

Juan Carlos Martínez Oliveros

Curriculum Vitae

Education

- 2005–2009 **PhD in Astrophysics**, *Monash University*, Melbourne, Australia.
1999–2004 **M.S. in Astrophysics**, *Saint Petersburg State University*, Saint Petersburg, Russian Federation.

PhD Thesis

- Title *Multi-wavelength analysis in flare seismology and the role of magnetic field dynamics in the seismicity of solar active regions*
Supervisors Professor Paul Cally & Dr. Alina Donea
Description This thesis explored the generation of seismic events associated with highly impulsive flares.

Experience

- 2009–Present **Assistant Research Physicist (I–V.5)**, *Space Sciences Laboratory*, University of California at Berkeley, California, USA.
STEREO Team data reduction researcher and RHESSI Team data reduction researcher
- 2009–Present **Undergraduate and Postgraduate Theses Supervisor**, *Observatorio Astronómico Nacional*, Universidad Nacional de Colombia.
Undergraduate: 2 Completed research works, 1 current; Postgraduate (masters): 2 Completed theses (one laureate and one with highest honors), 4 current
- 2014–2016 **REU mentor**, *Space Sciences Laboratory*, University of California at Berkeley, California, USA.
- 2015 **Visitor Observer**, *Dunn Solar Telescope*, National Solar Observatory, Sunspot, New Mexico, USA.
- 2009–2011 **Postdoctoral Researcher**, *Space Sciences Laboratory*, University of California at Berkeley, California, USA.
STEREO Team data reduction researcher and RHESSI Team data reduction researcher
- 2006–2009 **Teaching Assistant**, *Monash University*, Monash University, Melbourne Australia.
Provided in-class support to second-year engineering students (ENG2091 and ENG2092) and provided in-class support to third-year science students (ASP3012).
- August 2013 **Visitor scientist**, *NorthWest Research Associates Inc (NWRA) – Colorado Research Associates (CoRA)*, Boulder, Colorado, USA.
- January 2010 **Visitor scientist**, *NorthWest Research Associates Inc (NWRA) – Colorado Research Associates (CoRA)*, Boulder, Colorado, USA.

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- August 2008 **Visitor scientist**, *NorthWest Research Associates Inc (NWRA) – Colorado Research Associates (CoRA)*, Boulder, Colorado, USA.
- April 2012 **Visitor scientist**, *National Solar Observatory(NSO)*, Tucson, Arizona, USA.
- July 2012 **SOC team member**, *International Summer School Solar Astrophysics: Modern trends and techniques*, Observatorio Astronómico Nacional, Universidad Nacional de Colombia, Bogotá, Colombia.
- June 2011 **Visitor scientist**, *Observatorio Astronómico Nacional*, Universidad Nacional de Colombia, Bogotá, Colombia.
- 2009–Present **External theses advisor**, *Observatorio Astronómico Nacional*, Universidad Nacional de Colombia, Bogotá, Colombia.
- 2004–2005 **Teaching Assistant**, *Observatorio Astronómico Nacional*, Universidad Nacional de Colombia, Bogotá, Colombia.
Teach and assist second-year master degree in astronomy students for the “Astronomical techniques and instrumentation” course.
- 2004–2005 **Seminar Lecturer**, *Universidad de los Andes*, Bogotá, Colombia.
- 2001–2004 **Observational summer intern**, *Saint Petersburg State University*, Saint Petersburg, Russian Federation.
- Observational astrophysics practice, SAO – Special Astrophysical Observatory, Nizhnij Arkhiz, Russian Federation.
 - Radio astronomical practice, GAO – Main Astronomical Observatory, Pulkovo, Russian Federation.
 - Astrometry practice, Saint Petersburg State University, Saint Petersburg, Russian Federation.

Awards

- 2005 MGS – Monash Graduate Scholarship, Monash University, Melbourne Australia
- 2005 Top of the Ten International Tuition Fee Scholarship, Faculty of Science, Monash University, Melbourne Australia
- 1999 Scholarship of the Ministry of Education and Science of the Russian Federation

Professional affiliations

Member, American Geophysical Union
Member, American Astronomical Society

External Funding

- 2016–2019 **PI**, *Exploring the Observational and Physical Characteristics of Flares with and without Seismic Transients*, \$467,098.
- 2016–2019 **PI**, *Study of the Emission Heights of White-Light Solar Flares and their Hard X-Ray Sources*, \$491,622.
- 2011–2015 **Co-I**, *A Study of White-Light Flares Observed by the Solar Dynamics Observatory*, \$455,837.
- 2012–2015 **Co-I**, *Investigation of electron acceleration in propagating CMEs through combined X-ray and radio observations*, \$352,977.

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Languages

Spanish **Native language**
English **Good**
Russian **Good**

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Publications

- 2017 M. Pulupa, S. D. Bale, J. W. Bonnell, T. A. Bowen, N. Carruth, K. Goetz, D. Gordon, P. R. Harvey, M. Maksimovic, J. C. Martínez-Oliveros, M. Moncuquet, P. Saint-Hilaire, D. Seitz, and D. Sundkvist, The Solar Probe Plus Radio Frequency Spectrometer: Measurement requirements, analog design, and digital signal processing, *Journal of Geophysical Research (Space Physics)*, 122:2836–2854.
- 2016 M. Kuhar, S. Krucker, J. C. Martínez Oliveros, M. Battaglia, L. Kleint, D. Casadei, and H. S. Hudson, Correlation of Hard X-Ray and White Light Emission in Solar Flares, *Astrophys. J.*, 816:6.
- 2016 V. Krupar, J. P. Eastwood, O. Kruparova, O. Santolik, J. Soucek, J. Magdaleníć, A. Vourlidas, M. Maksimovic, X. Bonnin, V. Bothmer, N. Mrotzek, A. Pluta, D. Barnes, J. A. Davies, J. C. Martínez Oliveros, and S. D. Bale, An Analysis of Interplanetary Solar Radio Emissions Associated with a Coronal Mass Ejection, *Astrophys. J. Lett.*, 823:L5.
- 2016 W. G. Fajardo-Mendieta, J. C. Martínez-Oliveros, J. D. Alvarado-Gómez, and B. Calvo-Mozo, Impulsivity Parameter for Solar Flares, *Astrophys. J.*, 818:56.
- 2016 S. D. Bale, K. Goetz, P. R. Harvey, P. Turin, J. W. Bonnell, T. Dudok de Wit, R. E. Ergun, R. J. MacDowall, M. Pulupa, M. Andre, M. Bolton, J.-L. Bougeret, T. A. Bowen, D. Burgess, C. A. Cattell, B. D. G. Chandran, C. C. Chaston, C. H. K. Chen, M. K. Choi, J. E. Connerney, S. Cranmer, M. Diaz-Aguado, W. Donakowski, J. F. Drake, W. M. Farrell, P. Ferreau, J. Fermin, J. Fischer, N. Fox, D. Glaser, M. Goldstein, D. Gordon, E. Hanson, S. E. Harris, L. M. Hayes, J. J. Hinze, J. V. Hollweg, T. S. Horbury, R. A. Howard, V. Hoxie, G. Jannet, M. Karlsson, J. C. Kasper, P. J. Kellogg, M. Kien, J. A. Klimchuk, V. V. Krasnoselskikh, S. Krucker, J. J. Lynch, M. Maksimovic, D. M. Malaspina, S. Marker, P. Martin, J. Martinez-Oliveros, J. McCauley, D. J. McComas, T. McDonald, N. Meyer-Vernet, M. Moncuquet, S. J. Monson, F. S. Mozer, S. D. Murphy, J. Odom, R. Oliverson, J. Olson, E. N. Parker, D. Pankow, T. Phan, E. Quataert, T. Quinn, S. W. Ruplin, C. Salem, D. Seitz, D. A. Sheppard, A. Siy, K. Stevens, D. Summers, A. Szabo, M. Timofeeva, A. Vaivads, M. Velli, A. Yehle, D. Werthimer, and J. R. Wygant, The FIELDS Instrument Suite for Solar Probe Plus - Measuring the Coronal Plasma and Magnetic Field, Plasma Waves and Turbulence, and Radio Signatures of Solar Transients, *Space Sci. Rev.*
- 2015 J. C. Martínez-Oliveros, C. Raftery, H. Bain, Y. Liu, M. Pulupa, P. Saint-Hilaire, P. Higgins, V. Krupar, S. Krucker, and S. D. Bale, STEREO- Wind Radio Positioning of an Unusually Slow Drifting Event, *Solar Phys.*, 290:891–901.

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- 2015 S. Krucker, P. Saint-Hilaire, H. S. Hudson, M. Haberreiter, J. C. Martínez-Oliveros, M. D. Fivian, G. Hurford, L. Kleint, M. Battaglia, M. Kuhar, and N. G. Arnold, Co-Spatial White Light and Hard X-Ray Flare Footpoints Seen Above the Solar Limb, *Astrophys. J.*, 802:19.
- 2015 O. Burtseva, J. C. Martínez-Oliveros, G. J. D. Petrie, and A. A. Pevtsov, Hard X-Ray Emission During Flares and Photospheric Field Changes, *Astrophys. J.*, 806:173.
- 2015 J. C. Buitrago-Casas, J. C. Martínez Oliveros, C. Lindsey, B. Calvo-Mozo, S. Krucker, L. Glesener, and S. Zharkov, A Statistical Correlation of Sunquakes Based on Their Seismic and White-Light Emission, *Solar Phys.*, 290:3151–3162.
- 2014 P. Saint-Hilaire, J. Schou, J.-C. Martínez Oliveros, H. S. Hudson, S. Krucker, H. Bain, and S. Couvidat, Observations of Linear Polarization in a Solar Coronal Loop Prominence System Observed near 6173 Å, *Astrophys. J. Lett.*, 786:L19.
- 2014 J. C. Martínez Oliveros, C. Lindsey, H. S. Hudson, and J. C. Buitrago Casas, Transient Artifacts in a Flare Observed by the Helioseismic and Magnetic Imager on the Solar Dynamics Observatory, *Solar Phys.*, 289:809–819.
- 2014 J.-C. Martínez Oliveros, S. Krucker, H. S. Hudson, P. Saint-Hilaire, H. Bain, C. Lindsey, R. Bogart, S. Couvidat, P. Scherrer, and J. Schou, Chromospheric and Coronal Observations of Solar Flares with the Helioseismic and Magnetic Imager, *Astrophys. J. Lett.*, 780:L28.
- 2014 C. Lindsey, A.-C. Donea, J. C. Martínez Oliveros, and H. S. Hudson, The Role of Magnetic Fields in Transient Seismic Emission Driven by Atmospheric Heating in Flares, *Solar Phys.*, 289:1457–1469.
- 2014 O. Burtseva, J. C. Martínez Oliveros, G. Petrie, and A. Pevtsov, Hard X-ray Emission During Flares and Photospheric Field Changes, *Astrophys. J.*, Submitted.
- 2013 C. Lindsey, A.-C. Donea, and J. C. Martínez Oliveros, Computational Seismic Holography of Transient Seismic Emission from Flares, *Astronomical Society of the Pacific Conference Series*, 478:323.
- 2012 J. C. Martínez Oliveros, C. L. Raftery, H. M. Bain, Y. Liu, V. Krupar, S. Bale, and S. Krucker, The 2010 August 1 Type II Burst: A CME-CME Interaction and its Radio and White-light Manifestations, *Astrophys. J.*, 748:66.
- 2012 J. C. Martínez-Oliveros, C. Lindsey, S. D. Bale, and S. Krucker, Determination of Electromagnetic Source Direction as an Eigenvalue Problem, *Solar Phys.*, 279:153–171.
- 2012 J.-C. Martínez Oliveros, H. S. Hudson, G. J. Hurford, S. Krucker, R. P. Lin, C. Lindsey, S. Couvidat, J. Schou, and W. T. Thompson, The Height of a White-light Flare and Its Hard X-Ray Sources, *Astrophys. J. Lett.*, 753:L26.
- 2012 Y. D. Liu, J. G. Luhmann, C. Möstl, J. C. Martínez-Oliveros, S. D. Bale, R. P. Lin, R. A. Harrison, M. Temmer, D. F. Webb, and D. Odstrcil, Interactions between Coronal Mass Ejections Viewed in Coordinated Imaging and in situ Observations, *Astrophys. J. Lett.*, 746:L15.

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- 2012 J. D. Alvarado-Gómez, J. C. Buitrago-Casas, J. C. Martínez-Oliveros, C. Lindsey, H. Hudson, and B. Calvo-Mozo, Magneto-Acoustic Energetics Study of the Seismically Active Flare of 15 February 2011, *Solar Phys.*, 280:335–345.
- 2011 J. C. Martínez Oliveros, S. Couvidat, J. Schou, S. Krucker, C. Lindsey, H. S. Hudson, and P. Scherrer, Imaging Spectroscopy of a White-Light Solar Flare, *Solar Phys.*, 269:269–281.
- 2009 J. C. Martínez-Oliveros and A.-C. Donea, Magnetic field variations and seismicity of solar active regions, *Mon. Not. Roy. Astron. Soc.*, 395:L39–L42.
- 2008 J. C. Martínez-Oliveros, H. Moradi, and A.-C. Donea, Seismic Emissions from a Highly Impulsive M6.7 Solar Flare, *Solar Phys.*, 251:613–626.
- 2008 J. C. Martínez-Oliveros, A.-C. Donea, P. S. Cally, and H. Moradi, Helioseismic analysis of the solar flare-induced sunquake of 2005 January 15 - II. A magnetoseismic study, *Mon. Not. Roy. Astron. Soc.*, 389:1905–1910.
- 2007 J. C. Martínez-Oliveros, H. Moradi, D. Besliu-Ionescu, A.-C. Donea, P. S. Cally, and C. Lindsey, From Gigahertz to Millihertz: A Multiwavelength Study of the Acoustically Active 14 August 2004 M7.4 Solar Flare, *Solar Phys.*, 245:121–139.

Conferences

- 2016 **Oral presentation**, 2016 AGU Fall Meeting, 12 – 16 December, San Francisco, California, USA.
- 2016 **Organizer and SOC member**, IAUS 327: *Fine Structure and Dynamics of the Solar Atmosphere*, 9 October – 13 October, Cartagena, Colombia.
- 2016 **Poster presentation and session chair**, AOGS 2016, 31 July – 5 August, Beijing, China.
- 2016 **Invited talk**, 2016 Coolstars 19, 6–10 June, Uppsala, Sweden.
- 2016 **Poster presentation**, 2016 SPD Meeting, May 31st to June 3rd, Boulder, Colorado, USA.
- 2015 **Oral presentation and session chair**, 2015 AGU Fall Meeting, 14 – 18 December, San Francisco, California, USA.
- 2015 **Oral**, 14th RHESSI Workshop, 12-14 August 2014, NJIT, Newark, USA.
- 2015 **Oral and Poster presentation**, TESS 2015 – Triennial Earth-Sun Summit, 26 April – 1 May, Indianapolis, Indiana, USA.
- 2015 **Oral presentation, core member**, ISSI Workshop series: “Implications for coronal heating and magnetic fields from coronal rain observations and modelling”, 23 –27 February, Bern, Switzerland.
- 2014 **Poster presentation**, 2014 AGU Fall Meeting, 15 – 19 December, San Francisco, California, USA.
- 2014 **Poster presentation**, 1st Solar Orbiter Summer School, 22–25 September, L’Aquila, Italy.
- 2014 **Poster presentation**, 2014 224th AAS Meeting, 1–5 June, Boston, Massachusetts, USA.

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- 2014 **Session chair**, *13th RHESSI Workshop, 1-4 April 2014, FHNW Windisch, Switzerland.*
- 2013 **Poster presentation**, *2013 AGU Fall Meeting, 9 – 13 December, San Francisco, California, USA.*
- 2013 **Poster presentation**, *2013 SPD Meeting, 7 – 11 July, Bozeman, Montana, USA.*
- 2013 **Invited talk**, *2013 AGU Meeting of the Americas, 14 – 17 May, Cancún, México.*
- 2012 **Poster presentation**, *Boulder Solar Day Workshop 2012, 20 March, Boulder, Colorado, USA.*
- 2012 **Poster presentation**, *2012 AGU Fall Meeting, 9 – 13 December, San Francisco, California, USA.*
- 2012 **Oral and poster presentation**, *RHESSI Workshop: Tracing the Connections, 27 November – 2 December, Petaluma, California, USA.*
- 2012 **Poster presentation**, *2012 SPD Meeting, 10 – 14 June, Anchorage, Alaska, USA.*
- 2012 **Invited talk**, *Boulder Solar Day Workshop 2012, 20 March, Boulder, Colorado, USA.*
- 2011 **Oral and poster presentation**, *2011 AGU Fall Meeting, 5 – 9 December, San Francisco, California, USA.*
- 2011 **Oral presentation**, *12th RHESSI General Workshop, 17 – 21 October, 2011, Purple Mountain Observatory, Nanjing, China.*
- 2011 **Oral presentation**, *Moscow international workshop in solar physics: The Sun from quiet to active – 2011, 29 August – 2 September, Moscow, Russian Federation.*
- 2011 **Poster presentation**, *2011 SPD Meeting, 12 – 16 June, Las Cruces, New Mexico, USA.*
- 2011 **Oral presentation**, *2011 LoHCo meeting, 6 – 7 February, Stanford University, California, USA.*
- 2010 **Poster presentation**, *2010 AGU Fall Meeting, 14 – 18 December, San Francisco, California, USA.*
- 2010 **Oral presentation**, *10th RHESSI General Workshop, 1 – 5 August, 2010, Annapolis, Maryland, USA.*
- 2010 **Poster presentation**, *2010 SPD Meeting, 23 – 27 May, Miami, Florida, USA.*
- 2009 **Poster presentation**, *2009 AGU Fall Meeting, 14 – 18 December, San Francisco, California, USA.*
- 2009 **Oral presentation**, *9th RHESSI General Workshop, 31 August – 5 September 2009, Genova, Italy.*
- 2009 **Poster presentation**, *The Astronomical Society of Australia Annual Scientific Meeting, 5 – 9 July 2009, Melbourne, Australia.*
- 2008 **Oral presentation**, *GONG 2008/SOHO XXI: "Solar-stellar dynamos as revealed by helio- and asteroseismology" 11 – 15 August 2008, Boulder, Colorado, USA..*

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- 2007 **Oral and poster presentation**, *International Astronomical Union Symposium 247: "WAVES & OSCILLATIONS IN THE SOLAR ATMOSPHERE: HEATING AND MAGNETO-SEISMOLOGY"* 17 – 22 September 2007, Porlamar, Isla de Margarita, Venezuela.
- 2007 **Oral and poster presentation**, *SOHO 19/GONG 2007: "Seismology of Magnetic Activity"*, 9 – 13 July 2007, Monash University, Melbourne, Australia.
- 2006 **Poster presentation**, *Multi-Wavelength investigations of the Sun and modern problems of solar activity*, September 28 - October 2, 2006, Nizhnij Arkhiz, Russian Federation.

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