

RUOYAN WANG

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EDUCATION

PhD Physics - University of Leicester

2020 - 2024

Doctoral thesis: Jupiter's Auroral Ionosphere and Thermosphere

Advisor(s): Thomas Stallard and Darren Wright

MSc Astronomy - Leiden University

2018 - 2020

Master thesis: Cataloging and Visualizing Cradles of Planet Formation

Advisor: Matthew Kenworthy

First thesis: Detection of Transiting Exoplanets on the Bright End with MASCARA/TESS

Advisor: Ignas Snellen

BSc Physics (Astrophysics) - University of California, Santa Cruz

2013 - 2017

Senior thesis: Atmospheric Models of Brown Dwarfs

Advisor: Jonathan Fortney

ACADEMIC EXPERIENCE

Graduate Student Researcher - Leiden University

2018 - 2020

Cataloging and visualizing circumstellar disks:

- Built an online web database to assemble a complete catalog of all observational and published results of scattered light imaging, with an interface for easy access and basic statistical analysis.
- Designed a 3D reconstruction of circumstellar disks from 2D data, which brings an insight in the surface brightness and hence optical properties of dust grains.

Detecting transiting exoplanets near bright stars with MASCARA and TESS:

- Data-mined TESS archive for candidates that MASCARA could capture, and then analyzed the corresponding light curves for the long-term variability and revealing long-period planets.
- Modified and performed the data reduction method to eliminate effects of local sidereal time and lunar saturation. The direct transit searches involved both visual inspections and BLS detections.
- Ran signal recovery tests to characterize data calibration and performance of MASCARA.

Undergraduate Student Researcher - University of California, Santa Cruz

2016 - 2018

Modeling atmospheres of brown dwarfs:

- Ran models of brown dwarf atmospheres spanning a wide range of atmospheric metallicity, C/O ratios, and cloud properties, encompassing atmospheres of effective temperatures and gravities.
- Analyzed the expected temperature-pressure profiles and emergent spectra from an atmosphere in radiative-convective equilibrium.

- Reviewed and answered questions regarding to the class materials.
- Taught sessions handling the difficult conceptual and written problems covered in assignments.
- Helped control the pace of the class to ensure that most students could follow.

Observer

Spring 2017

Lick Observatory

- Observed with the Nickel 1m telescope to measure Pluto's proper motion and parallax, along with its angular separation to Charon, to calculate its various physical properties (distance, mass, radius, density), with supplemental data acquired from Hubble and New Horizons.
- Observed with the Shane 3m Kast double spectrograph to measure the rotation curve of UGC-08787 to determine if dark matter exists in the galaxy.

PRESENTATIONS

Annual Physical and Biological Science Summer Research Symposium August 2016 & 2017
University of California, Santa Cruz

231th AAS Meeting
Washington, D.C., USA

January 2018

INTERNSHIP/INDUSTRIAL TRAINING

China National Petroleum Corporation (CNPC)
Xining, China

June 2014 - August 2014

- Learned about the features of various equipment and relating to the automation process of oil refinery.
- Involved in a geophysical survey for petroleum and natural gas exploitation and extraction in plateau involving deep well cementing under high pressure and temperature.
- Processed and analyzed data acquired from artificial seismic waves for oil prospecting.

OUTREACH SERVICE

Gapper International Voluntourism
Galle, Sri Lanka

August 2015

- Learned about the ecosystem of sea turtles and the balance between wildlife and human activities.
- Helped design a passive sonar to listen to and record sea turtles during mating seasons, and also to observe their reactions to different melodies.

SCHOLARSHIP/HONOR/AWARD

Astronomy Master Scholarship - Leiden University

2018, 2019

Granted a tuition waiver till home fee for outstanding academic merit as a non EU/EEA international student.

Undergraduate Dean's Honors - University of California, Santa Cruz

2013, 2015

Regents Scholarship - University of California, Santa Cruz

2013

The Regents Scholarship carries the highest honor awarded by the University of California, Santa Cruz to entering undergraduates. Awarded in recognition of outstanding academic achievements.