Workshop on Variability with Wide-Field Imagers

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Sponsorship

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FOREWORD

The use of wide field imagers in Astrophysics is no longer in its infancy, in fact, these instruments are now available in ground-based telescopes ranging from the 2m to the 8m class. The development of mosaic cameras has represented a milestone, not only for technological problems , but also for challenging efforts from the astronomical community to cope with pre-processing and reduction of multi-band data collected with these new instruments. The main problems are obviously related with the huge amount of raw data to be processed, but also with the developments of new pipelines which can perform both the photometry and the astrometry of the scientific images, within a reasonable amount of time.

These problems become even more severe if we are interested in time dependent phenomena. Time variability is a transversal approach that crosses almost all the astrophysical fields. It is not surprising that time-series data collected with wide-field imagers have been used to detect fast-moving Near Earth Objects (NEOs), variable stars in the field and in stellar systems, Supernovae in nearby as well as in high-redshift galaxies, and to select Active Galactic Nuclei (AGNs). The last few years have witnessed a rapid growth of activity in the development of new observational and data reduction strategies that can fully exploit the use of multi-band data from different communities. Moreover, new wide-field imagers will become soon available at the astronomical community such as OMEGACAM (1×1 degree) at VST, VISTA, MEGACAM (1×1 degree) at CFH, and LBC (26×26 arcmin) at LBT. Furthermore, new International projects based on a massive use of wide-field imagers are being developed, such as LSST and PAN-STARRS.

Several groups have taken a keen interest in the use of these instruments, and therefore we decided that this would be the right moment to organize a workshop in Lampedusa (Italy), where leading practitioners and new potential users from all over the world could meet together in a pleasant venue in order to discuss the current status of the art and future perspectives. The workshop, *Variability with Wide Field Imagers* was organized by INAF-Osservatorio Astronomico di Roma, INAF-Osservatorio Astronomico di Teramo, and Università di Roma La Sapienza and was held at the Primary School *L. Pirandello* in September 2002. More than forty astrophysicists from ten different countries attended the five-days meeting.

The written version of the talks presented during the meeting are included in this book. We would like very much to thank the technical and the administrative staff of the organizing Institutions and in particular Dr. G. Giobbi and Prof. A.M. Tedesco whose enthusiastic support was fundamental to cope with the organization of a meeting of this kind. Our warm thanks go also to the Major of Lampedusa, Dr. B. Siragusa, to the town councillor Mr. F. Esposito, as well as to the headmasters Prof. C. Argento, and Prof. M. Maggiore for giving us the opportunity to use the Assembly Hall of the Primary School as well as for the invaluable help in solving several logistic problems which inevitably arise in connection with a meeting. We also wish to thank Dr. G. Nicolini of Lega Ambiente for the beautiful excursion in the Lampedusa Wildlife Reserve. Finally, it is really a pleasure to thank the many restaurants across the isle for the enticing opportunity to sample the manifold recipes of the local cuisine.

A few months after the meeting we knew the very bad news concerning the fire which destroyed the Mount Stromlo Observatory in Siding Spring. We have been particularly grieved, since some astronomers of this Observatory attended the workshop. It was a terrible disaster, which destroyed not only the scientific instruments but also the houses of several colleagues. However, the reconstruction is rapidly going ahead and as a good omen for the future, we have the great pleasure of dedicating this volume to the Mount Stromlo Observatory, for the crucial role that this Institution played in many of the astrophysical fields discussed in this volume.

G. Bono, M. Castellani, D. Trevese on behalf of LOC and SOC