

COMMISSION 25

STELLAR PHOTOMETRY AND POLARIMETRY (*STELLAR PHOTOMETRY AND POLARIMETRY*)

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PROCEEDINGS BUSINESS SESSIONS, .. August and .. August 2009

1. Introduction

The Business Meeting for Commission 25 was held on the 6th of August 2009. The meeting was chaired by Dr Eugene Milone, Vice President for the 2006-2009 triennium, and incoming President for the 2009-2011 triennium. Dr Milone presented an apology from the President of the Commission, Dr Peter Martinez, who was unable to attend the meeting.

2. Developments in the 2006-2009 triennium

The Commission had presented reports of developments in photometry and polarimetry in the IAU Highlights. This was briefly reviewed. Two particular highlights that were referred to were two important conferences organised by members of the Commission on (i) the the history of photometry, *Photometry: Past and Present*, organised by Eugene Milone, and (ii) the conference *Astronomical Polarimetry 2008 – Science from Small to Large Telescopes*, organised by Pierre Bastien, which took place from 6 to 11 July 2008 in Quebec.

3. Membership

According to the IAU membership database, prior to the start of the 2009 General Assembly, Commission 25 had 230 members from 40 countries. The Commission's membership represented 2.4% of the total IAU membership of 9658.

During the 2006-2009 triennium considerable effort had been devoted to updating the Commission's membership records. This was done by contacting members individually and requesting them to confirm or update their personal details. Many of the members' details were outdated or incorrect. The updated lists will be sent to the IAU Headquarters in Paris.

It was noted that a number of applicants for IAU Membership had listed Commission 25 as one of their preferred Commissions, should they be admitted to the IAU at the 2009 General Assembly. The names of these applicants would be circulated to the Organising Committee for approval as soon as the lists were received from the IAU Headquarters in Paris.

In 2007, the Commission's website was moved from its previous host site at the Vrije Universiteit Brussel to the South African Astronomical Observatory. The URL of the new Commission 25 website is iau_c25.sao.ac.za. We thank Dr Christiaan Sterken for having established the Commission's website and for having maintained it for a number of years. The Commission plans to change the C25 website to bring it more in line with the "look and feel" of the official IAU website.

One of the functions of the upgraded C25 website could be to serve as an IAU Photometry and Polarimetry Standards Portal. This matter will be taken up by the Organising Committee of C25 in the coming triennium.

4. Calibration of wide-band filters in use on the HST

The meeting discussed a communication received from Ivan King to make the members of Commission 25 aware of a calibration problem that has so far lacked a solution.

“Because of its greater throughput, HST’s F606W filter has been used by many observers when the aim has been to go as faint as possible. In the field of star clusters (especially globulars) F606W poses a particular problem of calibration, because its photometric behavior is so bad. Whereas F555W (whose throughput is rather less) is designed to resemble the Johnson V, F606W differs from F555W in ways that are both non-linear (with a sharp bend that cannot be represented by a quadratic term in color) and strong dependence on metallicity.

The relationship of F606W to normal photometric systems can be studied by empirical comparisons and by synthetic photometry, and this has been done, to the extent possible, in the photometric standard paper by Sirianni et al. (PASP 117, 1049, 2005), and also in a brief note by myself (King & Anderson, MemSAIt 72, 685, 2001).

Unfortunately existing calibration work does not cover the range of metallicity at all well (e.g., nothing at all for the open cluster NGC 6791, with $[Fe/H] +0.4$), nor does it extend to the very bottom of the main sequence, which has been reached with F606W in several clusters (NGC 6397, M4, Omega Cen, 47 Tuc, NGC 6791). In this faintest range of absolute magnitudes no calibration of F606W exists, because no empirical comparisons have been made, nor do spectrophotometric curves exist that could be used in synthetic photometry.”

In subsequent email discussion on the issue A.T. Young remarked that these non-overlapping passbands are not transformable because the basic information needed for transformations isn’t observed. In other words, this system is non-transformable by design.

5. Election of new office bearers for the triennium 2009-2011

The elections for the new officers of Commission 25 took place during May 2009. A total of 221 votes were received from members of the Commission. The results were as follows:

President: Eugene Milone (Canada)

Vice-President: Alistair Walker (Chile - CTIO)

Past President: Peter Martinez (South Africa)

Scientific Organising Committee

Barbara Anthony-Twarog (USA)

Jens Knude (Denmark)

John Menzies (South Africa)

Qian Shengbang (China)

Pierre Bastien (Canada)

Don Kurtz (UK)

Aleksey Mironov (Russian Federation)

6. Closing remarks

As outgoing President of the Commission, I would like to thank the Organising Committee and Members of Commission 25 for all the support, guidance and advice I received during my term of office. In particular, I would like to thank Arlo Landolt and Chris Sterken, who have served the Commission for many, many years. I often consulted them during my term of office and I hope they will still be able to contribute their experience and wisdom to the future leadership of the Commission. Finally, I wish to convey my best wishes to the incoming President, Eugene Milone, the incoming Vice-President, Alistair Walker, and the new SOC. The Commission is in excellent hands for the coming triennium.

Peter Martinez
President of the Commission