School of Physics and Astronomy
School Newsletter

Queen Mary University of London

August 2020

Head of School summary

It won't have escaped any reader's attention that we are still in the middle of recruiting new students to our programmes. The recent, last-minute, changes to the calculation of A-level (and indeed GCSE, BTEC, Scottish Highers etc.) grades has of course made it very challenging and I'd like to thank very much all my colleagues and our student ambassadors who have put in so much hard work in the last weeks. As I write this, recruitment is still very much in progress.

We are slowly reopening our university campus and I am pleased to say that we have most of our School's research laboratories operating and have very recently been able to let staff in single-occupancy offices return to the G O Jones building. We are working hard with Estates and our Health & Safety experts to open further but we will take great care to do this in a very controlled fashion.

All of my colleagues with undergraduate or postgraduate modules have been working hard on adapting the way these are delivered to ensure that how ever much we are open on campus or, as is certainly possible closed down, we can deliver a high quality education to all our students. I have been very pleased and impressed by how much engagement there has been with new ideas and methods for teaching in a blended fashion and how we will provide support and teaching materials to any students who may be unable to join us in person in the next few months.

I am very pleased to be able to announce that Chromosol Ltd, a Queen Mary spin out company of which our colleague Professor Bill Gillin is a Director and Chief Technology Officer, has been selected as one of the finalists of the Royal Society of Chemistry's Emerging Technology Competition. They have developed an approach to building optical amplifiers and lasers directly onto silicon chips. This will allow for the future integration of electronic and optical communications systems resulting in greater data transfer rates with reduced power consumption. The winners in the four categories will be announced on 30th September and we are all hoping Chromosol will be one of them.

WELCOME

Dr Ed Gillen has joined the Astronomy Unit (AU) as a new Lecturer. Dr Gillen studies young stars and exoplanets to understand the formation, evolution and diversity of

planetary systems. Dr Gillen completed his PhD on young binary stars at Oxford, before pursuing exoplanet research as a postdoc at Cambridge. He currently holds a Winton Exoplanet Fellowship where he leads a programme to detect and characterise young stellar and planetary systems.

We are very pleased to announce that *Dr Linda Cremonesi* joined the Particle Physics Research Center (PPRC) this month. Dr Cremonesi previously studied at QMUL graduating with a PhD from the PPRC in neutrino physics; where her thesis topic was on neutrino oscillations. Her research went from strength to strength as postdoc at UCL while continuing to work on neutrino oscillations, and through cutting edge work on the ANITA project, searching for signs of new physics in Antarctica. She returns to us as a permanent member of staff and the recipient of a prestigious UKRI Future Leaders Fellowship to work on the NOvA and DUNE experiments as one of the leaders in the field of neutrino physics relating to the neutrino oscillation analysis. This is a key method to study the difference between matter and antimatter (CP violation) in the neutrino sector. Linda's appointment continues the long tradition in the PPRC of studying matter antimatter differences dating back over the past 3 decades starting with CP violation studies on BaBar in the quark sector, and for almost the past two decades, work toward CP violation in the neutrino sector via T2K. We are excited to have Dr Cremonesi onboard, and look forward to working with her over the coming years. We would normally invite people to drop into the 4th floor to meet with Dr Cremonesi, however as we are not physically present at the Mile End campus at this time, I encourage you to reach out to her to welcome her to the School.

We're delighted to welcome *Dr Hugh Garsden* to the Astronomy Unit (AU). Dr Garsden joins us from the Harvard-Smithsonian Center for Astrophysics, where he was previously working on the LEDA experiment to detect the cosmic Dark Ages via the 21cm emission from neutral hydrogen. He will be working as a postdoc in the HERA group with Dr Phil Bull, on topics such as 21cm power spectrum estimation, GPU-accelerated simulations, and high-dimensional Bayesian data analysis.

Dr Thibault Degousee has joined Centre for Condensed Matter and Materials Physics (CCMMP) as a Postdoctoral Research Assistant. He joins us from the School of Engineering and Materials Science, and will be working with Dr Jan Mol on the fabrication and characterisation of molecular-network heat engines.

Congratulations

Congratulations to Dr Phil Bull and Dr Tessa Baker on recently awarded European Research Council Fellowship and to Dr Marcella Bona for the award of a Leverhulme Trust Senior Research Fellowship.

College & School Academic Prize winners

Congratulations to our academic prize winners,

College academic prize winners,
Lewis Sword - Best final year MSci mark

Beltran Sajonia-Coburgo-Gotha - Best final year BSc mark

School academic prize winners,
Oliver Blane - E J Irons - Best 2nd year
Mitchell Broad - EJ Wignall - Best 1st year shared
Izabella Zebrowaska - EJ Wignall - Best 1st year shared
Victor Shirandami - Best 3rd year MSci

Prof Graham Thompson

It is with great sorrow that we announce the death of Emeritus Professor of Physics Graham Thompson on 30 May. He was 75.

To read the tribute for Prof Thompson *click here*.

News from Careers Team

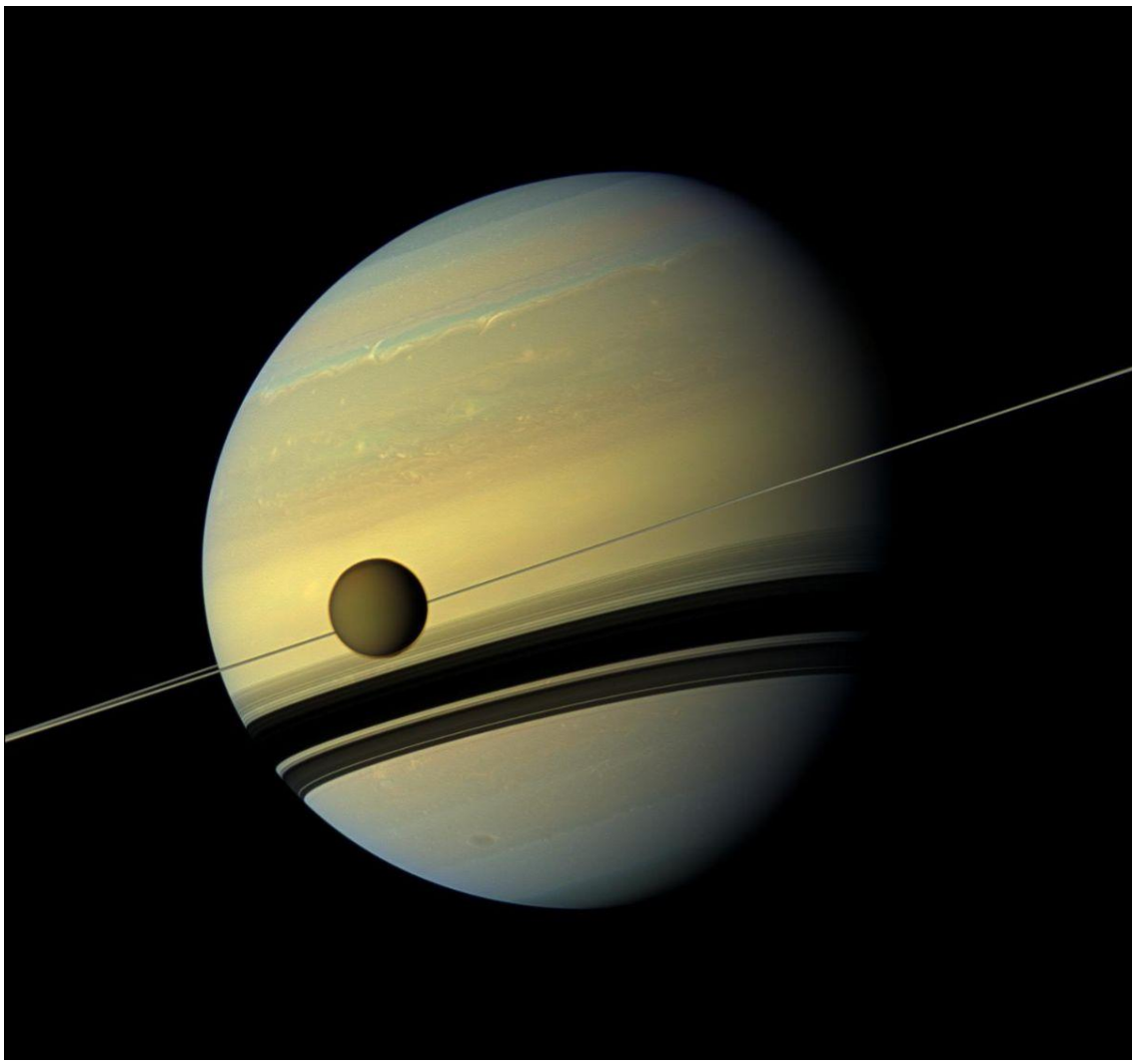
Chris Dowden, 2018 BSc Physics alumnus and Software Developer at Yobota, talked to current Science & Engineering (S&E) final-year students in our careers bootcamp on the 16th of June about how to apply current live opportunities at Yobota and how you can demonstrate software engineering experience when you haven't done a computer science degree. Students and staff can view a recording of his talk by enrolling in our *Career Events QMPlus module* and scrolling down to Past Events Recordings and then S&E finalist bootcamp.

Saturn's Moon Titan Drifting Away Faster Than Previously Thought

Research involving scientists from Queen Mary University of London has shown that the moons of Saturn are moving outwards faster than first estimated, providing new insights into how the Saturn system formed. To read more please *click here*

The paper achieved our highest ever altmetric score (currently 622) and received worldwide coverage, please see *here*

Picture: Cassini image of Saturn and Titan



Equality Diversity and Inclusion (EDI) committee updates

We are happy to announce that Dr Ed Gillen has taken up the EDI deputy role, effective immediately. For a full list of EDI members please see *here*

Bias Interrupters is a resource that can help challenge bias. The website has toolkits for individuals as well as for teams and organisations. It presents information based on science, drawing on literature to explain the nature of different biases in different circumstances and the gives practical, tangible examples of how you can challenge these biases.

How runny can a liquid get, ever?

School of Physics and Astronomy researchers have discovered a fundamental lower limit of fluid viscosity. The limit is set by fundamental physical constants including Planck constant and proton-to-electron mass ratio.

These results have been covered by Physics World, please *click here* and Cosmos Magazine, please *click here* to read more

Finding Neverland's Parameters

``Peter Pan'' discs are a recently discovered class of planet-forming disc that survive around ten times longer than is normal (never growing up, hence the name). However, it was unknown just how a disc can survive for so such a great length of time.

The Astronomy Unit's Dr Gavin Coleman and Dr Thomas Haworth published a paper explaining under what circumstances the observed Peter Pan discs can be produced without needing to be replenished. They terms this careful balance of initial disc configuration and environmental influence ``Neverland's Parameters''.

This work was associated by a release to science outlets. To read more please *click here* , the work was also published in *Physics Today* and *Cosmos Magazine*. It has featured in the *SciShow* with more than 1.3 million subscribes. The full paper can be found *here*.

Jobs

We are currently recruiting for a number of positions in the School. For more information please *click here*.

If you have any news for the monthly School newsletter. Please contact Sri - s.kulandaivelu@qmul.ac.uk

SPA Monthly newsletter

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