Piyush Agrawal

Ph.D. Candidate

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Education

Jan '18 – present
Ph.D. Candidate
Astrophysical & Planetary Sciences, University of Colorado, Boulder, USA

Thesis topic: *Helioseismic inversion techniques applied to solar spectroscopic data*
Advisor: Mark Rast

Aug '14 – Dec '17
Master of Science
Astrophysical & Planetary Sciences, University of Colorado, Boulder, USA

Thesis topic: *Transport of internetwork magnetic flux elements in the solar photosphere*
Advisor: Mark Rast

Jul '08 – May'13
Master of Science *(passed in first class)*
Applied Physics, Indian Institute of Technology (ISM), Dhanbad, India

Publication

Feb '18
Transport of internetwork magnetic flux elements in the solar photosphere
Authors : Agrawal, P., Rast, M. P., Gosic, M., R. Bellot Rubio, L., Rempel, M. 2018, ApJ, 854, 118

Projects

Jan '18 – present
Helioseismic inversion techniques applied to solar spectroscopic data
Advisor: Mark Rast, University of Colorado, Boulder

Presented this work at :

Sep '19 • Dynamics of the sun & stars: honoring the life & work of Michael Thomspon, HAO, Boulder, CO
Aug '19 • SHINE '19, Boulder, CO
Oct '18 • Instituto de Astrofísica de Canarias, Tenerife, Spain

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Aug '14 – Dec '17
Transport of internetwork magnetic flux elements in the solar photosphere
Advisor: Mark Rast, University of Colorado, Boulder

Presented this work at :

Oct '18 • Instituto de Astrofísica de Canarias, Tenerife, Spain
Sep '18 • Big Bear Solar Observatory, Big Bear City, CA
Mar '18 • Boulder Solar Day, HAO, Boulder, CO
Nov '17 • Brown Bag talk, National Solar Observatory, Boulder, CO
May '16 • 47th AAS-SPD Meeting, Boulder, CO

Jun '13
To optimize and enhance the IDL processing code for Sunrise II housekeeping data during Sunrise launch
Advisors: Michael Knoelker, Alice Lecinski, Esrange Space Center, Sweden

Dec '12— Jan '13 — *To find the sources of pointing imperfections in 2009 Sunrise flight (continued from 2011)*
Advisors: Michael Knoelker, Alice Lecinski, High Altitude Observatory, Boulder, CO

May – Aug '12 — *To embed Hinode magnetograms (higher resolution, smaller field of view) into MDI magnetograms (lower resolution, larger field of view), to study magnetic topology changes during a solar flare*
Advisor: Peter Gallagher, Trinity College Dublin, Ireland

Jun – Aug '11 — *To analyze the engineering data and find the sources of pointing imperfections in the 2009 flight of Sunrise balloon-borne Observatory*
Advisors: Michael Knoelker, Alice Lecinski, HAO-LASP REU Program, Boulder, CO

Dec '10 – Jan '11 — *To study the radial distribution of vertical current densities in sunspots, and to assist in the development of a solar vector magnetograph: alignment of optics and characterization of liquid crystal variable voltage to be applied to quarter-wave and half-wave plates*
Advisors: P. Venkatakrishnan, Sanjay Gosain, Udaipur Solar Observatory, India

Workshops

- Jun '19 — 1st NCSP Data Training Workshop: Preparing for DKIST- An Introduction to ground based data, National Solar Observatory, Boulder, CO
- Sep '18 — Solar Spectro-polarimetry and Diagnostic Techniques, Estes Park, CO
- Jan '16 — Asian Solar Physics Winter School on Helioseismology, NAOJ, Tokyo
- Jan '12 — Asian Solar Physics Winter School on Hinode data analysis, NAOJ, Tokyo

Awards & Fellowships

- Jun '19 — John T. Gosling Endowed Fellowship
- Apr '18 — Carl Hansen Graduate Fellowship Prize
- 2014 - '17 — George Ellery Hale Graduate Student Fellowship
- Dec '14 — UCAR Technical Achievement Award (HAO), Sunrise Balloon Project
- 2008 - '13 — Scholarship for Higher Education (Inspire), Government of India

Teaching experience

Jan – May '17 — Accelerated Introduction to Astronomy 2 (ASTR 1040)
Prof. Juri Toomre, University of Colorado Boulder
Responsibilities : taking recitation classes, setting the questions for exams and grading

Programming Skills

IDL, Python, Mathematica, Latex

Achievements

Apr '08 — Qualified IIT-JEE : Ranked among top 2% of about 0.5 million aspirants who took the test

Other Interests

Teaching, coding, hiking, singing, computer games, racquetball, badminton, cricket