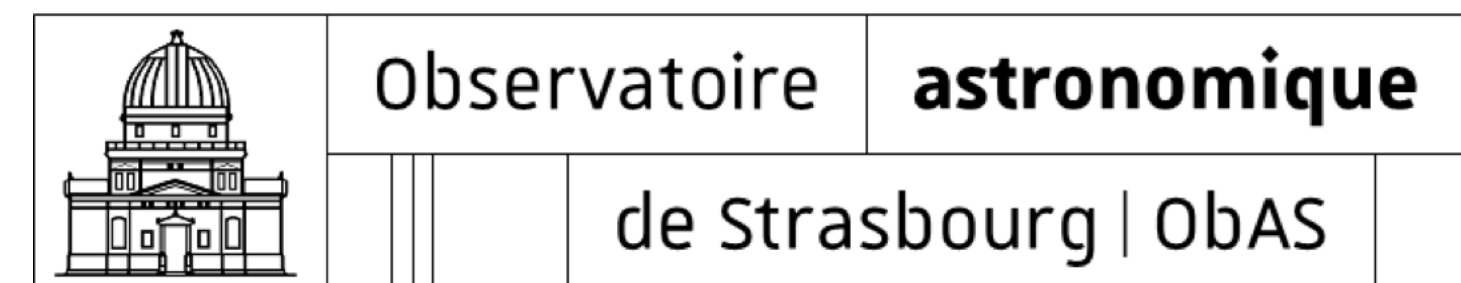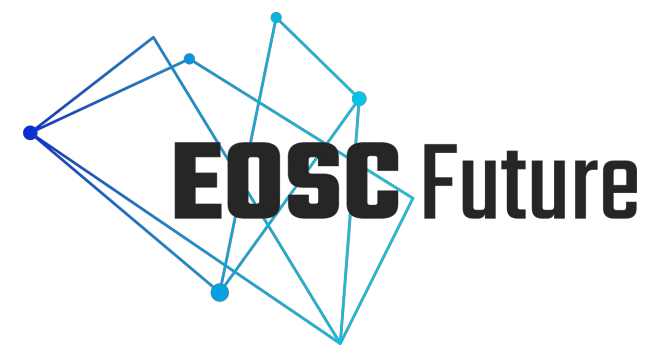# On-boarding CDS services and training materials to EOSC
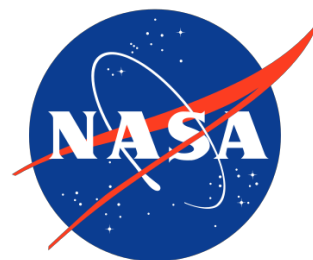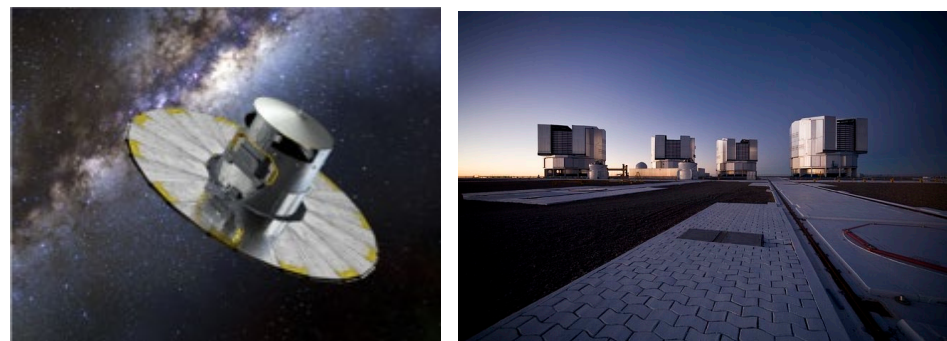
Mark Allen

(Director: **C**entre de **D**onnées astronomiques de **S**trasbourg)

M. Marchand, G. Landais, A. Gonneau, A. Oberto, S. Derriere, A. Schaaff. *With thanks to ESCAPE, EOSC Future, EOSC Pillar*
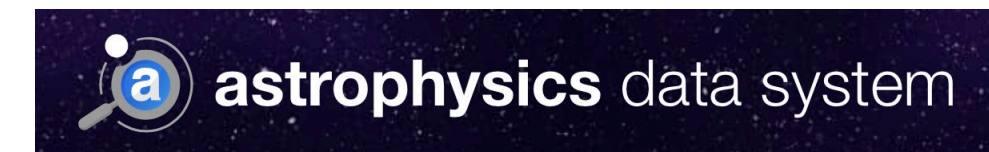
CDS - a part of the global astronomy data infrastructure
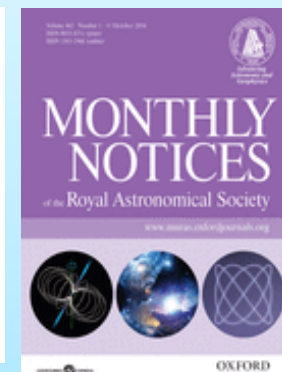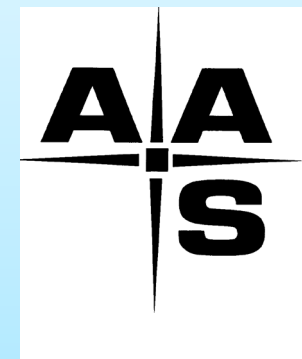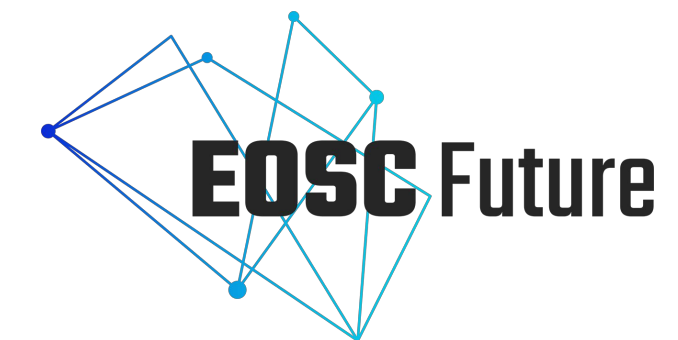
Involvement in EOSC

- H2020 (INFRAEOSC-2018) **European Science Cluster of Astronomy & Particle physics ESFRI res. infrastructures**
  - *on-boarding of Astronomical 'Virtual Observatory' to EOSC.*

- H2020 (INFRAEOSC-03-2020) Research and Innovation Action — *Science project support, consolidation of ESCAPE work. Creation of training materials and* **on-boarding them to EOSC**.

- **CDS VizieR** service records harvested in multiple ways.
  - 24635 records (OAI-PMH, DOIs)

- **CDS SIMBAD** and **VizieR** services **on-boarded to EOSC**.

- CDS Participation in **EOSC TF on Researcher Engagement and Adoption** *(plus earlier work in EOSC Secretariat).*
- Contributions/interactions: EOSC Pillar, FAIRsFAIR.

CDS services for the Astronomy community

~17 M Objects

24k Catalogues

1100 Image surveys

Heavily used: ~3M queries per day, 390k users per month
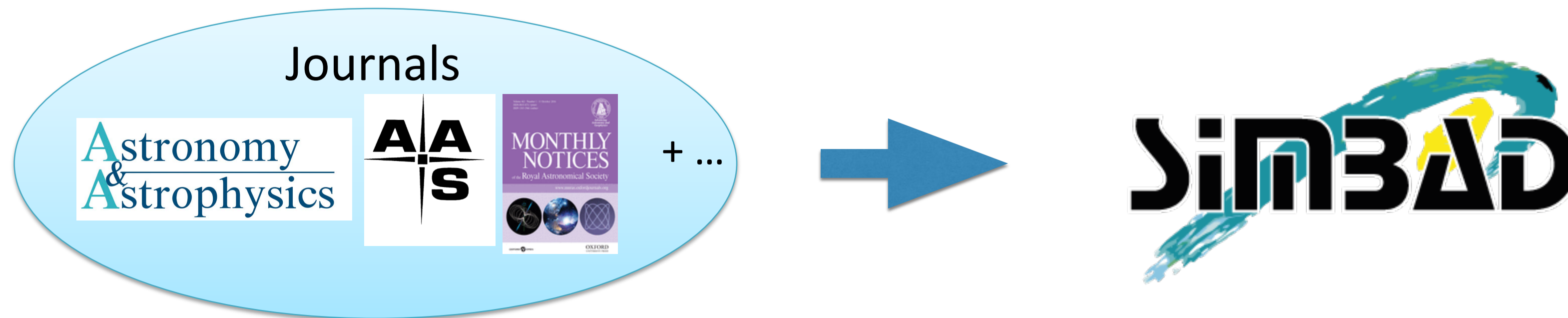
(mostly via programmatic interfaces)

SIMBAD

- **Treatment of ~15000 published articles processed per year**
- Astronomical objects identified in the text and tables

- **Supervised extraction and cross-identification**
- **Linking of Astronomical objects to the literature:**
  - Enables astronomy literature to be searched by Astronomy object name
  - Name resolver:

VizieR

- **Currently 24635 data sets. (~ 80 billion table rows).**

- **~1400 *'astronomical catalogues'* published per year.**

- Tabular and associated data from refereed articles, and also large surveys.
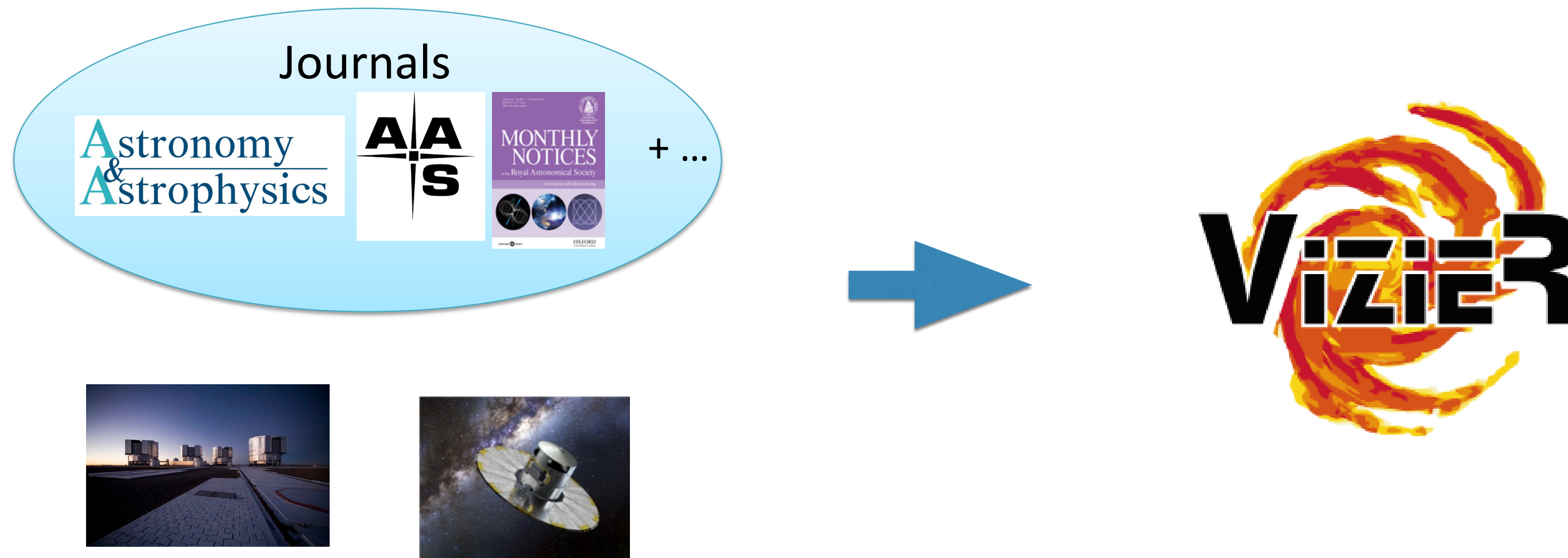
- **High level metadata curation, and value-added service functions:**
  - Interactive and programmatic interfaces, queriable by **IVOA standard protocols**.
  - Cross-catalogue searches using time, space and wavelength criteria.
- **DOIs assigned, CTS certification (2019-2022, 2024 pending)**

CDS as a 'Provider' in EOSC

The first steps were significantly helped by the EOSC-Pillar project

SIMBAD on-boarded to EOSC

EUROPEAN OPEN SCIENCE CLOUD

Access instructions

Pin to a project

This is an open access offer of the SIMBAD service. Press **Go to the service** button to reach the service website. You may also add the service to a **Project** in (

SIMBAD is on-boarded to the European Open Science Cloud (EOSC) to serve the astronomical community.

2024.02.04-18:03:18

- Gain EOSC experts support

- Easily access the selected service

- Organise your services and orders into logical blocks

To find out more about Projects in EOSC Marketplace, please refer to our FAQ

Go to the service

Next

Round-trip

SIMBAD is on-boarded to the European Open Science Cloud (EOSC) to serve the .

2024.02.04-18:03:18

On-boarding done by simple form…

EUROPEAN OPEN SCIENCE CLOUD

About   Statistics   For Providers   For Catalogues

Update Service | Provider: Strasbourg astronomical Data Centre | Catalogue: EOSC

SIMBAD

[Preview]   [Submit]

Fields with (*) are mandatory and must be completed in order to submit this form. Leaving optional fields blank will remove the relevant heading from the published resource/provider profile.

[Suggest]   Do you need help?

Provide feedback

Service Profile Information Blocks

1. Basic *	✓
2. Marketing *	✓
3. Classification *	✓
4. Availability *	✓
5. Location	
6. Contact *	✓
7. Maturity *	✓
8. Dependencies	
9. Attribution	
10. Management *	✓
11. Order *	✓
12. Financial	

*Required fields

8 of 8

Name (*)

Brief and descriptive name of the Resource as assigned by the Provider.

> SIMBAD

Suggested length is 80 characters

Abbreviation (*)

Abbreviation or short name of the Resource.

> SIMBAD

Suggested length is 20 characters

Resource Organisation (*)

The name of the organisation that manages or delivers the resource, or that coordinates the Resource delivery in a federated scenario.

VizieR on-boarded to EOSC in 2024

VizieR records in EOSC Portal

- An example of the ESA Gaia mission DR3 data hosted in the VizieR service.
- This record gets into EOSC in multiple ways because of *harvesting.*
- DOIs prevent multiplicity.

Source ▾ | 🔖 Cite | 📌 Pin to the Marketplace

Dataset . 2022 ✓
DOI: /10.26093/cds/vizier.1355
Hosted By: Strasbourg Astronomical Data Center
URL:
https://dx.doi.org/10.26093/cds/vizier.1355

Dataset . 2022 ○
Hosted By: B2FIND
URL:
http://dx.doi.org/http://doi.org/10.26093/cds/vi...

Gaia DR3 Part 1. Main source

Data: Dataset

📅 2022

Author: Collaboration Gaia

Identifier: DOI: 10.26093/cds/vizier.1355

Gaia Data Release 3 (Gaia DR3) will be released on 13 June 2022. The Gaia DR3 catalogue builds upon the Early Data Release 3 (released on 3 December 2020) and combines, for the same stretch of time and the same set of observations, these already-publish... Show more

🏷 Keywords: Solar System Astronomy   Standard stars   galactic and extragalactic astronomy   Astrophysics and Astronomy   Radial velocity   Astronomical object identification   Variable stars   Physics   Trigonometric parallax   exoplanet astronomy   Astrometry   Photographic photometry   Surveys   stellar astronomy   Asteroids   Optical astronomy   observational astronomy   Photometry   Proper motions   Natural Sciences

Source ▾ | 🔖 Cite | 📌 Pin to the Marketplace Project

The DOI landing page for this dataset

CDS home

Gaia DR3 Part 1. Main source : I/355

Access to
VizieR | **FTP** | **ReadMe** | **TAP** | **Xmatch** | **Download notebook**

Authors : Gaia collaboration
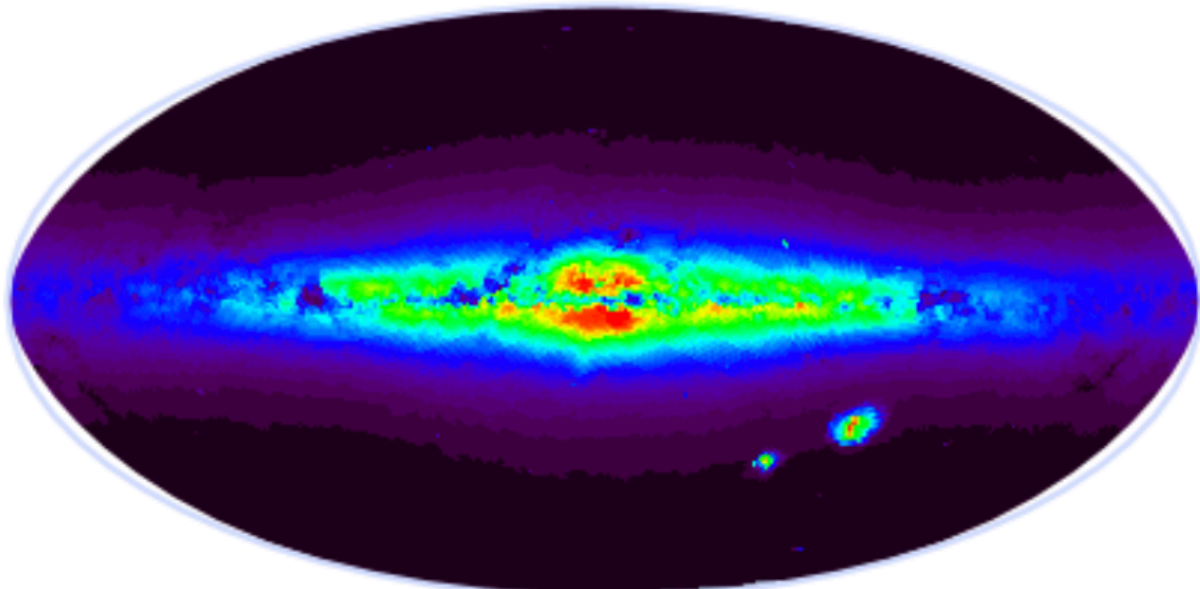
VizieR DOI : 10.26093/cds/vizier.1355 ❞ *Cite*
Bibcode : 2022yCat.1355....0G (ADS)

UAT : Surveys, Standard stars, Astrometry, Proper motions, Optical astronomy, Photographic photometry, Astronomical object identification, Radial velocity, Variable stars, Asteroids, Optical astronomy, Trigonometric parallax

Observation (OC)

Records : 1811709771 sources

Article Origin | Description | Acknowledgment | See also | History | Prov | FTP | **VizieR**

Gaia Data Release 3 (Gaia DR3) Part 1 Main source. (2022)
Go to the original article (10.5270/esa-qa4lep3)

Keywords : catalogs - astrometry - parallaxes - proper motions - techniques photometric - techniques: radial velocities

Abstract: Gaia Data Release 3 (Gaia DR3) will be released on 13 June 2022. The Gaia DR3 catalogue builds upon the Early Data Release 3 (released on 3 December 2020) and combines, for the same stretch of time and the same set of observations, these already-published data products with numerous new data products such as extended objects and non-single stars.

Inserted into VizieR : 09-Jun-2022
Last modification : 24-Jan-2024

On-boarding of Training Materials

- Developed as part of the EOSC Future project – showing how publishing in VizieR results in the data records being visible in EOSC Portal.

EUROPEAN OPEN SCIENCE CLOUD

About EOSC   Browse Marketplace   Providers Hub   Monitoring   Status   Contact us

← Go to Search

Training Resource

The journey of your data through the Virtual Observatory and the European Open Science Cloud

Resource organization: Strasbourg astronomical Data Centre

Provided by: Strasbourg astronomical Data Centre

Access training

OPEN ACCESS

About

The new initiatives for Open Science involve many actors: the journals, archives, the data sharing frameworks, and also the community of authors who publish their data. In this training we highlight the role of the authors, to show how efforts to describe astronomical data in standard ways has an important impact on achieving the goals of Open Science. In this training we concentrate on the publication of data via the Strasbourg Astronomical Data Centre (CDS) VizieR service and show how the process leads to the data being made visible in the EOSC Portal. We invite astronomy researchers to follow the journey of their data to EOSC!

Basic Details

Version Date
2023-06-09

License
https://creativecommons.org/licenses/by-sa/4.0/

Accessing the resource goes straight to the training tutorial in the CDS Git-hub

The journey of your data through the Virtual Observatory and the European Open Science Cloud

Key Points   Glossary   Learner Profiles   More ⌄

Learner View ⌄

Search

%

Collapse ‹

→ Next: Why distribute your... →

EPISODES ⌃

- **Summary and Setup** ⌃

    Overview

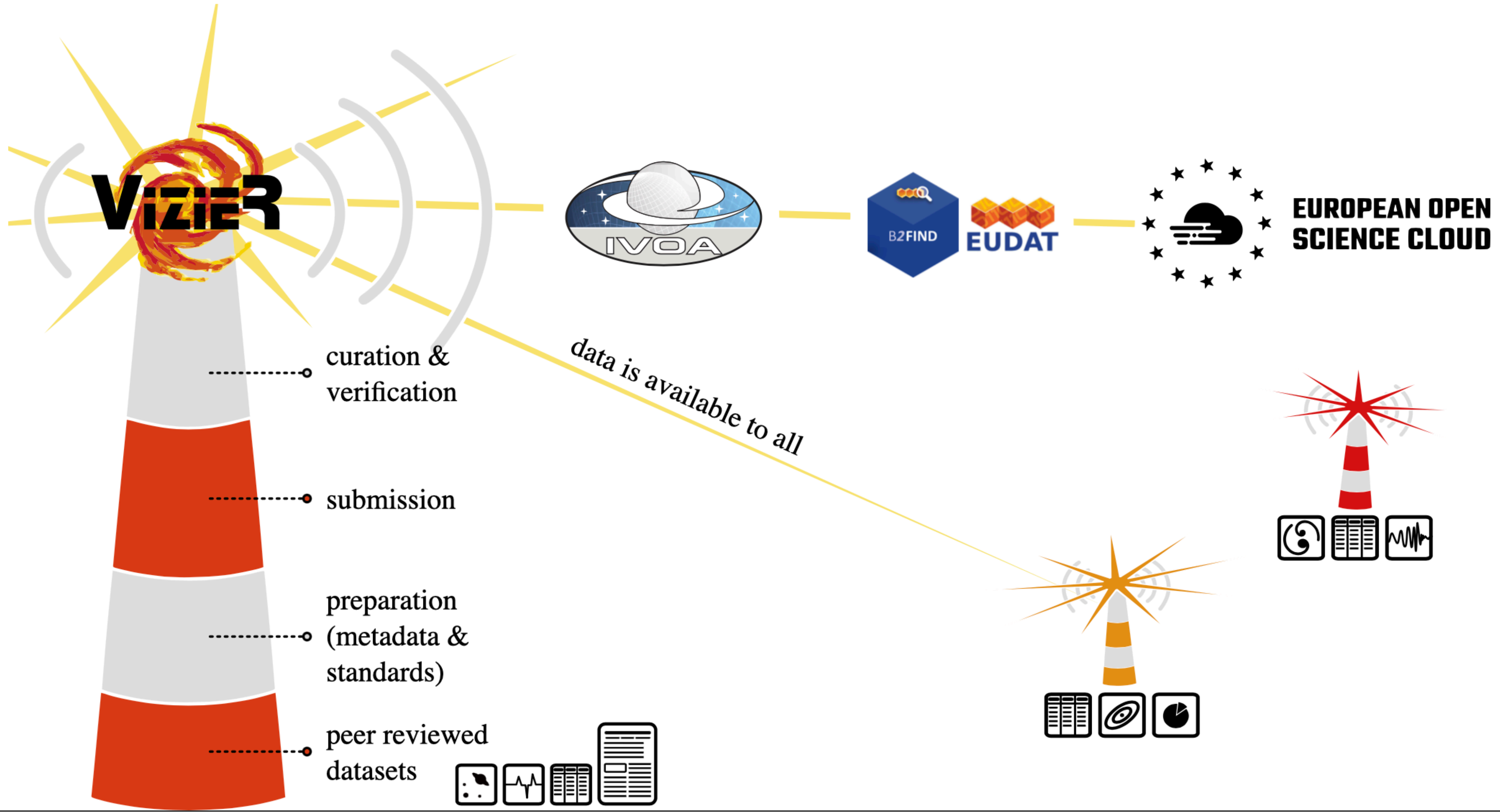   Target audience

    Learning outcomes

    Key Points and Glossary

    Type of course

    Version

Summary and Setup

Welcome to this course summarizing the journey of your data through the Virtual Observatory (VO) and the European Open Science Cloud (EOSC).

In this course, you will learn how to publish your data and you will become aware of new Open Science capabilities like EOSC.

VizieR

curation & verification

submission

preparation (metadata & standards)

peer reviewed datasets

IVOA

B2FIND
EUDAT

EUROPEAN OPEN SCIENCE CLOUD

data is available to all

Just the beginning…

- On-boarding shows we can add CDS services into the generic EOSC system.
- It is important to show that existing infrastructures can be included.
- The CDS resources are more 'discoverable' but …
  - Statistics show **very few** people use SIMBAD or VizieR via EOSC Portal!
  - CDS users already know how to find the services and go there directly.

- **So, why do it ?**
  - Because EOSC is still in very early stages, and we agree with the vision.
  - Because we can bring astronomy interoperability into EOSC.
  - The expectation that EOSC will provide access to computational resources, e.g. for running python notebooks – as prototyped in ESCAPE:

MOC NOTEBOOK TUTORIAL
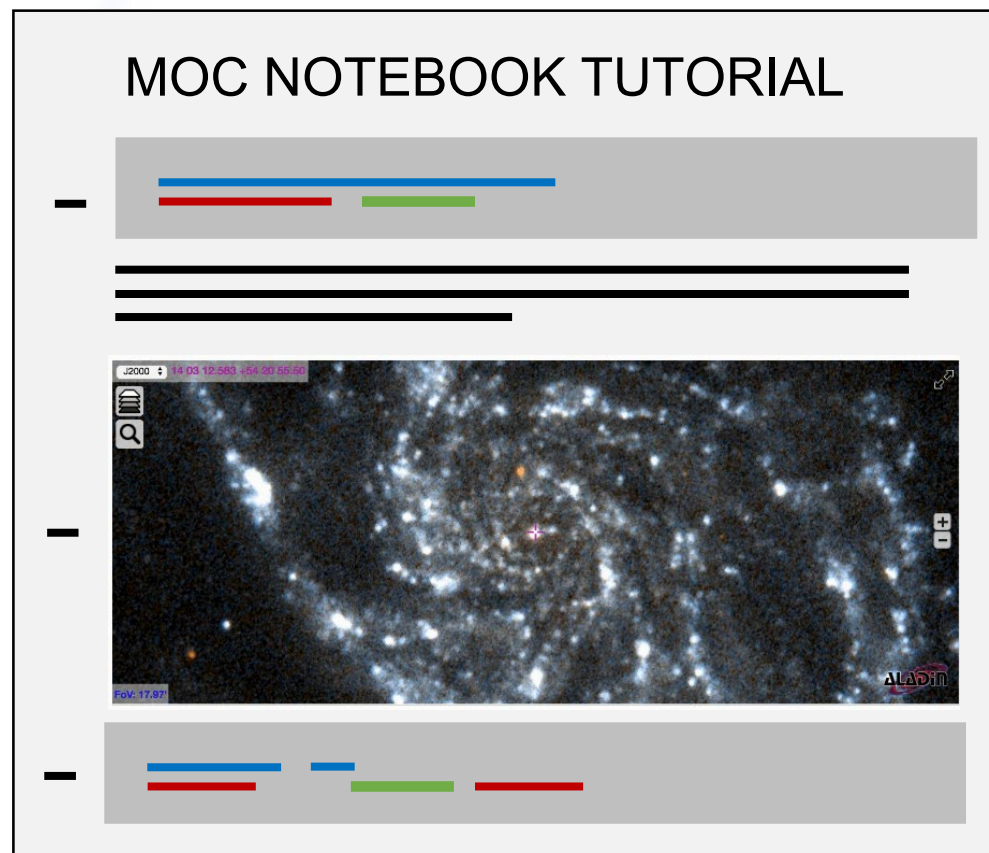
Open Science example :
RI requirements ➔ Re-usable notebooks

6. Training notebook tutorials on-boarded to ESCAPE-OSSR

7. Deployed in ESCAPE platform and Virtual Research E...

ESCAPE Science Platform prototype

- ⦿ JIVE Binder
- ◯ MyBinder
- ◯

5. ESCAPE school on interoperable data + follow on events
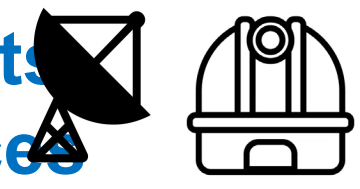
4. Publication in *Astronomy & Computing* journal

ESCAPE
European Science Cluster of Astronomy & Particle physics ESFRI research Infrastructures

Ready for integration in EOSC systems

1. ESFRI/RI requirements for interoperable services and data
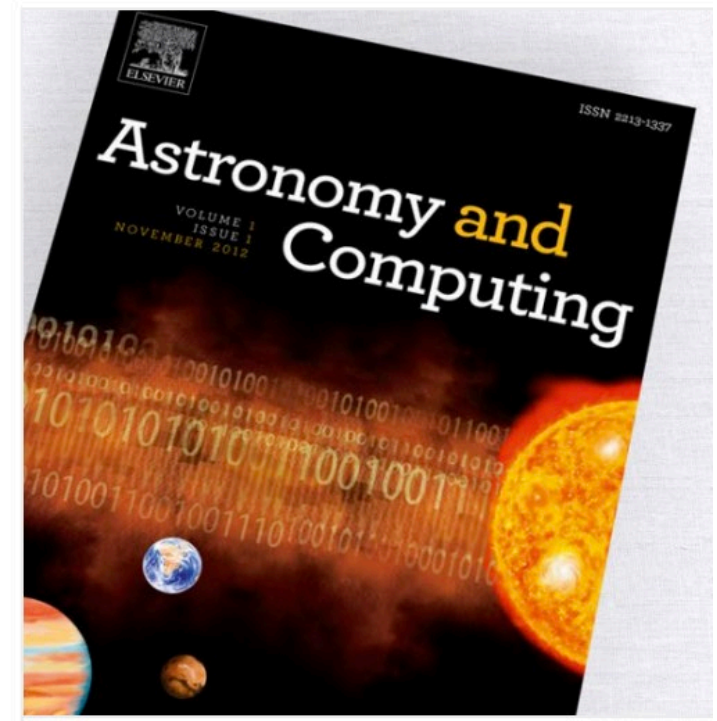
3. Reference implementation in open source software onboarded to ESCAPE-OSSR

MOC_cli
MOC_py
MOC_Rust

2. definition of international open standards

MOC: Multi-Order Coverage map
Version 2.0

IVOA Recommendation 27 July 2022

Interest/Working Group:
http://www.ivoa.net/twiki/bin/view/IVOA/IvoaApplications
Author(s):
Pierre Fernique (CDS), Ada Nebot (CDS), Daniel Durand (CADC), Matthieu Baumann (CDS), Thomas Boch (CDS), Giuseppe Greco (EGO-Virgo), Tom Donaldson (STScI/NASA), Francois-Xavier Pineau (CDS), Mark Taylor (University of Bristol), Wil O'Mullane (Vera C. Rubin Observatory), Martin Reinecke (Max Planck), Sébastien Derrière (CDS)
Editor(s):
Pierre Fernique, Ada Nebot, Daniel Durand

Launching notebooks

Summary

- CDS has on-boarded 2 services : SIMBAD and VizieR.

- A tutorial about publishing in VizieR has been created and on-boarded as an EOSC Training resource.

- On-boarding is important, but currently very little added-value.

- Expect EOSC to provide way to access computing resources for e.g. running notebooks close to the data.

- Expect a lot of evolution and new capabilities in the future.

Acknowledgments