

Guglielmino Salvatore Luigi

Track Record

1 July 2020 – present: Researcher (permanent position, III level) at INAF – Osservatorio Astrofisico di Catania (OACT)
2019-2020: Research Grant s.s.d. FIS/05 – FIS/06 at Università degli Studi di Catania (UniCT), 8 months
2016-2019: Research Grant s.s.d. FIS/05 at UniCT, 3 years
2014-2015: Research Grant s.s.d. FIS/05 at UniCT, 1 year
2013-2014: Research Contract (co.co.co.), UniCT, 1 year
2013: Research Contract, UniCT, 3 months
2012-2013: Fellowship at INAF –OACT, 1 year
2010-2011: Post-Doc Fellow at Instituto de Astrofísica de Canarias (IAC) – Spain, 1 year 9 months
2009-2010: Research Grant s.s.d. FIS/05 at UniCT, 1 year
2008: Invited Visiting Researcher at Instituto de Astrofísica de Andalucía – Spain, 2 months
2006: **Marie Curie Fellow** at IAC – Spain, 6 months
2005-2008: XX cycle, PhD course in Physics, UniCT, with fellowship, 3 years
2004: *Training* for the Master Thesis at IAC – Spain, with fellowship, 3 months

Education

2014: Bachelor's Degree in Classics, 110/110 «cum laude»
Thesis: “*Investigations about Astronomy in the Odyssey*”
2008: **PhD Degree in Physics**, *curriculum* Astrophysics, «cum laude»
Thesis: “*New perspectives on Emergence of Magnetic Flux on the Solar Surface: Models and Observations*”
2005-2008: XX cycle, PhD course in Physics, UniCT, with fellowship, 3 years
2005: Diploma in Piano, 8.50/10
2004: Master's Degree in Physics, 110/110 «cum laude»
Thesis: “*Emergence of ephemeral regions on the solar surface: observations and models*”
1999-2004: Master's Degree course in Physics, UniCT
1999: Maturità classica (Classics High-school Diploma), 100/100

Scientific production

65 publications

41 *peer-reviewed* papers (**11** as first author)

24 *proceedings*

Citations: **602**, H-index: **15**

(source Web of Knowledge/Scopus, January 2021)

orcid.org/0000-0002-1837-2262

Referee for *ApJ*, *ApJL*, *Solar Physics*, *Astrophysics and Space Science*

Scientific activity

Research fields

solar activity, solar magnetism, high-resolution spectropolarimetry of solar atmosphere, dynamic and magnetic parameters of solar active regions, emerging active regions and flux systems dynamics, storage of magnetic energy, analysis of IR, optical, UV, EUV, and X data to study highly energetic events (small-scale bursts, flares, eruptive prominences, CMEs), radio solar observations, diagnostics of magnetic fields in astronomical objects, cultural astronomy

Projects

Responsibilities

- **PI** of the Italian Group in the LOFAR Key Science Project (KSP) Solar Physics and Space Weather: July 2020 – present
This group consists of about 20 Italian researchers working in one of the six LOFAR KSPs, which participation is restricted to participating consortia, including LOFAR IT.
- **Executive Director** of the European Association for Solar Telescopes (EAST): January 2020 – present
EAST is an association with 26 members from 18 European countries, whose goal is to ensure access of European solar astronomers to world-class high-resolution ground-based observing facilities. The Executive Office, headed by the executive director, is responsible for the day-to-day operation of EAST.
- **Associated Scientist** for the Solar Orbiter PHI instrument: July 2018 – present

Participations

Present projects:

- Modeling and Data Analysis Working Group (MADAWG) Solar Orbiter – Team Member: April 2020 – present
- IBIS 2.0 Interferometric Bidimensional Spectrometer 2.0: December 2019 – present
- PRIN-MIUR 2017 “Circumterrestrial Environment: Impact of Sun-Earth Interaction”: November 2019 – present
- SunDish Project - Single-Dish Solar Radio Imaging: February 2019 – present
- H2020 SOLARNET – Integrating High Resolution Solar Physics: January 2019 – present
- H2020 PRE-EST – The EST Preparatory Phase: April 2017 – present
- SWICO Space Weather Italian Community: October 2014 – present

Past projects:

- PRIN-INAF 2014 “Plasma-magnetic field interplay in the solar atmosphere”: May 2015 – May 2018
- PRIN-MIUR 2012 “The active Sun and its effects on Space and Earth climate”: March 2014 – March 2017
- FP7 F-Chroma Flare chromospheres: Observations, Models and Archive: January 2014 – December 2016

- FP7 eHeroes Environment for Human Exploration and RObotic Experimentation in Space: April 2012 – February 2015
- PRIN-INAF 2010 “Magnetic fine structure of the solar atmosphere”: April 2012 – March 2013
- FP6 SOLAIRE Solar Atmospheric and Interplanetary Research: June 2007 – May 2011
- FP6 EARA EST: May 2006 – November 2006

Meetings

45 attended Meetings and Symposia

2 Invited Talk

- Magnetic flux emergence: observational evidence and its consequences in the solar atmosphere", 14/10/2016, Royal Astronomy Society Specialist Discussion Meeting "Flux emergence and its consequences in the solar atmosphere", London, UK
- Observational consequences of flux emergence from the photosphere to the corona: the role of interactions ", 11-15/10/2010, Hinode-4 Meeting: “Unsolved problems and recent insights”, Mondello, Palermo, Italy

32 Contributed Talks

24 Posters

3 SOC memberships

- "SoHe 2018: Third Meeting of the Italian Community in Solar and Heliospheric Physics", 29-31/10/2018, Turin, Italy"
- "SoHe 2016: 2016 Meeting of the Italian Community in Solar and Heliospheric Physics", 30/05-1/06/2016, Rome, Italy
- SoHe 2013: 2013 Meeting of the Italian Community in Solar and Heliospheric Physics", 4-6/09/2013, Catania, Italy

3 LOC memberships

International Schools

- 2nd European Summer School on Experimental Nuclear Astrophysics, 28/09-5/10/2003, Santa Tecla, Catania, Italy
- International School of Space Science “The Physics of the Sun: the Active Sun on your Active Desktop”, 27/03-1/04/2006, L'Aquila, Italy
- International School of Astrophysics "F. Lucchin" “The Sun: a Plasma Physics Laboratory – Formation of the Solar System: clues from exploration”, 17-22/09/2012, Vulcano, Messina, Italy

Observing campaigns

- Co-I international observing campaign: “Flux emergence modalities in the quiet Sun”, Tenerife, Spain (30/10-11/11/2020)
- Co-I international observing campaign: “Magnetic flux emergence during penumbra formation”, Big Bear, USA (5-11/10/2019)
- Co-I international observing campaign: “Radiative properties of magnetic features observed in quiet Sun and facular regions”, La Palma, Spain (6-14/08/2011)
- Co-I international observing campaign: “Joint Observational Campaign of the Solaire Network”, La Palma, Spain (13-18/09/2009)
- Co-I international observing campaign: “Quiet Sun and active region magnetism. Coordinated observations with HINODE”, Tenerife, Spain (17-28/09/2007)

Invited seminar talks

- "Magnetic flux emergence and reconnection in the solar atmosphere", 4/09/2020, Institute of Theoretical Astrophysics - University of Oslo, Norway
- "Magnetic flux emergence and response of the upper atmospheric layers", 8/02/2018, INAF - Osservatorio Astronomico di Roma, Monte Porzio Catone, Italy

Outreach activity

Participation to outreach programmes at INAF – OACT and at Department of Physics, UniCT:

- 59 guided visits at OACT for school pupils
- 7 public conferences
- outreach events: European Researchers' Night, Pint of Science, Solar System Tour, Week of the Scientific Culture, activities for astronomical events, public engagement

Awards

Menzione Speciale sez. Astrofisica, 106th National Meeting of the Italian Physical Society (SIF)

press release <https://www.media.inaf.it/2017/08/10/flux-rope-heart-sunspot/>

press release <https://www.media.inaf.it/2019/01/25/il-plasma-in-tasca/>

Teaching activity

- A.Y. 2020/21: Contract lecturer, Physics 2 and Laboratory (10 CFU/ECTS), 85 hrs, Master's Degree course in Chemistry, UniCT
- A.Y. 2016/17: Contract lecturer, Physics 2 and Laboratory (10 CFU/ECTS), 92 hrs, Master's Degree course in Chemistry, UniCT
- A.Y. 2014/15: Contract lecturer, supplementary teaching for Physics 2 Lab, 32 hrs, Master's Degree course in Physics, UniCT

Supervision of students

Assistant Supervisor of 3 Master Theses

- Fabiana Ferrente, Spectropolarimetric analysis of a flare in the chromosphere, *in progress*
- Alice Cristaldi, Interazioni magnetiche osservate ad alta risoluzione da SST e HINODE, 2012
- Mariachiara Falco, Analisi ad altissima risoluzione spaziale di macchie solari con SST e HINODE, 2012

Assistant Supervisor of 2 PhD students

- Mariarita Murabito, Analysis of the Penumbra Formation in Sunspots, XXX cycle, 2014 – 2017
- Mariachiara Falco, Analysis of High Resolution Observations of Sunspots Fine Structures, XXVIII cycle, 2012 – 2015

Lecturing and evaluation

- Member of the evaluation committee for the PhD Degree in Astrophysics, Dr. Nóbrega Siverio, Universidad de La Laguna, Spain, 2018
- Subject Expert and Teaching Assistant in Solar Physics, Magnetohydrodynamics: 2014 – present
- Lecturer at the 1st Summer School of Astronomy of the Italian Astronomical Society (SAIt) in Cassano, Bari, Italy, 2012

Teaching assistance

- Tutor for Physics 2 Lab at the Department of Physics, UniCT, 2015, 2017-2019
- Tutor for Physics 2 at the Department of Electrical Electronic and Computer Engineering, UniCT, 2018-2019
- Tutor for Physics 2 at the Department of Chemical Sciences, UniCT, 2017-2018
- Tutor "Piano Lauree Scientifiche" at the Department of Physics, UniCT, 2010-2014, 2019
- Tutor "Progetto Lauree Scientifiche" at the Department of Physics, UniCT, 2005-2009

Collaborations

- INAF – Osservatorio Astrofisico di Catania (Italy; Dr. P. Romano, Dr. D. Spadaro)
- Università degli Studi di Catania (Italy; Prof. F. Zuccarello)
- INAF – Osservatorio Astronomico di Roma (Italy; Dr. I. Ermolli, Dr. M. Murabito)
- ASI – Agenzia Spaziale Italiana (Italy, Dr. M. Stangalini)
- Università di Roma "Tor Vergata" (Italy; Prof. F. Berrilli, Dr. D. Del Moro)
- INAF – Osservatorio Astronomico di Cagliari (Italy; Dr. A. Pellizzoni)
- Instituto de Astrofísica de Andalucía (Spain; Dr. L. Bellot Rubio, Prof. J. C. del Toro Iniesta)
- Instituto de Astrofísica de Canarias (Spain; Prof. F. Moreno Insertis, Prof. B. Ruiz Cobo)
- Max Planck Institute for Solar System Research (Germany, Prof. S. K. Solanki)
- NASA (USA; Dr. P.R. Young)
- National Solar Observatory (USA; Dr. Martínez Pillet, Dr. S. Criscuoli)
- University of Glasgow (Scotland; Dr. D. MacTaggart)
- ASTRON (Netherlands; Dr. C. Tiburzi, Dr. P. Zucca)
- University of Oslo (Norway; Dr. D. Nóbrega Siverio, Prof. L. Rouppe van der Voort, Prof. M. Carlsson)
- Stockholm University (Sweden; Dr. J. de la Cruz Rodríguez)
- UCL – Mullard Space Science Laboratory (UK; Dr. G. Valori)