**Wellington Astronomical Society November 2015 Volume 45 Issue 10**
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*The next WAS meeting will be held on Monday 2nd of November 2015 at 7:30 pm*

# Wellington Astronomical Society Annual General Meeting

This month's meeting will be the Wellington Astronomical Society's Annual General Meeting (AGM). The AGM is scheduled to begin at 7:30 pm, venue is our usual room at Carter Observatory. Please note that we have had to change the day of the meeting to Monday, as Carter require use of the room on the usual Wednesday. The AGM will cover:

- President's annual report for 2015 (see later in this newsletter)
- Election of council members
- Tabling of motions for Syd Cretney bequest
- Any other business

It is hoped that there will be time at the end of the AGM to show a video.

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# PRESIDENTS ANNUAL REPORT FOR 2015 GORDON HUDSON

Sadly, Graham Blow, who was a long time member of WAS, passed away on December 31st 2014. The funeral was attended by many of the WAS members, with the service being held at the Pines in Houghton Bay on Monday 5th Jan. Graham set up and ran the Occultation Section of RASNZ for 37 years. He is sadly missed.

The Syd Cretney Bequest is becoming a long and drawn out affair. WAS has had to engage a lawyer to sort out our application. The lawyers for the Cretney bequest are in Blenheim. We have received the Syd Cretney Bequest which will place an Automated telescope in the Gifford Observatory. Part of the funds may go towards the refurbishment of the Thomas King Observatory if the Wellington City Council hand it over to the WAS for our use.

The WAS dome which has been stored at my place for the last two years is still there and hopefully will be removed by the end of this year.

WAS has had to remove our books and other items from the Carter Workshop and they are now stored in the World War I Gun Bunker outside the Dominion Observatory.

In February Tom Watson, who is the President of the Astronautics Association of New Zealand (AANZ), was not able to make the presentation due to health issues. Antony Gomez stepped in at short notice and gave us a talk about current research into galaxies and galactic clusters at radio wavelengths, and current and future radio telescopes. This was a great presentation and many thanks to Antony for stepping in at short notice.

In March we had an interesting speaker Ian J. Miller on "The Probability of Extrasolar Life". This talk created a lot of feed back, not all agreeing with the probability of extrasolar life.

April was set down for Global Astronomy month, and we were running this at Tawa College. This was well supported.

The talk for April was a most interesting one by Dave McCarter an amateur astronomer from London Ontario in Canada. The talk was " So many telescopes, so little time! A tour around observatories in Arizona and California"

May was to be a busy month with guest speakers. Our first speaker was Stella Kafka from the AAVSO. Her talk "Variable Stars and their Stories" is a subject I am quite keen on. Stella was on her way to the RASNZ conference in Tekapo, which doubled as the 50 year Anniversary of Mt John, at which she was to be a guest speaker.

Also in May we had the RASNZ Beatrice Tinsley Lecture. This was a free lecture at the Royal Society of NZ on Friday 15 at 6pm. It was given by Professor Gerry Gilmore from Cambridge University where he is Professor of Experimental Philosophy. His topic was "Gaia mapping the Milky Way from Space" Gerry is the Principal Investigator of Gaia and he is a Kiwi who completed his PhD at Canterbury University. Gaia is the European Space Agency mission which is currently creating the first ever 3-D census of the Milky Way. Unfortunately Wellington had a severe storm the night before which knocked out all public transport and this reduced the numbers attending.

Gerry was also on his way to the RASNZ conference and the 50 year anniversary of Mt John. Both of these conferences were a great success.

On Sunday morning of the Easter weekend 4-5 April we had a lunar Eclipse. Unfortunately most of us were clouded out and even had rain, but some of us had a break in the clouds long enough to get some photos of the event.

In June John Talbot spoke to us about Jupiter Moon Events that include Transits, Eclipses, Mutual Occultations. This talk was aimed at getting more people involved in doing some occultations, since there are only a few of us only regularly doing these events.

On Tuesday the 30th June was the occultation event we had been waiting for and that was Pluto occulting a bright 12 mag star. This was to happen at 4.50am on the morning of Tuesday 30th June. The Americans from SWRI sent 4 teams to observe this event and I placed them in various places throughout NZ. Each of the teams had problems with cloud but some of them managed to get timings, whereas the one I was with saw nothing but cloud. One of our members Haritina flew in the Flying Observatory Sofia and observed the Pluto occultation from the plane.

The Spacecraft New Horizons flew past Pluto on July 14th and sent back the most spectacular images of Pluto we have ever seen. These images are still arriving and we can expect to see even more detail in images yet to arrive.

In July our speaker was Antony Gomez and he talked of "Atoms of Space and Time" I was unable to attend this meeting as I was still in Northland with the Americans but I am told it was a very interesting talk.

*(continued on next page)*

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# PRESIDENTS ANNUAL REPORT FOR 2015 GORDON HUDSON (COTINUUED)

Unfortunately July was to be John Talbot's last meeting with WAS for a long time as he was put into hospital on July 24th for major surgery. While recovering from the surgery he had a major stroke which has paralysed his left side. We are unlikely to see John back at WAS for at least a year.

In August we had Dave MacLennan, our very own expert on the New Horizons mission to Pluto. Dave showed us images of the spacecraft before it left on its mission and also many computer generated images. These were very useful to help understand how it worked and why images from it take so long to reach earth. New Horizons is now heading for the Kuiper Belt objects.

Planning has now begun on the Automation of the Gifford Observatory.

The September talk was given by Dr Denis Sullivan who has recently retired from Victoria University and his talk was "Some Highlights from 40 plus Years of Optical Astronomical Observing". This was another fascinating talk and covered how he developed his Photo Electric Photometer from 1 channel to 2 channels and finally to 3 channels. But now he uses wide field CCD Camera arrays.

On 19th September we had the International Observe the Moon evening at Tawa College, but again this was clouded out and even had some rain, although I believe Chris managed a quick photo of the moon.

October was another busy month with speakers. First, on October 5th we had Professor Chris Lintott from the UK (he is the replacement for Sir Patrick Moore on "The Sky at Night"). His talk was run by the Royal Society and was called "How to Discover a Planet from your Sofa". It was attended by about 150 people. This was a wine and cheese evening with a charge attached and WAS members got in for a special rate. Unfortunately I missed the talk as I was with my wife in Wellington Hospital.

On Wednesday 7th WAS had its usual meeting which I was running, but I was unable to stay to hear our guest speaker Matt Visser from Victoria University on Cosmology. The next morning I left on the boat for the Starlight Festival which is reported elsewhere in the newsletter.

On November 2nd will be the WAS AGM this has had to be transferred to the Monday evening. There will be a new council and that will be led by a new president. I am stepping aside from all activities for a while as I have too much to attend to. John Talbot is now at Home in Waikanae but will take a long time to fully recover which he may not be able to.

The Syd Cretney Bequest has been invested with the Lawyers while we sort out how to proceed. At the AGM we hope to appoint a sub committee for the Gifford Observatory Automation.

WAS will be running the RASNZ 100th Anniversary Conference here in Wellington and a sub committee will be required for that as well.

I have to give a special thanks to the volunteers at Carter, for without them we would have to pay $1000 per year for the use of the room at Carter. However I understand the terms may be changing and we are in negotiations with the Wellington Museums on an MOU agreement.

I would like to thank the council for their support over the past 12 months. It has been a rocky road at times but I hope we can proceed with the prospects of a fully automated observatory now on the drawing board and the Thomas King Observatory becoming available for WAS use.

Finally, the Observing evenings at Tawa College are run by Chris Monigatti but most of them have been clouded out. Thank you Chris for a sterling job and also being the WAS Secretary.

Gordon Hudson President 2015

**Wellington Astronomical Society Incorporated**
**Statement of Financial Performance** **For Year ending 31-August-2015**

| INCOME: | Note# | 2015 | 2014 | 2013 | 2012 | | 2014 | 2011 | 2010 |
|---|---|---|---|---|---|---|---|---|---|
| Subscriptions Renewals in year | | $1,865.00 | $2,395.00 | $2,115.00 | $2,210.00 | | $2,395.00 | $2,070.00 | $2,380.00 |
| New Subscriptions | 2 | $410.00 | $290.00 | $490.00 | $785.00 | | $290.00 | $480.00 | $605.00 |
| Interest | | $188.44 | $183.96 | $154.59 | $143.69 | | $183.96 | $141.47 | $139.49 |
| Donations | | $60.00 | $1,110.00 | $70.00 | $1,120.50 | | $1,110.00 | $1,170.00 | $1,370.00 |
| Grants | 4 | $- | $- | $300.00 | $200.00 | | $- | $- | $210.00 |
| Sold capital Items | 10 | $100.00 | $- | $300.00 | $- | | $- | $- | $179.95 |
| Solar Viewers | | $- | $- | $140.00 | $257.00 | | $- | $- | |
| Other | 5 | $2,825.95 | $- | $40.00 | $80.00 | | $- | $- | $- |
| **Total Income** | | **$5,449.39** | **$3,978.96** | **$3,609.59** | **$4,796.19** | | **$3,978.96** | **$3,861.47** | **$5,421.04** |
| | | | | | | | | | |
| **EXPENDITURE:** | | | | | | | | | |
| Affiliation Fees to RASNZ | | $127.50 | $213.75 | $146.25 | $177.00 | | $213.75 | $198.00 | $225.00 |
| Auditor | | $100.00 | $- | $- | $47.56 | | $- | $40.97 | $39.97 |
| Bank Fees & Cheque book | | $- | $- | $- | $52.50 | | $- | $50.00 | $52.49 |
| Insurance | 6 | $410.55 | $410.55 | $410.55 | $410.55 | | $410.55 | $410.55 | $393.76 |
| Post Office Box Hire | | $92.50 | $185.00 | $185.00 | $160.00 | | $185.00 | $160.00 | $150.00 |
| Newsletter Printing | 7 | $115.80 | $128.90 | $224.11 | $211.73 | | $128.90 | $327.22 | $404.61 |
| Postage | 8 | $- | $126.00 | $30.80 | $120.00 | | $126.00 | $281.50 | $226.50 |
| Room Hire | 9 | $- | $100.00 | $- | $- | | $100.00 | $- | $1,693.13 |
| Speakers | | $377.03 | $50.00 | $777.00 | $1,064.00 | | $50.00 | $10.99 | $383.86 |
| Cretney Bequest | | $2,825.95 | $- | $- | $- | Astrophotography Workshop costs | $- | $- | $577.60 |
| Maintenance on Equipment | | $- | $- | $- | $235.97 | | $- | $- | $- |
| Solar Viewers | | $- | $- | $100.00 | $195.00 | | $- | $- | $- |
| Moving Observatory | | $- | $- | $230.00 | $- | | $- | $- | |
| Student Travel to Space Camp, Oly | | $250.00 | $- | $500.00 | $- | | $- | $- | $- |
| Web Site | | $195.94 | $199.28 | $199.28 | $199.71 | | $199.28 | $275.41 | $207.46 |
| Other Expenses | | $25.80 | $50.00 | | | | $50.00 | | |
| Capital Items | | | | | $63.00 | | | $55.00 | $4,784.22 |
| **Total Expenditure** | | **$4,521.07** | **$1,463.48** | **$2,802.99** | **$2,937.02** | | **$1,463.48** | **$1,809.64** | **$9,279.50** |
| | | | | | | | | | |
| **Cash Income less Expenditure** | | $928.32 | $2,515.48 | $806.60 | $1,859.17 | | $2,515.48 | $2,051.83 | -$3,858.46 |
| | | | | | | | | | |
| **Accrual adjustments** | | | | | | | | | |
| Reverse of previous years AP | 12 | $107.00 | $16.00 | $34.30 | $99.80 | | $16.00 | $117.94 | $749.68 |
| Less current Accounts Payable | | -$113.20 | -$107.00 | -$16.00 | -$34.30 | | -$7.00 | -$99.80 | -$117.94 |
| Reverse of previous years Prepaid | | -$310.30 | -$293.44 | -$278.66 | -$162.21 | | -$293.44 | | |
| Plus Debtors/Prepayments | | $339.49 | $310.30 | $293.44 | $278.66 | | $310.30 | $162.21 | |
| Less Depreciation | 10 | -$673.27 | -$779.05 | -$1,452.14 | -$1,423.17 | | -$779.05 | -$2,484.48 | -$2,340.57 |
| | | | | | | | | | |
| **Income less Expenditure** | | **$278.04** | **$1,762.29** | **($612.46)** | **$617.95** | | **$1,762.29** | **($134.30)** | **($683.07)** |

**Wellington Astronomical Society Incorporated**
**Statement of Financial Position** **For Year ending 31 August 2015**

| Current Assets | Note# | 2015 | 2014 | 2013 | 2012 | | 2014 | 2011 | 2010 |
|---|---|---|---|---|---|---|---|---|---|
| Bank Accounts | | $15,266.83 | $14,451.71 | $11,936.23 | $11,128.07 | | $14,375.57 | $9,268.90 | $7,217.07 |
| Prepayments | | $339.49 | $310.30 | $293.44 | $278.66 | | $310.30 | $162.21 | $- |
| **Total Current Assets** | | $15,606.32 | $14,762.01 | $12,229.67 | $11,406.73 | | $14,685.87 | $9,431.11 | $7,217.07 |
| **Property, Plant & Equipment from** | 10 | $6,509.54 | $7,182.81 | $7,961.86 | $9,412.81 | | $7,182.81 | $10,835.99 | $13,202.47 |
| **Total Assets** | | $22,115.86 | $21,944.82 | $20,191.53 | $20,819.54 | | $21,868.68 | $20,267.10 | $20,419.54 |
| | | | | | | | | | |
| **Liabilities** | | | | | | | | | |
| Accounts Payable | 12 | $113.20 | $107.00 | $16.00 | $34.30 | | $7.00 | $99.80 | $117.94 |
| Telescope Deposits | 11 | | | | | | | | |
| **Total Current Liabilities** | | $113.20 | $107.00 | $16.00 | $34.30 | | $7.00 | $99.80 | $117.94 |
| | | | | | | | | | |
| **Net Assets** | | **$22,002.66** | **$21,837.82** | **$20,175.53** | **$20,785.24** | | **$21,861.68** | **$20,167.30** | **$20,301.60** |

| Represented by Accumulated Fund | Note# | 2015 | 2014 | 2013 | 2012 | | 2014 | 2011 | 2010 |
|---|---|---|---|---|---|---|---|---|---|
| Opening Balance 01-September | | $21,935.08 | $20,172.79 | $20,785.25 | $20,167.30 | | $20,172.79 | $20,301.60 | $21,084.67 |
| Income less Expenditure | | $278.04 | $1,762.29 | ($612.46) | $617.95 | | $1,762.29 | -$134.30 | -$683.07 |
| **Total Members Funds** | | $22,213.12 | $21,935.08 | $20,172.79 | $20,785.25 | | $21,935.08 | $20,167.30 | $20,401.60 |

| Bank Accounts | | 2015 | 2014 | 2013 | 2012 | | 2014 | 2011 | 2010 |
|---|---|---|---|---|---|---|---|---|---|
| Cheque | | $7,435.13 | $6,771.70 | $4,407.75 | $3,748.13 | | $6,771.70 | $4,031.19 | $2,120.83 |
| Simple Saver | | $7,831.70 | $7,680.01 | $7,528.48 | $7,379.94 | | $7,603.87 | $5,237.71 | $5,096.24 |
| **Total** | | $15,266.83 | $14,451.71 | $11,936.23 | $11,128.07 | | $14,375.57 | **$9,268.90** | **$7,217.07** |

| Movement in Bank Accounts | Opening Bal | Deposits | Interest | Withdrawals | Closing Bal |
|---|---|---|---|---|---|
| Cheque | $6,771.70 | $5,160.95 | $36.75 | $4,521.07 | $7,448.33 |
| Simple Saver | $7,680.01 | $- | $151.69 | $- | $7,831.70 |
| **Total** | $14,451.71 | $5,160.95 | $188.44 | $4,521.07 | $15,280.03 |
| | | | | | |
| Net bank change | $828.32 | | | | |

| Movement in Members Funds | 2015 | 2014 | 2013 | 2012 | | 2014 | 2011 | 2010 |
|---|---|---|---|---|---|---|---|---|
| Total Assets Opening | $21,935.08 | $20,172.79 | $20,785.25 | $20,167.30 | | $20,172.79 | $20,301.60 | $21,084.67 |
| Cash, Income Less Expenditure | $928.32 | $2,515.48 | $806.60 | $1,859.17 | | $2,515.48 | $2,051.83 | -$3,958.46 |
| Assets Purchased | $- | $- | $- | $- | | $- | $118.00 | $4,784.22 |
| Assets sold | | | | $- | | | | $- |
| Depreciation | -$673.27 | -$779.05 | -$1,452.14 | -$1,423.17 | | -$779.05 | -$2,484.48 | -$2,340.57 |
| Reverse of previous years AP | $107.00 | $16.00 | $34.30 | $99.80 | | $16.00 | $117.94 | $749.68 |
| Less current Accounts Payable | -$113.20 | -$107.00 | -$16.00 | -$34.30 | | -$7.00 | -$99.80 | -$117.94 |
| Reverse prev yr Accounts receivable/prep | -$310.30 | -$293.44 | -$278.66 | -$162.21 | | -$293.44 | | |
| Plus Accounts receivable/prepaid | $339.49 | $310.30 | $293.44 | $278.66 | | $310.30 | $162.21 | |
| Reverse previous years Telescope Deposi | $- | $- | $- | $- | | $- | $- | $100.00 |
| **Total Assets Closing** | $22,213.12 | $21,835.08 | $20,172.79 | $20,785.25 | | $21,935.08 | $20,167.30 | $20,301.60 |
| | | | | | | | | |
| Check values | $- | $- | $- | $- | | $- | $0.00 | -$100.00 |

# 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 2014 AGM

**President**: Gordon Hudson

gordon@kpo.org.nz ph 04 - 2365125

**Vice President**: John Talbot john.talbot@xtra.co.nz ph 04 293 4620

**Secretary**: Chris Monigatti

chrismon@xtra.co.nz mob 021 890 222

**Treasurer**: Lesley Hughes

**Councilors:**

Aline Homes

John Homes + Webmaster

Roger Butland

Frank Andrews

Murray Forbes

Antony Gomez

Duncan Hall

**Newsletter Editor**: editor@was.org.nz

Postal Address:

Wellington Astronomical Society
PO Box 3181
Wellington 6140
New Zealand

# Election of WAS Council for 2015 – 2016

The WAS constitution states:

Clause 9:

(2) Candidates for election to Council may be from any grade of membership but may be proposed and seconded only by Financial Members of the Society. The name of the candidate and the position for which the candidate is standing together with the names of the proposer and seconder and acceptance of nomination by the candidate shall be lodged in accordance with Article 21(a)(ii) with the General Secretary not less than 14 clear days before the date of the Annual General Meeting.

(3) If no valid nomination for a position has been received by the General Secretary by the due date, nominations from the floor shall be called at the Annual General Meeting. Any call for nominations from the floor shall be made after the results of elections for other positions on the Council have been declared.

Nominations have been received thus:

| | |
|---|---|
| President: | Antony Gomez |
| Vice President: | Duncan Hall |
| General Secretary: | Chris Monigatti |
| Treasurer: | John Homes |

The remaining 5 council positions shall be filled by nominations received as above, and if necessary by vote at the AGM. Note that the council can be expanded by co-opting additional members.

Chris Monigatti

# WAS Motions to members at the AGM

**Motion #1:** to be put to the AGM: "That the Wellington Astronomical Society implement the plans for the Syd Cretney Bequest contained in the proposal prepared by the WAS observatory steering group and approved by Lunden's Law, the legal representatives acting on behalf of the executors of the Syd Cretney estate".

The approved option was: 'the Internet accessible remote controlled telescope based at the Gifford Observatory is the preferred option.' The option is retained of subsequently re-locating the Cretney Bequest-funded equipment to an astronomically better site at a later date.

**Motion #2:** to be put to the AGM: "That after election at this AGM the council of the Wellington Astronomical Society be empowered to appoint a 'Cretney Bequest Project Committee' to implement the plan for this project. This committee shall have a working capital up to $25,000. It shall fully record and report all expenditure to the WAS council and obtain approval for significant proposed expenditure of greater than $5,000 prior to incurring that expenditure to from the full WAS council."

Chris Monigatti

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# Starlight Festival by Gordon Hudson

This years Starlight Festival was held in Twizel on the 9-10-11th October. I left Wellington on the boat at 8am on Thursday 8th October arriving in Picton at 12.30pm. I drove to Christchurch and stayed the night in Darfield.

Next morning I drove to Tekapo arriving at 1pm. Twizel is 57km further on from Tekapo. I went to Twizel with Graeme Murray arriving at 4.30pm. There were events running all afternoon showing the Astrophotography display and Solar Observing. There was a photographic display called "Light Beyond the Bulb" to mark the International Year of Light 2015. There was another photographic display by RASNZ "The Harmful Effects of Light Pollution".

The opening was at 6pm with Powhiri, opening speeches, Kapa Haka performance and a Lecture on Tihanga Maori by Dame Anne Salmond of Auckland. This was followed by "Son et Lumiere" an astrophotograpy video show with music by Steve Chadwick of Horowhenua.

There was stargazing at Mt John that night but you had to be booked and could only travel there on a bus. This was totally booked out with 100 people keen to look throught the 1 meter telescope and the 24" telescope. I didn't bother going up as I had seen through these instruments before.

On Saturday there was Solar Observing and this went on for most of the day. The photographic displays from Friday continued all day Saturday.
The first public lecture was by Professor Chris Lintott at 11am "Is the Milky Way special?". This was a fascinating talk which should have been the WAS talk but was somehow changed.

Saturday afternoon was the Essay and Poems from 10 competition winners from NZ schools and sponsored by Genesis Energy. The competition was called the Margaret Mahy competition. Nine of the winners from all over NZ were in attendance the only one missing was the one from Northland. Each winner was given a Galileoscope and a certificate and a cash prize. Wellington had one winner Elanor Donnelly year 12 from St. Mary's College.

There was a planetarium show at the Sir Edmund Hillary Alpine Centre at Mt Cook but I didn't bother gong to that. There were two documentaries shown at the event centre the first was "The City Dark" which we had shown at the WAS meeting a while ago but the second was a NZ production called "Dark Sky" this was excellent and all about Light Pollution in NZ. There was no dinner supplied so we ended up going to the hotel in Twizel.

There was a UNESCO Starlight Concert performed by the Woolston Brass Band which I found too loud inside the sports centre, so I left and travelled back to Tekapo. There was a barbeque to be held at the Twizel Pukaki airport and run by the Canterbury Astronomical Society. I didn't attend that either.

The weather was clear for the barbeque and was clear for the Friday evening viewing on Mt John.

Sunday started off with a "Cultural site tour" by Ngai Tahu-Takerei Norton. This was a virtual tour and consists of a presentation on sites of cultural importance to the Maori in the MacKenzie Basin. The Solar telescopes continued as did the photographic displays.

The second public lecture was at 11am and this was presented by the second feature speaker "Is ET really out there?" This was presented by Dr Seth Shostak from the SETI Institute San Francisco. It was a most informative and entertaining speech and brilliantly presented. The lecture hall was full holding 200 people, as it was for Professor Lintott presentation. This was followed by the closing ceremony which consisted of more speeches.

Sunday afternoon was an open day on Mt John. Unfortunately it was blowing a gale but you could still get to see around the mount and the telescopes. I didn't visit the telescopes, as I started working on the removal of the RASNZ Library from Mt John to my accommodation at the Tekapo waterfront.

The next Starlight Festival will be held in two years time at the Mt Cook Centre. However this may be a problem for some people who will going to the Solar Eclipse in the USA about 2 months prior to the Festival.

On the drive back from Tekapo I visited several observatories. The first was the 18" Refractor stored at the Electrical Centre in Fairlie. This is the telescope that will one day be up and running at Tekapo.
The second Observatory was at Geraldine and called the Geraldine Observatory. Peter Aldous does much outreach astronomy with his C14 with a 6" refractor attached in one dome and under the other dome is a C11 with two 4" refractors. Each of these telescopes has a CCD camera attached to them. This was a spectacular site and the envy of most people.
I travelled on to Darfield where I stayed the night with the Loaders. Brian has a Meade 10" under a roll-on/roll-off roof and does a lot of occultations.

The next day I travelled to Kaikoura and while having lunch up where the Whale Watchers park I spotted a dome up high on the penninsula. I knew Larry Field lived in Kaikoura so I called and visited. Unfortunately there was no one home but it was Larry's place as he had his name on the fence, so I took several photos and left. What a spectacular house and site with magnificient views out to sea.

I travelled onto Blenheim, and as I was ahead of time, I called into see Bill Allen who has an observatory which I had visited several times in the past. He was not home. I noticed the Spanish Observatory that Bill was looking after has now gone and there is just the pier left standing. This observatory has now gone down to Lauder in Otago and is being run from there.

I arrived at the boat at 4.30pm and had a couple of hours to wait for the boat which was due to leave at 6.45pm. I enjoyed the trip on the boat back to Wellington as the boat was mostly empty of people and vehicles was only half full.

*Wellington's Elanor Donnelly from St. Mary's College who was one of the 10 winners of the Margaret Mahy essay and poems competition at this years Starlight Festival. She is show here with Professor Chris Lintott who presented her with the certificate and the Galileoscope. The standard of these entries was very high and this was mentioned several times by the Judges.*

*This image shows the 9 students with their Galileoscope and certificate in front on the floor. Each student was to read out their essay or poem but a couple were too shy and Marylin Head read them out for them. Marylin is seen on the left reading out an essay. The other people in the photo are the sponsors and Judges. There were 5 Junior winners and 5 Senior winners.*

# October meeting

At the October meeting, Professor Matt Visser from the Mathematics Department of Victoria University gave a very interesting and up-to-date presentation on the 'accelerating expansion' of the Universe.

The theory of the Universe expanding at an accelerating rate was formulated from number-crunching a lot of data, and plotting graphically. The data validity critically depends on the ability to accurately measure the distances out to redshifts of 1.0 or more. Traditionally Type 1a Supernovae were used as standard candles or cosmic tape measures. But recent research uncovered hitherto unrecognized variability in luminosity from such supernovae, probably related to the metallicity of the star.

Matt was highlighting that much more reliable data on absolute magnitudes and distances is required before the theoreticians can determine whether the expansion is constant, slowing, or accelerating, and thus ascertain the fate of the Universe.

The following link introduces this 'controversy' and includes some discussion:

http://phys.org/news/2015-04-universe-fast.html

Chris Monigatti

# Chris Lintott visit


Oxford University Professor of Astrophysics, and BBC 'Sky at Night' presenter Chris Lintott spent two days in Wellington on his way to the Starlight festival in Twizel. During this time Chris gave one presentation entitled 'The story of Zooniverse' at Victoria University, and one in conjunction with W.A.S. at the Royal Society 'How to discover a planet from your sofa', as well as a 30 minute interview with Kathryn Ryan on National Radio, 'Where are all the aliens?'.

http://www.radionz.co.nz/audio/player/201773435

Chris was promoting 'Citizen Science' – there is currently so much visual data being obtained, that neither professional scientists nor computers can classify it accurately. So the solution – get millions of volunteers to log in and analyse it in their spare time. Why would anyone want to get involved? As the retired Lancashire Policeman said "there's nothing to watch on TV and there's only so much gardening you can do".

Chris was an excellent and very entertaining speaker who seemed to be enjoying his first trip to New Zealand and we hope he returns in the near future.

If you have seen enough TV, then log into: https://www.zooniverse.org/ and get involved in scientific research!

Chris Monigatti

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# New Zealand's Scientific Heritage


2015 is a significant year for New Zealand science history. It is 150 years since James Hector arrived in Wellington to set up many of our national science organisations and 100 years since Ernest Marsden arrived in Wellington.

In celebration, Victoria University is hosting a two-day conference: "Finding New Zealand's Scientific Heritage", between the 23-24 November.

More information, including the program of talks (several of which are Astronomical) is available at: http://historyofscience.nz/

If you have any questions, please contact the conference convener Rebecca Priestley or conference administrator Kate Bazeley at NZhistsci2015@vuw.ac.nz or talk to Jim McAloon of VUW History department at the next WAS meeting.

Chris Monigatti

# Horowhenua Astronomical Society Astrophotography Weekend

The Horowhenua Astronomical Society is hosting its third annual astrophotography weekend. The weekend is open to everyone interested in astrophotography from beginners to advanced.

The activities will include opportunities for practical astrophotography, image processing workshops, presentations, bring-and-buy and (if the weather is bad) late-night movies.

Guest speakers and presenters include Peter Auldous, Steve Lang, Stephen Chadwick, George Ionas, Jonathan Green, Amit Kamble and Trevor Fafeita.

**Dates:** 13th-15th November

**Venue:** Foxton Beach Bible Camp, Foxton beach, Horowhenua

Please book ASAP by going to the web address: www.horoastronomy.org.nz or email stevechads@hotmail.com.

# 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 SI will be held at a "Christian" hostel and camp at Staveley between Friday February 5th and Monday February 8th.

There's nothing particularly religious about Stardate, although Phil Barker reports a religious experience when he views the cosmos through his twin brother Kevin's 5" Zeiss refractor.

Come and join us for this magnificent celebration of astronomy, science, and the cosmos at large. For more details see - http://www.treesandstars.com/stardate/

**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

# 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)

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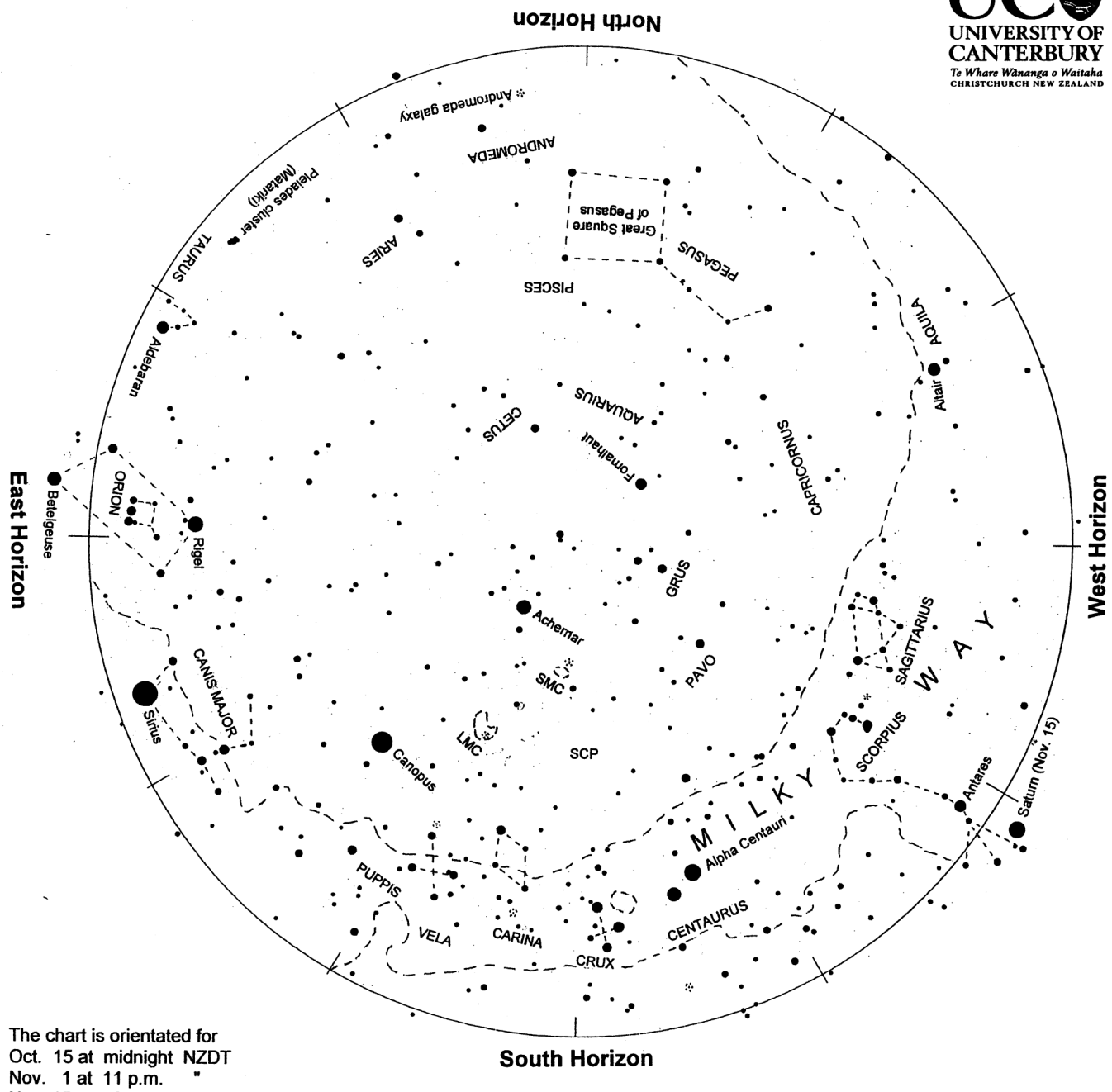
UC UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND




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

## Evening sky in November 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 makes a small extra clockwise rotation each night as we orbit the sun.

Saturn is setting in the southwest at the beginning of the month, but disappears in the dusk mid-month. Canopus is midway up the southeast sky. The Milky Way is wrapped around the horizon. It is low in the west and south early in the night. As the broad western part sets the fainter eastern half comes into view. Along with it rise Sirius, the brightest star; the constellation of Orion containing 'The Pot'; Taurus, and the Pleiades/ Matariki star cluster. The Pointers and Crux, the Southern Cross, are low in the south. The north sky is empty but for the Great Square of Pegasus with the Andromeda galaxy nearby.

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

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# The Night Sky in November

The brightest stars are in the eastern sky. Midway up the southeast sky is **Canopus**, the second brightest star. **Sirius**, the brightest star, rises in the later evening at the beginning of the month. It is in the sky at dusk by month's end, twinkling like a diamond as the air disperses its light.

Left of Sirius is the constellation of **Orion**, with 'The Pot' at its centre. **Rigel**, a bluish supergiant star, is directly above the line of three stars; **Betelgeuse**, a red-giant star, is straight below. Left again is orange **Aldebaran**. It is at one tip of a triangular group called the Hyades cluster. The Hyades and Aldebaran make the upside down face of **Taurus** the bull. Still further left is the **Pleiades** or **Matariki** star cluster, also called the Seven Sisters, Subaru and many other names. Six stars are visible to the eye; dozens are seen in binoculars. The cluster is 440 light years away and around 70 million years old.

Sirius is the brightest star both because it is relatively close, nine light years* away. Seen up close it would be 23 times brighter than the sun. By contrast, Canopus is 300 light years away and 13 000 times brighter than the sun.

**Saturn** is the only naked-eye planet in the evening sky. It sets in the southwest two hours after the sun at the beginning of the month. It looks like a medium-bright creamy-white star directly below orange **Antares**, the brightest star in the Scorpion. Because it is low in the sky it will look rather fuzzy in a telescope. By mid-month it is disappearing in the dusk.

The **Milky Way** is low in the sky, visible around the horizon from the northwest, through south into the eastern sky. The broadest, brightest part is in **Sagittarius**, to the right of the Scorpion's sting. 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 is 30 000 light years away in the direction of Sagittarius.

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. Alpha Centauri is the closest naked-eye star; 4.3 light years away.

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. That's still billions of stars in each. The globular star cluster 47 Tucanae looks like a slightly fuzzy star near the top-right edge of the SMC. It is 'only' 16 000 light years away and merely on the line of sight to the SMC. Globular clusters are spherical clouds of stars many billions of years old.

Very low in the north is the **Andromeda Galaxy**, easily seen in binoculars in a dark sky and faintly visible to the eye. It appears as a spindle of light. It is similar in shape to our galaxy but is a little bigger and nearly three million light years away.

**Venus, Mars and Jupiter** are in the eastern dawn sky. The three planets are close together at the beginning of the month, rising after 4 a.m. Venus is brightest, with Jupiter a close second. Mars is a fainter red 'star', just below Venus. Venus continues to rise two hours before the sun while Jupiter and Mars rise progressively earlier. By mid-month Jupiter is leading the three up the eastern sky. Venus is at the lower right end of the line; Mars is in the middle. They keep this order as the gaps between the three grow. The grouping is just a line-of-sight effect, of course. At mid-month Venus is 126 million km away; Mars is 313 million and Jupiter 860 million km away. There is an old and unreliable rule that stars twinkle and planets don't. It works for Jupiter and usually for Venus.

*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