Alexander P. Ji

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EDUCATION AND APPOINTMENTS

Hubble Fellow, Observatories of the Carnegie Institution of Washington — Aug 2017 - Present

Ph. D. Physics, Massachusetts Institute of Technology — Sep 2012 - Jun 2017
Advised by Anna Frebel, Astrophysics division

M.S. Statistics, Stanford University — Jun 2012
Focus on Applied Statistics and Machine Learning

B. S. Physics, Stanford University — Jun 2011
Minor in Computer Science

HONORS AND AWARDS

Hubble Fellowship — 2017-2020
Martin Deutsch Award for Excellence in Experimental Physics, MIT — Sep 2016
Young Scientist at 66th Lindau Nobel Laureate Meeting, Germany — Jun 2016
Best Poster Prize, Nuclei in the Cosmos XIV, Japan — Jun 2016
Henry Kendall Teaching Award, MIT — Sep 2014
Whiteman Fellow, MIT — Sep 2012 - Aug 2013
Outstanding Learning Assistant, American Association of Physics Teachers — Jun 2012
Stanford Alumni Award of Excellence — Jun 2011
Stanford Physics Undergraduate Commencement Speaker — Jun 2011

MIT Graduate Student Council Travel Grant — Jun 2016
APS DAP Graduate Student Travel Grant — Apr 2016
MIT Kavli Institute Travel Grant — May 2015

TALKS AND POSTERS

Invited Seminar "A rare and prolific r-process event in Reticulum II", CCAPP/OSU — Oct 2016
Highlight Talk "Dwarf galaxy archaeology with Reticulum II", First Stars V, Germany — Aug 2016
Invited Talk "A single prolific r-process event preserved in an ultra-faint dwarf galaxy", American Physical Society Hot Topics Session, April Meeting — Apr 2016
Colloquium "A rare and prolific r-process event in Reticulum II", U Toledo — Jan 2016

Talk "Homogeneous Abundances in Ultra-faint Dwarf Galaxies", JINA Forging Connections — Jun 2017
Talk "Dwarf galaxy archaeology with Reticulum II", The Galactic Renaissance — Feb 2017
Seminar "Dwarf galaxy archaeology with Reticulum II", Caltech Tea — Nov 2016
Seminar "Dwarf galaxy archaeology with Reticulum II", CfA ITC Luncheon — Nov 2016
Seminar "Dwarf galaxy archaeology with Reticulum II", UC Santa Cruz FLASH — Oct 2016
Seminar "Dwarf galaxy archaeology with Reticulum II", Yale Galaxy Lunch — Oct 2016
Seminar "Dwarf galaxy archaeology with Reticulum II", Carnegie Lunch Talk — Sep 2016
Seminar "A rare and prolific r-process event in Reticulum II", KIPAC/Stanford Tea — Aug 2016
Seminar "A rare and prolific r-process event in Reticulum II", Tufts Astro Lunch — Apr 2016
Local Seminars MIT Kavli Institute Journal Club, Grad Lunch, Code Coffee (15+ talks)

Poster "A rare and prolific r-process event in Reticulum II", Nuclei in the Cosmos XIV — Jun 2016
Poster "Satellite Planes in Caterpillar", Local Group Astrostatistics Conf, U Michigan — Jun 2015
Poster "Testing early star formation", Near-Field Far-Field Conf, UC Irvine — Feb 2014

TEACHING

Teaching Assistant MIT, 8.282/8.284: Intro to Astronomy/Modern Astrophysics	2014/2016/2017
Head Teaching Assistant Stanford, Physics 25/26: Modern Physics	2012
Teaching Assistant Stanford, Physics 63: Electricity, Magnetism, and Waves	2012
Teaching Assistant* Stanford, Physics 62: Classical Mechanics Laboratory	2010/2011
Instructor* Stanford, Physics 91SI: Practical Computing for Scientists	2011
Teaching Assistant Stanford, Physics 24: Electricity and Optics Laboratory	2011
Resident Tutor Stanford CTL, Math, science, and engineering tutoring	2009 - 2010
Section Leader Stanford, CS 106A/B: Programming Methods/Abstractions	2008 - 2009

* Led or assisted in curriculum development

LEADERSHIP EXPERIENCE

Galaxy Discussion Group Coordinator MIT Kavli Institute	Sep 2014 - Mar 2017
Journal Club Coordinator MIT Kavli Institute	Sep 2013 - Sep 2015
Student Social Coordinator MIT Physics Graduate Student Council	Sep 2014 - Sep 2015
Lunch Talk Coordinator MIT Physics Graduate Student Council	Sep 2013 - Sep 2014
President Stanford Society of Physics Students	Sep 2010 - Jun 2011
Secretary Stanford Society of Physics Students	Sep 2007 - Jun 2009
Music Director Stanford Side by Side	Sep 2009 - Jun 2010
Dormitory Staff Stanford Florence Moore Hall	Sep 2009 - Jun 2010

OUTREACH AND SERVICE

Referee for ApJL, MNRAS, A&A	
Mentor for high school and undergraduate students	
Public Talk "The First Stars", MIT IAP	Jan 2017
Einstein in the Classroom Instructor Cambridge Science Festival	Apr 2015
Science by the Pint public outreach with Harvard Science in the News	Apr 2015
Public Talk "The First Stars", MIT IAP	Jan 2015
Public Talk "The Universe in a Box", MIT IAP	Jan 2014
Science Outreach Taught courses at SPLASH, Exploring New Worlds, etc.	Sep 2007 - Jun 2011

TELESCOPE AND COMPUTING ALLOCATIONS

Magellan/MIKE High-resolution spectroscopy, 3 nights (PI)
Magellan/MIKE High-resolution spectroscopy, 6 nights (Co-PI)
Gemini/GRACES High-resolution spectroscopy, 1 night (PI)
Hubble/ACS 12 orbits (Co-I)
XSEDE/Stampede, Comet $\sim$10 million CPU hours (Associated student)

PUBLICATIONS

184 total citations (141 as 1st or 2nd author) as of Jun 2017 (via ADS)

11. Placco, V. M., Holmbeck, E. M., ..., **Ji, A. P.**, ..., *RAVE J203843.2−002333: The first highly r-process enhanced star identified in the RAVE survey*, ApJ, 844, 18

10. Griffen, B. F., Dooley, G., **Ji, A. P.**, O'Shea, B. W., Gomez, F., Frebel, A., *Tracing the origin of the first stars and galaxies within the hierarchical assembly history of the Milky Way*, submitted to MNRAS

9. **Ji, A. P.**, Frebel, A., Ezzeddine, R., Casey, A. R. *Chemical Diversity in the Ultra-faint Dwarf Galaxy Tucana II*, 2016, ApJL, 832, 1

8. **Ji, A. P.**, Frebel, A., Simon, J. D., Chiti, A. *Complete element abundances of nine stars in the r-process galaxy Reticulum II*, 2016, ApJ, 830, 93

7. **Ji, A. P.**, Frebel, A., Chiti, A., Simon, J. D. *R-process enrichment from a single event in an ancient dwarf galaxy*, 2016, Nature, 531, 610

6. Griffen, B. F., **Ji, A. P.**, Dooley, G. A., Gomez, F. A., Vogelsberger, M., O'Shea, B. W., Frebel, A., *The Caterpillar Project: A Large Suite of Milky Way Sized Halos*, 2016, ApJ, 818, 10

5. **Ji, A. P.**, Frebel, A., Simon, J. D., Geha, M., *High-resolution spectroscopy of extremely metal-poor stars in the least evolved galaxies: Bootes II*, 2016, ApJ, 817, 41

4. Frebel, A., Chiti, A., **Ji, A. P.**, Jacobson, H. R., Placco, V. M., *SD 1313–0019 — another second generation star with [Fe/H] = -5.0, observed with the Magellan telescope*, 2015, ApJL, 810, 27

3. **Ji, A. P.**, Frebel, A., Bromm, V., *Preserving chemical signatures of primordial star formation in the first low-mass stars*, 2015, MNRAS, 454, 659

2. Dooley, G., Griffen, B. F., Zukin, P., **Ji, A. P.**, Vogelsberger, M., Hernquist, L., Frebel, A., *The effects of varying cosmological parameters on halo substructure*, 2014, ApJ, 786, 50

1. **Ji, A. P.**, Frebel, A., Bromm, V., *The chemical imprint of silicate dust on the most metal-poor stars*, 2014, ApJ, 782, 95