Alexander P. Ji

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Website: www.alexji.com Github: www.github.com/alexji

RESEARCH INTERESTS: NEAR-FIELD COSMOLOGY

The first stars and galaxies: metal-free stars, first galaxy relics, reionization
The origin of the elements, especially the rapid neutron-capture process
Milky Way halo substructure and the nature of dark matter
Stellar spectroscopy and physics of stellar atmospheres

EDUCATION AND APPOINTMENTS

Assistant Professor, University of Chicago, Astronomy & Astrophysics — Jul 2021 – now
Senior Member, University of Chicago, Kavli Institute for Cosmological Physics — Jul 2021 – now

Carnegie Fellow, Observatories of the Carnegie Institution for Science — Aug 2020 – Jun 2021
Hubble Fellow, Observatories of the Carnegie Institution for Science — Aug 2017 – Jul 2020

Ph. D. Physics, Massachusetts Institute of Technology — 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, AWARDS, AND GRANTS

NSF Collaborative Research: Galactic Archaeology from Careful Modeling of Old Stars	2022-2025
Carnegie Fellowship	2020-2021
Hubble Fellowship	2017-2020
Thacher Research Award in Astronomy	Jun 2020
Carnegie Institution P^2 Grant	Apr 2019
APS DAP Cecilia Payne-Gaposchkin Thesis Award Finalist	Apr 2019
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

INVITED TALKS

Colloquium Johns Hopkins University/Space Telescope Science Institute	Mar 2023
Colloquium Columbia University	Feb 2023
Colloquium UC Berkeley	Jan 2023
Colloquium University of Minnesota	Dec 2022
Colloquium University of Illinois Urbana-Champaign	Sep 2022
Talk JINA Frontiers Meeting	May 2022
Colloquium Durham University	May 2022

Colloquium Center for Computational Astrophysics Apr 2022
Seminar American Museum of Natural History Apr 2022
Colloquium The Ohio State University Apr 2022
Seminar Notre Dame Feb 2022
Colloquium Illinois State University Oct 2021
Review Talk European Astronomical Society Symposium Jun 2021
Colloquium Carnegie Observatories Jun 2021
Seminar Northwestern/CIERA Apr 2021
Colloquium University of Indiana, Bloomington Jan 2021
Seminar Minnesota Institute for Astrophysics Cosmology Seminar Jan 2021
Seminar Rutgers Dec 2020
Colloquium Australian National University Sep 2020
Colloquium Max Planck Institute for Astrophysics Aug 2020
Colloquium UC Berkeley Jun 2020
Talk First Stars VI, Concepcion, Chile Mar 2020
Colloquium University of Texas Austin Feb 2020
Colloquium Stanford Feb 2020
Colloquium University of Chicago Jan 2020
Talk Chemical Evolution of Galaxies: the Next 25 Years, Sesto, Italy Jan 2020
Seminar JINA Online Seminar Nov 2019
Colloquium Caltech Oct 2019
Talk Hubble Symposium Oct 2019
Talk Dwarf Galaxy Cosmology, Durham Jul 2019
Talk APS Cecilia Payne-Gaposchkin Doctoral Dissertation Award in Astrophysics Finalist Apr 2019
Talk Hubble Symposium Mar 2019
Talk Stellar Archaeology, Tokyo Dec 2018
Talk The Metal-Poor Galaxy, Ringberg Jul 2018
Talk American Astronomical Society Denver Jun 2018
Talk Hubble Symposium Mar 2018
Colloquium University of Virginia (Joint Physics/Astronomy) Feb 2018
Seminar CCAPP/Ohio State University Oct 2016
Highlight Talk First Stars V, Heidelberg Aug 2016
Talk American Physical Society Hot Topics Session, April Meeting Apr 2016
Colloquium University of Toledo Jan 2016

CONTRIBUTED TALKS AND POSTERS

Talk Dynamical Masses of Local Dwarf Galaxies, Potsdam Mar 2023
Talk Ancient Globular Clusters, Aspen Mar 2022
Talk YITP Nuclear Burning Online Workshop Jul 2021
Talk Streams 21 Online Workshop Feb 2021
Talk Local Group Online Symposium, StSci Sep 2020
Session Lead Near/Far Age Workshop, Napa, CA Dec 2019
Talk GalFRESCA, UC Irvine Aug 2019
Talk ASU r-process workshop Mar 2019
Talk UC Irvine May 2018

Talk JINA Frontiers May 2018
Talk JINA Forging Connections Jun 2017
Talk The Galactic Renaissance Feb 2017
Seminars At Caltech, CfA, UCSC, Yale, Carnegie, KIPAC, Tufts Apr-Nov 2016
Poster SDSS Collaboration Meeting Jun 2020
Poster GMT Science Meeting Sep 2017
Poster Nuclei in the Cosmos XIV Jun 2016
Poster Local Group Astrostatistics, University of Michigan Jun 2015
Poster Near-Field Far-Field Conference, UC Irvine Feb 2014

TEACHING

Instructor ASTR 30100: Stars 2021-2022
Professional Development Program* ISEE (as team leader, with A. Lanz, S. Uddin) 2019
Lecturer "Cosmology and First Stars", JINA Frontiers Summer School, MSU 2019
Professional Development Program* ISEE (with R. McGurk, D. French) 2018
Workshop Carnegie, Scientific Writing Workshop for Undergraduates (with J. Teske) 2017
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

SELECTED OUTREACH AND SERVICE

Referee for Nature, Nature Astronomy, ApJ, ApJL, MNRAS, A&A
Panelist/Reviewer for NSF and NASA funding proposals
Panelist/Reviewer for NASA, Canada TAC, China TAP telescope proposals
Co-Chair SDSS-V Milky Way Halo Working Group 2020-present
Co-organizer Gaia DR3 Chicago Sprint Jun 2022
Co-organizer Origin of the Isotopes Online Workshop through IReNA Sep 2021-2022
Working Group Co-Organizer JINA Horizons, Explosive nucleosynthesis Dec 2020
Co-Organizer JINA-CEE Chemical Evolution Workshop Mar 2020
Program Committee for JINA First Frontiers Summer School May 2019
Climate Survey Working Group Carnegie Institution for Science 2019–2021
Speaker Aspen Physics Cafe Mar 2022
Public Talk The Messy Milky Way, Carnegie Lunch with an Astronomer Feb 2021
Public Talk "The First Stars", San Diego Astronomy Association Dec 2020
Public Talk "The First Stars, Like, Ever", Caltech Astronomy on Tap Aug 2020
Public Talk "Glimpses of the Cosmic Dawn", Pasadena City College Lectures Sep 2019
Public Talk "Glimpses of the Cosmic Dawn", Huntington Library Astronomy Lectures Mar 2019
Public Talk "Searching for the First Stars", Carnegie Open House Oct 2017

Public Talk "Glimpses of the Cosmic Dawn", Whitin Observatory at Wellesley Apr 2017
Einstein in the Classroom Instructor Cambridge Science Festival Apr 2015
Public Talks "The Universe in a Box" and "The First Stars", MIT IAP 2014/2015/2017
Admissions Committee UChicago Astronomy & Astrophysics Graduate Program 2020-2023
Fellowship Committee Kavli Institute for Cosmological Physics Fellowship 2022-2023
Fellowship Committee Margaret Burbidge Prize Fellowship in Astrophysics 2021-2022
Fellowship Committee Brinson Prize Fellowship in Observational Astrophysics 2020-2021

TELESCOPE AND COMPUTING ALLOCATIONS

As PI (over 50 nights on large ground-based telescopes):
Magellan/MIKE High-resolution spectroscopy
Magellan/M2FS Multi-object spectroscopy
Magellan/IMACS Multi-object spectroscopy
Magellan/MegaCam Imaging
VLT/FLAMES Multi-object spectroscopy
Gemini/GRACES High-resolution spectroscopy
Du Pont/Echelle High-resolution spectroscopy
CTIO/DECam Wide-field imaging

As Co-I:
Keck/HIRES High-resolution spectroscopy
DCT/EXPRES High-resolution spectroscopy
VLT/UVES High-resolution spectroscopy
Hubble/ACS Optical imaging
Hubble/COS UV spectroscopy
JWST/NIRCam IR imaging
XSEDE/Stampede, Stampede2, Comet High Performance Computing

STUDENT AND POSTDOCTORAL COLLABORATORS

Graduate Students Kaley Brauer (MIT PhD, 2017-present),
Samantha Usman (UChicago PhD, 2021-present),
Alice Luna (UChicago PhD, 2021-present),
Pierre Thibodeaux (UChicago PhD, 2022-present),
Shuyu Wang (UChicago MS, 2021),
Yupeng Yao (UChicago MS, 2022),
Guilherme Limberg (USP PhD, visiting student 2022-2023)

Undergraduate Students Benjamin Cohen (UChicago, 2023); Jarvis Zhang (UChicago, 2023); Noah Geller (UChicago, 2022); Morgan Lee (UWisconsin, 2022); Hillary Andales (MIT, 2022); Jandrie Rodriguez (ELAC, 2020-2021); Allen Marquez (CSULA, 2019-2020); Mimi Truong (ELAC, 2020); Fernando Barceló (Pomona, 2019); Jose Arizmendi (ELAC, 2019); Sergio Escobar (Caltech, 2018); Maude Gull (MIT, 2016-2018); Madelyn Cain (MIT, 2016-2018); Lizhou Sha (MIT, 2016-2017)

Postdoctoral Researchers Sanjana Curtis (UChicago, 2022-present); Anirudh Chiti (Brinson Fellow at UChicago, 2022-present); Katy Rodriguez-Wimberly (NSF MPS Ascend Fellow at UC Riverside, 2020-present)

COLLABORATION MEMBERSHIP

The Southern Stellar Stream Spectroscopic Survey (S^5, https://s5collab.github.io/, Project Builder)
SDSS-V, https://www.sdss.org/future/, Milky Way Halo Working Group co-chair
The *Caterpillar* Project (https://www.caterpillarproject.org/, Project Builder)
The R-Process Alliance (RPA, https://sites.google.com/view/rprocessalliance/home)
DECam Local Volume Exploration Survey (DELVE, https://delve-survey.github.io/)
The Magellanic Satellites Survey (MagLiteS)
Joint Institute for Nuclear Astrophysics (JINA-CEE)
International Research Network for Nuclear Astrophysics (IReNA)

PUBLICATIONS

25 refereed or submitted first and second author papers, >1000 total citations, h-index = 17.
75 total refereed or submitted papers, >2500 total citations, h-index = 30.
As of Dec 2022 (via NASA ADS). * indicates papers written with students I supervised or co-supervised.

FIRST AND SECOND AUTHOR PUBLICATIONS

25. Frebel, A. & **Ji, A. P.**, *Observations of r-process stars in the Milky Way and Dwarf Galaxies*, Handbook of Nuclear Physics – Part III, in press

24. **Ji, A. P.**, Naidu, R. P., Brauer, K., Ting, Y.-S., Simon, J. D., *Chemical Abundances of the Typhon Stellar Stream*, accepted to MNRAS, arXiv:2207.04016

23. **Ji, A. P.**, Simon, J. D., Roederer, I. U., Magg, E., . . . , *Metal Mixing in the R-Process Enhanced Ultra-Faint Dwarf Galaxy Reticulum II*, accepted to ApJ, arXiv:2207.03499

22. Reggiani, H., **Ji, A. P.**, Schlaufman, K. C., Frebel, A., . . . , *The Chemical Composition of Extreme-Velocity Stars*, 2022, AJ, 163, 252

21. Naidu, R. P., **Ji, A. P.**, Conroy, C., Bonaca, A., Ting, Y.-S., et al., *Evidence from Disrupted Halo Dwarfs that r-process Enrichment via Neutron Star Mergers is Delayed by* $\gtrsim$*500 Myrs*, 2022, ApJL, 926, 36

20. Li, T. S., **Ji, A. P.**, Pace, A. B., Erkal, D., Koposov, S. E., Shipp, N., et al., *S^5: The Orbital and Chemical Properties of One Dozen Stellar Streams*, 2022, ApJ, 928, 30

19. **Ji, A. P.**, Koposov, S. E., Li, T., S., Erkal, D., Pace, A. B., et al., *Kinematics of Antlia 2 and Crater 2 from The Southern Stellar Stream Spectroscopic Survey*, 2021, ApJ, 921, 32

18. Casey, A. R., **Ji, A. P.**, Hansen, T. T., Li, T. S., et al., *Signature of a massive rotating metal-poor star imprinted in the Phoenix stellar stream*, 2021, ApJ, 921, 67

17. Hansen, T. T., **Ji, A. P.**, Da Costa, G. S., Li, T. S., et al., *S^5: The destruction of a bright dwarf galaxy as revealed by the chemistry of the Indus stellar stream*, 2021, ApJ, 915, 103

16. Brauer, K.*, **Ji, A. P.**, Drout, M. R., Frebel, A., *Collapsar R-Process Yields Can Reproduce [Eu/Fe] Abundance Scatter in Metal-Poor Stars*, 2021, ApJ, 915, 81

15. **Ji, A. P.**, Li, T. S., Hansen, T. T., Casey, A. R., et al., *The Southern Stellar Stream Spectroscopic Survey (S^5): Chemical Abundances of Seven Stellar Streams*, 2020, AJ, 160, 181

14. **Ji, A. P.**, Li, T. S., Simon, J. D., et al., *Detailed Abundances in the Ultra-Faint Magellanic Satellites Carina II and III*, 2020, ApJ, 889, 27

13. **Ji, A. P.**, Drout, M. R., & Hansen, T. T., *The Lanthanide Fraction Distribution in Metal-poor Stars: a Test of Neutron Star Mergers as the Dominant r-process Site*, 2019, ApJ, 882, 1

12. Frebel, A., **Ji, A. P.**, Ezzeddine, R., Hansen, T. T., Chiti, A., Thompson, I. B., Merle, T. *Chemical abundance Signature of J0023+0307 – A Second-Generation Main-Sequence Star with [Fe/H]* < -6, 2019, ApJ, 871, 146

11. Brauer, K.*, **Ji, A. P.**, Frebel, A., Dooley, G. A., Gomez, F. A., O'Shea, B. W. *The Origin of r-process Enhanced Metal-Poor Halo Stars In Now-Destroyed Ultra-Faint Dwarf Galaxies*, 2019, ApJ, 871, 2

10. **Ji, A. P.**, Simon, J. D., Frebel, A., Venn, K. A., Hansen, T. T. *Chemical Abundances in the Ultra-Faint Dwarf Galaxies Grus I and Triangulum II: Neutron-Capture Elements as a Defining Feature of the Faintest Dwarfs*, 2019, ApJ, 870, 83

9. **Ji, A. P.** & Frebel, A. *From Actinides to Zinc: Using the full abundance pattern of the brightest star in Reticulum II to distinguish between different r-process sites*, 2018, ApJ, 856, 138

8. Safarzadeh, M., **Ji, A. P.**, Dooley, G., Frebel, A., Scannapieco, E., Gomez, F., O'Shea, B. W. *Selecting ultra-faint dwarf candidate progenitors in cosmological N-body simulations at high redshifts*, 2018, MNRAS, 476, 5006

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

6. **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

5. **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

4. 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

3. **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

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

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

N-TH AUTHOR PUBLICATIONS

50. Chandra, V., Naidu, R. P., Conroy, C., **Ji, A. P.**, ..., *Distant Echoes of the Milky Way's Last Major Merger*, submitted to ApJ, arXiv:2212.00806

49. Simon, J. D., Brown, T. M., Mutlu-Pakdli, B., **Ji, A. P.**, ..., *Timing the r-Process Enrichment of the Ultra-Faint Dwarf Galaxy Reticulum II*, accepted to ApJ, arXiv:2212.00810

48. Wang, S.*, Necib, L., **Ji, A. P.**, Ou, X., Lisanti, M., de los Reyes, M. A. C., Strom, A. L., Truong, M., *High-Resolution Chemical Abundances of the Nyx Stream*, submitted to ApJ, arXiv:2210.15013

47. Koposov, S. E., Erkal, D., Li, T. S., ..., **Ji, A. P.**, ..., *S5: : Probing the Milky Way and Magellanic Clouds potentials with the 6-D map of the Orphan-Chenab stream*, submitted to MNRAS, arXiv:2211.04495

46. Shah, S.*, Ezzeddine, R., **Ji, A. P.**, Hansen, T. T., Catelan, M., ..., *Uranium Abundances and Ages of R-process Enhanced Stars with Novel U II Lines*, submitted to ApJ

45. Mardini, M. K., Frebel, A., Ezzeddine, R., ..., **Ji, A. P.**, ..., *The chemical abundance pattern of the extremely metal-poor thin disk star 2MASS J1808-5104 and its origins*, 2022, MNRAS, 517, 3993

44. Shipp, N., Panithanpaisal, N., Necib, L., ..., **Ji, A. P.**, ..., *Streams on FIRE: Populations of Detectable Stellar Streams in the Milky Way and FIRE*, submitted to ApJ, arXiv:2208.02255

43. Brauer, K.*, Andales, H. D.*, **Ji, A. P.**, Frebel, A., ... *Possibilities and Limitations of Kinematically Identifying Stars from Accreted Ultra-Faint Dwarf Galaxies*, accepted to ApJ, arXiv:2206.07057

42. Chiti, A., Simon, J. D., Frebel, A., Pace, A. B., **Ji, A. P.**, Li, T. S., *Magellan/IMACS spectroscopy of Grus I: a low metallicity ultra-faint dwarf galaxy*, 2022, ApJ, 939, 41

41. Schatz, H., Becerril Reyes, A. D., et al., including **Ji, A. P.**, *Horizons: Nuclear Astrophysics in the 2020s and Beyond*, accepted to JPhG

40. Chiti, A., Frebel, A., **Ji, A. P.**, Mardini, M. K., ..., *Detailed chemical abundances of stars in the outskirts of the Tucana II ultra-faint dwarf galaxy*, accepted to ApJ, arXiv:2205.01740

39. Lileengen, S., Petersen, M. S., Erkal, D., ..., **Ji, A. P.**, ..., *The effect of the deforming dark matter haloes of the Milky Way and the Large Magellanic Cloud on the Orphan-Chenab Stream*, accepted to MNRAS, arXiv:2205.01688

38. Hartwig, T., Magg, M., Chen, L.-H., Tarumi, Y., ..., **Ji, A. P.**, ..., *Public Release of A-SLOTH: Ancient Stars and Local Observables by Tracing Halos*, accepted to ApJ

37. Cerny, W., Simon, J. D., Li, T. S., Drlica-Wagner, A., ..., **Ji, A. P.**, ..., *Pegasus IV: Discovery and Spectroscopic Confirmation of an Ultra-Faint Dwarf Galaxy in the Constellation Pegasus*, accepted to ApJ, arXiv:2203.11788

36. Chen, L.-H., Magg, M., Hartwig, T., Glover, S. C. O., **Ji, A. P.**, Klessen, R. S., *Tracing stars in Milky Way satellites with A-SLOTH*, 2022, MNRAS, 513, 934

35. Rasmussen, K. C., Brogi, M., ..., **Ji, A. P.**, *Increasing Detection Significances from High-Resolution Exoplanet Spectroscopy with Novel Smoothing Algorithms*, accepted to ApJ, arXiv:2108.12057

34. Fu, S. W., Weisz, D. R., Starkenburg, E., Martin, N., **Ji, A. P.**, ..., *Metallicity Distribution Function of the Eridanus II Ultra-Faint Dwarf Galaxy from Hubble Space Telescope Narrow-band Imaging*, 2022, ApJ, 925, 6

33. Rodriguez Wimberly, M. K., Cooper, M. C., ... **Ji, A. P.**, *Sizing from the Smallest Scales: The Mass of the Milky Way*, 2022, MNRAS 513, 4986

32. de los Reyes, M. A. C., Kirby, E. N., **Ji, A. P.**, Nuñez, E. H., *Simultaneous Constraints on the Star Formation History and Nucleosynthesis of Sculptor dSph*, 2022, ApJ, 925, 66

31. Shipp, N., Erkal, D., Drlica-Wagner, A., ..., **Ji, A. P.**, ..., *Measuring the Mass of the Large Magellanic Cloud with Stellar Streams Observed by S^5*, 2021, ApJ, 923, 149

30. Martinez-Vazquez, C. E., Cerny, W., ..., **Ji, A. P.**, ..., *RR Lyrae stars in the newly discovered ultra-faint dwarf galaxy Centaurus I*, 2021, AJ, 162, 253

29. Reggiani, H., Schlaufman, K. C., Casey, A. R., Simon, J. D., **Ji, A. P.**, *The Most Metal-poor Stars in the Magellanic Clouds are r-process Enhanced*, 2021, ApJ, 162, 229

28. Nelson, T., Ting, Y.-S., Hawkins, K., **Ji, A. P.**, Kamdar, H., El-Badry, K., *Distant Relatives: The Chemical Homogeneity of Comoving Pairs Identified in Gaia*, 2021, ApJ, 921, 118

27. Gull, M., Frebel, A., ..., **Ji, A. P.**, Brauer, K., *R-process-rich stellar streams in the Milky Way*, 2021, ApJ, 912, 52

26. Jenkins, S., Li, T. S., Pace, A. B., **Ji, A. P.**, Koposov, S. E., Mutlu-Pakdil, B., *VLT Spectroscopy of Ultra-Faint Dwarf Galaxies. 1: Bootes I, Leo IV, Leo V*, 2021, ApJ, 920, 92

25. Chiti, A., Frebel, A., Simon, J. D., ..., **Ji, A. P.**, ..., *An extended halo around an ancient dwarf galaxy*, 2021, Nat Astron., 5, 392

24. Li, T. S., Koposov, S. E., Erkal, D., **Ji, A. P.**, ..., *Broken into Pieces: ATLAS and Aliqa Uma as One Single Stream*, 2021, ApJ, 911, 149

23. Wan, Z., Lewis, G. F., Li, T. S., ... **Ji, A. P.**, ..., *The tidal remnant of an unusually metal-poor globular cluster*, 2020, Nature, 583, 768

22. Reggiani, H., Schlaufman, K. C., Casey, A. R., **Ji, A. P.**, *The Most Metal-poor Stars in the Inner Bulge*, 2020, ApJ, 160, 173

21. Cain, M., Frebel, A., **Ji, A. P.**, Placco, V. M., ..., *The R-Process Alliance: J1521-3538, a very metal-poor, extremely r-process-enhanced star with [Eu/Fe]=+2.2, and the class of r-III stars*, 2020, ApJ, 898, 1

20. Ezzeddine, R., Rasmussen, K., Frebel, A., ... **Ji, A.P.**, ..., *The R-process Alliance : First Magellan/MIKE Release from the Southern Search for R-Process-enhanced Stars*, 2020, ApJ, 898, 150

19. Placco, V. M., Santucci, R. M., ... **Ji, A. P.**, ..., *The R-Process Alliance: The Peculiar Chemical Abundance Pattern of RAVE J183013.5−455510*, 2020, ApJ, 897, 78

18. Hawkins, K., Lucey, M., Ting, Y.-S., **Ji, A. P.**, ..., *Identical or fraternal twins? The chemical homogeneity of wide binaries from* Gaia *DR2*, 2020, MNRAS, 492, 1164

17. Norfolk, B. J., Casey, A., ..., **Ji, A. P.**, *Discovery of s-process enhanced stars in the LAMOST survey*, 2019, MNRAS, 490, 2219

16. Koposov, S. E., Boubert, D., Li, T. S., ..., **Ji, A. P.** (7th/20), ..., *Discovery of a nearby 1700 km/s star ejected from the Milky Way by Sgr A**, 2020, MNRAS, 491, 2645,

15. Li, T. S., Koposov, S. E., Zucker, D. B., ..., **Ji, A. P.** (7th/32), ..., *The Southern Stellar Stream Spectroscopic Survey (S^5): Overview, Target Selection, Data Reduction, Validation, and Early Science* , 2019, MNRAS, 490, 3508

14. Kozlowski, S., Bañados, E., ..., **Ji, A. P.**, ..., *Discovery of two quasars at $z = 5$ from the OGLE survey*, 2019, ApJ, 878, 115

13. Placco, V., Santucci, R. M., ..., **Ji, A. P.**, ..., *The R-Process Alliance: Spectroscopic Follow-up of Low-metallicity Star Candidates from the Best & Brightest Survey*, 2019, ApJ, 870, 122

12. Kemp, A., Casey, A., ..., **Ji, A. P.**, ..., *On the discovery of K-enhanced and possibly Mg-depleted stars throughout the Milky Way*, 2018, MNRAS, 480, 1384

11. Cain, M. G., Frebel, A., Gull, M., **Ji, A. P.**, ..., *The R-Process Alliance: Chemical Abundances for a Trio of R-Process-Enhanced Stars*, 2018, ApJ, 864, 43

10. Gull, M., Frebel, A., Cain, M. G., Placco, V., **Ji, A. P.**, ..., *The R-Process Alliance: discovery of the first metal-poor star with a combined r- and s-process element signature*, 2018, ApJ, 862, 174

9. Chiti, A., Frebel, A., **Ji, A. P.**, Jerjen, H., Kim, D., Norris, J. E., *Chemical Abundances of New Member Stars in the Tucana II Dwarf Galaxy*, 2018, ApJ, 857, 74

8. Li, T. S., Simon, J. D., ..., **Ji, A. P.**, ..., *Ships Passing in the Night: Spectroscopic Analysis of Two Ultra-Faint Satellites in the Constellation Carina*, 2018, ApJ, 851, 145

7. Hartwig, T., Yoshida, N., ..., **Ji, A. P.**, ..., *Descendants of the first stars: the distinct chemical signature of second generation stars*, 2018, MNRAS 478, 1795

6. 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*, 2018, MNRAS, 474, 443

5. Drout, M. R., Piro, A. L., . . . , **Ji, A. P.**, . . . , *Light Curves of the Neutron Star Merger GW170817/SSS17a: Implications for R-Process Nucleosynthesis*, 2017, Science, 358, 1570

4. Shappee, B. J., Simon, J. D., . . . , **Ji, A. P.**, . . . , *Early Spectra of the Gravitational Wave Source GW170817: Evolution of a Neutron Star Merger*, 2017, Science, 358, 1574

3. 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*, 2017, ApJ, 844, 18

2. 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

1. 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

UNREFEREED MANUSCRIPTS

6. Zafar, Tayyaba et al. including **Ji, A. P.**, *MANIFEST@GMT science overview: a multi-interface, multi-mode instrument science and simulations*, 2022, SPIE Proceedings, 12184, 1218417

5. **Ji, A. P.** et al., 2019, *Local Dwarf Galaxy Archaeology*, White Paper submitted to the Astro 2020 Decadal Survey

4. Simon, J. D. et al. including **Ji, A. P.**, 2019, *Dynamical Masses for a Complete Census of Local Dwarf Galaxies*, White Paper submitted to the Astro 2020 Decadal Survey

3. Roederer, I. U. et al. including **Ji, A. P.**, 2019, *The First Stars and the Origin of the Elements*, White Paper submitted to the Astro 2020 Decadal Survey

2. Roederer, I. U. et al. including **Ji, A. P.**, 2019, *The astrophysical r-process and the origin of the heaviest elements*, White Paper submitted to the Astro 2020 Decadal Survey

1. The MSE Science Team including **Ji, A. P.**, *The Detailed Science Case for the Maunakea Spectroscopic Explorer, 2019 edition* (contributed to Chapter 4), arXiv:1904.04907