Minutes of the AGM

Minutes of the Annual General Meeting held on 2003 July 12 in the auditorium of Christian Brothers College, Silverton, Pretoria.

1. Opening
The President, Tim Cooper, welcomed those present. The meeting was attended by 10 members, plus an additional 9 members of the Pretoria Centre and 4 visitors.

2. Apologies
Apologies were received from Neville Young, Theo Pistorius & Maciej Soltynski.

3. Minutes of the previous AGM
The minutes of the 2002 AGM, published in *MNASSA*, were accepted (proposed by Tim Cooper and seconded by Dave Gordon.)

4. Matters arising
There were no matters arising.

5. Financial report
The financial report was read by Tim Cooper. It is noted that the accounts have not yet been audited, but were accepted on a proposal by Michael Poll and seconded by Jannie Smit. When audited the final accounts will be published in *MNASSA*.

6. Election of Auditor
On a proposal by Tim Cooper and seconded by Michael Poll, auditors Horwath Zeller and Karro are to be retained.

7. Report of Council
The report of Council was read by Tim Cooper. Tim wished to thank Cliff Turk for the work he did to ensure that all the reports were submitted on time. The report was accepted on a proposal by Jannie Smit and seconded by Atze Herder.

8. Reports of Observing Sections
The reports were read either by their author or an alternate as follows: Comet and Meteor (read by the Director, Tim Cooper), Deep Sky (read by Dave Gordon on behalf of Auke Slotegraaf), Double Star (read by Michael Poll on behalf of Chris de Villiers), Occultation (read by the Director, Brian Fraser), Solar (read by Mike Haslam on behalf of Braam van Zyl) and Variable Star (read by Michael Poll on behalf of Jan Hers).

The President commented that the report submitted by Mr Hers was an abbreviated version, since he had only just returned to his house which had been flooded some weeks earlier.

The reports of the Observing Sections are to appear in *MNASSA*.

9. Reports of other Sections
The Dark Sky Section report was read by Frikkie le Roux on behalf of Cliff Turk. No reports were received from the Computing and Historical Sections. (The Historical Section report was received after the AGM and will be published in *MNASSA*.)

10. ASSA Scholarship
The report by Maciej Soltynski on the ASSA Scholarship was read on his behalf by Tim Cooper. The full report will be published in *MNASSA*.

11. ASSA Endowment Trust
The report on the ASSA Endowment Trust was read by Tim Cooper. The full report will be published in *MNASSA*.

12. Election of Office Bearers

The election of Office Bearers, nominated by Cliff Turk and Abe Mahomed, was completed on a proposal by Dave Gordon and seconded by Brian Fraser. The nominees for 2003/2004 are:

President	Mr C L Rijsdijk
Vice Presidents	Dr C D Laney
	Ms P J Booth
	Mr T P Cooper
Members of Council	Dr I S Glass
	Dr P Martinez
	Mr A B Jones
	Mr M Poll
Hon. Secretary	Mr C L Rijsdijk
Hon. Treasurer	Mr C R G Turk

13. Any other business

Tim Cooper announced that an ASSA Long Service Award has been awarded to Jan Hers. The award will be made to Jan by the incoming President, Mr C Rijsdijk, and takes the form of a book prize.

Tim also requested that all the Centres of ASSA work together to do something special for the transit of Venus, next year. This issue needs to be properly coordinated by Council.

14. Presidential Address

Tim Cooper then handed over the Chair to Michael Poll who asked Tim to give his Presidential address. The subject of the address was an interesting topic, 'Amateur observations – Successes and opportunities'.

A question arising from the talk was asked: "Is there a gap in amateur Southern African observing for planetary observations?" Tim replied in the affirmative and that this should be raised at Council.

Michael Poll thanked Tim for his excellent talk and also for his year of Presidency.

15. Closing

There being no further business, the meeting was adjourned at 20:55. Wine, cheese and snacks were then enjoyed courtesy of Tim and Janet Cooper.

Mike Haslam (Acting Secretary ASSA)

Report of Council 2002–2003

Council notes with regret the death of Mr Colin Gray (Treasurer 1994–2003) .

1. Membership

Subscriptions have remained at R80 per annum and full membership has increased to 226. Lapel badges are still being given to all new Full Members. There are many more members of Centres who are also automatically local members of the Society.

2. Finance

Our Treasurer, Mr Colin Gray passed away on 9 April 2003 leaving us in a very healthy financial position. Our deepest sympathies are extended to his wife Fiona, children Diana, Roger and Heather and to his five grandchildren. A full obituary will be published in *MNASSA*.

Many members have made donations to the Society or to the ASSA Endowment Trust

when paying their subscriptions and we are most grateful for these. Our thanks are also due to our Auditor, Mr Ron Glass CA(SA) of the firm Horwath Zeller Karro for continued services and advice.

3. Council Appointees

Dr Abe Mahomed and Mr Cliff Turk remain as Membership Secretary and Business Manager respectively. Between them they circulate *MNASSA* and the *Handbook* to all members and subscribers throughout the world. In addition the Membership Secretary handles the *Sky & Telescope* subscriptions and the Business Manager deals with all advertising in both of our publications.

4. *MNASSA*

Editor Mr Auke Slotegraaf keeps the standard high in this publication which is well received both in South Africa and overseas. Contributions are welcome from amateurs and professionals. The reports from the institutions and those of the directors of the observing sections show the volume of astronomical work being done in the region. Thank you Auke, your contribution to the Society is invaluable.

5. Annual *Handbook*

Miss Pat Booth has had to resign as Editor of the *Handbook* due to pressure of work. The *Handbook* is now being guided by the Society's Editorial Board with Mr Auke Slotegraaf taking the leading role. Various upgrading is planned and will be implemented as soon as possible, starting with the 2004 edition, which will probably retail for R30.00.

All Centre Secretaries, Section Directors and other interested parties are requested to advise the Editor of any changes to information relating to them. (NB. E-mail addresses and telephone numbers should be checked every year please.)

6. ASSA Scholarship Fund

After making its first grants to two second-year students last year, only one grant has been made this year. Grants are available to undergraduate students studying astronomy subjects at University in the second or subsequent years. Mr Maciej Soltynski, Dr Abe Mahomed and Mr Andrew Gray are thanked for their time and the trouble they take to ensure that the grants go to worthy students.

7. Observing Sections

New Directors have been appointed for the Dark Sky Section and for the Solar Section during the year. We congratulate Messrs Cliff Turk and Braam Van Zyl respectively for taking on these tasks and wish them both a long and successful tenure.

A new Director is still required for the Imaging Section and any volunteer is asked to contact Council for more information regarding what is required.

The reports of all Sections will appear in *MNASSA*.

8. ScopeX

Following Johannesburg's very successful exhibition last year and a smaller similar display by Garden Route Centre, much progress was made this year. Johannesburg enlarged their effort considerably and are to be congratulated on a really fine effort. A full report has already appeared in *MNASSA*, so we will just record that there were 43 telescope exhibitors including four commercial ones. Ten lectures were arranged during the day, six of them being presented by professionals.

In Cape Town, a fine venue at Kirstenbosch Botanical Garden was secured with a large exhibition hall and lecture theatre next door. Sixteen telescopes were on display including those of one commercial exhibitor. Unfortunately the weather was not good and only one telescope viewed the Sun for about 30 minutes before the rain followed by total cloud drove everyone indoors where the three lectures were all well attended.

It is understood that displays were also arranged at World's End Observatory, Pietermaritzburg and by the Friends of Boyden in Bloemfontein but no detailed reports have yet been received. Council will be delighted to hear of more similar displays in 2004.

9. Transit of Mercury

Much of the co-operative effort with astronomers overseas (mainly in Europe) came to naught, as bad weather bedevilled us. However, we made contact with those overseas astronomers and are able to gear up for a more intensive effort for the Transit of Venus on 8 June 2004 which will be the first such transit since 6 December 1882. Venus will be more easily visible than Mercury and this will be another opportunity to promote our science to the public.

10. 5th ASSA Symposium

Pretoria Centre pulled out all the stops to produce an exceptional Symposium at Aloe Ridge Hotel. The facilities were very good indeed, as was the subject matter, and many new friendships were made.

Notable attendees were Dr Janet Mattei of AAVSO, Prof Brian Warner of UCT and J Kelly Beatty executive editor of Sky & Telescope. Special thanks to our President, Mr Tim Cooper for being the driving force behind this achievement.

The dates were immediately prior to the total eclipse of the Sun in the far northern parts of South Africa and many delegates took the opportunity to treat themselves to this spectacle.

11. Acknowledgments

Council thanks the following for their co-operation and assistance during the past year:

The Director of SAAO for the continued use of meeting facilities; the Directors of our Observing Sections for forwarding observations to international bodies; the Directors of the other sections for their support; all our Centres and members who helped to promote astronomy to the public throughout the region; and especially the Pretoria Centre for hosting this meeting for us.

Financial Report

Cliff Turk (Hon. Treasurer)

The untimely death of our late Treasurer, Colin Gray, on 9th April caused a glitch in the smooth accounting which he had operated for some years.

During the last week of his life he had tried to complete the third-quarter financial report for Council but was not successful. There is a small discrepancy, probably caused by some item not being recorded, and one other possible error of approximately R100. The auditors were asked by telephone if the new Treasurer could enlist their aid in balancing these problems and they agreed to make an appointment to do this as soon as they were a little less busy. Nothing further has been heard from them.

This has delayed the writing-up of the last-quarter accounts but this is now in progress, based on the approximate figures for the end of the third quarter. Once the year has been audited fully, the final accounts will be published in *MNASSA*.

In the meantime, I can report that the Society's funds are in a healthy state. We have over R40 000 in the Scholarship fund and more than R50 000 in a money market fund. This latter will be depleted during the first half of 2004 when printing and circulation costs of *MNASSA* will exceed the income at that time of year when very little is received in members' subscriptions.

We have just been told by *Sky & Telescope* that they have had to increase their subscription rates due to rising production and distribution costs. A new direct subscription will now cost US$ 61.95, but members ordering through the Society will be able to order for the equivalent of US$ 55. The Rand amount required to be paid to the Society will be published in each issue of *MNASSA* and any variation in the exchange rate plus exchange costs will be absorbed by the Society.

The Society will experience increased costs connected with the upgrading of the *Handbook* for 2004, the retail price of which will probably be set at R30 (a 50% increase over 2003). It is hoped that the *Handbook* will become available in bookshops around the country and members are requested to assist in promoting this to various outlets. Full details of prices and discounts can be obtained from the Business Manager.

Report from the MNASSA Editorial Board

Auke Slotegraaf

The Editors would like to thank all those who contributed to *MNASSA* throughout the year, particularly the scientists who submitted research papers for publication, and those who contributed less-formal articles and news notes. *MNASSA* publishes material of interest to professional and amateur astronomers, and is indexed in *A&A Abstracts* and therefore the articles at any level should be of a high standard. Contributions can be divided into the following:

- reader's letters;
- ASSA news (Society-related material; news from Council; activities of members, etc.);
- news notes (local and international news of interest to astronomers);
- research papers (original research papers on all branches of astronomy and astrophysics; papers are sent to referees before publication);
- general contributions (typically longer and more detailed than news notes, these contributions are less formal than research papers; these include historical articles,
- biographies, obituaries, travel accounts, observing reports, instrumentation development papers and progress reports on ongoing research);
- reviews (currently only book reviews are published, but during 2004 this will include web sites and software); and
- the observer's page (accounts of the activities of the various observing sections within the Society).

A 'Style Guide and Instructions to Authors' is available to assist authors in preparing their manuscripts.

Report of the Comet and Meteor Section

Tim Cooper (Director)

The year 2002 was another in which several observing opportunities were lost to cloud. Nonetheless, 18 individuals contributed meteor observations totalling 93 hours (Tables 1 and 2). There were a good number of fireballs reported (Table 3), and gradually the quality of the reports is improving as people report the correct parameters. Only three comets were observed by five individuals during the year, partly due to the weather, and the lower number of bright comets observable in 2002.

Table 1. Total observing time per observer

Observer	n	h
Tim Cooper	5	25.1
Cliff Turk	6	15.7
Magda Streicher	5	14.1
Auke Slotegraaf	1	4.6
Ivor Paul	1	4.6
Brian Skinner	1	4.0
Trevor Gould	2	3.4
Tony Jones	1	3.4
Michael Poll	2	5.9
Mike Begbie	1	2.2
Herman Wiechers	1	2.1
Mauritz Geyser	1	2.0
David Pringle-Wood	1	2.0
Brian Fraser	1	1.6
Theo Pistorius	1	0.7
Martin Wasserfall	1	0.7
Barbara Cunow	1	0.5
Anton Nel	1	0.5
Total		93.1

n: number of showers observed. h: total observing time (hours)

Table 2. Summary of observations

Observer	Shower	h
T Cooper	Virginids	9.2
	γ Normids	0.9
	η Aquarids	7.1
	Leonids	5.9
	Geminids	2.0
C Turk	April Lyrids*	4.0
	Leonids*	1.9
	Geminids*	2.2
	θ Ophiuchids	2.5
	Orionids	1.7
	Geminids	3.4
M Streicher	α Crucids	1.2
	April Lyrids	2.8
	July Phoenicids	1.4
	Perseids	4.4
	Leonids	4.3
A Slotegraaf	Geminids	4.6
I Paul	Geminids	4.6
T Jones	α Crucids	3.4
B Skinner	α Crucids	4.0
M Poll	Leonids	3.2
	Geminids	2.7
T Gould	Leonids	1.2
	Geminids	2.2
M Begbie	Leonids	2.2
H Wiechers	Geminids	2.1
M Geyser	Leonids	2.0
D Pringle-Wood	Leonids	2.0
B Fraser	Leonids	1.6
T Pistorius	Leonids	0.7
M Wasserfall	η Aquarids	0.7
B Cunow	Leonids	0.5
Anton Nel	Leonids	0.5
	Total	93.1

h: number of hours observed; * 2001

Notes on some observed showers

The Alpha Crucids were observed by Magda Streicher, Tony Jones and Brian Skinner. As in previous years analysis of the data shows the characteristics of the alpha Crucids to be fast, white and often bright. My annual plotting program on the Virginids was heavily affected by clouds. The Eta Aquarids were observed by Tim Cooper, and by Martin Wasserfall. The latter observed from 01:50–02:30 UT on 5 May, counting 20 eta Aquarids and three sporadics. Cloud severely hampered my own observations this year. The first opportunity came on May 7, after maximum, and I managed observation on only four mornings, with best rates on May 7, and with another good performance on May 10. The Leonids were observed for 24.1 hours. No storm occurred in 2002, but Mike Begbie and Magda Streicher observed best rates with 38 Leonids in 1.2 hours and 29 Leonids in 0.9 hours respectively. The year closed with observations of the Geminids. Best rates were observed by Tim Cooper with 54 Geminids and 16 sporadics in 2.0 hours on the morning of December 14. On the morning of the 15th, Auke Slotegraaf and Ivor Paul were seeing rates down to 10-12 per hour, and by the 16th, rates were almost nil as noted by several observers.

Summary of observed fireballs

2002 saw a total of 17 fireball reports, summarised in Table 3. Full details have been submitted for publication in *MNASSA*. Seven of the 17 were fireballs from known ma-

Table 3. Fireballs recorded in 2002

Date and time (UT)		Name of reporter	m_v
Feb 05	~19:00	Boet and Jackie Boshoff	–6 ?
Feb 06	19:14	Andrew Gray	–4
Feb 11	17:25	Bill Hollenbach	–4
Feb 11	18:55	Bill Hollenbach	–4
May 07	03:29	Tim Cooper	–3
Jul 21	13:45	Bill Hollenbach, Jane Trembath	–10
Sep 10	20:41	Auke Slotegraaf	–5.5
Sep 12	17:15	June Borchert	–4
Sep 18	16:31	Trevor Green	–5
Oct 21	19:42	Vasili Champanis	–6
Nov 19	01:20	Tim Cooper	–3
Nov 19	01:32	Tim Cooper	–4
Dec 14	00:46	Herman Wiechers, Tim Cooper	–3
Dec 14	01:06	Cliff Turk	–5
Dec 14	02:15	Cliff Turk	–5
Dec 15	01:55	Auke Slotegraaf, Ivor Paul	–4
Dec 15	02:12	Auke Slotegraaf, Ivor Paul	–5

jor shower radiants, the remainder were sporadic events.

Of particular interest is the event of 21 July. The first report was from Bill Hollenbach. Follow-up reports came from the Johannesburg Planetarium, and later from some eyewitnesses reports collected by Trevor Gould. These included Jane Trembath, an airline pilot, who saw the object from her plane. Fragments were located and sent for analysis to Prof Uwe Reimold.

Summary of observed comets

Comet LINEAR C/2000 WM1 was observed by Magda Streicher, Mike Begbie, David Pringle-Wood, Simon Walsh and Tim Cooper. The comet was observed from January, peaking at magnitude 2.3, until April. Comet Ikeya-Zhang C/2002 C1 was observed by Mike Begbie, David Pringle-Wood and Tim Cooper. Discovered in February, the comet brightened to magnitude 3 in late March, before fading to magnitude 10 by mid year. Comet SWAN C/2002 O6 was discovered on July 31, peaked at magnitude 6 in mid August and faded rapidly thereafter. It was observed by Mike Begbie and David Pringle-Wood.

A number of observations were received from Peter van Blommestein, which are not included in the above statistics due to missing some requisite minimum information.

Report of the Deep-Sky Section

Auke Slotegraaf (Director)

It is a pleasure to announce to the AGM that two observers have been awarded Observing Certificates. Magda Streicher of Pietersburg will receive a Director's Award for her dedication in completing the entire Jack Bennett Catalogue of 152 cometary deepsky objects

Tony Jones of Cape Town is to receive a General Observer's Certificate for his set of observations of objects discovered by James Dunlop.

The Director continued his review of historical deep-sky catalogues. Initial results were reported in 2002 November at the 5th ASSA Symposium, entitled 'Nonstellar objects in old star catalogues'. This work identified 62 star fields that may contain open cluster remnants. The results were communicated to Bruno Alessi, a Brazilian astronomer studying open clusters.

In 2003 March, the Director helped present a deepsky viewing evening, held at Simonsvlei and hosted by the 'Sterre en Planete' radio show broadcast on 'Radio Sonder Grense'.

The Section's web page, 'The Deepsky Observer's Companion', was listed in a recent introductory astronomy book as a "valuable resource"; members are reminded that this observing guide is available on the internet for free download, or in printed form for the price of postage. Only one request for the printed guide (from a scholar in Cape Town) was received during the year under review.

The Director is always keen to hear how others see the Universe beyond our solar system - so let's hear from you.

Report of the Double Star Section

Chris de Villiers (Director)

The Section was largely inactive during the past year. No astrometric observations were made by myself, or received from others.

A number of descriptive observations were received from Magda Streicher.

No expenses were incurred.

Report of the Solar Section

Braam van Zyl (Director)

Since the early history of ASSA the Solar Section has played an important role. Unfortunately everything came to a halt when the previous Director, Jim Knight, resigned in 2000 and no suitable replacement was found. Good news is, however, that the Solar Section was reactivated thanks to the initiative of the Bloemfontein Centre.

During the seventies the Boyden Observatory at Bloemfontein installed a coelostat solar telescope and used it intensively for a research program. After Boyden was closed down in 1987 the telescope was moved to the grounds of the University of the Free State. It was, however, infrequently utilized. Since 2001 various international and local organizations have invested funds towards the upgrading and utilization of Boyden. It was also decided to develop the observatory into a facility where science awareness of the public could be promoted alongside a modern research facility.

Funds donated by the Charl van der Merwe Foundation were utilized to establish an Educational Walk on the terrain and to reinstall the solar telescope. Thus after 14 years the solar telescope was returned to its original location. The telescope was serviced, the vacant building housing a snake family was refurbished and a CCD camera and computer were also procured.

The telescope has become the focus during daytime visits of school groups. It is a powerful educational tool as it pertains to various themes and topics required by school curricula for example: "Earth, Space and beyond"; "The Earth-Moon-Sun system" and "energy, energy transfer and photosynthesis."

For night-time visitors the telescope can also be focused on the moon.

Although the telescope was restored to working order, no funds or manpower were available to restart a research program. Members of the Bloemfontein Centre took advantage of this opportunity and offered their assistance, which was gratefully accepted. At the same time the ASSA Council requested the Bloemfontein Centre to reactivate the Solar Section which contributed to the appointment of Braam van Zyl as the new Director at the end of 2002.

Twelve members of the Bloemfontein Centre offered their voluntary service to the solar workgroup. Boyden personnel namely Dr P. Meintjes, Dr M. Hoffman, and Mr. Hannes Calitz, an MSc student in astrophysics, provided extensive theoretical and practical training.

Activities of the solar workgroup

- to act as tour guides for visiting groups;
- counting sunspots and active areas on

weekends using the coelostat. Some members observe and record sunspots on a daily basis from their homes (using small telescopes) and forward their data to the AAVSO and ALPO solar sections in the USA;
- photography;
- solar eclipse observing; during the weeks leading up to the eclipse members were involved in a variety of talks to inform the public. Members endeavoured to observed and photograph the eclipse from Boyden observatory which was unsuccessful due to overcast weather conditions.

Future developments for 2003

- two research programs: (1) the magnetic field of the Sun employing the Zeeman effects (2) sudden ionosphere disturbances (SIDs);
- Mercury transit; and
- recruitment of more members, especially outside Bloemfontein.

Report of the Variable Star Section

Jan Hers (Director)

The following observations made during the year 2002 have been received from observers in southern Africa:

Observer	Location	Visual	PEP
P Bosman	Johannesburg	9	
T P Cooper	Kempton Park	109	
J Hers	Sedgefield	166	
R W Jones	Fish Hoek		80 (+?)
H Lund	Johannesburg	33	
L A G Monard	Pretoria	1213	
J P L Mostert	Prieska	21	
J Plomp	Pretoria	85	
M Poll	Pretoria	117	
J A Smit	Pretoria	1213	
C Turk	Cape Town	175	
S de Villiers	Cape Town		(?)
S Walsh	Harare	160	
P Wedepohl	Somerset West	478	

Report of the Dark Sky Section

Cliff Turk (Director)

During the year the Section had a permanent Director appointed and further progress will hopefully follow as efforts are concentrated on spreading interest in specific areas until the entire country is covered. If anyone would like to assist in their own areas, please contact the Director for guidance.

StarWalks at Kirstenbosch were again popular during the mid-summer months and the light pollution problem is steadily becoming better known. At the same time, funds have been built up which will facilitate a more general promotion of the Section on a national basis during 2003.

Two unsolicited enquiries have been received from people engaged in businesses related to lighting and productive discussions have been held with both.

We hope that Scope-X/Astronomy Day exhibits around the country will soon all feature the need for controlling light pollution.

News of any successes with improving bad or invasive light problems is welcomed.

Report of the Historical Section*

Chris de Coning (Director)

The calendar year 2002 was an exciting year for the Historical Section. Much has been achieved.

In previous reports it was mentioned that the historical section is working on a database listing all observatories, people, telescopes, as well as anything else that may be of value to the history of astronomy in Southern Africa. The idea is to make the information available to all interested parties and in December 2002 that was achieved. The database has been transformed into a website. The address is [www.saao.ac.za/assa/index.html], which takes you to the ASSA homepage. From there, follow the link to the Historical Section.

In December ASSA held a very interesting symposium in Johannesburg as part of the preparations for the solar eclipse. During this symposium a series of very interesting talks on historical topics was given. It is interesting to note that the number of talks with historical content have increased from four at the previous conference to 10 with this conference.

One of the long-term goals of the Historical Section is to digitise our peer-review journal, *MNASSA*. Due to the huge scope of the project it was put aside for the time being. However, the American space agency NASA has offered to scan in, and thus digitise all previous copies of *MNASSA* and its predecessor *JASSA*. Auke Slotegraaf, Editor of *MNASSA*, sent them a full set of journals.

(* report received after the AGM)

ASSA Scholarship Report

Maciej Soltynski (Convenor, ASSA Scholarship Committee)

The ASSA Scholarship was established in 2000 to encourage the study of astronomy. The Scholarship is in support of 2nd and 3rd year undergraduate studies (and in exceptional cases, Honours) in *astronomy subjects only*, at any Southern African university. Preference is given to members of ASSA as well as to previous holders of the Scholarship who have made good progress in their studies. Preference is also be given to applicants who are not in receipt of other scholarships or similar funding. The Scholarship covers academic fees for *astronomy subjects only*, and makes a contribution towards the cost of prescribed books for these subjects, and is valid for one year.

It is with pleasure that we can report that in 2002 the scholarship was awarded for the first time to two members of the Society, Melissa van Gend and Chris de Villiers. Both were awarded the Scholarship to assist them in their second year astronomy studies which are part of their chosen curriculum towards the B.Sc. degree at the University of South Africa (UNISA). Their progress will constitute part of this report for 2003.

I would like to thank my fellow committee members, Andrew Gray and Dr. Abe Mahomed, for their time and valuable inputs in evaluating scholarship applications. Thanks is also due to Prof. Derck Smits of UNISA for his contribution to the evaluation process.

ASSA Endowment Trust Report

Cliff Turk (Secretary, ASSA Endowment Trust)

During the calendar year 2002 the Trust received donations of R1770.00 which increased its capital to R21246.25.

Income from investments amounted to R4536.12 from which grants and expenses totalling R1504.00 were paid leaving a nett increase of R3032.12 in disposable funds which then stood at R33353.56.

The full year-end accounts will be published in *MNASSA*.

Members and Centres are reminded that the Trust will consider assisting with funding of worthwhile projects. Initial enquiries should be motivated in writing to the Trust Secretary, 20 Nerine Ave., Pinelands 7405 or email to [cliffturk@yebo.co.za]

Presidential address

Amateur Observations – Successes and Opportunities

Tim Cooper

1. Introduction

The term of ASSA President is served alternately by a professional and amateur astronomer. I belong very firmly to the latter, and I am very conscious of upholding the role of the amateur as a contributor to astronomy in Southern Africa.

Amateur astronomers in Southern Africa have developed a reputation as skilled observers over many years. Geographically, we reside in an important part of the globe, being in the southern hemisphere in a position to observe southern objects at time-critical moments when most other land areas experience daylight. Our observations are in demand. Despite these factors, the number of active observers today remains small, limiting the significance of our observations.

Tonight I want to highlight some areas where ASSA members have contributed meaningful observations, and list others where opportunities exist to contribute to an even greater extent, either by more people becoming involved in existing observing programs, or by participating in new programs already operating in other countries, thereby complementing the global observing network. I will list a number of specific requests that have been made of us by overseas professionals.

2. Variable stars

One of the areas where ASSA members have made a major contribution to science is the study of variable stars (Mattei 2002). The AAVSO database contains over 640 000 southern African observations by 111 individuals. This tradition extends back to H E Houghton, through Reginald de Kock, and in the recent past, to Danie Overbeek, who provided much impetus and the majority of southern African observations. However, with the passing of Danie in 2001, a gap has been left in the coverage of many variable stars, which are now not being observed. It is important that current ASSA observers include these stars in their observing programs, to ensure continued coverage.

Recently the observational records that Alexander William Roberts produced from 1891–1920 at Boyden Observatory were discovered (B van Zyl, private communication). A team headed by Brian Fraser and myself, in conjunction with the AAVSO and the University of the Free State, are in the process of reducing these for further study. This work will enable us to extend the AAVSO records back in time and allow more precise determinations of variable star behaviour.

There are a number of stars that the AAVSO lists as being in need of observation. Some of these desperately require observers, since they are observed so infrequently that it is impossible to make a proper study of the brightness variation through the construction of an accurate light curve. The list of stars for which observations are desperately required is given as Table 1.

3. Nova searching

ASSA members mounted a dedicated search for novae under the leadership of Jack Ben-

nett. His technique was to assign areas of the sky to visual observers who would search using binoculars or the naked eye every night. None were found and the program was abandoned. With modern technology for imaging and computer processing, the techniques for discovery of novae are well established, but no ASSA members are doing this work. There is a need to set this up via a dedicated section with its own Director. During 2002, there were 15 IAU announcements of new novae or outbursts of nova-like variables (Green 2003: 6).

One of the most prolific nova discoverers is Bill Liller, a retired astronomer living in Chile. He discovers novae through dedicated photographic searches. As a clue he states that most novae discovered in the 1980s were within 15° of the galactic equator, and nearly half within a 30° x 30° box

Table 1. Southern variable stars in need of observations.

Stars very urgently in need of observations

0003-39 V Scl	0707-72 R Vol	1046-28 RS Hya	2049-54 S Ind
0024-38A T Scl	0720-05 TT Mon	1115-61 RY Car	2051-40 RY Mic
0025-46 T Phe	0731-73 S Vol	1345-36 RX Cen	2120-30 S Mic
0044-35 X Scl	0813-34 TU Pup	1346-77 T Aps	2142-47 R Gru
0106-30 U Scl	0925-51 Y Vel	1656-36 RT Sco	2213-21 X Aqr
0109-57 RS Phe	0949-53 Z Vel	1913-31 SW Sgr	2327-46 V Phe
0346-25 U Eri	0955-63 RV Car	2007-47 R Tel	2352-65 R Tuc
0641-36 CH Pup	1032-70 RZ Car	2022-40 U Mic	

Stars urgently in need of observations

0018-62 S Tuc	0918-68 RW Car	1452-54 Y Lup	2034-29 R Mic
0257-51 T Hor	0940-23 RR Hya	1547-36 R Lup	2039-05 Y Aqr
0349-46 U Hor	1010-58A Z Car	1616-07 W Oph	2057-82 T Oct
0512-47 T Pic	1010-58B AF Car	1623-19 Y Sco	2102-21 X Cap
0536-04 Y Ori	1144-41 X Cen	1708-33 RW Sco	2158-28 S PsA
0543-31 S Col	1150-58 W Cen	1735-43 RU Sco	2212-30 R PsA
0556-86 R Oct	1302-12 RV Vir	1741-62 W Pav	2219-38 T Gru
0632-01 SY Mon	1342-36 RT Cen	1821-33 RV Sgr	2228-67 R Ind
0742-41 W Pup	1405-28 RU Hya	1855-12A ST Sgr	2234-62 T Tuc
0756-12 U Pup	1434-17 V Lib	1911-24 TY Sgr	2351-50 R Phe
0824-76 R Cha	1437-19A SX Lib	2008-22 W Cap	2352-09 V Cet

The stars listed here need additional observations. Please be aware that many of these stars are difficult to observe, and should be attempted only by experienced observers. Taken from *AAVSO Bulletin 66: Predicted maxima and minima of long period variables for 2003.*

centred on the star 3 Sgr (Liller 1992: 28). With the proper equipment and dedication, there is clearly scope for ASSA members to follow in Bill's footsteps and contribute to this field.

4. Supernova searching

The first supernova discovered from South Africa was that in the galaxy M83 by Jack Bennett on 1968 July 16 (IAU Circular 2085). Thirty three years later, Berto Monard discovered the first of his ten (to date) supernovae, in the galaxy NGC 1448. His initial discovery was visual, after hundreds of hours of painstaking searching, but since then all his discoveries have been made using CCD imaging on a SCT telescope and computer processing, and have come in quick succession. There is clearly scope for both methods, but Berto is currently the only one searching for supernovae. He gave us an insight to his search techniques with a paper presented at the 5th ASSA Symposium (Monard 2003). There were 292 discoveries of extra-galactic supernovae during 2002 (Green 2003: 7) so there is plenty of opportunity for more ASSA members to become involved in this field.

5. Comets

During recent years, the apparition of several bright comets has led to a resurgence in southern African comet observation. These observations include the study of brightness behaviour, coma morphology, and tail development. This resurgence was certainly fuelled by the appearance of comet Hale-Bopp, with nearly 400 separate observations recorded. Mention must be made of Mike Begbie, who contributed over 80% of these observations. However, many other amateurs are becoming skilled in these observations, and still more observations are required.

There are still areas where ASSA can make a larger contribution. For one, only the brighter comets are being well observed; we need more data on the fainter comets as well. Secondly, Daniel Green has requested CCD photometry of even fainter comets, not visible visually, especially of far southern comets which are out of reach of our northern colleagues.

I commented on the history of comet discovery at the ASSA Symposium (Cooper 2003a). The last comet discovered from South Africa was in 1978. Needless to say, dedicated searching for comets from South Africa is desperately required. The discoverer is able to share in the Edgar Wilson award for a successful amateur discovery. This annual prize of US$ 10 000 is shared amongst the amateur comet discoverers for the previous year. There were five amateur recipients for comets discovered in 2002 (Green 2003: 7).

6. Meteors

ASSA also has a rich past of meteor observation. There was a very active group during the 1950s when S C Venter was Director of the Meteor Section. One observer, J H Botham, was particularly active, logging over 100 hours of observing in one year. In recent years, ASSA members have again started to contribute to this field, but there is still much scope for expansion in three key areas:

- monitoring the behaviour of major annual showers. Useful work has been done on the eta Aquarids (Cooper 2003b), but several other showers can be well monitored from here using only the naked eye;
- elucidating the activity of minor showers, mainly by accurate plotting to determine

annual activity and radiant structure; and
- determining the frequency and nature of short-lived meteor outbursts.

There are two recorded instances of short-lived meteor outbursts (Jenniskens 1995). On the night of 1964 November 25/26 Brian Warner observed 25 meteors in 10 minutes from a radiant near omega Orionis. In 1979, Tim Cooper observed abnormally strong activity from a radiant in Pyxis. Based on the reported observations, Jenniskens and Lyytinen (2003) predict possible outbursts from these in 2012/2035 and 2038/2039 respectively.

In addition, Cliff Turk, Bill Hollenbach and Tim Cooper have reported bursts which have not been further analysed. The latter case occurred most recently, on the morning of 2003 May 4, when 15 meteors were seen from a radiant at $\alpha = 22{:}20$, $\delta = -27.5°$ in Piscis Australis. What is clear is that these types of outbursts are probably more common than originally thought, but that most are missed since there are too few observers watching the sky on a continual basis. Many such visual outbursts could be confirmed using forward-scatter radio techniques. A global network has been set up, and virtually the only area on the globe for which a station is missing is South Africa.

It is clear that meteor observing is practiced by too few observers, and often for various reasons those few are not out observing at the same time. We require more observers to join these programs and fill in the gaps left from our location.

7. Planetary occultations

An occultation occurs when a solar system body passes in front of a star. This body can be the Moon, a major planet (of which obviously eight such possibilities exist), or one

Table 2. Successful minor planet occultation observations by amateurs.

Seq. No.	Date	Minor planet	Diam. (km)	Observer(s)	Chords
26	1982 Mar 30	15 Eunomia	>309	Overbeek	1
38	1983 May 05	65 Cybele	>150	Hers	1
48	1984 Aug 08	87 Sylvia	>249	Strobos, Hirsch	1
56	1985 Apr 21	12 Victoria		Van Ellinckhuyzen	½
80	1988 Apr 21	139 Juewa	164±20	Cooper, Wakefield	2
82	1988 Jul 09	250 Bettina	>97	Cooper, Fraser, Overbeek, Wakefield	3
100	1990 Jun 15	3 Juno		Overbeek	1
113	1991 Jun 15	356 Liguria		Lund	1
137	1994 Dec 15	336 Lacadiera	>52	Overbeek	1
182	1998 Jun 27	248 Lameia	62 x 53 or 55 x 52	Overbeek, Cooper, Fraser, Smit, Lund	5
222	1999 Oct 14	48 Doris		Overbeek, Cooper, Fraser, de Jager	4
247	2000 Jun 11	345 Tercidina		Overbeek, Smit	2
257	2000 Oct 05	135 Hertha		Turk	1
311	2002 Jan 07	712 Boliviana		Streicher	1

Extracted from a list of 334 positive events observed globally up to May 2002, maintained by the International Occultation Timing Association. Also see Fraser & Overbeek (1998).

of the host of minor planets, for which the latest count is 208,572 (Marsden 2003: 8). There exists a core group of ASSA observers who observe the latter, and by timing the disappearance and reappearance of stars during such events, we are able to determine the size and shape of the occulting body. A list of successful observations is given in Table 2. In the past, the limited accuracy of the predictions meant that we might achieve success in perhaps 5% of the events observed. Nowadays, with much more accurate positional measurements of both stars and planets, the success rate is perhaps one in two or three.

Nevertheless, there are still too few chords generated by ASSA members to determine accurate minor planet profiles, simply because too few observers are taking part in this important program. A case in point will illustrate the importance of having many observers taking part. The most successful event so far observed from South Africa was the occultation of PPM 236753 by 248 Lameia on 1998 June 27 (Fraser & Overbeek 1998). Five chords were obtained across the profile of the minor planet, which enabled us to derive a size of 55 x 52 km. However, if we superimpose the positions of the five successful stations on a map of the Gauteng region, we realise that dozens of potential observers were in the path, and had these observed we could have defined the profile with much greater accuracy. And this was the most successful to date; most results are based on the chords of at most one or two observers.

8. Solar and lunar observing

The Solar Section languished for many years without direction. Now however, it is being rejuvenated under the leadership of its new Director, Braam van Zyl. I would urge interested participants to contact Braam, to ensure the long-term viability of observations by ASSA members. In the past, observations have been made in sunspot counting and drawing, and the monitoring of solar magnetic activity.

There has never been any coordinated approach to lunar observation. Despite the fact that many consider the Moon to be a sterile solar system body, there are important areas where observers with small telescopes can contribute, such as the monitoring of TLPs and micro-meteorite impacts. In the case of the Leonids, these impacts have been recorded with video recorders. In recent years, ASSA members have also submitted useful measurements of lunar eclipse darkness, which have been used to measure the dissipation of volcanic aerosols (Keen 2003). This series of observations needs to be continued in support of this long term project, and with three more total lunar eclipses in 2003/4 we have an ideal opportunity to make a valuable contribution to this program.

9. Double stars

The Double Star section under the directorship of Chris de Villiers is the newest observing section of ASSA. Little double star work has been done since the pioneering days of Innes, Finsen, van den Bos and Rossiter. The section desperately requires more observers to complement the work being done by Chris and Magda Streicher. Quoting from Chris' webpage [www.skywatch.co.za]:

> 'This branch of astronomy offers...a unique opportunity for the observer to engage in real astronomical research, rather than just admiring the colour differences

often found in a pair of doubles. In fact, this field is wide open to all interested observers, presenting a golden opportunity for serious scientific work. Scientific double star work consists of determining the angular separation between the two components, and the position angle of the (usually) fainter, secondary component with respect to the brighter, primary component. After many observations the apparent orbit may be plotted and the orbital elements calculated. Once the orbit of a pair is known, the masses of the stars may be calculated.'

10. Deep-sky observing

Virtually only Auke Slotegraaf and Magda Streicher are engaged in this work, but both produce a high output of quality observations which are used by the global community. These objects are also considered to be without change, but there are a surprising number of objects which are considered poorly known and for which visual observations are sought. Chief in this category would be uncertainties in the NGC; the Revised NGC (RNGC) listed a great number of objects as non-existent when they do, in fact, exist. With the establishment of the various Data Centres, the RNGC's mischief is largely undone, but there is nevertheless a nomenclature mix-up, which deep-sky observers are helping to sort out (A Slotegraaf, private communication).

11. Conclusions

The foregoing lists some of the major contributions and areas for expansion. But the list certainly does not end here. For the advanced amateur, there are fields of specialised study crying out for attention, especially for those equipped with CCD cameras on even small telescopes. These are fields which, not so long ago, were beyond the realm of the amateur, to which he or she can now make a serious contribution.

My Presidential Address intends to give some idea of the successes achieved by dedicated amateur ASSA observers in the past, and impetus for improving our contribution in the future. For many of these important observations it is not required to have a large professional telescope. All it takes is patience, motivation and dedication. I sincerely hope that our many members will take these comments to heart in the coming period. Clear skies to you all.

References

Cooper T. P. (2003a) A History of Comet Discovery from South Africa. MNASSA, 62 (7&8), 170–179.

Cooper T. P. (2003b) Recent ASSA Results on Comets and Meteors. MNASSA, 62 (5&6), 114–123.

Fraser B. & Overbeek M. D. (1998) Occultation Observation of PPM236753 by 248 Lameia, 1998 June 27. MNASSA, 57, 85–87.

Green, D. W. E. (2003) Annual Report of the Central Bureau for Astronomical Telegrams, 2002. IAU Information Bulletin 93.

Jenniskens P. (1995) Meteor Stream Activity II. Meteor Outbursts. Astron. Astrophys., 295, 206–235.

Jenniskens P. & Lyytinen E. (2003) Meteor Outbursts from Long Period Comet Dust Trails. Icarus (in press).

Keen R. (2003) Volcanic aerosol optical thicknesses derived from lunar eclipse observations, In: Global Volcanism Program – Volcanic Activity Reports – Atmospheric Effects. Retrieved from [http://volcano.si.edu].

Liller W. (1992) The Cambridge Guide to Astronomical Discovery. CUP.

Marsden B. G. (2003) Annual Report of the Minor Planet Centre, 2002. IAU Information Bulletin 93.

Mattei J. A. (2002) Contributions of South African amateur astronomers to variable star research. Paper presented at the 5th ASSA Symposium, November 2002 (unpublished)

Monard L. A. G. (2003) Searching for Supernovae. MNASSA, 62 (5&6), 131–133.

... *Occultation by Titan, continued from p.194*

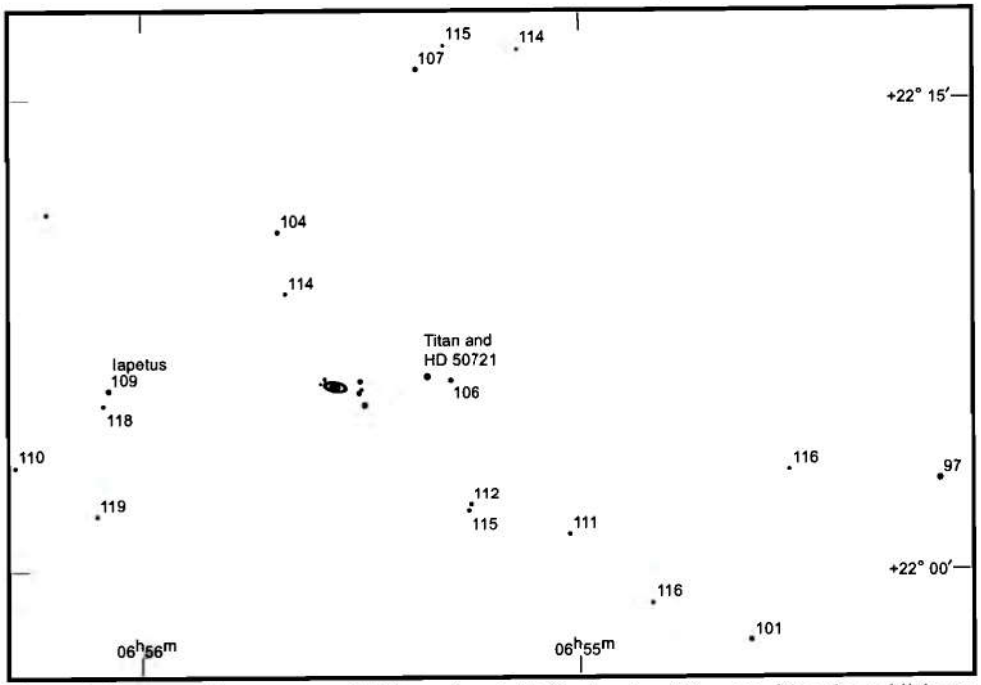

Figure 2. Saturn and its moons on 14 November at 02:11, showing Titan occulting the reddish star HD 50721. The separation between Saturn and Titan will be 2′56″. Some 7 hours later, Titan will occult the 10.6 mag star shown to its west. East of Saturn lies Iapetus (10.9 mag); several more moons are identified on the close-up diagram below. Stellar magnitudes, taken from the Tycho-2 catalogue and converted to *V*, are shown with decimals omitted.

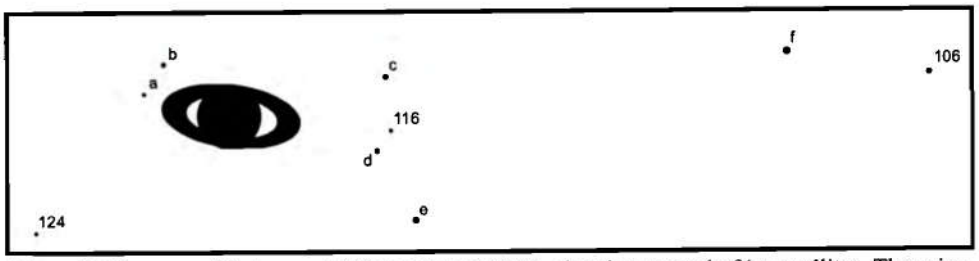

Figure 3. Close-up of Saturn on 14 November at 02:11, showing several of its satellites. The orientation of the diagram is identical to Figure 2, which has north up and east to the left. The satellites, and their visual magnitudes, are (a) Mimas, 12.7 mag; (b) Encelade, 11.5; (c) Dione, 10.2; (d) Tethys, 10.0; (e) Rhea, 9.5; (f) Titan, 8.4 and HD 50721, 8.6 mag.

Quasars and active galaxies

The French astronomers Mira & Philippe Veron (Haute Provence Observatory) have recently made the 11th edition of their quasar catalogue available. It lists all quasars with measured redshifts known prior to 2003 August 1.

It includes close on 50 000 quasars, and an additional 15 000 galaxies with active nuclei. This is nearly double the number in the previous edition, due to inclusion of the Australian 2dF quasar catalogue and results from the first part of the SLOAN sky survey.

These exotic celestial objects are within reach of the amateur equipped with a small telescope and a good set of star charts.

Table 1 lists all quasars with V mag brighter than 13.0, putting them within reach of a 6-inch telescope.

The brightest quasar in the list is **IC 4296** (see finder chart overleaf) located in Centaurus. Despite its southerly declination, it was discovered by Lewis Swift in the 1890s from Los Angeles, California, using a 16-inch refractor. Prof H A Howe observed it soon after, with a 20-inch refractor from Denver, Colorado. More southerly observers will have a better view, but not much detail is likely to be seen. An 8-inch shows it as a round half-arcminute fuzzy blob. It is the brightest member of a group of 30 or so galaxies (the IC 4296 Group) which include NGC 5140 and possibly NGC 5161, NGC 5188 & NGC 5193.

Table 2 (overleaf) is an extract from the catalogue listing all active galaxies brighter than $V = 12.0$ and south of declination +20°. A number of 'famous' deepsky objects are in the list.

Most prominent is **NGC 4594**, the Sombrero Galaxy, in Virgo. In binoculars, it is readily seen as an elongated glow. I have never, however, noticed its nuclear region as being prominent, as one would expect from an active galaxy. However, in a telescope, the nucleus comes into prominence. William Herschel recorded it on two occasions during his systematic observing programme. In March 1788 he wrote about it in his log as follows: "much elongated, bright

Table 1. Quasars brighter than V = 13.0

Designation	RA h m s	Dec ° ′ ″	*V* (mag)	redshift (z)
4U 0241+61	02 44 57.6	+62 28 06	12.19	0.045
WENSS 0648+733	06 54 26.6	+73 19 50	11.7	0.114
1WGA J0820.1+3728	08 20 07.7	+37 28 39	11.8	0.082
MCG -02.28.039	11 01 29.9	−12 26 56	12.7	0.026
3C 273.0	12 29 06.7	+02 03 08	12.85	0.158
IC 4296	13 36 39.0	−33 57 58	10.5	0.013
WPVS 95	14 51 33.0	−36 25 56	12.3	0.028
WPVS 97	14 55 53.0	−35 48 22	12.0	0.035
NPM1G+27.0587	18 53 03.9	+27 50 28	12.5	0.062
FIRST J22060-0821	22 06 02.6	−08 21 06	12.34	0.067
RXS J22289-0904	22 28 52.7	−09 04 52	12.8	0.07
RX J23273+1524	23 27 22.0	+15 24 37	12.6	0.044