



CAS MAG

The official magazine of the Canterbury Astronomical Society

www.cas.org.nz, www.facebook.com/CanterburyAstronomicalSociety

Monthly Meeting: TUESDAY 16TH APRIL 2019

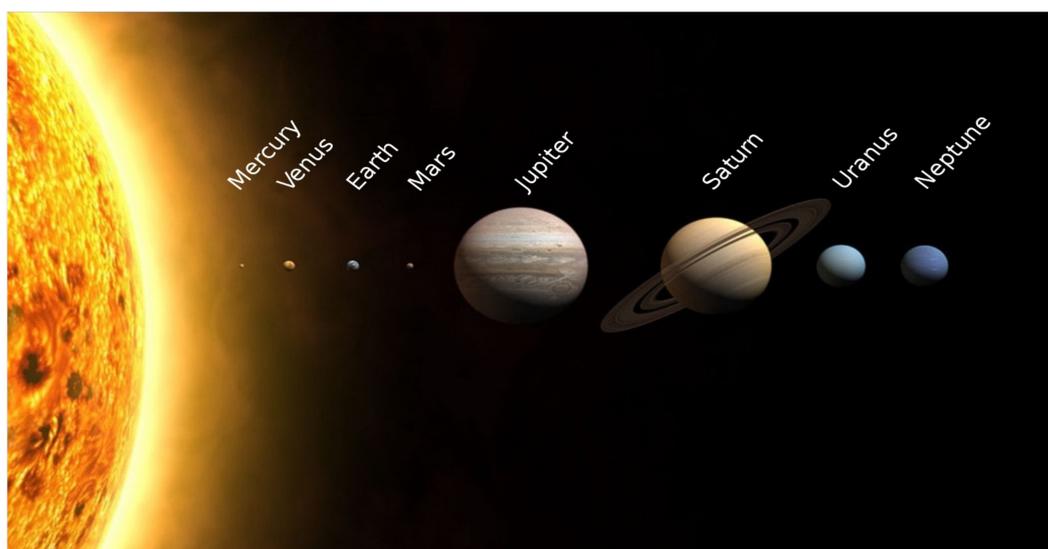
From 7:30p.m, room 701 on the 7th floor of the West building (Old Rutherford) (Physics and Astronomy) at the University of Canterbury (see page 4 for a detailed map).

Refreshments start at 7.30. Meeting starts at 8pm

APRIL MEETING: A TOUR OF THE SOLAR SYSTEM

Dr Euan Mason (Cas President).

A representative image of the Solar System with sizes, but not distances, to scale
Image from Wikipedia



CAS Membership Subscriptions for 2019-2020 **THIS YEARS SUBSCRIPTIONS ARE NOW DUE FOR PAYMENT**

Please use your name and member number as a reference when banking, then email membership@cas.org.nz to advise so payments can be matched to you correctly.

PLEASE also include any changes to your contact details (eg: phone, email, address)
Full details are included on the last page of this newsletter.

You are also welcome to pay by cash or cheque at our monthly meetings



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CAS Calendar, APRIL 2019 - JUNE 2019

April 2019

Tuesday 9th	Committee Meeting
Friday 12th	1st Public Open Night 7.30pm
Saturday 13th	First quarter
Tuesday 16th	Members Meeting from 7.30pm
Friday 19th	Full Moon/Easter Friday
Saturday 20th	Members Night at Observatory
Sunday 21st	Easter Sunday
Monday 22nd	Easter Monday
Saturday 27th	Last Quarter

May 2019

Sunday 5th	New Moon
Sunday 12th	First Quarter
Tuesday 14th	Committee Meeting
Sunday 19th	Full Moon
Tuesday 21st	Members Meeting from 7.30pm
Saturday 25th	Members Night at Observatory
Monday 27th	Last Quarter

June 2019

Monday 3rd	Queens Birthday Holiday
	New Moon
Monday 10th	First Quarter
Tuesday 11th	Committee Meeting
Monday 17th	Full Moon
Tuesday 18th	Members Meeting from 7.30pm
Saturday 22nd	Mid-Winter Bonfire night at Observatory
Tuesday 25th	Last Quarter

UPCOMING EVENTS:

PUBLIC OPEN NIGHTS 2019

This years Fridays Public Open Nights are listed below and we always welcome volunteers for these events

12th, 26th April

3rd, 10th, 17th, 24th 31st May

7th, 14th, 21st, 28th June

26th July (see below as the rest of July is Kidsfeast)

2nd, 9th, 16th, 23rd, 30th August

6th, 13th, 20th, 27th September

Volunteers are always required to help run these events, New members are always welcome to come along and help. Information and Notifications will be on our website with contact details. If you would like to help please contact the open night organisers, Helpers MUST be members of the Society, These open nights are a great way to get training and experience using the society's telescopes, as there are always experienced members on hand to help you.

KIDSFEST 2019

Provisional dates for this are Saturday 6th July—Saturday 20th July

Excluding both Tuesday's 9th and 16th, This event runs every night during this set time

As in the past years your support and help with these events are what makes them the huge success that they are

Rob Glassey is the society's contact for both Open nights, Kidsfest and Group Bookings, and can be contacted at vice.president@cas.org.nz



CANTERBURY ASTRONOMICAL SOCIETY AGM REPORT

This was held on 19th March.

Committee Office holders presented their reports and a summary of those are published in this issue.

Your new Committee was then elected as follows:

President: Euan Mason

Vice-President: Rob Glassey

Treasurer: David Brian

Secretary: Dale Kershaw

Web Master: Simon Lewis

Observatory Directory: Terry Richardson

Membership Secretary: Simon Lewis

Librarian: Colin Fortune

Editor: Dale Kershaw

Committee:

Carol McAlavery, Josh Swan, Marc Bunyan, Tracey Richards, Malcolm Flain

Many thanks go to the outgoing committee members for their hard work and commitment to CAS during their time on the committee.

The Committee would also like to thank Karen for her ongoing work with cleaning the lodge and toilets for us over the last year.



MONTHLY MEETINGS:

Carol Mc Alavey has asked for you, our members to make suggestions or offer to give a talk at our monthly meetings

If you have any suggestions for topics please contact Carol via cstars@xtra.conz

The meeting venue is now held in room 701 on the 7th floor of the West building (Old Rutherford) (Physics and Astronomy) of the University of Canterbury

Car parking is available in the car park with entrances in Science Road or Engineering Road.

Disabled parking is in Engineering Rd



Upcoming Meetings

16th APRIL 2019

Dr Euan Mason

A Tour of the Solar System

21st MAY 2019

Prof Philipp Richter Erskine at University of Canterbury

18th JUNE 2019 TBC

16th JULY 2019 TBC

20th AUGUST 2019 TBC

17th SEPTEMBER 2019 Members Soapbox

17TH OCTOBER 2019 TBC

19TH NOVEMBER 2019 TBC

(correct as at 5th March 2019, Subject to change as required)

Many thanks go to Orlon Petterson and Rosalie Reilly from the School of Physical and Chemical Sciences, University of Canterbury for arranging the meeting room for CAS this year

Also Thanks to Associate Professor Karen Pollard for organising the Lecture theatres for our public talks



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WELCOME TO OUR NEW MEMBERS:

A warm welcome to our new members, We look forward to meeting you at our meetings or events, Please make yourselves known to others. The following were accepted as members at the March Committee meeting
Welcome to:

Lilly Bolt
 Claire Hawkins
 The King Family
 Ian Murray

It is always great to see our new members coming along to our Members Meetings, Members Nights and Events.



OBSERVATORY NEWS

ALARM AT THE OBSERVATORY

The installation of our ALARM at the observatory is now fully operational, Ask a committee member for the password.

GRAEME KERSHAW SKY CAMERA

The Graeme Kershaw All Sky Camera is located at the RF Joyce Observatory In West Melton, The static image will update every time the page is refreshed. At night you will see Stars, the moon and planets as well as the occasional meteor.

This camera was made possible by the generous donation from the Kershaw Family and is a tribute to Graeme's tireless work in the field of Astronomy.

<http://richardson.geek.nz/allsky/>

Photos:

Right, The camera unit.

Below: Photo from unit 7th April 2019 5.20pm



METEOR SHOWERS FOR 2019

Shower	Dates		Moon	Peak Rate	RA	Dec	Near Star
	Active	Peak					
Centaurids	Jan 28 - Feb 21	Feb 8	3 days after New moon	5 (-25)	14.1	-59	β Cen
gamma-Normids	Feb 25 - Mar 22	Mar 13	1 day before First quarter	8	16.6	-51	γ Nor
pi-Puppids	Apr 15 - Apr 28	Apr 23	4 days before Last quarter	var to 40	7.3	-45	σ Pup
eta-Aquariads	Apr 19 - May 28	May 5	New moon	60	22.5	-1	η Aqr
Pisces Austrinids	Jul 15 - Aug 10	Jul 27	2 days after Last quarter	5	22.7	-30	α PsA
alpha-Capricornids	Jul 3 - Aug 15	Jul 30	2 days before New moon	4	20.5	-10	α Cap
Southern delta-Aquarids	Jul 15 - Aug 25	Jul 27	5 days before New moon	20	22.6	-16	δ Aqr
Southern iota-Aquarids	Jul 25 - Aug 15	Aug 4	3 days after New moon	2	22.3	-15	ι Aqr
Northern delta-Aquarids	Jul 15 - Aug 25	Aug 13	3 days before Full moon	4	22.3	-5	θ Aqr
Northern iota-Aquarids	Aug 11 - Aug 31	Aug 19	3 days after Full moon	3	21.8	-6	β Aqr
Piscids	Sep 1 - Sep 30	Sep 19	3 days before Last quarter	3	0.3	-1	λ Psc
Orionids	Oct 2 - Nov 7	Oct 21	1 day before Last quarter	20	6.3	+16	γ Gem
Leonids	Nov 14 - Nov 21	Nov 17	3 days before Last quarter	100+	10.2	+22	γ Leo
alpha-Monocerotids	Nov 15 - Nov 25	Nov 27	New moon	var to 5	7.9	+1	δ Mon
Pheonicsids	Nov 28 - Dec 9	Dec 6	2 days after First quarter	var	1.2	+53	Achernar
Geminids	Dec 7 - Dec 14	Dec 14	2 days after Full moon	120	7.3	+33	Castor

Information from the Royal Astronomical Society New Zealand website <http://www.rasnz.org.nz>

AGM REPORTS

LIBRARIAN REPORT: COLIN FORTUNE:

I must begin by apologising for a year of little activity as I have poor health from a degenerative disease which is slowing me down considerably. The library has been tidied and some duplicate copies of obscure books have been removed. This has made room on the shelves for new items and I am looking out for up to date books which will help newcomers to Astronomy. I am still at a loss to find new technology which will replace books as a lending medium other than DVD's but their life is coming to an end.

We have purchased a Q and A Guide to assist new comers which will go into the library and I will get the updates of Sky and Telescope on DVD and make copies to put in the Library.

Several books have been borrowed and not returned. Stephen O'Meara's Deep Sky Companions will need to be replaced as they were very popular and informative but have been missing for two years.

I am keen to find another member who can work alongside me to learn the system and get things up to date and later take over this position.

From Your Editor

Thank you all for your support over the last year and I look forward to being your Editor for the coming year.

As always I look forward to receiving your items to include in future issues and I welcome contributions or suggestions and encourage you to send any articles or ideas you would like to be see included in upcoming issues.

Remember you can have your advert added in the future casmag's, Contact me for detail's

Please email to editor@cas.org.nz

Dale Kershaw

AGM REPORTS CONTINUED

STARDATE STAVELEY 2019 REPORT: Jan Fortune

Jan would like to thank Dale in particular for taking over the registration and accommodation issues on the Friday when I had to rush back to Christchurch with Colin in hospital and then a big thank you to ALL CAS members who helped me so much with preparing and cleaning up after the Pot Luck dinner on Saturday and the cleaning up on departure on Sunday. Your support was most appreciated.

Jan

STAVELEY STARDATE FEBRUARY 2019

ATTENDEES

Friday 46

Saturday 54

Plus 5 day visitors

INCOME

Registrations \$1720

to come \$80

TOTAL \$1800

EXPENDITURE

Staveley Camp - Deposit \$200

Payment \$1040

Supplies/gifts \$262.62

TOTAL \$1502.62

Excess Income over Expenditure \$297.38

EDITOR'S REPORT 2019: DALE KERSHAW

This past year for Cas and Casmag has been very busy, Cas successfully hosted the profitable 2018 RASNZ conference and I was proud to be part of that organising committee, and Thanks Carol for her outstanding leadership with this

I continue to make changes to the casmag as it is needed, this is an ongoing exercise. I have published 11 editions this last year. Which are then uploaded to our website and members notified

Thank you to Euan for publishing the June issue for me.

I also want to thank Carol McAlavey for her support and assistance in the last year helping with Casmags during the printing/ folding and putting in the envelopes for posting.

I continue as required send to the other NZ and Australian society's. I send printed copies to our life members, our members who have requested a printed copy and to the required legal deposit office and several other places including Libraries.

I have continued in sending new members their 1st copy as a welcome with a note advising future issues will be available online via our website

I would like to thank all those members who have submitted items/articles to be included and really do encourage all members to continue to do this in the future.

As part of the Editors job I also receive other society's and RASNZ newsletters so they can be uploaded to our website.

As I did last year as a committee member, I have also attended the monthly committee meetings and have been involved with and enjoyed the public open nights and the other events as often as it has been possible

I was also able to organise for our members to visit the SOFIA plane.

(Sofia ask that we invite those who haven't had a chance to visit).

I look forward to doing this again this year

I do look forward to another year as your editor/ committee member if you choose to re-elect me and would like to thank the rest of the committee and my fellow cas members for all the support, they given to me in what has been personally for me a very hard stressful and upsetting year.

AGM REPORTS CONTINUED

OBSERVATORY DIRECTORS REPORT 2019: TERRY RICHARDSON

We have achieved a lot in the last year but there is still much to do.

Jobs from previous administration

Repair of septic tank - Completed

Replace lodge roof - Completed

Commissioning of intrusion alarm (already installed) - Completed

Jobs commissioned and completed in the last year.

3 Laptop computers for observatory use with serial connections for telescope control acquired

Installation of internet in the lodge - Completed

Retaining wall moved and reconstructed, bottom terrace extended - Completed

Cyprus trees on boundary felled and cut up - Completed

Received various eyepieces and guide scope for 12 inch

Set up guiding for 12 inch - Completed.

General day to day maintenance

I wish to heartily thank all of our faithful volunteers who have tirelessly facilitated these achievements.

Jobs pending

Commission Graeme Kershaw Sky camera at observatory - Ready to install.

Will be displayed on the website.

Construct temporary fencing across the top of the roadside bank for visual security.

Stain or oil retaining wall timber and paint rails white

Repair rotting roof spars on 14 inch

Investigate sticky dome rollers 14 inch

Replace doors on 14 inch

Waterproofing the dome skirt of Nankeville Dome

Free up dome rollers Nankeville dome

Recommission 24 inch Dob. Euan is ready to coordinate this

Building up Pier for C11 on fiberglass dome - Materials on hand and ready for completion.

Repair leaking roof in 16 inch

Planting replacement trees on road boundary

Replace Hebe hedging around terraces

Install power for Nankeville dome and fiberglass dome - Already planned.

Install cat in lodge for Autumn!

Long term

Modification of the lodge with a secondary door for rapid exit in emergency.

Several plans and ideas are being floated.

Equipment wish list

A portable Go To mount with tripod for use on terraces and for training

Astronomical Video camera for general use.

Replacement Video projector for lodge

General

We have had a very successful winter program of open nights and Kidsfest (covered elsewhere)

Summer BBQ was successful, especially since we invited our neighbours from Bells Road. Turnout from members was a little disappointing.

Winter Bonfire was a roaring success! A group of NASA Sophia staff attended.

Thanks to Euan for live music at these events.

We have been encouraging, and developing, a group of members who are now accredited to use various facilities at the observatory. (List available for perusal). It would be good to have more people on this list. Open nights coming up so lots of opportunity here.

Generally I am well pleased with frequent use of the observatory. Perusal of the observatory log book reveals attendance by various members on most clear nights. I hope this will increase even more now that we will have the skycam in operation.

Terry Richardson

Observatory Director 2018-19

INTRODUCING YOUR 2019-2020 CAS COMMITTEE

About Your New Committee:

PRESIDENT: EUAN MASON

I am a professor at the University of Canterbury, where I teach silviculture and also make models of how trees grow. This is my third period as president; I was president for several years just after the turn of the century, and then for a few years following our earthquakes in 2011.

Many thanks to members for placing your trust in me.

I shall do my best to help CAS provide wonderful astronomical and social events for members, while also serving the community with open nights and making provision for astroimaging and research if people wish. I have been interested in astronomy for many decades, and I enjoy imaging, showing people the cosmos, looking through superb telescopes, and I dabble in sunspot counts, occultations and other astro-research topics when time allows.

Please feel free to ask if you have any queries or if I can help you get started with knowing the sky or setting up equipment.



VICE PRESIDENT: ROB GLASSEY

Many of you will know me from the Practical Astronomy talks or from the open nights. This is my sixth year on committee, and fourth as Vice President. I have been actively observing the sky since 2004 when I started looking after a family holiday home near Staverley, and I got drawn into actual observing by the dark night skies out there. I use a wide variety of telescopes, of all sizes, and I enjoy chasing the many strange and wonderful objects that can be found in the night sky.

By day I pretend to be an electronics engineer.



OBSERVATORY DIRECTOR: TERRY RICHARDSON

Moved to West Melton in 2000 for two reasons. One was to be away from city noise and pollution, the other was to see the stars at night. It was not until near retirement (from medicine and aviation) about 5 years ago he decided to buy a telescope. With Trial and error and lots of internet consultation he learned how to set the telescope up and integrate it with a computer for information and control and then started Astrophotography. As with all astrophotography this is a developing interest and skill. He joined the society about 3 years ago to learn more by talking with like minded people. The passion for the night sky has grown to the point that he now can run all the telescopes at the observatory.



INTRODUCING YOUR 2019-2020 CAS COMMITTEE

About Your New Committee: CONT

TREASURER: DAVID BRIAN

David has been a member of Cas since 2006 and on the committee for a good few years and has had served several times as treasurer, this being his 2nd year this time round



SECRETARY/EDITOR: DALE KERSHAW

I have been a CAS member for 6 years, and this will be my 3rd year as your editor and 1st as CAS Secretary. With a keen interest in astronomy for many years, hand crafts and gardening. I am now after Graeme's passing last year will still be working on the restoration of the 154 yr old Townsend Teece telescope, which will be returned to its former site at the Arts Centre when complete. The other things that keep me busy are family, sewing and my Orchids were I am also on that committee



WEBMASTER/MEMBERSHIP SECRETARY: SIMON LEWIS

I have been interested in space and astronomy since I was young and in more recent years have indulged in a passion for telescopes, both visual and radio. My other hobby, amateur radio, has allowed me to explore and experiment in satellites, meteor, aurora and moonbounce communications. My telescope interest led me to buying a 10" LX200 some years ago but I have migrated more to astrophotography these days.

I am currently building a roll off roof obs at home in Greendale. I love doing outreach and seeing the delight on the kids faces. My professional role as a project and IT programme manager gives me some great skills to use for CAS and I look forward to serving on CAS committee and developing CAS for its members.



LIBRARIAN: COLIN FORTUNE

I was standing outside Melbourne Casino after dinner with a young lady from Canada and had to admit that I could not find the Southern Cross in the evening sky! The fact that light pollution was almost 100% did nothing to get me off the hook. I had done no work in finding my way around the heavens since scouting days and resolved to remedy the situation. Several thousand dollars, a home observatory, four telescopes and 50 books later I can now find Crux and a couple of other constellations as well. I have been a member of CAS for about 10 years and am developing a particular interest in Astrophotography, using knowledge gained during a career in Medical Photography. Should the lass from Canada ever pass by I can at least show her the Southern Cross.



INTRODUCING YOUR 2019-2020 CAS COMMITTEE

About Your New Committee: CONT

COMMITTEE: CAROL MCALAVEY

I have been involved with CAS for 33 years, both on the committee and involved with outreach at the Arts Centre Townsend telescope and West Melton Observatory. I was also involved with Stardate SI and Stargazers Getaway for many years.

I was the lead on the local organising committee (This was done over 3years) for the RASNZ 2018 conference that was held here in Christchurch.

This Conference was very well attended and a huge success, with a good profit for both RASNZ and CAS.

My main interest in astronomy is aurora and its wonderful displays...now all I need is a good camera to record them!!



COMMITTEE: MALCOLM FLAIN

Malcolm was gifted a 25mm collapsible telescope at 8 years of age and the interest has grown ever since. He has been a member of Cas for many many years, and has served on the committee several times, Malcolm has built several scopes and helped others with their own builds, as well as repairing Cas scopes



COMMITTEE: JOSH SWAN

Hi I Joined CAS a year ago and since then, dove headfirst into Astrophotography, I have my own setup at home that I image in the back yard with but am looking forward to imaging with the equipment at CAS. Outside the society, I have just finished my degree in marketing and getting started in that career

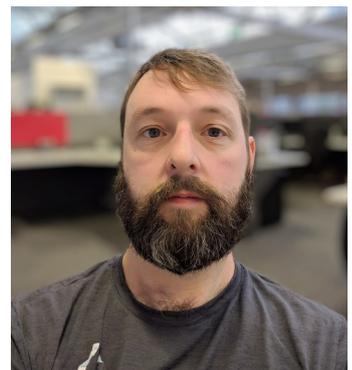


COMMITTEE: MARC BUNYAN

I moved to NZ from the Scottish Borders in 2010 with my NZ Partner after buying her a G&T in my local (the rest as they say - is history). Loving in a rural area I've always had a fascination with the night sky and fondly remember astral events growing up, ranging from a shuttle launch to Hale Bop.

By day I work in the enterprise IT space (keeping your You Tube and Netflix going!) And by night I'm often figuring out my next tinkering project, Whether that's another computer/drone/camera experiment (some of them even get finished!).

I Hope I can help CAS grow into the future and look forward to many clear skies ahead



COMMITTEE: TRACEY RICHARDS

Kiwi born and returned to NZ to help rebuild a city. Building Services CAD technician with a bias to the Electrical discipline. Landscape Astrophotography is my thing. Astride the electrical fence of indecision on whether Star Trek or Star Wars is the best.



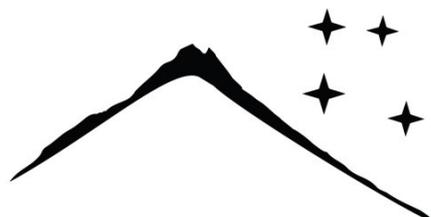
RASNZ 2019 Conference - New Plymouth 17 - 19 May 2019

The RASNZ 2019 Conference will be held in New Plymouth 17 - 19 May and will be followed by the 13th Trans-Tasman Symposium on Occultations. The conference is being hosted by the New Plymouth Astronomical Society as part of their 100th celebrations and will be held at the Devon Hotel.

More information will be available here as planning for the event progresses. We look forward to seeing you in New Plymouth

The RASNZ AGM will take place on the afternoon of Saturday 18 May 2019 following the last conference session of the day.

Check the RASNZ website for registration details



**New Plymouth
Astronomical Society**

NEW ZEALAND STARLIGHT CONFERENCE **October 2019**

We are planning a conference on Dark Skies, Combatting Light Pollution and Star Gazing to be held at Lake Tekapo in the worlds largest International Dark Sky Reserve,

(see <http://starlightconference.org/>)

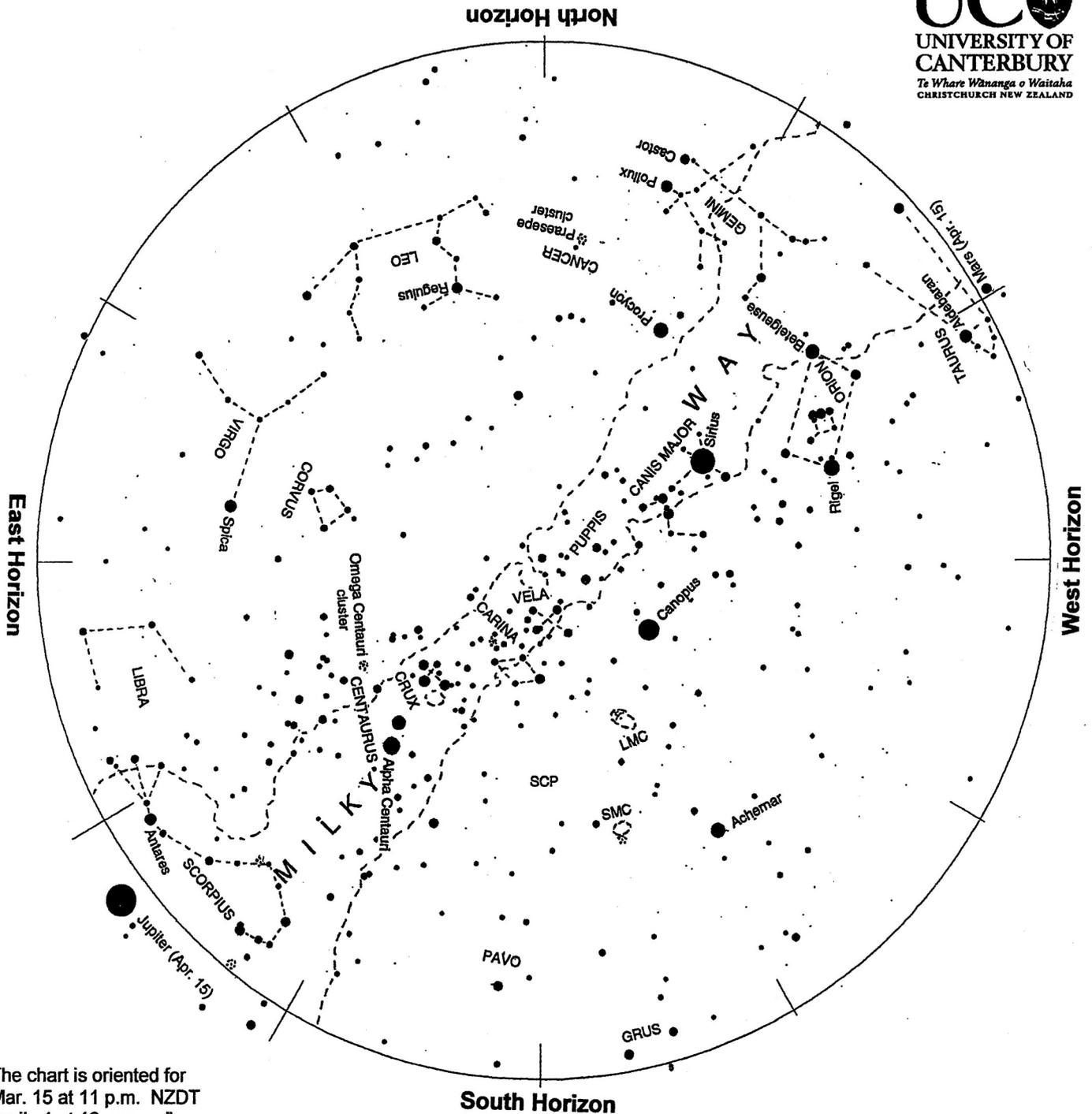
The Dates will be 6pm on Sunday 20th October 2019 till 4.30pm on Wednesday 23rd October 2019.

The New Zealand Starlight Conference is supported by the International Dark Sky Association and Hosted by Aoraki Mackenzie International Dark Sky Reserve Board.

More details will be posted on the website above in the coming months, Members of RASNZ and Affiliated societies will be most welcome as participants

We hope to see many New Zealanders at the conference

John Hearnshaw (Chair of AMIDSR Board)



The chart is oriented for
 Mar. 15 at 11 p.m. NZDT
 April 1 at 10 p.m. "
 April 15 at 8 p.m. NZST
 May 1 at 7 p.m. "

Evening sky in April 2019

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 westward or clockwise shift each night as we orbit the sun.

Sirius, the brightest true star, is midway down the western sky. Below it is Orion with bright stars Rigel, blue tinted, and orange Betelgeuse. Canopus, the second brightest star, is southwest of overhead. Crux, the Southern Cross, and The Pointers, Alpha and Beta Centauri, are high in the southeast sky. The Praesepe star cluster is a fuzzy spot low in the north. Mars is the only planet in the early evening sky, looking like a reddish star on the northwest skyline. Golden Jupiter rises in the southeast around 11 p.m. NZDT (10 p.m. NZST) at the beginning of the month; 8 p.m. at the end.

The Evening Sky in April 2019

Sirius and **Canopus** are the first stars to appear at dusk. Sirius, the brightest star, is northwest of the zenith and Canopus, the second brightest, is southwest. They are the brightest true stars in all the sky though the star-like planets Jupiter (up soon), Venus and occasionally Mars are brighter.

Below Sirius are **Rigel** and **Betelgeuse**, the brightest stars in **Orion**. Between them is a line of three stars: Orion's belt. To southern hemisphere star watchers, the line of three makes the bottom of 'The Pot', now tipped on its side. A line of fainter stars makes the Pot's handle or Orion's sword in the northern hemisphere view. Binoculars show a misty patch in the middle of the handle, the Orion Nebula, a distant cloud of glowing gas. Below and right of Sirius is **Procyon**. Sirius marks the head of the Canis Major, the big dog following Orion the hunter across the sky. Procyon is the head of Canis Minor.

Jupiter rises in the southeast around 11 p.m. NZDT (10 p.m. NZST) at the beginning of the month. It appears as a golden-coloured star shining with a steady light, not twinkling like a star. It is up four minutes earlier each night so appears around 8 p.m. at the end of April. A small telescope will show the disk of Jupiter with its four bright 'Galilean' moons lined up on each side. Binoculars, held steady, will sometimes show one or two moons looking like faint stars close to the planet.

Saturn (not shown) rises in the southeast around midnight at the beginning of the month, below and right of Jupiter. It looks like a cream-coloured star, the brightest in that region but much fainter than Jupiter. By the end of April it is up soon after 10 pm. A small telescope shows Saturn as an oval, the rings and planet blended. Larger telescopes separate the planet and rings and may show Saturn's moons looking like faint stars close to the planet. Titan, one of the biggest moons in the solar system, orbits about four ring diameters from the planet. The moon will be close to Saturn on the 25th.

Low in the northern sky is a fuzzy patch of light, the **Praesepe cluster**, marking the shell of **Cancer** the Crab. Praesepe is also called the Beehive cluster, the reason obvious when it is viewed in binoculars. Praesepe is 600 light years (l.y.)* away. Its stars are 600 million years old. The biggest and brightest stars in the original cluster have long ago burnt out so only the medium-brightness stars remain. This gives the cluster its uniform appearance in contrast to the much younger Pleiades/Matariki/Subaru cluster which still has several prominent stars.

Lower and further left are **Pollux** and **Castor**, the heads of **Gemini** the twins, making a vertical pair. Though related in myth, the Twins are quite different from each other. Pollux is an orange star 31 times brighter than the sun and 34 l.y. from us. Castor is a hot white star about 47 times the sun's brightness and 51 l.y. away.

Crux, the Southern Cross, is high in the southeast. Below it, and brighter, are Beta and **Alpha Centauri**, often called 'The Pointers'. Alpha Centauri is the closest naked-eye star, 4.3 l.y. away. Beta Centauri, like most of the stars in Crux, is a blue-giant star hundreds of light years away. **Canopus** is also a very luminous distant star; 13 000 times brighter than the sun and 300 l.y. away.

The Clouds of Magellan, **LMC** and **SMC** are midway down the southwest sky, easily seen by eye on a dark moonless night. They are two small galaxies about 160 000 and 200 000 light years away.

The brilliant planet **Venus**, not shown, rises around 4 a.m. NZST at the beginning of the month; around 5 a.m. at the end. At the end of the month **Mercury** makes its best morning sky appearance of the year. It will be below Venus through the month. The two planets will appear close together mid-month but very different in brightness. Neither planet is of much interest in a telescope. The moon will be above Venus on the morning of the 2nd and between Venus and Mercury on the 3rd.

*A **light year (l.y.)** is the distance that light travels in one year: nearly 10 million million km or 10^{13} 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.

CAS COMMITTEE AND OFFICERS 2019/2020

Public Nights and Group Bookings		bookings.liaison@cas.org.nz
President:	Euan Mason	president@cas.org.nz
Vice President:	Rob Glassey	vice.president@cas.org.nz
Treasurer:	David Brian	treasurer@cas.org.nz
Secretary:	Dale Kershaw	secretary@cas.org.nz
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	Malcolm Flain	casweb@cas.org.nz

For more specialized information please see the contact information page on www.cas.org.nz

CAS Contact Information

Canterbury Astronomical Society Inc.

PO Box 25-137

City East

Christchurch 8141

Web: www.cas.org.nz

Canterbury Astronomical Society Facebook Group:

www.facebook.com/groups/CanterburyAstronomicalSociety

West Melton Observatory: 43° 29' 55.5" S, 172° 20' 59.0" E 218 Bells Road, West Melton

CAS Members Meetings:

The CAS monthly members meetings are currently held from 7.30pm onwards every third Tuesday of the month (except December and January) in Room 701 on the 7th floor of the WEST BUILDING (old Rutherford) Physics and Astronomy at the University of Canterbury,

Any member of the public who is considering in joining the society are most welcome to attend the meetings.

CAS on Facebook:

Cas has a Facebook presence, Useful to keep up to date with events, interesting articles, asking for advice, For members please use the website forums for more detailed information etc

CAS on Twitter:

Cas is on Twitter at <https://twitter.com/canterburyastro>

CAS Membership:

Subscriptions are due 1st April each year

Fees for current members who renew before 31st May are at the discounted price shown on the membership form included on the back page of your Casmag, Full details are included on our website.

Contributions to CASMAG:

Member contributions to CASMAG are always most welcome (letters, observing notes, articles, news)

Please submit articles by email to editor@cas.org.nz

The deadline for each issue is the 1st of each month

Small personal advertisements are free to financial members, (less than 8 lines in a column)

Charges for larger items range from \$5 to \$40, email the editor for more details.

The Constitution of The Canterbury Astronomical Society Inc:

This can be found on our website, Please ask for the link if required

DISCLAIMER:

This newsletter is for general information purposes only. The views expressed herein are not necessarily those of the Canterbury Astronomical Society Inc (CAS)

CAS has taken all reasonable measures to ensure that the material contained herein is correct, but gives no warranty for, and accepts no responsibility for its accuracy or completeness.

Readers are advised not to rely solely on this information, and should seek independent advice before making any decision, CAS reserves the right to make changes at any time, as deemed necessary.

 Canterbury Astronomical Society Inc.

APPLICATION FOR MEMBERSHIP

To: Membership Secretary
 Canterbury Astronomical Society Inc.
 P.O.Box 25-137
 City East
 Christchurch 8141



Applicant's name in full (Block letters): _____

Address: (Note: a P.O. Box is NOT a legal address): _____

Home phone: _____ Cell phone: _____

Email: _____ Date of Birth (if under 18): _____

Membership Category (*tick; subscription must accompany application*)

Discounted if membership is renewed before 31 May

Online banking details (Please identify your payment): 03 0802 0098273 00

	Discounted	Full
<input type="checkbox"/> Adult (any person 18 years of age or over who is not eligible for any other category)	\$70	\$80
<input type="checkbox"/> Family (two or more persons living at the same address) §	\$105	\$120
<input type="checkbox"/> Junior (under 18 years of age on 1 April of the current year)	\$35	\$40
<input type="checkbox"/> Senior (over 65 years)	\$35	\$40
<input type="checkbox"/> Community Services Card Holder	\$35	\$40
<input type="checkbox"/> Student (any person studying full-time at a tertiary institution; must reapply annually)	\$35	\$40
<input type="checkbox"/> Corporate (members have voting rights of one member but cannot take office)	\$210	\$240

§ If family membership, please list the other persons involved.

Name	Date of birth (if under 18)	Signature

All CAS members receive CASMag, a monthly newsletter. Would you prefer to receive this (please tick):

by email as a .pdf attachment? or by post as a hard copy?

Do you have access to a telescope? What type and size? _____

I, the undersigned declare that the information given herein is true.

Signature: _____ Date: _____

By signing this application, the applicant agrees to comply with the Constitution and By-laws of the Canterbury Astronomical Society. A copy of the Constitution may be downloaded from http://www.cas.org.nz/constitution/CAS_constitution.pdf.

Date Approved: _____