

Curriculum vitae

PERSONAL INFORMATION Luca Valenziano

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PRESENT EMPLOYMENT Senior Staff Researcher
Istituto Nazionale di Astrofisica, Osservatorio di Astrofisica e Scienza dello Spazio
OAS-Bologna
via Piero Gobetti 101, 40129 Bologna (Italy)
www.oas.inaf.it

PROFILE SUMMARY I have spent more than 20 years in scientific and management activities, on space and ground-based astrophysics projects, building parts for satellites, planning and developing missions and experiments, transferring technology to industry, leading teams up to 150 people from different countries, representing my institution in all contexts.
Since May 2016, under appointment by INAF President, I represent INAF in multilateral and international collaboration governing bodies and at Italian Ministry for Foreign Affairs.
In 2017, INAF Council positively evaluated me for Institute Directorship. I have been awarded of the Gruber Prize 2018 as key person of the Planck Satellite Team.
I teach Space Projects Management at the University of Genova, Physics Department.
I am able to manage complex projects with multiple tasks running in parallel, with problem-solving attitude and attention to team members and stakeholders, aiming at obtaining best results within existing constraints. I have a success-oriented approach, being able to steer projects through milestones within the tight boundaries of budget and schedule.

WORK EXPERIENCE

Management

Main activities include:

During 20 years of activity, I have organized and managed over 100 technical and managerial reviews in international context, both as supplier and as customer. My responsibility has included document preparation, review and approval, review process organization, RIXs management.

INAF/ Chief Officer for Multilateral and International collaborations

I am actually member, on behalf of the INAF President, of several boards, among which ASTRONET, SKA StratCom, Observatorios Astrofisicos de Canarias CCI and EUTO. I am managing international collaboration agreements between INAF and other countries (among which Argentina, Korea, Saudi Arabia, Australia, Jordan) and representing the Institute in National and international formal meetings.

I am the INAF representative to the Italian Foreign Affair Ministry (MAECI).

ESA/Euclid

Since 2010, I am managing the overall Italian Scientific and technical contribution to the Euclid mission, under INAF appointment (budget 9.5MEuro in cash, funded by ASI – Agenzia Spaziale Italiana on 4 contracts over 9 years), also taking care of managerial relations with partner institutions (national and international) and representing the project towards external bodies.

- 2007-2019: as Project Manager of the NIS/NISP instrument (about 150 MEuro estimated cost), I successfully brought the project from proposal to being adopted as one of the two instruments of ESA Cosmic Vision M2 mission and up to the first major technical review in 2011. After project responsibility moved to France in September 2011, as Project Manager of the Italian contribution to the NISP instrument (about 35 MEuro budget) I am leading the Italian team in the construction phase, until instrument delivery to ESA, planned in December 2019.

ESO E-ELT HiRES instrument

Since fall 2015: Project Manager of the HiRES (High-REsolution Spectrograph)

instrument on the E-ELT telescope (25 MEuro project, 12 countries, 100+ scientist and engineers). Phase A has lasted 2 years since March 2016 and I lead the team to timely complete the activity with the final review with ESO. Phase A formally successfully closed in June 2018. I am actually preparing the contractual document to establish the HIRES consortium and the agreement for construction with ESO.

Microwave Science and Technology Transfer

- 2015-present: Consultant to CGS/OHB company for cryogenic radio and microwave calibrators (ESA ITT);
- 2011-2014: as Coordinator of scientific contribution to an industrial project (ThalesAleniaSpace, 5 MEuro team of 45 researchers), I lead the team to completed the project and deliver the full set of technology demonstrators and technical studies.
- 2006-2009: Head of two INAF-funded projects aimed to transfer cryogenic technologies to Italian PMIs.

Experiment deployment and operations

- 1999-2001: TOM telescope deployment at Tenerife (Canary Islands, Spain): head of deployment team and operations;
- 1996-1997: On-site responsible for Astrophysical activities in Antarctica.

Scientific Activity

2007 - present: **ESA/Euclid** satellite mission

Among proposers of the Near-Infrared cryogenic spectrograph (NISP) on-board Euclid ESA mission (launch in 2020) and subsequently former NISP Project Manager and flight electronics technical team leader. Actually NISP in-flight Operation Manager
Main activities included: supporting the scientific team for instrument design specific to space applications, material selection, thermal design, assembly integration and verification (AIV) planning, instrument flight operation planning.

2013 - present: **ESA/Athena** satellite mission and **HE** activities

I am one of X-IFU (X-ray Integral Field Unit) Co-Investigators and member of X-IFU System Team, lead by CNES. As manager for the on-board Instrument Control Unit electronics for the X-IFU instrument, main tasks are: unit configuration and design management, SW operation architecture, schedule and budget management and maintenance.

I am among the proposers of the Theseus M5 mission.

1997 - 2010: **ESA/Planck** LFI satellite mission

As responsible for cryogenic microwave on-board calibrator development, I timely delivered the unit (2005), which successfully completed its operations exceeding expected performance. Main duties included: Flight unit design (electromagnetic, thermal, material choice) and analytical modeling, qualification for space application; development, manufacturing supervision and test; data analysis; budget and schedule maintenance; document configuration; team supervision and reporting to international review boards.

1997-2016: **Millimetric Wave detectors and Radio Receivers**

I participated to several scientific projects, among which: technology development for future missions on CMB polarisation (scientific contribution and financial budget manager, cryogenic radio-detector development team leader); TOM, microwave telescope installed In Tenerife (Canary Islands) team leader, millimetric imaging bolometric camera prototype development. More recently, I have lead a proposal to ESA for building ground calibrators the MWI instrument on the MetOp satellite.

1993-1997: **Astrophysics in Antarctica**

Participated to three missions in Antarctica under ENEA/PNRA contract. Main activities included: experiment deployment at sea-level, high altitude remote camp and at French-Italian Concordia station on the Plateau; cryogenic instruments design and operations, Helium an Nitrogen liquefier operation, telescope SW maintenance, data

reduction SW development (Fortran, IDL), scientific data analysis and paper writing.

Bibliography: more than 250 published papers (< 16000 citations), most of them available at <http://orcid.org/0000-0002-1170-0104>. H-index (ISI): 64.

Teaching and High Education

Teaching

- 2018: Assistant professor at the University of Genova, Physics department. Teaching Space Projects Management among the Physics and Space Science course.
- Several teaching classes at Ph.D. course in astronomy and astrophysics: Perugia University, Bologna University, International School on Space Science (L'Aquila), Sardinia Summer School on Radioastronomy (Cagliari). Topics: CMB Cosmology, the Planck mission (2013-2014), Cryogenics, Detectors for Astronomy, Optics;
- Lessons on astronomy and cosmology for school teachers training (all levels) from 1997 to 2017. Topics: Introduction to Astronomy, Space astrophysics, solar System, History of Astronomy, HE and non-optical astronomy;

Thesis supervision

- From 1999 to 2007 I have supervised seven Master Degree Thesis at University of Bologna and University of Cagliari. Topics: Data reduction, Radio Detectors, Cryogenics, Instrument calibration.

Post Doc supervision

- From 2012 I am supervising:
 - a PostDoc working on Euclid survey strategy;
 - a senior Post Doc working on Euclid NISP Operations;
 - a PostDoc working as Project Controller in different scientific projects (Euclid, HIRES, Athena).

Institutional activities

Evaluation Boards

- Since 2004, I was member of more than 10 recruiting boards at INAF;
- Since 2012, I have been appointed almost every year as referee for scientific project and grants funded by Italian Ministry for Research and/or by INAF (average project budget 200-300 K€);
- I am a member of the Expert Group, nominated by ANVUR (a governmental agency), for ranking Italian Scientific Institutions (VQR 2014-2016);
- In 2014, I was a member of the international board for the evaluation of Dr. F. Zamkotsian's HDR (Habilitation a la Diriger des Recherches Scientifiques) at l'Université de Aix-Marseille, France.

Institute Coordination Responsibilities

- Former member of IASF-Bologna Director support council;
- Responsible for laboratory safety (institutional training required);
- Trained as administrative officer RUP (Responsabile Unico del Procedimento) under the actual Italian anti-corruption law.
- Positively evaluated for Research Institute directorship (2017).

JOB RECORD

August 2018 - Present

Senior Staff Researcher

Istituto Nazionale di Astrofisica, Osservatorio di Astrofisica e Scienza dello Spazio

OAS-Bologna via Piero Gobetti 101, 40129 Bologna (Italy)
www.iasfbo.inaf.it

Business sector: Experimental Astrophysics and Cosmology, Space technologies,
Project Management, Education, Public Outreach

February 2018–Present Associate Professor

University of Genova, Physics Department
via Dodecaneso, Genova, Italy

Business sector: High Education, teaching

May 2016–Present Chief Officer for Multilateral and International collaborations

Istituto Nazionale di Astrofisica
via del Parco Mellini 36, Rome
www.inaf.it

Business sector: International policy

January 2016–Present ELT HIRES Instrument Project Manager

HIRES Consortium
www.arcetri.astro.it/~hires

www.eso.org/public/teles-instr/elt/elt-instr/hires/

Business sector: Research infrastructure, scientific instruments, international research
collaborations

Since 2015 Associate Professor proficiency (sector Astrophysics and Cosmology)

Italian Education Ministry

Qualification obtained after a selection by an international board; direct recruitment
from Italian universities is therefore possible.

January 1996 – August 2018 Staff Researcher

Istituto Nazionale di Astrofisica, IASF-Bologna
via Piero Gobetti 101, 40129 Bologna (Italy)
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Business sector: Experimental Astrophysics and Cosmology, Space technologies,
Project Management, Education, Public Outreach

Oct 1993–Jan 1997 Antarctic Scientific Expedition Team member

ENEA - Programma Nazionale di Ricerche in Antartide

Participant to three austral summer missions, 6 months in Antarctica over three years.

Feb 1993–Dec 1995 Ph.D. Student

Università degli Studi di Perugia, Perugia (Italy)

Mar 1992–Jan 1993 Post-degree Volunteer

Experimental Cosmology Lab, Department of Physics "La Sapienza", Rome (Italy)

As post degree volunteer, worked on stratospheric balloon experiment for CMB
observations.

PRIZES

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- August 2018 Gruber Cosmology Prize 2018
Gruber Foundation, Yale University
As member of the Planck Team, for mapping the temperature and polarization of the cosmic microwave background radiation with unprecedented precision.
<http://gruber.yale.edu/prize/2018-gruber-cosmology-prize>

EDUCATION AND TRAINING

- March 2016 Course on Italian Public contracts management
Maggioli S.p.a.
Management of public purchase contracts according to Italian laws
- March 2016 Training Course for Laboratory Safety managers
INAF Safety Officer
Safety in working environments according to EU and Italian laws
- Jan 2016 Course on ECSS Q-ST-80C and M-series standards
INTECS S.p.a. – Brainware company
Management and quality standards according for ESA projects
- Dec 2014 Course on Digital Identities
Insights
Company branding and tools.
- Dec 2014 Course on System Engineering for Large Scientific facilities in Astrophysics
INCOSE Italia
System Engineering applied to large scientific projects
- 1997-2010 Technical training on: C/C++ programming, LabView, IDL, CAD 3D

Programming tools
- Dec 1995 Ph.D. in Physics
Università degli Studi di Perugia, Perugia (Italy)
Thesis Title: Astrophysics in Antarctica. Preliminary site testing for astronomical observations
- Feb 1992 Master Degree in Physics
Università degli Studi di Roma "La Sapienza", Rome (Italy)
Thesis Title: Research on photo-impulsed bolometric detectors

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C2	C1
French	C1	C1	B2	B2	B1
Spanish	B1	B1	A2	A1	A1

Communication skills

- Excellent communication skills in professional and public international environment gained through experience in managing technical projects with international partners; excellent capability in presenting topics with 'tone-of-voice' appropriate to any audience.
- Excellent communication and interaction skills with professionals, diplomats, public officers, with specific attention to cultural differences in different nationality;
- Excellent communication with general public, educators and students, gained through my experience in public dissemination activities and responsibility, as part of Bologna local government, of education, culture and inter-racial politics.

Organizational / managerial skills

Beyond job-related experience, I have worked in public administration governing bodies:

- Elected Head of School Council (about 1000 students over 4 sites) for 6 years;
- Elected member of Bologna-Reno Local City Council (35000 resident citizens, mandate 2011-2016, with responsibility on Culture, Education, Inter-racial politics).

January 22, 2019