

Keynote Lecture : Classical Novae: Stellar Apoplexy, Convalescence and Recovery*Professor Brian Warner*

Brian Warner was born in England on 25 May 1939. He was educated at East Grinstead County Grammar School from 1951-1958 and then University College London, B.Sc. (1st Class Hons., in Astronomy) 1958-1961, University College London, Ph.D. (Astronomical Spectroscopy) 1961-1964, University of Oxford M.A. (By decree) 1967, and was awarded a DSc by University of London 1972 and University of Oxford 1986.

He has held positions of Research Assistant, University of London Observatory (seconded to Radcliffe Observatory, Pretoria) 1964-1965, Radcliffe-Henry Skynner Senior Research Fellow, Balliol College, Oxford 1965-1967, Assistant Professor, University of Texas at Austin 1967-1970, Associate Professor, University of Texas at Austin 1970-1972, Professor of Astronomy and Head of Department of Astronomy, University of Cape Town 1972-1999, Distinguished Professor of Natural Philosophy, and Head of Department of Astronomy, University of Cape Town 1999 – present, as well as several stints as visiting professor at various institutions.

His honours, again many, include Alfred P. Sloan Fellow 1970-1972, Fellow, University of Cape Town 1978- present, Boyden Premium, The Franklin Institute of Philadelphia 1980, McIntyre Award of the Astronomical Society of Southern Africa 1983, John F.W. Herschel Medal, Royal Society of South Africa 1988, South Africa Medal, South African Association for the Advancement of Science 1989, Ernest Oppenheimer Memorial Trust: University Travelling Fellowship 1990, Gill Medal, Astronomical Society of Southern Africa 1992, Associate (i.e. Honorary Fellow) of the Royal Astronomical Society 1994, Royal Astronomical Society of New Zealand. Honorary Member 1995 and the University of Cape Town Book Award 1997.

Prof Warner serves on a number of editorial and advisory boards including Astrophysics and Space Science since 1978, Astronomical Society of Southern Africa since 1984, South African Library 1990, University of Cape Town Press 1992, Journal of Astronomical History and Heritage 1998, Archaeoastronomy: The Journal of Astronomy and Culture 1998, Member of Advisory Board: South African Astronomical Observatory 1984, 1987-1988, Foundation for Research Development: Member of Collegium 1990-1992, South African National Committee for Astronomy: Chairman 1992-1998, Member of Advisory Committee, Space Research Unit, University of Potchefstroom 1993-2001, Chairman, Hubble Space Telescope Panel (Proposal selection: Binary Stars and Accretion Discs), Member, Review Committee on National Facilities, Department of Arts, Culture, Science and Technology October 1997

Prof Warner is a member of the British Astronomical Association, Member 1955-, Royal Astronomical Society, Junior Member, 1956-1960, Fellow 1960-1994, Associate 1994-, Astronomical Society of the Pacific, Member 1960-, Royal Society of South Africa, Member 1973-1976, Fellow 1976-, Astronomical Society of Southern Africa, Member 1972-, International Astronomical Union, Member 1970-, Academy of Science of South Africa, (Founding) Member 1994-, South African Institute of Physics, Member 1998-.

He served as British Astronomical Association: Director, Lunar Section 1963-1965, Royal Society of South Africa President 1981-1983, Astronomical Society of Southern Africa President 1977-1978, International Astronomical Union, Commission 42 (Close Binary Stars) President 1979-1982, International Astronomical Union, Commission 27 (Variable Stars): Member of Organizing Committee 1982-1991 and International Union of Pure and Applied Physics Commission C19 (Astrophysics): Vice-Chairman 1996-

1999

He is the author of a number of books, prolific writer and presenter of several named lectures.

Paper 2 **Friday 29 November** **11h00-12h00**

The Danie Overbeek Memorial Lecture: Contributions of Amateur Astronomers to Variable Star Research

Dr Janet Mattei

Dr Mattei is the Director of the American Association of Variable Star Observers.

Paper 3 **Friday 29 November** **12h00-13h00**

Pulsars

Prof Fabio Frescura

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Session 2 Open Session

Chairman Louis Barendse

Paper 4 **Friday 29 November** **14h00-14h15**

Recent Developments at Boyden Observatory

Dr Hannes Calitz

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Paper 6 **Friday 29 November** **14h15-14h30**

Boyden Observatory's Public Program

Dr Hannes Calitz

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Paper 6 **Friday 29 November** **14h30-15h00**

W Ursa Majoris Stars

Prof Derck Smits

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Paper 7 **Friday 29 November** **15h30-16h00**

Formation of Oxygen in the Early Atmosphere

Brian Fraser

I joined ASSA in 1970 after being inspired by the Apollo moon landings. Soon after this I acquired a 3-inch refractor telescope for R100-00 (for which my wife has never forgiven me).

In 1973 I made my first telescope, a 6-inch F8 Newtonian reflector. Subsequent to this I have made an 8-inch F5 reflector and a 12-inch F5 reflector, as well as various 6-inch telescopes for other people. At the moment I am working on a 20-inch mirror that will, hopefully, be the last telescope that I make. (Except for the 30-inch.....one day).

In 1985 and 1986 I was Chairman of the Johannesburg centre of ASSA after serving on the committee for a number of years.

I served on the council of ASSA for a number of years and was President in 1995. At present I am

Director of the Occultation section. My occupation is programming computers and I use all the available software to supply local observers with predictions of lunar occultations, minor planet occultations and grazing occultations for their locations.

In about 1987 I joined the AAVSO (American Association of Variable Star Observers) and got involved in regular variable star observing.

My observing program involves observing lunar occultations, grazing occultations, occultations of minor planets and studying variable stars. I have published about 15 papers on astronomical observations.

I use an Optec SSP3 photometer for lunar occultations as well as for variable star observations. I have built a Cookbook CCD camera, which I plan to use for variable star observations.

Paper 8 **Friday 29 November** **16h00-16h30**

Space Geodesy

Ludwig Combrinck

Dr Ludwig Combrinck is the Programme Leader of the HartRAO Space Geodesy Programme. He obtained a MSc and Ph.D from the University of Cape Town.

Paper 9 **Friday 29 November** **16h30-17h00**

Supernova Search program

Berto Monard

Berto Monard started with active observing in 1990 and has produced more than 25 000 visual observations of variable stars for the AAVSO and the VSS of RASNZ. With larger telescopes since 1997, he has specialised mainly in the observation of cataclysmic variables and transients. He moved to a darker site in 2001, built there the Bronberg Observatory, equipped it with an SCT/CCD system and is more than ever looking for changes in the far distances of the local Universe and beyond.

He has discovered six SNe up to now: one visually (SN 2001el) and five with the CCD camera (all in 2002).

AAVSO SUPERNOVA AWARD TO BE MADE BY Dr JANET MATTEI TO BERTO MONARD

Session 3 Observing Sections

Chairman Rupert Hurlly

Paper 10 **Saturday 30 November** **09h00-09h30**

Recent ASSA Results on Comets and Meteors

Tim Cooper

Tim Cooper started out in astronomy in 1965 after receiving a 30mm refractor as a present. He became a member of ASSA in 1973 on the same night as his hero of that time Patrick Moore. In 1975 he took up observing comets and meteors under the mentorship of Jack Bennett, and variable stars and planetary occultations under the late Danie Overbeek. He is currently President of ASSA, and has served as Comet and Meteor Section Director since 1994.

Paper 11 **Saturday 30 November** **09h30-10h00**

Delta Scorpil - a Strange Variable

Brian Fraser

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Paper 12 **Saturday 30 November** **10h00-10h30**

The South African Meteorite Recovery Program

Trevor Gould

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Paper 13

Saturday 30 November

11h00-11h30

Variable Stars

Jan Hers, paper to be read by Michael Poll

Jan Hers born on 4th March 1915 in Hilversum, Holland. He came to South Africa with his mother in 1927. He attended University of the Witwatersrand and received a B.Sc (Eng)(electrical) in 1936.

Worked for the SABC for the next 10 years, mainly as recording engineer, cutting about 10000 acetate disks during that period, but also spending an increasing amount of time in the workshop, making amplifiers and various related electronic instruments. Then I was asked if I could make something to measure transmitter frequencies, something on the lines of the equipment made by the General Radio Co in the USA, but which was not available during the war. This involved what was in fact the first quartz crystal clock in S.A. and the traditional way of checking this was to compare it to time signals from a local observatory. When this showed that my clock, using a very cheap crystal picked up somewhere, was significantly more accurate than the Union Observatory clock, I was asked to join the Observatory staff to reorganise the time department.

This was to occupy the next 25 years, but later, especially after the launching of the first earth satellites, I was more and more involved with astronomical work, and I attended several IAU General Assemblies as South African Representative (in those days the Cape and Radcliffe observatories were still controlled from the UK). M.Sc (Eng) in 1964. When Finsen retired in 1965 I was appointed Acting Director, which I felt was a mistake because an AD has no status, and this reflected on the Observatory as a whole. But this did not stop us from giving full impetus to the projected new 74-inch reflector, for which the glass disk had already been obtained. It was originally thought that the Hartbeespoort site would be a suitable place for erecting such a telescope, but a study of weather patterns had shown that there would be no future for this site, and I therefore initiated and organised a site testing project which during 1968-1970 was to take us over the entire country. Unfortunately at this time the Republic Observatory became the victim of a war of words, the real aim of which was to avoid the loss of the Cape Observatory. The main activities at the Republic Observatory - double stars and asteroids - were said to be "oldfashioned astronomy", of no importance today. Our site testing report was said to be "unscientific" and it was even said that I had falsified the results, and I was threatened that I should abstain from having anything to do with astronomy in future! I decided to take no notice.

From 1972 was "employed" at CSIR in Pretoria, but mostly found my own things to do. Rebuild the time equipment (all solid state, including a new ZUO time code generator) and continued to photograph comets at home, and do the reduction with the aid of a measuring machine at CSIR! Nobody objected. Finally retired end 1976.

Paper 14

Saturday 30 November

11h30-12h00

The ASSA Historical Section Website

Chris de Koning

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Paper 15

Saturday 30 November

12h00-12h30

Deep Sky Dedication

Magda Streicher

Magda is an enthusiastic member of the Deep Sky Section. She observes from a purpose built observatory just north of the Tropic of Capricorn, and is fortunate to still enjoy dark skies. Her interest in astronomy goes back to childhood, but twelve years ago she felt an all-consuming need to know more. Since then she

has been an active deep sky observer, becoming more involved in advanced deep sky observing, which she strives to share with others through radio talks and articles in the local paper. She observes using 8 and 12 inch Schmidt-Cassegrain telescopes and her favourite objects to study are clusters and galaxies.

ASSA DOUBLE STAR AWARD TO BE MADE BY CLIFF TURK TO MAGDA STREICHER

Paper 16

Saturday 30 November

12h30-13h00

Construction and Use of a Audine CCD camera

Theo Pistorius

Theo is a member of the Pretoria Centre of ASSA. He became involved in the Centre activities when Comet Shoemaker-Levy 9 struck Jupiter in 1994. Soon after that he got a Meade 8" SCT and started a hobby that will last a lifetime. His interest is stimulated by the scale of the universe and the constant changes in it. The opportunity to combine an interest in astronomy with the possibility to design and build gadgets to assist with visual, photographic and CCD imaging makes it impossible for him to stay inactive for long. He has two or three "projects" going on at any time with the initial research taking a few months followed with the design and building of the item.

In order to pay for the occasional expenses required to pursue a hobby and interest such as astronomy, he works as a telecommunication engineer at Telkom SA. He obtained an engineering degree in electronics in 1986 and a masters degree in engineering management in 1993. Previously he has worked for the SA Air Force and also for Alcatel Altech Telecoms.

Session 4 Historical

Chairman Brian Fraser

Paper 17

Saturday 30 November

14h00-14h30

Early History of Astronomy in South Africa

Peter Smits, paper to be read by Neville Young

I, Peter Smits was born in Johannesburg on 1920 June 25 and received my schooling at King Edward VII School. In 1939 I went to the University of Cape Town to study Mechanical Engineering. I joined the Tank Corp in 1939 and was in Egypt until mid-1943. I was de-mobbed late that year and returned to Varsity. After qualifying I joined the South African Railways serving in various posts until 1952 when I joined Shell as a Construction and Maintenance Engineer, later becoming Deputy Security Advisor to the Group. I spent many nights observing Variable Stars first at the old Union/Republic Observatory in Johannesburg under Dr Finsen and then at the old Royal Observatory in Cape Town under Dr Stoy. I was also the first lecturer at the original Cape Town Planetarium. I retired in 1983 and have lived here in Plettenberg Bay since 1993. Here I occupy my time Studying Genealogy, helping to run the Garden Route Section of the ASSA and lecturing and running courses on Astronomy. I am married to a Botanist, have three children and four grandchildren.

Paper 18

Saturday 30 November

14h30-15h00

A History of Comet Discovery from South Africa

Tim Cooper

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Paper 19

Saturday 30 November

15h30-16h00

De la Caille at the Cape 1751-1753

Rupert Hurly

Rupert Hurly is a professional land surveyor in private practice in Cape town. His active interest in astronomy began at the start of the IGY when he joined the program tracking satellites. He has assisted the Cape Centre on SAAO public nights for over 30 years, has served on Council or as alternate for 40 years and was ASSA President in 1978/9. Mr Hurly edited the Handbook for 13 years. He is Honorary Life Member of ASSA and the Cape Centre and in 1988 was awarded the Long Service Award of ASSA.

Paper 20

Saturday 30 November

16h00-16h30

Invention and Development of the Telescope

Louis Barendse

Louis Barendse has been a member of the Pretoria Centre since 1987 and its Chairman since 1993. He worked in the optical industry at the CSIR, which gave him an excellent insight into the mechanics of the telescope. As a result he has been instrumental in the building of many telescopes currently in use by Pretoria Centre members. In 1999 Louis joined Hartrao as part of NASA's program on laser ranging of artificial satellites. Those of you who have visited Louis' workshop will know about the wide range of instruments in a semi-assembled state, and scientific instruments waiting to be scavenged for components of his new telescopes. His most secret weapon is a wooden box containing a light intensified imager capable of reaching magnitude 18 in real time.

Session 5 Astronomical Research Chairman Michael Poll

Paper 21

Sunday 1 December

09h00-09h45

The Life of Jack Bennett

Neville Young

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Paper 22

Sunday 1 December

09h45-10h30

The Creation of Matter in the Early Universe - a Quantum Perspective

Frikkie de Bruyn

Frikkie de Bruyn matriculated in Christiana, he speaks seven languages and worked abroad for many years. He was Cultural Attache at the South African Trade Mission in Harare. Now retired, he devotes his time to the study of cosmology and astrophysics. He is a longstanding member and current Committee member of the Natal Midlands Centre of ASSA. He has written numerous articles for the Centre newsletter Stardust and has given several presentations.

Paper 23

Sunday 1 December

11h00-11h45

The Period Luminosity Law - how an amateur was first to determine the distance to delta Cephei

Jan Eben van Zyl

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Paper 24 **Sunday 1 December** **11h45-12h30**

Investigation of Optical and Near Infra Red Surface Brightness Profiles of Spiral Galaxies

Dr Barbara Cunow

Dr Cunow was born in Bremen in 1964. She studied at the University of Muenster, obtaining a Masters Diploma in Physics in 1989 and a PhD in Astronomy in 1994. She is currently senior lecturer in astronomy at the University of South Africa, and her main research interest is the dust content and stellar populations in spiral galaxies. She has been an ASSA member since 1995, member of the Astronomische Gesellschaft since 1998, and member of the IAU since 2000. In 2000 she received the Principals Prize for the Best Young Researcher of the Faculty of Science at UNISA.

Paper 25 **Sunday 1 December** **12h30-13h15**

Lighting and Light Pollution

Robbie Yates

Robbie Yates is the previous chief lighting engineer of Johannesburg (retired now) and past president of the SA National Committee on Illumination (SANCI).

Session 6 Solar Eclipse

Chairman Ad Sparrius

Paper 26 **Sunday 1 December** **14h00-14h30**

Preview of the 2002 Solar Eclipse

Cliff Turk

Interested in Astronomy since 1940 in London when the WWII "Blitz" blackout made it easy to see stars. Moved to South Africa in 1964 and still keen on dark skies.

Joined ASSA in 1970 and has been on Council as an alternate, a representative of a local Centre, full member, Vice President, President in 1986/87, or Business Manager continuously since 1972 (30 years). Received the Society's Long Service Award in 2000 and Honorary membership in 2001. Fellow of the Royal Astronomical Society and a member of the British Astronomical Association.

One of 7 partners of Cederberg Observatory and has given frequent talks to visitors since 1990. Has been a guide at the open nights of the SAAO for over 25 years. In all, has presented over 860 talks to audiences ranging from complete novices and schoolchildren to advanced amateur and professional astronomers at symposia.

A keen astrophotographer and observer of eclipses, variable stars, lunar occultations, comets and meteors. Has written two small books including one concentrating on the solar eclipses in Africa in 2001 and 2002. Cliff is a veteran of 4 total and numerous partial solar eclipses

Paper 27 **Sunday 1 December** **14h30-15h00**

Reminiscences of the 2001 Solar Eclipse

Louis Barendse, Tim Cooper, Neville Young, Theo Pistorius

The presenters are all members of the Committee of the Pretoria Centre. They observed the eclipse from Lusaka, Zambia, except Cooper, who observed from Nyamapanda in Zimbabwe. Barendse and Cooper will present records of photos taken at the eclipse. Young and Pistorius will present video recordings of the eclipse. The details of the data acquisition will be presented.

Paper 28 **Sunday 1 December** **15h30-16h00**

Solar Eclipse, Plans and Pictures

Cliff Turk

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Paper 29

Sunday 1 December

16h00-16h30

The 1940 Solar Eclipse

Rupert Hurly, Jan Eben van Zyl

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