

Friday, April 28, 2017  
**EXOPLANETS: HABITABILITY:**  
**THE HABITABILITY OF PROXIMA CENTAURI b**  
**10:15 a.m. Arizona Ballroom D**

**Chairs: Rory Barnes**

**Ravi Kopparapu**

- 10:15 a.m. Kane S. R. \* Gelino D. M. Turnbull M. C.  
[How Massive is the Proxima Centauri Planet?](#) [#3633]  
 We describe the effect of orbital inclination on the Proxima Centauri planet, in terms of mass, radius, atmosphere, and albedo.
- 10:30 a.m. Bixel A. \* Apai D.  
[Probabilistic Constraints on the Mass and Composition of Proxima Centauri b](#) [#3547]  
 We use exoplanet statistics and mass-radius relationships to place constraints on the mass, radius, and composition of Proxima Centauri b.
- 10:45 a.m. Del Genio A. D. \* Way M. J. Amundsen D. S.  
[Possible Climates of Proxima Centauri b in the Presence of a Dynamic Ocean](#) [#3157]  
 We perform 3-D GCM simulations of possible Proxima Centauri b climates for Earthlike atmospheres on synchronously rotating planets with a dynamic ocean.
- 11:00 a.m. Fleming D. P. \* Barnes R. Deitrick R. Luger R. Driscoll P. E. Quinn T. R. Guyer B. McDonald D. V. Meadows V. S. Arney G. Crisp D. Domagal-Goldman S. D. Lincowski A. Lustig-Yaeger J. Schwieterman E.  
[Coupled Atmospheric-Ocean-Tidal Evolution of Proxima Centauri b](#) [#3383]  
 In this work, we simulated the tidal history of Proxima Centauri b if it formed with or without a hydrogen envelope and surface oceans.
- 11:15 a.m. Deitrick R. \* Quinn T. R. Barnes R. Kaib N. Luger R. Driscoll P. E. Fleming D. P. Guyer B. MacDonald D. V. Meadows V. S. Arney G. Crisp D. Domagal-Goldman S. D. Lincowski A. Lustig-Yaeger J. Schwieterman E.  
[Death Stars: How Alpha Centauri Threatens Proxima's Planetary System](#) [#3441]  
 We study the dynamics of the Alpha Centauri system under the influence of the galactic environment to determine how Proxima's planetary system may be affected.
- 11:30 a.m. Meadows V. S. \* Arney G. N. Schwieterman E. W. Lustig-Yaeger J. Lincowski A. P. Robinson T. D. Domagal-Goldman S. Barnes R. K. Fleming D. P. Deitrick R. Luger R. Driscoll P. E. Quinn T. R. Crisp D.  
[Proxima Centauri b: Environmental States and Observational Discriminants](#) [#3615]  
 We have used coupled 1D climate-photochemical models to explore the current environmental states and potential observational discriminants for Proxima Cen b.
- 11:45 a.m. Luger R. Lustig-Yaeger J. Fleming D. Tilley M. \* Agol E. Meadows V. Deitrick R. Barnes R.  
[Using Aurorae to Characterize Proxima Centauri b](#) [#3334]  
 We calculate the expected auroral output of Proxima Centauri b and discuss methods for characterizing the planet with high resolution auroral observations.
- 12:00 p.m. Luger R. Barnes R. Deitrick R. Driscoll P. E. Quinn T. R. Fleming D. P. Guyer B. McDonald D. V. Meadows V. S. Arney G. Crisp D. Domagal-Goldman S. D. Lincowski A. Lustig-Yaeger J. Schwieterman E.  
[Evolution of the Water Content of Proxima Centauri b](#) [#3534]  
 We discuss the evolution of the water content and atmospheric composition of Proxima Centauri b and its effects on the planet's habitability.
- 12:15 p.m. *Lunch*