

# J. Sebastián Castellanos Durán

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## Curriculum Vitae

### RESEARCH INTERESTS

- **Observational solar physics, photosphere and chromosphere.**
- **Spectropolarimetry, instrumentation, solar magnetism.**
- **Radiation processes, Magnetic energy release and solar flares.**

### EDUCATION

10/2017-now **Ph.D. in Physics** - The International Max Planck Research School (IMPRS) for Solar System Science at the University of Göttingen.

Advisors: Prof. Dr. S. Solanki and Dr. A. Lagg, (MPS, Germany.)

8/2014-10/2016 **Master of Science in Astronomy (M. Sc.)**, Universidad Nacional de Colombia (UNAL.)

Two years program.

**M. Sc. thesis** at OAN - Colombia in collaboration with FHNW - Switzerland.

Title: *Study of photospheric vector magnetic field changes during solar flares.*

Advisors: Dr. L. Kleint, (FHNW, Switzerland) and Prof. B. Calvo-Mozo, (OAN, Colombia.)

Referees: Dr. M. Cheung (LMSAL, USA), Dr. A. Asensio Ramos (IAC, Spain.)

Thesis Award: Meritorious distinction.

2008-2013 **Bachelor of Science in Physics**, Universidad Nacional de Colombia.

Five years program

**Diploma thesis** at Observatorio Astronómico Nacional, Colombia.

Title: *Study of the excess in White-Light during Solar Flares via the Backwarming model.*

Advisor: Prof B. Calvo-Mozo, OAN in collaboration with Dr. J.C. Martínez Oliveros, UC Berkeley.

Thesis grade: 5/5.

### PROFESSIONAL EXPERIENCE

1/2017-4/2017 Internship in Solar Physics at Max Planck Institute for Solar System Research. Germany.

6/2015-8/2015 Master thesis in collaboration with FHNW - IAESTE trainee, Windisch, Switzerland.

6/2014-8/2014 Internship in Astrophysics and Astronomical Instrumentation at INAOE. Puebla, Mexico.

6/2013-8/2013 IRIS Student Summer Intern Research Program at Stanford University and Lockheed Martin Solar and Astrophysics Laboratory. CA, U.S.A..

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## SELECTED HONORS

- 2017-2020 Graduate Research Fellowship, The German Academic Exchange Service (DAAD), Germany.  
2015-2016 Young Research Fellowship, National research council COLCIENCIA. Colombia.  
2015 UNAL travel grant for Master thesis - Two months visit to the FHNW, Switzerland.  
2015 National Republic Bank of Colombia travel grant for 3rd SOLARNET Workshop. Spain.  
2015 OAN travel grant for 3rd SOLARNET Workshop and school. Spain.  
2014 Travel grant for COCOA IV. Colombia.  
2014 INAOE travel grant for Guillermo Haro 2014 - Advanced School. Mexico.  
2012 RHESSI travel grant for RHESSI meeting - Tracing the Connection. CA - U.S.A..  
2012 Travel grant for AGU fall meeting. CA - U.S.A..

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## PUBLICATIONS

- 2017 *A Statistical Study of Photospheric Magnetic Field Changes During 75 Solar Flares.*  
**J.S. Castellanos Durán**, L. Kleint & B. Calvo-Mozo.  
ApJ 2018, 852, 25.
- 2015 *Cambios tipo Heaviside durante flares: Análisis de la componente en la línea de la visual y el vector campo magnético.*  
**J.S. Castellanos-Durán**, L. Kleint & B. Calvo-Mozo.  
Proceedings Vol 6 FACIEN. ISBN 2256-3830.
- 2015 *El modelo del Backwarming y un nuevo método observacional para entender los flares que emiten luz blanca.*  
**J.S. Castellanos-Durán**, & B. Calvo-Mozo.  
Proceedings Vol 6 FACIEN. ISBN 2256-3830.
- 2015 *¿Qué sabemos de las galaxias?: Comparación de propiedades integradas vs. espacialmente resueltas usando espectroscopía de campo integral.*  
**J.S. Castellanos-Durán**, & F.F. Rosales-Ortega.  
Proceedings Vol 6 FACIEN. ISBN 2256-3830.
- 2012 *Caracterización de la emisión en luz blanca y en rayos-X de la fulguración GOES M6.6 del 18 de Febrero de 2011 usando SDO y RHESSI.*  
**J.S. Castellanos-Durán**, J.D. Alvarado-Gomez & B. Calvo-Mozo.  
Proceedings ISBN 978-958-761-308-7.

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## SUPERVISION

- 4/2017-now Co-supervision of a diploma thesis, Angel Daniel Martinez.  
Universidad Nacional de Colombia. *Host advisor: Prof. Benjamín Calvo-Mozo.*
- 4/2017-6/2018 Co-supervision of a diploma thesis, Willinton Jhomar Caicedo Tez.  
Universidad Nacional de Colombia. *Host advisor: Prof. Benjamín Calvo-Mozo.*

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## OBSERVATIONAL EXPERIENCE

- 6/2018 GREGOR observatory & co-observation with IRIS and HINODE (IHOP358). Tenerife, Spain.

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## SELECTED TALKS AND CONTRIBUTIONS IN CONFERENCES

- 09/2018 HINODE-12 Meeting 2018. Spain (contributed talk.)  
06/2018 IRIS9 Meeting 2018. Germany (e-poster.)  
10/2017 GREGOR Meeting 2017. Germany (contributed talk.)

- 10/2016 IAU Symposium 327 (IAUS327): "Fine structure and dynamics of the solar atmosphere". Colombia (contributed talk.)
- 10/2016 XV Latin American Regional IAU Meeting 2016 (XV LARIM.) Colombia (contributed talk.)
- 5/2015 3rd SOLARNET Workshop. Spain (contributed talk.)
- 12/2014 IV Congreso Colombiano de Astronomía y Astrofísica. Colombia (3 contributed talks.)
- 6/2014 Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun. U.S.A. (poster.)
- 5/2014 Astrolunch at Universidad de los Andes. Colombia.
- 8/2013 Stanford University Summer projects Workshop. U.S.A. (poster.)
- 10/2013 3th Seminar on New Trends on Engineering at Universidad Autónoma. Colombia.
- 12/2012 AGU Fall Meeting. U.S.A. (poster.)
- 11/2012 RHESSI Workshop: Solar in Sonoma. U.S.A. (contributed talk.)
- 7/2012 Solar Astrophysics School: Modern Trends and Techniques, Colombia (poster.)
- 6/2012 National meeting for researching and development "ENID 2012". Colombia (contributed talk.)
- 8/2010 II Congreso Colombiano de Astronomía y Astrofísica "COCOA II". Colombia (attended.)
- 05/2015 3rd SOLARNET School "Solar Magnetic Fields: Modeling and Measuring Techniques". Spain.
- 12/2014 Escuela Andina de Astronomía y Astrofísica: Visión Moderna de la Cosmología. Ecuador.
- 9/2014 Advanced School on Integral Field Spectroscopy Techniques and Analysis (LOC.) Mexico.
- 7/2012 International Summer School - Solar Astrophysics: Modern Trends and Techniques. Colombia.
- 5/2012 Fourth School in Physical Mathematics: Quantum Integrable Systems. Colombia.
- 8/2010 Extragalactic Astronomy School. Colombia.

## OUTREACH

- 5/2017 Outreach talk during the "Jueves bajos las Estrellas" at OAN, Bogotá, Colombia.
- 2/2017 Night of science, Göttingen, Germany.
- 9/2015 Naturama day of science, Aarau, Switzerland.
- 2011-2016 Weekly Astronomy observations at OAN. Bogotá, Colombia.
- 5/2015 Spacio review talk about solar magnetic fields at District Planetarium. Bogotá, Colombia.
- 2013-2014 Book editor's assistant: *Astronomía para todos. Retos modernos de una ciencia milenaria*. ISBN 978-958-761-656-9. Universidad Nacional de Colombia.
- 2012-2014 One of three people allowed to give tours on the historic part of OAN. It is the oldest observatory in Latin America. Bogotá, Colombia.
- 10/2014 Spacio review talk about Integrated field spectroscopy with CALIFA and PINGS surveys: emission line detection methods and integrated galaxy properties at District Planetarium. Bogotá, Colombia.
- 4/2014 Spacio review talk about the Sun and White-light flares at District Planetarium. Bogotá, Colombia.
- 6/2012 Co-responsible for Venus transit streaming, watched by 80.000 people at Unimedios - UNAL.

## OTHER SKILLS

Languages: Spanish (native), English, German (B1.)  
 Computer skills: IDL, SSWIDL, Python, IRAF, Linux, L<sup>A</sup>T<sub>E</sub>X.

J. Sebastián Castellanos Durán