Teemu Öhman, Ph.D.

No-Cost Visiting Scientist
Lunar and Planetary Institute, Houston, USA

Freelance scientist and lecturer
Arctic Planetary Science Institute
Karhuntie 19 C 24, FI-96500 Rovaniemi, Finland

Phone: +358 40 566 7143
E-mail: teemusp.ohman@gmail.com
ResearchGate: www.researchgate.net/profile/Teemu_Oehman
LinkedIn: http://fi.linkedin.com/pub/teemu-öhman/2/ab7/4a/
Website: www.lpi.usra.edu/lpi/ohman/
Nationality: Finnish

Education

Department of Geosciences, University of Oulu, Finland, 1995–2009

- Doctor of Philosophy, November 2009
  - Thesis (split between the Departments of Geosciences and Physics): *The Structural Control of Polygonal Impact Craters*
- Licentiate of Philosophy, May 2007
  - Thesis: *The Structural Control of Polygonal Impact Craters on Mars*
- Master of Science, June 2002
  - Thesis: *The Indications of Cratering Process in Saarijärvi Impact Crater, Northern Finland* (in Finnish)
  - Major: Geology and mineralogy
  - Minors: Astronomy, Quaternary geology, Geophysics, Geochemistry, Chemistry

Research and teaching experience

- *August 2013 – present:* No-Cost Visiting Scientist at Lunar and Planetary Institute, Houston, USA, and freelance Earth and planetary scientist at Arctic Planetary Science Institute, Rovaniemi, Finland. Research topics: Impact cratering tectonics on the terrestrial planets.
- *January 2015 – March 2015:* Part-time teacher at the Rovaniemi Adult Education Centre, Rovaniemi, Finland. Lecturing courses Introduction to Astronomy and Light and Colour in the Atmosphere.
- *September 2012 – August 2013:* Postdoctoral Fellow at Lunar and Planetary Institute, Houston, funded mostly by grants from NASA Mars Data Analysis Program and NASA Lunar Advanced Science and Exploration Research to Dr. Patrick J. McGovern. Research topics: Structural characterization and evolution of Alba Mons and Olympus Mons, Mars, through generation and analysis of digital elevation models; Lunar and terrestrial impact cratering.
- *November 2011 – August 2012:* Postdoctoral Fellow at Lunar and Planetary Institute, Houston. Research topics: Lunar and terrestrial impact cratering.
- *July 2010 – October 2011:* Postdoctoral Fellow in lunar surface geology at the Center for Lunar Science and Exploration, Lunar and Planetary Institute, Houston. Funded by NASA Lunar Science Institute grant to Dr. David A. Kring. Research topics: Analysis of impact melt distribution and rheology in lunar crater Kepler using integrated analysis of image and topographic data sets; Shock metamorphism in terrestrial impact craters.
- *June 2007 – November 2009:* Ph.D. candidate in the Department of Geosciences, University of Oulu, supervised by Dr. Jouko Raitala and Dr. Pekka Tuisku. Funded by numerous grants from several foundations. Research topics: Photogeologic analysis of impact crater formation in structurally heterogenous targets on Mars, Venus, and the Moon; Shock metamorphism of

terrestrial impact craters; Petrophysical properties of impactites; Fluvial and volcanic evolution of Hellas region, Mars.

- *July 2002 – May 2007:* Lic. Phil. candidate in the Department of Geosciences, University of Oulu, supervised by Dr. Jouko Raitala and Dr. Pekka Tuisku. Funded by the Finnish Graduate School in Geology, and numerous grants from several foundations. Research topics: Photogeologic analysis of impact crater formation in structurally heterogenous targets on Mars and Venus; Shock metamorphism of terrestrial impact craters; Petrophysical properties of impactites; Fluvial and volcanic evolution of Hellas region, Mars. A five-week expedition to the Popigai impact structure, arctic Russia in 2004.
- *Fall semester 2004:* Teaching assistant in undergraduate courses of Crystallography and mineralogy and Bedrock geology in the Department of Geosciences, University of Oulu.
- *September 1995 – June 2002:* M.Sc. candidate in the Department of Geosciences, University of Oulu, supervised by Dr. Jouko Raitala and Dr. Pekka Tuisku. Major in Geology and mineralogy, minors in Astronomy, Quaternary geology, Geophysics, Geochemistry, and Chemistry. Main focus on terrestrial impact cratering, including, e.g., four weeks of geologic mapping in Saarijärvi impact structure, northern Finland in 1999, and a five-week expedition to Kara impact structure, arctic Russia in 2001.
- *Summers 1996, 1997, 1999, and 2000:* Total 10.5 months of bedrock mapping and prospecting in various parts of northern Finland for the Geological Survey of Finland's Rovaniemi office.

International studies (intensive short courses and major workshops)

- CLSE: *Lunar Analogue Training at Meteor Crater, Arizona & the San Francisco Volcanic Field, Arizona, USA,* 29. April – 1. May 2011
- NordForsk – NIR: *Impact Cratering in the Planetary System – Cratering Mechanisms and Shock Metamorphism* (**co-organizer, lecturer, field guide**), Finland, 29. August – 5. September 2010
- NordForsk – NIR: *Crater Mechanics and Structural Characteristics*, Norway, 8.–11. June 2009
- NordForsk – NIR: *Small Quaternary Craterforms – Geophysical and Ecological Aspects,* Estonia, 28. September – 2. October 2008
- NordForsk – NIR: *The Economic Aspects of Impact Craters, Geological and Socio-economical Views,* Norway, 17.–20. September 2007
- NordForsk – NIR: *How Impact Cratering Affects Local Geology, Geochemistry, and Geophysics,* Sweden, 28. May – 2. June 2007
- NordForsk – NIR: *Signatures of an Impact – The K-T boundary in Denmark,* Denmark, 18.–25. September 2006
- ESIR: *Geophysical Research Campaign at the Ilumetsa Impact Craters* (**co-organizer, lecturer**), Estonia, 13.–18. August 2005
- ESF-IMPACT: *Short Course on Impact Geophysics,* Sweden, 26. May – 1. June 2003
- ESF-IMPACT: *Short Course on Impact Stratigraphy,* Italy, 4.–11. May 2002
- NorFA: *High-resolution Secondary Ionisation Mass Spectrometry and Geochronology,* Sweden, 17.–22. September 2001
- NorFA: *Palaeosedimentology with Special Emphasis on the Precambrian Formations in NW Russia: Geological Excursion through Karelia*, Russia, 31. May – 11. June 2001
- ESF-IMPACT: *ESF Short Course on Impact Metamorphism,* Germany, 29. October – 2. November 2000
- NorFA: *Post-glacial Meteorite Craters and Physical–Chemical Aspects of Impact Structures,* Estonia, 14.–22. June 1999

Research interests

- Multidisciplinary remote sensing analysis of planetary impact craters, basins and tectonic structures (Moon, Mars, Venus, and the Earth)

- Geology of terrestrial impact structures, particularly on the Fennoscandian Shield, including:
  - geologic mapping and other field studies
  - optical petrography
  - geochemistry
  - remote sensing, including analysis of airborne geophysical data
- Petrophysical properties of impactites
- Structural characterization and evolution of large volcanoes on Mars
- Archean and Paleoproterozoic geology of the northern Fennoscandian Shield
- Generation of digital elevation models with stereo imagery
- Geology of the terrestrial planets
- History of science, particularly of impact and lunar research

IT and laboratory/analysis experience

- Operating systems: Windows, Mac, MS-DOS, UNIX/Linux (basics)
- Image processing: USGS Integrated Software for Imagers and Spectrometers (ISIS), NASA Ames Stereo Pipeline, Adobe Photoshop, ImageJ, GIMP (basics)
- Geologic and GIS software: ESRI ArcGIS, Rockware RockWorks, Surfer Surface Mapping System, MELTS (Adiabat 1_ph subroutine), ER Mapper (basics), Integrated Lunar Information Architecture for Decision Support (ILIADS, basics)
- Other software: Microsoft Office (Word, Excel, Powerpoint, Outlook), Libre Office (Writer, Calc), Adobe Acrobat, Windows Live Movie Maker, Blogger, WordPress
- Optical petrography (transmitted light), electron probe microanalysis (EPMA), scanning electron microscopy (SEM), X-ray fluorescence (XRF), X-ray diffractometry (XRD)
- Various petrophysical methods (e.g., Geological Survey of Finland's RISTO-equipment package and software, Curie-point and hysteresis measurements, spinner-magnetometers, AF-demagnetisers)
- Basic field and analysis experience with various ground penetrating radar systems (GPR), vertical electric sounding (VES) and profiling equipment, and magnetometers
- In addition to bedrock mapping and prospecting (see above), I have done field work on or visited about 26 impact structures in Finland, Sweden, Norway, Estonia, Russia, Germany, Canada, USA, and South Africa, as well as several localities of K/T- and Eocene/Oligocene distal impact ejecta deposits in Italy, Denmark, and USA.

Primary planetary remote sensing datasets used

- Moon: Lunar Reconnaissance Orbiter NAC, WAC, LOLA (points and DEM), Mini-RF, and Diviner (gridded Christiansen feature and rock abundance) data; Kaguya TC; Lunar Orbiter imagery; Clementine UVVIS; Arecibo radar data; SMART-1 AMIE; Apollo imagery
- Mars: Mars Express HRSC (stereo imagery and DEMs; **associate investigator**); Mars Reconnaissance Orbiter CTX; Mars Odyssey THEMIS VIS and IR; Viking MDIM 2.0; Mars Global Surveyor MOC WA and NA, and MOLA (points and DEM)
- Venus: Magellan SAR and altimetry data
- Earth: Landsat TM, ETM+, and OLI

Grants and scholarships awarded

My impact cratering and planetary geology research has been funded by the Finnish Graduate School in Geology (2004, and five months in 2006), and grants (total ~100 090 €) from various foundations, funds, and other sponsors:

- 2015; WSOY Literary Foundation; 4000 €
- 2015; Advisory Board for the Publication of Science; 3500 €
- 2014; Lappi Fund of the Finnish Cultural Foundation; 4000 €
- 2009 & 2007; Space Institute in the University of Oulu; 1500 € & 6500 €
- 2008, 2006, & 2004; Magnus Ehrnrooth Fund of the Finnish Society of Sciences and Letters;

6000 €, 3450 €, & 2000 €
- 2008; North Ostrobothnia Fund of the Finnish Cultural Foundation; 8000 €
- 2008; The Faculty of Science of the University of Oulu; 4200 €
- 2006; Sohlberg Delegation of the Finnish Society of Sciences and Letters; 3000 €
- 2004 & 2002; Kalle, Yrjö and Vilho Väisälä Foundation of the Finnish Academy of Science and Letters; 7000 € & 14 000 €
- 2004 & 2001; Jenny and Antti Wihuri Fund; 3000 € & ~12 950 €
- 2003; Advisory Board for the Publication of Science; 3000 €
- 2002; Seppo Säynäjäkangas Science Foundation; 2800 €
- Additional travel and support grants were received from the Academy of Finland (3430 €), Oskar Öflund's Foundation (2500 €), The Faculty of Science of the University of Oulu (500 €, 1000 €, 880 €, & 500 €), Barringer Crater Company (~815 €, ~680 €, & ~545 €), and Pallasite Press (Brian Mason travel award, ~340 €).

Professional and administrative service
- **Reviewer** for *Icarus* (2015, 2014), *Planetary and Space Science* (2014), *Tectonophysics* (2014), *Geosciences* (2014), *Earth and Planetary Science Letters* (2013), *Lithosphere* (2012), *Bulletin of the Geological Society of Finland* (2012), *Geologica Acta* (2011), and *Meteoritics & Planetary Science* (2010).
- **Member** of the international Söderfjärden Research Program Consortium (2014 – present)
- **Member** of the LPI Career Development Award panel (2012).
- **Manager** of LPI's Lunar Impact Crater Database (2011 – present)
- **Co-chair** for impact cratering and planetary geology session in the *29th Nordic Geological Winter Meeting* in Oslo, Norway, 11.–13. January 2010.
- **Co-organizer** of international short courses in impact crater research in Estonia (2005) and Finland (2010, see above).
- **Co-organizer** of the NordForsk-funded Nordic–Baltic impact cratering research planning meeting at KTH Royal Institute of Technology in Stockholm, Sweden, in spring 2004, which later resulted in the formation of the *Network on Impact Research (NIR).*
- **Coordinator** of the *European Student Impact Researchers (ESIR)* network, 2004–2012.
- I have given invited lectures about my impact crater research in the seminar series of Lunar and Planetary Institute, Houston, USA, Department of Geophysics, University of Helsinki, Finland, and the Divisions of Geophysics and Astronomy, University of Oulu, Finland.

Language skills
- Finnish (native language)
- English (excellent)
- Swedish (good)
- German (average)
- Russian (basics)

Current memberships in professional societies
- Meteoritical Society, 2001 – present
- American Geophysical Union, 2011 – present
- American Association for the Advancement of Science, 2013 – present

Miscellaneous experience
- During summers 1995 and 1998 I spent six months providing briefing services and weather observations for the Finnish Aviation Administration Kuopio airport.
- Corporal, Finnish Air Force, 1994–1995 (11 months), with special training in weather observations, briefing services, and air surveillance, in Tikkakoski and Utti air force bases, Finland.

- I was the observatory manager of the Astronomical Association Arktos in Oulu, Finland, during 1996–2010. I also served shorter periods as the chairman, librarian, and a member of the board. Currently (2015 – present) I am the vice chairman of Astronomical Association Corona Borealis in Rovaniemi, Finland.
- I was the leader of the halo section of the national Ursa Astronomical Association for the first period in 1999, and co-organized a national halo observation campaign in spring 2001.
- I have experience in giving popular science lectures on impact craters, planetary geology, astronomy, and meteorology, as well as organising stargazing events for the general public.

LIST OF PUBLICATIONS

05.07.2015

Dr. Teemu Öhman
Karhuntie 19 C 24
FI-96500 Rovaniemi
Finland
Phone: +358 40 566 7143
E-mail: teemusp.ohman@gmail.com

Peer reviewed papers (* denotes corresponding author and an equal share between the first two authors):

01. Schwarz W. H., Schmieder M., Buchner E., Trieloff M., Moilanen J. & **Öhman T.**, 2015. A Carnian $^{40}Ar/^{39}Ar$ age for the Paasselkä impact structure (SE Finland) – An update. *Meteoritics & Planetary Science,* vol. 50, no. 1, pp. 135–140, doi: 10.1111/maps.12407.
02. **Öhman T.,** Kramer G. Y. & Kring D. A., 2014. Characterization of melt and ejecta deposits of Kepler crater from remote sensing data. *Journal of Geophysical Research: Planets,* vol. 119, pp. 1238−1258, doi: 10.1002/2013JE004501.
03. **Öhman T.** & McGovern P. J., 2014. Circumferential graben and the structural evolution of Alba Mons, Mars. *Icarus,* vol. 233, pp. 114–125, doi: 10.1016/j.icarus.2014.01.043.
04. **Öhman T.** & Preeden U., 2013. Shock metamorphic features in quartz grains from the Saarijärvi and Söderfjärden impact structures, Finland. *Meteoritics & Planetary Science*, vol. 48, no. 6, pp. 955–975, doi: 10.1111/maps12112.
05. Nahm A. L., **Öhman T.** & Kring D. A., 2013. Normal faulting origin for the Cordillera and Outer Rook Rings of Orientale Basin, the Moon. *Journal of Geophysical Research: Planets,* vol. 118, pp. 190–205, doi: 10.1002/jgre.20045.
06. **Öhman T.** & Kring D. A., 2012. Photogeologic analysis of impact melt-rich lithologies in Kepler crater that could be sampled by future missions. *Journal of Geophysical Research – Planets,* vol. 117, E00H08, doi: 10.1029/2011JE003918.
07. **Öhman T.**, Aittola M., Korteniemi J., Kostama V.-P. & Raitala J., 2010. Polygonal impact craters in the Solar System: Observations and implications. In: Gibson R. L. & Reimold W. U. (eds.): *Large Meteorite Impacts and Planetary Evolution IV. Geological Society of America Special Paper 465.* Geological Society of America, Boulder, pp. 51–65, doi: 10.1130/2010.2465(04).
08. Schmieder M., Schwarz W. H., Buchner E., Trieloff M., Moilanen J. & **Öhman T.**, 2010. A Middle-Late Triassic $^{40}Ar/^{39}Ar$ age for the Paasselkä impact structure (SE Finland). *Meteoritics & Planetary Science*, vol. 45, no. 4, pp. 572–582, doi: 10.1111/j.1945-5100.2010.01041.x.
09. Korteniemi J., Raitala J., Aittola M., Ivanov M. A., Kostama V.-P., **Öhman T.** & Hiesinger H., 2010. Dike indicators in the Hadriaca Patera – Promethei Terra region, Mars. *Earth and Planetary Science Letters*, vol. 294, pp. 466–478, doi: 10.1016/j.epsl.2009.06.038.
10. Aittola M., **Öhman T.***, Leitner J. J., Kostama V.-P. & Raitala J., 2010. The structural control of Venusian polygonal impact craters. *Icarus*, vol. 205, no. 2, pp. 356–363, doi: 10.1016/j.icarus.2009.08.004.
11. **Öhman T.,** Aittola M., Kostama V.-P., Raitala J. & Korteniemi J., 2008. Polygonal impact craters in Argyre region, Mars: Implications for geology and cratering mechanics. *Meteoritics & Planetary Science*, vol. 43, no. 10, pp. 1605–1628.
12. Tagle R., **Öhman T.,** Schmitt R. T., Erzinger J. & Claeys Ph., 2007. Traces of an H chondrite in the impact-melt rocks from the Lappajärvi impact structure, Finland. *Meteoritics & Planetary Science*, vol. 42, no. 10, pp. 1841–1854.

13. Aittola M., **Öhman T.,** Leitner J. J. & Raitala J., 2007. The characteristics of polygonal impact craters on Venus. *Earth, Moon, and Planets*, vol. 101, pp. 41–53, doi: 10.1007/s11038-007-9148-4.
14. **Öhman T.,** Aittola M., Kostama V.-P., Hyvärinen M. & Raitala J., 2006. Polygonal impact craters in Argyre Region, Mars: Evidence for influence of target structure on the final crater morphology. *Meteoritics & Planetary Science*, vol. 41, no. 8, pp. 1163–1173.
15. Vishnevsky S. A., Raitala J., Gibsher N. A., **Öhman T.** & Pal'chik N. A., 2006. Impact tuffisites of the Popigai astrobleme. *Russian Geology and Geophysics*, vol. 47, no. 6, pp. 715–733.
16. Korteniemi J., Kostama V.-P., Törmänen T., Aittola M., Lahtela H., **Öhman T.,** Raitala J. & Neukum G., 2005. Complex geology of two large impact craters in Tyrrhena Terra, Mars: Detailed analysis using MEX HRSC camera data. *Journal of Geophysical Research – Planets*, vol. 110, E12S18, doi: 10.1029/2005JE002427.
17. **Öhman T.,** Aittola M., Kostama V.-P. & Raitala J., 2005. The preliminary analysis of polygonal impact craters within greater Hellas region, Mars. In: Koeberl C. & Henkel H. (eds.): *Impact Tectonics*. Springer-Verlag, Berlin Heidelberg, pp. 131–160.

Encyclopedia entries, conference proceedings, and other papers with a review process (* denotes corresponding author and an equal share between the first two authors):
18. Bray V. J., **Öhman T.** & Hargitai H., 2015. Central peak crater. In: Hargitai H. & Kereszturi A. (eds.): *Encyclopedia of Planetary Landforms*. Springer (in press).
19. Hargitai H. & **Öhman T.**, 2015. Complex crater. In: Hargitai H. & Kereszturi A. (eds.): *Encyclopedia of Planetary Landforms*. Springer (in press).
20. Korteniemi J. & **Öhman T.*,** 2015. Polygonal crater. In: Hargitai H. & Kereszturi A. (eds.): *Encyclopedia of Planetary Landforms*. Springer (in press).
21. Potter R., Hargitai H. & **Öhman T.**, 2015. Impact basin. In: Hargitai H. & Kereszturi A. (eds.): *Encyclopedia of Planetary Landforms*. Springer (in press).
22. Riikonen M., Cowley L., Schroeder M., Pekkola M., **Öhman T.** & Hinz C., 2007. The Lowitz arcs. *Weather*, vol. 62, no. 9, pp. 252–256, doi: 10.1002/wea.73.
23. Korteniemi J., Aittola M., **Öhman T.** & Raitala J., 2006. Floor-fractured craters on the terrestrial planets – The Martian perspective. In: Wilson A. (ed.): *Proceedings, 40th ESLAB – First International Conference on Impact Cratering in the Solar System,* ESA Special Publication SP-612, pp. 193–198 (CD-ROM).

Theses (Licentiate and Ph.D. theses fully peer reviewed):
24. **Öhman T.**, 2009. *The Structural Control of Polygonal Impact Craters.* Ph.D. thesis, Department of Geosciences, University of Oulu. Res Terrae, Ser. A, No. 28. 403 pp. (222 pp. + 6 app. + 6 papers). E-thesis (no papers): https://www.researchgate.net/publication/260034157_The_Structural_Control_of_Polygonal_Impact_Craters
25. **Öhman T.,** 2007. *The Structural Control of Polygonal Impact Craters on Mars.* Licentiate thesis, Department of Geosciences, University of Oulu. 105 pp. + 3 app. (13 pp.) + 3 papers.
26. **Öhman T.,** 2002. *The Indications of Cratering Process in Saarijärvi Impact Crater, Northern Finland* (in Finnish). M.Sc. thesis, Department of Geosciences, University of Oulu. 180 pp. + 10 app. (26 pp.)

Extended international conference abstracts:
27. Kukkonen S., Aittola M. & **Öhman T.**, 2015. An Update on the Structural Control of Venusian Polygonal Impact Craters. *Lunar and Planetary Science XLVI,* #2005, Lunar and Planetary Institute, Houston, U.S.A.

28. Kramer G. Y., Kring D. A., McGovern P. J., Nahm A. L. & **Ohman T.,** 2015. Compositional and Structural Characteristics of Schrädinger's Basin Volcanism. *Lunar and Planetary Science XLVI,* #2829, Lunar and Planetary Institute, Houston, U.S.A.
29. Kukkonen S., Aittola M. & **Öhman T.**, 2014. The Structural Control of Venusian Impact Crater Formation – Tectonic Case Studies. *Lunar and Planetary Science XLV,* #2589, Lunar and Planetary Institute, Houston, U.S.A.
30. Schmieder M., Jourdan F., **Öhman T.,** Tohver E., Mayers C. & Frew A., 2014. A Proterozoic $^{40}Ar/^{39}Ar$ Age for the Söderfjärden Impact Structure, Finland. *Lunar and Planetary Science XLV,* #1301, Lunar and Planetary Institute, Houston, U.S.A.
31. **Öhman T.** & McGovern P. J., 2013. Strain calculations for circumferential graben on Alba Mons, Mars. *Lunar and Planetary Science XLIV,* #2966, Lunar and Planetary Institute, Houston, U.S.A. (poster)
32. Chandnani M., Kramer G. Y., Fessler B., **Öhman T.** & Kring D. A., 2013. Deep crustal lunar lithologies exposed in the south-western peak ring of the Schrödinger basin. *Lunar and Planetary Science XLIV,* #1938, Lunar and Planetary Institute, Houston, U.S.A.
33. **Öhman T.,** Kramer G. Y. & Kring D. A., 2012. Spectral Analysis of the Distribution of Impact Melt-rich Lithologies in Lunar Crater Kepler Using M^3 Data. *Lunar and Planetary Science XLIII,* #2257, Lunar and Planetary Institute, Houston, U.S.A. (poster)
34. Kramer G. Y., **Öhman T.**, Nahm A. L. & McGovern P., 2012. Pre- and Post-impact Influences on Schrödinger Basin's Structural Geology. *Lunar and Planetary Science XLIII,* #1734, Lunar and Planetary Institute, Houston, U.S.A.
35. **Öhman T.** & Kring D. A., 2011. Photogeologic Analysis of Impact Melt-rich Lithologies in the Lunar Crater Kepler Using LROC and Kaguya Data. *Lunar and Planetary Science XLII,* #1177, Lunar and Planetary Institute, Houston, U.S.A. (poster)
36. **Öhman T.** & Preeden U., 2011. Shock Metamorphism of Quartz in Saarijärvi and Söderjärden Impact Structures, Finland. *Lunar and Planetary Science XLII,* #1546, Lunar and Planetary Institute, Houston, U.S.A. (talk)
37. Schmieder M., Buchner E., Jourdan F., Schwarz W. H., Trieloff M., van Soest M. C., Wartho J.-A., Hodges K. V., Moilanen J., Hietala S. & **Öhman T.**, 2010. Updating the Finnish impact cratering record. *Lunar and Planetary Science XLI,* #2036 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
38. Raitala J., Aittola M., Korteniemi J., **Öhman T.**, Törmänen T. & Kukkonen S., 2010. Possible ice lenses on Mars. *Lunar and Planetary Science XLI,* #1332 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
39. Buchner E., Moilanen J., **Öhman T.** & Schmieder M., 2009. Shock-molten sandstone clasts in impact melt rocks: age constraints for the Paasselkä impact structure (SE Finland). *Lunar and Planetary Science XL,* #2169 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
40. Schmieder M., Jourdan F., Hietala S., Moilanen J., **Öhman T.** & Buchner E., 2009. A high precision Late Mesoproterozoic $^{40}Ar/^{39}Ar$ age for the Keurusselkä impact structure (Finland). *Lunar and Planetary Science XL,* #1028 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
41. Korteniemi J., Raitala J., Aittola M., Ivanov M., **Öhman T.**, Kostama V.-P. & Hiesinger H., 2009. Evidence for Dike Swarms on the Eastern Hellas Rim, Mars. *Lunar and Planetary Science XL,* #2126 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
42. **Öhman T.,** Aittola M., Kostama V.-P., Korteniemi J. & Raitala J., 2008. The control of target structure on the crater morphology on the Moon, Mars, and Venus – evidence and implications. *Large Meteorite Impacts and Planetary Evolution IV*, #3046 (CD-ROM), 17–21 August 2008, Vredefort Dome, South Africa.

43. Raiskila S., Elbra T., **Öhman T.** & Pesonen L. J., 2008. Petrophysical and palaeomagnetic studies of the Keurusselkä impact structure, Finland. *Large Meteorite Impacts and Planetary Evolution IV*, #3056 (CD-ROM), 17–21 August 2008, Vredefort Dome, South Africa.
44. Aittola M., **Öhman T.**, Leitner J. J., Raitala J., Kostama V.-P. & Törmänen T., 2008. The association of Venusian polygonal impact craters with surrounding tectonic structures. *Lunar and Planetary Science XXXIX,* #2137 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
45. **Öhman T.,** Aittola M., Kostama V.-P., Kallo M. & Raitala J., 2007. The mechanics of polygonal impact crater formation. *Bridging the gap II: Effect of target properties on the impact cratering process*, September 22–26 2007, Saint-Hubert, Canada, p. 87–88. (poster)
46. **Öhman T.,** 2007. The origin and tectonic modification of the Saarijärvi impact structure, northern Finland. *Bridging the gap II: Effect of target properties on the impact cratering process*, September 22–26 2007, Saint-Hubert, Canada, p. 85–86. (poster)
47. **Öhman T.,** Aittola M., Leitner J. & Raitala J., 2007. Venusian polygonal impact craters. *Lunar and Planetary Science XXXVIII*, #2299 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
48. Versh E., Kirsimäe K., Buchardt Westergaard B., Naumov M. V., **Öhman T.** & Jõeleht A., 2006. Mineralogical and stable isotope study of impact-induced hydrothermal carbonates. *First International Conference on Impact Cratering in the Solar System*, European Space Agency, ESTEC, Noordwijk, The Netherlands, 08–12 May, 2006, pp. 233–234.
49. Korteniemi J., Aittola M., Lahtela H., **Öhman T.,** & Raitala J., 2006. Distribution of Martian crater floors with fractures and/or depressions. *First International Conference on Impact Cratering in the Solar System*, European Space Agency, ESTEC, Noordwijk, The Netherlands, 08–12 May, 2006, pp. 119–120.
50. **Öhman T.,** Aittola M., Kostama V.-P. & Raitala J., 2006. Preliminary geological analysis of polygonal impact crater data from Argyre region, Mars. *Lunar and Planetary Science XXXVII,* #1236 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A. (poster)
51. Tagle R., Claeys Ph., **Öhman T.,** Schmitt R. T. & Erzinger J., 2006. Traces of an H chondrite in the impactites from Lappajärvi Crater, Finland. *Lunar and Planetary Science XXXVII,* #1277 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
52. Aittola M., Korteniemi J., **Öhman T.,** Törmänen T. & Raitala J., 2006. Geology of central Noachis Terra, Mars. *Lunar and Planetary Science XXXVII,* #1654 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
53. Korteniemi J., Aittola M., Lahtela H., **Öhman T.** & Raitala J., 2006a. Martian floor-fractured craters vs. craters with irregular depressions. *Lunar and Planetary Science XXXVII,* #2145 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
54. **Öhman T.,** Aittola M., Kostama V.-P., Hyvärinen M. & Raitala J., 2005. Preliminary study of polygonal impact craters in Argyre region, Mars. *Lunar and Planetary Science XXXVI,* #1731 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A. (poster)
55. **Öhman T.** & Raitala J., 2005. Geochemistry of the dark veinlets in the granitoids from the Söderfjärden impact structure, Finland: Preliminary results. *Lunar and Planetary Science XXXVI,* #1738 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A. (poster)
56. Korteniemi J., Kostama V.-P., Aittola M., **Öhman T.,** Törmänen T., Lahtela H., Raitala J., Neukum G. & the HRSC Co-Investigator Team, 2005. Mars Express HRSC analysis of two impact craters in Terra Tyrrhena, Mars. *Lunar and Planetary Science XXXVI,* #1680 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.

57. Vishnevsky S. A., Gibsher N. A., Raitala J., **Öhman T.** & Palchik N. A., 2005. The Popigai fluidizites: Dense water inclusions in lechatelierite; evidence for shock-generated carbonate and hydrosilicate melts. *Lunar and Planetary Science XXXVI,* #1145 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
58. Raitala J., Aittola M, Kostama V.-P., Lahtela H. & **Öhman T.,** 2003. Modified impact craters – clues to Martian geological processes. *Sixth International Conference on Mars*, #3016 (CD-ROM), July 20–25, 2003, Pasadena, U.S.A.
59. **Öhman T.,** Aittola M., Kostama V.-P. & Raitala J., 2003. Polygonal impact craters as an indicator of fracturing – an example from greater Hellas region, Mars. *Lunar and Planetary Science XXXIV,* #1311 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
60. **Öhman T.,** Badjukov D., Raitala J., Petrova T. & Stehlik H., 2003. Impactites of the Paasselkä and Suvasvesi South craters, Finland. *Lunar and Planetary Science XXXIV,* #1571 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A. (poster)
61. Raitala J., Ojala K., **Öhman T.,** Badjukov D. D. & Lorenz C. A., 2003. Kara crater by remote sensing. *Lunar and Planetary Science XXXIV,* #1057 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
62. **Öhman T.**, Kostama V.-P., Aittola M., Raitala J. & Badjukov D., 2002a. Martian analogues for Kara impact structure, Russia. *Lunar and Planetary Science XXXIII,* #1270 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A. (poster)
63. Badjukov D., Raitala J., **Öhman T.** & Lorenz C., 2002a. The Kara crater size: suevite layer outside the crater depression. *Lunar and Planetary Science XXXIII,* #1480 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
64. Aittola M., **Öhman T.,** Kostama V.-P. & Raitala J., 2002. Impact craters establish geological diversity within Hellas region. *Lunar and Planetary Science XXXIII,* #1485 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.
65. Kostama V.-P., Aittola M., **Öhman T.** & Raitala J., 2002. Geological units of the Hellas basin region, Mars. *Lunar and Planetary Science XXXIII,* #1486 (CD-ROM), Lunar and Planetary Institute, Houston, U.S.A.

International conference abstracts:

66. Kukkonen S., Aittola M. & **Öhman T.**, 2015. Craters and coronae – the influence of volcano-tectonic features on impact crater formation on Venus. *European Planetary Science Congress 2015,* 27 September – 02 October 2015, La Cité des Congrès, Nantes, France (submitted).
67. Kukkonen S., Aittola M. & **Öhman T.**, 2014. Impact craters in structurally heterogeneous targets: Venusian case studies. *European Planetary Science Congress 2014,* EPSC Abstracts, vol. 9, EPSC2014-339. 7–12 September 2014, Centro de Congressos do Estoril, Cascais, Portugal.
68. **Öhman T.,** Kramer G. Y. & Kring D. A., 2011. Impact melt-rich lithologies in lunar crater Kepler. *4th Annual NASA Lunar Science Forum*, July 19–21, 2011, NASA Ames Research Center, Moffett Field, U.S.A. (talk) http://lunarscience2011.arc.nasa.gov/impact-melt-rich-lithologies-lunar-crater-kepler.html
69. **Öhman T.**, Salminen J. M., Badjukov D. D., Bäckström A., Pesonen L. J. & Raitala J., 2010. Kara impact structure: preliminary paleomagnetic, rock magnetic and petrophysical results. *29th Nordic Geological Winter Meeting*, January 11–13, 2010, Oslo, Norway. NGF, Abstracts and Proceedings of the Geological Society of Norway, No. 1, pp. 215–216. (talk)
70. Raitala J., **Öhman T.,** Ivanov M., Aittola M., Korteniemi J., Kostama V.-P., Törmänen T. & Lahtela H., 2010. Geological events provoked by impact structures in the Martian environment. *29th Nordic Geological Winter Meeting*, January 11–13, 2010, Oslo,

Norway. NGF, Abstracts and Proceedings of the Geological Society of Norway, No. 1, p. 152.

71. Raitala J., Aittola M., Korteniemi J., **Öhman T.** & Törmänen T., 2009. A Pingo Group on Noachis Terra, Mars. *The 50th Vernadsky/Brown Microsymposium on Comparative Planetology*, October 12–14, 2009, Moscow, Russia.
72. Schmieder M., Buchner E., Jourdan F., Schwarz W. H., Trieloff M., van Soest M. C., Wartho J.-A., Hodges K. V., Moilanen J., Hietala S. & **Öhman T.**, 2009. The Finnish Impact Cratering Record – an Update with New Isotopic Data. *The First Arab Impact Cratering and Astrogeology Conference*, 9–10 November 2009, Amman, Jordan.
73. Buchner E., Schmieder M., Schwarz W. H., Trieloff M., Moilanen J., **Öhman T.** & Stehlik H., 2009. A Proterozoic $^{40}Ar/^{39}Ar$ Age for the Suvasvesi South Impact Structure (Finland). *Meteoritics & Planetary Science*, vol. 44, No. 7, Supplement, A44.
74. Schmieder M., Buchner E., Schwarz W. H., Trieloff M., Moilanen J. & **Öhman T.**, 2009. A Middle Triassic $^{40}Ar/^{39}Ar$ Age for the Paasselkä Impact Structure (Finland). *Meteoritics & Planetary Science*, vol. 44, No. 7, Supplement, A187.
75. **Öhman T.,** Aittola M., Kostama V.P., Korteniemi J. & Raitala J., 2008. Target rock influences the impact crater morphology. Abstract μ48_29 (CD-ROM). *48th Vernadsky/Brown Microsymposium on Comparative Planetology*, October 20–22, 2008, Moscow, Russia.
76. **Öhman T.,** Aittola M., Kostama V.P., Korteniemi J. & Raitala J., 2008. Target rock mechanisms influence the impact crater morphology. *European Planetary Science Congress 2008*, 21–26 September, Münster, Germany, EPSC2008-A-00194 (CD-ROM)
77. **Öhman T.**, Aittola M., Raitala J. & Kostama V.-P., 2008. The structural control of impact craters: Evidence from the terrestrial planets. *The 33rd International Geological Congress*, August 6–14 2008, Oslo, Norway (CD-ROM).
78. Aittola M**., Öhman T.**, Raitala J., Kostama V.-P. & Törmänen T., 2008. Venusian polygonal impact craters vs. tectonics. *The 33rd International Geological Congress*, August 6–14 2008, Oslo, Norway (CD-ROM).
79. Kostama V.-P., Aittola M., Korteniemi J., Lahtela H., Törmänen T., **Öhman T.** & Raitala, J., 2007. Geological and Paleo-Climatic Constraints for the Search of Life on Mars. *EANA – 7th European Workshop on Astrobiology*, October 22-24 2007, University of Turku, Finland, p. 25.
80. Aittola M., **Öhman T.,** Leitner J. J., Kostama V.-P., Raitala J., & Törmänen T., 2007. Polygonal impact craters on Venus and their associations with surrounding tectonic features. #m46_01 (CD-ROM), *The 46th Vernadsky/Brown Microsymposium on Comparative Planetology*, October 2–3 2007, Moscow, Russia.
81. Aittola M., **Öhman T.,** Leitner J. J., Raitala J., Kostama V.-P. & Törmänen T., 2007. Polygonal impact craters on Venus: Association with surroundng tectonic features. *European Planetary Science Congress 2007*, #EPSC2007-A-00302 (CD-ROM), 19–24 August 2007, Potsdam, Germany.
82. Aittola M., **Öhman T.,** Hyvärinen M. & Raitala J., 2006. Polygonal impact craters on Venus: Preliminary results. *The 44th Vernadsky/Brown Microsymposium on Comparative Planetology*, #m44_02 (CD-ROM), October 9–11, 2006, Moscow, Russia.
83. Aittola M. & **Öhman T.,** 2006. Polygonal impact craters on Venus. *European Planetary Science Congress 2006*, #EPSC2006-A-00430, Berlin, Germany, September 18–22, 2006.
84. Korteniemi J., Aittola M., Lahtela H., **Öhman T.** & Raitala J., 2006. Floor-fractured craters on Mars – distribution and formation scenarios. *European Planetary Science Congress 2006*, #EPSC2006-A-00419, Berlin, Germany, September 18–22, 2006.

85. **Öhman T.,** Aittola M., Korteniemi J., Kostama V.-P. & Raitala J., 2006. The influence of target fracturing on crater morphology – A short review of polygonal impact craters. *Impact craters as indicators for planetary environmental evolution and astrobiology*, Östersund, Sweden, June 8–14, 2006. (talk)
86. Salminen J., **Öhman T.** & Pesonen L. J., 2006. Porosity of impactites – key for understanding cratering process? *European Geosciences Union General Assembly*, Vienna, Austria, 02–07 April 2006, Geophysical Research Abstracts, vol 8, 01733 (CD-ROM).
87. **Öhman T.,** 2006. Dark veinlets in the granitoids of Saarijärvi, Söderfjärden and Lappajärvi impact structures. *27th Nordic Geological Winter Meeting*, January 9–12 2006, University of Oulu, Finland. Bulletin of the Geological Society of Finland, Special issue 1, p. 175. (poster)
88. **Öhman T.,** Aittola M., Kostama V.-P., Hyvärinen M. & Raitala J., 2006. Polygonal craters of Argyre region, Mars – Clues to cratering mechanics? *27th Nordic Geological Winter Meeting,* January 9–12 2006, University of Oulu, Finland. Bulletin of the Geological Society of Finland, Special issue 1, p. 176. (talk)
89. Bäckström A., **Öhman T.,** Versh E. & Plado J., 2006. ESIR at Ilumetsa – an example of international student cooperation in impact crater research. *27th Nordic Geological Winter Meeting*, January 9–12 2006, University of Oulu, Finland. Bulletin of the Geological Society of Finland, Special issue 1, p. 21.
90. Aittola M., Korteniemi J., **Öhman T.,** Törmänen T. & Raitala J., 2006. Geology of Noachis Terra, Mars. *27th Nordic Geological Winter Meeting*, January 9–12 2006, University of Oulu, Finland. Bulletin of the Geological Society of Finland, Special issue 1, p. 5.
91. Plado J. & ESIR Working Group (incl. **Öhman T.**), 2006. The Ilumetsa meteorite crater field, SE Estonia – results of the geophysical campaign. *27th Nordic Geological Winter Meeting*, January 9–12 2006, University of Oulu, Finland. Bulletin of the Geological Society of Finland, Special issue 1, p. 125.
92. Vishnevsky S., Raitala J. & **Öhman T.,** 2006. Popigai impact fluidizites: new data on opaques. *27th Nordic Geological Winter Meeting*, January 9–12 2006, University of Oulu, Finland. Bulletin of the Geological Society of Finland, Special issue 1, p. 169.
93. Korteniemi J., Aittola M., **Öhman T.,** Törmänen T. & Raitala J., 2005. Water and ice in central Noachis Terra, Mars? *42nd Vernadsky–Brown Microsymposium on Comparative Planetology*, #m42_36 (CD-ROM), October 10–12, Moscow, Russia.
94. **Öhman T.,** Aittola M., Kostama V.-P., Hyvärinen M. & Raitala J., 2005b. The origin of polygonal impact craters – Evidence from Argyre region, Mars. *37th AAS Division for Planetary Sciences Meeting,* 4–9 September 2005, University of Cambridge, United Kingdom. Bulletin of the American Astronomical Society, vol. 37, no. 3, p. 687, #32.08. (poster)
95. Aittola M., Korteniemi J. **& Öhman T.,** 2005. Geological characteristics of the central Noachis Terra, Mars. *37th AAS Division for Planetary Sciences Meeting,* 4–9 September 2005, University of Cambridge, United Kingdom. Bulletin of the American Astronomical Society, vol. 37, no. 3, p. 686–687, #32.06.
96. Korteniemi J., Kostama V.-P., Aittola M., **Öhman T.,** Törmänen T., Lahtela H., Raitala J., Neukum G. & the HRSC Co-Investigator Team, 2004. HRSC study of an unnamed Martian impact crater at 24.5 S, 80.9 E. *40th Vernadsky/Brown Microsymposium on Comparative Planetology,* #46 (CD-ROM), October 11–13, 2004, Moscow, Russia.
97. Vishnevsky S. A., Raitala J., Gibsher N. A., **Öhman T.** & Palchik N. A., 2004. The Popigai "fluidizite" dykes: a new data on their mineralogy and petrology. *Meteoritics & Planetary Science*, vol. 39, no. 8, Supplement, p. A109.

98. Riikonen M., Cowley L., Schroeder M. & **Öhman T.,** 2004. The Lowitz Arcs. *327. WE-Heraeus Seminar – Atmospheric Optics (8th International Meeting on Meteorological Optics)*, 13–17 June, 2004, Bad Honnef, Germany.
99. Raitala J., Aittola M., Kostama V.-P., Korteniemi J., Lahtela H. & **Öhman T.,** 2004. Geology and climate changes on Mars. *First International Symposium on Space Climate,* June 20–23, 2004, Oulu, Finland, p. 91.
100. **Öhman T.,** Aittola M., Kostama V.-P. & Raitala J., 2004. Polygonal impact craters and bedrock fractures. *26th Nordic Geological Winter Meeting*, January 6–9 2004, Uppsala, Sweden. GFF, vol. 126, part 1, p. 54–55. (talk)
101. Raitala J., Badjukov D., **Öhman T.,** Lorentz K. & Ojala K., 2004. The size of the Kara crater. *26th Nordic Geological Winter Meeting,* January 6–9 2004, Uppsala, Sweden. *GFF*, vol. 126, part 1, p. 55.
102. **Öhman T.,** Pesonen L. J., Elo S., Uutela A., Tuisku P. & Raitala J., 2003. The origin and evolution of the Saarijärvi impact structure. *Meteoritics & Planetary Science*, vol. 38, no. 7, Supplement, p. A52. (poster)
103. Lahtela H., Kostama V.-P., Aittola M., **Öhman T.** & Raitala J., 2003. The lacustrine reservoirs in Hellas impact basin region. *Third International Conference on Large Meteorite Impacts*, #4073 (CD-ROM), August 5–7, 2003, Nördlingen, Germany.
104. **Öhman T.,** Lorenz K., Pesonen L. J., Badjukov D., Raitala J., Elo S. & Ojala K., 2003. Kara impact structure, Russia: recent developments in petrophysical and geochemical studies. *Third International Conference on Large Meteorite Impacts,* #4071 (CD-ROM), August 5–7, 2003, Nördlingen, Germany. (talk)
105. Vishnevsky S. A., Raitala J., Gibsher N. A., Palchik N. A. & **Öhman T.,** 2003. Breccia veins, pseudotachylites and fluidizite dykes in Archean gneiss fragments from the Popigai megabreccia. *Third International Conference on Large Meteorite Impacts,* #4034 (CD-ROM), August 5–7, 2003, Nördlingen, Germany.
106. Lahtela H., Kostama V.-P., Aittola M., **Öhman T.,** & Raitala J., 2003. The crater lakes and other implications for standing bodies of water in Hellas region, Mars. *38th Vernadsky/Brown Microsymposium on Comparative Planetology,* #ms057 (CD-ROM), October 27–29, 2003, Moscow, Russia.
107. Badjukov D. D., Raitala J., **Öhman T.** & Lorenz C. A., 2002. The Kara impact structure: single or double? In: von Dalwigk I. (ed.): *Impact Tectonism. 8th Workshop of the European Science Foundation program IMPACT.* Mora, Sweden, May 31 – June 3, 2002, p. 15.
108. **Öhman T.,** Aittola M., Kostama V.-P. & Raitala J., 2002. Polygonal impact craters in Hellas region, Mars. In: von Dalwigk I. (ed.): *Impact Tectonism. 8th Workshop of the European Science Foundation program IMPACT.* Mora, Sweden, May 31 – June 3, 2002, p. 47. (poster)
109. **Öhman T.,** Badjukov D., Pesonen L. J., Abels A., Tuisku P. & Raitala J., 2002. Pseudotachylite veins in the Söderfjärden crater, western Finland. In: von Dalwigk I. (ed.): *Impact Tectonism. 8th Workshop of the European Science Foundation program IMPACT.* Mora, Sweden, May 31 – June 3, 2002, p. 48. (poster)
110. **Öhman T.,** Raitala J., Badjukov D. & Lorenz C., 2002. Preliminary studies of the Syadmayakha suevites from the Kara crater, Russia. *Meteoritics & Planetary Science*, vol. 37, no. 7, Supplement, p. A112. (poster)
111. **Öhman T.,** Badjukov D., Raitala J. & Lorenz C., 2002. Kara revisited. *36th Vernadsky/Brown Microsymposium on Comparative Planetology*, #ms072 (CD-ROM), October 14–16 2002, Moscow, Russia. (poster)
112. Ojala K., Badjukov D., Raitala J., **Öhman T.** & Lorenz C., 2002. Landsat TM classification of the arctic Kara impact crater tundra, Russia. *36th Vernadsky/Brown Microsymposium on Comparative Planetology*, #ms073 (CD-ROM), October 14–16 2002, Moscow, Russia.

113. Aittola M., Raitala J., Kostama V.-P., **Öhman T.,** Korteniemi J. & Pakarinen, J., 2001. Evaluation of HRSC target sites for the Mars Express mission within Noachis quadrangle, MC-27. *The 34th Vernadsky/Brown Microsymposium on Comparative Planetology,* October 8–9, 2001, Moscow, Russia. (CD-ROM)
114. Kostama V.-P., Raitala J., Aittola M., **Öhman T.,** Pakarinen J. & Korteniemi J., 2001. Evaluation of HRSC target sites for the Mars Express mission within Hellas quadrangle, MC-28. *The 34th Vernadsky/Brown Microsymposium on Comparative Planetology,* October 8–9, 2001, Moscow, Russia. (CD-ROM)
115. Kostama V.-P., Pakarinen J., Raitala J., Aittola M., **Öhman T.** & Korteniemi J., 2001. Evaluation of HRSC target sites for the Mars Express mission within Hellas Quadrangle, MC-28. *52nd IAF Congress,* 1.–5.10.2001, Toulouse, France.
116. Kostama V.-P., Aittola M., Raitala J. & **Öhman T.,** 2001. The geology of the Hellas basin region: possible Mars Express HRSC target sites. *Bulletin of the American Astronomical Society,* vol. 33, no. 3, abstract 36.12.
117. **Öhman T.,** Pesonen L. J., Raitala J., Uutela A. & Tuisku P., 2000. The Saarijärvi crater – older and larger than assumed? In: Pesonen L. J. & Plado J. (eds.): *Meteorite Impacts in Precambrian Shields. 4th Workshop of the European Science Foundation Impact Programme*, Lappajärvi – Karikkoselkä – Sääksjärvi, Finland, May 24–28, 2000. Geological Survey of Finland and University of Helsinki, p. 82. (poster)

Extended abstracts in international workshops:

118. Chandnani M., Kramer G. Y., Fessler B., **Öhman T.,** & Kring D. A., 2012. Deep crustal lithologies exposed in the south-western peak ring of the Schrödinger basin. *Papers Presented at the 28th Annual Summer Intern Conference*, Lunar and Planetary Institute, Houston, Texas, USA, August 9. 2012, pp. 4–6.
119. **Öhman T.**, 2011. Impact Craters in Fractured Target Terrains: a comparison of Meteor Crater and Examples on the Moon. In: Kring D. A., Abramov O., Galenas M. G., Joy K. H., Kramer G. Y., Mercer C. N., Nahm A. L., Niihara T., Öhman T., Rapp J. F., Shaner A. J., Simmons S., Weller M. B., & White O. L., 2011. *Lunar Analogue Training at Meteor Crater, Arizona & the San Francisco Volcanic Field, AZ* (Field trip guide), O. Abramov (ed.), Lunar and Planetary Institute contribution #1618, Houston, pp. 81–86 (talk).
120. **Öhman T.** & Kring D. A., 2011. Photogeologic Analysis of Impact Melt-rich Lithologies in the Lunar Crater Kepler Using LROC and Kaguya Data. *Center for Lunar Science and Exploration Team Workshop*, Lunar and Planetary Institute, Houston, U.S.A., January 6.–7. 2011, 2 pp. (talk)
121. **Öhman T.**, 2009. Four hundred years of hits and misses in scientific impact crater research. *Crater Mechanics and Structural Characteristics. Network on Impact Research workshop*, Gol, Norway, June 8.–11. 2009, Program and Abstracts, pp. 29–30 (talk).
http://www.mn.uio.no/geo/english/research/networks/nir/gol2009/NIR_workshop_Abstracts.pdf
122. **Öhman T.,** 2007. The complexity of a simple crater: The evolution of Saarijärvi impact structure. *The economic aspects of impact craters, geological and socio-economical views. Network on Impact Research workshop*, Stavanger, Norway, September 17.–20. 2007, 2 pp. (talk)
123. **Öhman T.,** Aittola M., Kostama V.-P., Kallo M. & Raitala J., 2007. Target structures ad cratering mechanics: Models for polygonal impact crater formation. *The economic aspects of impact craters, geologigal and socio-economical views. Network on Impact Research workshop,* Stavanger, Norway, September 17.–20. 2007, 2 pp. (talk)

Abstracts and extended abstracts in national (Finnish) conferences:

124. **Öhman T.** & McGovern P. J., 2014. Topographic Analysis of the Circumferential Graben around Alba Mons, Mars. In: Karjalainen M., Mõttus M., Praks J., Luojus K., Takala M., Salminen M., Berglund R., & Kumpula T. (eds.), *Abstract Book of the Finnish Remote Sensing Days 2013,* Reports of the Finnish Geodetic Institute, 2014:1, p. 50. Dipoli Congress Centre, Otaniemi, Espoo, Finland, October 23–24, 2013 (poster).
125. **Öhman T.,** Kramer G. Y. & Kring D. A., 2014. Multidisciplinary Remote Sensing Analysis of Lunar Impact Crater Kepler. In: Karjalainen M., Mõttus M., Praks J., Luojus K., Takala M., Salminen M., Berglund R., & Kumpula T. (eds.), *Abstract Book of the Finnish Remote Sensing Days 2013,* Reports of the Finnish Geodetic Institute, 2014:1, p. 29. Dipoli Congress Centre, Otaniemi, Espoo, Finland, October 23–24, 2013 (talk).
126. Aittola M., Raitala J., Kostama V.-P., Törmänen T., **Öhman T.,** Korteniemi J., Lahtela H., Hyvärinen M. & Kainu T., 2007. Eurooppalaiset luotainhankkeet ja planeettojen pinnan tutkimus. In: Poutanen M. & Suurmäki H. (eds.): *FinCOSPAR 2007*, 4.–5.10.2007, Korpilampi, pp. 6–7.
127. Salminen J., **Öhman T.** & Pesonen L. J., 2005. Törmäyskivien huokoisuus – avain kraatterien synnyn ja kehityksen ymmärtämiseen? In: Viljanen J. & Mäntyniemi P. (eds.): *XXII Geofysiikan Päivät*, 19.–20.5.2005, Helsinki, pp. 213–218.
128. Ojala K., Badjukov D., Raitala J., **Öhman T.** & Lorenz C., 2002. Study of the Kara impact crater tundra, arctic Russia. In: Jussila J., Nygrén T. & Kelhä V. (eds.): *The IX Meeting of Finnish National COSPAR and ANTARES Fall Seminar 2002* – Programme and Abstracts, October 30th – November 1st, 2002, Oulu, Finland, p. 74.
129. Kostama V.-P., Aittola M., **Öhman T.,** & Raitala J., 2002. Hellas Basin: Unveiling the geologic history of Mars. In: Jussila J., Nygrén T. & Kelhä V. (eds.): *The IX Meeting of Finnish National COSPAR and ANTARES Fall Seminar 2002* – Programme and Abstracts, October 30th – November 1st, 2002, Oulu, Finland, p. 71.

Popular science articles, commentaries:

130. **Öhman T.,** 2012. Ask astro: Lunar impacts, *Astronomy,* September, pp. 50–51.
131. **Öhman T.,** 2011. Ask astro: Creating Lunar Craters, *Astronomy*, April, p. 53.
132. **Öhman T.**, 2009. Pirstekartioista Keurusselällä ja maailmalla. *Geologi*, vol 61, no. 6, pp. 190–197.
133. **Öhman T.**, Schmieder M., Jourdan F., Buchner E. & Raiskila S., 2009. Summary: Shatter cones in Keurusselkä impact structure, Finland. *Geologi*, vol. 61, no. 6, pp. 195–196.
134. **Öhman T.**, 2009. Kallioperän rakenteet vaikuttavat törmäyskraattereiden syntyyn. *Geologi*, vol. 61, no. 5, pp. 158–159.
135. **Öhman T.,** 2004. Kara Crater and the K/T Extinction: Close But No Cigar. *Meteorite*, vol. 10, no. 4, pp. 32–37.

Other publications in Finnish magazines and newspapers:

136. **Öhman T.,** 2015. Miksikö opiskelu ei kiinnosta? *Helsingin Sanomat,* 27.1.2015, p. B10.
137. **Öhman T.,** 2014. Astronautit ovat kustannustehokkaita. *Helsingin Sanomat,* 17.11.2014, p. B10.
138. **Öhman T.,** 2012. Auringonpimennys palmujen katveessa. *Nova*, 2012, Astronomical Association Arktos, Oulu, p. 19.
139. **Öhman T.,** 2008. Lentosäätiedot tähtiharrastajan apuna. *Nova*, 2008, Astronomical Association Arktos, Oulu, pp. 30–33.
140. **Öhman T.,** 2008. Kirja-arvosteluja. *Nova*, 2008, Astronomical Association Arktos, Oulu, pp. 23–25, 34–35.
141. **Öhman T.,** 2008. Kara ja Popigai – Venäjän arktiset jättiläiskraatterit. *Nova*, 2008, Astronomical Association Arktos, Oulu, pp. 10–14.

142. **Öhman T.,** 2005. Mitä globalisaatio merkitsee? *Helsingin Sanomat*, 28.6.2005.
143. **Öhman T.**, 2004. Tähtitorni kaupungin keskellä. *Nova*, 1/2004, Astronomical Association Arktos, Oulu, pp. 13–15.
144. **Öhman T.,** 2004. Kirja-arvosteluja. *Nova*, 1/2004, Astronomical Association Arktos, Oulu, pp. 21–23.
145. **Öhman T.,** 1999. Sivuaurinko. *Ursa Minor*, 1/1999, Ursa Astronomical Association, Helsinki, pp. 4–10.
146. **Öhman T.,** 1999. Sivuaurinko. *Ursa Minor*, 2/1999, Ursa Astronomical Association, Helsinki, pp. 10–17.
147. **Öhman T.**, 1999. Sivuaurinko. *Ursa Minor*, 3/1999, Ursa Astronomical Association, Helsinki, pp. 4–8.
148. Moilanen J. & **Öhman T.,** 1998. Kraattereihin liittyvää termistöä. *Tähdet ja Avaruus*, 1/1998, Ursa Astronomical Association, Helsinki, p. 14.
149. **Öhman T.,** 1997. Paluu Puolivälinkankaalle. *Nova*, 1996–1997, Astronomical Association Arktos, Oulu, pp. 6–7.
150. **Öhman T.**, 1994. Omin kirjallisuudenlajini. *Sisä-Suomen Lehti*, 5.6.1994, p. 8.

Publications on the internet, websites, databases, educational products, interviews, reports:

151. **Öhman T.** & Uusi Rovaniemi, 2015. Katse kevättaivaalle: helmiäispilviä, haloja ja revontulia. Uusi Rovaniemi 28.02.2015, p. 8. An interview/article about atmospheric optics. http://www.lehtiluukku.fi/lue/uusi-rovaniemi-28.02.2015/71681.html
152. Holtari R., 2014. Kotka on kaunis kraatteri Marsissa. Kymen Sanomat 02.10.2014, p. 8. An interview about a newly named impact crater on Mars.
153. **Öhman T.,** 2014. Kansainvälinen Kuun havaintotapahtuma syyskuussa. *Zeniitti*, 3/2014, Ursa Astronomical Association, Helsinki https://www.ursa.fi/blogi/zeniitti/2014/08/04/kansainvalinen-kuun-havaintotapahtuma-syyskuussa/ (accessed 31.10.2014)
154. **Öhman T.,** 2013. *A beginner's guide to stereo-derived DEM production and analysis using ISIS, ASP, and ArcMap*. Lunar and Planetary Institute, internal report, 30 pp., doi: 10.13140/RG.2.1.1743.7609. Available online at: http://www.lpi.usra.edu/lunar/tools/dems/Ohman_2013_ISIS-ASP-ArcMap_workflow.pdf (accessed 15.05.2015)
155. Kramer G., **Öhman T.** & Landprint.com, 2011. *Schrödinger Basin 3D Relief Model.* Description available at: http://www.lpi.usra.edu/nlsi/training/3dModels/ (accessed 31.10.2014)
156. Kramer G., **Öhman T.** & Landprint.com, 2011. *Tycho Crater 3D Relief Model.* Description available at: http://www.lpi.usra.edu/nlsi/training/3dModels/ Featured as C. Wood's Lunar Photo of the Day, November 9th 2012: http://lpod.wikispaces.com/November+9%2C+2012 (accessed 31.10.2014)
157. **Öhman T.**, 2011. *Lunar Impact Crater Database, v. 24 May 2011* (a thorough revision of a database originally compiled by A. Losiak et al., 2009). http://www.lpi.usra.edu/lunar/surface/Lunar_Impact_Crater_Database_v24May2011.xls (accessed 31.10.2014)
158. Korhonen J. & **Öhman T.**, 2002. *Pyramidi – huhtikuun 2001 haloyhteenveto*. Ursa Astronomical Association, Halo section, 22 pp. http://www.ursa.fi/ursa/jaostot/halot/havainnot/yhtv2001.pdf (accessed 09.02.2014)
159. **Öhman T.**, 1998. *Revontulien havaitseminen – visuaalihavainto-opas*. Ursa Astronomical Association, Aurora section. http://www.ursa.fi/ursa/jaostot/revontulet/opas.html (accessed 09.02.2014)
160. C. Wood's *Lunar Photo of the Day*: **Öhman T.** & Kring D. A., 2012. Kepler rayology, March 26, 2012. http://lpod.wikispaces.com/March+26,+2012 (accessed 09.02.2014)

161. Aittola M., 2011. An interview about asteroid impact hazard in Finnish e-magazine ”*maggo*”, December 2011. Magazine website: www.maggo.fi
162. Raitala J. (Ed.), 2001. Nordenskiöld-retkikunta Kara-kraaterilla 2001. Text: Raitala J. Photos: Raitala J., **Öhman T.,** Korhonen R. & Kunnas P. A CD-ROM (in Finnish) about the expedition to the Kara impact structure, arctic Russia. ISBN 951-42-6586-6.
163. **Öhman T.**, 2012–present. *Hieman Kuusta*. A blog (in Finnish) about the science, exploration, and observation of the Moon. http://kuusta.blogspot.com/