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Linfeng WAN

Department of Earth & Planetary Sciences
University of California Santa Cruz (UCSC)

EDUCATION AND WORKING EXPERIENCE

09/2018 - Present **Graduate student, PLANETARY ASTRONOMY, UCSC** — Advisor: Dr. Xi ZHANG
 09/2015 - 06/2018 **M.S., ASTROPHYSICS, Nanjing University** — Advisor: Dr. Xin CHENG
 06/2017 - 08/2017 **Visiting student researcher, Caltech** — Advisor: Dr. Yuk L. YUNG
 09/2011 - 06/2015 **B.S., ASTRONOMY, Nanjing University**
 06/2014 - 08/2014 **Visiting student, University of Western Australia** — Advisor: Dr. Eric J. HOWELL

GRANTS

06/2017 - 05/2018 **Host**, Graduate Innovation Program of Jiangsu Province (15,000 CNY)
 03/2012 - 06/2013 **Host**, National Undergraduate Innovation Program (20,000 CNY)

PUBLICATIONS

- [6] Siteng Fan, Donald Shemansky, Cheng Li, Peter Gao, **Linfeng Wan**, and Yuk Yung. "Retrieval of Chemical Abundances in Titan's Upper Atmosphere from Cassini UVIS Observations. *E&SS* 6:1057 (2019)
- [5] Xin Cheng, Ying Li, **Linfeng Wan**, Mingde Ding, Pengfei Chen, Jie Zhang, and Jiajia Liu. "Observations of Turbulent Magnetic Reconnection Within a Solar Current Sheet". *ApJ* 866:64 (2018)
- [4] **Linfeng Wan**, Xin Cheng, Tong Shi, Wei Su, and Mingde Ding. "The Formation and Early Evolution of a Coronal Mass Ejection and its Associated Shock Wave on 2014 Jan 8". *ApJ* 826:174 (2016)
- [3] Zhoujian Zhang, Yong Shi, George Rieke, Xiaoyang Xia, Yikang Wang, Bingqing Sun, and **Linfeng Wan**. "Distributions of Quasar Hosts on the Galaxy Main Sequence Plane". *ApJL* 819:L27 (2016)
- [2] Tong Shi, Yikang Wang, **Linfeng Wan**, Xin Cheng, Mingde Ding, and Jie Zhang. "Predicting the Arrival Time of Coronal Mass Ejections with the GCS and Drag Force Model". *ApJ* 806:271 (2015)
- [1] David Coward, Eric Howell, **Linfeng Wan**, and Damien Macpherson. "Selection Biases in the Gamma Ray Burst $E_{\text{iso}} - L_{\text{opt,X}}$ Correlation". *MNRAS Letter* 449:L6 (2015)

MEETINGS AND WORKSHOPS

12/2019 **Oral presentation**, AGU 100 Fall Meeting, San Francisco, CA, USA
 08/2017 **Oral presentation**, AAS Solar Physics Division (SPD) Meeting, Portland, OR, USA
 08/2017 Sagan Exoplanet Summer Workshop about Microlensing, Pasadena, CA, USA
 06/2016 Synthesis Imaging Workshop about Interferometers, Socorro, NM, USA

TEACHING EXPERIENCES

Spring, Fall 2019 Teaching assistant: Planetary Discovery (sections, grading and office hours)

AWARDS AND HONORS

06/2018 Summa Cum Laude
 11/2016 National Scholarship (Ministry of Education of China)
 2013 - 2015 Elite Program Fellowship for Undergraduate Student

COMPUTER SKILLS

- Programming in Python, Fortran, IDL, MATLAB, and Parallel Computing
- Operating Systems of LINUX, MacOS and typesetting with LaTeX

RESEARCH EXPERIENCES

- 10/2018 - Present **Graduate student**, UCSC/Planetary Sciences, CA, USA
Topic: Atmospheres on icy bodies — **Advisor:** Dr. Xi ZHANG
Project 1: **Modeling Pluto's atmosphere: temperature distribution & rotational lightcurves**
- 06/2017 - 08/2017 **Visiting student researcher**, Caltech/Planetary Sciences, CA, USA
Topic: Properties of atmosphere of planets — **Advisor:** Dr. Yuk YUNG
Project 3: **Tenuous Atmosphere of Europa**
(in prep.)
 - Explored photochemical processes of energetic particles hitting on its icy surface
 - Calculated input/output energies of different particles that affect its atmosphere**Project 2:** **Processing of Data Cubes from Cassini/UVIS**
Project 1: **Abundances of Hydrocarbon and Nitrile Species in Titan's Upper Atmosphere**
(Pub.[6])
 - Applied an innovative method for Titan occultation measurements from Cassini
 - Derived the abundances by MCMC over the entire vertical range for the first time
- 05/2012 - 06/2018 **Topic:** Solar physics and space science — **Advisor:** Dr. Mingde DING & Dr. Xin CHENG
Project 5: **Observations of Magnetic Reconnection in a Super-hot Current Sheet (CS)**
(Pub.[5])
 - Presented observations of a super-hot and dense CS with high resolutions
 - Supported fractal magnetic reconnection occurring in the long stretching CS**Project 4:** **Solar Radio Signals at High Frequencies of Several GHz**
(in prep.)
 - Studied radio signals produced by eruptive activities via magnetic reconnection
 - Proposed a potential method to study the properties of particle accelerating regions**Project 3:** **Early Evolution of a Bubble-like CME and its Associated Shock**
(Pub.[4])
 - Measured real velocities of the CME and shock accurately from a very early stage
 - Obtained thermal properties with differential emission measure inversion methods
 - Better understood mechanism, more accurately forecast and effects evaluated**Project 2:** **Coronal Mass Ejection (CME) Earth Arrival Time Prediction**
(Pub.[2])
 - Validated previous results on CME kinematics under drag-force assumptions
 - Improved the determination of CME initial speed with forward modeling
 - Reduced estimation error, thus more accurate forecast on CMEs' arrival**Project 1:** **Relationship between Solar Magnetic Field and Solar Activities**
 - Conducted statistical analysis of the distribution and strength of sunspots
 - Computed 3D numerical reconstruction of magnetic field from 2D observations
- 06/2015 - 08/2015 **Topic:** Galaxies and quasars — **Advisor:** Dr. Yong SHI
Project: **Where Do Quasars Lie on the Galaxy Main Sequence?**
(Pub.[3])
 - Gave the distribution of quasars in the galaxy main sequence plane
 - Supported the evolutionary scenario of emerging from ULIRGs during transition
- 06/2014 - 08/2014 **Visiting research student**, University of Western Australia, WA, Australia
Topic: Gamma ray burst (GRB) — **Advisor:** Dr. Eric HOWELL & Dr. David COWARD
Project: **GRBs as Probes to the Distant Universe/Gravitational Wave Sources**
(Pub.[1])
 - Performed statistical analysis of GRB luminosity and outflow energy
 - Identified strong selection biases in GRB $E_{\text{iso}} - L_{\text{opt},X}$ correlation, better estimated the ϵ_B parameter which is systematically higher in short GRBs than long ones