Publications

Ilkka Sillanpää February 12th, 2017

Peer Reviewed Articles:

First Author

Sillanpää, I., N.Yu. Ganushkina, and S. Dubyagin, Long-term variations of electron fluxes at geostationary orbit: GOES MAGED data and IMPTAM, in preparation for *Space Weather*, 2017.

1. Sillanpää, I., and Johnson, R.E., The Role of Ion-Neutral Collisions in Titan's Magnetospheric Interaction, *Planetary and Space Science 108*, doi:10.1016/j.pss.2015.01.007, 2015.
2. Sillanpää, I., Young, D.T., Crary, F., Thomsen, M., Reisenfeld, D., Wahlund, J-E., Bertucci, C., Kallio, E., Jarvinen, R., and Janhunen, P., Cassini Plasma Spectrometer and Hybrid Model Study on Titan's Interaction: Effect of Oxygen Ions, *Journal of Geophysical Research,* ***116***, A07223, doi:10.1029/2011JA016443, 2011.
3. Sillanpää, I., Kallio, E., Jarvinen, R., and Janhunen, P., Oxygen Ions at Titan's Exobase in a Voyager 1 type Interaction from a Hybrid Simulation, *J. Geophys. Res.* ***112***, A12205, doi:10.1029/2007JA012348, 2007.
4. Sillanpää, I., Kallio, E., Janhunen, P., Schmidt, W., Harri, A.-M., Mäkinen, T., Mursula, K., Vilppola, J., and Tanskanen, P., Hybrid Simulation Study of Ion Escape at Titan for Different Orbital Positions, *Advances in Space Research* ***38***: 799 – 805, 2006.
5. Sillanpää, I., Lühr, H., Viljanen, A., and Ritter, P., Quiet-time Magnetic Variations at High Latitude Observatories, *Earth, Planets and Space* ***56***: 47 – 65, 2004.

Contributor

6. Dubyagin, S., Ganushkina, N. Yu., **Sillanpää, I.**, A. Runov, and V. Angelopoulos, Solar Wind Driven Variations of Electron Plasma Sheet Densities and Temperatures beyond Geostationary Orbit during Storm Times, submitted to *J. Geophys. Res.,* 2016.
7. Teolis, B.D., **Sillanpää, I.**, Waite, J.H., and Khurana, K.K., Surface Current Balance and Thermoelectric Whistler Wings at Airless Astrophysical Bodies: Cassini at Rhea, *J. Geophys. Res.,* doi:10.1002/2014JA020094, 2014.
8. Fuselier, S.A., Frahm, R., Lewis, W.S., Masters, A., Mukherjee, J., Petrinec, S.M., and **Sillanpaa, I.**: The Location of Magnetic Reconnection at Saturn's Magnetopause: A Comparison with Earth, *J. Geophys. Res., 119*, doi:10.1002/2013JA019684, 2014.
9. Wellbrock, A., Coates, A., **Sillanpää, I.**, Jones, G.H., Arridge, C.S., Lewis, G.R., Young, D.T., Crary, F.J., and Aylward, A.D., Photoions in Far Tail of Titan and Magnetic Connections to Ionosphere, *J. Geophys. Res.,* ***117***, A03216, doi:10.1029/2011JA017113, 2012.
10. Jarvinen, R., Kallio, E., Dyadechkin, S., Janhunen, P., and **Sillanpää, I.**, Widely different characteristics of oxygen and hydrogen ion escape from Venus, *Geophysical Research Letters,* ***37(16)***, L16201, doi:10.1029/2010GL044062, 2010.
11. Jarvinen, R., Kallio, E., Janhunen, P., Barabash, S., Zhang, T.L., Pohjola, V., and **Sillanpää, I.**, Oxygen ion escape from Venus in a global hybrid simulation: role of the ionospheric O^+ ions, *Annales Geophysicae,* ***27***, 4333-4348, 2009.
12. Jarvinen, R., Kallio, E., **Sillanpää, I.**, and Janhunen, P., Hybrid Modelling the Pioneer Venus Orbiter Magnetic Field Observations, *Adv. Space Res.,* ***41(9)***, 1361 – 1374, doi:10.1016/j.asr.2007.10.003, 2008.
13. Kallio, E., Zhang, T.L., Barabash, S., Jarvinen, R., **Sillanpää, I.**, Janhunen, P., Fedorov, A., Sauvaud, J.-A., Mazelle, C., Thocaven, J.-J., Gunell, H., Andersson, H., Grigoriev, A., Brinkfeldt, K., Futaana, Y., Holmström, M., Lundin, R., Yamauchi, M., Asamura, K., Baumjohann, W.,

Lammer, H., Coates, A.J., Linder, D.R., Kataria, D.O., Curtis, C.C., Hsieh, K.C., Sandel, B.R., Grande, M., Koskinen, H.E.J., Säles, T., Schmidt, W., Riihelä, P., Kozyra, J,. Krupp, N., Woch, J., Luhmann, J.G., McKenna-Lawlor, S., Orsini, S., Cerulli-Irelli, R., Mura, A., Milillo, A., Maggi, M., Roelof, E., Brandt, P., Russell, C.T., Szego, K., Winningham, J.D., Frahm, R.A., Scherrer, J.R., Sharber, J.R., Wurz, P., and Bochsler, P., The Venusian induced magnetosphere: A case study of plasma and magnetic field measurements on Venus Express mission, *Planet. Space Sci., **56**(6)*, doi:10.1016/j.pss.2007.09.011, 2008.

14. Kallio, E., **Sillanpää, I.**, Jarvinen, R., Janhunen, P., Dougherty, M.K., Bertucci, C., and Neubauer, F., Morphology of the Magnetic Field near Titan: Hybrid Model Study of the Cassini T9 Flyby, *Geophys. Res. Lett., **34**,* L24S09, doi:10.1029/2007GL030827, 2007.
15. Aksnes, A., Amm, O., Stadsnes, J., Østgaard, N., Germany, G.A., Vondrak, R.R., and **Sillanpää, I.**, Ionospheric conductances derived from satellite measurements of auroral UV and X-ray emissions, and ground-based data: A comparison, *Ann. Geophys., **23***, 343 – 358, 2005.
16. Kallio, E., **Sillanpää, I.**, and Janhunen, P., Titan in subsonic and supersonic flow, *Geophys. Res. Lett., **31***, L15703, doi:10.1029/2004GL020344, 2004.
17. Ritter, P., Lühr, H., Viljanen, A., Amm, O., Pulkkinen, A., and **Sillanpää, I.**, Ionospheric Currents Estimated Simultaneously from CHAMP Satellite and IMAGE Ground Based Magnetic Field Measurements: a Statistical Study at Auroral Latitudes, *Ann. Geophys. **22***: 417 – 430, 2004.
18. Seppälä, E.T., Alava, M.J., and **Sillanpää, I.J.**, Domain walls in random field Ising magnets: wetting, *Journal of Magnetism and Magnetic Materials, **272-276**(2)*, 1 286 – 1 287, 2004.
19. Amm, O., Aikio, A., Bosqued, J.-M., Dunlop, M., Fazakerley, A., Janhunen, P., Kauristie, K., Lester, M., **Sillanpää, I.**, Taylor, M., Vontrat-Reberac, A., Mursula, K. and André, M., Mesoscale structure of a morning sector ionospheric shear flow region determined by conjugate Cluster II and MIRACLE ground-based observations, *Ann. Geophys., **21***, 1 737 – 1 751, 2003.

Other Publications including Science Outreach:

Treatises

1. Dissertation, Hybrid Modelling of Titan's Interaction with the Magnetosphere of Saturn (Titanin vuorovaikutus Saturnuksen magnetosfäärin kanssa ja sen simulointi hybridimallilla), 2008. http://urn.fi/URN:ISBN:978-951-697-660-3
2. Pro Gradu Master's Thesis, One-dimensional Method of Characteristics to Determine Ionospheric Conductances and Currents, 2003. http://urn.fi/URN:NBN:fi-fe20031053

Conference Publications

1. Matéo-Vélez, J-C., Ganushkina, N., Meredith, N., Sicard-Piet, A., Maget, V., Payan, D., **Sillanpaa, I.**, and Dubyagin, S., From GEO/LEO environment data to the numerical estimation of spacecraft surface charging at MEO, *14th Spacecraft Charging Technology Conference*, ESA/ESTEC, Noordwijk, Netherlands, 4-8 April 2016.
2. Jarvinen R., Kallio E., Janhunen P., Pohjola V., **Sillanpää I.**, Grid convergence of the HYB-Venus hybrid simulation, in *Numerical Modeling of Space Plasma Flows: ASTRONUM-2009,* Astronomical Society of the Pacific Conference Series, 429, p. 193-200, 2010.
3. Amm, O., Aksnes, A., Stadsnes, J., Østgaard, N., Vondrak, R.R., Germany, G.A., and **Sillanpää, I.**, Observations and analysis of ionospheric electrodynamics during a substorm recovery phase using the MIRACLE network, *Proceedings Seventh International Conference on Substorms (ICS-7)*, Levi, Finland, March 21-27, 2004, Finnish Meterological Institute report 2004:5, p. 87-94, 2004.
4. Viljanen, A., Amm, O., Lühr, H., Pulkkinen, A., Ritter, P. and **Sillanpää, I.**, Maanpinta- ja satelliittihavainnoista määritettyjen ionosfäärivirtojen vertailu. *Proc. of XXI Geofysiikan päivät,*

Oulu 22-23.5. 2003 (eds. K. Kaila and T. Korja), p. 163-166, 2003.

5. Amm, O., Viljanen, A., Pulkkinen, A., **Sillanpää, I.**, and Vanhamäki, H., Methods for combined ground-based and space analysis of ionospheric current systems, *Proc. of the 4th Oersted International science team conference (OIST-4)* (eds. P. Stauning et al.), Copenhagen, September 23-27, 2002, p. 181-184, 2002.
6. Viljanen, A., Amm, O., Lühr, H., Pulkkinen, A., Ritter, P. and **Sillanpää, I.**, Determination of 2-D ionospheric equivalent currents using the ground magnetic field and the method of spherical elementary current systems, *Proc. OIST-4,* p. 185-188, 2002.

Popular Science and Outreach

1. Popular science lecture, *Pluto – ei enää (niin) tuntematon (Pluto – no longer (that) unknown),* Helsinki, Finland, as part of the Space Week program, 4 October 2015.
2. 90min class, *Our Solar System Today,* Kulosaari Secondary School, Helsinki, Finland, 18 May 2015.
3. Popular science lecture, *Aurinkokuntamme tänään (Our Solar System Today),* Kokkola, Finland, 18 April 2015.
4. Keynote talk in NASA Space Apps Challenge, *Realtime satellite and space weather data for online use*, Mikkeli, Finland, 10-12 April 2015.
5. Popular science lecture, *Aurinkokuntamme Nyt (Our Solar System Now),* Rauma, Finland, 24 January 2015.
6. Popular science lecture, *Aurinkokuntamme – luotaimia ja etäisyysskaaloja (Our Solar System – space probes and length scales)*, Helsinki, 15 January 2015.
7. Popular science lecture for Finnish Astronomical Society URSA*, Cassini-luotain ja Saturnuksen uusi vuodenaika (Cassini Space Probe and the New Season of Saturn),* Helsinki, 8 September 2009.
8. Article in Yliopisto magazine, *Titan, seireeni (Titan - a Siren),* 5/2008, p. 46-47.
9. Article in Avaruusluotain (Space Probe) magazine by the Finnish Space Reseach Association, *Titanin ionipaon simulointia Ilmatieteen laitoksella (Simulation of Titan's Ion Escape at the Finnish Meteorological Institute)*, Avaruusluotain, vol. 39, issue 3, p. 17-19, 2004.
10. Article in Avaruusluotain. Siili, T., Harri, A-M., Sillanpää, I., Tanskanen, P., and Vilppola, J., Teemakokonaisuus: *Cassini/Huygens luotain ja Suomi (Theme: Cassini/Huygens Probe and Finland),* Avaruusluotain, vol. 39, issue 3, p. 10-11, 2004.
11. Article in Puhuri magazine, *Titan-simulaatioita ja Cassinin mittauksia (Simulation of Titan and Measurements by Cassini),* p. 28-29, 6/2004.

Media and Press Appearances

1. TV interview on newest New Horizons data from Pluto Flyby: Yle Aamutv, 17 September 2015.
2. Three interviews on Kepler 452b discovery on 24 July 2015: Iltalehti, MTV, and Sweden's Radio Sisuradio.
3. Three TV interviews on the New Horizons Pluto Flyby:
    1. TV1 Päivän kasvo, 15 July 2015
    2. Yle Aamutv, 16 July 2015
    3. MTV Huomenta Suomi, 20 July 2015
4. Numerous interviews and mentions in news media 14-16 July 2015 on the New Horizons Pluto Flyby, e.g. Ilta-Sanomat, Turun Sanomat, Iltalehti, MTV, Helsingin Sanomat.
5. Quoted in two news items on 3 July 2015: Luotain ohittaa Pluton, kuvien tarkkuus 50 m luokkaa – Suomalaisosaamista hyödynnetään aurinkokunnan reunalla (Probe to meet with Pluto, with 50m resolution images – Finnish space science at the edge of the solar system), Tekniikka & Talous; Avaruusluotain antaa pian ensimmäiset tarkat kuvat Pluton pinnasta (Space probe about to take

first accurate images of Pluto's surface), Yle News
6. Quoted in blog Työn vierestä. Satu Roos: Viisautta työhön (More wise at work) http://tyon-vieresta.blogspot.fi/2015/04/viisautta-tyohon.html#more, 26 April 2015.
7. Interview in Keskipohjanmaa newspaper, *Maailmankaikkeutta ymmärtämässä (Understanding the Universe),* 18 April 2015.
8. Interview in Länsi-Suomi newspaper, *Suomalainen avaruustutkimus on kaukana lapsenkengistä (Space Research in Finland is no Underdog),* 6 February 2015, p. 12.
9. Interview in Helsingin Sanomat newspaper*, Avaruustutkija ja mormoni uskoo ihmeisiin, mutta ei evoluutioon (Interview with a Space Scientist who is a Mormon: on miracles and evolution)*, 15 August 2014.
10. Dissertation mentioned in an article in Suomen Kuvalehti. Karri Kokko: Öljyä Saturnuksen kuista? (Oil from the Moons of Saturn?) http://suomenkuvalehti.fi/jutut/tiede/oljya-saturnuksen-kuista/, 29 February 2008.
11. Interview in Kokkola paper, 16 January 2008, p. 19.
12. Quoted in Helsingin Sanomat newspaper, 11 January 2005.

Science presentations (first author only):

Lectures

1. Finnish Meteorological Intistitute lecture, *Pluto flyby,* Helsinki, 20 August 2015.
2. Physics Days 2015, Space Division meeting in Helsinki, 17 March 2015.
   New Horizons to Reveal Unexplored Pluto.
3. Southwest Research Institute – Space Science Directorate at Boulder, CO, 20 August 2014.
   Ion-Neutral Collisions and Their Effects for Titan's Plasma Interaction.
4. Earth Observation and Arctic Research Units at Finnish Meteorological Institute, 1 April 2011.
   Titan's Plasma Interaction: Observations and Simulations.
5. Heliophysics Science Division at NASA Goddard Space Flight Center, 31 May 2007.
   Hybrid Simulations of Plasma Interactions at Titan and Venus.
6. Institute of Geophysics and Planetary Physics at Los Alamos National Laboratory, 29 May 2007.
   Hybrid Simulations of Plasma Interactions at Titan and Venus.
7. Theoretical Physics Institute at the Technical University of Braunschweig, 18 January 2007.
   Advanced Hybrid Model for Titan – Plasma near Titan's Exobase.

Conference Presentations

1. Sillanpää, I., and Johnson, R., Modeling Ion Energy Deposit on Titan's Ionosphere, Cassini Magnetospheric Plasma Science (MAPS) workshop, 20-22 March 2013.
2. Sillanpää, I., and Johnson, R., Ion-Neutral Collisions at Titan, American Geophysical Union (AGU) fall meeting, San Francisco, 3-7 December 2012.
3. Sillanpää, I., Ebert, R., Elliott, H., and Kallio, E., Preliminary Model for the Solar Wind Interaction with Pluto's Extended Plasma Tail, European Geosciences Union (EGU) General assembly, Vienna, 22nd - 27th April 2012.
4. Sillanpää, I., Young, D., Crary, F., Thomsen, M., Reisenfeld, D., Wahlund, J-E., Bertucci, C., Kallio, E., Jarvinen, R., and Janhunen, P., Titan Flyby T15 – Hybrid Model and Cassini Multi-instrument Comparison, Magnetospheres of Outer Planets (MOP), Boston, Massachusetts, 11th – 15th July 2011.
5. Sillanpää, I., Young, D., Crary, F., Thomsen, M., Reisenfeld, D., Wahlund, J-E., Bertucci, C., Kallio, E., Jarvinen, R., and Janhunen, P., Titan Flyby T15 – Hybrid Model and Cassini Multi-

instrument Comparison, MAPS workshop, Annapolis, MD, 27th - 29th April 2011.
6. Sillanpää, I., Young, D., Crary, F., Reisenfeld, D., and Thomsen, M., Titan plasma interaction in weak magnetospheric flow, MAPS workshop, Meadon, Paris, France, 7th - 8th April 2010.
7. Sillanpää, I., Kallio, E., Jarvinen, R., Liu, K., and Janhunen, P., Advances in Hybrid Modelling of Titan – HYB model, 37th COSPAR assembly, in Montreal, Canada, 13th - 20th July 2008.
8. Sillanpää, I., Kallio, E., Jarvinen, R., and Janhunen, P., Understanding Titan's Plasma Interaction – Hybrid Model Results, Physics Days 2007, in Tallinn, Estonia, 15th - 17th Mar 2007.
9. Sillanpää, I., Kallio, E., Jarvinen, R., Janhunen, P., Vilppola, J., Tanskanen, P., and Mursula, K., Improved Hybrid Simulation on the Plasma Interaction of Titan – CAPS/IBS data comparison, COSPAR in Beijing, China, 17th - 22nd July 2006.
10. Sillanpää, I., Kallio, E., Jarvinen, R., Janhunen, P., Bertucci, C., Dougherty, M.K. and Neubauer, F.M., Improved Hybrid Simulation on the Magnetic Interaction of Titan – mixed wings and Cassini/MAG comparison, EGU General assembly in Vienna, 3rd - 7th April 2006.
11. Sillanpää, I., Kallio, E., Janhunen, P., Improved Hybrid Simulation of Titan Interaction – new phenomena?, London Titan Seminar Series 2005, Imperial College – London, 16th - 17th Nov 2005 (invited).
12. Sillanpää, I., Kallio, E., Janhunen, P., Schmidt, W., Vilppola, J., Mursula, K., and Tanskanen, P., Titan's Plasma Interaction and CASSINI Flybys, 39th Physics Days in Espoo, Finland, 17.-19.3.2004.
13. Sillanpää, I., Kallio, E., Janhunen, P., Schmidt, W., Harri, A.M., Mäkinen, T., Mursula, K., Vilppola, J., and Tanskanen, P., A Global Hybrid Model of Titan's Ion Escape, AGU fall meeting, San Francisco, December 2004.

Conference Posters

14. Sillanpää, I., Ganushkina, N., Dubyagin, S., and Rodriguez, J.V., IMPTAM Verification and Validation on GOES MAGED Data for Long-term Variations of Electron Fluxes at Geostationary Orbit, 13th European Space Weather Week, Oostende, Belgium, 14-18 November 2016.
15. Sillanpää, I., Ganushkina, N., Dubyagin, S., and Matéo Vélez, J-C., Case Studies with Van Allen Probes and IMPTAM Modeling, Global Modelling of the Space Weather Chain, Espoo, Finland, 24-28 October 2016.
16. Sillanpää, I., Ganushkina, N., and Dubyagin, S., IMPTAM Runs at CCMC, 8th Community Coordinated Modeling Center Workshop, Annapolis, Maryland, 11-15 April 2016.
17. Sillanpää, I., and Johnson, R., Stellar Wind Interactions with Cold Exoplanet Atmospheres, 33rd Theoretical Physics Winter School: Exoplanets, Jerusalem, 29-31 December 2015.
18. Sillanpää, I., Formation of Alfvén Wings at Titan and Their Effect, Physics Days 2015, Helsinki, 17 - 19 March 2015.
19. Sillanpää, I., and Johnson, R., The Effect of Ion-Neutral Collisions on the Plasma Interaction at Titan, EGU general assembly, Vienna, 27 April - 2 May 2014.
20. Sillanpää, I., and Johnson, R., Ion-Neutral Collisions in Titan's Magnetospheric Interaction, AGU fall meeting, San Francisco, 9-13 December 2013.
21. Sillanpää, I., and Johnson, R., Effects of Neutral Collisions and Charge Exchange to Titan Plasma Interaction, EGU General assembly, Vienna, 22nd - 27th April 2012.
22. Sillanpää, I., and Johnson, R., Thermal Plasma and Pick-up Ion Penetration at Titan: Effect of Energy Loss to Neutrals, joint EuroPlanet Science Congress (EPSC) and AAS/DPS meeting, Nantes, France, 3rd – 7th October 2011.
23. Sillanpää, I., Johnson, R., Kallio, E., and Jarvinen, R., New Ion Impact Simulations for Titan, EGU general assembly in Vienna, Austria, 4th – 8th April 2011.
24. Sillanpää, I., Young, D., Crary, F., Thomsen, M., Reisenfeld, D., Wahlund, J-E., Bertucci, C.,

Kallio, E., Jarvinen, R., and Janhunen, P., Physics Days, Helsinki, Finland, 29th – 31th March 2011.

25. Sillanpää, I., Johnson, R., Ion Impacts on Titan's Ionosphere and the Effect of Neutral Collisions – a Hybrid Model Study, AGU fall meeting, San Francisco, USA, 13rd – 17th December 2010.
26. Sillanpää, I., Young, D.T., Crary, F., Kallio, E., and Jarvinen, R., Composition of Titan's Wake – CAPS Study, EPSC, Potsdam, Germany, 14th - 18th September 2009.
27. Sillanpää, I., Young, D.T., Crary, F., Kallio, E., and Jarvinen, R. , Composition of Titan's Wake – CAPS Study, MOP, Cologne, Germany, 27th - 31st July 2009.
28. Sillanpää, I., Young, D.T., Wilson, R., Crary, F., Bertucci, C., Dougherty, M., Wellbrock, A., Coates, A., Kallio, E., Jarvinen, R., and Janhunen, P., Cassini's CAPS and MAG measurements during Titan flyby T15 and HYB model results, MAPS workshop, San Antonio, Tx, USA, 1st - 2nd April 2009.
29. Sillanpää, I., Young, D., Wilson, R., Crary, F., Bertucci, C., Dougherty, M., Wellbrock, A., Coates, A., Kallio, E., Jarvinen, R., and Jahnunen, P., Cassini's CAPS and MAG measurements during Titan flyby T15 compared to HYB model results, AGU fall meeting, San Francisco, USA, December 2008.
30. Sillanpää, I., Kallio, E., Jarvinen, R., and Jahnunen, P., O+ at Titan's Exobase from a Hybrid Simulation, AGU joint assembly, Acapulco, Mexico, May 2007.
31. Sillanpää, I., Kallio, E., Jarvinen, R., Janhunen, P., Vilppola, J., Tanskanen, P., Mursula, K., Bertucci, C., Dougherty, M.K., and Neubauer, F.M., Advanced Hybrid Simulation on the Magnetic Interaction at Titan, AGU fall meeting, San Francisco, December 2006.
32. Sillanpää, I., Kallio, E., Jarvinen, R., Janhunen, P., Bertucci, C., Dougherty, M.K., and Neubauer, F.M., Hybrid Simulation Results for Titan compared with Cassini/MAG data from T9 flyby, EPSC, Berlin, Germany, 17th - 22th September 2006.
33. Sillanpää, I., Kallio, E., Janhunen, P., Vilppola, J., Mursula, K., and Tanskanen, P., The Structure of the Magnetic Field around Titan, AAS/DPS meeting in Cambridge, UK, 4th - 8th September 2005.
34. Sillanpää, I., Kallio, E., Janhunen, P., Schmidt, W., Vilppola, J., Mursula, K. and Tanskanen, P., Turning of the iono and magnetotails of Titan. Cassini/Huygens Titan meeting, Crete, Greece, 30th May - 3rd June 2005.
35. Sillanpää, I., Kallio, E., Janhunen, P., Schmidt, W., Vilppola, J., Mursula, K. and Tanskanen, P., Global Hybrid Simulation for Titan's Plasma Interaction. EGU 2nd general assembly, Vienna, Austria, 2005.
36. Sillanpää, I., Kallio, E., Janhunen, P., Schmidt, W., Harri, A.M., Mäkinen, T., Mursula, K., Vilppola, J., and Tanskanen, P., Modelling of the ion escape at Titan, COSPAR 35th Scientific Assembly, Paris, France, 2004.
37. Sillanpää, I., Kallio, E., Janhunen, P., Schmidt, W., Harri, A.M., Mäkinen, T., Mursula, K., Vilppola, J., and Tanskanen, P., Modelling of the ion escape at Titan, EGU 1st General Assembly, Nice, France, 2004.
38. Sillanpää, I., Kallio, E., Janhunen, P., Mursula, K., Vilppola, J., and Tanskanen, P., Modelling of the ion escape at Titan, 38th Physics Days, Oulu, 18.- 20.3.2004.
39. Sillanpää, I., Kallio, E., Jantunen, P., Mursula, K., Vilppola, J., and Tanskanen, P., Modelling of the ion escape at Titan, Antares seminar, Helsinki, 30.10. 2003.
40. Sillanpää, I., Kallio, E., and Jantunen, P., Modelling of the ion escape at Titan, 37th Physics Days 20.-22.3.2003, Helsinki, 2003.