



TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO

ID CODE 5564

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Fisica Aldo Poltremoli**

Scientist- in - charge: **Dr. Giovanni Rosotti, Prof. Giuseppe Lodato.**

Chiara Eleonora Scardoni

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Scardoni
Name	Chiara Eleonora

PRESENT OCCUPATION

Appointment	Structure
Ph.D student	Institute of Astronomy, University of Cambridge (UK)

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Laurea triennale in Fisica	Università degli Studi di Milano	2017
Specialization			
PhD	PhD in Astronomy	University of Cambridge	2023 (expected)
Master	Laurea Magistrale in Fisica	Università degli Studi di Milano	2019



Degree of medical specialization			
Degree of European specialization			
Other			

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City

FOREIGN LANGUAGES

Languages	level of knowledge
Italian	Native speaker
English	Advanced

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2022	Murdin Prize - annual prize for the best published journal paper produced by a Ph.D. student at the Institute of Astronomy (University of Cambridge). Prize awarded for the paper " <i>Inward and outward migration of massive planets: moving towards a stalling radius</i> " (Scardoni, Clarke, Rosotti, Booth, Alexander, Ragusa).
2019	Peterhouse Cambridge Research Studentship - studentship awarded by Peterhouse Cambridge (college of Cambridge) to pursue postgraduate studies at the University of Cambridge (approximately 15 studentships are awarded each year).
2017	Fondazione Angelo Ghezzi - scholarship for young people (under 28) aimed at funding their courses/studies. Selection based on academic records.
2016	Partecipazione at "Astrofisica su Mediterranea": fully funded astrophysics course, supported by Associazione Mediterranea, INAF (Istituto Nazionale di Astrofisica), CIFS (Consorzio



	Interuniversitario per la Fisica). Competitive selection (5 students selected) based on academic records.
2013	Registration in the National Excellence Honours Roll , promoted by the MIUR to provide incentives for students of upper secondary Italian state schools and state authorised schools in Italy and abroad who: have obtained a mark of 100 with honours in a state exam at the end of their secondary school education; and/or are winners of national and international competitions linked to subjects recognised by the annual programme to promote excellence.

TRAINING OR RESEARCH ACTIVITY

Description of activity
<p>Ph.D. in Astronomy (October 2019 - now), Institute of Astronomy, University of Cambridge (UK). Supervisor: Prof. Cathie Clarke.</p> <p>Description: My Ph.D. research focuses on the formation and evolution of planets in protoplanetary discs.</p> <ul style="list-style-type: none">• <i>Planet formation</i>. I focused on the streaming instability as potential solution to the “radial drift barrier” to planet formation by performing simulations (with the hybrid code ATHENA) and comparing the results to observations.• <i>Planet evolution</i>. I analysed the planet-dominated regime of type II migration by performing live-planet, long timescale simulations with the Eulerian code FARGO3D, with the aim of testing and explaining the expected correlation between the gap properties and the direction of planet migration. <p>Research Secondment (October 2022), Centre for Computational Astrophysics, New York, New York (USA) Supervisor: Prof. Phil Armitage.</p> <p>Project topic: the effect of planetary accretion on planet migration in protoplanetary discs.</p> <p>Description: I am extending the analysis on the planet-dominated regime of type II migration by adding the planet accretion to test its effect on the migration properties.</p> <p>Master’s thesis in Physics (April 2018 - April 2019), Dipartimento di Fisica Aldo Pontremoli, Università degli Studi di Milano (Italy) Supervisors: Prof. Giuseppe Lodato. Co-supervisor: Dr. Giovanni Rosotti.</p> <p>Title of the project: Is type II migration locked to the disc evolution?</p> <p>Description: I focused on the disc-dominated type II migration regime by performing long timescale 2D simulations with the code FARGO3D. The goal was to investigate the apparent discrepancy between the classic theory of disc-dominated type II migration and the shorter migration timescales found in recent simulations.</p> <p>Bachelor’s thesis in Physics (June 2016 - February 2017), Dipartimento di Fisica Aldo Pontremoli, Università degli Studi di Milano (Italy) Supervisor: Prof. Giuseppe Lodato.</p> <p>Title of the project: Evoluzione dei dischi protoplanetari nel piano $M_{\text{disc}} - \dot{M}_{\text{acc}}$.</p> <p>Description: I studied how the disc mass M_{disc} and accretion rate \dot{M}_{acc} evolve under the action of viscosity by implementing a population synthesis model to study the discs’ distribution in the $M_{\text{disc}} - \dot{M}_{\text{acc}}$ plane, and how it compares to the observed systems.</p>



PROJECT ACTIVITY

Year	Project

PATENTS

Patent

CONGRESSES AND SEMINARS

Date	Title	Place
07/02/2022	IPLU Science Day (Poster presentation)	Selwyn College, Cambridge, UK
01/02/2022	Hypatia colloquium (Online talk)	ESO, Germany
20/12/2021	Milan Christmas Meeting (Talk)	Università degli studi di Milano, Italy
19/04/2021	Online Seminar	Imperial College London, London, UK
3/02/2020	Wednesday seminar	Institute of Astronomy, Cambridge, UK
20/12/2019	Milan Christmas Meeting (Talk)	Università degli studi di Milano, Italy

PUBLICATIONS

Books

Articles in reviews
Scardoni, C. E. , Clarke, C. J., Rosotti, G. P., Booth R. A., Alexander, R., Ragusa, E., 2022, MNRAS. <i>Inward and outward migration of massive planets: moving towards a stalling radius.</i>
Scardoni, C. E. , Booth, R. A., Clarke, C., 2021, MNRAS. <i>The effect of the streaming instability on protoplanetary disc emission at millimetre wavelengths.</i>



Manara, C. F.; Natta, A.; Rosotti, G. P.; Alcalá, J. M.; Nisini, B.; Lodato, G.; Testi, L.; Pascucci, I.; Hillenbrand, L.; Carpenter, J.; Scholz, A.; Fedele, D.; Frasca, A.; Mulders, G.; Rigliaco, E., **Scardoni, C.**; Zari, E., *Astronomy & Astrophysics. X-Shooter Survey Of Disk Accretion In Upper Scorpius I. Very high accretion rates at age>5 Myr.*

Scardoni, C. E., Rosotti, G. P., Lodato, G., Clarke, C., 2020, MNRAS. *Type II migration strikes back – an old paradigm for planet migration in discs.*

Lodato, G., **Scardoni, C. E.**, Manara, C. F., Testi, L. 2017, MNRAS. *Protoplanetary disc 'isochrones' and the evolution of discs in the $\dot{M}_{\text{disc}} - \dot{M}_{\text{acc}}$ plane.*

Congress proceedings

OTHER INFORMATION

Teaching/mentoring experience:

- Supervisor for “Astrophysical Fluid Dynamics” course, University of Cambridge (Lent Term 2022)
- Co-supervisor of a Bachelor’s thesis, Università degli Studi di Milano (2020).
- Secondary school physics teacher (remedial courses), Istituto Sant’Ambrogio (2017-2019).

Summer schools:

- Dustbusters school: protostellar discs and planet formation, Università degli Studi di Milano (May 2022)
- An introduction to turbulence in magnetised plasmas, Instituto de Plasmas e Fusão Nuclear, Lisbon (July 2018)
- Summer school on plasma physics, intense lasers and nuclear fusion, Instituto de Plasmas e Fusão Nuclear, Lisbon (July 2018)

Outreach experience:

- Scientific guide in physics didactic laboratories (FLAbs) 2018-2019
- Welfare officer, MCR Peterhouse Cambridge committee, Cambridge, UK (2020-2021)
- Outreach talk, Peterhouse Graduate Research Symposium, University of Cambridge, UK (February 2022)
- Outreach talk, Peterhouse Graduate Research Symposium, University of Cambridge, UK (November 2021)
- Outreach Course, Institute of Astronomy, University of Cambridge, UK (Lent Term 2019)
- Outreach talks at primary schools, Milan, Italy (December 2019, February 2021)

Referees contact details:

- Prof. Cathie Clarke (cclarke@ast.cam.ac.uk)
- Dr. Richard Booth (r.booth@imperial.ac.uk)
- Prof. Phil Armitage (parmitage@flatironinstitute.org)



Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

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Place and date: Milan, 14/01/2023