OSCARS
Open Science Clusters' Action for Research & Society

Funded Project

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Implemented by

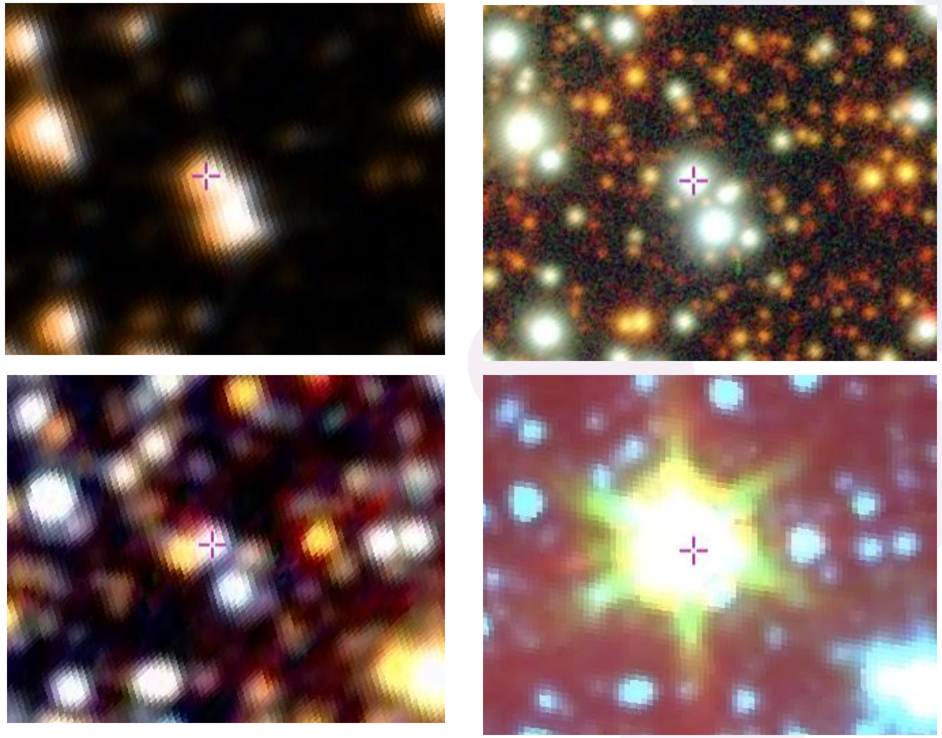
MANCHESTER 1824 The University of Manchester

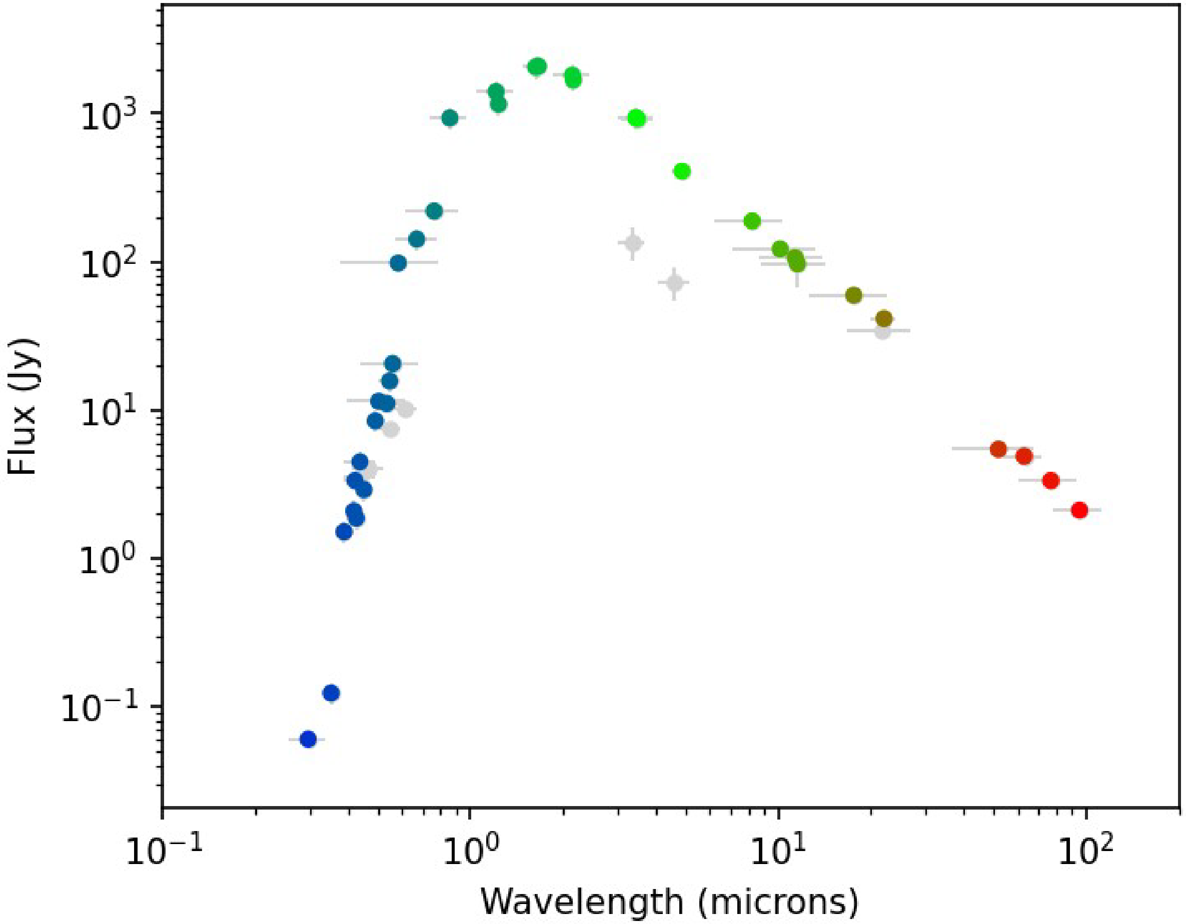
ACRI ST

Funded by the European Union

CHALLENGE ADDRESSED

- Astronomers need fundamental properties of stars (e.g. temp., luminosity).
- These can’t come directly from observations, but need modelling.





SOLUTION

- We previously developed the

Python Stellar Spectral Energy Distribution (PySSED) package

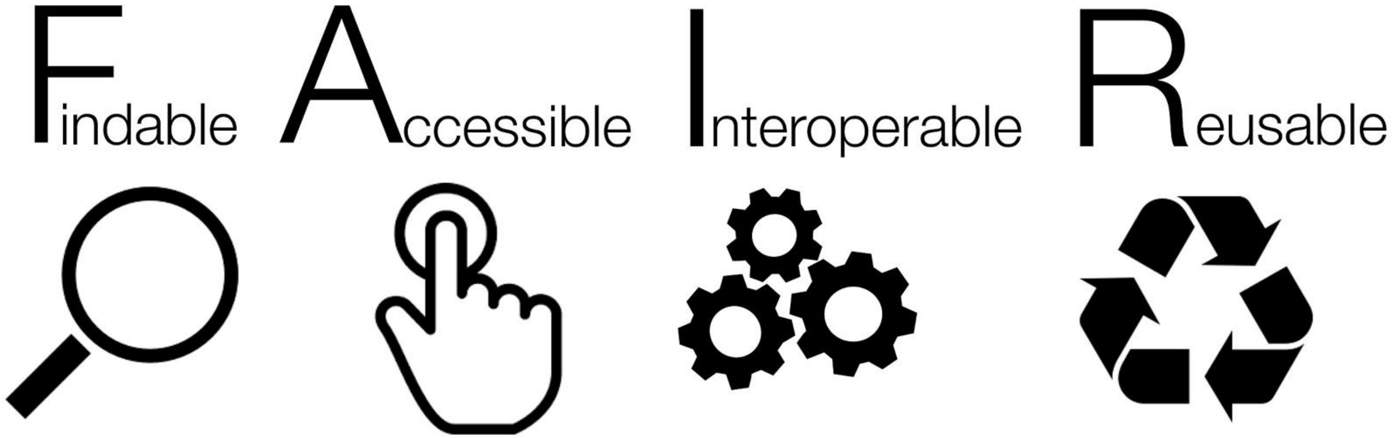
which determines temperatures, radii and luminosities of stars based on observations of their brightnesses in different astronomical surveys.

- These surveys are hosted on Virtual Observatory repositories (CDS@Strasbourg) that are already part of OSCARS.

- We will run PySSED across the entire sky, testing 1.8 billion stars.

- We expect to measure accurate parameters for ~300 million stars.

RESULTS



- Our catalogue of results will be published on CDS (**findable, accessible**).

- Our partner company (ACRI-ST) is preparing visualisation tools and a supporting web app so that users can interact with the data and export it to common data-processing tools (**interoperable**).

- Our software will be published on GitHub (**reproducable**).

RISKS

- Risks are low: we use existing software on a well-defined and known problem.

- Computing resources are substantial (34 CPU years), but we have 100s of CPUs!

- We would like to know how we can best add value to our project and ensure its support beyond completion, e.g., by integrating our software/results into others' tools.

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