



TASC5/KASC12 program, MIT, Cambridge, MA, USA

Sunday, 21 July 2019

17:30-19:30 Welcome Reception and Registration, Ting Foyer, MIT

Monday, 22 July 2019

08:30-09:00 Registration, Ting Foyer, MIT (2 Amherst St., Cambridge)

***TESS* Mission & Opening (Chair: Nevin Weinberg)**

09:00-09:30 George Ricker (MIT): Searching Near and Far: Transits and Transients from *TESS* (Invited)

09:30-09:45 Jon M. Jenkins (NASA Ames): *TESS* Science Processing Operations Center Pipeline and Data Products

09:45-10:10 Clara Brasseur (STScI): Accessing *TESS* Data Programmatically: A MAST case study (Invited Software Demo)

10:10-10:45 COFFEE BREAK

Early *TESS* observations (Chair: Katrien Kolenberg)

10:45-11:15 Dan Huber (Hawaii): Solar-Like Oscillators with *TESS*: First Results (Invited)

11:15-11:30 Marc Hon (UNSW): First results of the solar-like oscillator yield from *TESS* Full Frame Images

11:30-11:45 Timothy R. White (ANU): The brightest stars observed by *TESS*

11:45-12:00 Warrick H. Ball (Birmingham): What sort of variable is HR2562?

Monday, 22 July 2019, cont.

12:00-13:30 LUNCH on own at local restaurants

13:30-14:00 Earl Bellinger (Aarhus): Experimental tests of stellar pulsation and evolution with *TESS* and SONG (Invited)

Evolutionary Diagnostics (Chair: Katrien Kolenberg)

14:00-14:15 Joel Ong (Yale): Structural and Evolutionary Diagnostics from Asteroseismic Phases

14:15-14:30 James S. Kuszlewicz (Max Planck Institute): Clumpiness: Time-domain classification of Kepler red giant evolutionary states

14:30-15:00 Poster Sparklers I [Mikkel N. Lund (P1), R. Handberg (P2), A. Tkachenko (P3), Nicholas Saunders (P4), Rich Townsend (P5), Gerald Handler (P6), Erich Hartig (P7), Walter E. van Rossem (P8), James S. Kuszlewicz (P9), Jennifer Johnson (P10), Maria Pia Di Mauro (P11), Nathalie Themeßl (P12), Regner Trampedach (P13), Klara Gynther Karlsmose (P14), JJ Hermes (P15), Joseph Guidry (P16), Emil Knudstrup (P17), Zhoujian Zhang (P18)]

15:00-15:30 COFFEE BREAK

Binary Benchmarks (Chair: Jamie Tayar)

15:30-15:45 Daniel R. Hey (Sydney): Forward modelling of pulsating star in binaries

15:45-16:00 Jean McKeever (Yale): Comparison between asteroseismic and dynamical masses of a sample of red giants

16:00-16:15 Nathalie Themeßl (Max Planck Institute): Is it time to retire the Sun as the reference star for determining red giant stellar parameters

16:15-16:30 Sanjay Sekaran (KU Leuven): An eclipse to build a dream on: Detecting g-mode period spacing patterns in eclipsing binaries with pulsating components

Interactive Software Demo (Chair: Jamie Tayar)

16:30-16:55 Andrew Tkachenko (KU Leuven): TESS Data for Asteroseismology (TD'A): a machinery for data processing and variability classification (Invited Software Demo)

19:00-22:00 Young Astronomer's Mixer, Bleacher Bar, Fenway Park (82A Landsdowne St., Boston)

Tuesday, 23 July 2019

Intermediate-Mass Stars (Chair: Gerald Handler)

08:30-09:00 Don Kurtz (UCLan): Results and prospects for the *TESS* main mission studies of main-sequence A to mid-F stars (Invited)

09:00-09:15 Vichi Antoci (Aarhus): The zoo of delta Sct and gamma Dor stars observed with *TESS*

09:15-09:30 Filiz Kahraman Alicavus (Nicolaus Copernicus, Warsaw): Unexpected presence of hot Gamma Doradus and A-F type hybrid pulsators

09:30-09:45 Juan Carlos Suárez (Granada): Estimating large separation and rotational splittings of delta Scuti stars with neural networks

09:45-10:00 Antonio García Hernández (Granada): The period-luminosity-color diagram: identifying the fundamental radial mode in A/F stars with *Kepler* and *Gaia*

10:05-10:45 COFFEE BREAK

10:45-11:15 Tim Bedding (Sydney): High-frequency delta Scuti stars with *TESS* (Invited)

11:15-11:30 Gang Li (Sydney): Gravity and Rossby modes in 600 *Kepler* gamma Doradus stars

11:30-11:45 Joey S. G. Mombarg (KU Leuven): Improving stellar evolution models with atomic diffusion from asteroseismology of intermediate-mass stars

11:45-12:00 Kuldeep Verma (Aarhus): Helium settling in F stars: Constraining turbulent mixing using observed signature of helium ionization

12:00-13:30 LUNCH on own at local restaurants

Tides (Chair: Conny Aerts)

13:30-13:45 Zhao Guo (Penn State): Tidal Asteroseismology: Opportunities and Challenges

13:45-14:00 P. G. Beck (Universität Graz): Testing tidal theory for evolved stars from red-giant binaries observed by *Kepler*

14:00-14:15 Cole Johnston (KU Leuven): High tide as seen by *TESS*: What *TESS* can do for tidal asteroseismology and pulsating binaries

Tuesday, 23 July 2019, cont.

Massive Stars (Chair: Conny Aerts)

14:15-14:45 May Pedersen (KU Leuven): What *TESS* can do for massive stars (Invited)

14:45-15:00 Dominic M. Bowman (KU Leuven): Low-frequency gravity waves in blue supergiants revealed by high-precision *K2* and *TESS* photometry

15:00-15:30 COFFEE

15:30-15:45 Derek Buzasi (FGCU): Multi-Epoch Asteroseismology: A Window Into Evolution of Massive Stars

15:45-16:00 Tao Wu (Yunnan Obs.): A New C-D-like Diagram and the Evolution of SPB Stars

16:00-16:15 Lucas Viani (Yale): Testing Convective Overshoot Using Asteroseismology

Interactive Software Demos (Chair: Conny Aerts)

16:15-16:40 Jessie Dotson (NASA Ames): The lightkurve package for *Kepler* & *TESS* data (Invited Software Demo)

16:40-17:05 Oliver Hall (Birmingham): Accessible asteroseismology with lightkurve (Invited Software Demo)

Wednesday, 24 July 2019

Stellar Activity (Chair: Sarbani Basu)

08:45-09:15 Rachael Roettenbacher (Yale): Continuing the Stellar Activity Revolution with Space-Based Photometry (Invited)

09:15-09:30 Ângela R. G. Santos (SSI): Surface rotation, photometric activity, and active region lifetimes for *Kepler* targets

09:30-09:45 Alexandra E. L. Thomas (Birmingham): Asteroseismic constraints on active latitudes of solar-type stars

09:45-10:00 Savita Mathur (IAC): Where are the modes? Studying the non detection of acoustic modes in solar-like stars observed by *Kepler*

10:00-10:45 COFFEE

Compact Pulsators (Chair: Judi Provencal)

10:45-11:15 Stéphane Charpinet (IRAP Toulouse): First steps toward TESSing ultimate stages of stellar evolution (Invited)

11:15-11:30 M. H. Montgomery (UT Austin): The effect of a variable convection zone on coherence and damping of modes in pulsating white dwarfs

11:30-11:45 Weikai Zong (Beijing Normal): Spaceborne photometry revolution: oscillation mode variability in pulsating hot B subdwarfs and white dwarfs

11:45-12:00 Zach Vanderbosch (UT Austin): Observing Outbursting White Dwarfs in the post-*Kepler* Era

12:00- LUNCH on own at local restaurants

FREE AFTERNOON

Thursday, 25 July 2019

Galactic Archaeology (Chair: Savita Mathur)

08:30-09:00 Cristina Chiappini (AIP, Potsdam): Asteroseismology with *CoRoT*, *Kepler*, *K2* and *TESS*: Impact on Galactic Archaeology (Invited)

09:00-09:15 Dennis Stello (UNSW): Galactic archaeology with *TESS* and *K2*

09:15-09:30 Ditte Slumstrup (Aarhus): The origin of the young alpha-rich stars: The view from *Kepler*, *K2* and *CoRoT*

09:30-10:00 Poster Sparklers II [Sowgata Chowdhury (P19), M. Lares-Martiz (P20), Camilla C. Borre (P21), D.L. Holdsworth (P22), E. Brunsden (P23), Thomas Shutt (P24), A. Derekas (P25), K.R. Pollard (P26), Oliver J. Hall (P27), V. Khalack (P28), Attila Bódi (P29), Pál Szabó (P30), Keaton J. Bell (P31), Alexandra E. L. Thomas (P32), Filipe Pereira (P33), S. Mathur (P34), Nada Jevtic (P35), László Molnár (P36), Maria Pia Di Mauro (P37)]

10:00-10:45 COFFEE

10:45-11:00 Marc H. Pinsonneault (Ohio State): Precision Stellar Astrophysics: Testing Asteroseismic Radii with *Gaia* and Understanding the Differences

11:00-11:15 Samuel Grunblatt (Hawaii): Definitive Effective Temperature and Radius Scales for Asteroseismic Red Giants

11:15-11:30 Tanda Li (Sydney): Good ages in subgiants determined by the asteroseismic modelling

11:30-12:00 Katrien Kolenberg (KU Leuven): The wonderful world of classical pulsators, seen by *TESS* (Invited)

12:00-13:30 LUNCH on own at local restaurants

Rotation (Chair: Rhita-Maria Ouazzani)

13:30-14:00 Jamie Tayar (Hawaii): The Evolution of Stellar Rotation (Invited)

14:00-14:15 Sébastien Deheuvels (CNRS Toulouse): Seismic inference on the radial rotation profile within the envelopes of subgiants and red giants

14:15-14:30 Timothy Van Reeth (KU Leuven): Measuring differential rotation and magnetic fields in A/F-type stars with gravity-mode pulsations

14:30-14:45 Andres Moya (Birmingham): Asteroseismology and machine learning for stellar aging using gyrochronology

14:45-15:30 COFFEE

Thursday, 25 July 2019, cont.

Maximizing the Data (Chair: Christina Hedges)

15:30-15:45 Keaton J. Bell (Max Planck Institute): Fully automated solar-like oscillation detections with the coefficient of variation method

15:45-16:00 Javier Pascual-Granado (Granada): Extraction of pulsation frequencies: separating the wheat from the chaff with fractal analysis

16:00-16:15 Enrico Corsaro (Cantania): FAMED: A new pipeline for fast and automated peak bagging of stellar oscillations. Application to *Kepler* and *TESS* GI proposal stars

16:15-16:30 Guy R. Davies (Birmingham): PBjam: The Open Source Peak Bagging Tool

16:30-16:55 Dan Foreman-Mackey (Flatiron): Gaussian Processes for time series analysis (Invited Software Demo)

19:00-22:00 Conference Dinner, Samberg Center, MIT (50 Memorial Dr., Cambridge)

Friday, 26 July 2019

3D Models (Chair: Jessie Dotson)

09:00-09:15 Andreas Christ Sølvesten Jørgensen (MPIA): Improving 1D stellar evolution codes using 3D simulations of stellar envelopes

09:15-09:30 Yixiao Zhou (ANU): Asteroseismology of Solar-type Stars with 3D Hydrodynamical Stellar Modelling

Interactive Software Demos (Chair: Jessie Dotson)

09:30-09:55 Adina Feinstein (Chicago): Using *eleanor*, an open-source Python package, to extract light curves from the *TESS* Full-Frame Images (Invited Software Demo)

09:55-10:20 Andras Pal (Konkoly): Accurate methods for differential image analysis on *TESS* FFIs (Invited Software Demo)

10:20-10:45 COFFEE

Finding and Exploring Red Giants (Chair: Jessie Dotson)

10:45-11:00 Isabel Colman (Sydney): Image subtraction photometry on *Kepler* open clusters

11:00-11:15 Anthony Noll (CNRS Toulouse): Probing the extension of convective cores with subgiants observed by *Kepler* and *TESS*

11:15-11:30 Nevin N. Weinberg (MIT): Nonlinearly damped oscillation modes in red giants

Asteroseismology of Planet Hosts (Chair: Dan Huber)

11:30-12:00 Vincent Van Eylen (Princeton): Asteroseismology of planet host stars in the *TESS* era (Invited)

12:00-13:30 LUNCH on own at local restaurants

13:30-13:45 Tiago Campante (Porto): *TESS*'s first asteroseismic known hosts

13:45-14:00 Ashley Chontos (Hawaii): A Systematic Search for Asteroseismic Host Stars in *Kepler*, *K2*, and *TESS* Data

14:00-14:15 Martin B. Nielsen (Birmingham): *TESS* Asteroseismology of λ^2 Fornacis

14:15-14:30 Charlotte Gehan (LESIA Paris Obs.): Large-scale analysis of red giant inclinations

14:30-15:00 Sara Seager (MIT): *TESS* Era Astronomy (Invited Closing)

15:00 *End of TASC5/KASC12 Workshop*