

## IUGONET Type-A: web service for solar-terrestrial science

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IUGONET is a community to promote solar-terrestrial physics studies, which NIPR, Nagoya Univ., Kyoto Univ., Tohoku Univ., Kyushu Univ., NICT, NAOJ, JMA and Kanazawa Univ participate in. Our team has mainly developed two products, i.e., UDAS and IUGONET Type-A. UDAS is an analysis software based on SPEDAS (Space Physics Environment Data Analysis Software) and IDL (Interactive Data Language), and IUGONET Type-A is a web service to provide data information and web-based analysis platform 'UDAS web'.

IUGONET Type-A was opened to public on 1 Nov, 2016. This service has functions to show metadata of observational data (e.g., description, acknowledgement [data policy], start and stop date, contact person, data publisher URL, observatory and instrument information), quick-look images (QLs), and how to create these QLs. In particular, thumbnail display of QL plots of retrieved data is very useful to view various data and find correlated data. In addition, UDAS web enables to plot data easily on web browser (PC, smartphone, tablet device and more) without any installation/setup of dedicated software and license. Therefore, IUGONET Type-A is an one-stop web service that enables to search, understand, visualize and test data, and promotes new interdisciplinary studies regarding the solar-terrestrial physics even for researchers in emerging countries.

Furthermore, IUGONET Type-A was built by 'IUGONET Web Application Framework for Science'. This framework can also handle various metadata formats and work on other system. For example, this framework is now being used for Fukushima radiation database, RADARC, and in future we will divert it to some database for various data, such as meteorological data, sequential (ensemble-based) data, and the other scientific data. We believe that this framework is useful to share scientific knowledge between wider communities and can contribute to open science.

Keywords: solar-terrestrial environmental science, open science, open data, database system