

# TESS Science Conference III – Program



## MONDAY, JULY 29

- 9:00 – 9:15 Welcome, SOC chair
- 9:15 – 10:35 Session: **Mission Overview**. Chair: Sam Quinn
- 9:15 – 9:40 **George Ricker** (MIT; Invited Overview Talk) - Title TBD
- 9:40 – 10:05 **Roland Vanderspek** (MIT; Invited Overview Talk) - Title TBD
- 10:05 – 10:20 **Dave Latham** (Center for Astrophysics | Harvard & Smithsonian) - *The role of the TESS follow-up observing program working group*
- 10:20 – 10:35 **Christina Hedges** (NASA GSFC) - *Update from the TESS science support center at NASA GSFC*
- 10:35 – 11:05 Coffee break
- 11:05 – 12:00 Session: **Exoplanets I**. Chair: Gijs Mulders
- 11:05 – 11:30 **Juliette Becker** (University of Wisconsin-Madison; Invited Overview Talk) - *From TESS to Theory: Advancing our understanding of planet formation*
- 11:30 – 11:45 **Madison Brady** (University of Chicago) - *Using TESS targets to characterize the compositions of nearby M dwarf planets*
- 11:45 – 12:00 **Angie Wolfgang** (Eureka Scientific) - *The Magellan-TESS Survey: Holistic characterization of small planets*
- 12:00 – 1:30 Lunch (on own)
- 1:30 – 2:45 Session: **Exoplanets II**. Chair: Juliette Becker
- 1:30 – 1:45 **Mike Lund** (Caltech/IPAC-NExScI) - *ExoFOP: Evolving Support for TESS and Future Missions*
- 1:45 – 2:00 **Pierre-Alexis Roy** (Université de Montréal) - *A paradigm shift in our understanding of sub-Neptunes: JWST transmission spectroscopy reveals that hydrogen and volatiles are mixed in a miscible envelope on sub-Neptunes*
- 2:00 – 2:15 **Benjamin Rackham** (MIT) - *Towards robust corrections for stellar contamination in transmission spectra using HST, JWST, and TESS: first results from two Legacy programs*
- 2:15 – 2:30 **Johanna Teske** (Carnegie Earth & Planets Lab) - *Atmospheres of Small TESS Planets from the JWST COMPASS (Compositions of Mini-Planet Atmospheres for Statistical Study) Program*
- 2:30 – 2:45 **David Armstrong** (University of Warwick) - *A statistical sample of planets in and near the Neptunian Desert revealed with HARPS RVs*
- 2:45 – 3:45 Poster Session 1
- 3:45 – 5:00 Session: **Exoplanets III**. Chair: Sara Seager
- 3:45 – 4:00 **Emma Nabbie** (USQ) - *Transit Timing Variations of TESS Multi-Planet Systems: A Catalog From the First Five Years*
- 4:00 – 4:15 **Joey Rodriguez** (MSU) - *Hot Jupiters With Friends as a Guide for Planetary Evolution*
- 4:15 – 4:30 **Ashley Chontos** (Princeton University) - *13 New TESS Planets and Homogeneous Properties for 21 Evolved Systems*
- 4:30 – 4:45 **Elisabeth Newton** (Dartmouth College) - *Exoplanets in THYME*
- 4:45 – 5:00 **Alex Polanski** (University of Kansas) - *Unveiling Orbital Architectures with the TESS-Keck Survey*

# TUESDAY, JULY 30

9:00 – 10:25 **Session: Stellar Astrophysics I.** Chair: Conny Aerts

9:00 – 9:25 **Dan Hey** (UH; Invited Overview Talk) - Title TBD

9:25 – 9:40 **Ward Howard** (UCB) - *Unlocking the potential of TESS to constrain the radiation environment of every M dwarf with simultaneous 20 s NUV and red optical flare observations*

9:40 – 9:55 **Luke Bouma** (Caltech) - *Transient corotating gas clumps around young low-mass stars*

9:55 – 10:10 **Catherine Espaillat** (BU) - *Catching protoplanetary disk dissipation with TESS and JWST*

10:10 – 10:25 **Aylin Garcia Soto** (Dartmouth College) - *Contemporaneous observations of H<sub>α</sub>, H<sub>β</sub> and H<sub>γ</sub> luminosities and photometric amplitudes for M dwarfs*

10:25 – 10:55 Coffee break

10:55 – 11:55 **Session: Stellar Astrophysics II.** Chair: JJ Hermes

10:55 – 11:10 **Yuto Kajikiya** (Tokyo Institute of Technology) - *Simultaneous photometry and spectroscopy of stellar flare on M dwarf YZ CMi using TESS and Seimei*

11:10 – 11:25 **Rafael García** (DAP/CEA-Saclay) - *Measuring rotation periods and stellar oscillations in red giants with TESS data*

11:25 – 11:40 **Lyra Cao** (Vanderbilt University) - *TESS light curve amplitudes, rotation periods, and star spots in lower main sequence stars*

11:40 – 11:55 **Joel Ong** (UH) - *Asteroseismic identification and characterization of a rapidly rotating engulfment candidate*

11:55 – 1:30 Lunch (on own)

1:30 – 3:00 **Session: Exoplanets IV.** Chair: Hugh Osborn

1:30 – 1:45 **Rachel Fernandes** (Pennsylvania State University) - *Tracing the evolution of short-period exoplanets: Insights from young stellar clusters*

1:45 – 2:00 **Sydney Vach** (USQ) - *The occurrence and evolution of small young planets in comoving populations with TESS*

2:00 – 2:15 **Madyson Barber** (UNC Chapel Hill) - *A 3 Myr transiting planet in the presence of a misaligned transitional disk*

2:15 – 2:30 **Nardiello Domenico** (Università degli Studi di Padova (UNIPD)) - *Young planets with TESS*

2:30 – 2:45 **Louise Dyregaard Nielsen** (Munich University) - *Tracing planet formation with the youngest transiting exoplanet candidate*

2:45 – 3:00 **John Livingston** (ABC/NAOJ) - *Low densities, eccentricities, and entropies in a young, compact multi-planet system*

3:00 – 3:30 Coffee break

3:30 – 5:00 **Session: Data Analysis I.** Chair: Roland Vanderspek

3:30 – 3:45 **Douglas Caldwell** (SETI Institute) - *SPOC light curves, target pixel files, and other goodies in the extended mission*

3:45 – 4:00 **Glen Petitpas** (MIT) - *Updates to QLP and TEV from the TESS science office at MIT*

4:00 – 4:15 **Daniel Muthukrishna** (MIT) - *Modeling and removal of scattered light in TESS full frame images using generative AI*

4:15 – 4:30 **Lionel Garcia** (Flatiron Institute, CCA) - *Detection of transiting exoplanets around active stars with nuance*

4:30 – 5:00 State of the profession talk: **Jonathan Chou** (MIT) – *Mental health in academia*

# WEDNESDAY, JULY 31

- 9:00 – 10:10 **Session: [Extragalactic Astrophysics](#). Chair: Michael Fausnaugh**  
9:00 – 9:25 **Ben Shappee** (UH; Invited Overview Talk) - Title TBD  
9:25 – 9:40 **Rahul Jayaraman** (MIT) - *Using TESS to study optical counterparts to gamma-ray bursts*  
9:40 – 9:55 **Derek Buzasi** (Florida Gulf Coast University) - *Searching for GRB precursors with TESS*  
9:55 – 10:10 **Armin Rest** (STScI) - *TESS light curves with SYNDIFF*
- 10:10 – 10:40 **Coffee break**
- 10:40 – 11:55 **Session: [Extragalactic & Galactic Astrophysics](#). Chair: Michael Fausnaugh**  
10:40 – 10:55 **Qinan Wang** (Johns Hopkins University) - *Searching for early excess of SNe Ia from Kepler and TESS*  
10:55 – 11:10 **Kirill Sokolovsky** (University of Illinois Urbana-Champaign) - *TEQUILA SHOTS: An image subtraction pipeline for AGN and transient science with TESS*  
11:10 – 11:25 **Rayna Rampalli** (Dartmouth College) - *Wrinkles in time: Tracing spiral arm passages using gyrochronology*  
11:25 – 11:40 **Lizhou Sha** (University of Wisconsin-Madison) - *Confirming the tidal tails of the young open cluster Blanco 1 with TESS rotation periods*  
11:40 – 11:55 **Christopher Lindsay** (Yale University) - *Asteroseismic modeling of metal-poor, alpha-rich giants in the Halo*
- 11:55 – 1:30 **Lunch (on own)**
- 1:30 – 3:00 **Parallel Session 1 (Kresge Little): [Extragalactic Transients Science with TESS](#), Organizer: Qinan Wang**  
1:30 – 1:45 **Rahul Jayaraman** (MIT) - *Enabling multi-messenger astrophysics with TESS: Infrastructure and initial results*  
1:45 – 2:00 **Ryan Ridden-Harper** (University of Canterbury) - *Uncovering the dynamic universe with TESS*  
2:00 – 2:15 **Daniel Muthukrishna** (MIT) - *Predicting the age of supernovae with recurrent neural networks*  
2:15 – 2:30 **Michael Fausnaugh** (TTU) - *Properties and progenitor systems of Type Ia Supernovae observed by TESS*  
2:30 – 2:45 **Zachary Lane** (University of Canterbury) - *Photometric and spectroscopic time-series analysis of SN2019vxxm*  
2:45 – 3:00 **Ryne Dingler** (Texas A&M University) - *A detailed view of relativistic jets: TESS Observations of gamma-ray emitting blazars*
- 1:30 – 3:00 **Parallel Session 2 (Kresge Main): [Cooler Transiting Exoplanets: A long-term vision for TESS](#), Organizer: Sam Gill**  
1:30 – 1:35 Introduction - **Sam Gill** (University of Warwick)  
1:35 – 1:50 **Toby Rodel** (Queen's University Belfast) - *Putting a TlaRA on SPOC: long-period planet yields from TESS*  
1:50 – 2:05 **Katharine Hesse** (MIT) - *Evolution of the TOI Catalog with the TESS Extended Missions*  
2:05 – 2:20 **Victoria DiTomasso** (Center for Astrophysics | Harvard & Smithsonian) - *The Lone Transit: Characterizing a Long-Period Neptune-Sized Exoplanet, HD60779b*  
2:20 – 2:35 **Eric Gaidos** (UH) - *Probing the Runaway Greenhouse Limit with Long-Period Planets from TESS*  
2:35 – 3:00 **Panel - Daniel Bayliss** (University of Warwick), **Hugh Osborn** (University of Bern), **Amy Tuson** (UMBC/NASA GSFC), **Diana Dragomir** (UNM)
- 3:00 – 3:30 **Coffee break**
- 3:30 – 5:00 **Parallel Session 3 (Kresge Little): [Brown dwarfs from the TESS mission and beyond](#), Organizer: Theron Carmichael**  
3:30 – 3:45 **Jan Subjak** (Center for Astrophysics | Harvard & Smithsonian) - *From giant planet to brown dwarf: evidence for deuterium burning in old age?*  
3:45 – 4:00 **Yuchen (Elina) Zhang** (UH) - *Characterizing Old and Young Transiting Brown Dwarfs in the "Mass Desert"*

- 4:00 – 4:15 **Geza Kovacs** (Konkoly Observatory) - *Detection of Secondary Eclipses in Two Brown Dwarf-hosting Systems in the K2 Fields: Further Support for Over-Luminosities*
- 4:15 – 4:30 **Lauren Doyle** (University of Warwick) - *The First Spin-Orbit Alignment of an M dwarf-Brown Dwarf System*
- 4:30 – 4:45 **Akihiko Fukui** (The University of Tokyo) - *TOI-5278B: An Ultrashort-Period, Ultracool Dwarf Transiting an M dwarf*
- 4:45 – 5:00 **David W. Latham** (Center for Astrophysics | Harvard & Smithsonian) - *Orbits from TRES for two dozen transiting companions near the substellar limit*
- 3:30 – 5:00 **Parallel Session 4 (Kresge Main): TESS exoplanet demographics, Organizer: Jessie Christiansen**
- 3:30 – 3:45 **Michele Kunimoto** (UCB) - *LEO-Vetter Demonstration*
- 3:45 – 4:00 **Steven Giacalone** (Caltech) - *TRICERATOPS Demonstration*
- 4:00 – 4:05 **Gijs Mulders** (Universidad Adolfo Ibáñez) - *The Occurrence of TESS Super-Earths in Systems with Cold Giant Planets*
- 4:05 – 4:10 **Jason Eastman** (Center for Astrophysics | Harvard & Smithsonian) - *A homogeneous re-analysis of all Kepler and TESS planet candidates*
- 4:10 – 4:15 **Sam Grunblatt** (Johns Hopkins University) - *The Population of Planets Transiting Subgiant and Giant Stars Revealed by TESS*
- 4:15 – 4:20 **Sharon Wang** (Tsinghua University) - *GPASS: Giant Planets Around Small Stars*
- 4:20 – 4:25 **TBC**
- 4:25 – 4:30 **TBC**
- 4:30 – 5:00 **Panel** – Members TBD

## THURSDAY, AUGUST 1

- 9:00 – 10:30 **Session: TESS Users Committee** (Session's program TBD)
- 10:30 – 11:00 **Coffee break**
- 11:00 – 11:55 **Session: Solar System Science. Chair: Malena Rice**
- 11:00 – 11:25 **Deb Woods** (MIT/Lincoln Labs; Invited Overview Talk) - *Contributions of TESS to Solar System Science*
- 11:25 – 11:40 **Nora Takacs** (Konkoly Observatory) - *Exploring the physical properties of Jupiter Trojans and Hildas with the TESS space telescope*
- 11:40 – 11:55 **Ben Cassese** (Columbia University) - *Initial results of a TESS outer solar system survey*
- 11:55 – 1:30 **Lunch (on own)**
- 1:30 – 2:45 **Session: Exoplanets V. Chair: Andras Pal**
- 1:30 – 1:45 **Nicholas Saunders** (UH) - *Evolved and aligned: Newly discovered TESS hot Jupiters demonstrate rapid obliquity damping after the main sequence*
- 1:45 – 2:00 **Alexander Venner** (USQ) - *Seeing beyond the shadows: Accessing TESS system architectures with astrometry*
- 2:00 – 2:15 **Xianyu Wang** (Indiana University) - *Prevalent spin-orbit alignment of warm Jupiters in single-star systems: evident even around hot stars*
- 2:15 – 2:30 **Steven Giacalone** (Caltech) - *The origins of close-in brown dwarfs from the stellar obliquity distribution*
- 2:30 – 2:45 **Mutian Wang** (Nanjing University) - *Photo-dynamical analysis of circumbinary multi-planet system TOI-1338: a fully coplanar configuration with a puffy planet*

- 2:45 – 3:45 **Poster Session 2**
- 3:45 – 5:00 **Session: Stellar Astrophysics III. Chair: Marc Hon**
- 3:45 – 4:00 **Zitao Lin** (Tsinghua University) - *Revealing imprints of tidal evolution and radius inflation with TESS transiting brown dwarfs*
- 4:00 – 4:15 **Dominick Rowan** (The Ohio State University) - *Measuring fundamental stellar parameters with eclipsing binaries*
- 4:15 – 4:30 **Masafumi Niwano** (Tokyo Tech) - *Possible anti-correlations between pulsation amplitudes and the disk growth of Be stars in giant-outbursting Be X-ray binaries*
- 4:30 – 4:45 **Linhao Ma** (Princeton University) - *Variability of blue supergiants in the LMC with TESS*
- 4:45 – 5:00 **Shishir Dholakia** (USQ) - *Catalog of stellar companions from pulsation timing in first four years TESS*

## FRIDAY, AUGUST 2

- 9:00 – 10:15 **Session: Data Analysis II. Chair: Michelle Kunimoto**
- 9:00 – 9:15 **Te Han** (UC Irvine) - *TESS-Gaia Light Curve (TGLC): high-precision, dilution-free TESS FFI light curves*
- 9:15 – 9:30 **Aviv Ofir** (Weizmann Institute of Science) - *Systematic-errors reduction in TESS and JWST data*
- 9:30 – 9:45 **Ryan Ridden-Harper** (University of Canterbury) - *TESSreduce: Extracting high quality calibrated PSF photometry from TESS*
- 9:45 – 10:00 **David Rapetti** (USRA/NASA Ames) - *Comparing and automatically optimizing the performance of systematic error correctors for TESS light curves*
- 10:00 – 10:15 **Tyler Pritchard** (UMD/NASA GSFC) - *TESSVectors: easy spacecraft based de-trending for the community*
- 10:15 – 10:45 **Coffee break**
- 10:45 – 12:00 **Session: Synergies I. Chair: Nicole Schanche**
- 10:45 – 11:00 **Vikash Singh** (INAF - Osservatorio Astrofisico di Catania) - *CHEOPS-TESS occultations of KELT-20 b*
- 11:00 – 11:15 **Christopher Mann** (NRC-HAA) - *NEOSSat and ORACLE: Unshrouding TESS's most challenging exoplanet candidates*
- 11:15 – 11:30 **Conny Aerts** (KU Leuven) - *TESSting Gaia's discovery of ~60,000 new nonradial pulsators: a novel pathway to ensemble asteroseismology of massive stars*
- 11:30 – 11:45 **Mayuko Mori** (Astrobiology Center) - *Multi-band starspot characterization by synergy of TESS and ground-based telescopes.*
- 11:45 – 12:00 **Daniel Huber** (UH) - *TESS 20-Second data as a pathfinder for the Habitable Worlds Observatory*
- 12:00 – 1:30 **Lunch (on own)**
- 1:30 – 3:00 **Session: Exoplanets VI. Chair: Andrew Vanderburg**
- 1:30 – 1:45 **Mallory Harris** (UNM) - *Microlensing exoplanet candidate with TESS*
- 1:45 – 2:00 **Bob Aloisi** (University of Wisconsin - Madison) - *A search for habitable-zone planets and their precursors orbiting white dwarf stars*
- 2:00 – 2:15 **Sydney Jenkins** (MIT) - *JWST follow-up of first TESS planet transiting a white dwarf*
- 2:15 – 2:30 **Fintan Eeles-Nolle** (University of Warwick) - *Stellar multiplicity in and around the Neptunian desert*
- 2:30 – 2:45 **Tyler Fairnington** (USQ) - *A formation dichotomy revealed in the eccentricity distribution of TESS small planets*
- 2:45 – 3:00 **Noah Vowell** (MSU) - *Using transiting brown dwarfs to define the planetary mass limit*
- 3:00 – 3:30 **Coffee break**
- 3:30 – 5:00 **Session: Synergies II. Chair: Avi Shporer**

- 3:30 – 3:45 **Billy Edwards** (SRON, Netherlands Institute for Space Research) - *Population studies of exoplanet atmospheres with ESA-Ariel: Current approach to target selection and the impact of TESS*
- 3:45 – 4:00 **Marc Pinsonneault** (Ohio State University) - *Red giant asteroseismology in TESS and Roman*
- 4:00 – 4:15 **Hugh Osborn** (University of Bern) - *Unlocking long-period planets with CHEOPS: Detection of a resonant sextuplet of sub-Neptunes orbiting HD110067*
- 4:15 – 4:30 **Giampaolo Piotto** (Universita' di Padova) - *The PLATO Mission – An overview*
- 4:30 – 4:45 **Yoshi Eschen** (University of Warwick) - *Viewing the PLATO field through the lenses of TESS*
- 4:45 – 5:00 **Ben Hord** (NASA GSFC) - *NASA's Pandora SmallSat Mission: Multiwavelength characterization of exoplanets and their host stars*