

“TESSting Stellar Astrophysics” The TASC3/KASC10 Workshop

Conference Programme

All lectures to be held in the Large Lecture Theatre [S02], top floor Poynting Physics, University of Birmingham main campus [building R13 on campus maps]

<http://www.birmingham.ac.uk/Documents/university/edgbaston-campus-map.pdf>

Sunday

18.00 – 20.00 Ice Breaker, Bramall Music Building, University of Birmingham main campus [building R12 on campus maps]

Monday

09.00 – 09.10 Opening, Introduction and Welcome

Setting the scene for TESS and TASC

Chair: Bill Chaplin

09.10 – 09.40 “Unlocking the Secrets of nearby Exoplanets with the Transiting Exoplanet Survey Satellite” George Ricker, MIT [invited review]

09.40 – 10.00 “TESS instrument status update”, Roland Vanderspek, MIT [invited, TBC]

10.00 – 10.30 “TASC target selection and data products”, Hans Kjeldsen, Aarhus [invited]

10.30 – 11.00 Tea, coffee and poster viewing

11.00 – 11.30 “TESS Data Preparation”, Mikkel Lund & Rasmus Handberg, Birmingham & Aarhus [invited]

Theme reviews

Chair: Tim Bedding

11.30 – 12.00 “TESSting Theories of the Structure & Evolution of Planetary Systems”, Courtney Dressing, Caltech [invited review]

12.00 – 12.30 “Current challenges for stellar physics and stellar evolution models”, Maurizio Salaris, Liverpool John Moores [invited review]

12.30 – 13.30 Lunch (buffet)

13.30 – 14.00 “Challenges for understanding stellar evolution in binary/multiple/interacting systems”, Silvia Toonen, Amsterdam [invited review]

14.00 – 14.30 “Stellar Populations & Galactic Archaeology – Open Questions”, Gerry Gilmore, IoA Cambridge [invited review]

14.30 – 15.00 1-minute poster presentations

15.00 – 15.30 Tea, coffee and poster viewing

Theme 1: Challenges for Understanding the Structure and Evolution of Exoplanet Systems

Chair: Dave Latham

15.30 – 16.00 “Astroseismology-Exoplanet Synergies in the TESS Era: What will we learn?” Daniel Huber, Hawaii [invited]

16.00 – 16.30 “Getting the most out of light curves of exoplanet host stars”, Suzanne Aigrain, Oxford [invited]

16.30 – 16.50 “The Construction of the TESS Input Catalog and Exoplanet Search Target List”, Josh Pepper, Lehigh University

16.50 – 17.10 “Using Asteroseismology to Resolve the Mystery of Planet Inflation”, Samuel Grunblatt, Hawaii

17.10 – 17.30 “Massive or not massive that is the question”, Dennis Stello, UNSW

19.00 – Astronomy Mixer, IKON Art Gallery, Birmingham city centre

Tuesday

Chair: Sarbani Basu

09.00 – 09.40 1-minute poster presentations

Theme 2: Challenges for Studies of Stellar Evolution & Stellar Interiors Physics

09.40 – 10.10 “Modelling dynamical processes in stellar interiors in the light of asteroseismic measurements”, Patrick Eggenberger, Geneva [invited]

10.10 – 10.30 “Using quadrupolar mixed modes to probe the internal rotation of red giants”, Sebastien Deheuvels, IRAP Toulouse

10.30 – 11.00 Tea, coffee and poster viewing

11.00 – 11.20 “The era of large-scale measurements of red giant core rotation”, Charlotte Gehan, LESIA Paris Observatory

11.20 – 11.40 “Core and Surface Rotation Rates of Evolved Intermediate Mass Stars”, Jamie Tayar, Ohio State University

11.40 – 12.10 “The impact of magnetic fields on stellar evolution”, Evelyne Alecian, Grenoble [invited]

12.10 – 12.30 “Asteroseismology with a twist: An efficient damping mechanism for oscillations in red giants with magnetised cores”, Shyeh Tjing (Cleo) Loi, DAMTP Cambridge

12.30 – 13.30 Lunch (buffet)

Theme 2: Challenges for Studies of Stellar Evolution & Stellar Interiors Physics (continued...)

Chair: Marie-Jo Goupil

13.30 – 13.50 “Angular momentum transport on the lower main sequence as revealed by γ Doradus stars”, Rhita-Maria Ouazzani, LESIA Paris Observatory

13.50 – 14.10 “Asteroseismic measure of the latitudinal differential rotation”, Othman Benomar, NYU Abu Dhabi

14.10 – 14.30 “Tracking Magnetism and Angular Momentum Loss with Rotating Stellar Populations”, Jennifer van Saders, Carnegie Observatories

14.30 – 14.50 “Mixed modes in red giants: stellar information versus alternative facts”, Benoit Mosser, LESIA Paris Observatory

14.50 – 15.10 “Asteroseismology of 16,000 Kepler red giants: global oscillation parameters, masses and radii”, Jie Yu, University of Sydney

15.10 – 15.30 “Exploring coupling between pressure and gravity modes in red-giant stars”, Saskia Hekker, Max Planck Institute

15.30 – 16.00 Tea, coffee and poster viewing

Theme 2: Challenges for Studies of Stellar Evolution & Stellar Interiors Physics (continued...)

Chair: Steve Kawaler

16.00 – 16.30 “Rumblings in the Stellar Graveyard: White Dwarf Pulsations with K2 and TESS”, JJ Hermes, University North Carolina [invited]

16.30 – 16.50 “Red edge of DAVs and outbursts in cool DAVs”, Jing Luan, UC Berkeley

16.50 – 17.10 “The impact of pre-white dwarf evolution on the asteroseismological inferences of ZZ Ceti stars”, Francisco Cesar De Geronimo, Universidad Nacional de La Plata

17.10 – 17.30 “A Universal approach to the analytical modelling of period spacings in the presence or absence of buoyancy-related glitches”, Margarida Cunha, IA Porto

17.30 – 17.50 “Kepler red-clump stars in the field and in open clusters: constraints on core mixing”, Diego Bossini, University of Birmingham

19.00: Public Lecture (ticket only; see conference website), Large Lecture Theatre [S02], top floor Poynting Physics, University of Birmingham main campus [building R13 on campus maps]

Wednesday

Theme 2: Challenges for Studies of Stellar Evolution & Stellar Interiors Physics (continued...)

Chair: Margarida Cunha

09.00 – 09.20 “Seismic scaling relations 2.0”, Thomas Kallinger, University of Vienna

09.20 – 09.40 “Surface effects in evolved solar-like oscillators”, Warrick Ball, University of Birmingham

09.40 – 10.00 “Seismic estimate of the envelope helium abundance for stars in the Kepler seismic LEGACY sample”, Kuldeep Verma, SAC Aarhus

10.00 – 10.20 “Seismic signatures of magnetic activity in Kepler data: results from a Bayesian peak-bagging analysis of 87 solar-type stars”, Angela Santos, IA Porto

10.20 – 10.50 Tea, coffee and poster viewing

Theme 3: Challenges for Understanding Stellar Evolution in Binary/Multiple/Interacting Systems

Chair: Conny Aerts

10.50 – 11.20 “The potential of TESS for advancing studies of binary systems”, Andrej Prsa, Villanova [invited]

11.20 – 11.40 “Compact objects and hierarchical triples: Kepler delta Scuti stars in binary and multiple systems”, Simon Murphy, University of Sydney

11.40 – 12.00 “Modelling Kepler Red Giants in Eclipsing Binaries: Constraining the Mixing length parameter”, Tanda Li, University of Sydney

Theme 4: Challenges for Stellar Populations and Galactic Archaeology Studies

Chair: Andrea Miglio

12.00 – 12.30 “Stellar population studies with solar like-oscillators: what we have learnt so far, and the promise of TESS”, Luca Casagrande, ANU [invited]

12.30 – Excursion to Warwick Castle (with packed lunch)

Thursday

Theme 4: Challenges for Stellar Populations and Galactic Archaeology Studies (continued...)

Chair: Andrea Miglio

09.00 – 09.30 “Cepheid and RR Lyrae studies with TESS: what could 27 days give us?” Emese Plachy, Konkoly [invited]

09.30 – 09.50 “The First APOKASC Catalog of Kepler Dwarf and Subgiant Stars”, Aldo Serenelli, IEEC-CSIC

09.50 – 10.10 “Non-radial modes in first-overtone RR Lyrae stars – the complete analysis of the OGLE data for the Galactic bulge”, Henryka Netzel, Nicolaus Copernicus, Warsaw

10.10 – 10.30 “Age dissection of the Milky Way disk using asteroseismology”, Victor Silva Aguirre, SAC Aarhus

10.30 – 11.00 Tea, coffee and poster viewing

Parallel Working Group Sessions

11.00 – 11.05 “K2 Guest Observer Cycle 6 Proposals”, Christina Hedges, K2 GO Office

11.05 – 11.10 “Overview of the TESS Guest Investigator programme”, Tom Barclay, NASA Goddard

11.10 – 12.30 Parallel meetings of TASC Working Groups

11.10 – 11.50 Parallel meetings #1 (details TBC)

11.50 – 12.30 Parallel meetings #2 (details TBC)

12.30 – 13.30 Lunch

Special TASC Session

Chair: Hans Kjeldsen

13.30 – 14.00 WG1 & WG2: TESS Exoplanet Hosts & Solar-Type Stars

14.00 – 14.30 WG7: Red Giant Oscillations

14.30 – 15.00 WG3: Oscillating Stars in Clusters

15.00 – 15.30 WG4: Main-Sequence AF Classical Pulsators

15.30 – 16.00 Tea, coffee and poster viewing

16.00 – 16.30 WG5: Main-Sequence OB Classical Pulsators

16.30 – 17.00 WG6: RR Lyrae & Cepheids

17.00 – 17.30 WG8: Compact Pulsators

19.00, for sit-down at 20.00: Conference Dinner, Edgbaston Cricket Ground

Friday

Future Opportunities and Challenges

Chair: Jørgen Christensen-Dalsgaard

09.30 – 10.00 “The Gaia astrometric mission”, Joris de Ridder, KU Leuven [invited]

10.00 – 10.30 “Asteroseismology with PLATO”, Kevin Belkacem, LESIA Paris Observatory [invited]

10.30 – 11.00 Tea, coffee and poster viewing

11.00 – 11.45 Open Plenary Discussion: Challenges for TASC [led by Hans Kjeldsen]

11.45 – 12.15 Summary talk, Yvonne Elsworth, Birmingham [invited]

12.15 – 12.30 Closing