Aurora Sicilia-Aguilar Curriculum Vitae

Full name and last names: Maria de la Aurora Sicilia Aguilar
Nationality: Spain
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Education:

1995-2000	Undergraduate studies in Physics (Licenciatura, equivalent to MSc), Universidad Autónoma de Madrid, Spain. Graduated in June 2000 with grade 3.78 (over 4). Awarded prize for the best student graduating in Spain in Physics in year 2000, and the best student at the UAM.
March 2003	Master thesis in Astronomy, Universidad Autónoma de Madrid, Spain.
June 2005	PhD in Astronomy, Universidad Autónoma de Madrid, Spain, PhD work done under a predoctoral fellowship at the Harvard-Smithsonian Center for Astrophysics, USA. Grade for the PhD: Sobresaliente (Summa) cum Laude (highest one).

Current and previous positions:

Nov 2015-present	SUPA Advanced Fellow at the University of St Andrews, UK.
Oct 2013-Nov 2015	Research Fellow in Astronomy at the University of St Andrews, UK.
July 2011-Dec 2014	"Ramón y Cajal" tenure-track position at the Universidad Autónoma de Madrid (UAM), Spain. *Cancelled on Dec. 2014 due to **family situation** (see below)*
Sept 2008-June 2011	Personal independent postdoc from the Deutsche Forschungsgemeinschaft. "*The effect of mass and environment on evolution of protoplanetary disks".*
Sept 2005-Aug 2008	Postdoctoral Stipendium at the Max-Planck-Institut für Astronomie (MPIA) (Heidelberg, Germany) within the group of Th. Henning.
Oct 2000-July 2005	Predoctoral Fellow at the Harvard-Smithsonian CfA (Cambridge, MA, USA). Advisor: Lee Hartmann (Smithsonian Astrophysical Observatory). Thesis title: "*Protoplanetary Disk Evolution at the Ages of Planet Formation"*
July 2000-Sept 2000	Summer Program at Instituto de Astrofísica de Canarias(La Laguna, Spain). Advisor: Ignacio García de la Rosa. Project: *"The Tolman Test"*.

Career breaks/unconventional career path:

• **Maternity leave:** 29 September 2008/2 February 2009, child born on 29/09/2008, 4 months.
• **Maternity leave:** 26 August 2010/2 December 2010, child born on 28/09/2010, 3.3 months.
• **Maternity leave:** July 3 2015/November 9 2015, child born on 17/07.2015, 4 months.
• **Part-time work:** 3/12/2010 to 30/06/2011, 60% working hours due to children care. January 2016-September 2016, 80% working hours due to childcare.

Total time in career break: 2.0 years.

Due to pregnancy risks during 2nd and 3rd pregnancies (first child born pre-term) and nursing times for all three children, my participation in international conferences was partly reduced during 2008/11 and 2015/16. Invited overseas talks during pregnancy times had to be declined.

• **Unconventional career path:** My husband is also a researcher in Physics. Having three children, we adapted our careers to our family situation, working always in nearby top-level institutions. I did two postdocs at the MPIA in Heidelberg, Germany (second one under my own independent DFG project) while my husband worked in Basel, Switzerland, at 300 km. I also had to renounce to my tenure-track position in Spain due to the impossibility for my husband to find a long-term academic job in Spain. After my husband obtained a permanent position in the UK, I took the advantage to move on to establish a collaboration with researches at the University of St Andrews as there was a strong mutual interest, and I am at present searching for a permanent position. Due to its close distance to St Andrews and to the possibility of making a strong contribution to the Astronomy teaching and research, Dundee is thus an excellent opportunity.

Fellowships and awards:

• *A-rated ERC Starting Grant 2014:* rated as "excellent according to all ERC criteria", but received no funds due to funding limitations.

• *Proyectos de Investigacion No Orientada* AYA2012-35008 from the Spanish MINECO, 2 year group fellowship (Jan 2013/Dec 2014), covering 1 postdoc position (taken by M. Fang, see below).
• *"Ramón y Cajal"* tenure-track RyC2010-06164 (MINECO, Spain), 5yr fellowship as independent researcher within Spanish institutions. Awarded 06/2010.Cancelled 12/2014 *due to family situation.*
• Personal fellowship SI1486/1-1, Deutsche Forschungsgemeinschaft (DFG, German Science Foundation). 2 year funding, extended due to maternity/part time work (Sept. 2008- June 2011).
• *"Primer Premio Extraordinario de Licenciatura en Ciencias Físicas"* on June 2001, national award for the best student graduating in Physics in the year 2000 in Spain.
• *"Premio Fin de Carrera",* June, 2001, award for the best student in Physics in 2000 in the UAM.
• Four literary prizes for poetry and short stories, Grupo Encuentros, Tres Cantos(Madrid) contests.
• Figure in *Sicilia-Aguilar et al. 2013, A&A 559, 3* selected for A&A cover and 2014 A&A calendar.

Supervision of students and postdoctoral fellows:
• **Mara Pelayo Baldárrago** (March 2016-present): PhD student, working on *"Star formation in low-mass and high-mass clusters"*.
• **Anna Oprandi** (June-July 2016): summer student, working on *"Spectroscopy and photometry of the EX Lupi analog ASASSN13db"*. A paper will result from this work.
• **Min Fang** (2013-2014): Postdoctoral Fellow at the UAM for 2 years, linked to my project AYA2012-35008.*"Spectroscopic study of accreting, variable stars and the chaotic system GW Ori"*.
• **Mara Pelayo Baldárrago** (January 2013-March 2014): Master Student, Master thesis finished on February 2014, *"A study of shocks and stellar feedback in the CrA region"*.
• UAM PhD tutor for **Álvaro Ribas Gómez** (directed by B. Merín & H. Bouy, ESAC), 2012-2014.
• **Ana Chacón Tanarro** (March 2013-June 2013): Undergraduate thesis project (similar to MSc) on *"Stellar variability in Tr37: observations and interpretation"*.
• **Taisiya Kopytova** (2012): Master student, co-supervision (together with V. Joergens, MPIA). Project based on analysis of observations and models of the young brown dwarf CHXR20.
• **Lennart Forck** (August/September 2008): Undergraduate summer project on *"Observations of stellar variability in the CepOB2 region with the MPIA/70cm King Telescope"*.
• Took part in supervision of MPIA students V. Roccatagliata (PhD), M. Fang (PhD), A. Pohl (master).
• A further PhD position associated to my Spanish group grant AYA2012-35008 was cancelled due to funding shortages in the Spanish system.

Teaching experience:
I enjoy teaching at undergraduate and graduate levels. In particular, I am interested in teaching as a means to make students familiar with current research activities in Physics and Astronomy, to make them think out of the box and develop a critical approach to problem solving, stressing that the most important part is "to learn to think".
• Astrophysics labs and tutorials (2016), 2nd year Astronomy, University of St Andrews, 18h.
•Star and planet formation (2015-2016), 4th year of Astronomy, University of St Andrews, 9h (2015), 9h (2016).
• Quantum Phenomena (2015), 1st year of Physics, Univ. of St Andrews, 16h.
• Star Formation (2013/2014), Theoretical Physics Master at the UAM, 22h lectures.
• Planet Formation (2012/2013), 4th year of Physics, 3h lectures part of the Stellar Physics subject.
• Astrophysics and Cosmology (2012/2013), 4th year of Physics at the UAM, 20h lectures.
• Advanced Lectures in Astronomy (2012/2013), Astrophysics Master at the UAM, 12h lectures.
• Electronics Laboratory (2011/2012), 4th year of Physics at the UAM, 60h lectures.
My visa status in USA, the lack of teaching activities at MPIA, and grant restrictions (DFG requires 100% research time), did not allowed me to teach during my PhD time in USA or my MPIA time.

Organisation of scientific meetings:
• Organiser of the splinter session on *"Observing protoplanetary disks: bringing together the possibilities of current and near-future instrumentation*" at the Protoplanetary Discussions conference in Edinburgh, March 2016. Resulted in the **"Disk Rosetta Stone Collaboration"**, an international observer collaboration lead by A. Sicilia-Aguilar and A. Banzatti (STScI, USA) to explore the limits and possibilities of current astronomical instrumentation and observational techniques to decipher the physics of protoplanetary disks. A paper on the "Disk Rosetta Stone"

has been submitted.
• Member of the Scientific Organising Committee (SOC) for the *"Ringberg Conference on Transport Processes and Accretion in YSOs"* in Ringberg Castle, Germany. February 2011.
• Co-organiser of the splinter session *"Disks, accretion and outflows of brown dwarfs",* at the 17th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun, Barcelona, Spain, June 2012.

Invited talks and invited seminars:
• *"Episodic accretion and time variability in young stars"*. Invited talk at the conference "Missing links from disks to planets", Hungary, October 10-13 2016
• *"Hunting down the signs of evolving protoplanetary disks: Herschel, accretion, and more"*. Invited seminar at Glasgow University, February 2016.
• *"Herschel views of young clusters: Star formation and protoplanetary disks"*. Invited talk at the Guillermo Haro Workshop 2014, July 2014, Puebla, Mexico.
• *"Herschel views of young clusters: Star formation and protoplanetary disks"*. Invited seminar at the University of Kent, UK, November 2014.
• *"Observations of protoplanetary disks".* Invited review talk at the "Dust Growth in Star- and Planet-Forming Environments, DG13" July 23, 2013 in Heidelberg, Germany.
• *"Multiwavelength imaging of dusty stars and newborn planets"*, at the 12th SSOM (Swiss Society for Optics and Microscopy) Engelberg Lectures in Optics, March 5, 2007, Engelberg, Switzerland.
• *"From disks to planets: Evolution and dispersal of protoplanetary disks",* Oct. 2007, Heidelberg, Germany, review talk for the MPIA external evaluation committee (Max-Planck Fachbeirat).
• *"A multiwavelength picture of protoplanetary disk evolution: The effects of age, mass, and environment"*, April 2010, invited seminar at ESTEC, The Netherlands.
• *"A multiwavelength picture of protoplanetary disk evolution: The effects of age, mass, and environment"*, June 2010, invited seminar at the Universidad Autónoma de Madrid, Spain.
• A further invited talk at a conference on Protoplanetary Disks on June 2015 in Michigan, USA, had to be cancelled due to advanced pregnancy.

Some important recent contributions in international conferences:
(31 in total)
• *"Multi-episodic and triggered star formation in IC 1396 A: A treasure chest at the edge of an HII region"*, accepted poster contribution at the Ringberg conference on Early Phases of Star Formation 2016 (note that the acceptance rate for participation at the EPoS 2016 conference was 44% due to the meeting being restricted to 70 participants only).
• *"Multiwavelength views on disk dispersal and accretion evolution: Herschel, accretion, and beyond"*, March 2016, contributed talk at the Protoplanetary Discussions meeting in Edinburgh, UK.
• *"The different paths of disk dispersal: Herschel views of young and evolved clusters"*, May 2013, European Southern Observatory, Garching, Germany.
• *"The different ways of disk dispersal and accretion evolution"*, Jun/2012, at the 17th Cambridge Workshop on Cool Stars, Stellar Systems, and the Sun, Barcelona, Spain. Splinter session.
• *"The star formation and disk evolution history of a sparse region: The Coronet cluster"*, Mar/2012, at the "CNES: Herschel's view of Star and Planet Formation", Grenoble, France.
• *"Accretion in evolved and transitional disks"*, Feb/2011, at the "Ringberg Conference on Transport Processes and Accretion in YSOs", Ringberg Castle, Germany.
• *"Star formation and disk evolution in the Coronet cluster"*, Jan/2013, ESAC, Madrid, Spain.

Outreach activities:
Engaged in events to promote science among youngsters, children and the general public. I consider these activities as a necessary return of scientific activity to society, and a chance to bring science to parties that may be socially/historically less exposed (such as girls/women regarding technical and scientific careers) and to contribute to the early science education of young children.

• Participation in the Open Night at the St Andrews Observatory in 2013, 2014, 2016, organising children talks (Talks: *"Comets, crystals, planets"; "Space experiments and exploring the stars"*) and children activities (rocket building and launching).
• Organization of children activities on *"Comets, crystals, planets"* for the Science and Space

School at the St Andrews Observatory (February 2016), making dry ice comets and "LEGO crystals". This school is intended to bring science closer to children from less-favourable backgrounds.
• Participant in St Andrews mobile planetarium for young people and children (from 2014 on). Included planetarium shows at the University Science Day (March 5, 2016).
• Participation at the Braemar Science Festival, March 2015, with a talk for children on *"Comets, crystals, planets",* in Braemar, UK.
• Organisation of the eclipse viewing at the St Andrews Nursery Centre (March 20, 2015) for children aged 3-5.
• Organisation of activities for high school students and undergraduates at the UAM (April 2012-June 2013), designed at promoting the interest of Physics among high school students, and bringing current research topics to Physics undergraduates.
• Lectures for a non-professional audience at the UAM Summer School, Miraflores, Madrid, Spain, July/August 2012, on the topic *"Formación de estrellas y planetas"* (Star and planet formation).
• Participation on the MPIA *"Girls' Day 2011"*, event designed at promoting the interest in Astronomy (and, by default, on science/technology) among school girls aged 11-16 (April 2011). Organization of lectures and activities on *"Planetenentstehung und die Zusammensetzung von Sternen und Planeten"* (Planet formation and what planets and stars are made of).
• Public talks: *"Space experiments and exploring the stars",* public talk at St Andrews Observatory, 2016. • *"Crystals, comets, and real-time experiments with young stars",* public talk at St Andrews Observatory, 2013, 2014. • *"Dusty stars, newborn planets, and eclipses in other solar systems"*, public lecture on March 28, 2006 in Antalya, Turkey.
• 4 Popular/outreach papers.

Institutional responsibilities:
• Outreach Representative of the Theoretical Physics Department at the Universidad Autónoma de Madrid, academic year 2012/2013.
• External referee for applications to the Lise Meitner-Position, Austria, (2014, 2015).
• External referee for applications to the Erwin Schroedinger Fellowship, Austria, (2016).
• Member of Panel C of the European Southern Observatory (ESO) Observing Programmes Office (OPC) for evaluation of telescope proposals, periods P91 and P92 (2012-2013).
• PhD thesis evaluation committee for J. Maldonado (UAM, 2012), P. Riviere-Marichalar (UAM, 2013), and I. Rodríguez-Barrera (St Andrews, scheduled for September/October 2016).

Major collaborations:
• Founder of the *"Disk Rosetta Stone Collaboration"*, an international observer collaboration lead by A. Sicilia-Aguilar and A. Banzatti (STScI, USA) to explore the limits and possibilities of current astronomical instrumentation and observational techniques to decipher the physics of protoplanetary disks.
• Collaborator in the *Arago UV space mission* (2014-on), pre-main sequence stars working group (PI C. Neiner), collaborating as an expert on young stars and accretion.
• Participant in Herschel *Gould Belt Key Project* (PI Ph. André).
• Participant in Herschel GTO project *Stellar Disk Evolution* (PI G. Olofsson).
• *Supernovae Observations at CfA/FLWO* – Collaboration as observer at FLWO telescopes, 2004.

My career in different first-class institutions in various countries has allowed me to develop a solid network of collaborators worldwide, enhanced through participation and presentation of my results in different conferences and through observing runs carried out in various telescopes worldwide. I have strong active collaborations with colleagues in the USA (J.S. Kim, M. Fang, N. Patel, A. Banzatti, K. Getman, T. Currie, T. Holoien), Germany (V. Roccatagliata, T. Henning), Spain (C. Eiroa), UK (B. Biller), Hungary (A. Kóspal, P. Abraham), France (M. Benisty, A. Carmona, G. Laibe), Mexico (M. Chávez), Chile (J. Prieto), Russia (A. Sobolev).

Observing experience and most important observing proposals approved:
Large experience planning, observing, and reducing data from different telescopes, using optical , near-/mid-/far-IR, millimetre/radio continuum and line observations. **Proposal success rate >60%.**
• **Herschel/PACS:** *Tracing global disk dispersal and evolution in Cep OB2* (GO cycle-1, 23h)
• **Spitzer/IRS:** *Protoplanetary disks around very low-mass stars in the Coronet cluster* (GO-3, 23h,

P.I. Th. Henning, Sicilia-Aguilar as co-PI). • *Dust and gas in planet-forming disks* (GO-3, 36h).
• **ESO VLT:** *GW Ori: exploring the disk-planet connection in a triple system* (P98A, 3h).• *Accretion history of the VLM stars in the Coronet cluster* (P79A, 8h; P83A 14h).
• **ESO APEX:** *Disk evolution at a single age: tracing the initial conditions in the Coronet cluster* (P80, 20h).• *Initial conditions, dynamics, and protoplanetary disks* (P92, 36h). • *Coeval disks in the Coronet cluster: connecting initial conditions and dispersal mechanisms in disks* (P94, 30h).
• **Calar Alto/3.5m and 2.2m telescopes:** Several programs in photometry/spectroscopy, 20h.
• **Subaru/HDS:** *The young eruptive star GM Cep: Activity, rotation, and binarity* (2007, 3h).
• **SMA** (PI D. Wilner at CfA, Sicilia-Aguilar is project leader): *Dynamics and structure in a binary disk* (2009B, 8h; 2010B, 8h). • *The class 0 object in IC1396A* (2014; PI N. Patel).
• **IRAM 30m:** *A Class 0 object in IC1396A: Multiepisodic star formation?* (2013-14, 22h). • *Outer disk evolution in protoplanetary disks I, II, III* (2007-9, 100h). • *The disk of GM Cep* (2006, 5h). • *The three ages of RDI-triggered protostars* (2014, 33h).

I also have a strong expertise on data reduction from observations with all the above telescopes, as well as with the software tools needed for reduction, analysis, and interpretation of data, including:
• C, Python, and AWK programming languages.
• IRAF/PyRAF, HIPE, GILDAS, and APEX tools for data reduction.
• CASSIS/RADEX software and radiative-transfer tools for analysis and modelling of spectral lines.
• RADMC radiative-transfer tools for modelling of protoplanetary disks.

Languages:
Spanish (native).
English (fluent).
German (fluent).

Impact: Total refereed publications 52, 18 as first author, H index 26 (ADS).
Total citations >2700 (August 2016).
In addition: 4 popular/outreach papers, 8 contributions to conference proceedings.
See details in the complete Publication List.