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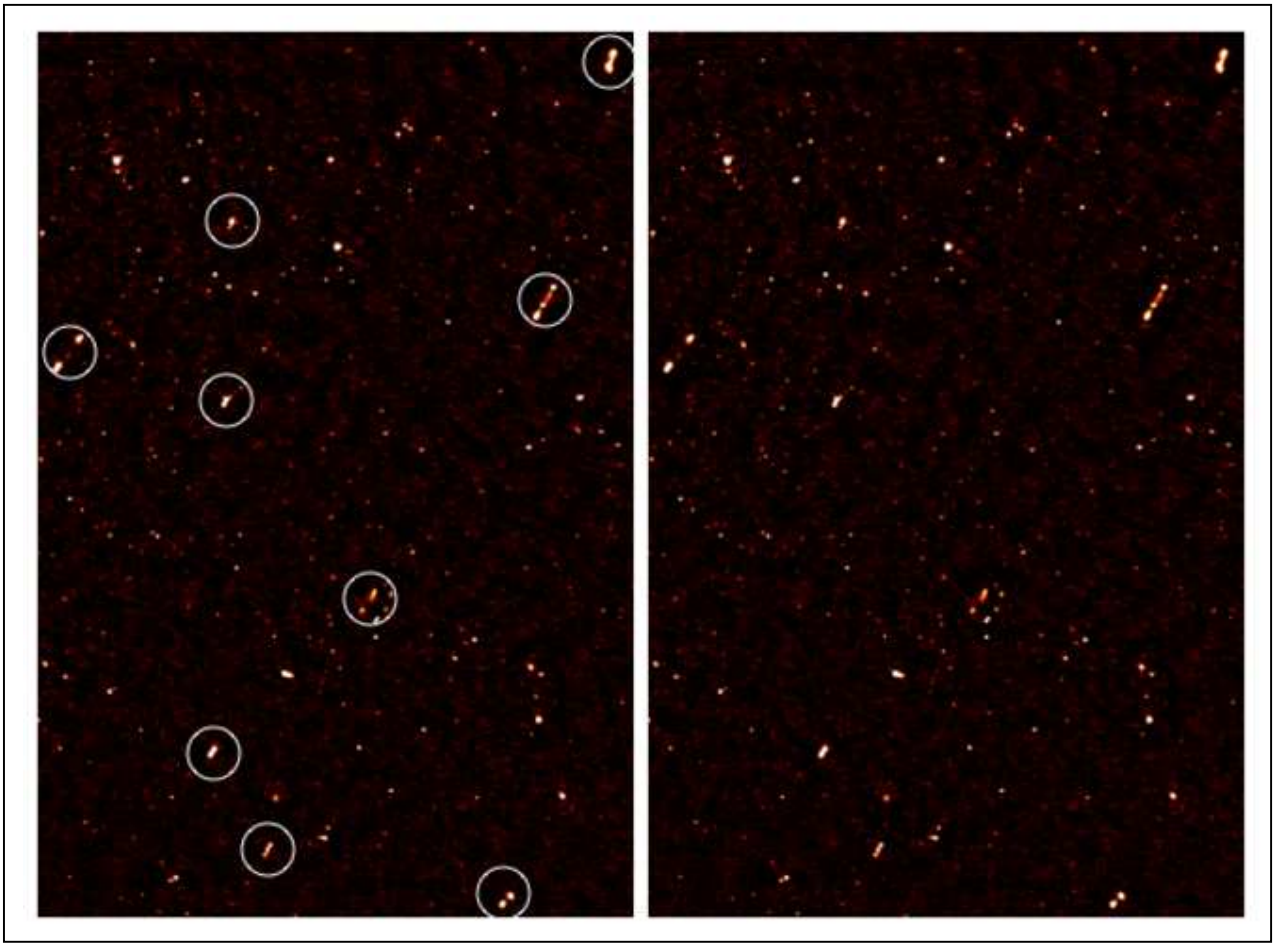

In this issue:

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CONTRIBUTIONS	*MNASSA* mainly serves the Southern African astronomical community. Articles may be submitted by members of this community or by those with strong connections. Else they should deal with matters of direct interest to the community**.** *MNASSA* is published on the first day of every second month and articles are due one month before the publication date.
RECOGNITION	Articles from *MNASSA* appear in the NASA/ADS data system.

Cover picture: An image of the deep radio map covering the ELAIS-N1 region, with aligned galaxy jets. The image on the left has white circles around the aligned galaxies; the image on the right is without the circles. *Credit: Prof Russ Taylor (UCT/UWC/SKA)*

Astronomical Society of Southern Africa
ASSA

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Vol 75 Nos 3 & 4 April 2015

News Note: Unexplained Galaxy Alignment on a cosmic scale

Deep radio imaging by researchers in the University of Cape Town and University of the Western Cape has revealed that supermassive black holes in a region of the distant universe are all spinning out radio jets in the same direction -- most likely a result of primordial mass fluctuations in the early universe. The results appear in a recent paper in MNRAS (Monthly Notices of the Royal Astronomical Society).

The essence of the discovery is that radio jets from a number of galaxies occupying a large volume of space are aligned instead of being randomly orientated as expected. The data come from a deep radio imaging survey of a one-degree square region called ELAIS-N1 using the Giant Metrewave Radio Telescope (GMRT) in India. ELAIS stands for the European Large Area ISO Survey, originally a multi-national project for an in-depth infrared survey of certain parts of the extragalactic sky at 6.7 to 175 micrometres wavelength.

The jets are produced by the supermassive black holes at the centres of these galaxies, and the only way for this alignment to exist is if the black holes are all spinning in the same direction, according to Andrew Russ Taylor, the principal author of the study who holds of a joint UWC/UCT SKA professorial chair. The co-author of this study is Presanth Jagannathan, a UCT PhD student currently working at the National Radio Astronomy Observatory, Socorro, New Mexico, USA.

Since these black holes are not connected in any way, nor can exchange they information or influence each other directly over such vast scales, this spin alignment must have occurred during the formation of the galaxies in the early universe. This implies that there is a coherent spin in the structure of this volume of space that was formed from the primordial mass fluctuations that seeded the creation of the large-scale structure of the universe.

Earlier observational studies had previously detected deviations from uniformity in the orientations of galaxies but these sensitive radio images are the first to use jets to reveal alignments of galaxies on physical scales of up to 100 Mpc. Measurements of the total intensity radio emission of galaxy jets have the advantage of not being affected by effects such as scattering, extinction and Faraday Radiation, which may be an issue for other studies.

The cause of this alignment is far from being understood but is probably of cosmological significance. There are several suggested explanations: cosmic magnetic fields; fields associated with exotic particles (axions); and cosmic strings could create an alignment in galaxies on scales larger than galaxy clusters.

The authors go on to note it would be interesting to compare this with predictions of angular momentum structure from universe simulations.

UWC Prof Romeel Dave, SARChI Chair in Cosmology with Multi-Wavelength Data, who leads a team developing plans for universe simulations that could explore the growth of large-scale structure from a theoretical perspective, agrees: "This is not obviously expected based on our current understanding of cosmology. It's a bizarre finding."

"GMRT is one of the largest and most sensitive radio telescope arrays in the world," notes Prof Taylor, "but we really need MeerKAT to make the very sensitive maps, over a very large area and with great detail, that will be necessary to differentiate between possible explanations. It opens up a whole new research area for these instruments, which will probe as

deeply and as far back as we can go -- it's going to be an exciting time to be an astronomer."

(Acknowledgment: various press releases and www.ras.org.uk/images/stories/press/Black_Holes/alignment.pdf)

News Note: Presentation of Edinburgh Medal

On Wednesday 30 March, the Lord Provost of City of Edinburgh Council presented the Edinburgh Medal to Kevin Govender of the IAU's Office of Astronomy for Development and to Silvia Torres-Peimbert, President of the IAU, in a special ceremony at the 2016 Edinburgh International Science Festival.

The 2016 Edinburgh Medal was jointly awarded to Kevin Govender and the International Astronomical Union (IAU) in recognition of their wide-reaching contribution to science.

The UK's Astronomer Royal, Lord (Martin) Rees, opened the event, following which Torres-Peimbert and Govender discussed their work and the future of Astronomy for Development. Professor Monica Grady delivered a vote of thanks.

The joint award acknowledges the creation and establishment of the Office of Astronomy for Development, which integrates the pursuit of scientific knowledge with social development for and with those most in need. Under the pioneering stewardship of Kevin Govender, the Office of Astronomy for Development, hosted at the South African Astronomical Observatory in partnership with the National Research Foundation and the

South African Department of Science and Technology, has successfully harnessed astronomy in the service of global education and capacity building.

Letter to the Editor: Call for Historical Material

As Director of the Historical Section of ASSA I would like to appeal to all members to donate items of historical value to the Society's Archive. Potentially valuable material will be lost forever if we do not identify and conserve it. For instance, minute books of meetings, newsletters, membership list of centres could be interest and value.

A few years ago the Society founded an Archive for unique and irreplaceable documents. In order to properly conserve them the Council of ASSA has entered into an agreement with the University of Cape Town which manages a "Special Collection Archive". These documents are now properly indexed, conserved and stored.

Some of the important documents were digitized and are now available on the internet to the public. This includes the minutes of meetings of the National Council of ASSA, the Cape Centre as well as the Natal Midlands Centre, for a total of about 140 years. To view the minutes go to the A.S.S.A. website.

http://assa.saao.ac.za/sections/history/assa-archive/

When viewing the website it will become apparent that there is material for the National Council, Cape Centre, Bloemfontein and the Natal Midlands Centre, and hardly anything for the Natal, Garden Route and Hermanus Centres. There is nothing for the Johannesburg or Pretoria Centres.

Items that can be considered for the Archive can be musty and old, it can be modern such as e-mails. For example the Archive has some newsletters from the Cape and Bloemfontein Centre's which were e-mailed, thus from the digital era. There are no newsletters from the pre-digital era. Anything relevant would be of importance!

Chris de Coning
history@assa.saao.ac.za

Port Elizabeth People's Observatory Society

By Doug Bullis, Grahamstown.
With additional comments by Nielen Schaefer, Sirion Robertson and Marc Schafer and edited by Case Rijsdijk.

Introduction

After 66 years of introducing South Africans to the wonders of the night sky, the 1891 Port Elizabeth Thomas Cooke & Sons 8-inch refractor has departed our shores. It's a leave-taking that inspires mixed emotions. On the plus side, the grand old telescope is to be restored to its original ex-works condition as centrepiece of a telescope history museum and working observatory in Napa County, California. It will be surrounded by late 19th century historic telescopes by Clark, Grubb, and Brashear. Most important, it will be used to introduce young people and the public to the wonders of astronomy. A more promising future could hardly be imagined.

Historical Overview
The year 1947 is not noted for much, but a Mr. J Bently of Port Elizabeth, South Africa, had developed a keen interest in astronomy. On 28 May 1947 Bently gathered twelve colleagues with similar interest, to form an observatory society. Mr. Bently's group was realistic about their ambitions though: they borrowed a 4 inch refractor and an epidiascope used to

project images of book pages onto a wall. They met in one another's homes or under the night skies at Newton Park (which really was a park in those days). Mr. Bently later made inquiries at the Royal Observatory at the Cape and learnt that a large Thomas Cooke refractor, in storage at the Royal Astronomical Society in Britain, might be available, at the pulse-quickening asking price of £1 200!

Fig. 1. The Port Elizabeth telescope in its roll-off roof observatory on Westview Drive in Mill Park. Not shown in this image are the cabinets surrounding the room.

The Port Elizabeth enthusiasts were free to pursue their interests in astronomy, but like so many other amateurs they relied on hand-me-downs bequeathed by the wealthy. In the last years of the 1940s Mr. Bently's group had only their four-inch telescope with several eyepieces of abstemiously slender fields of view. But they resolved to commence a public fund-raising drive to purchase the 8" Cooke, and within 11 months had garnered enough private and public funds to order the telescope. The name "Port Elizabeth People's Observatory Society" (PEPOS) is a fitting amalgam in honour of so diverse an array of open wallets. Their new telescope, arrived in mid-1949 on the Port Elizabeth docks in two enormous crates, within which lay all its many pieces.

The records are unclear whether Mr. Bently's Committee fully anticipated the extent of equipment in the two crates, which consisted of:

One Eight-inch (203mm) f/15.1 (3048 mm focal length) doublet refractor

One cast-iron pier & German equatorial mount with gearing for lunar, solar, and sidereal rates, plus manual slewing capability

Working clock drive in glass-windowed metal enclosure, running time approximately 8 hours

Low-dispersion stellar spectroscope in wood box

High-dispersion solar spectroscope in wood box

Filar micrometer in wood box

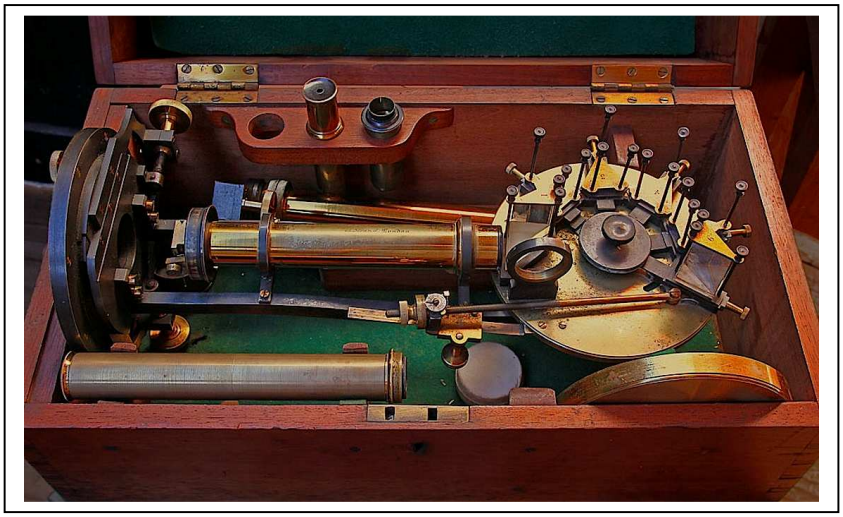
3.5" dia. Ronchi grating in wood box

Astronomical protractor in wood box

Spirit level in wood box

Fig. 2 (left): Cooke 1890s filar micrometer as it came with the Port Elizabeth refractor. In keeping with the elder Cooke's business philosophy that performance delivered must surpass performance claimed, his equipment looked a lot better on a telescope than it did in his catalogue. Photo by the author

Fig. 3 (below) Five-prism quadruple-pass solar spectrometer from the Thos. Cooke & Sons 1886-1892 design series.



There was no handy instruction manual. At first the telescope was assembled on a hardpan clearing courteously loaned by Anderson Nurseries. The Cooke's introduction to the charms of Eastern Cape

weather was brisk: it endured three months in the open air until a cumbersome corrugated iron shed was constructed. The entire shed rolled on tram rails discarded when the auto boom arrived.

Here four of the prisms were removed for cleaning. The incoming beam was reflected internally four times to result in a total dispersion equal to 20 prisms.

The City of Port Elizabeth then generously opened its purse to the tune of £2 000 to build a home for it in Mill Park. In those days Mill Park was really a park, many kilometres from the edge of the young city busily at work down by the water. The same rails did double duty when a proper observatory was built in 1950 on a site granted by the Municipality. Political relations and science were good friends even then: the Municipality's generosity enabled them to buy brick, mortar, and skills to make a fully-equipped observatory with lecture halls. The builder made a sturdy structure with a roll-off roof that worked faultlessly for 66 years, but forgot to add running water and toilet fixtures! The site in Mill Park was selected because it was under dark skies on the edge of the young city. By June 1953 PEPOS Committee deemed that the equipment, observatory and personnel were ready and felt confident enough to open the telescope to the public.

The following appeared in the **The Herald Newspaper**, Port Elizabeth, Eastern Cape, 29 June, 1953:

Public Can Peer at the Planets through City's New Telescope

The only large astronomical telescope to be set up solely for the public use in South Africa is to be opened to townspeople and visitors to Port Elizabeth on Wednesday night.

Established and operated by the Port Elizabeth centre of the Astronomical Society of Southern Africa, the city's eight inch telescope which was*

imported from England at a cost of about £1 000 [sic]. It is housed in a new Peoples Observatory, at Westview drive, Mill Park.

Officers of the Port Elizabeth centre announced yesterday that, weather permitting, members of the Society would be in attendance every Wednesday night, starting this week, to enable small parties of interested people to look at the planets.

The telescope is the only large professional telescope to be set up solely for the benefit of the public in South Africa. The use of the site has been granted by the City Council to the trustees of the Society.

* Editor's note: there is no record of there ever being a Port Elizabeth Centre of the ASSA – this should probably read: PE People's Observatory Society (PEPOS).

Mr. Bently and the PEPOS Committee were in advance of their time. Based on the evidence of his activities, if not his scanty writings, Bently hoped that South African amateur astronomy might one day produce its own William Herschel. He was envious of the success of the professional community, leaving Port Elizabeth amateurs to the cold comforts of their back yards. This vexed Mr. Bently no end, and as there were no public observatories in South Africa, and precious few in the world, he felt that here was a void that PEPOS could fill – and did most successfully for over 60 years!

Somewhat later the Royal Observatory in Cape Town donated a 42 mm Troughton & Simms 1839 transit telescope, and six original Ottway Huygens eyepieces (drawtube dia 30.06mm or 1.2 in) in a wooden box were purchased in July 1959, for the sum £45, from the U.K.

Decline

At its peak in the 1980s, the PEPOS sported 81 members – with up to 20 or more regularly attending meetings! But over the past ten years there has been a steady decline; the Society was quite obviously fading! Today suburbs extend more than fifteen kilometres beyond the building. PEPOS is not the first observatory to eventually close its doors, the same thing happened to Observatories around the world, including the Royal Observatory at the Cape, which moved its instruments from its suburb in Cape Town to the excellent site in Sutherland in the Northern Cape.

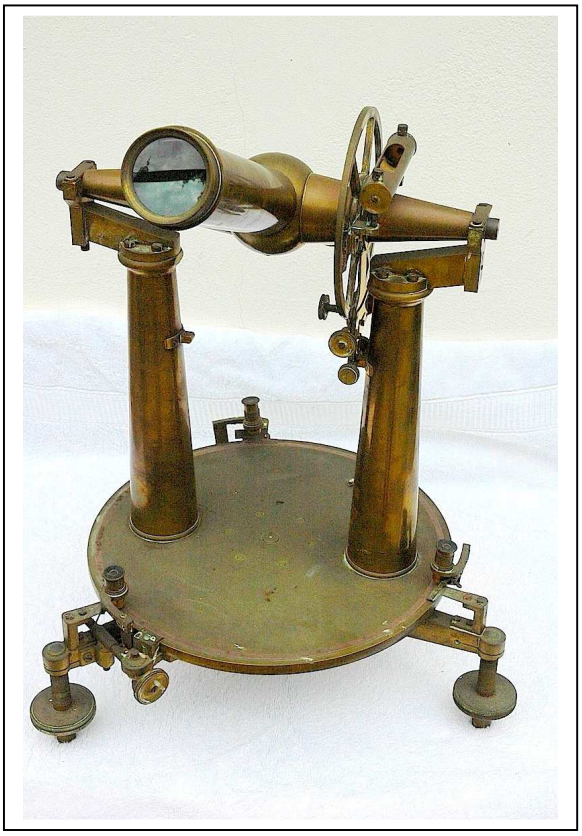


Fig. 4. Troughton & Simms, London, 1839 42 mm solar transit circle. The PEPOS Minutes Book entry dated 16 July 1948 records, "The Royal Observatory, Cape Town is donating a spectroscope, a portable Transit Instrument, and Chronograph, to the People's Observatory. While all are obsolete instruments for research purposes, they are all that is reasonably desired for demonstration purposes."

As interest in the telescope had waned over the last few decades, due in part to the now readily available 8"-plus Schmidt-Cassegrain telescopes, as well as the robust Dobsonian reflectors, all at a reasonable price and used by amateur astronomers today. As a result the Cooke telescope was hardly used, was deteriorating and maintenance costs were beyond the means of the depleted society. Members of the Port Elizabeth Astronomical Society were faced with the problem deciding what to do with the telescope. Nielen Schaefer was

concerned that the telescope might, quite literally, have to be sold off as scrap metal! To avoid this, a small group of individuals got together: Ms Kate Cobbing, Prof Justin Jonas, Mr Case Rijsdijk, Mr Nielen Schaefer (member of PEPOS), Prof Marc Schafer and the author to try and find a solution. After some discussions the following options appeared to be possible:

The telescope and mounting is sold as scrap metal. (Naturally its optics would be removed and treated in some less philistine way: even if only by being kept in the bottom of a cupboard in the physics department of a university. The future of the lenses would of course be a matter of independent discussion: (see below.)
The telescope plus mounting, but not necessarily including its optics (see above) is bought from its owners, moved to a suitable place, and erected and maintained as a museum piece.
The instrument is bought and set up in fully functional circumstances, where it could be used for educational purposes. This option would extend its useful life indefinitely.

Obviously the last option was most desirable and several attempts were made to find a home in SA, without success. Meanwhile the author discovered that there were people around the world who bought and restored these "collector's telescopes". So an auction was set up by the author and successfully completed on 28 October, 2015, when PEPOS announced that the highest bidder for the 1890s Cooke 8-inch refractor at close of the auction was Daniel Mobati, from California, USA, whose is winning bid was for US$17 500. Daniel Mobati wrote:

It is indeed an honor to be the next custodian of this observatory. My plans include restoration and preservation of all the instruments which will be housed on an observatory in the San Francisco Bay Area. The specific location will be in Napa Valley, in the heart of the Wine Country. I hope it will be instrumental in providing access to the interested public (specially

the youth generation) with the goal of educating and sparking an interest in the history and the science of Astronomy.

Departure

By the end of December 2015, Nielen Schaefer and the author had stripped the Cooke telescope down to crate-able size pieces ready for shipping to the US, and at the time of writing, the process of getting the crates to the US is underway.

Fig. 5. The dissembled Cooke telescope on the floor of the PEPOS Observatory, ready for packing and shipping.

Fig. 6. Another view of the dissembled Cooke prior to packing.

The money raised from the sale of the PEPOS Cooke telescope will be put into a fund for supporting students doing science at the Nelson Mandela Metropolitan University, NMMU.

It is hoped that at some time in the future, MNASSA will be able to publish an article, showing the 8" Thomas Cooke Telescope in its new home, doing what it does best – showing the public the night sky through a truly historic instrument.

Observing and other activities

This is a new section that I hope will encourage others to really start doing some astronomy. I think that there are enough spots around SA near enough to where we live to go out to do some observing. In addition some outreach activities are also welcome to be submitted. There are several new initiatives coming as well – so there is ample opportunity for members to get involved. In order to enable members to learn more about these various activities will have add some links that may prove to be useful.
Editor

For this issue the Editor has chosen a stunning image by Leslie Rose.
A full resolution image may be downloaded from here: http://www.astrobin.com/244073/
This image was taken at the Summer Southern Star Party held at Nightsky Caravan Park near Bonnievale in the Western Cape on the evenings of 5 & 6 February 2016.

Imaging gear used:
Camera: Atik 383L CCD camera with the sensor cooled to -15 C^{o}
Telescope: TS Optics 8inch Ritchey Chretien (Carbon Fiber) with an Astrophysics CCDT67 focal reducer.
Mount: Celestron CGEM equatorial mount.
Total imaging time: 5.2 Hours

Fig 1. The blue reflection nebula CED 111 (Cederblad 111) lies within the Chameleon Molecular Cloud Complex at a distance of about 520 light years. To the left of CED111 is the pale yellow crescent shaped nebula CED110. Between these two nebulae one can just make out 2 reddish "blobs", these are two stars in the infancy of their life cycle (HH49 and HH50). These reflection nebulae are surrounded by thick clouds of dust from which new stars are being born. The brightest of these stars illuminate the gas and dust around them, creating visible reflection and emission type nebulae. The red arrow head shape to the right of CED111 is the infrared nebula GN 11.07.3.

http://inspirehep.net/record/813309/plots

http://apod.nasa.gov/apod/ap070811.html

http://www.atnf.csiro.au/pasa/15_1/zealey/paper/node2.html

Colloquia and Seminars

These form an important part of a research facility, often as a sort of pre-publication discussion or a discussion of an individual's current research, and as such it is virtually impossible to "publish" this material. However by recording the topics discussed in the form below does indicate to those, who are unable to attend, what current trends are and who has visited to do research: it keeps everyone 'in the loop' so to speak

Also included in this section are the colloquia/seminars at the SAAO, UWC and the Astrophysics, Cosmology and Gravity Centre at UCT, ACGC. Also included are the SAAO Astro-coffees which are 15-20min informal discussions on just about any topic including but not limited to: recent astro-ph papers, seminal/classic publications, education/outreach ideas and initiatives, preliminary results, student progress reports, conference/workshop feedback and skills-transfer.

SAAO

Title: Ionized gaseous halos in starforming disk galaxies – ionization and kinematics
Speaker: Ralf-Juergen Dettmar (Ruhr-Universität Bochum)
Date: 17 March
Time: 11h00 – 12h00
Venue: SAAO Auditorium
Abstract: The gaseous components in the disk-halo interface provide diagnostics for the global state of the dynamical ISM in star-forming disk galaxies. This is not only of interest to constrain models of the ISM but also important input for the current discussion about the importance of gas infall vs. outflow for the evolution of galaxies.

Following a short introduction into the general scenario some results for the ionization structure and kinematics of the diffuse ionized gas from IFU and Fabry-Perot spectroscopy will be presented and discussed.

Title: Sutherland seeing conditions and prospects of an Adaptive Optics system for SALT
Speaker: Laure Catala (SAAO)
Date: 24 March
Time: 11h00 – 12h00
Venue: SAAO Auditorium

Abstract: Ground-based telescopes are all affected by atmospheric turbulence that degrade their image quality. Nowadays most large telescopes are designed with adaptive optics (AO) systems compensating for those undesirable effects and providing near diffraction limited images to the science instruments. The initial design of SALT does not include such a system.
In the framework of my phd thesis I worked on a dimensioning and performance study of an AO system for SALT. In order to perform such a study a good knowledge of the seeing and atmospheric turbulence conditions at the Sutherland site was necessary. Hence, the first part of my work was dedicated to the site characterization, for which I used data from existing instruments, a MASS-DIMM and a SLODAR. I was also involved in the development of a new turbulence profiler instrument, the PBL, in collaboration with a team at the University of Nice Sophia Antipolis (France). I will give a brief overview of the Sutherland site results along with the PBL instrument development in the first part of this talk.
The second and main part of the talk will focus on the AO dimensioning and performance study. In order to evaluate the potential performances of an AO system for SALT I did a number of simulations. Those simulations need 3 sets of input parameters:
1. The site seeing and atmospheric turbulence conditions
2. The telescope parameters
3. The AO system parameters
The two first ones are known from the site characterization study and available telemetry data and telescope design characteristics. The AO system parameters need to be optimized prior to the actual system

performance study. As SALT is mainly designed for spectroscopy we focussed our study on the potential improvements in terms of spectroscopic performances. I present here the optimization study of the AO system parameters and the results of the AO simulations on the potential performances of such a system on SALT.
I will conclude with on-going projects related to the SALT AO study and further areas that still need to be investigated.

Title: Active phases and flickering in symbiotic stars.
Speaker: Krystian Ilkiewicz (Nicolaus Copernicus Astronomical Centre)
Date: 7 April
Time: 11h00 – 12h00
Venue: SAAO Auditorium

Abstract: Symbiotic stars are close binaries consisting of a late-type giant transferring material to a much hotter compact companion. Some of them are known to exhibit active phases, characterized by apparent increases in the hot component temperature and appearance of flickering, i.e. changes of the observed flux on time-scale of minutes. Throughout the years UV observations allowed authors to excluded geometrical and orbitally related nature of this phenomenon, while indicating connection to a mass transfer variability. I present optical and X-ray observations of one of the symbiotic systems, T CrB, that helped determine the nature of both active phases and flickering in symbiotic stars. In particular, the X-ray observations indicate that the flickering originates in the boundary zone between the accretion disc and the white dwarf. The X-ray radiation from the boundary zone is then reprocessed by thick accretion disc or a nebula into UV radiation.

Title: Science with MeerLICHT
Speaker: Vanessa McBride (UCT & SAAO)
Date: 14 April
Time: 11h00 – 12h00
Venue: SAAO Auditorium

Abstract: MeerLICHT is a 65cm optical telescope that will operate from Sutherland starting 2017. The telescope will point wherever the MeerKAT radio array is pointing and will observe in 5 filters with a 1 minute cadence. The primary goal of the project is full exploitation of radio transient science, with before, during and after snapshots of any radio transient objects. However, a wealth of optical data will be generated and I will discuss observing strategy and potential ancillary science from these data.

NASSP

Title: Building an operational forecast model of induced E-field
Speaker: Dr. Stefan Lotz from SANSA
Date: 23 February
Time: 16h00 – 17h00
Venue: RW James, Lecture theatre 2A (James 2A)

Abstract: During intense geomagnetic storms fluctuations of ionospheric currents and the Earth's magnetic field induces an electric field on the surface. These E-fields, in turn, induces current in grounded conductor networks like power distribution networks or oil pipelines. In the case of power networks, anomalous quasi-direct current causes heating of transformer cores and cooling oil. This may cause damage to the transformers and may ultimately trigger widespread blackouts. The prediction of these effects is an open problem in space physics. Our lack of understanding of solar dynamics hampers the effective forecasting of coronal mass ejections (CMEs). The lack of in situ solar wind measurements close to the magnetospheric bow shock hampers our understanding of the coupling of the solar wind and magnetospheric plasmas. In this talk I will demonstrate the construction of a simple empirical prediction model of induced E-field caused by solar activity. The data sources, modelling techniques and performance of the model will be discussed.

Title: How much information can be measured in the Universe?
Speaker: Dr. Yin-Zhe Ma from UKZN
Date: 1 March
Time: 16h00 – 17h00
Venue: RW James, Lecture theatre 2A (James 2A)

Abstract: Cosmologists' work is to measure the modes of fluctuations in the Universe. The total number of modes one can measure depend on the maximum space that one can observe, and the highest value of perturbation modes one can measure. In this talk, I will give a physical picture of how this “total information” changes in the past and future time, and discuss how many number of modes cosmologists can be measured now, and in the future. In addition, I will discuss how can use the 21-cm intensity mapping technique to map out more structures of the Universe and therefore acquire more information from it.

Title: Modelling the progenitors and environments of stellar explosions
Speaker: Dr. Shazrene Mohamed
Date: 8 March
Time: 16h00 – 17h00
Venue: RW James, Lecture theatre 2A (James 2A)

Abstract: In this talk we present models of explosions in low- and high-mass stellar systems and their interaction with their circumstellar environments. For the former, we focus on RS Ophiuchi, a symbiotic nova system consisting of a red giant and an accreting white dwarf which undergoes thermonuclear outbursts every 10-20 years. The resulting outflow is highly asymmetric with evidence for a dense, equatorial component and bipolar ejecta morphology. The white dwarf is thought to be close to the Chandrasekhar mass making the system a likely Type Ia supernova candidate. The main high-mass example is Betelgeuse, a red supergiant that is surrounded by a massive circumstellar shell and a bow shock. The star will eventually explode producing a core-collapse supernova. We discuss the origin of the circumstellar structures in these

progenitors, and the observable spectroscopic and photometric signatures we expect from their collision with the explosive ejecta.

Title: Mapping Diffuse HI around Galaxies with the Green Bank Telescope
Speaker: Assoc. Prof. D.J Pisano from West Virginia University
Date: 15 March
Time: 16h00 – 17h00
Venue: RW James, Lecture theatre 2A (James 2A)

Abstract: In order to better understand how galaxies accrete gas from their surroundings, it is necessary to map neutral hydrogen emission down to the log N(HI)~17-18 level. While MeerKAT and SKA should be able to detect such gas, this sensitivity is currently achievable with the Green Bank Telescope. I will discuss the results of our ongoing surveys and how future studies will be helped by the addition of a phased-array feed to the GBT.

Title: A Galaxy Cluster Quest using Machine Learning Techniques?
Speaker: Dr. Nadeem Oozeer from the SKA SA
Date: 22 March
Time: 16h15 – 17h00
Venue: RW James, Lecture theatre 2A (James 2A)

Abstract: Galaxy clusters can be observed at different wavelengths. Each of these wavelengths reveals different characteristics of the clusters. Blanton et al. (2000, 2001, 2014) showed that bent radio galaxies can be used as tracers for galaxy clusters, especially those at high redshift. However, due to the huge amount of multi-wavelength data, traditional techniques are becoming obsolete and discovering new galaxy clusters has become tedious. In this talk I will review some aspects of galaxy clusters in the radio regime as well as elaborate on how machine learning (ML) can be used to classify radio sources in the quest for bent radio galaxies.

Title: The Universe in Full Color : Multi-Wavelength Studies of the Cosmic Star Formation History

Speaker: Dr Mattia Vaccari from UWC
Date: 12 April
Time: 16h15 – 17h00
Venue: RW James, Lecture theatre 2A (James 2A)

Abstract: The coming of age of multi-wavelength astrophysics over the past decade has allowed us to probe deep and wide into the distant universe at all wavelengths thanks to the combination of ground-based and space-based instrumentation.
This giant leap in observational capabilities has provided much further insight into how different wavelengths can be used to reliably trace star formation rates and thus place stronger constraints on the cosmic star formation history and on computer simulations trying to reproduce it.
I will provide a general introduction to the subject and then discuss some recent results of our research in this field, and particularly how long-wavelength (infrared, millimetre and radio) observations are being used to improve upon ultra-violet/optical estimates.
I will conclude by outlining future lines of research in the field within the HELP (http://herschel.sussex.ac.uk) project by UWC/UCT/IDIA researchers and students, and in particular how machine learning techniques can be effectively combined with more traditional approaches.

Title: Young massive star clusters and superwinds in strongly star-forming galaxies
Speaker: Dr. Petri Vaisanen (SAAO)
Date: 12 April
Time: 16h15 – 17h00
Venue: RW James, Lecture theatre 2A (James 2A)

Abstract: I will present an overview of our ongoing research on luminous IR galaxies, investigating the histories of their stellar populations, their super star cluster populations formed during violent star-forming episodes, and gas outflows and inflows both triggering and quenching further star-formation and feeding central active nucleus growth. These

processes are detailed essential pieces in trying to understand the trends in larger scale cosmological galaxy evolution coming from results of higher redshifts surveys. We use SALT, VLT, Gemini, and ALMA for the detailed work, along with smaller telescopes and archival data. In particular I will highlight recent SALT-based results on a rapidly disappearing population of massive clusters, indicating that globular cluster progenitors may need galaxy interactions to survive, and show an example of star-formation quenching seen in action within a nearby luminous merger, and describe student theses connected to the project

Astro-Coffee

Title: Security of quantum cryptography.
Speaker: Dr Mafu Mhlambululi from Botswana
Date: 16 March
Time: 13h00
Venue: 2nd floor auditorium SKA office, Pinelands

Abstract. Quantum theory forms one of the most studied fundamental theories of nature. It inevitably has led to the emergence of a number of different research areas. One of the breakthroughs was the development of quantum cryptography, which now forms one of the most advanced subjects in this field. One aspect of quantum cryptography, known as quantum key distribution (QKD) is the art of generating a secure key which is used to encode a secret message between two legitimate parties conventionally known as Alice, the sender, and Bob, the receiver, in the presence of an eavesdropper, known as Eve. The goal of QKD is to guarantee security in the presence of an eavesdropper, who has access to the communication channel and unlimited technology, to ensure she is unable to obtain useful information about the message. The most interesting and amazing phenomenon about a QKD scheme is that its security is based on the Laws of Physics rather than the computational or mathematical algorithms as in classical cryptography. Since the presentation of the first complete protocol i.e., BB84 protocol, several

QKD protocols have been proposed. Moreover, the unconditional security proofs of all these protocols against various attacks have been realized. In this talk, we discuss how the Laws of Physics guarantee the security of QKD protocols. We also provide a study of both theory and practical methods of security for different classes of QKD protocols. Concerning theory, we briefly clarify how the various laws of physics allow security of QKD protocols, which are used for secret communication. On the practical side, we show an implementation of a high dimensional mutually unbiased basis QKD protocol.

UWC/UCT

Title: Constraining GR with future large scale surveys
Speaker: Dr Francesco Montanari (University of Helsinki)
Date: 4 March
Time: 14h00
Venue: Rm 1.35 New Physics Building, UWC

Abstract: We investigate how new cosmological information can be obtained from ultra-large scale structure surveys, in order to constrain our theory of gravity.
We discuss directly observable cosmological probes allowing model independent measurements, useful to put complementary constraints on cosmological parameters.
The capability of future experiments to constrain sub-leading terms contributing to the galaxy spectrum and bi-spectrum is forecasted.
Promising probes are associated in particular with the weak lensing effect on galaxy statistical distributions, which constrains our theory of gravity through the lensing potential.

ACGC

Title: From colliding black holes to gravitational waves
Speaker: Dr Bishop Mongwane (UCT)
Date: 23 February
Time: 12h00
Venue: MAM-110 Maths Building, UCT

Abstract: In this informal talk, I will spend +/- 30 minutes to summarize the mathematics of binary black hole collision from a numerical relativity viewpoint and then we can spend the remaining time discussing the LIGO discovery and implications for cosmology and modified gravity.

Joint meeting with UCT/UWC
Title: Multi-Wavelength Techniques to test the Fundaments of Cosmology
Speaker: Dr. Stefano Camera (Jodrell Bank Centre for Astrophysics, Univ. of Manchester)
Date: 1 March
Time: 12h00
Venue: MAM-110 Maths Building, UCT

Abstract: In this talk, I shall review innovative techniques that will allow next-generation experiments to tackle some of the most fundamental questions of contemporary cosmology: the nature of gravity, inflation and dark matter. On the one hand, oncoming experiments such as the ESA Euclid satellite or the Square Kilometre Array will, for the first time, open a window onto the largest cosmic scales. Such scales, near or above the horizon, are uncontaminated by the non-linear growth of structure and by baryonic/astrophysics feedback. They can teach us about inflation and the physics of the early Universe. By measuring relativistic effects that only become detectable on those extremely large scales we could further confirm - or disprove - Einstein's gravity on cosmological distances. On the other hand, novel multi-wavelength synergies will enable us to lift

degeneracies in the dark sector. For instance, by cross-correlating the extragalactic gamma-ray background with weak gravitational lensing, we shall be able to disentangle, in the diffuse gamma-ray emission, the tiny contribution due to annihilations or decays of dark matter particles from the overwhelming background of unresolved astrophysical sources.

Joint meeting with UCT/UWC
Title: Gevolution and LATfield2
Speaker: Dr. David Daverio (Geneva U., Switzerland)
Date: 17 March
Time: 15h00
Venue: MAM-110 Maths Building, UCT

Abstract: Large scale structure formation is a highly non-linear process which can only be studied by numerical simulation. 100 years after the discovery of general relativity, n-body codes are still using Newtonian formulation of gravity. During this talk I will present the first n-body code based on equation consistently derived from general relativity, gevolution. The numerical tools required by such a code will be discussed and the library LATfield2 basement will be briefly introduced. Finally, first result obtained with gevolution for ΛCDM cosmology will be discussed.

Title: Photometric Supernova Classification With Machine Learning
Speaker: Dr. Michelle Lochner (University College London)
Date: 5 April
Time: 12h00
Venue: MAM-111 Maths Building, UCT

Abstract: The automated classification of photometric supernovae has become an active field in recent years in light of current and upcoming imaging surveys, including the Dark Energy Survey (DES) and the Large Synoptic Telescope (LSST). Spectroscopic confirmation of type will be impossible for all supernovae discovered with these surveys, making photometric classification an important step for both cosmology and core-

collapse studies. With this in mind, we develop a multi-faceted classification pipeline, investigating the use of machine learning algorithms combined with existing and novel methods of extracting features from light curves. In this talk, I will provide an overview of the methods used and discuss the results from applying the pipeline simulated supernova data. I will also discuss the effect of representativeness of training set and show that accurate classification is possible without redshift information.

Title: Astronomy at the Centre for High Performance Computing
Speaker: Prof. Catherine Cress (UWC)
Date: 19 April
Time: 12h00
Venue: MAM-110 Maths Building, UCT

Abstract: I will give an overview of CHPC facilities and astronomy-related work underway here. I will present a number of projects related to clusters of galaxies, including: (a) the clustering of Planck clusters as a probe of their mass (providing insight into apparent problems with Planck data); (b) SALT follow-up of clusters detected by the Atacama Cosmology Telescope; (c) radio observations of halos and star-forming galaxies in clusters and (d) probing the expansion rate of the universe using the luminous red galaxies typically found in clusters. I will also discuss simulation work aimed at modelling the radio sky, including the neutral hydrogen and continuum emission that will be detected by the MeerKAT/SKA.

AIMS

Title: How to model the effect of small-scale structures on light propagation?
Speaker: Dr Pierre Fleury (UCT):
Date: 18 April
Time: 12h00
Venue: Upstairs Hall, AIMS

Abstract: In standard cosmology, observations are interpreted as if light propagated through a universe whose inhomogeneities are modeled by perturbations with respect to the FLRW spacetime. However, the very narrow light beams associated with point-like sources—such as supernovae—probe the Universe at extremely small scales (~AU), up to which the perturbative approach should break down. In this talk, I will present an alternative framework where the lensing due to small-scale structures is treated as a diffusion process.

Sky Delights: The Mysterious Lizard

Magda Streicher

Mystery is to be found everywhere, veiled in darkness and unknown to us. And so it is with the constellation of Lacerta, which is enveloped in mystery. Since I had the opportunity to study it when I visited an astronomy camp in the northern hemisphere, I decided I just had to unravel it.

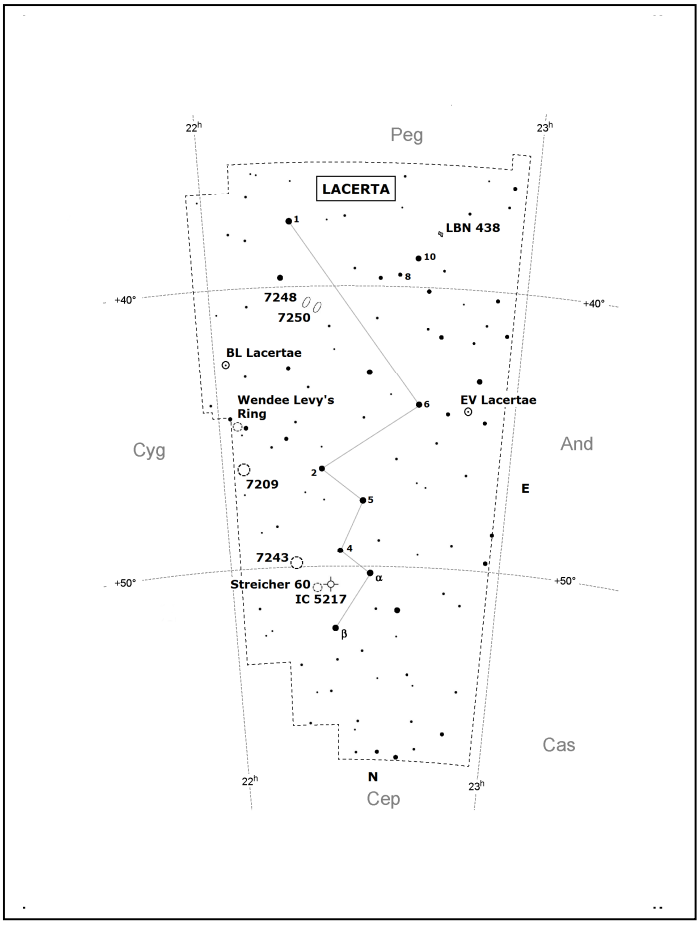


Fig. 1 The Lacerta Sky Chart

Firstly, the name means "lizard". Whether a large or small lizard in this case, who knows what the Polish astronomer Johannes Hevelius was thinking when he named the constellation in the late 17th century. Lacerta is relatively small in composition and weight among the constellations of Cygnus, Cepheus, Andromeda and Pegasus. For us in the southern part of the world the constellation is beyond reach, but I was able to "grab" a few objects, as it were, to share with you.

The constellation has a lot to offer in terms of open clusters, but a planetary nebula is the object to search out first. The star beta Lacertae is on the northern tip, with alpha Lacertae 2.2 degrees further south in the string formation which in combination forms the constellation outlinehe planetary nebula **IC 5217** is situated in a triangle west with alpha and beta

Lacertae, against a busy star field. It appears as just a small, out-of-focus dot. Use higher magnification and the magnitude 12 nebula appears slightly oval with a pale grey colour. With a careful eye and averted vision it grows, but no central star was spotted, although some amateurs claim to spot a very faint star on the north-east edge of the nebula. However, a lovely, long string was spotted a few years ago 7' towards the north-west, **Streicher 60** (DSH J 2223.3+5103 as listed in the *Deep Sky Hunters Catalogue*), drapes nearly 8' in length from north-east to south-west with no fewer than 10 stars about 11 magnitude, 7' towards the north-west.

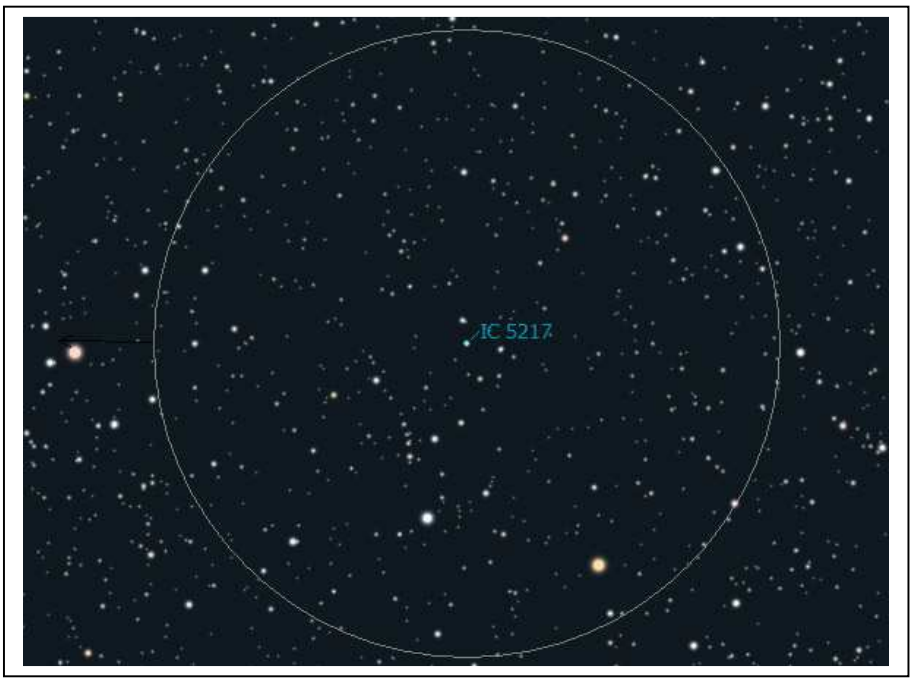


Fig. 2 Planetary Nebula IC 5217. This image clearly shows the string of stars mentioned. Here North is down and East to the right as seen from the northern hemisphere

In an isosceles triangle between alpha and beta Lacerta, towards the south-west, the first of the multitude of clusters Lacerta has in its boundaries is **NGC 7243.** The first impression was of three groupings in a somewhat elongated formation north-east to south-west. The brightest stars are situated more to the west, with a tighter star grouping east which extended south in short strings of faint stars. The equal magnitude 9 double star **Struve1890**, near centre, rounds off the grouping. H. Smyth notes that the surrounding area outside the grouping, is very rich in starlight, especially to the north. This cluster has been nicknamed the Broken Heart with the 14 brightest stars roughly outlining a heart symbol broken open along the northern side, where one of the stars

seems greatly misplaced. The complete grouping consists of more or less 50 stars. Binoculars are the best option to discover this starry heart that Lacerta offers

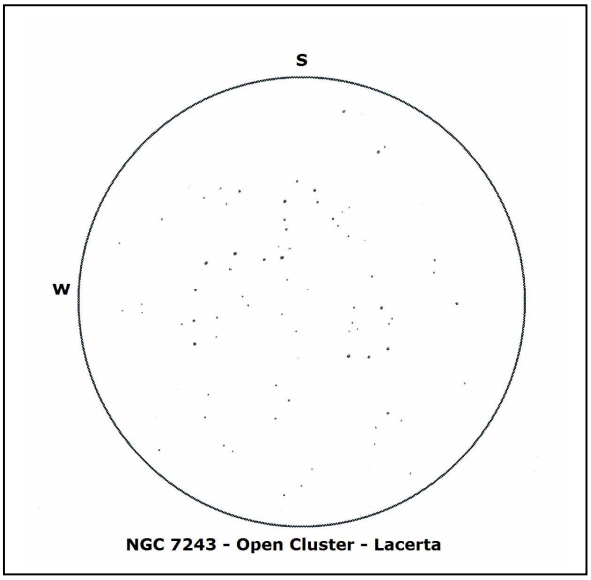


Fig. 3 NGC 7243 – an open cluster in Lacerta

Close to the Cygnus border a further 4 degrees south-west the lovely curly cluster **NGC 7209** winds its way over an area of 25'. The cluster gives an elongated impression with relatively faint stars fairly compact. The brightest stars in the cluster snake north to south across the group in a wide S shape. Stars string outward to the western side with fewer stars on the eastern side. Looked at in a wide field of view it appears as a pentagon shape. Just 1.4^{o} north-east of NGC 7209 is an attractive curve of bright, colourful, outstanding stars from east to west on which to try out your colour perception. Their magnitudes are 6.2, 6.5 and 5.1. I see them as white, bluish and yellow orange. (Well, if you are lucky enough to observe them from a more northern position!).

The star 6 Lacerta is a star hop away from the young star **EV Lacertae** in the eastern part of the constellation. This pipsqueak star unleashed a monster flare, picked up on 25 April, 2008 by the Swift satellite, the brightest flare ever seen coming from a star emitting only one percent of the Sun's light and having only a third of the Sun's mass. This flare was thousands of times more powerful than the greatest observed solar flare. The star remained bright in X-rays for 8 hours before settling back to normal. EV Lacertae is a run-of-the-mill red dwarf, one of the most common types of star in the universe. At a distance of only 16 light years EV Lacertae is one of our closest stellar neighbours, but because of its feeble light output, its apparent magnitude is only 10 (*MNASSA*, August

2008). The star had been thought to be a variable, but in the 1970s it was discovered that it is a brilliant core of a distant elliptical galaxy.

The nice thing about searching out asterisms is the story-telling part of these small groupings with fewer stars than the usual known open clusters. One such is **Wendee Levy's Ring**, consisting of magnitude 12 to 13 stars. The unrelated stars form a completely smooth ring, but sadly, the ring is open at its southern end. But it is such a wonderful gem to observe! It was discovered on the night of 2 January 2000 by David H. Levy and his wife Wendee. David H. Levy is the author of many books, and the co-discoverer of the comet Shoemaker-Levy 9. The asterism is to be found nearly on the border with Cygnus, close to NGC 7000, the North American Nebula

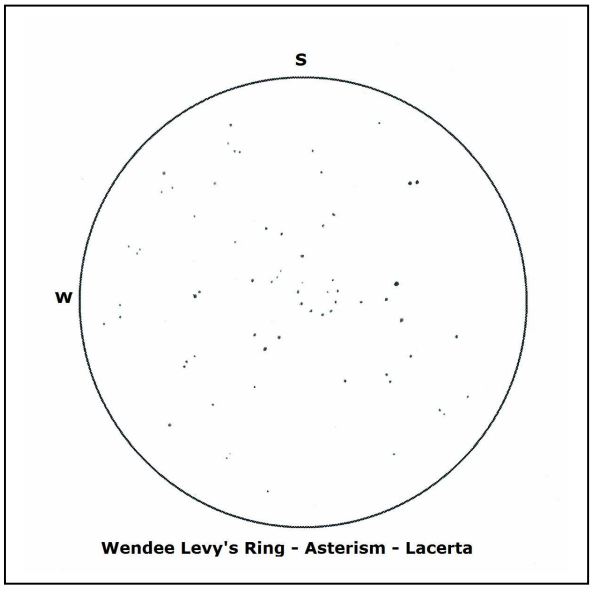


Fig. 4 The "Wendee" asterism in Lacerta

Moving further south-east is probably Lecerta's most famous object, **BL Lacertae**, an active galaxy with an active galactic nucleus (AGN) and named after its prototype. In contrast to other types of active galactic nuclei, BL Lacertae is characterised by rapid and large-amplitude flux variability and significant optical polarisation. When compared with the more luminous active nuclei of quasars with strong emission lines, BL Lacertae objects have spectra dominated by an active galaxy. It was first discovered by Cuno Hoffmeister in 1929, but was originally thought to be an irregular variable star in the Milky Way galaxy and so was given a variable star designation. In 1968 the "star" was identified by John Schmitt at the David Dunlap Observatory as a bright, variable radio source. A faint trace of a host galaxy was also found. In 1974 Oke and Gunn measured the redshift of BL Lacertae as z = 0.07,

corresponding to a recession velocity of 21 000 km/s with respect to the Milky Way. The redshift figure implies BL Lacertae changes in apparent magnitude over fairly small time periods between values of 14 and 17.

Although Lacerta is known for ample open clusters, it does have a few faint galaxies to offer. Two galaxies just 18' apart are situated more or less in the middle southern part of the constellation. **NGC 7248** and **NGC 7250** look nearly identical as two equal ovals in a south-east to north-west direction. NGC 7248, the brighter of the two, has a very bright nucleus and a slightly hazy edge. NGC 7250, in comparison, brightens up suddenly towards the centre, but not in a star-like way. An orange-coloured magnitude 11.5 star is situated on its south-eastern tip.

Locate 8 and 10 Lacertae in the far southern part of the constellation to point the way to **LBN 438**, a *Lynd's Catalogue* dark nebula. The surrounding area shows up only as an area scarred with starlight. Illuminated through interstellar radiation, the dusty nebula is, however, very faint. A string of stars runs alongside this dark area ending with a magnitude 9 deep orange star at the southern end. Halfway in this string a small knot of stars comes to light. The little grouping consists of 8 very faint stars seen at really high power (460X). On either side of the dusty nebula brighter stars make the star field stand out beautifully. It is one of the faintest Lynd's objects in the catalogue.

I accepted the challenge of trying to weave some reality into the mystical, given my favourable view of the far north, and was pleasantly surprised.

OBJECT	TYPE	RA	DEC	MAG	SIZE
BL Lacertae	Galaxy *	22h02m .7	+42°16′ .7	-	-
Wendee Levy's Ring	Asterism	22h04m .4	+45°09′ .0	10	5′
NGC 7209	Open Cluster	22h05m .2	+46°29′ .8	7.7	25′
NGC 7243	Open Cluster	22h15m .3	+49°53′ .0	6.4	21′
NGC 7248	Galaxy	22h16m .8	+40°30′ .0	12.4	1.8′x 0.9′
NGC 7250	Galaxy	22h18m .3	+40°35′ .0	12.6	1.2′x 0.6′
Streicher 60 DSH J 2223.3+5 103	Asterism	22h23m .3	+51°03′ .6	9.5	11′
IC 5217	Planetary Nebula	22h23m .9	+50°58′ .0	12.6	6″
LBN 438	Nebula	22h41m .8	+37°42′ .8	-	-
EV Lacertae	Galaxy *	22h46m .8	+44 °20′.2	10.9	-

Biographical index to MNASSA and JASSA to December 2015

I.S. Glass (SAAO)

This is an index of obituaries and other biographical notes from MNASSA and JASSA (predecessor of MNASSA) of people of note in Southern African astronomy, who spent at least a year here. An earlier version was published in *MNASSA* **62** pp302-309 2003.

Adam, Robert Martin (Rob), b 13 September 1955. To become Director of SKA (South Africa) *MNASSA* **73**, p254, 2014

Alden, Harold Lee. Dir Yale Southern Station. b Chicago 10 Jan 1890. d Charlottesville, Virginia, 3 February 1963. Pres ASSA 1931-32. Obit and picture: Rosenthal, Eric, *MNASSA* **30**, pp4-5, 1971. Obit: *MNASSA* **23**, p2, 1964. Hon member: *MNASSA* **4**, p56, 1945.

Anderson, R.G.B. Founder of Solar Section, ASSA. d 14 May 1987. Obit: Winskill, C.G., *MNASSA* **47**, p67, 1988.

Arp, Halton (Chip). Controversial Palomar astronomer who worked at least some of the time 1955-1957 at the Royal Observatory, Cape. b 21 March 1927. d 28 December 2013. Obituary: Glass, I.S., *MNASSA* **73**, pp1-2, 2014.

Atkins, G.R. Benefactor of Cape Centre. *MNASSA* **31**, p73, 1972. Pictures: *MNASSA* **29**, pp144,146, 1970.

Baart, Eddie. Prof at Rhodes University, b Kimberley 6 September 1933 d Port Elizabeth 23 December 2014. Obit: Anon *MNASSA* **74**, pp10-13, 2015.

Barker, James Gilbert (Jimmie). Active member of Natal Centre. b 13 October 1913, Crieff Scotland. d Durban (?), 21 March 1989. Obit: *MNASSA* **48**, pp55-56, 1989.

Bassett, Bruce. Cosmologist UCT Fellows' Award. *MNASSA* **65**, p176, 2006.

Bateman, Forrest de J. Active member of Transvaal Centre. b 1909. d 1983. Obit: Overbeek, M.D., *MNASSA* **42**, p56, 1983.

Bell, H.J.S. Active member of Natal Centre. Death notice: *MNASSA* **11**, p102, 1950.

Bell, William. Active Transvaal centre member. b Ireland, ca 1899. d 2 April 1971. Obits: *MNASSA* **30**, p34, 1971; 30, pp56-57, 1971.

Bennett, Jack C. Comet discoverer. Nova award AAVSO: *MNASSA* **35**, 112, 1976. Gill Medal: *MNASSA* **29**, p123, 1970. Picture: *MNASSA* Centrepiece 36, p126ff, 1977. BAA Merlin Medal: *MNASSA* 30, p57, 1971.

Bentley, J.C., President 1952-53. *MNASSA* **82**, p44, 1969.

Bentley, John Henry. b Pretoria ca 1921. d Pretoria 6 October 1965 (Bee-stings). Obit: *MNASSA* **24**, 142, 1965.

Bentley, William Cecil (Bill). Long-serving Council member, ASSA. b York, England, 1916. d Cape Town, 30 Sept, 1998. President 1970-71. Hurly, R., *MNASSA* **58,** p97, 1999. Also *MNASSA* **58**, 1, 1999. Picture: *MNASSA* Centrepiece **36**, p48ff, 1977.

Bester, Michiel John, Comet discoverer. Worked at Boyden 1937-1982. b Colesburg, 16 May 1917. d. Bethal 15 April 2005. See Cooper, T.P., *MNASSA* **62**, p176, 2003. Cooper, T.P., Obit: *MNASSA* **64**, pp118-119, 2005.

Blathwayt, Theodore Ballantyne. Discoverer of 3 comets. Donohoe Comet Medallist of ASP. b ca 1862. d 12 October 1934. Obit: *JASSA* **3,** pp166-167, 1935.

Bleksley, Arthur Edward Herbert. Leading member of Transvaal Centre. b Eastern Cape, 1908. d 1984. President of ASSA 1948-49. Obit: Overbeek, M.D., *MNASSA 44*, pp2-4, 1985.

Bondietti, John Sydney (Jack). Founder of CT planetarium. See Fairall, *MNASSA* **60**, p91, 2001.

Booth, Roy. Appointed as Director of HartRAO, *MNASSA* **65,** 95,2006.

Borcherds, Richard Borcherdus. Active member of Cape Centre. d 24 January 1958. Obit: *MNASSA* **17**, p3, 1958.

Borlase, E.M. Founder member of Natal Centre. Death notice: *MNASSA* **5**, p26, 1946.

Brickett, Ian R.H. Active member of Transvaal Centre. d 1987. *MNASSA* **46**, p28, 1987. Legacy to ASSA: *MNASSA* **45**, p110, 1986.

Bull, Alfred. d 6 June 1930. Early Cape Astr Assoc member. Obit: *JASSA* **2**, p237, 1930.

Cameron, Alan D.B. Active Cape Centre member. b 1917. d 23 July 1999. Obit: Skinner, B., *MNASSA* **58**, pp104-105, 1999.

Cameron-Swan, Donald. Long-time member of ASSA. b Gateshead-on-Tyne UK 22 April 1863. d Cape Town 19 August 1951. Notice of death: *MNASSA* **10**, p.63, 1951. Obit: *MNASSA* **11**, pp2-3, 1952. Pres of ASSA 1930-31.

Champion, G.A. d April 1926. Founding member of Natal Astr Assoc. *JASSA*, **2**, p38, 1926.

Charles, Philip Alan. Director of SAAO 2004-2012. b. 24-11-1950. Suspension and reinstatement – see *MNASSA* **69**, 48-54, 2010; **69**, 115, 2010. Farewell *MNASSA* **70**, 185-188, 2011.

Churms, Joseph. Positional astronomer and Deputy Director, SAAO. b Woodstock, Cape Town, 16 May 1926. d (24?) 25 September 1994, Cape Town. Active member of ASSA, former editor of *MNASSA*, President of ASSA 1969-70. Obit: Spencer Jones, *MNASSA* **54**, pp54-55, 1995. Also *MNASSA* **53**, p97, 1994. Retirement: *MNASSA* **46**, p116, 1987. Long service award: *MNASSA* **43**, p42, 1984.

Cillie, Prof G. Gawie. Early contributor to the theory of gaseous nebulae. b Stellenbosch 13 July 1910. d Stellenbosch 15 June 2000. Feast, M.W., *MNASSA* **60** pp37-39, 2001 (Astronomical Work and bibliography). Anon, *MNASSA*, **59**, p51, 2000 (general obit). Appointed Prof of Music, UOFS: *MNASSA* **36**, p2, 1977.

Cousins, Alan William James. Leading photometrist, amateur, later staff member of Royal Observatory and SAAO. b 8 August 1903, Three Anchor Bay. d 11 May 2001, Cape Town. Obits: Glass, I.S., *MNASSA* **60**, pp67-87, 2001 (includes bibliography). Also Kilkenny, D., *MNASSA* **52**, pp55-62, 1993. Gill medal *MNASSA* **22**, p85, 1963.

Cox, Walter Hubert. b Southampton, 2 September 1864. d Cape Town, 7 February 1932. Founder member of ASSA. Staff member of RO. Obit and picture: *JASSA* **3**, pp85-86, 1932.

Christianson, Michael John. Natal amateur. d 2002. *MNASSA* **61**, p113, 2003.

Davies, Hugh Clifford. Active member of Cape Centre. b 1904. d 1959. *MNASSA* **18**, pp145-6, 1959.

de Jager, Okkie. Cosmic Ray Physicist; Prof at Centre for Space Research, North-West University. b 9 April 1961, Pretoria; d 14 December 2010. Obituary: Burger, Adri, *MNASSA* **70**, pp10-11, 2011.

de Kock, Reginald Purdon. Prolific variable star observer. b Worcester (?) 2 July 1902. d Cape Town 20 July 1980. Obit: Glass, I.S., *MNASSA* **45**, pp113-116, 1986. Merit award AAVSO: *MNASSA* **21**, p1, 1962.

de La Caille, Nicolas-Louis. 18th C. positional astronomer. b Rumigny, France, 29 December 1713. d Paris 21 March 1762. See Feast, M.W., *MNASSA* **37**, pp12-14, 1978. Named several southern constellations. See also Hurly, R., *MNASSA* **62**, pp137-140, 2003; Evans, D.S., *MNASSA* **62**, p245; Tercentenary: Glass, I.S., *MNASSA* **72**, pp181-3, 2013.

de Sitter, Willem. Cosmologist. Spent Aug 1897 to December 1899 at RO Cape. d 20 November 1934. Obit: *JASSA* **3**, pp165-6, 1935.

Driver, Frederick John. RO Cape staff member. b Cornwall 8 January 1907. d 26 July 1957. Obit: *MNASSA* **16**, p104, 1957.

de Villiers, Josias Eduard. Owned Sea Point Observatory. b Stellenbosch, 27 December 1843. d (in train accident) Mostertshoek, Cape, 16 August 1898. Observatory: see Warner B. and Hurly R. *MNASSA* **35**, pp57-62, 1976.

de Villiers, C.W. Amateur radio astronomer. *MNASSA* **31**, p42, 1972.

du Toit, Daniel. Comet discoverer. Asst. at Boyden. *MNASSA* **1**, p74, 1942. See also Cooper, T.P., *MNASSA* **62**, pp176-7, 2003.

Duveen, Vernon. Active member of Natal Midlands Centre. b Prieska ca 1921. d Cape Town 1984. *MNASSA* **43**, p2, 1984.

Eddington, Arthur Stanley. (Occcasional visitor to SA). Interesting reminiscences by Redman, R.O., *MNASSA* **4**, pp26-27, 1945.

Ellis, George F.R. Retirement *MNASSA* **64**, 3-4, 2005. Receives NSTF Lifetime Award *MNASSA* **64**, 115, 2005.

Ensor, G.E. Comet discoverer. d Pretoria 9 June 1943. *MNASSA* **2**, pp45-46, 1943.

Erasmus, David Andre. Consulting meteorologist involved in characterizing astronomical sites worldwide. b 11 October 1955, d 11 March 2007. Obituary (Anon) *MNASSA* **66**, 58, 2007.

Evans, David Stanley. In SA 1946-1968. Worked at Radcliffe Observatory and was Chief Assistant at Royal Observatory, Cape of Good Hope. b Cardiff, Wales, 28 January 1916. d 14 November 2004, Austin, Texas, USA.Gill medal: *MNASSA* 47, p90, 1988. Retirement from University of Texas: *MNASSA* **45**, p86, 1986. McIntyre Award: *MNASSA* **31**, pp88-89, 1972. Editorial note: *MNASSA* **28**, pp2-3, 1969. Obit: Glass, I.S. *MNASSA* **64**, pp6-8, 2005 (includes picture).

Fairall, Anthony Patrick. President of ASSA 1983-1984. Prolific UCT researcher and author. b London 15 September 1943, d 23 November 2008, Hout Bay. Obituary (Anon) *MNASSA* **68**, pp64-66, 2009.

Fallows, Fearon. First HM Astronomer. b Cockermouth, Cumberland, UK 4 July 1789. d Observatory, 25 July 1831. see Cameron-Swan, D., *JASSA* **3**, pp1-14, 1931.

Fanaroff, Bernard. Former radio astronomer. b 1947. *MNASSA* **53**, p65, 1994. To step down as SKA (South Africa) director etc *MNASSA* **73** pp253-257, 2014.

Feast, Michael William. 2nd Director, SAAO. Appointment, *MNASSA* **35**, p112, 1976. Gill medal and photo: *MNASSA* **42**, p16, 1983. NRF award *MNASSA* **74**, pp153-4, 2015.

Finsen, William Stephen Last director of Republic Observatory b Johannesburg 28 July 1905. d Johannesburg, 16 May 1979. Noted double-star observer. Overbeek, D., *MNASSA* **56**, pp74-75, 1997. Appointed Union astronomer *MNASSA* **15**, p90, 1956.

Fitzgerald, Mary. Former director of University of Witwatersrand Planetarium, Johannesburg. d 29 June 2014. Obit: Streicher, M, *MNASSA* **73** pp265-267, 2014.

Florsch, Alphonse. ESO site-tester associated with Zeekoegat. d Farschviller, France, 8 October 2015.
Obit: Swanepoel, E., *MNASSA* **74**, 195, 2015.

Forbes, Alexander Forbes Irvine. Comet discoverer. b Kinellar, Aberdeenshire 13 April 1871. d Cape town 15 May 1959. Pres ASSA 1942-43. Kleyn, S., *MNASSA* **61**, pp189-193, 2002. His house: *MNASSA* **32**, Centrepiece, 2pp, 1973. Obit: *MNASSA* **18**, pp50-51, 1959. Hon. member ASSA, *MNASSA* **17**, p113, 1958. Legacy to ASSA: *MNASSA* **18**, p155, 1955.

Forbes, David Lamont. Active Natal Centre member. d October 1934. Obit: *JASSA* **3**, p166, 1935.

Forbes, Mrs L.E. (Hermanus) Mention of death: *MNASSA* **4**, p1, 1944.

Ford, E.B. Former President and Dir of Planetary section. Obit: *MNASSA* **5**, pp8-9, 1946.

Fox, George C. Early Cape member. b Bournemouth, 1864. d Cape Town 9 October 1935. *JASSA* **4**, pp74-76, 1937.

Franklin-Adams, John. U.K. Amateur, made famous star atlas. b London 5 August 1843. d London 13 August 1912. Observed in Cape Town 1903-4. See *MNASSA* **2**, pp38-39, 1943. See also *MNASSA* **74**, 127-35, 2015.

Fuhr, Gunter. b. Germany 1907. Occultation observer. d Cape Town 18 December 1993. Overbeek, D, *MNASSA* **56**, p80, 1997. Also *MNASSA* **53**, p1, 1994.

Galpin, Henry Carter. Founder of Grahamstown Observatory. b nr Bridport, Dorset, 16 June 1820. d 1886, Grahamstown. Spencer Jones, J., *MNASSA* **44**, Centerpiece (6pp), June 1985.

Gaylard, Michael. Director of Hartebeesthoek Radio Astronomy Observatory. b 1 July 1952 Salisbury, Rhodesia; d 14-8-2014. Obituary: Combrinck, L., *MNASSA* **73**, 148-150, 2014.

Geary, Thomas Elliot. Director of Johannesburg Planetarium 1960-1993(?). b Mafeking 1933. d Johannesburg (?) 1993. Obit: Jacobs, G.C., *MNASSA* **52**, p118, 1993.

Gill, David. HMA 1879-1907. b 12 June 1843, Aberdeen. d 24 January 1914. Recollections by W. Whittingdale and Col. Rose: *MNASSA* **3** pp72-79, 1943; by L. Crawford *MNASSA* **2**, pp84-85, 1943.

Glass, Ian Stewart. Gill Medal, *MNASSA* **58**, pp101-102, 1999.

Gray, Colin Douglas. Treasurer, ASSA, 1994-2002. b 30 April 1923. d 9 April 2003. Death notice: *MNASSA* **62**, p89, 2003. Obit: Turk, C., *MNASSA* **62**, p197, 2003.

Gundry, Philip G. Pres. Pretoria Astron. Assoc. Founder of TUC Observatory. b London 1877. d Pretoria 25 September 1929. *JASSA* **2**, pp205-6, 1930.

Haffner, Hans. Former Director of Boyden Observatory. Pres ASSA 1958-59. *MNASSA* **36**, p40, 1977.

Halm, Jakob Karl Ernst. Astrophysicist. Chief Assistant, Royal Observatory, 1907-1927. b 30 November 1866, Bingen, Germany. d 1944 *MNASSA* **3**, p76, 1944. First Pres of Astronomical Association (1912) and 3rd of ASSA (1924-25) (picture). *MNASSA* Obits: Vol **3**-Pilling, A., p95, Bleksley A.E.H., pp96-97, Anon, on his retirement, p97-98, 1944. *MNASSA* **46**, p113, 1987. Retirement: *JASSA* **2**, p66, 1927. Noted for stellar mass-luminosity law and other discoveries. See Glass, I.S. *MNASSA* **73**, pp14-23, 2014.

Harding, George Alfred. Officer in Charge, Royal Observatory, Cape of Good Hope, immediately before its dissolution. Sutherland Observatory construction. b Tonbridge, Kent, 14 November 1920. d 28 April 1986, Tenerife. Obit: Glass, I.S., *MNASSA* **45**, pp55-56, 1986. Appointment: *MNASSA* **28**, p32, 1969. *MNASSA* **36**, p2, 1977.

Henize, Karl. A former astronaut, Henize worked at Bloemfontein at the Lamont-Hussey Observatory, where he made a survey for emission-line objects. d Mount Everest, 6 October 1993. *MNASSA* **52**, p124, 1993.

Hers, Jan..President of ASSA 1967-1968. Acting director of Republic Observatory 1965-1971. b. 4 March 1915, Hilversum, Netherlands, d. 24 August 2010 Sedgefield, Cape. Honorary membership of ASSA: *MNASSA* **56**, p105, 1997. Long service award: *MNASSA* **63**, p65, 2004. Obituary: Glass, I.S., *MNASSA* **69**, 175-176, 2010.

Hertzsprung, Ejnar. Visited Union Obsy 1923 Oct - 1925 June. *MNASSA* **16**, p119, 1957.

Hirst, William Parkinson. Satellite tracker, Moonwatch Coordinator. b 21 October 1903. d 27 May 1994. Obit: *MNASSA* **53** pp42-43, 1994. Minor Planet Hirst: *MNASSA* **46**, pp114-115, 1987. Gill Medal: *MNASSA* **16**, p63, 1957.

Hlozek, Renée. ASSA Scholarship holder becomes Rhodes Scholar. *MNASSA* **67**, pp39-40, 2008.

Hough, Sydney Samuel. b Stoke Newington 11 June 1870. d Chingford 8 July 1923. bur. 14 July 1923. Chingford. HMA. Obit: W.H.C. (prob. W.H. Cox) *JASSA* **1**, pp27-31, 1923.

Houghton, Hendon Egerton. Founder member. d ca 1948. Pres. ASSA 1936. Variable star observer, comet discoverer. Obit: Forbes, A.F.I., *MNASSA* **7**, p2, 1948.

Hudson, James. Early member. d April 1935. Obit: *JASSA* **4**, p38, 1935.

Hurly, Rupert. President of ASSA 1978-1979. Former Chaiman of Cape Centre. Leader of Cape Moonwatch team. Active in many types of public outreach. b. 15 September 1922, d. 15 April 2006. ASSA Long Service Award 1988. Honorary member 1999. *MNASSA* **58**, pp103-104, 1999. Editor of *Annual Handbook* 1976-1989. Obit: Turk, C.R.G. *MNASSA* **65**, pp130-132, 2006.

Innes, Robert Thorburn Ayton. First director of Transvaal-Union-Republic Observatory (1904-1927). b 10 November 1861. d London 13 March 1933. Obit: *JASSA* **3**, pp125-127, 1933 (pict. facing p. 101). Orchiston, W., *MNASSA* **62**, pp8-17 2003. Picture: *MNASSA* **30**, p130, 1971. See also Glass, I.S., *MNASSA*, **66**, pp244-261, 2007.

Jackson, Cyril. Comet discoverer. Worked at Yale-Columbia Observatory. b Ossett, Yorkshire, 5 December 1903. d Haenertsburg, Transvaal, February 1988. Obit: *MNASSA* **48**, p66, 1989. Mention *MNASSA* **63**, pp167-168, 2004 (talk by M. Streicher).

Jackson, John. HMA 1933-1950. b Paisley 11 February 1887. d 9 December 1958. See Warner (1979). Gill medal: *MNASSA* **17**, 59, 1958. Retirement: *MNASSA* **9**, p21, 1950. Departure: *MNASSA* **9**, p39, 1950. Reminiscence: Shirach, W.F.T., *MNASSA* **48**, pp41-42, 1950. Obit: *MNASSA* **17**, p129, 1958.

Jacobs, C.R. Active member of Transvaal Centre. d ca 1977. *MNASSA* **37**, p2, 1978.

Jansen, Albert. Owner of Spreeufontein Observatory near Prince Albert. b Netherlands 6 February 1940 d George 13 June 2004. Obit: W. Koorts & Michiel Brentjens *MNASSA* **63**, p100, 103. Asteroid (10950) Albertjansen = 4049P-L *MNASSA* **65**, p123, 2006.

Jarrett, Alan H. Director of Boyden Observatory. b2 Feb 1925 Manchester, UK, d 28 January 2007, Margate Kwa-Zulu Natal. Appointment: *MNASSA* 27, p23, 1968. Retirement: *MNASSA* **48**, p62, 1989. Obituary (Anon) *MNASSA* **66**, pp57-58, 2007.

Johnson, Ernest Leonard. Minor planet discoverer. Former staff member of Union Observatory. d ca 1977. *MNASSA* **37**, pp2-3, 1978.

Johnston, Robert James. Active member of Cape Centre. d 28 August 1961. *MNASSA* **20**, p120, 1961.

Johnston, William McClean. Active member, ASSA. b Newton Stewart, Scotland, ca 1880. d 8 July 1949 (accident). Obit: *MNASSA* **8**, p66, 1949.

Jonas, Justin. Appointed Director, HartRAO. b London, 1958. *MNASSA* **62**, p153, 2003.

Jones, Derek H.P. Cape Observer at Radcliffe, *MNASSA* **28**, p32, 1969.

Jones, Win. Variable star observer. Obit: de Villiers, S.N., *MNASSA* **57**, p5, 1998.

Jooste, Johannes L. Variable star observer. d 5 October 1998. Obit: Hers, J., *MNASSA* **59**, p77, 2000.

Kirchoff, Peter. Sculptor and amateur astronomer. b Germany ca 1893. d Johannesburg 19 December 1976. Obit: Thackeray, A.D., *MNASSA* **37**, 2, 1978. Pres ASSA 1954-55. Designed Gill Medal: *MNASSA* **41**, p96, 1982.

Kotze, Robert Nelson. Long-time member. b nr Malmesbury 1870. d 1953(?) Death notice: *MNASSA* **12**, p21, 1953.

Knipe, George Frederick Graham. Staff member, Republic Observatory. b England, 16 August 1916. d 19 December 1973. Obit: J.H., *MNASSA* **33**, pp2-3, 1974.

Knox-Shaw, Harold. Founder of Radcliffe Observatory in South Africa. d Cape Town, 11 April 1970. Pres ASSA 1941-42. Obit: Thackeray, A.D., *MNASSA* **29**, pp54-55, 1970. Retirement: *MNASSA* **9**, p21, 1950. Biog: *MNASSA* **9**, p23, 1950. Gill Medal: *MNASSA* **15**, p53, 1956.

Krumm, Harold. Long-serving member of ASSA Council. b 14 July 1912 Cape Town, d 8 Feb 2001 Langebaan. Obit: Glass, I.S., *MNASSA 61*, pp47-48, 2002. Also Anon *MNASSA* **60**, p25, 2001.

La Caille, Nicolas-Louis de. Worked in SA 1751-1753. b Rumigny, Franc**e** 29 December 1713; d Paris 21 March 1762. Tercentenary Glass, I.S. *MNASSA* **72**, pp181-183, 2013.

Lagerwey, Hendrik Cornelius. Leading amateur. Photometrist. Active ASSA Council member. Pres. ASSA 1964. b Johannesburg 29 April 1912. d Cape Town 10 Feb 1972. Obit: AWJC, PATW, *MNASSA* **31**, p32, 1972.

Lindsay, Eric Mervyn. Chief Asst, Boyden, 1934-37. b nr Portadown, Ireland,1907. d Armagh, Ireland 27 July 1974. Obit: Jarrett, A.H., *MNASSA* **33**, p116, 1974.

Lloyd Evans, Tom. President of ASSA 1991-1992. b Wimslow, UK, 2 December 1940, d Dundee, Scotland,12 June 2014. Astronomer at Radcliffe Observatory and SAAO. Retirement: *MNASSA* **60**, pp61-62, 2001. Obituary: Glass, I.S., *MNASSA* **73**, pp98-103, 2014.

Long, A.W. Prominent amateur. See Orchiston, W., *MNASSA* **65,** pp148-159, 2006.

Lourens, Jan van Breda. Long-time staff member of RO. d Cape town 3 September 1977. Obit: Russo, T.W., *MNASSA* **36**, p79, 1977.

Lunt, J. Astronomer at RO Cape. Comet discovery: *JASSA* **2**, p160, 1930.

Maclear, Thomas. 3rd HM Astronomer, Cape of Good Hope (1833-1870). b Newtownstewart, Tyrone, Ireland 17 March 1794. d Cape Town 14 July 1879. Lastovica, E., *MNASSA* **58**, 89-92. Also Hurly, R.F., *MNASSA* **54**, pp110-111, 1995 (geodetic work).

Mann, William. Royal Observatory staff member. b Lewisham, Kent, 25 October 1817. d Cape Town 30 April 1873. *MNASSA* **55**, p38, 1996. Obit: reprint from Cape Monthly Magazine. *MNASSA* **7**, pp48-50, 1948.

Mason, Hugh Churchill. Worked at Natal Observatory. b Truro, England, 1873. d Cape Town February 1936. Obit: *JASSA* **4**, pp76-77, 1937.

McIntyre, Donald Glencoe. Early member, Pres ASSA 1933-34. b 1890, d 11 March 1966. Joined Cape Astr Soc, 1916. Benefactor of ASSA (McIntyre Award). Wrote Comets in Old Cape Records (1949), pub by Cape Times Ltd. Turk, C., *MNASSA* **58**, p62, 1999. Obit: MNASSA 25, p11, 1966.

McKenzie, Theodore. First Sec. ASSA. Later Pres. Death notice: *MNASSA* **12**, p21, 1953.

Menzies, Alexander. Staff member of RO. b Woodstock, 7 May 1905. d Hermanus, 13 May 1988. Pres of ASSA 1965. Obit: Churms, J., *MNASSA* **47**, pp64-65, 1988.

Mills, A. Observatory (in Zimbabwe): see Fairall, A.P., *MNASSA* **33**, pp137-141, 1974.

Moir, James. Early Johannesburg Centre member. b Banff, Scotland 1874. d 30 March 1929. Obit: H.E.W. *JASSA* **2**, pp203-4, 1930. Picture: *JASSA* **2**, 141, 1930.

Monard, Berto. Gill Medallist 2004. Citation *MNASSA* **63**, 170, 2004. Picture *MNASSA* **63**, p167, 2004.

Morrisby, Arthur G.F. Leading member of Harare Centre of ASSA. b Cape, d (murdered) Bulawayo, 16 April 1988. Obit: Vincent, J.V., *MNASSA* **47**, p66, 1988. Also Garde, T., *MNASSA* **47**, p67, 1988.

Neville, E. Director, Durban Observatory. See Gray, M.A., *MNASSA* Centerpieces, vols **36** (1977), p126ff (2pp), **37** (1978), p8ff (2pp).

Nicolson, George D. Director of HartRAO (1976-2003). Gill medal: *MNASSA* **56**, p83, 1997. Retirement: *MNASSA* **62**, p153, 2003.

O'Donoghue, Darragh. SAAO astronomer. b Ireland 29 January 1957, d Cape Town 25 June 2015. Gill Medal *MNASSA* **70,** pp169-170, 2011. Obit: Whitelock, P.A., Crause, L., *MNASSA* **74**, pp160-2, 2015.

Orpen, Garrett. Long-serving Council Member and Treasurer for 37 years. b 27 July 1911, d Kenilworth Sept 1997. Honorary member. Obit: *MNASSA* **56**, p105, 1997.

Overbeek, Michiel Daniel. All-time record variable star observer and staunch member of ASSA. b Ermelo, 1920. d 19 July 2001 Johannesburg. Gill medal 1984 *MNASSA* **43**, p41, 1984. President 1961 and 1999. Obit: Fraser, B., *MNASSA* **61**, pp90-91, 2001. Also *MNASSA* **53**, pp41-42, 1994 (AAVSO awards).

Papadopoulos, Christos. Maker of the True Visual Magnitude Photographic Star Atlas. b Prussa (near Constantinople) 20 Feb 1910, d Johannesburg 8 May 1992. *MNASSA* **51**, p29, 1992. Overbeek, M.D., *MNASSA* **51**, pp81-83, 1992. President 1975. Gray, M.A., Gill medal: 1981 *MNASSA* **41**, pp93-96, 1982. Hon member 1988. Picture: *MNASSA* **41**, p92, 1982.

Paraskevopoulos, J.S. Director of Boyden Station. d 15 March 1951. Notice of death: *MNASSA* **10**, p13, 1951.

Pearson, William Gordon. Technician at Royal Observatory and later SAAO. b 24 March 1939 Cape Town; d 17 October 2012 Pinelands. Obituary (Anon) *MNASSA* **71**, pp229-230, 2012.

Peers, Charles Ernest b Belfast UK 1975. d Higgovale, Cape, 1944. (Artist; old member) Death notice: *MNASSA* **4**, p1, 1944.

Redman, Roderick Oliver. Chief Asst, Radcliffe Observatory, 1937-1947. b Rodborough, Gloucestershire UK 17 July 1905. d Cambridge 6 March 1975. Obit: R.H. Stoy, *MNASSA* **34**, pp132-138, 1975.

Reid, William. Comet discoverer. b Pitcaple, Aberdeenshire 23 Aug 1861. d Rondebosch 8 June 1928. Obit: M *JASSA* **2**, pp129-130, 1928. Picture: *JASSA* **2**, facing p.89, 1928.

Reynecke, Rev. Craddock private observatory. Paper by A. Graham. *Cape Astr Assoc*, 10 Apr 1918 (available in SAAO library).

Rijsdijk, Case. President of ASSA 2003-2004. Editor of *MNASSA* 2011- . Receives NSTF award. *MNASSA* **68**, p92, 2009.

Roadnight, C.H.W. Founder member and former chairman, Natal Centre..Death notice: *MNASSA* **4**, 82, 1945. Obit 4, pp91-92, 1945.

Roberts, Alexander William. (of Lovedale) b Farr, Sutherlandshire, 4 December 1857. d Alice, 27 January 1938. Obit: McIntyre, D.G., *JASSA* 4, pp116-124, 1938. Tribute by Smuts, J.C., *JASSA* **4**, pp93-94, 1938. Snedegar, K., *MNASSA* **60**, pp54-59, 2001. Also Overbeek, M.D., *MNASSA* **34**, Centerpiece 1p, 1975; 35, Centerpiece 2pp, 1976. Picture: *JASSA* **4**, facing p93, 1938. See also, Hers, J., *MNASSA* **62**, pp134-5, 2003. Mention *MNASSA* **63**, 167, 2004 (talk by Brian Fraser and Tim Cooper). Some biographical details in *MNASSA* **63**, 176-180, 2004 article by Cooper, T.P, Fraser, B., Cooper, D., Hoffman, M. & van Zyl, B. See also Orchiston, W., *MNASSA* **65** pp148-159, 2006.

Rossiter, Richard Alfred. Former director of Lamont-Hussey Observatory (1926-1952). b Oswego, New York USA, 19 December 1886. d Bloemfontein, 26 Jan 1977. Obit and picture: Holden, F., *MNASSA*, **36**, pp60-62, 1977.

Russo, T.W. Long-time secretary of ASSA. d 28 Oct 1980. *MNASSA* **39**, p35, 1980. Picture: *MNASSA* **36**, Centerpiece, p48ff, 1977

Schlesinger, Frank. Yale Southern Station. b New York USA 11 May 1871. d Connecticut, 10 July 1943. Obit: H.L. Alden, *MNASSA* **3**, pp16-17, 1944.

Schonegevel, Herbert William. Foundation member, Cape astr Ass. d 11 Mar 1947. Obit: H.E.H., *MNASSA* **6**, p19, 1947.

Simonhoff, Julius. d September 1984. Death notice: *MNASSA* **43**, p75, 1984.

Skjellerup, John Francis. Comet discoverer, a founder member of ASSA. b Cobden, Victoria, Australia 16 May 1875. d 1952. Orchiston, W., *MNASSA* **62**, pp54-73, 2003. Lived in SA 1900-1923. See also Orchiston, W., *MNASSA* **65,** pp148-159, 2006.

Smit, Danie (Doc). Variable star observer, Pretoria Centre member. b Reitz, Free State 22 September 1924; d Pretoria 7 September 2014. Obituary: Young, N., *MNASSA* **73**, pp219-221, 2014.

Smith, Roy Duchesne Fairbridge. Pretoria Centre and Moonwatch. b Kraaipan, Mafikeng 26 April 1930. d 19 June 2013. Obituary: Roberts, G., *MNASSA* **72**, pp89-90, 2013.

Smits, Peter, President of ASSA 1959-1960. Active in public outreach in Johannesburg and later active in Garden Route Centre. b 25 June 1920, d 13 June 2008. Obituary (Anon) *MNASSA* **67**, pp164-1\65,

Smuts, Jan Christiaan. Prime Minister of SA. Long-time (paying!) ASSA member. d 1950. Reminiscences: McIntyre, D., *MNASSA* **9**, pp78-79, 1950 Quotation from: *MNASSA* **9**, p87, 1950.

Spencer Jones, Harold. HMA 1923-1933. b 29 March 1890. d 3 November 1960. Obit: *MNASSA* **19**, pp146-149, 1960. Appointed HMA: *JASSA* **1**, p94, 1924.

Steer, E.J. Active member Cape Astr. Assoc. d Sea Point 1944. *MNASSA* **3**, p60, 1944.

Stobie, Robert Stewart. 3rd director of SAAO. b 3 August 1941, Edinburgh, Scotland. d Cape Town 2 May 2002. Obit: Glass, I.S., *MNASSA* **61**, pp70-71, 2002. Also Anon, *MNASSA* **61**, pp54-55, 2002.

Stoy, Richard Hugh. Last HMA. b Wolverhampton, UK, 31 January 1910. d Edinburgh, UK, 8 November 1994. (1950-1968). Obit: Cousins, A.W.J., Glass, I.S., Thomas, Y.Z.R., *MNASSA* **54**, pp19-25 (including bibliography). Gill Medal: *MNASSA* **35**, pp76-78, 1976. Editorial note with picture: *MNASSA* **28**, pp2-3, 1969.

Taylor, Clement Jennings. Comet discoverer. b Lincolnshire, UK, 1861. d Cape Town 30 June 1922. Pres Ast Assoc 1916-17. Obit: CLOB D. (prob. Dutton) *JASSA*, **1**, p31, 1923. See also Cooper, T.P., *MNASSA* **62**, pp173-4, 2003.

Thackeray, Andrew David. Director of Radcliffe Observatory 1948-1974. b 19 June 1910. d (in accident) Sutherland 21 February 1978. Obit: Warner, B., *MNASSA* **37**, pp20-22, 1978. See also Evans, D.S., *MNASSA* **37**, pp22-23, 1978. Also Feast, M.W., Bibliography and picture, *MNASSA* **37**, pp48-62, 1978. Appointed Radcliffe Visiting Professor, UCT, *MNASSA* **33**, p3, 1974. G.G. Cillie A.D. Thackeray, *MNASSA* **34**, pp34-38, 1975. Arrival in SA: *MNASSA* **7**, p47, 1948.

Turk, Cliff. ASSA Long Service Award, *MNASSA* **59**, p9, 2000.

Turner, J.B.G. RO Cape staff member. b SA 15 April 1907. d 22 May 1957. Obit: *MNASSA* **16**, pp41-42, 1957.

van Blommestein, Peter Ian. President of ASSA 2000-2001. b. 14 June 1925, Johannesburg. d. 6 September 2005, Cape Town. Obituary De Coning, C., *MNASSA 65*, pp3-5, 2006.

van den Bos, Willem Hendrik, Director of Union Observatory 1941-1956. b Rotterdam, Netherlands, 1896. d Johannesburg 30 March 1974. *MNASSA* **33**, p47, 1974. Picture *MNASSA* **33**, facing page 59, 1974. Obit: Finsen, W.S., *MNASSA* (incl picture) **33**, pp60-61, 1974. Also Hirst, W.P., *MNASSA* **33**, p61, 1974. Gill Medallist *MNASSA* **19**, 77, 1960. Pres. ASSA 1943 and 1955.

van Gent, Hendrik. Observer, Leiden Southern Station 1928-1946. d Amsterdam 29 March 1947. Obit: van den Bos, W.H., *MNASSA* **6**, pp34-35, 1947.

van Zyl, Johannes Ebenhaezer. Active member of Transvaal Centre. Author. Teacher, university lecturer and planetarium lecturer. b. 10 August 1913, d. 28 March 2006. Obituary (Anon) *MNASSA* **65**, pp64-65, 2006.

Velghe, Albert Georges. Former director of Boyden Observatory. b Gent, Belgium, 22 September 1916. d Gent 27 October 1986. Obit: Jarrett, A.H., *MNASSA* **46**, pp101-102, 1987. Took over Boyden: *MNASSA* **19**, p61, 1960.

Venter, Stephanus Christian. Pres ASSA 1956-7. Dir Comet and Meteor section for 20 years. b Phillipstown dstrict 16 September 1907. d (in accident, lived at Pietermaritzburg) 26 January 1968. Obit: JCB *MNASSA* **27**, p22, 1968.

Vincent, John V. Active member of Harare Centre. d 1999. Walsh, Simon, *MNASSA* **58**, pp93-94, Begbie, Mike, *MNASSA* **58**, pp94-96. Picture: *MNASSA* **42**, p16, 1983. *MNASSA* **35**, Centrepiece, p122ff, 1976.

Voute, Joan George Erardus Gijsbertus, Visitor at the Royal Observatory, Cape 1913-1917. b Madieon, Java, 7 June 1879. d The Hague, Netherlands, 20 August1963. See Glass, I.S., *MNASSA* **66**, pp244-261, 2007. First parallax determination of Proxima Cen.

Wahl, C. Arnold. Cape Centre member. b Paarl 14 December 1890. d 1968. Obit JS *MNASSA* **27**, p22, 1968.

Wargau, Walter Friedrich. Prof of Astronomy at UNISA 1983-1996. b Munich 26 April 1948. d Schwabach, Germany 6 November 1996. Obit: Glass, I.S., Soltynski, M. and Peters, V., *MNASSA* **56**, pp6-7, 1997.

Warner, Brian. Prof of Astronomy at UCT. Gill Medal: 1992. *MNASSA* **51**, p106, 1992. McIntyre Award: *MNASSA* 42, p17, 1983. ASSAf Gold medal *MNASSA*, **64**, 3, 2005. Retirement *MNASSA* **64**, pp3-4, 2005.

Watson, R. Nova discovery: *JASSA* **1**, p157, 1925.

Weinberg, Isaac. Cape Centre member. d 14/15 September 1971. Helped with ASSA Handbook. *MNASSA* **30**, p117, 1971. Obit: RFH[urly] *MNASSA* **30,** p152, 1971.

Welsh, Henry. Active member, Durban Centre. d. Durban 10 January 1967. Obit: *MNASSA* **26,** p1, 1967.

Weltman, Amanda. Cosmologist, UCT. NSTF and other awards, *MNASSA* **71**, p102, 2012.

Wesselink, Adriaan Jan. Worked at Leiden Southern Station, Johannesburg, 1946-1950 and Radcliffe Observatory, Pretoria, 1950-1964. b Hellevoetsluis, Netherlands, 7 April 1909. d 1995, New Haven Connecticut, USA, 12 January, 1995. President ASSA 1962. Obit: Feast, M.W., *MNASSA* **54**, pp84-85, 1997.

Wild, Peter Anthony Thornton (Pat). President of ASSA 1975-1976. Associate Prof of Astronomy, UCT, later involved in Research Administration. b Grahamstown 18 April 1937; d 23 September 2012, Cape Town. Obituary (Anon) *MNASSA* **71**, p193, 2012.

Williams, Evan Gwyn, Radcliffe Observatory. b London, England, 13 October 1905. d Pretoria 31 May 1940. Pioneer of Fabry photometry. *MNASSA* **1**, p10, (issue 3) 1940.

Willstrop, Roderick V. Start of 2-yr visit to RO Cape: *MNASSA* **16**, p125, 1957.

Wood, Harry Edwin Union Astronomer 1927-1941. Former President, ASSA. b 3 February 1881. d 1946 Obit van den Bos, W.H., *MNASSA* **5**, pp17-18, 1946.

Woolley, Richard van der Riet. First director of SAAO. b Weymouth, England, 24 April 1906. d Somerset West, 24 December 1986. Obit: Feast, M.W., *MNASSA* **46**, pp4-6, 1987. 80th birthday: *MNASSA* **45**, p54, 1986. Retirement: *MNASSA* **36**, p2, 1977. Biog. note: *MNASSA* **14**, p37, 1955.

Zanstra, Hermann. Astrophysicist. Radcliffe Observatory during WW II. B Heernveen, Netherlands, 3 November 1894. d Haarlem, Netherlands, 2 October 1972. Recollections: Evans, D.S., *MNASSA* **31**, pp140-141, 1972. Departure from SA: *MNASSA* **5**, p64, 1946.

The **Astronomical Society of Southern Africa** (ASSA) was formed in 1922 by the amalgamation of the Cape Astronomical Association (founded 1912) and the Johannesburg Astronomical Association (founded 1918). It is a body consisting of both amateur and professional astronomers.

Publications: The Society publishes its electronic journal, the *Monthly Notes of the Astronomical Society of Southern Africa (MNASSA)* bi-monthly as well as the annual *Sky Guide Africa South.*

Membership: Membership of the Society is open to all. Potential members should consult the Society's web page assa.saao.org.za for details. Joining is possible via one of the local Centres or as a Country Member.

Local Centres: Local Centres of the Society exist at Bloemfontein, Cape Town, Durban, Harare, Hermanus, Johannesburg, Pretoria and Sedgefield district (Garden Route Centre). Membership of any of these Centres automatically confers membership of the Society.

Sky & Telescope: Members may subscribe to Sky & Telescope at a significant discount (proof of membership is required). Please contact the Membership Secretary for details.

Internet contact details: email: assa@saao.ac.za Home Page: http://assa.saao.ac.za

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