

# Scott S. Sheppard

## Curriculum Vitae

### Personal Data

Department of Terrestrial Magnetism, Carnegie Institution of Washington

5241 Broad Branch Rd. NW, Washington, DC 20015, USA

Phone: (202) 478-8854, Fax: (202) 478-8821

Email: [Sheppard@dtm.ciw.edu](mailto:Sheppard@dtm.ciw.edu) Web: <http://www.dtm.ciw.edu/users/sheppard>

### Education

Ph.D.	Astronomy	University of Hawaii	2004
	<i>Thesis: Small Bodies in the Outer Solar System</i>		
M.S.	Astronomy	University of Hawaii	2001
B.A.	Physics with Honors	Oberlin College	1998

### Professional Experience

Faculty Member:	Carnegie Institution of Washington, DTM	7/07-present	
Hubble Fellow:	Carnegie Institution of Washington, DTM	9/04-7/07	
Research Assistant:	Institute for Astronomy, University of Hawaii	5/99-9/04	
Teaching Assistant:	Physics and Astronomy, University of Hawaii	8/98-5/99	
Mechanical Engineer:	Genencor International	5/98-8/98	
Honors Student:	Department of Physics, Oberlin College	8/97-5/98	
	<i>Project: Determination of Stress in Sputtered Molybdenum Thin Films by X-ray diffraction and Geometric Optics</i>		
Tutor:	Modern Physics, Oberlin College	8/97-12/97	
Research Fellow:	Department of Astronomy, University of Minnesota	5/97-8/97	
	<i>Project: A Telescope Guidance System</i>		
Research Assistant:	Department of Physics, Bucknell University	5/96-8/96	
	<i>Project: The Dust Tail of Comet P/Halley</i>		
Laboratory Assistant:	Department of Physics, Oberlin College	2/96-5/96	
Research Assistant:	NASA Lewis Research Center	12/95-2/96	
	<i>Project: Attenuation of Microwave Transmission Lines</i>		
Research Assistant:	Department of Physics, Oberlin College	8/95-12/95	
	<i>Project: The Efficiency of Solar Cells</i>		

### Honors

2001 ARCS Scholar of the year  
2003 ARCS Scholar of the year  
Hubble Fellow  
Asteroid (17898) named Scott Sheppard  
NSF Fellow (declined)

### Research Interests

Small Bodies in the Solar System: comets, asteroids, satellites and Kuiper Belt objects  
Brown Dwarfs, Low Mass Stars and the Solar Neighborhood  
Star, Planet and Solar System Formation

## Refereed Publications for Scott S. Sheppard

- Person, M., Brothers, T., .. Sheppard, S., .. et al. “Constraint on the Size of KBO (50000) Quaoar from a Single Chord Occultation” 2013, Icarus, submitted.
- Burgasser, A., Sheppard, S. and Luhman, K. “Resolved Near-Infrared Spectroscopy of WISE J104915.57-531906.1AB: A Flux-Reversal Binary at the L dwarf/T dwarf Transition” 2013, ApJ, 772, 129.
- Benecchi, S. and Sheppard, S. “Light Curves of Large Southern Hemisphere Kuiper Belt Objects” 2013, AJ, 145, 124.
- Person, M., Dunham, E., Bosh, A., ..Sheppard, S., .. et al. “The 2011 June 23 Stellar Occultation by Pluto: Airborne and Ground Observations” 2013, AJ, 146, 83.
- Hsieh, H., Kaluna, H., Novakovic, B., ..Sheppard, S., .. et al. “Main-Belt Comet P/2012 T1 (PANSTARRS)” 2013, ApJ Letters, 771, 1.
- Parker, A., Buie, M., .. Sheppard, S., .. et al. “Discovery of a High-Inclination L5 Neptune Trojan in the Search for a Post-Pluto New Horizons Target” 2013, AJ, 145, 96.
- Mace, G., Kirkpatrick, J. D., Cushing, M., .. Sheppard, S., .. et al. “A Study of the Diverse T Dwarf Population Revealed by WISE” 2013, ApJS, 205, 6.
- Sheppard, S. “The Color Differences of Kuiper Belt Objects in Resonance with Neptune” 2012, AJ, 144, 169.
- Sheppard, S., Ragozzine, D. and Trujillo, C. “2007 TY430: A Cold Classical Kuiper Belt Type Binary in the Plutino Population” 2012, AJ, 143, 58.
- Sheppard, S., Udalski, A., Trujillo, C. et al. “A Southern Sky and Galactic Plane Survey for Bright Kuiper Belt Objects” 2011, AJ, 142, 98.
- Trujillo, C., Sheppard, S. and Schaller, E. “A Photometric System for Detection of Water and Methane Ices on Kuiper Belt Objects” 2011, ApJ, 730, 105
- Brozovic, M., Jacobson, R. and Sheppard, S. “The Orbits of Neptune’s Outer Satellites” 2011, AJ, 141, 135
- Li, J., Kuchner, M., Allen, R. and Sheppard, S. “Measuring the Sizes, Shapes, Surface Features, Poles and Rotations of Solar System Objects with Interferometry” 2011, Icarus, 211, 1007
- Sheppard, S. and Trujillo, C. “The Size Distribution of the Neptune Trojans and the Missing Intermediate Sized Planetesimals” 2010, ApJ, 723, L233

- Sheppard, S. and Trujillo, C. "Detection of a Trailing (L5) Neptune Trojan" 2010, *Science*, 329, 1304
- Elliot, J., Person, M., .. Sheppard, S., .. et al. "Size and Albedo of Kuiper Belt Object 55636 from a Stellar Occultation" 2010, *Nature*, 465, 897
- Sheppard, S. "The Colors of Extreme Outer Solar System Objects" 2010, *Astron. J.*, 139, 1394
- Sheppard, S. and Trujillo, C. "A Survey for Satellites of Venus" 2009, *Icarus*, 202, 12
- Brucker, M., Grundy, W., Stansberry, J., Spencer, J., Sheppard, S., Chiang, E. and Buie, M. "High Albedos of Low Inclination Classical Kuiper Belt Objects" 2009, *Icarus*, 201, 284
- Sheppard, S. and Cushing, M. "An Infrared High Proper Motion Survey Using the 2MASS and SDSS: Discovery of M, L, and T Dwarfs" 2009, *Astron. J.*, 137, 304
- Sheppard, S., Lacerda, P. and Ortiz, J. "Photometric Light Curves of Trans-Neptunian Objects and Centaurs: Rotations, Shapes and Densities" 2008, chapter in the Univ. of Arizona Space Science Series book "The Solar System Beyond Neptune", ed. A. Barucci, H. Boehnhardt, D. Cruikshank and A. Morbidelli (Tucson: Univ. of Arizona Press)
- Nicholson, P., Cuk, M., Sheppard, S., Nesvorny, D. and Johnson, T. "Irregular Satellites of the Giant Planets" 2008, chapter in "The Solar System Beyond Neptune", ed. A. Barucci, H. Boehnhardt, D. Cruikshank and A. Morbidelli, (Tucson: Univ. of Arizona Press)
- Sheppard, S. "Dwarf Plutonian Planets and other Large Kuiper Belt Objects: Their Rotations, Phase Functions and Absolute Magnitudes" 2007, *Astron. J.*, 134, 787
- Berger, E., Fox, D., Price, P. .. Sheppard, S., .. et al. "A New Population of High Redshift Short-Duration Gamma-Ray Bursts" 2007, *AstroPhys. J.*, 664, 1000
- Sheppard, S. and Trujillo, C. "A Thick Cloud of Neptune Trojans and Their Colors" 2006, *Science*, 313, 511
- Sheppard, S., Jewitt, D. and Kleyna, J. "A Survey for "Normal" Irregular Satellites Around Neptune: Limits to Completeness" 2006, *Astron. J.*, 132, 171
- Sheppard, S. "A planet more, a planet less" 2006, *Nature*, 439, 541
- Sheppard, S. "Outer Irregular Satellites of the Planets and Their Relationship with Asteroids, Comets and Kuiper Belt Objects" 2006, invited review in "Asteroids, Comets and Meteors: IAU Symposium 229" ed. D. Lazzaro, S. Ferraz-Mello and J. Fernandez, (Cambridge: Cambridge University Press), 319-334
- Fernandez, Y., Jewitt, D. and Sheppard, S. "Albedos of Asteroids in Comet-Like Orbits" 2005, *Astron. J.*, 130, 308

- Sheppard, S., Jewitt, D. and Kleyna, J. "Ultra Deep Survey for Irregular Satellites of Uranus: Limits to Completeness" 2005, *Astron. J.*, 129, 518
- Abell, P., Fernandez, Y., Pravec, P., ..Sheppard, S., .. et al. "Physical Characteristics of Comet Nucleus C/2001 OG108 (LONEOS)" 2005, *Icarus*, 179, 174
- Jewitt, D. and Sheppard, S. "Irregular Satellites in the Context of Planet Formation" 2005, *Space Sci. Reviews*, 116, 441
- Sheppard, S. and Jewitt, D. "Extreme Kuiper Belt Object 2001 QG298 and the Fraction of Contact Binaries" 2004, *Astron. J.*, 127, 3023
- Jewitt, D. and Sheppard, S. "The Nucleus of Periodic Comet 48P/Johnson" 2004, *Astron. J.*, 127, 1784
- Sheppard, S., Jewitt, D. and Kleyna, J. "A Survey for Outer Satellites of Mars: Limits to Completeness" 2004, *Astron. J.*, 128, 2542
- Jewitt, D., Sheppard, S. and Porco, C. "Jupiter's Outer Satellites and Trojans" 2004, in "Jupiter: The Planet, Satellites and Magnetosphere" ed. F. Bagenal, T. Dowling and W. McKinnon, (Cambridge: Cambridge University Press), Chap. 12, 263-280
- Sheppard, S. and Jewitt, D. "An Abundant Population of Small Irregular Satellites Around Jupiter" 2003, *Nature*, 423, 261
- Fernandez, Y., Sheppard, S. and Jewitt, D. "The Albedo Distribution of Jovian Trojan Asteroids" 2003, *Astron. J.*, 126, 1563
- Sheppard, S. and Jewitt, D. "Hawaii Kuiper Belt Variability Project: An Update" 2003, *Earth, Moon and Planets*, 92, 207
- McBride N., Green, S., Davies, J., Tholen, D., Sheppard, S. et al. "Visible and Infrared Photometry of Kuiper Belt Objects: Searching for Evidence of Trends" 2003, *Icarus*, 161, 501
- Jewitt, D., Sheppard, S. and Fernandez, Y. "143P/Kowal-Mrkos and the Shapes of Cometary Nuclei" 2003, *Astron. J.*, 125, 3366
- Fernandez, Y., Jewitt, D. and Sheppard, S. "Thermal Properties of Centaurs Asbolus and Chiron" 2002, *Astron. J.*, 123, 1050
- Sheppard, S. and Jewitt, D. "Time-Resolved Photometry of Kuiper Belt Objects: Rotations, Shapes and Phase Functions" 2002, *Astron. J.*, 124, 1757
- Jewitt, D. and Sheppard, S. "Physical Properties of the Trans-Neptunian Object (20000) Varuna" 2002, *Astron. J.*, 123, 2110

Fernandez, Y., Jewitt, D., and Sheppard, S. “Low Albedos Among Extinct Comet Candidates” 2001, *AstroPhys J.*, 553, 197L

Brandner, W., Sheppard, S., Zinnecker, H. et al. “VLT-Detection of Two Edge-On Circumstellar Disks in the rho Oph Dark Cloud” 2000, *Astron. Astrophys.*, 364, L13

Sheppard, S., Jewitt, D., Trujillo, C., Brown, M., and Ashley, M. “A Wide-Field CCD Survey for Centaurs and Kuiper Belt Objects” 2000, *Astron. J.*, 120, 2687

### **Conference Proceedings**

Moskovitz, N., Yang, B., .. Sheppard, S., .. et al. “The Near-Earth Encounter of Asteroid 2005 YU55: Visible and Near-Infrared Spectroscopy” 2012, *LPI* 43, 2080.

Sheppard, S. “Small Bodies in the Outer Solar System” 2006, invited review for *New Horizons in Astronomy*, ASP Conference Series, 352, 3

Sheppard, S. and Jewitt, D. “The Abundant Irregular Satellites of the Giant Planets” 2003, in “Highlights of Astronomy” Vol. 13, International Astronomical Union, Ed. Engvold,

Sheppard, S. and Jewitt D. “The Shapes, Densities and Phase Functions of Trans-Neptunian Objects” 2002, in “Asteroids, Comets and Meteors” Ed. B. Warmbein, ESA Series

Brandner, W., Potter, D., Sheppard, S. et al. “The Evolution of Circumstellar Disks: Lessons From the VLT and ISO” 2001, in “The Origin of Stars and Planets: The VLT View” (ESO Publication), Eds. J. Alves and M. McCaughrean, Springer Verlag, Heidelberg.

### **Other Selected Publications**

Sheppard, S. “Gathering Moons”, 2012, *Astronomy Magazine*, (November)

Sheppard, S. “Two New Satellites of Jupiter: S/2011 J1 and S/2011 J2”, 2012, *IAU Circ.* 9252

Sheppard, S. “The Kuiper Belt” 2011, *McGraw-Hill Encyclopedia of Science and Technology*

Sheppard, S. “Finding the Small Moons of the Outer Planets: A Satellite Revolution” 2009, *Astronomical Society of the Pacific, Astronomy Beat*, April

Sheppard, S. “Natural Satellites” 2009, *World Book*

Sheppard, S. “Pluto and the Kuiper Belt” 2007, essay in “The Universe” by R. Freedman and W. Kaufmann III (New York: W. H. Freeman and Company), pp 401-402

Jewitt, D., Sheppard, S. and Kleyna, J. “The Strangest Satellites in the Solar System” 2006, *Scientific American Magazine*, August

Sheppard, S. et al. "Nine New Satellites of Saturn", 2006, IAU Circ. 8727 (June)

Sheppard, S. "What is a Planet?" 2006, Sky & Telescope Magazine, Letter to the Editor, January

Sheppard, S. "Decision Time for Space Exploration: Where in the Heavens Do We Go Next" 2005, San Francisco Chronicle, October 10

Sheppard, S. "Small Satellites of the Giant Planets" 2005, IAU Comm 16 Triennial Report

Sheppard, S. "Discovery of Coma around Asteroidal Object 2004 YJ35" 2005, IAU Circ. 8637 (December)

Sheppard, S. et al. "Twelve New Satellites of Saturn" 2005, MPEC 2005-J13 (May)

Sheppard, S., Fernandez, Y. and Jewitt, D. "Discovery of Coma around Asteroidal Object 2004 DO29 (P/Spacewatch-Linear)" 2004, IAU Circ. 8305 (March 16)

Sheppard, S., Fernandez, Y. and Jewitt, D. "Discovery of Coma around Asteroidal Object 2004 DZ61 (P/Catalina-Linear)" 2004, IAU Circ. 8321 (April 14)

Fernandez, Y., Jewitt, D., and Sheppard, S. "Fragmentation of Comet 57P/du Toit-Neujmin-Delporte" 2002, IAU Circ. 7935 (July 20)

Sheppard, S. "Outer Jovian Satellites" 2002, IAU Comm 16 Triennial Report

Sheppard, S. "Jupiter Satellites: 39 and Counting" 2002, Mercury, 31, 10

Sheppard, S. "Synchronous Rotations of Moons" 2002, Astronomy Magazine, (March)

Sheppard, S. and Jewitt, D. "Discovery of Components to comet C/2002 Q3 (Linear)" 2002, IAU Circ. (Sept. 6)

### **Professional Service**

- Scientific Organizing Committee, The University of Arizona Space Science Series The Solar System Beyond Neptune book.
- Scientific Organizing Committee for the 2012 Division of Planetary Sciences Meeting.
- Member participant for the New Horizons spacecraft to Pluto and the Kuiper Belt.
- Member of the Large Synoptic Survey Telescope (LSST) solar system science collaboration.
- Referee for Nature; Astronomical Journal; Astrophysical Journal; Astronomy and Astrophysics; Icarus; Earth, Moon and Planets.
- Panel Member for NASA Planetary Science Proposals.
- Panel Member for NASA Origins of the Solar System Program.
- Panel Member for NSF Small Bodies and Solar System Origins Program.
- Numerous Invited Public and Scientific Talks given around the World.
- Written Several Scientific Articles in Newspapers and Magazines for the General Audience.
- Contributor to the History Channel Program on Near Earth Asteroids.

- Contributor to Reporter Requests from TV, Magazines and Newspapers for Scientific Understanding.
- Creator of a Webpage on the Moons in our Solar System, <http://www.ifa.hawaii.edu/~sheppard/satellites>. Answer Frequent e-mails from Students and Teachers Interested to Learn more about our Solar System.