



**Wellington Astronomical Society
2018-11 eNewsletter**

**Wellington Astronomical Society Inc.
email Newsletter for November 2018**

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1. NOVEMBER 2018 SOCIETY MEETING

The WAS Annual General Meeting will be held on Wed 7th November at 7:30 pm at Space Place, Carter Observatory, 40 Salamanca Rd, Kelburn.



Annual General Meeting 2018

1. Apologies
2. Minutes of the AGM 2017
3. President's Report
4. Cretney Bequest Sub-Committee Report
5. Treasurer's Report
6. Election of Officers
7. Life Membership
8. Other business
9. End of AGM followed by supper

NOTE: If you wish to vote at the AGM, please ensure your subscription to WAS is paid before the meeting. Only votes from paid up WAS members will be valid.

2. EVENTS

WAS Astrophotography group / Dark Sky Observing - Saturday 10th November 10:30 pm, Star Field - John Whitby's dark sky site. This is our last Astrophotography / Deep Sky event for this year at a dark sky site in the Wairarapa. To attend and get directions to Star Field, please email Antony (president@was.org.nz) as we need to keep track of numbers. Any updates will be posted on the [WAS Facebook page](#) closer to the time. For further details or cancellations contact Chris 021 890 222 or Antony 021 253 4979.

Note the later starting time of 10:30 pm as there is a prior activity taking place at the Star Field. Please arrive after the start time.

We are grateful to John Whitby for providing access to his Star Field site free of charge to WAS members.

WAS Observing Evening - Saturday 17th November, 8:00 pm, Tawa College.

See many wonderful objects, star clusters, galaxies, dying stars and nebulae. We will be focusing on the area around Galactic Centre of the Milky Way which lies across the night sky. The planets Saturn and Mars are also visible.

Come and learn how to star-hop through the night sky to find many of the various astronomical objects using the Society's Dobsonian telescopes. Chris is often there on Friday evenings too so feel free to come along though it would be best to give him a ring on 021 890 222 to check on conditions.

WAS Christmas Party - Wednesday 5th December, 7:30 pm, Wellington Collegians Cricket Club, Anderson Park, Botanical Gardens.

Keep this date free for the WAS Christmas Party, our last gathering for 2018. More details will be available in the next newsletter and on our Facebook page.

New Zealand Astrophotography Weekend 2018 - December 7th - 9th, 2018, Foxton Beach Bible Camp, Foxton Beach, Horowhenua.



The Horowhenua Astronomical Society is hosting the sixth New Zealand Astrophotography Weekend. Held in the lower North Island it is an annual event dedicated to astrophotography in a wonderful dark-sky location. It is open to everyone interested in astrophotography - from beginners to advanced. Come along and share your knowledge, tips and experiences.

All sorts of astrophotography can be undertaken - solar-system / nightscapes / deep-sky.

The weekend shall consist of:

- Practical astrophotography. There are plenty of safe areas for people to set up their equipment and leave it in situ for the whole weekend.
-

- Image Processing: There is a huge room with long tables available which is perfect for people to set up computers. If you have one then please bring an external monitor to attach to your laptop as this is very useful for other people to observe what you are doing.
- Presentations: There shall be talks on astrophotography related topics held in the large hall (see below).
- Bring-and-buy: Feel free to bring along any equipment that you are no longer using and wish to sell.
- Fish and chips dinner: Saturday night. Please pay when you book.
- Late-night movies: Should the weather not be kind then movies can be shown on the big screen.

Everyone is encouraged to bring along their own telescopes / mounts / cameras etc, however basic they might be.

For more information and booking details go to

<http://www.horoastronomy.org.nz/upcoming-events/astrophotography-weekend>

Central Starparty 2019 - January 3rd – 7th, 2018, Tuki Tuki Camp, Hawkes Bay.



The fourth Central Star Party will be held from Thursday 3rd January to Monday 7th of January 2019 and will be held at the Tuki Tuki Camp site in the Hawkes Bay. This is the site of many previous star parties.

Central Star Party has been established to hold annual star parties in the central North Island for the benefit of the astronomical community of the North Island of New Zealand. The goal of the organisers is to provide a fun social astronomical gathering laced with talks and activities.

Further details are available at <https://censtar.party/>

3. SOCIETY NEWS

2018 – 2019 Subscriptions

We started the new Financial Year on the 1st September. Membership subscriptions are now due. Please continue supporting our Society's activities by renewing your membership. As part of our mission of

promoting astronomy through education and public outreach, we endeavour to keep our activities free for everyone to attend.

However, as a Society, we do retain a number of fixed costs. Every year we pay out for insurance, affiliation to the Royal Astronomical Society of NZ, post-office box, venues and costs incurred when we host an international speaker, and telescope equipment.

Your commitment to supporting our Society through renewing your 2018 – 2019 subscription is very much appreciated.

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

- Adult/Waged: \$50.00
- Student/Unwaged: \$30.00
- Associate (outside the Wellington region): \$20.00
- Family: \$70.00

Payment methods:

- Direct Deposit or Internet Banking - use Acc No: 03-0502-0508656-00, please include reference so we know who is making the payment
- Cheque - make out to Wellington Astronomical Society Inc, and mail to PO Box 3181, Wellington 6140
- Cash - please bring exact amount to meeting.

Mosaic of the Full Moon – Murray Forbes



I had a lunar occultation predicted for Monday 22nd October (Labour Day). This was nearly a full moon, with the faint star disappearing behind the tiny sliver of the dark limb. As I wasn't sure if I'd be able to see this star against a bright sky background (lit up by the moon), I started to setup about an hour before the event time so I had plenty of time to find the right camera

settings. Anyway I found a setting where the star was visible (just) and still had 45 minutes to go before the occultation. To fill in the time I decided to attempt to video the moon to create a photographic mosaic.

I tried various settings on my video camera (a Watec 120N+ integrating camera) and found that the 'High5' integration time gave the best brightness setting. This setting still produces a video stream of 25 frames per second but each frame is an exposure only 1/1000 second long. I can only get about a quarter of the moon in my camera's field of view. So I needed to make a mosaic and took video recordings of six different areas of the moon. I made sure there was an overlap between each area, to aid the mosaic stitching program later on.

Even though the moon was near the meridian, the seeing wasn't particularly good. I suspect this was because it was only a few hours after sunset. My understanding is that the best seeing is usually after midnight and with the object near the meridian, but that wasn't possible in this case. I recorded each segment of the moon for at least three minutes (i.e. about 4,500 frames) in the hope that I'd get some brief instances of good seeing.

The next day I used RegiStax to analyse each video recording, take the best 10% of the frames from each recording and then stack these frames together to produce a png image. I then used GIMP to crop each (of my six) images to remove the (now very blurred) timestamps along the bottom of the images. Finally I used Microsoft's Image Composite Editor to automatically stitch the images together to form the mosaic you can see in the figure below. Note: All of the programs I've just mentioned are free (even the Microsoft program!).

As a first attempt at doing an astro-photographic mosaic I quite pleased with the result, especially as I was using a video camera which has a very low resolution compared to even a budget point-and-shoot camera. If you look carefully you can see some distortions on the boundaries where the individual images were stitched together. To improve on this first attempt, next time I'd take more areas of the moon with greater overlaps, make longer recordings and set my scope's tracking rate to track the moon (rather than for stars).

I look forward to seeing other members' astrophotography in future newsletters.

P.S. I also managed to record and analyse the lunar occultation that was my original project for that night.

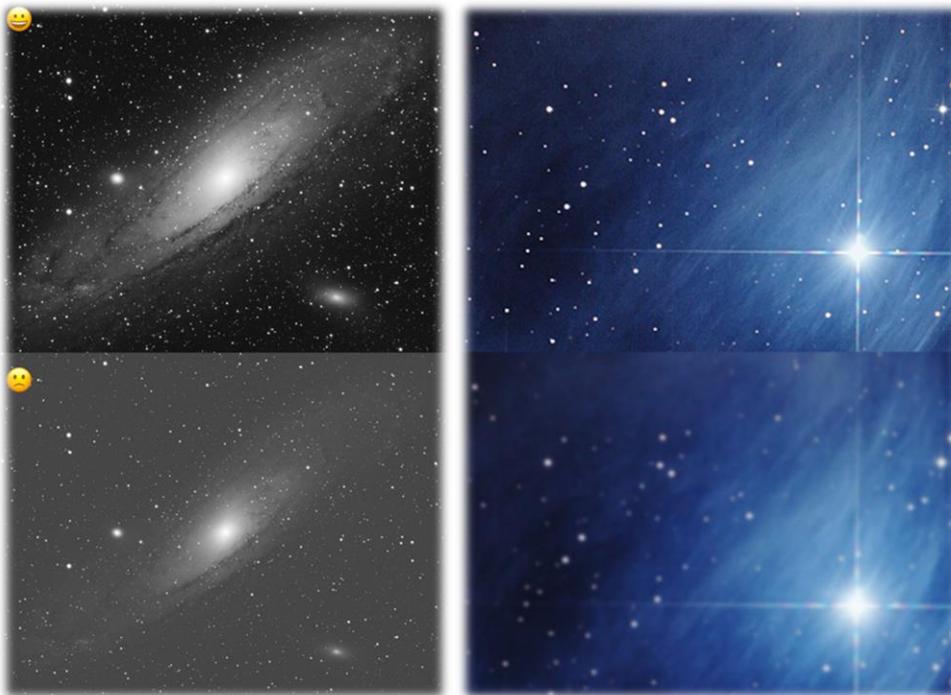
Seeing and Transparency - John Whitby

Seeing and **Transparency** are values that an observer uses to compare the quality of the sky from night to night. The values are very specific to an individual observer's visual acuity. **Seeing** is a measure of how stable the sky is. **Transparency** is a measure of how clear the sky is.

Most of my observations have been visual where I rate a sky for seeing and transparency to determine conditions for my astrophotography.

I have not recorded visual observations at the various locations that I have visited throughout NZ over the last five years or so. I only spend time at each location with my portable imaging equipment and a modified mirror-less camera, mainly for imaging and to determine the amount of light pollution. I am however making mental visual estimates of the seeing and transparency at each location while there.

One test I did at the better locations was to take a 10 second exposure at ISO 3200 using a camera lens both at the horizon and at 45 degrees, mainly to see the levels of light pollution.



*Poor transparency washes out faint details and reduces contrast.
Richard S. Wright Jr.*

*Poor seeing handicaps how sharp your images start off before processing.
Richard S. Wright Jr.*

Seeing and transparency are not directly related to light pollution, so it was possible to get excellent seeing and excellent transparency near heavy light pollution... i.e. Auckland which often has excellent seeing conditions.

This much I can tell you...My site at the top of the Coromandel ranges, on the very odd occasion, had the best seeing and best transparency I have ever seen, even leaving Tekapo in the dust! Steady stars right down to the horizon and almost three dimensional seeing in the milky way!

But the downside...it rained every other day and was constantly clouded out.

The darkest site I have ever been to was at the tip of Golden Bay near Puponga and the seeing was very steady there with excellent transparency, that is as long as you looked inland, looking out to the sea it turned to custard!

Another very dark site was inland from Kaikora but the seeing was affected by the mountains.

Along the East coast of the North Island the seeing was affected by the preceding hill ranges and the sea.

The East coast of the South Island was better where there were wide plains but then there was CH-CH light pollution looming in the distance.

Most other places were either too remote or the topography affected seeing. It became obvious to me that you don't have to be on the top of a mountain (in NZ) but definitely needed to on the East Coast where there was a dryer climate and preferably a large flat valley after the main ranges. The West coast ranges drive the moisture up to form rain and the dry air flows more smoothly across a wide flat plain.

Martinborough was my final choice as it had the right topography which produced a dry climate (for NZ at least) and over the last year I have had approx 3+ excellent nights a week on average with 50% clear nights in the last 6 weeks alone. These are nights where the seeing is around 7 to 8/10 most nights and up to 9/10 occasionally. The transparency can range from 6 to 9/10 on these nights.

There are plenty of nights good enough to collect scientific data but I am only interested in quality data for astrophotography and need good seeing and good transparency at a minimum. I know for a fact that Mt John are still able to collect scientific data on nights where I wouldn't even bother going out.

The best sky brightness reading at my current site from a Unihedron sky meter has been a staggering 21.95 magnitudes per square arcsecond, taken at 4.00 am recently. All of the Wairarapa towns recently changed to 3000K street lighting as part of a process for Dark Sky Reserve accreditation and this has helped as the previous best reading from my site was 21.82. IDA's gold standard is 21.75...22.0 is total darkness!

Holidays with an Education: Introducing Life Enriched Holidays

Life Enriched Holidays combine a life-enhancing and enriching experience with a vacation at the heritage Martinborough Hotel. Short 3-day or 5-day courses combine 8 - 20 hours of tutorials and a wonderful holiday break with complimentary activities, superb food and Martinborough wines included. Life Enriched Holidays are educational holidays for adults, that

with outstanding and acclaimed tutors, provide the chance to learn a new skill, develop latent talents, or explore a special interest.

Life Enriched Holidays appreciate the support of:

The Martinborough Hotel
The Petit Hotel
Union Square
The Martinborough Lodge
StoneCutter Vineyard

Tutors include:

Adam Newell – Michelin starred Chef
Jane Skilton - Master of Wine
Jillian Sullivan – Author and Tutor NZ & USA
John Faisandier B.A, B.Theol, M.Ed
Becky Bateman – Under the Stars
John Whitby – Star Field Martinborough

<https://www.lifeenrichedholidays.co.nz/martinborough-dark-skies>
www.lifeenrichedholidays.co.nz
www.facebook.com/lifeenrichedholidays

ASTRONZ - Buying telescopes and binoculars

In conjunction with the [Martinborough Dark Sky Society](#) we are looking at doing a bulk buy of telescopes and binoculars from [ASTRONZ](#) in time for Christmas. ASTRONZ is a non-for-profit online astronomy shop owned by the Auckland Astronomical Society. It reinvests everything earned back into astronomy and science education throughout New Zealand.

It also offers a commission back to the Wellington Astronomical Society for any referrals by the Society on orders for equipment through their site www.astronz.nz. So if you are intending to purchase anything from ASTRONZ please indicate that you were referred by WAS.

If you are interested in the bulk buy option then check out the ASTRONZ site and email president@was.org.nz by the end of the day 11th November 2018. We will collate the order and place it with ASTRONZ in time for you to pick up from Wellington for Christmas. If you want to discuss your purchase first for options, feel free to contact Antony directly 021 2534979.

Please note that there is still a freight cost associated with your purchase to get it to Wellington.

4. ASTRONOMY NEWS

Up to date Astronomy News and Society events is available on the Society's Facebook page: [Wellington Astronomical Society](#).

5. NIGHT SKY FOR NOVEMBER 2018

The [Night Sky for November 2018](#) courtesy of the University of Canterbury.

6. CONTACTS

The following members were elected to Council at the Nov 2017 AGM

President: Antony Gomez (president@was.org.nz) - 021 253 4979

Vice President: Duncan Hall (vice-president@was.org.nz)

Secretary: Becky Bateman (secretary@was.org.nz)

Treasurer: John Homes

Membership Secretary: Janine Bidmead (membership@was.org.nz)

Website: Peter Woods (webmaster@was.org.nz)

Telescope custodian: Chris Monigatti

Council: Andrew Fuller, Chris Monigatti, Frank Andrews, Janine Bidmead, Murray Forbes, Peter Woods, Roland Idaczyk

Postal Address:

Wellington Astronomical Society,
PO Box 3181,
Wellington 6140, New Zealand

Website: www.was.org.nz

Facebook page: [Wellington Astronomical Society](#).

Facebook group: [WAS – Wellington Astronomical Society](#) (for members)

Facebook Astrophotography group: [WAS Astrophotography Group](#) (for members)
