PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 9909

, "Front Matter: Volume 9909," Proc. SPIE 9909, Adaptive Optics Systems V, 990986 (4 October 2016); doi: 10.1117/12.2257427

SPIE.

Event: SPIE Astronomical Telescopes + Instrumentation, 2016, Edinburgh, United Kingdom

PROCEEDINGS OF SPIE

Adaptive Optics Systems V

Enrico Marchetti
Laird M. Close
Jean-Pierre Véran
Editors

26 June–1 July 2016
Edinburgh, United Kingdom

Sponsored by
SPIE

Cooperating Organizations
American Astronomical Society (United States) • Australian Astronomical Observatory (Australia) • Association of Universities for Research in Astronomy (AURA) • Canadian Astronomical Society (CASCA) (Canada) • Canadian Space Agency (Canada) • European Astronomical Society (Switzerland) • European Southern Observatory (Germany) • National Radio Astronomy Observatory • Royal Astronomical Society (United Kingdom) • Science & Technology Facilities Council (United Kingdom)

Published by
SPIE

Part One of Three Parts

Volume 9909

Proceedings of SPIE 0277-786X, V. 9909

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Adaptive Optics Systems V, edited by Enrico Marchetti, Laird M. Close, Jean-Pierre Véran, Proc. of SPIE Vol. 9909, 990986
© 2016 SPIE · CCC code: 0277-786X/16/\$18 · doi: 10.1117/12.2257427

Proc. of SPIE Vol. 9909 990986-1

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from these proceedings:

Author(s), "Title of Paper," in *Adaptive Optics Systems V*, edited by Enrico Marchetti, Laird M. Close, Jean-Pierre Véran, Proceedings of SPIE Vol. 9909 (SPIE, Bellingham, WA, 2016) Six-digit Article CID Number.

ISSN: 0277-786X
ISBN: 9781510601970

ISSN: 1996-756X (electronic)
ISBN: 9781510601987 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) • Fax +1 360 647 1445
SPIE.org

Copyright © 2016, Society of Photo-Optical Instrumentation Engineers.

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/16/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

**SPIE. DIGITAL
LIBRARY**
SPIEDigitalLibrary.org

Paper Numbering: *Proceedings of SPIE* follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online and print versions of the publication. SPIE uses a six-digit CID article numbering system structured as follows:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc. The CID Number appears on each page of the manuscript.

Contents

xvii *Authors*
xxvii *Conference Committee*

Part One

SESSION 1	STATUS OF CURRENT AO PROJECTS I
9909 01	MagAO: status and science [9909-1]
9909 02	Imaka: a ground-layer adaptive optics system on Maunakea [9909-2]
9909 03	Engineering aspects of the Large Binocular Telescope Observatory adaptive optics systems [9909-3]
SESSION 2	ASTRONOMY WITH AO I
9909 05	The infrared imaging spectrograph (IRIS) for TMT: latest science cases and simulations (Invited Paper) [9909-5]
9909 06	Stellar photometry with multi conjugate adaptive optics (Invited Paper) [9909-6]
9909 07	Photometric techniques, performance and PSF characterization of GeMS [9909-7]
SESSION 3	AO FOR THE ELTS
9909 08	Adaptive optics program update at TMT [9909-8]
9909 09	The adaptive optics modes for HARMONI: from Classical to Laser Assisted Tomographic AO [9909-9]
9909 0A	Joint MICADO-MAORY SCAO mode: specifications, prototyping, simulations and preliminary design [9909-10]
9909 0B	Designing the METIS SCAO and LTAO systems [9909-11]
SESSION 4	PATHFINDERS, NEW PROPOSED AO SYSTEMS, AND CONCEPTS I
9909 0C	Final two-stage MOAO on-sky demonstration with CANARY [9909-12]
9909 0D	Keck Planet Imager and Characterizer: concept and phased implementation [9909-13]

9909 OF **The rapid transient surveyor** [9909-15]

SESSION 5 CHARACTERIZATION, MEASUREMENT AND MODELING OF THE DISTURBANCES FACED BY AO I

9909 OH **FASS: the full aperture seeing sensor** [9909-17]

9909 OI **Operational optical turbulence forecast for the service mode of top-class ground based telescopes** [9909-18]

9909 OJ **Characterizing and mitigating vibrations for SCEXAO** [9909-19]

SESSION 6 ADVANCES IN AO CONTROL AND CALIBRATIONS I

9909 OK **Review of AO calibrations, or how to best educate your AO system (Invited Paper)** [9909-20]

9909 OL **Solving the NFIRAOS calibration puzzle** [9909-21]

9909 OM **LQG adaptive optics control with wind-dependent turbulent models** [9909-175]

SESSION 7 WAVEFRONT CORRECTORS

9909 OO **Deformable mirrors development program at ESO** [9909-24]

9909 OP **A new driving method for piezo deformable mirrors: open loop control and MOAO made easy** [9909-25]

SESSION 8 LASER GUIDE STAR SYSTEMS

9909 OR **Four generations of sodium guide star lasers for adaptive optics in astronomy and space situational awareness** [9909-28]

9909 OS **Keck II laser guide star AO system and performance with the TOPTICA/MPBC laser** [9909-29]

SESSION 9 EXTREME AO I

9909 OU **SAXO, the SPHERE extreme AO system: on-sky final performance and future improvements (Invited Paper)** [9909-32]

9909 OV **Status and performance of the Gemini Planet Imager adaptive optics system (Invited Paper)** [9909-33]

9909 OW **The SCEXAO high contrast imager: transitioning from commissioning to science** [9909-34]

SESSION 10	STATUS OF CURRENT AO PROJECTS II
9909 0X	A review of solar adaptive optics (Invited Paper) [9909-35]
9909 0Y	Status of the DKIST system for solar adaptive optics [9909-36]
9909 0Z	Adaptive Optics Facility: control strategy and first on-sky results of the acquisition sequence [9909-37]
9909 10	On-sky MOAO performance evaluation of RAVEN [9909-38]
9909 11	AO corrected satellite imaging from Mount Stromlo [9909-39]
SESSION 11	WAVEFRONT SENSING I
9909 12	Sub-electron read noise and millisecond full-frame readout with the near infrared eAPD array SAPHIRA (Invited Paper) [9909-40]
9909 13	C-RED one: ultra-high speed wavefront sensing in the infrared made possible [9909-41]
9909 14	AO WFS detector developments at ESO to prepare for the E-ELT [9909-42]
9909 15	Near-infrared wavefront sensing [9909-43]
SESSION 12	EXTREME AO II
9909 16	Tackling down the low wind effect on SPHERE instrument [9909-44]
9909 18	Evolutionary timescales of AO-produced speckles at NIR wavelengths [9909-46]
SESSION 13	STATUS OF CURRENT AO PROJECTS III
9909 19	Astronomical AO in Key Laboratory of Adaptive Optics, Chinese Academy of Sciences (Invited Paper) [9909-47]
9909 1A	Robo-AO Kitt Peak: status of the system and deployment of a sub-electron readnoise IR camera to detect low-mass companions [9909-48]
9909 1B	The ERIS adaptive optics system [9909-49]
9909 1C	Status of the GTC adaptive optics: integration in laboratory [9909-50]
9909 1D	First light of the deformable secondary mirror-based adaptive optics system on 1.8m telescope [9909-51]

SESSION 14	ASTRONOMY WITH AO II
9909 1E	A review of astronomical science with visible light adaptive optics (Invited Paper) [9909-52]
9909 1G	High-precision astrometry towards ELTs [9909-54]
SESSION 15	PATHFINDERS, NEW PROPOSED AO SYSTEMS, AND CONCEPTS II
9909 1H	Solar adaptive optics: specificities, lessons learned, and open alternatives [9909-55]
9909 1I	Adaptive optics for MOSAIC: design and performance of the wide(st)-field AO system for the E-ELT [9909-56]
9909 1J	Testing the pyramid truth wavefront sensor for NFIRAOS in the lab [9909-57]
SESSION 16	CHARACTERIZATION, MEASUREMENT, AND MODELING OF THE DISTURBANCES FACED BY AO II
9909 1K	Review of the outer scale of the atmospheric turbulence (Invited Paper) [9909-58]
9909 1M	Modelling and prediction of non-stationary optical turbulence behaviour [9909-60]
9909 1N	E-ELT turbulence profiling with stereo-SCIDAR at Paranal [9909-61]
SESSION 17	POST-PROCESSING AO DATA
9909 1P	Point spread function determination for Keck adaptive optics [9909-63]
9909 1Q	PSF reconstruction validated using on-sky CANARY data in MOAO mode [9909-64]
9909 1R	Exploiting physical constraints for multi-spectral exo-planet detection [9909-65]
9909 1S	Correction of distortion for optimal image stacking in wide field adaptive optics: application to GeMS data [9909-66]
SESSION 18	ADVANCES IN AO CONTROL AND CALIBRATIONS II
9909 1T	The GMT active optics control strategies [9909-67]
9909 1U	AOFLTAO mode: reconstruction strategy and first test results [9909-68]
SESSION 19	WAVEFRONT SENSING II
9909 1X	NGS2: a focal plane array upgrade for the GeMS multiple tip-tilt wavefront sensor [9909-71]

- 9909 1Z **Anti-aliasing optical method for Shack Hartmann WFSs** [9909-73]
- 9909 20 **The QACITS pointing sensor: from theory to on-sky operation on Keck/NIRC2** [9909-74]
- 9909 21 **Designing and testing the coronagraphic Modal Wavefront Sensor: a fast non-common path error sensor for high-contrast imaging** [9909-75]

POSTER SESSION: STATUS OF CURRENT AO INSTRUMENT PROJECTS

- 9909 22 **Commissioning and first light results of an L'-band vortex coronagraph with the Keck II adaptive optics NIRC2 science instrument** [9909-76]
- 9909 24 **The adaptive optics system of the 1.5m GREGOR solar telescope: four years of operation** [9909-78]
- 9909 25 **Status and new developments with the Keck I near-infrared tip-tilt sensor** [9909-79]
- 9909 27 **The ZIMPOL high contrast imaging polarimeter for SPHERE: polarimetric high contrast commissioning results** [9909-81]
- 9909 29 **Progress in multi-conjugate adaptive optics at Big Bear Solar Observatory** [9909-83]
- 9909 2C **Preliminary result of the solar multi-conjugate adaptive optics for 1m new vacuum solar telescope** [9909-86]
- 9909 2D **MAORY: adaptive optics module for the E-ELT** [9909-87]

Part Two

POSTER SESSION: STATUS OF CURRENT AO INSTRUMENT PROJECTS (cont.)

- 9909 2E **Adaptive optics capabilities at the Large Binocular Telescope Observatory** [9909-88]
- 9909 2F **Reshaping and polishing the GeMS MCAO system** [9909-89]
- 9909 2G **Adaptive optics operations at the Large Binocular Telescope Observatory** [9909-90]
- 9909 2H **GRAAL on the mountaintop** [9909-91]
- 9909 2I **Solar adaptive optics for 1m new vacuum solar telescope** [9909-92]
- 9909 2K **Performance monitoring of an AO instrument: the case of SINFONI** [9909-96]
- 9909 2L **CIAO: wavefront sensors for GRAVITY** [9909-97]
- 9909 2M **System tests and on-sky commissioning of the GRAVITY-CIAO wavefront sensors** [9909-98]

- 9909 2N **Status of Hida solar adaptive optics system and experiment of tomographic wavefront sensing** [9909-99]
- 9909 2S **Laboratory results of the AOF system testing** [9909-105]
- 9909 2T **Ten years maintaining MACAO-VLTI units in operation in the Very Large Telescope at Paranal Observatory** [9909-106]
- 9909 2V **On-sky AO test bench** [9909-110]
- 9909 2W **Lick Observatory's Shane telescope adaptive optics system (ShaneAO): research directions and progress** [9909-111]
- 9909 2X **On-sky single-mode fiber coupling measurements at the Large Binocular Telescope** [9909-112]
- 9909 2Y **Rejuvenation of a ten-year old AO curvature sensor: combining obsolescence correction and performance upgrade of MACAO** [9909-113]
- 9909 2Z **AOF: standalone test results of GALACSI** [9909-114]
- 9909 30 **CHOUGH: spatially filtered Shack-Hartmann wave-front sensor for HOAO** [9909-115]
- 9909 31 **SHARK-NIR: from K-band to a key instrument: a status update** [9909-116]
- 9909 32 **Adaptive system for solar telescopes operating in the strongly turbulent atmosphere** [9909-117]
- 9909 33 **Adaptive optics on-sky demonstrator for the Anglo-Australian Telescope** [9909-118]
- 9909 34 **NFIRAOS in 2015: engineering for future integration of complex subsystems** [9909-119]
- 9909 35 **GTC adaptive optics hardware electronics** [9909-120]
- 9909 36 **First on-sky results with ARGOS at LBT** [9909-320]

POSTER SESSION: CHARACTERIZATION, MEASUREMENT, AND MODELING OF THE DISTURBANCES FACED BY AO

- 9909 37 **Analysis and comparison of the atmospheric parameters retrieved from a Ex-AO instrument with the astroclimatic monitoring system** [9909-122]
- 9909 38 **Forecasts of the atmospherical parameters close to the ground at the LBT site in the context of the ALTA project** [9909-123]
- 9909 3B **Towards an automatic system for monitoring of C_N^2 and wind speed profiles with GeMS** [9909-129]
- 9909 3C **Online estimation of atmospheric turbulence parameters and outer-scale profiling** [9909-134]

- 9909 3D **Single detector stereo-SCIDAR for Mount Stromlo** [9909-135]
- 9909 3E **The statistics of atmospheric turbulence at Maunakea measured by RAVEN** [9909-138]
- 9909 3F **Characterisation of a turbulent module for the MITHIC high-contrast imaging testbed** [9909-139]
- 9909 3G **Vibrations in MagAO: resonance sources identification and first approaches for modeling and control** [9909-141]
- 9909 3H **AIR FLOW: airborne interferometric recombiner fluctuations of light at optical wavelengths** [9909-144]
- 9909 3I **Turbulence profiling for adaptive optics tomographic reconstructors** [9909-146]
- 9909 3J **SHIMM: a seeing and turbulence monitor for astronomy** [9909-148]
- 9909 3K **Closed-loop control for tip-tilt compensation on systems under vibration** [9909-149]
- 9909 3L **Vibrations in MagAO: frequency-based analysis of on-sky data, resonance sources identification, and future challenges in vibrations mitigation** [9909-153]
- 9909 3M **The bistatic geometry for Na profiling with LGS at Teide Observatory** [9909-156]
- 9909 3N **Simulation of an accelerometer-based feedforward vibration suppression in an adaptive optics system for MICADO** [9909-157]
- 9909 3P **William Herschel Telescope site characterization using the MOAO pathfinder CANARY on-sky data** [9909-163]
- 9909 3R **Atmospheric turbulence profiling using the SLODAR technique with ARGOS at LBT** [9909-168]
- 9909 3S **The study of variability of the atmospheric turbulence in the region Lake Baykal** [9909-169]

POSTER SESSION: PATHFINDERS, NEW PROPOSED AO SYSTEMS AND CONCEPTS

- 9909 3U **AO upgrade for VLT UT4: an 8m class HST from ground** [9909-124]
- 9909 3V **SOUL: the Single conjugated adaptive Optics Upgrade for LBT** [9909-126]
- 9909 3X **Empirical Green's function approach for utilizing millisecond focal and pupil plane telemetry in exoplanet imaging** [9909-131]
- 9909 3Y **Experimental results on using artificial neural networks for accurate centroiding in Shack-Hartmann wavefront sensors with elongated spots** [9909-136]
- 9909 3Z **SRAO: optical design and the dual-knife-edge WFS** [9909-137]
- 9909 40 **Analysis of wavefront reconstruction in 8-meter ring solar telescope** [9909-140]

- 9909 41 **Adaptive optics for high resolution spectroscopy: a direct application with the future NIRPS spectrograph** [9909-142]
- 9909 42 **Development of a novel three-dimensional deformable mirror with removable influence functions for high precision wavefront correction in adaptive optics system** [9909-143]
- 9909 44 **Getting ready for the first on sky experiment using an ELT-scaled elongated sodium laser guide star** [9909-147]
- 9909 47 **A testing facility at the Asiago Copernico telescope in the framework of the ADaptive Optics National laboratory of Italy: ADONI** [9909-154]
- 9909 48 **CHOUGH: implementation and performance of a high-order 4m AO demonstrator** [9909-155]
- 9909 49 **On the verification of NFIRAOS algorithms and performance on the HeNOS bench** [9909-158]
- 9909 4B **DRAGON-NG: a configurable and capable AO test-bench** [9909-161]
- 9909 4E **An engineered design of a diffractive mask for high precision astrometry** [9909-167]
- 9909 4F **Status of an extreme adaptive optics testbench using a self-referenced Mach-Zehnder wavefront sensor** [9909-170]

POSTER SESSION: ADVANCES IN AO CONTROL AND CALIBRATIONS

- 9909 4H **Natural guide-star processing for wide-field laser-assisted AO systems** [9909-180]
- 9909 4I **Green FLASH: energy efficient real-time control for AO** [9909-183]
- 9909 4J **Kaczmarz and Cimmino: iterative and layer-oriented approaches to atmospheric tomography** [9909-188]
- 9909 4K **The control switching adapter: a practical way to ensure bumpless switching between controllers while AO loop is engaged** [9909-193]
- 9909 4L **Dimensioning the MAORY real time computer** [9909-194]
- 9909 4M **Bridging FPGA and GPU technologies for AO real-time control** [9909-197]
- 9909 4N **Thirty Meter Telescope narrow-field infrared adaptive optics system real-time controller prototyping results** [9909-202]
- 9909 4P **Novel technology for reducing wavefront image processing latency** [9909-206]
- 9909 4Q **EDiFiSE full-FPGA adaptive optics: first laboratory results using the IACAT optical ground support equipment** [9909-212]
- 9909 4R **Novel algorithm implementations in DARC: the Durham AO real-time controller** [9909-215]

- 9909 4S **Demonstration of the suitability of GPUs for AO real-time control at ELT scales** [9909-217]
- 9909 4V **Location-grouping algorithm based on limited actuators deformable mirror for high precision wavefront aberration correction in adaptive optics system** [9909-221]
- 9909 4W **Prediction control method to improve the dynamic performance of a close-loop adaptive optics system** [9909-222]

POSTER SESSION: EXTREME AO

- 9909 4Z **Speckle lifetime in XAO coronagraphic images: temporal evolution of SPHERE coronagraphic images** [9909-174]
- 9909 50 **High contrast imaging of exoplanets on ELTs using a super-Nyquist wavefront control scheme** [9909-176]
- 9909 52 **The path to visible extreme adaptive optics with MagAO-2K and MagAO-X** [9909-184]
- 9909 54 **Subaru Coronagraphic eXtreme Adaptive Optics: on-sky performance of the asymmetric pupil Fourier wavefront sensor** [9909-189]
- 9909 55 **Speckle nulling wavefront control for Palomar and Keck** [9909-192]
- 9909 56 **First on-sky closed loop measurement and correction of atmospheric dispersion** [9909-196]
- 9909 57 **Fast and robust exo-planet detection in multi-spectral, multi-temporal data** [9909-199]
- 9909 58 **Planet detection down to a few λ/D : an RSDI/TLOCI approach to PSF subtraction** [9909-200]

Part Three

POSTER SESSION: EXTREME AO (cont.)

- 9909 59 **Focal-plane electric field sensing with pupil-plane holograms** [9909-204]
- 9909 5B **Precise wavefront control for stellar coronagraphy: possibilities by a common-path extremely unbalanced interferometer** [9909-209]

POSTER SESSION: LASER GUIDE STAR SYSTEMS

- 9909 5E **Comparison between observation and simulation of sodium LGS return flux with a 20W CW laser on Tenerife** [9909-178]
- 9909 5F **Polarization switching of sodium guide star laser for brightness enhancement** [9909-179]
- 9909 5G **LGS adaptive optics system with long-pulsed sodium laser on Lijiang 1.8 meter telescope 2014-2016 observation campaign** [9909-182]

- 9909 5J **Laser traffic control system upgrades for Maunakea** [9909-191]
- 9909 5K **Laser beam shaping simulations for generation of artificial stars constellations** [9909-195]
- 9909 5L **Laser pointing camera: a valuable tool for the LGS-AO operations** [9909-198]
- 9909 5M **Closed-loop control for laser beam shaping system before guide star projection** [9909-201]
- 9909 5N **Daylight operation of a sodium laser guide star** [9909-205]
- 9909 5O **Vapor cell based sodium laser guide star mechanism study lab-bench** [9909-207]
- 9909 5P **Sodium vapor cell laser guide star experiments for continuous wave model validation**
[9909-210]
- 9909 5Q **The progress of TMT Laser Guide Star Facility** [9909-213]
- 9909 5R **Development of vertical external cavity surface emitting lasers (VECSELs) for use as
monochromatic and polychromatic sodium guidestars** [9909-216]

POSTER SESSION: ASTRONOMY WITH AO

- 9909 5U **The Robo-AO KOI survey: laser adaptive optics imaging of every Kepler exoplanet
candidate** [9909-226]
- 9909 5V **GeMS/GSAOI performances from a user perspective** [9909-228]
- 9909 5Y **High-z galaxies simulations: a benchmark for Global-MCAO** [9909-234]

POSTER SESSION: WAVEFRONT SENSING

- 9909 5Z **Optical solutions for accommodating ELT LGS wave-front sensing to small format detectors**
[9909-225]
- 9909 60 **A general formalism for Fourier based wave front sensing: application to the pyramid wave
front sensors** [9909-227]
- 9909 61 **Sensing wavefronts on resolved sources with pyramids on ELTs** [9909-229]
- 9909 62 **ESO adaptive optics NGSD/LGSD detector and camera controller for the E-ELT** [9909-231]
- 9909 63 **LIFT on Keck: analysis of performance and first experimental results** [9909-233]
- 9909 64 **Experimental study of an optimised Pyramid wave-front sensor for Extremely Large
Telescopes** [9909-235]
- 9909 65 **Novel tip-tilt sensing strategies for the laser tomography adaptive optics system of the GMT**
[9909-236]

- 9909 66 **Comparative study of infrared wavefront sensing solutions for adaptive optics** [9909-237]
- 9909 67 **Pupil phase discontinuity measurement: comparison of different wavefront sensing concepts** [9909-238]
- 9909 68 **Correction of NIRI/ Altair non-common path aberrations using focal plane sharpening** [9909-239]
- 9909 69 **Wavefront sensing using a photonic lantern** [9909-240]
- 9909 6A **High order dark wavefront sensing simulations** [9909-242]
- 9909 6B **Pyramid wavefront sensing using Laser Guide Star for 8m and ELT class telescopes** [9909-243]
- 9909 6C **A "Fast and Furious" solution to the low-wind effect for SPHERE at the VLT** [9909-245]
- 9909 6D **Estimating phase errors from pupil discontinuities from simulated on sky data: examples with VLT and Keck** [9909-246]
- 9909 6E **Exploring the operational effects of phase diversity for the calibration of non-common path errors on NFIRAOS** [9909-247]
- 9909 6G **Fast modulation and dithering on a pyramid wavefront sensor bench** [9909-249]
- 9909 6H **PWFSs on GMCAO: a different approach to the non-linearity issue** [9909-250]
- 9909 6I **An achromatic low-order wavefront sensor** [9909-251]
- 9909 6J **Dark tip-tilt sensing** [9909-252]
- 9909 6K **Sparse aperture differential piston measurements using the pyramid wave-front sensor** [9909-253]
- 9909 6L **Laser guide star spot shrinkage for affordable wavefront sensors** [9909-255]
- 9909 6M **Solving the MCAO partial illumination issue and laboratory results** [9909-256]
- 9909 6N **Analytical expression of a long exposure coronagraphic point spread function** [9909-258]
- 9909 6P **Experimental result from tip-tilt measurement with a laser guide star at Yunnan Observatories** [9909-260]
- 9909 6Q **Correlation wavefront sensing for extended objects** [9909-262]
- 9909 6R **Development of an optical differentiation wavefront sensor based on binary pixelated transmission filters** [9909-264]
- 9909 6S **ZELDA, a Zernike wavefront sensor for the fine measurement of quasi-static aberrations in coronagraphic systems: concept studies and results with VLT/SPHERE** [9909-265]
- 9909 6T **Characterising latency for AO optical sensors: an implementation** [9909-266]

- 9909 6U **Low photon-count tip-tilt sensor** [9909-267]
- 9909 6V **Fast gradient-based algorithm on extended landscapes for wave-front reconstruction of Earth observation satellite** [9909-268]
- 9909 6W **The pyramid wavefront sensor used in the closed-loop adaptive optics system** [9909-269]

POSTER SESSION: AO MODELING, ANALYSIS AND SIMULATIONS

- 9909 6X **Daytime turbulence profiling for EST and its impact in the solar MCAO system design** [9909-270]
- 9909 6Z **Comparison between simulations and lab results on the ASSIST test-bench** [9909-277]
- 9909 71 **COMPASS: status update and long term development plan** [9909-282]
- 9909 72 **Wavefront reconstruction with pupil fragmentation: study of a simple case** [9909-287]
- 9909 73 **End-to-end simulations of the E-ELT/METIS coronagraphs** [9909-290]
- 9909 75 **Simulations of E-ELT telescope effects on AO system performance** [9909-298]
- 9909 76 **Pseudo-analytic simulation of woofer-tweeter MOAO system: application to MOSAIC** [9909-301]
- 9909 77 **Accurate laser guide star wavefront sensor simulation for the E-ELT first light adaptive optics module** [9909-304]
- 9909 78 **Preparation of AO-related observations and post-processing recipes for E-ELT HARMONI-SCAO** [9909-305]
- 9909 79 **Deriving comprehensive error breakdown for wide field adaptive optics systems using end-to-end simulations** [9909-307]
- 9909 7A **8s, a numerical simulator of the challenging optical calibration of the E-ELT adaptive mirror M4** [9909-309]
- 9909 7B **The numerical simulation tool for the MAORY multiconjugate adaptive optics system** [9909-310]
- 9909 7C **Simulation of DKIST solar adaptive optics system** [9909-311]
- 9909 7E **PASSATA: object oriented numerical simulation software for adaptive optics** [9909-314]
- 9909 7F **Soapy: an adaptive optics simulation written purely in Python for rapid concept development** [9909-315]
- 9909 7I **Analysis of the performances of 45 degrees tilted deformable mirrors for the EST MCAO** [9909-318]

- 9909 7J **The software package CAOS 7.0: enhanced numerical modelling of astronomical adaptive optics systems** [9909-319]

POSTER SESSION: POST-PROCESSING AO DATA

- 9909 7K **PSF calibration using the Lyot-based low order wavefront sensor telemetry: first simulations** [9909-271]
- 9909 7N **Spatially variant PSF modeling and image deblurring** [9909-281]
- 9909 7P **Speckle statistics in adaptive optics images at visible wavelengths** [9909-286]
- 9909 7Q **A comparison between different coronagraphic data reduction techniques** [9909-289]
- 9909 7T **The software package AIRY 7.0: new efficient deconvolution methods for post-adaptive optics data** [9909-297]
- 9909 7W **Detection of faint companions in multi-spectral data using a maximum likelihood approach** [9909-306]

POSTER SESSION: WAVEFRONT CORRECTORS

- 9909 7Y **E-ELT M4 adaptive unit final design and construction: a progress report** [9909-272]
- 9909 7Z **Developments of piezo deformable mirrors** [9909-275]
- 9909 80 **GMTIFS: deformable mirror environmental testing for the on-instrument wavefront sensor** [9909-276]
- 9909 82 **Research on the optimization of a bimorph piezoelectric deformable mirror based on zeroth-order method** [9909-292]
- 9909 83 **Bimorph mirrors for adaptive optics in space telescopes** [9909-294]
- 9909 84 **Development of a miniaturized deformable mirror controller** [9909-299]
- 9909 85 **Fault-tolerant drive electronics for a Xinetics deformable mirror at GeMS DM0** [9909-321]

Authors

Numbers in the index correspond to the last two digits of the six-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first four digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Abicca, R., 2D
Absil, Olivier, 20, 22, 73
Adamkovics, Mate, 05
Adler, Tobias, 2L
Agapito, Guido, 15, 1B, 2D, 3U, 3V, 6B, 6K, 7B, 7E
Akiyama, M., 10, 3E
Alaluf, D., 83
Albrecht, Alexander R., 5R
Allain, Guillaume, 6I
Aller-Carpentier, Emmanuel, 2S, 2Z
Allington-Smith, Jeremy, 69
Alonso, Ángel, 3M, 4Q
Alvarez, Domingo, 12
Ambrosino, Filippo, 5L, 7P
Ammons, S. Mark, 0V, 2F, 4E
Amorim, A., 2M
Amram, Philippe, 0P
Andersen, David R., 05, 06, 07, 0L, 10, 1G, 34, 3E, 49, 6D, 6E
Andersen, Morten, 1S
Andrighettoni, Mario, 4I, 7Y
Angerer, Gerald, 4I, 7Y
Antichi, J., 1B
Antonini, Tania, 7Z
Antoshkin, L. V., 32
Araujo Hauck, Constanza, 2F
Arcidiacono, Carmelo, 2D, 3V, 4J, 4L, 6A, 6J, 6K, 6M, 77, 7B
Argomedo, Javier, 0Z, 2H, 2S, 2Z
Aribi, Tarik, 7Z
Armus, Lee, 05
Arriola, Alexander, 0W, 33
Arsenault, Robin, 0Z, 1U, 2H, 2S, 2Z, 6Z
Asensio Ramos, A., 1H
Ashby, Dave, 03, 1T
Atkinson, D., 0C
Atkinson, Dani E., 18, 5U
Atwood, Jenny, 34
Aubry, Marie, 7Z
Baba, Naoshi, 2N
Bacciotti, Francesca, 3I
Baffa, Carlo, 3I
Bailey, Vanessa P., 0V
Baker, Ian, 12, 13
Ball, Jesse G., 68
Banas, T., 4Z
Bao, Hua, 19, 2C, 2I
Baranec, Christoph, 02, 0F, 1A, 5U
Barberio, Michael J., 85
Bardou, Lisa, 44
Barr, David, 4P
Barth, Aaron, 05
Bartos, R., 0D
Baruffolo, Andrea, 0U, 1B, 27, 2D, 3I, 4J, 4L
Basden, Alastair G., 0C, 1I, 1Q, 3P, 44, 48, 4P, 4R, 4S
Bastais, R., 83
Bastard, Arnaud, 7Z
Baudoz, Pierre, 0A, 0U, 20
Bazzon, Andreas, 27
Beaufort, Emmanuel, 7Z
Béchet, Clémentine, 5K
Bechter, Andrew, 2X
Bechter, Eric, 2X
Belikov, Ruslan, 84
Bellazzini, Michele, 06, 2D
Bello, D., 1C, 5E
Bendek, Eduardo, 4E, 84
Benetti, Stefano, 47
Benneke, B., 0D
Bennet, Francis, 1I, 1X, 3D, 6T
Bento, J., 0W
Berdja, Amokrane, 3Y
Bergomi, Maria, 3I, 47, 5Y, 6A, 6H, 6J, 7Q
Berkefeld, Thomas, 24, 29
Bernard, Anaïs, 1S
Bernard, Julien, 4I, 4M
Berrilli, Francesco, 7I
Bertero, Mario, 7T
Bertram, Thomas, 0B, 6I, 6M
Berwein, J., 6M
Beuzit, Jean-Luc, 0U, 16, 27, 4Z, 6C, 6S
Bezmyannikova, Yulia, 5B
Bharmal, Nazim Ali, 30, 48, 4B
Bian, Qi, 42, 4V
Bian, Qi, 5G
Biasi, Roberto, 4I, 7Y
Biliotti, V., 1B, 2D
Biondi, Federico, 47, 5Y
Bitenc, Urban, 0C, 4B, 4I, 4R, 4S
Black, Martin, 48
Blain, C., 1B, 6B
Blanchard, P., 6S
Blanco, Leonardo, 09, 78
Blind, N., 4I
Bloxxham, G., 80
Bo, Yong, 5G
Boccacci, Patrizia, 7T

Boccaletti, A., 4Z
 Bolbasova, L. A., 32
 Bonaccini Calia, Domenico, 3M, 44, 5E, 5L
 Bonaglia, Marco, 0A, 2D, 36, 3R, 3U, 3V
 Bonavita, M., 7Q
 Bond, Charlotte Z., 64, 6D
 Bongiorno, Angela, 3I
 Bonnefond, Sylvain, 72
 Bonnet, Henri, 2L, 2M, 75
 Bono, Giuseppe, 06, 3U
 Borelli, J., 36
 Bottom, Michael, 20, 22, 55
 Botugina, N. N., 32
 Bouchez, Antonin H., 1T, 65
 Bounissou, Sophie, 1S
 Bourgenot, Cyril J., 48
 Bourget, Pierre, 16, 2L, 2M
 Boutolleau, David, 13
 Bouxin, A., 1P
 Bowler, B., 0D
 Boyer, Corinne, 08, 4N, 5Q
 Boz, R., 80
 Bradley, Colin, 10, 3E, 6B, 6G
 Bramall, David G., 4B
 Brandl, Bernhard R., 0B, 73
 Brandner, Wolfgang, 2L, 2M
 Bregoli, Giovanni, 2D, 4L, 77, 7B
 Briguglio, Runa, 01, 1B, 2D, 3V, 52, 7A, 7Y
 Brinkmann, Martin, 0O, 16
 Brissaud, O., 2D
 Brousseau, Denis, 02, 2V, 6I
 Brulé, J., 4I, 7I
 Brusa Zappellini, Guido, 03, 2E, 2G
 Bryson, Ian, 09, 78
 Budker, Dmitry, 5E, 5P
 Buey, Tristan, 0A, 0C, 1I, 44
 Bundy, D., 80
 Burda, I., 83
 Busoni, Lorenzo, 0A, 1B, 2D, 36, 3R, 3U
 Butler, R. C., 7B
 Butterley, Timothy, 1N, 3C, 3I, 3J
 Byrnes, Peter, 34
 Cai, Jianqing, 6K
 Caillat, A., 3F, 6S
 Campbell, Randy, 22, 5J
 Cantalloube, Faustine, 57, 6N
 Cappellaro, Enrico, 47
 Carbillat, Marcel, 7J, 7T
 Carbonaro, Luca, 1B, 2D, 3I, 3V
 Carlisle, Elizabeth, 7C
 Carlomagno, Brunella, 22, 73
 Carlotti, Alexis, 09, 0A, 2D, 3I, 7I, 7Q
 Carmignani, Thomas, 13
 Carolo, Elena, 3I, 47, 6A, 7Q
 Carrasco Damele, Eleazar R., 2F
 Casali, Mark, 0O, 14
 Cascone, Enrico, 2D, 4L
 Castro, Mario, 3G, 3K, 3L, 5M
 Castro-Almazán, Julio A., 3M
 Cavaller, L., 1C
 Cayrel, Marc, 7Y
 Cederberg, Jeffrey G., 5R
 Centrone, Mauro, 3I, 3M, 44, 5E, 5L, 7P
 Cerruto, A., 5L
 Cetre, Sylvain, 0D, 0S, 22, 25
 Chan, Dwight, 22
 Chapin, Edward L., 4N
 Chapron, Frédéric, 0A
 Chemla, Fanny, 0A, 0C, 1I, 2L, 44
 Chen, Donghong, 19, 2I, 5G
 Chen, S., 0F
 Chen, Xinyang, 6K
 Cheng, Feng, 5G, 5Q
 Chin, Jason C. Y., 0S
 Chinellato, Simonetta, 47
 Chiomento, Venerio, 47
 Chisholm, Eric M., 05
 Chock, J., 1P
 Choquet, Elodie, 7K
 Christou, Julian C., 03, 2E, 2G
 Chulani, Haresh M., 4Q
 Chun, Mark R., 02, 0D, 0F, 15, 3H
 Ciliegi, Paolo, 06, 0A, 2D, 4L, 77, 7B
 Clarke, Fraser, 09, 78
 Clénet, Yann, 0A, 1G, 2L, 2M, 7I
 Clop, Fabien, 13
 Close, Laird M., 01, 1E, 3I, 3G, 3L, 52
 Cohen, Mathieu, 0A, 0C
 Collados, M., 1H, 6X
 Conan, Jean-Marc, 09, 0M, 1I, 4H
 Conan, Rodolphe, 1T, 65
 Conod, U., 4I
 Conrad, Al, 2E, 52
 Conzelmann, Ralf D., 2H, 2Z
 Cooke, Jeff, 05
 Copeland, M., 80
 Correia, Carlos M., 09, 10, 1Q, 3C, 3E, 3P, 4H, 64, 6D, 6E, 6L, 78
 Correia, J.-J., 2D
 Corrigan, Mark, 69
 Cortecchia, F., 2D, 7B
 Cortes, Angela, 2K
 Cosentino, Giuseppe, 2D, 4L, 7B
 Costille, Anne, 0U, 27, 6S
 Cote, Patrick, 05
 Coughlan, John, 4P
 Cousty, Raphaël, 7Z
 Coutts, D., 0W
 Crass, Jonathan, 2X
 Crepp, Justin R., 2X
 Crossfield, I., 0D
 Cumming, Tom, 5J
 Cummings, Keith, 0Y
 Currie, T., 0W
 Cvetojevic, Nick, 0W, 33
 Dai, Yichun, 40
 Dalessandro, Emanuele, 5V
 Davidge, Timothy, 05
 Davies, Richard, 0A, 1G
 De Caprio, V., 2D

Deen, Casey, 2L, 2M
 Defrère, Denis, 22
 de Haan, Menno, 27
 Dekany, Richard, 0D, 15, 55
 Delabre, B., 2Z
 Delacroix, Christian, 22, 73
 Delboulbé, A., 2D
 Del Moro, Dario, 7I, 7P
 Delplancke, Françoise, 2L, 2M
 Del Vecchio, C., 2D
 Delvit, J. M., 6V
 Dembet, R., 4I
 Demidov, M. L., 32
 Deneux, H., 4I
 Deng, Jijiang, 5G
 Deng, Keran, 5G
 Denis, Loïc, 57, 7N
 Dennison, Kaitlin, 4E
 Densmore, Adam, 34
 De Pascale, Marco, 2D, 3I
 Derelle, S., 66
 Dérie, Frédéric, 1N
 De Rosa, A., 2D
 De Rosa, Robert J., 0V
 Devaney, Nicholas, 1R, 57, 7W
 Deysenroth, M., 36
 Dickson, C., 0C
 Di Lieto, Nicola, 62
 Dillon, Daren, 2W
 Dima, Marco, 3I, 47, 5Y, 6A, 6H, 6J
 Diolaiti, Emiliano, 06, 0A, 2D, 4L, 77, 7B
 Dipper, Nigel A., 0C, 4B, 4I, 4P, 4S
 Di Rico, G., 1B, 2D
 Dixon, Thomas, 6T
 Do, Tuan, 05, 1P
 Doelman, Niek, 1M
 Dohlen, Kjetil, 09, 0U, 16, 27, 37, 3F, 67, 6C, 6L, 6S, 78
 Dominik, Carsten, 27
 Donahue, Jeff, 2F
 Donaldson, Robert H., 0Z, 1U, 2H, 2S, 2Z
 Dong, Ruoxi, 5G
 Donini, Michele, 4J
 Doppmann, Greg, 0S
 D'Orazi, Valentina, 3I, 7Q
 d'Orgeville, Céline, 0R, 1X, 2F
 Dorrer, Christophe, 6R
 Doucet, Nicolas, 0A, 4I, 7I
 Doughty, D., 0W
 Downing, Mark, 0U, 14, 1B, 27, 2H, 62
 Drobilek, Mark, 0Y
 Dubbeldam, Cornelis Marc, 1N, 30, 48, 4B
 Duev, Dmitry, 1A
 Dufourcq, G., 4I
 Duhoux, Philippe, 2S
 Dumas, Christophe, 05
 Dunlop, Colin, 4B
 Dunn, Jennifer S., 05, 4N
 Dupuy, Christophe, 12
 Durand, Sébastien, 0A
 Durney, O., 3V
 Dutey, Gabrielle, 7Z
 Dziuban, Iliia, 5B
 Ebert, Monica, 2L
 Echeandía, Carlos, 4Q
 Egner, S., 1B
 Eisenhower, Frank, 2L, 2M
 El Hadi, Kacem, 09, 3F, 64, 67, 6L, 78
 Ellerbroek, Brent L., 05, 08, 4N, 5Q
 Elswijk, Eddy, 27
 Emaleev, O. N., 32
 Ermolli, Ilaria, 7I
 Escárate, Pedro, 3G, 3K, 3L, 5M
 Espeland, B., 80
 Esposito, Simone, 0I, 0A, 15, 1B, 2D, 2E, 2G, 3I, 36, 3R, 3U, 3V, 4L, 52, 6B, 6H, 77, 7B, 7E
 Esselborn, Michael, 2L, 2M, 75
 Fan, Muwen, 5Q
 Fan, Tingwei, 5F
 Fan, Xinlong, 19, 1D, 2I
 Fantinel, Daniela, 2D, 3I
 Farinato, Jacopo, 3I, 47, 4J, 5Y, 6A, 6H, 6J, 7Q
 Farisato, Giancarlo, 3I
 Fauvarque, Olivier, 60, 64
 Feautrier, Philippe, 0A, 0C, 13, 2D, 44, 4L, 77, 7B
 Fedrigo, E., 2Y
 Feger, T., 0W
 Feldt, Markus, 0B, 6I, 73
 Felini, Corrado, 2D, 4L
 Femenia Castellà, Bruno, 20, 22, 25, 55, 63
 Feng, Yan, 5F
 Feng, Zhongyi, 2I
 Ferrari, André, 57
 Ferrari, Marc, 6L
 Ferraro, Francesco R., 5V
 Ferraro, Ivan, 06
 Ferreira, Florian, 0A, 4I, 7I, 79
 Ferruzzi, D., 2D
 Fetzer, Gregory J., 0R
 Finger, Gert, 12, 14, 2L
 Fini, Luca, 0I, 2D, 38, 3V
 Fiorentino, Giuliana, 06, 07, 1G, 2D
 Fischer, Andreas, 24
 Fitzgerald, M., 0D, 1P
 Fitzsimmons, Joeleff, 34
 Fitzsimons, Ewan, 1I
 Flaisher, A., 4I
 Folcher, Jean-Pierre, 7J
 Foley, Michael, 2X
 Follette, Katherine B., 0I, 0V
 Fontana, A., 2D
 Foppiani, Italo, 2D, 4L, 7B
 Forsberg, Pontus, 73
 Fortney, J., 0D
 Frahm, R., 2Y
 Frazin, Richard A., 3X
 Frigo, Aldo, 47
 Frolov, Pavel, 5B
 Fucik, J., 0D

Fuensalida, Jesús J., 3M, 4Q
 Fumi, Pierluigi, 7Y
 Fusco, Thierry, 09, 0U, 15, 16, 1I, 1Q, 1S, 1U, 37,
 3C, 3F, 3P, 3U, 4H, 4Z, 60, 63, 64, 66, 67, 6C, 6L,
 6S, 78
 Gach, Jean-Luc, 09, 0C, 0P, 13, 44, 6L
 Gaessler, Wolfgang, 31, 36
 Gago, F., 2Z
 Galicher, R., 4Z
 Gallie, A. M., 09
 Gallieni, Daniele, 7Y
 Gamroth, D., 10, 3E
 Gao, Yang, 5G
 Garbellotto, Chiara, 4J
 Garcés Santibañez, Eduardo, 3Y
 Garcés, Javier, 3G, 3K, 3L, 5M
 Gardiner, John, 02
 Garrel, Vincent, 1X, 2F, 4E
 Gaudi, Scott, 2X
 Gavel, Donald T., 2W
 Geisler, Douglas, 5V
 Gemperlein, H., 36
 Gendron, Éric, 0A, 0C, 1I, 1Q, 2L, 2M, 3I, 3P, 44, 4I,
 5Z, 71, 76, 79
 Geng, D., 4I
 Gerard, Benjamin L., 50, 58
 Ghez, Andrea M., 05, 1P
 Ghigo, M., 2D
 Giallongo, Emanuele, 31
 Gigoux, Pedro, 2F
 Gilles, Luc, 4N
 Giordano, C., 1B, 2D, 6B
 Giorgi, Fabrizio, 7I
 Girard, Julien H. V., 0U, 16, 4Z, 6S
 Giraut, Orion, 60
 Giro, E., 2D
 Gisler, Daniel, 27
 Glauser, Adrian, 2L
 Gluck, L., 2D
 Glück, Martin, 3N
 Goebel, Sean B., 0J, 0W, 18
 Gomez Gonzalez, Carlos, 22
 Gong, Mali, 42, 4V
 Gonte, Frederic, 2L, 2Y
 González-Núñez, Héctor, 5K
 Goode, Phil, 29
 Goodwin, Michael, 33
 Gorceix, Nicolas, 29
 Govaert, Alain, 27
 Gratadour, Damien, 0A, 0C, 1G, 1Q, 44, 4I, 4M,
 71, 76, 79
 Greffe, Timothee, 13
 Greggio, Davide, 31, 47, 5Y, 6A, 6H, 7Q
 Grèzes-Beset, Catherine, 7Z
 Grigoriev, V. M., 32
 Groëninck, Denis, 7Z
 Groff, T., 0W
 Gross, Simon, 0W, 33
 Grosse, Doris, 3D
 Gu, Naïting, 2I
 Guan, Chunlin, 19, 1D
 Guerineau, N., 66
 Guerra, Juan Carlos, 2S, 37
 Guesalaga, Andrés, 0H, 16, 3B, 3C, 3E, 3K, 5K
 Guidolin, I., 5E
 Gullieuszik, Marco, 47, 5Y, 6J
 Guo, Youming, 19, 1D, 2I
 Gutierrez-Cheetam, P., 2Z
 Guyon, Olivier, 0D, 0J, 0W, 15, 18, 31, 4E, 52, 54,
 56, 7K
 Guzmán, Christian Dani, 3Y
 Habraken, Serge, 73
 Hackenberg, W., 0Z, 5E
 Hackett, Shawn, 5R
 Haffert, S., 2I
 Hagelberg, J., 0W
 Haguenauer, Pierre, 16, 2H, 2M, 2S, 2Y
 Hall, Donald N. B., 0D, 15, 18
 Halsall, Rob, 4P
 Hammer, Francois, 1I
 Hammersley, P., 09
 Hanaoka, Yoichiro, 2N
 Hanley, Kenneth, 1R, 7W
 Hao, Lei, 05
 Harris, Robert J., 69
 Hart, Michael, 5N
 Hayano, Yutaka, 02, 05, 56
 Hayashi, M., 0W
 Hayward, Thomas, 0V
 Heidecke, Frank, 24
 Hénault, F., 2D
 Henning, Thomas, 2L, 2M
 Henry, David M., 09, 0C, 48
 Herbst, T. M., 2E, 6M
 Herrald, Nick, 1I, 1X
 Herriot, Glen, 0L, 1J, 1Z, 34, 49, 4N, 6G
 Herscovici-Schiller, Olivier, 6N
 Hibon, Pascale, 2H
 Hill, Alexis, 34
 Hill, J. M., 2E
 Hinz, Philip M., 01, 2E, 2X, 31, 3V, 52
 Hippler, Stefan, 0B, 2L, 6I, 73
 Hölck-Santibanez, Daniel, 30, 48
 Holzlöhner, Ronald, 5E, 5P
 Horodincea, M., 83
 Hu, Lin, 82
 Hu, R., 0D
 Huang, Jiang, 5G
 Huang, Kai, 6P
 Huang, Lei, 42, 4V
 Huber, Armin, 2L, 2M
 Hubert, Zoltan, 0A, 2L, 2M
 Hubin, Norbert, 0U, 27, 2Z
 Huby, Elsa, 20, 22, 55, 73
 Hudepohl, G., 2T
 Huet, J.-M., 0C
 Hugot, Emmanuel, 09, 0U, 6L
 Hunter, L., 0F
 Hyde, Elizabeth, 84
 Iannicola, Giacinto, 06

Ichimoto, Kiyoshi, 2N
 Ingraham, Patrick, 0V
 Ireland, Michael J., 0D, 0W, 52
 Ives, Derek, 12
 Jackson, K., 10, 3E
 Jager, Rieks, 0B
 Jagourel, Pascal, 1I
 Jahn, Wilfried, 6L
 Jakob, Gerd, 0O, 2L
 Jarno, Aurélien, 78
 Jefferies, Stuart, 5N
 Jenkins, David, 4R
 Jensen-Clem, Rebecca, 1A
 Jiang, Changchun, 5G, 5Q
 Jiang, Wenhan, 19
 Jin, Kai, 1D, 5G
 Jin, Zhenyu, 40
 Jochum, Lieselotte, 2L
 Jocou, Laurent, 2D, 2L
 Johansson, Erik, 0Y
 Johnson, Luke C., 0Y
 Johnson, Robert L., 5R
 Jolissaint, L., 1P
 Jolivet, Aïssa, 22
 Jolley, P., 2Z
 Jost, Andreas, 2H
 Jovanovic, Nemanja, 0J, 0W, 18, 52, 54, 56
 Juvénal, Rémy, 0M, 2F, 4K
 Kackley, Russell, 5J
 Karlsson, Mikael, 22, 73
 Kasdin, J., 0W
 Kasper, Markus, 0O, 0U, 16, 1B, 27, 4Z
 Kawahara, H., 0W
 Keller, Christoph U., 21, 27, 59, 6C, 73
 Kellner, Aglaë, 6Q
 Kendrew, Sarah, 2L
 Kenworthy, Matthew, 0B, 52, 73
 Kerber, F., 2D
 Kerley, Dan, 4N
 Kern, Jonathan, 03
 Ketterer, Ryan, 2X
 Kiekebusch, Mario J., 0Z, 2H, 2S, 2Z
 Kingery, Christopher, 02
 Kirchbauer, J. P., 2Z
 Klammer, Benjamin, 84
 Klein, B., 2Z
 Klein, Ralf, 2L, 2M
 Kolb, Johann, 0K, 0Z, 1U, 2H, 2L, 2M, 2S, 2Z, 6Z
 Kong, Lin, 2C, 2I
 Konyaev, P. A., 32
 Kopylov, E. A., 32, 3S
 Korkiakoski, Visa, 21, 3D
 Kotani, T., 0W
 Kovadlo, P. G., 32, 3S
 Krol, Hélène, 7Z
 Kudo, T., 0W, 56
 Kudryashov, A. V., 32
 Kuhn, J., 0W
 Kuijken, Konrad, 1G
 Kulas, Martin, 2L, 2M, 36
 Kulcsár, Caroline, 0M, 2F, 4K
 Kulkarni, Shrinivas, 1A
 Kuntschner, Harald, 0Z, 2H, 2Z
 Kupke, Renate, 2W
 Kuwamura, Susumu, 2N
 Kwok, Shui, 1P, 5J
 La Camera, Andrea, 7J, 7T
 Lafrasse, S., 2D
 Lagadec, T., 0W
 Lagrange, A. M., 4Z
 Lai, Olivier, 02, 3H, 68
 Laidlaw, Douglas J., 3I
 Lainé, Maxime, 4I, 4M, 7I
 Lamb, Masen, 16, 3F, 64, 6D, 6E
 Lanclos, Kyle, 22
 Langlois, Maud, 1R, 4F, 57
 Lanzoni, Barbara, 5V
 La Penna, Paolo, 0Z, 1U, 2D, 2S, 2Z, 6Z
 Lardièrre, Olivier, 10, 1J, 3E, 6G
 Larkin, James E., 05
 Lascaux, Franck, 0I
 Latry, C., 6V
 Laun, Werner, 2L
 Lauria, M., 2D
 Lavigne, Jean-François, 2V
 Lavrinov, V. V., 32
 Lavrinova, L. N., 32
 Law, Nicholas M., 1A, 3Z, 5U
 Lawrence, Jon, 33
 Lazo, Manuel, 2F
 Lazzarini, Paolo, 7A, 7Y
 Leclerc, J.-B., 4I
 Le Coarer, E., 2D
 Le Duigou, Jean-Michel, 6N
 Lefebvre, Michael, 03, 2G, 36
 Leger, J., 4F
 Le Louarn, Miska, 09, 16, 1U, 2D, 2S, 2Z, 6Z, 72, 75
 Lemarchand, Stéphane, 13
 Le Merrer, J., 6S
 Le Mignant, D., 6S
 Lenzen, Rainer, 2L, 2M
 Lessio, Luigi, 47
 Lewis, Steffan, 14, 5E, 5P
 Li, Lei, 5O
 Li, Lihang, 5O
 Li, Mei, 19, 2I
 Li, Min, 1D, 5G, 5Q
 Li, Rongwang, 6P
 Li, Wenru, 5G
 Li, Xin-yang, 4W
 Li, Xiqi, 5Q
 Li, Yuqiang, 6P
 Lilley, Paul, 0O, 2Y, 7Y
 Lilley, Scott, 0S, 22, 25
 Lisi, Franco, 3I
 Liu, Michael, 05, 0D
 Lizon, Jean-Louis, 27, 2Z
 Lombardi, G., 5E
 Lombini, Matteo, 0A, 2D, 77, 7B
 López, R. L., 1C

Lopez-Rodriguez, Enrique, 05
 López-Ruiz, J. C., 1C, 35
 Loss, Keith, 02
 Loupias, M., 4F
 Love, Gordon D., 6Q
 Lozi, Julien, 0J, 0W, 52, 56, 7K
 Lu, Jessica R., 02, 05, 0F, 1P
 Lukin, V. P., 32, 3S
 Luo, Qi, 4W
 Luo, Ruiyao, 5O
 Lyke, Jim, 25
 Lynch, Dana, 84
 Ma, Xiaoyu, 19, 5G
 Ma, Xingkun, 42, 4V
 Ma, Xue'an, 2I
 Macintosh, Bruce A., 0V
 MacLachlan, David G., 69
 Madec, F., 6S
 Madec, Pierre-Yves, 0O, 0Z, 1U, 2H, 2S, 2Z, 6Z, 72, 75
 Mader, J., 1P
 Magnard, Y., 2D
 Magrin, Demetrio, 31, 47, 5Y, 6A, 6H, 6J, 7Q
 Maiorano, E., 2D
 Maire, Jérôme, 0V
 Males, Jared R., 01, 0W, 3G, 3L, 52
 Manescau, A., 2Z
 Manetti, Mauro, 7Y
 Mannucci, F., 2D
 Mantegazza, Marco, 7Y
 Mao, Shude, 05
 Mapelli, M., 2D
 Marafatto, Luca, 31, 47, 6A, 6J
 Marchet, Nicolas, 7Z
 Marchetti, Enrico, 14, 2D, 5V, 75
 Marchioni, José, 3G, 3K, 3L, 5M
 Marchis, F., 67
 Marco de la Rosa, J., 6X
 Marin, Eduardo, 2F, 4E
 Marino, Jose, 0X, 0Y, 1H, 29, 7C
 Marois, Christian, 05, 50, 58
 Marshall, Daniel, 05
 Martic, G., 83
 Martín Díaz, C., 1C, 35
 Martín, O. A., 10, 1Q, 3E, 3P
 Martín, Yolanda, 1C, 4Q
 Martinache, Frantz, 0W, 54, 56
 Martínez Rey, N., 35
 Martínez, G., 1P
 Martorana, Giorgio, 47
 Mary, David, 57
 Masciadri, Elena, 0I, 38, 3B, 3C
 Massari, Davide, 06, 07, 1G
 Matthews, Keith, 22
 Maurel, D., 2D
 Mauro, Francesco, 5V
 Mawet, Dimitri, 0D, 15, 16, 20, 22, 4Z, 55, 73
 Mazin, Ben, 0W, 52
 Mazzoni, Tommaso, 36, 3R
 McConnachie, Alan W., 06, 07, 1G
 McGraw, John T., 5R
 McLeod, B., 1T
 McMahon, Tom J., 03
 Medeiros, Drew, 0S
 Mehrgan, Leander, 12, 14, 2Z
 Mellein, Marcus, 2L
 Mesa, D., 7Q
 Meyer, Manfred, 12
 Micela, Giuseppina, 2X
 Michaud, L., 2D
 Mieda, Etsuko, 1J, 49
 Milburn, Jennifer, 55
 Miller, Douglas L., 03, 2E, 2G
 Milli, Julien, 0U, 16, 4Z
 Milner, Steven, 22
 Minowa, Y., 0W, 56
 Miura, Noriaki, 2N
 Mohr, Lars, 31
 Monelli, Matteo, 06
 Montes, Vanessa, 1X, 2F
 Montilla, Iciar, 1C, 1H, 3M, 5E, 6X
 Montoya, L., 1H, 6X
 Montoya, Manny, 31, 3V
 Moore, Anna M., 05
 Moreau, Aurélien, 7Z
 Moreaux, G., 6S
 Morel, Carine, 0C, 1I, 3I, 76
 Moreno, Cristian, 2F
 Moreno-Ventas, Javier, 2L
 Morgante, G., 2D
 Morin, Pierre, 7Z
 Morris, M. R., 1P
 Morris, S., 0C
 Morris, Timothy J., 09, 0C, 1I, 1N, 1Q, 3I, 3P, 44, 48, 69
 Morton, Tim, 5U
 Morzinski, Katie M., 01, 3G, 3L, 52
 Mouillet, David, 0U, 16, 27, 4Z, 6C, 6S
 Moulin, T., 2D
 Mourya, Rahul, 7N
 Mugnier, Laurent M., 1P, 1S, 57, 6D, 6N
 Mulhollan, Zachary, 6R
 Müller, Eric, 2L, 2M
 Mumm, Katherine, 84
 Muñoz-Tuñón, Casiana, 3M
 Murphy, Neil, 5N
 Myers, Richard M., 09, 0C, 1I, 1Q, 30, 3P, 44, 48, 4B, 4S, 69
 Nai, A., 4I
 Nakatani, Yoshikazu, 2N
 Narita, N., 56
 Navarrete, Julio, 37
 Navarro, Ramon, 1G
 N'Diaye, Mamadou, 0U, 16, 3F, 67, 6S
 Neichel, Benoît, 09, 0H, 16, 1I, 1Q, 1S, 1U, 2F, 3B, 3C, 3P, 3U, 4H, 60, 63, 64, 67, 6L, 78
 Neumann, Udo, 2L, 2M
 Ngo, Henry, 20, 22
 Ning, Yu, 5O
 Nofi, Larissa, 5U

Norris, Barnaby, 0J, 0W, 33
 Núñez Cagigal, M., 1C, 35
 Obereder, Andreas, 0B, 61
 Oberti, Sylvain, 0Z, 1U, 2D, 2L, 2M, 2S, 2Z, 6Z, 7B
 Oh-ishi, Akira, 2N
 Okita, Hirofumi, 0J
 O'Neal, Jared, 16
 Ono, Y. H., 10, 3E, 3P
 Onuma, Eleanya E., 2X
 Orban de Xivry, G., 36
 Origlia, Livia, 5V
 Osborn, James, 0C, 0H, 1M, 1N, 3C, 3I, 3J, 44
 Otarola, Angel, 0S
 Ott, Jürgen, 2L
 Offen, Gilles, 52, 73
 Ouattara, Issa, 0P
 Oya, Shin, 02, 10, 3E
 Pagano, Isabella, 2X
 Pagès, Hubert, 7Z
 Palazzari, P., 4I
 Pallanca, Laurent, 2L, 2Y
 Palmer, David W., 0V
 Palomo, Richard, 7Z
 Pandey, Shashi B., 05
 Panduro, Johana, 2L, 2M
 Pareschi, G., 2D
 Pariani, Giorgio, 7A, 7Y
 Pascal, Sandrine, 09, 6L
 Patauner, Christian, 4I, 7Y
 Pathak, Prashant, 0W, 56
 Patti, Mauro, 2D, 77, 7B
 Paufigue, Jérôme, 09, 0Z, 2H, 2S, 6Z
 Paulin, Nicolas, 1X
 Pavlov, Alexey, 27
 Pécontal-Rousset, Arlette, 78
 Pedichini, Fernando, 2X, 31, 5E, 5L, 7I, 7P
 Pedreros Bustos, Felipe, 5E, 5P
 Peng, Qinqun, 5G
 Pepe, F., 4I
 Perera, Saavidra, 0H, 3J
 Perraud, L., 6V
 Perraut, K., 2M
 Perret, Denis, 0C, 4I, 4M
 Perrin, G., 2M
 Perrin, Marshall D., 0V
 Perrot, Clément, 0A
 Perruchon-Monge, Ulysse, 7J
 Pescoller, Dietrich, 4I, 7Y
 Peter, D., 36
 Petit, Cyril, 09, 0U, 1I, 4H, 4K
 Pettazzi, Lorenzo, 2M, 2Y, 7Y
 Pfrommer, Thomas, 44, 5E
 Phillips, Andrew C., 05
 Pietrow, A. G. M., 2I
 Pinna, Enrico, 0I, 1B, 2G, 3I, 3V, 52, 6B, 6H, 7Q
 Piqueras, Laure, 78
 Plana, Henri, 1S
 Plantet, Cedric, 15, 63, 66
 Pluzhnik, Eugene, 84
 Por, Emiel H., 59
 Porta, F., 4I
 Portaluri, Elisa, 47, 5Y, 6H
 Postnikova, M., 3F
 Pott, Jörg-Uwe, 1G, 3N
 Poyneer, Lisa A., 0V, 2W
 Pragt, Johan, 27
 Prato, Marco, 7T
 Pretet, D., 4I
 Preumont, A., 83
 Price, Ian, 1I, 1X, 6T, 80
 Prieto, G., 1C
 Puech, M., 7I
 Pueyo, Laurent, 6L
 Puga, Marta, 1C, 4Q
 Puget, Pascal, 27, 6S
 Puglisi, Alfio, 0I, 1B, 2D, 2G, 3I, 36, 3V, 52, 6B, 7B, 7E, 7Q
 Qiao, Jie, 6R
 Quentin, J., 2Z
 Quiros-Pacheco, F., 1T
 R. Santhakumari, K. K., 6M
 Raab, W., 36
 Rabaud, Didier, 64
 Rabien, S., 2E, 36
 Rabou, P., 2D
 Ragazzoni, Roberto, 2D, 3I, 47, 4J, 5Y, 6A, 6H, 6J, 6M
 Ragland, Sam, 0S, 1P, 25, 63
 Rahmer, Gustavo, 03, 2E, 2G, 36
 Rains, A., 0W
 Rajan, Abhijith, 0V
 Ramos, Jose, 2L, 2M
 Rampy, Rachel, 25, 63
 Ramsay, Suzanne, 14, 2D
 Rantakyrö, Fredrik T., 0V
 Rao, Changhui, 19, 1D, 2C, 2I, 5G, 5Q, 6W
 Rao, Xuejun, 19, 2C, 2I
 Raynaud, Henri-François, 0M, 4K
 Rebeschini, Mauro, 47
 Reeves, Andrew P., 0C, 3I, 44, 4B, 7F
 Reggiani, Maddalena, 22
 Reinero, C., 2Y
 Reyes García-Talavera, M., 1C, 3M, 5E
 Reyes-Moreno, Javier, 14, 1B, 2H, 62
 Reynolds, Robert O., 2X
 Riccardi, Armando, 0I, 0A, 1B, 2D, 3V, 52, 7A, 7Y
 Ricciardi, A., 5L
 Ricciardi, S., 2D
 Richards, Kit, 0Y
 Richards, Samuel, 33
 Richey, Jeff W., 5R
 Riddle, Reed, 0F, 1A, 5U
 Rigaut, François, 1I, 15, 1X, 2F, 3D, 6T, 80
 Rimmele, Thomas, 0X, 0Y, 29
 Riquelme, Miguel, 2L
 Ritchie, I., 1I
 Riva, M., 2D
 Robert, C., 66
 Robertson, David J., 48
 Rochat, S., 2D

Rochester, Simon, 5E, 5P
 Rodeghiero, Gabriele, 1G
 Rodrigues, Myriam, 1I
 Rodríguez-Ramos, Luis F., 1C, 35, 4Q
 Roelfsema, Ronald, 27
 Rohloff, Ralf-Rainer, 2L, 2M
 Rojas Zagals, Diego, 3G, 3K, 3L, 5M
 Rolt, Stephen, 4B
 Rosado, M., 1C
 Rosensteiner, Matthias, 1J, 49
 Rouaud, C., 4I
 Roussel, F., 2D
 Rousset, Gérard, 0A, 0C, 1I, 1Q, 2L, 3P, 44, 4I, 76, 79
 Roux, A., 2D
 Ruane, Garreth, 0D, 73
 Rudy, Alexander R., 2W
 Rui, Daoman, 5Q
 Runburg, Elliott, 2X
 S. Béjar, V. J., 1C
 Saathof, Rudolf, 6U
 Salama, Maïssa, 1A
 Salasnich, Bernardo, 0U, 27, 2D, 3I
 Salgado, F., 2T
 Samal, Manash, 1S
 Santi, Shane, 02
 Saracco, P., 2D
 Saracino, Sara, 5V
 Sarazin, Marc, 0H, 1N
 Saunter, Christopher D., 6Q
 Sauvage, Jean-François, 09, 0U, 16, 1U, 27, 37, 3C, 3F, 4H, 4Z, 60, 64, 67, 6C, 6D, 6E, 6L, 6N, 6S, 78
 Savransky, Dmitry, 0V
 Sawodny, Oliver, 3N
 Saxenhuber, Daniela, 0B
 Scheithauer, Silvia, 0B, 2L, 2M
 Schitter, Georg, 6U
 Schmid, Hans Martin, 0U, 27
 Schmidt, Dirk, 0X, 24, 29, 7C
 Schmoll, Jürgen, 48
 Schnetler, Hermine, 09, 78
 Schoeck, Matthias, 05
 Schreiber, Laura, 06, 0A, 1G, 2D, 4L, 77, 7B
 Schubert, Josef, 0A
 Schuhler, Nicolas, 2L
 Schwab, C., 0W
 Schwartz, Noah, 09, 4P, 78
 Schweinsberg, Aaron, 6R
 Schworer, G., 0W
 Sedghi, B., 2Z
 Sekulic, Predrag, 0Y
 Serabyn, Eugene, 0D, 0W, 20, 22, 55, 7K
 Service, Max, 02
 Sevin, Arnaud, 0A, 0C, 0U, 4I, 4M, 7I, 76
 Sharp, R., 80
 Shashkova, Inna, 5B
 Sheik-Bahae, Mansoor, 5R
 Shen, Yu, 5G
 Shikhovtcev, A. Yu., 32, 3S
 Siebenmorgen, Ralf, 2H
 Simard, Luc, 05
 Simmons, Julia, 22
 Singh, Garima, 0J, 0W, 7K
 Siquin, Jean-Christophe, 7Z
 Sitarski, B., 1P
 Sivitilli, A., 36
 Sivo, Gaetano, 1X, 2F, 4E
 Skemer, A., 0D
 Smith, C., 1I
 Smith, Malcolm, 4N
 Snik, Frans, 2I, 52
 Soenke, Christian, 0U, 1B, 1U, 2H, 2S, 2Z
 Solar, Mauricio, 5M
 Soltau, Dirk, 24
 Sosa, Richard, 03
 Soulez, Ferréol, 7N
 Spanò, Paolo, 1B, 3U, 7A
 Spavone, M., 2D
 Srinath, Srikar, 2W
 Stadler, Eric, 0C, 13, 2D, 44
 Stangalini, Marco, 3I, 7I, 7P, 7Q
 Steele, Brad, 02
 Stegmeier, Jörg, 12
 Stetson, Peter B., 06, 07
 Stomski, Paul J., Jr., 25, 5J
 Storm, J., 36
 Straubmeier, C., 2M
 Ströbele, Stefan, 0O, 2S, 2Z
 Stuik, Remko, 0B, 1G, 6I
 Suárez Valles, Marcos, 0U, 0Z, 1B, 1U, 2L, 2M, 2S, 2Z
 Subramaniam, Annapurni, 05
 Subramanian, Smitha, 05
 Surdej, Jean, 73
 Suzuki, Ryuji, 05
 Sy, Adama, 7J
 Szapudi, I., 0F
 Sztetek, M.-H., 2D
 Takami, H., 0W, 56
 Takamiya, M., 0F
 Takato, N., 0W
 Talbot, Robert Gordon, 0C, 44, 48
 Tallon, Michel, 1H, 4F, 72
 Tamura, M., 0W
 Tan, Jonathan C., 05
 Tang, Jinlong, 5Q
 Tang, Zhenghong, 6K
 Tavrov, Alexander, 5B
 Taylor, Gregory E., 03, 2E, 2G
 Tecza, M., 09
 Tenegi, F., 1C
 Terai, Tsuyoshi, 05
 Testa, Vincenzo, 06
 Thatte, Niranjana, 09, 4H, 78
 Thibault, Simon, 02, 2V, 6I
 Thiebaut, C., 6V
 Thiébaud, Éric, 1R, 4F, 57, 7N, 7W
 Thomas, Jim, 5J
 Thomas, Sandrine, 0V

Thomson, Robert R., 69
 Thorn, Elliott, 3D
 Tintori, Matteo, 7A, 7Y
 Todd, S., 0C
 Tokovinin, Andrei, 3Z
 Tolstoy, Eline, 06, 1G
 Tomasella, Lina, 47
 Tonry, J., 0F
 Toomey, Douglas, 02
 Tordo, Sebastien, 2H, 2Z
 Torroni, Paolo, 4L
 Townson, Matthew J., 3I, 6Q
 Tran, Hien, 22
 Traverso, Luciano, 47
 Treu, Tommaso, 05
 Trifonov, V. D., 32
 Trujillo, Chadwick A., 1X, 2F, 68
 Tsubota, Kevin, 0S
 Tubío Araujo, O., 1C, 35
 Tully, R. B., 0F
 Turatto, Massimo, 47
 Turchi, Alessio, 0I, 38, 3B
 Turri, Paolo, 06, 07, 1G, 49
 Tuthill, P., 0W
 Ueno, Satoru, 2N
 Uhlendorf, Kristina, 1X
 Valenzuela, Jose Javier, 2H, 2S, 37
 van Dam, Marcos A., 1P, 25, 2F, 65, 6D
 van Kooten, Maaike, 1J, 6G
 Vargas Catalan, Ernesto, 22, 73
 Vasisht, G., 0D
 Vassallo, Daniele, 3I, 47, 6A, 7Q
 Vega Reyes, N., 6X
 Veillet, C., 2E
 Venema, Lars, 0B
 Ventura, N., 2D
 V́eran, Jean-Pierre, 06, 07, 0L, 0V, 1J, 1Z, 2V, 49, 4N, 6D, 6E, 6G, 6I
 Verdoes Kleijn, Gijs, 1G
 V́erinaud, Christophe, 09, 2D, 3I, 7I, 7Q
 Vernet, Elise, 0O, 2S, 7Y
 Vernet, Joel D. R., 09, 2Z, 3U, 4H
 Vezilj, Jennifer, 0I
 Vick, Andy, 4P
 Vidal, Fabrice, 0A, 0C, 1Q, 3I, 3P, 44, 7I
 Vigan, Arthur, 0U, 16, 3F, 4Z, 6D, 6S
 Vilela, R., 35
 Viotto, Valentina, 3I, 47, 5Y, 6A, 6H, 6J, 7Q
 Vogel, Conrad, 03
 Vola, Pascal, 09, 6L
 Wahhaj, Zahed, 4Z
 Wallace, J. K., 0D
 Walth, Gregory, 05
 Wang, Chaoyan, 6K
 Wang, Cheng, 2I
 Wang, Hairen, 82
 Wang, Hongyan, 5O
 Wang, J., 0D
 Wang, Jason J., 0V
 Wang, K., 83
 Wang, Lianqi, 0L, 4N, 5Q
 Wang, Pengyuan, 5G
 Wang, Shengqian, 19, 6W
 Wang, Xiaoyun, 2I
 Wang, Zhiyong, 2I
 Wei, Kai, 0S
 Wei, Kai, 19, 1D, 5G, 5Q, 6W
 Wei, Ling, 1D, 5G
 Weinberger, Alycia, 52
 Weiss, Jason L., 05
 Weller, Harald J., 12
 Wertz, Olivier, 22
 Wetherell, Ed, 0S
 White, John, 68
 Wilby, M. J., 2I, 6C
 Wildi, Francois, 27, 4I
 Wilson, Richard W., 0H, 1N, 3I, 3J
 Vincentsen, James, 05
 Withington, Kanoa, 3H
 Witzel, G., 1P
 Wizinowich, Peter, 0D, 0S, 15, 16, 1P, 22, 25, 63, 6D
 Wöger, Friedrich, 0X, 0Y, 29
 Woillez, J., 2Y
 Wong, Michael, 05
 Woodward, Charles E., 2X
 Wright, Shelley A., 05, 0F
 Wu, Ya-Lin, 0I
 Xi, Fengjie, 5O
 Xian, Hao, 19, 1D, 5Q
 Xiong, Yaoheng, 6P
 Xompero, Marco, 0I, 1B, 2D, 3V, 52, 7A, 7B, 7Y
 Xu, Xiaojun, 5O
 Xu, Zuyan, 5G
 Yan, Meng, 4V
 Yan, Zhao-jun, 4W, 6K
 Yang, Zhou, 5R
 Yao, Ji, 5G
 Younger, Eddy J., 0C, 48, 4B, 4I
 Zavagno, Annie, 1S
 Zerbi, F. M., 2D
 Zhai, Dongsheng, 6P
 Zhang, Ang, 19, 1D
 Zhang, Junbo, 1D
 Zhang, Kai, 05
 Zhang, Lanqiang, 19, 2C, 2I
 Zhang, Xianyu, 03, 29, 2E, 2G
 Zhang, Xiaojun, 19, 1D, 2I, 5G
 Zhang, Xuejun, 19, 1D
 Zhang, Yudong, 19, 1D, 5G, 5Q
 Zheng, Jessica, 33
 Zheng, Lixin, 6K
 Zheng, Wenjia, 5G, 6W
 Zhong, Libo, 2I
 Zhou, Chenlu, 42, 4V
 Zhou, Longfeng, 1D
 Zhou, Luchun, 19, 1D, 5G
 Zhou, Tianhua, 5F
 Zhou, Yu, 6P
 Zhu, Lei, 19, 2C, 2I

Zhu, Liyun, 6K
Zhu, Nenghong, 6K
Ziad, Aziz, 1K
Ziegler, J., 36
Ziegler, Carl, 3Z, 5U
Zins, Gérard, 0A, 2L, 2M, 6S
Zúñiga, Sebastián, 3G, 3K, 3L, 5M
Zuo, Junwei, 5G

Conference Committee

Symposium Chairs

Colin Cunningham, UK Astronomy Technology Centre
(United Kingdom)

Masanori Iye, National Astronomical Observatory of Japan (Japan)

Symposium Co-chairs

Allison A. Barto, Ball Aerospace & Technologies Corporation
(United States)

Suzanne K. Ramsay, European Southern Observatory (Germany)

Conference Chairs

Enrico Marchetti, European Southern Observatory (Germany)

Laird M. Close, The University of Arizona (United States)

Jean-Pierre Véran, National Research Council Canada (Canada)

Conference Program Committee

Christoph Baranec, University of Hawai'i (United States)

Antonin H. Bouchez, GMTO Corporation (United States)

Celine D'Orgeville, The Australian National University (Australia)

Brent L. Ellerbroek, Thirty Meter Telescope Observatory Corporation
(United States)

Simone Esposito, INAF - Osservatorio Astrofisico di Arcetri (Italy)

Thierry Fusco, Laboratoire d'Astrophysique de Marseille, ONERA
(France)

Olivier Guyon, The University of Arizona (United States)

Yutaka Hayano, National Astronomical Observatory of Japan
(Japan)

Caroline Kulcsar, Institut d'Optique (France)

Anne-Marie Lagrange, Institut de Planétologie et d'Astrophysique de
Grenoble (France)

Jessica R. Lu, University of Hawai'i (United States)

Bruce A. Macintosh, Stanford University (United States)

Pierre-Yves Madec, European Southern Observatory (Germany)

Elena Masciadri, INAF - Osservatorio Astrofisico di Arcetri (Italy)

Claire E. Max, University of California, Santa Cruz (United States)

Richard M. Myers, Durham University (United Kingdom)

Laura Schreiber, INAF - Osservatorio Astronomico di Bologna (Italy)

Dirk Soltau, Universität Freiburg (Germany)

Mitchell Troy, Jet Propulsion Laboratory (United States)
Elise Vernet, European Southern Observatory (Germany)
Peter L. Wizinowich, W.M. Keck Observatory (United States)

Session Chairs

- 1 Status of Current AO Projects I
Enrico Marchetti, European Southern Observatory (Germany)
- 2 Astronomy with AO I
Laird M. Close, The University of Arizona (United States)
- 3 AO for the ELTs
Antonin H. Bouchez, GMTO Corporation (United States)
- 4 Pathfinders, New Proposed AO Systems, and Concepts I
Simone Esposito, INAF - Osservatorio Astrofisico di Arcetri (Italy)
- 5 Characterization, Measurement and Modeling of the Disturbances Faced by AO I
Thierry Fusco, Laboratoire d'Astrophysique de Marseille, ONERA (France)
- 6 Advances in AO Control and Calibrations I
Richard M. Myers, Durham University (United Kingdom)
- 7 Wavefront Correctors
Elena Masciadri, INAF - Osservatorio Astrofisico di Arcetri (Italy)
- 8 Laser Guide Star Systems
Claire E. Max, University of California, Santa Cruz (United States)
- 9 Extreme AO I
Olivier Guyon, The University of Arizona (United States)
Bruce A. Macintosh, Stanford University (United States)
- 10 Status of Current AO Projects II
Dirk Soltau, Universität Freiburg (Germany)
Yutaka Hayano, National Astronomical Observatory of Japan (Japan)
- 11 Wavefront Sensing I
Christoph Baranec, University of Hawai'i (United States)
- 12 Extreme AO II
Mitchell Troy, Jet Propulsion Laboratory (United States)

- 13 Status of Current AO Projects III
 Pierre-Yves Madec, European Southern Observatory (Germany)
 Peter L. Wizinowich, W.M. Keck Observatory (United States)

- 14 Astronomy with AO II
 Anne-Marie Lagrange, Institut de Planétologie et d'Astrophysique de
 Grenoble (France)

- 15 Pathfinders, New Proposed AO Systems, and Concepts II
 Jessica R. Lu, University of Hawai'i (United States)

- 16 Characterization, Measurement, and Modeling of the Disturbances
 Faced by AO II
 Elena Masciadri, INAF - Osservatorio Astrofisico di Arcetri (Italy)

- 17 Post-processing AO Data
 Brent L. Ellerbroek, Thirty Meter Telescope Observatory Corporation
 (United States)

- 18 Advances in AO Control and Calibrations II
 Laura Schreiber, INAF - Osservatorio Astronomico di Bologna (Italy)

- 19 Wavefront Sensing II
 Laura Schreiber, INAF - Osservatorio Astronomico di Bologna (Italy)