

# Ian U. Roederer, PhD

# Curriculum Vitae

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## Education

**PhD**, Astronomy, University of Texas, Austin, Texas (2010)  
**MA**, Astronomy, University of Texas, Austin, Texas (2007)  
**BS**, Astronomy (with dept. honors), Indiana University, Bloomington, Indiana (2005)  
**BS**, Physics, Indiana University, Bloomington, Indiana (2005)

## Appointments

**Research Professor**, Department of Astronomy, University of Michigan (2021–)  
**Intermittent Lecturer**, Department of Astronomy, University of Michigan (2014–)  
**Associate Research Scientist**, Department of Astronomy, University of Michigan (2017–2021)  
**Assistant Research Scientist**, Department of Astronomy, University of Michigan (2013–2017)  
**Carnegie Fellow**, Carnegie Observatories, Pasadena, California (2010–2013)

## Grants

(Total of \$1,986,571 to my institution)

### **NSF**

Co-PI, Astronomy & Astrophysics Research Grant AST 2205847: \$588,370 (2022–2025)  
Co-PI, Astronomy & Astrophysics Research Grant AST 1815403: \$329,793 (2018–2022)  
PI, Astronomy & Astrophysics Research Grant AST 1613536: \$144,914 (2016–2019)

### **NASA**

PI, *Astrophysics Data Analysis Program* 80NSSC21K0627: \$185,197 (2021–2024)  
PI, *Hubble Space Telescope* GO-17166: \$TBD (2023–2026)  
PI, *Hubble Space Telescope* AR-16630: \$80,725 (2021–2023)  
PI, *Hubble Space Telescope* GO-15657: \$66,821 (2019–2022)  
PI, *Hubble Space Telescope* AR-15051: \$68,070 (2017–2020)  
PI, *Hubble Space Telescope* GO-14765: \$72,844 (2016–2019)  
PI, *Hubble Space Telescope* GO-14232: \$57,609 (2016–2019)  
PI, *Hubble Space Telescope* GO-13827: \$46,472 (2016–2019)  
PI, *Hubble Space Telescope* GO-14231: \$54,292 (2015–2018)  
PI, *Hubble Space Telescope* AR-13884: \$74,476 (2015–2018)  
PI, *Hubble Space Telescope* AR-13879: \$54,155 (2014–2017)  
PI, *Hubble Space Telescope* GO-12976: \$1,504 (2012–2015)  
PI, *Hubble Space Telescope* GO-12268: \$54,960 (2011–2014)  
Co-I, *Hubble Space Telescope* GO-15951 (PI Hansen): \$13,805 (2020–2023)  
Co-I, *Hubble Space Telescope* GO-14151 (PI Frebel): \$53,547 (2016–2019)  
Co-I, *Hubble Space Telescope* AR-13246 (PI Frebel): \$27,549 (2013–2016)  
Co-I, *Hubble Space Telescope* GO-12554 (PI Beers): \$1,488 (2012–2015)

### **Other**

PI, AAS travel grant: \$930 (2009)  
 PI, IAU travel grants (3): \$2,500 (2008–2009)  
 PI, Professional development awards, University of Texas (3): \$1,675 (2007–2009)  
 PI, *Sigma Xi* Grant-in-Aid of Research Award: \$4,875 (2006)

## **Honors and Awards**

Barbara McClintock Fellow, Carnegie Observatories (2012)  
 Outstanding Dissertation Award, Univ. of Texas Graduate School/University Co-op (2011)  
 NSF Graduate Research Fellowship—Honorable Mention (2005, 2006, 2007)  
 Hollis and Grete Johnson Award for Excellence in Student Research, Dept. of Astronomy, Indiana Univ. (2005)  
 Herman B Wells Scholar, Indiana University (2001–2005)

## **Invited Talks**

### **Conferences and Meetings**

[14] 15th International Symp. on the Origin of Matter and Evolution of Galaxies, Kyoto, Japan (07/02/2019)  
 [13] FRIB and the GW170817 Kilonova, East Lansing, MI (07/17/2018)  
 [12] Stellar Abundances in Dwarf Galaxies, Denver, CO (06/05/2018)  
 [11] A Celebration of CEMP and Gala of GALAH, Melbourne, Australia (11/14/2017)  
 [10] First Stars V, Heidelberg, Germany (08/01/2016)  
 [9] Connecting FRIB with the Cosmos, East Lansing, MI (06/01/2016)  
 [8] The UV-Visible Path Forward: the Future of UV/Visible Space Astrophysics (06/25/2015)  
 [7] JINA-CEE Frontiers in Nuclear Astrophysics, East Lansing, MI (03/24/2015)  
 [6] Status and Challenges of r-process Nucleosynthesis, INT, Seattle, WA (07/30/2014)  
 [5] Torino Workshop on Nucleosynthesis in AGB Stars, Bad Honnef, Germany (07/18/2014)  
 [4] Nuclear Astrophysics Workshop, NSCL, East Lansing, MI (08/22/2013)  
 [3] National Academy of Science: Korean-American Kavli Frontiers Symposium, Irvine, CA (08/12/2013)  
 [2] American Physical Society / Division of Nuclear Physics, Newport Beach, CA (10/27/2012)  
 [1] Russbach Workshop on Nuclear Astrophysics, Russbach, Austria (03/12/2012)

### **Astronomy/Astrophysics Colloquia**

[20] DAO/Herzberg Astronomy and Astrophysics Research Center [virtual] (11/24/2020)  
 [19] University of Florida [virtual] (05/14/2020)  
 [18] MIT (03/12/2019)  
 [17] Michigan State University (JINA-CEE) (09/10/2018)  
 [16] University of Victoria (05/02/2018)  
 [15] Space Telescope Science Institute and Johns Hopkins University (10/25/2017)  
 [14] Case Western Reserve University (03/01/2017)  
 [13] University of Minnesota (02/17/2017)  
 [12] Purdue University (01/27/2017)  
 [11] University of Michigan (01/12/2017)  
 [10] The Ohio State University (CCAPP) (05/24/2016)  
 [9] University of Washington (05/19/2016)  
 [8] Heidelberg (ZAH, MPIA, MPIK, HITS) (05/03/2016)  
 [7] University of Notre Dame (09/01/2015)

[6] University of Illinois	(04/21/2015)
[5] Indiana University	(11/18/2014)
[4] UC Irvine	(03/05/2013)
[3] UC Santa Cruz	(11/21/2012)
[2] University of Utah	(11/09/2012)
[1] Texas A&M University	(03/25/2009)

### **Physics Colloquia**

[6] TRIUMF	(05/03/2018)
[5] University of Wisconsin	(04/20/2018)
[4] University of Notre Dame	(02/01/2017)
[3] Central Michigan University	(09/10/2015)
[2] University of Wisconsin	(09/04/2012)
[1] University of Oklahoma	(12/03/2009)

### **Contributed Talks**

[36] RR Lyrae Stars, Galactic Structure, and Chemistry, Pasadena, CA	(06/11/2022)
[35] JINA-CEE Frontiers in Nuclear Astrophysics, South Bend, IN	(05/26/2022)
[34] Science with UV-Efficient Ground-Based Spectrographs [virtual]	(02/03/2021)
[33] The Local Group: Assembly and Evolution, STScI [virtual]	(09/01/2020)
[32] 236th AAS Meeting [virtual]	(06/02/2020)
[31] FRIB Proposal Writing Workshop [virtual]	(05/04/2020)
[30] R-Process Alliance Workshop, Cambridge, MA	(11/22/2019)
[29] Small Galaxies—Cosmic Questions, Durham, United Kingdom	(08/02/2019)
[28] 233rd AAS Meeting, Seattle, WA	(01/08/2019)
[27] 231st AAS Meeting, Washington, DC	(01/11/2018)
[26] Forging Connections: From Nuclei to the Cosmic Web, East Lansing, MI	(06/26/2017)
[25] JINA-CEE Frontiers in Nuclear Astrophysics, Lansing, MI	(02/09/2017)
[24] Magellan Science Symposium, Washington, DC	(12/08/2016)
[23] JINA-CEE Frontiers in Nuclear Astrophysics, South Bend, IN	(03/30/2016)
[22] 225th AAS Meeting, Seattle, WA	(01/05/2015)
[21] 222nd AAS Meeting, Indianapolis, IN	(06/06/2013)
[20] Seminar, University of Michigan	(12/03/2013)
[19] 221st AAS Meeting, Long Beach, CA	(01/08/2013)
[18] Nuclei in the Cosmos XII, Cairns, Australia	(08/06/2012)
[17] NIC Workshop on r-process Nucleosynthesis, Cairns, Australia	(08/04/2012)
[16] Carnegie Science Day, Carnegie Observatories	(04/13/2012)
[15] Chemical Evolution of the Milky Way, Sesto, Italy	(01/25/2012)
[14] Carnegie Science Day, Carnegie Observatories	(10/28/2011)
[13] The Globular Cluster Galaxy Connection, UC Santa Cruz	(07/13/2011)
[12] Ph.D. defense, Department of Astronomy, University of Texas	(06/04/2010)
[11] 215th AAS Meeting, Dissertation summary talk, Washington, D.C.	(01/04/2010)
[10] Seminar, Carnegie Observatories	(11/20/2009)
[9] Astronomy tea talk, Caltech	(11/16/2009)

- [8] Poster summary talk, The Frank N. Bash Symposium, University of Texas (10/19/2009)
- [7] Institute for Theory and Computation seminar, Harvard-Smithsonian CfA (09/29/2009)
- [6] Joint Institute for Nuclear Astrophysics seminar, Michigan State University (09/14/2009)
- [5] Second GMT Hi-Res Spectroscopy Workshop, University of Texas (01/17/2009)
- [4] Astronomy journal club presentation, UCLA (01/13/2009)
- [3] Seminar, Carnegie Observatories (04/11/2008)
- [2] The IXth Torino Workshop on AGB Stars, Perugia, Italy (10/25/2007)
- [1] Precision Spectroscopy in Astrophysics, Aveiro, Portugal (09/12/2006)

## Teaching

### **University of Michigan, Ann Arbor, Michigan**

- Astro 101, The Solar System and the Search for a New Earth (4 cr.) (winter 2019, fall 2022)
- Astro 102, Stars, Galaxies, and the Universe (4 cr.) (winter 2020)
- Astro 104, Alien Skies: A Tour through the Universe (3 cr.) (winter 2017)
- Astro 127, Naked Eye Astronomy (1 cr.) (10 sections, fall 2014 to fall 2016)
- Astro 399, Introduction to Research (1–3 cr.) (various sections and years)
- Stars and the Atomic Age (developed as part of NSF AAG 16-13536)

### **Pasadena City College, Pasadena, California**

- New Horizons in Astronomy (extended learning curriculum) (summer 2012)

## Mentoring

### **Undergraduate students**

- Lailyn Borum, University of Michigan '25 (2022–)
- Audrey Lang, University of Michigan '21 (2020–)
- Xiaowei Ou, University of Michigan '20 (2016–2020)
- David Khatami, Pomona College '16 (summer 2013)

## Professional Service

- Chair**, Stars and stellar populations science working group, European Extremely Large Telescope (ELT) ArmazoNes high Dispersion Echelle Spectrograph (ANDES) (2022–)
- Member**, Hubble Space Telescope Users' Committee (2022–)
- Science Verification Team**, Gemini High Resolution Optical SpecTrograph (GHOST) (2020–)
- External reviewer**, CFHT French Time Allocation Committee, China Telescope Access Program, FONDECYT, NIST, Austrian Science Fund's Erwin Schrödinger Fellowship, and the Canadian Time Allocation Committee; 1–2 reviews per year (2014–)
- Peer-review referee**, AJ, ApJ, A&A, MNRAS, PASP, Science; 4–5 manuscripts per year (2009–)
- Panel reviewer**, NASA Astrophysics Data Analysis Program (2021)
- Science Advisory Group**, Integral Field Units for Magellan (IFU-M) (2017–2021)
- Collaborator**, Cosmic Evolution Through UV Surveys (CETUS) a proposed probe-class mission (2016–2020)
- Member**, science working group to advise the science and technology definition team for the UV Spectrograph on NASA's Habitable Exoplanet Observatory (HabEx) mission concept (2016–2020)
- Member**, Magellan-2020 Strategic Planning Committee (2020)
- Panel reviewer**, NSF Astronomy & Astrophysics Research Grants Program (2019)

- Topical group convener**, US ELT Key Science Program effort (2018–2019)  
**Member**, UV-visible science interest group, Cosmic Origins Program Analysis Group (2015)  
**Judge**, Chambliss student poster award competition, 221st, 222nd, 225th, 231st, 232nd, and 233rd AAS Meetings (2013–2019)  
**Panel member or mid-cycle reviewer**, Hubble Space Telescope Time Allocation Committee (2011, 2014, 2017, 2019, 2022)  
**Science advisor**, Michigan/Magellan Fiber System (M2FS) (2011–2013)  
**Member**, Science Working Group for G-Clef, the high-resolution optical spectrograph for the Giant Magellan Telescope (2010)  
**Member**, Science Working Group for Q-Spec, a proposed high-resolution optical spectrograph for the Giant Magellan Telescope (2009)

## **Department Service**

- Undergraduate academic advisor** (2021–)  
**Member**, U. Michigan Extremely Large Telescope Committee (2021–)  
**Co-chair**, Colloquium Committee (2019–2020)  
**Member**, Magellan Training/Use Committee (2018–2019)  
**Co-chair, member**, Diversity, Equity, & Inclusion Committee (2017–2018; 2020)  
**Member**, NOEMA Telescope Allocation Committee (U. Michigan internal) (2018)  
**Member**, Magellan Telescope Allocation Committee (U. Michigan internal) (2014–2015; 2022–2023)  
**Coordinator**, Carnegie Observatories lunch seminar (2011–2013)  
**Graduate student representative**, Dept. of Astronomy, Univ. of Texas (2007–2008)

## **Science Communication**

- Organizer/speaker**, virtual activities for children and adults at public libraries across Michigan and Indiana during the COVID-19 pandemic (2020–2021)  
**Speaker**, Carnegie Observatories Public Lecture Series, “Stars and the Atomic Age” (2013)  
**Judge**, Los Angeles County Science Fair (2013)  
**Contributing author**, “Ask an Astronomer” column in *Astronomy Magazine* (2009–2014)  
**Host/speaker/volunteer**, astronomy outreach events including star parties, University open houses, K–12 school groups, library groups, scout groups, Rotary, and amateur astronomy societies (2005–)  
**Intern**, Gheens Science Hall and Rauch Planetarium, Louisville, Kentucky: led planetarium shows and discussions for the public and school groups (summer 2002, 2003, 2005)

## **Professional Affiliations**

American Astronomical Society  
 International Astronomical Union

## **Press Releases and Media Coverage**

- “Gemini’s GHOST Captures Exquisite First Light Observations of a Bright, Chemically Rich Star”:  
 NSF’s NOIRLab press release featuring a star my team discovered (07/2022)  
 “Astronomers find ‘gold standard’ star in Milky Way”: University of Michigan (05/2022)

“Star fossil: a rare and ancient star over 10 billion years old”: São Paulo Research Foundation	(05/2021)
“Explosions of universe’s first stars spewed powerful jets”: MIT	(05/2019)
“Massive hyper-runaway star ejected from the Milky Way Disk”: University of Michigan	(03/2019)
“Using the Gaia Satellite to study the environment of the r-process”: JINA-CEE Highlight	(10/2018)
“Relics of the Milky Way’s first generation of stars”: University of Michigan	(06/2016)
“A rare and prolific r-process event preserved in an ancient dwarf galaxy”: JINA-CEE Highlight	(05/2016)
“New evidence for the i-process in the early Galaxy”: JINA-CEE Highlight	(04/2016)
“Our Cosmic Selves”: New York Times commentary by R. Jayawardhana on my team’s detection of phosphorus, among other things	(04/2015)
“Candidate Solar Sibling Found”: McDonald Observatory	(05/2014)
“Old Star, New Trick”: Carnegie Institution for Science	(04/2012)
“Astronomers Find Rare Element in Ancient Stars”: MIT	(02/2012)

## **Refereed Publications**

- Total citations: 3,792 (1,941 as first author, 1,851 as Nth author)
- *h*-index: 37 (as of 2022 September 22)
- Publications are linked to the NASA ADS whenever possible.
- Follow [this link](#) for a full listing of my publications at the NASA ADS.
- ★ marks publications led by a student under my supervision.

[94] *Discovery of an Ultra Lithium-rich Metal-poor Red Giant Star*

Kowkabany, J., Ezzeddine, R., Charbonnel, C., **Roederer, I.U.**, Li, Y., Hackshaw, Z., Beers, T.C., Frebel, A., Hansen, T.T., Holmbeck, E., Placco, V.M., Sakari, C.M.

*Astrophysical Journal*, submitted (arXiv:2209.02184)

[93] *The R-Process Alliance: Chemo-Dynamically Tagged Groups II. An Extended Sample of Halo r-Process-Enhanced Stars*

Shank, D., Beers, T.C., Placco, V.M., Gudin, D., Catapano, T., Holmbeck, E.M., Ezzeddine, R., **Roederer, I.U.**, Sakari, C.M., Frebel, A., Hansen, T.T.

*AAS Journals*, submitted (arXiv:2208.09712)

[92] *The chemical abundance pattern of the extremely metal-poor thin disk star 2MASS J1808–5104 and its origins*

Mardini, M.K., Frebel, A., Ezzeddine, R., Chiti, A., Meiron, Y., Ji, A.P., Placco, V.M., **Roederer, I.U.**, Meléndez, J.

**Monthly Notices of the Royal Astronomical Society**, in press (arXiv:2208.03891)

[91] *ANDES, the high resolution spectrograph for the ELT: science case, baseline design and path to construction*

Marconi, A., et al. (200+ authors, including **Roederer, I.U.**)

**Proceedings of the Society of Photo-Optical Instrumentation Engineers**, submitted

[90] *Finding *r*-II sibling stars in the Milky Way with the Greedy Optimistic Clustering algorithm*

Hattori, K., Okuno, A., **Roederer, I.U.**

**Astrophysical Journal**, submitted (arXiv:2207.04110)

[89] *Metal Mixing in the R-Process Enhanced Ultra-Faint Dwarf Galaxy Reticulum II*

Ji, A.P., Simon, J.D., **Roederer, I.U.**, Magg, E., Frebel, A., Johnson, C.I., Klessen, R.S., Magg, M., Cescutti, G., Mateo, M., Bergemann, M., Bailey, J.I. III.

**Astrophysical Journal**, submitted (arXiv:2207.03499)

[88] *The complex stellar system M22: confirming abundance variations with high precision differential measurements*

McKenzie, M., Yong, D., Marino, A.F., Monty, S., Wang, E., Karakas, A.I., Milone, A., Legnardi, M.V., **Roederer, I.U.**, Martell, S., Horta, D.

**Monthly Notices of the Royal Astronomical Society**, in press

[87] *Horizons: nuclear astrophysics in the 2020s and Beyond*

Schatz, H., Becerril Reyes, A.D., Best, A., et al. (165 authors, including **Roederer, I.U.**)

**Journal of Physics G: Nuclear and Particle Physics**, in press (arXiv:2205.07996)

[86] *The R-Process Alliance: Abundance Universality among Some Elements at and between the First and Second R-Process Peaks*

**Roederer, I.U.**, Cowan, J.J., Pignatari, M., Beers, T.C., Den Hartog, E.A., Ezzeddine, R., Frebel, A., Hansen, T.T., Holmbeck, E.M., Mumpower, M.R., Placco, V.M., Sakari, C.M., Surman, R., Vassh, N.

**Astrophysical Journal**, 936, 84 (2022)

[85] *The R-Process Alliance: A Nearly Complete R-Process Abundance Template Derived from Ultraviolet Spectroscopy of the R-Process-Enhanced Metal-Poor Star HD 222925*

**Roederer, I.U.**, Lawler, J.E., Den Hartog, E.A., Placco, V.M., Surman, R., Beers, T.C., Ezzeddine, R., Frebel, A., Hansen, T.T., Hattori, K., Holmbeck, E.M., Sakari, C.M.

**Astrophysical Journal Supplement Series**, 260, 27 (2022)

[84] *Orbital Parameters and Binary Properties of 37 FGK stars in the Cores of Open Clusters NGC 2516 and NGC 2422*

Lipartito, I., Bailey, J.I. III, Brandt, T.D., Mazin, B.A., Mateo, M., Spencer, M.E., **Roederer, I.U.**

**Astronomical Journal**, 162, 285 (2021)

[83] *Atomic Transition Probabilities of Neutral Calcium*

Den Hartog, E.A., Lawler, J.E., Sneden, C., Cowan, J.J., **Roederer, I.U.**, Sobek, J.

**Astrophysical Journal Supplement Series**, 255, 27 (2021)

[82] *Probing the He II re-ionization ERA via Absorbing C IV Historical Yield (HIERACHY) I: Discovery of a Strong Outflow from a  $z \sim 4.7$  Quasar*

Yu, X., Li, J.-T., Qu, Z., **Roederer, I.U.**, Bregman, J.N., Fan, X., Fang, T., Johnson, S.D., Wang, F., Yang, J.

**Monthly Notices of the Royal Astronomical Society**, 505, 4444 (2021)

[81] *Dynamical masses and mass-to-light ratios of resolved massive star clusters - II. Results for 26 star clusters in the Magellanic Clouds*

Song, Y.-Y., Mateo, M., Bailey, J.I. III, Walker, M.G., **Roederer, I.U.**, Olszewski, E.W., Reiter, M., Kremin, A.

**Monthly Notices of the Royal Astronomical Society**, 504, 4160 (2021)



- [80] *SPLUS J210428.01–004934.2: An Ultra Metal-Poor Star Identified from Narrow-Band Photometry*  
Placco, V.M, **Roederer, I.U.**, Lee, Y.S., Almeida-Fernandes, F., Herpich, F.R., Perottoni, H.D., Schoenell, W.,  
Ribeiro, T., Kanaan, A.  
**Astrophysical Journal Letters**, 912, L32 (2021)
- [79] *Detection of Al II in the Ultraviolet Spectra of Metal-Poor Stars: An Empirical LTE Test of NLTE Aluminum Abundance Calculations*  
**Roederer, I.U.**, Lawler, J.E.  
**Astrophysical Journal**, 912, 119 (2021)
- [78] *Improved Atomic Transition Probabilities for UV and Optical Lines of Hf II and Determination of the Hf Abundance in Two Metal-Poor Stars*  
Den Hartog, E.A., Lawler, J.E., **Roederer, I.U.**  
**Astrophysical Journal Supplement Series**, 254, 5 (2021)
- [77] *R-Process-Rich Stellar Streams in the Milky Way*  
Gull, M., Frebel, A., Hinojosa, K., **Roederer, I.U.**, Ji, A.P., Brauer, K.  
**Astrophysical Journal**, 912, 52 (2021)
- [76] *The R-Process Alliance: Chemo-Dynamically Tagged Groups of Halo r-Process-Enhanced Stars Reveal a Shared Chemical-Evolution History*  
Gudin, D., Shank, D., Beers, T.C., Yuan, Z., Limberg, G., **Roederer, I.U.**, Placco, V., Holmbeck, E.M., Dietz, S.,  
Rasmussen, K.C., Hansen, T.T., Sakari, C.M., Ezzeddine, R., Frebel, A.  
**Astrophysical Journal**, 908, 79 (2021)
- [75] *Detection of Pb II in the Ultraviolet Spectra of Three Metal-Poor Stars*  
**Roederer, I.U.**, Lawler, J.E., Holmbeck, E.M., Beers, T.C., Ezzeddine, R., Frebel, A., Hansen, T.T., Ivans, I.I.,  
Karakas, A.I., Placco, V.M., Sakari, C.M.  
**Astrophysical Journal Letters**, 902, L24 (2020)
- ★ [74] *Vanadium Abundance Derivations in 255 Metal-poor Stars*  
Ou, X., **Roederer, I.U.**, Sneden, C., Cowan, J.J., Lawler, J.E., Shtetman, S.A., Thompson, I.B.  
**Astrophysical Journal**, 900, 106 (2020)
- [73] *The R-Process Alliance: Fourth Data Release from the Search for R-Process-Enhanced Stars in the Galactic Halo*  
Holmbeck, E.M., Hansen, T.T., Beers, T.C., Placco, V.M., Whitten, D.D., Rasmussen, K.C., **Roederer, I.U.**,  
Ezzeddine, R., Sakari, C.M., Frebel, A., Drout, M.R., Simon, J.D., Thompson, I.B., Bland-Hawthorne, J.,  
Gibson, B.K., Grebel, E.K., Kordopatis, G., Kunder, A., Meléndez, J., Navarro, J.F., Reid, W.A., Seabroke,  
G., Steinmetz, M., Watson, F., Wyse, R.F.G.  
**Astrophysical Journal Supplement Series**, 249, 30 (2020)

[72] *The R-process Alliance: First Magellan/MIKE Release from the Southern Search for R-Process-enhanced Stars*

Ezzeddine, R., Rasmussen, K., Frebel, A., Chiti, A., Hinojisa, K., Placco, V.M., Beers, T.C., Hansen, T.T., **Roederer, I.U.**, Sakari, C.M., Ji, A.P., Meléndez, J.

**Astrophysical Journal**, 898, 150 (2020)

[71] *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*

Cain, M., Frebel, A., Ji, A.P., Placco, V.M., Ezzeddine, R., **Roederer, I.U.**, Hattori, K., Beers, T.C., Meléndez, J., Hansen, T.T., Sakari, C.M.

**Astrophysical Journal**, 898, 40 (2020)

[70] *The R-Process Alliance: The Peculiar Chemical Abundance Pattern of RAVE J183013.5–455510*

Placco, V.M., Santucci, R.M., Yuan, Z., Mardini, M.K., Holmbeck, E.M., Wang, X., Surman, R., Hansen, T.T., **Roederer, I.U.**, Beers, T.C., Choplin, A., Ji, A.P., Ezzeddine, R., Frebel, A., Sakari, C.M., Whitten, D.D., Zepeda, J.

**Astrophysical Journal**, 897, 78 (2020)

[69] *Hyperfine Structure Constants for Levels of  $^{175}\text{Lu}^+$*

Den Hartog, E.A., Lawler, J.E., **Roederer, I.U.**

**Astrophysical Journal Supplement Series**, 248, 10 (2020)

[68] *Detailed Iron-Peak Element Abundances in Three Very Metal-Poor Stars*

Cowan, J.J., Sneden, C., **Roederer, I.U.**, Lawler, J.E., Den Hartog, E.A., Sobeck J.S., Boesgaard, A.M.

**Astrophysical Journal**, 890, 119 (2020)

[67] *Dynamical Masses and Mass-to-light Ratios of Resolved Massive Star Clusters. I. NGC 419 and NGC 1846*

Song, Y.-Y., Mateo, M., Mackey, A.D., Olszewski, E.W., **Roederer, I.U.**, Walker, M.G., Bailey, J.I. III

**Monthly Notices of the Royal Astronomical Society**, 490, 385 (2019)

[66] *High Resolution Optical Spectroscopy of Stars in the Sylgr Stellar Stream*

**Roederer, I.U.**, Gnedin, O.Y.

**Astrophysical Journal**, 883, 84 (2019)

[65] *r-process Nucleosynthesis: Connecting Rare-Isotope Beam Facilities with the Cosmos*

Horowitz, C.J., Arcones, A., Côté, B., Dillmann, I., Nazarewicz, W., **Roederer, I.U.**, Schatz, H., Aprahamian, A., Atanasov, D., Bauswein, A., Bliss, J., Brodeur, M., Clark, J.A., Frebel, A., Foucart, F., Hansen, C.J., Just, O., Kankainen, A., McLaughlin, G.C., Kelly, J.M., Liddick, S.N., Lee, D.M., Lippuner, J., Martin, D., Mendoza-Temis, J., Metzger, B.D., Mumpower, M.R., Perdikakis, G., Pereira, J., O’Shea, B.W., Reifarth, R., Rogers, A.M., Siegel, D.M., Spyrou, A., Surman, R., Tang, X., Uesaka, T., Wang, M.

**Journal of Physics G: Nuclear and Particle Physics**, 46, 083001 (2019)

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## **Major Mission Proposal Documents**

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## **Astro 2020 Decadal Whitepapers**

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