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Date of Birth: 24th October 1971
Nationality: Italian/British/USA

Education

- 1994 – 1997: **PhD in Astrophysics**. University College London, UK
- 1991 – 1994: **BSc in Astrophysics**. University College London, UK
- 1988 – 1990: **International Baccalaureate** (Grade 40/45, Best Italian Performance)
United World College of the Adriatic. Duino, Italy
- 1985 – 1988: **Italian Scientific High School**. Bologna, Italy

Employment

- 2000 – Present: **Research fellow, Dept. of Astrophysics, American Museum of Natural History, New York** – research on stellar evolution of single stars and interactive binaries.
- 2005 – Present: **Consultant Large Synoptic Survey Telescope** – education and public outreach consultant and liaison to AMNH.
- 2000 – Present: **Science Bulletins content adviser, AMNH**.
- 1999 – 2000: **Research fellow, Dept. of Physics and Astronomy, University College London, UK** – research in the physics of Wolf-Rayet stellar winds, with emphasis on modeling the UV spectrum.
- 1997 – 1999: **Research fellow, Institute of Astronomy, Federal Institute of Technology, Zurich, Switzerland** – theoretical research in the physics of radiation transfer in stellar atmospheres and winds.

Scientific Publications (full list in appendix):

- 39 refereed publications** in Astronomy and Astrophysics, Monthly Notices of the Royal Astronomical Society, the Astrophysical Journal (including Letters), the Astronomical Journal, the Publication of the Astronomical Society of the Pacific and the Observatory.
- Over 50 conference proceedings contributions.**
- Over 800 citations.**

Grants (as PI or significant co-I with funding):

- 2008: **Hubble Space Telescope, Cycle 17 (PI; ~\$100k):** *Planetary Nebulae in Globular Clusters – Part II.*
- 2008: **Spitzer Space Telescope, Cycle 5 (PI; ~\$30k):** *The Disks around PG1159 Stars*
- 2008: **Hubble Space Telescope, Cycle 16 and DD (PI; \$41K):** *Planetary Nebulae, Globular Clusters and Stellar Mergers*
- 2007: **Hubble Space Telescope, Cycle 16 (co-I; theory; \$70k):** *Beyond the textbook: Planetary Nebula temporal evolution*
- 2006: **NSF (PI; \$490K):** *Stellar Duets - How companions change the lives and evolution of stars*
- 2004: **Hubble Space Telescope, Cycle 13 (co-I; \$20k):** *The shadow echo of the unique R Corona Borealis star UW Cen*
- 2003: **Hubble Space Telescope, Cycle 12 (PI; \$70k):** *A search for proplyds with ACS*
- 2003: **Chandra Cycle 5 (co-I; ~\$30):** *The early onset of X-ray emission from Planetary Nebulae*
- 2001: **FUSE Cycle 3 (PI; \$30k):** *Abundance variations during dwarf nova cycles*

- 1999: **Hubble Space Telescope, Cycle 9 (PI; ~\$50k):** *The C/O abundance gradient on planetary nebulae*

Awards:

- 2000: **Isaac Asimov Fellowship of the American Museum of Natural History** - to carry out astronomy research
- 1994: **Perren Fund Scholarship** to cover living costs and fees to complete Ph.D.
- 1994: **Maude Pierce award for women achievers** at UCL.
- 1994: **Award for best astronomy degree**
- 1993: **Award for best 2nd year undergraduate project**
- 1988: **Two years full annual scholarship at the United World College of the Adriatic** – the UWCs are international schools for students drawn from about 100 countries completing their high school education.

Invited talks:

- Routine invitation (about 3-5 times per year) to give departmental seminars.
- 2008: **Benjamin Dean Lecture Series** at the Morrison Planetarium, San Francisco, CA
- 2007: **Hydrogen Deficient Stars III**, Tuebingen, Germany
- 2006: **IAU Symposium 234: Planetary Nebulae**, Waikoloa, HI
- 2003: **Asymmetric Planetary Nebulae meeting**, Seattle, WA
- 2002: **VIII Tex-Mex meeting: Astrophysical Plasmas**, Mexico City, Mexico
- 2001: **International Astronomical Union Symposium 209: Planetary Nebulae**, Canberra, Australia
- 2000: **Workshop on Sakurai's Object**, Keele, UK
- 1999: **Workshop on Wolf-Rayet central stars of PN**, Amsterdam, Holland

Community Service:

- Routinely referee papers for **A&A, MNRAS, RevMxA&A, AJ, ApJ**
- 2008: **Hubble Space Telescope: Time Allocation Committee** (*invited, but could not attend*)
- 2007 – *present*: **National Optical Astronomical Observatories: Time Allocation Committee**
- 2007: **Hydrogen-deficient Star III (conference): Scientific Organizing Committee**
- 2007: **Asymmetric Planetary Nebulae IV (conference): Scientific Organizing Committee**
- 2003 – 2005: **American Astronomical Society: Travel Grants Committee**
- 2002: **Far Ultraviolet Spectroscopic Explorer: Time Allocation Committee**
- 2001: **Hubble Space Telescope: Time Allocation Committee**
- 2000: **Far Ultraviolet Spectroscopic Explorer: Time Allocation Committee**

Scientific Societies:

- American Astronomical Society
- Royal Astronomical Society

Academic Teaching Experience:

- 2008 – *ongoing*: **Supervision of a graduate student**. *Research into the analytics and hydrodynamics of common envelope interactions.*
- 2003 – 2008: **Mentored 6 senior undergraduate** students' research - AMNH (4 under the auspices of NSF's Research Experience for Undergraduate program) leading to publication for 4 of them in peer-reviewed journals. Four of them went on to Graduate School.
- 2003 – 2008: **Mentored 4 graduate** students' research - AMNH (employed as data analysts; a common activity for graduates before they go on to grad school) leading to 1 publication (2 papers still in preparation). All 4 went on to graduate school.

- 2008: **Designed and delivered courses on stellar astrophysics** and research notions for finishing high school students.
- 2000 – 2007: **Lectured NY public school teachers** within professional development conferences – AMNH.
- 2001 – 2006: **Written and lectured Astronomy Courses for lay audiences**: “Stellar Death”, on the lives and deaths of stars. “Spectroscopy”, on the technique of spectroscopy in Astronomy.
- 2003 – 2004: **Written and taught courses on Einstein’s Relativity and Astrobiology** for teachers (taking masters credits), hosted by Connected University and taught on line.
- 2002 – 2003: **Designed and taught workshops for Middle School girls** designed to promote the mathematical sciences among women.
- 2002: **Supervised and directed undergraduates** from the Art Institute of Pittsburg leading to the design and construction of an exhibit for AMNH.
- 1999 – 2000: **Tutored Astronomy and Physics undergraduate students at University College London** - University College London manages the student's curriculum through their tutors who are responsible for guiding and assessing and them in their whole degree course.
- 1997 – 1999: **Lectured undergraduate extra-galactic and practical astrophysics** - Swiss Federal Institute of Technology.
- 1994 – 1997: **Taught physics laboratory** to first year undergraduates with the task of demonstrating experimental techniques and statistical methods - University College London.

Education and Public Outreach activities have included:

- 2008: **Scientific adviser** for the new Hayden Planetarium Space Show production on Stars.
- 2000 – 2008: **Content editor for the Astro Bulletins project.** Selecting and curating content for Astro documentaries (bi-yearly), weekly news, web and kiosk essays and animations. Astro Bulletins is distributed to over 40 museums in the country and has a 10 million visitor per year audience.
- 2000 – 2008: **Lectures to lay audiences**, including Museum staff adjournment courses to docents, amateur astronomers, school children ages 5 to 18 and grade-school teachers.
- 2006: **Content adviser for K-12 McMillan Graw-Hill textbook series** (National and State Curricula).
- 2003: **Content editor for Children’s books on space.**
- 2000 – 2007: Given **Radio and Television interviews** on various Astrophysical topics.
- 2006 – 2007: **Evaluator for Young Naturalist Award** (AMNH).
- 2001 – 1003: **Authored and secured funding for two exhibitions**: “Shooting Stars”, a photo exhibitions about telescopes. “Physics of Danger”, a photo exhibitions dealing with natural disasters and the physical explanations behind them.
- 2000 – 2008: **Rose Center and Special Exhibitions tours** to VIPs, teachers and grade school children.
- 1994 – 2000: **Delivered educational lectures and workshops** to groups of schoolgirls (age 16-18) as part of programs to encourage young women to take up physical science studies.
- 1991: **Royal Yachting Association sailing instructor** – full time instruction on all aspects of theory and practical sailing including safety and first aid to children and adults.

Other interests and skills:

- Languages:** Italian and English (native speaker), Spanish and French (fluent), German (I manage).
- Sports:** Dancing, Sailing, Skiing.
- Other:** Alternative and World Cinema. Traveling.

Appendix: Refereed Publications

1. **Binary central stars of PN discovered through photometric variability. I. What we know and what we would like to find out**
De Marco, O., Hillwig, T. C., Smith, A. J. AJ, 2008, in press
2. **The hydrogen-deficient knot of the 'born-again' planetary nebula Abell 58 (V605 Aql).**
Wesson, R., Barlow, M. J., Liu, X.-W., Storey, P. J., Ercolano, B., De Marco, O. MNRAS, 2008, 383, 1639
3. **Spectral Determination of Material Geometry Around Evolved Stars: The Case of HD 179821**
Nordhaus, J., Minchev, I., Sargent, B., Forrest, W., Blackman, E. G., De Marco, O., Kastner, J.; Balick, B., Frank, A. ApJ, 2008, in press
4. **Serendipitous Chandra X-Ray Detection of a Hot Bubble within the Planetary Nebula NGC 5315**
Kastner, J. H.; Montez, R., Jr.; Balick, B.; De Marco, O. ApJ, 2008, 672, 957
5. **An ancient nova shell around the dwarf nova Z Camelopardalis**
Shara, M. M., Martin, C. D., Seibert, M., Rich, R. M., Salim, S., Reitzel, D., Schiminovich, D., Deliyannis, C. P., Sarrazine, A. R., Kulkarni, S. R., Ofek, E. O., Brosch, N., Lépine, S., Zurek, D., De Marco, O., Jacoby, G. Nature, 2007, 446, 159
6. **Do Most Planetary Nebulae Derive from Binaries? I. Population Synthesis Model of the Galactic Planetary Nebula Population Produced by Single Stars and Binaries**
Moe, M., De Marco, O. ApJ, 2006, 650, 916
7. **A close look into the carbon disk at the core of the planetary nebula CPD-56°8032**
Chesneau, O., Collioud, A., De Marco, O., Wolf, S., Lagadec, E., Zijlstra, A. A., Rothkopf, A., Acker, A., Clayton, G. C., Lopez, B. A&A, 2006, 455, 1009
8. **V605 Aquilae: The Older Twin of Sakurai's Object**
Clayton, G. C., Kerber, F., Pirzkal, N., De Marco, O., Crowther, P. A., Fedrow, J. M. ApJ Letters, 2006, 646, 69
9. **Cloud Fragmentation and Proplyd-like Features in H II Regions Imaged by the Hubble Space Telescope**
De Marco, O., O'Dell, C. R., Gelfond, P., Rubin, R. H., Glover, S. C. O. AJ, 2006, 131, 258
10. **New insights on the complex planetary nebula Hen 2-113**
Lagadec, E., Chesneau, O., Matsuura, M., De Marco, O., de Freitas Pacheco, J. A., Zijlstra, A. A., Acker, A., Clayton, G. C., Lopez, B. A&A, 2006, 448, 203
11. **X-Ray Imaging of Planetary Nebulae with Wolf-Rayet-type Central Stars: Detection of the Hot Bubble in NGC 40**
Montez, R., Jr., Kastner, J. H., De Marco, O., Soker, N. ApJ, 2005, 635, 381
12. **A Spectroscopic Analysis of Blue Stragglers, Horizontal Branch Stars, and Turnoff Stars in Four Globular Clusters**
De Marco, O., Shara, M. M., Zurek, D., Ouellette, J. A., Lanz, T., Saffer, R. A.; Sepinsky, J. F. ApJ, 2005, 632, 894
13. **Observations and three-dimensional photoionization modelling of the Wolf-Rayet planetary nebula NGC 1501**
Ercolano, B., Wesson, R., Zhang, Y., Barlow, M. J., De Marco, O., Rauch, T., Liu, X.-W. MNRAS, 2004, 354, 558

14. **First Evidence of Circumstellar Disks around Blue Straggler Stars**
De Marco, O., Lanz, T., Ouellette, J. A.; Zurek, D., Shara, M. M. ApJ Letters, 2004, 606, 151
15. **Indications of a Large Fraction of Spectroscopic Binaries among Nuclei of Planetary Nebulae**
De Marco, O., Bond, H. E.; Harmer, D., Fleming, A. J. ApJ Letters, 2004, 602, 93
16. **Wolf-Rayet Central Stars and the Binary Evolution Channel**
De Marco, O.; Sandquist, E. L.; Mac Low, M.-M.; Herwig, F.; Taam, R. E. RMxAC, 2003, 18, 24
17. **Freshly ionized matter around the final helium shell flash object V4334 Sagittarii (Sakurai's Object)**
Kerber F., Pirzkal, N., De Marco O., Asplund M., Clayton, G.C. and Rosa, M.R. ApJ Letters, 2002, 581, 39
18. **Revised stellar temperatures for Magellanic Cloud O supergiants from FUSE and VLT-UVES spectroscopy**
Crowther, P.A., Hillier, D.J., Evans, C.J., Fullerton, A.W., De Marco, O., Willis, A.J., 2002, ApJ, 579, 774
19. **Discovery of an edge-on disk around the [WC10] central star CPD-56 8032**
De Marco, O., Barlow, M.J., Cohen, M., 2002, ApJ Letters, 574, 83
20. **What are the hot R Coronae Borealis Stars**
De Marco, O., Clayton, G.C., Herwig, F., Clark, S., Pollacco, D., Kilkenny, D., 2002, AJ, 123, 3387
21. **A new look at the evolution of Wolf-Rayet central stars of PN**
De Marco, O., and Soker, N., 2002, PASP, 114, 602
22. **A deep survey for faint PN in the Small Magellanic Cloud**
Jacoby, J.H., De Marco, O., 2001, AJ, 123, 269
23. **SwSt 1: an O-rich planetary nebula around a C-rich central star**
De Marco, O., Crowther, P.A., Barlow, M.J., Clayton, G., de Koter, A., MNRAS, 2001, 328, 527
24. **Abundances of [WC] central stars and their planetary nebulae**
De Marco, O., Barlow, M.J., Ap&SS, 2001, 275, 53
25. **Far-UV FUSE spectroscopy of the O VI resonance doublet in Sanduleak 2 (WO)**
Crowther P.A., Fullerton, A., Hillier, D.J., Brownsberger, Dessart, L., Willis, A.J., De Marco, O., Barlow, M.,J., and the FUSE Science Team, 2000, ApJL, 538, 51
26. **FUSE Observations of the Stellar Winds of Two O7 Supergiants in the Magellanic Clouds**
Fullerton, A., Crowther P.A., De Marco O., Hutchings, J., Bianchi, L., Brownsberger, Massa, D., Morton, Rachford, Snow, Sonneborn, Tumlinson, Willis, A.J., 2000, ApJL, 538, 43
27. **Gamma Velorum: II. The Wolf-Rayet star**
De Marco O., Schmutz W., Crowther P.A., Dessart L., Hillier D.J., deKoter A., Schweickhardt J., 2000, A&A, 358, 187
28. **Wolf-Rayet nebulae as tracers of stellar ionizing fluxes: I. M1-67**
Crowther P.A., Pasquali A., De Marco O., Schmutz W., Hillier D.J., deKoter A., 1999, A&A, 350, 1007
29. **The WC10 Central Star M4-18 and its Planetary Nebula**
De Marco O., Crowther P.A., 1999, MNRAS, 306, 93

30. **The Gamma Vel binary system: I. O Star Parameters and Light Ratio**
De Marco O., Schmutz W., 1999, A&A, 345, 163
31. **Long Term Light Curves for [WC] Central Stars**
Jones A., Lawson W.A., De Marco O., Kilkenny D., von Wyk F., Roberts G.,
1999, The Observatory, 119, 76
32. **Sakurai's Object: The planetary nebula and the central star.**
Jacoby J.H., De Marco O., Sawyer D., 1998, AJ, 116, 1367
33. **The WC10 Central Stars CPD-56 8032 and He 2-113: III. Wind Electron
Temperatures and Abundances**
De Marco O., Barlow M.J., Storey P.J., 1998, MNRAS, 297, 999
34. **Quantitative Classification of WC stars**
Crowther P.A., De Marco O., Barlow M.J., 1998, MNRAS, 296, 367
35. **The WC10 Central Stars CPD-56 8032 and He 2-113: II. Stellar Wind Modelling**
De Marco O., Crowther P.A., 1998, MNRAS, 296, 419
36. **The Evolution of the Final Helium Shell Flash Star V605 Aql from 1917 to 1997**
Clayton G.C., De Marco O., 1997, AJ, 114, 2679
37. **The WC10 Central Stars CPD-56 8032 and He 2-113: I. Distances and Nebular
Parameters**
De Marco O., Barlow M.J., Storey P.J., 1997, MNRAS, 292, 86
38. **A Quantitative Analysis of the Prototype [WCL] Star CPD-56 8032**
Crowther P.A., De Marco O., Barlow M.J., Storey P.J.,
1996, Ast&SpSci, 238, 119
39. **A Method for the Direct Determination of the Wind Electron Temperature of WC10
Central Stars of Planetary Nebulae**
De Marco O., Barlow M.J., Storey P.J., 1996, Ast&SpSci, 238, 91