

David R. Law

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I. EDUCATION:

2003-2008: Ph.D. Astrophysics (defended July 2008), CALIFORNIA INSTITUTE OF TECHNOLOGY

Advisor: Professor Charles C. Steidel

“The Kiloparsec-Scale Structure and Kinematics of High-Redshift Star-Forming Galaxies”

1999-2003: B.A. Astronomy-Physics, Summa Cum Laude, Minor Mathematics, UNIVERSITY OF VIRGINIA

Advisor: Professor Steven R. Majewski

“Modeling the Tidal Tails of the Sagittarius Dwarf Galaxy”

II. RESEARCH INTERESTS:

Galaxy formation and evolution

Kinematics of high-redshift galaxies

Milky Way structure and dynamics; tidal interactions with dwarf satellites

Integral-field spectroscopy and laser-guided adaptive optics

III. POSITIONS:

2003-2008: Graduate research student, CALTECH

2005: Teaching Assistant, *Structure and Dynamics of Galaxies*, CALTECH (graduate level)

2005: Teaching Assistant, *Galaxies and Cosmology*, CALTECH

2004,2005: Teaching Assistant, *Astronomical Measurements and Instrumentation*, CALTECH (graduate level)

2003: Summer Research Assistant, UNIVERSITY OF VIRGINIA (*Advisor: Dr. Steven Majewski*)

2002-2003: Public Night Telescope Operator, MCCORMICK OBSERVATORY

2002: Summer Research Assistant, UNIVERSITY OF VIRGINIA (*Advisor: Dr. Steven Majewski*)

2001: Summer Research Assistant, NORTHERN ARIZONA UNIVERSITY

(*Advisor: Dr. Kathleen DeGioia-Eastwood*)

2000: Summer Research Assistant, MIT HAYSTACK OBSERVATORY (*Advisor: Dr. Colin Lonsdale*)

IV. AWARDS AND HONORS:

2004: Holloway Fellowship, CALTECH

2003: D. Nelson Limber Prize, UNIVERSITY OF VIRGINIA

2003: Small Research Fellowship, UNIVERSITY OF VIRGINIA

V. PROFESSIONAL SOCIETIES AND SERVICE:

2007: Science Advisor: Keck next-generation adaptive optics program

2004-present: Junior Member of the American Astronomical Society

VI. OBSERVATIONAL AND TECHNICAL EXPERIENCE [NIGHTS]:

Over 50 nights experience with optical and near-IR imaging, spectroscopy, and laser-assisted adaptive optics.

Keck Observatory (Keck I/II: OSIRIS/LGSAO[14], NIRSPEC[9], LRIS[3])

Palomar Observatory (200" Hale: WIRC[12], LFC[1])

Cerro Tololo Interamerican Observatory (4m Blanco, 1.5m: CSPEC[4], MOSAIC[6])

Las Campanas Observatory (100" duPont[5])

Hubble Space Telescope (ACS, WFPC2)

Experience with multiple major programming languages.

C, C++, FORTRAN, HTML, IDL, IRAF

VII. SELECTED RECENT TALKS:

COLLOQUIUM SPEAKER at the University of California: San Diego, 2007

Spatially Resolved Kinematics of Star-Forming Galaxies in the Early Universe

INVITED TALK at "Science in the Era of TMT", Irvine, CA, 2007

TMT: Science Goals and Design Requirements for IFU Studies of High Redshift Galaxies

VIII. SELECTED MEDIA COVERAGE:

SKY AND TELESCOPE, "Meet the Milky Way's Newfound Neighbors", July 2005, p. 17

CNN NEWS, "Sagittarius being eaten by Milky Way", Sep 25 2003

CIEL ET ESPACE, "Impitoyable Voie Lactée", August 2003, p. 13

IX. PUBLICATIONS:

LEAD AUTHOR on **6** Refereed Publications (ASTROPHYSICAL JOURNAL, ASTRONOMICAL JOURNAL)

CO-AUTHOR on **10** Additional Refereed Publications

16. Geha, M., Willman, B., Simon, J.D., Strigari, L.E., Kirby, E., **Law, D.R.**,
and Strader, J. 2008, ApJ submitted.

"The Least Luminous Galaxy: Spectroscopy of the Milky Way Dwarf Galaxy Segue I."

15. Wright, S.A., Larkin, J.E., **Law, D.R.**, Steidel, C.C., Shapley, A.E.,
and Erb, D.K. 2008, ApJ submitted.

"Dynamics of Galactic Disks and Mergers at $z \approx 1.6$: Spatially Resolved Spectroscopy with Keck Laser Guide Star Adaptive Optics."

14. Chou, M., Majewski, S.R., Cunha, K., Smith, V.V., Patterson, R.J., Martinez-Delgado, D., **Law, D.R.**,
Crane, J.D., Munoz, R.R., Lopez, R. G., Geisler, D., and Skrutskie, M.F. 2007, ApJ, 670, 346.

"A 2MASS All-Sky View of the Sagittarius Dwarf Galaxy: Variation of the Metallicity Distribution Function Along the Sagittarius Tidal Stream."

13. **Law, D.R.**, Steidel, C.C., Erb, D.K., Larkin, J.E., Pettini, M., Shapley, A.E., and Wright, S.A. 2007
ApJ, 669, 929

"Integral Field Spectroscopy of High-Redshift Star Forming Galaxies with Laser Guided Adaptive Optics: Evidence for Dispersion-Dominated Kinematics."

12. Peter, A.H.G., Shapley, A.E., **Law, D.R.**, Steidel, C.C., Erb, D.K., Reddy, N.A., and Pettini, M. 2007
ApJ, 668, 23.

"Morphologies of Galaxies in and around a Protocluster at $z=2.300$ "

11. Wright, S.A., Larkin, J.E., Barczys, M., Erb, D.K., Iserlohe, C., Krabbe, A., **Law, D.R.**, McElwain, M.W.,

- Quirrenbach, A., Steidel, C.C., and Weiss, J. 2007, ApJ, 658, 78.
“Integral Field Spectroscopy of a Candidate Disk Galaxy at z 1.5 using Laser Guide Star Adaptive Optics.”
10. **Law, D.R.**, Steidel, C.C., Erb, D.K., Pettini, M., Reddy, N.A., Shapley, A.E., Adelberger, K.L., and Simenc, D.J. 2007, ApJ, 656, 1.
“The Physical Nature of Rest-UV Galaxy Morphology during the Peak Epoch of Galaxy Formation.”
9. Casetti-Dinescu, D.I., Majewski, S.R., Girard, T.M., Carlin, J.L., van Altena, W.F., Patterson, R.J., and **Law, D.R.** 2006, AJ, 132, 2082.
“A Deep Proper-Motion Survey in Kapteyn Selected Areas: I. Survey Description and First Results for Stars in the Tidal Tail of Sagittarius and in the Monoceros Ring.”
8. Majewski, S.R., **Law, D.R.**, Polak, A.A., and Patterson, R.J. 2006, ApJL, 637, 25.
“Measuring Fundamental Galactic Parameters with Stellar Tidal Streams and SIM PlanetQuest.”
7. **Law, D.R.**, Steidel, C.C., and Erb, D.K. 2006, AJ, 131, 70.
“Predictions and Strategies for Integral-Field Spectroscopy of High-Redshift Galaxies.”
6. **Law, D.R.**, Johnston, K.V., and Majewski, S.R. 2005, ApJ, 619, 807.
“A 2MASS All-Sky View of the Sagittarius Dwarf Galaxy: IV. Modeling the Sagittarius Tidal Tails.”
5. Johnston, K.V., **Law, D.R.**, and Majewski, S.R. 2005, ApJ, 619, 800.
“A 2MASS All-Sky View of the Sagittarius Dwarf Galaxy: III. Constraints on the Flattening of the Galactic Halo.”
4. Majewski, S.R., Kunkel, W.E., **Law, D.R.**, Patterson, R.J., Polak, A.A., Rocha-Pinto, H.J., Crane, J.D., Frinchaboy, P.M., Hummels, C.B., Johnston, K.V., Rhee, J., Skrutskie, M.F. and Weinberg, M.D. 2004, AJ, 128, 245.
“A 2MASS All-Sky View of the Sagittarius Dwarf Galaxy: II. Swope Telescope Spectroscopy of M Giant Stars in the Dynamically Cold Sagittarius Tidal Stream.”
3. Crane, J.D., Majewski, S.R., Rocha-Pinto, H.J., Frinchaboy, P.M., Skrutskie, M.F., and **Law, D.R.** 2003, ApJL, 594, 119.
“Exploring Halo Substructure with Giant Stars: Spectroscopy of Stars in the Galactic Anticenter Stellar Structure.”
2. **Law, D.R.**, Majewski, S.R., Skrutskie, M.F., Carpenter, J., and Ayub, H.F. 2003, AJ, 126, 1871.
“2MASS Studies of Differential Reddening Across Three Massive Globular Clusters.”
1. **Law, D.R.**, DeGioia-Eastwood, K., and Moore, K.L. 2002, ApJ, 565, 1239.
“Empirical Bounds for the Ionizing Fluxes of Wolf-Rayet Stars.”