

Gal Sarid - Curriculum Vitae

CONTACT INFORMATION

Earth & Planetary Sciences
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PERSONAL INFORMATION

Date of birth: May 7, 1981.
Place of Birth: Tel Aviv, Israel.
Citizenship: Israel.
Family Status: Married (Yael Ginossar).

RESEARCH INTERESTS

- Thermal and collisional evolution of planetary bodies.
- Early compositional evolution in the solar system.
- Relation between internal composition, surface properties and coma activity for cometary nuclei.
- Modeling cometary activity of target objects for observations and space missions.
- Structural and dynamical effects during the evolution of small Solar system bodies (comets, asteroids, Trojans, Centaurs, trans-Neptunian objects).
- Preliminary interests: Hydrodynamical simulation of formation processes in planetary systems, Research methodologies in astrobiology, Mixed microbial population analysis.

EDUCATION

Tel Aviv University, Tel Aviv, Israel

Ph.D., Planetary Sciences, 2010.

- Dissertation Topic: “**Thermal and Structural Evolution of Small Bodies in the Solar System**”.
- Advisor: Prof. Dina Prialnik, Dept. of Geophysics & Planetary Sciences, Tel Aviv University, Tel Aviv, Israel.

Graduate studies, Geophysics & Planetary Sciences, 2003-2004.

- Transferred to direct Ph.D. program.

B.Sc. (Cum Laude), Geophysics & Planetary Sciences, 2002.

Undergraduate studies, combined physics & mathematics program, School of Physics & Astronomy, 1999-2000.

EMPLOYMENT

Department of Earth and Planetary Sciences, Harvard University, Cambridge, MA USA

Postdoctoral Research Associate

October 2012 - Present.

NASA Astrobiology Institute, University of Hawai'i team, Honolulu, HI USA

Collaborator

October 2009 - Present.

University of Hawai'i, Institute for Astronomy, Honolulu, HI USA

Postdoctoral Researcher

October 2009 - October 2012.

NASA Astrobiology Institute, University of Hawai'i team, Honolulu, HI USA

Research Fellow

October 2009 - October 2012.

Tel Aviv University, Department of Geophysics & Planetary Sciences, Tel-Aviv, Israel

Teaching assistant

October 2003 - 2008.

TEACHING
EXPERIENCE

Astrobiology course, Prof. K. J. Meech (2011) – Guest lecturer.

Undergraduate course ast281, Department of Physics & Astronomy, University of Hawai'i.

REU Program (2010) – Mentoring an undergraduate research project.

Victoria Hartwick, University of Wisconsin-Madison: “Modeling the Interior Structure of Tempel 1” (presented at AAS Meeting # 217).

Stellar Physics (2003/4) – Lectures, class exercises and homework problems.

3rd year undergraduate program curriculum course, Department of Geophysics & Planetary Sciences, Tel Aviv University, Israel.

Continuum Mechanics (2003/4, 2005/6, 2006/7, 2007/8) – Lectures, class exercises and homework problems.

2nd year undergraduate program curriculum course, Department of Geophysics & Planetary Sciences, Tel Aviv University, Israel.

OBSERVING
EXPERIENCE

UH 2.2-m telescope (optical).

Caltech Submillimeter Observatory (sub-mm).

COMPUTER
PROFICIENCY

Programming languages: Fortran, C, Matlab, Html.

Operating systems: Windows, Unix/Linux, Mac OS.

Working knowledge of graphic software (Photoshop, GIMP), MS Office package and LaTeX environments.

PUBLICATIONS

Full list attached at the end of the document.

SCIENTIFIC
MEETINGS

- 35th Committee on Space Research (COSPAR) Scientific Assembly, Paris, France, 2004.
Poster presentation.
- 35th "Saas-Fee" Advanced School: Trans-Neptunian objects and comets, Swiss Society of Astronomy and Astrophysics, Murren, Switzerland, 2005.
Participation.
- Asteroids-Comets-Meteors (ACM) conference (IAU Symp. #229), Buzios, Rio de Janeiro, Brazil, 2005.
Poster presentation.
- International Workshop on trans-Neptunian objects: Dynamical and Physical properties, Catania, Italy, 2006.

Poster presentation.

- The 24th Jerusalem Winter School in Theoretical physics: The Lives of low-Mass Stars and Their Planetary Systems, The Institute for Advanced Studies, The Hebrew University, Jerusalem, Israel, 2006/7.

Oral & Poster presentation.

- Wilhelm und Else Heraeus - Physics school: The early phase of planet formation, Physikzentrum Bad Honnef, Germany, 2008.

Poster presentation.

- The Israeli Astrophysics & Cosmology Student Conference Series (AsCoS) I, Weizmann institute, Rehovot, Israel, 2008.

Oral presentation.

- Asteroids-Comets-Meteors (ACM) Conference, Baltimore, Maryland, USA, 2008.

Oral & Poster presentation.

- 54th Annual Meeting of the Israel Physical Society, Ben Gurion University, Beer-Sheva, Israel, 2008.

Poster presentation.

- 1st Center for Planetary Science (CPS) International School of Planetary Sciences: Dust in Space, Kobe, Japan, 2009.

Poster presentation.

- The Israeli Astrophysics & Cosmology Student Conference Series (AsCoS) II, Tel-Aviv University, Tel-Aviv, Israel, 2009.

Participation.

- XXVII IAU General Assembly, Symp. #263: Icy bodies of the Solar System, Rio de Janeiro, 2009.

Oral & Poster presentation.

- NAI "Workshop Without Walls": The Organic Continuum from the Interstellar Medium to the Early Solar System, 2010.

Participation.

- Astrobiology Science Conference (AbSciCon), League City, Texas, USA, 2010.

Oral & Poster presentation.

- Computational Astrobiology summer school, Honolulu, Hawai'i, USA, 2010.

Invited lecturer.

- 42nd annual meeting of the Division for Planetary Sciences, Pasadena, California, USA, 2010.

Oral presentation.

- ALMA early science workshop, Honolulu, Hawai'i, USA, 2011.

Participation.

- UH NAI Astrobiology winter school, Honolulu, Hawai'i, USA, 2011.

Invited lecturer.

- Hawaii-Stockholm mini symposium on Astrobiology, Honolulu, Hawai'i, USA, 2011.

Invited lecturer.

- Computational Astrobiology summer school, Honolulu, Hawai'i, USA, 2011.

Invited lecturer.

- EPOXI-DIXI science team meeting, Fairbanks, Alaska, USA, 2011.

Participation.

- New Horizons icy surface processes workshop, Flagstaff, Arizona, USA, 2011.
Poster presentation.
- 43rd annual meeting of the Division for Planetary Sciences (DPS-EPSC), Nantes, France, 2011.
Oral & Poster presentation.
- Star and Planet Formation workshop, Honolulu, Hawai'i, USA, 2011.
Invited lecturer.
- New Horizons Science Team meeting, Boulder, Colorado, USA, 2012.
Participation.
- Astrobiology Science Conference (AbSciCon), Atlanta (GA Tech), Georgia, USA, 2012.
Poster presentation.
- Asteroids-Comets-Meteors (ACM) Conference, Niigata, Japan, 2012.
Poster presentation.
- EPOXI-DIXI science team meeting, Cape Cod, Massachusetts, USA, 2012.
Participation.
- New Horizons science team meeting, Boulder, Colorado, USA, 2013.
Participation.
- *Invited speaker* at seminars in:
Tel Aviv University, Israel, Dept. of Geophysics and Planetary Sciences; Weizmann Institute, Israel, Dept. of Environmental Sciences and Energy Research; Weizmann Institute, Israel, Benoziyo Center for Astrophysics; The Hebrew University of Jerusalem, Israel, Racah Institute of Physics; University of Hawai'i, USA, Institute for Astronomy; University of Hawai'i, USA, Institute of Geophysics and planetology; Universite Paris-Sud (Orsay) France, Institut d'Astrophysique Spatiale; Kobe University, Japan, Dept. of Earth and Planetary Sciences.

AWARDS AND
GRANTS

- Undergraduate studies excellence award, Department of Geophysics & Planetary Sciences, Tel-Aviv University, Israel, 2001.
- The Ilan Ramon & Rabbi Dasberg excellence award, Department of Geophysics & Planetary Sciences, Tel-Aviv University, Israel, 2005.
- The Ilan Ramon commemorative scholarship for outstanding graduate students in science & technology, The Commercial & Industrial Club, Israel, 2006.
- Graduate studies excellence award, Department of Geophysics & Planetary Sciences, Tel-Aviv University, Israel, 2008.
- Astrobiology postdoctoral fellowship, University of Hawai'i, NASA astrobiology institute, USA, 10/2009-10/2012.
- Co-Investigator on NSF planetary astronomy grant ("Water in the Asteroid Belt", PI Karen J. Meech), University of Hawai'i, 2010-2013.
- International travel grants, American Astronomical Society, 2012.

COLLABORATORS

In alphabetical order:

Jade Bond, Dept. of Astrophysics, U. of New South Wales, Australia.

Rosario Brunetto, Inst. d'Astrophysique Spatiale, U. Paris-Sud Orsay, France.

Francesca DeMeo, Dept. of Earth, Atmospheric & Planetary Sciences, MIT, USA.

Steven Desch, School of Earth & Space Exploration, Arizona State U., USA.

Stephen Freeland, Inst. for Astronomy & NASA Astrobiology Inst., U. of Hawaii, USA.

Aurelie Guilbert-Lepoutre, Dept. of Earth & Space Sciences, UCLA, USA.

Nader Haghighipour, Inst. for Astronomy, U. of Hawaii, USA.

Ravit Helled, Dept. of Geophysics & Planetary Sciences, Tel Aviv U., Israel.

Patryk Lykawka, Astronomy group, Faculty of Natural Sciences, Kinki U., Japan.

Karen Meech, Inst. for Astronomy & NASA Astrobiology Inst., U. of Hawaii, USA.

Mario Melita, Inst. de Astronomia y Fisica del Espacio, UBA-CONICET, Argentina.

Dina Prialnik, Dept. of Geophysics & Planetary Sciences, Tel Aviv U., Israel.

Sarah T. Stewart, Dept. of Earth & Planetary Sciences, Harvard U., USA.

Alberto Robador, Oceanography & NASA Astrobiology Inst., U. of Hawaii, USA.

Jeff Taylor, Hawaii Inst. of Geophysics & Planetology, U. of Hawaii, USA.

Bin Yang, Inst. for Astronomy & NASA Astrobiology Inst., U. of Hawaii, USA.

SCIENTIFIC OUTREACH

- Organization of Planetary Science group seminar (Dept. of Geophysics & Planetary Sciences, Tel-Aviv University), 2005-2007.
- Active assistance and participation in departmental colloquium (formal weekly seminar, Dept. of Geophysics & Planetary Sciences, Tel-Aviv University), 2004-2009.
- Active assistance and participation in astrophysics student seminar (graduate student seminar, Dept. of Astronomy & Astrophysics, Tel-Aviv University), 2005-2009.
- Active assistance and participation in student Astro-Reading club (graduate student journal club, Dept. of Astronomy & Astrophysics, Tel-Aviv University), 2008.
- Organization of Astro-coffee seminar series (weekly general astronomy seminar, Inst. for Astronomy, University of Hawai'i), 2009-2012 .
- Commentator for popular science section, Discovery Magazine, 2011.

PUBLIC OUTREACH

- Courses on general astronomy and the Solar system at YPIPCE (institute for extracurricular education for gifted children), 2004-2009.
- Public presentations on general astronomy and Solar system studies, for various ages and venues, 2004-2009.
- Co-organization of the Tel-Aviv University Astronomy Club (voluntary activity in astronomy, physics and science towards the general public). 2004-2009.
- Participation in local science fair judging (Niu Valley), Honolulu, Hawai'i, USA. 2010.
- Participation in Physics day open house, University of Hawai'i, Honolulu, Hawai'i, USA. 2010-2012.
- Participation in Inst. for Astronomy open house, University of Hawai'i, Honolulu, Hawai'i, USA. 2010-2012.

- Participation as category judge in the state science fair, Honolulu, Hawai'i, USA. 2011.
- Astronomy-related after-school activities, Kalihi community center (PACT community teen program), Honolulu, Hawai'i, USA, 2012.

PROFESSIONAL SERVICE

Journal Review:

- Planetary & Space Science; Icarus; Astronomy Journal.

Panel Review:

- NASA Outer Planet Research.

Membership:

- American Geophysical Union; Division for Planetary Sciences (American Astronomical Society).

Updated: December 2012

Publication list (Gal Sarid)

REVIEWED:

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- [1] Belton, M. J. S., Thomas, P., Carcich, B., Quick, A., Veverka, J., Melosh, H. J., A'Hearn, M. F., Li, J-Y., Brownlee, D., Schultz, P., Klaasen, K. and Sarid, G. 2013. **The origin of pits on 9P/Tempel 1 and the geologic signature of outbursts in Stardust-NExT images.** *Icarus*, *In press*.
- [2] Hainaut, O. R., Kleyana, J., Sarid, G., Hermalyn, B., Zenn, A. R., Meech, K. J., Schulz, P., Hsieh, H., Tranco, G., Pittichová, J. and Yang, B. 2012. **P/2010A2 LINEAR - I: An impact in the Asteroid Main Belt.** *Astronomy and Astrophysics* 537, A69.
- [3] Meech, K. J., and 196 colleagues 2011. **EPOXI: Comet 103P/Hartley 2 Observations from a Worldwide Campaign.** *The Astrophysical Journal* 734, L1.
- [4] Belton, M. J. S., and 70 colleagues 2011. **Stardust-NExT, Deep Impact, and the accelerating spin of 9P/Tempel 1.** *Icarus* 213, 345-368.
- [5] Meech, K. J., and 57 colleagues 2011. **Deep Impact, Stardust-NExT and the behavior of Comet 9P/Tempel 1 from 1997 to 2010.** *Icarus* 213, 323-344.
- [6] Guilbert, A., Barucci, M. A., Brunetto, R., Delsanti, A., Merlin, F., Alvarez-Candal, A., Fornasier, S., de Bergh, C., Sarid, G. 2009. **A portrait of Centaur 10199 Chariklo.** *Astronomy and Astrophysics* 501, 777-784.
- [7] Sarid, G., Prialnik, D. 2009. **From KBOs to Centaurs: The thermal connection.** *Meteoritics and Planetary Science* 44, 1905-1916.
- [8] Prialnik, D., Sarid, G., Rosenberg, E. D., Merk, R. 2008. **Thermal and Chemical Evolution of Comet Nuclei and Kuiper Belt Objects.** *Space Science Reviews* 138, 147-164.
- [9] Sarid, G., Prialnik, D., Meech, K. J., Pittichová, J., Farnham, T. L. 2005. **Thermal Evolution and Activity of Comet 9P/Tempel 1 and Simulation of a Deep Impact.** *Publications of the Astronomical Society of the Pacific* 117, 796-809.

UNDER REVISION:

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- [1] Sarid, G., Prialnik, D., Meech, K. J. Survival of Ice in Main Belt Comets - A Parameter Study. *Monthly Notices of the Royal Astronomical Society*.
- [2] Sarid, G., Prialnik, D. The Inner-Workings of Trans-Neptunian Objects: Long-Term Thermo-Chemical and Structural Evolution. *Icarus*.
- [3] Sarid, G. Occurrence of Methane Ice in The Interior of Large Trans-Neptunian Objects. *Icarus*.
- [4] Belton, M. J. S., Thomas, P., Carcich, B., Quick, A., Veverka, J., Melosh, H. J., A'Hearn, M. F., Li, J-Y., Brownlee, D., Schultz, P., Sarid, G. The Origin of Pits on 9P/Tempel 1 and The Geologic Signature of Outbursts in Stardust-NExT Images. *Icarus*.

IN PREPARATION:

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- [1] Sarid, G., Brunetto, R., DeMeo, F. Masking Water Features on Surfaces of Small Icy Bodies.
- [2] Melita, M. D., Sarid, G., Lykawka, P. S. Considerations About Water Ice Longevity on the Jupiter Trojan Asteroids.
- [3] Sarid, G., Zenn, A., Meech, K. J., Prialnik, D. Internally-Driven Dust Activity on Comet 22P/Kopff.
- [4] Sarid, G., Prialnik, D. Dynamical and Thermal Pathways in the Evolution of Centaur Objects.
- [5] Yang, B., Sarid, G. Crystalline Water Ice in the outburst of Quasi-Hilda Comet P/2010 H2.
- [6] Sarid, G. Early Thermal Evolution of Planetesimals Beyond the Snow Line.

ABSTRACTS:

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- [1] Sarid, G. 2012. Stories of Pre-Accreted Icy Planetesimals: Internal Evolution and Volatile Delivery. *LPI Contributions*, 1667, 6491.
- [2] Sonnett, S., Meech, K. J., & Sarid, G. 2012. Bi-Color Light Curves of Eight Neutral Trans-Neptunian Objects. *LPI Contributions*, 1667, 6429.
- [3] Meech, K. J., Bauer, J. M., Bhatt, B. C., et al. 2012. New Insights into Comet Activity from the EPOXI Mission Campaign and the Spitzer Comet Nucleus Survey. *LPI Contributions*, 1667, 6303.
- [4] Prialnik, D., Sarid, G., Meech, K., & Assis, A. 2012. Evolutionary Models of Main Belt Comets *American Astronomical Society Meeting Abstracts* #219, 219, #432.16.
- [5] Sonnett, S., Meech, K. J., Sarid, G. 2011. Surface Properties of Neutral TNOs. *EPSC-DPS Joint Meeting 2011*, 1681.
- [6] Sarid, G. 2011. Early Thermal Evolution of Planetesimals Beyond the Snow Line. *EPSC-DPS Joint Meeting 2011*, 1632.
- [7] Sarid, G., Zenn, A. R., Meech, K. J., Farnham, T. L. 2011. Internally-Driven Dust Activity of Comet 22P/Kopff. *EPSC-DPS Joint Meeting 2011*, 1535.
- [8] Meech, K. J., Sarid, G. 2011. New insights into comet activity from Earth-based observations of the EPOXI mission target, 103P/Hartley 2. *EPSC-DPS Joint Meeting 2011*, 410.
- [9] Hartwick, V., Sarid, G. 2011. Modeling the Interior Structure of Tempel 1. *Bulletin of the American Astronomical Society* 43, #156.04.
- [10] Prialnik, D., Sarid, G., Meech, K. J. 2010. Survival of ice in Main Belt Comets. *Bulletin of the American Astronomical Society* 42, 959.
- [11] Sarid, G. 2010. Evolution of the Known Centaurs Population - Dynamical and Thermal Pathways. *Bulletin of the American Astronomical Society* 42, 991.
- [12] Yang, B., Sarid, G. 2010. Crystalline Water Ice In Outburst Comet P/2010 H2. *Bulletin of the American Astronomical Society* 42, 951.
- [13] Sarid, G., Prialnik, D. 2010. Dynamical and Thermal Pathways in the Evolution of Centaur Objects. *LPI Contributions* 1538, 5555.
- [14] Sarid, G., Prialnik, D. 2010. Retention of Water and Organic Compounds in the Distant Kuiper Belt. *LPI Contributions* 1538, 5539.
- [15] Yang, B., Sarid, G. 2010. Comet P/2010 H2 (Vales). *International Astronomical Union Circular* 9139, 2.

- [16] Meech, K., Hainaut, O., Prialnik, D., Sarid, G. 2010. Investigating the Early Solar System with Distant Comet Nuclei. *NOAO Proposal ID #2010A-0375* 375.
- [17] Guilbert, A., Barucci, A., Brunetto, R., Delsanti, A., Merlin, F., Alvarez-Candal, A., Fornasier, S., de Bergh, C., Sarid, G. 2009. A Portrait of Centaur 10199 Chariklo. *AAS/Division for Planetary Sciences Meeting Abstracts #41* 41, #65.01.
- [18] Sarid, G., Prialnik, D. 2008. Methane and Ice Water Retention in Large KBOs. *LPI Contributions* 1405, 8254.
- [19] Sarid, G., Prialnik, D. 2008. From TNOs to Centaurs: The Thermal Connection. *LPI Contributions* 1405, 8252.

BOOK CHAPTERS:

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- [1] Prialnik, D., Sarid, G., Rosenberg, E. D., Merk, R. 2009. Thermal and Chemical Evolution of Comet Nuclei and Kuiper Belt Objects. Origin and Early Evolution of Comet Nuclei, 147.