

**IHDEA meeting 2020**

**Report of Contributions**

Contribution ID: 2

Type: **not specified**

## **BASS2000 - a ground-based solar observations database**

*Tuesday, October 20, 2020 2:09 PM (3 minutes)*

BASS2000 was originally devoted to the dissemination of French ground-based solar observations. But it extends now to Portuguese (Coimbra) and Belgian (Brussels) observations. Added values are also available, such as a high-resolution quiet Sun spectrum ranging from UV to IR, connected with the virtual observatory VAMDC.

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**Primary author:** ABOUDARHAM, Jean (LESIA)

**Presenter:** ABOUDARHAM, Jean (LESIA)

**Session Classification:** Interfaces & Databases

Contribution ID: 3

Type: **not specified**

# MASER: A Science Ready Toolbox for Low Frequency Radio Astronomy

*Wednesday, October 21, 2020 1:30 PM (10 minutes)*

**MASER** (Measuring, Analysing and Simulating Radio Emissions) provides a comprehensive infrastructure dedicated to low frequency radio emissions (typically < 50 to 100 MHz). The four main radio sources observed in this frequency are the Earth, the Sun, Jupiter and Saturn. They are observed either from ground (down to 10 MHz) or from space (down to a few kHz). Ground observatories are more sensitive than space observatories and capture high resolution data streams (up to a few TB per day for modern instruments). Conversely, space-borne instruments can observe below the ionospheric cut-off (10 MHz) and can be placed closer to the studied object.

Several tools have been developed in the last decade for sharing space physics data. Data visualization tools developed by the **CDPP** (Centre de Données de la Physique des Plasmas, in Toulouse, France) and the University of Iowa (**Autoplot**) are available to display and analyse space physics time series and spectrograms. A planetary radio emission simulation software is developed in LESIA (**ExPRES**: Exoplanetary and Planetary Radio Emission Simulator). The **VESPA** (Virtual European Solar and Planetary Access) provides a search interface that allows to discover data of interest for scientific users, and is based on **IVOA** standards (astronomical International Virtual Observatory Alliance). The University of Iowa also develops **Das2** that allows to distribute data with adjustable temporal resolution.

MASER is making use of all these tools and standards to distribute datasets from space and ground radio instruments available from the Observatoire de Paris, the Station de Radioastronomie de Nançay and the CDPP deep archive. These datasets include Cassini/RPWS, STEREO/Waves, WIND/Waves, Ulysses/URAP, ISEE3/SBH, Voyager/PRA, Nançay Decameter Array (Routine, NewRoutine, JunoN), RadioJove archive, swedish Viking mission, Interball/POLRAD... MASER also includes a Python software library for reading raw data.

This work is supported by CDPP, CNES, PADC, Europlanet-2020-RI and Europlanet-2024-RI. The Europlanet 2020 Research Infrastructure project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654208. The Europlanet-2024 Research Infrastructure project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871149.

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**Primary authors:** CECCONI, Baptiste (LESIA - Observatoire de Paris - PSL); LOH, Alan (LESIA - Observatoire de Paris - PSL); LE SIDANER, Pierre (DIO - Observatoire de Paris - PSL); AICARDI, Stéphane (DIO - Observatoire de Paris - PSL); SAVALLE, Renaud (DIO - Observatoire de Paris - PSL); BONNIN, Xavier (LESIA - Observatoire de Paris - PSL); NGUYEN, Quynh Nhu (LESIA - Observatoire de Paris - PSL); LION, Sonny (LESIA - Observatoire de Paris - PSL); SHIH, Albert (DIO - Observatoire de Paris - PSL); ZARKA, Philippe (LESIA - Observatoire de Paris - PSL); LOUIS, Corentin (IRAP - CNES / CNRS); LAMY, Laurent (LESIA - Observatoire de Paris - PSL); GRIESSMEIER, Jean-Mathias (LPC2E - Univ. d'Orléans); FADEN, Jeremy (University of Iowa); PIKER, Christopher (University of Iowa); ANDRÉ, Nicolas (IRAP - CNRS); ERARD, Stéphane (LESIA - Observatoire de Paris - PSL); GÉNOT, Vincent (IRAP - CNRS); MAFI, Joseph (UCLA); SHARLOW, Mark (UCLA); SKY, Jim (Radiosky Publishing)

**Presenter:** CECCONI, Baptiste (LESIA - Observatoire de Paris - PSL)

**Session Classification:** Tools & Software

Contribution ID: 4

Type: **not specified**

## Heliophysics and planetology data distributed by AMDA with HAPI

*Tuesday, October 20, 2020 2:12 PM (3 minutes)*

AMDA is both an online space data analysis tool and database which serves the heliophysics and planetology communities. It is developed and maintained by the CDPD for more than 15 years and has always had interoperability in its high priorities. A recent update of AMDA made its data distributed via HAPI thanks to the use of the official node-js HAPI server and the implementation of a binding to the AMDA REST web services. This presentation will quickly demonstrate AMDA functionalities with a focus on data that are now distributed via HAPI.

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**Primary authors:** GÉNOT, Vincent (IRAP/CNRS/UPS/CNES); Mr RENARD, Benjamin (AKKA); Mrs BOUCHEMIT, Myriam (IRAP); Mr DUFOURG, Nicolas (CNES); Mr BUDNIK, Elena (Noveltis/IRAP); Dr ANDRÉ, Nicolas (IRAP); CECCONI, Baptiste (Observatoire de Paris); LOH, Alan (LESIA - Observatoire de Paris - PSL); Dr JACQUEY, Christian (IRAP)

**Presenter:** GÉNOT, Vincent (IRAP/CNRS/UPS/CNES)

**Session Classification:** Interfaces & Databases

Contribution ID: 5

Type: **not specified**

## SPASE implementations in CDPP archives and databases

*Tuesday, October 20, 2020 1:40 PM (3 minutes)*

For more than 20 years, the CDPP (the French Plasma Physics Data Centre) archives and gives access to heliophysics and planetology datasets.

Community and uses have changed over time in particular the need for interoperability, through formats, metadata and model standards. In this context, taking advantage of the evolution of the SIPAD archiving system and CNES storage strategy, the CDPP has drawn a roadmap towards the implementation of the SPASE data model. At the same time the AMDA online database and tool is heavily dependent on SPASE to standardize dataset description and handle its information system. This presentation will give a broad overview of current and future SPASE usages at CDPP.

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**Primary author:** BOUCON, Daniele

**Co-authors:** HEULET, Dominique (CNES); DUFOURG, Nicolas (CNES); Mrs BOUCHEMIT, Myriam (IRAP/CNRS/UPS/CNES); ANDRÉ, Nicolas (IRAP/CNRS/UPS/CNES); Mrs BUDNIK, Elena (IRAP/CNRS/UPS/CNES); Mr JACQUEY, Christian (IRAP/CNRS/UPS/CNES); Mr BRZUSTOWSKI, Quentin (IRAP/CNRS/UPS/CNES); GÉNOT, Vincent (IRAP/CNRS/UPS/CNES)

**Presenters:** BOUCON, Daniele; GÉNOT, Vincent (IRAP/CNRS/UPS/CNES)

**Session Classification:** SPASE

Contribution ID: 6

Type: **not specified**

## Status update on the SDAC and the VSO (withdrawn)

*Tuesday, October 20, 2020 2:15 PM (3 minutes)*

### Status update on the SDAC and the VSO

The Solar Data Analysis Center (SDAC) and the Virtual Solar Observatory (VSO) provide infrastructure in support of the international heliophysics community. In this presentation I will describe:

- New datasets stored at the SDAC
- New datasets made available via the VSO
- Upcoming data storage responsibilities assigned to the SDAC, including new missions and other research data
- Experiments in providing cloud and GPU computing facilities for SDAC data holdings

I will also give a brief description of the challenges in providing useful scientific access to the multi-petabyte SDO data archive, and some potential solutions.

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**Primary author:** Dr IRELAND, Jack (NASA Goddard Space Flight Center)

**Presenter:** Dr IRELAND, Jack (NASA Goddard Space Flight Center)

**Session Classification:** Interfaces & Databases

Contribution ID: 7

Type: **not specified**

## Coordinating Python Development with PyHC

*Wednesday, October 21, 2020 2:02 PM (9 minutes)*

Many Heliophysics software projects are being developed in, or converted to, the Python programming language. The Python in Heliophysics Community (PyHC) has worked over the past two years to bring together the solar and space physics communities for the purpose of coordinating Python software development efforts. The goal of this work is to share knowledge and lessons learned, reduce the incidence of duplicated efforts, ascertain potential collaborations between PyHC projects, and ensure that existing software tools are interoperable and widely available. This presentation will showcase the efforts of the PyHC and increase awareness of the resources that the PyHC provides.

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### Online Material

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**Primary author:** BARNUM, Julie (Laboratory for Atmospheric and Space Physics)

**Co-authors:** Dr ROBERTS, Aaron (NASA GSFC); WARE, Alexandria (LASP); POLSON, Shawn (LASP)

**Presenter:** BARNUM, Julie (Laboratory for Atmospheric and Space Physics)

**Session Classification:** Tools & Software



Contribution ID: 8

Type: **not specified**

## Registering Resources from Observatoire de Paris and Nançay in HPDE

*Tuesday, October 20, 2020 1:46 PM (3 minutes)*

Observatoire de Paris is hosting and managing Solar observations facilities (in Meudon and Nançay), Radio astronomy instruments (Nançay), and is producing and distributing Heliophysics data collections. The PADC (Paris Astronomical Data Centre) and the CDN (Nançay Data Centre) teams are working on describing and registering those resources in the HPDE registry, using the SPASE data model. We present here the current status of the work, and the issues and challenges that have been encountered.

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**Primary authors:** CECCONI, Baptiste (Observatoire de Paris); LOH, Alan (LESIA - Observatoire de Paris - PSL); LE SIDANER, Pierre (DIO - Observatoire de Paris - PSL); Mr GIRARD, Julien (CEA-Saclay); Mr THETAS, Emmanuel (USN, Observatoire de Paris, CNRS, PSL, Université d'Orléans); ABOUDARHAM, Jean (LESIA)

**Presenter:** CECCONI, Baptiste (Observatoire de Paris)

**Session Classification:** SPASE

Contribution ID: 9

Type: **not specified**

## **Integrated environment for simulation access and visualization : an extension of SPASE proposed by the TEMPETE project**

*Tuesday, October 20, 2020 1:43 PM (3 minutes)*

During the EU-FP7 project « Integrated Medium for Planetary Exploration » (IMPEX), an interface between planetary simulation databases and online data processing tools has been developed [Khodachenko et al, 2011]. One of the efforts of the IMPEX project was to specify a language describing the data that exchanged between the simulation databases and the visualization tools [Hess et al, 2013]. This led to extend the SPASE data model in order to describe most of the numerical codes used for simulations of the plasma environment in the Solar System. This extension is now fully incorporated in SPASE.

The TEMPETE project aims to understand the response of planetary magnetospheres and exospheres to solar storms. The project more specifically addresses how to describe and track the temporal evolution of the interaction of a solar storm with planetary environments (Earth, Mars, Mercury). We relied on the effort and the infrastructure developed in the IMPEX project and we extend it to a new class of simulation model and to give also the possibility to describe time varying simulation results. The first step is to extend the current SPASE data model in order to describe upper atmosphere/exosphere simulation runs and results. Secondly we intend to describe variable input conditions and associated results.

We present here the status of the data model extension and new visualization functionalities.

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**Primary authors:** Dr MODOLO, Ronan (LATMOS / UVSQ); Dr GÉNOT, Vincent (IRAP); Dr LEBLANC, Francois (LATMOS / CNRS); Dr ANDRÉ, Nicolas (IRAP); Mr TONIUTTI, Jean-Philippe (GFI); Mr BEIGBEDER, Laurent (GFI); Dr POPESCU, Daniel (GFI); Mrs BOUCHEMIT, Myriam (IRAP); Dr GARNIER, Philippe (IRAP); Mr GANGLOFF, Michel (IRAP); Ms BASKEVITCH, Claire (LATMOS / CNRS); Ms WERNER, Elisabeth (LATMOS / CNRS); Dr CHAUFRAY, Jean-Yves (LATMOS / CNRS); Dr FONTAINE, Dominique (LPP); Prof. SAVOINI, Philippe (LPP)

**Presenter:** Dr MODOLO, Ronan (LATMOS / UVSQ)

**Session Classification:** SPASE

Contribution ID: 10

Type: **not specified**

# NASA HP Use of Digital Object Identifiers for Data

*Tuesday, October 20, 2020 1:30 PM (10 minutes)*

Digital Object Identifiers (DOIs) can be used to create a Permanent ID (PID) for any digital entity, be it a published article, a numerical dataset, a software program, an image, a model, or even a sound. The key is having a home for the object that will not go away, or that will transfer the object to a new home if it does. The DOI must point to a “landing page” URL that contains the current location and general information about the resource, as well as one or more methods or links to access the object (ftp site, web page, web service pointer). Required descriptive terms are a title, a “creator” (aka author), a publisher (provider of the object; typically a repository), a publication date, a type (mostly “dataset” in this context), and an identifier (the DOI itself). DOIs are registered by members of DOI organizations (the NASA Heliophysics Data Environment–HPDE–is a member of datacite.org, which in turn belongs to the International DOI Foundation, <https://doi.org/>). The most difficult part of “minting” DOIs is to generate a landing page. For this purpose, for datasets, NASA HPDE is using the SPASE data product registrations (see <https://heliophysicsdata.gsfc.nasa.gov/>), which contain the required links and much more information. Our plan is to work with the MASA missions, mainly via Project Scientists, to mint DOIs for data-product-level (SPASE Numerical Data Products) for all the current and prior NASA observatories. The most important element is getting agreement on the Creators of the datasets. The process should improve product metadata in general.

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**Primary author:** Dr ROBERTS, Aaron (NASA GSFC)

**Presenter:** Dr ROBERTS, Aaron (NASA GSFC)

**Session Classification:** SPASE

Contribution ID: 11

Type: **not specified**

# pySPEDAS: Space Physics Environment Data Analysis Software in Python

*Wednesday, October 21, 2020 2:21 PM (3 minutes)*

SPEDAS (Space Physics Environment Data Analysis Software) is a framework, written in IDL, to support loading, plotting, analysis, and integration of data from a number of space- and ground-based observatories, including THEMIS, MMS, GOES, ERG, IUGONET, and most data sets archived at NASA CDAWeb. While powerful, IDL has numerous limitations, including the high cost of licensing, limited support and issues created by a single namespace. Due to these limitations and the increasing popularity of the Python programming language, we are collaborating with several missions to bring their data products into the Python environment through a project called pySPEDAS. pySPEDAS currently supports loading data from over 20 missions, as well as several ground-based observatories and includes some basic tools for analyzing these data. This presentation will include a brief introduction to the library, the current status and a brief discussion of how we're validating the data products.

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**Primary author:** Mr GRIMES, Eric (UCLA)

**Presenter:** Mr GRIMES, Eric (UCLA)

**Session Classification:** Tools & Software

Contribution ID: 12

Type: **not specified**

## IUGONET activity for upper atmosphere study

*Tuesday, October 20, 2020 1:10 PM (10 minutes)*

In the Earth's upper atmosphere above about 60 km, including the mesosphere, thermosphere, and ionosphere, various phenomena are generated by energy inputs from higher regions (e.g., solar radiation, solar wind, and particle precipitation from the magnetosphere) and from the lower atmosphere (e.g., atmospheric waves). Thus, comprehensive analysis of various kinds of satellite and ground-based observational data in the multiple regions is important to understand physical mechanism of the phenomena. Inter-university Upper atmosphere Global Observation NETWORK (IUGONET) project started in 2009 to share and effectively analyze such various upper atmospheric data, including solar and planetary data, which have been accumulated by Japanese universities and institutes for more than 60 years. We present our activities to share the upper atmosphere data and facilitate interdisciplinary studies regarding solar-terrestrial physics (STP).

We have supported the research activity in the STP field through the release of the upper atmosphere data, the development of data search and analysis tools, and the education of young scientists. We have supported publishing various upper atmosphere data in collaboration with many STP projects, such as EISCAT, SuperDARN, PWING, and ERG. We have also provided a data analysis software, called "iUgonet Data Analysis Software (UDAS)", and a data service, "IUGONET Type-A", to accelerate comprehensive data analysis. UDAS is a plug-in software for Space Physics Environment Data Analysis Software (SPEDAS), which allows researchers to analyze various types of the IUGONET data in an integrated fashion. IUGONET Type-A is a one-stop data service to search data, show information of data (via metadata and quick-look plots), identify events of interest, interactively create stacked-plot, and guide users to advanced analysis with SPEDAS. The IUGONET metadata is based on the Space Physics Archive Search and Extract (SPASE) data model to ensure interoperability with other STP missions. In order to produce scientific output effectively using the IUGONET data and tools, we regularly hold data analysis workshops for young researchers in Japan and other countries (e.g., Indonesia, Malaysia, India, China, Nigeria). As a result, many research papers including the Master and Doctor theses have been published by using the IUGONET data and tools.

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**Primary author:** Dr TANAKA, Yoshimasa (National Institute of Polar Research)

**Co-authors:** Mr UMEMURA, Norio (Institute for Space-Earth Environmental Research, Nagoya University); Dr ABE, Shuji (International Center for Space Weather Science and Education, Kyushu University); Dr SHINBORI, Atsuki (Institute for Space-Earth Environmental Research, Nagoya University); Mr UENO, Satoru (Kwasan and Hida Observatories, Graduate School of Science, Kyoto University); Prof. SHIOKAWA, Kazuo (Institute for Space-Earth Environmental Research, Nagoya University)

**Presenter:** Dr TANAKA, Yoshimasa (National Institute of Polar Research)

**Session Classification:** SPASE

Contribution ID: 13

Type: **not specified**

## SunPy : The community-developed, free and open source solar data analysis environment for Python.

*Wednesday, October 21, 2020 2:11 PM (10 minutes)*

The goal of the SunPy project is to facilitate and promote the use and development of community-led, free, and open source data analysis software for solar physics based on the scientific Python environment. The project achieves this goal by developing and maintaining the SunPy core package, supporting an ecosystem of affiliated packages, and educating the solar physics community about the Python scientific software stack. In the last year, the SunPy project released the first official stable release (version 1.0) of the core package, won a grant from NASA, published a paper about the project in *The Astrophysical Journal* (The SunPy Community et. al, 2020), published a paper about the software in *The Journal of Open Source Software* (Mumford et al., 2020), and surveyed the solar physics community about software and hardware usage published these results in *Solar Physics* (Bobra et al., 2020). This talk will present how the sunpy package can be used for solar physics data analysis and discuss the current status and roadmap for the package.

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**Primary authors:** HAYES, Laura (NASA Goddard Space Flight Center); THE SUNPY COMMUNITY

**Presenter:** HAYES, Laura (NASA Goddard Space Flight Center)

**Session Classification:** Tools & Software

Contribution ID: 14

Type: **not specified**

# Autoplot and Java Libraries for HAPI and Science Processing

*Wednesday, October 21, 2020 1:10 PM (10 minutes)*

Autoplot has been useful for developing science processes that interact with HAPI and Das2 Servers, CDF files, and other file formats where a collection of files form a database covering long time spans ("aggregations"). Internally, Autoplot's Java code implements these features, and to make use of them codes will use Autoplot as a library. This is messy, and I've extracted functionality from Autoplot to form two independent Java libraries.

First, a library for handling the URI Templates (<https://github.com/hapi-server/uri-templates/wiki/Specification>) which are used for aggregation is available. Given a time range and template, the list of files covering the interval is computed. Or, given a list of files, the time range for each file is computed. I realize this is fairly trivial for any given aggregation, but URI\_Templates are a standard specification and this library makes using this specification easy.

Second, an independent library for interacting with HAPI servers is available (<https://github.com/hapi-server/client-java>). This library manages transactions with HAPI servers, and provides serial (record-by-record) access as well as returning all the data as one transaction. Further, HAPI data is cached, so that repeated interactions with a server will not require repeating downloads, while quick checks of freshness are used to ensure the cache is up-to-date. IDL, Matlab, and Python have Java bridges which make the library useful in these environments as well, which will also be demonstrated.

I will also briefly show Autoplot and review new features introduced this past year.

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**Primary author:** JEREMY FADEN, Jeremy

**Presenter:** JEREMY FADEN, Jeremy

**Session Classification:** Tools & Software



Contribution ID: 15

Type: **not specified**

## Current Status of ERG-Science Center (withdrawn)

*Tuesday, October 20, 2020 2:18 PM (3 minutes)*

The ERG(Arase) Science Center serves as a hub of the ERG project, providing data files in a common format (CDF) and developing the space physics environment data analysis software for IDL/SPEDAS. These tasks contribute to the ERG project by achieving quick analysis and well-organized conjugate ERG satellite and ground-based observations. In this presentation, we report the current status of the ERG (Arase) Science Center activity including a topic of data DOI for the ERG project data.

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### Online Material

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**Primary authors:** Prof. MIYOSHI, Yoshizumi (ISEE, Nagoya University); Dr SHINOHARA, Iku (ISAS/JAXA); Dr HORI, Tomoaki (ISEE, Nagoya University); Dr SHOJI, Masafumi (ISEE, Nagoya University); Dr JUN, Chae-Woo (ISEE, Nagoya University); Dr IMAJO, Shun (ISEE, Nagoya University); Dr NAKAMURA, Satoko (ISEE, Nagoya University); Dr KITAHARA, Masahiro (ISEE, Nagoya University); Dr MATSUDA, Shoya (ISAS/JAXA)

**Presenter:** Prof. MIYOSHI, Yoshizumi (ISEE, Nagoya University)

**Session Classification:** Interfaces & Databases

Contribution ID: 16

Type: **not specified**

# HAPI Update and Recent Developments

*Tuesday, October 20, 2020 2:00 PM (3 minutes)*

The Heliophysics Application Programmer's Interface (HAPI) offers a standardized way for data providers to serve time series data. HAPI offers a lowest common denominator set of request features and a simple streaming data transport protocol that can represent existing data holdings with little or no information loss. We present a brief overview of the specification, including recent and proposed changes. We also describe existing implementations for servers as well as progress on client libraries and tools for accessing HAPI-compliant data.

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## Online Material

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**Primary author:** VANDEGRIFF, Jon (JHU Applied Physics Lab)

**Co-authors:** Dr WEIGEL, Robert (George Mason University); FADEN, Jeremy (Cottage Systems, Inc.); Dr ROBERTS, Aaron (NASA GSFC); KING, Todd; GRIMES, Eric (UCLA); LAL, Nand; HARRIS, Bernard (GSFC); CANDEY, Robert (GSFC); BOARDSEN, Scott (University of Maryland Baltimore County)

**Presenter:** VANDEGRIFF, Jon (JHU Applied Physics Lab)

**Session Classification:** Interfaces & Databases

Contribution ID: 17

Type: **not specified**

## SOLARNET Virtual Observatory

*Tuesday, October 20, 2020 2:21 PM (3 minutes)*

The goal of the SOLARNET Virtual Observatory (SVO) is to provide easy access to the data of ground based solar telescopes and satellite data to the larger scientific community. The SVO is designed to let users search across multiple datasets from different instruments by letting the users search on a time range, on events or instrument characteristics in a central metadata database.

We will present the work we achieved so far, what we wish to achieve in the near future and the challenges that we face.

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### Online Material

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**Primary author:** Mr MAMPAEY, Benjamin (Royal Observatory of Belgium)

**Co-author:** Mr VANSINTJAN, Robbe (Royal Observatory of Belgium)

**Presenter:** Mr MAMPAEY, Benjamin (Royal Observatory of Belgium)

**Session Classification:** Interfaces & Databases

Contribution ID: 18

Type: **not specified**

## Current status of Hinode science center: toward Solar-C science center

*Tuesday, October 20, 2020 2:27 PM (3 minutes)*

For the promotion of the Hinode science output, a Japanese science center is formed at ISEE, Nagoya University, where analysis tools, calibration, and the computer environment for data analysis are provided to the researchers. In this talk, we discuss the current status of Hinode science center at ISEE. Recently, Solar-C(EUVST) (EUV High-Throughput Spectroscopic Telescope) mission is discussed as a flagship mission for the solar physics over the world. Solar-C(EUVST) is designed to comprehensively understand the energy and mass transfer from the solar surface to the solar corona and interplanetary space, and to investigate the elementary processes that take place universally in cosmic plasmas. As a fundamental step towards answering how the plasma universe is created and evolves, and how the Sun influences the Earth and other planets in our solar system, the proposed mission is designed to comprehensively understand how mass and energy are transferred throughout the solar atmosphere. Understanding the solar atmosphere, which connects to the heliosphere via radiation, the solar wind and coronal mass ejections, and energetic particles is pivotal for establishing the conditions for life and habitability in the solar system. We now also prepare to set up the Solar-C science center at ISEE. We discuss the current status of Solar-C science center at ISEE.

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### Online Material

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**Primary authors:** Dr IMADA, Shinsuke (Nagoya Univ.); HINODE & SOLAR-C, team

**Presenter:** Dr IMADA, Shinsuke (Nagoya Univ.)

**Session Classification:** Interfaces & Databases

Contribution ID: 19

Type: **not specified**

# The Das2 System: Efficient Navigation of Large Time-Series Data Sets

*Tuesday, October 20, 2020 2:03 PM (3 minutes)*

*Das2* describes a collection of cooperating programs originally created to support daily review and analysis activities of the Cassini RPWS investigation. The system proved to be useful and is now relied upon for rapid access to working data sets from many missions including Galileo, Polar, Cluster, Voyager, Mars Express and Juno as well as ground based radio astronomy results from the Nançay Decameter Array and Long Wave Array.

The key points of *das2* as envisioned 18 years ago are automatic server-side data reduction and automatic generation of data requests during GUI interaction, features not unfamiliar to anyone who has used Google Maps™. The most widely used *das2* client program is Autoplot. Since Autoplot is already the focus of a separate presentation, this overview will focus on other aspects of the *das2* system. In short I will:

- Give a brief development history and major component synopsis;
- Navigate gigabytes of Planetary Data System files over a home DSL link;
- Touch on standardizing an in-house protocol;
- and cover more recent developments such as the stream validator and SPEDAS client.

I will also point out where more work is needed to make *das2* servers immediately usable without local software development.

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**Primary author:** PIKER, Chris (The University of Iowa)

**Co-authors:** Mr GRANROTH, Larry (The University of Iowa); Dr DROZDOV, Alexander (University of California, Los Angeles)

**Presenter:** PIKER, Chris (The University of Iowa)

**Session Classification:** Interfaces & Databases

Contribution ID: 20

Type: **not specified**

## Space solar physics data and VO services at MEDOC

*Tuesday, October 20, 2020 2:24 PM (3 minutes)*

MEDOC, created as the European data and operations center for SoHO, also hosts data from STEREO, SDO, and other solar physics space missions. Data from observations and derived data are distributed through interfaces including a SiTools instance providing a web interface and web services. In addition, we are developing an EPN-TAP service for derived data sets produced by MEDOC. We will report on the current status of this development and discuss the prospects.

### Open access

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### Abstract

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### Online Material

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**Primary authors:** BUCHLIN, Eric (Université Paris-Saclay, CNRS, Institut d'Astrophysique Spatiale, 91405, Orsay, France); Mr CAMINADE, Stéphane ( Université Paris-Saclay, CNRS, Institut d'Astrophysique Spatiale, 91405, Orsay, France); Mr TRAORÉ, Nima (DSI Group, 92350 Le Plessis-Robinson, France); Mrs MAGALI, Mebsout ( Université Paris-Saclay, CNRS, Institut d'Astrophysique Spatiale, 91405, Orsay, France); Mrs KARIN, Dassas ( Université Paris-Saclay, CNRS, Institut d'Astrophysique Spatiale, 91405, Orsay, France); CECCONI, Baptiste (Observatoire de Paris)

**Presenter:** BUCHLIN, Eric (Université Paris-Saclay, CNRS, Institut d'Astrophysique Spatiale, 91405, Orsay, France)

**Session Classification:** Interfaces & Databases

Contribution ID: 21

Type: **not specified**

## Update on the NASA HPDE

*Monday, October 19, 2020 1:25 PM (15 minutes)*

The NASA Heliophysics Data Environment has been actively adding datasets (PSP, ICON, GOLD, SolO, etc.); working on moving the large SDO data archive to the Solar Data Analysis Center at GSFC; adding DOIs to NASA datasets; and other projects. The NASA HPDE has also been working with NASA HQ to develop a “data system of the future” known as the NASA Heliophysics Digital Resource Library (HDRL), which will also include modeling (centered at CCMC). The intent is to provide uniform dataset access and to allow seamless data-model integration to facilitate a more complete understanding of complex Heliophysics systems. We are exploring options for implementing cloud storage, keeping computing near to large data archives, and using integrated datasets and novel methods to gain new insights. Many of these efforts use an increasingly integrated set of Python routines as a basis.

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**Primary author:** ROBERTS, D Aaron (NASA GSFC)

**Presenter:** ROBERTS, D Aaron (NASA GSFC)

**Session Classification:** General

Contribution ID: 22

Type: **not specified**

## SPEDAS Interoperability Tools and Future Development Plans

*Wednesday, October 21, 2020 1:00 PM (10 minutes)*

The SPEDAS software package includes several features designed to support discovery, download, and analysis of heliophysics data sets without the need to develop mission-specific load routines. In this presentation, we will briefly demonstrate some of these tools, including downloads via NASA's CDAWeb service, the Heliophysics API (HAPI), and the DAS2 protocol. We will discuss the metadata and file format standards that enable the development of these general-purpose access tools, and describe our development plans for supporting additional heliophysics archives and general-purpose analysis tools.

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**Primary author:** LEWIS, Jim (UC Berkeley Space Sciences Laboratory)

**Presenter:** LEWIS, Jim (UC Berkeley Space Sciences Laboratory)

**Session Classification:** Tools & Software



Contribution ID: 23

Type: **not specified**

## Kamodo python visualization and analysis

*Wednesday, October 21, 2020 2:24PM (3 minutes)*

Kamodo is an open source python package under development at the Community Coordinated Modeling Center (CCMC). It can read, interpolate, visualize, and analyze space weather model output and data. A Kamodified model has a python reader and interpolator to enable visualization and analysis tools in Kamodo. Many of the already Kamodified models have had their most useful visualization adapted for utilization on the CCMC website. Kamodo can pull in satellite trajectories, interpolate from model output in time and space, and provide data/model comparison and analysis. As an open source project, the Kamodo development team is encouraging community involvement. That involvement can range from beta testing, suggestions for new features, new visualization options or new Kamodified model readers. The Kamodo GitHub site is here: <https://github.com/nasa/Kamodo>

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### Online Material

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**Primary authors:** Dr DE ZEEUW, Darren; RASTAETTER, Lutz (NASA CCMC); PEMBROKE, Asher (Predictive Science Inc.)

**Presenter:** Dr DE ZEEUW, Darren

**Session Classification:** Tools & Software

Contribution ID: 24

Type: **not specified**

## PlasmaPy: An open source Python package for plasma research and education

*Wednesday, October 21, 2020 2:27 PM (3 minutes)*

The mission of the PlasmaPy project is to foster the creation of an open source software ecosystem for plasma research and education. The PlasmaPy package contains the core functionality needed by most plasma scientists, while community-developed affiliated packages will contain more specialized functionality. Because plasma science is vital to much of heliophysics and astronomy, PlasmaPy is being developed to be interoperable with Astropy while in communication with the Python in Heliophysics Community. PlasmaPy is being developed to include commonly used plasma formulae, object-oriented representations of particles, base classes for plasma simulations, and tools for plasma diagnostics and analysis.

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### Abstract

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### Online Material

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**Primary authors:** MURPHY, Nicholas (Center for Astrophysics | Harvard & Smithsonian); STAŃCZAK, D. (IPPLM); E., Everson (UCLA); BECKERS, J.; BRYANT, K.; FORDIN, S.; HEUER, P.; KHAN, F.; KOZŁOWSKI, P.; LANGENDORF, S.; LEONARD, A.; MALHOTRA, R.; MARUCA, B.; MUMFORD, S.; PARASHAR, T.; SCHAFFNER, D.; STANSBY, D.; TAMBOLI, F.; QUDSI, R.; VARNISH, T.; VINCENA, S.

**Presenter:** MURPHY, Nicholas (Center for Astrophysics | Harvard & Smithsonian)

**Session Classification:** Tools & Software

Contribution ID: 25

Type: **not specified**

## Overview of CDPP activities in space physics

*Wednesday, October 21, 2020 1:20 PM (10 minutes)*

The French Plasma Physics Data Centre (CDPP, <http://cdpp.eu/>) initially established by CNES and CNRS aims to providing access to local and remote data, designing and building science driven analysis tools for observational data as well as results from models and numerical simulations. Other tools like the Propagation Tool or 3DView allow users to put their data in context and interconnect with other databases and tools through interoperability. This presentation will briefly summarize all CDPP activities targeting in particular those related to current and future missions like Bepicolombo, JUICE, and Solar Orbiter.

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### Abstract

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**Primary authors:** ANDRE, Nicolas (IRAP, OMP, CNRS, UPS, CNES); GÉNOT, Vincent (IRAP, OMP, CNRS, UPS, CNES); JACQUEY, Christian (IRAP, OMP, CNRS, UPS, CNES); BOUCHEMIT, Myriam (IRAP, OMP, CNRS, UPS, CNES); BUDNIK, Elena (IRAP, OMP, CNRS, UPS, CNES); BRZUSTOWSKI, Quentin (IRAP, OMP, CNRS, UPS, CNES); PITOUT, Frédéric (IRAP, OMP, CNRS, UPS, CNES); ROUIL-LARD, Alexis (IRAP, OMP, CNRS, UPS, CNES); PLOTNIKOV, Illya (IRAP, OMP, CNRS, UPS, CNES); BUDNIK, Elena (Noveltis); DUFOURG, Nicolas (CNES); BOUCON, Daniele (CNES); DURAND, Joelle (CNES); HEULET, Dominique (CNES); GANGLOFF, Michel (IRAP, OMP, CNRS, UPS, CNES); CEC-CONI, Baptiste (Observatoire de Paris)

**Presenter:** ANDRE, Nicolas (IRAP, OMP, CNRS, UPS, CNES)

**Session Classification:** Tools & Software

Contribution ID: 26

Type: **not specified**

## Activities and Status of the SPDF Archive for the Past Year

*Tuesday, October 20, 2020 2:30 PM (3 minutes)*

The SPDF archive has added GOLD, Parker Solar Probe and Solar Orbiter data in the past year and is working on ICON data and final data from Van Allen Probes. We present the various activities from the past year and current status.

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### Online Material

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**Primary author:** CANDEY, Robert (GSFC)

**Presenter:** CANDEY, Robert (GSFC)

**Session Classification:** Interfaces & Databases

Contribution ID: 27

Type: **not specified**

## Welcome & Logistics

*Monday, October 19, 2020 1:00 PM (5 minutes)*

**Presenter:** CECCONI, Baptiste (Observatoire de Paris)

**Session Classification:** General

Contribution ID: **28**

Type: **not specified**

## **IHDEA Introduction**

*Monday, October 19, 2020 1:05 PM (20 minutes)*

**Presenter:** FUNG, Shing (NASA/GSFC)

**Session Classification:** General

Contribution ID: **30**

Type: **not specified**

## **ESA Highlights**

*Monday, October 19, 2020 1:40 PM (15 minutes)*

**Presenter:** MASSON, Arnaud (ESA)

**Session Classification:** General

Contribution ID: **31**

Type: **not specified**

## **CNES Highlights**

*Monday, October 19, 2020 1:55 PM (15 minutes)*

**Primary authors:** BOUCON, Daniele; Mr DUFOURG, Nicolas (CNES); ANDRE, nicolas (irap)

**Presenters:** BOUCON, Daniele; ANDRE, nicolas (irap)

**Session Classification:** General



Contribution ID: 32

Type: **not specified**

## **JAXA/Nagoya Highlights**

*Monday, October 19, 2020 2:10 PM (15 minutes)*

**Presenter:** MIYOSHI, Yoshizumi (ISEE, Nagoya University )

**Session Classification:** General

Contribution ID: 33

Type: **not specified**

## ObsParis Highlights

*Monday, October 19, 2020 2:25 PM (15 minutes)*

**Presenter:** CECCONI, Baptiste (Observatoire de Paris)

**Session Classification:** General

Contribution ID: **34**

Type: **not specified**

## **Tools for IHDEA (wiki, slack,...)**

*Monday, October 19, 2020 2:40 PM (20 minutes)*

**Presenters:** MASSON, Arnaud (ESA); CECCONI, Baptiste (Observatoire de Paris)

**Session Classification:** General

Contribution ID: 35

Type: **not specified**

## **SPASE 2.3.2 Highlight and new features**

*Tuesday, October 20, 2020 1:00 PM (10 minutes)*

**Presenter:** KING, Todd

**Session Classification:** SPASE

Contribution ID: 36

Type: **not specified**

## **SPASE/HAPI-Inside & Open metadata**

*Tuesday, October 20, 2020 1:49 PM (11 minutes)*

**Open access**

**Abstract**

**Online Material**

**Presenter:** FUNG, Shing (NASA/GSFC)

**Session Classification:** SPASE

Contribution ID: 37

Type: **not specified**

## TAP & EPN-TAP

*Tuesday, October 20, 2020 2:06 PM (3 minutes)*

We shortly introduce TAP and EPN-TAP in the context of the IHDEA. TAP is the Table Access Protocol, a science agnostic API to search into relational databases. EPN-TAP is a TAP interface, with a specific metadata dictionary specifying the table columns. EPN-TAP is dedicated to solar system sciences (planetary and heliophysics).

### Open access

### Abstract

### Online Material

**Presenter:** CECCONI, Baptiste (Observatoire de Paris)

**Session Classification:** Interfaces & Databases

Contribution ID: **38**

Type: **not specified**

## Open Discussion

*Tuesday, October 20, 2020 2:33 PM (27 minutes)*

**Presenter:** CECCONI, Baptiste (Observatoire de Paris)

**Session Classification:** Interfaces & Databases

Contribution ID: 39

Type: **not specified**

## **Solarsoft update (withdrawn)**

**Open access**

**Abstract**

**Online Material**

**Presenter:** IRELAND, Jack

**Session Classification:** Tools & Software



Contribution ID: 40

Type: **not specified**

## Open Discussion

*Wednesday, October 21, 2020 1:40 PM (20 minutes)*

**Session Classification:** Tools & Software

Contribution ID: 41

Type: **not specified**

## Open Discussion

*Wednesday, October 21, 2020 2:33 PM (30 minutes)*

Other packages update  
PyHC/IHDEA interactions

**Session Classification:** Tools & Software

Contribution ID: 42

Type: **not specified**

## IHDEA Working Groups

*Thursday, October 22, 2020 1:00 PM (1 hour)*

Open discussion

Working group proposal

Setting up contributors and goals

**Presenters:** MASSON, Arnaud (ESA); CECCONI, Baptiste (Observatoire de Paris); FUNG, Shing (NASA/GSFC)

**Session Classification:** General

Contribution ID: 43

Type: **not specified**

## **Future IHDEA recommendations**

*Thursday, October 22, 2020 2:00 PM (30 minutes)*

**Session Classification:** General

Contribution ID: 44

Type: **not specified**

## **Summary & plans for the next meeting**

*Thursday, October 22, 2020 2:30 PM (30 minutes)*

**Session Classification:** General

Contribution ID: 45

Type: **not specified**

## Showcase

**Session Classification:** SPASE

Contribution ID: 46

Type: **not specified**

## **DOI for ESA Heliophysics spacecraft experiments and relation to SPASE**

*Tuesday, October 20, 2020 1:20 PM (10 minutes)*

**Presenter:** MASSON, Arnaud (ESA)

**Session Classification:** SPASE

Contribution ID: 47

Type: **not specified**

## National tribute to Samuel Paty

*Wednesday, October 21, 2020 2:00 PM (1 minute)*

All French research and education institutions will observe one minute of silence, to pay our tribute to Samuel Paty, high school teacher, murdered on Oct. 16 2020 because he was doing his job of teaching freedom of speech.



Contribution ID: 48

Type: **not specified**

## HelioPy

*Wednesday, October 21, 2020 2:30 PM (3 minutes)*

Short presentation of HelioPy

**Presenters:** MASSON, Arnaud (ESA); STANSBY, S

**Session Classification:** Tools & Software