

Sarah M. R. Jeffreson

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Employment/education

- 2020– **ITC Fellow, Harvard-Smithsonian Center for Astrophysics**, *Harvard University*, Cambridge MA, United States
- 2016–2020 **PhD student, International Max Planck Research School for Astrophysics**, *University of Heidelberg*, Heidelberg, Germany
Thesis topic: Which physical processes drive the evolution of giant molecular clouds?
Supervisor: J. M. Diederik Kruijssen
- 2015–2016 **MSc, Gonville and Caius College, University of Cambridge**, Cambridge, UK (First-class honours)
Thesis topic: Dynamical models of flattened, rotating globular clusters
Supervisors: Jason L. Sanders and N. Wyn Evans
- 2012–2015 **BA Hons Physics**, *Gonville and Caius College, University of Cambridge*, Cambridge, UK
- 2010–2011 **International Baccalaureate**, *Methodist Ladies' College*, Melbourne, Australia

Relevant awards and funding

- 2020 **ITC Fellowship**, *Harvard University*
- 2017 **NEON Observing School scholarship**, *University of Copenhagen and La Palma Observatory*
- 2015 **Research funding at Karl Remeis Sternwarte**, *University of Erlangen-Nuernberg*
- 2014 **Research in Industrial Projects for Students scholarship**, *Institute of Pure and Applied Mathematics, UCLA*
- 2014 **Research funding in the optics research group**, *Glasgow University*
- 2013–2016 **Scholarship for continued academic excellence**, *Gonville and Caius College, Cambridge University*
- 2013 **Amgen Scholars Programme scholarship**, *Karolinska Institutet*
- 2011 **The Australian Student Prize**

Refereed publications

2017– 6 first-author, 8 total

Momentum feedback from marginally-resolved HII regions in isolated disc galaxies, [Jeffreson, S. M. R.](#), Krumholz, M. R., Fujimoto, Y., Armillotta, L., Keller, B. W., Chevance, M., Kruijssen, J. M. D., **MNRAS in press** (2021b)

A scaling relation for the molecular cloud lifetime in Milky Way-like galaxies, [Jeffreson, S. M. R.](#), Keller, B. W., Winter, A. J., Chevance, M., Kruijssen, J. M. D., Krumholz, M. R., Fujimoto, Y. **MNRAS in press** (2021a)

The role of galactic dynamics in shaping the physical properties of giant molecular clouds in Milky Way-like galaxies, [Jeffreson, S. M. R.](#), Kruijssen, J. M. D., Keller, B. W., Chevance, M., Glover, S. C. O., **MNRAS**, **498**, 385 (2020)

The dynamical evolution of molecular clouds near the Galactic Centre - II. Spatial structure and kinematics of simulated clouds, Kruijssen, J. M. D. et al. (incl. SMRJ), **MNRAS**, **484**, 5734 (2019)

The lifecycle of molecular clouds in nearby star-forming disc galaxies, Chevance, M. et al. (incl. SMRJ), **MNRAS** submitted (2019)

On the physical mechanisms governing the cloud lifecycle in the Central Molecular Zone of the Milky Way, [Jeffreson, S. M. R.](#), Kruijssen, J. M. D., Krumholz, M. R., Longmore, S. N. **MNRAS**, **478**, 3380 (2018b)

A general theory for the lifetimes of giant molecular clouds under the influence of galactic dynamics, [Jeffreson, S. M. R.](#), Kruijssen, J. M. D., **MNRAS**, **476**, 3688 (2018a)

The Gaia-ESO Survey: dynamical models of flattened, rotating globular clusters, [Jeffreson, S. M. R.](#), Sanders, J. L., Evans, N. W., Williams, A. A., Gilmore, G. F. et al. **MNRAS**, **469**, 4740 (2017)

Conferences, seminars and colloquia

Feb. 2017– 2 Invited Talks, 4 Colloquia, 9 Contributed Talks, 2 Seminar Talks

Jul. 2021 **Ringberg series**, virtual ([contributed talk](#))

Jun. 2021 **AAS Summer meeting**, virtual ([contributed talk](#))

May 2021 **ISM 2021: Structure, characteristic scales, and star formation**, Beirut/virtual ([contributed talk](#))

Oct. 2020 **ITC Colloquium**, Harvard, USA ([invited colloquium](#))

Jul. 2020 **ARI Colloquium**, Heidelberg, Germany ([colloquium](#))

Nov. 2019 **Harvard-Heidelberg workshop on the Physics of Star Formation: Linking Observations and Simulations**, Harvard, USA ([contributed talk](#))

Nov. 2019 **Seminar at the ITC**, Harvard, USA ([seminar](#))

Nov. 2019 **SFIR Seminar**, Princeton, USA ([seminar](#))

Sep. 2019 **Through Dark Lanes to New Stars, celebrating the career of Prof. Charles Lada**, Crete, Greece ([contributed talk](#))

Jun. 2019 **Linking the Milky Way and Nearby Galaxies**, Helsinki, Finland ([contributed talk](#))

- Jun. 2019 **Institute for Theoretical Astrophysics Blackboard Colloquium**, Heidelberg, Germany ([colloquium](#))
- Nov. 2018 **Hendrik van de Hulst Centennial Symposium: The Interstellar Medium of Galaxies, Status and Future Perspectives**, Leiden, The Netherlands ([contributed talk](#))
- Jul. 2018 **The Laws of Star Formation: From the Cosmic Dawn to the Present Universe**, Cambridge, UK ([contributed talk](#))
- Jun. 2018 **The Multi-Scale Physics of Star Formation and Feedback during Galaxy Formation**, Heidelberg, Germany ([invited talk](#))
- Jun. 2017 **Galactic Star Formation with Surveys**, Heidelberg, Germany ([contributed talk](#))
- Jul. 2017 **Linking Observations and Theory Across the Scales of Star Formation in Galaxies**, Sexten Centre for Astrophysics ([poster](#))
- Apr. 2017 **SFB 881 Seminar**, Heidelberg, Germany ([seminar](#))
- Feb. 2017 **The Physics of the ISM**, Cologne, Germany ([poster](#))

Teaching experience

- 2019 **Experimental Physics II, Tutor to class of 20**, *University of Heidelberg*, Electrostatics, Electrodynamics, Electromagnetism, Optics, Special Relativity
- 2018–2019 **Experimental Physics I, Tutor to class of 20**, *University of Heidelberg*, Mechanics and Thermodynamics

Scientific responsibilities held

- 2021–2022 **ITC Colloquium Organising Committee**
- 2020 **ITC Fellowship Selection Committee**
- 2018 **Conference Local Organising Committee**, *The Multi-Scale Physics of Star Formation and Feedback during Galaxy Formation*, University of Heidelberg
- 2017–2019 **Co-investigator on ALMA proposals**, *Cycles 5, 6 and 7*, Principal Investigators Steven N. Longmore, Mélanie Chevance, Alexander P. S. Hygate

Refereeing

- May 2019– **Referee**, *Monthly Notices of the Royal Astronomical Society*

Programming languages

C/C++, Bash, Python, MATLAB, HTML/CSS