

KITP Conference: Planet-Star Connections in the Era of TESS and Gaia

(May 20-24, 2019)

**Coordinators: Rebekah Dawson, Jim Fuller, Daniel Huber,
Katja Poppenhaeger**

Monday, May 20, 2019

Precision Exoplanets with Asteroseismology, Chair: Daniel Huber (U Hawaii)

8:50am	Mark Bowick (KITP)	Welcome
9:00am	Vincent Van Eylen (Princeton)	What asteroseismology can do for exoplanets
9:30am	Angela Santos (STScI)	Seismic signatures of magnetic activity in solar-type stars
10:00am	J. Christensen-Dalsgaard (Aarhus)	Stellar modeling and asteroseismology
10:30am		Morning Break

Close-in Planetary Radii, Chair: Diana Dragomir (MIT)

11:00am	Angie Wolfgang (Penn State)	Data-driven planetary radii
11:30am	Travis Berger (U of Hawaii)	Precise Characterization of Kepler Stars and Planets Using Gaia DR2
11:45am	James Owen (Imperial)	Sculpting planet radii with atmospheric escape
12:15pm		Lunch Break

Cool Dwarf Seismology, Chair: Daniel Huber (U Hawaii)

1:45pm	Hans Kjeldsen (Aarhus)	Low SNR detections of p-modes: Using asteroseismology to characterize a large number of TESS host stars
2:15pm	Tim Bedding (U Sydney)	The Next Frontiers for Asteroseismology
2:45pm	Bill Chaplin (U Birmingham)	Asteroseismology of planet hosts: summary and future challenges
3:15pm		Afternoon Break
3:45pm	Panel discussion{panel1}	Stellar properties, an exoplaneteer's wishlist

Stellar Characterization and Planetary Implications, Chair: Benjamin Montet (U Chicago)

4:15pm Allison Youngblood (NASA Goddard) Ultraviolet Emission from M Dwarfs during Quiescence and Flare
 4:45pm Ekaterina Ilin (AIP) Stellar magnetic evolution: Flaring activity in K2 Open Clusters
 5:00pm Eric Gaidos (U Hawaii) The Protoplanet-Star Connection
 5:30pm **SHUTTLE TO BWSCI**

Tuesday, May 21, 2019

Stellar Activity and Rotation, Chair: Katja Poppenhaeager (AIP)

9:00am Elisabeth Newton (Dartmouth) The evolution of rotation and magnetic activity in M dwarfs
 9:30am Raphaelle Haywood (Harvard) What can we learn from the Sun?
 10:00am Cecilia Garraffo (Harvard) Stellar Spin to Planetary Atmospheres
 10:30am **Morning Break**

11:00am Jennifer van Saders (U Hawaii) The right tool for the job: Understanding the limits and potential of period-age and activity-age relations.
 11:30am Ruth Angus (Columbia) Measuring stellar ages from light curves
 12:00pm Panel discussion{panel2} Stellar activity: Friend or foe?
 12:30pm **Lunch Break**

Orbital Dynamics and Tidal Evolution, Chair: Jack Lissauer (NASA Ames)

2:00pm Smadar Naoz (UCLA) Hidden and apparent companions for multi and lonely planets around hot (or not) stars
 2:30pm Dong Lai (Cornell U) Low-e / high-e migration of small/big planets and tidal dissipation
 3:00pm Konstantin Batygin (Caltech) Slowing the roll of hyperbolic encounters
 3:30pm **Afternoon Break**

Poster Session, including Lightning/Haiku presentations [list below]

5:30pm **RECEPTION-KITP Courtyard**
 6:00pm **SPECIAL EVENTS DINNER-KITP COURTYARD**
 8:00pm **SHUTTLE TO BWSCI**

Wednesday, May 22, 2019

Limits to stellar model physics, Chair: Jim Fuller (Caltech)

- 9:00am Jamie Tayar (U Hawaii) Current Limitations on Stellar Mass Estimates from Models
- 9:30am Willie Torres (CfA) Host Star Properties from Stellar Evolution Models
- 10:00am Marc Pinsonneault (Ohio State) Putting A Spin on Stellar Evolution: Rotation, Magnetism, And Activity

10:30am **Morning Break**

- 11:00am Panelists: Tayar{panel3}, Torres Pinsonneault, Kawaler Unfortunate truths about stellar models: Exoplanteers beware!

Planet and Stellar Populations, Chair: Angie Wolfgang (Penn State)

- 11:30am Maxwell Moe (U Arizona) Impact of Binary Stars on Planet Formation and Statistics
- 12:00pm Daniel Foreman-Mackey (Flatiron) Population inference
- 12:30pm Announcement-Followon Program by Maggie Sherriffs

12:35pm **Lunch Break**

2:00pm **FREE AFTERNOON Shuttle Available to BWSCI**

Las Cumbres Observatory Open House Transportation provided from BWSCI and Munger Residence Hall

Thursday, May 23, 2019

Planet vs. Stellar Properties, Chair: Rebekah Dawson (Penn State)

- 9:00am Subo Dong (Peking U) Studying Exoplanet Population and Host Properties with LAMOST
- 9:30am Ji Wang (Ohio State) Investigating the effect of metallicity on stellar and planet properties
- 10:00am Gijs Mulders (U Mulders) The exoplanet population around stars of different masses

10:30am **Morning Break**

- 11:00am Eve Lee (Caltech) Stellar Spin, Metallicity, and Planet Formation
- 11:30am Juliette Becker (Michigan) Drawing Insights on Past Planetary Migration from Current System State
- 12:00pm Panelists: Becker{panel4}, Dong, Lee Moe, Mulders, Wang Implications for how planets form and evolve

12:30pm **Lunch Break**

Stellar Structure, Chair: Jennifer van Saders (U Hawaii)

2:00pm	Greg Feiden (U of North Georgia)	Magnetic Effects on M-dwarf Evolution
2:30pm	Matthew Browning (Exeter)	Magnetism, rotation, and dissipation in simulations of convective stars and planets
3:00pm	Adrian Barker (U of Leeds)	Tidal dissipation in stars and the orbital decay of hot Jupiters

3:30pm **Afternoon Break**

Stellar Activity and Characterization, Chair: Elisabeth Newton (MIT)

4:00pm	Ben Montet (U of Chicago)	The Evolution of Long-Term Stellar Photometric Variability from Kepler Photometry
4:30pm	Phillip Muirhead (BU)	Chemical Ages of M dwarf stars and Magnetic Inflation
5:00pm	Dennis Stello (U Sydney)	Characterizing host stars with SONG and TESS using asteroseismology

5:30pm **RECEPTION-KITP COURTYARD**

6:00pm **SPECIAL EVENTS DINNER**

8:00pm **SHUTTLE TO BWSCI**

Friday, May 24, 2019

The M-dwarf Advantage (?), Chair: Philip Muirhead (BU)

9:00am	Courtney Dressing (UC Berkeley)	M dwarf planets present and future
9:30am	Aomawa Shields (UC Irvine)	M dwarf habitability and climate feedback
10:00am	Adam Burgasser (UCSD)	The planet brown dwarf connection

10:30am **Morning Break**

11:00am	Nick Wright (Keele U)	The rotation - activity relationship of M dwarfs
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11:30am	Beate Stelzer (U Tuebingen)	The long-term evolution of an M star's magnetic activity: Is a calibration possible?
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12:00pm	Panel Discussion{panel5}	Are M-dwarfs the ideal planet hosts?
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12:30pm **Morning Break**

White Dwarf Planets and Properties, Chair: Eric Agol (U Washington)

2:00pm	Dimitri Veras (U of Warwick)	Dynamics of planetary systems with white dwarf host stars
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2:30pm	JJ Hermes (BU)	Better characterizing white dwarfs to illuminate planet occurrence around
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intermediate-mass stars

3:00pm Steve Kawaler (ISU)

Old stars with good tickers - are the beating hearts of white dwarfs regular enough for planet detection?

3:30pm **CONFERENCE END: SHUTTLE TO BWSCI *Also available to SB Airport and SB Airbus, Goleta location (See Registration Desk BEFORE FRIDAY to sign up.)**