IVOA June 2025
Interoperability Meeting

Report of Abstracts

https://indico.ict.inaf.it/e/3121

Abstract ID : **4**

The Virtual Astronomy Classroom: New Frontiers in Science Education

Content

The digital revolution has transformed astronomy education through the Virtual Observatory, creating dynamic, accessible learning environments that transcend traditional classroom limitations. By integrating real-time data, like Gaia, Kepler, TESS, SDSS, virtual astronomy classrooms empower students worldwide to explore the cosmos regardless of geographic or socioeconomic barriers. These tools not only enhance engagement through hands-on experimentation with actual astronomical datasets but also cultivate critical STEM skills like data analysis and computational thinking. As the Virtual Observatory bridges the gap between cutting-edge research and education, it represents a paradigm shift in science pedagogy—democratizing access to the universe while preparing a new generation of learners for data-driven discovery. This innovative approach redefines astronomy education as an immersive, boundaryless experience, where every student can participate in the scientific process under the same "digital sky.

Internal Comments

Author: Dr HASAN, Priya (Maulana Azad National Urdu University, Hyderabad, India)

Co-author: Prof. HASAN, Syed Najamul (Maulana Azad National Urdu University, Hyderabad, India)

Status: SUBMITTED

Submitted by **Dr HASAN, Priya** <priya.hasan@gmail.com> on **Friday 4 April 2025**

Abstract ID : **5**

MANGO last step (DM-WG)

Content

After being delayed due to the MIVOT recommendation process, the MANGO data model is now a VO working draft.
The purpose of MANGO, which stands for MO-del for AN-notating G-enericO-objects, is to add an upper level of description to the tabular data of query responses. It allows metadata to be extended, complex quantities to be reconstructed from multiple column values and properties to be linked together. It also allows to specify the origin of the data.
I'll give an overview of the model and the tools available to exercise it.
This talk is an invitation for people to contribute to the REC process.

Internal Comments

Author: MICHEL, Laurent (Observatoire de Strasbourg)

Comments:

list of the authors of the draft: François Bonnarel, Gilles Landais, Laurent Michel, Jesus Salgado, Mireille Louys, Marco Molinaro

Status: SUBMITTED

Submitted by **MICHEL, Laurent** <laurent.michel@astro.unistra.fr> on **Tuesday 8 April 2025**

Abstract ID : **6**

Extreme Precision Radial Velocities and IVOA Standards

Content

Extreme Precision Radial Velocity (EPRV) refers to radial velocity measurements that aim to realize a precision of better than 0.1 m/s, with the ultimate goal of detecting temperate, Earth-like exoplanets orbiting nearby Sun-like stars. An international working group is developing standardized formats for EPRV data products delivered by modern instruments. This group desires to make the data formats compatible with IVOA and FAIR standards, to support wide discoverability and accessibility to these data and to enable interoperability with related datasets. This presentation describes progress in these standardized formats and discusses areas where IVOA standards enable them to be discoverable and accessible.

Internal Comments

Authors: Dr BENDER, Chad (U Arizona); BERRIMAN, Bruce (Caltech/IPAC); Dr BURT, Jennifer (JPL); DATA FORMATTIMG TEAM, EPRV; Dr FULTON, B. J. (Caltech/IPAC-NExScI)

Comments:

We request assistance from the organizers in selecting the correct session for the presentation. Berriman will be the presenter.

Status: SUBMITTED

Submitted by **BERRIMAN, Bruce** <gbb@ipac.caltech.edu> on **Tuesday 8 April 2025**

Abstract ID : **7**

Mango/Mivot tooling (APPS-WG)

Content

I'll present the state of the art with the tools I'm developing to handle the mapping of VOTable data on data models (especially MANGO) with Mivot. This includes the Pyvo annotation reader and writer, the model validator, and a few other things.

Internal Comments

Author: MICHEL, Laurent (Observatoire de Strasbourg)

Status: SUBMITTED

Submitted by **MICHEL, Laurent** <laurent.michel@astro.unistra.fr> on **Wednesday 9 April 2025**

Abstract ID : **8**

The IVOA and the IAU

Content

The IAU VO working group was established in 2021, and led IVOA participation in the IAU General Assemblies in 2022 and 2024. This presentation gives a technical description of the contributions of the VO working group to these General Assemblies. Continued participation in the IAU should follow a plan that implements the goals of the IAU Strategic Plan 2020-2030. Discussion of such a plan is encouraged.

Internal Comments

Author: BERRIMAN, Bruce (Caltech/IPAC)

Comments:

Please schedule in IAU Plenary Session

Status: SUBMITTED

Submitted by **BERRIMAN, Bruce** <gbb@ipac.caltech.edu> on **Wednesday 9 April 2025**

Abstract ID : **9**

Experiences and lessons learned from EP scientific workflow

Content

An automated and efficient workflow is crucial for scientific output in astronomy, particularly in time-domain astronomy. The National Astronomical Data Center (NADC) has undertaken the development of the workflow for the Einstein Probe(EP), a high-energy X-ray satellite focused on time-domain astronomy. During the development process, we encountered challenges including workflow orchestration, workflow scalability, and the traceability of data product generation processes. To address these issues, we developed a workflow framework based on cloud technologies including containers, message queues, and workflow orchestrators, etc. This framework offers excellent scalability and portability and significantly enhance the efficiency of complex algorithm integration and deployment in multi-team collaborations. Finally, we proposed our recomendation for provenance and workflow data model. This framework can be further applied to future time-domain astronomy projects, and we hope that our experiences can provide insights for the IVOA workflow standards.

Internal Comments

Author: ZHANG, Zhen (National Astronomical Observatories, Chinese Academy of Sciences)

Co-authors: Dr XU, Yunfei (National Astronomical Observatories, Chinese Academy of Sciences); Prof. CUI, Chenzhou (National Astronomical Observatories, Chinese Academy of Sciences)

Presenter: ZHANG, Zhen (National Astronomical Observatories, Chinese Academy of Sciences)

Status: SUBMITTED

Submitted by **ZHANG, Zhen** <zhangzhen@nao.cas.cn> on **Thursday 24 April 2025**

Abstract ID : **10**

Accessing Solar System observations from ESO archive

Content

Solar System observations at ESO would benefit from an access via EPN-TAP, similar to that provided on the HST archive.
This is a report on a first test to identify these data in the archive, and difficulties encountered during the process.

Internal Comments

Author: ERARD, Stéphane (LIRA / Observatoire de Paris)

Comments:

SSIG session

Status: SUBMITTED

Submitted by **ERARD, Stéphane** <stephane.erard@obspm.fr> on **Saturday 3 May 2025**

Abstract ID : **11**

Taxonomy of small bodies of the solar system.

Content

The expected increase of observations in this field in the coming years calls for a community standard to describe these objets.
The current project aims at unifying the existing descriptions.

Internal Comments

Author: ERARD, Stéphane (LIRA / Observatoire de Paris)

Comments:

SSIG session

Status: SUBMITTED

Submitted by **ERARD, Stéphane** <stephane.erard@obspm.fr> on **Saturday 3 May 2025**