



# CASMAG

The official magazine of the Canterbury Astronomical Society

[www.cas.org.nz](http://www.cas.org.nz), [www.facebook.com/CanterburyAstronomicalSociety](https://www.facebook.com/CanterburyAstronomicalSociety)

## **Monthly Meeting: TUESDAY 19TH MARCH 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

## **MARCH MEETING ANNUAL GENERAL MEETING 19TH March 2019**

March is the AGM for the Society and it will be held in 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).

This years AGM will include reports from the Officers of your current Committee, and the Election of the 2019-2020 Committee including positions of officers.

This is your chance to have your say in the election of your committee members and for their appointed jobs

All Financial members are entitled to vote and you are urged to attend this meeting and have your say.

(see list of officers on page 3)



## **CAS Membership Subscriptions for 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](mailto: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, MARCH 2019 – MAY 2019

### March 2019

Thursday 7th	New Moon
Tuesday 12th	Committee Meeting
Thursday 14th	First Quarter
Tuesday 19th	Annual General Meeting from 7.30pm
Thursday 21st	Full Moon
Saturday 23rd	Members Night at Observatory
Thursday 28th	Last Quarter

### April 2019

Friday 5th	New Moon
Sunday 7th	Daylight saving ends
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

## **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](mailto:vice.president@cas.org.nz)

## **CAS AGM**

This is at our March meeting and is when your committee present their annual reports and the election of committee officers takes place,

If you have an interest in becoming a committee member please let 1 of the current committee know, or if you have any questions,

Committee contact details are on our website, or you can ring Dale on 9806057(afternoons/evenings please).

Positions for election are as follows:

President:

Vice-President:

Treasurer:

Secretary:

Observatory Director:

Editor:

Membership Secretary:

Librarian:

Web Master:

And then enough committee members making up total of 12 committee members.

The Presidents (page 7) and Treasurers (page 8 & 9) report are included in this issue of Casmag



## 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](mailto: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

**19th MARCH 2019**

**CAS AGM**

**16th APRIL 2019** TBC

**21st MAY 2019** TBC

**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





## **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 November and February Committee meetings:

### **Welcome to:**

Lucchio Doddinton  
David Gibbs  
David Hill  
Jessica Fagg-Banfield  
The Franks family  
Gordon Cameron



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.

### **The New Retaining Wall**

If you haven't already seen the new retaining wall you can see it on your next visit out to the observatory.

Many thanks go to those who helped and to Terry our Observatory Director for his amazing work and efforts in finishing this.

We can now use both the upper and lower areas for observing



### **Trees At The Observatory**

All the offending trees at our observatory are down.

Many thanks to Euan Mason for his expertise in this work and thanks to the others in the working partys who were able to help with this task, I am sure we will have a clear view looking south now

## **METEOR SHOWERS FOR 2019**

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

### **STARDATE SOUTH ISLAND 8TH,9TH 10TH FEBRUARY 2019**

This years event was very well attended with folks coming from all over New Zealand, We had a wide range of speakers and 2 wonderful clear nights for observing. The Saturday night Pot luck dinner was enjoyed by all with plenty of food for all to share, We hosted Anthony Powell & Angélica Anglés (thanks to James Moffat for organising her visit) as our special guests. Many thanks to Jan fortune and Euan Mason for their organisation of this great event.

I personally want to thank all those that stepped up to help with the setting up, cooking, keeping the kitchen working and all the cleaning up after the event, I stepped up to the role of Camp Auntie, due to Colin's ill health that weekend. All those that helped did an amazing job.

A special thanks to Mary & Peter Wilde for their help with registrations on Friday Thanks to those who have sent me photos and I have included some in this issue on pages 12 & 13

Looking forward to next years event (dates will be announced in future casmag's)  
Dale Kershaw (Editor & Temporary Camp Auntie)

#### **From Your Editor**

**Thank you all for another great year at Cas as your Editor.**

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](mailto:editor@cas.org.nz)

Dale Kershaw

## Canterbury Astronomical Society President's Report 2019

2018/19 has been another great year for CAS, primarily because of the companionship, dedication and hard work of our members.

Our speaking programme was fabulous. We enjoyed the following:

"Dr William Pickering" – Dr John Campbell  
 "USA astronomy trip" – Ashley Marles  
 "SOFIA" – SOFIA crew  
 "Looking for Life in the Solar System" - Emily Lackdawalla  
 "Geomagnetometry for Auroral Prediction" – Terry Richardson  
 "Black holes" - Dr Paul Groot  
 "Graeme Kershaw: 45 years at Mt John" – Dale Kershaw  
 "Members soapbox"  
 "Tracking Near-Earth Asteroids" – Alan Gilmore  
 "Antarctic Skies and Photography" – Anthony Powell

Thanks to Malcolm Carr for sorting the supper each night, and also a special thanks to Carol McAlavey for organising and presenting such a great programme. In addition we enjoyed mid-summer and mid-winter barbecues.

The observatory is better than ever. Many thanks to Terry Richardson for a great year as observatory director, and also to members who attended working bees. The defective retaining wall on the high platform has been rebuilt to an amazing standard, the offending trees behind the main dome are down (I must admit I enjoyed felling them J), and the observatory is in superb condition overall.

CAS's accounts are in fine shape, and so thanks to David Brian for his dedication as treasurer.

Thanks to Christina and Simon Lewis for sorting our membership records. We have around 140 members.

CASMAG is essential for our communications and so a big thanks to Dale Kershaw. She makes it something special each month.

Many thanks to Spencer Lintott for his excellent service as secretary.

Colin Fortune continued his sterling service as librarian. Our records and our books are well organised and up to date.

CAS has long had a web presence, and Simon Lewis has continued that tradition. Many thanks to him for sorting it out and creating a new website from scratch. Our old one was really just a forum.

Stardate at Staveley was well attended. Jan Fortune and I organised it, and this year we hosted Anthony Powell & Angélica Anglés (thanks to James Moffat for organising her visit) as our special guests. The programme of Staveley speakers was fabulous this year, and we also enjoyed two clear nights of brilliant observing. Many thanks to our camp mother, Jan Fortune. I consider myself to be something of a camp child J.

Thanks to all members of CAS's committee for their hard work.

As always, public outreach is a high profile activity for the society. We are now renowned for our winter programme of showing the public the sky & Kid's Fest was again a major success. Thanks to all volunteers, and in particular to Rob Glassey for coordinating the outreach programme. If you haven't been at a public night and can help during 2019, please do so. You don't need to be an expert on the sky and it's fun interacting with eager members of the public. More than half of our income came from public visits to our observatory.

Thanks to all of you, CAS's members, my friends, for helping to make this such a great society.

This is my third term as president (my last periods in office were 2001-2005 & 2011-2015), and I am happy to continue if you wish. However, I believe in stepping down as president after not too long a period in order to invigorate an organisation, and so if elected again I'll step down in March 2020. I'll continue to support CAS in whatever capacity I can, of course.

Euan Mason

## TREASURERS REPORT FOR 2018 AGM

Starting off the year with a bank balance of \$48,608.95, our planned expenditure for the 2019 year was \$36,596.28 and our planned income was \$18,800.00. With planned works at the observatory to install a new roof at a cost of \$10,580 and replacement of the septic tank at a cost of \$9,125.25 that had bumped up our expenditure before the year began, the year was looking good.

The efforts of all involved in the planned work successfully being completed towards the continuing regeneration out at the observatory the addition of the installation of a new strengthened retaining wall was added throughout the year at a budgeted cost of \$3,500.00.

With the determination of the new Observatory Director Terry Richardson did his utmost to keep costs down and projects on track. As treasurer I would like to give big thanks to his efforts and the efforts of his successful team of support he had around him throughout this year.

Membership is going from strength to strength as our communications to members has stabilised and improved with the thanks of Dale and her huge efforts in growing CASMag.

In addition to the efforts of Simon and Christine for their work with the membership applications, and integration into the new website which Simon worked extremely hard on to keep the online presence as slick as we have ever experienced as a Society, and yes CAS finally got an internet connection out at the Observatory.

I would also like to thank the University of Canterbury for their continued support in providing a venue for our member's evenings, an ideal location for our eager group of like minded astronomy enthusiasts, and a big thank you to Carol for coordinating our speakers for our members evening.

Our members nights and Kids fest events are again growing, with an expected donation income of \$12,000 over the course of the year, the tireless efforts of all of our open night helpers and coordinators managed to bring in a total of \$14,945.03 (Please don't ask me where the .03 cents came from I just add the numbers up).

With CAS finishing off the 2018 year with a balance of \$38,856.69 a huge effort, and huge success for all involved.

One final piece of official business regarding the membership subscriptions, they will not be changing for the 2019.

Wishing you all Clear Skies and happy observing for 2019.

Dave Brian

CAS Treasurer

021 158 7850



## CAS ACCOUNTS as of 31-Dec-18

YEAR 2018

EXPENDITURE BUDGET		BUDGET		ACTUAL		BALANCE
ITEM						
Committee	Charities Commission	\$95.00	-\$51.11			\$88.89
	RASAZ	\$40.00	-\$355.00			\$500
	Accountant/Auditor	\$480.00	-\$480.00			\$0.00
	N2 Post Boxes	\$75.00	-\$175.00			\$0.00
	Hall Hire Committee	\$350.00	\$0.00			\$350.00
	Hall Hire Members	\$350.00	\$0.00			\$350.00
	Travel CAS Guest	\$500.00	-\$236.30			\$263.70
	Insurance	\$3,400.00	-\$3,229.85			\$109.65
	Sa wyn District	\$600.00	-\$676.40			\$76.40
	Meridian Energy	\$700.00	-\$756.19			\$66.19
	Internet	\$800.00	-\$754.50			\$35.50
	Grants/Operations Out	\$2.00	-\$1,000.00			\$1,000.00
	Committee Misc.	\$200.00	\$115.00			\$315.00
	<b>Committee Sub Total:</b>	<b>\$8,215.00</b>	<b>-\$8,139.25</b>			<b>\$75.75</b>
Special Projects	Special Projects: Lodge Roof	\$10,385.00	-\$10,550.00			\$0.00
	Special Projects: Septic Tank	\$9,125.25	-\$9,125.25			\$0.00
	Special Projects: 24" Res't	\$300.00	\$0.00			\$300.00
	Special Projects: Request	\$1,385.03	\$0.00			\$1,385.03
	Special Projects: OHS RTW	\$3,000.00	-\$2,483.52			\$516.38
	Special Projects: TBC	\$2.00	\$0.00			\$2.00
	Grant Projects Expenditure	\$0.00	\$0.00			\$0.00
	<b>Special Project Sub Total:</b>	<b>\$24,791.28</b>	<b>-\$22,188.87</b>			<b>\$2,602.41</b>
Librarian	Library: General	\$200.00	\$0.00			\$200.00
	Library: Sky & Mail	\$80.00	\$0.00			\$80.00
	Library: Social Request	\$200.00	\$0.00			\$200.00
	<b>Librarian Sub Total:</b>	<b>\$480.00</b>	<b>\$0.00</b>			<b>\$480.00</b>
Editor	Editor: Postage	\$200.00	\$0.00			\$200.00
	Editor: Printing	\$500.00	-\$517.50			\$33.50
	Outreach Materials	\$150.00	\$0.00			\$150.00
	<b>Editor Sub Total:</b>	<b>\$850.00</b>	<b>-\$517.50</b>			<b>\$332.50</b>
Webmaster	Webmaster	\$250.00	\$0.00			\$250.00
Observatory Director	<b>Web Master Sub Total:</b>	<b>\$250.00</b>	<b>\$0.00</b>			<b>\$250.00</b>
	Obs Bt. Equipment	\$300.00	-\$140.50			\$359.50
	Obs Building Maintenance	\$500.00	-\$1,157.29			\$657.29
	Obs Grounds Maintenance	\$1,000.00	\$0.00			\$1,000.00
	Obs Maint Travel/Misc	\$50.00	\$0.00			\$50.00
	<b>Observatory Director Sub Total:</b>	<b>\$2,000.00</b>	<b>-\$1,298.19</b>			<b>\$701.81</b>
<b>Expenditure Total</b>		<b>\$86,596.28</b>	<b>-\$85,443.91</b>			<b>\$4,152.37</b>
<b>Expenditure minus Special Projects</b>		<b>\$11,805.00</b>	<b>-\$10,235.24</b>			<b>\$1,569.76</b>

INCOME		BUDGET		ACTUAL		BALANCE
Item						
Membership	Membership	\$6,000.00	\$6,938.32			-\$938.32
	Open Nights	\$12,000.00	\$9,473.00			\$2,527.00
	Kidsfest	\$0.00	\$3,472.03			-\$3,472.03
	CASMag Advert's	\$200.00	\$0.00			\$200.00
	Grants/Donations in	\$0.00	\$194.09			-\$194.09
	Grants-Interest	\$400.00	\$16.83			\$383.17
	Literary Sales	\$200.00	\$40.00			\$160.00
	Refund	\$0.00	\$0.00			\$0.00
	<b>Income</b>	<b>\$18,800.00</b>	<b>\$22,154.27</b>			<b>-\$3,354.27</b>
Working Account	Account Balance as of 31-Dec-18		\$	13,076.68		
	<b>Savings Account</b>					
Savings Account	Account Balance as of 31-Dec-18			\$25,780.01		
	Interest			\$538.38		
Account Transfers	From General to Savings			\$12.00		
	From Savings to General			\$0.00		
Savings Profit / Loss	Savings Profit / Loss			\$550.38		
	<b>Profit / Loss 2017</b>					
Non-Profit Account	Balance as of 01/01/2018			\$48,607.95		
	Income			\$22,154.27		
Expenses	Expenses			\$32,443.91		
	<b>Profit / Loss</b>			<b>-\$10,300.64</b>		
<b>Total Bank Balance</b>				<b>\$38,856.69</b>		
\$10,000.00 Request			\$1,586.03			
Remaining			\$1,586.03			
Grants/Donations in	Grants/Donations in		\$194.09			
	Out		\$0.00			
Balance	Balance		\$194.09			
Notes:	Lodge Refit:		\$1,646.85			2015
			-\$3,346.87			2016
			-\$1,047.23			2017
			<b>-\$4,394.12</b>			
<b>TOTAL INTEREST SAVINGS PLUS GENERAL ACCOUNT =</b>						<b>\$858.21</b>
<b>Total Open Night =</b>						<b>\$14,945.03</b>

## **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

<http://www.rasnz.org.nz/groups-news-events/conf-next>



## **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 ROYAL ASTRONOMICAL SOCIETY OF NEW ZEALAND SWAPA (STUDENTS WITH A PASSION FOR ASTRONOMY) SECONDARY SCHOOL COMPETITION

The Royal Astronomical Society of New Zealand (RASNZ) is promoting astronomy for NZ high school students who have an interest and passion for this science. In 2019 the Society is holding its annual conference in New Plymouth from Friday 17<sup>th</sup> to Sunday 19<sup>th</sup> May. The normal conference registration for non-RASNZ members is around \$200, however the Society is waiving this cost for up to ten (10) young astronomers who are keen to attend and find out more about our science. In addition, the cost of the Saturday night banquet, travel costs to/from the conference and accommodation (usually backpacker) for the Friday and Saturday nights are paid for by a generous benefactor.

Astronomers from throughout New Zealand, and some from overseas, will participate in this year's conference. Many of these will be amateur astronomers, and RASNZ is pleased that amateurs in New Zealand contribute so much to the strength of the Society - together with a core of professionals, mainly in our universities. To find out more about the RASNZ annual conference, the Society's website at [www.rasnz.org.nz](http://www.rasnz.org.nz) should be consulted.

To be considered, students should email a short statement of no more than 300 words explaining why they would like to attend the conference and why they are interested in astronomy.

This statement should be sent to RASNZ Immediate-Past President, John Drummond (email: [kiwiastronomer@gmail.com](mailto:kiwiastronomer@gmail.com)) by **Friday 15<sup>th</sup> March 2019, 5 pm**. Please include your name, gender, school, city, age, year of study at school in 2018, email address, telephone contact and science teacher's name/phone/email. The winners of the competition will be selected for their clear enthusiasm of astronomy, seniority, and good English in their submitted statement. Alternatively, a printed version can be posted to John Drummond, PO Box 113, Patutahi 4045. The RASNZ Students with a Passion for Astronomy competition is most applicable to students in Years 11, 12 or 13, however excellent students in Years 10 or below should not be deterred from applying. Those who win the free registration/travel/accommodation will be notified around early-April 2019.

John Drummond  
[kiwiastronomer@gmail.com](mailto:kiwiastronomer@gmail.com)

PO Box 113, Patutahi 4045

Ph. (06) 8627 557 (home), 0275 609 287 (cell)

**FOR SALE**  
**500 mm (20 in) MIRROR      f/6**



This NEW 500mm F/6 Newtonian mirror was imported from the US for a folded, 3-mirror Newtonian design to fit my 4.5m dome. Having received a finished Cassegrain telescope of the same size, the mirror needs to find a new home. It has been tested to have a  $1/12$  lambda P/V surface error. It was hand figured by an experienced mirror maker, who left a 5mm TDE (turned down edge) owing to the exquisite figure on the rest of the surface. That edge needs to be masked off to yield a 490mm exquisite optical performer. The solid Pyrex blank is 50mm thick. The mirror has been aluminized and has been stored in its original packing. 500mm mirrors typically sell for \$4000-7500 overseas. The 150mm flat has a P/V surface of  $1/10$  lambda and was made by Gary Nankivell. It is used as the secondary to fold the image to a diagonal which reflects the image to an eyepiece. Its price is \$400.

**CONTACT:** Larry Field, 022-319-7090, 03-319-7090, [larryfield14@gmail.com](mailto:larryfield14@gmail.com)

**SEARCHING  
 FOR 6" DOBSONIAN  
 for family use  
 Please contact:  
 Frances Malcolm,  
[frances.malcolm@icloud.com](mailto:frances.malcolm@icloud.com)  
 14 Forest View Rd, RD1, Little River**

Phone: 0273684166







Left:

Simon Lewis  
Setting up his  
automated  
astro  
photography  
rig

Right:

Jamie Mustoe  
pointing out  
features of his  
rig during the  
telescope walk



Left:

Rob Glassey  
with his  
12 inch  
Dobsonian

Below:

Ashley Marles' double stacked Lunt  
100mm h-alpha telescope



Left:

James  
Tse  
assembling  
his 10in

Photos on this page printed with  
thanks to Ashley Marles

Below: Saturday Night dinner attendees





Photos on this page:

From the top

1/Group Photo

2/Telescope walk

3/Anthony & Christine Powell

4/250mm F-11 R35

Achromatic Doublet from  
ISTAR Optical

5/Angélica Anglés

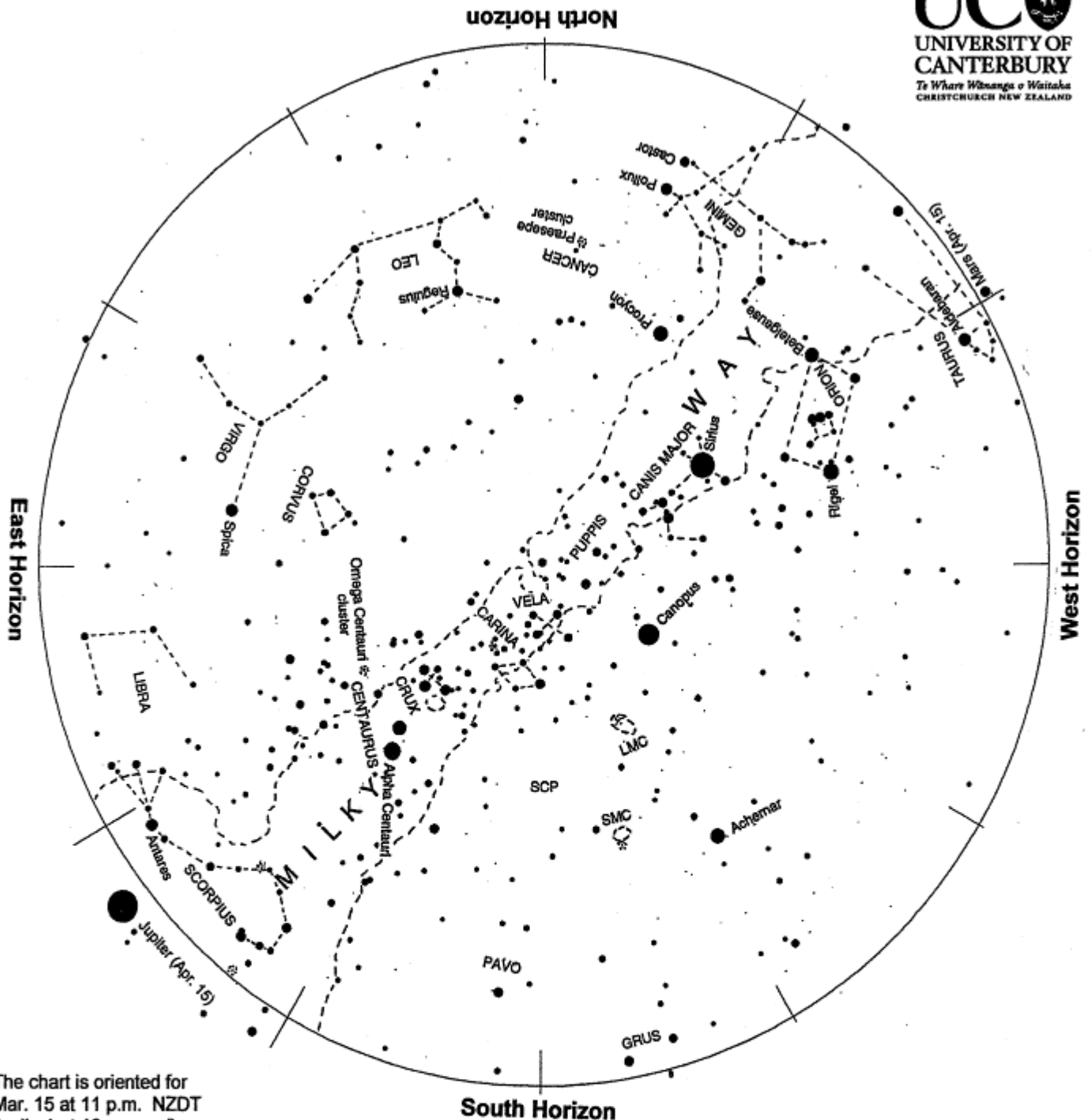
6/Clear dark skies with  
many astronomers in  
action



Photos printed on  
this page with  
thanks to

Euan Mason,  
David Hill,  
Ashley Marles





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. Praespe 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 planets 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 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](http://www.cas.org.nz)

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CanterburyAstronomicalSocietyFacebook Group: [www.facebook.com/groups/CanterburyAstronomicalSociety](https://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](mailto: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**

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  
 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](http://www.cas.org.nz/constitution/CAS_constitution.pdf).

Date Approved: \_\_\_\_\_