



CAS MAG

The official magazine of the Canterbury Astronomical Society

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

Monthly Meeting: TUESDAY 20TH NOVEMBER

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

NOVEMBER MEETING: ALAN GILMORE

(Former Superintendent Mt John University Observatory)

'Tracking Near-Earth Asteroids'.

At the University of Canterbury's Mt John Observatory we track near-Earth asteroids that have been discovered by international searches.

Any asteroid that crosses the orbit of Mars is likely to approach Earth sooner or later. Several telescopes, mostly in Arizona and Hawaii, are looking for such objects. Their discoveries need to be tracked for as long as possible so the orbits of the objects can be accurately determined.

At the University of Canterbury's Mt John Observatory we run a programme following up near-Earth object discoveries. This talk will describe the programme.



Images: Above: Alan Gilmore
(Photo Credit: Research Gate)
Right: Photo Credit: IAU.org

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CAS Calendar, NOVEMBER 2018—JANUARY 2019

November 2018

Thursday 1st	Last Quarter
Thursday 8th	New Moon
Tuesday 13th	Committee Meeting 7.30pm
Friday 16th	Canterbury Show Day
	First Quarter
Tuesday 20th	CAS Members Meeting 7.30pm
Friday 23rd	Full Moon
Saturday 24th	Members night at Observatory
Friday 30th	Last Quarter

December

Saturday 1st	Christmas BBQ for members at Observatory
Friday 7th	New Moon
Tuesday 11th	Committee Meeting 7.30pm
Sunday 16th	First quarter
Sunday 23rd	Full Moon
Tuesday 25th	Christmas Day
Wednesday 26th	Boxing Day
Saturday 29th	Last Quarter
Monday 31st	New Years Eve

January 2019

Tuesday 1st	New Years day
Sunday 6th	New Moon
Monday 14th	First Quarter
Saturday 19th	Members Night at Observatory
Monday 21st	Full Moon (SUPER FULL MOON)
Monday 28th	Last Quarter

NOTE: NO MEMBERS MEETINGS ARE HELD IN DECEMBER AND JANUARY

UPCOMING EVENTS:

PUBLIC OPEN NIGHTS

These have finished for this year and will start again in 2019, Daylight saving ends on 7th April 2019, dates for open nights will be announced in the coming months,

Many thanks to those who helped with this years open nights with-out your support we would not be able to hold these. This also includes our Kidsfest helpers.



STARDATE SOUTH ISLAND 2019

The date has been set for this, It is the weekend of Friday 8th-Saturday 9th February 2019

More details to come in

Put this date in your calendar.

The website has some details but shows the 2018 times and dates



CAS MEMBERS CHRISTMAS PARTY/BBQ

Committee have set the date for this event Saturday 1st December at the observatory,

Starts from 5pm

(BBQ will start from 6-6.30pm) and

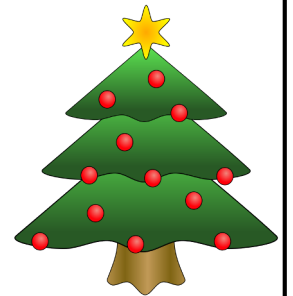
CAS will supply meats, bread, sauces etc for the

BBQ and ask those coming along to bring a salad/other food or dessert to share with those others

attending. BYO Drinks,

Event will be held wet/or fine,

Look forward to seeing you on the 1st



CAS Membership Subscriptions 2019-2020

NEXT YEARS SUBSCRIPTIONS WILL BE DUE FOR PAYMENT IN APRIL NEXT YEAR 2019

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

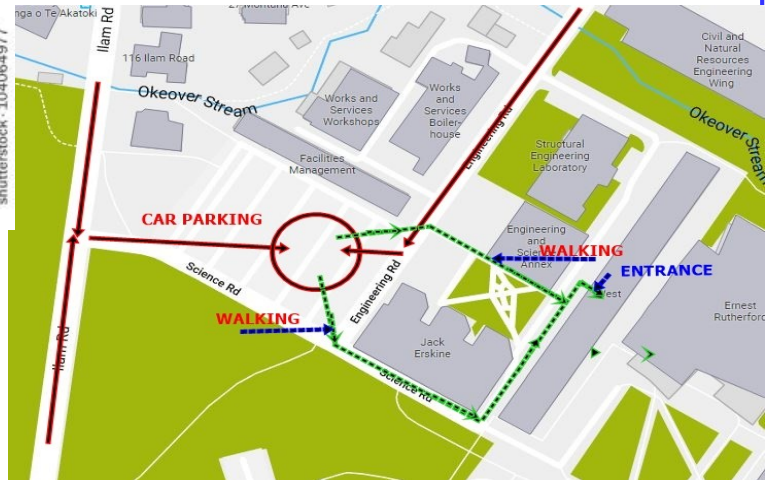


MONTHLY MEETINGS:

Carol Mc Alavey has again been busy organising speakers for this year, If you have any suggestion for topics please contact Carol via cstars@xtra.conz

The meeting venue has changed and 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 Guest Speakers:

20th NOVEMBER 2018

Alan Gilmore,
(Former Superintendent Mt John University Observatory)
'Tracking Near-Earth Asteroids'

DECEMBER 2018

No Meeting

JANUARY 2019

No Meeting

19th FEBRUARY 2019

Anthony Powell
"Antarctic Skies and Photography"
(see page 6 for more information on his work)

19th MARCH 2019

CAS AGM

16th APRIL 2019

TBA

(correct as at 7th November 2018, 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. It has be great to see our new members coming along to our open nights and meetings,

Brent Fisher
Vanessa gray
Finlay Mably
Micheal Sinclair
Keri Tolo
Aayushi Verma
Jeanette Scott



Table of Southern Meteor Showers

Shower	Dates		Moon	Peak Rate	RA	Dec	Near Star
	Active	Peak	2018				
Centaurids	Jan 28 - Feb 21	Feb 8	Last quarter	5 (-25)	14.1	-59	β Cen
gamma-Normids	Feb 25 - Mar 22	Mar 13	5 days before New moon	8	16.6	-51	γ Nor
pi-Puppids	Apr 15 - Apr 28	Apr 23	First quarter	var to 40	7.3	-45	σ Pup
eta-Aquariads	Apr 19 - May 28	May 5	3 days before Last quarter	60	22.5	-1	η Aqr
Pisces Austrinids	Jul 15 - Aug 10	Jul 27	1 day before Full moon	5	22.7	-30	α PsA
alpha-Capricornids	Jul 3 - Aug 15	Jul 30	2 days after Full moon	4	20.5	-10	α Cap
Southern delta-Aquariads	Jul 15 - Aug 25	Jul 27	1 day before Full moon	20	22.6	-16	δ Aqr
Southern iota-Aquariads	Jul 25 - Aug 15	Aug 4	1 day before Last quarter	2	22.3	-15	ι Aqr
Northern delta-Aquariads	Jul 15 - Aug 25	Aug 13	2 days after New moon	4	22.3	-5	θ Aqr
Northern iota-Aquariads	Aug 11 - Aug 31	Aug 19	1 day after First quarter	3	21.8	-6	β Aqr
Piscids	Sep 1 - Sep 30	Sep 19	2 days after First quarter	3	0.3	-1	λ Psc
Orionids	Oct 2 - Nov 7	Oct 21	4 days before Full moon	20	6.3	+16	γ Gem
Leonids	Nov 14 - Nov 21	Nov 17	1 day after First quarter	100+	10.2	+22	γ Leo
alpha-Monocerotids	Nov 15 - Nov 25	Nov 27	3 days before Last quarter	var to 5	7.9	+1	δ Mon
Pheonicians	Nov 28 - Dec 9	Dec 6	1 day before New moon	var	1.2	+53	Achernar
Geminids	Dec 7 - Dec 14	Dec 14	1 day before First quarter	120	7.3	+33	Castor

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

Canterbury Astronomical Society is supported by grants and funding from organisations and individuals from across Canterbury. Including



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February 2019 Members Meeting Speaker Information

ANTHONY POWELL (FROZEN SOUTH.COM)

Anthony Powell has just spent his tenth winter over in Antarctica. He worked for many years as a telecommunications engineer before becoming a full-time filmmaker and photographer. He had to design and build a lot of his own camera equipment to withstand the harsh conditions of the deep Antarctic winters.

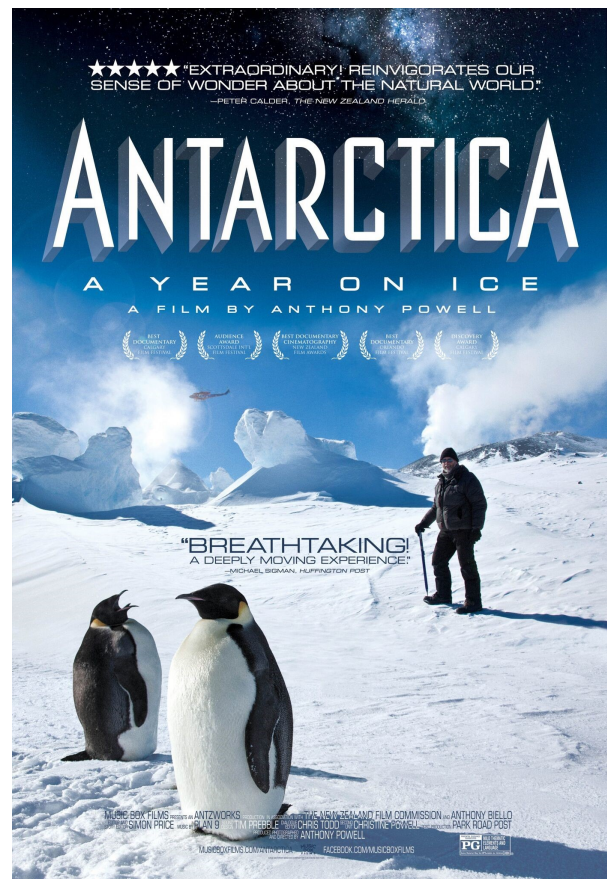
He made the international award-winning film "Antarctica: A Year on Ice" and has contributed footage to numerous films, TV shows, and exhibitions.

These include National Geographic, Discovery, US Natural History Museum, and the Emmy Award winning BBC series Frozen Planet.

(Thanks again to Carol for organising this wonderful speaker for our meetings)



Images from Anthony Powell



From Your Editor

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

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.

Please email to editor@cas.org.nz

Dale Kershaw

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.



ONGOING WORK AT OBSERVATORY COMING UP

Retaining Wall Construction

We have a large project for members coming up. The committee have decided that due to the high cost involved in getting contractors to do this work, we will construct the new retaining wall (to replace the one which is falling down and dangerous) using members work parties.

We will hire a machine to level the ground and bore the holes for the posts. Following this we will need a crew for the best part of a day to mix and pour concrete for the posts. A week or two later we will have to lay drain and back fill with the gravel at the lodge (another work party). Another pile of gravel will then arrive and we will have to back fill the wall with the gravel and top it off with topsoil from the leveling process. The whole job will involve at least 3 full days with a group of volunteers (hopefully not always the same people). We have already purchased the posts and will have the ground prepared hopefully in a few weeks. This is a heads up that volunteers will be called for soon. Watch the members page for details.



HEATHERS NOTES

The last public open night at the observatory for this year turned out to be a success, there were a lot of CAS helpers, which was just as well as the lodge was bursting at the seams, twice over, with, - I don't know, how many did we have?-- Anyway, a lot of people.. The night sky was beautifully clear and we were secretly looking forward to our own viewing later in the night. The planets were the favourite things to view; - I had my 20X80 bino there and tried to 'wow' the public with showing them Brocchi's cluster, aka The Coathanger, which through a bino, does look like a coathanger complete with a hook at top, and a line of stars bottom, - [on which to hang your clothes!] Anyway, I got a few, 'Oh! Yes, I can see it, -well, you couldn't miss it really, but, it was the planets they wanted the most, and the planets they got! They are best seen through a scope with higher power to show detail.. The Coathanger,-- go to Sagitta the Arrow, yes it does look like an arrow, - two stars, one below the other, - the blunt end of the arrow, - move on down perhaps, very slightly left and there you have it. In a clear dark sky, you can just make out a misty patch naked eye. If you look it up in a star chart, you will have to look up Vulpecula, the Fox. It does have a number, Collinder399. Also, just for the public's last night, we provided a super show of a satellite flaring, very bright and flaring regularly; every time there was a flare, there was an OOOH, for the crowd, so, I think a good [last night] was had by all...



Images from Wikipedia

Left: Vulpecula

Right: Brocchi's Cluster

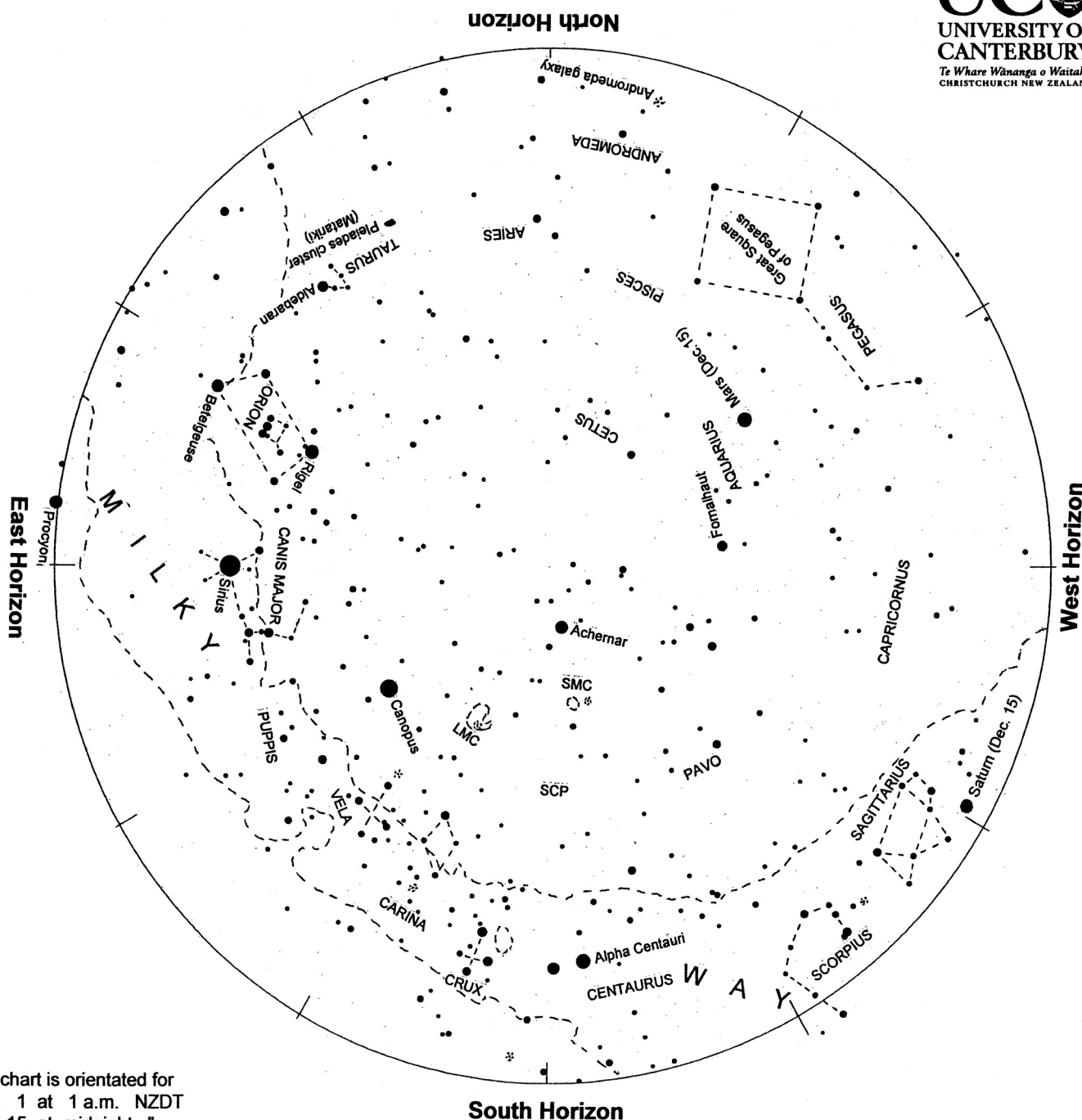


On to the October CAS night talk, - Dale gave a very interesting talk about Graeme and his dedication to the repair of the Townsend telescope. She gave an in-depth talk that we all found very interesting, and helped us get to know the 'man behind the story' and we learnt such a lot about this very clever, dedicated man, and a humble gentle man too. - It was also a team effort of Dale and Graeme.. Dale did him proud with that talk.. The High-Tech bits were filled by one very knowledgeable Orlon, that,-- could have been a talk all of it's own!! Thank you Dale for sharing with us. We learnt a lot about both the project, and, the man.....
From Heather ..

And From Heathers Facebook posting:

A welcome in the night sky, Orion, looking at M42 through a good eyepiece, and a UHC, stunning, and, Taurus, the Pleiades cluster, again using a UHC filter, a little neb can be seen around some of the brighter stars, and, of course, Canis Major... hello to my summer friends.. slowly saying good bye to my winter friend, Scorpius. If you can get hold of a UHC filter, take a look at the LMC, - stunning..... and..... high power on the Tarantula using a UHC, it is like 3D ! Enjoy!!

Thank you Heather for your interesting and informative Notes each month;
Dale (Editor)



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 2018

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.

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. Canopus, the second brightest star, is midway up the southeast sky. Mars is the only planet in the late evening sky, looking like a medium bright orange star in the northwest. Early in the month Saturn is low in the southwest twilight, setting early. The Pointers and Crux, the Southern Cross, are low in the south. Right of Canopus are the Clouds of Magellan (LMC and SMC on the chart), two nearby galaxies. The Great Square of Pegasus spans the lower northern sky with the Andromeda Galaxy below and right of it.

The Evening Sky in December 2018

The brightest stars are in the east and south. Brightest of all is **Sirius**, due east at dusk, often twinkling like a diamond. Higher in the southeast sky is **Canopus**, the second brightest star. Opposite Canopus in the north-western sky is orange **Mars**, the only planet in the late evening sky. **Saturn**, a little fainter than Mars, is low in the southwest at the beginning of the month setting two hours after the sun. It is fading into the twilight by mid-month.

The thin crescent Moon will be right of Saturn on the 9th. The first quarter Moon will be near Mars on the 15th.

Left of Sirius 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 770 light years* away. Orange **Betelgeuse**, below the line of three, is a cooler red-giant star 430 light years away.

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 and makes one eye of the bull. Still further left is the **Pleiades /Matariki/Subaru** cluster, a tight grouping of six naked-eye stars impressive in binoculars. It is 440 light years away.

Low in the south are the Pointers, Beta and **Alpha Centauri**, and **Crux** the Southern Cross upside down at this time of the year. 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, just setting, 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 edge-wise 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. 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 but that is still many billions of stars in each.

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.

The bright planets are in the morning sky. Brilliant Venus rises due east around 4 a.m. at the beginning of the month; after 3:15 a.m. by the end. The moon will be left of Venus on the 2nd and below it on the 3rd. On the 22nd Jupiter and Mercury will make a close pair on the eastern horizon at dawn. Jupiter moves higher each morning while fainter Mercury sinks into the twilight.

The apparent closeness of the planets is all line-of-sight, of course. On the 22nd Mercury is 173 million km from us on our side of the Sun while Jupiter is 936 million km away on the far side of the Sun. Venus is 84 million km away.

*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.

CAS Committee and Officers 2018/2019

Public Nights and Group Bookings

President	Euan Mason
Vice President	Rob Glassey
Treasurer	David Brian
Secretary	Spencer Lintott
Observatory Director	Terry Richardson
Editor	Dale Kershaw
Membership Secretary	Christina Lewis
Librarian	Colin Fortune
Web Master	Simon Lewis
Committee Members	Graeme Kershaw Carol McAlavey Malcolm Flain

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

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CanterburyAstronomicalSocietyFacebook 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 meeting is 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) of the University of Canterbury
 Any member of the public who is considering joining the Society is most welcome to attend the meeting.

CAS on Facebook

CAS has a facebook presence. Useful to keep in touch for when your planning to head out to the observatory, asking other members for advice and or post interesting information. Follow the link listed in the contact information and request to join us.

CAS on Twitter

CAS has a Twitter presence at <https://twitter.com/canterburyastro>

CAS Membership

Subscriptions are due 1st April.

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

Contributions to CASMAG

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

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

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

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

Charges for larger items range from \$5 to \$40; email the editor for full details

The Constitution of The Canterbury Astronomical Society Inc

This can be found on our website via this link

<https://www.cas.org.nz/files/file/3-the-constitution-of-the-canterbury-astronomical-society-inc/>

Disclaimer

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Canterbury Astronomical Society Inc.

APPLICATION FOR MEMBERSHIP

To: Membership Secretary
 Canterbury Astronomical Society Inc.
 P.O.Box 25-137
 Victoria Street
 CHRISTCHURCH 8144



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: _____