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Observatory Operations: Strategies, Processes, and Systems VII

Alison B. Peck
Robert L. Seaman
Chris R. Benn
Editors

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Introduction

This conference provided a forum for discussion of a broad range of issues relevant to the operation of ground-based and space observatories, including observing/support models, calibration, data-reduction/archiving, quality control, engineering and infrastructure, fault-handling, productivity, and staffing.

While every ground and space observatory has its own individual and unique characteristics, each shares with the others a common need to execute technical and science operations in the most efficient and cost-effective way possible. We all share the goal of providing outstanding capabilities and reliable services to our users while operating within the constraints imposed by tight budgets and limited staffing. At the same time, the technical and logistical challenges are growing with the systems and network complexity of new observing modes, coordinated multi-facility and multi-messenger observing campaigns, fully or partially robotic facilities, integrated instrument pipelines and science archives, and the need to integrate more complex cyber-infrastructure such as the Grid and the Virtual Observatory. The subtle intricacies and large scales of new instrumentation naturally lead to correspondingly creative operations modalities.

Building on previous successful conferences, we invited the observatory operations community to gather to discuss lessons learned, progress made, and future initiatives. As before, we were particularly interested in discussions of what works versus what does not work, as well as what was planned versus what actually happened. Discussion of the interplay of science operations, technical operations, data management operations, and observatory development was particularly encouraged—especially as it impacts the maximization of science value return. The interplay of available funding, delivered capabilities/services, and user expectation management and how that informs observatory operations models is another important discussion topic. An additional topic of this conference was the rising support challenge of time-domain investigations. Demand for such support is steadily increasing, driven by the desire to study rare, random events as well as exoplanets and long-term, synoptic phenomena. Such studies are particularly challenging when they require coordination between multiple space and ground based observatories. While this trend has previously been driven by space-based detections of gamma ray bursts, the startup of ground-based time-domain survey facilities (ramping up to the Large Synoptic Survey Telescope) are **quickly** taking this challenge to a new level. Progress reports from new facilities coming on-line and existing facilities facing major new operational challenges were particularly encouraged.

This volume contains the contributions, both oral and poster, to this conference from the international community.

**Alison B. Peck
Robert L. Seaman
Chris R. Benn**