

J. Xavier Prochaska

Associate Astronomer/Associate Professor of Astronomy and Astrophysics
University of California Observatories/Lick Observatory

INTERESTS AND EXPERTISE

Damped Ly α systems in quasars, Lyman limit systems, stellar abundances, thick disk imaging of our galaxy

ACADEMIC HISTORY

1993 B.S. in Physics (magna cum laude), Princeton University
1998 M.S. in Physics (highest score on qualifying exam), University of California, San Diego
1998 Ph.D. in Physics, University of California, San Diego

POSITIONS HELD

1998–01 Carnegie Fellow, Carnegie Observatories, Pasadena, California
2001–02 Hubble Fellow, Carnegie Observatories, Pasadena, California
2002–06 Assistant Astronomer/Assistant Professor, UCO/Lick Observatory, University of California, Santa Cruz
2006– Associate Astronomer/Associate Professor, UCO/Lick Observatory, University of California, Santa Cruz

HONORS AND AWARDS

1993 Sigma Xi Society, Princeton University
1993 Shinestone Senior Thesis Award in Physics, Princeton University
1993 Department of Energy Fellowship, University of California, San Diego
1998 Carnegie Postdoctoral Fellowship
2001 Hubble Fellowship

EXTERNAL RESEARCH SUPPORT (\$20,000 and over)

1999–	PI NASA/FUSE Cycle 2, “Physical Properties of a $z \ll 1$ Lyman Limit System”	\$27,003
2000–	PI NASA/FUSE Cycle 3, “Identifying the Physical Nature of Low z OVI Absorbers”	\$93,900
2003–	PI NSF Grant, “Lyman Limit Systems: Probing the Protogalactic/IGM Interface”	\$256,921
2003–	Co-I NSF Grant, “New Windows on Damped Lyman Alpha Protogalaxies”	\$205,000
2004–	Co-I NASA Grant, “A Comprehensive Study of Interstellar Depletions”	\$105,400
2004–	PI NASA Grant, “Star Formation in Damped Ly α Galaxies”	\$32,134
2005–	PI STScI Grant “The Low Redshift in IGM Enrichment History”	\$112,000
2005–	PI STScI Grant “An ACS Imaging Survey of the Galaxies Hosting Strong MG II Absorption”	\$82,231
2005–	PI NASA Grant “Probing Interstellar and Intergalactic Media at $z > 1$: Tracing the Evolution of Dust and Gas in the Ancient Universe with Swift Bursts”	\$36,650

RECENT PUBLICATIONS (selected)

“Damped Lyman Alpha Systems and Galaxy Formation Models. II. High Ions and Lyman Limit Systems,” A.H. Maller, J.X. Prochaska, R.S. Somerville and J.R. Primack. *MNRAS*, **343**, 268–278, 2003.

“The Age-Metallicity Relation of the Universe in Neutral Gas: The First 100 Damped Ly α Systems,” J.X. Prochaska, E. Gawiser, A.M. Wolfe, S. Castro and S.G. Djorgovski. *ApJL*, **595**, L9–L12, 2003.

“The elemental abundance pattern in a galaxy at $z = 2.626$,” J.X. Prochaska, J.C. Howk and A.M. Wolfe. *Nature*, **423**, 57–59, 2003.

“Echelle Spectroscopy of a Gamma-Ray Burst Afterglow at $z = 3.969$: A New Probe of the Interstellar and Intergalactic Media in the Young Universe,” H.-W. Chen, J.X. Prochaska, J.S. Bloom and I.B. Thompson. *ApJL*, **634**, L25–L28, 2005.

“The SDSS Damped Ly α Survey: Data Release 3,” J.X. Prochaska, S. Herbert-Fort and A.M. Wolfe. *ApJ*, **635**, 123–142, 2005.

“Damped Ly α Systems,” A.M. Wolfe, E. Gawiser and J.X. Prochaska. *ARA&A*, **43**, 861–918, 2005.

“Dissecting the Circumstellar Environment of Gamma-Ray Burst Progenitors,” J.X. Prochaska, H.-W. Chen and J.S. Bloom. *ApJ*, **648**, 95–110, 2006.

“Supersolar Super-Lyman Limit Systems,” J.X. Prochaska, J.M. O’Meara, S. Herbert-Fort, S. Burles, G.E. Prochter and R.A. Bernstein. *ApJL*, **648**, L97–L100, 2006.

“On the Incidence and Kinematics of Strong Mg II Absorbers,” G.E. Prochter, J.X. Prochaska and S.M. Burles. *ApJ*, **639**, 766–780, 2006.

“Quasars Probing Quasars. II. The Anisotropic Clustering of Optically Thick Absorbers around Quasars,” J.F. Hennawi and J.X. Prochaska. *ApJ*, **655**, 735–748, 2007.

UNIVERSITY SERVICE (selected)

Administrative appointments

2002– Member, UCO/Keck Telescope Assignment Committee
 2003 Member, Keck Observatory Archive Working Group
 2003– Member, Keck Users Group

Other university service

2002– Developed Keck/ESI Data Reduction Pipeline
 2002– Developed Lick/Kast Data Reduction Pipeline
 2004– UCO Keck Scheduler
 2004– Developed Keck/HIRES Data Reduction Pipeline
 2005– Co-Chair, Local Organizing Committee for “Nearly Normal Galaxies in a Λ CDM Universe” Conference

PROFESSIONAL ACTIVITIES (selected)

Consultative or other service to civic, state, or national governmental agencies

2002– NASA/FUSE Observers Advisory Committee
 2004 HST TAC
 2004 FUSE TAC

Five major presentations

2000 Invited talk, SPIE, Munich, Germany
 2002 Invited review talk, Conference on the IGM/Galaxy Connection, Boulder, CO
 2003 Invited review talk, Carnegie Symposium IV, Pasadena, CA
 2004 Invited talk, Plumian Celebration, Cambridge, England
 2005 Invited review talk, “IGM and Galaxies” Conference, Shanghai, China

STUDENTS AND FELLOWS SUPERVISED (lifetime)

Ph.D. Advisees

G. Prochter
 Y. Fenner
 K. Cooksey

Senior Theses

S. Herbert-Fort
 M. Krok