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Ground-based and Airborne Instrumentation for Astronomy III

Ian S. McLean
Suzanne K. Ramsay
Hideki Takami
Editors

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Introduction

Astronomical instrumentation is entering an era of unprecedented productivity and creativity. Our well-established ground-based 8-10m class observatories are being equipped with second and third generation instruments, often of substantial size and complexity. Meanwhile, designs are underway for new instruments that will deliver the scientific results from the planned extremely large telescopes (apertures of 20-m and more). The engineering challenge is not only to produce these new instruments, but to ensure that they perform at the highest level, are reliable and affordable.

Equally important, innovative optical/IR instrumentation for many kinds of smaller telescopes, solar telescopes and airborne platforms has provided new opportunities and challenges in recent years. Adaptive optics, wide-field multi-object surveys, and 3D spectroscopy are all becoming "standard" facilities as detector sizes continue to grow. Increasingly, new instrumentation is designed with adaptive optics incorporated in the overall system.

This conference, the third in the series, was established with the following aims: (1) to provide an overview of the performance and lessons learned from those instruments already in operation; (2) to give insight into the design and status of future instruments proposed, planned or already in development; (3) to create a forum for the exchange of technical information on achievements and problems amongst instrument builders in both the academic and industrial worlds. Without doubt, these goals were achieved.

At this meeting, 285 papers were presented, either as oral or poster contributions, a record for this conference series. Seven invited reviews were requested on major existing facilities or planned new ones. Topics covered the entire range of UV, optical and infrared instrumentation for both ground-based and airborne astronomy. Specific areas of interest included:

- performance of recently developed instrumentation
- lessons learned from existing major instrumentation programs
- design reports of new instruments - imagers, spectrographs, polarimeters
- new techniques and technologies
- instruments for airborne astronomy
- instruments for ground-based solar telescopes
- instrumentation for future Extremely Large Telescopes (ELTs)

The conference was subdivided into 13 sessions spread over six days, including a special topical session (Session 5) on Instrumentation and Techniques for Exoplanet Detection. On behalf of the program committee, it is a pleasure to acknowledge all participants.

Ian S. McLean
Suzanne K. Ramsay
Hideki Takami
Conference Chairs