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BINARY AND MULTIPLE STARS
AS TRACERS
OF STELLAR EVOLUTION

Edited by Zdeněk Kopal and Jürgen Rahe

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BINARY AND MULTIPLE STARS AS TRACERS OF STELLAR EVOLUTION

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INTERNATIONAL ASTRONOMICAL UNION, HELD IN BAMBERG, F.R.G.,
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Edited by

ZDENĚK KOPAL

Department of Astronomy, The University, Manchester, U.K.

and

JÜRGEN RAHE

*Dr.-Remeis-Sternwarte Bamberg,
Astronomisches Institut der Universität Erlangen-Nürnberg, F.R.G.*



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BINARY AND MULTIPLE STARS AS TRACERS OF STELLAR EVOLUTION

ASTROPHYSICS AND SPACE SCIENCE LIBRARY

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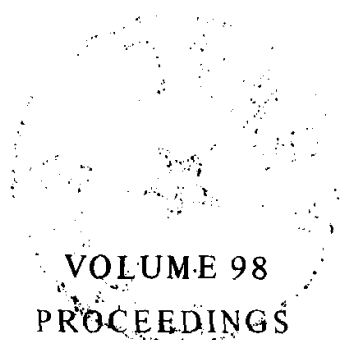
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All's well that ends well ...



Group photograph of participants of the Colloquium.

List of Participants

Abhyankar, K.D.	Osmania University, Hyderabad, India
Adam, J.	Universität Heidelberg, Heidelberg, F.R.G.
Andersen, J.	Copenhagen University, Tølløse, Denmark
Antonello, E.	Osservatorio Astronomico di Brera, Merate, Italy
Awadalla, N.	University of Manchester, U.K.; Helwan Obs., Egypt
Bakos, G.A.	University of Waterloo, Waterloo, Canada
Barbaro, G.	Osservatorio Astronomico, Padova, Italy
Beuermann, K.P.	Technical University, Berlin, F.R.G.
Bode, M.F.	University of Keele, Staffordshire, U.K.
Brancewicz, H.	University of Mining and Metallurgy, Krakow, Poland
Brogliä, P.	Osservatorio Astronomico, Merate, Italy
Bruch, A.	University Münster, Münster, F.R.G.
Budding, E.	University of Manchester, Manchester, U.K.
Bues, I.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Chapman, R.D.	NASA-Goddard Space Flight Center, Greenbelt, U.S.A.
Chochol, D.	Astron. Institute, Slovak Acad. of Sc., Tatranska Lomnica, Czechoslovakia
Clausen, J.	Copenhagen University Observatory, Tølløse, Denmark
Collins II, G.W.	Ohio State University, Columbus, U.S.A.
Costa Boronat, V. da	Instituto de Astrofisica de Andalucia, Granada, Spain
Dallaporta, N.	Instituto Astronomia University, Padova, Italy
De Cuyper, J.P.	Vrije Universiteit Brussel, Brussels, Belgium
De Grève, J.P.	Vrije Universiteit Brussel, Brussels, Belgium

De Kort, J.J.	Nijmegen, The Netherlands
De Landtsheer, A.C.	Sterrewacht Sonnenborgh, Utrecht, The Netherlands
Delgado Sanchez, A.J.	Instituto de Astrofisica de Andalucia, Granada, Spain
Dommanget, J.	Observatoire Royal, Brussels, Belgium
Drechsel, H.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Franz, O.G.	Lowell Observatory, Flagstaff, U.S.A.
Giménez, A.	Instituto de Astrofisica de Andalucia, Granada, Spain
Giuricin, G.	Osservatorio Astronomico, Trieste, Italy
Glass, I.S.	European Southern Observatory, Garching, F.R.G.; South African Astron. Obs., South Africa
Grygar, J.	Institute of Physics, Cz. Acad. of Sciences, Rez, Czechoslovakia
Guarnieri, A.	Istituto di Astronomia, Universita di Bologna, Bologna, Italy
Halbwachs, J.L.	Observatoire de Strasbourg, Strasbourg, France
Hensler, G.	Universitätssternwarte, Göttingen, F.R.G.
Hilditch, R.W.	University Observatory, St. Andrews, Scotland, U.K.
Hopp, U.	Technical University, Berlin, F.R.G.
Isserstedt, J.	Universität Würzburg, Würzburg, F.R.G.
Jeffery, C.S.	University Observatory, St. Andrews, Scotland, U.K.
Jørgensen, H.E.	University Observatory, Tølløse, Denmark
Kippenhahn, R.	MPI für Astrophysik, Garching, F.R.G.
Knigge, R.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Kohoutek, L.	Hamburger Sternwarte, Hamburg, F.R.G.
Kondo, Y.	NASA-Goddard Space Flight Center, Greenbelt, U.S.A.

Kopal, Z.	University of Manchester, U.K.
Kreiner, J.M.	Silesian University, Katowice, Poland
Kruszewski, A.	ESO, Garching, F.R.G.; Warsaw Univ.Obs., Poland
Krzeminski, W.	Copernicus Astronomical Center, Warsaw, Poland
Kumsiashvili, M.I.	Astrophysical Observatory, Abastumany, U.S.S.R.
Kurpinska, M.	Uniwersytet Jagiellonski, Krakow, Poland
LaDous, C.	Universitäts-Sternwarte, München, F.R.G.
Law, W.Y.	MPI für Astrophysik, Garching, F.R.G.
Lukas, R.	W. Foerster-Sternwarte, Berlin, F.R.G.
Martin, R.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Mauder, H.	Universität Tübingen, Tübingen, F.R.G.
McLean, B.	University Observatory, St.Andrews, Scotland, U.K.
Meyer-Hofmeister, E.	MPI für Astrophysik, Garching, F.R.G.
Milano, L.	Capodimonte Astronomical Observatory, Napoli, Italy
Mirzoyan, L.V.	Astrophysical Observatory, Byurakan, U.S.S.R.
Nordström, B.	Copenhagen University Observatory, Tølløse, Denmark
Otmianowska, K.	Uniwersytet Jagiellonski, Krakow, Poland
Packet, W.	Vrije Universiteit Brussel, Brussels, Belgium
Pavlovski, K.	Hvar Observatory, Zagreb, Yugoslavia
Plavec, M.	University of California, Los Angeles, U.S.A.
Rahe, J.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Rahunen, T.	University of Helsinki, Helsinki, Finland
Ritter, H.	MPI für Astrophysik, Garching, F.R.G.
Ruffini, R.	Istituto di Fisica G.Marconi, Roma, Italy

Rucinski, R.	MPI für Astrophysik, Garching, F.R.G.; Warsaw Univ. Obs., Poland
Rupprecht, G.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Russo, G.	Osservatorio Astronomico Capodimonte, Napoli, Italy
Sadik, A.R.	Astron. and Space Research Center, Baghdad, Iraq
Salukvadze, G.N.	Astrophysical Observatory, Abastumani, U.S.S.R.
Schiener, B.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Schnur, G.	European Southern Observatory, Santiago, Chile
Seggewiß, W.	Observatorium Hoher List, Daun, F.R.G.
Shustov, B.M.	Astronomical Council, Ac. of Sciences, Moscow, U.S.S.R.
Sienkiewicz, R.	Copernicus Astronomical Center, Warszawa, Poland
Smith, R.C.	University of Sussex, Falmer Brighton, U.K.
Sreenivasan, S.R.	University of Calgary, Calgary, Canada
Staniucha, M.	Warsaw University Observatory, Warszawa, Poland
Strohmeier, W.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Szeidl, B.	Konkoly Observatory, Budapest, Hungary
Tremko, J.	Skalná Pleso Observatory, Tatranská Lomnica, Czechoslovakia
Vanbeveren, D.	Vrije Universiteit Brussel, Brussels, Belgium
Van de Kamp, P.	Sproul Observatory, Swarthmore, PA, U.S.A.
Van Hamme, W.	Sterrenkundig Obs., R.U.G., Gent, Belgium
Van't Veer, F.	Institut d'Astrophysique, Paris, France
Vanýsek, V.	Charles University, Praha, Czechoslovakia
Vogt, N.	European Southern Observatory, Santiago, Chile

Walter, K.	Universität Tübingen, Tübingen, F.R.G.
Wargau, W.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Weidemann, V.	Universität Kiel, Kiel, F.R.G.
West, R.	European Southern Observatory, Garching, F.R.G.
Whitelock, P.A.	South African Astronomical Observatory, South Africa
Wilson, R.E.	Dept. of Astronomy, University of Florida, Gainesville, U.S.A.
Wood, F.B.	University of Florida, Gainesville, U.S.A.
Worg, R.	Universität Erlangen, Remeis-Sternwarte, Bamberg, F.R.G.
Wu, Ch.-Ch.	Computer Sciences Corporation, Silver Spring, U.S.A.
Yamasaki, A.	University of Tokyo, Tokyo, Japan
Zhou, Y.	MPI für Astrophysik, Garching, F.R.G.; Dept. of Astrophysics, Hefei, China
Zinnecker, H.	MPI für Extraterrestr. Physik, Garching, F.R.G.

WELCOME

R. Grafberger
Mayor of Bamberg

Sehr geehrter Herr Professor Dr. Kopal !
Sehr geehrter Herr Professor Dr. Rahe !
Meine sehr verehrten Damen und Herren der Internationalen Astronomischen Union !

Als "Nabel der Welt" begriff sich Bamberg als es gegründet wurde. Es war die Zeit des Ptolemäischen Weltbildes als die Erde noch Mittelpunkt des Universums war. Der Sternenmantel, den Kaiser Heinrich zum Osterfest 1020 geschenkt bekam, zeugt heute noch als größte Kostbarkeit im Diözesan-Museum von diesem Weltbild. Abt Gerhard von Seeon schrieb damals über Bamberg "Haec caput est orbis, hic gloria conditur omnis" (Hier ist die Hauptstadt der Welt, die Wiege jeglichen Ruhmes). Aus diesem Denken der damaligen Welt ist diese Stadt weitgehend geprägt.

Heute ist Bamberg Mittelpunkt einer ganz anderen astronomischen Welt. Es ist mir eine Ehre, Sie, die Teilnehmer des 69. Colloquiums der Internationalen Astronomischen Union hier in Bamberg in Vertretung des Oberbürgermeisters begrüßen zu dürfen. Die Bürger und der Rat der Stadt Bamberg heißen Sie, die Gäste aus aller Welt, herzlich willkommen. Wir sind stolz darauf, daß Ihre Organisation dieses Colloquium nach Bamberg vergeben hat. Daß dies so ist, verdanken wir den guten Verbindungen von Professor Dr. Rahe. Die Stadt Bamberg bedankt sich bei Ihnen recht herzlich und spricht Ihnen und Ihrem Institut ihre Anerkennung aus.

Heute geht es in der Astronomie um Doppelsterne, Mehrfachsysteme, Quasare, Pulsare, Neutronensterne, Schwarze Löcher und andere wunderbare Gebilde. Heute wird auf der Bamberger Sternwarte nicht mehr beobachtet, sondern an dem modernen astronomischen Weltbild mitgearbeitet. Zwischen dem alten Weltbild des Sternenmantels und dem faszinierenden modernen astronomischen Weltbild standen Kopernikus, Keppler und Galilei. An diesem Umbruch wirkte auch der Bamberger Mathematiker, Astronom und Computist Christoph Clavius Bambergensis mit. Er war maßgeblich an der Kalenderreform von Pabst Gregor beteiligt. Diese Männer begründeten die moderne Naturwissenschaft,

in dem sie die Frage nach dem "Warum" durch die Frage "Wie ist" ersetzen.

Eine moderne theologische Genesis könnte wie folgt beginnen:
"Am Anfang schuf Gott die Einheit. Diese Einheit war von unendlicher Dichte und alles, was war und jemals sein wird steckte komprimiert in ihr. Und Finsternis lag über dem Universum. Und Gott sprach:
"Es geschehe ein Urknall". Und es gab einen Urknall. Und so entstanden Materie und Strahlung. Und Gott besah sich den Urknall, der ein wahrhaft höllisches Ausmaß hatte..."

Eine solche theologische Genesis ist nicht ihre Aufgabe und doch sind Ihre Forschungen Hilfen für die Menschen, sich in dieser faszinierenden Welt zurechtzufinden.

Unsere Stadt gibt den Rahmen für solche wissenschaftlichen Gespräche ab. Es ist eine Stadt, die von einem anderen Weltbild geprägt ist und doch von den Menschen unserer Zeit liebend angenommen wird. Es ist eine Stadt, in der Sie Menschen finden, für die Gott, Bamberg und der Mensch selbst immer noch die Mitte - der Nabel der Welt - sind.

In dieser Stadt wünschen wir Ihrer wissenschaftlichen Tagung einen erfolgreichen Verlauf. Ihnen, den Teilnehmern, wünschen wir menschliche Begegnung untereinander und erlebnisreiche Tage in Bamberg.

WELCOME

Prof. Dr. Annegret Bollée
Vice-President, University of Bamberg

Ladies and gentlemen, dear colleagues -

It is an honor for the University of Bamberg and a great pleasure for me to welcome you here today on behalf of President Oppolzer who is at present absent from Bamberg. He has asked me to extend his greetings to you and his best wishes for a successful Colloquium and a pleasant stay in Bamberg.

The International Astronomical Union has chosen the town of Bamberg for its 69th Colloquium, and among the many old houses of this town one that stands out as having a particularly colorful history: one so full of memorable events that a little book could be written on the subject; indeed one has been written by my colleague and former Rector of the University, Elisabeth Roth. I refer you to her book for more detailed information.

The present building - in fact, two houses united into one - dates back to the Middle Ages. Before becoming Hochzeitshaus - I shall explain this name in due course - it was the Gasthaus zum Wilden Mann, the Wild-Man-Inn, the wild man being a kind of hairy giant, a figure which is often found in medieval and Renaissance coats-of-arms and also as a house sign. The inn Zum Wilden Mann was first mentioned in a document of 1484, and in the 16th Century it must have been an inn of great renown, otherwise the Prince Bishop would not have chosen this accommodation for his famous guest Albrecht Dürer in 1520. On the photo in your programme you can see the memorial tablet in memory of Dürer's various sojourns in Bamberg in that year.

In the times of the Renaissance, times of sumptuous festivities and opulent meals, German towns used to provide a public building for their citizens where they could celebrate private events, especially weddings. In 1605, therefore, the Mayor and Council of Bamberg decided to buy the Wild-Man-Inn and to transform it into a Hochzeitshaus for the townspeople of Bamberg. Hochzeit, meaning 'wedding' in modern German, did not have this restricted meaning in Old and Middle High

German. It meant 'festivity' or 'feast' in general. However, the Hochzeitshaus zum Wilden Mann was in fact mainly used for big weddings. This destination is documented by the painting of the Wedding at Cana. This painting by an unknown artist, dating from the early 17th century, was rediscovered in the course of the renovation of the building in 1973/74 and thoroughly restored in 1975.

The Hochzeitshaus was among the very few houses of Bamberg to be very badly damaged in the war, in 1945. Rebuilt in 1950-52, it was restored to its present shape in 1973-75. The Hochzeitshaus is part of our programme "Universität in der Altstadt", a programme which aims at integrating a new university into an old town by restoring old buildings and filling them with new life. I said a new university because it was in fact founded in 1972. But rather than a new foundation, it is a re-foundation; it takes up a tradition dating back to the 17th century. In 1648 the Prince Bishop Melchior Otto Voit von Salzburg raised a former seminary for priests to the rank of an Academy. After his patron saint Otto he named it Academia Ottoniana. At the beginning there were only two faculties, Theology and Philosophy, all the professors and the rector belonging to the order of the Jesuits. Prince Bishops succeeding Melchior Otto gradually enlarged the Academy in the course of the 18th century by adding faculties of Law and Medicine. In 1773 the academic constitution was changed in accordance with those of other German universities, and the name was changed to University of Bamberg. In the early 19th century, however, this promising development was interrupted. In 1802 the reign of the Prince Bishops of Bamberg came to an end and Bamberg became part of the state of Bavaria. The university was dissolved in 1803, but theological and philosophical studies have survived up to the present day. I shall not bore you with all the details of a rather complicated history. Let me only mention that the institutions succeeding the old university were transformed into a Philosophisch-Theologische Hochschule in 1923. Together with a Teacher Training College founded in 1958, the Philosophisch-Theologische Hochschule became one of the corner-stones of the refounded University in 1972. The Universitas Bambergensis rediviva at first offered courses only for future priests, teachers and social workers, but in 1977 more faculties were added, and we hope that the period of expansion has not yet come to an end. We have now 2.800 students - we expect to have over 3.000 in the winter term -, a staff of 520 and almost 90 professors. There are 6 faculties: Theology, Philosophy-Psychology-Education, Languages and Literature, History and Geography, Social Sciences and Economics, and a department for the training of social workers.

Ladies and gentlemen, may I wish you a successful meeting, and I hope that you will enjoy your stay in Bamberg. We have just said goodbye to the students who have attended the International Summer Course of German Language and Literature. They seemed to like Bamberg very much, so I hope that you will like it as well.

WELCOME

Prof. Dr. Nikolaus Fiebiger
President, University Erlangen-Nürnberg

Mr. Mayor, Dear Colleague, Mr. Chairman, Ladies and Gentlemen -

On behalf of the Friedrich-Alexander-Universität Erlangen-Nürnberg, I welcome you here in Bamberg. Very special greetings go to our guests from abroad.

The fact that presidents of two universities welcome you, illustrates the unusual situation in Bamberg. The Remeis-Observatory is part of the Friedrich-Alexander-Universität and belonged to this University already before the new University in Bamberg was founded; and this has remained so until today.

The University Erlangen-Nürnberg is a classical German university with a Faculty of Theology, Law, Medicine, Humanities, Natural Science, and Economy. Fifteen years ago - and this is something new in Germany - a Technical Faculty was incorporated, which now has more than 3.000 students. This has been an effort to fill a gap that existed in a few areas between universities and technical colleges in the courses offered. We can now say that this experiment has been successful.

We know, of course, that the Remeis-Observatory with its experimental facilities, is today of no great significance in astronomical research. Astronomy needs international cooperation and a great amount of sophisticated, and consequently, expensive instruments which cannot be provided by a single university. But we can and want to be a place where astrophysics is practiced and where young people can get an education in this subject. Although the appropriate experimental observations are carried out at the large national and international centers, the preparation and evaluation of these experiments still have to take place at the university.

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