The Open UNiverse initiative





Open UNiverse space science data for everyone

Open UNiverse. Main principles



Space science data are the end product of scientific space missions and hold the potential for the production of knowledge

Space science data generated through public funding should be considered a public good and should become openly available. (taking into account of fair scientific return and intellectual property rights)

High-level data products should be transparent and usable by all

Transparency and accessibility are key factors for The efficient conversion of data into knowledge Achieve equal opportunity in the access to scientific information.

Open UNiverse: Discussion phase



Open Universe Expert Meeting

11-12 April 2017 ASI-HQ, Rome, Italy

Expert Meeting Programme 🚈 PDF





United Nations / Italy Workshop on the Open Universe Initiative

VIENNA, AUSTRIA, 20-22 NOVEMBER 2017

Encouragement, criticism, recommendations

- Activities carried out in strict coordination with UNOOSA
- On going collaborations with institutions in several countries (Italy, Brazil, Armenia, Germany, Argentina, UAE, Switzerland, Japan)
- Formal support received from Brazil and Armenia. Argentina, and hopefully other countries may follow soon

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Open UNiverse: Preliminary Objectives





INCREASE TRANSPARENCY of already accessible resources: including promoting FAIR (Findable, Accessible, Interoperable, Reusable) guiding principles, promoting adoption of widely-used standards, processing from raw data to web-ready products, interfacing and facilitating cooperation between data providers and data centres and archives...



RESURFACE DATA and other hidden or otherwise hardly accessible resources: by identifying inaccessible data and working with national and regional entities to solve the challenges to make them public, as well as bringing new main players and actors in the international space science arena into the Initiative and in contact with other public data access solutions.



BROADEN THE USER-BASE of astronomy and space science data: to include as well the rapidly growing community of citizen scientists, by providing the necessary tools to use astronomy and space science data for a range of target groups, including educators and students in universities, schools, planetariums or any amateur scientists or other potential end-user

16/11/2018

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- Minor modification of agencies cost-to-completion models
- Avoid duplication of efforts/ Collaboration and coordination among data centres
- Full use of existing infrastructure and data services (e.g. IVOA standards)
- Innovative tools also based on new technologies . (e.g. openuniverse.asi.it, container's based pipelines)
- New paradigms (e.g. Distributed analysis, living catalogs)



open space science data

Open Universe documents

- Open Universe paper
- Original proposal A/AC./105/2016/CRP.6
- Open Universe Expert Meeting, 11-12 April 2017, ASI-HQ, Rome, Italy
- <u>Report on the Open Universe Expert Meeting</u>
- Open Universe Workshop, Vienna 20-22 November 2017
- Report on the Open Universe workshop

Open Universe Technical presentations

- June 2016 COPUOS, 59th session
- June 2017 COPUOS, 60th session
- February 2018 COPUOS-STSC, 55th session

Open UNiverse for astronomy UNITED NATIONS Office for Outer Space Affairs Open Universe @ ASI Space Astronomy » Ground Astronomy » Planetary Science » Solar data » ISS » VO and General services » Bibliography » Cosmic Rays » Astronomical tools » Image galleries » Open software » Other Initiatives » Educational contents » VO inside Feedback Help & video tutorials

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Open UNiverse: Use of existing infrastructures



VOU-Blazar tool based on IVOA protocols



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Open UNiverse: New paradigms, new technologies



Swift_deepsky pipeline

Complex software that can be run by anyone on a Docker container





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Open UNiverse: progress so far



- Version 1.5 of Open Universe portal (openuniverse.asi.it) released in Oct. 2018
- VOU-Blazar tool (V1.0) released
- Swift_Deepsky pipeline developed and under testing
- Open Universe for blazars project started (> 11,000 Swift XRT images processed, XRT and BAT spectra generation and UVOT analysis in progress) Results will be available via openuniverse.asi.it, VO, VOU-Blazars etc.
- Organization of data analysis schools (f2f, on-line, hybrid)