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FOREWORD

February 21, 2005

The organization of the 37th Liège International Astrophysical Colloquium (LIAC37), held in Sart Tilman (Liège University, Colonster Castle) on 23-25 August 2004, was proposed by the members of the Network Activity (NA) Committee of the Optical Interferometry Network of the European Interferometry Initiatives (EII, OPTICON/FP6). Among the planned activities of EII, Workpackage 3 directly aims at developing the vision for a next-generation interferometric facility (post VLTI era). See the link :

http://www.strw.leidenuniv.nl/ eurinterf/Activities/OPTICON-NA/index.html

The Scientific Organizing Committee (SOC) of LIAC37 was composed of a representative sample of members from the EII : Eric Bakker, Chris Haniff, Thomas Henning, Andrzej Niedzielski, Romain Petrov, Andreas Quirrenbach and Jean Surdej. The SOC then proposed to the EII board to first address the science cases for next generation interferometric facilities. Given the present existing astronomical facilities (ground & space; including existing interferometric facilities), we were wondering what will be the most challenging science areas to be addressed with interferometers in the future (i.e. within 15 years from now). The SOC then proposed a list of science cases to be addressed and also the format and content of a 3-day scientific workshop entitled "Science Cases for Next Generation Optical/Infrared Interferometric Facilities (the post VLTI era)"; see the link :

http://www.astro.ulg.ac.be/colloques/2004/meeting2/index.html

A local organizing committee (LOC) was then set up. It was composed of Olivier Absil, Eric Bakker, Denise Caro, Alain Detal, Dominique Lambert, Anna Pospieszalska, Pierre Riaud, Jean Surdej (chairman) and Jean-Pierre Swings.

The science programme that was adopted is given below :

Monday 23 August 2004

09:45-10:00 Welcome (J. Surdej)
10:00-11:00 Invited Talk : Basic and future concepts of interferometers, including future technologies and reconstruction imaging techniques (P.Riaud)
11:00-12:00 Invited Talk : Filled Apertures - OWL phase A report (Ph. Dierickx)
12:00-12:30 More waves to come: the VLTI, la OLA and beyond (F. Delplancke)
14:00-15:00 Invited Talk : Circumstellar material (S. Wolf)
15:00-15:30 ELSA: an Extremely Large Synthesis Array (A. Quirrenbach)
16:00-17:00 Invited Talk : Exoplanets and high dynamics objects (J. Schneider)
17:00-17:30 KEOPS: an Imaging Synthesis Optical Array at Dome C in Antarctica (F.X. Schmider)

Tuesday 24 August
09:00-10:00 Invited Talk : Active Galactic Nuclei (A. Marconi)
10:00-10:30 NIR interferometry of the Seyfert galax NGC 1068 : present interferometric results and future goals (G. Weigelt)
11:00-12:00 Invited Talk : Extragalactic astrophysics (D. Fraix-Burnet)
12:00-12:30 Observing galactic centers at different redshifts (M. Wittkowski)
14:00-15:00 Invited Talk : Stellar activity and asteroseismology (F.X. Schmider)
15:00-15:30 Exoplanet science from the high Antarctic plateau (V. Coudé du Foresto)
16:00-17:00 Invited Talk : Stellar imaging (O. von der Luehe)
17:00-17:30 Towards snapshot imaging with hypertelescopes : progress of the 20-meter prototype (V. Borkowski & H. Le Coroller)

Wednesday 25 August
09:00-10:00 Invited Talk : Binary and multiple stars (F. Verbunt)
10:00-10:30 APrèS-MIDI, a concept for Aperture Synthesis Imaging in the MID-Infrared with the VLTI and Future Interferometers (F. Przygodda)
11:00-12:00 Invited Talk : Fundamental stellar parameters (M. Wittkowski)
12:00-12:30 Pegase: a space interferometer for the spectrophotometry of Pegasides (O. Absil)
14:00-15:00 Round table with AMOS engineers/physicists
15:00-16:00 General conclusions (P. Léna)
16:00-18:00 Bus transportation to AMOS, visit of their facilities (Auxiliary Telescopes) and small reception

Some 40 astrophysicists and engineers took active part in this meeting. Ten invited talks (1 hour with discussion), ten contributed talks (30 minutes with discussion) and 2 posters were presented, generally followed by very lively discussions. Following the organization of a round table with engineers from AMOS (Advanced and Mechanical Optical Systems), stimulating general conclusions were presented by Pierre Léna.

The present proceedings reflect most of the highlights of the conference.

It is our pleasure to thank the members of the SOC, of the LOC and colleagues from the Liège Institute of Astrophysics and Geophysics for having participated to the good organization of this Colloquium.

The organization of the 2004 Colloquium was made possible through various financial grants received from OPTICON (EII, FP6), "Service général de l'Enseignement universitaire et de la Recherche scientifique (Communauté Française de Belgique)", "Fonds National de la Recherche Scientifique" and AMOS. We address our sincere thanks to all these organizations for their financial support.

Liège, 21 February 2005

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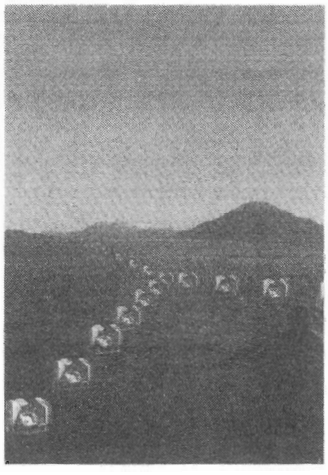

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