TESS Sci Con I - Talk Program

SUNDAY, 28 JULY

17:00 - 19:00 Opening Reception, Kresge Auditorium Lobby

MONDAY, 29 JULY

8:00-8:45 Registration

8:45-9:00 Welcome, SOC chairs

9:00-10:15 Session: Mission Overview. Chair: ***Josh Winn***

9:00-9:30 **George Ricker:** The TESS Mission: History, Present Status, and Future Prospects (30 min)
9:30-9:45 **Roland Vanderspek:** Year 2 Pointing and Lessons Learned from Year 1
9:45-10:00 **Natalia Guerrero:** TESS Objects of Interest Catalog: Sectors 1-6
10:00-10:15 **David Latham:** Masses and Radii of Exoplanets from Kepler, K2, and TESS

10:15-10:45 Coffee break

10:45-12:00 Session: Small Planets. Chair: ***Jennifer Burt***

10:45-11:00 **Louise D. Nielsen:** TOI-125: Precise Mass Determination of Three Level-1 TESS Planets
11:00-11:15 **James Jenkins:** TESS Discovery of the First Ultra-Hot Neptune
11:15-11:30 **Jennifer Winters:** Three Red Suns in the Sky of the Nearest Planet Transiting an M Dwarf
11:30-11:45 **Francois Bouchy:** Mass Measurement with ESPRESSO of Rocky Worlds Detected by TESS
11:45-12:00 **Kristo Ment:** Uniting TESS Data and a Decade of Ground-based Observations by the MEarth Project

12:00-13:30 Lunch (on own)

13:30-14:45 Session: Asteroseismology. Chair: ***Dominic Bowman***

13:30-14:00 **Conny Aerts:** TESS Highlights in Asteroseismology and Stellar Astrophysics: Latest News from Last Week's TASC5 (30 min)
14:00-14:15 **Tim Bedding:** Asteroseismology of High-Frequency Delta Scuti Stars with TESS
14:15-14:30 **Daniel Huber:** Asteroseismology of Solar-Type Stars with TESS
14:30-14:45 **Cole Johnston:** Coupling Binarity and Asteroseismology: High-Precision Core Masses and Ages from Kepler and TESS

14:45-15:15 Coffee break

15:15-16:30 Session: Transient. Chair: ***Patrick Valally***

15:15-15:30 **Michael Fausnaugh:** Early Time Light Curves of Type Ia Supernovae Observed with TESS
15:30-15:45 **Ryan Ridden-Harper:** Discovering Rapid Transients in the TESS Background Survey
15:45-16:00 **Anna Payne:** The Spanish Dancer Puts on a Show: The 2018 Outburst of NGC 1566
16:00-16:15 **Thomas Holoien:** ASASSN-19bt: The First TDE Detected by TESS
16:15-16:30 **Krista Lynne Smith:** The TESS-Fermi Blazars

16:30-18:30 Poster Reception I

TUESDAY, 30 JULY

9:00-10:00 *Session: Asteroseismology. Chair:* ***Conny Aerts***

9:00-9:15 **JJ Hermes:** First Light on Pulsating Compact Objects with TESS
9:15-9:30 **Ashley Chontos:** Exoplanets Orbiting Asteroseismic TESS Stars
9:30-9:45 **Jamie Tayar:** Calibrating Stellar Models in the TESS Era
9:45-10:00 **Dominic M. Bowman:** Low-Frequency Gravity Waves in Massive Stars Revealed by High Precision K2 and TESS Photometry

10:00-10:30 *Coffee break*

10:30-12:00 *Session: Large Planets. Chair:* ***Chelsea Huang***

10:30-10:45 **Stephen Kane:** TESS Observations of Known Exoplanetary Systems
10:45-11:00 **Joey Rodriguez:** Using TESS to Understand Giant Planet Migration
11:00-11:15 **Nora Eisner:** Planet Hunters TESS: People-powered Exoplanet Discovery in TESS Data
11:15-11:30 **Jason Curtis:** Searching for Young Exoplanets in Dispersed Clusters Guided by Gyrochronology
11:30-11:45 **Theron Carmichael:** Using TESS to Understand the Brown Dwarf Population
11:45-12:00 **Luke Bouma:** The Early Arrival of WASP-4b

12:00-13:30 *Lunch (on own)*

13:30-14:45 *Session: Atmospheric Characterization. Chair:* ***Sara Seager***

13:30-13:45 **Ian Wong:** Phase Curve Studies of Known Transiting Systems with TESS
13:45-14:00 **Ian Crossfield:** Spitzer Transits and Eclipses of TESS Planets
14:00-14:15 **Zahra Essack:** Low Albedo Surfaces of Lava Worlds
14:15-14:30 **Laura Kreidberg:** The Thermal Phase Curve of LHS 3844b
14:30-14:45 **James Owen:** Testing the Photoevaporation Model with TESS Multis

14:45-15:15 *Coffee break*

15:15-16:45 *Session: Stellar Activity and Binary Stars. Chair:* ***Elisabeth Newton***

15:15-15:30 **Stefanie Raetz:** The Rotation-Activity Relation of M dwarfs: From K2 to TESS and PLATO
15:30-15:45 **Amber Medina:** Flare Statistics and High Resolution Spectroscopy of a Volume Complete Sample of Mid-to-Late M dwarfs within 15 Parsecs
15:45-16:00 **Zhao Guo:** The Variability of TESS Eclipsing Binaries
16:00-16:15 **Travis Metcalfe:** Disentangling the Rotation and Activity Variations of 94 Aqr from Asteroseismology with TESS
16:15-16:30 **Eliana Amazo-Gomez:** Comprehensive Analysis of A Young Sun-like star: Rotation Period, Variability, Activity & Magnetism
16:30-16:45 **Agnieszka Cieplak:** Photometric Lightcurve Signatures of Black Holes and Neutron Stars with Main Sequence Stellar Companions

20:00-21:00 *Songs from Extrasolar Spaces: An Evening of Music Inspired by TESS*
Free Public Lecture and Concert in Kresge Auditorium (RSVP via conference website required).

20:00-20:30 Public Lecture with speakers George Ricker, Sara Seager, and Natalia Guerrero
20:30-21:00 Program of music by Boston's Lorelei Ensemble, featuring works by composers Meredith Monk and Molly Herron, and premiering new works by Elena Ruehr and John Harbison.

WEDNESDAY, 31 JULY

9:00-10:15 *Session: Small Planets and Occurrence Rates. Chair:* ***Jessie Christiansen***

9:00-9:15 **George Zhou:** The Frequency of Hot Jupiters across The HR Diagram from TESS
9:15-9:30 **Drake Deming:** A Bayesian Look at the Planet Occurrence Rate from TESS
9:30-9:45 **Lizhou Sha:** Does WASP-47e Have a Friend?
9:45-10:00 **Diana Dragomir:** The HD 21749 system: a Temperate sub-Neptune and the First Earth-sized Planet Discovered with TESS
10:00-10:15 **Enric Palle:** A Planetary System Around the Nearby M dwarf Gl 357

10:15-10:45 *Coffee break*

10:45-12:00 *Session: Young Stars and Data Analysis. Chair:* ***Sam Quinn***

10:45-11:00 **Elisabeth Newton:** DS Tuc Ab: a 45 Myr Old Planet in the Tuc-Hor Young Moving Group
11:00-11:15 **Klaus Hodapp:** The EXor Outburst Lightcurve of ESO-Ha 99
11:15-11:45 **Chelsea Huang:** Planets from the TESS Full Frame Images (30 min)
11:45-12:00 **Jon Jenkins:** TESS Science Processing Operations Center Pipeline and Data Products

12:00-13:30 *Lunch (on own)*

13:30-14:45 *Splinter Sessions*

Two parallel splinter sessions featuring short talks and panel discussions.

Splinter Session I: Count all the Photons! Best Practices for Extracting Accurate Light Curves for all Objects in the TESS FFIs

Lead organizer: **Ben Montet**
Location: Kresge Auditorium

13:30-13:35 **Ben Montet:** Introductory Remarks
13:35-13:50 **Derek Busazi:** Light Curves for Asteroseismology with the TASOC Pipeline
13:50-14:05 **Adina Feinstein:** Light Curves for Planet Searches with Eleanor
14:05-14:20 **Marco Montalto:** Analyzing the Brightest Dwarf and Sub-giant Stars in the Sky
14:20-14:45 Panel and Group Discussion: How do we Achieve the Best Photometry Possible in FFI Data? How do we Preserve as much Astrophysics as Possible?

Splinter Session II: Strategies for confirmation and characterization of long period planets in TESS

Lead organizer: **Steven Villanueva Jr.**
Location: Stratton Student Center, Room 491

a) Identification Sub-Session, moderated by **Diana Dragomir**

13:30-13:45 **Steven Villanueva Jr.:** Searching for Long-Period Planets in TESS
13:45-14:00 **Xinyu Yao:** Precovery of TESS Single Transits with KELT
14:00-14:15 **Juliette Becker:** Using Dynamics to Determine Observationally Ill-Constrained Planet Parameters
14:15-14:45 Panel Discussion with speakers **Nora Eisner, Chelsea Huang, Andrew Vanderburg**

14:45-15:15 *Coffee break*

15:15-16:30 *Splinter Sessions - continued*

Two parallel splinter sessions featuring short talks and panel discussions.

Splinter Session I: Count all the Photons! Best Practices for Extracting Accurate Light Curves for all Objects in the TESS FFIs

Lead organizer: **Ben Montet**
Location: Kresge Auditorium

15:15-15:30 **Nardiello Domenico:** A PSF-Based Approach to TESS Stellar Clusters
15:30-15:45 **Tim White:** Observing the Brightest Stars with TESS?
15:45-16:25 Panel and Group Discussion: Where are the Next, Best Opportunities for Science in the FFIs? How do we Prepare for the Extended Mission?
16:25-16:30 **Ben Montet:** Closing Remarks and Future Steps

Splinter Session II: Strategies for Confirmation and Characterization of Long Period Planets in TESS

Lead organizer: **Steven Villanueva Jr.**
Location: Stratton Student Center, Room 491

b) Follow-up Sub-Session, moderated by **Steven Villanueva Jr.**
15:15-15:30 **Belinda Nicholson:** Single Transit Follow up with Minerva-Australis
15:30-15:45 **Carl Ziegler:** One Hit Wonders: Hunting for the Longest Period TESS Planets
15:45-16:00 **Jennifer Burt:** The Many Uses of Archival Radial Velocities for Characterizing Long Period TESS Planets
16:00-16:30 Panel Discussion with speakers **Diana Dragomir, Daniel Bayliss, Paul Dalba**

16:30-18:30 *Poster Reception*

THURSDAY, 1 AUGUST

9:00-10:30 *Session: Stellar Activity and Binary Stars. Chair:* ***TBD***

9:00-9:30 **Huiqin Yang:** The New Expression on Activity-Rotation Relation across H-R Diagram (30 min)
9:30-9:45 **Zhuchang Zhan:** Complex Rotational Modulation of Rapidly Rotating M Stars Observed with TESS
9:45-10:00 **Sarah Jane Schmidt:** Initial Results From the TESS Ultracool Dwarf Survey
10:00-10:15 **Maximilian Guenther:** Stellar Flares and Habitable(?) M-dwarf Worlds: Exploring a New Sample with TESS
10:15-10:30 **Geisa Ponte:** Photometric variability and magnetic activity in young suns

10:30-11:00 *Coffee break*

11:00-12:30 *Session: Solar System. Chair:* ***Ian Wong***

11:00-11:15 **Ben Montet:** Summary of Data Analysis Splinter Session
11:15-11:30 **Steven Villanueva:** Summary of Single Transits Splinter Session
11:30-12:00 **Andras Pal:** TESS in the Solar System (30 min)
12:00-12:15 **Deborah Woods:** Asteroid Detection in TESS Full Frame Images
12:15-12:30 **Matt Holman:** A TESS Search for Distant Planets

12:30-14:00 *Lunch (on own)*

14:00-15:00 *Session: Synergies with TESS. Chair:* ***Enric Palle***

14:00-14:15 **Kate Isaak:** CHEOPS: Characterising ExOPlanet Satellite – A Mission Overview
14:15-14:30 **Eliza Kempton:** How to Determine Whether M-Dwarf Terrestrial Planets Possess Atmospheres
14:30-14:45 **Surangkhana Rukdee:** TARdYS: an Upcoming Exoplanet Hunter in Southern Hemisphere
14:45-15:00 **Juliana Garcia-Mejia:** The Tierras Observatory: An Ultra-Precise Photometer to Characterize Nearby Terrestrial Exoplanets

15:00-15:30 *Coffee break*

15:30-16:45 *Session: TESS Follow-up. Chair:* ***Dave Ciardi***

15:30-15:45 **Ryan Cloutier:** Present and Future Efforts for the PRV Characterization of Southern TESS Planets Through the HARPS M dwarf Program
15:45-16:00 **Rob Wittenmyer:** MINERVA-Australis: A Southern TESS Follow-up Machine
16:00-16:15 **Johanna Teske:** The Magellan-TESS Survey
16:15-16:30 **Karen Collins:** TFOP SG1 Ground-based Time-series Photometry: Goals, Status, Results and Your TESS Paper
16:30-16:45 **Elisabeth Matthews:** High-Resolution Follow-up of TESS Candidate Planets with 8m-class Telescopes

FRIDAY, 2 AUGUST

The last day of the TESS Science Conference will be dedicated to a symposium focused on the future of exoplanet research. By “future” we mean not just the missions currently under discussion but the science themes that will be important 20+ years from now. To explore this topic we have convened four panels of young scientific leaders to share their thoughts through an interactive discussion with the audience.

09:00-10:15 *Biosignatures and Life in General. Chair:* ***Stephen Kane***
Searching for life on other planets has moved from hypothetical conversations and become something that can be studied scientifically. To do so requires quantifying what one might be able to measure and what it might mean. With this understanding someday we hope to take your favorite planet from a science fiction book and see if it can exist and might even be out there somewhere.
Talks and Panel: **Shawn Domagal-Goldman, Janusz Petkowski, Paul Rimmer, Rafal Szabla, Sara Walker**

10:15-10:45 *Coffee break*

10:45-12:00 *Planets Themselves. Chair:* ***Clara Moskowitz***
If we want to look for life, first we need to understand the planets we are discovering. This panel will look at the wide diversity of planets that have been (or might be) discovered and what that tells us about planets in general and even about our own Earth. Each glimpse of a planet will give us deeper insight into planetary formation, evolution, structure, and atmospheres. Taken together, these insights might tell us where to look next.
Talks and Panel: **Sarah Hörst, Leslie Rogers, Oliver Shorttle, Cayman Unterborn**

12:00-12:15 *Talks by poster competition winners*

12:15-13:45 *Lunch (on own)*

13:45-15:00 *Planetary Architectures. Chair:* ***Chris Martin***
Looking at where planets come from may be just as informative as studying planets themselves. By better understanding the stars that planets orbit and the clouds of dust and gas that they come from, we may develop better ways to choose targets on which to invest telescope time.
Talks and Panel: **Juliette Becker, Marta Brian, Courtney Dressing, Meredith MacGregor**

15:00-15:30 *Coffee break*

15:30-16:30 *Techniques. Chair:* ***Johanna Teske***
Every effort to better understand planets requires new and improved techniques to observe planets and their systems. This panel will look at which methods have been successful, which show promise, and what we might be able to imagine in the decades to come.
Talks and Panel: **Jennifer Burt, Jessie Christiansen, Becky Jensen-Clem**

16:30-18:30 *Closing Reception, Kresge Auditorium Lobby*