

# Diane Feuillet

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## Achievements and Interests

**Galactic archaeology:** developed a new method to determine robust age trends using large spectroscopic surveys of giants stars, which allows for mapping of detailed chemical evolution through the Milky Way Galaxy.

**Stellar spectroscopy:** provided analysis for the Gaia-ESO Survey with which the bulge and disc samples are calibrated, including non-LTE abundances.

## Work Experience

- 2019 – **Postdoctoral Researcher**, *Lund University*, Lund, Sweden.  
Studying Galactic Archaeology with Dr. Sofia Feltzing.
- 2016 – 2019 **Postdoctoral Researcher**, *Max Planck Institut für Astronomie (MPIA)*, Heidelberg, Germany.  
Studying Galactic Archaeology with Dr. Karin Lind.
- 2017 – 2019 **SDSS IV APOGEE Science Working Group Co-Chair**, *SDSS-IV APOGEE Survey*.  
Coordination of APOGEE science working groups and organization of team meetings.
- 2014 – 2016 **1m Observations Coordinator**, *SDSS-IV APOGEE Survey*.  
Coordinator of 1m+APOGEE observations for the SDSS-IV APOGEE survey.

## Education

- 2011 – 2016 **Doctor of Philosophy in Astronomy**, *NMSU*, Las Cruces, NM.  
Dissertation: Ages and Abundances of Local Galactic Stellar Populations  
Advisor: Dr. Jon Holtzman
- 2011 – 2014 **Master of Science in Astronomy**, *NMSU*, Las Cruces, NM.  
Advisor: Dr. Jon Holtzman
- 2007 – 2011 **Bachelor of Arts in Physics-Astronomy with Honors**, *Whitman College*, Walla Walla, WA.  
Thesis: Photometry of the Galactic Globular Cluster M15  
Advisor: Dr. Nathaniel Paust

## Research Experience

- 2018 – 2019 **Spatial Evolution of the Age-Metallicity Relation.**  
Observational exploration of the spatial variation in the Galactic disk AMR using APOGEE and Gaia DR2.  
Publications: Feuillet et al. 2019
- 2016 – 2019 **Parameter and Abundance determination of GES spectra.**  
Determined stellar parameters and detailed abundances for Gaia-ESO Survey GIRAFFE spectra using SME.  
Collaborators: Karin Lind, Gaia-ESO Team
- 2012 – 2017 **Time resolved chemistry of the solar neighborhood.**  
Developed a technique to statistically determine ages of red giant stars. Examined age-abundance trends of individual elements using APOGEE red giants.  
Publications: Feuillet et al., 2016; Feuillet et al., 2018  
Collaborators: Jo Bovy, David Weinberg, Jon Holtzman
- 2011 – 2016 **Optical analysis of APOGEE targets**, *NMSU*, Las Cruces, NM.  
Validation of the IR abundance analysis done by APOGEE using high resolution optical echelle spectra.  
Publications: Jönsson et al., 2018  
Collaborators: Jon Holtzman, Henrik Jönsson, Katia Cuhna

2012 – 2014 **Validation of ASPCAP results**, *NMSU*, Las Cruces, NM.  
Aided in calibration of the APOGEE Stellar Parameters and Chemical Abundances Pipeline.  
Publications: Holtzman et al., 2015  
Collaborators: Jon Holtzman

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## Invited Talks and Workshops

November 2018 **Weighing Stars from Birth to Death**, The Lorentz Center, Leiden, The Netherlands.  
Active participant and contributor to White Paper

November 2018 **Life & Times of the Milky Way**, Shanghai, China.  
Invited Review Talk: Mapping the age-metallicity relation with APOGEE and Gaia

July 2018 **The Metal Poor Galaxy**, Ringberg Castle, Tegernsee, Germany.  
Invited Review Talk: Critical comparison of age diagnostics for metal-poor stars

March 2018 **Aarhus University**, Aarhus, Denmark.  
Invited Colloquium: Age-resolved chemistry of red giants in the solar neighborhood

March 2017 **Lund Observatory**, Lund, Sweden.  
Invited Colloquium: Local Stellar Age - Abundance Trends of Individual Elementals with APOGEE

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## Honors and Awards

May 2015 **A. Scott Murrell Memorial Endowed Scholarship**, *NMSU*, Las Cruces, NM.  
The Murrell Award recognizes outstanding research or professional development, and related accomplishments that raise the visibility of the NMSU Astronomy Department.

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## Professional Service and Membership

2016 – **4-metre Multi-Object Spectroscopic Telescope (4MOST)**.  
Deputy Galactic Project Science Manager, Active member

2011 – **Sloan Digital Sky Survey (SDSS) III & IV**.  
Active member, SDSS IV Collaboration Council member

2016 – 2019 **Gaia-ESO Survey (GES)**.  
LUMBA node analysis, Active member

2016 – 2017 **SDSS IV Committee On Inclusion in SDSS (COINS)**.  
Committee member

2010 – 2017 **American Astronomical Society**.  
Junior member & Chambliss Poster Award Judge

2015 – 2016 **NMSU Astronomy Department Colloquium Committee**.  
Graduate student representative

2014 – 2016 **NMSU Diversity in Astronomy Group**.  
Co-founder and organizer

2012 – 2015 **NMSU Astronomy Graduate Student Organization**.  
President, Secretary

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## Teaching and Public Outreach

2011 – 2016 **Graduate Teaching Assistant**, *Astronomy Department, NMSU*, Las Cruces, NM.  
Lab instructor for ASTR 110 'Introduction to Astronomy'  
Substitute lecturer and grader for ASTR 305 'Life in the Universe'  
Telescope operator for undergraduate observing

2011 – 2016 **Tombaugh Observatory Open House**, *NMSU*, Las Cruces, NM.  
Annual campus observatory events

2011 – 2016 **Astronomy Public Events**, Las Cruces, NM.  
Elementary and middle school sky demonstrations  
Science fair judging  
Community eclipse events

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## Publications

### Recent Peer-Reviewed Publications

Total citations: 3,300, First-author citations: 32, h-index: 13, m-index: 2.17

- 2019 **Feillet, Diane**, Frankel, Neige, Lind, Karin, et al. Spatial variations in the Milky Way disc metallicity-age relation. *MNRAS*, arXiv: 1908.02772
- 2018 **Feillet, Diane**, Bovy, Jo, Holtzman, Jon, Weinberg, David H., et al. Age-Resolved Chemistry of Red Giants in the Solar Neighborhood. *MNRAS*, 477, 2326, Citations: 5
- 2016 **Feillet, Diane K.**, Bovy, Jo, Holtzman, Jon, MacDonald, Nick, Nidever, David L. Determining Ages of APOGEE Giants with Known Distances. *ApJ*, 817, 40, Citations: 27
- 2014 **Feillet, Diane K.**, Paust, Nathaniel E. Q., Chaboyer, Brian. BVI Photometry and the Red Giant Branch Luminosity Function of M15. *PASP*, 126, 733
- 2018 Hasselquist, S., ...**Feillet, Diane**, et al. APOGEE [C/N] Abundances Across the Galaxy: Migration and Infall from Red Giant Ages. *ApJ: Accepted*, arXiv: 1812.05092
- 2018 Aguado, D. S., ...**Feillet, Diane**, et al. The Fifteenth Data Release of the Sloan Digital Sky Surveys: First Release of MaNGA Derived Quantities, Data Visualization Tools and Stellar Library. *ApJ: Accepted*, arXiv: 1812.02759
- 2018 Jönsson, Henrik, Allende Prieto, Carlos, Holtzman, Jon, **Feillet, Diane**, et al. APOGEE Data Releases 13 and 14: Stellar Parameter and Abundance Comparisons with Independent Analyses. *AJ*, 156, 126, Citations: 7
- 2018 Smiljanic, R., ...**Feillet, Diane**, et al. The Gaia-ESO Survey: properties of newly discovered Li-rich giants. *A&A*, 617, 4, Citations: 2
- 2018 Abolfathi, Bela, ... **Feillet, Diane**, et al. The Fourteenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the extended Baryon Oscillation Sky Survey and from the second phase of the Apache Point Observatory Galactic Evolution Experiment. *ApJS*, 235, 42, Citations: 191
- 2017 Albareti, Franco D., ... **Feillet, Diane**, et al. The Thirteenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-IV Survey MAPPING Nearby Galaxies at Apache Point Observatory. *ApJS*, 233, 25, Citations: 229
- 2017 Majewski, Steven R., ... **Feillet, Diane**, et al. The Apache Point Observatory Galactic Evolution Experiment (APOGEE). *AJ*, 154, 94, Citations: 284
- 2017 Blanton, Michael R., ... **Feillet, Diane**, et al. Sloan Digital Sky Survey IV: Mapping the Milky Way, Nearby Galaxies and the Distant Universe. *AJ*, 154, 28, Citations: 179
- 2016 García Pérez, Ana E., ... **Feillet, Diane**, et al. ASPCAP: The APOGEE Stellar Parameter and Chemical Abundances Pipeline. *AJ*, 151, 144, Citations: 165
- 2015 Holtzman, Jon A., ... **Feillet, Diane**, et al. Abundances, Stellar Parameters, and Spectra from the SDSS-III/APOGEE Survey. *AJ*, 150, 148, Citations: 206
- 2015 Alam, Shadab, ... **Feillet, Diane**, et al. The Eleventh and Twelfth Data Releases of the Sloan Digital Sky Survey: Final Data from SDSS-III. *ApJS*, 219, 27, Citations: 977
- 2014 Nidever, David L., ... **Feillet, Diane**, et al. Tracing Chemical Evolution over the Extent of the Milky Way's Disk with APOGEE Red Clump Stars. *ApJ*, 796, 38, Citations: 93
- 2014 Hayden, Michael R., ... **Feillet, Diane**, et al. Chemical Cartography with APOGEE: Large-scale Mean Metallicity Maps of the Milky Way Disk. *AJ*, 147, 116, Citations: 84

- 2014 Ahn, Christopher P., ... **Feillet, Diane**, et al. The Tenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Apache Point Observatory Galactic Evolution Experiment. *ApJS*, 211, 17, Citations: 691
- 2014 Eikenberry, Stephen S., ... **Feillet, Diane**, et al. Discovery of Two Rare Rigidly Rotating Magnetosphere Stars in the APOGEE Survey. *ApJ*, 784L, 30, Citations: 13