



Director's Office

The First Workshop on the Ground-Based O/IR System

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NOAO sponsored the First Workshop on the Ground-Based O/IR System at the Radisson Resort in Scottsdale, Arizona, on October 27–28. Approximately 50 invited participants plus an additional 30 who responded to a community-wide announcement met for two days. This workshop was the first public opportunity to discuss the recommendation of the McKee-Taylor Decadal Survey that the publicly- and privately-funded facilities be viewed as a single system, and to explore ideas about how the system might evolve, based on community scientific aspirations.

The workshop organizing committee met the day after the workshop to begin formulating a report. When it is completed, the report will be disseminated through the workshop Web site (http://www.noao.edu/gateway/oir_workshop), which also gives the agenda, list of participants, and relevant background information, as well as at the January 2001 AAS meeting in San Diego.

The workshop included three sets of presentations—on context for the system, elements of the system, and science talks on six broad areas. The context talks considered the current state of the O/IR system, the international landscape, and the synergy between ground- and space-based facilities. The talks on elements of the system covered the major facilities as well as ideas about the roles of smaller telescopes, advances in instrumentation, software, adaptive optics, interferometry, and observing modes. The science talks laid the groundwork for breakout groups, which were charged to identify the relationships between the important scientific programs of the next decade and the available or planned capabilities. A final discussion summarized the workshop.

Among the points that seemed likely to emerge as recommendations of the workshop are the following:

- A strong case was made for enhancing community capabilities in the areas of wide-field imaging at both near-IR and optical wavelengths. In the science areas of star formation and galaxy evolution, it was recognized that imaging surveys using instruments that will be designed around the upcoming generation of $4K \times 4K$ IR arrays will define samples for detailed study with 8–10 m and even larger telescopes. In the optical, the community appears ready for the next step from $8K \times 8K$ CCD mosaics to the LSST—with a three degree field and the consequent ability to survey the entire sky in a few nights. Much of the enthusiasm for this capability was driven by the anticipation of opening up the time domain, which caught the imagination of a number of the science groups.
- Wide field optical (and near-IR) multi-object spectroscopy was also identified as a priority. Groups interested in galaxy evolution and large-scale structure saw a need for the ability to collect spectra of very large samples of objects. Densities of hundreds to thousands of targets per square degree provide a goal for such next-generation instruments.
- There was substantial and increasing acknowledgement of the role that archived data might play in the future. There was overall agreement that more effort must be made to archive and provide access to large, uniform data sets, and that the utility of archiving smaller “PI” observations should be explored. It was recognized that this is limited by the way

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O/IR System continued

instruments are designed and used, and there was a call to consider the needs of archiving with some priority in the design of future instruments.

- Workshop participants recognized that software plays an increasingly important role in our research, both through its importance in the effective operation of complex instruments and through its application to archival research. The general sense was that software efforts are underappreciated and underfunded. Several groups proposed projects that would require substantial software efforts, including a complete census of AGN by the black holes group. This project would depend on the National Virtual Observatory to provide access to federated archives covering many wavelength bands.
- Follow-up, “intervention-type” observing modes were identified as necessary for studies in several areas, ranging from investigations of lensed supernovae by the cosmology group, to a census of trans-Neptunian objects and Earth-crossing asteroids by the solar system group.
- There was recognition of the fact that many of the projects proposed required many types of capabilities spread over a number of different observatories—some even combining space-based and ground-based capabilities. Each of these observatories has different constraints on access and different means of reviewing proposals. The idea of finding ways to provide access to multiple facilities through a single science proposal was supported.

