

Kyoung-Soo Lee

Curriculum Vitae

CONTACT INFORMATION

Yale University
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EDUCATION

Johns Hopkins University, Department of Physics & Astronomy
Ph.D., Astronomy & Astrophysics, **2007** (Advisor: Mauro Giavalisco)
Dissertation: Understanding Dark Matter-UV Light Connection at High Redshift
M.S., Astronomy, **2004**
Pohang Institute of Science and Technology (POSTECH), Korea
B.A., Physics, **1999**

RESEARCH EXPERIENCE

2007-present Jaylee and Gilbert Mead Prize Postdoctoral Fellow at Yale University
2003-2006 Space Telescope Science Institute (with Mauro Giavalisco)
Measurement and interpretation of the clustering properties and UV luminosity function of high-redshift star-forming galaxies $z > 2.5$, studies of multi-wavelength star-formation indicators, X-ray properties of star-forming galaxies
2002-2005 Space Telescope Science Institute (with Mark Dickinson)
Data acquisition/reduction/characterization of near-infrared and Ultraviolet data as part of the observational efforts of the GOODS survey, Supernovae search, morphologies of galaxies from *HST* imaging data (2003–2004)
2001 Johns Hopkins University (Far Ultraviolet Spectroscopic Explorer)
Analysis of FUSE data to study the impact of the South Atlantic Anomaly region on the satellite observations and its time variability

RESEARCH INTERESTS

- Statistical association of galaxies with the properties of hosting dark matter halos
- Cosmic structure formation of the Universe
- Observational evidence of halo substructure at high redshift
- Understanding the physical properties of different galaxy “types” in relation to halos, and with respect to one another within the hierarchical framework
- Constraining star formation history and stellar mass assembly of high-redshift galaxies
- Understanding physical properties of massive galaxies (stellar mass, star-formation rates, spatial cross-correlation of passive and SF galaxies, environmental dependence of their properties)

REFEREED PUBLICATIONS

Lee, K.-S., Giavalisco, M., Conroy, C., Wechsler, R. H., Ferguson H. C., Somerville, R. S., Dickinson, M. E., Urry, C. M. 2008, “Mapping the Dark Matter From UV Light at High Redshift: An Empirical Approach to Understand Galaxy Statistics”, Accepted for publication in the *Astrophysical Journal* (arXiv:0808.1727v1)

Lee, K.-S., Giavalisco, M., Gnedin, O. Y., Somerville, R., Ferguson, H., Dickinson, M., Ouchi, M. 2006, “The Large-scale and Small-scale Clustering of Lyman-break galaxies at $2.5 \leq z \leq 5.5$ from the GOODS survey”, *ApJ*, 642, 63

Quadri, R. F., Williams, R. J., **K.-S. Lee**, Franx, M., van Dokkum, P., Brammer, G. B. 2008, “A Confirmation of the Strong Clustering of Distant Red Galaxies at $2 < z < 3$ ”, Accepted for publication in the ApJ Letters (arXiv:0808.0911)

Somerville, R. S., **Lee, K.-S.**, Ferguson, H. C., Gardner, J. P., Moustakas, L. A., Giavalisco, M. 2004, “Cosmic Variance in the Great Observatories Origins Deep Survey”, ApJ, 600, L171

Carilli, C. L., Lee, N., Capak, P., Schinnerer, E., **Lee, K.-S.**, McCracken, H., Yun, M. S., Scoville, N., Smolcic, V., Giavalisco, M., Datta, A., Taniguchi, Y., Urry, C. M. 2008, “Star formation rates in Lyman break galaxies: radio stacking of LBGs in the COSMOS field and the sub- μ Jy radio source population”, Accepted for publication in the Astrophysical Journal (arXiv:0808.2391)

Giavalisco, M. & **Lee, K.-S.** 2008 “ The evolution of UV luminosity function at $2.5 \leq z \leq 6.5$ ”, in preparation

Giavalisco, M., et al. 2004, “The Great Observatories Origins Deep Survey: Initial Results from Optical and Near-Infrared Imaging”, ApJ, 600, L93

Daddi, E., Dickinson, M., Chary, R., Pope, A., Morrison, G., Alexander, D. M., Bauer, F. E., Brandt, W. N., Giavalisco, M., Ferguson, H., **Lee, K.-S.**, Papovich, C., Renzini, A. 2005, “The Population of BzK Selected ULIRGs at $z \sim 2$ ”, ApJ, 631, 13

Lehmer, B. D., Brandt, W. N., Alexander, D. M., Bauer, F. E., Conselice, C. J., Dickinson, M. E., Giavalisco, M., Grogin, N. A., Koekemoer, A. M., **Lee, K.-S.**, Moustakas, L. A., Schneider, D. P. 2005, “X-Ray Properties of Lyman Break Galaxies in the Great Observatories Origins Deep Survey”, AJ, 129, 1

Strolger, L. -G., et al. 2004, “The *Hubble* Higher z Supernova Search: Supernovae to $z \approx 1.6$ and Constraints on Type Ia Progenitor Models”, ApJ, 613, 200

Jönsson, J., Dahlen, T., Goobar, A., Gunnarsson, C., Mortsell, E., **Lee, K.-S.** 2006, “Lensing magnification of supernovae in the GOODS-fields”, ApJ, 639, 991

INVITED
TALKS

Space Telescope Science Institute, November 2008

University of Columbia, Department of Physics, Colloquium, October 2008

Yale Center for Astronomy & Astrophysics, YCAA Seminar, October 2008

Harvard-Smithsonian Center for Astrophysics, OIR Lunch Talk, October 2008

Goddard Space Flight Center, October 2008

Princeton University, Interstellar Medium and Star Formation Seminar, October 2008

University of California, Davis, Department of Physics, Cosmology Seminar, October 2008

Kavli Institute for Particle Astrophysics and Cosmology, Cosmology Seminars, September 2008

University of Arizona, Department of Astronomy, Theory Colloquium, September, 2008

Arizona state University, School of Earth & Space Exploration, September, 2008

University of Massachusetts, Department of Astronomy, March 2008

Western Kentucky University, Department of Physics, Colloquium series, 2007

Yale University, Department of Physics and Astronomy, YCAA Seminar, 2005

COLLABORATIONS

- Great Observatories Origins Deep Survey (GOODS: PI. Mauro Giavalisco, Mark Dickinson)
- Cosmic Evolution Survey (COSMOS: PI. Nick Scoville)
- Multiwavelength Survey by Yale-Chile (MUSYC: PI. Eric Gawiser, Pieter van Dokkum)
- NEWFIRM Medium-Band filter Survey (NMBS: PI. Pieter van Dokkum)
- DESIRE: Deep Spitzer Investigation into the Reionization Epoch (PI: Ranga-Ram Chary)
pending for approval

GRANTS

- *HST* Archival Research Grant (2006 –) as Principal Investigator: ‘Constraining the Small-scale Clustering: Towards Better Understanding of Galaxy and Dark Matter Connection’

TEACHING
EXPERIENCE

- 2008** Supervised two Yale undergraduate students for summer research program
Ms. Michele Dufault, & Laura Kreidberg
- 2001-2002** *Teaching Assistant*, Johns Hopkins University
Electromagnetic Theory
- 2000-2001** *Teaching Assistant*, Johns Hopkins University
General Physics Lab and General Physics I, II for physics majors

OBSERVING
EXPERIENCE

- Near-infrared wide-field imaging with the Flamingos on the KPNO-4m (2003 – 2005)
- U-band wide-field imaging with the MOSAIC II camera on the CTIO-4m (2003)
- Optical Spectroscopy with the GMOS on the Gemini north telescope (2005)
- Optical Spectroscopy with the DEIMOS on the Keck II telescope (2006)

REFERENCES

Mauro Giavalisco, Professor, University of Massachusetts, Amherst, Massachusetts 01002 phone: (413) 545-4767 email: mauro@umass.astro.edu

Risa Wechsler, Professor, Stanford University, Stanford, CA 94305-4060 phone: (650) 736-8017 email: rwechsler@stanford.edu

Mark Dickinson, Astronomer, National Optical Astronomy Observatory, 950 North Cherry Ave., Tucson, AZ 85719 phone: (520) 318-8531 email: med@noao.edu

Henry Ferguson, Astronomer, Space Telescope Science Institute, 3700 San Martin Dr., Baltimore, Maryland 21218 phone: (410) 338-5098 email: ferguson@stsci.edu

Rachel Somerville, Astronomer, Space Telescope Science Institute, 3700 San Martin Dr., Baltimore, Maryland 21218 phone: (410) 338-4893 email: somer@stsci.edu

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