

# Simone Aiola

## Curriculum Vitae et Studiorum

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*“Fatti non foste a viver come bruti, ma per seguir  
virtute e canoscenza” [Inferno - Dante Alighieri]*

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## PERSONAL INFORMATION

Birth date and place June 4, 1988 - Rome, Italy  
Nationality Italian  
Languages Italian (native speaker), English (proficiency level)

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## RESEARCH INTERESTS

Cosmology: phenomenology and data analysis.  
Cosmic Microwave Background physics: temperature, polarization, lensing, Sunyaev-Zel'dovich effect.  
Cosmic Microwave Background analysis: map-making, simulations, time-ordered data analysis, n-point estimators.

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## RESEARCH AND APPOINTMENTS

Sept 2016 - present **Postdoctoral Research Associate**, Supervisor: Jo Dunkley.  
Princeton University - NJ  
Aug 2013 - Aug 2016 **Graduate Student Researcher**, Advisor: Prof. Arthur Kosowsky.  
University of Pittsburgh - PA, USA  
Aug 2012 - Dec 2013 **Teaching Assistant**, University of Pittsburgh.  
Courses: Lab for Physics and Engineers - Lab 0219 (Fall 2012), Intro to Physics 2 - Phys 0111 (Spring 2013 and Summer 2013), Stonehenge to Hubble - Astro 0088 (Fall 2013) - Stars, Galaxies and Cosmos - Astro 0089 (Summer 2014)

For official records of teaching performances please contact Leyla Hirschfeld, graduate program coordinator ([lmh@pitt.edu](mailto:lmh@pitt.edu)).

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## EDUCATION AND MENTORSHIP

### Education

Ph.D., Physics **University of Pittsburgh, USA, 2012 - 2016.**  
Thesis: *New Probes of Large-Scale CMB Anomalies*

- Advisor: Prof. Arthur Kosowsky
- M.Sc., Physics **University of Pittsburgh, USA, 2012 - 2013** (*Awarded in 2014*).
- M.Sc., Astrophysics **‘La Sapienza’ University of Rome, IT, 2010 - 2012.**
- Thesis: *The Large-Scale Polarization Explorer: Optimization of the Observational Strategy*
- Advisors: Prof. Paolo de Bernardis and Dr. Francesco Piacentini
- Remarks: graduated *cum laude*
- B.Sc., Physics & Astrophysics **‘La Sapienza’ University of Rome, IT, 2007 - 2010.**
- Thesis: *The Polarization of the Cosmic Microwave Background*
- Advisor: Prof. Paolo de Bernardis
- Mentorship**
- Sept 2014 - Sept 2015 **Art and Sciences Teaching Assistant Mentor.**  
University of Pittsburgh - PA, USA
- May 2014 - Aug 2016 **Undergraduate Mentorship**, Co-advising undergraduate student Ellis Herman (University of Richmond).  
Project: Probing the lack of large-scale CMB correlation with polarization and lensing measurements.
- May 2013 - Aug 2016 **Undergraduate Mentorship**, Co-advising undergraduate student Bingjie Wang (University of Pittsburgh).  
Project: Large-scale anomalies in the CMB temperature sky.

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## AWARDS AND FELLOWSHIPS

- 2016 **McGill Astrophysics Postdoctoral Fellowship (declined).**  
Department of Physics - McGill University
- 2014 and 2015 **Zaccheus Daniel Predoctoral Fellowship.**  
Department of Physics and Astronomy - University of Pittsburgh
- 2015 **Andrew Mellon Predoctoral Fellowship.**  
The Dietrich School of Art and Sciences - University of Pittsburgh
- 2014 **University of Pittsburgh School of Arts and Sciences Fellowship.**  
The Dietrich School of Art and Sciences - University of Pittsburgh
- 2014 **Nomination for Outstanding Teaching Assistant Awards.**  
American Association of Physics Teachers
- 2014 **Myron P. Garfunkel Excellence in Graduate Student Teaching Award 2014.**  
Department of Physics and Astronomy - University of Pittsburgh

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## COLLABORATIONS

- May 2016 - Present **Simons Observatory (SO)**, *Main contributions: TOD-to-map working group, pipeline design working group..*

Sept 2014 - Present **Atacama Cosmology Telescope (ACT)**, *Main contributions: Remote Control Observer, map-making working group, kSZ working group, cosmology from 2-point working group..*

Sept 2010 - Aug 2012 **Large-Scale Polarization Explorer (LSPE)**, *Main contributions: optimization of the scanning strategy for B-mode search..*

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## COMPUTER SKILLS AND COMPETENCES

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|--------------------|---|
| Languages          | Fortran, C/C++, IDL, Matlab (Octave), Python                |
| Cosmological tools | CAMB, CLASS, polSPICE, HEALPix                              |
| Supercomputing     | MPI, OpenMP, clusters used: SCINET and Hippo (South Africa) |

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## TALKS AND POSTER PRESENTATIONS

For a detailed list of talks and posters with PDFs, visit my website. Below a list of talks from 2016.

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|-----------|---|
| July 2017 | <b>‘Maximum-likelihood map-making for ACT’</b> , contributed talk.<br>Advances in Theoretical Cosmology in Light of Data - Nordita, Stockholm |
| Feb 2017  | <b>‘Cosmology with ACT’</b> , contributed talk.<br>UKZN, SKA, and AIMS - South Africa   |
| Feb 2017  | <b>‘Maximum-likelihood map-making for ACT’</b> , contributed talk.<br>Cosmology on Safari - South Africa                                      |
| Mar 2016  | <b>‘New Probes of Large-scale CMB Anomalies’</b> , invited talk.<br>Astro Seminar - Case Western Reserve University, USA                      |

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## REFERENCES

**Prof. Arthur Kosowsky**, *Ph.D. Advisor*, email: [kosowsky@pitt.edu](mailto:kosowsky@pitt.edu).

**Prof. Jo Dunkley**, *Postdoc Supervisor*, email: [jdunkley@princeton.edu](mailto:jdunkley@princeton.edu).

**Prof. Lyman Page**, email: [page@princeton.edu](mailto:page@princeton.edu).

### Additional References

**Prof. Glenn Starkman**, email: [glenn.starkman@case.edu](mailto:glenn.starkman@case.edu).

**Prof. Jonathan Sievers**, email: [jonathan.sievers@gmail.com](mailto:jonathan.sievers@gmail.com).

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October 11, 2017