



OPTICON Workshop
on
Material Property Measurements for Cryogenic Instruments

Merate (Italy) – December 4th -5th, 2008

Second Announcement

Cryogenic instruments have become routine at astronomical observatories. Nevertheless, the design and operation of such instruments is a challenging task and unlike at room temperature, information on basic engineering properties of materials at cryogenic temperatures is limited. Measurements are often made during the detailed design phase of the instrument, with risks of over cost and delays in schedule if the material is found to be unsuitable.

The science cases for the next generation of extremely large telescopes (ELTs) call for very complex instruments delivering unprecedented data quality. In order to build these instruments within reasonable limits of mass, volume, complexity and budget we will need to move beyond the ad-hoc methods that have sufficed for previous instruments. A better knowledge of the various properties of materials (both optical properties of glasses, thermo-mechanical properties of support structures and thermal links) currently used at cryogenic temperatures will be essential, and yet unexplored materials may allow for innovative solutions. Phase A studies of a suite of instruments for the European ELT are underway and this is a good point in time to bring together experts from the relevant fields.

Therefore, we invite you to join us at the OPTICON Workshop on Material Property Measurements for Cryogenic Instruments to be held on 4-5 December 2008 at Astronomical Observatory of Brera in Merate, Italy.

The goals of this workshop are:

- to foster the sharing of information, experience and techniques between instrument developers, experts in optical and structural materials and industry
- to review the actual precisions and limitations of the knowledge on relevant materials
- to explore opportunities for future partnerships and joint use of facilities
- to discuss plans for funding of future work
- to summarize the current status and collect the future needs in a review paper

Specific topics of the workshop are:

- survey of existing data
 - optical
 - thermal
 - mechanical
- a survey of existing facilities and their capabilities
- the need for measurements over a range of temperatures
- where new materials could make a difference if we knew how to use them
- what is missing

The workshop will feature a series of invited talks to provide the basis for discussion on the above subjects and other talks based on abstract submission. Enough time will be reserved to open discussion. We plan to focus the discussion by having splinter groups with the results brought together in the plenary session and the review paper. To keep an informal atmosphere the number of participants will be limited.

General information

If you are interested in participating this workshop, we invite you to send an expression of interest **before October 31st** to our local organizing secretary (Paolo Spanò, paolo.spano@brera.inaf.it) with a short description of your contribution/expertise to the discussion. The number of talks will be limited in order to allow enough time to open discussion. **If you want to present a contribution, please, send a small abstract via email.**

The workshop will be held at INAF – Brera Astronomical Observatory in Merate, near Milano. We plan to start late morning of December 4th, to allow participants to reach Merate in the morning, and to finish in the afternoon of December 5th.

There are three airports near Milano: Malpensa (MPX), Linate (LIN) and Bergamo-Orio al Serio (BGY), the last two are nearer to Merate. We suggest you to book in advance your ticket flight. Public transports from all airports to Merate are available. A minibus will be organized for local transport between railway station and the observatory. Detailed information will be given later.

Workshop organizers will cover lodging costs for one night, meals and the social dinner. Financial support to cover travel expenses is not planned.

Any information about the workshop can be found in our website:

http://www.astro-golem.it/opticon/workshop_merate/index.html

Scientific Organizing Committee

<i>A. Bianco</i>	<i>(INAF IASF, Italy)</i>
<i>C.R. Cunningham</i>	<i>(UK ATC, UK)</i>
<i>F. Kerber</i>	<i>(ESO, Germany)</i>
<i>P. Spanò</i>	<i>(INAF Brera, Italy)</i>
<i>A. Woodcraft</i>	<i>(UK ATC, UK)</i>
<i>F.M. Zerbi</i>	<i>(INAF Brera, Italy)</i>

Local Organizing Committee

INAF – Oss. Astr. Brera

A. Bianco, Y. Ferrara, M. Riva, P. Spanò, G. Toso, D. Tresoldi, F.M. Zerbi

