



# ASTROPHYSICS

DR TRENT DUPUY

READER IN OBSERVATIONAL ASTRONOMY





**Institute for  
Astronomy**

**Royal  
Observatory  
Visitors Centre**

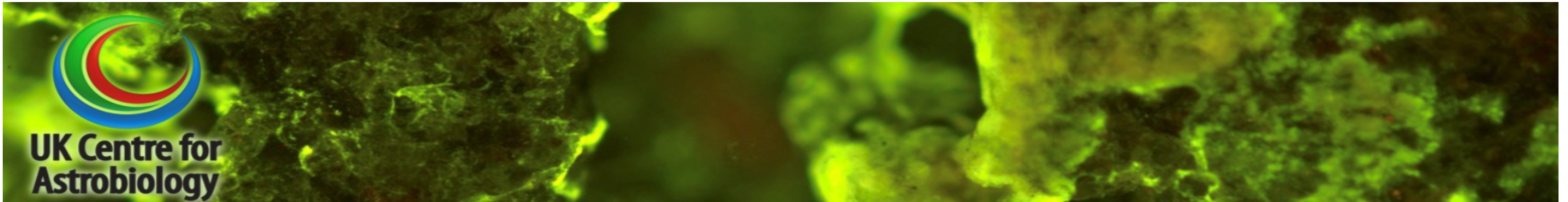
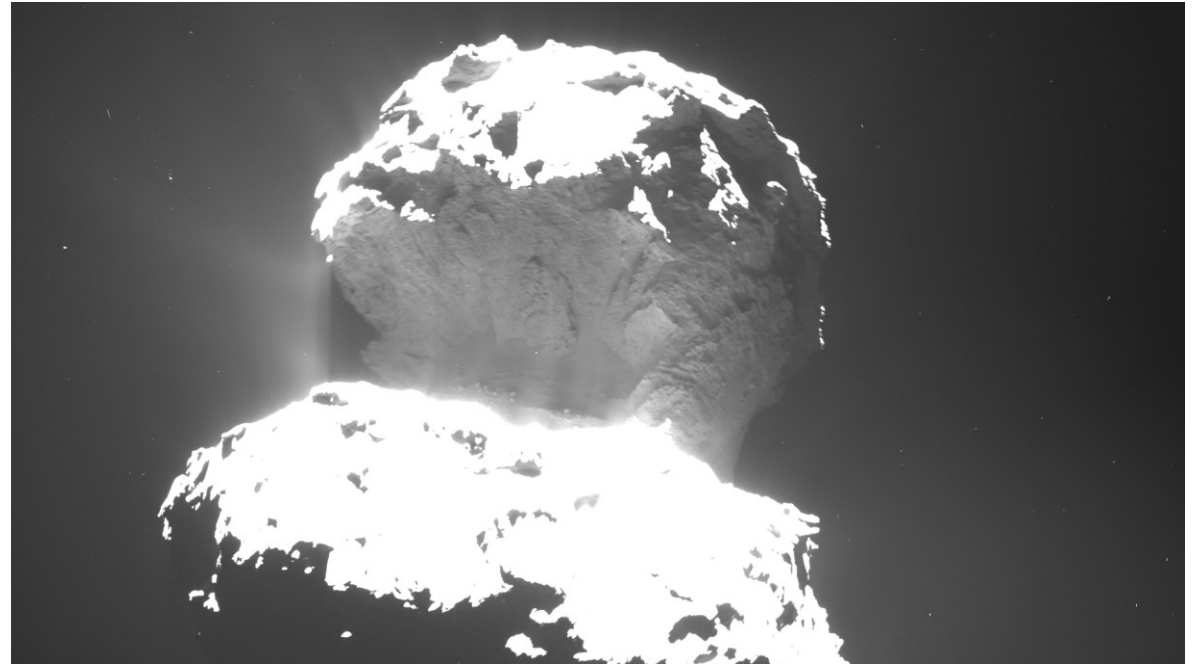
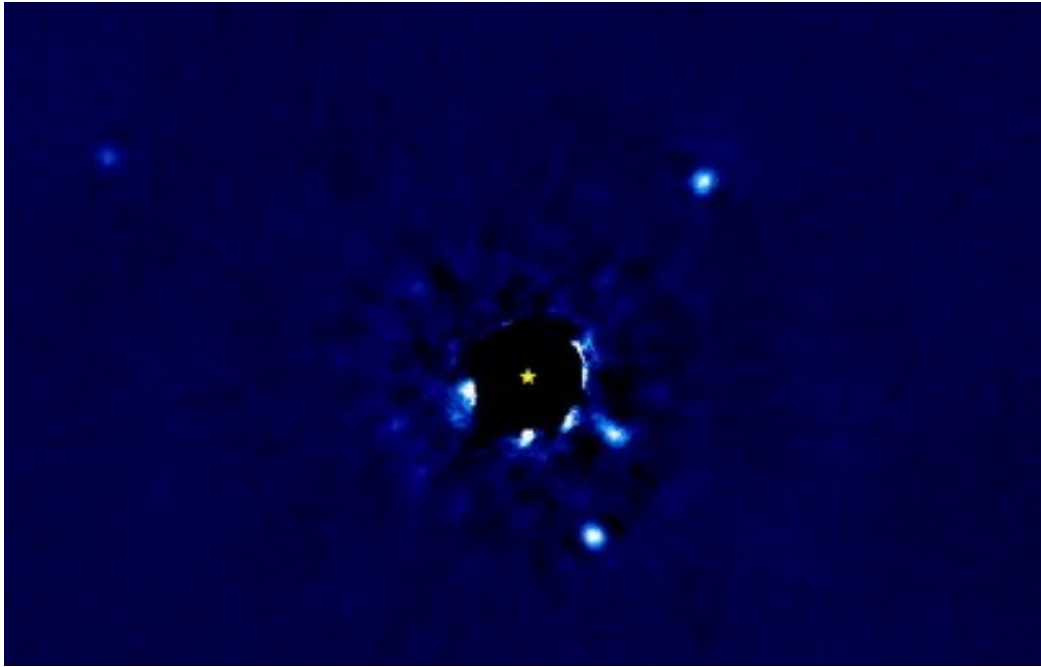
**UK Astronomy  
Technology  
Centre**

**Higgs Centre for  
Innovation**

**Food! Coffee!**



# EXOPLANETS, THE SOLAR SYSTEM & ASTROBIOLOGY





BLACK HOLES

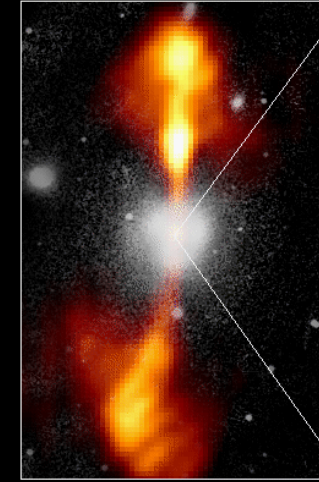
GALAXY  
FORMATION &  
EVOLUTION

## Core of Galaxy NGC 4261

Hubble Space Telescope

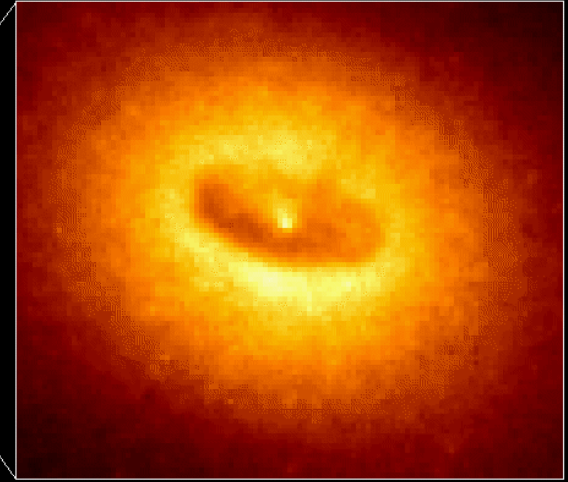
Wide Field / Planetary Camera

Ground-Based Optical/Radio Image



380 Arc Seconds

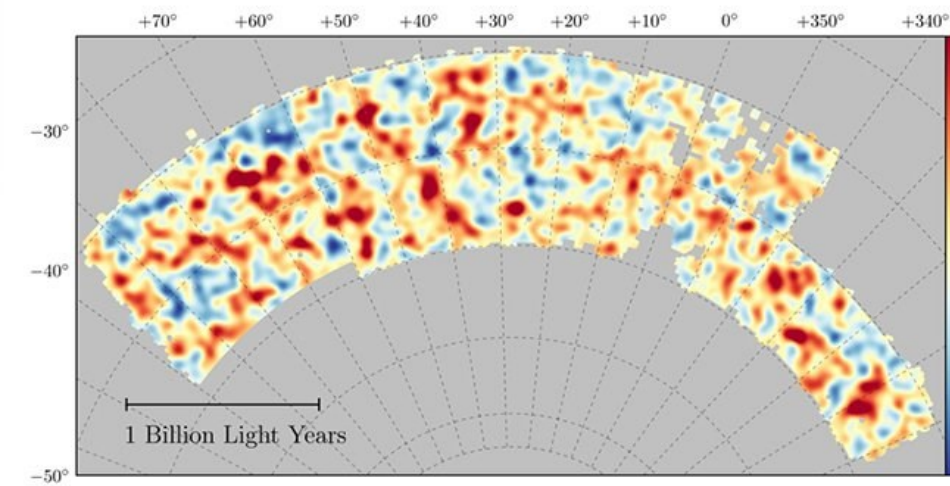
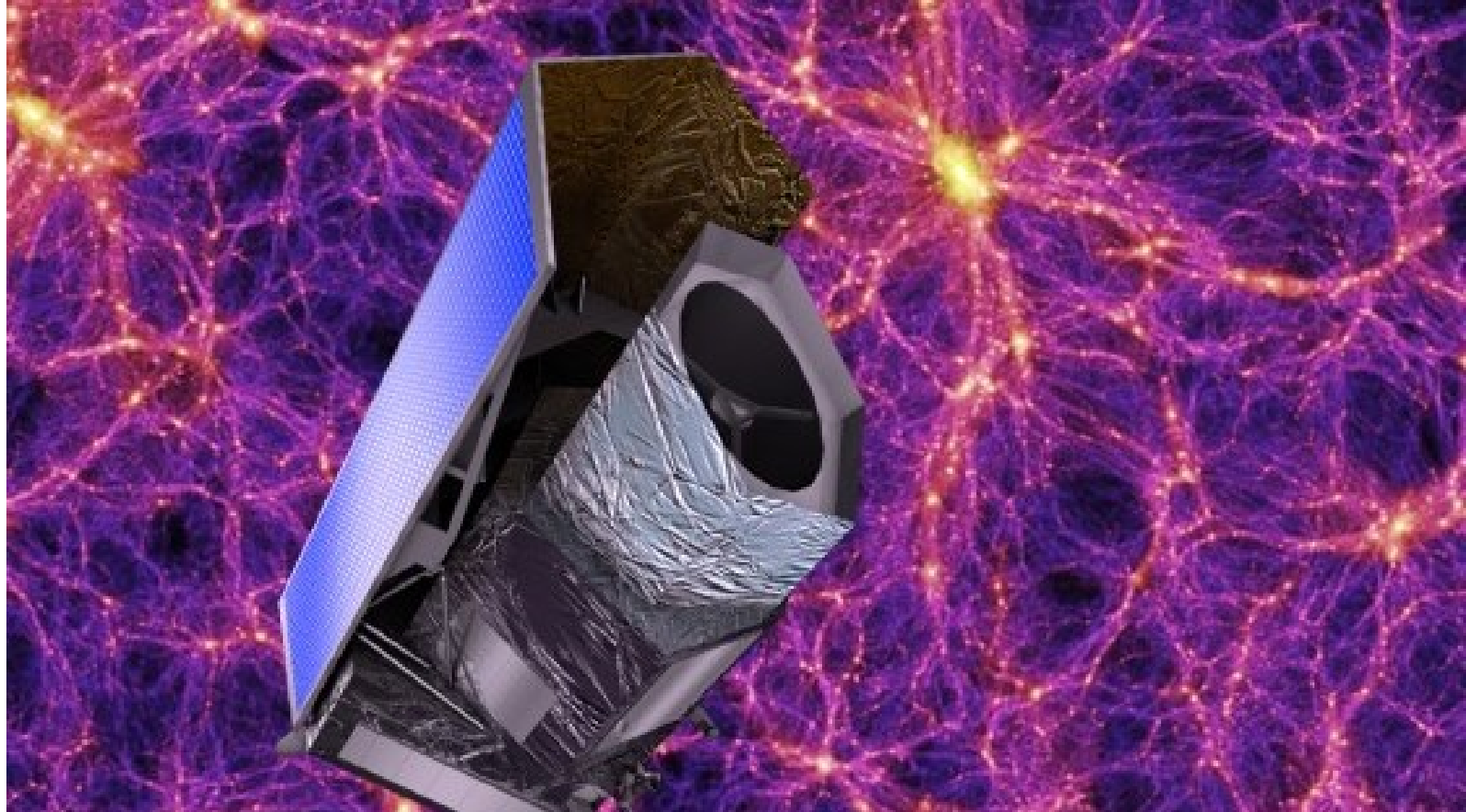
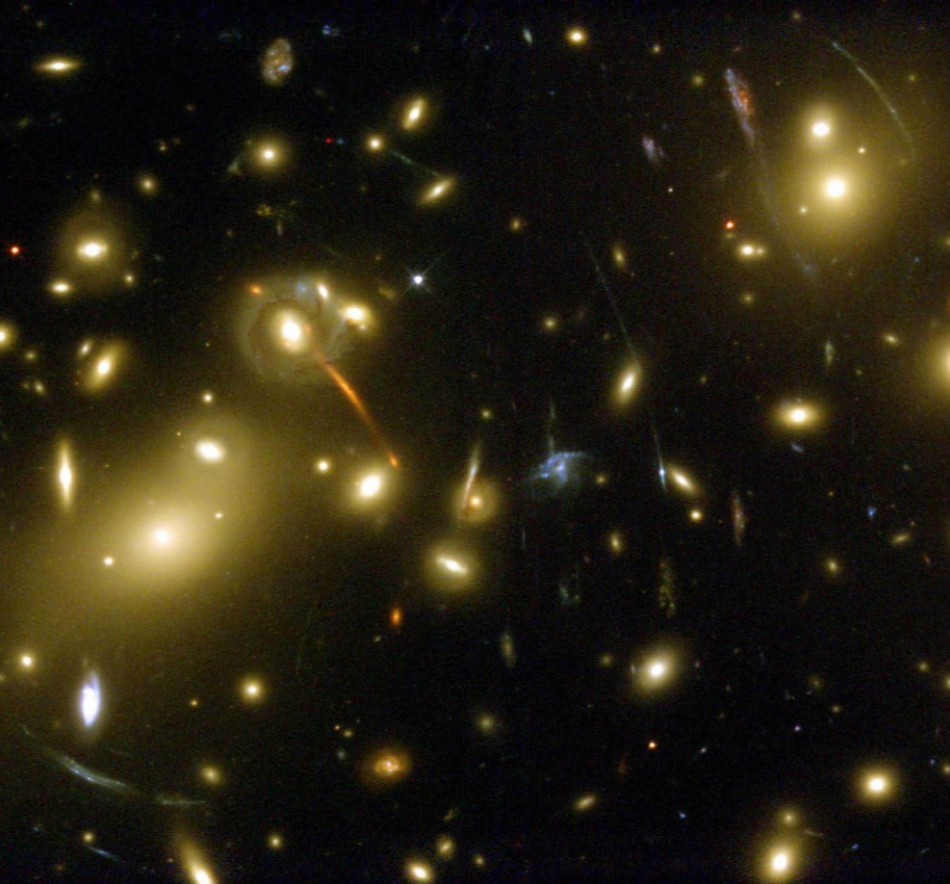
HST Image of a Gas and Dust Disk



17 Arc Seconds

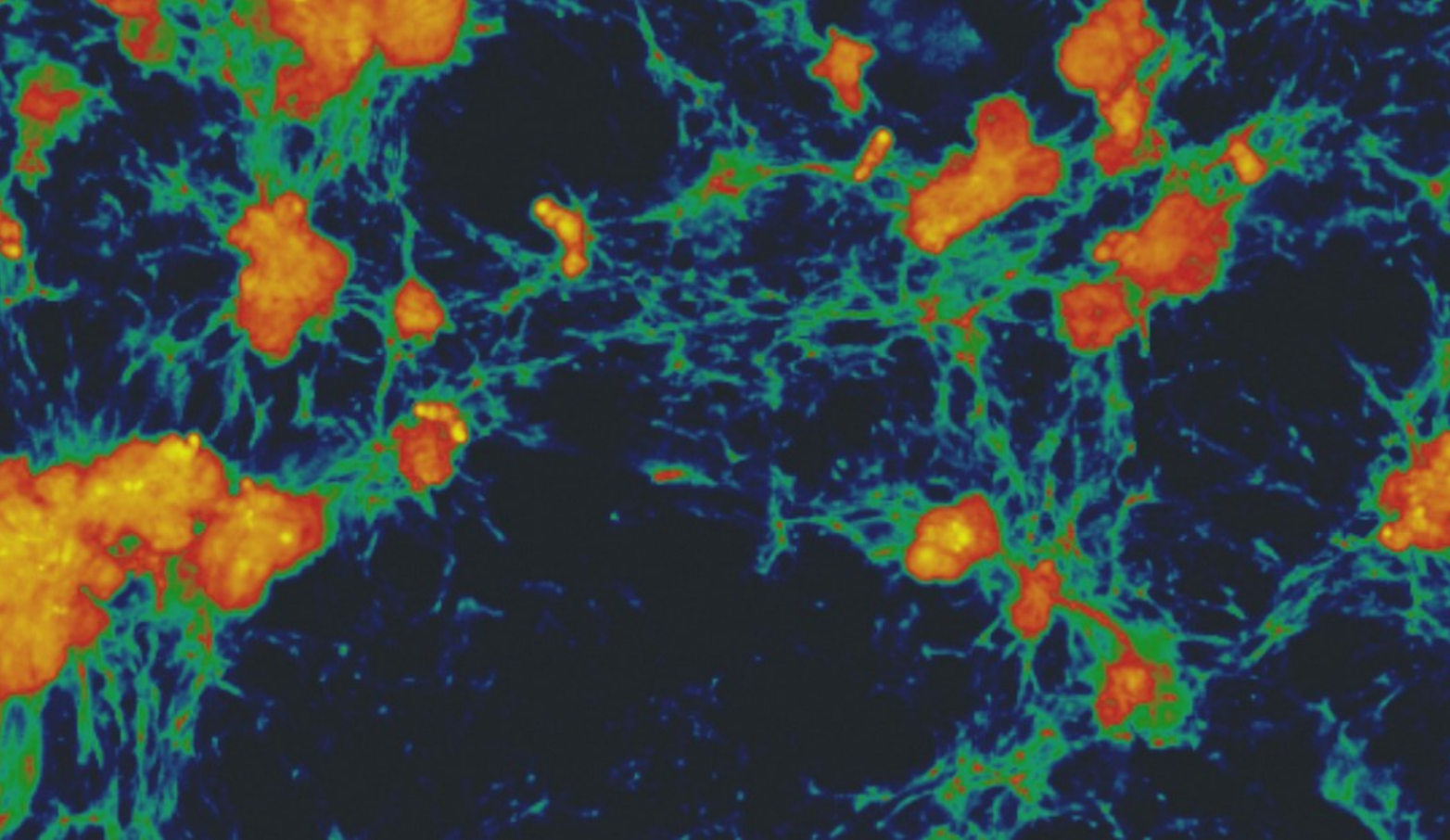




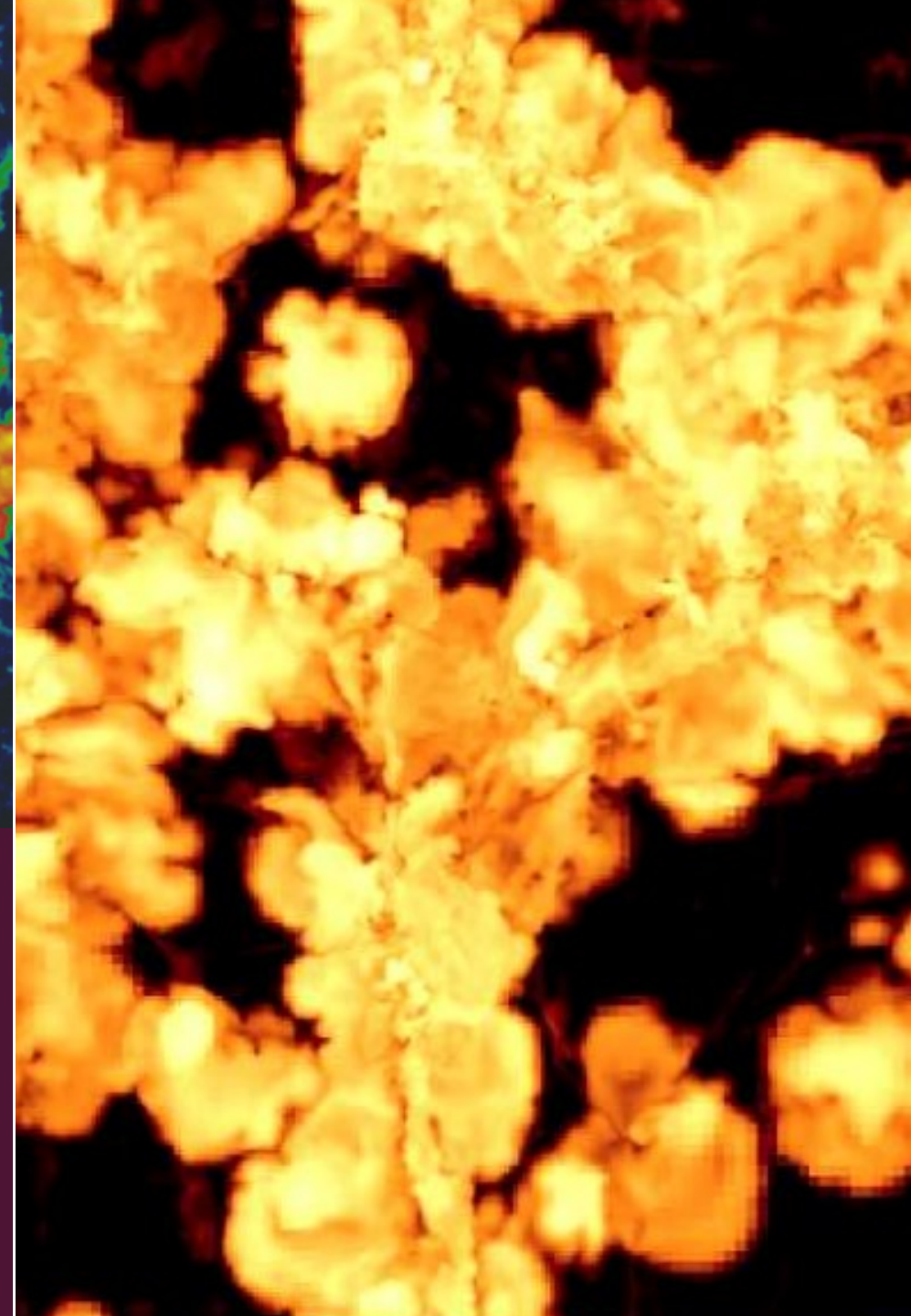


# COSMOLOGY





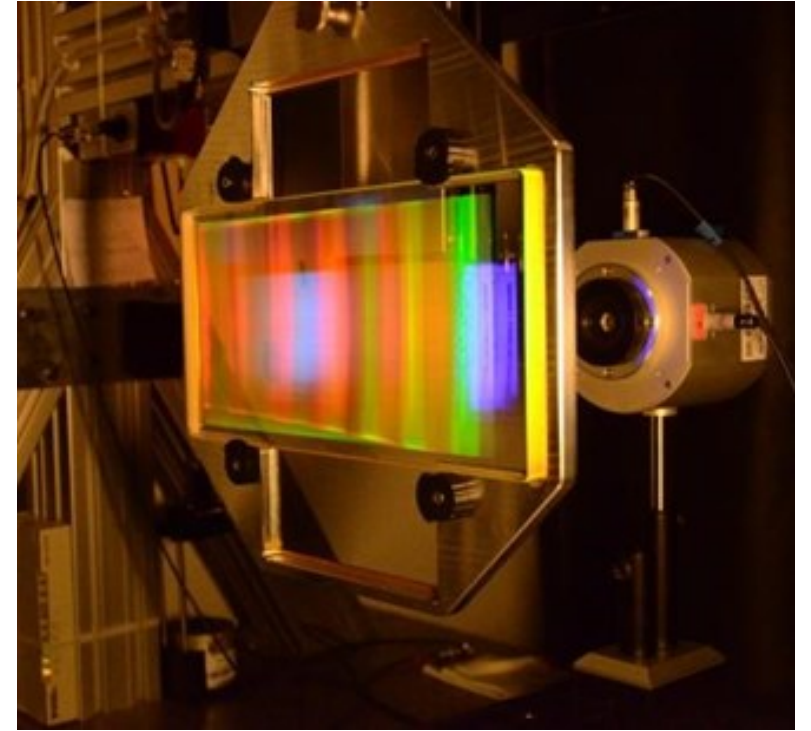
# COMPUTATIONAL ASTROPHYSICS







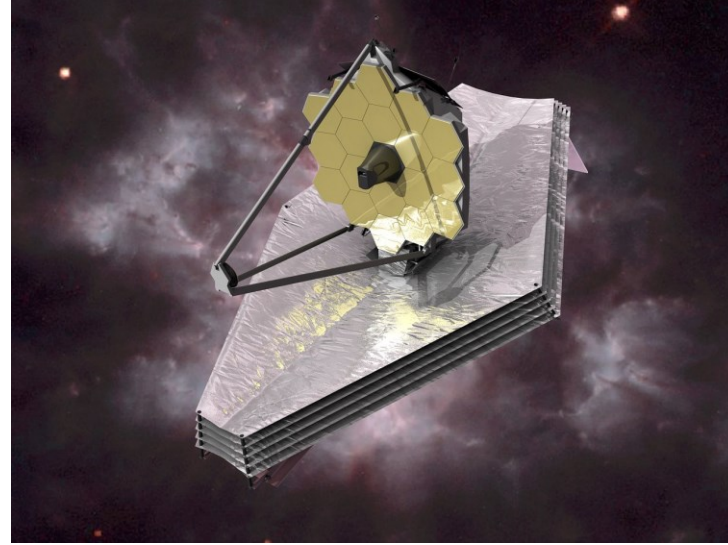
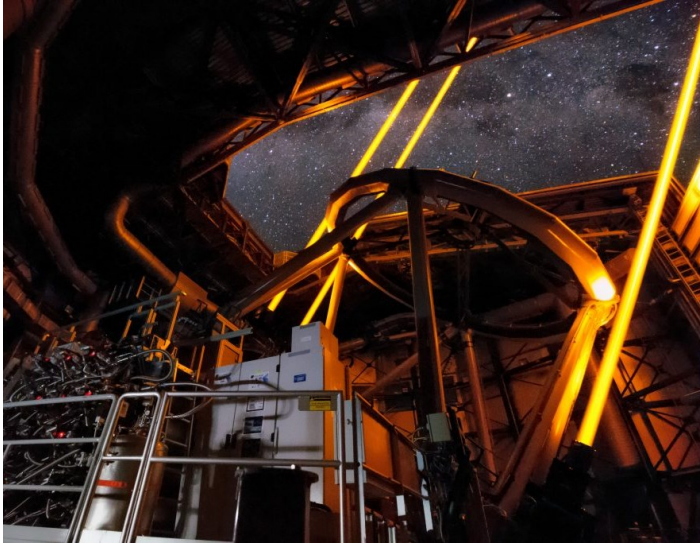
# THE MILKY WAY GALAXY & THE LOCAL GROUP



# ASTRONOMICAL INSTRUMENTATION







# OBSERVATIONAL ASTRONOMY





TO FIND OUT MORE! <https://ifa.roe.ac.uk/phds-jobs-fellowships/phd-studentships>



INSTITUTE FOR ASTRONOMY

**DEADLINE 6 JANUARY 2025**

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## PhD Studentships

PhD studentships at the IfA.



Anonymized Application for PhD study at the Institute for Astronomy

Delete all *Italic text here (yes, this text!)* and below in your submitted version.

Please complete this form (max 1 page) and email it to [Trent.Dupuy@ed.ac.uk](mailto:Trent.Dupuy@ed.ac.uk) by 2025 January 6th.

If you are a current UoE student with access to the ROE site, please mention this in the email.

**Project Selection:** We strongly encourage you to select 4 projects from 4 different supervisors to maximize your chances of a good match. Please rank your choices, using the same rank to indicate a tie.

1. e.g., Ricarda Beckmann, The dynamics of seed black holes in the early Universe
2. e.g., Sarah Rugheimer, The Exotic Worlds of exo-Titans
3. e.g., Britton Smith, Building a Better Interstellar Medium for Galaxy Simulations
4. e.g., Alistair Glasse, Performance testing the ELT/METIS/LMS spectrometer

**Degree Program, Year (to be) awarded, Average Grade % for the last 2 years:**

Add a \* if you wish us to consider any extenuating circumstances described in your reference letters.

e.g., Astrophysics (MPhys 2025), 62%\* (2024), 78% (2023)

If unable to calculate a %, list your average, the max and pass scores

Do not list your University on this form.

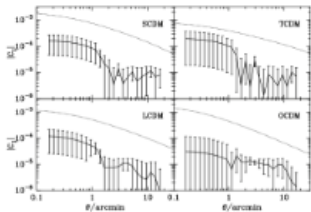
**Research Experience:** List up to 3 titles of research projects that you have undertaken. Was this group research, part of your undergraduate programme or a vacation project? For any vacation projects, list the funding body if applicable. Please do not list your supervisors. If you have submitted/published any papers - tell us here. If you haven't written a paper, don't worry as it is very rare at this career stage!

e.g., "The AGN-Galaxy host connection" - senior honours research project (group work)

e.g., "Intrinsic correlation of galaxy shapes" - MPhys project. One paper submitted as co-author.

e.g., "VLT/MUSE observations of NGC 3115" - vacation research (Cormack scholarship)

**Research Summary:** Tell us more about one of these projects - keeping this whole application form under one page. Please mention any relevant skills that you developed when undertaking this project. We would really love to see a figure (or maybe an equation) you made, if you have one that you can discuss.



My measurement of the correlation of galaxy shapes as a function of their separation on the sky for four different cosmological models. I analysed a suite of N-body simulations and compared my measurements to the expected signal from weak gravitational lensing (shown dashed). This research broadened my knowledge of observational cosmology.

Note that when you delete the italic font in the form above, you will have much more space here to tell us about your research. You can update the figure using a right click, followed by "Replace Image".

**Academic preparation:** List up to 3 courses taken that you think are particularly relevant to your selected projects. List the % grade awarded in each.

e.g., Advanced Cosmology (75%), Computational Astrophysics (72%), General Relativity (69%)

**Fee status:** find your predicted fee status here: <https://www.ed.ac.uk/tuition-fees/fee-status/work-out>

e.g., Home Fee Rate, Overseas/International

This version was updated 2024 November 11.

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