



Keck Northeast Astronomy Consortium

# Symposium 2018

Middlebury College

Ripton & Middlebury, Vermont

Friday & Saturday, September 28 & 29, 2018



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# Schedule

Friday, September 28, 2018

*Bread Loaf Mountain Campus*

3pm – 6pm	<b>Check-In &amp; Registration</b> <i>Bread Loaf Inn Lobby &amp; Lounge</i>
6pm – 7pm	<b>Reception</b> <i>Bread Loaf Inn Blue Room &amp; Porch</i>
7pm – 9pm	<b>Remarks &amp; Banquet</b> <i>Bread Loaf Inn Dining Room</i>
9pm – 10pm	<b>Dessert Social &amp; Stargazing</b> <i>Bread Loaf Barn</i>
9pm – 10pm	<b>Faculty Discussion</b> <i>Treman</i>

Overnight

*Bread Loaf Mountain Campus*

*Bread Loaf Inn, Maple, Birch, Treman, & Frothingham*

Saturday, September 29, 2018

*Bread Loaf Mountain Campus*

6am – 6:30am	<b>Light Refreshments</b> <i>Bread Loaf Inn Dining Hall</i>
6:30am – 8am	<b>Breakfast &amp; Check-Out</b> <i>Bread Loaf Inn Dining Hall &amp; Lobby</i>
8am – 8:45am	<b>Transit</b> <i>Bread Loaf Inn to McCardell Bicentennial Hall</i>

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# Schedule

Saturday, September 29, 2018

*McCardell Bicentennial Hall, Middlebury Campus*

8:45am – 10am	<b>Opening Remarks &amp; Session I</b> <i>McCardell Bicentennial Hall 216</i>
10am – 10:15am	<b>Poster Introductions</b> <i>McCardell Bicentennial Hall 216</i>
10:15am – 10:45am	<b>Posters &amp; Refreshments</b> <i>McCardell Bicentennial Great Hall &amp; Discovery Court</i>
10:45am – 12pm	<b>Session II</b> <i>McCardell Bicentennial Hall 216</i>
12pm – 12:15pm	<b>Photographs</b> <i>McCardell Bicentennial Great Hall &amp; Discovery Court</i>
12:15pm – 1:45pm	<b>Lunch</b> <i>McCardell Bicentennial Great Hall &amp; Discovery Court</i>
12:30pm – 1:30pm	<b>Faculty Meeting</b> <i>McCardell Bicentennial Hall 148</i>
12:45pm – 1:30pm	<b>Lunchtime Breakout Sessions</b> <i>McCardell Bicentennial Hall 104, 219, 220, &amp; 338</i>
1:45pm – 3pm	<b>Session III</b> <i>McCardell Bicentennial Hall 216</i>
3pm – 3:30pm	<b>Posters &amp; Refreshments</b> <i>McCardell Bicentennial Great Hall &amp; Discovery Court</i>
3:30pm – 4pm	<b>Session IV &amp; Closing Remarks</b> <i>McCardell Bicentennial Hall 216</i>
4pm – 4:30pm	<b>Light Refreshments</b> <i>McCardell Bicentennial Great Hall &amp; Discovery Court</i>

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# Student Research Presentations

## Session I

*Honey I Shrunk the Heliosphere! Using Hubble to Look Back at the Sun's Historical Trajectory Through the Local Interstellar Medium*

**Hunter Vannier, Wesleyan**

*Do Chaos, Domes, Pits, and Spots Contribute to Changing Morphology of Europa's Ridges?*

**Karla Núñez, Middlebury**

*Determining the Viability of KELT Exoplanet Candidates*

**Aidan Pidgeon, Dickinson; Bailey Piotrowski, Vassar**

*An Updated Catalog of Cool Dwarf Targets for the Transiting Exoplanet Survey Satellite Using Gaia DR2 Parallaxes*

**Jay Chittidi, Vassar**

## Session II

*A Kinematically Unbiased Sample of Candidate Nearby Young Stars*

**Matthieu Chalifour, Swarthmore**

*Multi-Epoch Spectroscopy of DQ Tau, V826 Tau, and UZ Tau E*

**Jocelyne Andrade, Colgate; Rhys Manley, Swarthmore;**

**Allison Quintana, Wesleyan; Nicole Tan, Wellesley**

*Deriving Temperature Distributions and Mass-Loss Rates from Shocks in Massive Stars' Winds*

**Graham Doskoch, Swarthmore**

*Measuring the Mass of a Brown Dwarf in the Debris Disk of HD 206893*

**David Vizgan, Wesleyan**

*Determining the Evolutionary Status of the Disk Surrounding HD 166191*

**Diego Garcia, Middlebury**

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# Student Research Presentations

## Session III

*Searching for Intermediate Mass Black Holes in Nearby Dwarf Galaxies*

**Benjamin Martinez, Wesleyan**

*Identifying Intrinsic X-ray Source Population Groupings in External Galaxies:*

*Astronomical Uses for Machine Learning*

**Sadie Coffin, Middlebury; Karina Cooper, Swarthmore**

*From Einstein to Chandra: An Exploration of Highly Variable AGN*

**Gilberto Garcia, Wesleyan**

*"Dark Fluid" Cosmology*

**David Robinson, Swarthmore**

*Correlation Function and Redshift Distortion of the Matter Power Spectrum*

**Kayla Nowak, Lycoming**

## Session IV

*Saturation Correction and Standard Normalization Techniques for Isotopic*

*Abundance Analysis*

**Ethan Lopes, Williams**

*The Development of an Electrostatic Probe for a Miniature Ion Thruster Internal*

*Discharge Chamber*

**Chloe Shi, Wellesley**

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# Student Research Presentations

## Posters

*Likelihood Analysis of Gamma Ray Emission from the Massive Star Cluster Westerlund 1*

**Katie Chapman, Colgate**

*Comparisons of the Seismic Properties of the Sun During Solar Cycles 23 and 24*

**Diego Espino, Middlebury**

*Imaging Green Pea Galaxies*

**Nicole Ford, Williams**

*High Precision Photometry of Faint White Dwarf Stars from K2 Data*

**Michael Henderson, Wesleyan**

*Characterizing the Orbital Dynamics of Protoplanetary Disks in Binary Systems*

**Aaron Hersch, Swarthmore**

*How Old Are These Green Peas?*

**John Inoue, Williams**

*Images and Analysis of the Great American Eclipse*

**Christian Lockwood, Williams**

*EDGES: Radial Star Formation Histories of NGC4143 and UGC07639*

**Jacob Pilawa, Colgate**

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# Student Research Presentations

## Posters

*Models and Observations of the Crater Modification Sequence on the Moon and Mars*

**Hallie Pimperl, Wellesley; Emma Chickles, Wellesley**

*The Timescales of the Optical Variability of Blazar OJ 287*

**Lekshmi Rajagopal, Colgate; Eric Roels, Colgate; Rishi Lohar, Colgate; Jacob Pilawa, Colgate**

*Gamma-Ray Bursts: Probes of the Early Universe*

**Alina Sabyr, Colgate**

*Black Hole Imaging with Space-Based Telescopes*

**Maura Shea, Wellesley**

*Conducting Exoplanet Transit Follow-Up Observations for KELT at Swarthmore College's Peter van de Kamp Observatory*

**Erin Snoddy, Swarthmore**

*Sloshing Galaxies in the Most Massive Gravitationally Bound Structures in the Universe*

**Janel Williams, Wellesley**

*Williams College Expedition to the Willamette Valley, Oregon, to Observe the 2017 Total Solar Eclipse: Meteorological Measurements and Analysis*

**Ross Yu, Williams; Christian Lockwood, Williams**

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## Lunchtime Breakout Sessions

*Applying to Graduate School and What to Expect in the First Year*

**Seth Redfield, Wesleyan**

Associate Professor of Astronomy, Department of Astronomy

Principal Investigator, Keck Northeast Astronomy Consortium REU Site

McCardell Bicentennial Hall 104

*Communicating Science*

**Kristina Punzi, Wellesley**

Instructor in Astronomy Laboratory & Observatory Manager, Department of  
Astronomy

Astronomy Ambassador, American Astronomical Society

McCardell Bicentennial Hall 219

*Equity and Inclusion in Astronomy*

**Colette Salyk, Vassar**

Assistant Professor of Astronomy, Department of Physics & Astronomy

McCardell Bicentennial Hall 220

*Bayesian Statistics and Markov Chain Monte Carlo*

**Kevin Flaherty, Williams**

Lecturer in Astronomy & Observatory Supervisor, Department of Astronomy  
& Department of Physics

McCardell Bicentennial Hall 338

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# Moderators

## Session I

**Eric Jensen, Swarthmore**

Professor of Astronomy, Department of Physics & Astronomy

## Session II

**Meredith Hughes, Wesleyan**

Assistant Professor of Astronomy, Department of Astronomy

## Session III

**Seth Redfield, Wesleyan**

Associate Professor of Astronomy, Department of Astronomy

Principal Investigator, Keck Northeast Astronomy Consortium REU Site

## Session IV

**Eilat Glikman, Middlebury**

Assistant Professor of Physics & P. Frank Winkler Fellowship in Physics,  
Department of Physics

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## Remarks

### Banquet

#### **Debbie Elmegreen, Vassar**

Professor of Astronomy on the Maria Mitchell Chair, Department of Physics  
& Astronomy

President Elect, International Astronomical Union

### Opening

#### **Pat Manley, Middlebury**

Professor of Geology, Department of Geology, & Director of the Sciences

### Closing

#### **Eilat Glikman, Middlebury**

Assistant Professor of Physics & P. Frank Winkler Fellowship in Physics,  
Department of Physics

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## Notes & Acknowledgments

Please consult the Proceedings for additional information regarding non-presenting co-authors and research advisors.

The stargazing event is weather permitting.

The symposium organizers would like to recognize the tireless and invaluable contributions of Middlebury College staff.

This Symposium is supported in part by National Science Foundation award AST 1559865.

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The Keck Northeast Astronomy Consortium comprises astronomy faculty and students at eight small liberal arts colleges and universities in the northeast. Their goals are to promote astronomy research among their students and to foster faculty and student interaction among the eight campuses. They sponsor a student exchange program each summer and a student research symposium each fall.

Although originally funded by the W. M. Keck Foundation beginning in 1990, they are now funded by the National Science Foundation, under their Research Experiences for Undergraduates (REU) program.



Each fall students and faculty from the Keck Northeast Astronomy Consortium Research Experiences for Undergraduates (REU) program and the member schools gather together for a student research symposium.



Middlebury  
College

**Middlebury**  
**Science & Mathematics**

**Middlebury**  
**Physics**



Mittelman  
Observatory