

TAURANGA ASTRONOMICAL SOCIETY NEWSLETTER

Issue No. 20 April 2008 www.tauranga-astro.150m.com

In This Issue: [★ Gunter Van Dijk](#) [★ January Monthly Meeting](#) [★ February Monthly Meeting](#) [★ March Monthly Meeting](#) [★ Curiouser and Curiouser](#)
[★ Building a German Equatorial Mount Part 3](#) [★ Back Page](#)

GUNTER VAN DIJK

We were saddened to hear of the passing of Gunter van Dijk on 13 March 2008 at the age of 77.

Gunter was a foundation member of U3A. He served for several years on the committee as treasurer and membership secretary. He set up procedures which were very efficient, and the way the membership is handled and recorded is unchanged today.

Gunter was active for many years in the U3A astronomy group and an encouragement to all who knew him. He applied his technical and computer skills to furthering our knowledge of astronomy. He was engaged in a worldwide computer linkup for the SETI program, the search for extraterrestrial intelligence. He made his house freely available to us and was always ready to help us. Brought up in occupied Holland during WW2, Gunter emigrated to NZ in 1952 and worked for customs, the forest service and the post office. He also ran his own company, Avalon Electronic Services. Before coming to Tauranga, Gunter was one of a committee who started the Wellington planetarium, and for some time was a highly respected director of the planetarium. It was while Gunter was a member of the U3A astronomy group that the Tauranga Astronomical Society was formed, with Gunter being one of the trustees for a number of years. We have lost a great friend. Our heartfelt condolences go to his beloved helpmate of 46 years, Patricia and his son in Matua, Tauranga and daughter in Melbourne.

Jim Barrowclough, Secretary

January Monthly Meeting

Last year Ted Harper gave a presentation to the Society about astrobiology and the factors that went into explaining just how rare our planet may be in the universe. In January Ted gave another talk on the same subject but taking a very different look at the same questions posed. Instead of the "Rare Earth" prospect Ted gave an informative talk that explained how life on other planets may indeed be a common occurrence and that it may be just a matter of time until S.E.T.I or a similar program detects the first signal from an extra terrestrial source.

February Monthly Meeting

Visit by Michael Passage - German Astronomer, who gave an address at Whakatane Observatory

President Norman (Norman Izett, President of the Whakatane Astronomical Society) heard that a German Astronomer was staying in Rotorua with a Rotorua Society member and yes he would love to come to



Whakatane and give a talk. It was all done very much at the last minute but we were joined by members from both Rotorua and Tauranga Societies. Norman had done an interview on the local radio IXX and a few members of the public came, plus some of our members, so the new meeting room was nicely full. This is the first time an outside lecturer has used the building, even though it has a fair way to go before it is finished and really comfortable.

Michael Passage has worked in Russia on the large 6-metre telescope, and is currently working on electro-magnetic forces from the Sun.

The first part of his talk showed us his observatory, how it came into being and its construction. He then told us how he conducts public nights with viewing through the telescope – a few good hints for us! He likes to walk the party up the gentle grass slope and through the trees to the observatory, about 20 minutes. This way the people become attuned to the surroundings and more receptive to the views of the skies.

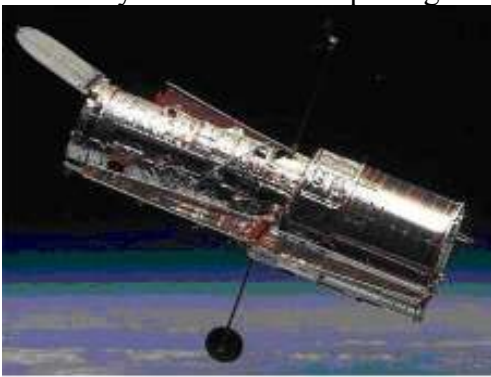
We then had a break to stretch the legs and have a drink. The second part of his talk showed us the observatory where he worked in Russia. I always think of Russia as a poor country, but for astronomy goes no expense is spared. The buildings were huge and quite beautiful and the equipment plentiful – if needed for the research, get it. It was all most interesting and enlightening.

This address was given at the Tauranga Astronomical Society's public night on Wed. 27th. February with over 90 illustrations of Michael Passage's Whakatane talk by Jim Barrowclough with assistance by Les Smith and Stuart Murray. We had been given a CD by the Whakatane Society and this had been transferred to Ursula McFarlane's laptop – thanks Ursula.

The large Russian telescope had been kept secret during the cold war as had been a number of the other large pieces of astronomical equipment. If anyone wishes to read more about this six metre Russian telescope just click on this website - <http://www.astr.ua.edu/keel/telescopes/bta.html>

March Monthly Meeting

In March we were fortunate enough to have Ted Harper present a DVD entitled HUBBLE, 15 years of Discovery. This DVD was put together by the European Space Agency (ESA) and was hosted by British Astronomer Bob Fosbury.



The first part of the DVD gave some of the background to the Hubble Space Telescope (HST) it's self, and also how it is an international team of Scientists and Technicians primarily from NASA in the United States and ESA in Europe who administer what is one of the most fantastic telescopes man has yet to put into service.

After the introduction we were shown some of the spectacular images captured by the HST. This was accompanied by a very informative narrative that explained some of the science behind the stunning images. The life cycles of stars were shown from birth within stellar nurseries (nebula or gas clouds were stars are formed) through to the death's of stars, the planets and colliding galaxies were also shown.

The DVD also featured some interesting computer simulations including the collision and merging of our galaxy with the nearest large galaxy the Andromeda Galaxy.

After the customary tea break Ted took us on a virtual tour of the night sky and beyond using the "Starry Night" program on his computer. Using this tool the computer is virtually transformed into a space ship capable of delivering you anywhere within the know universe. This was well appreciated by all who attended.

Curiouser and Curiouser



A curious object was donated to the Tauranga Astronomical Society last year by the late Frank Bateson, who had been the Society's patron. It was my mission to find out what it was. I had never come across one of these so didn't even know where to start, but a trip to the annual Stardate in Hawke's Bay this year was a good place to find out.

It was recognised as a measuring tool called a filar micrometer and that Frank would have probably used it to measure the distance between two stars.

It is a brass object with various attachments, and is stored in a solid wood box (mahogany?). It probably dates back to the late 19th century.

The images in this article are of the Bateson micrometer. It has two measuring gauges at each side and is therefore named as a double filar, or bi-filar, micrometer. Two eyepieces and a brass tube are missing. The brass tube would have attached the mechanism to the telescope. The tube is 1¼" diameter. The eyepiece tube on the back of the instrument is ¾" diam Both are apparently non-standard sizes.



An excerpt from the Power House Museum website in Australia follows;

Filar micrometers are used in astronomy to measure small angles and arcs. The device uses two very fine parallel wires or threads that can be manipulated by the observer to take very minute measurements. One wire is placed over a viewed object then the other wire is moved by a screw mechanism over the other object, the distance in between can then be measured using the scale on the micrometer. At one time spiders silk was used for the cross hairs on a micrometer, until new technology allowed finer and more durable wires to be produced. Instruments, such

as this one, have now been replaced by more modern technology, but were historically most commonly used to measure the distance between double stars.

(Dicker, 2008)

The article is referring to their own micrometer, however there is no accompanying image.

It is difficult to say when and where our particular instrument was made – there are no engravings or markings anywhere. The Powerhouse Museum article talks of Andrew Ross (1798-1859), a renowned and successful scientific instrument maker in 19th century London.

Reference

(Dicker, 2008). Double filar micrometer in wooden storage box., 1875 - Statement of Significance. <http://www.powerhousemuseum.com>. 2008.

Thanks to Ian Cooper and Peter White who were able to point me in the right direction !

Ursula Macfarlane February 2008

Building a German Equatorial Mount Part 3

Well you may remember that last year I wrote a couple of articles around building a German Equatorial mount. This project was initially intended to be permanently mounted in the front yard of our rural property and I had gone some way in the construction of this mount. Well they do say that one of the few guarantees in life is change and this has been the case for my family and me.



What had been a project for a permanent mount has been modified into a semi transportable mount. The reason being that we may need to move from our current home and I would like to be able to take the mount with me and easily site it else where. To this end I decided to rebuild the pier. Instead of the post used previously I constructed a new pier from 4x2 timber and 18mm thick plywood. These were off cuts from a home renovation project. The pier itself rested on and is bolted to a frame made of three lengths of 6 x 2. The idea for this came from building a deck and seeing just how strong a piece of 6 x 2 timber is. The Pier lies in the centre of the frame with the three ends of the frame lying at 120 degrees intervals from the pier.

For added strength and to prevent any movement in the pier three stays are attached. These are made from steel chain and are tensioned using turnbuckles. Once these are wound up there is absolutely no movement when pushing on the top of the pier. As can be seen, the top of the pier is angled at 37 degrees to allow for the Latitude here in Te Puke. Three bolts on top of the pier hold the 10mm steel plate onto which is fastened the equatorial head I had constructed earlier. This had been built around a pair of 40mm steel shafts held in precision bearings.

Once built, the new pier was given a coat of primer and a couple of coats of Karaka green roof paint (left over from painting the roof 2 years ago). Two rubber stoppers were screwed to the ends of the 6 x 2's to give a firm footing and possibly aid in the dampening of any vibrations. A leveling bolt is built into the front of the frame work so that the mount may be accurately pointed at the south celestial pole. This was constructed using a 10mm bolt, T-nut and an acorn nut.

A block of plastic was found in the scrap bin of a local industrial plastics supply company and a hole drilled through that would allow it to rest on the declination shaft. Two lengths of threaded rod were used to attach the declination plate to the right ascension flange. This block of plastic was then drilled to allow it to slip onto the threaded rods. Two motorcycle valve springs and wing nuts were used to provide and adjust tension on the assembly. This allows the amount of friction being applied to the declination shaft to be varied. Once the completed optical tube assembly and counter weights are fitted, the tension will be adjusted so that the telescope can move readily in declination when pulled, but will stay put once the observers hand is removed from the telescope. It must also be enough to prevent a gust of wind from making the telescope act as a wind vane.

The next job I tackled was to come up with a counterweight that could be attached to the declination shaft

and balance the weight of the tube. My first attempt was to use an old baby formula tin filed with concrete. Unfortunately this was not really as heavy as I had hoped. I decided to try and come up with a metal counterweight. I was fortunate enough to find a local engineering shop that had some suitably large off cuts of steel bar that happened to be taking up shelf space. These were taken to another local engineering shop to have a 40mm hole cut through the middle of them and another hole at right angles to the central hole bored and tapped to take an M8 bolt that would be used to fasten the weight to the shaft. When I picked up the finished weight I was really pleased to see how neat it looked. I had intended to paint them but decided to purchase some clear metal lacquer instead.

The next projects to tackle are to mount the 10 inch scope on the dec. axis and fit a clock drive. With a bit of perseverance I should have this project finished in a couple of month's time. Mind you I have said that before.....

BACK PAGE

The Tauranga Astronomical Society holds a monthly meeting on the fourth Wednesday of each month at the Otumoetai Soccer Club rooms, 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, weather permitting, or the screening of an Astronomical DVD.

The Tauranga Astronomical Society Newsletter is published quarterly each January, April, July and October. The editor welcomes contributions from members provided they are on an Astronomy related subject and are original. Articles for the newsletter may be submitted electronically by email too:

andrew32walker@yahoo.com

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 the editor's home in rural Te Puke. 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 5738550. 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@wave.co.nz

Jim Barrowclough: Secretary 576-5389 jimbar@clear.net.nz

Lew Lawson: Treasurer 574-9800 lindy.lew@xtra.co.nz

Les Smith 576-4368 lesmith@xtra.co.nz

Stuart Murray 576-1943 stual@clear.net.nz

Andrew Walker Editor 573-8550 andrew32walker@yahoo.com

Ted Harper 544-4787 tedharper@xtra.co.nz