

Dr. Gráinne Costigan

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Working in the most competitive and notable astronomy institutes in Europe, and the largest, current European space telescope, has given me strong team working skills, with a focus on attaining the end goal using innovative techniques and tools. I am looking forward to the next challenge of using my scientific knowledge and outreach and teaching experience to encourage the next generation of young scientist into STEM subjects.

EXPERIENCE

Research Associate

Leiden University &
ESA's Gaia spacecraft
April 2014 - Current

- Member of data processing consortium of the European big data driven space observatory, Gaia.
- Part of the team developing the data archive, analysis tools & validation of data.
- Lead role in beta testing of archive, development of long term data and software preservation plan.
- Designed and supervised multiple student projects.

PhD Student

ESO, Munich
DIAS, Dublin
Dec. 2009 – Nov. 2013

- Developed strong project development skills, from formulating the science question, assessing what tools are needed, completing necessary analysis to reach scientific goal, to final publication of results.
- Developed independent work ethic with good communication skills through working with multiple supervisors in different locations.
- Presented scientific results at multiple international conferences.

Research Associate

Dundee University, UK
Oct. 2008 – Aug. 2009

- Implemented and developed computer vision algorithms for planetary rover navigation.

City Astronomer

Dundee, Scotland
Oct. 2008 – Aug. 2009

- Lead the outreach program in the local public observatory.
- Gave weekly public lectures, with night sky and planetarium tours.
- Wrote a monthly astronomy column in local newspaper.
- Held astronomy and art workshops for children in conjunction with local artists.

EDUCATION

PhD Dec. 2014

Graduated Queen's University Belfast (Northern Ireland), PhD in Star formation. Title: Accretion Variability in Young Stellar Objects

Masters 2007 – 2008

Cambridge University (UK), Master of Mathematics. CASM Part III

Bachelors 2003 – 2007

Trinity College Dublin (Ireland), Theoretical Physics, BA (mod)

RECENT COMMUNITY INVOLVEMENT

Sept. 2016
Bogotá, Colombia

Science teaching in a primary school as part of a three week voluntary placement. Designed and implemented program for all classes from 7 to 12 years old. Full class outline (gcostigan.com/communication).

Oct. 2015
Leiden, NL


Co-Organiser of Interdisciplinary seminar on Medical Imaging and Astronomy. In connection with Erasmus Medical centre (Rotterdam)

Oct. 2015 ESA
(ESTEC), Netherlands.

Co-organiser of the 'Accretion and Outflows: Exchanging Mass, Momentum and Ideas' workshop at the European Space Agency.

TECHNICAL SKILLS

Python. MATLAB/Octave. MIDAS (FORTRAN based). ADQL (astronomical SQL). IDL. Bash. Latex. Unix.

 [twotonnetess.github.io](https://github.com/twotonnetess)

PUBLICATIONS

- 2017** 'Gaia Data Release 1: Catalogue validation' Arenou, F & The validation team (35 members). (A&A)
- 2016** 'The disappearing act: a dusty wind eclipsing RW Aur' . Bozhinova, I.; Scholz, A.; **Costigan, G.**; et al. (MNRAS).
 'Gaia Data Release 1. Summary of the astrometric, photometric, and survey properties' . Gaia collaboration (A&A).
 'The Gaia mission' . Gaia collaboration (A&A).
 'Understanding discs in binary YSOs - detailed modelling of VV CrA' . Scicluna, P.; Wolf, S.; Ratzka, T.; **Costigan, G.**; Launhardt, R.; Leinert, C.; Ober, F.; Manara, C. F.; Testi, L. (MNRAS)
- 2015** 'Pre- and Post-burst Radio Observations of the Class 0 Protostar HOPS 383 in Orion' . Galván-Madrid, R.; Rodríguez, L. F.; Liu, H. B.; **Costigan, G.**; Palau, Aina; Zapata, L. A.; Loinard, L. (ApJ)
 'Temperaments of young stars: rapid mass accretion rate changes in T Tauri and Herbig Ae stars' **Costigan, G.**; Vink, Jorick S.; Scholz, A.; Ray, T.; Testi, L. (MNRAS)
- 2014** 'Time Monitoring of Radio Jets and Magnetospheres in the Nearby Young Stellar Cluster R Coronae Australis' . Liu, H. B.; Galván-Madrid, R.; Forbrich, J.; Rodríguez, L. F.; Takami, M.; **Costigan, G.**; Manara, C. F.; + (ApJ)
- 2012** 'LAMP: the long-term accretion monitoring programme of T Tauri stars in Chamaeleon I' . **Costigan, G.**; Scholz, A.; Stelzer, B.; Ray, T.; Vink, J. S.; Mohanty, S. (MNRAS)

RECENT INVITED TALKS

- Feb 2016** Invited talk at workshop 'For Stone Age to Space Age: Discussing Common Grounds in Archaeology and Astronomy'.
 Leiden, Netherlands.
- March 2015** Invited seminar at University College Dublin.
 UCD, Dublin, Ireland
 Title: Gaia; The Billion Star Galactic Surveyor.

SUCCESSFUL OBSERVATION PROPOSALS

- 2015** 30 hours of VLT-KMOS to survey the entire star forming region of the Flame nebula
- 2013** "Connecting Accretion with Stellar Rotation": VLT-KMOS Science verification. Successful but not observed. PI: G. Costigan
- 2013** "The Jet-Accretion Connection in Young Stellar Objects: VLT-KMOS Mapping of Near-Infrared Lines" VLT-KMOS Science Verification. PI: R. Galvan-Madrid
- 2012** "Monitoring Magnetic Fields: Searching for the connection between variable magnetic fields and accretion variability" VLT-CRIRES ; PI: G. Costigan