

## Curriculum Vitae and Publications

Name: **James Michael Weygand**  
Present Position: Research Geophysicist  
Earth, Planetary, and Space Sciences  
University of California, Los Angeles  
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### Education

<b>Institution</b>	<b>Degree Awarded and Date</b>
St. Olaf College	B.A. Physics and Math May, 1992
University of Calgary	M.Sc. Space Physics Aug. 1994
University of Calgary	Ph.D. Space Physics Apr. 1998

### Scholarships, Awards, etc.

<b>Date</b>	<b>Award</b>
March 2012	Antarctica Service Medal
August 2001	NASA's Planetary Science Summer School
1997-1998	Graduate Research Assistantship
1994, 1996 and 1997	Canadian Corporation of University Space Science Graduate Scholarship
1992-1997	Graduate Teaching Assistantship
Summers of 1992 to 1997	Graduate Research Assistantship
1995-1996	Departmental Scholarship
1991-1992	President of Society of Physics Students St. Olaf College Sigma Pi Sigma Physics Society
1989-1992	St. Olaf Band
1985-1988	National Honors Society

### Skills

Experience programming in UNIX, LINUX, C, Mathematica, postscript, system administration, IDL, Matlab, HTML, XML, Java Script, and FORTRAN. Experienced with Powerpoint and Microsoft Word, vi on UNIX, and LaTeX. Three semesters of Russian, two years of Spanish, and two years of German.

### Academic Experience

<b>Position</b>	<b>Date</b>	<b>Depart</b>	<b>Place</b>
Tutor	Sept. 89 to May, 92	Physics	St. Olaf College
Tutor	Sept. 90 to Dec. 90	Math	Private
Teaching Assistant	Sept. 91 to May, 92	Physics	St. Olaf College
Teaching Assistant	Sept. 92 to April, 97	Physics	University of Calgary
Tutor	Oct. 94 to April, 98	Physics	University of Calgary
Research Assistant	Summers Feb. 95 to June, 95	Physics	University of Calgary
Research Assistant	June, 95	Physics	University of Calgary
Research Assistant	May, 97 to April, 98	Physics	University of Calgary
Associate Scientist (Post Doctorate Fellow)	May, 98 to Nov. 2000	Physics	University of Bern
Post Doctorate Fellow	Dec. 2000 to June 2001	IGPP	UCLA
Research Assistant Geophysicist	July 2001 to June 2008	IGPP	UCLA
Research Associate Geophysicist	July 2008 to June 2015	IGPP	UCLA
Research Geophysicist	July 2015 to present	IGPP	UCLA

### Curriculum :

- Participated in Van Nuys Middle School College and Career Day, Spring, 2018.
- Participated in Porter Middle School Career day, Spring, 2017.
- Participated in Maple Ave Middle School Pen Pal program, 2015-2016.
- Participated in Harmony Elementary School Career day, Spring, 2015.
- Earth and Space Science 293, Space Physics Journal Club, UCLA, Fall, 2006.
- Taught Earth and Space Science 9, Solar System and Planets, Summer, 2005.
- Taught Earth and Space Science 9, Solar System and Planets, Summer, 2004.
- Participated in faculty selection committee during June, 1997.
- Elected to participate in selection of physics and astronomy department head at University of Calgary in November, 1994.
- Participated in curriculum review at University of Calgary in August, 1994.

### Offices Held/Club Memberships :

- Institute of Geophysics and Planetary Physics Seminar Chairman, 2008 to 2009.
- Member of the American Geophysical Union from 1993 to 1998 and May, 2001 to present.
- Member of the European Geophysical Society from April 1999 to present.
- Member of Canadian Association of Physicists from 1996 to 1999.
- Member of Physics and Astronomy Student Association at University of Calgary from 1992 to 1997.
- Graduate Student Representative at University of Calgary from 1993 to 1994.
- President of Sigma Pi Sigma Physics Club from 1991 to 1992.

### **Conference Organization and Committees :**

- Committee for NSF Ground Magnetometer Array Workshop Report.
- Committee for AMPERE core users group in May 2015.
- Committee for the SAMBA-iMAGS Workshop in Punta Arenas, Chile in Oct. 2013.
- Merit Increase Committee for the Department of Earth, Planetary, and Space Sciences from 2011-2017 .
- Committee for the STAMMS-2 conference in Orleans, France Sept. 2007.
- Committee for the Turbulence Workshop at the Institute of Geophysics Planetary Physics in Los Angeles, California in May 2005.
- Committee for the Mini-workshop to explore the establishment of a UCLA/CalSpace Center for Excellence.
- World Wide Web Administrator for the Joint SOHO-ACE Workshop 2001 on Solar and Galactic Composition.
- Treasurer: 7<sup>th</sup> CELIAS Postlaunch Workshop in Couvet, Switzerland in October, 1999.
- Committee for the 23rd International Cosmic Ray Conference in Calgary, Canada in July, 1993.

### **Conference Chairs :**

- Session Chair (Friday Afternoon) for the First Magnetospheric Multiscale Mission Community Science Workshop in Los Angeles, CA in September, 2016.
- Session Chair (Tuesday Morning) for Mechanics of the Magnetospheric System and Effects on the Polar Region Workshop in Torres del Paine, Chile in October, 2013.
- Session Chair (Tuesday Morning) for Cluster Themis meeting in Boulder Colorado in October, 2012.
- Session Chair (Session Number: SM24A) for Fall AGU at San Francisco, California in December, 2008.
- Session Chair (Session Number: SM54A) for Fall AGU at San Francisco, California in December, 2007.
- Session Chair (Session Number: NG31B) for Fall AGU at San Francisco, California in December, 2006.
- Session Chair (Session Number: SM11B and SM12B) and student paper judge for Spring AGU at Montreal, Canada in May, 2004.
- Session Chair (Session Number: SM21B) for Fall AGU at San Francisco, California in December, 2003.
- Assistant Chair at Living with a Star Geospace 2002 Panel Review at Washington D.C. in January, 2003.
- Session Chair (Session Number: SM21D) for Fall AGU at San Francisco, California in December, 2002.

### Seminar Presentations :

- **Invited Speaker** for Seminar talk at the University of Calgary in August, 1992.
- **Invited Speaker** for the Outdoor Pursuits program in Calgary, Alberta, Canada in October, 1995.
- **Invited Speaker** for open house talk at Rothney Astrophysical Observatory in April, 1997.
- **Invited Speaker** for seminar given at the Physikalisches Institut, Universität Bern in May, 1999.
- **Invited Speaker** for the Astronomische Gesellschaft Bern in August, 2000. Talk entitled: The August 11, 1999 solar eclipse temperature profiles of the Inner Corona.
- **Invited Speaker** for seminar given at the University of California, Los Angeles, ESS 288B Atmospheric Sciences 275B Space Physics Seminar in January, 2001. Talk entitled: The August 11, 1999 solar eclipse temperature profiles of the Inner Corona.
- **Invited Speaker** for seminar given at the University of California, Los Angeles, ESS 288B Atmospheric Sciences 275B Space Physics Seminar in October, 2001. Talk entitled: Determining the Plasmopause Boundary with ULF Pulsations using High and Low Latitude Ground-based Magnetometers.
- **Invited Speaker** for seminar at University of Arizona, Tucson in April, 2002. Talk entitled: Determining the Plasmopause Boundary with ULF Pulsations using High and Low Latitude Ground-based Magnetometers.
- **Invited Speaker** for seminar at NASA Jet Propulsion Laboratory, Pasadena in April, 2002. Talk entitled: Determining the Plasmopause Boundary with ULF Pulsations using High and Low Latitude Ground-based Magnetometers.
- **Invited Speaker** for seminar at Los Alamos National Laboratory, Los Alamos in April, 2002. Talk entitled: Determining the Plasmopause Boundary with ULF Pulsations using High and Low Latitude Ground-based Magnetometers.
- **Invited Speaker** for seminar at Boston University, Boston in October, 2002. Talk entitled: Determining the Plasmopause Boundary with ULF Pulsations using High and Low Latitude Ground-based Magnetometers.
- **Invited Speaker** for seminar given at the University of California, Los Angeles, ESS 288B Atmospheric Sciences Space Physics Seminar in November, 2002. Talk entitled: The nature of fluctuations observed by Cluster in the plasma sheet.
- **Invited Speaker** for seminar given at the University of California, Los Angeles, ESS 286A in January, 2003. Talk entitled: The nature of fluctuations observed by Cluster in the plasma sheet Planetary Science Seminar.
- **Invited Speaker** for seminar given at the University of California, Los Angeles, in February, 2003. Talk entitled: Plasma sheet turbulence observed by Cluster Institute of Geophysics and Planetary Physics Seminar Series.
- **Invited Speaker** for seminar given at the University of California, Los Angeles, ESS 288B Atmospheric Sciences Space Physics Seminar in January, 2004. Talk entitled: Plasma sheet turbulence.

- **Invited Speaker** for seminar given at the Bartol Research Institute, University of Delaware in October, 2004. Talk entitled: Plasma sheet turbulence observed by Cluster.
- **Invited Speaker** for seminar given at IGPP, University of California, Riverside in November 2005. Talk entitled: Non-self similar scaling of magnetic field fluctuations in the solar wind and the plasma sheet.
- **Invited Speaker** for ESS 288B Atmospheric Sciences Space Physics Seminar in January 2006. Talk entitled: A trip to the Antarctic Ice Cap.
- **Invited Speaker** for ESS 288B Atmospheric Sciences Space Physics Seminar in February 2006. Talk entitled: Substorm Onsets and the Harang Discontinuity.
- **Invited Speaker** for seminar given at IGPP, University of California, Los Angeles in November 2007. Talk entitled: Correlative Scale, Taylor Scale, and Effective Magnetic Reynolds Number Determination from Plasma Sheet and Solar Wind Magnetic Field Fluctuations.
- **Invited Speaker** for seminar given at IGPP, University of California, Los Angeles in April 2010. Talk entitled: Anisotropies Observed in Magnetic Field Fluctuations Measured in the Solar Wind and Foreshock.
- **Invited Speaker** for ESS 288B Atmospheric Sciences Space Physics Seminar in March 2012. Talk entitled: Installation of Magnetometer Arrays in Antarctica.
- **Invited Speaker** for ESS 288B Atmospheric Sciences Space Physics Seminar in November 2013. Talk entitled: Auroral Electrojet indices in the Northern and Southern Hemisphere: a statistical study.
- **Invited Speaker** for Space Physics Research Group Seminar at University of California, Berkeley (Physics 290B) in October 2014. Talk entitled: Conjugate Northern and Southern Magnetic Substorms in Magnetometer Data.
- **Invited Speaker** for ESS 288B Atmospheric Sciences Space Physics Seminar in October 2014. Talk entitled: Omega Bands: An Auroral Enigma.
- **Invited Speaker** for Physics Colloquia at St. Olaf College, Minnesota in November 2014. Talk entitled: Conjugate Northern and Southern Magnetic Substorms in Magnetometer Data.
- **Invited Speaker** for Laboratory for Atmospheric and Space Physics Seminar in April 2015. Talk entitled: Anisotropies Observed in Magnetic Field Fluctuations Measured in the Solar Wind and Foreshock.
- **Invited Speaker** for the University Centre in Svalbard in November 2015. Talk entitled: Differences in Onset Time of Conjugate Magnetic Substorms.
- **Invited Speaker** for National Oceanic and Atmospheric Administration Seminar in August 2016. Talk entitled: The Spherical Elementary Current Systems Method and Space Weather.
- Education and Public Outreach Seminar for Sierra Club in August 2017. Talk entitled August 21, 2017 Solar Eclipse.

- **Speaker** for Department of EPSS at UCLA ARTEMIS/THEMIS seminar in April 2018. Talk entitled: Temporal and Spatial Development of vTECs During Substorms.
- **Invited Speaker** for German Research Centre for Geosciences seminar in Potsdam, Germany in October 2018 . Talk entitled: Temporal and Spatial Development of vTECs During Substorms.
- **Invited Speaker** for Institut für Geophysik und extraterrestrische Physik seminar at Technische Universität Braunschweig in Braunschweig, Germany in October 2018. Talk entitled: Temporal and Spatial Development of vTECs During Substorms.
- **Invited Speaker** for Department of Physics Seminar at the University of New Brunswick, Fredericton, Canada in November 2018. Talk entitled: Temporal and Spatial Development of vTECs During Substorms.
- **Invited Speaker** for NASA Jet Propulsion Laboratory in Pasadena, CA in January 2019. Talk entitled: Temporal and Spatial Development of vTECs During Substorms.
- **Speaker** for Department of EPSS at UCLA ARTEMIS/THEMIS seminar in April 2020. Talk entitled: Temporal and Spatial Development of TECs During Substorms.

#### **Conference Presentations :**

- Oral presentation for the American Geophysical Union Spring Conference at Baltimore, Maryland in May, 1994.
- Oral presentation at Freja Conference in February, 1995.
- Oral presentation at the Division of Aeronomy and Space Physics Conference at Banff, Alberta in February, 1995.
- Oral presentation at International Association of Geomagnetism and Aeronomy (IAGA) meeting Boulder, Colorado in July, 1995 (presented by M.G. Henderson).
- Oral presentation at American Geophysical Union Fall Conference in December, 1995 (presented by M.G. Henderson).
- Oral presentation at the Division of Aeronomy and Space Physics Conference in Ottawa, Ontario in February, 1996.
- Oral presentation for the 31<sup>st</sup> Committee on Space Research Scientific Assembly at Birmingham, England in August, 1996.
- Poster presentation at US–Finnish Space Physics Conference at Melbourne, Florida in February, 1997.
- Oral presentation at IAGA in Uppsala, Sweden in August, 1997.
- Poster presentation at the annual Canadian Association of Physicists Conference in Calgary, Canada in June, 1997.
- Oral presentation at the 5<sup>th</sup> CELIAS Postlaunch Workshop in Portsmouth, New Hampshire, U.S.A in October, 1998.
- Oral presentation at the American Geophysical Union Fall Conference in San Francisco, California in December, 1998.

- Oral presentation at the 6<sup>th</sup> CELIAS Postlaunch Workshop in Pertisau, Austria in March, 1999.
- Oral presentation at the 24<sup>th</sup> European Geophysical Society in Den Hague, the Netherlands in April, 1999.
- Poster presentation at American Geophysical Union Spring Conference in Boston, Massachusetts, U.S.A. in June, 1999.
- Poster presentation at the 8<sup>th</sup> SOHO Workshop in Paris, France in June, 1999.
- Oral presentation at the 7<sup>th</sup> CELIAS Postlaunch Workshop in Couvet, Switzerland in October, 1999.
- Oral presentation at the American Geophysical Union Fall Conference in San Francisco, California in December, 1999.
- Oral presentation at the 8<sup>th</sup> CELIAS Postlaunch Workshop in Charleston, South Carolina in March, 2000.
- Oral presentation at the European Geophysical Union Conference in Nice, France in April, 2000.
- 2 Oral presentations at the American Geophysical Union Spring Conference in Washington D.C. in May, 2000.
- Poster presentation at the Joint SOHO-ACE Workshop 2001 Solar and Galactic Composition in Bern, Switzerland in March 6 - 9, 2001.
- Oral presentation at the European Geophysical Union Conference in Nice, France in April, 2001.
- Poster presentation at the IGPP Annual Meeting at University of California, Los Angeles in May, 2001.
- Oral presentations at the American Geophysical Union Spring Conference in Boston, Massachusetts, U.S.A. in May, 2001.
- Poster presentation at the Geospace Environment Modeling Workshop in Snowmass, Colorado, U.S.A. in June, 2001.
- Poster presentation at the American Geophysical Union Fall Conference in San Francisco, California in December, 2001.
- Poster presentation at the Magnetospheric Imaging Workshop in Yosemite, California in February, 2002.
- Oral and Poster presentation at the Geospace Environment Modeling Workshop in Snowmass, Colorado, U.S.A. in June, 2002.
- **Invited Speaker**, Oral presentation and Poster presentations at the Geospace Environment Modeling Workshop in Snowmass, Colorado, U.S.A. in June, 2003. Talk entitled: The Magnetotail (in the Student Tutorials).
- Oral presentation at the American Geophysical Union Fall Conference in San Francisco, California in December, 2003.
- Poster presentation at the Living With A Star workshop in Boulder, Colorado, U.S.A. in March, 2004.
- Oral and Poster presentation at the American Geophysical Union Spring Conference in Montreal, Quebec, Canada in May, 2004.
- Poster presentation at the Geospace Environment Modeling Workshop in

- Snowmass, Colorado, U.S.A. in June, 2004.
- Two Poster presentations at the American Geophysical Union Fall Conference in San Francisco, California in December, 2004.
  - Oral Presentation at the Annual Cluster/FGM workshop in London, England. in March, 2005.
  - Oral Presentation at the European Geophysical Union Conference in Vienna, Austria in April, 2005.
  - Poster Presentation at the European Geophysical Union Conference in Vienna, Austria in April, 2005.
  - Oral Presentation at the a Turbulence Workshop held at the Institute of Geophysics and Planetary Physics in Los Angeles, California, USA in May, 2005.
  - Oral Presentation at Solar Wind 11, Whistler, BC, Canada in June 2005.
  - **Invited Speaker** at the a Turbulence Workshop held at Santa Fe, NM organized by J. Borovsky at Los Alamos National Laboratory, in Santa Fe, NM, October, 2005. Talk entitled: Non-self similar scaling of magnetic field fluctuations in the solar wind and the plasma sheet.
  - **Invited Speaker** for Dynamical Processes in Space Plasmas workshop at the Dead Sea, Israel in May 2006. Talks entitled: Spatial correlation of the solar wind from two point measurements and Finite size scaling in the solar wind magnetic field observed in individual slow and fast solar wind intervals.
  - **Invited Speaker** for UCLA Turbulence Workshop at UCLA, Los Angeles, CA in May 2006. Talk entitled: New preliminary effective magnetic Reynolds number estimates from two point measurements for plasma sheet and solar wind.
  - Oral Presentation at the 8<sup>th</sup> International Conference on Substorms in Banff, Canada in March 2006. Talk entitled: Substorm Onsets and the Harang Discontinuity.
  - **Invited Speaker** for Solar wind - magnetosphere coupling conference in Puerto Vallarta, Mexico in November 2006. Talk entitled: Spatial correlation of solar wind and plasma sheet turbulence from two point measurements.
  - Oral Presentations at the 6<sup>th</sup> Annual International Astrophysics Conference in Ohau, Hawaii in March, 2007. Talk entitled: Spatial correlations of solar wind and plasma sheet turbulence from two point measurements.
  - Oral Presentations at the Greenland Space Science Symposium in May 2007. First Talk entitled: Conjugate calculations of AE indices. Second Talk entitled: Substorm onsets and the Harang discontinuity.
  - Oral and Poster Presentations at the Geospace Environment Modeling Workshop in Midway, Utah in June 2007. Talk entitled: Virtual Magnetospheric Observatory. Poster entitled: Relation of Substorm Onset to Local AL Index.
  - Oral Presentations at the Spatio-Temporal Analysis Multipoint Measurements in Space 2 conference in Orleans, France in September 2007. Talk entitled: Correlative scale and effective magnetic Reynolds number



determination from plasma sheet and solar wind magnetic field fluctuations.

- **Invited Speaker** for 15<sup>th</sup> Cluster Workshop and CAA school in Tenerife, Canary Islands in March 2008, Talk entitled: Correlative scale and effective magnetic Reynolds number determination from plasma sheet and solar wind magnetic field fluctuations.
- **Invited Speaker** for the International Polar Year-ICESTAR workshop in Bergen, Norway in April 2008, Talk entitled: Preliminary THEMIS ground magnetometer equivalent ionospheric currents.
- **Invited Speaker** for the Western Pacific Geophysics Meeting in Cairns, Australia in July 2008, Talk entitled: Taylor scale determination from plasma sheet magnetic field fluctuations and power density spectra.
- Oral Presentation for the Western Pacific Geophysics Meeting in Cairns, Australia in July 2008, Talk entitled: Populating and Harvesting Metadata in the Virtual Magnetospheric Observatory.
- **Invited Speaker** for The interface between Plasma Dissipation Processes and MHD Turbulence in Space Plasmas in Santa Fe, New Mexico in October 2008, Talk entitled: Spatial Correlation of Solar Wind and Plasma Sheet Turbulence from Two Point Measurements.
- Two Oral Presentations at the Geospace Environment Modeling Workshop in Snowmass, CO in June 2009. Talks entitled: Equivalent Ionospheric Currents Derived from THEMIS, GIMA, MACCs, Greenland, CARISMA, and CANMOS Magnetometer Arrays; and Anisotropies of the Taylor Scale, Correlation Scale, and Effective Magnetic Reynolds Number Determination from Plasma Sheet Magnetic Field Fluctuations.
- **Invited Speaker** at the Dynamical Processes in Space Plasmas at the Dead Sea, Israel in April, 2010. Talk entitled: Multiple Magnetic Correlation Scales in the Solar Wind.
- **Invited Speaker** and Oral presentation at the Meeting of Americas in Iguassu Falls, Brazil in August, 2010. Talk entitled: A Preliminary Comparison Between SuperDARN Flow Vectors and Equivalent Ionospheric Currents from the GIMA, Greenland, MACCS, THEMIS, CARISMA, and CANMOS ground magnetometer arrays. Talk entitled: Multiple Magnetic Correlation Scales in the Solar Wind.
- **Invited Speaker** and Poster at the 20<sup>th</sup> Cluster Workshop and CAA school in Corfu, Greece in September, 2010. Talk entitled: A Preliminary Comparison Between SuperDARN Flow Vectors and Equivalent Ionospheric Currents from the GIMA, Greenland, MACCS, THEMIS, CARISMA, and CANMOS ground magnetometer arrays. Poster entitled: Getting Data Into & Out of NASAs Virtual Magnetospheric Observatory.
- **Invited Speaker** for International Astrophysics Forum Alpbach, Congress Center Alpbach, Tyrol, Austria in June 2011.
- Poster Presentation at the Geospace Environment Modeling Workshop

- in Santa Fe, NM in June 2011. Poster entitled: Application and Validation of the Spherical Elementary Currents Systems Technique for Deriving Ionospheric Equivalent Currents with the North American and Greenland Ground Magnetometer Arrays.
- Poster Presentation at the 3<sup>rd</sup> Joint Cluster-THEMIS Workshop in Boulder, CO in October 2012. Poster entitled: Observations of Two Different Types of Current Configurations During North South arcs.
  - Poster Presentation at the Chapman Conference on Fundamental Properties and Processes of Magnetotails in Reykjavik, Iceland in March, 2013. Poster entitled: A Statistical Comparison of Auroral Electrojet Indices in the Northern and Southern Hemispheres.
  - Poster Presentation at the Solar, Heliospheric, and INterplanetary Environment Workshop in Lake Lanier, GA in June 2013. Poster entitled: A Comparison of Magnetic Correlation Functions in the Solar Wind.
  - Oral Presentation at the Mechanics of the Magnetospheric System and Effects on the Polar Region Workshop in Oct 2013 in Torres del Paine, Chile. Talk entitled: Differences in Substorm Onset Times at Conjugate Stations: Preliminary Report.
  - **Invited Speaker** at the SAMBA-iMAGS Workshop in Oct 2013 in Punta Arenas, Chile. Talk entitled: Differences in Substorm Onset Times at Conjugate Stations: Preliminary Report.
  - Poster Presentation at the Geospace Environment Modeling Workshop in Norfolk, VA in June 2014. Poster entitled: Conjugate Northern and Southern Magnetic Substorms in Magnetometer Data.
  - Poster Presentation at the Inner Magnetosphere Coupling Workshop in Los Angeles, CA in March 2015. Poster entitled: Spherical Elementary Current Systems Method Identifies the R1/R2 Boundary within 1 deg.
  - Oral Presentation at the University of California, Los Angeles Plasma Fest in Los Angeles, CA in Sept 2015. Talk entitled: Chaos in the Solar Wind.
  - **Invited Speaker** for the Ground-Based Magnetometer Array Planning Workshop in Greenbelt, MD in May 2016. Talk entitled: The Application and Validation of the Spherical Elementary Currents Systems Technique for Deriving Ionospheric Currents with the North American and Greenland Arrays.
  - Oral Presentation at the Solar, Heliospheric, and INterplanetary Environment Workshop in Santa Fe, NM in July 2016. Poster entitled: Complexity Variation in the Interplanetary Magnetic Field between 0.5 and 5.4 AU.
  - Oral Presentation at the Fourth Cluster/THEMIS Workshop in Palm Springs, CA in November 2016. Talk entitled: Occurrence of Auroral Omega Bands and Possible Mechanisms.
  - Oral Presentation at the 13th International Conference on Substorms in

- September 2017. Talk entitled: Temporal and Spatial Development of dB/dt during Substorms.
- Oral Presentation at the International Community Coordinate Modeling Center meeting in Florida 2017. Talks entitled: The Application and Validation of the Spherical Elementary Current Systems Technique for Deriving Ionospheric Currents with the North American and Greenland Ground Magnetometer Arrays and North American and Greenland Ground Magnetometers.
  - Oral and Poster Presentation at the Geospace Environment Modeling workshop in Virginia 2017. Talk entitled: Temporal and Spatial Development of dB/dt During Substorms.
  - Oral Presentation at Committee on space Research Assembly California in 2018. Talk entitled: Temporal and Spatial Development of TECs During Substorms.
  - Oral Presentations at the mini-Geospace Environment Modeling workshop in Washington D.C. in 2018. Talks entitled: Hemispherically Conjugate Magnetometer Observations and The Spherical Elementary Current Systems Method, Dipolarizations, and Substorms.
  - Oral Presentations at the 14th International Conference on Substorms in Tromso, Norway in 2019. Talked entitled: The Source of Auroral Omega Bands.
  - Oral Presentations at the International Space Weather Action Teams workshop in Florida in 2020. Talk entitled: Spherical Elementary Currents and dB/dt results for 17 March 2015 and 7 September 2017.
  - **Invited Speaker** for Ham Radio Science Citizen Investigation workshop in Pennsylvania in 2020. Talk entitled: Temporal and Spatial Development of TECs During Substorms.

### Funded Research Grants

1. Moldwin, M.B., and J.M. Weygand, On Understanding the Origin and Properties of Magnetic Structures in the Solar Wind, submitted to NRA 01-OSS-01 SRT in 2002, award number: NAG5-12823. FUNDED PROPOSAL
2. Angelopoulos, V., NASA THEMIS/MIDEX Phase A, submitted to NASA in 2002, award number: SA3650:15. J.M. Weygand as Research Assistant. FUNDED PROPOSAL RESEARCH
3. McPherron, R.L., A GEM investigation of the asymmetry of magnetic storm effects and their implications regarding ring current injections, submitted to NSF GEM in 2002, award number: ATM-0201798. J.M. Weygand as Research Assistant. FUNDED PROPOSAL
4. Kivelson, M.G., UCLA Cluster II Mission Participation, submitted to NASA in 2002, award number: NAG5-12131. ATM-0201798. J.M. Weygand as Research Assistant. FUNDED PROPOSAL
5. Weygand, J.M., R.L. McPherron, O. Amm, E. Donovan, F. Harald, M. Henderson, F. Honary, T.-S. Hsu, K. Liou, I. Mann, J. Murphree, and G. Parks, Solar wind and IMF control of Substorm onset and development of the current Wedge, submitted to ROSS-2004 in 2004: NNH04ZSS0001N, award number: SECGIP04-0029-0165. FUNDED PROPOSAL
6. Walker, R., S. Joy, L. Bargatze, J.M. Weygand, P. Chi, C.T. Russell, and T. King, Virtual observatories for solar system and space physics, submitted to NNH05ZDA001N-S3CVO in 2005, award number: 05-S3CVO05-0006, 2005. FUNDED PROPOSAL
7. Kivelson, M.G., Magnetometer team at UCLA for the Cluster II Mission, submitted to NASA in 2005, award number: NNG05GF56G. J.M. Weygand as Research Assistant. FUNDED PROPOSAL
8. Hsu, T.-S., R.L. McPherron, and J.M. Weygand, Determination of Relative Timing of Substorm Associated Phenomena Using Multi-Satellite Observations, submitted to NASA NNH06ZDA001N-HGI, 2006. FUNDED PROPOSAL
9. Weygand, J.M., GEM: Influence of solar wind and modes of geomagnetic activity on plasma sheet turbulence, submitted to NSF GEM, award number: NSF 04-576. FUNDED PROPOSAL
10. Matthaeus, W.H., S. Dasso, J.M. Weygand, Continuation of RSSW@1AU Project: Statistical Characterization of Solar Wind Fluctuations at 1AU using multiple spacecraft data, submitted to NASA in 2008. FUNDED PROPOSAL

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| 11. | Kivelson, M.G., Studies of plasma in the terrestrial magnetosphere using data from the Cluster II mission, submitted NASA in 2009, award number: NNX09AH01G.   | FUNDED<br>PROPOSAL                |
| 12. | Weygand, J.M., A. Boudouridis, E. Zesta, A Comparison of Conjugate Auroral Electrojet Indices, NSF Antarctica proposal, submitted to NSF Antarctic Program, 2010.  | FUNDED<br>PROPOSAL                |
| 13. | Weygand, J.M., W.H. Matthaeus, and S. Oughton, Eulerian Decorrelation Functions Derived from Multispacecraft Observations of Interplanetary Magnetic Field Fluctuations, submitted to NSF SHINE, 2011.   | FUNDED<br>PROPOSAL                |
| 14. | Walker, R., T. King, J.M. Weygand (Key Personnel), Virtual Magnetospheric Observatory (VMO), submitted to NASA Goddard NNX12AQ12G, 2012.   | FUNDED<br>UNSOLICITED<br>PROPOSAL |
| 15. | Weygand, J.M., Data Services Upgrade: Spherical Elementary Current System Archive for Magnetosphere-Ionosphere Coupling over North America, submitted to NASA HIDEE, 2013.   | FUNDED<br>PROPOSAL                |
| 16. | Weygand, J.M., Data Services Upgrade: Restoration of OGO and Explorer Fluxgate Magnetometer Data, submitted to NASA HIDEE, 2013.   | FUNDED<br>PROPOSAL                |
| 17. | Walker, R., T. King, J.M. Weygand (Key Personnel), Metadata Additions and Enhancements for the Heliophysics Data submitted to NASA Goddard NNX14AJ09G, 2014.   | FUNDED<br>UNSOLICITED<br>PROPOSAL |
| 18. | Matthaeus, W.H., A.F. Rappazzo, D. Ruffolo, J.M. Weygand, (CoI) M. Wan, A. Usmanov, Trapping, Transport and Dynamic Behavior of Magnetic Connectivity and Energetic Particles in the Inner Heliosphere: Implications for Solar Probe, Solar Orbiter and Heliospheric Prediction. | FUNDED<br>PROPOSAL                |
| 19. | Walker, R., T. King, J.M. Weygand (Key Personnel), Information Model Maintenance with Metadata Additions and Enhancements for the Heliophysics Data Environment, submitted to NASA Goddard, 2015.  | FUNDED<br>UNSOLICITED<br>PROPOSAL |
| 20. | Weygand, J.M., Data Services Upgrade: expansion of Spherical Elementary Current System Data Set for Magnetosphere-Ionosphere Coupling, submitted to NASA HIDEE, 2015.  | FUNDED<br>PROPOSAL                |
| 21. | Weygand, J.M., Investigation of the Differences in Onset Times of Hemispherically Conjugate Substorms, submitted to NSF Baseline NSF 15-545, 2015.   | FUNDED<br>PROPOSAL                |
| 22. | Matthaeus, W.H., J.M. Weygand (Co-I), Multiple Spacecraft Time Space Correlation - Method and Implementation, submitted to NASA Heliophysics Guest Investigator Program, 2016.   | FUNDED<br>PROPOSAL                |
| 23. | Walker, R., T. King, J.M. Weygand (Key Personnel), HPDE Community Data and Simulation Metadata and Standards Services, submitted to NASA Heliosphysics Data Environment, NASA HPDE-80GSFC17C0018 2017.   | FUNDED<br>PROPOSAL                |

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|-----|--|--------------------------------|
| 24. | Hwang, K.-J., J.M. Weygand (Co-I), The Dynamics of Earth's Magnetopause in the Presence of Flow Shear, submitted to NASA Magnetosphere Multiscale Mission Guest Investigator, 2017.  | FUNDED<br>PROPOSAL             |
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