

Workshop of Word Survey about Earth and Planetary Phenomena by Citizen

*Harufumi Tamazawa^{1,2}, kiyomi iwahashi³

1. Disaster Prevention Research Institute Kyoto University, 2. Faculty of Fine Arts, Kyoto City University of Arts, 3. National Institute of Japanese Literature

In order to find phenomena related to earth and planetary sciences such as natural disasters, weather, or astronomical phenomena from historical materials and use them, it is necessary first to read the historical materials and to accurately extract words and phrases. In particular, there are a large amount of Japanese historical materials written in "kuzushi-ji" (cursive hand), and it is indispensable how to extract accurate information from a large amount of data. In handling a large amount of data, in addition to experts, cooperation of citizens who are interested and interested in contents can not be lacked, and interest in citizen participatory research in open science in recent years is also increasing. One example of such citizen participatory research is a preceding example project called "Minna-de-Honkoku" that citizens who are interested in historical disaster histories are widely asked to interpret the historical documents using the Internet. (Kano 2017).

At the National Institute of Japanese Literature (NIJL), as part of space weather research using historical materials, we have held a citizen participatory workshop "Aurora Hunter from History" three times from 2016 (Iwahashi & Tamazawa 2018). In the workshop, Participants surveyed actually seek astronomical phenomena by touching classical ceremonies and old records is with researchers of history and astronomy. This workshop is not only a mere outreach event but also a testcase of research on natural sciences using historical document with citizen. In this report, we will present the results of the efforts and think about the possibility and meaning of citizen participation in future planetary science.

In November 2018, under the full cooperation of the Kyoto University Library, this project, which will be the 4th event, was held under the name "Aurora Hunter from History IN Kyoto" at Kyoto University. There, not only astronomical phenomena but also phenomena such as earthquakes, floods and droughts were extended to the phenomenon of natural disasters, and the research was expanded to research on earth planetary science and disaster prevention. In addition, on the day we also made a lecture on the latest research on aurora and earthquakes using historical materials and demonstrated "Minna-de-Honkoku". Also, as a new attempt, we extracted the weather information from the diary historical materials and worked on data.

Looking at the questionnaire of the participants on the day, there are a lot of participants who are interested in astronomy interest more than in the past three participants. Recruitment has been reaffirmed that the participation was triggered by many lecturers and that daily social contribution activities such as researchers' lectures are important for deepening their interest in scientific research by citizens.

From the free written part of the questionnaire, it became clear that for those with less opportunities to touch historical materials usually, they were interested in reading the historical materials written in Japanese and Chinese. On the contrary, from the people who are interested in history, I found that I was attracted by the unexpectedness that I could discover newly by reading from a different viewpoint from the viewpoint I have read so far. In other words, in a workshop with a different field collaboration type, even if it is an aggregation of citizens with different interests and interests, each interest can be found in

other fields by ingenuity of the organizer side, cooperation is obtained from a wide range It suggests the possibility.

Given the aspect of citizen participation research, the so-called open science, of citizen participatory research, in order to improve the accuracy of data extracted from citizens as natural science data, cooperation among participating experts is indispensable Being able to be accurate as data by discussing beyond its own expertise. Also, in order to capture permanent participation, we aimed for a synergistic effect of both on-line work like "reprinting at everyone" and offline workshops like "classical aurora hunter", both young and senior It is the future goal to approach approach.

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References

- K. Iwahashi & H. Tamazawa (2018) Stars and galaxies, 1, 51-65.
Y. Kano (2017): Report Kasama"63, 53-56.

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