

## Nicolas Lehner, Ph.D.

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### Education

- Ph.D., Astrophysics, The Queen's University of Belfast, N. Ireland Sep. 2000
- M.Sc., Astrophysics, Université Louis Pasteur, Strasbourg, France June 1995
- B.Sc., Physics, Université Louis Pasteur, Strasbourg, France June 1994

### Positions

- **Research Assistant Professor** Aug. 06 – Present  
University of Notre Dame, Notre Dame, IN, USA
- **Research Scientist** Oct. 05 – Aug. 06  
University of Notre Dame, Notre Dame, IN, USA
- **Research Scientist** Dec. 02 – Sep. 05  
University of Wisconsin, Madison, WI, USA
- **Research Scientist** Oct. 00 – Nov. 02  
The Johns Hopkins University, Baltimore, MD, USA

### Research Interests

- Observational cosmology
- Galaxy formation and evolution
- Physics of the interstellar and intergalactic medium

### Scholarships and Fellowships

- European Social Fund postgraduate studentships Sep. 97 – Sep. 00
- Northern Ireland Development for Research postgraduate studentships Sep. 97 – Sep. 00

### Professional Memberships

- American Astronomical Society
- Far Ultraviolet Spectroscopic Explorer associate PI team member

### Professional Services

- Astronomy & Museum Educator Nov. 95 – Jul. 97  
Planétarium de Strasbourg, Strasbourg, France  
*Main duties:* Developed and presented educational and entertaining programming in astronomy and the other sciences to pupil schools; students, and general public.
- Open University Assistant Teacher, Strasbourg-Mulhouse, France May 96  
*Course taught:* The Universe observed in different wavelengths
- Scientific referee for the Astrophysical Journal 02 – Present
- Mentoring/supervising graduate students Oct. 05 – Present

## Refereed Publications

1. "Properties and Origin of the High-Velocity Gas toward the Large Magellanic Cloud," **N. Lehner**, L. Staveley-Smith, and J.C. Howk, *Astrophysical Journal* 702, 940-954 (2009).
2. "The Connection Between a Lyman Limit System, a Very Strong O<sub>VI</sub> Absorber, and "Strong z~0.5 O VI Absorption Toward PKS 0405-123: Implications for Ionization and Metallicity of the Cosmic Web," J.C. Howk, J.S. Ribaudo, **N. Lehner**, J.X. Prochaska, H.-W. Chen, *Monthly Notices of the Royal Astronomical Society* 396, 1875-1894 (2009).
3. "The Connection Between a Lyman Limit System, a Very Strong O<sub>VI</sub> Absorber, and Galaxies at z ~ 0.203," **N. Lehner**, J.X. Prochaska, H.A. Kobulnicky, K.L. Cooksey, J.C. Howk, G.M. Williger and S.L. Cales, *The Astrophysical Journal* 694 734-750 (2009).
4. "Probing feedback in protogalaxies: multiphase gas in a DLA at z ~ 2.4," **N. Lehner**, J.C. Howk, J.X. Prochaska, and A.M. Wolfe, *Monthly Notices of the Royal Astronomical Society* 390, 2-20 (2008).
5. "A High-Resolution Survey of Low-Redshift QSO Absorption Lines: Statistics and Physical Conditions of O<sub>VI</sub> Absorbers," T.M. Tripp, K.R. Sembach, D.V. Bowen, B.D. Savage, E.B. Jenkins, **N. Lehner**, P. Richter, *Astrophysical Journal Supplement Series*, 177, 39-102 (2008).
6. "The High-Velocity Gas toward Messier 5: Tracing Feedback Flows in the Inner Galaxy," W.F. Zech, **N. Lehner**, J.C. Howk, W.V.D. Dixon, and T.M. Brown, *Astrophysical Journal* 679, 460-480 (2008).
7. "Metallicity and Physical Conditions in the Magellanic Bridge," **N. Lehner**, J.C. Howk, F.P. Keenan, J.V. Smoker, *Astrophysical Journal* 678, 219-233 (2008).
8. "Highly Ionized Plasma in the Large Magellanic Cloud: Evidence for Outflows and a Possible Galactic Wind," **N. Lehner**, J.C. Howk, J.C., *Monthly Notices Royal Astronomy Society*, in press (2007).
9. "The Abundance of Deuterium in the Warm Neutral Medium of the Lower Galactic Halo," B.D. Savage, **N. Lehner**, A. Fox, B.P. Wakker, K.R. Sembach, T.M. Tripp, *The Astrophysical Journal*, in press (2007).
10. "Physical Properties, Baryon Content, and Evolution of the Ly $\alpha$  Forest: New Insights from High Resolution Observations at z  $\leq$  0.4," **N. Lehner**, B.D. Savage, B.P. Wakker, K.R. Sembach, T.M. Tripp, *The Astrophysical Journal*, in press (2007).
11. "What is the Total Deuterium Abundance in the Local Galactic Disk?" J.L. Linsky, (14 co-authors including **N. Lehner**), *The Astrophysical Journal* 647, 1106 (2006).
12. "Low Redshift Intergalactic Absorption Lines in the Spectrum of HE0226-4110," **N. Lehner**, B.D. Savage, B.P. Wakker, K.R. Sembach, T.M. Tripp, *The Astrophysical Journal Supplement Series* 164, 1 (2006).

13. "Properties of the Ovi Absorption in the Local Interstellar Medium," B.D. Savage, **N. Lehner**, The Astrophysical Journal Supplement Series 162, 134 (2006).
14. "Ca II K Observations of QSOs in the line-of-sight to the Magellanic Bridge," J.V. Smoker, F.P. Keenan, H.M.A. Thompson, C. Bruens, E. Muller, **N. Lehner**, C. Kobulnicky, J.-K. Lee, I. Hunter, Astronomy and Astrophysics 443, 525 (2005).
15. "Detection of Ne VIII in the Low-Redshift Warm-Hot IGM," B.D. Savage, **N. Lehner**, B.P. Wakker, K.R. Sembach, T.M. Tripp, The Astrophysical Journal 626, 776 (2005).
16. "Small-Scale Structure of O VI Interstellar Gas in the Direction of the Globular Cluster NGC 6752," **N. Lehner**, J.C. Howk, The Publications of the Astronomical Society of the Pacific 116, 895 (2004).
17. "C II Radiative Cooling of the Diffuse Gas in the Milky Way," **N. Lehner**, B.P. Wakker, B.D. Savage, The Astrophysical Journal 615, 767 (2004).
18. "FUSE Survey of the Local Interstellar Medium within 200 Parsec," **N. Lehner**, E.B. Jenkins, C. Gry, H.W. Moos, P. Chayer, S. Lacour, The Astrophysical Journal 595, 858 (2003).
19. "A Search for O VI in the Winds of B-Type Stars," J. Zsargó, A.W. Fullerton, **N. Lehner**, D. Massa, Astronomy and Astrophysics 405, 1043 (2003).
20. "FUSE Snapshot Survey of O VI Variability in the Winds of 66 OB-Type Stars," N. Lehner, A.W. Fullerton, D. Massa, K.R. Sembach, J. Zsargó, The Astrophysical Journal 589, 526 (2003).
21. "FUSE Observations of the Magellanic Bridge Gas toward Two Early-Type Stars: Molecules, Physical Conditions, and Relative Abundances," **N. Lehner**, The Astrophysical Journal 578, 126 (2002).
22. "The Deuterium-to-Oxygen Ratio in the Local Interstellar Medium from FUSE observations," G. Hébrard, S.D. Friedman, J.W. Kruk, **N. Lehner**, et al., Planetary and Space Science 50, 1169 (2002).
23. "Optical Spectroscopy of the M 15 Intermediate Velocity Cloud," J.V. Smoker, F.P. Keenan, **N. Lehner**, C. Trundle, Astronomy and Astrophysics 387, 1057 (2002).
24. "Abundances of Deuterium, Nitrogen, and Oxygen in the Local Interstellar Medium: Overview of First Results from the FUSE Mission," H.W. Moos, K.R. Sembach, A. Vidal-Madjar, D.G. York, S.D. Friedman, G. Hébrard, J.W. Kruk, **N. Lehner**, M. Lemoine, G. Sonneborn, B.E. Wood, et al., The Astrophysical Journal Supplement Series 140, 3 (2002).
25. "Deuterium Abundance toward WD0621-376: Results from the FUSE Mission," **N. Lehner**, C. Gry, K.R. Sembach, G. Hébrard, P. Chayer, H.W. Moos, J.C. Howk, J.M. Désert, The Astrophysical Journal Supplement Series 140, 81 (2002).

26. "A Peculiar Metal Rich Star, HD135485," C. Trundle, P.L. Dufton, W.R.J. Rolleston, R.S.I. Ryans, D.J. Lennon, **N. Lehner**, *Monthly Notices Royal Astronomy Society* 328, 291 (2001).
27. "The Influence of Stellar Wind Variability on Measurements of Interstellar O VI along Sightlines to Early-Type Stars," **N. Lehner**, A.W. Fullerton, K.R. Sembach, D. Massa, E.B. Jenkins, *The Astrophysical Journal Letter* 556, L103 (2001).
28. "HST/STIS Observations of the High-Velocity Interstellar Cloud HVC 291.2-41.2+80: A Warm, Mainly Ionized High-Velocity Cloud," **N. Lehner**, F.P. Keenan, K.R. Sembach, *Monthly Notices Royal Astronomy Society* 323, 904 (2001).
29. "Line Identification in the Ca II K Spectral Region of Sharp-Lined B-Type Stars," **N. Lehner**, C. Trundle, F.P. Keenan, K.R. Sembach, D.L. Lambert, *Astronomy and Astrophysics* 370, 996 (2001).
30. "Observations of the Interstellar Medium in the Magellanic Bridge," **N. Lehner**, K.R. Sembach, P.L. Dufton, W.R.J. Rolleston, F.P. Keenan, *The Astrophysical Journal* 551, 781 (2001).
31. "H I and Optical Spectroscopy toward the M 15 Intermediate-Velocity Cloud," J.V. Smoker, **N. Lehner**, F.P. Keenan, E.J. Totten, E. Murphy, K.R. Sembach, B. Bates, *Monthly Notices Royal Astronomy Society* 322, 13 (2001).
32. "CO and Optical Observations of the Magellanic Bridge," J.V. Smoker, F.P. Keenan, A. Polatidis, C.J. Mooney, **N. Lehner**, W.R.J. Rolleston, *Astronomy and Astrophysics* 363, 451 (2000).
33. "High-Resolution Optical Spectroscopy of the Sharp-Lined B-type star HD83206," **N. Lehner**, P.L. Dufton, D.L. Lambert, R.S.I. Ryans, F.P. Keenan, *Monthly Notices Royal Astronomy Society* 314, 199 (2000).
34. "Optical Observations of Three Galactic Halo Stars: Evidence for Cloudlets in Intermediate- and High-Velocity Interstellar Clouds," **N. Lehner**, K.R. Sembach, D.L. Lambert, R.S.I. Ryans, F.P. Keenan, *Astronomy and Astrophysics* 352, 257 (1999).
35. "Low Resolution Optical Spectroscopy of the M 15 High-Velocity Interstellar Cloud," J.V. Smoker, **N. Lehner**, F.P. Keenan, E.J. Totten, *Irish Astronomical Journal* 26, 105 (1999).
36. "High-velocity Interstellar Clouds toward the M15 Globular Cluster: I. Low Resolution Optical Data," **N. Lehner**, W.R.J. Rolleston, R.S.I. Ryans, F.P. Keenan, B. Bates, D.L. Pollacco, K.R. Sembach, *Astronomy and Astrophysics Supplement* 134, 257 (1999).

### **Unrefereed Publications**

1. “Spitzer Observations of Extraplanar Emission from Spiral Galaxies,” **N. Lehner**, J.C. Howk, Les 5èmes Rencontres de l’Observatoire de Paris, “Visions for Infrared Astronomy,” 2006, in press.
2. “Discovery of a Hot, Multiphase Ne VIII/O VI Absorber in the Low-Redshift IGM,” B.D. Savage, **N. Lehner**, B.P. Wakker, K.R. Sembach, T.M. Tripp, “Five Years of Discovery with FUSE,” Victoria, BC., ASPC 348, 363 (2006).
3. “C II Radiative Cooling of the Diffuse Gas in the Milky Way,” N. Lehner, B.P. Wakker, B.D. Savage, “Five Years of Discovery with FUSE,” ASPC 348, 448 (2006).
4. “Discovery of a Hot, Multiphase Ne VIII/O VI Absorber in the Low-Redshift IGM,” B.D. Savage, N. Lehner, B.P. Wakker, K.R. Sembach, T.M. Tripp, “Five Years of Discovery with FUSE,” Victoria, BC., ASPC 348, 363 (2006).
5. “Distribution and Baryon Content of H I Absorbers at  $z < 0.5$ ,” **N. Lehner**, B.D. Savage, B.P. Wakker, K.R. Sembach, T.M. Tripp, IAU Colloq. 199: Probing Galaxies through Quasar Absorption Lines, 162 (2005).
6. “FUSE Survey of the Local Interstellar Medium,” **N. Lehner**, C. Gry, E.B. Jenkins, H.W. Moos, S. Lacour, ASSL Vol. 315: How Does the Galaxy Work?, 386 (2004).
7. “The Deuterium-to-Oxygen Ratio in the Local Interstellar Medium from FUSE Observations,” G. Hébrard, S.D. Friedman, J.W. Kruk, **N. Lehner**, M. Lemoine, J.L. Linsky, H.W. Moos, C. Oliveira, K.R. Sembach, G. Sonneborn, A. Vidal-Madjar, B.E. Wood, XVII IAP Colloquium, “Gaseous Matter in Galaxies and Intergalactic Space,” p. 79 (2001).
8. “FUSE Interstellar Studies of the WD0621–376 Sightline,” **N. Lehner**, C. Gry, K.R. Sembach, P. Chayer, H.W. Moos, G. Hébrard, R. Ferlet, XVII IAP Colloquium, “Gaseous Matter in Galaxies and Intergalactic Space,” p. 77 (2001).
9. “HST/STIS Observation of the Magellanic Bridge: First interstellar abundance in the Magellanic Bridge,” **N. Lehner**, F.P. Keenan, P.L. Dufton, K.R. Sembach, Spring Symposium “A Decade of HST Science,” p. 53 (2000).
10. “The interstellar medium in the Magellanic Bridge,” **N. Lehner**, F.P. Keenan, J.V. Smoker, P.L. Dufton, W.R.J. Rolleston, F.C. McKenna, K.R. Sembach, J.E. Tohline, G. White, S. Stanimirovic, International Astronomical Union Symposium 190, p. 501 (1998).

### **Other Publications**

1. “Les Planétariums et Internet: un Exercice de Style?” **N. Lehner**, review Planétariums 2, 33 (1996).

### **Invited Lectures and Addresses**

1. October 2005 – “Intergalactic Medium in the Low Redshift Universe,” Talk presented at the University of Notre Dame, IN, USA.
2. March 2005 – “Distribution and Baryon Content of HI Absorbers at  $z < 0.5$ ,” Selected talk presented at the IAUC 199, “Probing Galaxies through Quasar Absorption Lines,” Shanghai, China.
3. March 2004 – “C II Radiative Cooling of the Diffuse Gas,” Colloquium presented at UW-Madison, WI, USA.
4. February 2004 – “C II Radiative Cooling of the Diffuse Gas in the Low, Intermediate, and High Velocity Clouds,” Talk presented at UC San Diego, CA, USA.
5. April 2000 – “HST/STIS Observations toward the General Direction of the Magellanic Bridge,” Talk presented at The Johns Hopkins University, Baltimore (MD), USA.
6. March 2000 – “HST/STIS Observations of a High-Velocity Interstellar Cloud toward the Magellanic Bridge,” Talk presented at the Astronomical Science Group of Ireland meeting, Dublin, Ireland.
7. March 2000 – “Abundances in the Interstellar Medium of the Magellanic Bridge,” Talk presented at the Queen’s University of Belfast, Belfast, Northern Ireland.
8. December 1999 – “The Remarkable Spectrum of the B-type star HD83206,” Invited seminar presented in the Observatory of Strasbourg, France.