Platforms EOI: AstroCommons Science Platform

Project title
AstroCommons Science Platform

Field of Research code(s)
- 01 MATHEMATICAL SCIENCES
- 02 PHYSICAL SCIENCES
- 04 EARTH SCIENCES
- 08 INFORMATION AND COMPUTING SCIENCES
- 09 ENGINEERING
- 10 TECHNOLOGY
- 13 EDUCATION

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EOI lead Email

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### Project description

Several major international astronomy projects are looking for significant Australian investment in eResearch over the next few years. The Australian astronomical community has invested in the data centres to enable astronomy data more FAIR. While the existing investment is for standalone data centres, there is a need to federate data centres to establish the AstroCommons, an astronomy data and computing ecosystem. The AstroCommons aims to enable astronomers to (1) simultaneously access the multi-wavelength national and international astronomy data; (2) seamlessly deploy the frequently used tools and pipelines; (3) optimise the hybrid cloud and HPC workflow for better data interoperability and service reliability; and (4) effectively provide training and technical support.

Leveraging the previously successful investment on ASVO, this project aims to establish the AstroCommons science platform by further integrating five ASVO nodes. The overall aim is to: (1) provide a VO (Virtual Observatory) compatible service framework to connect data products, tools catalogue, and computing services; and (2) optimise the hybrid OpenStack cloud and HPC workflow for better data interoperability.

### Existing technology

**Adopt**

This project will adopt the existing ASVO platform infrastructure and optimise it to form the AstroCommons Science Platform. All AstroCommons Science Platform services will be based on the IVOA (International Virtual Observatory Alliance) standards to ensure the data interoperability across the data centre boundaries.

**Adapt**

This project will adapt the existing ASVO node code packages to federate existing ASVO services to establish the AstroCommons Science Platform framework. This project also plans to review and adapt the existing astronomy science platform solutions (e.g. NOAO Data Lab Science Platform) towards the establishment of the AstroCommons Science Platform.

**Build**

This project does not plan to build new platform technology using ARDC funding. All new platform development (if required) will be funded by AAL.

### Anticipated requirements

**Annual funding**

$500,000 - $599,000

**Proposed length**

3 years

### Other information

**Other information you wish to provide**

This project built on the success of ASVO and aim to integrate and optimise the existing ASVO infrastructure to establish an AstroCommons science platform. It aims to enable the wealth of data available to astronomers to be fully exploited.

The national research infrastructure roadmap adopted nine focus areas and this proposal aims to address the following two areas: (1) Digital Data and eResearch Platforms and (2) Advanced Physics and Astronomy. Specifically, the roadmap recommended two priority areas for astronomy infrastructure and this project addressed both priorities areas.

### Terms

**I agree to the terms**

Yes