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Ground-based and Airborne Telescopes V

**Larry M. Stepp
Roberto Gilmozzi
Helen J. Hall**
Editors

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AIRBORNE TELESCOPES I

- 9145 0Q **SO FIA general investigator science program (Invited Paper)** [9145-25]
 E. T. Young, B.-G. Andersson, E. E. Becklin, W. T. Reach, R. Sankrit, NASA Ames Research Ctr. (United States); H. Zinnecker, NASA Ames Research Ctr. (United States) and Univ. Stuttgart (Germany); A. Krabbe, Univ. Stuttgart (Germany)
- 9145 0R **The Balloon-borne Large Aperture Submillimeter Telescope for Polarimetry-BLASTPol: performance and results from the 2012 Antarctic flight** [9145-26]
 N. Galitzki, Univ. of Pennsylvania (United States); P. A. R. Ade, Cardiff Univ. (United Kingdom); F. E. Angilè, Univ. of Pennsylvania (United States); S. J. Benton, Univ. of Toronto (Canada); M. J. Devlin, B. Dober, Univ. of Pennsylvania (United States); L. M. Fissel, Univ. of Toronto (Canada) and Northwestern Univ. (United States); Y. Fukui, Nagoya Univ. (Japan); N. N. Gandilo, Univ. of Toronto (Canada); J. Klein, Univ. of Pennsylvania (United States); A. L. Korotkov, Brown Univ. (United States); T. G. Matthews, Northwestern Univ. (United States); L. Moncelsi, California Institute of Technology (United States); C. B. Netterfield, Univ. of Toronto (Canada) and Canadian Institute for Advanced Research (Canada); G. Novak, Northwestern Univ. (United States); D. Nutter, E. Pascale, Cardiff Univ. (United Kingdom); F. Poidevin, Instituto de Astrofísica de Canarias (Spain) and Univ. de La Laguna (Spain); G. Savini, Univ. College London (United Kingdom); D. Scott, Northwestern Univ. (United States); J. A. Shariff, Univ. of Toronto (Canada); J. D. Soler, Univ. of Toronto (Canada) and Institut d'Astrophysique Spatiale (France); C. E. Tucker, Cardiff Univ. (United Kingdom); G. S. Tucker, Brown Univ. (United States); D. Ward-Thompson, Univ. of Central Lancashire (United Kingdom)
- 9145 0S **SO FIA pointing history** [9145-27]
 H. J. Kärcher, MT Mechatronics GmbH (Germany); N. Kunz, P. Temi, NASA Ames Research Ctr. (United States); A. Krabbe, J. Wagner, Deutsches SO FIA Institut, Univ. Stuttgart (Germany); M. Süß, MT Mechatronics GmbH (Germany)

- 9145 OT **Design and construction of a carbon fiber gondola for the SPIDER balloon-borne telescope** [9145-28]
 J. D. Soler, Institut d'Astrophysique Spatiale, CNRS (France) and Univ. of Toronto (Canada); P. A. R. Ade, Cardiff Univ. (United Kingdom); M. Amiri, The Univ. of British Columbia (Canada); S. J. Benton, Univ. of Toronto (Canada); J. J. Bock, California Institute of Technology (United States); J. R. Bond, Canadian Institute for Theoretical Astrophysics, Univ. of Toronto (Canada) and Canadian Institute for Advanced Research (Canada); S. A. Bryan, Case Western Reserve Univ. (United States); C. Chiang, Princeton Univ. (United States) and Univ. of KwaZulu-Natal (South Africa); C. C. Contaldi, Imperial College London (United Kingdom); B. P. Crill, O. P. Doré, California Institute of Technology (United States) and Jet Propulsion Lab. (United States); M. Farhang, Univ. of Toronto (Canada); J. P. Filippini, California Institute of Technology (United States); L. M. Fissel, Univ. of Toronto (Canada); A. A. Fraisse, A. E. Gambrel, Princeton Univ. (United States); N. N. Gandilo, Univ. of Toronto (Canada); S. Golwala, California Institute of Technology (United States); J. E. Gudmundsson, Princeton Univ. (United States); M. Halpern, The Univ. of British Columbia (Canada) and Canadian Institute for Advanced Research (Canada); M. Hasselfield, The Univ. of British Columbia (Canada) and Princeton Univ. (United States); G. C. Hilton, National Institute of Standards and Technology (United States); W. A. Holmes, Jet Propulsion Lab. (United States); V. V. Hristov, California Institute of Technology (United States); K. D. Irwin, National Institute of Standards and Technology (United States); W. C. Jones, Z. K. Kermish, Princeton Univ. (United States); C.-L. Kuo, Stanford Univ. (United States); C. J. MacTavish, Canadian Institute for Theoretical Astrophysics, Univ. of Toronto (Canada); P. V. Mason, California Institute of Technology (United States); K. G. Megeerian, Jet Propulsion Lab. (United States); L. Moncelsi, T. Morford, California Institute of Technology (United States); J. M. Nagy, Case Western Reserve Univ. (United States); C. B. Netterfield, Univ. of Toronto (Canada) and Canadian Institute for Advanced Research (Canada); A. S. Rahlin, Princeton Univ. (United States); C. D. Reintsema, National Institute of Standards and Technology (United States); J. E. Ruhl, Case Western Reserve Univ. (United States); M. C. Runyan, Jet Propulsion Lab. (United States); J. A. Shariff, Univ. of Toronto (Canada); A. Trangsrud, Jet Propulsion Lab. (United States); C. Tucker, Cardiff Univ. (United Kingdom); R. S. Tucker, California Institute of Technology (United States); A. D. Turner, A. C. Weber, Jet Propulsion Lab. (United States); D. V. Wiebe, The Univ. of British Columbia (Canada); E. Y. Young, Princeton Univ. (United States)
- 9145 OU **Pointing control for the SPIDER balloon-borne telescope** [9145-102]
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9145 0V

BLASTbus electronics: general-purpose readout and control for balloon-borne experiments
[9145-30]

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- 9145 OW **Upgrade of the SOFIA target acquisition and tracking cameras** [9145-31]
 J. Wolf, M. Wiedemann, E. Pfüller, M. Lachenmann, Deutsches SOFIA Institut, Univ. Stuttgart (Germany) and SOFIA Science Ctr., NASA Ames Research Ctr. (United States); H. J. Hall, SOFIA/USRA (United States); H.-P. Röser, Deutsches SOFIA Institut, Univ. Stuttgart (Germany)

TELESCOPES AND ARRAYS FOR SURVEYS, TIME-DOMAIN AND TRANSIENT OBSERVATIONS I

- 9145 OY **The Pan-STARRS Project in 2014 (Invited Paper)** [9145-33]
 J. S. Morgan, W. Burgett, P. Onaka, Institute for Astronomy, Univ. of Hawai'i (United States)
- 9145 OZ **The Evryscope: the first full-sky gigapixel-scale telescope** [9145-144]
 N. M. Law, O. Fors, P. Wulken, J. Ratzloff, D. Kavanaugh, The Univ. of North Carolina at Chapel Hill (United States)
- 9145 10 **Introduction of Chinese SONG telescope** [9145-35]
 G. Wang, X. Jiang, H. Wang, S. Kou, D. Niu, Y. Ye, Z. Zhang, J. Xu, C. Ren, L. Xu, Z. Yue, National Astronomical Observatories, Nanjing Institute of Astronomical Optics & Technology (China) and Key Lab. of Astronomical Optics & Technology, Nanjing Institute of Astronomical Optics & Technology (China)
- 9145 11 **Liverpool Telescope 2: a new robotic facility for time domain astronomy in 2020+** [9145-36]
 C. M. Copperwheat, I. A. Steele, S. D. Bates, R. J. Smith, M. F. Bode, Liverpool John Moores Univ. (United Kingdom); I. Baker, Glyndwr Innovations Ltd. (United Kingdom); T. Peacocke, Lyncaeus Ltd. (United Kingdom); K. Thomson, Glyndwr Innovations Ltd. (United Kingdom)

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- 9145 13 **Status of the Transneptunian Automated Occultation Survey (TAOS II)** [9145-38]
M. J. Lehner, Institute of Astronomy and Astrophysics, Academia Sinica (Taiwan), Univ. of Pennsylvania (United States), and Harvard-Smithsonian Ctr. for Astrophysics (United States); S.-Y. Wang, Institute of Astronomy and Astrophysics, Academia Sinica (Taiwan); C. A. Alcock, Harvard-Smithsonian Ctr. for Astrophysics (United States); K. H. Cook, Institute of Astronomy and Astrophysics, Academia Sinica (Taiwan); G. Furesz, J. C. Geary, Harvard-Smithsonian Ctr. for Astrophysics (United States); D. Hiriart, Instituto de Astronomía, Univ. Nacional Autónoma de México (Mexico); P. T. Ho, Institute of Astronomy and Astrophysics, Academia Sinica (Taiwan); W. H. Lee, Univ. Nacional Autónoma de México (Mexico); F. Melsheimer, DFM Engineering, Inc. (United States); T. Norton, Harvard-Smithsonian Ctr. for Astrophysics (United States); M. Reyes-Ruiz, M. Richer, Instituto de Astronomía, Univ. Nacional Autónoma de México (Mexico); A. Szentgyorgyi, Harvard-Smithsonian Ctr. for Astrophysics (United States); W.-L. Yen, Z.-W. Zhang, Institute of Astronomy and Astrophysics, Academia Sinica (Taiwan)
- 9145 14 **MASCARA: the multi-site all-sky CAamera: concept and first results** [9145-39]
A.-L. Lesage, J. F. P. Spronck, R. Stuik, Leiden Observatory, Leiden Univ. (Netherlands); F. Bettonvil, Leiden Observatory, Leiden Univ. (Netherlands) and NOVA Optical-Infrared Instrumentation Group at ASTRON (Netherlands); D. Pollaco, The Univ. of Warwick (United Kingdom); I. A. G. Snellen, Leiden Observatory, Leiden Univ. (Netherlands)
- 9145 15 **Current status and future plans for the Maunakea Spectroscopic Explorer (MSE)** [9145-40]
D. A. Simons, Canada-France-Hawaii Telescope Corp. (United States); D. Crampton, P. Côté, A. McConnachie, K. Szeto, National Research Council – Herzberg (Canada); D. Salmon, D. Devost, Canada-France-Hawaii Telescope Corp. (United States); R. Murowinski, National Research Council – Herzberg (Canada)
- 9145 16 **Wavefront sensing and the active optics system of the dark energy camera** [9145-41]
A. Roodman, K. Reil, C. Davis, SLAC National Accelerator Lab., Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States)

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- 9145 17 **Spectroscopic survey of LAMOST (Invited Paper)** [9145-42]
Y. Zhao, National Astronomical Observatories (China)
- 9145 18 **Baseline design of the LSST telescope mount assembly** [9145-43]
D. R. Neill, E. Hileman, J. Sebag, W. Gressler, O. Wiecha, M. Warner, J. Andrew, B. Schoening, National Optical Astronomy Observatory (United States)
- 9145 19 **The Maunakea Spectroscopic Explorer: the science-driven design rationale** [9145-44]
A. McConnachie, R. Murowinski, D. Salmon, D. Simons, Canada-France-Hawaii Telescope (United States); P. Côté, NRC - Herzberg Institute of Astrophysics (Canada)
- 9145 1A **LSST Telescope and site status** [9145-45]
W. Gressler, J. DeVries, E. Hileman, D. R. Neill, J. Sebag, O. Wiecha, J. Andrew, P. Lotz, W. Schoening, National Optical Astronomy Observatory (United States)

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- 9145 1B **Real time estimation of differential piston at the LBT** [9145-165]
M. Böhm, Univ. Stuttgart (Germany) and Max-Planck-Institut für Astronomie (Germany);
J.-U. Pott, Max-Planck-Institut für Astronomie (Germany); O. Sawodny, Univ. Stuttgart
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- 9145 1C **Overview and status of the Giant Magellan Telescope project (Invited Paper)** [9145-47]
R. A. Bernstein, P. J. McCarthy, The Giant Magellan Telescope Project Corp. (United States)
and Carnegie Observatories (United States); K. Raybould, B. C. Bigelow, A. H. Bouchez,
J. M. Filgueira, G. H. Jacoby, The Giant Magellan Telescope Project Corp. (United States);
M. Johns, The Giant Magellan Telescope Project Corp. (United States) and Carnegie
Observatories (United States); D. Sawyer, The Giant Magellan Telescope Project Corp.
(United States); S. Shectman, Carnegie Observatories (United States); M. Sheehan, The
Giant Magellan Telescope Project Corp. (United States)
- 9145 1E **European Extremely Large Telescope: progress report (Invited Paper)** [9145-49]
R. Tamai, J. Spyromilio, European Southern Observatory (Germany)

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- 9145 1F **Design of the Giant Magellan Telescope** [9145-50]
M. Johns, C. Hull, G. Muller, B. Irrazaval, A. Bouchez, T. Chylek, C. Smith, A. Wadhavkar,
B. Bigelow, The Giant Magellan Telescope Project Corp. (United States); S. Gunnels,
Paragon Engineering (United States); B. McLeod, Smithsonian Astrophysical Observatory
(United States); C. Buleri, Quartus Engineering Inc. (United States)
- 9145 1G **Looking beyond 30m-class telescopes: the Colossus project** [9145-51]
J. R. Kuhn, Institute of Astronomy, Univ. of Hawai'i (United States); S. V. Berdyugina,
Kiepenheuer-Institut für Sonnenphysik (Germany) and NASA Astrobiology Institute, Univ. of
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Innovative Optics Ltd. (Canada)

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- 9145 1I **The secondary mirror concept for the European Extremely Large Telescope** [9145-53]
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L. Pettazzi, A. Rakich, B. Sedghi, European Southern Observatory (Germany)

- 9145 1J **High volume production trial of mirror segments for the Thirty Meter Telescope** [9145-54]
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- 9145 1L **New strategies for an extremely large telescope dedicated to extremely high contrast: the Colossus project** [9145-56]
G. Moretto, Ctr. de Recherche Astrophysique de Lyon, CNRS, Observatoire de Lyon (France); J. R. Kuhn, Institute for Astronomy, Univ. of Hawai'i (United States); E. Thiébaud, M. Langlois, Ctr. de Recherche Astrophysique de Lyon, CNRS, Observatoire de Lyon (France); S. V. Berdyugina, Kiepenheuer-Institut für Sonnenphysik (Germany) and NASA Astrobiology Institute, Univ. of Hawai'i (United States); C. Harlinton, D. Halliday, Innovative Optics Ltd. (Canada)
- 9145 1M **Development of GMT fast steering secondary mirror assembly** [9145-57]
M. Cho, National Optical Astronomy Observatory (United States); A. Corredor, C. Dribusch, W. H. Park, The Univ. of Arizona (United States); G. Muller, M. Johns, C. Hull, J. Kern, Giant Magellan Telescope Project (United States); Y.-S. Kim, Giant Magellan Telescope Project (United States) and Korea Astronomy and Space Science Institute (Korea, Republic of)
- 9145 1O **Status of E-ELT M5 scale-one demonstrator** [9145-59]
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- 9145 1R **Inductive sensors based on embedded coil technology for nanometric inter-segment position sensing of the E-ELT** [9145-62]
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- 9145 1S **High performance control of mirror segment actuators for the European Extremely Large Telescope** [9145-188]
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- 9145 1T **The Giant Magellan Telescope active optics system** [9145-64]
B. McLeod, Harvard-Smithsonian Ctr. for Astrophysics (United States); A. H. Bouchez, B. Espeland, J. Filgueira, M. Johns, Giant Magellan Telescope (United States); T. J. Norton, M. Ordway, W. A. Podgorski, J. Roll, Harvard-Smithsonian Ctr. for Astrophysics (United States); C. Smith, Giant Magellan Telescope (United States)
- 9145 1U **Fast optical re-phasing of segmented primary mirrors** [9145-65]
H. Bonnet, M. Esselborn, N. Kornweibel, P. Dierickx, European Southern Observatory (Germany)

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N. Reyes, Univ. de Chile (Chile) and Max-Planck-Institut für Radioastronomie (Germany); V. Tapia, Univ. de Chile (Chile); D. Henke, NRC - Herzburg Institute of Astrophysics (Canada); M. Sanchez-Carrasco, Univ. de Chile (Chile) and Instituto de Astrofísica de Andalucía (Spain); F. P. Mena, Univ. de Chile (Chile); S. M. X. Claude, NRC - Herzburg Institute of Astrophysics (Canada); L. Bronfman, Univ. de Chile (Chile)
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A. Matsuzawa, The Graduate Univ. for Advanced Studies (Japan); M. Saito, The Graduate Univ. for Advanced Studies (Japan), Joint ALMA Observatory (Chile), and National Astronomical Observatory of Japan (Japan); S. Iguchi, The Graduate Univ. for Advanced Studies (Japan) and National Astronomical Observatory of Japan (Japan); K. Nakanishi, The Graduate Univ. for Advanced Studies (Japan), Joint ALMA Observatory (Chile), and National Astronomical Observatory of Japan (Japan); H. Saito, Nippon Institute of Technology (Japan)

- 9145 20 **What are scientifically valuable developments for ALMA enhancement?** [9145-71]
S. Iguchi, D. Iono, National Astronomical Observatory of Japan (Japan) and The Graduate Univ. of Advanced Studies (Japan)

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- 9145 23 **Using feed array networks to control distortions in antenna reflector for astrophysical radio-astronomy** [9145-74]
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- 9145 24 **A 200-GHz telescope unit for the QUIJOTE CMB Experiment** [9145-75]
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J. P. McMullin, National Solar Observatory (United States); T. R. Rimmele, V. Martínez Pillet, T. E. Berger, National Solar Observatory, Univ. of Colorado at Boulder (United States); R. Casini, NCAR High Altitude Observatory (United States); S. C. Craig, National Solar Observatory (United States); D. F. Elmore, National Solar Observatory, Univ. of Colorado at Boulder (United States); B. D. Goodrich, National Solar Observatory (United States); S. L. Hegwer, National Solar Observatory, Univ. of Colorado at Boulder (United States); R. P. Hubbard, E. M. Johansson, National Solar Observatory (United States); J. R. Kuhn,

H. Lin, Institute for Astronomy, Univ. of Hawai'i (United States); W. McVeigh, National Solar Observatory (United States); W. Schmidt, Kiepenheuer-Institut für Sonnenphysik (Germany); S. Shimko, A. Tritschler, M. Warner, National Solar Observatory (United States); F. Wöger, National Solar Observatory, Univ. of Colorado at Boulder (United States)

- 9145 26 **The progress of Chinese Giant Solar Telescope** [9145-77]
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G. Murga, AEC IDOM (United States); H. K. Marshall, National Solar Observatory (United States); T. E. Lorentz, J. Ariño, P. Ampuero, AEC IDOM (United States)
- 9145 29 **1.8-M solar telescope in China: the CLST** [9145-80]
C. Rao, N. Gu, L. Zhu, Institute of Optics and Electronics (China) and The Key Lab. on Adaptive Optics (China); Y. Liu, Institute of Optics and Electronics (China), The Key Lab. on Adaptive Optics (China), and The Univ. of Chinese Academy of Sciences (China); J. Huang, Institute of Optics and Electronics (China); C. Li, Institute of Optics and Electronics (China) and The Key Lab. on Adaptive Optics (China); Y. Cheng, X. Cao, M. Zhang, Institute of Optics and Electronics (China); L. Zhang, Institute of Optics and Electronics (China), The Key Lab. on Adaptive Optics (China), and The Univ. of Chinese Academy of Sciences (China); H. Liu, Y. Wan, Institute of Optics and Electronics (China); H. Xian, Institute of Optics and Electronics (China) and The Key Lab. on Adaptive Optics (China); W. Ma, Institute of Optics and Electronics (China); H. Bao, X. Zhang, C. Guan, D. Chen, M. Li, Institute of Optics and Electronics (China) and The Key Lab. on Adaptive Optics (China)

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O. Dreyer, A. Ippa, S. Seubert, H. J. Kärcher, MT Mechatronics GmbH (Germany); P. Jeffers, National Solar Observatory (United States); G. Bonomi, Ingersoll Machines Tools, Inc. (United States)

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- 9145 2D **Commissioning and science verification of the 2m-Fraunhofer Wendelstein Telescope** [9145-83]
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- 9145 2E **OAJ 2.6-m survey telescope: assembly, integration, and testing** [9145-84]
O. Pirnay, C. Bastin, G. Lousberg, J.-M. Tortolani, P. Verheyden, AMOS Ltd. (Belgium)

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T. Usuda, National Astronomical Observatory of Japan (Japan); Y. Ezaki, N. Kawaguchi, K. Nagae, A. Kato, J. Takaki, M. Hirano, T. Hattori, M. Tabata, Y. Horiuchi, Y. Saruta, S. Sofuku, N. Itoh, T. Oshima, T. Takanezawa, M. Endo, Mitsubishi Electric Corp. (Japan); J. Inatani, M. Iye, National Astronomical Observatory of Japan (Japan); A. Sadjadpour, M. Sirota, S. Roberts, L. Stepp, Thirty Meter Telescope Observatory Corp. (United States)
- 9145 2G **New finite element models and seismic analyses of the telescopes at W.M. Keck Observatory** [9145-87]
F. W. Kan, A. T. Sarawit, Simpson Gumpertz & Heger Inc. (United States); S. P. Callahan, Caltech Optical Observatories (United States); M. L. Pollard, W. M. Keck Observatory (United States)
- 9145 2H **Wheel drives for large telescopes: save the cost and keep the performance over hydrostatic bearings** [9145-88]
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J. Teran, M3 Engineering & Technology Corp. (United States); M. Sheehan, Giant Magellan Telescope Organization Corp. (United States); D. H. Neff, E. Grigel, D. Adriaanse, M3 Engineering & Technology Corp. (United States); A. Farahani, Giant Magellan Telescope Organization Corp. (United States)

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D. G. MacMartin, California Institute of Technology (United States) and Thirty Meter Telescope Observatory Corp. (United States); H. Thompson, Thirty Meter Telescope Observatory Corp. (United States)

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Z. Yue, Y. Ye, National Astronomical Observatories, Nanjing Institute of Astronomical Optics & Technology (China), Key Lab. of Astronomical Optics & Technology, Nanjing Institute of Astronomical Optics & Technology (China), and Univ. of Chinese Academy of Sciences (China); B. Gu, National Astronomical Observatories, Nanjing Institute of Astronomical Optics & Technology (China) and Key Lab. of Astronomical Optics & Technology, Nanjing Institute of Astronomical Optics & Technology (China)

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L. Dettmann, D. Ashby, J. M. Hill, A. Chatila, Large Binocular Telescope Observatory (United States)
- 9145 2S **Active optics control development at the LBT** [9145-99]
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- 9145 2T **Challenges of the opto-mechanical conceptual design of a small far-IR balloon experiment** [9145-100]
J.-L. Dournaux, Observatoire de Paris à Meudon, CNRS, Univ. Paris Diderot (France); C. Berthod, Institut National des Sciences de l'Univ., CNRS (France); D. Horville, J.-M. Huet, P. Laporte, Observatoire de Paris à Meudon, CNRS, Univ. Paris Diderot (France); M. Wiedner, Observatoire de Paris, CNRS, Univ. Paris Diderot (France); A. Romanow, Observatoire de Paris à Meudon, CNRS, Univ. Paris Diderot (France); J.-M. Krieg, L. Pagani, Observatoire de Paris, CNRS, Univ. Paris Diderot (France); J. Evrard, A. Gomes, M. Jouret, CNES - Ctr. National d'Études Spatiales (France)
- 9145 2U **Attitude determination for balloon-borne experiments** [9145-101]
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C. D. Reintsema, National Institute of Standards and Technology (United States); J. E. Ruhl, Case Western Reserve Univ. (United States); M. C. Runyan, Jet Propulsion Lab. (United States); G. Savini, Univ. College London (United Kingdom); D. Scott, The Univ. of British Columbia (Canada); J. A. Shariff, Univ. of Toronto (Canada); J. D. Soler, Univ. of Toronto (Canada) and Institut d'Astrophysique Spatiale, CNRS, Univ. Paris-Sud (France); N. E. Thomas, Univ. of Miami (United States); A. Trangsrud, Jet Propulsion Lab. (United States); M. D. Truch, Univ. of Pennsylvania (United States); C. E. Tucker, Cardiff Univ. (United Kingdom); G. S. Tucker, Brown Univ. (United States); R. S. Tucker, California Institute of Technology (United States); A. D. Turner, Jet Propulsion Lab. (United States); D. Ward-Thompson, Univ. of Central Lancashire (United Kingdom); A. C. Weber, Jet Propulsion Lab. (United States); D. V. Wiebe, The Univ. of British Columbia (Canada); E. Y. Young, Princeton Univ. (United States)

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M. Lachenmann, J. Wolf, Deutsches SOFIA Institut, Univ. Stuttgart (Germany) and SOFIA Science Ctr., NASA Ames Research Ctr. (United States); R. Strecker, Deutsches SOFIA Institut, Univ. Stuttgart (Germany) and NASA Neil Armstrong Flight Research Ctr. (United States); B. Weckenmann, F. Trimpe, Deutsches SOFIA Institut, Univ. Stuttgart (Germany) and SOFIA Science Ctr., NASA Ames Research Ctr. (United States); H. J. Hall, SOFIA Science Ctr., Univ. Space Research Association (United States) and NASA Ames Research Ctr. (United States)

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R. T. McMichael, M. W. Noble, D. Adams, P. Bernasconi, H. Borowski, Johns Hopkins Univ. Applied Physics Lab. (United States); R. Bupp, Nu-Tek Precision Optical Corp. (United States); A. F. Cheng, H. Eaton, R. Espiritu, Z. Fletcher, K. Heffernan, K. Hibbitts, C. L. Kee, G. Maahs, G. Murphy, D. Ponnusamy, N. W. Rolander, K. Strohbahn, J. R. Troll, B. D. Williams, Johns Hopkins Univ. Applied Physics Lab. (United States)

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Introduction

The large number of submissions to and excellent attendance at the Ground-based and Airborne Telescopes V conference reflects continued strong interest in the astronomical and engineering communities. There were 214 papers submitted to this year's conference, which included 30 oral sessions and two poster sessions.

Good progress was reported on many ongoing and planned programs. Excellent papers were presented on AKA, ALMA, APF, AST3, BLASTPol, CCAT, CGST, CHIME, CLST, CTA, DCT, DECam, DKIST, E-ELT, GLT, GMT, HET, KDUST, LAMOST, LBT, LMT, LSST, LT2, MSE, NST, OAJ, Pan-STARRS, PLANETS, SKA, SOFIA, Spider, SST, TAO, TESS, TMT, and WFT.

Papers were presented on many current optical-IR telescope projects that are finally funded and ready for construction. The Extremely Large Telescopes session was the most widely attended; almost at the level of the conference's plenary sessions. There were several sessions of Airborne Telescopes, including SOFIA and balloon projects. Another topic that had several sessions was Telescopes and Arrays for Surveys, Time-domain and Transient Observations. Attendance was strong through the last session on Measurement and Control of Telescope Vibration.

The range of technical subjects covered in the papers is similar to previous conferences. Design of telescopes for extreme environments still is a hot topic for the conference. A new topic that hasn't been covered in the past was telescopes to image orbiting objects. This will be of interest in the future for commercial and military applications.

The co-chairs would like to thank the SPIE symposium organizers, the GB&AT program committee members, the session chairs, the authors, and all the conference participants for making this year's conference so successful.

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