

Dr. Silvano Fineschi

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Education

1994 Ph.D. in Astronomy, University of Firenze, Firenze, Italy; Harvard University, Cambridge, MA, USA
1988 Doctor degree in Physics (*Laurea in Fisica*), University of Firenze, Firenze, Italy

Positions Held

2018-pres. Director, National Institute for Astrophysics (INAF) – Turin Astrophysical Observatory, Torino, Italy
1998-pres. Astronomer, National Institute for Astrophysics (INAF) – Turin Astrophysical Observatory Torino, Italy
1995-2001 Astrophysicist, Smithsonian Astrophysical Observatory, Cambridge, MA; NASA/GSFC Greenbelt, MD
1994-1995 Research Associate, University of Firenze, Firenze, Italy
1991-1995 Visiting Scientist, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA
1989-1991 Research Associate, NRC, NASA Marshall Space Flight Center, Huntsville, AL

Scientific Programs and Projects

2019-present Principal Investigator, *CorMag*, Coronal Magnetograph for Stratospheric Balloon – EU Hemera Project, CNES Esrange Space Centre, Kiruna station, Sweden.
2016-present Principal Investigator *ESCAPE-AntarctiCor*, Antarctic Coronal-Magnetograph, National Plan for Research in Antarctica (PNRA), Italian-French Concordia base in Antarctica.
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, METIS coronagraph, ESA Solar Orbiter mission, INAF - Torino, Italy.
2010-present Lead Co-I of the Italian contribution to ASPIICS Coronagraph for the ESA Formation-Flying PROBA-3, INAF - Torino, Italy, and CSL, Liege, Belgium.
2006, 2010 Eclipse Expedition Leader, Eclipse Expeditions, K-Corona & E-Corona Liquid Crystal Spectropolarimeter Waw-al-Namus, Libya (2006), Tatakoto, French Polynesia (2010).
2003-12 Co-PI, Project Scientist, Sounding-rocket Coronagraphic Experiment (SCORE) on the HERSCHEL sounding-rocket payload, INAF - Torino, Italy, and 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.
1994 Co-I Smithsonian Inst. Scholarly Study on a New Method for Measuring Magnetic Fields in the Solar Corona.
1989-91 NRC Research Associate, Solar Maximum Mission: Impact Polarization in Solar Ultraviolet Lines.

Honors and 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 Special Mention, biannual "Gratton Prize" for the best Ph.D. thesis in Astronomy, Italy
1989 Research Associateship, National Academy of Sciences/National Research Council (NRC), USA

Review Panels Membership/Participation

2015-NASA Heliophysics Mission Senior Review Panel
2012-US High-Altitude Observatory. Scientific Steering Committee of the COronal Solar Magnetism Observatory.
2012 EU, Managing Committee "Polarization as a tool to study the Solar system and beyond" (COST 1104)
2010 NASA, "Solar and Heliospheric Physics" (NNH09ZDA001N-SHP)
2005 NASA, "Science & Technology Definition Team", Solar Probe mission 2003 ESA, "Remote-Sensing Payload Working Group", Solar Orbiter mission 2003 NASA, "Solar and Heliospheric Physics" (NRA 02-OSS-01 SHP)
1998 NASA, "Sun-Earth Connection Guest Investigator, and Education Program" (ROSS-98)
1996 NASA, "Sun-Earth Connection Supporting Research and Technology, Suborbital, Guest Investigator, and Education Programs" (NRA 96-OSS-09)

Selected Publications

- 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
- 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.
- 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).
- 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.
- 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.
- Sandri P., Fineschi S., et al., 2018, "Stray-light analyses of the multi-element telescope for imaging and spectroscopy coronagraph on Solar Orbiter" *Opt. Eng.* 57(1), 015108
- Fineschi, S., et al., 2015, "Stray-light analysis of the METIS coronagraph on Solar Orbiter", *Proc. SPIE* 9604, 94040K.
- Fineschi S. et al., 2013 "METIS: a novel coronagraph design for the Solar Orbiter Mission", *Proc. of SPIE* 8443-127.
Capobianco, G., Fineschi, S., et al., 2012, "Electro-optical polarimeters for ground-based and space-based observations of the solar K-corona", *Proc. of SPIE* Vol. 8450, 845040.
- Crescenzo, G., Fineschi, S., et al., 2012, "Imaging polarimetry with the METIS coronagraph of the Solar Orbiter Mission", *Proc. of SPIE* Vol. 8443 84433J-1.
- Fineschi, S. (editor), 2011 "Solar Physics and Space Weather Instrumentation IV", *Proc. of SPIE* Vol. 8148.
- Fineschi, S., et al. 2011 "Liquid Crystals Lyot Filter for Solar Coronagraphy", *Proc. of SPIE* Vol. 8148, 814808.
- Uribe-Patarroyo, N., et al. Fineschi, S., 2011, "Space-qualified liquid-crystal variable retarders for wide-field-of-view coronagraphs", *Proc. of SPIE* Vol. 8148, 814810
- Fineschi, S. and Baur, T., et al., 2010 "Imaging Spectro-polarimeter with a Liquid Crystals Lyot Filter for Proba-3 Formation-Flying Coronagraph", ICSO – 8th International Conference on Space Optics.
- Khan, A., Belluzzi, L., Landi Degl’Innocenti, E., Fineschi, S., Romoli, M., 2011, "Spectropolarimetric forward modelling of the lines of the Lyman-series using a self-consistent, global, solar coronal model", *A&A* 529, A12.
- Morgan, H., Fineschi, S., Habbal, S.R., Li, Bo, 2008, "In Situ Spectroscopy of the Solar Corona", *A&A.*, 482, 981.
- Fineschi, S. et al., 2005 "KPol: liquid crystal polarimeter for K-corona observations from the SCORE coronagraph", *Proc. SPIE*, 5901,389.
- Fineschi, S., et al., 2003, "Ultraviolet and Visible-light Coronagraphic Imager (UVCI)", *Proc. SPIE*, 4853,162.
- Fineschi, S., et al., 2001, "Extended UV Corona Imaging from the Solar Orbiter: the Ultraviolet and Visible-light Coronagraph (UVC)", *ESA SP-493*, 217.
- Fineschi, S., 2001, "Space-based Instrumentation for Magnetic Field Studies in Solar and Stellar Atmospheres", in "Magnetic Field across the H-R Diagram", *Astr. Soc. Pacif. Confer. Series*, 248, 597.
- Fineschi, S., et al., 1993, "Polarimetry of the HI Lyman- α Line for Coronal Magnetic Fields Diagnostics", *SPIE*, 1742, 423.