

Scott S. Sheppard

Curriculum Vitae

Personal Data

Earth and Planets Laboratory, Carnegie Institution for Science

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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 for Science, 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

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

- Hsieh, H. and Sheppard, S. “The reactivation of main-belt Comet 324P/La Sagra (P/2010 R2)” 2015, MNRAS Letters, 454, L81.
- Drahus, M., Waniak, W., Tendulkar, S., Agarwal, J., Jewitt, D. and Sheppard, S. “Fast Rotation and Trailing Fragments of the Active Asteroid P/2012 F5 (Gibbs)” 2015, ApJ, 802, L8.
- Sheppard, S. and Trujillo, C. “Discovery and Characteristics of the Rapidly Rotating Active Asteroid (62412) 2000 SY178 in the Main Belt” 2015, AJ, 149, 44.
- *Trujillo, C.* and *Sheppard, S.* “A Sedna-like Body with a Perihelion of 80 Astronomical Units” 2014, Nature, 507, 471-474.
- *Co-First Authors**
- Luhman, K. and Sheppard, S. “Characterization of High Proper Motion Objects from the Wide-Field Infrared Survey Explorer” 2014, ApJ, 787, 126.
- Schneider, A., Cushing, M., Kirkpatrick, D., ..Sheppard, S. “Discovery of the Young L Dwarf WISE J174102.78-464225.5” 2014, AJ, 147, 34.
- 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., Osip, D., ..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

Other Selected Publications

- Sheppard, S. “Beyond the Kuiper Belt: The Oort Cloud”, 2015, *Sky & Telescope Magazine*, (March), 129, 26-30.
- Sheppard, S. and Trujillo, C. “Discovery of Comet C/2014 F3 (Sheppard-Trujillo)”, 2014, *CBET* 3879
- Sheppard, S. “Gathering Moons”, 2012, *Astronomy Magazine*, (November), 40, 56
- Sheppard, S. “Two New Satellites of Jupiter: S/2011 J1 and S/2011 J2”, 2012, *IAU Circ.* 9252
- 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. “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), 21, 1
- 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, 295, 23
- Sheppard, S. et al. "Nine New Satellites of Saturn", 2006, IAU Circ. 8727 (June)
- Sheppard, S. "What is a Planet?" 2006, Sky & Telescope Magazine, (January), 111, 14
- Sheppard, S. "Small Bodies in the Outer Solar System" 2006, invited review for New Horizons in Astronomy, ASP Conference Series, 352, 3
- 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)
- 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,
- 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 Magazine, 31, 10
- Sheppard, S. "Synchronous Rotations of Moons" 2002, Astronomy Magazine, (March), 30, 73
- Sheppard, S. and Jewitt, D. "Discovery of Components to comet C/2002 Q3 (Linear)" 2002, IAU Circ. (Sept. 6)
- 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.

Professional Service

- Scientific Organizing Committee for 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; Monthly Notices of the Royal Astronomical Society.
- Panel Member for NASA Planetary Science Proposals.
- Panel Member for NASA Origins of the Solar System Program.
- Panel Member for NASA Solar System Exploration Research Virtual Institute (SSERVI).
- Panel Member for NSF Small Bodies and Solar System Origins Program.
- Panel Member for NSF Astronomy Post Doctoral Fellowships.
- Panel Member NOAO telescope time allocation committee (2015-2017).
- Panel Member Hubble Space Telescope time allocation committee (2010 and 2014).
- 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.
- Creator of a Webpage on the Moons in our Solar System,
<http://home.dtm.ciw.edu/users/sheppard/satellites>.