

# Curriculum Vitæ - Vinicius Moris Placco

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## Contact information

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## Employment

2015– Research Assistant Professor  
Department of Physics  
University of Notre Dame

2014–2015 Science Fellow  
Gemini Observatory – Northern Operations Center  
Association of Universities for Research in Astronomy

2013–2014 Postdoctoral Fellow  
National Optical Astronomy Observatory  
Association of Universities for Research in Astronomy

2010–2013 Postdoctoral Fellow  
Instituto de Astronomia, Geofísica e Ciências Atmosféricas  
Universidade de São Paulo

## Education

2007–2010 Doctorate degree in Astronomy  
*[Search for very metal-poor stars based on carbon over-abundance](#)*  
Instituto de Astronomia, Geofísica e Ciências Atmosféricas  
Universidade de São Paulo

2005–2007 Master's degree in Astronomy  
*[Abundance patterns among very metal-poor stars in the Galaxy: a statistical approach](#)*  
Instituto de Astronomia, Geofísica e Ciências Atmosféricas  
Universidade de São Paulo

2001–2005 Bachelor's degree in Physics (concentration: Astronomy)  
Instituto de Física  
Universidade de São Paulo

## Awards

2011 *Featured Astronomy thesis of the year 2010*  
Instituto de Astronomia, Geofísica e Ciências Atmosféricas  
Universidade de São Paulo

2005 *Best Astronomy undergraduate project*  
Instituto de Astronomia, Geofísica e Ciências Atmosféricas  
Universidade de São Paulo

## Research Experience

### Funding

#### Current

2018–2020 Hubble Space Telescope (Co-I)  
*The Unexplored Domains of the s-Process*  
Space Telescope Science Institute  
Value: \$119,104

#### Past

2015–2017 Hubble Space Telescope (Co-I)  
*The First Detections of Phosphorus, Sulphur, and Zinc in a Bona-Fide Second-Generation Star*  
Space Telescope Science Institute  
Value: \$85,293 (3 months of salary support - 2015/2016/2017)

2016–2017 Faculty Research Support Program Initiation Grant (PI)  
*Identification of CEMP Stars from S-PLUS Photometry using Artificial Neural Networks*  
University of Notre Dame  
Value: \$10,000

#### Future Submissions

2018 Templeton Foundation - Small Grants (**Deadline for submission: August 31, 2018**)  
*Observational Constraints on the Origins of Life*  
Budget: 1-2 years of salary support

#### Short term visits

- 2014 University of Notre Dame  
Department of Physics  
Funding: Gemini Observatory and JINA (Joint Institute for Nuclear Astrophysics)
- 2014/2012 Massachusetts Institute of Technology  
Kavli Institute for Astrophysics and Space Research  
Funding: Gemini Observatory, FAPESP (The State of São Paulo Research Foundation – Brazil)
- 2013/2012 National Optical Astronomy Observatory  
Funding: FAPESP (Brazil)
- 2013 New Mexico State University  
Funding: FAPESP (Brazil)
- 2010/2008 Universität Heidelberg  
Zentrum für Astronomie  
Funding: Universität Heidelberg (Germany), FAPESP, PROEX (Brazil)
- 2010/2009 Michigan State University  
2007 Physics and Astronomy Department  
Funding: JINA (USA), FAPESP, PROEX (Brazil)

## Fellowships

- 2013–2014 Postdoctorate – FAPESP (12/13722-1) – National Optical Astronomy Observatory  
*(re)discovery and analysis of metal-poor stars in the Milky Way*
- 2010–2013 Postdoctorate – FAPESP (10/08996-0) – Universidade de São Paulo  
*The Milky Way Halo revisited*
- 2007–2010 Doctorate – FAPESP (07/04356-3) – Universidade de São Paulo  
*Search for very metal-poor stars based on carbon over-abundance*
- 2005–2007 Master's – FAPESP (05/01023-8) – Universidade de São Paulo  
*Abundance patterns among very metal-poor stars in the Galaxy: a statistical approach*
- 2004–2005 Undergraduate research project – CNPq/PIBIC – Universidade de São Paulo  
*Descoberta e Análise de Objetos com Linhas em Emissão no Survey HK*
- 2002–2004 Undergraduate research project – FAPESP (02/04704-8) – Universidade de São Paulo  
*Construção de câmara de alvo gasoso para produção de feixes radioativos*

## Academic Experience

### Teaching

#### Lead Instructor (LI) / Co-Instructor (CI) / Guest Lecturer (GL)

##### Undergraduate level

- 2017 (CI) Descriptive Astronomy (FA17-PHYS-10140)  
Course Instructor Feedback: 4.1/5.0 - [link to full report](#)  
University of Notre Dame
- 2017 (LI) General Physics B - E & M Laboratory (SP17-PHYS-11422)  
Course Instructor Feedback: 4.7/5.0 - [link to full report](#)  
University of Notre Dame
- 2016 (GL) Descriptive Astronomy (FA16-PHYS-10140)  
University of Notre Dame
- 2015 (GL) Modern Observational Techniques (FA15-PHYS-30481)  
University of Notre Dame
- 2012/2011 (LI) Sky and Stars: An introduction  
Universidade Virtual do Estado de São Paulo
- 2012/2011 (LI) Galaxies: An introduction  
Universidade Virtual do Estado de São Paulo

##### Graduate level

- 2017 (CI) Astrophysics: Stars (SP17-PHYS-80202)  
University of Notre Dame
- 2016 (CI) Large-Scale Astronomical Surveys (SP16-PHYS-70210)  
University of Notre Dame
- 2015 (GL) Astrophysics: Stars (SP15-PHYS-80202)  
University of Notre Dame
- 2012 (GL) Observational Astronomy  
Universidade de São Paulo

#### Teaching Assistant - Universidade de São Paulo

- 2009/2008 Introduction to Astronomy
- 2009/2007 Fundamental Astronomy

## Student supervision

### Graduate Level (co-advisor) - University of Notre Dame

2015–present Devin Whitten  
2015–present Kaitlin Rasmussen  
2015–present Erika Holmbeck  
2015–present Sarah Dietz  
2015–present Dmitrii Gudin  
    2015–2017 Geoffrey Lentner  
    2012–2016 Rafael Santucci (Ph.D. - Universidade de São Paulo)  
    2010–2012 Rafael Santucci (M.Sc. - Universidade de São Paulo)

### Undergraduate Level (advisor) - University of Notre Dame

2016–present Erik Peterson  
2016–present David Kalamarides  
2016–present John Roach  
2016–present Cristobal Gonzales  
2016–present Michael Kurkowski  
2015–present Spencer Clark  
    2017 Jazmine Jefferson (University of Kansas - REU)  
    2017 Derek Shank (Ohio Wesleyan University - DISC/REU) - [video report](#)  
    2017 Diego Fernandez (University of Oregon - REU)  
    2016 Travis Hodges (Austin Peay State University - DISC/REU)  
    2016 Miguel Correa (San Diego State University - REU)  
    2015 Siyu He (Xi'an Jiaotong University - REU)  
2012–2014 William Alves (Universidade de São Paulo)  
2008–2010 Rafael Santucci (Universidade de São Paulo)

## Committee Service - University of Norte Dame

2016–present Graduate Recruitment, Department of Physics  
2015–present Preliminary Exam Committee, Department of Physics  
2015–present University Committee on Research & Sponsored Programs, Notre Dame Research

## Thesis Committees

2016 [Rafael Miloni Santucci](#) (Ph.D.)  
    Universidade de São Paulo  
2016 [Camilo Francisco Javier Muñoz Peña](#) (M.Sc.)  
    Universidade de São Paulo

## Other relevant information

### Observatory related experience

2008–present SOAR Telescope: 40+ nights – remote observations  
2010–present Gemini Observatory: Phase I / Phase II programs  
2011–present ESO/NTT Telescope: 12 nights in visitor mode  
2013–present KPNO/Mayall Telescope: 20+ nights in visitor/remote mode  
    2014–2015 Gemini North Telescope: 12 nights in queue mode - observer  
    2014–2015 Part of GMOS and GRACES instrument teams on Gemini North, working  
        on data quality assessment and instrument performance monitoring  
2008–2012 Responsible for the SOAR Telescope remote observing room at Universidade de São Paulo  
2013 McDonald 2.1m Telescope: 4 nights in visitor mode

## Professional Societies and Committees

US representative for the [Gemini Observatory Users Committee](#)  
Member of the American Astronomical Society  
Member of the Brazilian Astronomical Society  
Member of the Brazilian Physical Society  
Member of the JINA Center for the Evolution of the Elements  
Referee for the Astrophysical Journal

## Computing skills

Linux/Unix/MACOSX operating systems  
Advanced Shell Scripting (Linux/Unix/MACOSX)  
L<sup>A</sup>T<sub>E</sub>X, Gnuplot, OpenOffice, MS Office. Co-author of the L<sup>A</sup>T<sub>E</sub>Xtemplate [IAGTESE](#)  
IRAF/Pyraf/Gemini packages, focused on spectroscopy  
Basic IDL/Python/R-project/SQL (PostgreSQL/pgAdmin3)

## Invited / Contributed talks

### 2017

Universidade de São Paulo – S-PLUS Collaboration Meeting (online)  
*Updates on S-PLUS Short Survey(s)*

Michiana Astronomical Society – MAS monthly meeting speaker  
*A Tale of Two Stars: Revealing the Age and Chemical Evolution of the Universe*

University of Notre Dame – Astro-Skills Lunch  
*The do's and don'ts when plotting data*

Red de Infraestructuras de Astronomía – Early Data Release and Scientific Exploitation of the J-PLUS Survey  
*Identification of (Bright) Carbon-Enhanced Metal-Poor Stars with J-PLUS Photometry*

GMT Community Science Meeting – Chemical Evolution of the Universe  
*A Monte Carlo approach to find the Progenitors of Ultra Metal-Poor Stars* (Rapid Poster Talk)

University of Notre Dame – The Great American Eclipse at Notre Dame  
Co-organizer / Astronomy faculty representative – 3,500 attendees

University of Notre Dame – Research Experiences for Undergraduates (REU) Program  
*A needle in a haystack: What one star can tell us about the age and chemical evolution of the entire Universe*

Centro de Estudios de Física del Cosmos de Aragón – J-PLUS 1<sup>st</sup> Virtual Meeting  
*Identifying (Carbon-Enhanced) Metal-Poor Stars from J-PLUS Photometry*

Joint Institute for Nuclear Astrophysics – Physics of Atomic Nuclei High School Program  
*Stellar Archaeology: The Age and Chemistry of the Universe revealed by old Stars*

Universidade de São Paulo – Astrophysics Colloquium  
*Searching for the Origin of the Elements Using a 12-Color Map of the Night Sky*

### 2016

University of Notre Dame – Astrophysics Seminar  
*A Monte Carlo approach to find the Progenitors of Ultra Metal-Poor Stars*

University of Notre Dame – Department of Physics Colloquium  
*Searching for the Origin of the Elements Using a 12-Color Map of the Night Sky*

University of Notre Dame – Astronomy 1-minute talks (19 presenters)  
*Organizer*

Universidade de São Paulo – X-PLUS Collaboration Meeting  
*Identifying Bright Carbon-Enhanced Metal-Poor Stars from S-PLUS Photometry*

University of Notre Dame – Research Experiences for Undergraduates (REU) Program  
*Near-Field Cosmology with Metal-Poor Stars*

University of Notre Dame – Our Universe Revealed  
*A day in the life of an Astronomer*

University of Notre Dame – Our Universe Revealed  
*Our eyes in the skies: How telescopes help us place ourselves in the Universe*

227th Meeting of the American Astronomical Society  
*Identifying Bright Carbon-Enhanced Metal-Poor Stars in the RAVE Catalog*

### 2015

University of Notre Dame – Our Universe Revealed  
*The stuff we are made of: how do we determine the chemical elements in stars and the Universe?*

University of Notre Dame – Astronomy 1-minute talks (15 presenters)

*Organizer*

Joint Institute for Nuclear Astrophysics / University of Notre Dame – High School On Air Talk

*Stellar Archaeology: The Age and Chemistry of the Universe revealed by old Stars*

*YouTube video*

Michigan State University – JINA-CEE Nuclear Astrophysics Lunch Research Discussions

*Observing the First Stars through the Atmospheres of Ultra Metal-Poor Stars*

Universidade de São Paulo – X-PLUS Collaboration Meeting

*Identifying Carbon-Enhanced Metal-Poor Stars from S-PLUS Photometry*

University of Notre Dame – Research Experiences for Undergraduates (REU) Program

*Galactic Archaeology: The Chemical Evolution and Age of the Universe revealed by old Stars*

## 2014

University of Notre Dame – Astronomy Seminar

*Exploring the history of the Galactic halo with Carbon-Enhanced Metal-Poor stars*

Massachusetts Institute of Technology - Kavli Institute

*Exploring the history of the Galactic halo with Carbon-Enhanced Metal-Poor stars*

## 2013

National Optical Astronomy Observatory

*(Carbon Enhanced) metal-poor stars and the chemical evolution of the Universe*

Gemini Observatory – Northern Operations Center

*Metal-poor stars as tracers of the chemical evolution of the Galaxy*

## 2012

Universidade Cruzeiro do Sul - Astronomy Colloquium

*Search for Carbon-Enhanced Metal-Poor stars in the Halo(es) of the Galaxy*

Universidade de São Paulo - Astronomy Colloquium

*Spectroscopy from  $R=300$  to 30000: metal-poor stars and Galactic chemical evolution*

Universidade de São Paulo - Invitation to Physics: undergraduate weekly seminar

*Galactic Archaeology: chemical evolution of the Universe revealed by metal-poor stars*

Universidade de São Paulo - Astronomy at noon: undergraduate weekly seminar

*Census of the Milky Way*

## 2011

Universidade de São Paulo - Chemical Evolution Group Seminar

*Rediscovering the Dual Halo of the Milky Way via Hierarchical Clustering*

Universidade de São Paulo - Astronomy at noon: undergraduate weekly seminar

*Stellar Archaeology*

Universidade de São Paulo - Astronomy Colloquium

*Making good use of bad weather: finding extremely metal-poor stars in the clouds*

ESO Headquarters - Santiago - Astronomy Colloquium

*Searches for Metal-Poor Stars from the Hamburg/ESO Survey using the CH G-band*



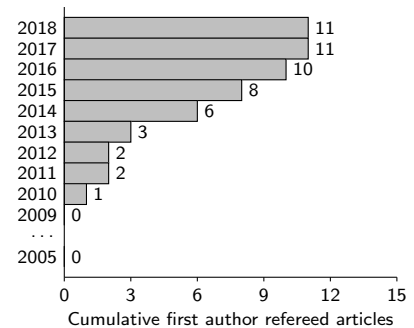
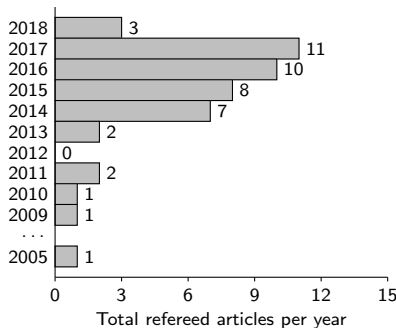
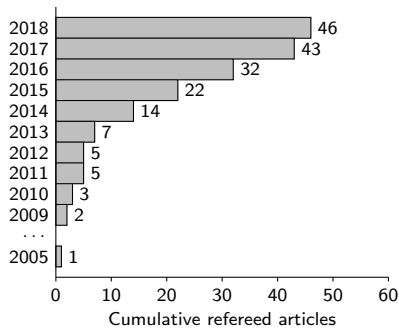
## Quantitative Indicators / Online Resources

- ADS: **798 citations / h-index = 17** (January 17, 2018 - [ADS link](#))
- Google Scholar: **834 citations / h-index = 18** (January 17, 2018 - [Google Scholar link](#))
- ADS Publication List (complete - [ADS link](#)) / (refereed only - [ADS link](#))
- ResearcherID profile - [ResearcherID](#) / LinkedIn profile - [LinkedIn](#)

## Publication list

### Refereed articles

Total: 46 publications (11 first author, 5 second author, 5 third author)



46. López-Sanjuan, C., Vázquez Ramió, H., Varela, J., Spinoso, D., Angulo, R. E., Muniesa, D., Viironen, K., Cristóbal-Hornillos, D., Cenarro, A. J., Ederoclite, A., Marín-Franch, A., Moles, M., Ascaso, B., Bonoli, S., Chies-Santos, A. L., Coelho, P. R., Costa-Duarte, M. V., Cortesi, A., Díaz-García, L. A., Dupke, R. A., Galbany, L., Hernández-Monteaigudo, C., Logroño-García, R., Molino, A., Orsi, A., **Placco, V. M.**, Sampedro, L., San Roman, I., Vilella-Rojo, G., Whitten, D., Mendes de Oliveira, C. L., Sodr e Jr., L.  
*J-PLUS: Morphological star/galaxy classification by PDF analysis*  
**2018, Astronomy & Astrophysics**, submitted
45. Gull, M., Frebel, A., Cain, M., **Placco, V. M.**, Ji, A. P., Abate, C., Ezzeddine, R., Karakas, A. I., Hansen, T. T., Sakari, C., Holmbeck, E. M., Santucci, R. M., Casey, A. R., Beers, T. C.  
*Discovery of the first metal-poor star with a combined r- and s-process element signature*  
**2018, The Astrophysical Journal**, submitted
44. Sakari, C. M., **Placco, V. M.**, Hansen, T. T., Holmbeck, E. M., Beers, T. C., Frebel, A. F., Roederer, I. U., Venn, K. A., Wallerstein, G., Davis, C. E., Farrell, E., Yong, D.  
*A Newly Discovered, Bright, Highly r-process Enhanced Metal-Poor Star at  $[Fe/H] \sim -2$*   
**2018, The Astrophysical Journal Letters**, in press
43. Shappee, B. J., Simon, J. D., Drout, M. R., Piro, A. L., Morrell, N., Prieto, J. L., Kasen, D., Holoien, T. W.-S., Kollmeier, J. A., Kelson, D. D., Coulter, D. A., Foley, R. J., Kilpatrick, C. D., Siebert, M. R., Madore, B. F., Murguía-Berthier, A., Pan, Y.-C., Prochaska, J. X., Ramirez-Ruiz, E., Rest, A., Adams, C., Alatalo, K., Ban ados, E., Baughman, J., Bernstein, R. A., Bitsakis, T., Boutsia, K., Bravo, J. R., Di Mille, F., Higgs, C. R., Ji, A. P., Maravelias, G., Marshall, J. L., **Placco, V. M.**, Prieto, G., Wan, Z.  
*Early Spectra of a Gravitational Wave Source GW170817: Evolution of a Neutron Star Merger*  
**2017, Science**, 10.1126/science.aag0186 ([ADS link](#))
42. LIGO Scientific Collaboration and Virgo Collaboration, Fermi GBM, INTEGRAL, IceCube Collaboration, . . . , TOROS: Transient Robotic Observatory of the South Collaboration (incl. **Placco, V. M.**), . . .  
*Multi-messenger Observations of a Binary Neutron Star Merger*  
**2017, The Astrophysical Journal Letters**, vol. 848, 12 ([ADS link](#))

41. Díaz, M. C., Macri, L. M., Garcia Lambas, D., Mendes de Oliveira, C., Nilo Castellón, J. L., Ribeiro, T., Sánchez, B., Schoenell, W., Abramo, L. R., Akras, S., Alcaniz, J. S., Artola, R., Beroiz, M., Bonoli, S., Cabral, J., Camuccio, R., Castillo, M., Chavushyan, V., Coelho, P., Colazo, C., Costa-Duarte, M. V., Cuevas Larenas, H., DePoy, D. L., Domínguez Romero, M., Dultzin, D., Fernández, D., García, J., Girardini, C., Gonçalves, D. R., Gonçalves, T. S., Gurovich, S., Jiménez-Teja, Y., Kanaan, A., Lares, M., Lopes de Oliveira, R., López-Cruz, O., Marshall, J. L., Melia, R., Molino, A., Padilla, N., Peñuela, T., **Placco, V. M.**, Quiñones, C., Ramírez Rivera, A., Renzi, V., Riguccini, L., Ríos-López, E., Rodriguez, H., Sampedro, L., Schneiter, M., Sodr , L., Starck, M., Torres-Flores, S., Tornatore, M., Zdrozny, A.  
*Observations of the first electromagnetic counterpart to a gravitational wave source by the TOROS collaboration*  
**2017**, *The Astrophysical Journal Letters*, vol. 848, 29 ([ADS link](#))
40. Reggiani, H., Meléndez, J., Kobayashi, C., Karakas, A., Ramírez, I., **Placco, V. M.**  
*Constraining cosmic scatter in the Galactic Halo through a differential analysis of Metal Poor Stars*  
**2017**, *Astronomy & Astrophysics*, vol. 608, 46 ([ADS link](#))
39. KIELTY, C. L., VENN, K. A., LOEWEN, N. B., SHETTRONE, M., **PLACCO, V. M.**, JAHANDAR, F., MÉSZÁROS, SZ., MARTELL, S.  
*Carbon-enhanced metal-poor stars in the SDSS-APOGEE database*  
**2017**, *Monthly Notices of the Royal Astronomical Society*, vol. 471, 404 ([ADS link](#))
38. Fernández-Trincado, J. G., Zamora, O., Garcia-Hernandez, D. A., Souto, D., Dell’Aglı, F., Schiavon, R. P., Geisler, D., Tang, B., Villanova, S., Hasselquist, S., Mennickent, R. E., Cunha, K., Shetrone, M., Allende-Prieto, C., Vieira, K., Zasowski, G., Sobek, J., Hayes, C. R., Majewski, S. R., **Placco, V. M.**, Beers, T. C., Schleicher, D. R. G., Robin, A. C., Mészáros, Sz., Masseron, T., Garcia-Perez, A. E., Anders, F., Meza, A., Alves-Brito, A., Carrera, R., Minniti, D., Lane, R. R., Fernandez-Alvar, E., Moreno, E., Pichardo, B., Perez-Villegas, A., Schultheis, M., Roman-Lopes, A., Fuentes, C. E., Nitschelm, C., Harding, P., Bizyaev, D., Pan, K., Oravetz, D., Simmons, A., Ivans, I. I., Blanco-Cuaresma, S., Hernandez, J., Alonso-Garcia, J., Valenzuela, O., Chaname, J.  
*Atypical Mg-poor Milky Way field stars with globular cluster second-generation like chemical patterns*  
**2017**, *The Astrophysical Journal Letters*, vol. 846, 2 ([ADS link](#))
37. Hasselquist, S., Shetrone, M., Smith, V. V., Holtzman, J., McWilliam, A., Fernández-Trincado, J. G., Beers, T. C., Majewski, S. R., Nidever, D. L., Tang, B., Tissera, P. B., Fernández-Alvar, E. F., Allende-Prieto, C., Battaglia, G., Carigi, L., Cunha, K., Delgado Inglada, G., Frinchaboy, P., García-Hernández, D. A., Geisler, D., Minniti, D., **Placco, V. M.**, Schultheis, M., Sobek, J., Villanova, S.  
*APOGEE Chemical Abundances of the Sagittarius Dwarf Galaxy*  
**2017**, *The Astrophysical Journal*, vol. 845, 162 ([ADS link](#))
36. **Placco, V. M.**, Holmbeck, E. M., Frebel, A., Beers, T. C., Surman, R. A., Ji, A. P., Ezzedine, R., Points, S. D., Kaleida, C. C., Hansen, T. T., Sakari, C. M., Casey, A. R.  
*RAVE J203843.2–002333: The First Highly R-process-enhanced Star Identified in the RAVE Survey.*  
**2017**, *The Astrophysical Journal*, vol. 844, 18 ([ADS link](#))
35. Lee, Y. S., Beers, T. C., Kim, Y. K., **Placco, V. M.**, Yoon, J., Carollo, D., Masseron, T., Jung, J.  
*Chemical Cartography. I. A Carbonicity Map of the Galactic Halo*  
**2017**, *The Astrophysical Journal*, vol. 836, 91 ([ADS link](#))
34. Beers, T. C., **Placco, V. M.**, Carollo, D., Rossi, S., Lee, Y. S., Frebel, A., Norris, J. E., Dietz, S., Masseron, T.  
*Bright Metal-Poor Stars from the Hamburg/ESO Survey. II. A Chemodynamical Analysis*  
**2017**, *The Astrophysical Journal*, vol. 835, 81 ([ADS link](#))
33. van Weeren, R. J., Andrade-Santos, F., Dawson, W. A., Golovich, N., Lal, D. V., Kang, H., Ryu, D., Brügggen, M., Ogrea, G. A., Forman, W. R., Jones, C., **Placco, V. M.**, Santucci, R. M., Wittman, D., Jee, M. J., Kraft, R. P., Sobral, D., Stroe, A., Fogarty, K.  
*The Case for Electron Re-Acceleration at Galaxy Cluster Shocks*  
**2017**, *Nature Astronomy*, vol. 1, 5 ([Nature Astronomy link](#) / [Issue cover](#))

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32. Carollo, D., Beers, T., **Placco, V. M.**, Santucci, R. M., Denissenkov, P., Tissera, P. B., Lentner, G., Rossi, S., Lee, Y. S., Tumlinson, J.  
*The age structure of the Milky Way's halo*  
**2016, Nature Physics**, vol. 12, 1170 ([Nature Physics link](#) / [Issue cover](#))
31. **Placco, V. M.**, Frebel, A., Beers, T. C., Yoon, J., Chiti, A., Heger, A. Chan, C., Casey, A. R., Christlieb, N.  
*Observational Constraints on First-Star Nucleosynthesis. II. Spectroscopy of an Ultra Metal-Poor CEMP-no Star*  
**2016, The Astrophysical Journal**, vol. 833, 21 ([ADS link](#))
30. Yoon, J., Beers, T., **Placco, V. M.**, Rasmussen, K., Carollo, D., He, S., Hansen, T. T., Roederer, I. U.  
*Observational Constraints on First-Star Nucleosynthesis. I. Evidence for Multiple Progenitors of CEMP-no Stars*  
**2016, The Astrophysical Journal**, 833, 20 ([ADS link](#))
29. Hasselquist, S., Shetrone, M., Cunha, K., Smith, V. V., Holtzman, J., Lawler, J. E., Beers, T. C., Chojnowski, D., Fernández-Trincado, J. G., García-Hernández, D. A., Hearty, F. R., Majewski, S. R., Pereira, C. B., **Placco, V. M.**, Villanova, S., Zamora, O.  
*Identification of Neodymium in the APOGEE H-band Spectra*  
**2016, The Astrophysical Journal**, vol. 833, 81 ([ADS link](#))
28. **Placco, V. M.**, Beers, T. C., Reggiani, H., Meléndez, J.  
*G64–12 and G64–37 are Carbon-Enhanced Metal-Poor Stars*  
**2016, The Astrophysical Journal Letters**, vol. 829, 24 ([ADS link](#))
27. Roederer, I. U., **Placco, V. M.**, Beers, T. C.  
*Detection of Phosphorus, Sulphur, and Zinc in the Carbon-Enhanced Metal-Poor Star BD+44° 493*  
**2016, The Astrophysical Journal Letters**, vol. 824, 19 ([ADS link](#))
26. Hansen, C. J., Nordström, B., Hansen, T., Kennedy, C. R., **Placco, V. M.**, Beers, T. C., Andersen, J., Cescutti, G., Chiappini, C.  
*Abundances of carbon-enhanced metal-poor stars as constraints on their formation*  
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3. Rossi, S., **Placco, V. M.**; Beers, T. C., Kennedy, C. R., Marsteller, B., *Refined Estimates of [Fe/H] and [C/Fe] in Metal-Poor Stars*, **Proceedings of the 10th Symposium on Nuclei in the Cosmos, 2008** ([ADS link](#))
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## Telescope time allocations

**Approved observing projects: 118**

**Total awarded: 5218.76 hours**

### Principal Investigator

**Approved observing projects: 38**

**Total awarded: 1367.55 hours**

38. 2018A - Gemini South - GS-2018A-Q-402 (Band 4): 30.0 hours
37. 2017B - Gemini North - GN-2017B-Q-84 (Band 4): 39.0 hours
36. 2017A - Gemini South - GS-2017A-FT-3: 5.5 hours
35. 2017A - KPNO Mayall - 2017A-0295: 7.0 nights
34. 2016B - Gemini North - GN-2016B-Q-85 (Band 4): 50.0 hours
33. 2016B - Gemini South - GS-2016B-Q-86 (Band 4): 50.0 hours
32. 2016A - Gemini South - GS-2016A-Q-107 (Band 4): 50.0 hours
31. 2015B - Gemini North - GN-2015B-Q-100 (Band 4): 30.0 hours
30. 2015B - Gemini South - GS-2015B-Q-104 (Band 4): 50.0 hours
29. 2015B - ESO/NTT - 096.D-0018(A): 5.0 nights
28. 2015A - Gemini North - GN-2015A-Q-401 (Band 4): 30.0 hours
27. 2015A - Gemini South - GS-2015A-Q-205 (Band 4): 50.0 hours
26. 2015A - ESO/NTT - 095.D-0202(A): 4.0 nights
25. 2015A - KPNO Mayall - 2015A-0071: 6.0 nights
24. 2015A - SOAR - 2015A-0071: 5.0 nights
23. 2014B - Gemini South - GS-2014B-Q-85 (Band 4): 30.0 hours
22. 2014B - Gemini North - GN-2014B-Q-102 (Band 4): 30.0 hours
21. 2014A - Gemini South - GS-2014A-Q-92 (Band 4): 33.3 hours
20. 2014A - Gemini North - GN-2014A-Q-101 (Band 3): 16.7 hours
19. 2014A - Gemini North - GN-2014A-Q-105 (Band 4): 33.3 hours
18. 2013B - Gemini South - GS-2013B-Q-89 (Band 4): 25.0 hours
17. 2013B - Gemini North - GN-2013B-Q-105 (Band 4): 25.0 hours
16. 2013B - SOAR - SO2013B-001: 30.0 hours
15. 2013A - SOAR - SO2013A-018: 34.0 hours
14. 2012B - Gemini South - GS-2012B-Q-65 (Band 3): 10.0 hours – queue
13. 2012B - Gemini South - GS-2012B-Q-84 (Band 4): 70.0 hours – queue
12. 2012B - Gemini North - GN-2012B-Q-284 (Band 4): 70.0 hours – queue
11. 2012B - ESO/NTT - 090.D-0275(A): 4 nights – classical
10. 2012B - SOAR - SO2012B-001: 24.0 hours – remote
9. 2012A - Gemini South - GS-2012A-Q-76 (Band 3): 6.0 hours – queue
8. 2012A - ESO/NTT - 089.D-0331(A): 4 nights – classical
7. 2012A - SOAR - SO2012A-003: 24.0 hours – remote
6. 2011B - ESO/NTT - 088.D-0344(A): 4 nights – classical



5. 2011B - SOAR - SO2011B-002: 24.0 hours – remote
4. 2011A - Gemini South - GS-2011A-Q-86 (Band 4): 4.0 hours – queue
3. 2011A - Gemini North - GN-2011A-Q-88 (Band 3): 1.3 hours – queue
2. 2011A - Gemini North - GN-2011A-Q-122 (Band 4): 6.7 hours – queue
1. 2011A - SOAR - SO2011A-010: 17.0 hours – remote

## Co-Investigator

**Approved observing projects: 80**

**Total awarded: 3851.21 hours**

80. 2018A - LCO/Magellan Telescope - Carnegie Time: 2 nights
79. 2018A - LCO/duPont Telescope - Carnegie Time: 18 nights
78. 2018A - Apache Point Observatory - UW08: 5.0 nights
77. 2018A - LCO/Magellan Telescope - Chilean Time: 3 nights
76. 2018A - SOAR - 2018A-0021: 36 hours
75. 2018A - McDonald 2.7m - McD18-1-2.7-3: 7.0 nights
74. 2017B - Gemini North - GN-2017B-FT-7: 6.28 hours
73. 2017B - Gemini North - GN-2017B-Q-75 (Band 3): 41.82 hours
72. 2017B - Gemini North - GN-2017B-Q-79 (Band 4): 63.64 hours
71. 2017B - Gemini South - GS-2017B-Q-75 (Band 3): 20.91 hours
70. 2017B - Gemini South - GS-2017B-Q-84 (Band 4): 107.82 hours
69. 2017A - Southern African Large Telescope - 2017-1-MLT-012: 55.6 hours
68. 2017A - Gemini North - GN-2017A-Q-82 (Band 3): 202.0 hours
67. 2017A - Gemini South - GS-2017A-Q-86 (Band 3): 142.5 hours
66. 2017A - ESO/NTT - 099.D-0428: 5.0 nights
65. 2017A - LCO/Magellan Telescope - Carnegie Time: 3 nights
64. 2017A - LCO/duPont Telescope - Carnegie Time: 19 nights
63. 2017A - SOAR - 2017A-0016: 40 hours
62. 2016B - Gemini North - GN-2016B-Q-77 (Band 3): 6.4 hours
61. 2016B - Gemini South - GS-2016B-Q-81 (Band 3): 32.3 hours
60. 2016B - ESO/NTT - 098.D-0434: 4.0 nights
59. 2016B - Hubble Space Telescope - Cycle 24 - HST-GO-14765: 40 orbits
58. 2016B - LCO/duPont Telescope - Carnegie Time: 5 nights
57. 2016A - ESO/NTT - 097.D-0196: 7.0 nights
56. 2016A - Apache Point Observatory - UW07: 2.5 nights
55. 2016A - Gemini North - GN-2016A-Q-17 (Band 1): 9.8 hours
54. 2016A - Gemini North - GN-2016A-Q-75 (Band 3): 79.4 hours
53. 2016A - Gemini South - GS-2016A-Q-76 (Band 3): 74.0 hours
52. 2016A - SOAR - 2016A-0019: 4.0 nights
51. 2015B - Southern African Large Telescope - 2015-2-SCI-056: 117.8 hours
50. 2015B - Hubble Space Telescope - Cycle 23 - HST-GO-14231: 18 orbits

49. 2015B - Gemini North - GN-2015B-Q-86 (Band 3): 26.5 hours
48. 2015B - Gemini South - GS-2015B-Q-71 (Band 3): 42.9 hours
47. 2015B - SOAR - 2015B-0020: 5.0 nights
46. 2015A - ESO/VLT - 095.D-0504(A): 30.0 hours
45. 2015A - Gemini North - GN-2015A-Q-76 (Band 3): 45.8 hours
44. 2015A - Gemini South - GS-2015A-Q-77 (Band 3): 42.8 hours
43. 2015A - Gemini South - GS-2015A-Q-92 (Band 4): 26.0 hours
42. 2014B - ESO/VLT - DDT293.D-5036(A): 2.4 hours
41. 2014B - Gemini South - GS-2014B-Q-67 (Band 3): 55.0 hours
40. 2014B - Gemini North - GN-2014B-Q-85 (Band 3): 55.0 hours
39. 2014B - KPNO Mayall - 2014B-0321: 3.0 nights
38. 2014B - SOAR - 2014B-0321: 3.0 nights
37. 2014A - Gemini South - GS-2014A-Q-88 (Band 3): 66.7 hours
36. 2014A - KPNO Mayall - 2014A-0323: 8.0 nights
35. 2013B - KPNO Mayall - 2013B-0046: 6.5 nights
34. 2013B - Gemini South - GS-2013B-Q-75 (Band 3): 50.0 hours
33. 2013B - Gemini North - GN-2013B-Q-81 (Band 3): 50.0 hours
32. 2013B - SOAR - SO2013B-S102: 17.0 hours (long term)
31. 2013B - ESO/NTT - 092.D-0308(A): 6 nights
30. 2013B - McDonald 2.1m - McD13-3: 5 nights
29. 2013B - LNA/Brazil - 2013B-P012: 6 nights
28. 2013B - NOT (Nordic Optical Telescope) - 48-031: 3.5 nights
27. 2013A - Gemini North - GN-2013A-Q-113 (Band 4): 54.5 hours
26. 2013A - Gemini South - GS-2013A-Q-91 (Band 3): 54.6 hours
25. 2013A - Gemini South - GS-2013A-Q-95 (Band 4): 10.9 hours
24. 2013A - ESO/NTT - 091.D-0292(A): 6 nights
23. 2013A - LNA/Brazil - 2013A-P030: 4 nights
22. 2013A - SOAR - SO2013A-LP2: 17.0 hours (long term)
21. 2013A - NOT (Nordic Optical Telescope) - 47-003: 3.0 nights
20. 2012B - NOT (Nordic Optical Telescope) - 46-011: 2.5 nights
19. 2012B - ESO/VLT (X-Shooter) - 090.D-0321(A): 12 hours
18. 2012B - LCO/Magellan - MAG/12B/9: 2 nights
17. 2012B - AAO/AAT - AAT/12B/032: 6 nights
16. 2012B - SOAR - SO2012B-005: 8.0 hours (long term)
15. 2012A - Gemini South - GS-2012A-Q-81 (Band 4): 74.0 hours
14. 2012A - AAO/AAT - AAT/12A/011: 4 nights
13. 2012A - LCO/Magellan - MAG/12A/7: 2 nights
12. 2012A - SOAR - SO2012A-002: 16.0 hours
11. 2011B - Gemini South - GS-2011B-Q-91 (Band 4): 75.0 hours – queue
10. 2011B - SOAR (SO2011B-008): 24.0 hours

9. 2011A - Gemini South - GS-2011A-Q-85 (Band 3): 63.4 hours – queue
8. 2011A - CFHT - CF2011A-002: 13.9 hours – queue
7. 2010B - CFHT - 10BB05A/10BB99B: 13.9 hours – queue
6. 2010A - Gemini South - GS-2010A-Q-78 (Band 4): 25.0 hours – queue
5. 2009B - SOAR - SO2009B-004: 17.0 hours – remote
4. 2009A - SOAR - SO2009A-0249: 6 nights – remote
3. 2009A - SOAR - SO2009A-014: 32.0 hours – remote
2. 2008A - SOAR - SO2008A-006: 3 nights – remote
1. 2007B - SOAR - SO2007B-006: 3 nights – remote

## Press releases, articles, and media resources

### 2017

Revista FAPESP (in Portuguese - online)

[Fonte de ouro e régua do universo](#)

Agência FAPESP (in Portuguese - online)

[Nova fonte de ondas gravitacionais é observada](#)

Notre Dame News (online)

[Students in right place, right time witness first-ever detected neutron star collision](#)

Notre Dame College of Science News (online)

[Astrophysics graduate students witness first-ever detected neutron star collision](#)

Agência FAPESP (in Portuguese - online)

[Estudo detecta elétrons duplamente acelerados no choque de aglomerados de galáxias](#)

École Polytechnique News (online)

[The inaugural issue of Nature Astronomy features the work of F. Andrade-Santos](#)

Jornal da USP (in Portuguese - online)

[Cientistas descobrem poderosa colisão cósmica dupla](#)

Folha de São Paulo (in Portuguese - online)

[Quando aglomerados de galáxias colidem e um buraco negro gigante entra no meio da história](#)

Nature Astronomy (online - issue cover)

[The case for electron re-acceleration at galaxy cluster shocks](#)

Chandra X-ray Observatory Blog (online)

[The Discovery of Particle Re-acceleration in a Galaxy Cluster Collision](#)

Notre Dame News (online)

[Notre Dame astrophysicist confirms source of galaxy collision](#)

### 2016

Nature Physics (online - issue cover)

[The age structure of the Milky Way's halo](#)

Notre Dame News (online)

[Second-generation stars identified, giving clues about their predecessors](#)

Science Alert (online)

[Astronomers have created the most detailed age map of the Milky Way yet](#)

Universe Today (online)

[Best picture yet of Milky Way's formation 13.5 billion years ago](#)

Notre Dame News (online)

[Detailed age map shows how Milky Way came together](#)

Daily Mail (online)

[How the Milky Way formed: Stunning 3D maps show how 130,000 stars came together 13.5 billion years ago](#)

Daily Mail (online)

[Graphic shows age structure of the Milky Way's halo](#)

Astrobites (online)

[Our halo is getting younger, spatially speaking](#)

UPI (online)

[New map details formation of the Milky Way galaxy](#)

International Business Times (online)

[How Did The Milky Way Form? New Chronographic Map Provides Answers](#)

Phys.org (online)

[Detailed age map shows how Milky Way came together](#)

Reddit Journal of Science (online)

[Detailed age map shows how Milky Way came together](#)

Science Daily (online)

[Detailed age map shows how Milky Way came together](#)

Laboratory Equipment (online)

[Detailed age map shows how Milky Way came together](#)

Geek Journal (online)

[Detailed age map shows how Milky Way came together](#)

AboNewsCast (online)

[Detailed age map shows how Milky Way came together](#)

Science Newsline (online)

[Detailed age map shows how Milky Way came together](#)

MSU Today (online)

[Astronomers pinpoint how Milky Way Galaxy was formed](#)

Ancient Code (online)

[How the Milky Way formed: Awesome 3D map shows how 130,000 stars merged](#)

Astro Watch (online)

[Detailed Age Map Shows How Milky Way Came Together](#)

Science Bulletin (online)

[Detailed Age Map Shows How Milky Way Came Together](#)

Science Blog (online)

[Astronomers pinpoint how Milky Way Galaxy was formed](#)

EurekAlert! (online)

[Detailed Age Map Shows How Milky Way Came Together](#)

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[Detailed Age Map Shows How Milky Way Came Together](#)

Life Science Network (online)

[The age structure of the Milky Way's halo](#)

Jornal da USP (in Portuguese - online)

[Astrônomos brasileiros mapeiam estrutura de idades do halo da Via Láctea](#)

Agência FAPESP (in Portuguese - online)

[Pesquisadores mapeiam a distribuição cronológica dos astros da Via Láctea](#)

Revista Galileu (in Portuguese - online)

[Brasileiros confirmam que estrelas na borda da Via Láctea são as mais novas](#)

O Povo (in Portuguese - online)

[Como os astros da Via Láctea se distribuem?](#)

Space Today TV (in Portuguese - online)

[Como a Via Láctea Se Formou](#)

- Público (in Spanish - online)  
[Así se formó la Vía Láctea](#)
- Geofísica Brasil (in Portuguese - online)  
[IAG-USP mapeia distribuição cronológica dos astros da Via Láctea](#)
- Planeta Universitário (in Portuguese - online)  
[Pesquisadores mapeiam a distribuição cronológica dos astros da Via Láctea](#)
- News Rondônia (in Portuguese - online)  
[Pesquisadores mapeiam a distribuição cronológica dos astros da Via Láctea](#)
- JINA-CEE Newsletter (online - Page 2)  
[Evidence for Multiple Progenitors of CEMP-no Stars](#)
- Space Daily (online)  
[Relics of the Milky Way's first generation of stars](#)
- University of Michigan News (online)  
[Relics of the Milky Way's first generation of stars](#)
- Notre Dame News (online)  
[Astrophysicists release new study of one of the first stars](#)
- Newswise (online)  
[Astrophysicists release new study of one of the first stars](#)
- EurekAlert! - AAAS (online)  
[Astrophysicists release new study of one of the first stars](#)
- Scientia (online - page 13)  
[Physics team creates Milky Way galaxy map](#)
- JINA-CEE Newsletter (online)  
[Discovery of the Brightest Ultra Metal-Poor Star](#)
- Agência FAPESP (in Portuguese - online)  
[Via Láctea cresceu de dentro para fora](#)
- Exame.com (in Portuguese - online)  
[Via Láctea cresceu de dentro para fora, diz pesquisa](#)
- Planeta Universitário (in Portuguese - online)  
[Via Láctea cresceu de dentro para fora](#)
- European Southern Observatory Photo Press Release (online)  
[ESO Telescopes Spy a Rare Relic](#)
- Notre Dame News (online)  
[Newly discovered star offers opportunity to explore origins of first stars in the early universe](#)
- Space Daily (online)  
[How the first stars sprung to life in early universe](#)
- Astronomy Now UK (online)  
[Ancient star provides insight into stellar origins in early universe](#)
- Empresa Brasil de Comunicação (in Portuguese - online)  
[História da Via Láctea ganha novos capítulos com descoberta de estrela por equipe da USP](#)
- Correio Braziliense (in Portuguese - online)  
[Astrônomos brasileiros identificam estrela rara na Via Láctea](#)
- Globo.com (in Portuguese - online)

*Professor da USP descobre estrela tão antiga quanto o Universo*

G1.globo.com (in Portuguese - online)

*Astrônomos identificam estrela antiga e rara na Via Láctea*

Agência USP de Notícias (in Portuguese - online)

*Estrela traz evidências do início da Via Láctea*

Universidade de São Paulo - Notícias (in Portuguese - online)

*Equipe liderada pela USP identifica estrela chave para entender o início da Via Láctea*

Agência FAPESP (in Portuguese - online)

*Astrônomos brasileiros identificam estrela rara na Via Láctea*

Folha de São Paulo (in Portuguese - online)

*Astrônomos encontram uma estrela quase tão velha quanto o próprio Universo*

JINA-CEE Newsletter (online)

*Hubble Space Telescope Near-Ultraviolet Spectroscopy of Bright CEMP-s Stars*

JINA-CEE Newsletter (online)

*The First Age Map of the Galactic Halo*

## 2015

Jornal da USP (in Portuguese - online)

*Mapa permite estimar idade dos componentes da Via Láctea*

UOL Notícias (in Portuguese - online)

*Mapa permite estimar idade das estrelas da Via Láctea*

Astronomy & Astrophysics Highlights (online)

*2MASS J18082002–5104378: The brightest ( $V=11.9$ ) ultra metal-poor star*

The Observer (online and print)

*Galactic archeologists create the first map of Milky Way's stellar halo*

Best Education News (online)

*Astrophysicists produce the first age map of the halo of the Milky Way*

National Science Foundation - News from the Field (online)

*Astrophysicists produce the first age map of the halo of the Milky Way*

Notre Dame News (online)

*Astrophysicists produce the first age map of the halo of the Milky Way*

The Watchers (online)

*The first age map of the Milky Way's halo produced*

Red Orbit (online)

*First-ever Milky Way age map shows oldest stars clustered in center*

Headlines and Global News (online)

*Milky Way Age Map Created For The First Time, Confirming Past Assumptions In Astrophysics*

Global News Connect (online)

*Astrophysicists furnish a initial age map of a Halo of a Milky Way*

Science World Report (online)

*First Ever Age Map of the Milky Way Galaxy Reveals History of the System*

Media INAF (in Italian - online)

*Quanto è vecchia la Via Lattea?*

The Observer (online and print)

*"Our Universe Revealed" lecture looks at chemical composition of stars*

**2014**

JINA-CEE Newsletter (online)

*Seven New Stars with  $[Fe/H] < -3$  – Six of them CEMP-no*

Phys.org (online)

*Galactic archaeologists uncover new insights into the formation of the earliest stars and galaxies*