

Dr. Marja K. Seidel

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Education

- 2012–2015 **Ph.D. in Astrophysics** Instituto de Astrofísica de Canarias (IAC) & Universidad de La Laguna, La Laguna, Spain
Thesis: *An integral view on bar-driven secular evolution and its influence on bulges*
Advisor: Dr Jesús Falcón Barroso (IAC) - graduation with maximum distinction (cum laude): Oct 16, 2015
- 2011–2012 **Master in Astrophysics** Universidad de La Laguna, La Laguna, Spain
Thesis: *Bulge and disk evolution after spirals: from stellar populations to disk heating*
Advisor: Dr Jesús Falcón Barroso (IAC)
- 2010–2011 **Exchange semester with DAAD scholarship** 6 months (Sept-January) Universidad de La Laguna, La Laguna, Spain
Pursuing my studies in Physics and Earth and Space Sciences
Guided research project on extrasolar planets in collaboration with the Instituto de Astrofísica de Canarias
- 2008–2011 **Bachelor of Physics** Jacobs University, Bremen, Germany
Thesis: *Suitability of a NeCu-70 Deep UV Laser for Raman Spectroscopy*
Advisor: Dr Arnulf Materny (Jacobs University Bremen)
(Grade point average of 1.5 on a scale of 1 to 5 (for both BSc.))
- 2008–2011 **Bachelor of Earth and Space Sciences** Jacobs University, Bremen, Germany
Thesis: *Detection of CoRoT-Exoplanets through ground-based follow-up and an analysis of the detection reliability*
Advisor: Dr Hans Deeg (IAC), Dr Joachim Vogt (Jacobs University Bremen)
- 2006–2008 **High School Diploma** graduated as top of class Theodor-Heuss-Gymnasium, Waltrop, Germany
Secondary education: bilingual German-French diploma, representative of the graduating class

Research interests

galaxy evolution: secular evolution in comparison with hierarchical clustering, dynamics of galaxies, influence of the dark matter component, barred galaxies, bulges, star forming rings, AGN feeding and feedback; **stellar populations:** full-spectral fitting codes, decoupling of stellar and kinematic component; **techniques:** use of integral field units

Research experience

- 2015 – now **Postdoc position in Astrophysics** Carnegie Observatories, Pasadena, CA, USA
Independent research on galaxy structure, dynamics and extragalactic distance scale
Advisor: Dr Barry Madore (Carnegie Observatories)
- 2013 **Extended research stay** (July–September) Mount Stromlo Observatory, Canberra, Australia
WiFeS observations on galactic bulges and their analysis
Host: Dr Kenneth Freeman (MSO)
- 2009 **Summer intern** (June–July) Max Planck Institute for Extraterrestrial Physics, Munich, Germany
Research on galaxy clusters, examining position of the BCG (brightest cluster galaxy)
Advisor: Dr Hans Böhringer (MPE)
- 2007–2009 **International Astronomical Youth Camp (IAYC)** (3 weeks) Czech Republic, Germany, Poland
Participation in three international astronomical youth camps during the summer (each three weeks) ; conduction of own small research projects

Awards

2011– 2015	IAC Ph.D. fellowship Fellowship <i>Astrofísico Residente</i> of the IAC for 4 years of funding (including MSc.)	Instituto de Astrofísica de Canarias, La Laguna, Spain
2015	CONVIVE award Award for helping to promote and strength the work environment at the IAC or its international projection	Instituto de Astrofísica de Canarias, La Laguna, Spain
2015	Best Poster at the EWASS conference Award and Talk given to the three best posters at the largest astronomical conference of the world	EWASS, 22-26 June 2015, Tenerife, Spain
2014	Poster-Talk winner Award given to the three best posters and subsequent talks	IAU Symposium 311, 21-25 July 2014, Oxford UK
2008-2011	Merit-based Scholarship Scholarship to attend Jacobs University	Jacobs University, Bremen, Germany
2010-2011	DAAD Fellowship DAAD fellowship for my exchange semester at the Universidad de La Laguna	Germany
2009-2010	President's List Award for outstanding academic achievement (top 5%)	Jacobs University, Bremen, Germany
2010	Freiherr-vom-Stein-Award nomination Nomination by the city of Bremen for the Freiherr-vom-Stein-Award 2010 for social and corporate innovation	Bremen, Germany
2008-2009	DPG membership 1 year membership in the DPG (German Physics society) for excellence in physics (high school diploma)	Germany
2008	Apollinaire prize Apollinaire prize for excellence in French (high school diploma)	Germany

Conference presentations, colloquia and seminars

2014	Poster + Selected Talk Poster on <i>Galactic Bulges: The importance of Secular Evolution versus Early Formation Scenarios</i> and selected talk as poster winner	IAU Symposium 311, 21-25 July 2014, Oxford UK
2014	Highlight Talk <i>Galactic Bulges: The importance of Secular Evolution versus Early Formation Scenarios</i>	IAU Symposium 309, 7-11 July 2014, Vienna, Austria
2014	Invited Talk - 23th August 2014 <i>Galactic Bulges and Bars: Secular Evolution versus Early Formation Scenarios</i>	St Xavier's College, Kathmandu, Nepal
2013	Seminar - 13th September 2013 <i>An integral view on bar-driven secular evolution</i>	Mount Stromlo Observatory, Canberra, Australia
2013	Seminar - 4th September 2013 <i>An integral view on bar-driven secular evolution</i>	Swinburne University of Technology, Melbourne, Australia
2013	Colloquium - 31st July 2013 <i>An integral view on bar-driven secular evolution</i>	AAO, Sydney, Australia (weekly colloquium)
2013	Contributed Talk - 13th June 2013 <i>An integral view on bar-driven secular evolution</i>	Santa Cruz, Spain (IAC Our Science Day 2013)
2013	Contributed Talk <i>An integral view on bar-driven secular evolution</i>	The Role of Bars in Galaxy Evolution, 13-17 May 2013, Granada, Spain
2012	Poster - August 2012 <i>Constraints on secular evolution in unbarred spiral galaxies: disentangling disk heating agents</i>	IAU General Assembly, SpS3: Secular Evolution of Galaxies, Beijing, China
2012	Contributed Talk <i>Constraints on secular evolution in unbarred spiral galaxies: disentangling disk heating agents</i>	10th Spanish Astronomical Society meeting, Valencia, Spain

Observing Experience

- 2012-2014 **IFU SAURON on the 4.2m William Herschel Telescope** Roque de los Muchachos Observatory, La Palma, Spain
Obtention of integral field spectra for my Ph.D. project and related projects, total: 24 nights; PI for 16 nights
- 2013 **IFU WiFeS on the 1.3m Telescope** Siding Spring Observatory, Australia
Extragalactic Archeology: dissecting galactic bulges in space and time, 3 nights, (Col; PI: Kenneth C. Freeman(RSSA))
- 2010 **Imaging at the IAC 80-cm** Teide Observatory, Tenerife, Spain
Obtention of light curves as part of the photometric follow-up for CoRoT, 3 nights, 2010; PI: Hans Deeg (IAC) (I was not part of the original observation proposal, but joint for my undergraduate thesis project)
- 2010 **Imaging at 1.3-m telescope** Skinakas Observatory, Crete, Greece
Observation of globular clusters, 1 night, PI: Marcus Brueggen, part of undergraduate training

Successful Telescope Proposals

- 2014 **IFU MUSE** VLT in Paranal, Chile
MUSE Science Verification Proposal: *Searching for a fossil record of AGN feeding and feedback*; 2h (service time) (Col; PI: Dimitri A. Gadotti (ESO))
- 2014 **IFU SAURON on the 4.2m William Herschel Telescope** Roque de los Muchachos Observatory, La Palma, Spain
A pair of lenses for the eye of SAURON, 3 dark nights, (PI)
- 2013 **IFU SAURON on the 4.2m William Herschel Telescope** Roque de los Muchachos Observatory, La Palma, Spain
An integral view of bar-driven secular evolution in disk galaxies 3, 4 dark nights, (PI)
- 2013 **IFU WiFeS on the 1.3m Telescope** Siding Spring Observatory, Australia
Extragalactic Archeology: dissecting galactic bulges in space and time, 3 nights, (Col; PI: Kenneth C. Freeman(RSSA))
- 2013 **IFU SAURON on the 4.2m William Herschel Telescope** Roque de los Muchachos Observatory, La Palma, Spain
An integral view of bar-driven secular evolution in disk galaxies 2, 4 dark nights, (PI)
- 2013 **Long-slit spectroscopy with Osiris at the GTC 10.4m telescope** Roque de los Muchachos Observatory, La Palma, Spain
Secular Evolution in Disk Galaxies: the Relationship Between Disk Heating Agents and Stellar Populations, 20h (service time), (Col; PI: Jesús Falcón Barroso (IAC))
- 2012 **IFU SAURON on the 4.2m William Herschel Telescope** Roque de los Muchachos Observatory, La Palma, Spain
An integral view of bar-driven secular evolution in disk galaxies 1, 4 dark nights, (PI)

Teaching & Supervision

- 2014– now **MSc. thesis supervision** Co-supervisor: Jesús Falcón Barroso University of La Laguna, Tenerife, Spain
Unravelling the formation of the counter-rotating stellar disk in NGC4138
- 2012– now **Teaching assistant - Photometry** University of La Laguna, Tenerife, Spain
Teach and prepare classes for this astrophysics course for BSc. and MSc. students
- 2009–2011 **Teaching assistant - General Astrophysics** School of Engineering and Science, Jacobs University, Bremen, Germany
Tutor for General Astrophysics (preparing and giving tutorials)
- 2009–2011 **Teaching assistant - General Earth & Space Sciences** School of Engineering and Science, Jacobs University, Bremen, Germany
Tutor for General Earth and Space Sciences (preparing and giving tutorials)
- 2009–2010 **Teaching assistant - Physics Lab** Natural Science Lab Physics, Jacobs University, Bremen, Germany
Prepare the experiments in the physics lab courses and give guidance to students

Organization and Outreach (selection)

2015	LOC EWASS 2015 Member of the LOC of the European Week of Astronomy and Space Science (EWASS) 2015	La Laguna, Tenerife, Spain
2014	LOC STARMUS 2015 Volunteer at the STARMUS festival - a macro-festival combining science, art and music, keynote speaker Stephen Hawking	Tenerife, Spain
2013– now	Founder of IAC Journal Club Organizing weekly discussions of astro-ph papers based on votes (http://iac.voxcharta.org/)	Instituto de Astrofísica de Canarias, La Laguna, Spain
2011– now	Observatory visits & outreach talks Organization of visits for exchange students and others at the Teide Observatory	Teide Observatory, Tenerife, Spain
2012– now	Ph.D. student representative Member of the Ph.D. student representatives for the IAC	Instituto de Astrofísica de Canarias, La Laguna, Spain
2012–2014	Seminar committee Member of the Seminar Organizing Committee at the Instituto de Astrofísica de Canarias	Instituto de Astrofísica de Canarias, La Laguna, Spain
2014	Outreach talk and workshop Presentation on <i>Wonders of the Universe</i> and construction of spectrographs, solar observations	Green school, Bali, Indonesia
2013 & 2014	LOC & SOC - Our Science Day Member of the LOC & SOC of Our Science Day (organizing an institute internal conference day)	Instituto de Astrofísica de Canarias, La Laguna, Spain
2013	Invited outreach talk Presentation on <i>The Universe nearby</i>	Rotary Club of Western Creek, Canberra, Australia
2009–2011	Student representative for Earth & Space Sciences Jacobs University Open House events	Jacobs University, Bremen, Germany

Computer Skills

operating systems: Linux, Mac OSX, Windows

IFU data analysis tools: pPXF, Gandalf, pingsoft, Qfitsview, XSauron reduction pipeline, pyWiFeS reduction pipeline

Stellar population analysis tools: line strength indices, Steckmap, Starlight

general analysis: IDL, python, Bash, (Py/I)RAF, DS9, Topcat, L^AT_EX, MS Office, CASSY, LabView, ArcGis, GMT, Grass

Languages

German: mother tongue, **English:** fluent, **French:** fluent, **Spanish:** fluent, **Portuguese:** basic

Biographical information

Citizenship **German**

Date of Birth **15 July 1988, Werne, Germany**

Publications

As first author:

- *Dissecting galactic bulges in space and time I: the importance of early formation scenarios vs. secular evolution*, **Seidel, M.**, R. Cacho, T. Ruiz-Lara, J. Falcón-Barroso, I. Perez, P. Sanchez-Blazquez, F. P. A. Vogt, M. Ness, K. Freeman and S. Aniyani, 2014, MNRAS, 446, 2837, doi: 10.1093/mnras/stu2295.

- *Galactic bulges: the importance of early formation scenarios vs. secular evolution*, **Seidel, M.**, R. Cacho, T. Ruiz-Lara, J. Falcón-Barroso, I. Perez, P. Sanchez-Blazquez, F. P. A. Vogt, M. Ness, K. Freeman and S. Aniyán, 2014, in IAU Symp. 309, "Galaxies in 3D across the Universe", B. L. Ziegler, F. Combes, H. Dannerbauer, M. Verdugo, Eds. (Cambridge: Cambridge Univ. Press), in press.
- *Constraints on secular evolution in unbarred spiral galaxies: disentangling disk heating agents*, **Seidel, M.**, Falcón-Barroso J., Gerssen J., Shapiro Griffin K., 2013, in Highlights of Spanish Astrophysics VII, Guirado J. C., Lara L. M., Quilis V., Gorgas J., eds.

In preparation/submitted:

- *The BaLROG project - I. Quantifying the influence of bars on the kinematics in nearby galaxies*, **Seidel, M.**, J. Falcón-Barroso, I. Martínez-Valpuesta, S. Díaz García, H. Salo and E. Laurikainen, J. Knapen, 2015, MNRAS.
- *The BaLROG project - II. Quantifying the influence of bars on the stellar populations in nearby galaxies*, **Seidel, M.**, J. Falcón-Barroso, P. Sánchez-Blázquez, R. Peletier, I. Pérez, I. Martínez-Valpuesta, 2015

As contributing author:

- *The timing precision of transit light-curves*, Deeg, H. J.; **Seidel, M.**; the Corot Photometric Follow-Up Team, 2012, eprint arXiv:1206.1212

In preparation:

- *Dissecting galactic bulges in space and time II: decoupling kinematics and stellar populations*, R. Cacho, **Seidel, M.**, T. Ruiz-Lara, J. Falcón-Barroso, I. Perez, P. Sanchez-Blazquez, F. P. A. Vogt, M. Ness, K. Freeman and S. Aniyán, 2014

References

For more information please contact any of my referees:

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