

Alessandro Sonnenfeld

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Research

I am an observational astronomer, expert in gravitational lensing. I have been using **strong lensing** to study the inner structure of massive early-type galaxies and **weak lensing** to link galaxies to their dark matter halos. I make extensive use of **Bayesian inference** methods, in order to fit complex models to a broad range of observations.

Employment history

Sep 2020 - Present	NOVA Fellow
Leiden (Netherlands)	Leiden Observatory, Leiden University
Sep 2018 - Aug 2020	Marie Skłodowska-Curie Fellow
Leiden (Netherlands)	Leiden Observatory, Leiden University
Sep 2015 - Aug 2018	IPMU Prize Postdoctoral Fellow
Kashiwa (Japan)	Kavli Institute for the Physics and the Mathematics of the Universe, The University of Tokyo
Jan 2015 - Jul 2015	Postdoctoral Scholar
Los Angeles, CA (USA)	University of California Los Angeles

Education

Sep 2010 - Jan 2015	PhD in Physics
Santa Barbara, CA (USA)	University of California Santa Barbara
Sep 2007 - May 2010	MSc in Physics
Pisa (Italy)	University of Pisa
Sep 2004 - Sep 2007	BSc in Physics
Pisa (Italy)	University of Pisa

Grants

165,598 EUR	Marie Skłodowska-Curie Individual Fellowship
Sep 2018	European Union, Horizon 2020 research and innovation programme (Project "HALOS2020". ID: 792916)

1,400,000 JPY (approx. 11,000 EUR)
Apr 2017 Grants-in-Aid for Scientific Research (KAKENHI) Young Scientists (B)
Japan Society for the Promotion of Science, Ministry of Education, Culture, Sports, Science and Technology (Grant number: JP17K14250)

Awards

Sep 2014 Dr. Pliny A. and Margaret H. Price Prize in Cosmology and Astroparticle Physics
Columbus (OH) Center for Cosmology and Astroparticle Physics, The Ohio State University

Sep 2013 - Jun 2014 Dean Graduate Fellowship
Santa Barbara (CA) University of California Santa Barbara

Publications summary

Number of papers: 61 (61 refereed, 0 under review)
As first author: 21 (21 refereed, 0 under review)

H-index 28

Number of citations 1932 (source: ADSLabs)

Selected Talks

Jun 30, 2020 Invited talk at the European Astronomical Society Meeting, special session on "Crossing the characteristic mass scales in galaxy evolution"
Leiden (Netherlands)

Mar 14, 2019 Invited colloquium talk at Shanghai Jiao Tong University
Shanghai (China)

Jan 31, 2019 Invited colloquium talk at the Kavli Institute for the Physics and the Mathematics of the Universe
Kashiwa (Japan)

Jan 9, 2019 Invited colloquium talk at the Kavli Institute for Astronomy and Astrophysics, Peking University
Beijing (China)

Jan 8, 2019 Invited colloquium talk at the Center for Astrophysics, Tsinghua University
Beijing (China)

Sep 16, 2014 Invited seminar talk at the Center for Cosmology and AstroParticle Physics, The Ohio State University
Columbus, OH (USA)

Apr 17, 2014 Invited panel discussion at the symposium “Dark Matter in
Pasadena, CA (USA) Southern California”, California Institute of Technology

Teaching

Sep 2020 Gravitational lensing (4 hours, guest lectures on strong
lensing)
Leiden (Netherlands) Leiden Observatory

Nov 2018 “Bayesian methods in astronomy” (20 hours)
Medellín (Colombia) University of Antioquia. Leiden University - Antioquia
University astronomy twinning program.

Jun 2014 - Sep 2014 Teaching assistant, “Astronomy 1” (Instructor: Dr. Robert
Geller)
Santa Barbara, CA (USA) University of California Santa Barbara

Mentored students

Jun 2021-Present Felipe Lohmann (Leiden Observatory summer student)
Sep 2020-Present Qing Zhou (Leiden Observatory MSc student)
Sep 2020-Present Naadyah Jagga (Leiden Observatory MSc student)
Jun 2020-Aug 2020 Yun-Hsin Hsu (Leiden Observatory summer student)
Feb 2020-Mar 2021 Lindsey Oberhelman (Leiden Observatory MSc student)
Feb 2020-Jul 2020 Juliëtte Hilhorst (Leiden Observatory BSc student)
Sep 2019-Jul 2020 Siyu Wang (Leiden Observatory MSc student)
Sep 2019-Jul 2020 Maryam Tajalli (Leiden Observatory MSc student)
Jun 2019-Aug 2019 Thomas Venville (Leiden Observatory summer student)
Sep 2018-Jul 2019 Danial Langeroodi (Leiden Observatory MSc student)

Professional activities

Apr 2020-present Coordinator of Euclid Key project KP-PL-SL-1 “Galaxy scale
strong lenses”

Jan 2020-Apr 2022 Organizer of Lorentz Center workshop “Bridging gaps in
dynamical probes of galaxies” (4-8 April, 2022)

Sep 2020-present Co-lead of “Galaxy & AGN evolution and lensing” work
package in the Euclid consortium

Jan 2020-present Lead of the “Galaxies and halos” working group in the Kilo
Degree Survey (KiDS) collaboration

2019, 2020 Leiden/ESA Astrophysics Program for Summer Students (LEAPS) co-organizer

Referee for: Swiss National Science Foundation, Nature, The Astrophysical Journal, Monthly Notices of the Royal Astronomical Society, Astronomy & Astrophysics, Publications of the Astronomical Society of Japan, The Astronomical Journal, Journal of Cosmology and Astroparticle Physics

Membership in major collaborations: Euclid Consortium, Kilo Degree Survey (KiDS), TDCOSMO, 4MOST

Observing Experience

Telescope nights: Keck Telescope (8 nights), Lick Observatory (10 nights)

Observing proposals as Principal Investigator: Subaru (IRCS). Allocated time: 1 night.
Gemini North (GNIRS). Program ID: GN-2013A-Q-91. Allocated time: 7.6 hours.
Gemini North (GNIRS). Program ID: GN-2012B-Q-42. Allocated time: 2.5 hours.

Data analyzed: Keck LRIS, DEIMOS; VLT X-SHOOTER; Gemini GNIRS; Hubble Space Telescope WFC3; Subaru Hyper Suprime-Cam.

Outreach activities

Jun 29, 2020 Public talk: "Citizen science - discovering gravitational lenses"
Leiden (Netherlands) Astronomy on tap, Leiden

Sep 17, 2017 Public talk: "Materia oscura, galassie e il mestiere dell'astrofisico"
Lucca (Italy) Agorà della scienza

Other academic qualifications

Italian Ministry for Education, University and Research - 02/C1, Fascia 2
9/11/2020 (ASN 2018-2020, Quadrimestre n. 5):