

PROCEEDINGS OF SPIE

Modern Technologies in Space- and Ground-based Telescopes and Instrumentation

Eli Atad-Ettedgui
Dietrich Lemke
Editors

27 June–2 July 2010
San Diego, California, United States

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Published by
SPIE

Volume 7739

Proceedings of SPIE, 0277-786X, v. 7739

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Author(s), "Title of Paper," in *Modern Technologies in Space- and Ground-based Telescopes and Instrumentation*, edited by Eli Atad-Ettedgui, Dietrich Lemke, Proceedings of SPIE Vol. 7739 (SPIE, Bellingham, WA, 2010) Article CID Number.

ISSN 0277-786X
ISBN 9780819482297

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

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 N. Jovanovic, Macquarie Univ. (Australia) and Australian Astronomical Observatory (Australia); S. Gross, C. Miese, A. Fuerbach, Macquarie Univ. (Australia) and Ctr. for Ultrahigh bandwidth Devices for Optical Systems (Australia); J. Lawrence, Macquarie Univ. (Australia) and Australian Astronomical Observatory (Australia); M. J. Withford, Macquarie Univ. (Australia) and Ctr. for Ultrahigh bandwidth Devices for Optical Systems (Australia)
- 7739 24 **Characterising modal noise in fibre-coupled spectrographs for astronomy** [7739-194]
 U. Lemke, J. Corbett, J. Allington-Smith, G. Murray, Durham Univ. (United Kingdom)
- 7739 25 **Defining requirements and identifying relevant technologies in astrophotonics** [7739-75]
 J. R. Allington-Smith, Durham Univ. (United Kingdom); T. A. Birks, Univ. of Bath (United Kingdom); J. Bland-Hawthorn, The Univ. of Sydney (Australia) and Anglo-Australian Observatory (Australia); C. R. Cunningham, UK Astronomy Technology Ctr. (United Kingdom); S. Dagupta, Univ. of Southampton (United Kingdom); R. Haynes, Anglo-Australian Observatory (Australia), Astrophysikalisches Institut Potsdam (Germany), and InnoFSPEC (Germany); P. J. V. Garcia, Univ. do Porto (Portugal); A. K. Kar, Heriot-Watt Univ. (United Kingdom); A. Kelz, Astrophysikalisches Institut Potsdam (Germany) and InnoFSPEC (Germany); P. Y. Kern, Lab. d'Astrophysique de l'Observatoire de Grenoble (France); L. Labadie, Instituto de Astrofísica de Canarias (Spain); J. S. Lawrence, Macquarie Univ. (Australia); E. P. Le Coarer, Lab. d'Astrophysique de l'Observatoire de Grenoble (France); M. M. Roth, Astrophysikalisches Institut Potsdam (Germany) and InnoFSPEC (Germany); S. Minardi, Friedrich-Schiller-Univ. Jena (Germany); R. M. Sharples, Durham Univ. (United Kingdom); R. R. Thomson, Heriot-Watt Univ. (United Kingdom)
- 7739 26 **Supercontinuum light sources for use in astronomical instrumentation: a test with PMAS, the Potsdam multi-aperture spectrophotometer** [7739-76]
 M. M. Roth, Astrophysikalisches Institut Potsdam (Germany) and innoFSPEC Potsdam (Germany); H.-G. Löhmannsröben, Univ. Potsdam (Germany) and innoFSPEC Potsdam (Germany); C. Dosche, Univ. Potsdam (Germany); C. Sandin, Astrophysikalisches Institut Potsdam (Germany) and innoFSPEC Potsdam (Germany); O. Reich, Univ. Potsdam (Germany) and innoFSPEC Potsdam (Germany); R. Haynes, Astrophysikalisches Institut Potsdam (Germany) and innoFSPEC Potsdam (Germany); L. Leick, NKT Photonics A/S (Denmark); J. M. Chávez Boggio, Astrophysikalisches Institut Potsdam (Germany) and innoFSPEC Potsdam (Germany); A. Kelz, Astrophysikalisches Institut Potsdam (Germany)
- 7739 27 **Optical design of optical switches for diverse field spectroscopy** [7739-177]
 R. Content, G. J. Murray, J. R. Allington-Smith, Durham Univ. (United Kingdom)
- 7739 28 **Dither-based sensor for improved consistency of adaptive optics system** [7739-78]
 A. Vyas, Indian Institute of Astrophysics (India) and Indian Institute of Science (India); M. B. Roopashree, B. R. Prasad, Indian Institute of Astrophysics (India)

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- 7739 29 **Ground-based observatory operations optimized and enhanced by direct atmospheric measurements** [7739-79]
J. T. McGraw, P. C. Zimmer, M. R. Ackermann, D. C. Hines, A. B. Hull, L. Rossmann, D. C. Zirzow, The Univ. of New Mexico (United States); S. W. Brown, G. T. Fraser, K. R. Lykke, A. W. Smith, National Institute of Standards and Technology (United States); C. W. Stubbs, Harvard Univ. (United States); J. T. Woodward, National Institute of Standards and Technology (United States)
- 7739 2B **Fibre positioning revisited: the use of an off-the-shelf assembly robot for OPTIMOS-EVE** [7739-192]
G. B. Dalton, Rutherford Appleton Lab. (United Kingdom) and Univ. of Oxford (United Kingdom); M. S. Whalley, Rutherford Appleton Lab. (United Kingdom); O. Mounissamy, Univ. of Oxford (United Kingdom) and IUT Paris Jussieu, Univ. Paris Diderot (France); E. C. Sawyer, I. A. J. Tosh, D. L. Terrett, Rutherford Appleton Lab. (United Kingdom); I. J. Lewis, Univ. of Oxford (United Kingdom)
- 7739 2C **Fibre Bragg gratings for temporal spectral astronomy** [7739-81]
G. Mariën, N. Cvetojovic, Macquarie Univ. (Australia); N. Jovanovic, Macquarie Univ. (Australia) and Australian Astronomical Observatory (Australia); J. Dawes, Macquarie Univ. (Australia); J. Bland-Hawthorn, Sydney Institute for Astronomy, Univ. of Sydney (Australia); R. Haynes, innoFSPEC, Astrophysikalisches Institut Potsdam (Germany); J. Lawrence, Q. Parker, Macquarie Univ. (Australia) and Australian Astronomical Observatory (Australia); M. J. Withford, Macquarie Univ. (Australia)

POSTER SESSION: OPTICS FABRICATION/MATERIALS

- 7739 2D **Fabrication of 4-meter class astronomical optics** [7739-104]
M. J. Valente, D. W. Kim, C. J. Oh, M. J. Novak, J. H. Burge, College of Optical Sciences, The Univ. of Arizona (United States)
- 7739 2E **Studies on evaluating and removing subsurface damage on the ground surface of CLEARCERAM-Z HS** [7739-105]
H. Akitaya, T. Yamashita, N. Ohshima, M. Iye, National Astronomical Observatory of Japan (Japan); T. Maihara, H. Tokoro, K. Takahashi, Nano-Optonics Research Institute (Japan)
- 7739 2G **Carbon fiber reinforced composites: their structural and thermal properties** [7739-108]
J. Cheng, National Radio Astronomy Observatory (United States); D. Yang, Nanjing Institute of Astronomical Optics & Technology (China)
- 7739 2H **Structural analysis of a new type lightweight optical mirror blank** [7739-109]
Y. Li, X. Cui, National Astronomical Observatories, Nanjing Institute of Astronomical Optics & Technology (China) and Key Lab. of Astronomical Optics & Technology, Nanjing Institute of Astronomical Optics & Technology (China); N. Hu, The Civilizer New Products Institute Nanjing (China)

- 7739 2I **Herschel Space Telescope: impact of new material strain data on optical test and model correlation** [7739-112]
B. Catanzaro, CFE Services (United States); D. Doyle, European Space Research and Technology Ctr. (Netherlands); E. Cohen, CFE Services (United States)
- 7739 2J **Post-flight reflectance of COSTAR and WF/PC 2 pickoff mirrors upon their return from space** [7739-113]
M. A. Quijada, R. M. Henry, T. Madison, R. Boucarut, J. G. Hagopian, NASA Goddard Space Flight Ctr. (United States)
- 7739 2K **Ultra-lightweighted HB-Cesic one-meter mirror demonstrator** [7739-114]
M. R. Krödel, P. Hofbauer, ECM Ingenieur-Unternehmen für Energie- und Umwelttechnik GmbH (Germany)
- 7739 2L **Recent achievements with a cryogenic ultra-lightweighted HB-Cesic mirror** [7739-115]
M. R. Krödel, P. Hofbauer, ECM Ingenieur-Unternehmen für Energie- und Umwelttechnik GmbH (Germany); C. Devilliers, Thales Alenia Space (France); Z. Sodnik, European Space Research and Technology Ctr. (Netherlands); P. Robert, Société Européenne de Systèmes Optiques (France)
- 7739 2M **CFRP composite mirrors for space telescopes and their micro-dimensional stability** [7739-116]
S. Utsunomiya, T. Kamiya, R. Shimizu, Japan Aerospace Exploration Agency (Japan)
- 7739 2N **Time-dependent deformation of surface geometry on light weight and thermally stable CFRP mirror in humid environment** [7739-117]
Y. Arao, Waseda Univ. (Japan); J. Koyanagi, S. Utsunomiya, S. Takeda, Japan Aerospace Exploration Agency (Japan); H. Kawada, Waseda Univ. (Japan)
- 7739 2O **Secondary mirror system for the European Solar Telescope (EST)** [7739-119]
L. Cavaller, B. Siegel, G. Prieto, GRANTECAN S.A. (Spain); E. Hernandez, Instituto de Astrofísica de Canarias (Spain); J. M. Casalta, J. Mercader, J. Barriga, NTE-SENER S.A. (Spain)

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- 7739 2P **An improved method of the spatial point's position detection** [7739-120]
Y. Zhang, X. Li, Univ. of Science and Technology of China (China); L. Zhu, National Astronomical Observatories (China); J. Jin, W. Li, Univ. of Science and Technology of China (China)
- 7739 2Q **A method of attitude measurement of the calibration target** [7739-121]
J. Jin, X. Li, Univ. of Science and Technology of China (China); L. Zhu, National Astronomical Observatories (China); Y. Zhang, B. Li, W. Li, Univ. of Science and Technology of China (China)
- 7739 2R **A method of 3D reconstruction based on single camera** [7739-122]
L. Zhu, National Astronomical Observatories (China); X. Li, B. Li, J. Jin, Y. Zhang, W. Li, Univ. of Science and Technology of China (China)

- 7739 2S **Use of a Faro Arm for optical alignment** [7739-123]
L. A. Crause, D. E. O'Donoghue, J. E. O'Connor, F. Strümpfer, South African Astronomical Observatory (South Africa)
- 7739 2T **Surface measurements of radio antenna panels with white-light interferometry** [7739-124]
S. Chinellato, Univ. degli Studi di Padova (Italy); C. Pernechele, INAF, Astronomical Observatory of Cagliari (Italy); S. Carmignato, Univ. degli Studi di Padova (Italy); F. Manzan, INAF, Astronomical Observatory of Cagliari (Italy)
- 7739 2V **Optical testing of the LSST combined primary/tertiary mirror** [7739-126]
M. T. Tuell, H. M. Martin, Steward Observatory, The Univ. of Arizona (United States); J. H. Burge, Steward Observatory, The Univ. of Arizona (United States) and College of Optical Sciences, The Univ. of Arizona (United States); W. J. Gressler, National Optical Astronomy Observatory (United States); C. Zhao, College of Optical Sciences, The Univ. of Arizona (United States)
- 7739 2W **Advanced wavefront sensing and control testbed (AWCT)** [7739-130]
F. Shi, S. A. Basinger, R. T. Diaz, R. O. Gappinger, H. Tang, R. K. Lam, E. Sidick, R. C. Hein, M. Rud, M. Troy, Jet Propulsion Lab. (United States)
- 7739 2X **Phase retrieval methods for wavefront sensing** [7739-131]
S. Bikkannavar, D. Redding, J. Green, S. Basinger, D. Cohen, J. Lou, C. Ohara, F. Shi, Jet Propulsion Lab. (United States)
- 7739 2Y **First cophasing of a segmented mirror with a tunable filter and the pyramid wavefront sensor** [7739-135]
M. Bonaglia, E. Pinna, A. Puglisi, S. Esposito, Osservatorio Astrofisico di Arcetri (Italy); J. C. Guerra, Isaac Newton Group of Telescopes (Spain); R. Myers, N. Dipper, Durham Univ. (United Kingdom)

POSTER SESSION: TELESCOPE STRUCTURE AND MECHANICAL DESIGN

- 7739 30 **An innovative low-cost antenna dish built with commercial off-the-shelf (COTS) components** [7739-136]
J. Cheng, J. Ruff, S. Sturgis, National Radio Astronomy Observatory (United States); D. Yang, Nanjing Institute of Astronomical Optics & Technology (China)
- 7739 31 **The VST active primary mirror support system** [7739-137]
P. Schipani, INAF, Osservatorio Astronomico di Capodimonte (Italy); M. Capaccioli, S. D'Orsi, L. Ferragina, L. Marty, C. Molfese, INAF, VSTCeN (Italy); F. Perrotta, INAF, Osservatorio Astronomico di Capodimonte (Italy); G. De Paris, D. Fierro, INAF, Sede Centrale (Italy); R. Tomelleri, P. Rossettini, F. Perina, S. Recchia, Tomelleri s.r.l. (Italy); D. Magrin, INAF, Osservatorio Astronomico di Padova (Italy)
- 7739 32 **Performance of the VST secondary mirror support system** [7739-138]
P. Schipani, INAF, Osservatorio Astronomico di Capodimonte (Italy); S. D'Orsi, D. Fierro, L. Marty, INAF, VSTCeN (Italy); F. Perrotta, INAF, Osservatorio Astronomico di Capodimonte (Italy); C. Arcidiacono, INAF, Osservatorio Astrofisico di Arcetri (Italy)

- 7739 33 **The axial actuators for the VST primary mirror** [7739-139]
D. Fierro, INAF (Italy); S. D'Orsi, L. Marty, Tomelleri s.r.l. (Italy); C. Molfese, F. Perrotta, P. Schipani, INAF, Osservatorio Astronomico di Capodimonte (Italy); M. Capaccioli, Tomelleri s.r.l. (Italy); G. De Paris, INAF (Italy); R. Tomelleri, P. F. Rossettini, Tomelleri s.r.l. (Italy); J. Farinato, INAF, Osservatorio Astronomico di Padova (Italy)
- 7739 35 **Thermal behavior of the Medicina 32-meter radio telescope** [7739-141]
T. Pisanu, F. Buffa, National Institute for Astrophysics, Cagliari Astronomical Observatory (Italy); M. Morsiani, National Institute for Astrophysics, Institute of Radio Astronomy (Italy); C. Pernechele, S. Poppi, National Institute for Astrophysics, Cagliari Astronomical Observatory (Italy)
- 7739 36 **Fast force actuators for LSST primary/tertiary mirror** [7739-143]
E. Hileman, National Optical Astronomy Observatory (United States); M. Warner, Cerro Tololo Inter-American Observatory (Chile); O. Wiecha, National Optical Astronomy Observatory (United States)
- 7739 37 **Innovative relocation system for enclosures for MROI array telescopes** [7739-145]
A. Busatta, L. Ghedin, G. Marchiori, S. Mian, European Industrial Engineering s.r.l. (Italy); I. Payne, New Mexico Institute of Mining and Technology, Magdalena Ridge Observatory (United States); M. Pozzobon, European Industrial Engineering s.r.l. (Italy)

POSTER SESSION: SIMULATION, TESTING, AND CONTROLS

- 7739 38 **Design and simulation of the direct drive servo system** [7739-147]
C. Ren, Z. Liu, L. Song, Q. Yi, K. Chen, Tsinghua Univ. (China); Z. Zhang, Nanjing Institute of Astronomical Optics & Technology (China)
- 7739 39 **Toward high-dynamic active mirrors for LGS refocusing systems** [7739-148]
E. Hugot, F. Madec, S. Vives, M. Ferrari, D. Le Mignant, J. G. Cuby, Lab. d'Astrophysique de Marseille, CNRS, Univ. de Provence (France)
- 7739 3A **In-flight aberrations corrections for large space telescopes using active optics** [7739-149]
M. Laslandes, M. Ferrari, E. Hugot, G. Lemaitre, Lab. d'Astrophysique de Marseille, CNRS, Univ. de Provence (France)
- 7739 3B **The calibration and evaluation for laser tracker application in LAMOST site environment** [7739-151]
Z. Zhou, Y. Jin, C. Zhai, Y. Gu, Univ. of Science and Technology of China (China)
- 7739 3C **Performance verification testing for HET wide-field upgrade tracker in the laboratory** [7739-152]
J. Good, McDonald Observatory, The Univ. of Texas at Austin (United States); R. Hayes, J. Beno, The Univ. of Texas at Austin (United States); J. Booth, M. E. Cornell, G. J. Hill, H. Lee, McDonald Observatory, The Univ. of Texas at Austin (United States); J. Mock, The Univ. of Texas at Austin (United States); M. Rafal, R. Savage, McDonald Observatory, The Univ. of Texas at Austin (United States); I. Soukup, The Univ. of Texas at Austin (United States)

- 7739 3D **Upgrading the controller of the fast tip-tilt tertiary mirror for the SOAR Telescope** [7739-153]
M. Warner, Cerro Tololo Inter-American Observatory (Chile); S. Heathcote, SOAR Telescope (Chile); G. Schumacher, R. Cantarutti, E. Parkes, Cerro Tololo Inter-American Observatory (Chile)

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- 7739 3E **LN2 continuous flow cryostats: a compact vibration free cooling system for single to multiple detector systems** [7739-154]
J. L. Lizon, M. Accardo, European Southern Observatory (Germany)
- 7739 3F **Liquid nitrogen pre-cooling of large infrared instrument at ESO** [7739-155]
J. L. Lizon, European Southern Observatory (Germany)
- 7739 3G **A very accurate filter wheel for a large field IR imager** [7739-156]
J. L. Lizon, European Southern Observatory (Germany)
- 7739 3H **A hybrid liquid nitrogen system for the cooling of the ESO OmegaCAM detector** [7739-157]
J. L. Lizon, A. Silber, G. Jakob, European Southern Observatory (Germany)
- 7739 3I **Advanced high-cooling power 2-stage Gifford-McMahon refrigerator systems** [7739-158]
G. Jakob, J. L. Lizon, European Southern Observatory (Germany)
- 7739 3J **First concept for the E-ELT cryogenic infrastructure** [7739-159]
J. L. Lizon, J. C. Gonzalez, European Southern Observatory (Germany); C. Monroe, Monroe Brothers Ltd. (United Kingdom); I. Bryson, D. Montgomery, UK Astronomy Technology Ctr. (United Kingdom)
- 7739 3K **An optical shutter for the Euclid imager** [7739-161]
A. M. Glauser, Institute for Astronomy, ETH Zurich (Switzerland) and UK Astronomy Technology Ctr. (United Kingdom); J. Amiaux, J.-L. Auguères, CEA, IRFU, SAp (France); S. Lilly, Institute for Astronomy, ETH Zurich (Switzerland); A. Refregier, CEA, IRFU, SAp (France)
- 7739 3L **Large format filter changer mechanism for the Dark Energy Survey** [7739-162]
G. Tarlé, B. Bigelow, D. Boprie, C. Cooper, E. Dede, W. Lorenzon, B. Nord, M. Schubnell, C. Weaverdyck, Univ. of Michigan (United States)
- 7739 3M **Assembly of the Dark Energy Survey CCD Imager** [7739-163]
G. Derylo, H. Cease, H. T. Diehl, J. Estrada, B. Flaugher, Fermi National Accelerator Lab. (United States)
- 7739 3N **Cooling the Dark Energy Camera CCD array using a closed-loop two-phase liquid nitrogen system** [7739-164]
H. Cease, Fermi National Accelerator Lab. (United States); D. DePoy, Texas A&M Univ. (United States); G. Derylo, H. T. Diehl, J. Estrada, B. Flaugher, K. Kuk, Fermi National Accelerator Lab. (United States); S. Kuhlmann, Argonne National Lab. (United States); A. Lathrop, K. Schultz, R. J. Reinert, R. L. Schmitt, A. Stefanik, Fermi National Accelerator Lab. (United States); A. Zhao, Argonne National Lab. (United States)
- 7739 3O **A precision lens mount for large temperature excursions** [7739-166]
S. A. Smee, The Johns Hopkins Univ. (United States)

POSTER SESSION: SPECTROSCOPY AND IMAGE SLICER

- 7739 3P **The GRAVITY spectrometers: mechanical design** [7739-169]
S. Fischer, M. Wiest, C. Straubmeier, S. Yazici, C. Araujo-Hauck, Univ. zu Köln (Germany); F. Eisenhauer, Max-Planck-Institut für extraterrestrische Physik (Germany); G. Perrin, Lab. d'Etudes Spatiales et d'Instrumentation en Astrophysique (France), Institut National des Sciences de l'Univers (France), and Groupement d'Intérêt Scientifique PHASE (France); W. Brandner, Max-Planck-Institut für Astronomie (Germany); K. Perraut, Lab. d'Astrophysique de l'Observatoire de Grenoble (France); A. Amorim, Univ. de Lisboa (Portugal); M. Schöller, European Southern Observatory (Germany); A. Eckart, Univ. zu Köln (Germany) and Max-Planck-Institut für Radioastronomie (Germany)
- 7739 3Q **Prototyping and testing of mechanical components for the GRAVITY spectrometers** [7739-170]
M. Wiest, S. Fischer, Univ. zu Köln (Germany); M. Thiel, M. Haug, Max-Planck-Institut für extraterrestrische Physik (Germany); R-R. Rohloff, Max-Planck-Institut für Astronomie (Germany); C. Straubmeier, C. Araujo-Hauck, S. Yazici, Univ. zu Köln (Germany); F. Eisenhauer, Max-Planck-Institut für extraterrestrische Physik (Germany); G. Perrin, Lab. d'Etudes Spatiales et d'Instrumentation en Astrophysique (France) and Institut National des Sciences de l'Univers (France); W. Brandner, Max-Planck-Institut für Astronomie (Germany); K. Perraut, Lab. d'Astrophysique Observatoire de Grenoble (France); A. Amorim, Univ. de Lisboa (Portugal); M. Schöller, European Southern Observatory (Germany); A. Eckart, Univ. zu Köln (Germany) and Max-Planck-Institut für Radioastronomie (Germany)
- 7739 3R **HARPS secondary guiding** [7739-171]
G. Ihle, G. Avila, I. Kastinen, G. Lo Curto, A. Segovia, P. Sinclaire, European Southern Observatory (Germany); R. Tomelleri, Tomelleri s.r.l. (Italy)
- 7739 3S **High-performance silicon grisms for 1.2-8.0 μm : detailed results from the JWST-NIRCam devices** [7739-173]
M. Gully-Santiago, W. Wang, C. Deen, The Univ. of Texas at Austin (United States); D. Kelly, The Univ. of Arizona (United States); T. P. Greene, NASA Ames Research Ctr. (United States); J. Bacon, II-VI Inc. (United States); D. T. Jaffe, The Univ. of Texas at Austin (United States)
- 7739 3T **Optomechanical system of AIT tools to perform tests and integrations of 24 IFU** [7739-174]
E. Renault, F. Laurent, L. Adjali, R. M. Bacon, D. Boudon, P. Caillier, E. Daguisé, J.-P. Dubois, Univ. de Lyon (France), Observatoire de Lyon (France), CNRS (France), and Ctr. de Recherche Astrophysique de Lyon (France); H. Anwand, Georg-August-Univ. (Germany); J. Kosmalski, M. Loupias, Univ. de Lyon (France), Observatoire de Lyon (France), CNRS (France), and Ctr. de Recherche Astrophysique de Lyon (France); H. E. Nicklas, Georg-August-Univ. (Germany); A. Remillieux, Univ. de Lyon (France), Observatoire de Lyon (France), CNRS (France), and Ctr. de Recherche Astrophysique de Lyon (France)
- 7739 3U **Progress in the fabrication of a prototype ZnSe immersion grating for the WINERED spectrograph** [7739-175]
P. J. Kuzmenko, S. L. Little, Lawrence Livermore National Lab. (United States); Y. Ikeda, Photocoding Inc. (Japan); N. Kobayashi, Institute of Astronomy, The Univ. of Tokyo (Japan)

- 7739 3W **ESPRESSO: design and analysis of Coudé-Train concepts for stable and efficient optical feeding** [7739-178]
A. Cabral, A. Moitinho, J. Coelho, J. Lima, P. Carvas, A. Amorim, J. Rebordão, Univ. de Lisboa (Portugal); G. Ávila, European Southern Observatory (Germany); D. Mégevand, Observatoire de l'Univ. de Genève (Switzerland); J-M. Herreros, Instituto de Astrofísica de Canarias (Spain); F. Zerbi, INAF, Osservatorio Astronomico di Brera (Italy); P. Di Marcantonio, INAF, Osservatorio Astronomico di Trieste (Italy); C. Lovis, Observatoire de l'Univ. de Genève (Switzerland); N. C. Santos, Univ. do Porto (Portugal); F. Pepe, Observatoire de l'Univ. de Genève (Switzerland); S. Cristiani, INAF, Osservatorio Astronomico di Trieste (Italy); R. Rebolo, Instituto de Astrofísica de Canarias (Spain)
- 7739 3X **Scattered light in a DMD based multi-object spectrometer** [7739-195]
K. D. Fourspring, Z. Ninkov, J. P. Kerekes, Rochester Institute of Technology (United States)

POSTER SESSION: COATINGS/FILTERS/CLEANING/MASKS

- 7739 3Y **Progress toward high-performance astronomical coatings** [7739-180]
A. C. Phillips, W. E. Brown, B. Dupraw, D. F. Hilyard, D. J. Cowley, Univ. of California Observatories (United States)
- 7739 3Z **Cleaning the Southern African Large Telescope's M5 mirror** [7739-182]
L. A. Crause, H. Gajjar, J. Love, F. Strümpfer, J. E. O'Connor, D. E. O'Donoghue, O. J. Strydom, D. A. H. Buckley, P. Gillingham, South African Astronomical Observatory (South Africa)
- 7739 40 **Blocking filters with enhanced throughput for x-ray microcalorimetry** [7739-184]
D. A. Grove, J. C. Betcher, B. Lairson, R. Smith, T. Ayers, Luxel Corp. (United States)
- 7739 42 **Pass-band filter performance for space-flight Dark Energy missions** [7739-186]
J. Edelstein, Univ. of California, Berkeley (United States); S. L. Mufson, Indiana Univ. (United States); N. J. Mostek, Lawrence Berkeley National Lab. (United States); B. J. Baptista, Indiana Univ. (United States); B. E. Woodgate, NASA Goddard Space Flight Ctr. (United States); A. G. Kim, Lawrence Berkeley National Lab. (United States); C. R. Bower, Indiana Univ. (United States); R. Boucarut, M. A. Quijada, NASA Goddard Space Flight Ctr. (United States)

POSTER SESSION: PHOTONICS/ADC/ADAPTIVE OPTICS

- 7739 44 **Development of five multifibre links for the OPTIMOS-EVE study for the E-ELT** [7739-188]
I. Guinouard, F. Chemla, H. Flores, J.-M. Huet, F. Hammer, Observatoire de Paris (France); G. Wulterkens, Radboud Univ. Nijmegen (Netherlands)
- 7739 46 **Multi-way optical fibre connectors for astronomy** [7739-190]
D. M. Haynes, R. Haynes, W. Rambold, Anglo-Australian Observatory (Australia) and Astrophysikalisches Institut Potsdam (Germany); M. Goodwin, E. J. Penny, Anglo-Australian Observatory (Australia)

- 7739 47 **New scramblers for precision radial velocity: square and octagonal fibers** [7739-191]
 B. Chazelas, F. Pepe, F. Wildi, Observatory of Geneva, Univ. of Geneva (Switzerland);
 F. Bouchy, Institut d'Astrophysique de Paris, CNRS, Univ. Pierre & Marie Curie (France) and
 Observatoire de Haute-Provence, CNRS/OAMP, St. Michel l'Observatoire (France);
 S. Perruchot, Observatoire de Haute-Provence, CNRS/OAMP, St. Michel l'Observatoire
 (France); G. Avila, European Southern Observatory (Germany)
- 7739 48 **The ADC for the VST Telescope: theory and preliminary test of the electromechanical system**
 [7739-193]
 P. Schipani, INAF, Osservatorio Astronomico di Capodimonte (Italy); J. Farinato, INAF,
 Osservatorio Astronomico di Padova (Italy); C. Arcidiacono, INAF, Osservatorio Astrofisico di
 Arcetri (Italy); S. D'Orsi, L. Ferragina, D. Fierro, INAF, VSTCeN (Italy); D. Magrin, INAF,
 Osservatorio Astronomico di Padova (Italy); L. Marty, INAF, VSTCeN (Italy); F. Perrotta, INAF,
 Osservatorio Astronomico di Capodimonte (Italy); R. Ragazzoni, INAF, Osservatorio
 Astronomico di Padova (Italy); G. Umbriaco, INAF, Univ. degli Studi di Padova (Italy)

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Introduction

Astronomy is driven by the desire to understand our position in the universe, and by new technology.

For almost forty years, SPIE has organized conferences on astronomical telescopes and instrumentation. These events eventually became huge symposia with specialized parallel conferences on all major instrumental areas, such as space- and ground-based telescopes, detectors, interferometers, and adaptive optics. With the increasing complexity of the instrumentation; however, a further conference dedicated to the enabling technologies became necessary. This conference "Modern Technologies in Space- and Ground-based Telescopes and Instrumentation" was held for the first time in 2002 as part of the SPIE symposium of several conferences on astronomical telescopes and instrumentation, attended by ~ 2000 scientists and technicians. While the first two of these new technology-conferences started off with 47 and 79 contributions, respectively, the number of papers has increased to ~ 200 at this fifth conference. Six full days were necessary to schedule about half of the submitted contributions for oral presentations; the rest were posters. Several participants felt somewhat exhausted after a full conference week, which started early on a Sunday morning. The readers of these proceedings are in a more comfortable position: they can take their time to study the interesting and well written contributions from scientists and technicians from laboratories all over the world. However, they will of course miss out on the pleasure of listening to the number of committed speakers, and they cannot ask questions in real time.

This volume documents the impressive progress made in the technical preparation for the extremely large telescopes on both sides of the Atlantic since the 2008 meeting. The first large mirror segment for the Giant Magellan Telescope GMT was presented, including the alignment and test strategy for this 8m-off-axis giant. A first series of the 1.4m-hexagon segments for the 42m European counterpart E-ELT, made of different materials, proved that ESO and the European industry are ready to start building this giant telescope. Even "old" mirror materials such as Zerodur are good for a surprise. Its mechanical strength could recently be improved and measured to be nearly an order of magnitude higher than listed so far. This enables the manufacturing of "superlightweight" glass ceramic mirrors of only ~15% the mass of a full blank.

"Astrophotonics" was another major topic of this conference. With its novel devices such as starbugs, miniature spectrographs in multi-objects spectroscopy, array waveguide gratings, fiber Bragg and VPH gratings, it will revolutionize astronomy and reduce the size, mass, and cost of the next generation of instruments.

But sometimes progress at one front means a disaster at another: The modern closed cycle coolers for the large infrared instruments at the Very Large Telescope VLT have displayed a vibration level which is unacceptable for the operation of interferometers at the VLT- I. The solutions of the “vibration war” presented here look like an apparent, but sophisticated step backwards to Linde’s good old liquid nitrogen.

We hope that the readers will find reading these proceedings exciting, and that they will stimulate ideas for their own research.

We look forward to seeing you at the next conference on “Modern Technologies...” in Amsterdam in the summer of 2012.

Eli Atad-Ettedgui
Dietrich Lemke