

DIVISION IX OPTICAL AND INFRARED TECHNIQUES

TECHNIQUES OPTIQUES ET INFRAROUGES

Division IX provides a forum for astronomers engaged in the innovation, development and calibration of optical instrumentation and observational procedures including data processing.

PRESIDENT	Christiaan L. Sterken
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DIVISION IX COMMISSIONS

Commission 9	Instrumentation and Techniques (†)
Commission 25	Stellar Photometry and Polarimetry
Commission 30	Radial Velocities

DIVISION IX WORKING GROUPS

Division IX WG	Optical and Infrared Interferometry
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INTER-DIVISION WORKING GROUP

Division IX-X WG	Encouraging the International Development of Antarctic Astronomy
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PROCEEDINGS BUSINESS MEETING on 18 August 2006

1. Introduction

Division IX Board members expressed their ideas and opinions on the role and structure of the Division, and discussed measures to improve its functionality. This report includes the summary of the discussions on future organization of the Division within the revised by-laws of the IAU. The reports of Division IX Working Groups and Commissions over the period 2003–2006 can be found in *Reports on Astronomy, Transactions IAU Volume XXVIA* (2007, Ed. O. Engvold).

The Division IX structure reflects a historical evolution: it encompasses two rather small Commissions (25 and 30), and one very large Commission (9). Division IX differs from most other Divisions in the sense that it does not have very well-focused scientific topics of its own. This also explains why the Division rarely introduces proposals for Symposia.

The Board members are all aware of the fact that many of the highly technical areas – like adaptive optics and detectors – have other active forums outside the IAU, and that most of the key developments are carried out by non-IAU members. Division IX, though, can hardly be expected to become a driver for innovations as we see happen in SPIE and other organisations, even if funds would be made available.

Observing techniques, especially standardisation and calibration, are transversal to all Divisions. The Division must take a leading role in the science and calibration work that is not done by SPIE and other organisations, and support this activity by providing a dynamical information service which is accessible to everyone at no cost. In fact, the situation is not unlike the situation in the commercial world: private industries and consortia develop products, but governmental and international organisations regulate standardisation through setting norms, rules and requirements.

Standardisation is not to be left to technicians and engineers alone: standardisation is closely linked to expertise and is driven by those scientists who have the knowledge and the means to find out how to do it. Globalisation, in the sense of all-sky surveys, large-scale data facilities and observations from space, creates a large demand for standardisation, which becomes increasingly complicated as it surpasses the level of individual approaches. But standardisation has long been one of the tasks of our Commissions (especially C25 and C30), and as the IAU acts as a rule-making body in many fields, Division IX should support this role and strengthen its activities in all matters of calibration and standardisation in astronomical techniques.

2. Commission 9

Commission 9 covers a huge spectrum of techniques and assembles people with very diverse interests – its mandate is, in fact, as wide as the mandate of the Division, and one can even say that the two other Commissions deal with techniques that could be a sub-activity of Commission 9. On the other hand, Commission 9 has never been the center of international discussions on instruments. A profound re-structuring of Commission 9 is more than desirable, but is also extremely difficult and should, by all means, be much more than a simple rearrangement of the administrative structure.

As a first step, a shortlist of disciplines to be covered by Working Groups was compiled. Following this, the right people will be found to take charge of the development of these WGs, and proposals will be formulated to create a WG on *Adaptive Optics*, a WG on *Instrumentation for Site Testing*, a WG on *Extremely Large Telescopes*, and a WG on *Small Telescopes* (i.e., 2-meter class). It is expected that some of these Working Groups will evolve to Commission status by the time of the IAU XXVII General Assembly.

In view of the wide re-structuring of Commission 9, the decision was taken to remove the historical redundancy in the mandates of this Commission and its parent Division by dissolving the Commission, and by moving its WG *Sky Surveys* and WG *Detectors* (consisting largely as a link to an external forum) to become WGs of the Division.

3. Creation of a new Commission

The Divisional WG in Optical & Infrared Interferometry was created in 2000. At this moment, the goals of the WG have been met, and the WG has matured to become a new Commission.

The Commission on *Optical/Infrared Interferometry* will coordinate international collaborations on scientific and technical matters relating to long-baseline optical and infrared interferometry. As a Commission within Division IX its focus will be to establish scientific and technical standards that will facilitate the future growth of the field. The Commission will take an active role in promoting the science of interferometry through collaborations with individual Commissions within the IAU, most particularly with the Commissions on *Astrometry* (C8), *Double and Multiple Stars* (C26), *Variable Stars* (C27), and *Theory of Stellar Atmospheres* (C36).

The work of the Commission will take place primarily within the Commission's Working Groups. Although they have not yet been formally proposed, these working groups would likely include a WG on *Interferometry Data Standards*, a WG on *Imaging Algorithms*, a WG on *Calibrator Stars* and a WG on *Future Large Arrays*.

The Commission will also continue the work begun through the Working Group on *Optical/IR Interferometry*, which will include further development of the Optical Interferometry Data Exchange format and its supporting software. The Commission's website will be hosted at the Optical Long Baseline Interferometry News (OLBIN).

4. Scientific and technical meetings

Commissions 9 and 25 organised two scientific meetings: IAU Symposium No. 232 *Scientific Requirements for Extremely Large Telescopes*, and a workshop *The Future Of Photometric, Spectrophotometric and Polarimetric Standardization*. The latter proposal fell below the cut-off line for IAU support, mainly because of the fear that such technical matter would not attract a large audience, at the same time, the meeting overpassed the scope of a Joint Discussion. Both scientific meetings organised from inside Division IX show that there is a strong interest in the technical fields covered by the Division, and that the issue of standardisation and calibration is considered to be important by designers and users of instruments, whatever the location, size and extent of the observing facility. The existing and new Commissions and WGs are expected to enhance their support service to the community through stimulation by enhancing their websites, and through the organisation of technical meetings.

The concept of IAU-sponsored meetings is continuously revised and dynamically adapted to the changing needs of the IAU global community. It is perhaps time to reconsider the requirement on the size of the audience – at least for meetings of a technical nature – so that proposing WGs, Commissions and Divisions can count on IAU support to convene their experts on a *regular* basis. Such technical meetings, properly documented by proceedings in the IAU Publications, will promote and safeguard the science based on observational astronomy. Not to forget the tremendous benefit for students and young astronomers: we all know that education and training in calibrated experiment today falls dramatically short of what is needed to make optimal use of the gigantic tools that will be used by them in a decade from now.

5. Closing remarks

The change in Division structure will necessarily reflect in the composition of the new Division Board. In order to keep its extent manageable, and to allow access to younger colleagues, a new class of Board members called *Advisers* (mainly past presidents of the Division and its Commissions) is created. Those advisers will participate in appropriate discussions but will not drive the Division's business.

Christiaan L. Sterken
president of the Division