrnstedt from Sweden, J.J. Van Ellinckhuijzen from Namibia and Ruggero Maggi of Italy. Swiss musician Hans Peter Haiiptli composed a special cosmic musical track that was performed live at the opening [5].

In the technology exhibition, comprising approximately 50 aerospace firms, the OURS Foundation was present with a large display that included an interactive, computer-generated audio-visual presentation. For us, the significant event was the delivery and technology demonstration of a full-scale inflatable mock-up of *OUR-SPS*.

OURS Exhibition, Zurich, Switzerland, May 1990

The firm Habegger Art Management of Zurich organized a presentation and art exhibit of the OURS project.

Milan Art Center, Milan, Italy, 21 September – 4 October 1990

Organized by OURS Artist Ruggero Maggi, the exhibition included artworks by several OURS Artists, a public painting room and a display of children's art made for the project. Maggi proposed a 'mail art' project for the OURS that would utilize the international mail services in such a way that mail artwork would return to the original sender after making a complete trip around the planet, collecting postmarks and interventions along the way.

PUBLIC AWARENESS ACTIVITIES

The International Peace Book Project, USSR

Presentations of the *OUR-SPS* project were made to a children's group at the Center for Creative Initiatives for Peace in Moscow, which is administered by the Soviet Peace Committee. In January 1990 the OURS Foundation received an invitation from this organization to send a group of Swiss school children to Moscow to participate in the writing of an 'international peace book'. The OURS Foundation, with a local school group, organized the arrangements. In March 1990, eight students and two accompanying teachers traveled to Moscow for one week, joining students from the United States, Germany, Austria, Japan and the USSR.

Der Kreis (The Circle) Exhibit, Switzerland

In 1990 an exhibit examining the history and meaning of the symbol of the circle and all of its variations was organized by OURS member Thomas Imboden for the Migros Corporation of Switzerland. The OURS ring design was included in the display as an example of the use of the circle symbol to communicate unity.

The Rainbow Project, Switzerland and Japan

In Switzerland, Thomas Bertchi and, in Japan, Moko Sato have initiated a project to collect items for an archive with the theme of the rainbow. Information and events involving this universal theme will be publicized and used as a means to promote international cultural communication. Identifying with our similar motives, the Rainbow project publicized the OURS project in their presentations, press articles and activities. Sato translated the OURS information package into Japanese and presented the OURS project to students in Japan.

Youth Space Education Week, Wichita, Kansas, United States, 8-12 October 1990

With the purpose of promoting, educating and developing interest in aerospace and space education, the Youth Space Education Week was organized by OURS member Larry Lyons in Wichita, Kansas. The event was endorsed by U.S. Senators Robert Dole and Jake Garn and was supported by the Midwest Space Development Corporation, the National Space Society and the U.S. National Spaceweek Organization. The *OUR-SPS* project was featured and the '*OURS for Our Children*' program was highlighted to encourage children's participation in a cultural and astronomical project [6].

The World Timecapsule Fund, Minneapolis, Minnesota, United States

The goal and purpose of the World Timecapsule Fund (WTF) is to explore, preserve and share the story of humanity via the compilation of an interactive electronic archive. This archive will be composed of submissions of information by the project participants, primarily students from around the world. In the year 2000, a copy of the archive will be launched into interstellar space. The WTF and the OURS project are exploring ways to combine our activities and goals. The WTF has written about the *OUR-SPS* project in its newsletter, and a member of the OURS board of directors presently serves on the International Advisory Committee of the WTF.

Media Coverage 1989-1990

By the year 1989 more than 100 articles and reports about the project appeared in the international news media. A significant part of the process of establishing public awareness of the *OUR-SPS* (and thus encouraging global communication even before the sculptures' realizations in space) is illustrated by reviewing media coverage of the following chain of events.

- "*Art in Space*", an article by Roger F. Malina, appeared in *Technology Review*, published by the Massachusetts Institute of Technology [7]. This article featured several space art projects, including the *OUR-SPS* project, and outlined the controversy that this form of art has stimulated among scientists and artists.
- Malina's article stimulated an additional article, "*Is Space Art or Sky Art the Threat?*", by the president of the IAAA, which called upon the membership to discuss the nature of 'space art', and how the controversial nature of orbiting sculpture may reflect adversely on the already established genre of space art [8].
- In an earlier article in *Pulsar*, Paul Hartal, IAAA and OURS project member, discussed his assessment of art in space as "an important step toward the synergic fusion of art and science" and used several space art and space sculpture projects, including *OUR-SPS*, to make his point [9]. This discussion stimulated a reply from another IAAA member, Ron Miller, who called for criteria to distinguish between 'art in space' and 'publicity stunts' [10]. This dialogue is continuing.
- The OURS Foundation was contacted by a journalist from *Omni* magazine in the United States about the *OUR-SPS* project for an article called "High Art, Low Orbit" [11]. Although the story was positive and factual, a photo of *OUR-SPS* was captioned: "*A Halo For the Earth or Just OUR Junk in Space*". The author was provided substantial information concerning the environmental impact of *OUR-SPS*, and at that point no art had entered the space environment. The tone of this caption may reflect how the space community's activities are perceived by the general public. [12]

On the other side of the media issue, the space industry press is not paying a great deal of attention to *OUR-SPS*. Even though the OURS Foundation had one of the largest stands at Space Commerce '90 and organized a major exhibit of space art in the foyer, no article appeared in the space magazines or newspapers that covered the conference. One editor of a leading space magazine said that the "space industry has

enough problems with the public perception of its activities, and space projects such as the *OUR-SPS* may create an opportunity for the public to criticize the more serious work of space science”.

Table 1. The Communication Potential of the
OUR-SPS Project - Global Awareness

Year	Number of People
1984	10
1985	200
1986	100.000
1987	1,000.000
1988	15.000.000
1989	20.000.000
1990	30.000.000
1991	200.000,000
1992	1.500,000,000(OUR-SPS 1)
1992	4,000,000,000 (OUR-SPS 1 &2)

Global Awareness of the *OUR-SPS* Project

Based on public presentations and press coverage, both received and anticipated, we have calculated estimates of the number of people that, at one time or another, already have or will become aware of the project (Table 1).

TECHNOLOGICAL DEVELOPMENTS

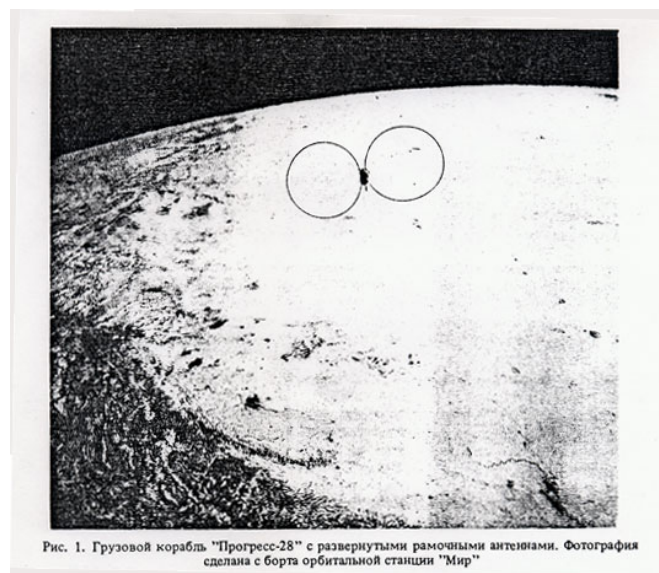


Fig. 1. USSR toroidal antenna experiment on a Progress 28 spacecraft, 26 March 1987. This photograph was taken from the Mir Space Station. (Photo: Glavcosmos, Moscow)

OUR Space Peace Sculpture 1

On 25 February 1988 the OURS project and Glavcosmos of the USSR signed a 'letter of intent' for the launch and deployment of a 10-kg payload from the Mir Space Station, agreeing to cooperate in the realization of *OUR-SPS* as a symbol of world peace. At that time the design of *OUR-SPS* was based on a technology called 'inflatable, space rigidized structures' (ISRS), under development by Contraves AG.

An essential element of the project's message was the demonstration of international cooperation in space by sending European technology to a Soviet space station.

Contraves was very slow to commit itself in support of the project and, by July 1989, had only submitted a proposal to conduct a feasibility study. In the meantime, Glavcosmos officials became concerned about the delay with the technology definition as well as the eventual possibility of running into technology transfer problems as they had in other dealings that involved Western technology.

In the course of negotiations Glavcosmos formulated a 'package' offer that included the manufacture of *OUR-SPS* in the Soviet Union and its launch and deployment. To substantiate their proposal they provided a photograph (Fig. 1) and information about their experiment with a dual inflatable toroidal antenna, 20 m in diameter, that took place on a Progress 28 spacecraft and was photographed from the Mir station [13].

Furthermore, Glavcosmos officials suggested that the deployment would be carried out during an extra-vehicular activity (EVA) with a cosmonaut pushing *OUR-SPS* into space by hand. The sculpture would be manufactured by NPO Energiya with V/O Licensintorg as the commercial interface. To keep the international scope of the *OUR-SPS* message intact, the OURS Foundation decided it would accept the Soviet proposal only if a parallel program leading to a similar deployment from a U.S. space shuttle was simultaneously pursued. This decision led to the development of the *OUR-SPS 2* program.



Fig. 2 Inflatable mock-up of the *OUR-Space Peace Sculpture*
(Photo: NPO Energiya Moscow)

An *OUR-SPS* Manufactured by NPO Energiya

The sculpture manufactured by NPO Energiya will be a torus with a diameter of 6 m and a ring thickness of 2 m. A metal sphere decorated to represent the planet Earth, containing an electronic archive of signatures and drawings, will be suspended in the center of the sculpture on four equally distant flexible rods. The torus will be covered with a detachable, decorated nylon covering that will be delivered to the USSR prior to launch (Fig. 2). Specifications about the type and quantities of materials involved are not available at this time. A full-sized mock-up of the sculpture was manufactured by NPO Energiya and delivered to the OURS Foundation at Space Commerce '90 (Fig. 3).



Fig. 3 Full-sized mock-up of the *OUR-Space Peace Sculpture* (NPO Energiya) on display at Space Commerce '90, Montreux, Switzerland

Deployment Sequence from the Mir Space Station

The sculpture will be transported to the Mir station via a cargo vehicle two months prior to the deployment date. During an EVA a cosmonaut will remove the sculpture from its transport container and attach it to an extendable rod that is 8-10 m in length (Fig. 4). The sculpture will then be inflated with gas supplied by the Mir station and photographed. The rod will then be retracted, and the sculpture returned to the station. The cosmonaut will direct the sculpture into space manually. These operations will be documented through a television and photographic report and transmitted to a world audience.

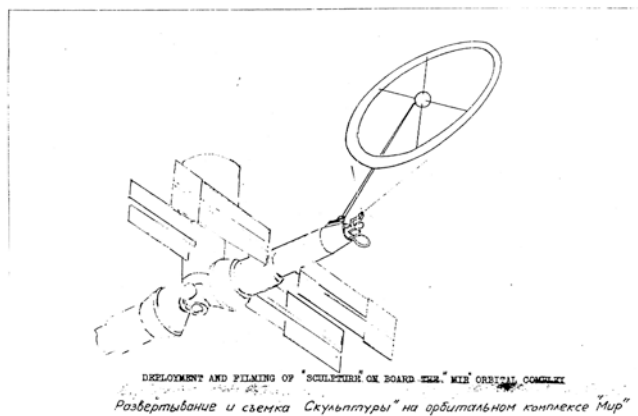


Fig. 4. Diagram of the *OUR-Space Peace Sculpture* deployment from the MIR Space Station.

(Courtesy of Glavcosmos, Moscow)

Table 2. Development Schedule of *OUR-SPS 1*

1. Manufacture and Delivery of Full size Mock-up
2. Preparation of Engineering Model
3. Testing of Engineering Model
4. Manufacture of Flight Model
5. Transfer of Outer Covering to OURS Foundation
6. Manufacture of Back-up Flight Model
7. Cyclogrammes of Experiment
8. Return of Decorated Outer Covering to NPO Energia
9. Final Discussions of TV Scenario
10. Transfer of OUR-SPS to OURS Foundation
11. Delivery of OUR-SPS to Mir Station
12. Deployment of OUR-SPS 1
13. Documentation Materials to OURS Foundation

Earth Day: 22 April 1992

As it is possible to schedule a deployment from the Mir station beforehand, much thought has been given to the timing of the deployment. Given the theme of the *OUR-SPS* Project, the optimum date will be Earth Day, 22 April 1992. As presented in Table 2, NPO Energiya has indicated that the *OUR-SPS* can be deployed during the month of April 1992. While the exact date of deployment has not yet been agreed upon, the OURS Foundation is planning to coordinate and integrate the live television transmission of the deployment with Earth-based events.

OUR-Space Peace Sculpture 2

Since the Nonscientific Payload Program that permitted Lowry Burgess's sculpture to be carried on a U.S. space shuttle was rescinded in the wake of the Challenger accident [14], the OURS Foundation decided to pursue the development and deployment of *OUR-SPS 2* through the GAS program. We made a visit to NASA headquarters in May 1989 to discuss the possibility of deploying the *OUR-SPS* from a shuttle. The OURS Foundation was informed that the GAS-reservation list was frozen but that reservations could be transferred in accord with established procedure. This procedure was described as merely a formality. The OURS Foundation was provided with information about the program and a list of existing GAS-reservation owners.

In December 1989 a select list of GAS owners received a mailing, which resulted in the selection of a party willing to transfer their GAS reservation to our organization. Letters of transfer were submitted to NASA in January 1990. Although the OURS Foundation has received further information from the technical office at the Goddard Spaceflight Center about conducting a GAS payload experiment, official approval of the transfer has still not been granted at the time of this writing.

A Consortium in Europe for *OUR-SPS 2*

One respondent to our letter concerning the GAS transfer was the firm Kayser-Threde GmbH of Munich, Germany. They sent a letter informing us that they had managed several successful flights of GAS payloads and that they would not sell a GAS reservation without providing the accompanying services themselves.

We contacted Kayser-Threde to ascertain their interest in combining their experience in the GAS program with Contraves's ISRS technology for the realization of *OUR-SPS 2*. Meetings between the three principal parties were held in July 1990.

On 31 July 1990, Kayser-Threde and Contraves issued a joint statement confirming their readiness to assist the realization of *OUR-SPS* deployment from the shuttle. The organizational responsibilities will be divided as follows: (1) Kayser-Threde GmbH, as prime contractor, will cover project management, system engineering and payload infrastructure, as well as serve as the NASA/GAS interface. (2) Contraves AG will be responsible for providing the ISRS product. (3) The OURS Foundation will be responsible for design, publicity and fund-raising.

In the meantime, the question of the likelihood of successfully deploying a satellite from a GAS container has been discussed. From informal contacts with space experts familiar with such matters, it appears that in order to receive the television coverage necessary for the deployment of *OUR-SPS*, our GAS payload must be upgraded to a 'complex assisted payload' (CAP). Information about this program has not been made available to us, but informal cost estimates are approximately U.S. \$500,000, rather than the anticipated U.S. \$25,000-50,000 for a GAS canister with a lid that opens.

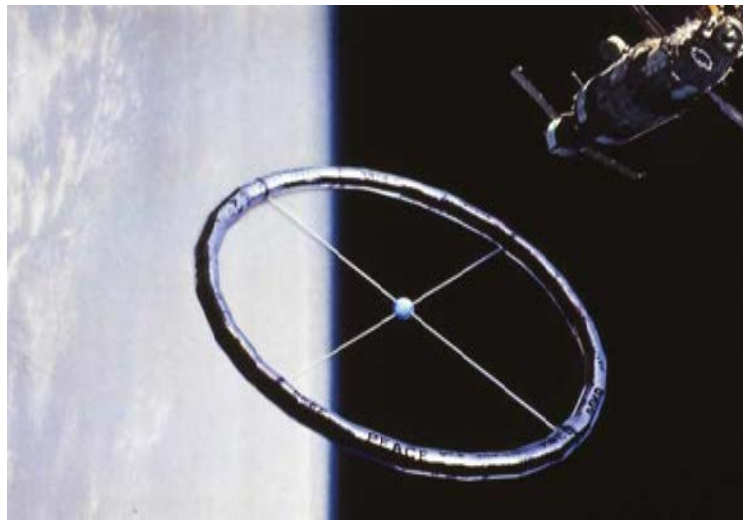


Fig. 5. Artist's conception of *OUR-Space Peace Sculpture*, as it will look in space.

Why Two OUR-Space Peace Sculptures for 1992?

It is clear that the *OUR-SPS* Project will be a success with the realization of just one *OUR-SPS* in 1992. As mentioned, we have chosen to pursue plans for both deployments primarily to maintain the global scope of the message and to attempt to keep the project as politically neutral as possible. On practical terms, only the United States and the USSR have the crewed space vehicles necessary for televising the project. In addition, because the two sculptures are technically different, the OURS Foundation will gain much valuable data to apply to the larger space sculpture projects planned for the years 1996 and 2000.

Project Costs and Fund-Raising Costs

The firm, fixed 'package' offer made by Glavcosmos, NPO Energiya and V/O Licensintorg has been set at approximately U.S. \$1,000,000, including management, manufacture, launch and deployment. The anticipated costs for *OUR-SPS 2* are approximately U.S. \$2,000,000.

Corporate Sponsorship

Before 1990 all of the project's activities were financed through public participation activities, in-kind donations and the sale of artworks. Because we lacked the financial resources to reach a world audience through advertisements and mailings, we decided to implement a corporate sponsorship plan that would not only raise the necessary funds to initiate the technology development but also allow for global participation.

In early 1990 the OURS Foundation commissioned the public relations firm ABC/Eurocom in Frankfurt, Germany, to prepare a global communication strategy. As their assessment of the communication potential of the *OUR-SPS* project was positive, this firm created a corporate and public participation/ sponsorship plan in order to raise the necessary funds.

Although several corporations have sponsored exhibitions and made in-kind donations in support of the project, the task of finding sponsors and raising funds has proved difficult. In general, potential sponsors are concerned about the realization risks of a space project, especially in light of global economic difficulties affecting both the United States and the USSR, and about the seemingly narrow range of enthusiasm for space development among the public at large. Moreover, many sponsors want to exploit the advertising potential of *OUR-SPS* by putting logos or other company identifications on the sculptures.

CONCLUSION: SPACE FOR PEACE AND PROGRESS

Today, the *OUR-SPS* project has reached the point of realization without compromising content or message. It has been developed and pursued in a volatile and changing global political climate in which the concepts of 'peace' and 'war' have been manifested in their extremes.

Perhaps some will judge the success or failure of the *OUR-SPS* project based on its eventual realization in the space environment (Fig. 5). It is not easy to raise money for a space art project celebrating world peace. Some people have told us that U.S. \$1,000,000 would be better spent on 'practical' projects here on Earth. Corporations and banks have demanded financial security before committing their services to the development of the project—a no-risk approach to vision. Others, aware of the high stakes of global communication, have suggested schemes to exploit its advertising potential. Consequently, throughout the process of bringing *OUR-SPS* to reality, finances have often been the main, and sometimes the only, focus of discussion.

The OURS Foundation has decided not to 'sell' *OUR-SPS* and maintains that the 'process' of realizing the project within the context of its message is at least as important as its eventual manifestation in space. This paper, along with our previous papers, is intended to provide space art pioneers, as well as all others dedicated to the realization of a space-faring civilization, with an example of the triumphs and the pitfalls of introducing a cultural dimension into the space environment.

References and Notes

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3. For more details on NASA's Getaway Specials, see Joe Davis, "*The Last Getaway Specials: The Space Shuttle and the Artist*", *Leonardo* 24, No. 4, 467-469 (1991).
4. D. Hardy, *Visions of Space* (Surrey, England: Dragon's World, 1989).
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