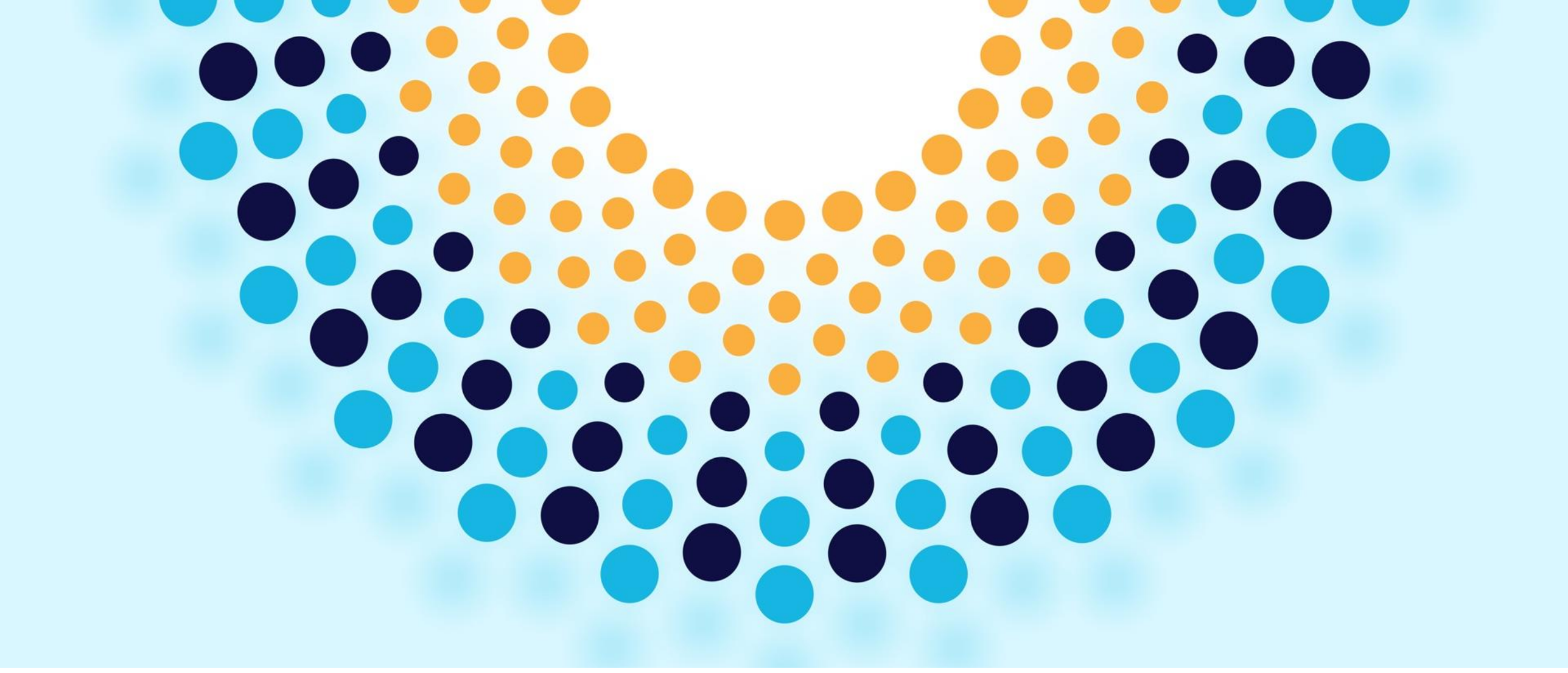

Astrophysics Projects with IRIS

IRIS@Cambridge: Astronomy

- Cambridge has been an early supporter of IRIS
  - providing IRIS infrastructure and underpinning operational software (e.g. OpenStack developments)
  - Deploying operational systems to IRIS for both ground-based and space-based astronomy at scale
- Early use of IRIS (2020) involved pilot study assessment
- Evolution is now that major processing is essentially entirely carried out using IRIS provided underlying hardware
  - Gaia core processing now deployed fully on IRIS (fully transition from the earlier bespoke hardware system May 2024)
  - PLATO exoplanet analysis system operational system designed to use IRIS, importantly using IRIS across multiple sites since March 2025.

IRIS Astrophysics Projects

- IRIS provides a vital digital research infrastructure supporting a significant range of major astrophysics projects
- This session provides a chance to briefly summarize the current astro projects making use of IRIS
- Various levels of IRIS use:
  - Some projects have core functions on own h/w and utilise IRIS for additional services, e.g. Euclid
  - Some projects are fully deployed on IRIS, e.g. Gaia Core
  - Some projects are fully deployed on IRIS and utilise IRIS resources over several locations, e.g. PLATO
- Interesting to see plans to move to or away from IRIS for all processing needs

IRIS Priorities for Astro

- Evolution of projects in their use of IRIS
  - More important, less important?
  - Highlight the impact of use of IRIS, increased science productivity
- Number of astro projects using IRIS, what is on the horizon?
- Balance of Space and Ground based
  - UK Space Agency (DSIT from 4/26) and UKRI-STFC: implications for funding
- From development to operations
  - Implications for IRIS when supporting routine operations rather than ‘nice to have’ optional processing
- IRIS evolution as a UKRI/ DSIT wide DRI:
  - links to NERC for instance around planetary exploration etc

Session Running Order

Time Slot	Theme	Title	Speaker
15:30 - 15:40		Intro	Nicholas Walton
15:40 - 15:45	Ground: Spectroscopy	**Spectroscopy / CASU**	Alireza Molaeinezhad
15:45 - 15:55	Space: Imaging	**Euclid / WFAU**	Mark Holliman
15:55 - 16:00	Space: Astrometry	**Gaia Core**	Patrick Burgess
16:00 - 16:05	Space: Astrometry	**Gaia DMP**	Nigel Hambly
16:05 - 16:10	Ground: Radio	**JBCA**	Robert Beswick
16:10 - 16:15	Ground: Grav Wave	**Ligo**	Duncan Macleod
16:15 - 16:20	Ground: Imaging	**LSST-UK**	George Beckett
16:20 - 16:25	Space: Photometry	**Plato**	Dominic Ford
16:25 - 16:30	Ground: Radio	**SKAO**	Rosie Bolton
16:30 - 16:35	Ground: Radio	**SKA UKSRC**	Robert Beswick
16:35 - 17:00		Discussion	Nicholas Walton

Note: Every astro project here was also discussed at the Cambridge 2019 F2F IRIS meeting

Discussion Session

- Will briefly discuss three key questions:

    1. What IRIS enabled you to achieve?
    2. In the next 2-3 years, which capabilities should IRIS prioritise to unlock the biggest step-change for you?
    3. What would the ‘cost’ be to ‘exit’ from IRIS if it were no longer there.

When listening to the talks, think about these points – we’ll come back to this at the end of the session.

Discussion: Grid to complete

Project	What IRIS enables you to achieve?	What capabilities should IRIS prioritise to unlock a big step-change for you?	What would the ‘cost’ be to ‘exit’ from IRIS if it were no longer there?
Spectroscopy / CASU			
LSST-UK			
SKAO			
JBCA			
Gaia Core			
Euclid / WFAU			
Plato			
Ligo			
Gaia DMP			
SKA UKSRC			