

RUSSELL VAN LINGE

rvanlinge@ucsd.edu

EDUCATION

University of California San Diego - La Jolla, California
Bachelors of Science in Physics with a Specialization in Astrophysics
Class of 2019
GPA: 3.391

September 2017 - Present

Palomar College - San Marcos, California
GPA: 3.39

August 2014 - June 2017

RESEARCH INTEREST

I investigate magnetic fields of ultra-cool, low-mass stars in the radio wavelengths using very long baseline interferometry (VLBI), particularly characterizing both long-term and short-term behaviors and searching for any cycles analogous to our Sun. These observations help in answering the type(s) of dynamo that generates magnetic fields in both partial and fully convective objects. I am also interested in the star-planet interaction and the effects phenomena such as stellar wind and flares do to the habitability of exoplanets.

PROJECTS

Long-term Radio Monitoring of Two Ultra-Cool, Low-Mass Dwarf Binaries (2016-Present)

This project conducted the first well sampled, year long radio monitoring of two ultra-cool dwarf binaries using the Karl Jansky Very Large Array. We wanted to characterize any type of variability as well as investigate any long-term cycling that could be analogous to our Sun's 11-year solar cycle. We also conducted an intensive week of daily observations as well as looked into the behavior found in individual epochs. Van Linge et al. (prep) will be submitted and up on Arxiv by the end of March 2019.

Searching for New M-dwarfs in the Dark Energy Survey (Summer 2018)

There have been many all sky-surveys in northern hemisphere, but only a handful have been done in the south. With the data release of the Dark Energy Survey (DES), it offered an opportunity to fill in the southern sky with low-mass dwarfs. This project set out to use machine learning to search for low-mass stars within the Dark Energy Survey. We started by cross-matching known low-mass stars and red giants from literature to DES and create a training set that would train our algorithm on separating red dwarfs from red giants. Then using the trained algorithm to feed in blind DES data and let it categorize each object based off of its color.

TECHNICAL STRENGTHS

Photometric Reduction

Time Domain Analysis

Bayesian Statistical Modeling

Software & Tools

Monte-Carlo Markov Chains, Gaussian Process

Common Astronomical Software Application (CASA),

Python, Latex

WORK EXPERIENCE

Center for Astrophysics and Space Science (CASS)

Undergraduate Research Assistant

Summer 2016-Present

PI: Prof. Adam Burgasser

- Undergraduate research in Prof. Adam Burgasser and Prof Quinn Konopacky's Stars and Planets Lab where I worked on various projects and the science communication for the lab.

ACADEMIC ACHIEVEMENTS/AWARDS

2018: Recipient of the William A. Lee Summer Research Scholarship, UC San Diego

2017: Physics Chair Challenge Fund, Physics Department, UC San Diego

2016: Certificate of Recognition for UC San Diego End of Summer Research Conference, UC San Diego

2016: Summer Training Academy for Research Success (STARS), UC San Diego

OUTREACH EVENTS

San Diego 2018 Science Expo; Petco Park - February 2018

UC San Diego InterTribal Youth Physics Outreach - July 2016

UC San Diego IOA Science Innovation Camp Physics Outreach - July 2016

LIST OF PRESENTATIONS

233rd American Astronomical Society Conference - January 2019

Tuning Into Brown Dwarfs: Long-term Radio Monitoring of Two Very Low Mass Dwarfs
Poster Presentation

William A. Lee Research Conference; UC San Diego - August 2018

The Search for Southern Stars: Looking for Low-Mass Stars in the Dark Energy Survey
Poster Presentation

Cool Stars 20; Boston University - July/August 2018

Tuning Into Brown Dwarfs: Long-term Radio Monitoring of Two Very Low Mass Dwarfs
Poster Presentation

California Conference for Undergraduate Research, Cal Poly Pomona - November 2017

Tuning Into Brown Dwarfs: Long-term Radio Monitoring of Two Very Low Mass Dwarfs
Oral Presentation

229th American Astronomical Society Conference - January 2017

Tuning Into Brown Dwarfs: Long-term Radio Monitoring of Two Very Low Mass Dwarfs
Poster Presentation

SACNAS Conference - October 2016

Tuning Into Brown Dwarfs: Long-term Radio Monitoring of Two Very Low Mass Dwarfs
Poster Presentation

Cal Poly Pomona Symposium - September 2016

Tuning Into Brown Dwarfs: Long-term Radio Monitoring of Two Very Low Mass Dwarfs
Oral Presentation

UC San Diego Summer Research Conference - September 2016

Tuning Into Brown Dwarfs: Long-term Radio Monitoring of Two Very Low Mass Dwarfs
Poster Presentation

REFERENCES

Prof. Adam Burgasser; UC San Diego | aburgasser@ucsd.edu

Dr. Carl Melis; UC San Diego | cmelis@ucsd.edu

Dr. Peter Williams; Harvard-Smithsonian Center for Astrophysics | pwilliams@cfa.harvard.edu