



TAURANGA ASTRONOMICAL SOCIETY

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IN THIS ISSUE:

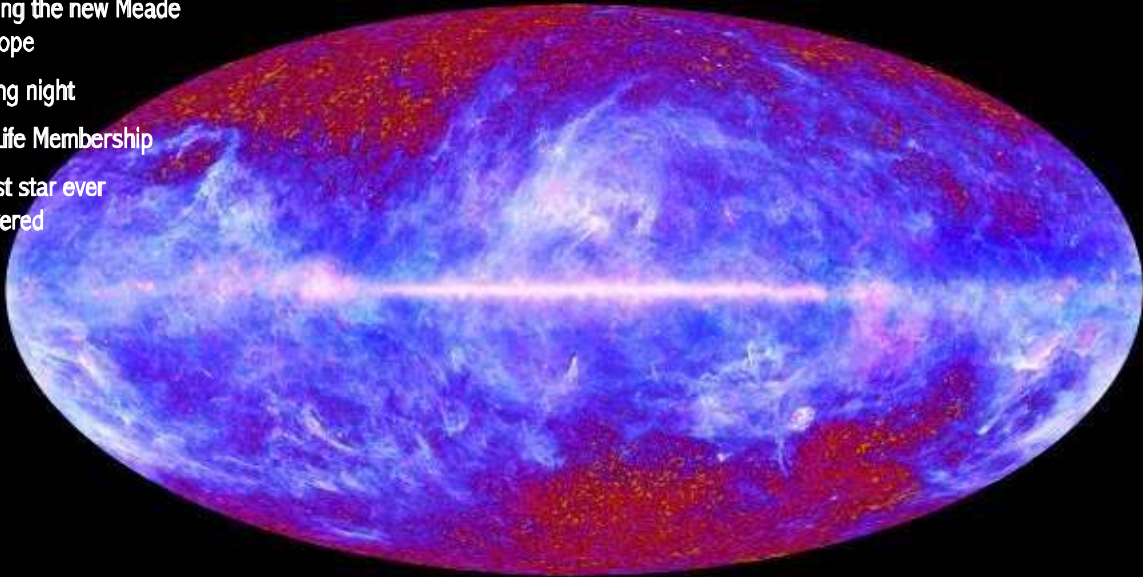
ESA Planck survey

Installing the new Meade
Telescope

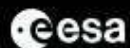
Opening night

Jim's Life Membership

Biggest star ever
discovered



The Planck one-year all-sky survey



[c] ESA, HFI and LFI consortia, July 2010

ESA Planck Survey

ESA PR-15 2010 ESA's Planck mission has delivered its first all-sky image. It not only provides new insight into the way stars and galaxies form but also tells us how the Universe itself came to life after the Big Bang.

"This is the moment that Planck was conceived for," says ESA Director of Science and Robotic

Exploration, David Southwood. "We're not giving the answer. We are opening the door to an Eldorado where scientists can seek the nuggets that will lead to deeper understanding of how our Universe came to be and how it works now. The image itself and its remarkable quality is a tribute to the engineers who built and have operated Planck. Now the scientific harvest must begin."

From the closest portions of the Milky Way to the furthest reaches of space and time, the new all-sky Planck image is an extraordinary treasure chest of new data for astronomers.

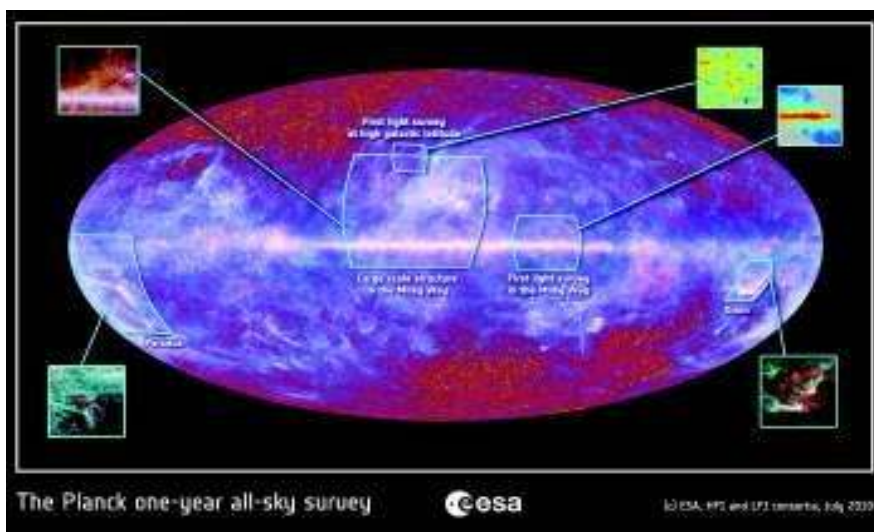
The main disc of our Galaxy runs across the centre of the image. Immediately striking are the streamers of cold dust reaching above and below the Milky Way. This galactic web is where new stars are being formed, and Planck has found many locations where individual stars are edging toward birth or just beginning their cycle of development.

Less spectacular but perhaps more intriguing is the mottled backdrop at the top and bottom. This is the 'cosmic microwave background radiation' (CMBR). It is the oldest light in the Universe, the remains of the fireball out of which our Universe sprang into existence 13.7 billion years ago.

While the Milky Way shows us what the local Universe looks like now, those microwaves show us what the Universe looked like close to its time of creation, before there were stars or galaxies. Here we come to the heart of Planck's mission to decode what happened in that primordial Universe from the pattern of the mottled backdrop.

The CMBR covers the entire sky but most of it is hidden in this image by the Milky Way's emission, which must be digitally removed from the final data in order to see the microwave background in its entirety.

When this work is completed, Planck will show us the most precise picture of the microwave background ever obtained. The big question will be whether the data will reveal the cosmic signature of the primordial period called inflation. This era is postulated to have taken place just after the Big Bang and resulted in the Universe expanding enormously in size over an extremely short period.



Telescope installation day attracts media coverage



From left to right: George Stewart, Roy Tallon, Les Smith, Jim Barrowclough and Toby Tobias

The headlines in the Tauranga press last month said it all....

"Astronomers have stars in their eyes with new telescope" "New light falls on far away galaxies" "Open roof viewing for astronomers" And lastly, to publicise Dr Grant Christie's visit and lecture, the caption read: **"Starry-eyed expert encourages amateurs"**

On Monday 7 June I had taken the "bull by the horns" and decided that with a perfect weather forecast we should move the telescope from its very secure storage and get it bolted down. It had been tucked away in Jim Barrowclough's garage for 15 months while we waited for a multitude of delays to get sorted out. These ranged from the issuing of consents by the council, to even finding the finance to pay for the telescope's pier, the viewing platform and stairs and insulating the huge sliding roof! I had also alerted some former colleagues in the Tauranga media that we were installing the telescope that day and that this would present some great photo opportunities

A team of four committee members, along with extra muscles from a younger member Roy Tallon, met the truck at the park and carefully carried the Meade up the stairs....no lightweight at 166 lbs... We were all smiles and quietly congratulated ourselves after it was bolted down on its wedge. Within a few minutes a reporter and photographer from Tauranga's "Weekend Sun" had arrived, taking multiple shots of the team from every angle.

The "Bay News" reporter also arrived, taking some superb shots and getting alongside me later, to find out all the whys and what-for's...

We had just over two weeks to prepare from Grant Christie's visit...but were still unsure about getting the computerised telescope to work. The factory manual is a little coy on some vital details, including getting it aligned with the south celestial pole and making it track !

I had arranged a meeting with staff from the "Weekend Sun" to advertise our opening night and bought a quarter page advertisement, supported by an editorial, on how amateur astronomers in New Zealand were making some startling discoveries from their own backyard telescopes. Grant Christie was featured with a photo of him beside the huge Zeiss telescope at Stardome observatory. The response to the article and advert., which was published five days prior to his visit, was nothing short of amazing !

The Crowds Kept Coming



The Tauranga Astronomical Observatory is located in the north east corner of a brand new community complex, which is also home for Matua Scouts, Guides, and Brownies, as well as the Otumoetai Soccer Club, and Albion Cricket Club. The former meeting space is three times its former size, which is perfect for hosting large gatherings, but being constructed with a smooth concrete floor, concrete block walls, masses of windows and a hard plasterboard ceiling, it has some serious delayed acoustic echoes. To help overcome this I managed to locate a whole house lot of good clean carpet on the day it was being replaced and we now roll this out, underneath the chairs. For opening night we had no idea how many people would turn up, so we thought 90 chairs should suffice. We scoured every room in the building and borrowed a further 25 from Matua Community Hall. But by 7.30pm when Grant's lecture was about to begin, every chair was taken.

Our members scouted about and found 15 more, including some that had been tossed out of the old scout and cub den.

One hundred and two people signed the attendance register, while more people arrived later on.... an unbelievable turnout and a new record for the society! What was most pleasing was the large number of children who had come along with a parent ,,,,around 30 or so I counted.

The Society was fortunate to have Dr Grant Christie, research astronomer from the Auckland Stardome observatory as guest speaker. A large turnout of people of all ages listened to Dr Christie talk about the contribution amateur astronomers can make to astronomical research. He described how amateur astronomers are discovering sun-grazing comets, making high resolution photographs of planets, tracking asteroids and comets, observing variable stars, discovering supernovae and



contributing to the discovery of extra-solar planets by making microlensing observations. Also present at the meeting was Jennie McCormick. Jennie, at Farm Cove Observatory and Grant Christie at Stardome are both members of the MicroFUN network, investigating microlensing events in the galactic bulge.

Jennie McCormick to the rescue

I was unaware that Grant had managed to bring along another of New Zealand's most active research astronomers...and former broadcaster, Jennie McCormick. Jennie has her own observatory at home, at Farm Cove in Auckland and has an identical Meade LXT 200ACF 14 inch telescope to the one we have installed. Many of you will know of her quite outstanding work for the Royal NZ Astronomical Society and of her very own discovery of a new asteroid....2009SA1 in September of last year...beating even the best of NASA to the job!

Prior to the meeting we took Grant and Jennie to see the telescope and the first thing she said was "oh you've got it mounted back to front!" That may have explained a lot, including why it was behaving rather oddly. I had rather rashly announced to the audience that they would be able to take a look through the Meade, after the lecture, but how do you cater for 100 keen viewers?

We let the children go first as many were up past their bedtime, and then it was 15 seconds for most...not terribly fair, I know. but the queue stretched the length of the hall.

Thankfully Jennie had managed to get the 'scope tracking, and lined up on the overhead moon, which enabled our visitors to get some really good sights of some of the moon's craters.

Grant's beautifully illustrated power point presentation was quite outstanding, and I am sure many of our audience went home that night with a better understanding of what lies up in space and how a number of New Zealanders are quietly making some really exciting discoveries, all from their own backyards, just for the love of their hobby. **Contributed by George Stewart**

Life Membership for Jim Barrowclough

It was one of the Society's best kept secrets and came as a complete surprise, to the recipient !.

Jim Barrowclough was awarded the Society's first Life Membership at this year's AGM, which was held at the new clubrooms on May 25. The honour was proposed by treasurer Lew Lawson and seconded by president George Stewart.

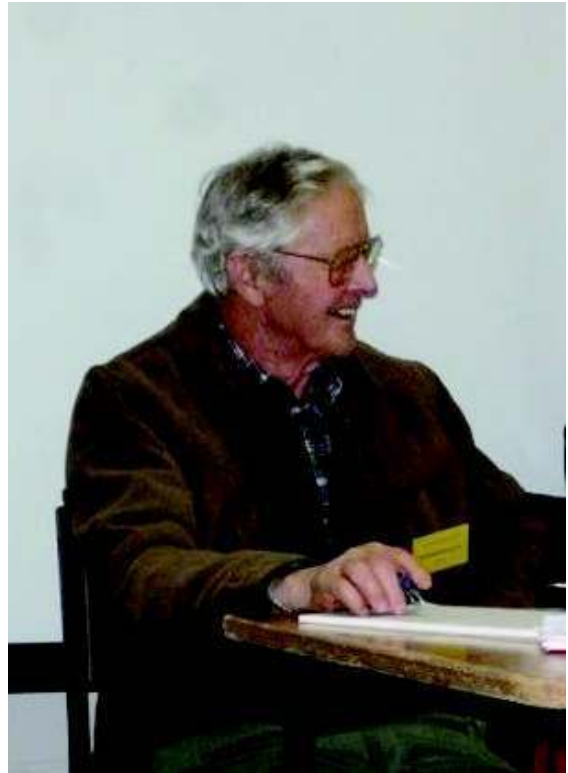
Jim is a founding member of the Tauranga Astronomical Society and although not the youngest, is always the first to give of his time and labour.

As our secretary, he has administered our affairs in an efficient manner and continues to do so, often burning the midnight oil to complete the necessary paperwork.

In all his endeavors, be it as a farmer, aircraft builder and member of many different community organisations, he gives 100%.

All benefit from his wisdom and energy.

We look forward to many more years of his association with us.



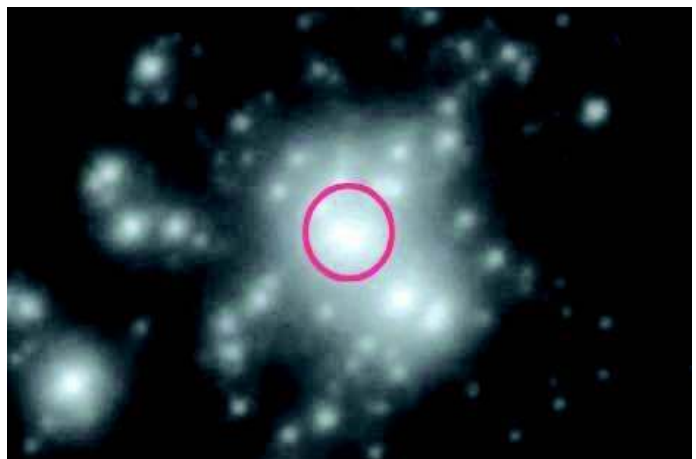
Toby Tobias

Biggest star ever discovered

Astronomers have discovered the biggest star yet about 165,000 light years away from The Milky Way in the Tarantula Nebula.

The star named R136a1, is 20 million times brighter than the Sun, 265 times its mass and the heaviest star ever found.

The hyper-giant, due to its size, will probably explode as a supernova in another few million years, which is a brief life span compared to the Sun's five billion years of existence already.



For Sale

Telescope Mirror set. I have for sale the primary and secondary mirrors for a 6inch f 4.7 RFT (Rich Field Telescope). The primary mirror was made by myself and could use re-coating though is still serviceable. They are currently in a telescope so any prospective buyers can view before purchase, I will include the whole scope minus the focuser. This would make a good first scope for someone who does not have a lot of storage space or boot room in the car. Use it as it is or build your own scope around the optics.

Orthoscopic eyepieces. I have for sale brand new, Japanese made Orthoscopic eyepieces for \$80 a piece in 5,6,7,9,12.5 and 18mm focal lengths. These are excellent eyepieces of high quality that will last a lifetime if cared for. At this price they are cheaper than the wholesale rate from Japan! These are the same eyepieces offered by University Optics in the US.

For more information on any of the above phone Andrew Walker on 07 579-5656 or email andrew32walker@yahoo.com



BACK PAGE

The Tauranga Astronomical Society holds a monthly meeting on the fourth Tuesday of each month at the Otumoetai Sport and Recreation Club, Fergusson Park, Tilby Dr, Matua. The meeting begins at 7.30pm and all are welcome.

New comers are invited to attend two meetings free of charge, however, after this a charge of \$5.00 per meeting will apply if membership of the society is not taken up.

Current membership fees are below and may be paid to the treasurer on any club night.

Full Time Student	\$15
Ordinary Membership	\$20
Family	\$30

Meetings consist of a presentation of roughly one hour either by a society member or an invited guest on an astronomical subject. After light refreshments this is followed by viewing through one of the society's telescopes, including our new Meade, weather permitting, or the screening of an Astronomical DVD.

The Tauranga Astronomical Society Newsletter is published quarterly each January, April, July and October. Our editors welcome contributions from members provided they are on an Astronomy related subject and are original. Articles for the newsletter may be submitted electronically by email to: sabelcher@value.net.nz

T.R.O.G (Tauranga Roving Observers Group)

TROG is a list of persons interested in observing from a dark sky site. We have been currently meeting approximately once a month at random locations. Another location previously used is Bell Road Papamoa and other sites are welcomed.

If interested in observing contact either Ursula Macfarlane 5767283 or Andrew Walker 5795656. The group is informal and no previous experience is required. Just bring along a telescope or binoculars if you have them, any star charts you might need and your enthusiasm.

Your Committee is:

George Stewart:	President	576-6170	geo_dorothy@vodafone.co.nz
Stuart Murray	Vice President	576-1943	stual@clear.net.nz
Jim Barrowclough:	Secretary	576-5389	jimbar@clear.net.nz
Lew Lawson:	Treasurer	574-9800	lindy.lew@xtra.co.nz
Noel Peterson		576-1159	igreenman1@xtra.co.nz
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