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## Japanese Lunar and Planetary Exploration Outreach – 17 Years’ History of “The Moon Station” –

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There is no question that the educational outreach for all ages are now essential part of each lunar and planetary mission, as the public interest in these explorations is increasing. Also, this situation becomes almost similar in all countries, including Japan, which conduct lunar and planetary explorations.

The website called “The Moon Station” (<http://moonstation.jp>) was established on November 1998, the start of Kaguya’s (Japanese Lunar Explorer) development phase, approximately ten years before the launch. Originally starting for the mission promotion, this website is now becoming one of the most popular and dominant portal of the lunar and planetary exploration. In this presentation, we will review 17 years’ growth of the website, and look toward the future vision of outreach in lunar and planetary exploration.

### 1. Introduction

There are more and more need for accountability in lunar and planetary missions worldwide, as most of them are purveyed by tax and requires to explain their needs for taxpayers. Even if they are prepared as commercial mission, the team has also an accountability to investors. Therefore, the timely and detailed explanation of lunar and planetary missions are highly demanded and required to sustain the overall exploration.

On the other hand, such explanation should be clear, comprehensive and easy-to-understand. However, most of explanations, using websites, are too difficult to understand by an average citizen due to abuse of difficult technical terms, a lengthy explanation of mission principles, lack of attractive photos and videos.

Effective outreach of lunar and planetary exploration requires attractive contents, plain but correct words and timely appearance of information.

The website “The Moon Station” [1] [2] (Fig. 1), established in 1998, continued its dedication to lunar and planetary exploration outreach, and its 17-years tradition and operation experience produced much lessons learned for this field.

In this paper, we first briefly explain the history of The Moon Station, and denote current situation. At the last, we will show lessons learned from site operation and expansion as well as future prospective.



**Fig. 1** Current top page of The Moon Station (Japanese top page). Formerly we used Flash navigation which the orange circle moves to deploy category index by clicking. However, we switched traditional image-based web page again in 2015 as mobile devices which do not support Flash are gaining its number.

## 2. History of “The Moon Station”

### 2.1. Site Launch

When we started the operation of the website, we formulated the following four policies for this website.

- Making maximum use of Japanese people’s particular emotion for the moon which they bore for over one thousand years.
- Interactiveness. The website designed into a two-way communication, transmitting information as well as receiving widely distributed opinion.
- Uniqueness in design. We set several dynamic contents (in that age, no major platform such as Flash existed which express such contents) to attract people’s eyes.
- Cooperation with the universities: In our website, several universities, including department of arts, have been joined to form the web pages. The site itself was (is) a form of joint study of collaboration of the different fields. The stylish design at the start of the site, shown in Fig. 2, is a fruit of such a unique collaboration.

### 2.2. Recognition as the Portal of Lunar Exploration

In 2002, a Japanese TV station aired the program which introduced “Apollo Hoax”. This rumor has been accepted widely in the society, particularly younger people (mostly teenagers).



**Fig. 2** Top page on 1998, establishment of the site (preserved inside the current website). Designed by Akira Harada, Professor of Tsukuba University. There were nine corners which of these are present at the current website.



**Fig. 3** Top page of the corner “Didn’t we go to the moon!?” at The Moon Station (Advertisement parts are mosaicked). There are approximately 30 pages inside the corner.



Fig. 4 Twitter page of The Moon Station (@moonstation-jp) as of the end of September

In response to the many inquiries to us, we put the pages entitled “Didn’t we go to the moon?” which conducted verification of their “theories” (and made strong rebuttal).

The pages gained the population over the Net, and the site recorded the record-setting access (1.36 million hits per day) on November 2002. This flood of access eventually made our site being recognized as the portal of lunar exploration.

### 2.3. Going Forward to the Planetary Exploration Field

The closest approach of Mars in the summer of 2003 and the following “rush” of exploration starting 2004 (such as MER and MRO) roused Japanese peoples’ interest in Martian (and other planetary) missions. In tune with this boom, we launched new corner on Mars exploration [3] and had large access (more than one million hits per day). Now our site has the corner which introduces worlds’ lunar



Fig. 5 Facebook page of The Moon Station.

and planetary missions (such as Cassini, EPOXI/Deep Impact and New Horizons) explaining in Japanese with the latest topics.

### 3. Recent Progress

We started a weblog in February 2007 to accelerate the prompt information transmission. The weblog is categorized into several tens of missions and we can deliver information without editing and uploading any HTML files. As of the end of November 2015, the number of articles are more than 800 and more than 100 articles are waiting to be opened (under draft).

As there are some confusions due to our domain name including JAXA (moon.jaxa.jp), we decided to obtain the new dedicated domain. From 2010, we moved to the new domain, moonstation.jp.

Also, our site is now getting acclimatized to rise of social networking. We started operation of Facebook page from 2013 and it attracts more than 300 Likes. We also launched official Twitter account from 2014 and it has more than 1,500 followers (as of the end of November 2015).

#### 4. Lesson Learned and Future Prospect

Through our 17 years' experience in operation of the website, we have learned many lessons. The major two lessons from these are importance of continuing operation and of honestly reflecting users' voice and demands for the website.

It is needless to say that long-lasting websites gain more credence than newer ones. Recently, there are increasing number of websites, which deliver space-related information. Some of these websites unfortunately feed low-trust information to the public. Here the term "low-trust" means it belongs to some kind of pseudo-science, technologically or scientifically wrong, and just retread of press releases and other media's report.

We have established our style of information transmission through 17 years. We fully understand importance of distinctiveness and understandability of information. Therefore, our site has our own rule for writing technical terms and expressing name of foreign mission name and space organizations. Sentence with unified expression is easy to read, and is trusted by users. Of course, we extremely care about correctness of information in the articles. It seems really difficult to make two things concurrently, speediness and credibility. However, our site balances these two elements with high level, fully using long experience of site operation.

Since the establishment of the site in 1998, The Moon Station set maximum care on hearing users' voice and opinion, and reflecting them. We receive many requests mainly from E-mails and direct telling to staffs. As the site is operated with small number of people, such requests and demands are easily and promptly reflected to the web pages. Requests and demands range from amendment of incorrect information to adding new contents on the website.

One good example for reflection of users' needs is addition of Q&A for autumn moon viewing (Chushu No Meigetsu). As our website is mainly dedicated to lunar and planetary exploration, not astronomy, there were some opinions that we did not need to put such information on our site. However, many requests led to put these on the website [4]. As a result, these pages attracts more than 100,000 pageviews in Mid Autumn Viewing day and contribute to increase of ad revenue in these years. It clearly shows reflection of users' needs makes wider acceptance, and eventually strong trust, for the website.

However, The Moon Station still have some difficulties for operation. One is long-lasting deficit of resources for daily operation. Here "resource" means budget, labor power and continuous support for maintaining the site.

Contents of The Moon Station is now managed by one person (Terazono), and it is difficult to join other members under current system as the site is fully file based, no any CMS (Content Management System) which is equipped in most of modern websites.

We plan full renewal of the website, the first one since 2003, which will be complete in the first quarter of 2016 in the earliest. This renewal covers placement of CMS (WordPress) which enables multiple persons to edit pages, complete change of page design which supports mobile-friendly page viewing and easier grasp of site operation condition using Google Webmaster Tool. We strongly expect this total renewing of the website will contribute to more users' visits and wider acceptance of the site as well as less labor work of site operation.

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