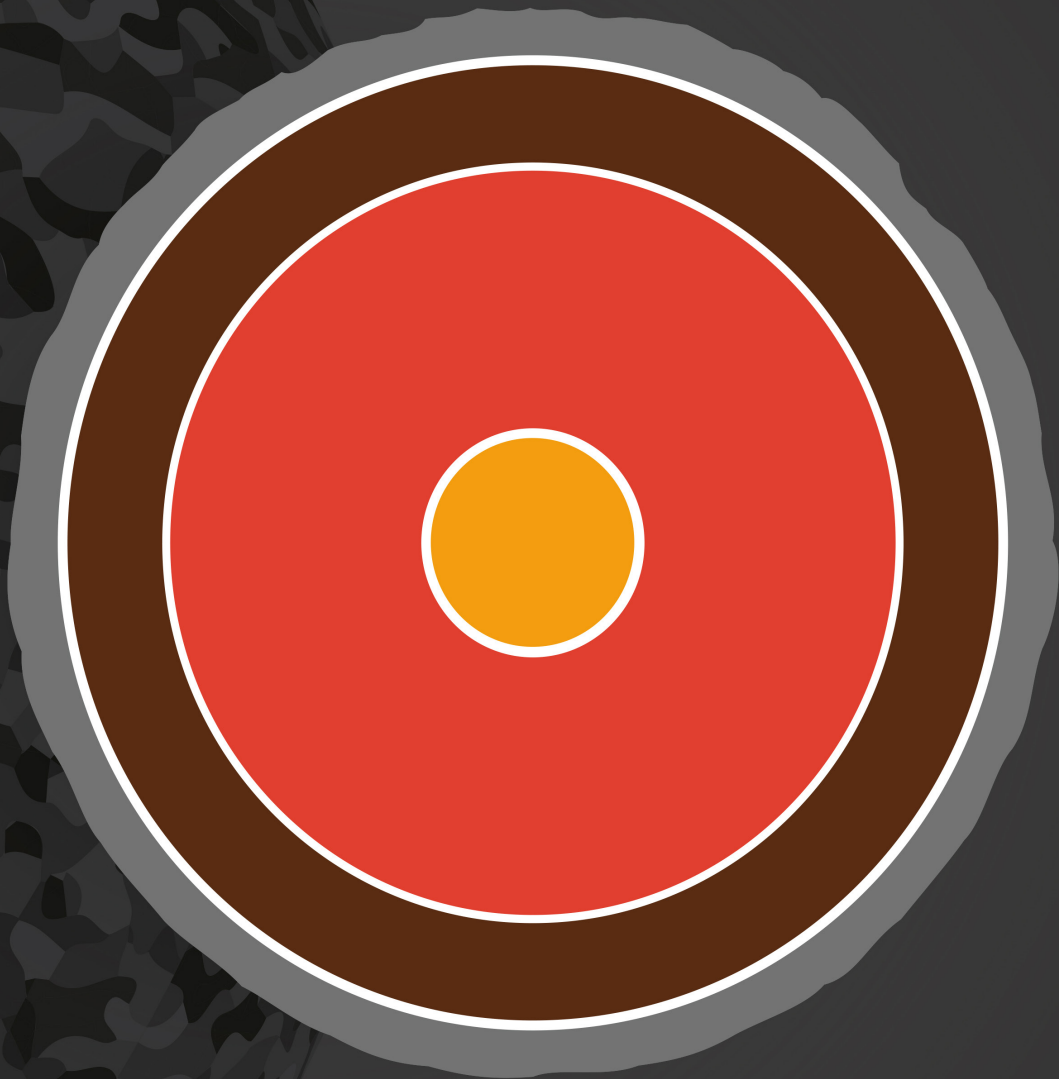


ROCKY WORLDS: *from the solar system to exoplanets*

6th - 8th January 2020 at the Kavli Institute, University of Cambridge



Programme

The organisers are committed to conducting meetings that are productive and enjoyable for everyone. This meeting is a place for the open exchange of scientific ideas. Harassment of participants in any form will not be tolerated. Thank you for helping make this a welcoming, respectful space for all.

The European Astronomical Society Council (EAS) Ethics Statement and Guidelines for Good Practice will apply during the conference. Participants are encouraged to read the document and follow its recommendations.
https://eas.unige.ch/documents/EAS_Ethics_Statement.pdf

Any participant who wishes to report any inappropriate behaviour is encouraged to speak, in confidence, to the LOC
E-mail rw2020@ast.cam.ac.uk

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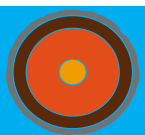
Session Overview

MONDAY 06 JAN	TUESDAY 07 JAN	WEDNESDAY 08 JAN
INTERIORS CHAIRED BY AMY BONSOR	FORMATION CHAIRED BY PAUL RIMMER	ATMOSPHERES CHAIRED BY MIKHEL KAMA
<ul style="list-style-type: none"> 09:00 Registration Opens 09:30 Meeting starts with introductions Pg 14 09:40 Jon Wade Pg 15 10:20 Tim Lichtenberg 	<ul style="list-style-type: none"> Pg 21 09:00 Zoe Leinhardt Pg 22 09:40 Lewis Watt Pg 23 10:00 Marc Brouwers 	<ul style="list-style-type: none"> Pg 29 09:00 Robin Wordsworth Pg 30 09:40 Nisha Katyal Pg 31 10:00 Zahra Essack
COFFEE BREAK - HOYLE RECEPTION FOYER		
<ul style="list-style-type: none"> Pg 16 11:00 Fergus Horrobin Pg 17 11:20 John Harrison Pg 18 11:40 Teresa Wong 	<ul style="list-style-type: none"> Pg 24 10:40 Mor Rozner Pg 25 11:00 Thomas Haworth Pg 26 11:20 Kathryn Dodds Pg 27 11:40 Evgeni Grishin 12:00 Photo 	<ul style="list-style-type: none"> Pg 32 10:40 Catriona Sinclair Pg 33 11:00 David Grinspoon Pg 34 11:20 Robert Graham Pg 35 11:40 Quentin Changeat
LUNCH		
<ul style="list-style-type: none"> Pg 19 13:40 Daniel Spencer Pg 20 14:00 Sarah McIntyre 14:20 Break-out sessions: Laura Rogers, John Harrison & Alexander Mustill <i>Kavli Ryle Rooms</i> Dan Spencer <i>Sackler Lecture Theatre</i> Francis Nimmo <i>Hoyle Committee Mtg Rm</i> 	<ul style="list-style-type: none"> 14:00 Break-out sessions Tim Lichtenberg <i>SPO</i> Sarah McIntyre <i>Kavli Ryle Rooms</i> Thomas Haworth & Jeff Jennings <i>Sackler Lecture Theatre</i> Evgeni Grishin <i>Hoyle Committee Mtg Rm</i> 	<ul style="list-style-type: none"> 14:00 Break-out sessions: Victoria Hartwick <i>Kavli Ryle Rooms</i> Quentin Changeat <i>Sackler Lecture Theatre</i> Paul Rimmer & Sang-Min Tsai <i>Hoyle Committee Mtg Room</i>
TEA BREAK - HOYLE RECEPTION FOYER		
<ul style="list-style-type: none"> 16:00 Discussion (Chair: Helen Williams) 16:40 Poster Introductions (Chair: James Bryson) 17:00-18:30 Poster sessions with Cheese & Wine 	<ul style="list-style-type: none"> 15:40 Discussion (Chair: Mark Wyatt) Pg 28 16:10 Sean Raymond 17:00 Close 	<ul style="list-style-type: none"> 15:40 Discussion (Chair: Oliver Shorttle) Pg 36 16:10 Vivien Parmentier 17:00 Close

18:45
Pre-conference dinner drinks.
Pembroke College ([see online map](#))
(Dress code for evening
receptions and conference
banquet is smart/casual)

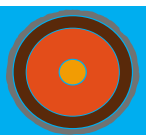
19:30
Conference dinner

* Please note: all information is subject to change; any updates will be announced via the Hoyle and Kavli reception monitors.



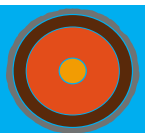
Monday 6th January 2020
Session • Interiors
Chair • Amy Bonsor

09:00	Registration Opens
09:30	Meeting starts with introductions
09:40	Jon Wade: The role of core formation in planetary habitability and the development of complex life. Pg 14
10:20	Tim Lichtenberg: Rocky (exo-)planet diversity from protoplanet solidification. Pg 15
10:40	Coffee break
11:00	Fergus Horrobin: Modelling Tidal Dissipation in Super-Earths with a Partially Molten Mantle. Pg 16
11:20	John Harrison: Polluted White Dwarfs: Constraints on the Origin and Geology of Exoplanetary Material. Pg 17
11:40	Teresa Wong: Plate Tectonics on Earth-Like Planets. Pg 18
12:00	Lunch (12:00-13:40)
13:40	Daniel Spencer: Coupling volcanism and interior dynamics on Io. Pg 19
14:00	Sarah McIntyre: Planetary magnetism as a parameter in exoplanet habitability. Pg 20
14:20	Break-out sessions: Laura Rogers, John Harrison and Alexander Mustill: Insights into exoplanet compositions from the Solar System, exoplanet atmospheres, and host star abundances. Kavli Ryle Rooms Dan Spencer: Planetary Volcanism, linking interiors to atmospheres. SLT Francis Nimmo: Tidal heating in the solar system and elsewhere. HCR
15:40	Coffee break
16:00	Discussion (Chair: Helen Williams)
16:40	Poster Introductions (Chair: James Bryson)
17:00	Poster Session with Cheese & Wine
18:30	Close



Tuesday 7th January 2020
Session • Formation
Chair • Paul Rimmer

09:00	Zoe Leinhardt: The Birth and Death of Extrasolar Planets. Pg 21
09:40	Lewis Watt: Planetary Embryo Collisions in Extreme Debris Disks. Pg 22
10:00	Marc Brouwers: How planets grow by pebble accretion. Pg 23
10:20	Coffee break
10:40	Mor Rozner: The Ablation Barrier for the growth of Meter-Size Objects in Protoplanetary Disks. Pg 24
10:40	Thomas Haworth: Gravitationally stable massive discs around low mass stars. Pg 25
11:20	Kathryn Dodds: The early thermal evolution of planetesimals during accretion and differentiation. Pg 26
11:40	Evgeni Grishin: Seeding interstellar planetesimals in circumstellar discs. Pg 27
12:00	Photo
12:05	Lunch
14:00	Break-out sessions: Tim Lichtenberg: Bridging the gap from planet formation to rocky exoplanet evolution. SPO Sarah McIntyre: Multi-parameter Approach to Habitability (M-PAtH). Kavli Ryle Rooms Thomas Haworth & Jeff Jennings: Strengthening collaborations across the epochs of planetary system evolution: A broad outlook and case study in star formation and planet-forming discs. SLT Evgeni Grishin: Formation and properties of the first planetesimals. HCR
15:20	Coffee break
15:40	Discussion (Chair: Mark Wyatt)
16:10	Sean Raymond: Formation pathways of rocky planets. Pg 28
17:00	Close
18:45	Conference dinner Pembroke College

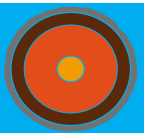


Wednesday 8th January 2020

Session • Atmospheres

Chair • Mihkel Kama

- 09:00 **Robin Wordsworth:** Tracing the coupled evolution of water and oxygen on temperate rocky exoplanets. [|Pg 29|](#)
- 09:40 **Nisha Katyal:** Effect of Secondary Outgassing on Atmospheric Evolution of Terrestrial Planets. [|Pg 30|](#)
- 10:00 **Zahra Essack:** Low Albedo Surfaces of Lava Worlds. [|Pg 31|](#)
- 10:20 Coffee break
- 10:40 **Catriona Sinclair:** Terrestrial Planet Bombardment and Atmosphere Evolution. [|Pg 32|](#)
- 11:00 **David Grinspoon:** The Evolution of Climate and a Possible Biosphere on Venus. [|Pg 33|](#)
- 11:20 **Robert Graham:** Hydrologic Control of Silicate Weathering and Rocky Planet Climate Stability. [|Pg 34|](#)
- 11:40 **Quentin Changeat:** ARIEL, a mission to unravel the atmospheric composition of a large number of super-Earths. [|Pg 35|](#)
- 12:00 Lunch (12 - 2pm)
- 14:00 Break-out sessions:
Victoria Hartwick: Cloud Microphysics in Exoplanet Atmospheres. [Kavli Ryle Rooms](#)
Quentin Changeat: Exploring degeneracies in atmospheric retrieval techniques. [SLT](#)
Paul Rimmer & Sang-Min Tsai: Atmospheric Features as "Golden Spikes" for Exoplanetary Eons. [HRC](#)
- 15:20 Coffee break
- 15:40 Discussion (Chair: Oliver Shorttle)
- 16:10 **Vivien Parmentier:** Understanding the spectrum of far away worlds: lessons learned from hot giant planets. [|Pg 36|](#)
- 17:00 Close



Local Information

Contacts:

Science Programme and Organisation

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Room number:- Kavli K14

Mr Steven Brereton

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Telephone number:- +44 01223 337516

Room number:- Kavli K12

Internet Access

Internet access during the conference will be most easily achieved using eduroam: <https://www.eduroam.org/>

For those unable to use eduroam, we will issue wifi accounts at the registration desk.

IoA First Aiders:

Matt Bothwell • 01223 339279, Hoyle Rm 59

Cormac O'Connell • 07801707058 or 01223 337505, Observatory Rm 5

Monica Gamboa • 01223 337548, Hoyle Reception

Mark Hurn • 01223 337537, Library Office

Debbie Peterson • 01223 766643, Hoyle Rm 6

Location of First Aid Boxes:

Hoyle Building • Ground floor; between lift

shaft & cleaning cupboard 1st floor; outside toilets

Observatory Building • In Kitchen and Librarian's Office

Kavli Institute Building • Ground floor; outside room

K14 Upper first floor; outside room K34

Accident and Emergency Unit

The nearest A & E Unit is at Addenbrooke's Hospital, Hills Road, Cambridge.

If no First Aider is available the casualty should be escorted to the Hospital's Emergency Department. In a serious emergency you should always call 999.

Fire Safety

In the event of a fire alarm please evacuate the building by the nearest exit (please see pages 113 & 114 for locations) Do not stop to collect personal belongings and do not re-enter the building.

Emergency Telephone Numbers

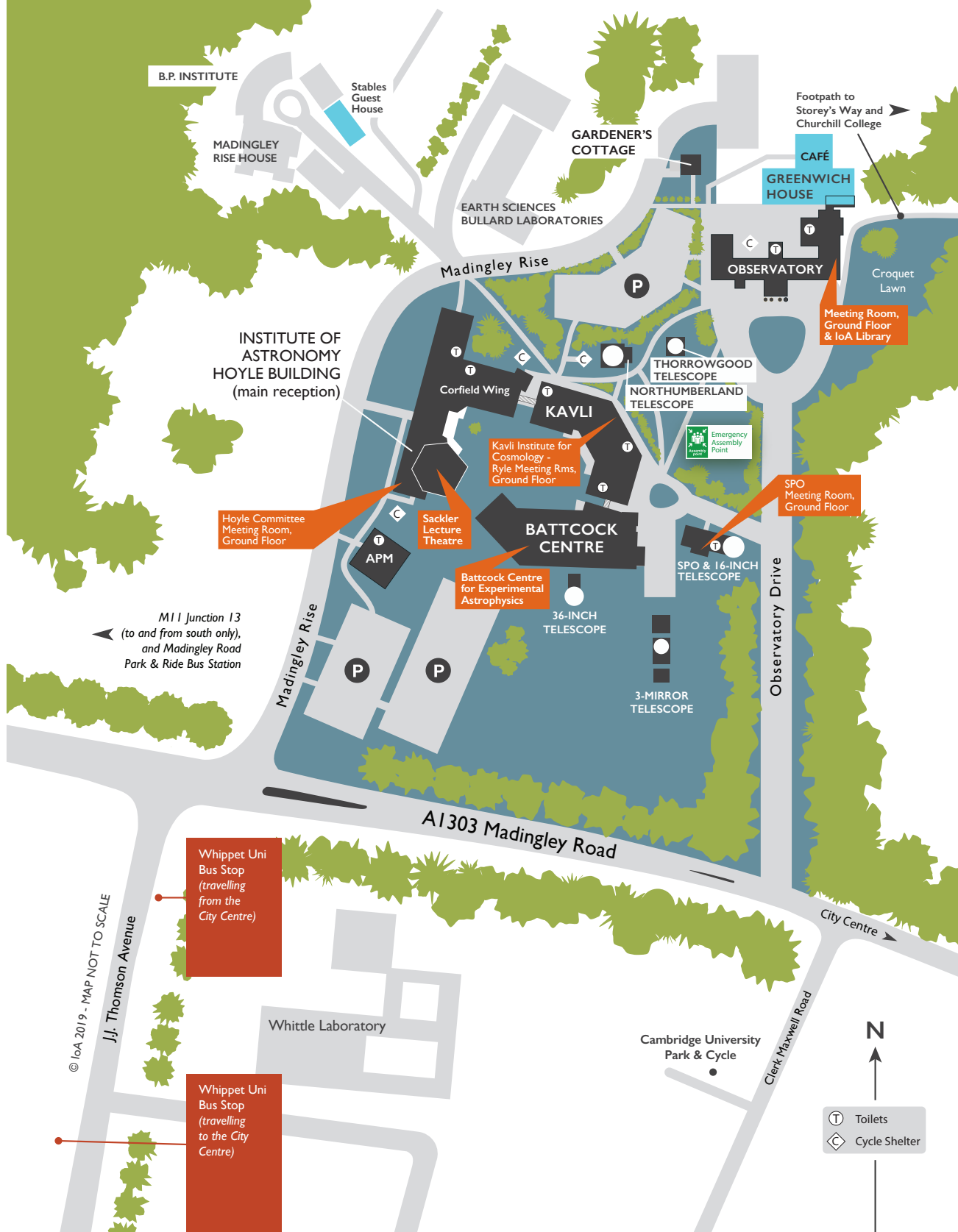
Ambulance, Fire & Police • 999

University Security Patrol • 101

University Security Patrol (calls external) • 01223 767444

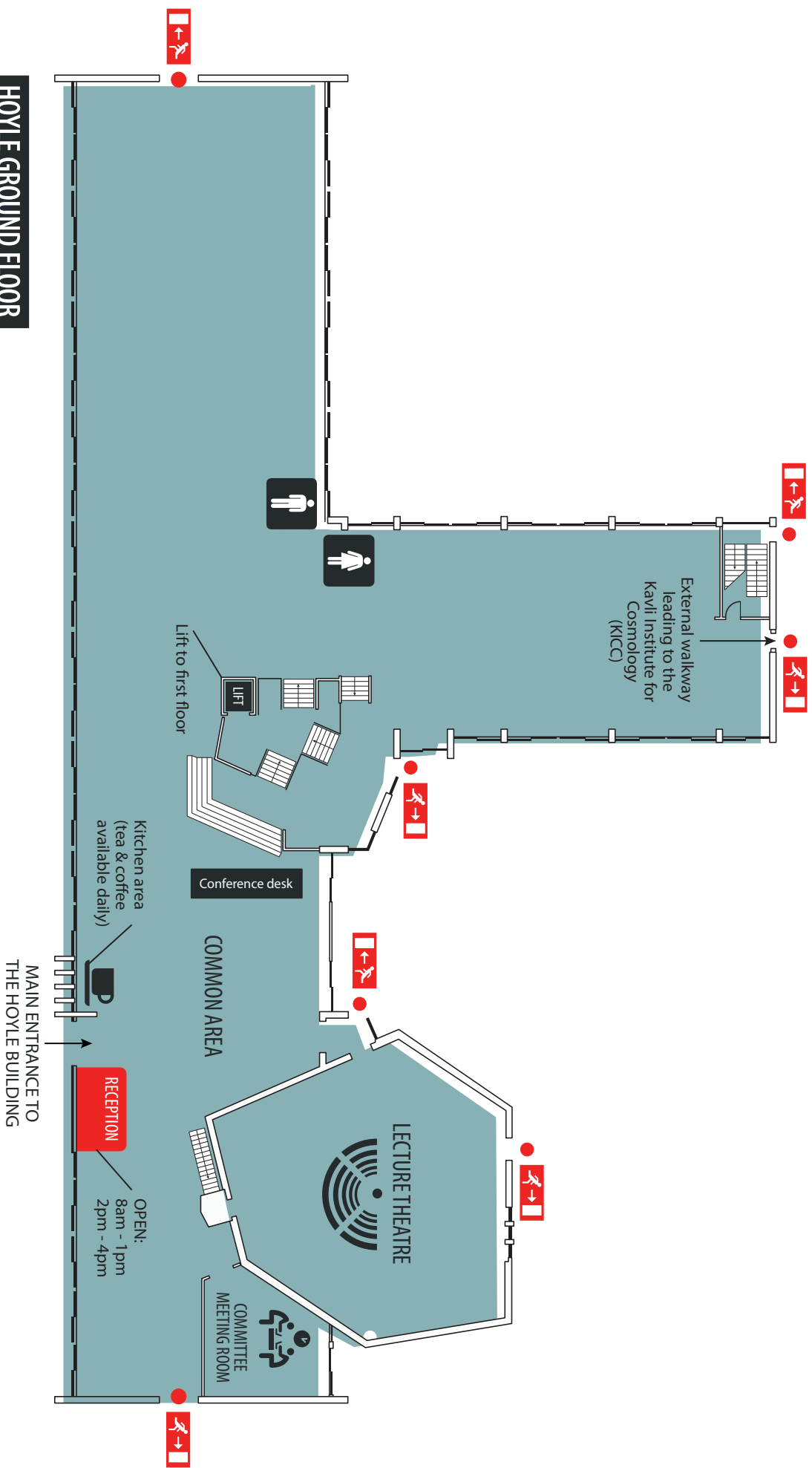
University Security Control Centre (24 Hrs) • 01223 331818

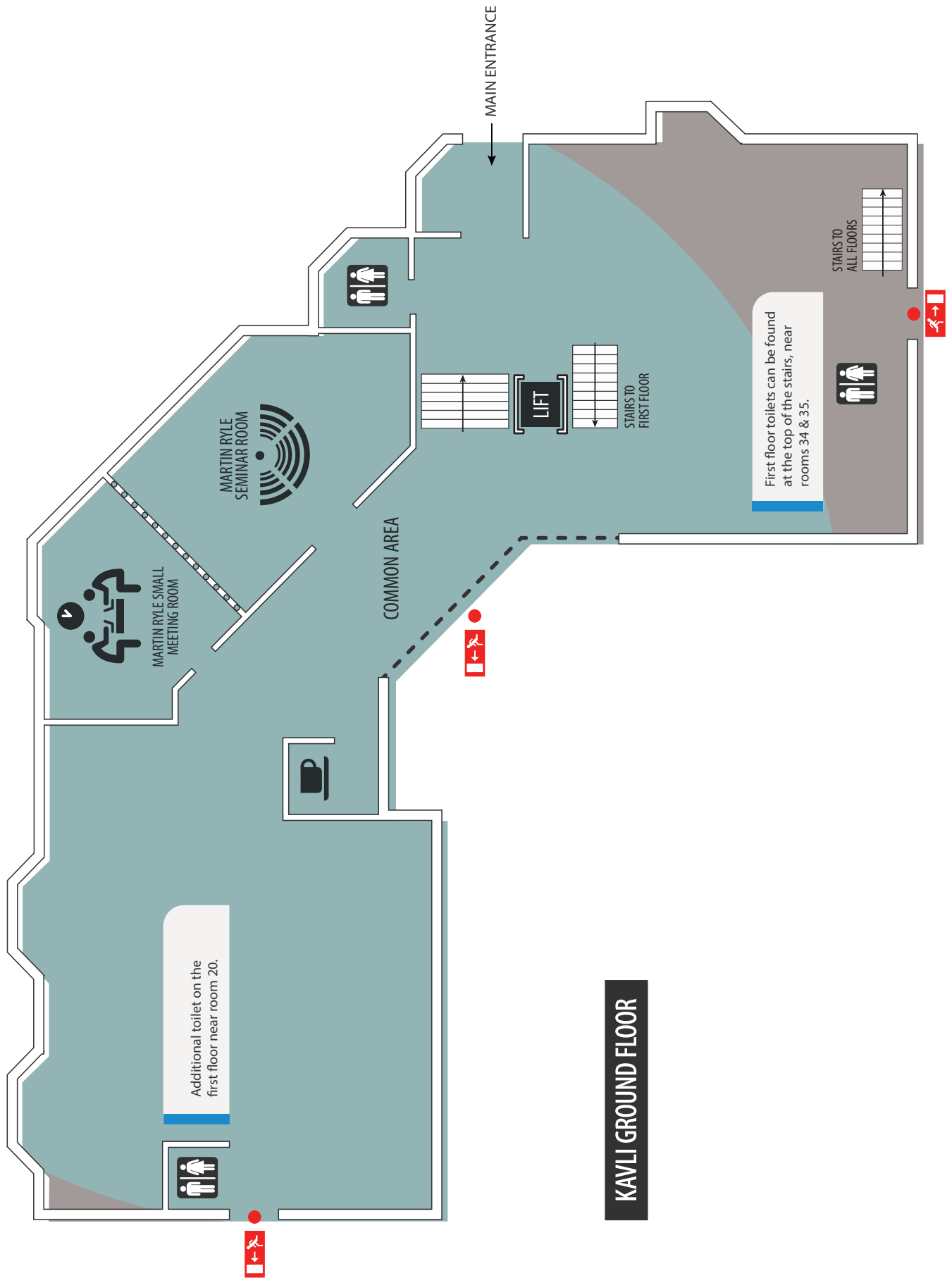
SITE MAP





HOYLE GROUND FLOOR







<https://www.kicc.cam.ac.uk/events/rocky-worlds-from-the-solar-system-to-exoplanets>