

YUE SHEN CURRICULUM VITAE

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Education	Ph.D, Astrophysics, 2009, Princeton University M.S., Physics, 2005, Tsinghua University, Beijing, China B.S., Physics, 2002, Tsinghua University, Beijing, China	
Academic Appointments	Assistant Professor, Department of Astronomy, University of Illinois at Urbana-Champaign, 2015–present Hubble Post-Doctoral Fellow, Carnegie Observatories, 2012–2015 Clay Post-Doctoral Fellow, Harvard-Smithsonian Center for Astrophysics, 2009–2012	
Selected Honors and Awards	Hubble Fellowship, 2012, Space Telescope Science Institute Clay Fellowship, 2009, Smithsonian Astrophysical Observatory Frelinghuysen Fellowship, 2005, Princeton University Yej Chi-Sun Prize, 2002, Department of Physics, Tsinghua University	
Research Area	Extragalactic astronomy: the physics and evolution of SMBHs, large-scale structure, galaxy formation; time domain and survey sciences	
Publication Records	NASA ADS records (Sep 2015): 80 refereed papers (34 first-author papers); total citations 5200+; first-author paper citations 1700+.	
Project Highlights	PI of the Sloan Digital Sky Survey Reverberation Mapping Project (2014–present): a large program to measure black hole masses for distant quasars. PI of a Gemini Observatory Large and Long Program (2015–2017): a GNIRS near-infrared spectroscopic survey of $z > 5.7$ quasars.	
Telescope Time Awards	PI of 3 HST GO and 1 Chandra GO programs, 60+ nights on 6-10m telescopes and 100+ nights on 2-4m telescopes. Co-I on various space- and ground-based observing programs.	
Observing Experience	Familiar with most ground-based optical/near-IR telescopes and instruments. 50+ nights observing on Magellan-Baade/Clay 6.5m, MMT 6.5m, Keck, Subaru; 30+ nights observing on KPNO-Mayall 4m, McDonald Obs 2.7m, ARC 3.5m, WIYN 3.5m, Steward Bok 2.3m.	
Teaching and Advising Experience	Assistant Instructor: <i>AST303 – Observing and Modeling the Universe</i> ; Fall 2008, Princeton <i>Introduction to Astrophysics</i> ; Fall 2004, Tsinghua University Undergraduate advisor for the 2015 class of astronomy majors, University	

of Illinois at Urbana-Champaign
 Past and Current Research Adviser for 10 undergraduate and graduate students from multiple institutions (UIUC, Princeton, Harvey Mudd College, Tsinghua Univ., Peking Univ.)

Other Research Interests Hydrodynamic simulations of accretion disks; MHD and self-similar solutions; Solar System dynamics and exoplanets; dust grain models

Professional Services Referee for major peer-review journals in astronomy and physics, including *Nature*, *ApJ/AJ*, *MNRAS*, *A&A*, *PASP*, *PASA*, *JCAP*, *JQSRT*, etc.
 External reviewer for Subaru TAC and Canadian Gemini TAC
 Panelist for 2013 NASA ADAP review (Panel Chair)
 Reviewer for NASA Earth and Space Science Fellowship Program

References

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**Referred
Journal
Articles**

[NASA ADS records](#) as of Sep 2015: 80 refereed papers (**34 first-author**); total citations 5200+ (H-index 36); **first-author citations** 1700+ (**H-index 20**).

First-author papers

34. **Shen, Y.**, et al. 2015, ApJ, submitted, *The Sloan Digital Sky Survey Reverberation Mapping Project: First Broad-line H β and MgII Lags at $z \gtrsim 0.3$ from six-Month Spectroscopy*
33. **Shen, Y.**, et al. 2015, ApJ, 805, 96, *The Sloan Digital Sky Survey Reverberation Mapping Project: No Evidence for Evolution in the $M_{\bullet} - \sigma_{*}$ Relation to $z \sim 1$*
32. **Shen, Y.**, et al. 2015, ApJS, 216, 4, *The Sloan Digital Sky Survey Reverberation Mapping Project: Technical Overview*
31. **Shen, Y.**, Ho, L. C. 2014, Nature, 513, 210, *The diversity of quasars unified by accretion and orientation*
30. **Shen, Y.**, Liu, X., Loeb, A., Tremaine, S. 2013, ApJ, 775, 49, *Constraining sub-Parsec Binary Supermassive Black Holes in Quasars with Multi-Epoch Spectroscopy. I. The General Quasar Population*
29. **Shen, Y.**, et al. 2013, ApJ, 778, 98, *Cross-Correlation of SDSS DR7 Quasars and DR10 BOSS Galaxies: The Weak Luminosity Dependence of Quasar Clustering at $z \sim 0.5$*
28. **Shen, Y.** 2013, BASI, 41, 61, *The Mass of Quasars* (review)
27. **Shen, Y.** 2012, ApJ, 757, 152, *Astrometric Reverberation Mapping*
26. **Shen, Y.**, Liu, X. 2012, ApJ, 753, 125, *Comparing Single-Epoch Virial Black Hole Mass Estimators for Luminous Quasars*
25. **Shen, Y.**, Ménard, B. 2012, ApJ, *On the Link between Associated MgII Absorbers and Star Formation in Quasar Hosts*
24. **Shen, Y.**, Kelly, B. C. 2012, ApJ, 746, 169, *The Demographics of Broad-Line Quasars in the Mass-Luminosity Plane. I. Testing FWHM-Based Virial Black Hole Masses*
23. **Shen, Y.**, Liu, X., Greene, J. E., Strauss, M. A. 2011, ApJ, 735, 48, *Type 2 Active Galactic Nuclei with Double-peaked [O III] Lines. II. Single AGNs with Complex Narrow-line Region Kinematics are More Common than Binary AGNs*

22. **Shen, Y.**, et al. 2011, ApJS, 194, 45, *A Catalog of Quasar Properties from SDSS DR7*
21. **Shen, Y.**, Kelly, B. C. 2010, ApJ, 713, 41, *The Impact of the Uncertainty in Single-Epoch Virial Black Hole Mass Estimates on the Observed Evolution of the Black Hole - Bulge Scaling Relations*
20. **Shen, Y.**, Loeb, A. 2010, ApJ, 725, 249, *Identifying Supermassive Black Hole Binaries With Broad Emission Line Diagnosis*
19. **Shen, Y.** et al. 2010, ApJ, 719, 1693, *Binary Quasars at High Redshift II: Sub-Mpc Clustering at $z \sim 3 - 4$*
18. **Shen, Y.** 2009, ApJ, 704, 89, *Supermassive Black Holes in the Hierarchical Universe: A General Framework and Observational Tests*
17. **Shen, Y.**, Draine, B. T., & Johnson, E. T. 2009, ApJ, 696, 2126, *Modeling Porous Dust Grains with Ballistic Aggregates II: Properties of Scattered Light*
16. **Shen, Y.**, et al. 2009, ApJ, 697, 1656, *Quasar Clustering from SDSS DR5: Dependences on Physical Properties*
15. **Shen, Y.**, & Tremaine, S. 2008, AJ, 136, 2453, *Stability of Distant Satellites of Giant Planets in the Solar System*
14. **Shen, Y.**, Draine, B. T., & Johnson, E. T. 2008, ApJ, 689, 260, *Modeling Porous Dust Grains with Ballistic Aggregates I: Geometry and Optical Properties*
13. **Shen, Y.**, & Turner, E. L. 2008, ApJ, 685, 553, *On the Eccentricity Distribution of Exoplanets from Radial Velocity Surveys*
12. **Shen, Y.**, Greene, J. E., Strauss, M. A., Richards, G. T., & Schneider, D. P. 2008, ApJ, 680, 169, *Biases in Virial Black Hole Masses: An SDSS Perspective*
11. **Shen, Y.**, et al. 2008, ApJ, 677, 858, *Do Broad Absorption Line Quasars Live in Different Environments from Ordinary Quasars?*
10. **Shen, Y.**, et al. 2007, AJ, 133, 2222, *Clustering of High-Redshift ($z \geq 2.9$) Quasars from the Sloan Digital Sky Survey*
9. **Shen, Y.**, Mulchaey, J. S., Raychaudhury, S., Rasmussen, J., & Ponman, T. J. 2007, ApJ, 654, L115, *Differences in the AGN Populations of Groups and Clusters: Clues to AGN Evolution*
8. **Shen, Y.**, Stone, J. M., & Gardiner, T. A. 2006, ApJ, 653, 513, *Three-dimensional Compressible Hydrodynamic Simulations of Vortices in Disks*

7. **Shen, Y.**, & Lou, Y.-Q. 2006, MNRAS, 370L, 85, *Dispersal of Gaseous Circumstellar Discs around High-mass Stars*
6. **Shen, Y.**, & Lou, Y.-Q., 2005, ChJAS, 5, 241, *Outflows and Inflows in Astrophysical Systems*
5. **Shen, Y.**, Liu, X., & Lou, Y.-Q. 2005, MNRAS, 356, 1333, *Structures in a class of magnetized scale-free discs*
4. **Shen, Y.**, & Lou, Y.-Q. 2004, ChJAA, 4, 541, *Global Axisymmetric Stability Analysis for a Composite System of Two Gravitationally Coupled Scale-Free Discs*
3. **Shen, Y.**, & Lou, Y.-Q., 2004, MNRAS, 353, 249, *Gravitationally coupled scale-free discs*
2. **Shen, Y.**, & Lou, Y.-Q., 2004, ApJ, 611, L117, *Shocked Self-similar Collapses and Flows in Star Formation Processes*
1. **Shen, Y.**, & Lou, Y.-Q., 2003, MNRAS, 345, 1340, *Axisymmetric stability criterion for two gravitationally coupled singular isothermal discs*

Second-author papers

14. Sun, J., & **Shen, Y.** 2015, ApJ, 804, L15, *Dissecting the Quasar Main Sequence: Insight from Host Galaxy Properties*
13. Feng, H., **Shen, Y.**, Li, H. 2014, ApJ, 794, 77, *Single-epoch Black Hole Mass Estimators for Broad-line Active Galactic Nuclei: Recalibrating $H\beta$ with a New Approach*
12. Tremaine, S., **Shen, Y.**, Liu, X., Loeb, A. 2014, ApJ, 794, 49, *Relativistic Redshifts in Quasar Broad Lines*
11. Liu, X., **Shen, Y.**, Bian, F., Loeb, A., Tremaine, S. 2014, ApJ, 789, 140, *Constraining Sub-Parsec Binary Supermassive Black Holes In Quasars With Multi-Epoch Spectroscopy. II. The Population With Kinetically Offset Broad Balmer Emission Lines*
10. Kelly, B. C., **Shen, Y.** 2013, ApJ, 764, 45, *The Demographics of Broad Line Quasars in the Mass-Luminosity Plane II. Black Hole Mass and Eddington Ratio Functions*
9. Liu, X., **Shen, Y.**, Strauss, M. A. 2012, ApJ, 745, 94, *Active Galactic Nucleus Pairs from the Sloan Digital Sky Survey. II. Evidence for Tidally Enhanced Star Formation and Black Hole Accretion*

8. Liu, X., **Shen, Y.**, Strauss, M. A. 2011, ApJ, 736, L7, *Cosmic Train Wreck by Massive Black Holes: Discovery of a Kiloparsec-scale Triple Active Galactic Nucleus*
7. Liu, X., **Shen, Y.**, Strauss, M. A., Hao, L. 2011, ApJ, 737, 101, *Active Galactic Nucleus Pairs from the Sloan Digital Sky Survey. I. The Frequency on ~ 5 -100 kpc Scales*
6. Lin Y.-T., **Shen, Y.**, Strauss M. A., Richards, G. T., Lunnan, R. 2010, ApJ, 723, 1119, *On the Populations of Radio Galaxies with Extended Morphology at $z < 0.3$*
5. Liu, X., **Shen, Y.**, Strauss, M. A., Greene, J. E. 2010, ApJ, 708, 427, *Type 2 AGNs with Double-Peaked [O III] Lines: Narrow Line Region Kinematics or Merging Supermassive Black Hole Pairs?*
4. Ross, N. P., **Shen, Y.**, et al. 2009, ApJ, 697, 1634, *Clustering of Low-Redshift ($z \leq 2.2$) Quasars from the Sloan Digital Sky Survey*
3. Hu, J., **Shen, Y.**, Lou, Y.-Q., & Zhang, S. N. 2006, MNRAS, 365, 345, *Forming supermassive black holes by accreting dark and baryon matter*
2. Lou, Y.-Q., & **Shen, Y.** 2004, MNRAS, 348, 717, *Envelope expansion with core collapse - I. Spherical isothermal similarity solutions*
1. Lou, Y.-Q., & **Shen, Y.** 2003, MNRAS, 343, 750, *Perturbation configurations in a two-fluid system of singular isothermal discs*

Other contributing-author papers

32. Eftekharzadeh, S., et al. 2015, ApJ, in press, arXiv:1507.08380, *Clustering of intermediate redshift quasars using the final SDSS III-BOSS sample*
31. Sun, M., Trump, J. R., **Shen, Y.**, et al. 2015, ApJ, in press, arXiv:1506.07886, *The Sloan Digital Sky Survey Reverberation Mapping Project: Ensemble Spectroscopic Variability of Quasar Broad Emission Lines*
30. Matsuoka, Y., Strauss, M. A., **Shen, Y.**, et al. 2015, ApJ, in press, arXiv:1506.07535, *The Sloan Digital Sky Survey Reverberation Mapping Project: Post-Starburst Signatures in Quasar Host Galaxies at $z < 1$*
29. Morganson, E., et al. 2015, ApJ, 806, 244, *The Time Domain Spectroscopic Survey: Variable Selection and Anticipated Results*
28. Grier, C. J., et al. 2015, ApJ, 806, 111, *The Sloan Digital Sky Survey Reverberation Mapping Project: Rapid CIV Broad Absorption Line Variability*

27. Alam, S., et al. 2015, ApJS, 219, 12, *The Eleventh and Twelfth Data Releases of the Sloan Digital Sky Survey: Final Data from SDSS-III*
26. Luo, B., et al. 2015, ApJ, 805, 122, *X-ray Insights into the Nature of PHL 1811 Analogs and Weak Emission-line Quasars: Unification with a Geometrically Thick Accretion Disk?*
25. Petroff, E., et al. 2015, MNRAS, 447, 246, *A real-time fast radio burst: polarization detection and multiwavelength follow-up*
24. Filiz Ak, N., et al. 2014, ApJ, 791, 88, *The Dependence of C IV Broad Absorption Line Properties on Accompanying Si IV and Al III Absorption: Relating Quasar-wind Ionization Levels, Kinematics, and Column Densities*
23. Ahn, C. P., et al. 2014, ApJS, 211, 17, *The Tenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Apache Point Observatory Galactic Evolution Experiment*
22. Filiz Ak, N., et al. 2013, ApJ, 777, 168, *Broad Absorption Line Variability On Multi-Year Timescales In A Large Quasar Sample*
21. McGreer, I. D., et al. 2013, ApJ, 768, 105, *The $z=5$ Quasar Luminosity Function from SDSS Stripe 82*
20. Hall, P. B., et al. 2013, MNRAS, 434, 222, *Broad Absorption Line Quasars with Redshifted Troughs*
19. Ross, N. P., et al. 2013, ApJ, 773, 14, *The SDSS-III Baryon Oscillation Spectroscopic Survey: The Quasar Luminosity Function from Data Release Nine*
18. Liu, X., Civano, F., **Shen, Y.**, et al. 2013, ApJ, 762, 110, *Chandra X-ray and Hubble Space Telescope Imaging of Optically Selected kiloparsec-Scale Binary Active Galactic Nuclei I. Nature of the Ionizing Sources*
17. Dawson, K. S., et al. 2013, AJ, 145, 10, *The Baryon Oscillation Spectroscopic Survey of SDSS-III*
16. Roseboom, I. G., et al. 2013, MNRAS, 429, 1494, *IR-derived covering factors for a large sample of quasars from WISE-UKIDSS-SDSS*
15. Paris, I., et al. 2012, A&A, 548, 66, *The Sloan Digital Sky Survey quasar catalog: ninth data release*
14. Filiz Ak, N., et al. 2012, ApJ, 757, 114, *Broad Absorption Line Disappearance on Multi-year Timescales in a Large Quasar Sample*

13. White, M., et al. 2012, MNRAS, 424, 933, *The clustering of intermediate-redshift quasars as measured by the Baryon Oscillation Spectroscopic Survey*
12. Richardson, J., et al. 2012, ApJ, 755, 30, *The Halo Occupation Distribution of SDSS Quasars*
11. Ahn, C. P., et al. 2012, ApJS, 203, 21, *The Ninth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Baryon Oscillation Spectroscopic Survey*
10. Richards, G. T., et al. 2011, AJ, 141, 167, *Unification of Luminous Type 1 Quasars through CIV Emission*
9. Schneider D. P., et al. 2010, AJ, 139, 2360, *The Sloan Digital Sky Survey Quasar Catalog V. Seventh Data Release*
8. Liu, X., Greene, J. E., **Shen, Y.**, Strauss, M. A. 2010, ApJ, 715, L30, *Discovery of Four kpc-Scale Binary AGNs*
7. Jiang L., et al. 2010, Nature, 464, 380, *Dust-free Quasars in the Early Universe*
6. Shankar, F., Weinberg, D. H., **Shen, Y.** 2010, MNRAS, 406, 1959, *Constraints on black hole duty cycles and the black hole-halo relation from SDSS quasar clustering*
5. Hennawi, J. F., Myers, A. D., **Shen, Y.** et al. 2010, ApJ, 719, 1672, *Binary Quasars at High Redshift I: 24 New Quasar Pairs at $z \sim 3-4$*
4. Diamond-Stanic, A. M., et al. 2009, ApJ, 699, 782, *High-Redshift SDSS Quasars with Weak Emission Lines*
3. Gibson, R. R., et al. 2009, ApJ, 692, 758, *A Catalog of Broad Absorption Line Quasars in Sloan Digital Sky Survey Data Release 5*
2. Reyes, R., et al. 2008, AJ, 136, 2373, *Space Density of Optically-Selected Type 2 Quasars*
1. Schneider, D. P., et al. 2007, AJ, 134, 102, *The Sloan Digital Sky Survey Quasar Catalog. IV. Fifth Data Release*