

FRIDAY 26.07.2024

Questions for the Future 1 - Chair: Risa Wechsler

09:30 - 10:00 - Neil Turok

A minimal SM/LCDM cosmology

10:00 - 10:30 - Volker Springel

Next generation galaxy formation simulations: challenges and opportunities

10:30 - 11:00 - Carole Mundell

From near-Earth to the fabric of space-time - cosmic journeys to the 2050s with the European Space Agency

11:00 - 11:30 - Coffee Break

Questions for the Future 2 - Chair: Carlos Frenk

11:30 - 12:00 - Sara Seager

In Pursuit of the Elusive: The Search for Exoplanet Biosignature Gases

12:00 - 12:30 - Ann Zabludoff

The Future of AI in Astronomy: Our Tool, Our Partner, Our Replacement?

12:30 - 13:00 - Speakers of Questions for the Future Session and Co-Directors

Finale and Closing Remarks

USEFUL INFORMATION

Join the IoA50 Slack Channel for conference updates and information:



Directions to Babbage Lecture Theatre, New Museums Site:

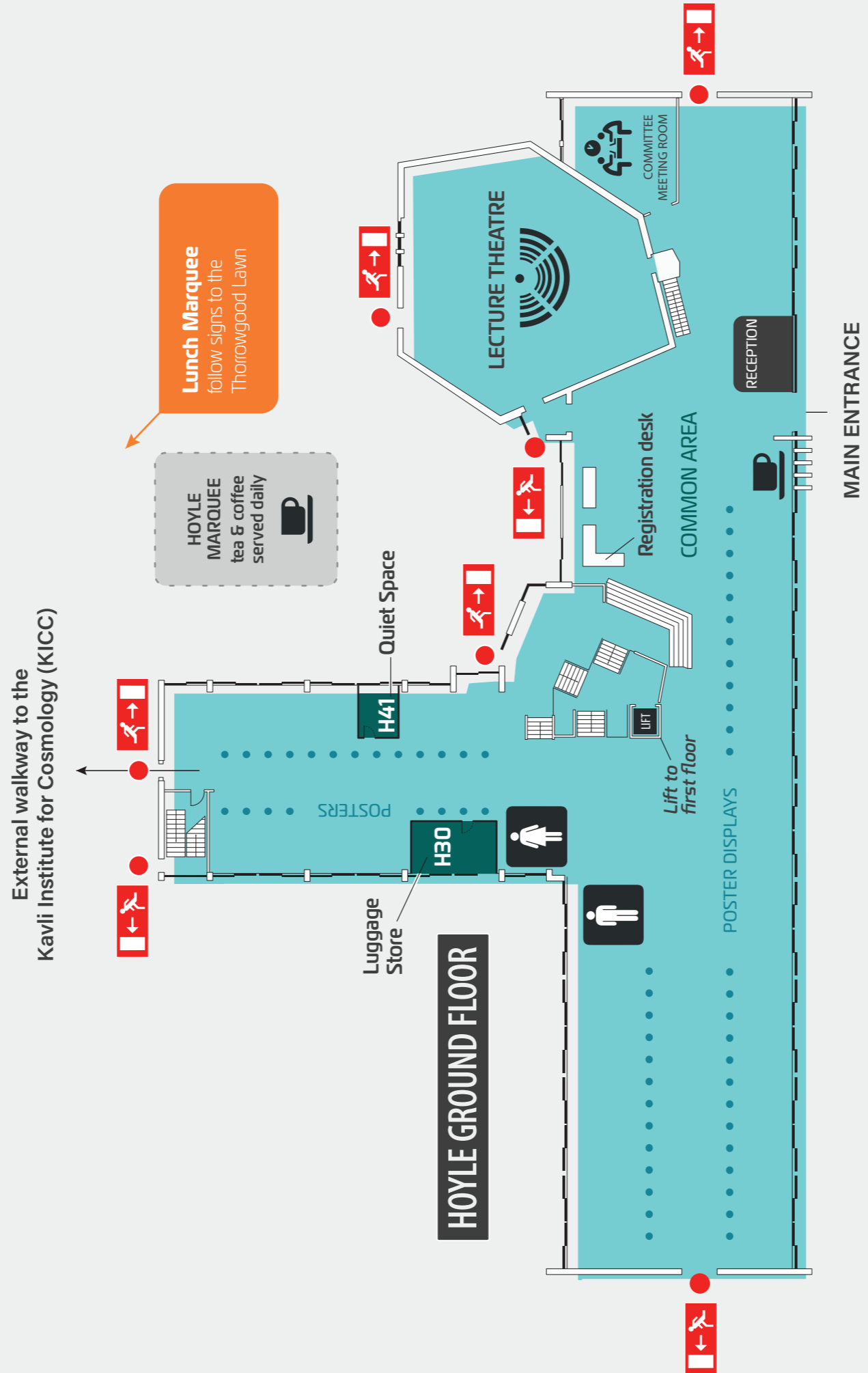


Directions to Trinity College, Cambridge CB2 1TQ:



IoA50 conference email address:
ioa50-frontiers@ast.cam.ac.uk

External walkway to the Kavli Institute for Cosmology (KICC)



IOA50

Programme

NEW FRONTIERS OF ASTRONOMY
SUNDAY 21 - FRIDAY 26 JULY 2024

QR code with IoA50 logo

MONDAY 22.07.2024

08:30 - 09:15 - Registration in the Hoyle reception foyer

09:15 - 09:20 - Opening Remarks

Exoplanets 1 - Chair: Cathie J. Clarke

09:20 - 09:45 - Anders Johansen

Planet Formation and Primordial Atmospheres

09:45 - 10:10 - Jayne Birkby

Exoplanet Atmospheres in High Resolution

10:10 - 10:30 - Sasha Hinkley

Characterization of Ice Line Exoplanets Through Direct Imaging

10:30 - 10:45 - Farzana Meru

Sandwiched planet formation: restricting the mass of a middle planet

10:45 - 11:15 - Coffee Break

Exoplanets 2 - Chair: Douglas Lin

11:15 - 11:40 - Mark Wyatt

The debris disk paradigm

11:40 - 12:05 - Lisa Kaltenegger

Characterizing potentially Earth-like planets - Exploring the diversity of Rocky Exoplanets

12:05- 12:25 - Andrew Winter

From galactic to planetary scales: the role of external star formation environment for planet formation

12:25 - 12:40 - Amy Bonsor

Cosmochemical-style insights for exoplanetary systems

12:40 - 13:00 - Conference Photo

13:00 - 14:00 - Lunch

Cosmology and Large-scale Structure 1 - Chair: Jochen Weller

14:00 - 14:25 - George Efstathiou

50 Years of Cosmology

14:25 - 14:45 - Andreu Font-Ribera

Recent highlights from cosmological spectroscopic surveys

14:45 - 15:05 - Vid Irsic

Lyman-alpha forest: From small to large scales

15:05 - 15:25 - Keir K. Roger

Cosmological tests of the nature of dark matter

15:25 - 16:00 - Coffee Break

Cosmology and Large-scale Structure 2 - Chair: Ofer Lahav

16:00 - 16:25 - Licia Verde

Precision Cosmology: The standard cosmological model and its unreasonable effectiveness

16:25 - 16:38 - Ryan Cooke

Primordial nucleosynthesis and the search for new physics

16:38 - 16:58 - Srinivasan Raghunathan

Constraining the Epoch of Reionisation using CMB as the backlight

16:58 - 17:18 - Alexandra Amon

Weak lensing with a billion galaxies: New opportunities, challenges and strategies

17:18 - 17:31 - Daniel Molnar

REACH instrument and calibration

TUESDAY 23.07.2024

Galaxy Formation and Evolution:

Theory & Observation 1 - Chair: Richard Ellis

09:15 - 09:40 - Amélie Saintonge

From cosmic web to molecular clouds: the multiple scales of galaxy evolution

09:40 - 09:53 - Vivienne Wild

How and why do galaxies stop forming stars?

09:53 - 10:18 - Julien Devriendt

The formation of galaxies with cosmological hydrodynamical simulations

10:18 - 10:38 - Andrew Pontzen

Exposing the interplay between feedback and history

10:38 - 10:58 - Christoph Pfrommer

Cosmic ray feedback in galaxies and clusters

10:58 - 11:30 - Coffee Break

Galaxy Formation and Evolution:

Theory & Observation 2 - Chair: Amélie Saintonge

11:30 - 11:50 - Eva Schinnerer

A cloud-scale view of the star formation process

11:50 - 12:10 - Steve Finkelstein

Insights into the Early Universe from the First Year of JWST Observations

12:10 - 12:23 - Andrew Bunker

JWST at the edge of the Universe - JADES high redshift galaxy spectra with NIRSpec

12:23 - 12:36 - Manuela Magliocchetti

The clustering properties of high-redshift passive galaxies

12:36 - 12:49 - Emma Ryan-Weber

Probing Reionization with high-z metals

12.49 - 14:00 - Lunch

High energy astrophysics + TD + GWs 1 - Chair: Piero Madau

14:00 - 14:25 - Andrew Fabian

50 years of X-ray astronomy

14:25 - 14:45 - Erin Kara

Black hole accretion

14:45 - 15:05 - Mitch Begelman

From Blazars to Supermassive Black Hole Binaries

15:05 - 15:18 - Nial Tanvir

Gamma-ray burst science in Cambridge

15:18 - 15:31 - Gary Ferland

Cloudy, a Starship to Discover the Universe through Spectroscopy

15:31 - 16:00 - Coffee Break

High energy astrophysics + TD + GWs 1 - Chair: Mitchell Begelman

16:00 - 16:25 - Sera Markoff

New Horizons: Black Hole Imaging in a Multi-Messenger Universe

16:25 - 16:38 - Douglas Lin

Dynamical evolution of young stars around the supermassive black hole in the Galactic center

16:38 - 16:51 - Hannah Übler

Massive black holes during the first billion years revealed by JWST/NIRSpec-IFU

16:51 - 17:04 - John Regan

Seeding the Massive Black Holes Observed at High-z

17:04 - 17:17 - Julie Hlavacek-Larrondo

AGN Feedback in Galaxy Clusters: A 10 Billion Year Journey

17:17 - 17:30 - Martin Bourne

Simulating SMBHs from the event horizon to the cosmic web

TUESDAY 23.07.2024

17:30 - 18:30

Poster Session

Drinks & nibbles in the Hoyle common area.

19:00 - 20:00 - Public Session in the Hoyle

Lecture Theatre, Institute of Astronomy

Gerry Gilmore & Gudrun Tausch-Pebody

Two and a Half Centuries of Astronomy and Astrophysics in Cambridge.

WEDNESDAY 24.07.2024

Stellar Evolution and Galactic Archaeology 1

Chair: Vasily Belokurov

09.30 - 09.50 - Alis Deason

The Mass Assembly of the Milky Way

09:50 - 10.10 - Keith Hawkins

Galactic Archeology and Cartography in the Gaia Era

10:10 - 10:25 - Anke Ardern-Arentsen

The ancient heart of the Milky Way

10:25 - 10:40 - Jason Sanders

Disentangling the history of our Galaxy in the era of Gaia

10:40 - 10:55 - Denis Erkal

A global view of the Milky Way's dark halo with stellar streams

10:55 - 11:30 - Coffee Break

Stellar Evolution and Galactic Archaeology 2

Chair: Christopher Tout

11.30 - 11.50 - Chiaki Kobayashi

The Origin of Elements and the Evolution of Galaxies

11:50 - 12:10 - Jim Fuller

Red Supergiant Boil-off

12.10 - 12.25 - Avishai Gilkis

Exploding Wolf-Rayet Stars - Wanted: Dead or Alive

12.25 - 12.40 - Jan Eldridge

Will we ever work out how binary stars evolve?

12.40 - 12.55 - Zhanwen Han

Exploring Common Envelope Phases and Binary Populations through LAMOST Spectroscopic Survey

13.00 - 14:00 - Lunch

14:00 - 15:00 & 15:30 - 16:30

Institute of Astronomy Library Tour

Mark Hurn, Librarian

Observatory building

19:00 - 20:00 - Public Session at the Babbage Hall

Jocelyn Bell Burnell

You are made of star stuff!

THURSDAY 25.07.2024

Frontiers 1 - Chair: Jim Stone

09:00 - 09:30 - Carlos Frenk

Who will survive for longer, CDM or the Λ CDM?

09:30 - 10:00 - Risa Wechsler

Connecting Light and Dark across Time and Space

10:00 - 10:30 - Ofer Lahav

AI for cosmological experiments: evolution or revolution?

10:30 - 11:00 - Leon Koopmans

21-cm Cosmology from Earth to the Moon

11:00 - 11:30 - Coffee Break

Frontiers 1 - Chair: Chris Reynolds

11:30 - 12:00 - Stephen Taylor

Hunting Supermassive Black-hole Binaries: The Next Frontier In Multi-messenger Astrophysics

12:00 - 12:30 - Chiara Mingarelli

Frontiers of pulsar timing array experiments

12:30 - 13:00 - Thorsten Naab

14 orders of magnitude - from the multi-phase ISM to IMBH formation

13:00 - 14:00 - Lunch

Frontiers 2 - Chair: Roger Blandford

14:00 - 14:30 - Jim Stone

Modeling Luminous Accretion Flows Around Black Holes

14:30 - 15:00 - Chris Reynolds

The Future of High-Energy Astrophysics

15:00 - 15:30 - Eloy de Lera Acedo

21st-century radio astronomy - The next 50 years

15:30 - 16:00 - Coffee Break

Frontiers 2 - Chair: Sara Seager

16:00 - 16:30 - Sandro Tacchella

Star formation and black hole growth in the first galaxies

16:30 - 17:00 - Matthew Bate

Predicting the variation of stellar properties using simulations of star cluster formation

17:00 - 17:30 - Raymond Pierrehumbert

What do atmospheric observations tell us about the interiors of subNeptunes?

19:00 - 22:00 - Gala Dinner

Trinity College

19:00-19:30 Reception at the Bowling Green

19:30 onwards Dinner (Hall) and

speeches by special guests.

19:00 - 20:00 - Public Session at Babbage Hall
Vasily Belokurov, Nikku Madhusudhan & Hiranya Peiris
*Life, the Universe, and Everything:
The next 50 years of astronomy*