

## **Bruce Tadashi Tsurutani**

### EDUCATION

Ph.D., Physics: University of California, Berkeley, 1972.  
Bachelor of Arts, Physics: University of California, Berkeley, 1963.  
High School: Santa Monica, California.

### CURRENT TITLE

Senior Research Scientist at the Jet Propulsion Lab (equivalent to Full Professor at a University comparable to Caltech), 1986 to present.  
Principal Scientist, JPL, 2001 to present

### PAST POSITIONS

Research Scientist, Jet Propulsion Laboratory 1972 to 1985.  
Senior Research Scientist, 1986 to present.  
Manager of Space Physics and Astrophysics Section (1985-1987) Division of Earth and Space Sciences. At the time, the Section was involved with: KOBE, IRAS, SETI, SIRTF, CRAF, Cassini, EOS, GGS, Galileo, Ulysses, Solar Probe, Cluster, Voyager, Giotto, ICE, Pioneers 10 & 11, and assorted balloon and rocket campaigns.  
Leader of Space Plasma Group, 1999 to 2006

### AREAS OF SCIENTIFIC INTEREST

Space weather: magnetic storms, substorms, HILDCAAs, geomagnetic quiet (solar max, declining phase, solar min), CMEs, high speed streams, CIRs, solar flares, coronal holes, power outages, satellite orbital decay.

Extreme space weather

Nonlinear plasma waves (evolution, strong turbulence, stochastic particle acceleration, cross-field diffusion of particles).

Plasma physics (instabilities and wave-particle interactions).

Ionospheric physics/aeronomy (the dayside superfountain effect, particle uplift, solar flare effects).

Auroral and magnetospheric physics (energetic particle precipitation, substorms, chorus, magnetosonic waves, hiss, relativistic electron acceleration).

Solar wind interaction with magnetospheres (upstream waves and particles, viscous interaction).

Cometary and Planetary plasma physics

Solar Corona Physics (flares, heating mechanisms).

Astrophysics (x-ray bursters).

### HONORS

ESA and Chinese NSSC Cluster and Double Star award, 2015  
JGR Space Physics, “Excellence in Refereeing”, 2015 (top 1%).  
Solar Physics, “for particular meritorious service in refereeing”, 2015.  
JASTP “Excellence in refereeing”, 2014.  
JGR Space Physics “Excellence in refereeing”, 2014  
AGU John Adam Fleming Medal, 2009.  
AGU Fellow, 2009.  
The Federal University of Santa Maria (UFSM), Rio Grande do Sul, Brazil  
University Medal, 2009.  
NASA Ulysses Group Achievement Award, 2009.  
JGR Citation for “Excellence in Refereeing”, 2007.  
NASA Cluster Science Team Group Achievement Award, 2004.  
GRL Citation for “Excellence in Refereeing”, 2003.  
ALAGE (Latin America Geophysical Society) inaugural Gold Medal, 2001.  
NASA Exceptional Service Medal, 2001.  
NASA Solar Electric Prop. (NSTAR) Group Ach. Awd., 1999.  
Von Humboldt (Germany) Research Fellow, 1993-1994.  
Brazilian National Space (W. Von Braun) Medal, 1992.  
NASA Ulysses Magnetometer Team Achievement, 1992.  
Ulysses Magnetometer Team achievement, 1991.  
ESA Ulysses achievement, 1990.  
NASA Exceptional Service Medal, 1985.  
GRL Citation for “Excellence in Refereeing”, 1984.  
NASA ISEE Magnetometer Team Achievement, 1979.  
NASA Pioneer 10, 11 Magnetometer Team Achievement, 1972, 1973.

#### UNIVERSITY AFFILIATIONS:

Visiting Associate, Rheinisches Institut für Umweltforschung, University of Cologne, Germany, April-May, 2013.  
Visiting Associate, Plasma Group, Calif. Inst. Tech. Nov. 2012-March 2013.  
Visiting Professor, Brazilian National Space Research Institute (INPE), Sept.-Oct., 2010.  
Visiting Professor, Technical University of Braunschweig, May-Aug, 2010.  
International External Evaluator for RISH, Kyoto Univ., Feb.-Mar. 2007.  
Visiting Professor, RISH, Kyoto University, Oct 2006 to April 2007.  
Visiting Professor, Kyoto University, July-Nov, 2005.  
Adjunct Professor, University of Southern California, 2003 -2007.  
Member of British Antarctic Survey Scientific Review Committee, 2001-2005.  
Visiting Associate, Solar Physics Group, Calif. Inst. Tech., 1996-2001.  
Visiting Professor, Technical Univ. Braunschweig, Germany, 1993-1994.  
Visiting Professor, Univ. Cologne, Germany, 1993-1994.  
Visiting Scientist, NOAA Space Environ. Lab, Boulder, CO, July 1993.  
Visiting Professor, University of Alaska Geophysical Institute, Fairbanks, Alaska, July 1992.  
Kyoto University International Scholarship, October 1989.

Visiting Professor, Kyoto University, March-July 1988.

#### Ph.D. THESIS ADVISOR:

B. Remya (with V. Reddy and G. Lakhina), IIGM, 2013-2014  
C. Yamashita (joint with E. Echer and C. Brum), INPE, 2010-2015  
E. da Costa Jr. (joint with V. Alves and E. Echer), INPE, 2007-2010  
F.L. Guarnieri (joint with W. Gonzalez of INPE), 2003-2005  
D. Wendel (joint with S. Ride, U. Calif. San Diego), 1993-1994  
N. LaBelle-Hamer (joint with L. Lee, University of Alaska), 1989-1994  
M. Okada (joint with H. Matsumoto, Kyoto University), 1991-1994

#### SCIENCE EDUCATION:

Participated in National Geographic TV movie on Extreme Weather, 2011.  
Taught second year electricity and magnetism, Univ. So. Calif., 2004  
Discovery Channel Program on “Storms in the Solar System” (partook in Solar and Magnetic Storms portion), 2000.  
Invitee (only 35 educators from the U.S.) at the Working Conference on Pre-College Science Education for Scientists and Engineers, California Institute of Technology, 7-13, March 1992.

#### SERVICES

Member of the AGU “Nonlinear Waves and Processes” selection committee (2015-16).  
Member of the AGU Honors and Recognition Committee (2015-2017).  
Member AGU Development Board (2015-2017).  
Chair of the AGU Fleming Committee 2013-2014.  
Member of the AGU SPA “Space Weather Prize” selection committee (2013).  
Member of NASA-SOLE “The Logistics of Extreme Space Weather: Preparing for the Inevitable” Workshop, 2010-2011.  
Member of the AGU Fleming Committee 2010-2012.  
Member of the AGU SPA Fellows Nomination Committee 2010-2011.  
Member of NASA LWS TR&T Steering Committee, 2011.  
Member of the RISH, Kyoto Univ. Science Rev. Board, 2007.  
Served on the British Antarctic Survey (BAS, Cambridge) Science Review Board, 2001-2006.  
Member AIP Subcommittee on Classification and Information Retrieval (1997-2000).  
Chairman, AGU Indices Revision Task Force (1993-1995).  
Chairman, EOS Editor Search Committee (1992).  
Chairman, JGR Editor Search Committee (1992).  
Chairman, GRL Editor Search Committee (1987)  
Led the Revamping of the AGU Indices (1981-1984).

#### MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Geophysical Union

European Geoscience Union  
Japanese Geosciences Union (JpGU)  
Society of Geophysics, Earth and Planetary Space Sciences (Japan)  
Union Radio Scientifique Internationale (URSI)  
Latin American Geophysical Society (ALAGE)  
American Association for Advancement of Science

#### OFFICER/OFFICIAL OF SCIENTIFIC ORGANIZATIONS

President, Space Physics and Aeronomy Section AGU, 1990-1992  
President –Elect, SPR Section AGU, 1988-1990  
Secretary for Solar Interplanetary Physics of the AGU, 1982-1986  
Member, AGU Board of Journal Editors, 1985-1986  
Member, AGU Journals Board, 1981-1984

#### EDITOR OF BOOKS

*Recurrent Magnetic Storms: Corotating Solar Wind Streams*, AGU Monograph, 167 (with R.L. McPherron, W.D. Gonzalez, G. Lu, J.H.A. Sobral, and N. Gopalswamy), 2006.  
*From the Sun: Auroras, Magnetic Storms, Solar-Flares, Cosmic Rays*, AGU Monograph (with S. Suess), 1998.  
*Magnetic Storms*, AGU monograph, 98 (B.T. Tsurutani, W.D. Gonzalez, Y. Kamide and J.K. Arballo), 1997.  
*Proceedings of the First U.S.-Russian Workshop on FIRE Environment*, IKI - Moscow (O. Vaisberg and B. Tsurutani), Dec. 1995  
*Small Instruments for Space Physics*, NASA, Washington D.C. (B. T. Tsurutani), November 1993.  
*Space Plasma Waves and Instabilities at Comets and in Magnetospheres*, AGU Monograph 61 (B. T. Tsurutani and H. Oya), 1989.  
*Collisionless Shock Waves in the Heliosphere: A Tutorial Review*, AGU Monograph 34 (R. G. Stone and B. T. Tsurutani), 1985.  
*Collisionless Shock Waves in the Heliosphere: Review of Current Research* AGU Monograph 35 (B. T. Tsurutani and R. G. Stone), 1985.

#### EDITOR OF JOURNAL

*Nonlinear Processes in Geophysics*, 2010-2017. NPG is a joint AGU and EGU journal.

#### EDITOR OF SPECIAL JOURNAL ISSUES

*Nonlinear Processes in Geophysics* “Nonlinear Waves and Chaos in Space Plasmas” (G.S. Lakhina, B.T. Tsurutani, A. Chian, T. Hada, and G. Morales), 2013-4.

*Journal of Atmospheric and Solar-Terr. Physics*, “Sun-Earth System Exploration: Moderate and Extreme Disturbances” (P. Newell and B.T. Tsurutani), 2013-4.

*Nonlinear Processes in Geophysics* “Nonlinear Plasma Waves in Space and Laboratories” (B.T. Tsurutani and G. Morales), 2011.

*Journal of Atmospheric Sol.-Terr. Physics*, “Ionospheric Response to High Speed Solar Wind Streams during the Declining Phase of the Solar Cycle” (A.J. Mannucci and B.T. Tsurutani), 2011.

*Nonlinear Processes in Geophysics* “Coupling between Large and Small Scale Turbulence in Space and Laboratory Plasmas” (T. Passot, R. Potelette, B.T. Tsurutani, T. Hada and P.-L. Sulem), 2009.

*Earth, Planets and Space (EPS)*, “Flare-Substorm Relationships: Space Weather” (B.T. Tsurutani, K. Shibata, S.-I. Akasofu, M. Oka), May 2009.

*Journal of Atmospheric Sol.-Terr. Physics*, “Space Weather in the Declining Phase of the Solar Cycle” (J.I. Moen and B.T. Tsurutani) January, 2003.

*Nonlinear Processes in Geophysics* “4<sup>th</sup> International Workshop on Nonlinear Waves and Chaos in Space Plasmas” (E. Mjølhus, B. Tsurutani and J. Buchner), 2003.

*Journal of Atmosph. Sol.-Terr. Physics* “Magnetic Storms” (B. Tsurutani, V. Papitashvili, Y. Feldstein, S. Lastovicka), 2000.

*Nonlinear Processes in Geophysics* “Nonlinear Waves and Chaos”, (E. Marsch, B. Tsurutani, P. Diamond), 1999.

#### ORGANIZER OF SPECIAL JOURNAL ISSUES

*Nonlinear Processes in Geophysics* (with G. Lakhina, A. Chian, T. Hada, G. Morales and R. Grimshaw), 2014.

*Journal of Solar and Terrestrial Phys.* (with P. Newell), 2014 .

*Journal of Geophysical Research*, “Chorus” (B. Tsurutani, R. Horne, D. Schriver, O. Verkhoglyadova, J. Pickett and O. Santolik) 2010.

*Journal of Geophysical Research*, “Corotating Solar Wind Streams and Recurrent Geomagnetic Activity”, July 2006.

*Journal of Geophysical Research*, “Magnetic Storms”, July, 1997

*Journal of Geophysical Research*, "Plasma Waves and Instabilities at Comet and in Magnetospheres", January 1989.

*Geophysical Research Letters*, "L. Biermann Memorial Issue: Comet Giacobini-Zinner", March, 1986.

*Journal of Geophysical Research*, "Collisionless Shock Waves in the Heliosphere II", June, 1985.

*Journal of Geophysical Research*, "Collisionless Shock Waves in the Heliosphere", January, 1985.

*Geophysical Research Letters*, "ISEE-3 Distant Geotail Results", October, 1984.

*Journal of Geophysical Research*, "Upstream Waves and Particles", April 1981.

#### ORGANIZER OF NASA WORKSHOPS

Dust Near the Sun Virtual Workshop (I. Mann et al., NASA White Paper), 2002

:

Coronal Hole Virtual Workshop, (K. Harvey et al., NASA White Paper), 2000

Particles Near the Sun Workshop, Atlanta, GA, (Tsurutani et al. NASA White Paper) 12-14 March 2000.

Solar Environment Workshop, Moscow, Russia, 5-7 June, 1995.

Small Instrument Workshop, Pasadena, California, 29-31 March 1993.

#### ORGANIZATION OF SCIENTIFIC MEETINGS/ WORKSHOPS/SESSIONS

Convened the 9<sup>th</sup> Nonlinear Waves and Chaos Workshop, San Diego, CA (Tsurutani, Morales, Camassas, Hada, Chian, and Lakhina) 3-8 March 2013.

Coconvened (with P. Newell) the 5<sup>th</sup> Earth-Sun System Exploration Conference, Kailua-Kona, Hawaii, 12-18 January, 2013.

Convened AGU "Extreme Space Conditions: the Impact of Nonlinear Processes", San Francisco, (Tsurutani, Schrijver, Guhathakurta, Mannucci, Basri, Brain, Vasilidis, and Vadim), 5-9 Dec., 2011.

Science Organizing Committee member of ILWS Workshop "Towards the Next Solar Maximum, Beijing China, 29 Aug. to 2 Sept, 2011.

Coconvened the Boulder High Speed Stream and Solar Minimum Workshop (A.J. Mannucci, B.T. Tsurutani, O. P. Verkhoglyadova, S.C. Solomon, J.P. Thayer, and J.M. Forbes) 1 -3 Sept. 2010.

Convened the 8<sup>th</sup> International Nonlinear Wave Workshop, La Jolla Calif (B.T. Tsurutani, G. Morales, T. Passot, V. Shevchenko). Sponsors: URSI, APS Plasma Div., and UCSD, 1-5 March, 2010.

Co-Convended EGU Session ST2.4 “Nonlinear Waves and Transport Processes in Solar Terrestrial Plasmas”, Vienna Austria (C. Mazelle, B.T. Tsurutani and O.P. Verkhoglyadova) 3-7 May 2010.

Co-Convended IAGA Session II-06 “Equatorial Atmosphere-Ionosphere Interactive Processes: Vertical and Latitudinal Coupling and Magnetospheric Forcing”, Sopron, Hungary, (M. Abdu, T. Nakamura and B.T. Tsurutani) 23-30 August 2009.

Member of the Scientific Organizing Committee of the 2009 International Living With A Star (ILWS), Ubatuba, SP, Brazil, 4-10 October 2009.

Co-Convended EGU session ST7 Waves as a Diagnostic Tool for Basic Plasma Processes, Vienna, Austria (R. Pottelette, J. Pickett, B.T. Tsurutani), 19-24 April 2009.

Co-Convended IAGA Session II-06 Equatorial Atmosphere-Ionosphere Interactive Processes: Vertical and Latitudinal Coupling and Magnetospheric Forcing, Sopron Hungary (M. Abdu, T. Nakamura, B.T. Tsurutani), 23-30 August 2009.

Convended The First International Electromagnetic Chorus Wave Workshop, San Diego, Ca (with R.Horne, J.S. Pickett, D. Schriver, O. Santolik and O.P. Verkhoglyadova), 10-12 February 2009.

Co-Convended AGU Session SA10 Solar and Solar Wind Control of Planetary Ionospheres During the Declining Phase of the Solar Cycle, San Francisco, Ca (A.J. Mannucci and B.T. Tsurutani), December, 2008.

Co-Convended the Seventh International Workshop on Nonlinear Waves and Turbulence in Space Plasmas (NLW-7), Beaulieu-sur-Mer, France (R. Pottelette, T. Passot, B.T. Tsurutani, T. Hada), 21-25 April, 2008.

Convended EGU session ST6 Waves, Wave-Particle and Wave-Wave Interactions, Vienna, Austria (with J.S. Pickett and R. Pottelette), 13-18 April, 2008.

Co-Convended First S. Korean Winter School for Space Physics, Geongju, South Korea (D.-Y. Lee, B.-H. Ahn, B.T. Tsurutani), 21-22 Feb. 2008.

Convended *Eighth Storm-Substorm Workshop*, Geongju, South Korea, (B.T. Tsurutani, B.-H. Ahn), 18-19 Feb. 2008.

Co-Convended IAGA session JAS009 Equatorial Atmosphere-Ionosphere Coupling Processes: Responses to Forcing from Lower Atmosphere and Magnetosphere, Perugia, Italy (M. Abdu, T. Nakamura, B.T. Tsurutani), 2-13 July, 2007.

Co-Convened AOGS session ST16-24, Equatorial to Mid-latitude Atmospheric/Ionospheric Effects of Solar Transients and Superstorms, Bangkok, Thailand, (A. Bhattacharyya, B.T. Tsurutani, M. Abdu, A.J. Mannucci, K. Yumoto), 30 July to 4 August, 2007.

Co-Convened EGU special session ST9 Linear and Nonlinear Wave- Particle Interactions in Space Plasmas, Vienna, Austria, (J. Pickett, R. Pottelette, B.T. Tsurutani), 16-17 April, 2007.

Co-Convened "Flare-Substorm CAWSES Space Weather Workshop" Fairbanks, Alaska, (K. Shibata, S.-I. Akasofu, B.T. Tsurutani) 18-21 March, 2007.

Co-Convened Nonlinear Wave Workshop (NWW-6), (T. Hada A. Chian and B.T. Tsurutani), Fukuoka, Japan, 9-13 October, 2006.

Convened AOGS (Asia Oceania Geosciences Society) ST-04 Corotating Streams and Geomagnetic Activity, Singapore, 10 -14 July, 2006.

Co-Convened *CAWSES International Workshop on Space Weather Modeling* (led Virtual Workshop), Yokohama, Japan, 14-17 Nov. 2006.

Co-Convened EGU session ST7.7 Filamentation Processes, Boundaries and Nonlinear Structures in Heliospheric Plasmas Vienna, Austria, (R. Pottelette, J. Pickett, B.T. Tsurutani, S. Savin), 3-7, April, 2006.

Co-Convened IAGA Symposium IDII01, Low Latitude Atmosphere-Ionosphere-Magnetosphere Coupling, Dynamics and Energetics (Divs. II and III), Toulouse, France (M.A. Abdu, T. Nakamura, B.T. Tsurutani), , 4 to 8 April, 2005.

Organizer Chapman Conference Corotating Solar Wind Streams and Recurrent Geomagnetic Activity, Manaus, Brazil, (with R. McPherron, W. Gonzalez and G. Lu, J.H.A. Sobral, and N. Gopalswamy), 6-12 February, 2005.

Convened EGU session (ST7) Waves, Particles and Non-linear Processes, Vienna Austria (with J. Pickett, R. Pottelette, and G. Lakhina), 24-29 April 2005.

Program Committee Member of IAU Symposium 226- Coronal and Stellar Mass Ejections, Beijing, China, 13-17 September, 2004.

Convened an EGU session Nonlinear Waves and Chaos (with J. Pickett and G. Lakhina), Nice, France, April 2004.

Co-Convened the Fifth International Workshop on Nonlinear Waves and Chaos, Mumbai, India, (G. Lakhina, S. Sharma and B.T. Tsurutani), 3-9 March, 2003.

Co-Organizer Magnetic Storm-Substorm Workshop, Henningsvaer, Norway (with J. Moen), 17-22 June 2002.



Co-Convened the *Nonlinear Wave and Chaos Workshop*, Tromso, Norway (with E. Molhus), 18-22 June 2001.

Organizer of Interplanetary Disturbances session of SRAMP Conference, Sapporo Japan (with R. Schwenn), 2-6 Oct., 2000.

Organizer of Magnetospheric session of *COSPAR Colloquium on Space Weather Study Using Multi-Point Technique*, Taipei, Taiwan, 27-29 September 2000.

Co-Organizer of "Alfvénic Structures: From the Sun to the Magnetosphere" Symposium portion of COSPAR, Warsaw, Poland, (with K. Stasiewicz), 16-23, July 2000.

Organizer of a two-day symposium on Interplanetary Medium and Geophysical Phenomena during Magnetic Storms (with Div II, III and IV), IAGA, Birmingham, England, 28-29 July 1999.

Convened Nonlinear Wave and Chaos Workshop, Carlsbad, California (B.T. Tsurutani and P. Diamond), 1-5 March 1999.

Co-Convened of "Nonlinear Waves and Turbulence in Space Plasmas Workshop", Cologne, Germany (F. Neubauer, B.T. Tsurutani), 12-15 February 1997.

Organizer of AGU Coronal Heating and Solar Wind Acceleration, Baltimore, MD special 1-1/2 day session, 27-30 May, 1997.

Organizer and Host of Magnetic Storm Workshop (Brazil IV), Lake Arrowhead, CA., 19-21 February, 1996.

Organizer and Host of Chapman Conference on Magnetic Storms, Pasadena, CA., (with Y. Kamide. and W. Gonzalez), 12-16 February, 1996.

Co-Convenor of International Workshop on Nonlinear Waves and Chaos in Space Plasmas, Kyoto, Japan (H. Matsumoto, T. Hada, B.T. Tsurutani and B. Buti), 13-16 June, 1994.

Member of the Organizing Committee of the Western Pacific Geophysics Meeting (WPGM), Kanazawa, Japan, 21-25 August 1990.

Member of Organizing Committee of Eighth Topical Conference on High Temperature Plasma Diagnostics, Hyannis, Mass., May 6-10, 1990.

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Organizer, Chapman Conference Plasma Waves and Instabilities in Magnetospheres and at Comets (with H. Oya), Sendai, Japan, 12-16 Oct., 1987.

Member of Organizing Committee of International Workshop on Active Experiments in Space, Kyoto, Japan, 19-20 October, 1987.

As Secretary of AGU SPA Section for 4 years, Organizer of 8 semiannual meetings, including creation and organization of ~ 40 special sessions (1982-1986).

Member of Organizing Committee of Second Neil Brice Memorial Symposium, Iowa City, Iowa, 1-6, September, 1986.

Member of Organizing Committee of Chapman Conference on Magnetotail Physics, Laurel, Maryland, 28-31 October, 1985.

Co-Organizer and Host of Chapman Conference on Collisionless Shocks in the Heliosphere, Napa, California, (with R. Stone), 20-24 February, 1984.

Organizer and Host of Upstream Waves and Particles Meeting, Jet Propulsion Laboratory, Pasadena, Ca (with P. Rodriguez), 15-16 April, 1980.

#### SERVED ON NASA MISSION STUDY PANELS

NASA LWS TR&T Steering Committee, 2011

NASA Solar Probe Plasma Wave Design Group, 2006-7

NASA Solar and Heliospheric Physics review, 2003

Project Scientist of NASA Solar Probe Mission, 1998-2001

New Millennium Science Working Group, 1994-2000

Study Scientist of NASA Solar Probe Mission, 1988-1998

NASA Space Physics Data Systems, 1994-1998

Cosmic and Heliospheric Working Group, 1993-1995

Cosmic and Heliospheric Management Operations Working Group, NASA, 1992-1995

Data System Users Group, 1980-1981

International Solar Polar, 1977

#### SPACECRAFT EXPERIMENTS (OPERATIONAL)

Co-I, Cluster Magnetometer investigation, 2000-present

Co-I, Cassini Magnetometer Investigation, 1990-present

Co-I, Polar UV Investigation, 1996 - present

Co-I, Polar Plasma Wave investigation, 1996 – present

Co-I, Rosetta Radio Science, 1997-present

Co-I, Rosetta Plasma Package, 1997-present

#### PAST MISSIONS

Co-I, Ulysses Magnetometer, 1990 - 2011

P.-I., DS1 magnetometer plus plasma wave NSTAR diagnostic package, 1996-2002

P.-I., STRV-2 auroral imaging experiment, 2000-2001

P.-I., CRAF magnetometer

Co-I, ISEE-3/ICE Magnetometer, launched 1978-1987

Co-I, ISEE-1, -2 Plasma wave investigation, 1978-1987

Co-I, Japanese Sakigake Plasma Wave, 1984-1986

## HOBBIES

Freelance Science Writer (had a weekly newspaper column "Science and the Citizen", Rafu Shimpo, Los Angeles, 1980-1981).

Have written articles for: Scientific American, EOS, and Earth and Space  
Mineral/Fossil Collecting

## PUBLICATIONS

~680 articles in refereed journals (JGR, GRL, Plan. Spa. Sci, Scientific American, Science, Nature, JASTP, Annal. Geophys., Earth Planets and Space, AA, Nonlinear Processes in Geophysics, Rev. Geophysics, Space Weather and Space Climate, Space Weather and others).

## HIGHLY CITED AUTHOR:

h-index 77, !10-index 360, number of citations 29,2004.

## NASA TEC BRIEFS

**Tsurutani, B.T.**, R. Hajra, E. Echer, W.D. Gonzalez and O. Santolik, Predicting magnetospheric relativistic  $> 1$  MeV electrons, *NASA Tech. Briefs*, NPO 49852, October 19, 2015.

**Tsurutani, B.T.**, B.J. Falkowski, O.P. Verkhoglyadova, G.S. Lakhina, Electromagnetic waves transformed from a coherent to a quasi-coherent nature, *NASA Tech Briefs*, NPO-48268, Jan. 2015.

**Tsurutani, B.T.**, E. Echer and W.D. Gonzalez, Physical causes of extremely low geomagnetic activity, NPO-48230, 2014.

Verkhoglyadova, O., **B.T. Tsurutani**, and G.S. Lakhina, Magnetic and electric field polarizations of oblique magnetospheric chorus waves, NPO47770, *Nasa Tech Briefs*, 7 Feb, 2011.

**Tsurutani, B.T.**, O.P. Verkhoglyadova and A. J. Mannucci, NPO-47209 Dayside Ionospheric Superfountain, NASA Tech Brief., Jan 21, 2010.

**Tsurutani, B.T.**, D.E. Brinza, M.D. Henry, L.D. Zhang, and D.R. Clay, Plasma-based detector of outer-space dust particles, NPO-30848, NASA Tech Briefs, 30, 77, March 2006.

Kuhnke, F., G. Musmann, K.H. Glassmeier, and **B.T. Tsurutani**, Small Magnetometer, NPO-19283, NASA Tech Briefs, 46, June 1995.

**Tsurutani, B.T.** and A.L. Brinca, Influence of Multiple Ion Species on Low Frequency Electromagnetic Wave Instabilities, NPO-17771, NASA Tech Briefs, 15, 50, 1991.

