Wellington Astronomical Society December 2015 Volume 45 Issue 11
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The next WAS meeting will be held on Wednesday 2nd of December 2015 at 7:30 pm at Carter Observatory, Upland Rd, Kelburn, Wellington

An Evening with Albert

Roland Idaczyk

The guest speaker at this month's meeting will be Roland Idaczyk, and his talk will be on Albert Einstein.

This year is the 100th anniversary of the publication of "Die Feldgleichungen der Gravitation" (The Field Equations of Gravitation) in the Meeting Reports of the Royal Prussian Academy of Sciences. With this paper, Einstein completed his General Theory of Relativity.

In celebration of this anniversary, Roland's talk will look at Albert Einstein as a person, his life, the impact his theory had at the time and its continuing impact today.

Inside this issue:

PRESIDENTS REPORT

This is my first report as president of WAS. It was a rather unexpected and sudden decision to make when Gordon Hudson asked me to stand. I wasn't given much time to think about it before I said yes.

It will be a challenging time, but now that I am over the shock, I am looking forward to the role. There are a few large projects that need to be undertaken, the main one being the building of an observatory for members to use with the funds bequeathed by Syd Cretney to WAS. We are also hoping (at a later stage) to refurbish the Thomas King Observatory. Finally, the WAS website needs a revamp and made mobile friendly.

To achieve these goals we need to improve our membership by having more public outreach events. We are already doing this to some degree, holding observing events at schools and libraries and giving presentations to other groups. What we need to work on is turning our efforts into increasing our membership. Our first meeting as a new Council will be preparing a plan of events for 2016 which we will present at our first meeting in February.

Thank you to all that attended the AGM on the 2nd November. I would also like to thank Lesley Hughes, our outgoing treasurer, and Gordon Hudson, our outgoing president, for their tremendous work on the previous council and also extend a warm welcome to our new council members James Smith and Peter Woods.

As the 2015 rapidly draw to a close (it is hard to believe the year has gone so quickly) I wish you all a happy, relaxing, enjoyable festive season and a safe journey if you are traveling during the holidays. For myself, I will be spending Christmas at home with family before traveling to the Hawkes Bay on New Year's Day to the Central Star Party to do some observing and catch up with friends.

Antony Gomez

2015 — 2016 SUBSCRIPTIONS DUE

The new subscription year began in September, so WAS looks forward to receiving your subscription renewal.

Renewal forms can be found on the website, but a summary follows:

Subscription for Newsletter by Email 2015-2016

Adult/Waged:	$ 50.00
Student/Unwaged:	$ 30.00
Family:	$ 70.00

Payment methods:

Cheque - make out to Wellington Astronomical Society Inc, and mail to PO Box 3181, Wellington 6140

Direct Deposit or Internet Banking - use Acc No: 03-0502-0508656-00, please include reference so WAS knows who is making the payment

Cash - please bring exact amount to meeting

WAS COUNCIL MEMBERS AND CONTACTS

Council Members

The following members were elected to Council at the Nov 2015 AGM

President: Antony Gomez

Vice President: Duncan Hall

Secretary/Telescope custodian: Chris Monigatti

Treasurer: John Homes

Curator of Instruments: Gordon Hudson

Website (joint): John Homes & John Talbot

Councilors

Frank Andrews

Aline Homes

Murray Forbes

James Smith

Peter Woods

Newsletter Editor: editor@was.org.nz

Postal Address: Wellington Astronomical Society, PO Box 3181, Wellington 6140, New Zealand

November meeting

The November meeting was the WAS Annual General Meeting (AGM). The AGM is a formal opportunity for the Council to inform WAS members what has happened in the past year, and what is planned for the future.

This year, the main purposes of the AGM were:

- To elect the WAS Council for 2016
- Submission for approval to WAS members of two motions related to the Syd Cretney bequest
- Informing members of the Council's plans for the coming year
- Responding to queries from the membership

ELECTION OF WAS COUNCIL

The following members were elected to the WAS Council for 2015-2016:

President: Antony Gomez

Vice-President: Duncan Hall

Treasurer/Web-site (joint): John Homes

General Secretary/Telescope Custodian: Chris Monigatti

Curator of Instruments: Gordon Hudson

Web-site (joint): John Talbot

General Council Members: Aline Homes, Frank Andrews, Murray Forbes, James Smith, Peter Woods.

MOTIONS FOR APPROVAL

The two motions for the Syd Cretney Bequest that were intended to be submitted for approval were withdrawn by the Council prior to the AGM.

COUNCIL'S PLANS FOR COMING YEAR

The council will soon look to set-up two sub-committees:

- **Cretney Bequest Project Committee**: this sub-committee is to implement the plan for the development of the remote-access observatory for use by WAS members as envisioned by the very generous bequest from the late Syd Cretney.
- **2020 RASNZ Conference Local Organising Committee**: WAS has been awarded the hosting of the 2020 conference which will be the centenary of RASNZ that was founded in Wellington, this sub-committee is to be responsible for organising and planning of this event.

If you would be interested in joining either of these sub-comittees, please contact either Antony Gomez or Chris Monigatti.

QUERIES FROM WAS MEMBERS

Members raised two interesting points from the floor:

- **How does a member get an article published in the newsletter?** Items for the newsletter can be submitted to editor@was.org.nz. For inclusion in a particular monthly edition of the newsletter, please submit articles or images by the **15th** of the month **before** the newsletter is to be published. Items that fall outside the deadline will be included in future editions of the newsletter (space permitting). The editor has the right to determine which articles are appropriate for inclusion and which are not appropriate.
- **How effective is WAS at meeting Clause 2.3 from its constitution, viz: "To facilitate the passing on of information from experienced members to new members." ?** WAS currently seeks to inform members through monthly presentations, research group meetings, observing evenings, and informally by encouraging members with like interests to get together. In 2016 WAS will attempt to extend its outreach to more public events. If there are other ways that you can suggest we can improve or offer specific training, please contact either Antony Gomez or Chris Monigatti.

CLOSING REMARKS

Finally, WAS would like to extend its thanks to the 18 members who attended the AGM, and all the other members who have supported WAS over the past year.

Stardate NI (North Island)

Stardate NI (formerly Stardate 2016), will be held at Stonehenge Aotearoa, near Carterton in the Wairarapa (same venue as last year). The main part of the programme will be based around the 8th, 9th and 10th of January but attendees will be able to arrive earlier by arrangement.

The facilities are still basic, so camping is the order of the day. Attendees will be able to use the toilets in the AV centre and basic showers will be erected. There are no bunk rooms, however full details of local accommodation are available at: http://www.stonehenge-aotearoa.co.nz/Tours++Treks/Booking+Your+Visit/Carterton+Accommodation.html .

Dates: 8-10th January 2016 (attendees able to arrive earlier by arrangement)

Venue: Field behind the visitor's centre, Stonehenge Aotearoa, Carterton, Wairarapa.

Registration: Still to be confirmed, but expected to be $23 for adults; children (pre-teens) accompanied by parents free.

Enquiries: If you are interested in attending, please send expression of interest to Kay Leather at hellfa@xtra.co.nz with Stardate in the subject line. If you would like to give a presentation, please send details to Richard (hamal@xtra.co.nz)or Kay Leather at hellfa@xtra.co.nz.

Stardate SI (South Island)

Stardate South Island will be held at the beautiful dark sky site in Staveley. Bunk accommodation is available as well as a camp site for those feeling a little more adventurous.

A large number of telescopes are always present, and historically conditions have been excellent over the weekend. This years guest speaker is Dr. Grant Christie from the Stardome Observatory, Auckland.

Dates: 5-8th February 2016

Venue: Staveley.

Further information: http://www.treesandstars.com/stardate/

Central Star Party

The Inter-Society Astronomical Advancement Committee (ISAAC) is holding it's first annual Central Star Party in January 2016. at the Tuki Tuki Camp site in the Hawkes Bay.

The goal is to provide a fun social astronomical gathering laced with talks and activities.

Accommodation is tenting, staying in the dormitories or using one of the four powered caravan sites.

See http://www.censtar.party/ for more details, and please contact the organisers if you wish to give a talk or presentation.

Dates: 1-5th January 2016

Venue: Tuki Tuki Camp site, Hawkes Bay.

Registration: $47 for early bird attendees

NACAA XXVII

This coming Easter, NACAA XXVII, the 27th National Australian Convention of Amateur Astronomers, will be held in Sydney.

Amateur astronomers from across Australia and New Zealand will be meeting to share their knowledge on a broad range of topics including variable stars, astroimaging, spectroscopy, occultations, outreach, comet hunting, history, citizen science, pro-am collaboration, and much more.

Programme highlights include:

- Two days packed with presentations
- Variable Stars South Symposium (see following item)
- Trans-Tasman Symposium on Occultations
- Workshop on image processing with PixInsight
- Conference Dinner with guest speaker Fred Watson
- Behind the scenes tour of historic Sydney Observatory

Registration packages range from just a half day to all four days.

Dates: Easter 2016

Venue: University of Sydney

Enquiries: http://nacaa.org.au

Variable Stars South Symposium

The 4th Variable Stars South Symposium will be held in Sydney on Easter Friday, 25th March 2016.

The venue is the University of Sydney´s Law Building (Camperdown Campus) which is centrally located, with good transport links, and plenty of accommodation options nearby.

The event is being held in conjunction with the 27th National Australian Convention of Amateur Astronomers, NACAA XXVII, which will run over the entire Easter Weekend.

Chair of the Programme Committee is David O´Driscoll.

Dates: Easter Friday, 25th March 2016

Venues: University of Sydney´s Law Building (Camperdown Campus)

Enquiries: David O´Driscoll (Chair of the Programme Committee)

A model Solar System?

One of the really difficult concepts in Astronomy is getting your head around the sizes of, and distances between, planets, stars and galaxies. New WAS member Jeremy Gold has a dream of developing a scale model of our Solar System centered right here in downtown Wellington.

Check out his idea at: http://wellington-solar-tour.strikingly.com/

Jeremy is keen to receive feedback and constructive suggestions. If you want to check the Maths of scaling down the planets, then this website:

http://www.exploratorium.edu/ronh/solar_system/

is for you. Just ensure that you use the metric column.

Chris Monigatti

Items for sale

WAS has several items that are no longer required, and is open to selling these for a mutually fair donation:

- Two 8 inch(?) mirrors
- Spider and secondary
- Secondary holder
- Tripod legs
- 2 Telrad type finders
- Focusser

Contact Chris Monigatti you are interested and a viewing can be arranged.









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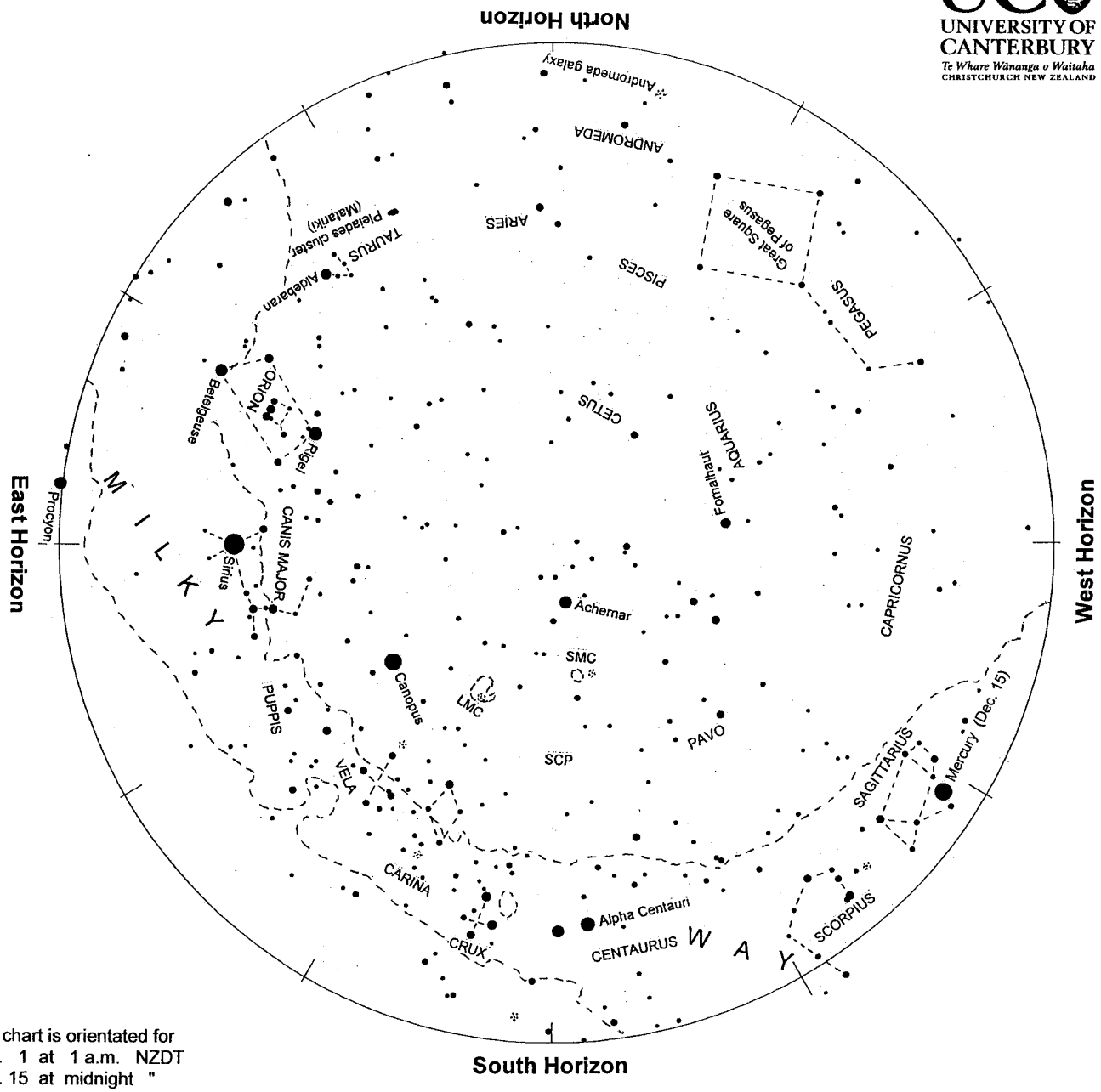

The chart is orientated for
Nov. 1 at 1 a.m. NZDT
Nov. 15 at midnight "
Dec. 1 at 11 p.m. "
Dec. 15 at 10 p.m. "

Evening sky in December 2015

To use the chart, hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge. As the earth turns the sky appears to rotate clockwise around the south celestial pole (SCP on the chart). Stars rise in the east and set in the west, just like the sun. The sky also shows a small extra clockwise rotation each night as we orbit the sun.

Mercury is the only naked-eye planet in the evening sky, setting in the southwest twilight. Sirius, the brightest star, is due east, twinkling like a diamond. Left of it is Orion, with 'The Pot' at its centre. Further left is Taurus and the Pleiades/Matariki/Seven Sisters star cluster. The Pointers and Crux, the Southern Cross, are low in the south. Right of Canopus, the second brightest star, are the Clouds of Magellan (LMC and SMC on the chart), two nearby galaxies. The Andromeda Galaxy is faint and low in the north. The bright planets Venus, Jupiter and Mars, and later Saturn, are all in the eastern dawn sky.

Chart produced by Guide 8 software; www.projectpluto.com. Labels and text added by Alan Gilmore,
Mt John Observatory of the University of Canterbury, P.O. Box 56, Lake Tekapo 7945, New Zealand. www.canterbury.ac.nz

The Night Sky in December

Mercury is the only planet in the evening sky. At the beginning of the month it appears as a bright star setting in the south-west an hour after the sun. It moves slightly higher in the twilight, setting 80 minutes after the sun by the end of the month. In a telescope it looks like a tiny gibbous moon; a moon between first quarter and full.

The brightest true stars are in the east and south. **Sirius,** the brightest of all the stars, is due east at dusk, often twinkling like a diamond. Left of it is the bright constellation of **Orion.** The line of three stars makes Orion's belt in the classical constellation. To southern hemisphere skywatchers they make the bottom of 'The Pot'. The faint line of stars above and right of the three is the Pot's handle. At its centre is the Orion Nebula, a glowing gas cloud nicely seen in binoculars. **Rigel**, directly above the line of three stars, is a hot blue-giant star. Orange **Betelgeuse**, below the line of three, is a cooler red-giant star.

Left of Orion is a triangular group making the upside down face of **Taurus** the bull. Orange **Aldebaran** is the brightest star in the V shape. Aldebaran is Arabic for 'the eye of the bull'. Still further left is the **Pleiades / Matariki/Seven Sisters/Subaru** cluster, impressive in binoculars. It is 440 light years* away.

Canopus, the second brightest star, is high in the southeast. Low in the south are the Pointers, Beta and **Alpha Centauri**, and **Crux** the Southern Cross. In some Maori star lore the bright southern Milky Way makes the canoe of Maui with Crux being the canoe's anchor hanging off the side. In this picture the Scorpion's tail can be the canoe's prow and the Clouds of Magellan are the sails.

The **Milky Way** is wrapped around the horizon. The broadest part is in **Sagittarius** low in the west at dusk. It narrows toward Crux in the south and becomes faint in the east below Orion. The Milky Way is our edgewise view of the galaxy, the pancake of billions of stars of which the sun is just one. The thick hub of the galaxy, 30 000 light years away, is in Sagittarius now low in the west. The nearby outer edge is the faint part of the Milky Way below Orion. A scan along the Milky Way with binoculars will show many clusters of stars and a few glowing gas clouds.

The Clouds of Magellan, **LMC** and **SMC**, high in the southern sky, are two small galaxies about 160 000 and 200 000 light years away, respectively. They are easily seen by eye on a dark moonless night. The larger cloud is about 1/20th the mass of the Milky Way galaxy, the smaller cloud 1/30th.

Very low in the north is the **Andromeda Galaxy** seen in binoculars in a dark sky as a spindle of light. It is a bit bigger than our Milky Way galaxy and nearly three million light years away.

Jupiter, Mars and Venus are all the morning sky, so not shown on the chart. Saturn joins them at the end of the month. At the beginning of December Jupiter rises around 2:30 a.m.; reducing to 12:30 a.m. by the 31st. It is a bright golden-coloured 'star' shining with a steady light. Venus is up around 4 a.m., a brilliant object bright enough to cast shadows in dark locations. Mars is between the two bright planets, looking like a medium-bright reddish star. Jupiter and Mars rise steadily earlier while Venus stays put in the dawn. In the second half of the month Mars is near, then passing below, the bluish-white star Spica the brightest star in Virgo. At the end of the month Saturn emerges from the dawn twilight below and right of Venus, at the bottom end of the diagonal line of planets. The crescent moon will be close to Venus on the morning of December 8th.

A small telescope shows Jupiter's disk with its four big moons like faint stars lined up on each side. They change sides from night to night as they orbit the planet. Jupiter is 794 million km away mid-month.

The Geminid meteor shower peaks on the morning of the 15th. The meteors appear to come from the constellation of Gemini, low in the northeast at midnight, moving to the north by dawn. The meteors are clumps of dust from a comet. Friction with the air heats them up and makes the air around them glow.

A **light year** (**l.y**.)is the distance that light travels in one year: nearly 10 million million km. Sunlight takes eight minutes to get here; moonlight about one second. Sunlight reaches Neptune, the outermost major planet, in four hours. It takes sunlight four years to reach the nearest star, Alpha Centauri.

Notes by Alan Gilmore, University of Canterbury's Mt John Observatory, P.O. Box 56, Lake Tekapo 7945, New Zealand.

www.canterbury.ac.nz