

Robert Oliver Parke Loyd

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Current as of 2017 September 5

Education

PhD Astrophysics and Planetary Science , University of Colorado, Boulder Thesis: <i>The Volatility of Far-Ultraviolet Radiation from Low-Mass Stars and Planetary Implications</i> Advisor: Kevin France	August 2017
Private Pilot License Instructor: Ben Pinnell	December 2016
BS Aerospace Engineering , Virginia Tech summa cum laude minors in astronomy, mathematics, and physics Thesis: <i>Actively Tunable Vibration Isolation using FFMC Tubes</i> Advisor: Michael Philen	December 2009

Research Interests

1. Stellar flares and their impact on exoplanetary atmospheres
2. Habitability of planets orbiting low-mass stars
3. Detection and characterization of exoplanets
4. Statistical methods and data processing for photon-level datasets
5. Direct imaging and detection of exoplanetary systems

Publications

Note that I use R. O. Parke Loyd as my pen name, inadvertently causing databases to ingest my last name on papers as either "Parke Loyd" or (correctly) "Loyd."

Stats as of Jan 2017 (from NASA ADS, refereed only):

first author papers 3, all papers 13, first author citations 34, all citations 123, h-index 5

First Author

Loyd, R. O. Parke et al. "The Muscles Treasury Survey V: FUV Flares on Active and Inactive M Dwarfs" 2017 ApJ in prep	2017
Loyd, R. O. Parke et al. "Ultraviolet C II And Si III Transit Spectroscopy And Modeling Of The Evaporating Atmosphere Of GJ436b" 2017 ApJ 834:L17	2017
Loyd, R. O. Parke et al. "The MUSCLES Treasury Survey. III. X-Ray to Infrared Spectra of 11 M and K Stars Hosting Planets" 2016 ApJ 824:102	2016

Loyd, R. O. Parke; France, Kevin “Fluctuations and Flares in the Ultraviolet Line Emission of Cool Stars: Implications for Exoplanet Transit Observations” 2014 ApJS 211:9 **2014**

Coauthor

Hoadley, Keri et al. “Signatures of Hot Molecular Hydrogen Absorption from Protoplanetary Disks. I. Non-thermal Populations” 2017 ApJ 846:6 **2017**

Kruczek, Nicholas et al. “H₂ Fluorescence in M Dwarf Systems: A Stellar Origin” 2017 ApJ 845:3 **2017**

Youngblood, Allison et al. “The MUSCLES Treasury Survey. IV. Scaling Relations for Ultraviolet, Ca II K, and Energetic Particle Fluxes from M Dwarfs” 2017 ApJ 843:31 **2017**

Airapetian, Vladimir et al. “How Hospitable Are Space Weather Affected Habitable Zones? The Role of Ion Escape” 2017 ApJ 836:L3 **2016**

Million, Chase et al. “gPhoton: The Galex Photon Data Archive” 2016 ApJ 833:292 **2016**

Yungblood, Allison et al. “The MUSCLES Treasury Survey. II. Intrinsic Ly α and Extreme Ultraviolet Spectra of K and M Dwarfs with Exoplanets” 2016 ApJ 824:101 **2016**

France, Kevin et al. “The MUSCLES Treasury Survey. I. Motivation and Overview” 2016 ApJ 820:89 **2016**

Gomez de Castro, Ana I et al. “Protoplanetary Disk Shadowing by Gas Infalling onto the Young Star AK Sco” 2016 ApJ 818L:17 **2016**

France, Kevin; Linsky, Jeffrey L.; Loyd, R. O. Parke “The ultraviolet radiation environment in the habitable zones around low-mass exoplanet host stars” 2014 Ap&SS 354:3 **2014**

Kulow, Jennifer R.; France, Kevin; Linsky, Jeffrey L.; Loyd, R. O. Parke “Ly α Transit Spectroscopy and the Neutral Hydrogen Tail of the Hot Neptune GJ 436b” 2014 ApJ 786:132 **2014**

Awarded Grants and Observations

Principal Investigator

HST General Observer, “Investigating an SPI and Measuring Baseline FUV Variability in the GJ 436 Hot-Neptune System” Program 15174 **2017**

Co-Investigator

HST General Observer, “Unobstructed Observations of the Intrinsic Lyman-alpha Emission of Low-mass Stars”, Program 15286 **2017**

HST General Observer, “The Mega-MUSCLES Treasury Survey: Measurements of the Ultraviolet Spectral Characteristics of Low-mass Exoplanetary Systems” Program 15071 **2017**

HST Archival Research, “Model Atmospheres and Spectral Irradiance Library of the Exoplanet Host Stars Observed in the MUSCLES Survey” Program 15038 **2017**

HST Director’s Discretionary, “The most detailed high-energy picture of Proxima Centauri, our nearest extrasolar neighbor” Program 14860 **2016**

HST Snapshot Program, “A SNAP UV Spectroscopic Study of Star-Planet Interactions” Program 14633 **2016**

HST General Observer, “A Direct Imaging Experiment to Determine the Origin of H₂ Emission from M dwarf Exoplanetary Systems” Program 14100 **2016**

HST General Observer, “The MUSCLES Treasury Survey: Measurements of the Ultraviolet Spectral Characteristics of Low-mass Exoplanetary Systems” Program 13650 **2015**

Conference Talks

Talks

The FUV Flares of Active and Inactive M Dwarfs **2017**
Know Thy Star -- Know Thy Planet, Pasadena, California

Cool Stars Provide Erratic Environments for Photochemistry AbGradCon, Boulder, Colorado	2016
FUV Emission Line Flares on M and K Dwarfs in the MUSCLES Survey Cool Stars 19, Uppsala, Sweden	2016

Posters

An Ultraviolet Spectral Examination of “Quiescent” Mdwarf Exoplanet Host Flares IAUS 320, Honolulu, Hawaii	2015
The Radiation Environment of HabitableZone Planets Orbiting LowMass Stars Emerging Researchers in Exoplanet Science, State College, Pennsylvania	2015
Astrophysical Noise and a Search for Star-Planet Interactions in Ultraviolet Time-Series Towards Other Earths, Porto, Portugal	2014
Fluctuations and Flares in Stellar UV Emission Observed by HST and GALEX Cool Stars 18, Flagstaff, Arizona	2014

Teaching Experience

Instructor of Record , ASTR 2600, Computational Techniques student ratings: instructor overall 5.5/6, course overall 4.9/6	summer 2015
Mentor , Boulder Valley School District: Science Research Seminar student	academic year 2013
Teaching Assistant , ASTR 1200, Stars and Galaxies	fall 2011
	fall 2012
Teaching Assistant , ASTR 1000, The Solar System	spring 2012

Honors and Awards

Departmental Award for Excellence in Teaching	2012
Clinton and Helen Robins Memorial Scholarship	2009
Stuart and Mary Shumate Scholarship Award	2008
Tau Beta Pi Scholarship Award	2008
E. W. Allen Memorial Scholarship	2006
Martha S. Van Oss Scholarship	2005

Selected Recent Adventures

In the hopes that including these in my CV will lead me to scientific expeditions or other adventuresome and intellectual work:

Private piloting 165 h total in Cessna 172s and a 182, 62 h cross country, 39 h solo, 361 landings, high performance checkout	Ongoing
Ran an ~50 mi loop that included traversing Great Sand Dunes National Park in ~16 h	2017
Summited Devil’s Tower, Wyoming	2016
Traveled in Ethiopia, 2 weeks	2016
Lived in Ranomafana, Madagascar, 1 month	2015

Backpacked and pack-rafted through Canyonlands National Park, Island in the Sky and Maze Districts, 9 days	2015
Climbed base to rim of the Black Canyon of the Gunnison	2015
Summited Grand Teton, Wyoming; Lone Eagle Peak, Colorado; Castleton Tower, Utah	2015
Ran the Four Pass Loop (7700 ft cumulative gain, 28 mi)	2015
Backpacked between Berber villages in the Atlas Mountains, 1 week	2014
Traversed Rocky Mountain National Park, east to west borders	2014
Backpacked the Grand Canyon Escalante Route in extreme summer heat	2014
Ran the Desert RATS trail marathon, Fruita, CO	2013
Backpacked in Gates of the Arctic National Park, exited by canoeing the Koyukuk River, 16 days	2013
Lived in Neno, Malawi, 1 month	2012
Traversed Corcovado National Park in Costa Rica	2012

Recent Service

Member of sponsor group for Burmese refugee family relocated to Boulder	2012 - 2016
Committee member: colloquium speaker graduate student lunch series	2014/2015
Committee member: graduate comprehensive exam	2013/2014
Committee member: graduate concerns	2012/2013

Technical Work Experience

Biology Field Technician , salmon fry distribution study, Fish and Wildlife Service, Alaska	summer 2011
Energy Resource Surveyor , SNP Patagonia Sur, Chile	2010
Aerospace Engineering Intern , Cygnus spacecraft project, Orbital Sciences Corp, Virginia	summer 2008, 2009