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KEEP THE TORCH BURNING

Closing of the Gotoh Planetarium and Astronomical Museum in Shibuya, Tokyo, and What it Suggests for the Future

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ABSTRACT

Gotoh Planetarium and Astronomical Museum will permanently close its door on March 11, 2001, to much grief of Japanese amateur and professional astronomers. Gotoh, the oldest working planetarium in Tokyo, features Carl Zeiss Model IV projector and educational show programs, which were modeled after the star shows at the Adler Planetarium, Chicago. Since its opening in 1957, Gotoh has made its policy to show live performances only and no automated programs. This has been a unique charm of the institution, especially because most of other planetariums run automated programs. Because Gotoh is non-profit organization and receives no public fund, its financial struggle began immediately when the number of visitors began to drop. The decrease of the number of visitors is mainly due to the increased numbers of other planetariums in Japan. However, there are few planetariums that are on a par with Gotoh in terms of the quality of live performance and dedication to educational end. Thus, the director of Gotoh thinks that one of the reasons that Gotoh became less popular is that cultural climate in Japanese society has changed: people are more attracted commercial entertainment institutions than to learning.

However, successful renovation at the Adler Planetarium shows good possibility that entertainment and learning do not have to exclude each other. Since astronomy is intrinsically interesting, if we communicate it in a way that learners feel engaged in the experience, entertainment and learning can be one. The convergence of quality learning and fun was an ideal that staff at Gotoh and many Japanese educators at other planetariums have talked about, and it has been realized at the Adler Planetarium. By comparing museum administration systems in two countries, shortcomings in Japanese system, which led to the closing of the Gotoh Planetarium, became visible.

The director and the staff at the Gotoh Planetarium hope that the remaining Japanese planetariums would inherit and continue the effort for educating the public. Gotoh, which greeted 16 million visitors in 44 years, was one of the earliest institutions that lighted the torch of scientific thinking in war-devastated Tokyo. We must keep handing on the torch to coming generations.

FULL ARTICLE

On March 11, 2001, the lights of the Gotoh Planetarium will go off forever.

It has been a whole year since Gotoh published its scheduled closure. Many of us stargazers were surprised by and grieved over the news, and wondered with regret why we had been away from Shibuya for so long. Aware of the short time we have left, we revisited the Planetarium; we have shared our memories and feelings with those who feel the same way. Each of us had to convince ourselves of the decision Gotoh Planetarium had made. After a year, most of us probably think the closure of Gotoh as a definite, inevitable event to come.

There are so many things, however, that have not been discussed. All stories told by newspapers, magazines and television during the past year seem identical. The regular story line is like this: Gotoh enjoyed much popularity during the “space-boom” era, namely around the time of the launch of Sputnik (1957), and Apollo 11’s landing on the Moon (1969). But the number of visitors never rose afterwards. Gotoh became less and less popular as newer, similar facilities were being built all over Japan. At last the visitors became so few that Gotoh is no longer able to keep operating.

But, is that all? Why not one of the other planetariums—approximately 350 in Japan, and over 90 in metropolitan Tokyo area alone—but Gotoh has to close? It seems unfair, for there are few planetariums in Japan that evoke so much emotion and memories as Gotoh does.

And what about all those feelings we share now? Can we just let them go like one of the childhood memories, as if the chalkmarks on the road dissolve and disappear? The memories of star-filled dome in Shibuya, and the names of constellations that we first learned through the curator’s voice-- they might stay in your heart or in your written record only as isolated, individualistic experiences. But is that all there remains?

What else we need, you may ask. But I want to set the years we spent with Gotoh in a larger context. Why was Gotoh initially brought into life, and what kind of changes brought about its closing? How were the Gotoh’s messages related to Tokyo, Japan, and astronomy and science in the last forty-four years? Unless we try to answer to such questions, it is impossible to understand real significance of Gotoh’s presence. What Gotoh’s history represents is a story of our own era. Only by having such historical perspective, each of us could understand our experience with Gotoh not as isolated ones but a part of the larger world, for which countless people have worked to create.

From the Ruins to the Era of Apollo

Gotoh has a unique position among planetariums in Japan, for it is a place where so many things started. For example, consider the regular types of planetarium programs that feature “Tonight’s Sky”, starting at the dusk and ending at the dawn, the “Stars and Music” program on weekends, and common descriptions of constellations coupled with Greek myth. We take them for granted and hardly ever reflect where they all came from. They were anything but set menu before Gotoh. Mr. Osamu Muramatsu, a curator at Gotoh, puts it this way: “Gotoh has set the standard.” Gotoh also nurtured many amateur and professional astronomers and planetarium curators, who have built a network around it. Thus, Gotoh has been an *agora* where stargazers freely come and go, and a crossing where countless roads meet. Gotoh was endowed with this special quality by the era that gave birth to it, and by the will of people who took on the responsibilities regarding its establishment and support.

Gotoh is the oldest working planetarium in Tokyo. However, it is not the first one built. First planetarium in Japan is the Osaka Municipal Electric Science Hall, opened in 1937, and the first in Tokyo is the Tounichi Astronomy Hall (renamed Mainichi Astronomy Hall in 1942) opened in the following year, 1938. Both halls housed Carl Zeiss Model II projector. Planetarium were first invented by Carl Zeiss in 1923, and the firm had kept monopoly over the world planetarium market until Japanese makers began producing smaller, cheaper projectors in the late 1950’s. The Tounichi Astronomy Hall set an example of live performance program as seen at Gotoh today. However, the Tounichi was demolished in an air raid in 1945. Japan had to wait until Gotoh came along for her next planetarium.

In 1955, Keita Gotoh, then the President of the Tokyu Railroad, and an awed wheeler-dealer, was looking for a cultural facility that could be housed in his new Tokyu Cultural Hall. He needed something worth the name of “culture”. Hearing this, several notable scholars who occupied positions such as the President of the Academy of Arts and Sciences, the Director of Tokyo Observatory, and the Director of the National Science Museum, asked Keita Gotoh to build a planetarium. Gotoh agreed, and donated 70 million yen (approximately 1 billion yen, or 8.4 million dollars in today’s value) to establish the Gotoh Planetarium and Astronomy Museum Foundation.

“If we are making it, it has to be the best.” Keita Gotoh said, and no money or efforts were spared for the projector custom-ordered to Carl Zeiss, dome built of cherry, and miniature telescopes and every other item for exhibition space. These material

compositions of the Gotoh Planetarium were supervised by Mr. Sadao Murayama, the current Director of the Gotoh Planetarium. At that time, he was working at the National Science Museum. “The National Museum had a very small budget, so there was not much I could do with it. But Gotoh Planetarium was different. The floor plan of the 8th floor of the Tokyu Cultural Hall, the things exhibited and how they were presented—they are all my ideas realized. I could do everything I wanted to. It was so exciting. Looking back, I am somewhat bewildered that they let some lad of 32 or 33 years old to be in charge. I suppose there were not many persons who could do those kind of works at that time.”

The name Gotoh Planetarium was actually Mr. Murayama’s idea. He knew that, in the US, it was common to name museums and educational institutions after the donors. Keita Gotoh shied away from the idea at first. “But we pushed,” Mr. Murayama says. “Rather than naming it something like Tokyu Planetarium, we thought it was time to name it after the donor, like they did in the US. So we got this name, the Gotoh Planetarium.”

Gotoh Planetarium’s policy for the contents of the shows was set by Mr. Megumi Hara, who now belongs to the education board of Gotoh. Right after the project began, Mr. Hara, then a radio-program director, was asked by Mr. Murayama to visit American planetariums in order to see what their shows were like. At the time, Mr. Hara was in a graduate program at an American university. Out of the numbers of planetariums Mr. Hara visited, the Adler Planetarium in Chicago stood out in his memory. According to Mr. Hara, a curator at Adler told him that there were two different styles of star shows in American planetariums. The first one, employed by the Hayden Planetarium in New York and the Griffith Observatory and Planetarium in Los Angeles, used many special effect projectors and emphasized eye-catching feature of the show. The second one, which Adler Planetarium employed, put more emphasis on academic aspect. Eventually, Gotoh Planetarium chose to follow the live performance style of the lost Tounichi Astronomy Hall, and follow Adler’s way for making the contents of the show programs. Thus the Gotoh Planetarium was born, with strong orientation to set the standard as high as major planetariums in the Western world, and with science education put to the fore.

The timing of the opening was fortunate for Gotoh Planetarium. Like the information technology boom today, it was the time of space-age boom. Sputnik’s successful flight into space in 1957 was only a year before the opening of Gotoh. People seeking entrance to Gotoh would form a long line, which began at the planetarium door on the 8th floor of the Tokyu Cultural Hall and went all the way down to the ground level. Gotoh was most popular around the time of Apollo 11’s landing on the Moon. According to Mr. Hitoshi Masuzawa, the oldest of the curator remaining at Gotoh and who has worked

here since 1968, the number of visitors per year reached 400,000 to half a million. (The number has dwindled to around 130,000 in recent years.) “During summer vacations and on rainy Sundays, when the demand was highest, we presented star show seven times a day at most. That’s how we managed to let everyone see the show.”

On July 20, 1969, visitors filled Gotoh’s dome and listened to Mr. Sadao Murayama’s lecture in excitement, as they watched live picture from the Moon. They had gathered there to sit up all night, to watch a historic moment. The picture of Apollo 11’s landing and the astronauts walking on the Moon was being relayed between Houston, NHK (Japan Broadcasting Corporation), and the Gotoh Planetarium. Gotoh, then, was at the forefront of cutting-edge technology, and of “culture”.

Is Gotoh’s Style Outdated?

Behind the scene, however, Gotoh’s potential problem was already there. In addition to the financial insecurity concomitant with Gotoh being a non-profit organization, Japanese tax system made it difficult for Gotoh to attract donations. Gotoh’s only valuable asset is the Zeiss projector, and the institution’s finance relies almost exclusively on entrance fee. In the US, where the planetariums that Gotoh was modeled after are located, donations for cultural institutions are subject to tax-exemption. Japanese system lacks such incentive, which makes it hard to lure a large sum of donation. When the mushrooming of new planetariums picked up speed and began to eat away potential visitors to Gotoh, Tokyu Railroad--now a conglomerate Tokyu Corporation--was virtually the only provider of financial support to Gotoh.

One of Gotoh’s missions was “the diffusion of similar institutions” in Japan. The more Gotoh fulfilled its mission, the worse its financial shape became. It was a dilemma that Mr. Osamu Muramatsu, a curator at Gotoh, described this way: “It is like octopus eating its own leg one by one to survive.” On top of that, so-called bubble economy in the 80’s lured local governments to build still more new planetariums. Local governments that did not have enough budget or population to support serious art or natural museums, nevertheless wanted to spend surplus income on some institutions that would make them look culture-conscious, jumped on the bandwagon of building planetarium, which seemed just right for their budget size. When the bubble economy fizzled in the early 90’s, Japanese landscape was left with hundreds of planetariums that had no adequate number of staff or sufficient amount of budget. And the Tokyu Corporation was so financially damaged that it could no longer support Gotoh, which needed at least 200,000 visitors per year to be financially independent.

The unexpected final blow resulted from the end of the Cold War. Carl Zeiss had been divided between East and West Germany after the World War II (Gotoh's projector was made in West Germany), and remerged in 1990 as the two states became one. In the years after Gotoh's acquisition of their machine, Carl Zeiss had been so diligent in taking care of their product that they had sent their engineers to Japan twice for major overhauling, which required the machine to be disassembled and reassembled. However, the newly merged company, as they restructured their business, decided to discontinue making the parts of Zeiss Model IV. Since then, Gotoh has been on its own to replace worn-down parts. Some parts were replaced with something closest found in general market; some parts were custom-ordered to small factories in Tokyo. However, there are numbers of other parts that only Carl Zeiss could make. If those parts fail, the staffs at Gotoh say, there is no way that the projector could be put to work again.

So there are several reasons for Gotoh's closing. About the decreased number of visitors, Mr. Sadao Murayama, the Director of Gotoh, has his own view. He thinks that one of the reasons that Gotoh is less popular is that a change in social climate in Japan has formed and widened the gap between people's taste and Gotoh's policy. Around the time of Apollo 11 was a turning point when Japanese society began moving toward commercialism and money-worshipping, and people increasingly turn away from learning institutions and flock to profit-oriented entertainment, Mr. Murayama says.

"Young people have less interest not only in science but in studying in general. They lack a desire to learn and to acquire knowledge. Planetariums with automated programs are putting so much effort on making entertainment-oriented shows, because otherwise nobody would come. It is definitely a grave situation. In the age of super-high technology, with people talking of IT revolution all the time, we are losing what should be at the basis."

It is not that he has no remorse about Gotoh, Murayama says.

"From the viewpoint of business, we probably should have responded earlier. We lacked money to update the exhibits and star shows in the ways that would accommodate today's visitors. But I don't think our policy has been wrong. If we could remain open, we could certainly continue fulfilling our missions."

Gotoh Planetarium has made some efforts to take back its popularity. In addition to the weekly "An Evening of Stars and Music" program, which has been a time-honored favorite since 1961, Gotoh for the last ten years has added Christmas concerts and other special programs. However, they never put a stop to the falling attendance.

The “Origin” Now: Renovation of the Adler Planetarium

Is there any way to reconcile the mission for education and the demand for entertainment, and be financially secure while fulfilling the mission?

A key to solve this problem is found in one of Gotoh’s origins: Adler Planetarium and Astronomy Museum in Chicago. Adler, which had opened in 1930 as the first planetarium in Western hemisphere, went through a major renovation. The newly added part of the building was opened to the public in January 1999. The classic planetarium with Zeiss Model VI projector (which is Adler’s second Zeiss machine) continues to operate. New additions include a latest type of star projector installed in StarRider Theater, hands-on exhibitions in the museum, and expanded museum shops and a cafeteria. Fabulous it may seem, Adler has seriously worked on its mission as an educational institution for the public. Star show programs, automated now, are produced in-house with highly educational contents. The number of visitors is climbing. How did Adler manage to secure its success, in a country with overwhelming variety of thrilling entertainment? Mr. Bryan W. Wunar, the Director of the Education Department at Adler, replied to my question. According to him, the museum part of Adler before the renovation represented “where astronomy was at twenty years previously.” Without a renewal plan, it was quite expectable that Adler would have lost an attraction as an educational institution.

The purpose of the renovation of the Adler was “to be able to remain current” as a place to offer latest astronomy information to the public. In 1993, before the American economy went on a spectacular boom, Adler invited new president, an astronomer who had an experience of rebuilding another science museum, and the renovation plan began. A task force led by the president drew a blueprint of Adler appropriate for the coming century. Fund drive and recruiting of new staff members started, in accordance with the plan. At the same time, Adler staff used latest results of educational researches to develop the exhibits and star show programs that to be housed in new facilities. Mr. Wunar says:

“Compared to earlier times, we now know much more about how people learn. We need to meet the needs of the learner. We think about the ways to capitalize on the interest that visitors feel at the moment that they first walk in. Visitors, we think, consists of two groups. First is the informal audience, which includes sightseers, and the second is the formal audience, who are teachers and students interested in science, and adult audience interested in astronomy. The former includes children who are not accustomed to regular studying. We think of this group as our first target for our educational program, because what works well with the first group always works for the second group too. To keep our standard high, we work closely with instructional designers and astronomers at universities.

While, previously, we were following what we called our educational mission, we were following more of academic mission, from the perspective of the scientists. And by really looking at education and what does education entail, and change it from a science perspective to a science *education* perspective, and really find out what that means. We found out that it was very different to say that we are trying to teach astronomy from academic perspective versus teaching astronomy as part of something that *everyone* should know. Anything we can do to continue promoting astronomy around the world, I think now is a good time for it. It is a very exciting moment for astronomy--a best time since the days of Apollo. If we can convey that astronomy is intrinsically interesting, education and entertainment do not have to exclude each other at all.”

Science is intrinsically interesting. It was an ideal that Director Murayama, curators at Gotoh, and other astronomy education institution staff I interviewed talked about in different words, which was realized at Adler. The financial security that Adler enjoys is supported by public fund and large sum of donations, which is incomparable to the state Gotoh is in. However, what Mr. Wunar’s description of the Adler renovation conveyed was the presence of a strong will to achieve the mission, and an ability to make a concrete plan and to realize it. How many of Japanese planetariums and science halls have them?

Gotoh, as a social education institution, has an exceptionally well-equipped system for developing its educational contents. In addition to the curators who lecture to the visitors, Gotoh has an “education board” mostly composed of professional astronomers. The board checks the drafts of show program scripts that curators prepare, and gives advice for editing. Ever since Gotoh opened, best-qualified scholars have supported it with no compensation. There are not many Japanese planetariums that enjoy similar support system. Many of them do not have even single staff member who specializes in astronomy. As I have mentioned earlier, this sorry state is partly the fault of local governments, who have often been interested in constructing cultural institutions as buildings *per se*, and have never gave good thought to the proper way of using them. At the same time, it is partly the problem of Japanese communities, which has yet to develop a sense of responsibility for supporting local museums as shared assets of community members.

The most crucial question would be the purpose of planetariums. One feature of Japanese planetariums is that people often expect them to provide certain romanticism beside education. Greek myths and sheer beauty of starry skies have been long cherished as “romantic”. Some planetariums even provide “healing” programs, as a part of larger

trend in recent years. I do not object to these images and programs, but if a planetarium that is supposed to have an educational mission keeps providing more and more shows that caters to non-educational demands, would it not be putting the cart before the horse—if it gives priority to attracting more visitors by sacrificing educational purpose? (On the other hand, there could be planetariums that are devoted to non-educational purpose.) In same way, entertainment in planetarium shows should be used to make scientific contents easier to understand, and not for its own sake. Many planetarium staff says that using automated programs itself is not the problem. Even with automated programs, a clear sense of purpose would develop a kind of script that would best convey the message. For instance, cartoon characters should not appear in star shows for their own sake but should be used as a helper for visitors to understand astronomical knowledge. Such distinction, however, is cloudy at best.

An Assignment for the Future

I asked Mr. Osamu Muramatsu, a curator, provided that he would continue working for planetarium, what he would want to do in the future.

“This is my dream. If possible, I would like to work with a planetarium and a dome made just in the way I want. I would custom-order the projector to Carl Zeiss, the dome should have at least 50-meter diameter, and there should be seats, just two hundred of them or so, close to the projector. There, I would talk about all kinds of things to visitors. I won’t use slides and videos as far as I can do without. I want to try how much I can convey with lectures and the stars. The only other thing I would use is music. I want to communicate just with the words and the music in the backgrounds.”

A planetarium with the best possible projected stars, that require the best what a lecturer can give—Would it not be, then, the ultimate form of the live-performance style that Gotoh has pursued?

On the last day of my visit to Gotoh for this article, I was allowed to climb on the pedestal on which the projector stood. The projector was enormous. I was never fully aware of the overwhelming massiveness of the steel until I stood beside it. I touched the star projection globe. It felt as if all the forty-four years of time was concentrated into one mass of weight inside the globe. Tens of thousands of times worth of star shows, the voice of the curators and the responses of the spectators, have showered on and permeated through this projector. No other planetariums in the future would use single projector to such an extent.

“In a way, we are leaving an assignment,” Mr. Muramatsu says. “Gotoh’s closing

may lead to something new. Now it seems to me that whole industry of planetarium is working in inertia. If Gotoh's closing provokes others to change for the 21st century, if we can provide that chance, then I think Gotoh will have fulfilled its final mission. Since we are right at the turn of the century, it's not a bad timing to quit, I guess. Nevertheless, a standard that has been in place all these years will be gone. So, to those planetariums that will remain open, I feel like telling, 'Please. We entrust this to you. It's you guys who will make the standard for the 21st century.'"

On March 11, the final dawn will come to Gotoh's sky. Zeiss Model IV projector will be cut off from the electricity for the last time. Gotoh's door will close behind us, and will never open again. Thus we lose one *agora*. But in front of us, there will be roads to other *agoras*. We neither know how many roads lead to the new *agoras*, nor how many chances they provide for people to meet each other and be introduced into the realm of stars. A place like Gotoh is yet to be found, but it is really up to us to make one.

"We must keep the torch burning."

It is Director Murayama's wish. The longing and curiosity for the stars and the space, the minds attracted to science, the desire for knowledge—It is the mission and responsibility for the planetariums and science museums to stimulate and respond to such wants of the mind. The torch of knowledge that Gotoh lit in the post-war Tokyo has been shared with countless astronomy education institutions that sprang up all over Japan. But are all the torches still burning?

16,000,000—It is the net number of visitors to Gotoh Planetarium. And each person, sixteen million of them, holds a small light in his or her hand. They are the lights from the stars in our eyes. They are the lights of scientific thoughts, to which every one of us got free access for the first time in history—in the age of Gotoh and us. It is our responsibility to pass the torch on.

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