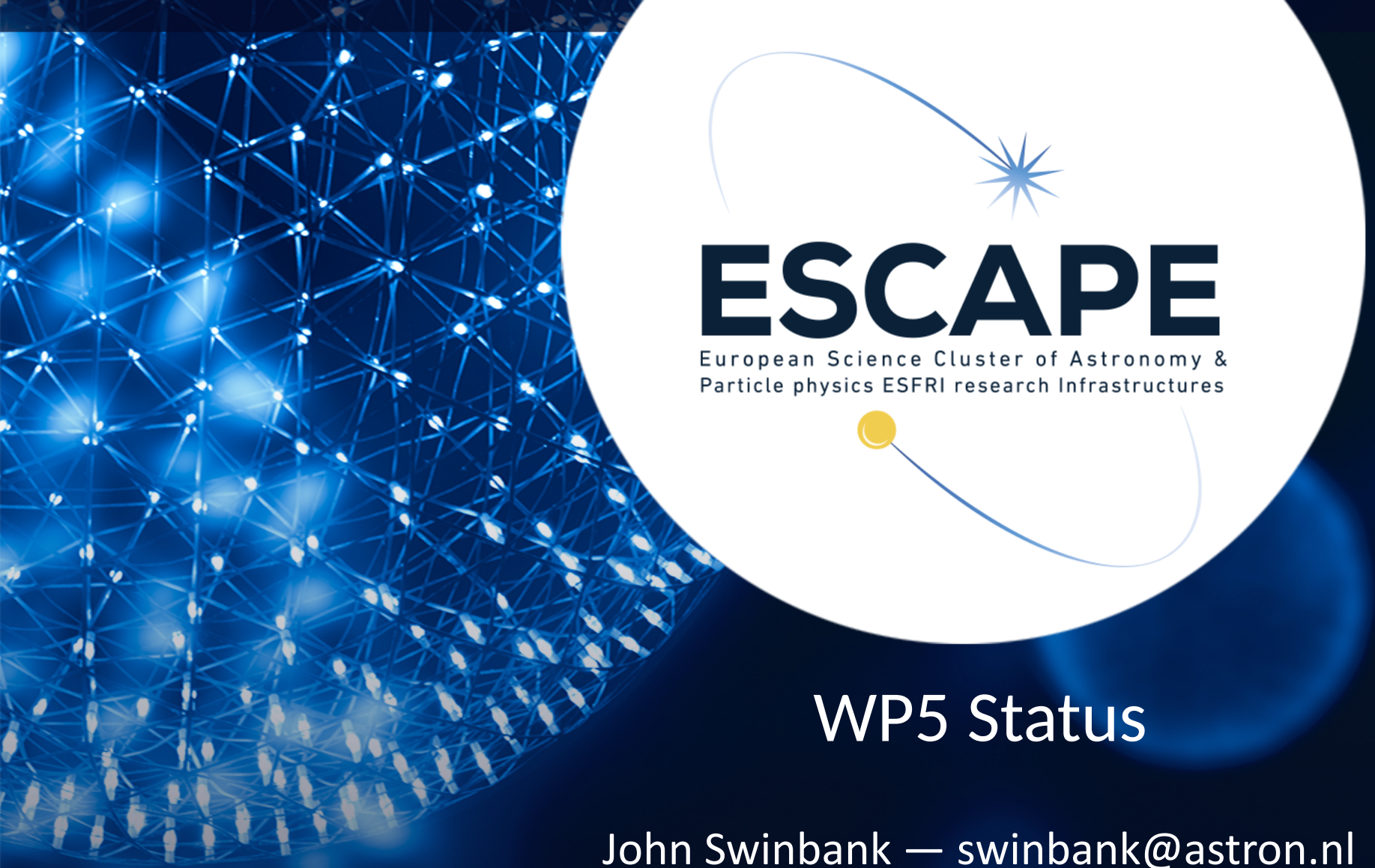

WP5 Status

John Swinbank — swinbank@astron.nl

ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n° 824064.

Staffing & Admin

- As of late 2020:
  - John Swinbank (ASTRON) took over from Michiel van Haarlem (also ASTRON) as WP5 coordinator.
  - Zheng Meyer-Zhao (ASTRON), WP5 Tech Lead, is on indefinite leave of absence.
- Leadership transition provides a chance to evaluate current progress and assess goals for the year ahead...
- ...but also means we have lost some momentum and are gradually spooling back up.
- Opportunity for new technical leaders to step forward!

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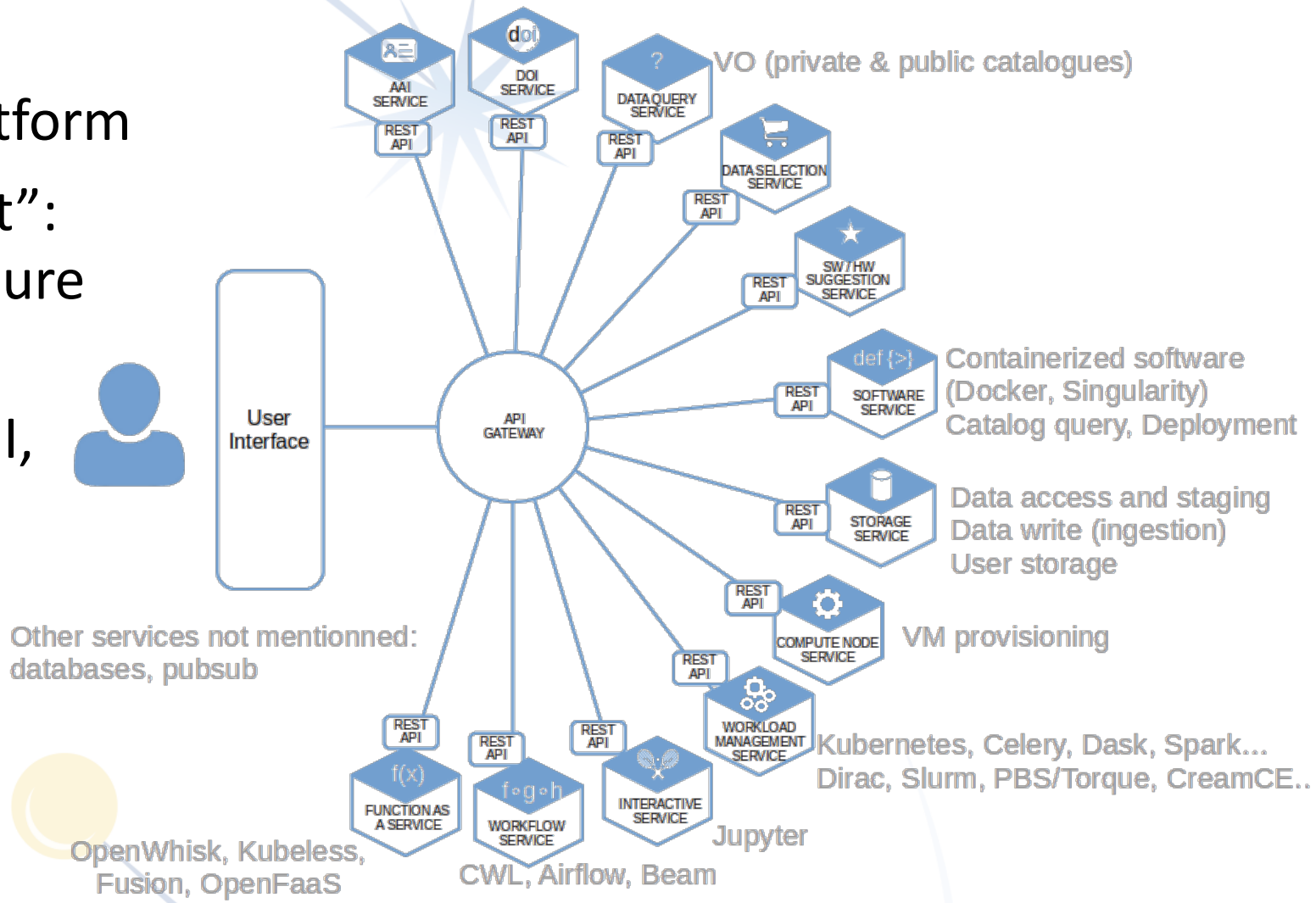
ESAP: The hub in ESCAPE's wheel

- ESFRI Science Analysis Platform
- A “science platform toolkit”: bring your own infrastructure and service capabilities.
- Two part structure: web UI, and API gateway
- Focal point of a range of pluggable, independent microservices
- Designed to be robust & extensible



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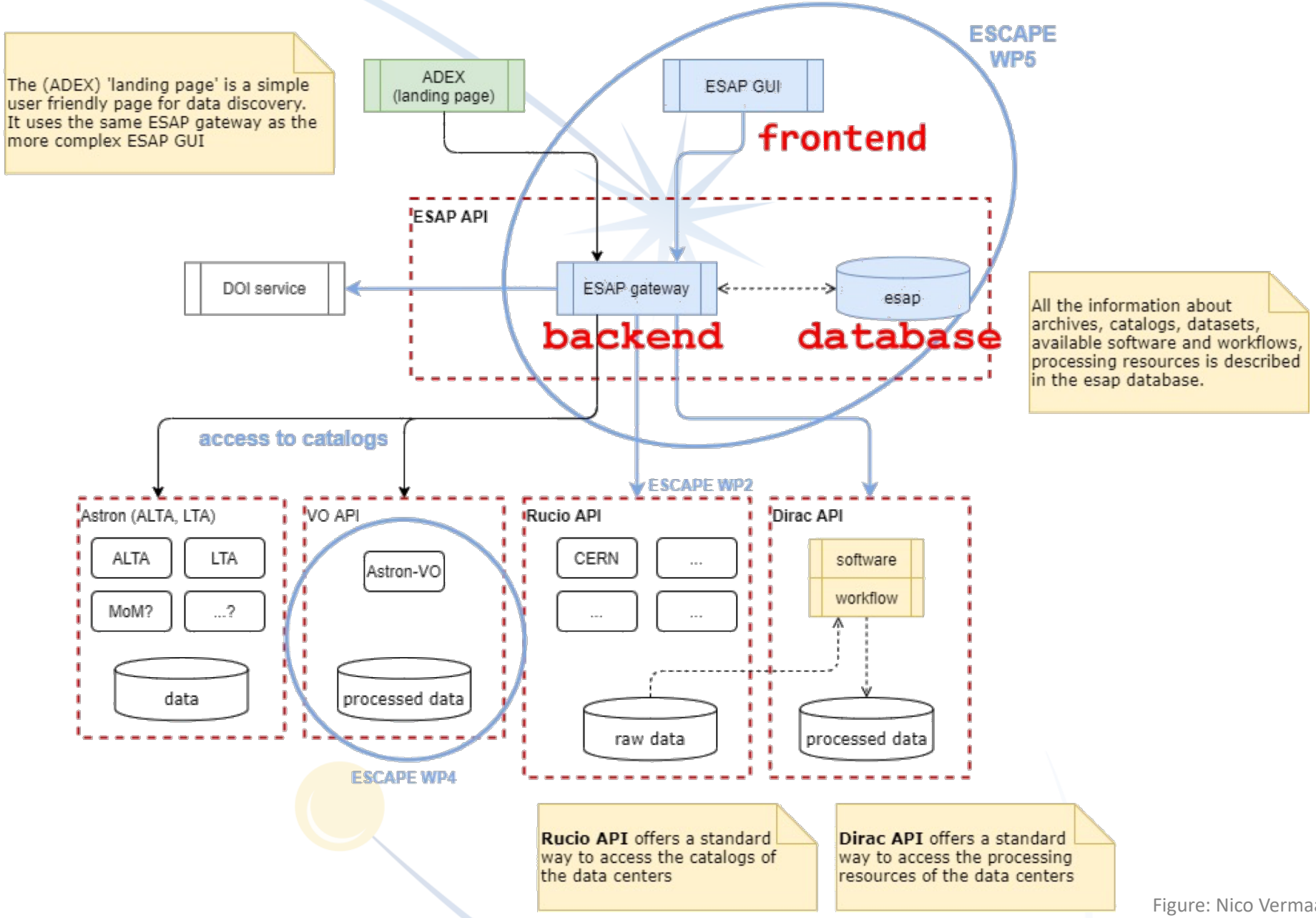

Figure: Nico Vermaas (ASTRON)

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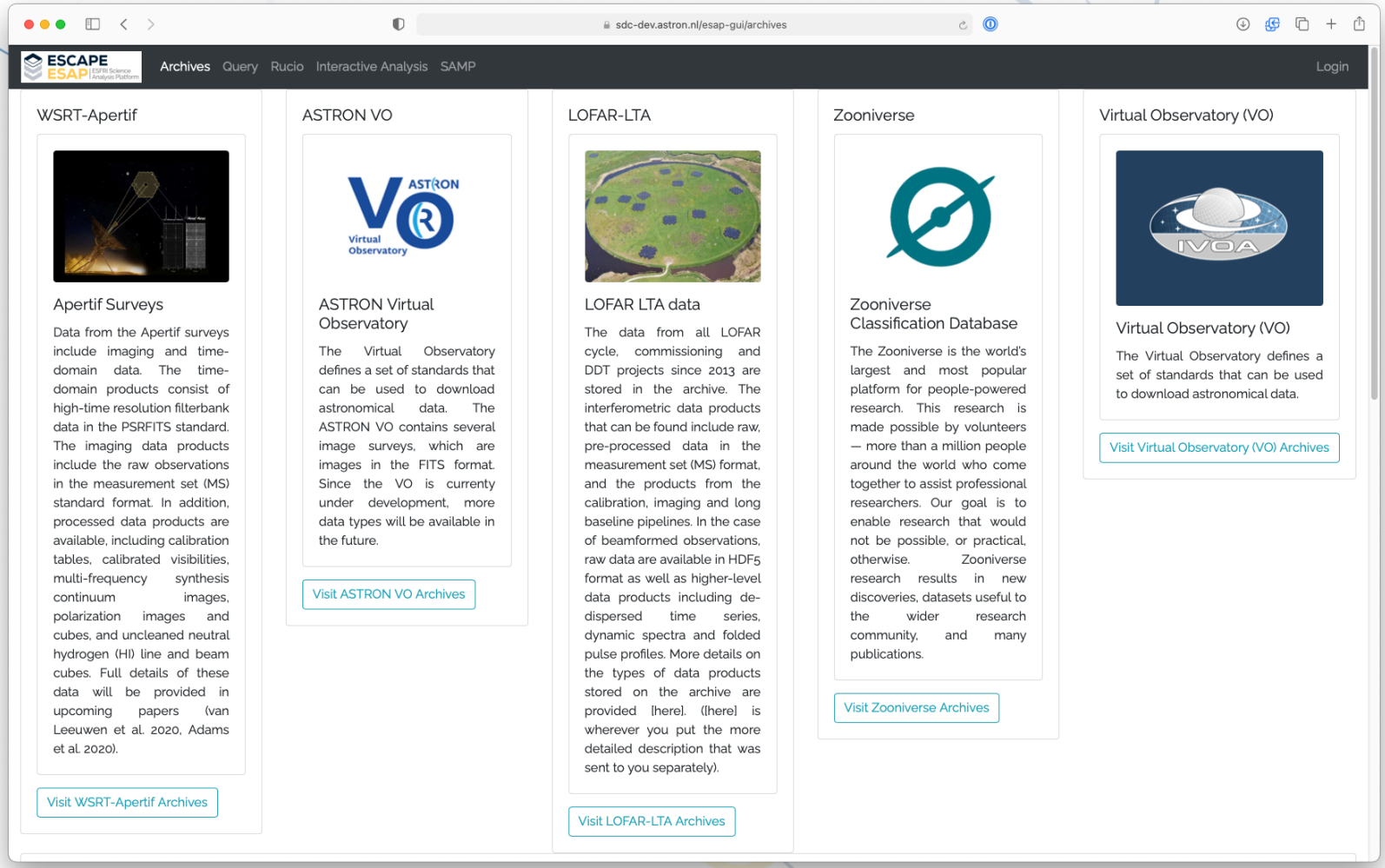
ESAP Queries in Action



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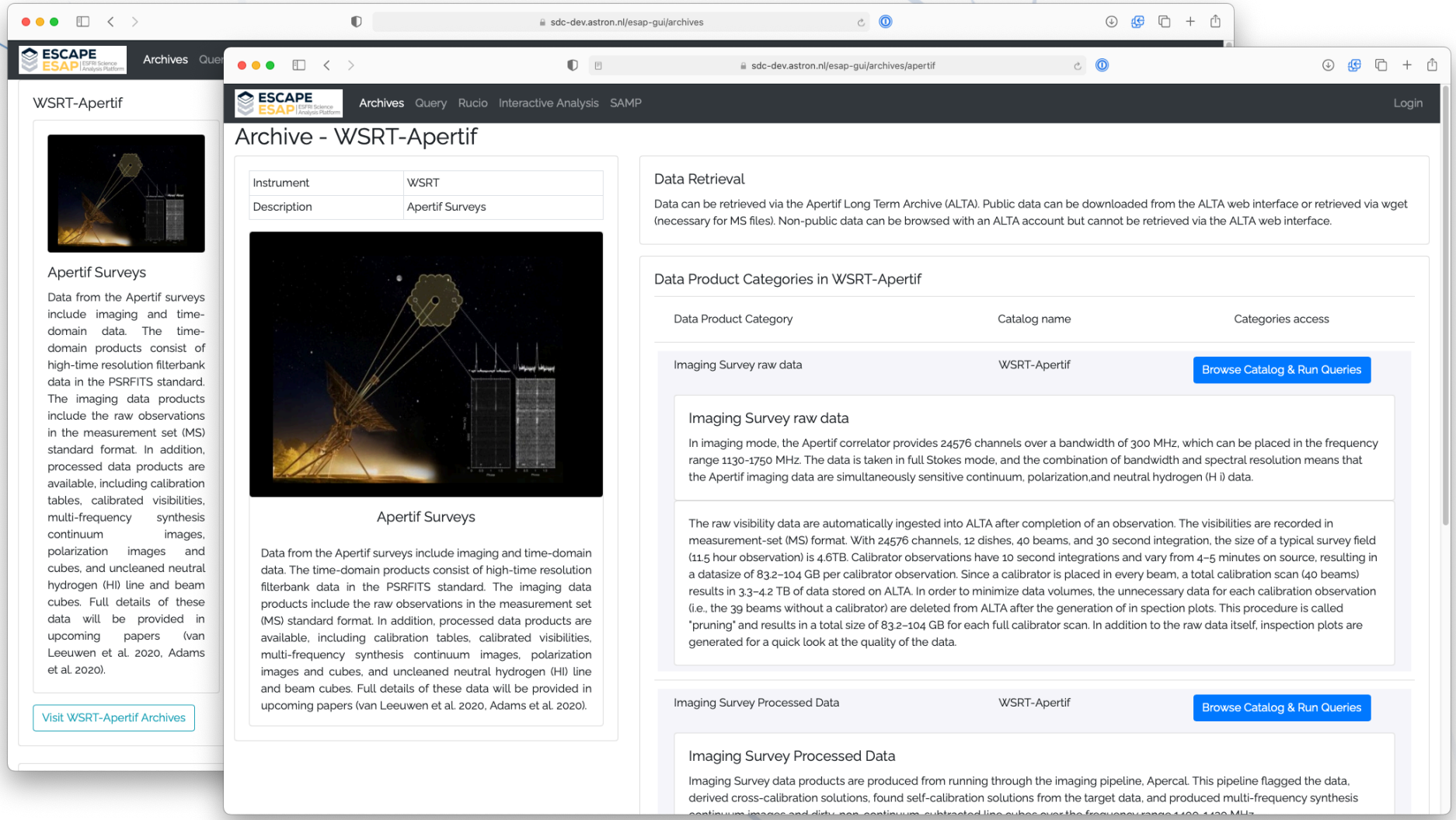

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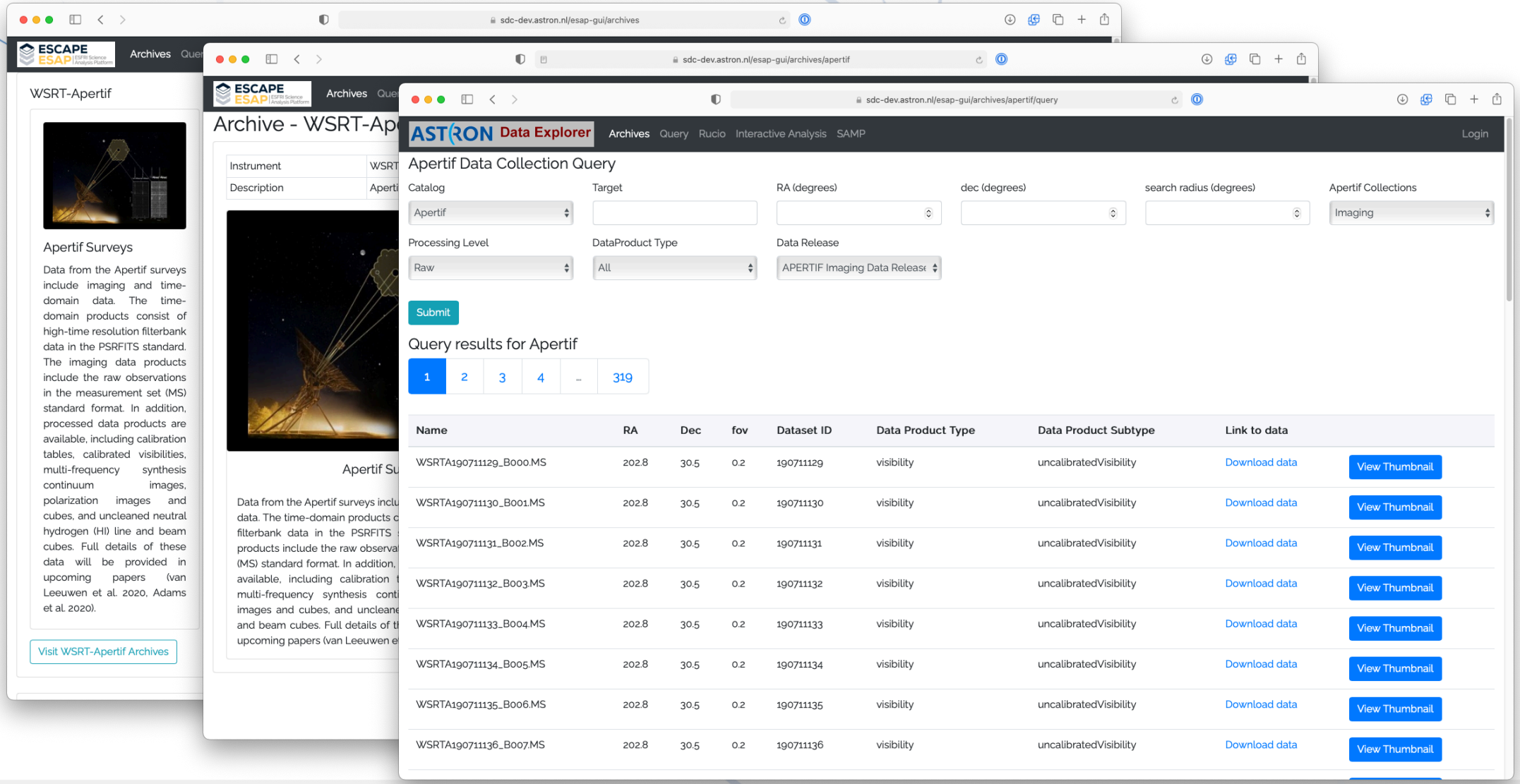

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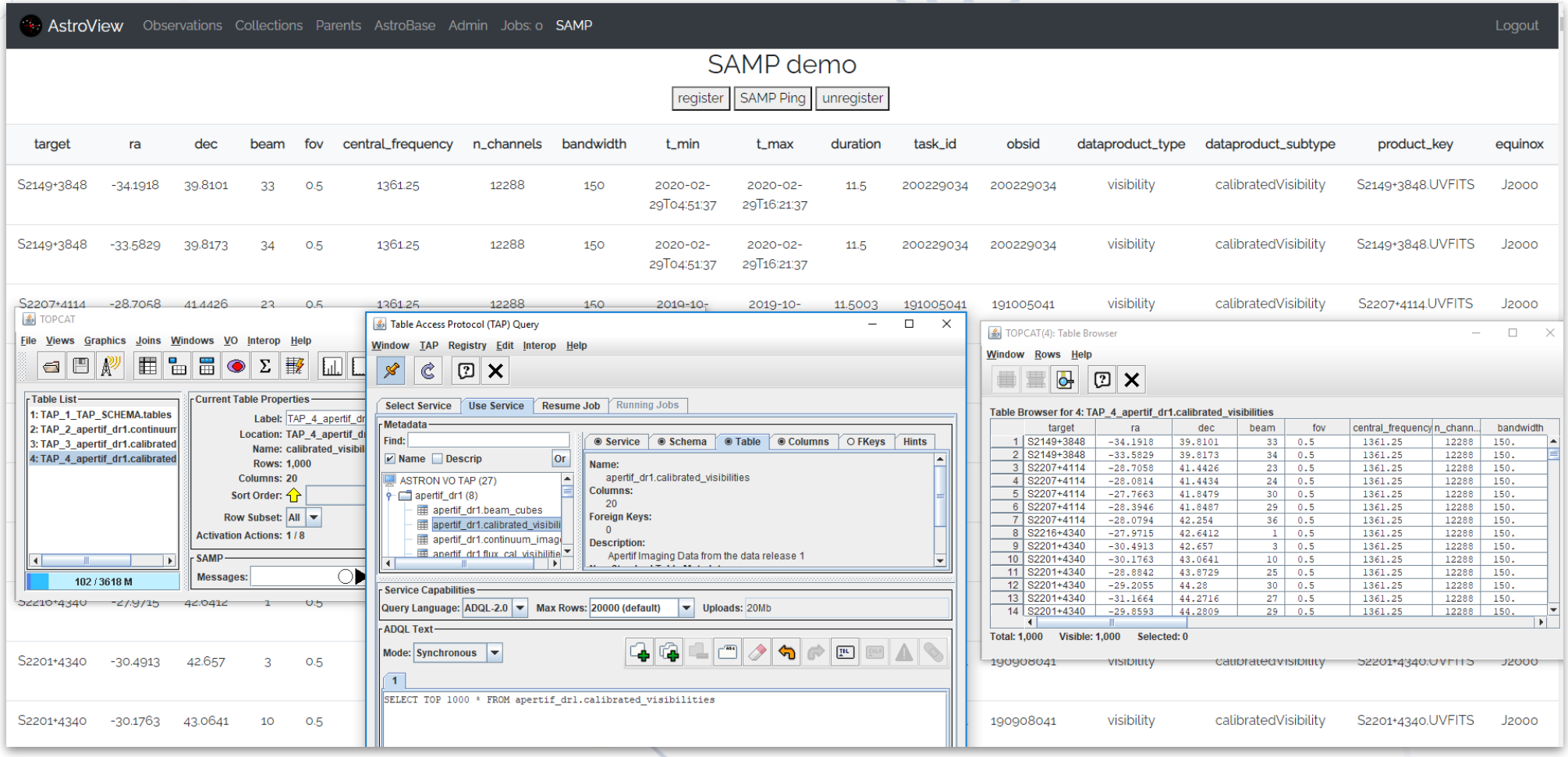
ESAP: Simple Application Messaging Protocol (SAMP)



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ESAP: Rucio

- ESAP — Rucio is currently a demo implementation by Hugh Dickinson
- which is hard to demo because AAI depends on X509 which is used to get a token. OIDC would make things easier
- Also Rucio REST interaction runs under non-standard port, which is blocked by default at ASTRON where ESAP development version is running
- Implementation is fairly simple: list files in specific scope
- Searching for data (other than scope) is not really implemented

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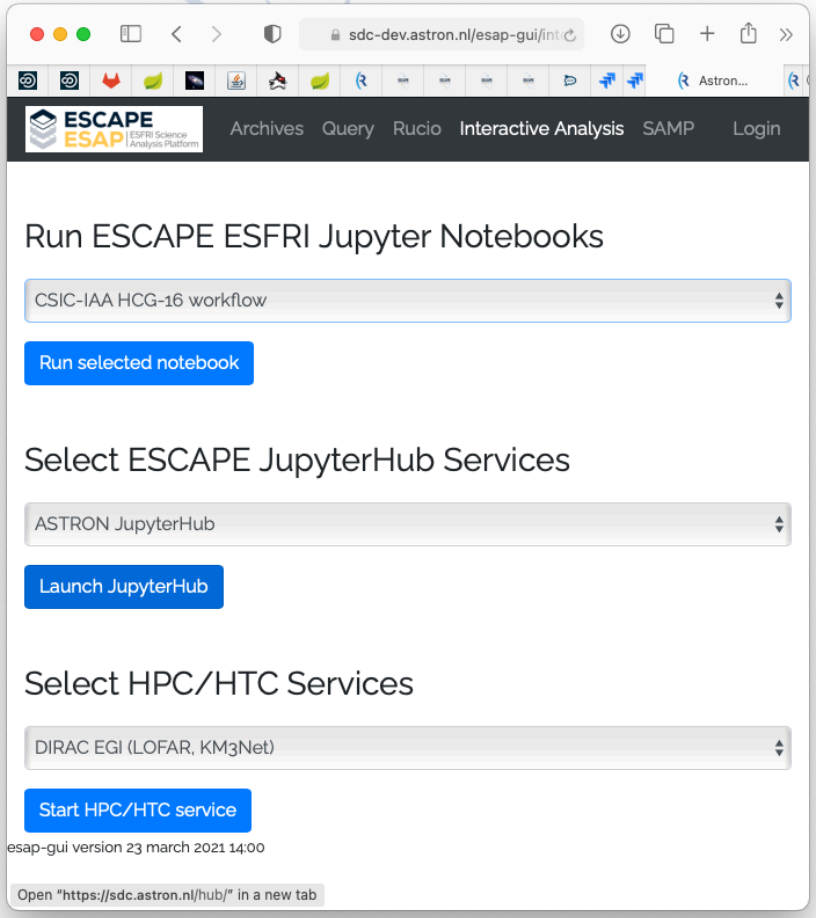
ESAP: Interactive Data Analysis & HPC/HTC Services

- *Currently*, ESAP acts as a “hub”, which effectively links out to JupyterHub & H[TP]C facilities.
- Notebooks running on e.g. Binder can access data made available through the VO and other standard interfaces.



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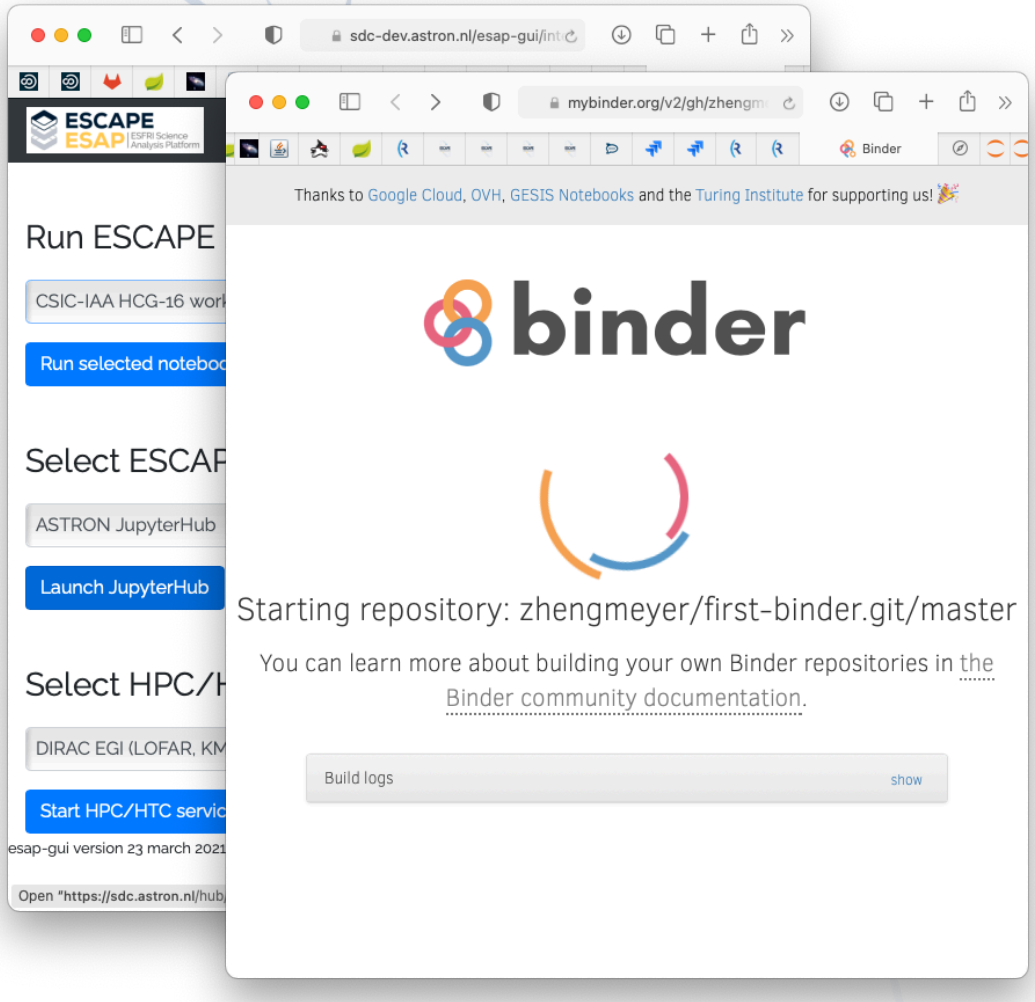

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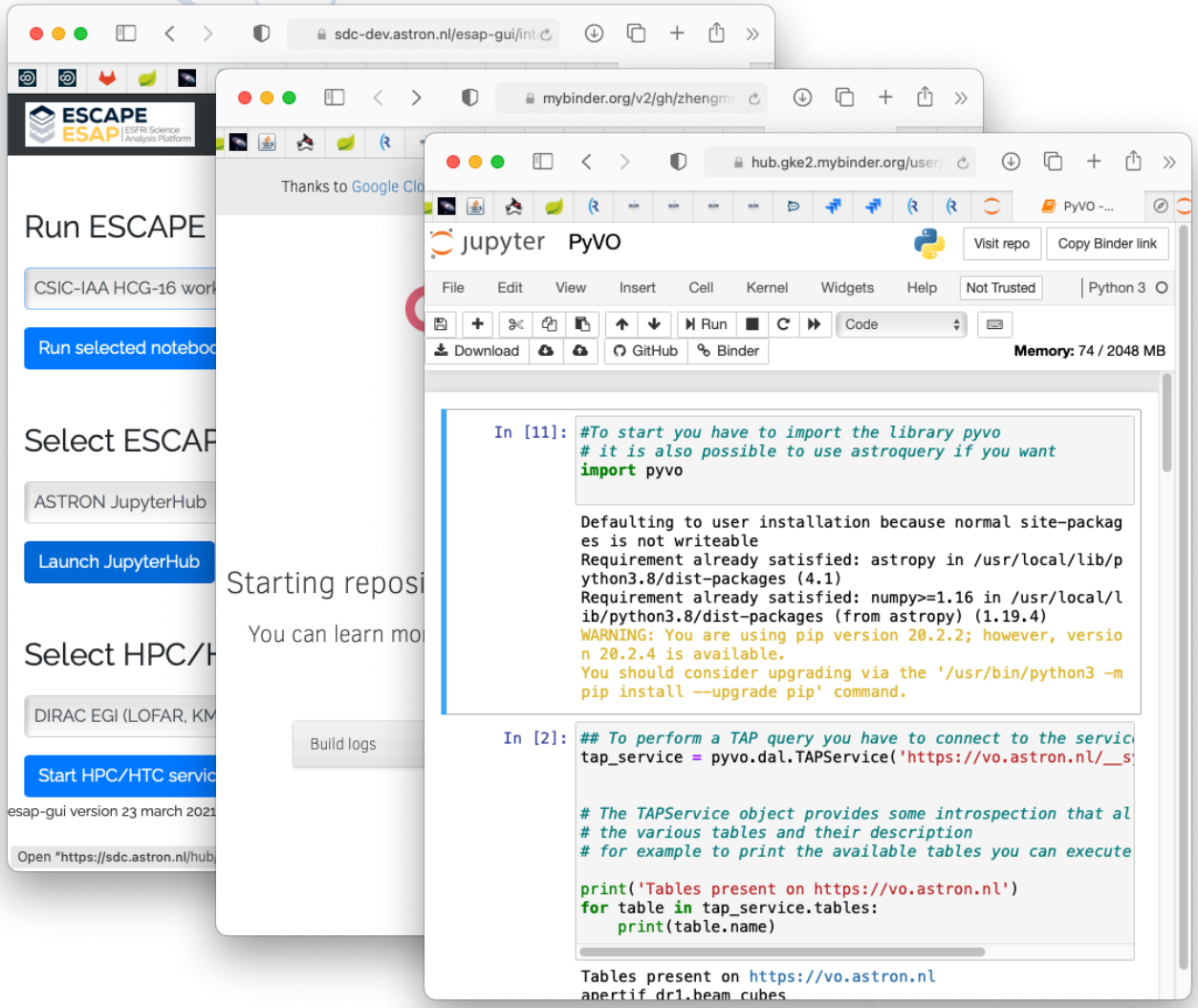

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ESAP: Future Interactive Data Analysis

- Lift that linking to JupyterHub facilities to the next level.
- That is, instead of simply linking to an existing notebook, the user should be able to:
  - Select data in the ESAP interface
  - Select notebook contents from WP3/OSSR
  - Search for an appropriate notebook service
  - Stage data & software to the notebook service
  - Launch an interactive analysis session
- Jupyter seems like the 800 lb gorilla in this conversation, but do we need other services too?

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ESAP: Future H[TP]C

- Effectively the same goals as for interactive analysis/Jupyter.
- But there's much more diversity of target systems; unclear if there's a Jupyter-like gorilla that we can target in this space.
  - DIRAC seems to be the name that's frequently mentioned, but I've not seen a real analysis of whether that's sufficient.
- Seems like there's a lot of work to do here to really understand our scope, use cases, etc.

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Rubin Observatory Science Platform

- Work carried out at CNRS-LAPP to investigate the Vera C. Rubin Observatory Science Platform.
- RSP provides tight coupling of a search/discovery portal, Jupyter notebook service, and VO APIs.
- A different regime from ESAP, but an opportunity to learn.

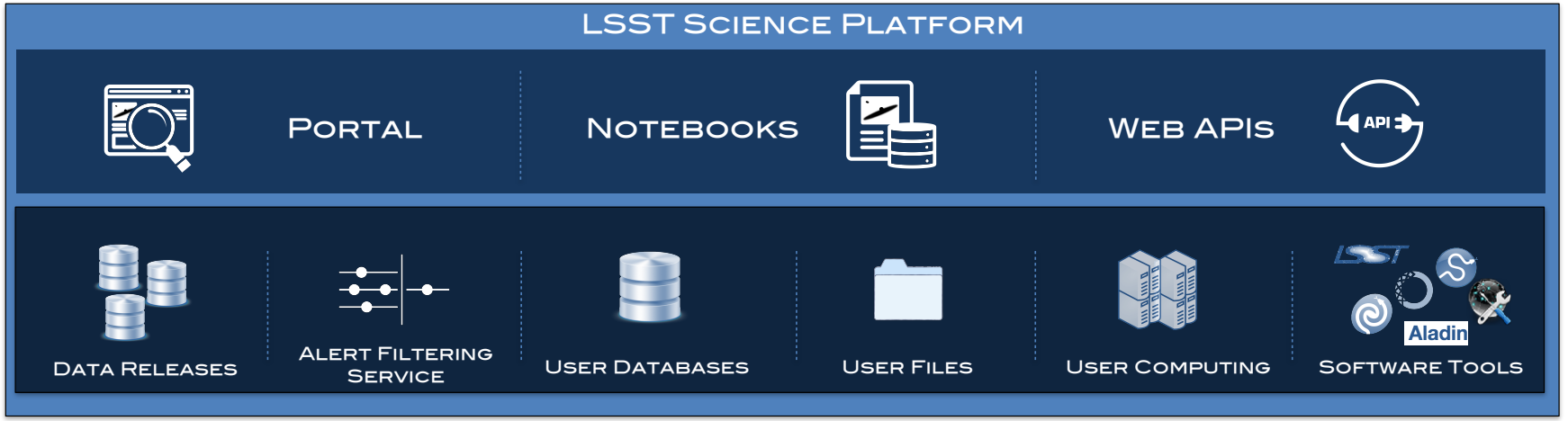

Figure: Vera C. Rubin Observatory

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Other WGs

- At this stage in ESCAPE development, it's clear that we need to think of a unified project: ESAP is only useful if it integrates with the products of other work packages.
- Hi, WP2! 👋
- Also regular meetings with WP3 (Software & Service Repository).
  - Metadata “task force” focusing on Jupyter notebooks just started.
  - Starting with a use case based on existing notebook analysis
    - https://github.com/AMIGA-IAA/hcg-16
    - https://indico.in2p3.fr/event/23933/

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Milestones

- MS31: Second WP5 workshop to analyse prototype performance
  - February 2021 (delayed due to leadership change)
- MS32: Integration of Science Platform with OSSR repository
  - August 2021
- MS33: Integration of Science Platform with Data Lake
  - October 2021

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WP5 Next Steps

- Focus on concrete & credible development plan driven by use cases.
- Develop core technical team to clarify scope.
- Publish ESAP development roadmap.

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