

## COMMISSION 26

## BINARY AND MULTIPLE STARS

### *ÉTOILES DOUBLES ET MULTIPLES*

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### **DIVISION IV / COMMISSION 26 WORKING GROUP**

#### **Division IV / Commission 26 / WG Binary and Multiple System Nomenclature**

### **PROCEEDINGS BUSINESS MEETING on 17 August 2006**

#### **1. Introduction**

The Business Meeting of Commission 26 took place on 17 August 2006, during the IAU XXVI General Assembly in Prague. It was chaired by its outgoing president, William Hartkopf, and was attended by the following members and guests: H. Abt, C. Allen, W. van Altena, R. Argyle, G. van Belle, D. Bisikalo, A. Bradley, T. ten Brummelaar, D. Cline, T. Corbin, R. Costero, J. Davis, H. Dickel, J. Docobo, J. Echevarria, F. Fekel, E. Griffin, P. Harmanec, W. Hartkopf, P. Lampens, O. Malkov, B. Mason, H. McAlister, T. Oswalt, D. Pourbaix, A. Poveda, D. Raghavan, W. Sanders, C. Scarfe, W. Tango, A. Tokovinin, S. Urban, R. Wilson, and H. Zinnecker.

#### **2. Membership and elections**

Hartkopf began the meeting with a report on events during the past triennium. He announced the deaths, during that period, of members Geoffery G. Douglass, Wulff D. Heintz, and Richard L. Walker. The meeting observed a few moments of silence in their memory.

The Commission then welcomed the following 26 new members:

Javier A. Ahumada (Argentina),	Yuri Lyubchik (Ukraine),
Charles D. Bailyn (USA),	Vladislava Marsakova (Ukraine),
Zorica D. Cvetković (Serbia),	David A. McDavid (USA),
Robert Dukes, Jr. (USA),	Maciej P. Mikolajewski (Poland),
Vladimir Elkin (UK),	Ignacio Negueruela (Spain),
Lars M. Freyhammer (United Kingdom),	Ralf Neuhäuser (Germany),
Simon P. Goodwin (UK),	Dieter E.A. Nürnberger (Chile),
Todd C. Hillwig (USA),	Victor V. Orlov (Russia),
Liliya Kazantseva (Ukraine),	Monika G. Petr-Gotzens (Germany),
Ludmilla Kisseleva-Eggleton (USA),	Donald Pollacco (UK),
Spyridon Kitsionas (Germany),	Lewis C. Roberts, Jr. (USA),
Wilhelm Kley (Germany),	Allyn J. Smith (USA), and
Jeremy Lim (China Taipei),	Alexander P. Zheleznyak (Ukraine).

This brings the total membership of Commission 26 to 151, from 35 countries.

The president then reported on the recent election, in which just over half the membership voted. For the period 2006-2009, the president will be Christine Allen, and the vice-president

José Docobo. The Organizing Committee will be made up of new members Yuri Balega, Brian Mason, Dimitri Pourbaix, and Colin Scarfe, along with continuing members John Davis, Edouard Oblak, and Terry Oswalt. Four new OC members were added rather than the usual three, due to a tie in the vote. Outgoing OC members Francis Fekel, Patricia Lampens, and Josefina Ling were thanked for their service over the past six years.

Hartkopf gave a short summary of developments at the Commission's website <http://ad.usno.navy.mil/wds/ds1.html>, which contains meeting announcements, bibliographies of double star papers, commission membership lists, and links to catalogs of interest to C26 members. Suggestions for further improvements were invited.

Docobo gave a report on Commission 26 circulars, which saw their 50<sup>th</sup> anniversary during the past triennium and which have been published since 1993 by Docobo and Josefina Ling of the Observatorio Astronómico 'Ramón María Aller'. These circulars, emailed to all C26 members and also available on the Commission's website, include orbits (some 160 during the past 3 years), measurements, notes, bibliographies, obituaries, and miscellaneous announcements and commentaries.

### 3. Past and future meetings

Andrei Tokovinin gave a brief account of the ESO workshop *Multiple Stars across the H-R Diagram*, held 12-15 July 2005 in Garching. Topics discussed during this meeting included

- \* Observing multiple stars (using interferometry, speckle, AO, X-ray, spectroscopy)
- \* Dynamics and evolution of multiple stars
- \* Formation, young systems, statistics
- \* Multiple stars with special components

Proceedings of this meeting are now available on line at

<http://www.eso.org/gen-fac/meetings/ms2005/proc.papers.html>.

Announcements were then made of upcoming meetings, including IAU Symposium No. 240, *Binary Stars as Critical Tools and Tests in Contemporary Astrophysics*, to be held later during the Prague GA, and Symposium No. 248, *A Giant Step: from Milli- to Micro-arcsecond Astrometry*, to be held 15-19 October 2007 in Shanghai.

### 4. Catalogs

Reports on various catalogues and journals of interest to Commission 26 followed:

#### 4.1. USNO CD-ROM 2006.5

Hartkopf described this update to the 2001.0 CD, which includes current versions (as of 30 Jun 2006) of the four USNO double-star catalogs on that CD (*Washington Double Star Catalog*, *6<sup>th</sup> Orbit Catalog*, *4<sup>th</sup> Interferometric Catalog*, and *2<sup>d</sup> Photometric Catalog*), as well as a *Catalog of Linear Elements* and a brief history of double star activities at the USNO. Copies of the USNO CD were made available to all meeting participants.

#### 4.2. Ninth Spectroscopic Orbit Catalog

Pourbaix briefly described the latest version of the catalog (see Pourbaix et al. 2004), which consists of 3,191 orbits of 2,684 systems. He estimates that ~75% of systems with published orbits are now included in the catalog. SB9 may be accessed through (<http://sb9.astro.ulb.ac.be>) either on a star-by-star basis (via various identifiers) or as a tarball containing all orbits and notes. Manpower to work on SB9 is limited, so help in data entry is welcome.

#### 4.3. Multiple Stars Catalog

Tokovinin announced the latest version of the MSC (Tokovinin 1997), which now has WMC designations implemented, and is available at <http://www.ctio.noao.edu/~atokovin/msc/>.

#### 4.4. Catalogue of Orbits and Ephemerides of Visual Double Stars

Docobo described this catalog which is available at <http://www.usc.es/astro>. As of 7 August 2006 the catalog comprised 1,844 orbits of 1,497 binaries, and includes ephemerides and orbit grades.



#### 4.5. *Catalogue of Eclipsing Binaries*

Oleg Malkov described this new catalog, whose goal is to not only catalog all known eclipsing variables, but to develop a procedure for their classification (detached, near-contact, contact; spectral type and luminosity class; description of eclipse depths and durations, etc.). A description of the catalog and classification work has been recently published (see Malkov et al. 2006).

### 5. Observing reports

Robert Argyle followed with a discussion of amateur projects in double-star measurement, including the efforts of the French Astronomical Society, the Webb Society, the new electronic *Journal of Double Star Observations*, the Spanish/South American LIADA group, and Garraf Observatory in Spain. Amateurs are responsible for over 1/3 of the measures added to the WDS database during the past six years, and many of these measures are of quite high quality. Argyle highlighted some of the major amateur observers, their equipment, and examples of their observations. He ended his talk with a plea encouraging observers to work in the long-neglected southern hemisphere.

Reports were given on various observing facilities and programs, including the speckle programs of Calar Alto (Docobo), the USNO (Brian Mason), PISCO (Argyle), and RYTSI/WIYN (William van Altena). Theo ten Brummelaar gave an update on the CHARA Array, which is now operating with six 1-meter telescopes over a 350-m baseline.

The business portion of the meeting then concluded with an outline of plans for the next triennium, by incoming president Allen.

### 6. Science session

Following a break, the science portion of the Commission meeting was comprised of six interesting talks:

- \* Theo ten Brummelaar: *The use of an outlying star as a calibrator for close pairs in interferometry*

- ★ Rafael Costero: *The Double-Lined Spectroscopic Binary  $\theta^1$  Ori E: an Intermediate-Mass, Pre-Main-Sequence System* (R. Costero, A. Poveda, & L. Echevarría)
- ★ Jose Docobo: *Coplanarity in the triple system Gliese 22* (J. A. Docobo, V.S. Tamazian, G. Weigelt, D. Schertl, Y. Y. Balega, M. Andrade, & P. P. Campo)
- ★ Elizabeth Griffin: *The Binary Star Gamma Persei: Bright, but Ill-understood...*
- ★ Patricia Lampens: *Spectral disentangling and combined orbit analysis of the Hyades binary  $\theta^2$  Tau* (P. Lampens, Y. Frémat, P. De Cat, & H. Hensberge)
- ★ Brian Mason: *Double Stars and the Terrestrial Planet Finder Mission*

After a few words of thanks by the outgoing president, the meeting adjourned to the steps of the Prague Congress Centre for a group photo .

William I. Hartkopf  
*president of the Commission*

### References

- Malkov, O., Oblak, E., Avvakumova, E., & Torra, J. 2006, *A&A*, 446, 785  
Pourbaix, D., et al., 2004, *A&A*, 424, 727  
Tokovinin, A. 1997, *A&AS*, 124, 75