

## Curriculum Vitæ

### F. Eugenio Barrio

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## Education

- **Doctor of Philosophy, University of Oxford.**  
Title: *Quasars within the Epoch of Reionization.*  
Supervisor: Prof. Steve Rawlings.  
Funded by SISCO EU-RTN, (an European Commission Research & Training Network).  
St Edmund Hall - University of Oxford, March 2010.
- **Master of Science, University of Durham.** (master by research)  
Title: *X-ray Emission from accreting Black Holes.*  
Supervisor: Dr Chris Done.  
Ustinov College - University of Durham, September 2002.
- **Bachiller Universitario en Física, Universidad Nacional de Tucumán.**  
Equivalent to a BA Physics Honours I class (marks average 7.31/10.00).  
Universidad Nacional de Tucumán - Argentina, June 2000.
- COURSES:
  - EU Winter School & Workshop: *Surveying the Universe*, SISCO EU-RTN and University of Innsbruck. Obergurgul, February 2005.
  - XIV Canary Islands Winter School of Astrophysics: *Dark Matter and Dark Energy in the Universe*, Instituto de Astrofísica de Canarias. Puerto de la Cruz, November 2002.
  - Courses part of the Master in Science Teaching at Universidad Nacional de Tucumán: Special Relativity, 2nd semester 1999; Optics Teaching, 1st semester 1998 and Introduction to Astrophysics, 2nd semester 1997.

## Scholarships & Awards

- Gosling Bursary 2004, St Edmund Hall, University of Oxford, January 2004.
- CIUNT Travel Grant, Science and Technology Secretariat SeCyT, Universidad Nacional de Tucumán UNT, August 2000.
- Intercultural Exchange Studentship in New Zealand. American Field Service AFS. Summer Program, Ruatoki, New Zealand, 1992-93.

## Research Interests

### **Extragalactic Astronomy/ Observational Cosmology.**

Formation and evolution of galaxies. High redshift. Active Galactic Nuclei. Quasars. Radio galaxies. High redshift Radio Galaxies. Galactic environments. Luminosity functions. Reionization. Multi-wavelength observations. Deep surveys. Large-area surveys.

## Experience & Skills

### OBSERVING

- Near Infrared Imaging: 2 runs adding 9 nights at UK Infrared Telescope UKIRT, J-H-K band imaging with UFTI (UKIRT Fast-Track Imager); long-slit spectroscopy with UIST (UKIRT 1-5 micron Imager Spectrometer). UKIRT, Mauna Kea, Hawaii, USA.
- Optical Imaging: 3 runs 16 nights at 2.7m (107") Harlan J. Smith Telescope, R-I band imaging with IGI (Imaging Grism Instrument). McDonald Observatory, Texas, USA.

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<sup>1</sup>last updated March 25, 2010.

## TECHNICAL & IT

- Extensive use of UKIRT OT (observing tool) and Gemini OT Phase II preparing imaging and spectroscopy observations, target lists, finding charts, instrument configurations, etc.
- Optical and near-infrared data reduction (imaging and spectroscopy) from WHT, INT, 2.7HJST, etc. (with IRAF) and UKIRT (with ORACDR).
- X-ray data reduction from RXTE with REX.
- Use of several astronomy related packages: IRAF, Karma (kvis, koords), IDL libraries, ds9, Gaia and XSPEC.
- Experience using astronomy Data sets, Databases and Catalogs: DSS, SDSS, SSS, APM, 2MASS, WENSS/WISH, NVSS, FIRST, VLSS, NED, IRSA, SIMBAD, etc.
- Familiarity with MSWindows/MSDOS, Mac OS X and Unix/Linux/Solaris systems; experience with C, Perl, IDL and XHTML languages; and extensive use of  $\LaTeX$  and MS Office.

## ACADEMIC & TEACHING

- SCIENCE TRANSFER (Most Important Conferences & Meetings)
  - Talk at Granada Workshop on High Redshift Radio Galaxies, Granada, Spain, 18-20/04/05.
  - Report Talk presented at SISCO EU-RTN meeting, Groningen, Netherlands, 23-24/09/04.
  - Report Talk presented at SISCO EU-RTN meeting, Heidelberg, Germany, 08-09/03/04.
  - Poster at XV International Conference for Physics Students ICPS2000, Zadar, Croatia, 04-11/08/00.
- EXTERNAL COLLEGE TUTOR:
  - Astrophysics B3. University College 2006-07, 2007-08 and 2008-09.
  - Astrophysics B3. Lady Margaret Hall, 2005-06 and 2006-07.
  - Astrophysics B3. St Hilda's College and Trinity College, 2005-06 and 2006-07.
- LABORATORY DEMONSTRATOR:
  - Philip Wetton Telescope. Astrophysics, University of Oxford, various instances in 2004 and 2005.
- TUTOR: (voluntary)
  - Key Stage 3 Mathematics at Cherwell School Oxford, 01-06/08.
  - OPAL Spanish. Oxford University Language Centre, Trinity 2005.
- STUDENT TEACHING ASSISTANT:
  - Laboratory of Experimental Physics 1, 2, 3 & 4. Department of Physics UNT, 1999, 2000 and 2001.
  - Laboratory of Modern Physics. Department of Physics UNT, 2nd semester 1998.
  - Modern Physics. Department of Physics UNT, 1st semester 1998.
  - Laboratory of Experimental Physics 1 & 2. Department of Physics UNT, 1997.
- OUTREACH/ PUBLIC UNDERSTANDING OF SCIENCE

Most were events targeting high school teenagers in their final years aiming to develop interest in science. It involved class presentation, question sessions, interactive workshops, electronics laboratory, planetarium demonstrations, open days hosting, etc.:

  - Several outreach talks and visits to Philip Wetton Telescope, University of Oxford, 2005-09.
  - High-Fliers Group. Department of Physics, University of Durham, 03/07/02.
  - Science Matters. Tyneside physics event, Newcastle upon Tyne, 05/06/02.
  - Inflatable Planetarium physics level 2. Durham Festival of Science, Durham, 06-07/05/02.
  - Physics for everyone 98. Universidad Nacional de Tucumán, 19-23/10/98.
  - Physics for everyone 94. Universidad Nacional de Tucumán, 17-21/10/94.
- ORGANIZATION & ADMINISTRATION
  - Departmental Administrator at the Oxford International Centre for Publishing Studies and at Modern Languages. Oxford Brooks University; 10/07-02/08.
  - Academic Assistant at Open University Summer School of Physics (SXR206). Green College, Durham, 26/07-05/08/02.
  - Active member (Treasurer) of TripleF Foro de Futuros Físicos (Physics Students Society of Tucumán).

San Miguel de Tucumán, 1999-2001.

- Collaborator at AAA00 Annual Meeting of the Argentinean Astronomy Society. Tafí del Valle, 18-22/09/00.
- Organization Staff of AFA99 84<sup>th</sup> Annual Meeting of the Argentinean Physics Society. S.M. de Tucumán, 13-17/09/99.
- Organization Staff of the workshops Physics for everyone 98. Universidad Nacional de Tucumán, S.M. de Tucumán, 19-23/10/98.

#### LANGUAGES

- SPANISH: Native.
- ENGLISH: Fluent.
- GERMAN: Basic.

#### OTHER COURSES

- MPS University of Oxford - UK Grad Equivalent Course: Personal Effectiveness & Transferable Skills, September 2005.
- Academic Writing Courses, Oxford University Language Centre: Writing a Research Article in English, December 2004 and Writing a Thesis or Dissertation, Hilary 2005.
- Physics Teaching Faculty University of Oxford, Graduate Training Course Level 1, Hilary 2005.
- Level 4 undergraduate courses at Department of Physics, University of Durham: Astrophysics II cosmology, Michaelmas 2001 and General Relativity & Cosmology, Michaelmas 2001.
- TOEFL 260/300 points in the computer based test, equivalent to 617-620/677 in the paper based test, 23/08/01.
- Course part of the Master in Science Teaching, Universidad Nacional de Tucumán: Optical Coherence Teaching 1st semester 1998.
- Extra 4th and 5th year short courses at Science and Technology Faculty, Universidad Nacional de Tucumán: Nuclear Radiation, From Chaos to the Theory of Complexity, Superconductivity & Superconductors II and Superconductivity & Superconductors, various semesters between 1998–2000.
- Extra 3rd, 4th and 5th year courses at Department of Physics, Universidad Nacional de Tucumán: Mathematics 3, Materials Properties, Thermodynamics, Experimental Physics 4 (Laboratory of vacuum techniques) and Classical Mechanics, various semesters between 1998–2000.
- SCUBA diving courses CMAS, EUDEF UNT, FAAS: 1st Star 1994, 2nd Star 1996, 3rd Star 1998.
- Intensive English courses at Anglo–Argentine Intercultural Institute, Tucumán: level 3 and 4, 1994.

#### WORK EXPERIENCE

Part-time and temporary work to help support myself during full-time education:

- Academic/University Teaching and Administration as above.
- Temporary Administrative Assistant, various roles and companies. Blue Arrow, Oxford; 2006-08.
- Professional Diver for S. W. Buceo (Divers & underwater services Company). S.M. de Tucumán; 04/99-08/01.
- Diving Instructor of 1st star CMAS. Escuela de Buceo y Actividades Subacuáticas EUDEF UNT, FAAS CMAS. S.M. de Tucumán; 09/97-08/01.

Voluntary work:

- Drama player for the theatrical (amateur) company “Juan Bosco” S.M. de Tucumán; 2000-2001.
- Volunteer in intercultural exchange programs Youth For Understanding YFU. S.M. de Tucumán, Argentina; 1996-97.
- Volunteer in intercultural exchange programs American Field Service AFS RL Tucumán (hosting, counselling). S.M. de Tucumán, Argentina; 1994-96.



## Publications List

### REFEREED JOURNALS

- *A young, dusty, compact radio source within a Ly $\alpha$  halo.* **F. Eugenio Barrio**, Matt J. Jarvis, Steve Rawlings, Amanda Bauer, Steve Croft, Gary J. Hill, Arturo Manchado, Ross J. McLure, Daniel J.B. Smith, Thomas A. Targett., 2008, Monthly Notices of the Royal Astronomical Society, Volume 389, Issue 2, pp. 792-798.
- *On the accretion geometry of Cyg X-1 in the low/hard state.* **Barrio F.E.**, Done C., Nayakshin S., 2002, Monthly Notices of the Royal Astronomical Society, Volume 342, Issue 2, pp. 557-563.

### CONFERENCE PROCEEDINGS

- *A Large Area Search for Radio-loud Quasars within the Epoch of Reionization.* Matt J. Jarvis, Steve Rawlings, **F. Eugenio Barrio**, Gary J. Hill, Amanda Bauer, Steve Croft. Multiwavelength AGN Surveys; proceedings of the Guillermo Haro Conference held December 8-12, 2003, in Cozumel, Mexico. Ed. R. Mújica and R. Maiolino. World Scientific Publishing Company, Singapore, 2004, p.133.
- *A Search for Radio-loud Quasars within the Epoch of Reionization.* Matt J. Jarvis, Steve Rawlings, **F. Eugenio Barrio**, Gary J. Hill, Amanda Bauer, Steve Croft, 2003, AGN Physics with the Sloan Digital Sky Survey, ed. G. T. Richards and P. B. Hall (San Francisco: ASP). ASP Conference Proceedings 2003.