Development of a web system for search, browsing and download of Akatsuki's observation data

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Venus climate orbiter "Akatsuki" observes clouds of different altitudes using five cameras with narrowband filters at different wavelengths. The images taken by Akatsuki are published on NASA's Planetary Data System (PDS) [1] and AKATSUKI Science Data Archive [2] of ISAS/JAXA's Data ARchives and Transmission System (DARTS) [3] after a certain period of time has elapsed. However, because the images taken by each camera are archived in different directories on the websites, there is a problem that it is difficult to get an overview of data obtained by cooperatively observing with multiple wavelengths.

With this background in mind, we have been developed a web system named "Akatsuki Data Search" [4] using Ruby on Rails. Our system provides easy search, browsing and download of data published on the above sites. In order to investigate the three-dimensional motion of Venus atmosphere over time that is the purpose of the Akatsuki project, we implement a function to generate the image list page using observation program names and its execution times described in header of the data files. This function makes it possible to compare cloud images at different altitudes taken at the same time and to display time variation of cloud distribution at the same altitude. Furthermore, in order to response the request to search data by information not written in header of the data files (e.g. images used for an article), function of "my favorite" is implemented. This function makes it possible to save the names of favorite data files or search condition used to obtain the files and to share the favorites with users.

In our presentation, we will explain and demonstrate our system in detail.

References:

[1] The Planetary Data System (PDS), https://pds.nasa.gov

[2] AKATSUKI Science Data Archive, https://www.darts.isas.jaxa.jp/planet/project/akatsuki/

[3] Data ARchives and Transmission System (DARTS), https://www.darts.isas.jaxa.jp/

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