

# CURRICULUM VITAE

## PERSONAL INFORMATION

*Family name, First name:* Cresci, Giovanni

*Researcher unique identifier(s):* ORCID 0000-0002-5281-1417

*Date of birth:* May 25<sup>th</sup>, 1977

*Nationality:* Italian

*Family status:* Married, 4 children (born in 2009, 2012, 2014, 2014)

*URL for web site:* <http://www.arcetri.astro.it/~gcresci/>

## • EDUCATION

- 2006 PhD in Astronomy, University of Florence, Italy.  
PhD Supervisor: Dr. Filippo Mannucci
- 2002 Master in Physics cum Laude, University of Florence, Italy

## • CURRENT POSITION

- 2023- Primo Ricercatore, INAF - Osservatorio Astrofisico di Arcetri, Italy

## • PREVIOUS POSITIONS

- 2016-2022 Ricercatore (tenure position), INAF - Osservatorio Astrofisico di Arcetri, Italy
- 2013-2016 Postdoctoral research associate at INAF – Osservatorio di Arcetri, Italy
- 2012-2013 Postdoctoral research associate at INAF – Osservatorio di Bologna, Italy
- 2009-2012 Postdoctoral research associate at INAF – Osservatorio di Arcetri, Italy
- 2006-2009 Postdoctoral research associate at Max Planck Institut fuer extraterrestrische Physik, Garching, Germany
- 2006 Fellowship at the Osservatorio di Arcetri, Italy
- 2005 Visiting student at Max Planck Institut fuer extraterrestrische Physik, Garching, Germany
- 2003 Visiting student at ESO Santiago, Chile

## • SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2023-2024 Supervision of master student Matteo Ceci, University of Florence, Italy
- 2023- Supervision of Postdoctoral Fellow Dr. Avinanda Chakraborty, INAF – Osservatorio di Arcetri
- 2023- Supervision of Postdoctoral Fellow Dr. Elena Bertola, INAF – Osservatorio di Arcetri
- 2023- Supervision of Ph.D. student Lorenzo Ulivi, University of Florence, Italy
- 2023- Co-supervision of Ph.D. student Cosimo Marconcini, University of Florence, Italy
- 2022 Supervision of master student Lorenzo Ulivi, University of Florence, Italy
- 2020-2023 Supervision of Ph.D. student Giulia Tozzi, University of Florence, Italy
- 2019-2021 Supervision of Postdoctoral Fellow Dr. Antonino Marasco, INAF – Osservatorio di Arcetri
- 2019-2023 Supervision of Ph.D. student Amirnezam Amiri, University of Florence, Italy
- 2019-2020 Supervision of master student Giulia Tozzi, University of Florence, Magini Prize 2020
- 2017-2018 Co-supervision of master student Antonio Pensabene, University of Florence, Magini prize 2018
- 2017-2019 Supervision of Ph.D. student Matilde Mingozzi, University of Bologna, Italy
- 2016-2019 Supervision of Postdoctoral Fellow Dr. Michele Perna, INAF – Osservatorio di Arcetri
- 2016-2018 Co-supervision of Ph.D. student Giacomo Venturi, University of Florence, Italy
- 2015-2017 Co-supervision of Ph.D. student Mirko Curti, University of Florence, Italy
- 2014 Co-supervision of master student Mirko Curti, University of Florence, Italy

## • COMMISSIONS OF TRUST AND INSTITUTIONAL RESPONSIBILITIES

- 2018- Co-project scientist and coordinator of the Science Team for MAVIS, AO assisted camera and spectrograph in the optical for the VLT
- 2022-2023 PI of the project “The metal circle: a new sharp view of the baryon cycle up to Cosmic Dawn with the latest generation IFU facilities” 200 kEuro by **Large Grant INAF 2022**

- 2023-2028 PI of ERIS GTO **HIPER** (High-resolution Investigation of feedback Processes with ERIS), 115 hours
- 2019-2022 Co-I, WP leader “MAGNUM” and local unit coordinator of the project PRIN MIUR 2017 “Black hole winds and the baryon life cycle”, PI F. Fiore
- 2019-2021 Co-I and local coordinator of the Mainstream grant “Black hole winds and the baryon cycle”, PI F. Fiore
- 2017-2019 Co-I, WP leader “Evolution of galaxies” e local unit coordinator of grant MIUR Frontiera “Evolution of galaxies”, PI I. Pagano
- 2017 Reviewer for the OPUS funding scheme of the Polish National Science Centre
- 2016- Member of the **NIRSpec on JWST** GTO team, coordinator of the ‘Physical and chemical properties of the ISM in SFGs at high-z’ Working Group
- 2015- Member of the Science Working Group for **HIRES**, High Resolution Spectrograph for ELT
- 2015-2020 Reviewer for the Italian Valutazione della Qualita’ della Ricerca (VQR) 2011-2014
- 2015-2018 Organizer of the General Seminar, INAF – Osservatorio di Arcetri
- 2014- Member of the Science Working Group for **MOONS**, the near-IR MOS for VLT
- 2013- Member of **ERIS**, Enhanced Resolution Imager and Spectrograph, Science Team
- 2012-2014 Member of Telescope Allocation Committee for LBT and TNG
- 2011-2018 Coordinator of the science working group “Physical parameter estimate from spectra” for the **Euclid** Science Working Group “Galaxy and AGN”
- 2011-2013 Coordinator of the working group “algorithm definition” of Spectroscopy Organization Unit for the ESA **Euclid satellite**
- 2011- Editorial Referee for Nature, Science, A&A, MNRAS, ApJ and ApJL

• **ORGANISATION OF SCIENTIFIC MEETINGS**

- 2022 Chair of the SOC in the “Charting the metallicity evolution history of the Universe”, Catania, Italy
- 2022 In the LOC of the AGN XIV conference, Firenze, Italy
- 2021 LOC and SOC of the Mavis Science Meeting 2021, Online
- 2021 In the SOC of the III Baracchi Conference, Online
- 2020 In the SOC of the EWASS 2020 Symposium - Linking Gas and Star-Formation Throughout Cosmic Time, Online
- 2020 In the SOC of the National AO meeting, Rome, Italy
- 2019 LOC and SOC of the Mavis Science Meeting 2019, Firenze, Italy
- 2018 In the SOC of the conference “AGN13: Beauty and the Beast”, Milan, Italy
- 2012 Chair of SOC and LOC of the conference “Metals in Tuscany 2012”, Spineto, Italy
- 2004 LOC of the conference “The role of mergers and feedback in galaxy formation”, Ringberg, Germany

• **MAIN RESEARCH PROJECT AND COLLABORATIONS:**

- 2022- *GALPHYS*, a large GTO project of MPE, Garching with ERIS to study galaxy kinematics at  $z \sim 2$ , in collaboration with N. Forster-Schreiber (MPE, Germany)
- 2022- *ERIS GTO*, to study ISM and AGN feedback in  $z \sim 2$  galaxies, in collaboration with F. Mannucci, F. Belfiore et al.
- 2020- *4MOST-StePS (A Stellar Population Survey using 4MOST)*, community survey with 4most, in collaboration with A. Iovino, A. Gallazzi (INAF) et al.
- 2019-2023 *SUBWAYS*, collaboration to study Ultra Fast Outflows in x-rays, a Chandra large program of 1.58 Ms, with M. Brusa (Univ. Bologna) et al.
- 2017- *MOONS GTO survey*, SDSS like rest frame optical survey at  $z \sim 1$ , in collaboration with M. Cirasuolo (ESO), L. Vanzi (PUC, Chile), H. Flores (GEPI, France), E. Oliva (INAF, Italy), J. Alfonso (CAAUL, Portugal), M. Carollo (ETH, Switzerland), Paltani (Geneva, Switzerland), et al.
- 2016- *NIRSpec GTO survey*, in collaboration with P. Ferruit (ESA), R. Maiolino (Cambridge, UK), N. Franx (Leiden, Netherlands), S. Arribas (INTA/CSIC, Spain), S. Charlot (Paris, France), T. Böker (ESA), et al.
- 2015- *SUPER survey*, near-IR IFU survey of active galaxies at  $z \sim 2$ , in collaboration with V. Mainieri (ESO), M. Brusa (Univ. Bologna, Italy), A. Marconi (Univ. Firenze, Italy), H. Netzer (Tel Aviv, Israel), F. Fiore (INAF, Italy) et al.
- 2015- *KLEVER survey*, resolved metallicity and ISM on high- $z$  galaxies, in collaboration with M. Cirasuolo (ESO), R. Maiolino (Cambridge, UK), M. Curti (Univ. Firenze, Italy)

- 2013- *Outflows and feedback in active galaxies with MUSE (MAGNUM), SINFONI IFU and X-Shooter spectroscopy* in collaboration with R. Maiolino (Cambridge, UK), V. Mainieri (ESO), A. Marconi (Univ. Firenze, Italy), M. Brusa (Univ. Bologna, Italy)
- 2015-2022 *VANDELS survey*, with particular interest for the measurement of stellar metallicity in high-*z* galaxies, in collaboration with R. McLure (Edinburgh, UK) and L. Pentericci (INAF, Italy) et al.
- 2017-2019 Spatially resolved ISM properties in *MaNGA galaxies*, in collaboration with K. Bundy (UCSC, USA), F. Belfiore (UCSC, USA), M. Mingozi (Univ. Bologna, Italy)
- 2012-2014 *The Herschel PEP survey*, in collaboration with D. Lutz (MPE, Germany), C. Gruppioni, G. Rodighiero (INAF)
- 2006-2017 *SINS/ZCSINS – high redshift galaxy Spectroscopic Imaging survey in the Near-ir* in collaboration with R. Genzel and N. Förster-Schreiber (MPE, Germany), S. Lilly (ETH, Switzerland), A. Renzini (INAF, Italy), A. Dekel (Hebrew Univ., Israel) et al.
- 2009-2015 *AMAZE (Assessing the Mass Abundances redshift Evolution) and LSD (Lyman-break galaxies Stellar populations and Dynamics)*, in collaboration with F. Mannucci (INAF, Italy), R. Maiolino (Cambridge, UK), A. Marconi (Univ. Firenze).
- 2004-2006 *SWAN – Survey of a Wide Area with NACO*, in collaboration with R. Davies, R. Genzel (MPE, Germany) and A. Baker (Rutgers, USA).
- 2003- *Star formation in local Blue Dwarf Galaxies*, in collaboration with L. Vanzi (PUC, Chile), M. Sauvage (CEA, France), E. Telles (Rio Observatory, Brazil) et al.
- 2002-2005 *KAOSS – K-band Arcetri Obscured Supernova Search*, in collaboration with F. Mannucci, R. Maiolino, M. Della Valle et al. (INAF, Italia)

- **MAIN INSTRUMENTATION PROJECTS:**

- 2018- Co-project scientist for **MAVIS**, the AO assisted camera and IFU spectrograph in the optical for the VLT, and coordinator of the MAVIS science team
- 2016- Member of the **NIRSpec@JWST** GTO team
- 2015- Member of the Science Working Group for **ANDES**, High Resolution Spectrograph for ELT
- 2013- Member of the **ERIS** (the next generation IR IFU and AO camera for the VLT) science team
- 2012- Part of the **MOONS** (the multi-object NIR spectrometer for the VLT) development team in Arcetri and part of MOONS science working group
- 2012-2013 **Herschel** Far-IR satellite PACS Instrument Control Center scientist for Italy
- 2011-2019 Responsible for the “algorithm definition” working package of the ESA **Euclid** satellite Spectroscopy Organization Unit; Coordinator of the “Physical parameter estimate from spectra” section of the Euclid “Galaxy and AGN” science working group
- 2010-2015 Collaboration to the characterization in the lab of the performances of the near-IR multi object spectrograph **NIRSpec** for the space telescope **JWST**, with the ESA team (Project Scientist: P. Ferruit, ESA), and member of the NIRSpec GTO team
- 2010-2011 Participation to the commissioning and science verification of the near-IR, AO assisted camera **PISCES** at LBT, in collaboration with INAF and LBT Observatory
- 2008-2009 Collaboration to the construction and commissioning and science verification of the multi-object near-IR spectrometer **LUCI** for the LBT, in collaboration with the LUCIFER team at MPE
- 2006 Participation in the commissioning and science verification of the Adaptive Optics assisted camera **Adopt@TNG** at the National Italian Telescope TNG, with the AO group in Arcetri

- **SCIENTIFIC PUBLICATIONS:**

I have published **186 papers** on the major refereed scientific journals, including Nature, Science, ApJ, MNRAS, A&A, 14 of which as PI, for a total of **22148 citations (Hirsch index H=76, source Google Scholar)**. A complete list of publications is available at <https://goo.gl/aHhDfN>; here a selection of 10 is reported:

1. Cresci, G.; Mannucci, F.; Maiolino, R.; Marconi, A.; Gnerucci, A.; Magrini, L., “*Gas accretion as the origin of chemical abundance gradients in distant galaxies*”, 2010, Nature, 467, 811  
<https://ui.adsabs.harvard.edu/abs/2010Natur.467..811C/abstract>
2. Cresci, G.; Hicks, E. K. S.; Genzel, R.; Schreiber, N. M. Förster; Davies, R.; Bouché, N.; Buschkamp, P.; Genel, S.; Shapiro, K.; Tacconi, L.; Sommer-Larsen, J.; Burkert, A.; Eisenhauer, F.; Gerhard, O.; Lutz, D.; Naab, T.; Sternberg, A.; Cimatti, A.; Daddi, E.; Erb, D. K. Kurk, J.; Lilly, S.

- L.; Renzini, A.; Shapley, A.; Steidel, C. C.; Caputi, K., “*The SINS survey: modeling the dynamics of  $z \sim 2$  galaxies and the high- $z$  Tully-Fisher relation*”, 2009, ApJ, 697, 115  
<https://ui.adsabs.harvard.edu/abs/2009ApJ...697..115C/abstract>
3. Cresci, G.; Mainieri, V.; Brusa, M.; Marconi, A.; Perna, M.; Mannucci, F.; Piconcelli, E.; Maiolino, R.; Feruglio, C.; Fiore, F.; Bongiorno, A.; Lanzuisi, G.; Merloni, A.; Schramm, M.; Silverman, J. D.; Civano, F., “*Blowin’ in the wind: both “positive” and “negative” feedback in a  $z \sim 1.6$  QSO*”, 2015, ApJ, 799, 82 <https://ui.adsabs.harvard.edu/abs/2015ApJ...799...82C/abstract>
  4. Cresci, G.; Marconi, A.; Zibetti, S.; Risaliti, G.; Carniani, S.; Mannucci, F.; Gallazzi, A.; Maiolino, R.; Balmaverde, B.; Brusa, M.; Capetti, A.; Cicone, C.; Feruglio, C.; Bland-Hawthorn, J.; Nagao, T.; Oliva, E.; Salvato, M.; Sani, E.; Tozzi, P.; Urrutia, T. Venturi, G., “*The MAGNUM survey: Positive feedback in the nuclear region of NGC 5643 suggested by MUSE*”, 2015, A&A, 582, 73  
<https://ui.adsabs.harvard.edu/abs/2015A%26A...582A..63C/abstract>
  5. Cresci, G., F. Mannucci, and M. Curti, “*Fundamental metallicity relation in CALIFA, SDSS-IV MaNGA, and high- $z$  galaxies*”, 2019, Astronomy and Astrophysics, 627, A42.  
<https://ui.adsabs.harvard.edu/abs/2019A%26A...627A..42C/abstract>
  6. Cresci, G., G. Tozzi, M. Perna, M. Brusa, C. Marconcini, A. Marconi, S. Carniani, M. Brienza, M. Giroletti, F. Belfiore, M. Ginolfi, F. Mannucci, L. Ulivi, J. Scholtz, G. Venturi, S. Arribas, H. Übler, F. D’Eugenio, M. Mingozzi, B. Balmaverde, A. Capetti, E. Parlanti, and T. Zana, “*Bubbles and outflows: the novel JWST/NIRSpec view of the  $z=1.59$  obscured quasar XID2028*”, 2023, A&A, 672A, 128C. <https://ui.adsabs.harvard.edu/abs/2023arXiv230111060C/abstract>
  7. Curti, M., G. Cresci, F. Mannucci, A. Marconi, R. Maiolino, and S. Esposito, “*New fully empirical calibrations of strong-line metallicity indicators in star-forming galaxies*”, 2017, Monthly Notices of the Royal Astronomical Society, 465, 1384.  
<https://ui.adsabs.harvard.edu/abs/2017MNRAS.465.1384C/abstract>
  8. Mingozzi, M., G. Cresci, G. Venturi, A. Marconi, F. Mannucci, M. Perna, F. Belfiore, S. Carniani, B. Balmaverde, M. Brusa, C. Cicone, C. Feruglio, A. Gallazzi, V. Mainieri, R. Maiolino, T. Nagao, E. Nardini, E. Sani, P. Tozzi, and S. Zibetti, “*The MAGNUM survey: different gas properties in the outflowing and disc components in nearby active galaxies with MUSE*”, 2019, A&A, 622, A146.  
<https://ui.adsabs.harvard.edu/abs/2019A%26A...622A.146M/abstract>
  9. Förster Schreiber, N. M.; Genzel, R.; Bouché, N.; Cresci, G.; Davies, R.; Buschkamp, P.; Shapiro, K.; Tacconi, L. J.; Hicks, E. K. S.; Genel, S.; Shapley, A. E.; Erb, D. K.; Steidel, C. C.; Lutz, D.; Eisenhauer, F.; Gillessen, S.; Sternberg, A.; Renzini, A.; Cimatti, A.; Daddi, E. Kurk, J.; Lilly, S.; Kong, X.; Lehnert, M. D.; Nesvadba, N.; Verma, A.; McCracken, H.; Arimoto, N.; Mignoli, M.; Onodera, M., “*The SINS survey: SINFONI Integral Field Spectroscopy of  $z \sim 2$  Star-forming Galaxies*”, 2009, ApJ, 706, 1364 <https://ui.adsabs.harvard.edu/abs/2009ApJ...706.1364F/abstract>
  10. Mannucci, F.; Cresci, G.; Maiolino, R.; Marconi, A.; Gnerucci, A., “*A fundamental relation between mass, star formation rate and metallicity in local and high-redshift galaxies*”, 2010, MNRAS, 408, 211 <https://ui.adsabs.harvard.edu/abs/2010MNRAS.408.2115M/abstract>
- **INVITED ORAL PRESENTATIONS AT CONFERENCES AND RESEARCH INSTITUTES**
    - “The role of AGN feedback in regulating star formation”, Spring Symposium STScI, Baltimore, 2024 (Review)
    - “Bubbles and outflows: the novel JWST/NIRSpec view of the  $z=1.59$  quasar XID2028”, NASA Goddard Space Center, USA, 2023
    - “Bubbles and outflows: the novel JWST/NIRSpec view of the  $z=1.59$  quasar XID2028”, Radio Galaxies Workshop, Bologna, Italy, 2023
    - “Bubbles and outflows: the novel JWST/NIRSpec view of the  $z=1.59$  quasar XID2028”, OAS Bologna
    - “Energetics and global effect of AGN feedback” at MMC2022, ESO, Garching (Review), 2022
    - “The physical properties, acceleration mechanism and impact of AGN outflows from low to high redshift”, Universidade de Sao Paulo, Brasil, Online, 2021
    - “The physical properties, acceleration mechanism and impact of AGN outflows from low to high redshift”, ESA Faculty Seminar, Baltimore, Online, 2021
    - “The physical properties and impact of AGN outflows from low to high redshift”, Seul National University, Online, 2021
    - “MAVIS: an MCAO assisted visible imager and spectrograph for the VLT”, LAM, Marseille, 2021, Online
    - “Multiple phase outflows and AGN feedback”, II KIAA Forum on Gas in Galaxies, Beijing, 2019 (Review)
    - “MAVIS: an MCAO assisted visible imager and spectrograph for the VLT”, at Baracchi II, Florence, Italy, 2018

- “The evolution of the Metallicity scaling relations across cosmic time”, at A star was born, Spineto, Italy, 2018
- “Evidence for feedback in individual QSOs”, at Lorentz Center, Netherland, 2017 (*Review*)
- “AGN driven Outflows & Feedback”, at Challenges in Galaxy Evolution, Florence, Italy, 2017 (*Review*)
- “The MAGNUM survey”, MIAPP, Garching, Germany, 2017
- “AGN Feedback locally and at high-z”, at AGN12, Napoli, Italy, 2016 (*Review*)
- “Feedback from AGN outflows in the local and high-z Universe”, INAF-Roma, Italy, 2015
- “LBT/LUCI view of star formation and metallicity at high-z” at *LBT workshop*, Padova, Italy, 2014
- “Metallicity near and far”, INAF-Bologna, Italy, 2013
- “Evolution of metallicity relations up to  $z\sim 3$ ”, at Metals in Tuscany, Spineto, Italy, 2012
- “Gas accretion in distant galaxies as the origin of metallicity gradients” at EWASS, Rome, Italy, 2012
- “Metallicity Near and Far”, Università di Padova, Italy, 2012
- “IFU observations of high-z galaxies”, ELIXIR Advanced PhD school, Madrid, Spain, 2011 (*Review*)
- “Metallicity in the early Universe” at Maximizing the LBT performances, Padova, Italy, 2011
- “Metallicity near and far”, at “Multiwavelength Views of the ISM in High-z Galaxies”, Santiago, Chile, 2011 (*Review*)
- “Metallicities near and far”, IRA, Bologna, Italy, 2011
- “AMAZE with LSD” at Galaxies in the distant Universe, Ringberg, Germany, 2010
- “Dynamics and metallicity at high-z”, Rutgers University, USA, 2010
- “Witnessing galaxy evolution at  $z>2$  with SINFONI”, Padova Observatory, Italy, 2009
- “Galaxy formation and evolution in unprecedented detail”, Arcetri Observatory, Italy, 2009
- “The SINS survey”, Pontificia Universidad Católica, Santiago, Chile, 2009
- “Processing and visualizing 3D near infrared data” at the 3D2008, ESO, Germany, 2008
- “Near-IR SNe searches: looking through the dust” at the SN rates08, Arcetri, Italy, 2008
- “The SINS survey”, Obs. National, Rio de Janeiro, Brasil, 2007
- “The SWAN survey: galaxies at the diffraction limit”, MPE, Garching, Germany, 2006
- “The SWAN survey: dealing with anisoplanatic PSFs and first results”, Arcetri, Italy, 2005

I have also presented the results of my work at 44 more international conferences between 2003 and 2023.

- **OBSERVING EXPERIENCE AND TELESCOPE TIME AS PI:**

I have been the PI of 31 successful projects at the main telescope facilities in the world, for a total of more than 1000 hours from radio to optical, and co-I of more than 130. I have spent more around 150 hours of observations at the major observing facilities, including VLT, Keck, NTT, ESO 3.6m, LBT, TNG and TIRGO.

- **FUNDING ID, PRIZES, GRANTS:**

- 2022: PI INAF Large Grant 2022 “The metal circle: a new sharp view of the baryon cycle up to Cosmic Dawn with the latest generation IFU facilities” (200 k€)
- 2022: Co-I PRIN MIUR “PROMETEUS: PRObing the METallicity Evolution of the Universe with Spectroscopy”, PI F. Mannucci (223 k€)
- 2019: Co-I and WP leader PRIN MIUR “Black hole winds and the baryon life cycle of galaxies”, PI F. Fiore (842 k€)
- 2017: Co-I ASI grant “X-ray studies of high-z QSOs to understand AGN feedback”, PI, M. Cappi (80 k€)
- 2017: Co-I PRIN INAF “Empowering SKA as a probe of galaxy evolution with HI”, PI L. Hunt (411 k€)
- 2017: Co-I and WP leader “Evolution of galaxies” for the MIUR grant “FRONTIERA”, PI I. Pagano (986k€)
- 2016: “*Abilitazione Scientifica Nazionale*” granted for Full Professorships in Italian Universities
- 2014: Co-I PRIN-INAF “Windy black Holes combing galaxy evolution”, PI F. Fiore (140 k€)
- 2013: “*Abilitazione Scientifica Nazionale*” granted for Associate Professorships in Italian Universities
- 2011: Co-I PRIN-INAF “Black hole growth and AGN feedback through the cosmic time”, PI F. Fiore
- 2011: Co-I PRIN-MIUR “The dark Universe and the cosmic evolution of baryons”, PI A. Cimatti
- 2010: Co-I ASI/INAF PRIN, “Metallicity evolution of galaxies”, PI: F. Mannucci
- 2009: Co-I of HST cycle-17 grant for data Analysis, PI: F. Mannucci
- 2008: Co-I of PRIN-INAF “Galaxies under a microscope”, PI: F. Mannucci
- 2008: Co-I of Spitzer Cycle-5 Data Analysis Award, PI: F. Mannucci
- 2004: Grant from MPE, to work 1 year in Garching, Germany, with R. Davies, M. Lenhart and R. Genzel
- 2003: PhD grant (3 years) from Università degli Studi di Firenze
- 2003: Grant from ESO, European Southern Observatory, to work 4 months in Santiago, Chile, with L. Vanzani