

DIVISION V
VARIABLE STARS

Division V provides a joint forum for the study of stellar variability in all its manifestations, whether due to pulsations, surface inhomogeneities, evolutionary changes, or to eclipses and other phenomena specifically related to double or multiple stars.

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BOARD

L. Balona	Representative Commission 27
J. Christensen-Dalsgaard	President Commission 27
M. Jerzykiewicz	Past Division V President
D. Kurtz	Past President Commission 27
J. Sahade	Representative Commission 42
P. Szkody	President Commission 42

PARTICIPATING COMMISSIONS

COMMISSION 27: VARIABLE STARS

COMMISSION 42: CLOSE BINARY STARS

DIVISION V: VARIABLE STARS *(ETOILES VARIABLES)*

PRESIDENT: Mikołaj Jerzykiewicz

BOARD: L. Balona, E. Guinan, Y. Kondo, D. Kurtz, M. Rodonò, J. Sahade

Commission 27: Variable Stars

Commission 42: Close Binary Stars

1. Introduction

Division V (Variable Stars) consists of Commissions 27 (Variable Stars) and Commissions 42 (Close Binary Stars)¹. As of August 2000, Division V has a total of about 750 members. An informal business meeting of the Division was held at the IAU General Assembly in Manchester, UK. The Division V business meeting was held on 16 August, 2000. Several items were discussed and short summaries of these are given here.

2. Division Organization

The Board discussed the constitution and organization of the Division V Board, the election of Board members, and term lengths of Board members. It was decided to continue the current working arrangement for the election of the President and Board members. The Division President is elected by the Board members for a three year term. An unbinding precedent used during the last six years has been the selection of the Division President by the Board from one of the Presidents of C27 and C42. In this arrangement the Division President alternates between the outgoing Presidents of C27 and C42. The Division Board is thus composed by the President of the Division and past Presidents of C27 and C42 (one of whom will be the President of the Board), and the current Presidents of C27 and C42. In the addition to these members, two distinguished members from each of the Commissions also serve on the Board. It was suggested that in the future each of distinguished Board members from C27 and C42 be nominated and selected from the members of their respective Commissions.

Following this arrangement, Edward Guinan (USA) was elected the new President of Division V and will serve from 2000 to 2003. During this triennium the Board members are: Mikołaj Jerzykiewicz (previous Division President), Donald Kurtz (former President of C27), Jørgen Christensen-Dalsgaard (President of C27), Paula Szkody (President of C42), Luis Balona (Distinguished Representative from C27) and Jorge Sahade (Distinguished Representative from C42). Yoji Kondo and Marcello Rodonò retired from the Board after serving during the first six years of the Division. Both Yoji Kondo and Marcello Rodonò are thanked for their outstanding service to the Division.

3. Discussions and Recommendations

Ways to improve cooperation and communication of Commissions 27 and 42 with the Division Board were discussed. To this end it was recommended that the Division Presi-

¹Division V has a homepage at <http://www.iau.org/div5.html> with links to the homepages of Commissions 27 and 42.

dent should serve on the SOC of both Commissions. It is hoped that this would keep the Division President and Board members informed of matters and issues important to both Commissions and the Division. It was also decided that up-to-date e-mail addresses of all C27 and C42 members who have e-mail addresses should be obtained. The current e-mail addresses of C42 members (where available) were compiled previous to the General Assembly and Jørgen Christensen-Dalsgaard, the President of C27, agreed to update the e-mail addresses of C27 members. When these e-mail addresses are available, it will be possible to be in contact electronically with nearly all members of the Division.

4. IAU Colloquia and Symposia

Guinan represented Division V at the IAU Executive Council (EC) meetings during the General Assembly. He filled-in for Mikołaj Jerzykiewicz at the 73rd EC meeting and attended the 74th EC meeting as the incoming Division President. The IAU Symposia and Colloquia approved by the EC and also supported by the Division are: "IAU Symposium 207 on Extragalactic Star Clusters" (Pucón, Chile; March 2001) and the IAU Colloquium "Radial and Non-radial Pulsations as Probes of Stellar Physics" (Leuven, Belgium; July 2001).

The Division members discussed the possibility of developing or soliciting proposals related to variable and close binaries stars for IAU Colloquia or Symposia during the next two years. Several possible topics were discussed for a Division sponsored IAU Symposium that would be held during the next General Assembly in Sydney, Australia in July, 2003. Those interested in developing proposals for an IAU Colloquium or Symposium are encouraged to do so. They should contact the Presidents of C27 and C42 as well as the Division V President so that these efforts can be better coordinated. The deadlines for submitting Colloquium or Symposium proposals for 2002/03 are March 2001/02, respectively. Letters of Intent for Symposia for the next General Assembly are due in March, 2001. It is hoped that proposals for Joint Discussions, Colloquia, and Symposia will be submitted from Division V members.

5. Working Groups (WGs)

Currently the Division supports "The Working Group on Active B Stars". Active B stars and Be stars are both single and binary stars and it is appropriate that C27, C42, and Div. V support this Working Group. WGs are also currently supported separately by the two Commissions. Discussions about establishing other WGs that would be of interest to C27 and C42 members and thus fit into the Division structure. One possible new Working Group discussed is: "Working Group on Magnetic Activity of Cool Stars and the Sun". Many magnetically active stars are cool stars (with spectral types from F to M) that are members of close binaries (RS CVn variables, Algols, W UMa stars and CVs). These stars are active primarily because tidal interactions cause these stars to spin rapidly and thus have strong magnetic dynamos. Typically these stars fall within the purview of C42. Rapid rotation and thus strong magnetic activity also arise from youth for single stars. Thus single cool stars that are young show manifestations of dynamo driven magnetic activity that include chromospheric and coronal emissions and quite often light variations that arise from starspots. Single stars displaying enhanced dynamo driven magnetic activity include T Tauri stars, dKe and dMe flare stars, BY Dra variables, and FK Com stars. A proposal to establish this Working Group is planned for 2001. Other possible Working Groups that have been suggested are "The Solar - Stellar Connection" (Div. II and Div. V) and the "Working Group on Extragalactic Variable and Binary Stars". Anyone interested in developing and organizing one of these suggested WGs or wishing to propose other WGs should contact the President of Division V or the Board members.

6. Other Division Matters

A Division V business session (1.5 hr) will be proposed for the next General Assembly. Also, if there is interest from Division members, Division V could propose or support one or two science sessions that would give Division members opportunities to interact and present informal papers on research results.

Edward F. Guinan
Incoming President of the Division

COMMISSION 27: VARIABLE STARS (ETOILES VARIABLES)

PRESIDENT: Donald Wayne Kurtz

VICE-PRESIDENT: Jørgen Christensen-Dalsgaard

ORGANIZING COMMITTEE: M. Jerzykiewicz, C. Cacciari, P. Harmanec, J. Matthews, P. Cottrell, P. Moskalik, P. Whitelock, D. Sasselov, D. Welch

1. Business meeting

One business meeting of Commission 27 was held at the IAU General Assembly on Friday evening, 11 August. The General Secretary gave Commissions the choice of having business meetings outside of the normal hours of the scientific sessions – either at lunch or in the evening. The SOC of C27 made the choice to meet in the evening. The number of participants was about 20, a low number, but not too different from previous General Assemblies where conflicts with scientific sessions also keep the number low. Few other Commissions met out of normal session hours, so it is difficult to judge which choice is best.

The new President of Commission 27, Jørgen Christensen-Dalsgaard, and the new Vice-President, Conny Aerts, were announced and confirmed. It was pointed out that the selection process for the Vice-President has been confined to the SOC in the past. The new President, Jørgen Christensen-Dalsgaard, has undertaken to create an up-to-date email list of as many C27 members as possible, so that the entire Commission can be kept informed about, and consulted on, future decisions.

The SOC of C27 in the last triennium consisted of D. W. Kurtz (President), Jørgen Christensen-Dalsgaard (Vice-President), Mike Jerzykiewicz (as past-President of C27 and President of Division V), Carla Cacciari, Peter Cottrell, Petr Harmanec, Jaymie Matthews, Pawel Moskalik, Dimitar Sasselov, Doug Welch and Patricia Whitelock. As the latter eight members were all in their first term, and all wish to remain on the SOC, only two new members were added to the SOC: Conny Aerts as the new Vice-President, and S. Seetha, who replaces Mike Jerzykiewicz whose term ended with his presidency of Division V. Mike was thanked for his service to C27; he served six terms from 1982 to 2000 and holds the record for the longest membership of the SOC of C27 since the founding of the Commission. The new SOC for 2000–2003 is, therefore, Jørgen Christensen-Dalsgaard (President), Conny Aerts (Vice-President), D. W. Kurtz (past-President), Ed Guinan (President of Division V), Carla Cacciari, Peter Cottrell, Petr Harmanec, Jaymie Matthews, Pawel Moskalik, Dimitar Sasselov, S. Somasundaram, Doug Welch and Patricia Whitelock.

Some Commissions now have a two-term rule for membership on the SOC. This was briefly discussed, but no ruling for C27 was attempted, given the small number of people at the meeting. This is a decision which may now be discussed with most the membership of the Commission by email in the next triennium. Given that eight of the members of the new SOC will be in their second terms, a rigid two-term rule is probably not desirable.

Twenty-nine IAU members applied for membership in C27 at this general assembly. Their applications were scrutinised by the President, Vice-President and attendees of the business meeting. All were accepted.

2. A proposed resolution about the use of Julian Ephemeris Date

Ulrich Bastiaan, who could not be present, sent a proposal for the consideration of support from C27 about the use of Julian Ephemeris Date in all variable star observations. He discussed the problem of the irregularity of Julian Date in IBVS 4822, and he sent a proposal for a type C resolution (to be adopted by a Commission or Division) which was presented at the business meeting. It is:

Recognising: that the Julian Date (JD) time coordinate used for recording and evaluating variable-star observations is not a truly physical time coordinate, but shows irregularities at the level of 30 parts per billion, and that for some variable stars the period can already be given to 10 statistically significant digits that the irregularities of the JD time coordinate have added up to one minute over the 20th century;

Considering: that the precision of many present-day timing measurements of variable stars is much better than one minute, that the number of stars with periods known to eight or more significant digits is growing rapidly, and that the JD time coordinate may on the long run lead to incorrect astrophysical implications;

C27 Recommends: that the JD scale (based on Universal Time, UT) be replaced by JED (Julian Ephemeris Date, based on Terrestrial Time, TT), that this transition be done following the practical procedure proposed in IBVS 4822, and that, in particular, all light curve elements and O–C diagrams be determined and published in terms of JED.

Don Kurtz supported this resolution in principle as the right thing for all variable star observers to do, but expressed a reluctance to try to force the resolution on observers of long-period variables. Several participants pointed out that there is no “C27 police force” so the resolution cannot be enforced, and Janet Mattei said that the AAVSO would not comply. It was decided that the proposed resolution is correct and all variable star observers should be urged to adopt it, but that the Commission did not wish to pass the resolution formally.

3. Naming Variable Stars

The long-term problem of the naming of variable stars was also discussed. With new large-scale surveys and up-coming satellite missions discovering new variable stars by their hundreds of thousands – soon to be millions – there is a problem in naming them. Many of the survey projects do not have variable stars as their prime objective and do not have the staff to handle organising the data and coordinating with the GCVS for giving each new variable a traditional variable star name. In addition, the GCVS, at present, does not have the staff and resources to handle such data should they be presented. There have been many suggestions over the last few triennia about possible new schemes for naming variable stars. Some favour a coordinate-based scheme, but that has two drawbacks: 1) coordinates precess, and 2) in crowded fields and with high angular resolution satellite missions capable of going to very faint magnitudes, right ascension and declination will need to be specified to two decimal precision, e.g. V134208.22, -270913.17; this is obviously unwieldy and will lead researchers to use short names of their own devising when writing about a particular object.

The lack of a “C27 police force” also means that there is no realistic way to keep the survey teams from going their own way on naming schemes. A plethora of types of variable stars names is thus inevitable. This is already happening: e.g. with the MA-CHO project discovery of many tens of thousands of variable stars, two different naming schemes – neither standard – were used in publications resulting from the project. Some participants at the business meeting were of the opinion that powerful data bases in the future may make naming a non-problem; others think it is a disaster in the making. It was decided to establish a small task force, consisting of Conny Aerts, Janet Mattei and Jørgen Christensen-Dalsgaard, to arrive at a proposal as to how to deal with this problem.

4. Definition of the Solar Radius

Petr Harmanec, who was not present, expressed his concern about the lack of a defined value for the solar radius and how the use of different values can unknowingly propagate into the errors for measurements of masses and radii for other stars. Jørgen Christensen-Dalsgaard will look into this problem.

5. A report on the IBVS by Katalin Olah

The years since the previous General Assembly brought rapid technical development in the publication of IBVS. Virtually all manuscripts are now submitted electronically; during the past three years we received only two typed papers, both of which were later resubmitted electronically as well. The number of published issues of IBVS in 1997, 1998 and 1999 were 128, 114 and 165, respectively. That is around the average of the last decade.

The refereeing system works well, and without major difficulties, although the rejection rate of IBVS is high. We have good relation with the vast majority of the authors, both with professionals and amateurs. They, in most cases, accept the referees' opinions, and seldom ask for a second referee. We help those authors whose technical background is not suitable to prepare manuscripts in the given format, but whose science is good. We also have good contact with some amateur groups to whom we give editorial advice.

At the previous GA in Kyoto we decided to set up a template file for papers that report observations or announce discoveries of variable stars with only a few remarks. This gives basic information about the variables and availability of the data. The template form has proved to be very successful – many good observations are published this way and premature or unnecessarily lengthy discussions are avoided.

During the last triennium the electronic version of IBVS became very important. Papers appear on the IBVS webpage first, shortly after their acceptance. The number of registered users at the time of the previous GA was 336. That grew to 522 by August, 2000. Registered electronic users of IBVS at present are in 56 countries.

The usage of the IBVS website (www.konkoly.hu/IBVS/IBVS.html) started to grow in the middle of 1997 when IBVS joined the ADS services. The hits to our website now are about 50000/month, but this is not a real estimate of usage, since most of these hits are made by the "robots" searching through the Web. A more realistic figure is the monthly 3000–4000 downloads.

The scanned pages of IBVS Nos. 1–4000 are now available on a single CD-ROM. The GNU zipped postscript files are accessible from a HTML-format Table of Contents file.

From IBVS No. 5000 the Scientific Editor László Szabados retires from the editorship. He will be replaced by Dr. Johanna Jurcsik, Konkoly Observatory. Also, the Editorial Board is changed after the GA, as it is every three years. Herewith we would like to express our thanks to László Szabados for persistent, excellent work for the IBVS. The Editors in Budapest appreciate very much the service of the outgoing members of the Editorial Board: Dr. P. Harmanec (Chair), Kam-Ching Leung and Edwin Budding.

6. From the incoming President

The last part of the business meeting was taken over, as President, by Jørgen Christensen-Dalsgaard. He began by expressing, on behalf of the whole Commission, great appreciation for the work that Don Kurtz had carried out during the preceding triennium, and before, to further the work of the Commission. He would do his best to follow up on this work; being predominantly a theoretician he would rely heavily on help from the Vice-President, Conny Aerts, concerning observational matters, and he looked forward to a fruitful and enjoyable collaboration with her.

The issue of the IAU data archive on variable stars was raised. There was apparently some doubt about the location of some of the data, although part of the archive was already

available from the Centre de Données Stellaires (Strasbourg). It was the impression that a complete copy of the archive is located in the library of the Royal Astronomical Society, and Jørgen Christensen-Dalsgaard was assigned the task to try to verify this and ensure that the data were transferred to the CDS.

It was decided that no further Commission business meeting was required during the General Assembly, and the meeting was closed in time so that the participants could attend the evening's concert.

D. W. Kurtz
President of the Commission

COMMISSION 42: CLOSE BINARIES STARS

(*ETOILES DOUBLES SERREES*)

PRESIDENT: Edward F. Guinan

VICE-PRESIDENT: Paula Szkody

ORGANIZING COMMITTEE: M. Rodonò, L. Bianchi, J.V. Clausen, H. Drechsel, G. Hill, S.J. Kenyon, V. Niemela, Y. Osaki, C.L. Sterken, R.E. Taam, O. Vilhu, J.C. Wheeler, J.H. Wood

1. Introduction

Commission 42¹ (Close Binaries) held one business and three science sessions during the XXIVth General Assembly in Manchester. The business meeting was held on 10 August (Thursday). Two consecutive science sessions (each lasting 1.5 hr) were held on 12 August (Saturday) and one science session took place on 14 August (Monday). In this report summaries of the transactions of the business meeting and science sessions are given. The science sessions were arranged so that Commission members attending the IAU General Assembly could have opportunity to interact with other members and to give informal presentations about their research. Because of space limitations only the titles and authors of the papers presented at the informal science sessions are given. Those interested in learning more about the material presented should contact the authors by e-mail. The Commission appreciates the help of the General Secretary, Johannes Andersen, for helping to arrange times and meeting rooms for the C42 science sessions.

2. Commission Structure and Composition

President, Vice-President and the Organizing Committee:

At the business meeting the results of the elections of the President, Vice-President and new members of the Commission's Organizing Committee (OC) were announced and the names confirmed. Paula Szkody (USA) is the President and Alvaro Giménez (Spain) is the Vice-President of the Commission for the 2000-2003 triennium. The OC for the same period is: Edward Guinan (USA, former President), Luciana Bianchi (USA), Horst Drechsel (Germany, Editor in Chief of the Bibliography of Close Binaries), Douglas Gies (USA), Young-Woon Kang (Korea), Jeffrey Linsky (USA), Mario Livio (USA), Nidia Morrell (Argentina), Virpi Niemela (Argentina), Yoji Osaki (Japan), Slavek Rucinski (Canada), Christopher Sterken (Belgium), and Janet Wood (UK). Twenty six new members were admitted to the Commission. This brings the total number of Commission 42 members to about 380.

Deceased Members:

During the last triennium the following distinguished members of our Commission and friends passed away. The deceased C42 members include: William Blitzstein (USA), Salvatore Cristaldi (Italy), Kjeld Gyldenkerne (Denmark), Robert Hjellming (USA), Carlos Jaschek (Spain), Daniel Popper (USA), Jan Van Paradijs (Netherlands), Frank Bradshaw

¹Commission 42 has a homepage at <http://www.konkoly.hu/IAUC42/>.

Wood (USA). The Commission appreciates the friendships and many contributions to close binary stars made by these colleagues. Also, Alan Batten gave a remembrance of Zdeňek Kopal, a former president of C42 and Professor of Astronomy at the location of the General Assembly, the University of Manchester. Alan Batten briefly discussed Professor Kopal's career and contributions to close binaries.

3. Transactions of the Commission

The Commission 42 Triennial Report was distributed to the attending members. The report covers the interval from 1997-2000 and is published in *Reports on Astronomy*, Vol. XXIV, (J. Andersen, Editor; ASP), p 259-276. Those wishing an electronic copy of the report should send requests to edward.guinan@villanova.edu or the file can be downloaded from the C42 website. This report contains a number of interesting and important reviews of advances made during the last three years in close binary stars.

Report on the Information Bulletin of Variable Stars:

Katalin Oláh, Co-Editor of the Information Bulletin of Variable Stars (IBVS), reviewed the activities of the IBVS during the last three years. Her report is given in the Report of Commission 27 (Variable Stars), found elsewhere in this volume. The Commission very much appreciates the fine work done by the editors of the IBVS.

Report on the Bibliography of Close Binaries:

Horst Drechsel, the Chief editor of the Bibliography of Close Binaries (BCB) could not attend the General Assembly but kindly provided the President with a summary that deals with important issues and problems concerning the BCB. A summary of the report was presented to the members by Edward Guinan. The primary points are given herewith. First it should be mentioned that up to December 1997 (Issue No. 65), this publication was known as "Bibliography and Program Notes on Close Binaries" (BPN). The current name of the BCB started with issue No. 66 in June 1998. On average, about 49 journals (plus proceedings, books, etc.) are searched and about 520 entries are included in each issue. Currently the BCB is divided into 4 sections: "Individual Stars", "General", "Collections of Data" and "Proceedings". The entries under "Individual Stars" and "Collections of Data" are listed according to the nature of the contents. Dr. Drechsel reports that there are about 250 people receiving hardcopies of the BCB and an unknown number of electronic downloads (HTML, PS and DVI files, from:

<http://www.sternwarte.uni-erlangen.de/ftp/bcb> and
[ftp://www.sternwarte.uni-erlangen.de/pub/bcb](http://www.sternwarte.uni-erlangen.de/pub/bcb).

Also, it is reported that P. Niarchos (Greece) replaces M. Vetesnik (Czech Republic) on the editorial board of the BCB. Dr. Drechsel gave a year notice that he wishes to retire from being the Chief Editor of the BCB. Dr. Drechsel has served as Chief Editor of the BCB for over five years (Issues #60-70) and has done an outstanding job in this capacity. He has suggested some editorial board members as possible replacements and these are being considered. It is hoped that a new Chief Editor will be named by late 2000.

The copying and mailing costs of paper copies of the BCB are nearly US \$1000 per year (two issues). To reduce (or eliminate) the costs of copying and distributing the paper copies, it has been recommended that the BCB become available only electronically with HTML and PS files. The subscribers would be notified by e-mail when each issue is complete. These files could then be downloaded from C42 web server or a server maintained at the institution of the Chief Editor. Furthermore, it was recommended that paper copies of BCB issues would only be provided under very special circumstances to those who demonstrate the need for paper copies.

E-mail Addresses of Commission Members:

Over the last triennium an effort was made to compile an up-to-date list of e-mail addresses of C42 members. Prior to this effort, the e-mail addresses of many Commission members were not available or were obsolete and not usable. This effort was made primarily to improve communications with Commission 42 members so that they can be better informed and consulted on the operations of the Commission. Also, this will permit C42 members to be contacted and consulted on important matters that relate to close binary systems. These include the announcements of meetings, the publications of the BCB and IBVS, the operation and formation of Working Groups, as well as important developments in the study of close binary stars. The e-mail addresses of the Commission members (whose e-mails are available) will be placed on the IAU C42 Web site. If you are a Commission member and your e-mail is not included or is incorrect, please contact the C42 President so that the e-mail address list can be amended.

4. Support of Working Groups from the Commission

Currently there are over 20 Working Groups (WGs) established within the IAU framework. WGs typically focus on more narrow topics or on new or emerging fields of research not specifically covered by the Commissions. One of the many advantages of WGs is that during the General Assembly, WGs can request time and meeting rooms for science and business sessions. C42 has supported one WG, (with C27 and Division V) – “The WG on Active B Stars”. However, during the General Assembly a proposal for another WG, “Accretion Physics in Interacting Binaries” was submitted to the Executive Committee. Some additional possible WGs were suggested and discussed. The following WGs are being considered for support: “Working Group on Stellar Magnetism and Activity”, “Working Group on Extragalactic Binaries” and “Working Group on Binary Star Formation and Evolution”, “Working Group on Fundamental Physical Quantities from Eclipsing Binary Systems”, and “Working Group on Computer Methods for Analyzing Light and Radial Velocity Curves of Eclipsing Binaries”. Those interested in joining or developing one of these WGs or proposing for a different WG should contact the incoming C42 President, Paula Szkody (szkody@astro.washington.edu) or the incoming Division V President, Edward Guinan (edward.guinan@villanova.edu).

5. Designations of Stellar Companions

A Multi-Commission Meeting (MCM) on “Designations of Stellar Components” was held on 11 August 2000 during the XXIVth General Assembly. Commission 42 was one of the supporting Commissions of the MCM. The meeting was organized by Helene R. Dickel who is the President of the “IAU Working Group on Designations” to resolve the problem of designating components of binary and multiple star systems. The development of new and more sensitive techniques for the detection and study of stellar companions is now blurring the traditional distinctions among astrometric, photometric, and spectroscopic binary and multiple star systems. The designation problem has become even more complicated since the discovery of planets and brown dwarfs around an increasing number of single and binary stars.

The primary aim of the meeting was to develop a simple, unambiguous, flexible, and computer friendly designation scheme for stellar companions that include planets and brown dwarfs. As reported by Colin Scarfe to Commission 42, the MCM resulted in the drafting of a Type C Resolution. This resolution recommends a uniform designation scheme, based on the expansion of the new Washington Double Star (WDS) system developed by the U.S. Naval Observatory, be developed during the next three years to include all types of components (stars, brown dwarfs, and planets). Discussions and reviews over the next 2 1/2 years will take place with the goal of formulating a resolution that will be acceptable to all interested parties. Those interested can find more information and the text of the adopted Type C Resolution at the following web site:

<http://ad.usno.navy.mil/ad/wds/newwds.html>

Those interested in getting involved in this important process are invited to participate in the ongoing discussions of the best way to solve the designation problem. It is hoped that this matter can be resolved in time so that a resolution can be submitted for consideration at the General Assembly in Sydney, Australia in 2003.

6. Commission 42 Science Sessions: Recent Developments in Close Binary Systems

The program of the Scientific Sessions of Commission 42 in Manchester "New Developments in Close Binary Systems" is given below. The sessions took place on 12 and 14 of August, 2000. The Commission appreciates the work done by the participants in making these Science Sessions both interesting and informative.

On 12 August (Saturday) the following papers were presented at the Blackett Theatre (Schuster Labs). These sessions were held from 14:00 to 17:30 (Chair: Edward Guinan):

- Andrea Dupree: "Coronal Structures in Close Binaries"
- Ronald Samec: "Near Contact and Shallow Contact Binaries: Interesting Period Studies and Stream Impact Phenomena"
- Janet Mattei: "AAVSO, EUVE, and RXTE TOO Helps Reveal Stages of Optical, EUV, and X-ray Emission observed in SS Cygni Outburst"
- Paula Szkody: "The Impact of HST on Cataclysmic Variables: Finding the WD and Distances"
- Jan-Erik Solheim: "How to Do Time Series Photometry under the Flaming Aurora?"
- Kresimir Pavlovski: "Fourier Disentangled Spectra of Close Binaries: A Way to Obtain Accurate Ages, Distances and Abundances"
- Alvaro Giménez: "Observing Light Curves of Eclipsing Binaries from Space"
- William Borucki: "Kepler: A Space Mission to Do 20 Micro-Magnitude Differential Relative Photometry of over 100 000 Stars"
- Yoji Kondo: "Future Prospects for Research in Close Binaries"
- Jorge Sahade: "Narrow Discrete Absorptions in AO Cas"
- Gerri Peters: "Circumstellar Material in Algol Systems with Early B-type Primaries and Short Periods"

The following papers were presented in the Blackett Theatre (Schuster Labs) on 14 August (Monday) from 11:00 to 12:30 (Chair: Paula Szkody):

- Edward Guinan: "Introductory Comments and Organization"
- Frans Van't Veer: "W UMa Contact Binaries: Almost One Century of Speculations. How to Continue?"
- Virpi Niemela: "Massive Binaries in the Magellanic Clouds"
- Nidia Morrell: "Determination of the Apsidal Motion Period of the Massive Binary HD 93205"
- Edward Guinan: "Determining Distances using Eclipsing Binaries: Application to the Magellanic Clouds"
- Ignasi Ribas: "Accurate Masses, Radii and Distances of Eclipsing Binaries in M31"
- Taghi Mirtorabi: "TiO Band and Near-IR Photometry of Active Binaries"

Acknowledgments. I wish to thank the members of the Commission and the members of the Organizing Committee for their support, help and advise during the last three years. I wish to congratulate the incoming President Paula Szkody, and Vice President Alvaro Giménez and the new members of the C42 Organizing Committee. Also I want to welcome the new C42 members and hope that they become actively involved in the operations and work of the Commission. During the last triennium I am also thankful to the Monique Orine and Jodi Greenberg (IAU Secretariat, Paris, France) for their assistance and advice. I also thank Ignasi Ribas for helping to obtain or update the e-mail addresses of Commission members and for his help in organizing the Science Sessions during the General Assembly.

Edward F. Guinan
President of the Commission