

Paolo Turri

CURRICULUM VITAE

Department of
Physics and Astronomy
University of
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Research Interests

Adaptive optics, PSF reconstruction, astronomical instrumentation, astronomical imaging and spectroscopy, data analysis software, stellar astrometry and photometry, Galactic Center, globular clusters, stellar populations, observational strategies.

Education

Ph.D. in Astronomy, *University of Victoria*, Victoria (BC), Canada. **2017**

Thesis: "Advancing next generation adaptive optics in astronomy: From the lab to the sky"

Advisors: Alan W. McConnachie, David R. Andersen

M.Sc. in Astrophysics and Space Physics, *University of Trieste*, Trieste, Italy. **2012**

Thesis: "Sky coverage of a multi-conjugate adaptive optics system using only natural guide stars on Extremely Large Telescopes"

Advisors: Roberto Ragazzoni, Giorgio Sedmak

B.Sc. in Astronomy, *University of Padova*, Padova, Italy. **2007**

Thesis: "The optical design of an experimental rigid corrector for static aberrations at the VLT prime focus"

Advisors: Roberto Ragazzoni, Giampaolo Piotto

Research Appointments

Postdoctoral Researcher, *University of British Columbia*, Vancouver (BC), Canada. **2019–**

Advisor: Scott C. Chapman

Postdoctoral Researcher, *University of California, Berkeley*, Berkeley (CA), United States. **2017–2019**

Advisor: Jessica R. Lu

Professional Activities

Gemini North Adaptive Optics Science Team member

TMT IRIS Science Team member

Canadian Time Allocation Committee (CanTAC) referee

Awards

Canadian Astronomical Society Board Award for Best Student Talk **2015**

Students Mentoring

William Drechsler, *UC Berkeley*, Undergraduate. **2019**

Advisor: Jessica R. Lu. Served as postdoc advisor

- Ruoyi Yin**, *UC Berkeley*, Undergraduate. **2019**
 Advisor: Jessica R. Lu. Served as postdoc advisor
- Steve Robinson**, *UC Berkeley*, Undergraduate. **2018**
 Advisor: Jessica R. Lu. Served as postdoc advisor
- Mojtaba Taheri**, *University of Victoria*, PhD. **2015–2017**
 Advisors: David R. Andersen and Alan W. McConnachie. Served as student advisor

Teaching Experience

- AstroTech Summer School**, *UC Berkeley*. **2019**
 Leader of an activity on the characterization of detectors
- Professional Development Program**, *UC Santa Cruz*. **2018**
 Training in scientific teaching by the Institute for Scientist & Engineer Educators, with practical teaching experience
- Teaching Assistant**, *University of Victoria*. **2013–2016**
 Astr250: Introduction to Astrophysics
- Teaching Assistant**, *University of Victoria*. **2013**
 Astr102: Exploring the Cosmos

Talks and Posters

Invited Talks

- Seminar at TMT offices **2018**
Pasadena (CA), United States
- MAVIS Science and Technical Workshop **2018**
Sydney, Australia
- Colloquium at Gemini South Observatory **2016**
La Serena, Chile
- Colloquium at Department of Physics and Astronomy **2014**
Bologna, Italy

Contributed Talks

- Adaptive Optics for Astronomy (AO4ASTRO) Conference **2019**
Marseille, France
- TMT Science Forum **2018**
Pasadena (CA), United States
- Center for Adaptive Optics, Fall Science Retreat **2018**
Lake Arrowhead (CA), United States
- UC Galactic Center Group Workshop **2017**
Los Angeles (CA), United States
- Center for Adaptive Optics, Fall Science Retreat **2017**
Lake Arrowhead (CA), United States
- Space Telescope Science Institute, PSF Fitting Workshop **2017**
Baltimore (MD), United States
- SPIE Conference, Astronomical Telescopes + Instrumentation **2016**
Edinburgh, United Kingdom
- Adaptive Optics for Extremely Large Telescopes (AO4ELT) Conference **2015**
Lake Arrowhead (CA), United States

Annual Meeting of the Canadian Astronomical Society 2015
Hamilton (ON), Canada

Posters

Adaptive Optics for Extremely Large Telescopes (AO4ELT) Conference 2019
Québec City (QC), Canada

SPIE Conference, Astronomical Telescopes + Instrumentation 2014
Montreal (QC), Canada

Invited Research Visits

Gemini Observatory – Southern Operations Center, La Serena, Chile. 2016
Analysis of the GeMS/GSAOI performance

Università di Bologna – Department of Astronomy, Bologna, Italy. 2014
Data reduction procedures for MCAO images

Public Outreach

Mount Diablo Astronomical Society, Walnut Creek (CA), United States. 2019
Talk on the history of adaptive optics at the Annual General Meeting

Royal Astronomical Society of Canada, Victoria (BC), Canada. 2016
Talk on the history of adaptive optics at the Annual General Meeting

Royal Astronomical Society of Canada, Victoria (BC), Canada. 2015
Public talk at the Dominion Astrophysical Observatory on adaptive optics and the Thirty Meter Telescope

Gruppo Astrofili Polesani, Rovigo, Italy. 2014
Public talk on globular clusters and adaptive optics

Legio I Italica, Rovigo, Italy. 2007–2012
Public presentations and school lectures on ancient and classical astronomy, mathematics and natural sciences

Gruppo Astrofili Polesani, Rovigo, Italy. 1999–2008
Amateur astronomer, organizer of the public evenings at the local astronomical observatory, telescope operator, planetarium operator, past member of the Board of Directors

References

Scott C. Chapman (Advisor), Dalhousie University – Department of Physics and Atmospheric Science / NRC Herzberg Astronomy and Astrophysics Research Centre.
scott.chapman@dal.ca

Jessica R. Lu (Advisor), UC Berkeley – Department of Astronomy.
jlu.astro@berkeley.edu

Alan W. McConnachie (Advisor), NRC Herzberg Astronomy and Astrophysics Research Centre.
alan.mconnachie@nrc-cnrc.gc.ca

David R. Andersen (Advisor), NRC Herzberg Astronomy and Astrophysics Research Centre.
david.andersen@nrc-cnrc.gc.ca

Peter B. Stetson, *NRC Herzberg Astronomy and Astrophysics Research Centre.*

peter.stetson@nrc-cnrc.gc.ca

Giuliana Fiorentino, *INAF – Osservatorio Astronomico di Bologna.*

giuliana.fiorentino@oabo.inaf.it

List of Publications

Refereed

E. Mieda, J.-P. Véran, M. Rosensteiner, **P. Turri**, D. Andersen, G. Herriot, O. Lardièrè, P. Spanò. “Multiconjugate adaptive optics simulator for the Thirty Meter Telescope: design, implementation, and results”. *JATIS*, 4:049002, 2018

P. Turri, A. W. McConnachie, P. B. Stetson, G. Fiorentino, D. R Andersen, G. Bono, D. Massari and J.-P. Véran. “Optimal stellar photometry for multi-conjugate adaptive optics systems using science-based metrics”. *AJ*, 153:199, 2017

D. Massari, G. Fiorentino, A. McConnachie, A. Bellini, E. Tolstoy, **P. Turri**, D. Andersen, G. Bono, P. B. Stetson and J.-P. Véran. “Astrometry with MCAO: HST-GeMS proper motions in the globular cluster NGC 6681”. *A&A*, 595:L2, 2016

D. Massari, G. Fiorentino, A. McConnachie, G. Bono, M. Dall’Ora, I. Ferraro, G. Iannicola, P. B. Stetson, **P. Turri** and E. Tolstoy. “GeMS MCAO observations of the Galactic globular cluster NGC 2808: the absolute age”. *A&A*, 586:A51, 2016

P. Turri, A. W. McConnachie, P. B. Stetson, G. Fiorentino, D. R Andersen, J.-P. Véran and G. Bono. “Toward precision photometry for the ELT era: the double subgiant branch of NGC 1851 observed with the Gemini/GeMS MCAO system”. *ApJL*, 811:L15, 2015

Conference Proceedings

T. Do, A. Ciurlo, G. Witzel, J. Lu, **P. Turri**, M. Fitzgerald, R. Campbell, J. Lyke, A. Ghez. “Point-spread function reconstruction for integral-field spectrograph data”. *Proc. SPIE*, 10703:107030I, 2018

A. Ciurlo, T. Do, G. Witzel, J. Lu, J. Lyke, M. P. Fitzgerald, A. Ghez, R. Campbell and **P. Turri**. “Off-axis PSF reconstruction for integral field spectrograph: instrumental aberrations and application to Keck/OSIRIS data”. *Proc. SPIE*, 10703:107031O, 2018

P. Turri, A. W. McConnachie, P. B. Stetson, D. R. Andersen, J.-P. Véran, G. Fiorentino and D. Massari. “Photometric techniques, performance and PSF characterization of GeMS”. *Proc. SPIE*, 9909:990907, 2016

M. Rosensteiner, **P. Turri**, E. Mieda, J.-P. Véran, D. R. Andersen and G. Herriot. “On the verification of NFIRAOS algorithms and performance on the HeNOS bench”. *Proc. SPIE*, 9909:990949, 2016

D. Massari, G. Fiorentino, E. Tolstoy, A. McConnachie, R. Stuik, L. Schreiber, D. Andersen, Y. Clénet, R. Davies, D. Gratadour, K. Kuijken, R. Navarro, J.-U. Pott, G. Rodeghiero, **P. Turri** and G. V. Kleijn. “High-precision astrometry towards ELTs”. *Proc. SPIE*, 9909:99091G, 2016

G. Fiorentino, D. Massari, A. McConnachie, P. B. Stetson, G. Bono, **P. Turri**, D. Andersen, J.-P. Véran, E. Diolaiti, L. Schreiber, P. Ciliegi, M. Bellazzini, E. Tolstoy, M. Monelli, G. Iannicola, I. Ferraro and V. Testa. “Stellar photometry with multi conjugate adaptive optics”. *Proc. SPIE*, 9909:990906, 2016

P. Turri, A. W. McConnachie, P. B. Stetson, G. Fiorentino and D. Andersen. "Precise and deep photometry from the ground: on-sky science performance of MCAO". *Adaptive Optics for Extremely Large Telescopes 4 - Conference Proceedings*, 31537, 2015

M. Rosensteiner, **P. Turri**, J.-P. Véran, D. Andersen, P. Spanò and G. Herriot. "Laboratory tests on HeNOS, the MCAO test bench for NFIRAOS". *Adaptive Optics for Extremely Large Telescopes 4 - Conference Proceedings*, 31542, 2015

P. Turri, D. R. Andersen, J.-P. Véran, P. Spanò, M. Rosensteiner and E. A. McVeigh. "An MCAO test bench for NFIRAOS". *Proc. SPIE*, 9148:91485Y, 2014

P. Turri, A. W. McConnachie, P. B. Stetson, G. Fiorentino, D. R. Andersen, G. Bono and J.-P. Véran. "Photometric performance of LGS MCAO with science-based metrics: first results from Gemini/GeMS observations of Galactic globular clusters". *Proc. SPIE*, 9148:91483V, 2014