

INFORMAZIONI PERSONALI

NOME E COGNOME Silvano Fineschi
 NAZIONALITA' Italia

WORK EXPERIENCE

- 2025 - present "Dirigente di Ricerca" (Level I) associato con incarico di ricerca
 Istituto Nazionale d'Astrofisica Osservatorio Astrofisico di Torino
 PI- Space Weather Line of Research (Spoke 6) of ASI SpaceltUp! program
- 2024 - 2025t "Dirigente di Ricerca" (Level I)
 Istituto Nazionale d'Astrofisica Osservatorio Astrofisico di Torino
 ▪ Lead Co-I of the CODEX NASA-KASI-INAF coronagraph onboard the International Space Station
- 2018 - 2023 Director – "Dirigente di Ricerca" (Level I)
 Istituto Nazionale d'Astrofisica Osservatorio Astrofisico di Torino
 ▪ Research institute management
 ▪ INAF Scientific Responsible for Italian contribution to ESA/NASA Solar Orbiter mission
 ▪ Principal Investigator of the Sounding-rocket Coronagraphic Experiment – SCORE. of the NASA suborbital experiment HERSCHEL (2nd flight – March 2022)
 ▪ Lead Co-Investigator ASPIICS coronagraph for ESA formation-flying PROBA-3 mission
 ▪ Principal Investigator of the Coronal Magnetograph – CorMag – experiment of the EU-funded stratospheric Hemera mission.
 ▪ Principal Investigator of the Antarctic Coronagraph (AntarctiCor) for the ESCAPE Project.
- 2002-2017 Associate Researcher (Level II)
 Istituto Nazionale d'Astrofisica Osservatorio Astrofisico di Torino
 ▪ Definition and design of the Metis coronagraph experiment for the ESA/NASA Solar Orbiter mission
 ▪ Co-Principal Investigator of the Sounding-rocket Coronagraphic Experiment – SCORE. of the NASA suborbital experiment HERSCHEL (1st flight – Sept. 2009)
 ▪ Lead Co-Investigator ASPIICS coronagraph for ESA formation-flying PROBA-3 mission
 ▪ Principal Investigator of the Antarctic Coronagraph (AntarctiCor) for the ESCAPE Project and
 ▪ Expedition Leader for the AntarctiCor deployment - XXXIV PNRA Campaign, Concordia, Antarctica.
 ▪ Eclipse Expedition Leader, Eclipse Expeditions, K-Corona & E-Corona Liquid Crystal Spectro-polarimeter Waw-al-Namus, Libya;
- 1992-2001 Astrophysicist
 Smithsonian Institution – Smithsonian Astrophysical Observatory, Cambridge, MA and NASA/Goddard Space Flight Center Greenbelt, MD - USA
 ▪ Mission Operations Lead Scientist, Co-I of the Ultraviolet Coronagraph and Spectrometer or SOHO.
 ▪ Associate scientist of the UV Coronal Spectrometer for the Space Shuttle Sub-satellite SPARTAN
 ▪ Co-I Smithsonian Inst. Scholarly Study on a "New Method for Measuring Magnetic Fields in the Solar Corona".
- 1989-1991 Research Associate
 National Academy of Science

NASA-Marshall Space Flight Center, Huntsville, AL -USA

- Solar Maximum Mission data analysis
- Multi-Spectral Solar Telescope Array – MSSTA – sounding-rocket experiment research associate

EDUCATION AND TRAINING

- 1991-1994 PhD in Astrophysics
Università di Firenze
Dipartimento di Astronomia e Scienza dello Spazio
Astrophysics – Space Science
- 1989-1991 Research Associate
National Academy of Science Research Associateship
NASA Marshall Space Flight Center
Solar Physics
Space Solar Physics
- 1983-1988 Laurea in Fisica
Università di Firenze
Dipartimento di Astronomia e Scienza dello Spazio
Atomic Physics

WORK ACTIVITIES

- Main projects**
- 2023-present Lead Co-I of the CODEX NASA-KASI-INAF coronagraph onboard the International Space Station
- 2018-present INAF Principal Investigator (“Responsabile Scientifico INAF”) Solar Orbiter Science Support for the Phase D/E and E1 of the Instruments Metis, SWA/DPU e STIX
- 2019-present Principal Investigator CorMag-Coronal Magnetograph for the HEMERA Stratospheric Balloon Program.
- 2018-19 Expedition Leader of the ESCAPE-AntarctiCor Project - XXXIV PNRA Campaign, Concordia, Antarctica.
- 2016-present Principal Investigator ESCAPE-AntarctiCor, Antarctic Coronal-Magnetograph, National Plan for Research in Antarctica (PNRA). XXXIV, XXXV, XXXVII and XXXVIII Campaigns at Italian-French Concordia base, Antarctica.
- 2012-2018 INAF Principal Investigator (“Responsabile Scientifico INAF”) Solar Orbiter Science Support for the Development of the Instruments Metis, SWA/DPU e STIX.
- 2012-present Principal Investigator, SCORE II on HERSCHEL II sounding-rocket, US Naval Research Laboratory (NRL), Washington, DC and INAF - Torino, Italy
- 2011-present Project Scientist, Co-I Metis coronagraph, ESA Solar Orbiter mission, INAF - Torino, Italy
- 2010-present PI of Italian contribution to ESA PROBA-3 mission, Lead Co-I ASIICS Formation-Flying PROBA Coronagraph, INAF - Torino, Italy, and CSL, Liege (Belgium);
- 2010 WP Lead ESA Startiger study for the PROBA-3 mission, INAF - Torino, Italy, and CSL, Liege Belgium);
- 2010-present, Chair of the INAF-ALTEC Managing Committee of the Optical Payload Systems – OPSys – facility.
- 2010 Eclipse Expedition Leader, Eclipse Expeditions, K-Corona & E-Corona Liquid Crystal Spectro-polarimeter; Tatakoto, French Polynesia;
- 2006 Eclipse Expedition Leader, Eclipse Expeditions, K-Corona & E-Corona Liquid Crystal Spectro-polarimeter Waw-al-Namus, Libya;
- 2006-2010 – Principal Investigator, Development of the Optical Payload Systems – OPSys – facility, Applied Research Grant from the Piedmont Region. INAF Turin Astrophysical

Observatory – ALTEC Turin, Italy

2003-12 Co-PI, Project Scientist, “Sounding-rocket Coronagraphic Experiment” (SCORE) on the HERSCHEL sounding- rocket payload, INAF - Torino, Italy, US NRL, Washington, DC

1995-98 Mission Operations Lead Scientist, Co-I of the Ultraviolet Coronagraph and Spectrometer on SOHO.

1992-99 Associate scientist of the UV Coronal Spectrometer for the Space Shuttle Sub-satellite SPARTAN.

Tutoring activities

- a. 2011-present – Adjunct professor for the “Laboratory for Astrophysics” graduate course at the University of Torino, Italy.
- b. 2010, October – Lecturer for the “Scuola Rivelatori” course, INFN, Torino, Italy
- c. 2008, October – Lecturer for the “Space Academy” course, Thales-Alenia Space, Torino, Italy
- d. Thesis Tutorship:
- i. PhD theses (Dottorato di Ricerca)
 - a. 2025 – Hervé Haudemant, Università di Torino (advisor)
 - b. 2020 – Raphael Rougeot, Université de Nice, Francia (co-advisor)
 - c. 2020 – Vladimiro Noce Università di Firenze (co-advisor)
 - d. 2016 – M. Casti, Università di Torino (advisor)
 - e. 2011 – Alexander Khan, Università di Firenze (co-advisor)
 - f. 2010 – Maurizio Pancrazzi, Università di Firenze (co-advisor)
 - g. 2008 – Huw Morgan, Aberystwyth University, Wales UK (co-advisor).
 - h. 2002 – F. Landini, Università di Firenze (co-advisor)
- ii. Master theses (Laurea Magistrale)
 - a. 2014 – Jessica Girella, Università di Torino
 - b. 2009 – Emanuele Balboni, Università di Torino
- iii. Bachelor theses (Laurea Triennale)
 - a. 2011 – Mattia Levi, Università di Torino
 - b. 2008 – Filippo Crudelini, Università di Torino
 - c. 2006 – Francesca Schiavon, Università di Torino

Awards

- 1997 Special Achievement Award, Smithsonian Institution (Outstanding Scientific Research).
- 1996 Special Achievement Award, Smithsonian Institution (UVCS/SOHO Science Operations).
- 1995 Special Act Group Award, NASA (UVCS/SOHO Refurbishment).
- 1995 European Space Agency Award, ESA (Valuable Contribution to SOHO).
- 1995 “Gratton Prize”- biannual award for the best Italian Ph.D. thesis in Astronomy - Special Mention, Italy.

Editorial activity

- Fineschi, Silvano; Fennelly, Judy Ann (2015): Solar physics and space weather instrumentation VI. 9-10 August 2015, San Diego, California, United States / Silvano Fineschi, Judy Fennelly, editors. Bellingham, Washington: SPIE (Proceedings of SPIE, 0277-786X, volume 9604).
- Fineschi, Silvano; Fennelly, Judy (2013): Solar physics and space weather instrumentation V. 25-26 August 2011, San Diego, California, United States / Silvano Fineschi, Judy Fennelly, editors. Bellingham, Washington: SPIE (Proceedings of SPIE, 0277-786X, volume 8862).
- Fineschi, Silvano; Fennelly, Judy Ann (2011): Solar physics and space weather instrumentation IV. 21-24 August 2011, San Diego, California, United States / Silvano Fineschi, Judy Fennelly, editors sponsored and published by SPIE. Bellingham, WA: SPIE (Proceedings of SPIE, 0277-786X, v. 8148).
- Fineschi, Silvano; Fennelly, Judy A. (2009): Solar physics and space weather instrumentation III. 4-6 August 2009, San Diego, California, United States / Silvano Fineschi, Judy A. Fennelly, editors; sponsored and published by SPIE. Bellingham, Wash.: SPIE (Proceedings of SPIE, 0277-786X, v. 7438).

Fineschi, Silvano; Viereck, Rodney A. (2007): Solar physics and space weather instrumentation II. 26-27 August 2007, San Diego, California, USA / Silvano Fineschi, Rodney A. Viereck, editors; sponsored and published by SPIE. Bellingham, Wash.: SPIE (Proceedings of SPIE, 0277-786X, v. 6689).

Fineschi, Silvano; Viereck, Rodney A. (2005): Solar physics and space weather instrumentation. Silvano Fineschi and Rodney A. Viereck.

Fineschi, Silvano; Gummin, Mark A. (2004): Telescopes and instrumentation for solar astrophysics

Fineschi, Silvano (2003): Polarimetry in astronomy.

Siegmund, Oswald H. W.; Fineschi, Silvano; Gummin, Mark A. (2001): UV.

Fineschi, Silvano (2000): Instrumentation for UV.

Fineschi, Silvano (1999): Ultraviolet and X-ray detection, spectroscopy, and polarimetry III.

Fineschi, Silvano (1998): X-ray and ultraviolet spectroscopy and polarimetry II.

Fineschi, Silvano (1995): X-ray and EUV. Conference Papers.

Fineschi, Silvano (1994): X-Ray and ultraviolet spectroscopy and polarimetry.

Fineschi, Silvano (1993): X-Ray and ultraviolet polarimetry. Conference: Papers.

Invited presentations

- a. 2019, Invited presentation "A journey to the polar regions of a star" ESA workshop Voyage 2050, at Consejo Superior de Investigaciones Científicas, Madrid, Spain.
- b. 2017, Invited seminar "Observing the Corona from Space", National Solar Observatory Colorado University, Boulder, CO, USA.
- c. 2010, Invited seminar "Probing Coronal Magnetism with UV/EUV Polarimetry", High Altitude Observatory and Colorado University, Boulder, CO, USA.
- d. 2006, Invited seminar "Prospects of Coronal Spectro-Imaging from Solar Orbiter and Probe", NASA/Marshall Space Flight Center and University of Alabama in Huntsville, AL, USA.

Grants

- i. 2019-present ASI-INAF contract "Supporto allo sviluppo payload italiani selezionati per voli su pallone stratosferico nell'ambito del progetto europeo HEMERA"
- ii. 2019-present Univ. Sapienza-INAF contract "Svolgimento di attività di ricerca e sviluppo sulla propulsione solare fotonica" –
- iii. 2015-present ASI-INAF contract "Solar Orbiter - Supporto Scientifico per la Realizzazione degli Strumenti METIS e SWA/DPU fasi D/E" "
- iv. 2012-2015 ASI-INAF contract for "Solar Orbiter - Supporto Scientifico per la Realizzazione degli Strumenti METIS e SWA/DPU fasi B2/C1".
- v. 2016-present ESA-INAF contract "PROBA 3 Coronagraph System Optical Analyses, Formation-flying Metrology & Calibration".
- vi. 2016-present PNRA-INAF contract "Piano Nazionale Ricerche Antartide", ESCAPE – AntarctiCor. – Financial management
- vii. 2006-2010 Piedmont Region – INAF contract for "Development of the Optical Payload Systems – OPSys – facility" – Financial management

Patents

Electro-optical-polarimeter based on liquid crystals
(European Patent No. 16382241.4 - N-REF PSC-EP-1347)

ADDITIONAL INFORMATION

Publications

Total number of publications in peer-review journals 78
Total number of citations: 4129
H index (Scopus): 25

Insert **relevant** publications (5-10 publications)

- 1) **Fineschi, S.**; Naletto, G.; Romoli, M.; Da Deppo, V.; Antonucci, E.; Moses, D. et al. (2020): Optical design of the multi-wavelength imaging coronagraph Metis for the solar orbiter mission. In *Experimental Astronomy* 49 (3), pp. 239–263. DOI: 10.1007/s10686-020-09662-z
- 2) Moses, J. D.; Antonucci, E.; Newmark, J.; Auchère, F.; **Fineschi, S.**; Romoli, M. et al. (2020): Global helium abundance measurements in the solar corona. In *Nature Astronomy*. DOI: 10.1038/s41550-020-1156-6.
- 3) E. Antonucci, M. Romoli, Vincenzo Andretta, S. **Fineschi**, Petr Heinzel, J. Daniel Moses, Giampiero Naletto, Gianalfredo Nicolini, D. Spadaro, Luca Teriaca et al. (93 more) , (2020), Metis: the Solar Orbiter visible light and ultraviolet coronal imager, *A&A*, 642, A10 Available with Open Access: DOI: [10.1051/0004-6361/201935338](https://doi.org/10.1051/0004-6361/201935338).
- 4) **Fineschi, S.**; Capobianco, G.; Massone, G.; Susino, R.; Zangrilli, L.; Bemporad, A. et al. (2019): AntarctiCor: Solar Coronagraph in Antarctica for the ESCAPE Project. In *Nuovo Cimento C Geophysics Space Physics C* 42 (1), p. 26. DOI: 10.1393/ncc/i2019-19026-9.
- 5) Casti, M.; **Fineschi, S.**; Capobianco, G.; Romoli, M.; Antonucci, E.; Nicolini, G. et al. (2019): Metis/Solar Orbiter polarimetric visible light channel calibration. In: International Conference on Space Optics — ICSO 2018, vol. 11180 (Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series), 111803C.
- 6) Raouafi, Nour E.; Riley, Pete; Gibson, Sarah; **Fineschi, S.**; Solanki, Sami K. (2016): Diagnostics of Coronal Magnetic Fields Through the Hanle Effect in UV and IR Lines. In *Frontiers in Astronomy and Space Sciences* 3, p. 20. DOI: 10.3389/fspas.2016.00020.
- 7) **Fineschi, S.**; Antonucci, E.; Romoli, M.; Bemporad, A.; Capobianco, G.; Crescenzo, G. et al. (2013): Novel space coronagraphs: METIS a flexible optical design for multi-wavelength imaging and spectrography. In: *Solar Physics and Space Weather Instrumentation V- Vol. 8862* (Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series) 88620G.
- 8) **Fineschi, S.**; Crescenzo, G.; Massone, G.; Capobianco, G.; Zangrilli, L.; Antonucci, E.; Anselmi, F. (2011): OPSys: optical payload systems facility for testing space coronagraphs. In: *Solar Physics and Space Weather Instrumentation IV*, vol. 8148 (Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series), 81480W.
- 9) **Fineschi, S.**; Antonucci, E.; Romoli, M.; Gardiol, D.; Naletto, Giampiero; Giordano, Silvio et al. (2003): Ultraviolet and Visible-light Coronagraphic Imager (UVCI). In: *Innovative Telescopes and Instrumentation for Solar Astrophysics*, vol. 4853 (Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series), pp. 162–171.
- 10) Esser, Ruth; **Fineschi, S.**; Dobrzycka, Danuta; Habbal, Shadia R.; Edgar, Richard J.; Raymond, John C. et al. (1999): Plasma Properties in Coronal Holes Derived from Measurements of Minor Ion Spectral Lines and Polarized White Light Intensity. In *ApJ* 510 (1), L63-L67. DOI: 10.1086/311786.

Silvano Fineschi