Kearn M Grisdale

Curriculum Vitae

Sub-department of Astrophysics, University of Oxford
Oxford, OX1 3RH
Phone: 01865 273 309
Mobile: 07889 208 461
Email: kearn.grisdale@physics.ox.ac.uk, kearngrisdale@gmail.com

Education

Ph.D., Astrophysics, Sep 2013–Mar 2017
Department of Physics, University of Surrey
Awarded: June 2017

Qualified Teacher Status (Q.T.S.) in Physics, Sep 2011–Jun 2012
Department for Education
Grade: 1
Age Range: 14–19

MSci, Astrophysics, Oct 2007–Aug 2011
University College London
Grade: 2:1 (Hons.)

Research Interests

My primary research area of interest is the role of stars in shaping the evolution of their host galaxy. In particular I am interested in the impact of where stars form and how their winds, radiation and supernovae changes the gas structure of the Interstellar Medium (ISM) through the use of hydrodynamic simulations compared with observations. This is a multi-scale problem ranging from the substructure inside giant molecular clouds to galaxy interactions.

Professional Appointments

Postdoctoral Research Assistant, Dept. of Physics, Uni. of Oxford Oct 2017–present
(Fixed-term)

Post-Doctoral Researcher, Dept. of Physics, Uni. of Surrey May 2017–Sep 2017
(Zero-hours contract)

Physics Teacher, Harris City Academy Crystal Palace Sep 2011–Aug 2013
(Fixed-term)

Scientific Responsibilities, Awards, Honours and Achievements

As a member of the HARMONI (High Angular Resolution Monolithic Optical and Near-infrared Integral field spectrograph on the European Extremely Large Telescope) science team I am leading work making predictions from mock observations of cosmological simulations.
I am leading a project combining hydrodynamical cosmological simulations with KMOS data designed to make quantifiable predictions on the impact of star formation and feedback on $z \sim 2$ galaxies.

I was a member (2019-2020) of the organising committee for the Galaxy Evolution Seminar series at the University of Oxford.

I held the Balzan Fellowship at the University of Oxford between Oct & Dec 2017

As part of the Horizon project (DP016) on DiRAC, I submitted a proposal to run a series

of simulations of the Milky Way & Magellanic Clouds and was awarded 3.5 million CPU hours. I have attended the 2020 DiRAC Hackathon as member of the Horizon project.

Teaching experience

Tutor, C1, MPhys Astrophysics, Masters level course, Department of Physics, University of Oxford	2018–2020
Demonstrator, PHY2071, Intro to Astronomy, Undergraduate level course, Department of Physics, University of Surrey	2014–2016
Demonstrator, PHY2063, Energy & Entropy, Undergraduate level course, Department of Physics, University of Surrey	2014–2016
Demonstrator, PHY1034, Essential Maths, Undergraduate level course, Department of Physics, University of Surrey	2013–2014
Secondary School Teacher, Physics and Science, Ages 11–19 (including GCSE and A-Levels), Harris City Academy Crystal Palace	2011–2013

Student Supervision

Over the past 2.5 years I have mentored several PhD students. In particular, Sergio Martin Alvarez and Laurence Routledge. With the former I have been working to combine his expertise on magnetic fields with my work on the interstellar medium to explore how such fields impact the evolution of galaxies. With the latter I have been providing guidance on using and analysing hydrodynamical simulations. For the project I lead comparing cosmological simulations with KMOS data, I am working closely with Laurence Hogan (PhD student). I have supervised two students on their 3rd year undergraduate "Extended Practical" . I am current supervising a project with a Master student at the University of Lund.

Colloquia, Talks and Posters

Extremely Big Eyes on the Early Universe (**invited talk**), Accademia de Lincei, Italy	Sep 2019
International Astronomical Union 2018 (**talk, poster**), University of Vienna, Au	Aug 2018
Santa Cruz Galaxy Workshop 2018 (**talk**), University of California, USA	Aug 2018
National Astronomy Meeting 2017 (**talk**), University of Hull, UK	Jul 2017
X-ray binaries in the Magellanic Clouds (**talk**), University of Southampton, UK	Apr 2017
Disc in Galaxies Conference (**poster**), ESO, Germany	Jul 2016
KIPAC Tea **Talk**, Stanford University, USA	Apr 2016
Berkeley Lunch **Talk**, University of California, Berkeley, USA	Apr 2016
RAMSES code user meeting (**talk**), Oxford, UK	Sep 2015
National Astronomical Meeting (**talk**), Llandudno, UK	Jul 2015
GRADnet Summer School (**poster**), NPL, UK	Jun 2014

Refereed For:

Monthly Notices of the Royal Astronomical Society, The Astrophysical Journal and a STFC grant review.

Publications

Published

1. **Kearn Grisdale**, Oscar Agertz, Florent Renaud, Alessandro Romeo, Julien Devriendt, Adrianne Slyz, 2019, *MNRAS*, 486, 5482-5491, *On the Observed Diversity of Star Formation Efficiencies in Giant Molecular Cloud.*

2. **Kearn Grisdale**, Oscar Agertz, Florent Renaud, Alessandro Romeo, 2018, *MNRAS*, 479, 3167-3180, *Physical properties and scaling relations of molecular clouds: the effect of stellar feedback*

3. **Kearn Grisdale**, Oscar Agertz, Alessandro Romeo, Florent Renaud, Justin I Read, 2017, *MNRAS*, 466, 1093-1110, *The impact of stellar feedback on the density and velocity structure of the interstellar medium*

4. Oscar Agertz, Alessandro Romeo, **Kearn Grisdale**, 2015, *MNRAS,* 449, 2156, *Characterising gravitational instability in turbulent multicomponent galactic discs*

Under Review

1. **Kearn Grisdale, Submitted to MNRAS,** *Physical Properties and Scaling Relations of Molecular Clouds: the Impact of Star Formation*. (Manuscript available upon request)

2. **Kearn Grisdale**, Niranjan Thatte, Julien Devriendt, Miguel Pereira-Santaella, Adrianne Slyz, Taysun Kimm , Yohan Dubois and Sukyoung K. Yi, **Submitted to MNRAS**, *Predicting the Observability of Population III Stars with ELT-HARMONI via the Helium* 1640Å *Emission Line*. (Manuscript available upon request)

3. Laurence Hogan, Dimitra Rigopoulou, Georgios Magdis, Miguel Pereira-Santaella, Ismael García-Bernete, Niranjan Thatte, **Kearn. Grisdale**, Jiasheng Huang, **Submitted to MNRAS**, *Integral Field Spectroscopy of Infrared Luminous Main Sequence Galaxies at Cosmic Noon*.
