Global Journal of Researches in Engineering: J General Engineering Type: Double Blind Peer Reviewed International Research Journal Publisher: Global Journals Space and Art: In Collaboration with the Public in Public Spaces

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Abstract

Space and art may seem separate â??" in the same ways that humans seem to be. Furthermore, both space and art are usually not easily accessed by the public. This paper proposes that through the practices of creating public installations, space and art can be much better integrated. Aiming to create this in an accessible form for anyone, ?local co-operation? between experts and the public â??" making an installation together â??" becomes a fundamental methodology. In this paper, the author will discuss two cases: Moons of Naoshima (2013-2014) in Naoshima, and Uy-uni-verse?Multiverse (2014) in Tanegashima Space Center. In summary, these cases show how this methodology works for the public collaborators to deepen their mental connections with space and art.

Index terms— collaboration, space, art, public installation, art and science.

1 Introduction

ince the 1960 were when humans started to go into outer space, the relationship between outer space and humans has been getting closer. From ancient times, people have been intuitively utilizing the laws of the universe by capturing the rhythms and patterns of nature, for instance in agriculture and navigation. In the current era, is the relationship between our culture and the universe getting closer? Or -is the universe somehow conceived of as being separate to humans? Such a question also applies to think about our relation to art, especially as a way of life which takes the universe as its concept.

Along with the aim of the author's project which is to mediate the dimly perceived nexus connecting the universe, humans, and art, the author would like to use the term 'the universe' that denotes all life forms and environments, and that also includes 'space' that refers to outer space. The truth of this universe remains a mystery, though the scientific research of astronomy, particle physics, astrophysics, and space science has been trying to erode a mountain of an enigma over the centuries. This enigma can be one of the reasons why our curiosity persists. Either consciously or unconsciously, some of us intuitively recognize that science and art have sprung from the same origin. Then, In this paper, the author will discuss a way of collaboration through two of her projects: Moons of Naoshima (2013-2014) in Naoshima, and Uy-uni-verse?Multiverse (2014) in Tanegashima Space Center.

2 II.

Local Co-operation 'Local co-operation' as a methodology, a unique way of making an art festival, has developed in Japan. In this, artists/designers/architects are invited to propose a plan that is to create an artwork with With the constant concept, ever since the inauguration of the festival, of "humans are part of nature" [2], the

professional artists/designers/architects create a site-specific project inevitably on someone's land, and this leads them to work with residents and also to build a new community. Using what is called 'local co-operation,' residents and volunteers engage in making artworks together with professionals as well (Fig. **??**), and this process evokes a feeling of appreciation, co-operation, and empathy among them. This unique method of collaboration has initially led by Fram Kitagawa (1946-) -an art director of the festival. With his profound skills and wholehearted enthusiasm, the festival has dramatically succeeded in provoking Japanese society to reconsider how to join our lives with nature and art in this era of disaster -both natural and human-induced. Furthermore, this methodology which is called the Tsumari-method, and named after Echigo-Tsumari Art Triennale, has become a prototype of city . This festival aims to restore vitality to the islands in the inner sea of the Setouchi area and to create an opportunity for everyone to find genuine beauty in their culture and life. Despite the difficulties in the accessibility to this area (e.g., most venues are in the small isolated islands), this festival attracts not only people throughout Japan but also those from around the world. In 2016, at the second festival of the Setouchi Triennale, approximately 1,040,050 visitors were recorded for 108 days in total **??**4].

In 2016, this festival succeeded in gathering approximately 7,000 volunteers to co-create it **??**5]. The volunteer group named 'Koebi-tai' has become an NPO, which carries out diverse tasks.For instance, cutting glasses and bushes to make a better environment as a part of the artworks, making the artworks together with the artists and residents, welcoming visitors, maintaining the artworks, and most importantly, communicating with residents through those activities and their ordinary lives (Fig. **??**). Consequently, their involvements lead to the creation of unity in the community. These encourage people to find a pure richness in their daily lives on the island.And to naturally be attracted by the charm of the site.

With the local co-operation model at Echigo-Tsumari and Setouchi, and with the author's three-year work experience in Naoshima (one of the venues of Setouchi Triennale), the author applies these elements to conduct another project, fostering her aim to create a deeper relationship between the universe, humans, and art.

3 III. Art Practice i: Moons of Naoshima

In the island called Naoshima, the author produced a project entitled Moons of Naoshima for December 6, 2013 -January 13, 2014. In collaboration with an artist/professor Takaharu Ito and the local entities of Naoshima, they created the light installation through a workshop with an elementary school there. This installation was designed to enhance the beauty of the winter environment and to bring warmth to the minds of residents and visitors.

4 a) Background

The origin of Setouchi Triennale is rooted in Naoshima, a small isolated island in the Seto Inland Sea of approximately 3,000 population and 8.14km 2 dimension (the main island of Naoshima) [6]. It was back in 1985 when the vision was derived from creating an artistic site there. The museums and public art around the island have been attracting worldwide visitors. Winter is quiet. This silence is mostly because of the meteorological conditions and the absence of the winter season in Setouchi Triennale (it consists of three seasons: spring, summer, and autumn). Meanwhile, during the Christmas and the New Year's holiday seasons, the town of Naoshima has been organizing an illumination project at the Miyanoura Port; the main entrance of the island, apart from Setouchi Triennale and also apart from any support of artists.

Considering these situations, the author proposed that the town of Naoshima reconsider this illumination project in collaboration with the artists and residents. In the end, her proposal made with an artist/professor Takaharu Ito was accepted. Besides, for an educational purpose, the town suggested that Ito and her work with Naoshima elementary school.

5 b) Concept

With this as a background, the basic concept of the project developed along the following lines: planning and local revitalization for many other places in Japan. Create space and time which enhance people's ability to realize the beauty of the environment (which residents tend to take for granted) 2. Use the moon as a motif of the installation, to provide an experience of feeling that the universe becomes closer 3. Enrich the beauty of the winter landscape, and winter life in Naoshima With these concepts, the plan was to make an installation of the imaginary 'moons' as if they were floating in the night sky. Each moon was to be made by the pupils of Naoshima. Therefore the installation was entitled Moons of Naoshima. c) Design Fig. **??** shows the layout of the installation. Two 25m-diameter (approx.) circles are located at the park just beside the ferry port.

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With 24 rods (of 6m height that give visibility for ferry passengers as well) for each circle, 'moons' (spherical styrofoams on the top) become illuminated by LED in the night (Figs. 4 and 5). As with the real moon, these moons wouldn't emit light by themselves. It is common nowadays that most illumination works don't look nice during the daytime. Therefore the installation was designed to be appreciated in the daytime as well. In the daytime, viewers can enjoy the color ful moons that have been painted by pupils.

In terms of the material used, the glass fiber rod allows the whole installation to be kinetic; to naturally move with the wind. In collaboration with Naoshima elementary school, Ito and the author organized the workshop. With 48 pupils from the third (9-10-year-old) and the sixth grade (12-13-year-old), the idea was to let each of them create an original 'moon' -his/her only 'moon' in the universe, imagining this floating in the sky of Naoshima.

To enhance their imagination, Ito wrote a short Poem about the moon.

1. The author explains the concept of the installation and recites Ito's poem for pupils with their eyes closed 2. Pupils sketch a moon on a piece of white paper based on their imagination (with watercolor and color markers) 3. With white spherical styrofoam for each person, pupils draw their moons with watercolor (Fig. 6) 4. Pupils decide the title 5. Reflection with all participants (pupils describe their works with all the participants) (Fig. **??**)

After the workshop at the elementary school, Ito's studio (in Tokyo) puts a waterproof coating on the moons. They led the production of the installation (e.g., making the rods and the other equipment).

An installing process was also led by Ito's studio with the support of the town of Naoshima.

7 e) Result

On December 6, 2013, the opening ceremony was held at the site, accompanied by the mayor of the town. With music (a Japanese song on a theme of the moon) led by a chorus group of residents, many residents seemed to be delighted in the atmosphere that this installation had created (Fig. **??**).

Figs. 9 and 10 show the daytime/night scenes of the installation. During the daytime, as Ito and the author expected, the colors of the moons nicely matched the color of the transparent blue sky (the weather in this region is mostly sunny during winter). In the night, these moons become illuminated reflecting the light below, as if they are floating in the night sky, or even in space. The winds are typically hard in winter there, and this gives a natural kinetic movement to the installation.

Over Christmas and the New Year's holidays, many visitors (many of them are relatives of residents, and travelers from diverse regions and countries) appreciated this occasion . With support from residents and schoolteachers, the author carried out the workshop described in the following: Tanegashima, where the rocket range of Japan Aerospace Exploration Agency (JAXA) is located. Led by Tanegashima Space Art Festival Promoting Committee with the cooperation of the town administration, JAXA and the other entities, the author was in charge of curating/co-organizing this project. This project was a preliminary event for the purpose of building a cornerstone for the future festival. In this section, the author discuss Uy-uni-verse?Multiverse, one of the installations for this project. The background of the island shows a unique environment, initially developed by JAXA where space development has become a symbol of the town. With the vision of reconnecting the universe, humans, and art and creating a new value of the idea of 'the universe' beyond the idea of 'space' which indicates 'outer space,' intuitive communication through local cooperation was developed.

For the project Mission in Tanegashima (2014), eight artists and designers had their residency on the island to make installations together with residents. From this, the project of the Cosmic Art Research Committee -of which the author act as a head -, including artists/designers Ryu Sakurai, Hajime Shimoyama, and Ryo Takahashi, is examined.

8 b) Concept

Starting from a dialogue between residents, the members of this Committee firstly tried to capture their feelings through staying on the island to make the installation suitable in their culture. Tangegashima has extraordinarily beautiful scenery formed by its geographical features combined with the Sea of Japan and the Pacific Ocean, where the Black Tide has brought new cultures and natural resources from overseas. Surprisingly, war has never happened on this island mainly because all the late rulers wanted its enriching resources and the fields where the rice grows to produce sufficient food for the inhabitants. Despite such a peaceful environment, as the island is 40km far away from the mainland of Kyusyu [9] (the large southern island of Japan), residents inevitably face to some difficulties in their ordinary lives , derived from the sense of being such a small community. Inhabitants have little chance to find the time to be alone and are socially engaged with each other most of their time. One resident told the members that he needed space and time to relieve himself. The members, therefore, came up with the idea that it would be meaningful if they could make a space for residents to look at themselves from both micro and macro perspectives.In other words, to examine the microcosm within themselves and the macrocosm of the entire universe.

To this end, the members located the most appropriate site where anyone could be just by himself/herself surrounded by the beautiful clear sky, especially the starry evening sky, and the sound of water resonating with the rhythms of the universe. The location chosen was the large lawn area of the Tanegashima Space Center, which everyone can access without any permission and at any time, and is located some distance from the residential area in the town.

Finally, the installation was entitled Uy-uni-verse?Multiverse, a combined term which evokes the universe and the Uyuni salt flat in Bolivia, where people can feel as if there is no border between the sky and the lake, in the same way, that there are no borders in outer space. As the members considered Uyuni salt lake as a metaphor of

the cosmic environment, this title reflects their hope to create space and time for people to experience a feeling that they are part of the vast universe.

9 c) Design

The next step is designing the structure. In this process, Shimoyama chiefly led the design. In collaboration with Yoshiharu Terada, a local architect on the island, the members gave gradual form to the installation.

First of all, the members collected the meteorological data from the chief certified weather forecaster at the Tanegashima Space Center. The members had to carefully examine the data to meet the criteria of JAXA for the site, and perhaps most importantly, to make the installation strong enough to withstand the harsh weather conditions of the island where the wind blows very forcefully -especially during the summer typhoon season. The members then used the data to calculate the resistible strength required to design the form of the structure.

Considering the one month of the exhibition and the possibility of a destructive typhoon, they decided to make it detachable in two parts. As shown in Fig. 4, this work consists of the upper frame covered by mirrorfinished stainless steel, the bottom frame with wooden stairs, and the pillars made of square cedar timber. Furthermore, taking into consideration the average height of residents as a human scale, it is designed to fit for one person to be surrounded by the sky. Therefore, it has no ceiling to allow the mirrors to be able to reflect only the scenery above. Aiming to create a bond between residents and the installation, the members gathered local technicians, carpenters, and volunteers to work together (Figs. 5 and 6). For this installation, approximately 20 people in total joined in collaboration. Since the residential period was limited to a week, the members decided to let residents make the object to give them a sense of unity through this project. However, the members gave great importance to communicating with residents to encourage mutual understanding and to enhance further creativity. Since the members found that most residents tended to be unconscious of their environment because they were too familiar with it, the members tried to provoke their sense of curiosity and creativity towards the universe and art.

10 e) Result

Following the installing process, the installation became as shown in Figs. **??** and 8. Fortunately, there were no critical incidents throughout the period, and it remained in good condition. To their surprise, Terada had often voluntarily come to maintain it by himself. In this project, it seemed that a sense of unity derived from intuitive and heartfelt mutual understanding, beyond logic and the practicalities of physical work. Terada's motivation and positive attitude towards the project was unexpectedly grateful.

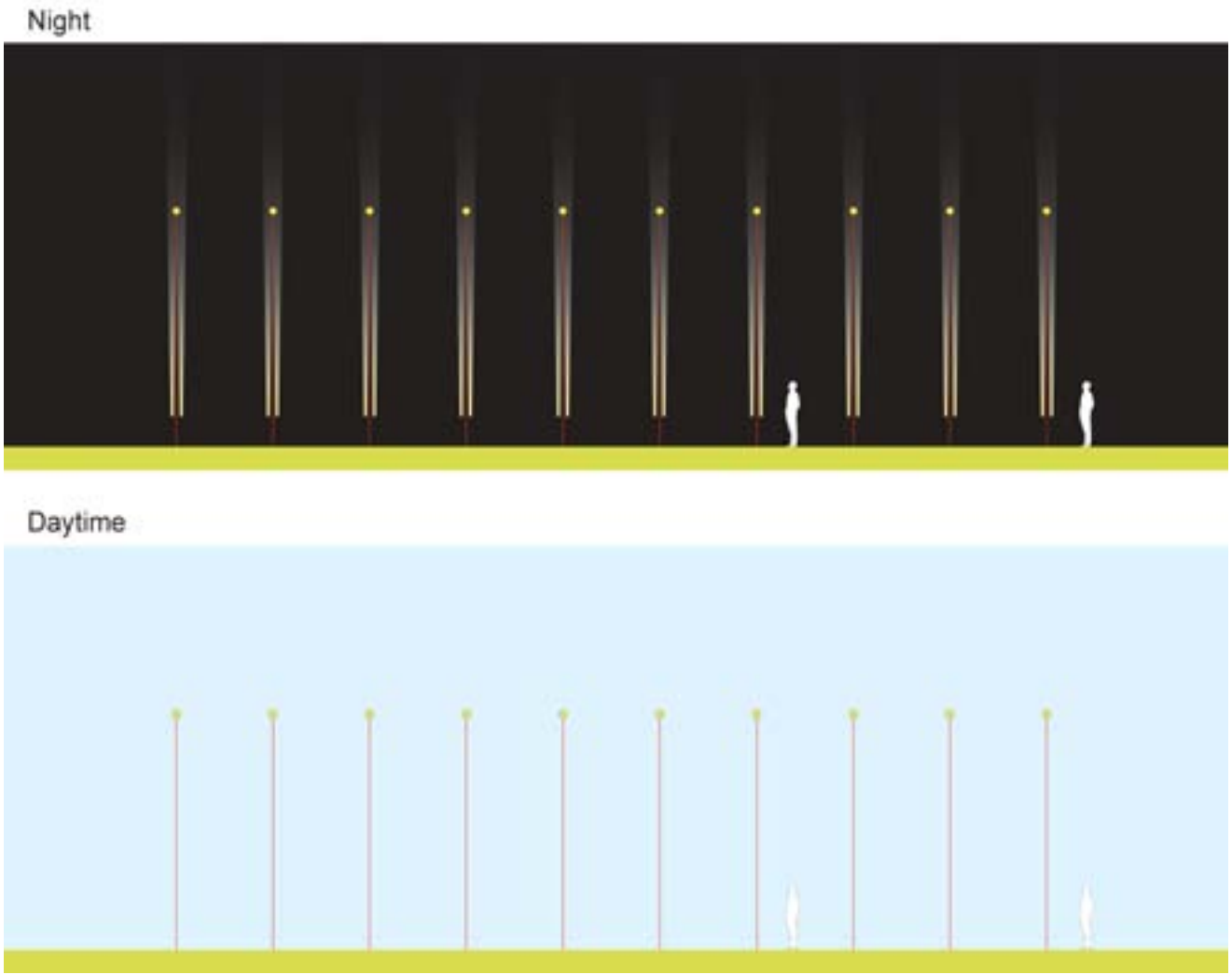
To analyze the results of this project, the author interviewed residents, visitors, and the staff of JAXA aiming to capture their feelings and attitudes towards the installation. The two comments below most aptly express the sentiments of the viewers:

"It was so comfortable inside the installation, with the sound of the water waves. It was like being in the real universe." (Resident) "I have never realized it is such a beautiful night sky spreading out of the Range Control Center where I always work. I felt like I was floating in the universe." (Staff member of JAXA)

In the light of these responses, not only the image of the objects but also the whole experiences of communication with other humans and the universe remains in the minds of the viewers. [1]

Figure 1:

Figure 2: S



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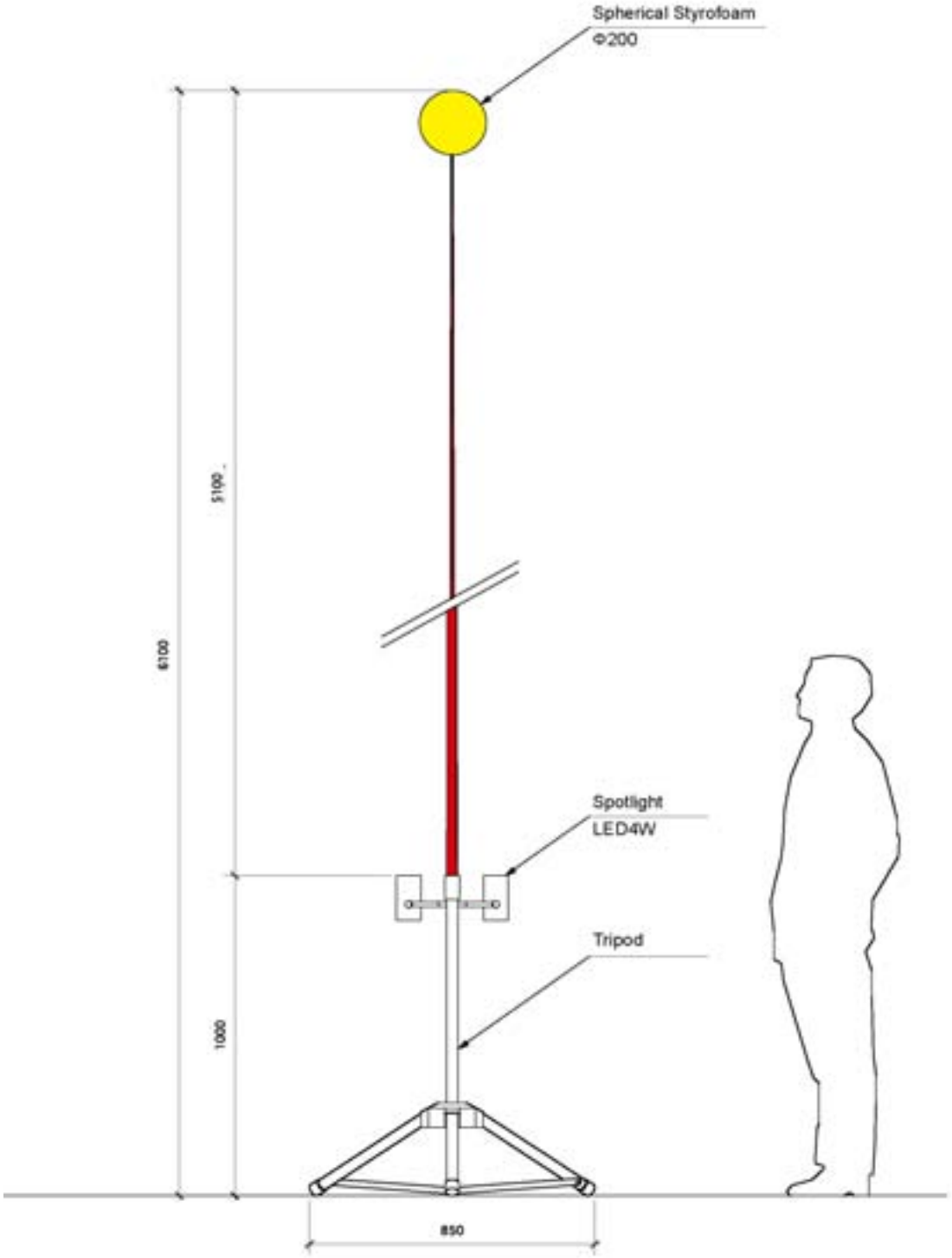

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Figure 4: (Fig. 4 :

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Figure 5: Fig. 6 :

Figure 6:

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Figure 7: Fig. 4 :

.1 Conclusion

Through the 'local co-operation' method, with such a sincere dedication from all the collaboratorsboth experts and the public -these projects have created unity among the community which may lead to the further development of society. This methodology helps us to deepen a mental connection with space and art by physical experiences. With ever-explorable space, the universe, and art, further projects that touch on human minds would grow.

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.2 Echigo Tsumari Executive

[Statistics of Naoshima ()] , *Statistics of Naoshima* 2019. (Naoshima Town)