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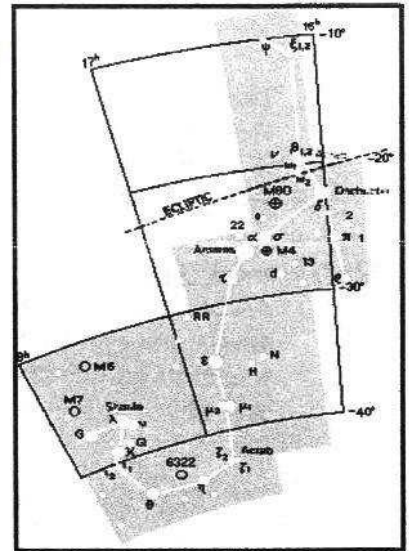
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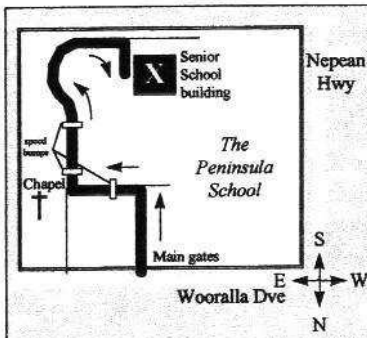
Volume XII, No. 5 (Sept 2003)

The Astronomical Society of Frankston was founded in 1969 with the aim of fostering the study of Astronomy by amateurs and promoting the hobby of amateur Astronomy to the general public. The Society holds a General Meeting each month for the exchange of ideas and information. Regular observing nights, both private and public, are arranged to observe currently available celestial objects. For decades the Society has provided *Astronomy on the Move* educational presentations and observing nights for schools and community groups exclusively in the Peninsula and surrounding regions to Moorabbin, Dandenong & Tooradin.

Meeting Venue: Peninsula School, Wooralla Drive, Mt. Eliza (Melways map 105/F5) in the Senior School at 8pm on the 3rd Wednesday of each month except December.
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Visitors are always welcome!



Annual Membership

| | |
|-------------------|------|
| Full Member | \$35 |
| Pensioner | \$30 |
| Student | \$25 |
| Family | \$45 |
| Family Pensioners | \$40 |
| Newsletter Only | \$16 |
| Organisation | \$50 |

DUE 1ST JAN EACH YEAR

| | |
|----------------|----------------|
| President | |
| Peter Skilton | (0414) 645 077 |
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Committee of Management:
Roger Chandler, John Cleverdon, Jane McConnell.

The public officer is Russell Thompson.

All calls after hours and pre- 8:30pm please.

Future Events

General Meetings:

SEPTEMBER 17, 2003

Session 1: Peter Norman on WMAP and Cosmology.

Session 2: video on "Space – the Final Junkyard"

OCTOBER 15, 2003

Session 1: Dr. Andrew Prentice Monash Maths Dept on "Formation of the Solar System"

Session 2: video on "The Challenger Disaster"

The Library will be open at General Meetings from 7:15pm to 7:55pm and again during the tea break.



Viewing Nights

Members Only:

NOTE: Members nights are also now held on Fridays!

Sept 5th/6th and 26th/27th, October 3rd/4th and 24th/25th, all at The Briars, Nepean Hwy, Mt. Martha.

New attendees must always confirm with John Cleverdon on 5987 1535 before attending. Remember for security reasons you can only attend

on planned Members' Nights, unless by prior arrangement with John who will liaise with *The Briars* accordingly. Last person out must switch on the shed security light. All attendees must sign the visitors' book in the observatory for insurance reasons.

Public, School & Community Groups Viewing/slide nights:

If you can assist, please contact the Secretary.

The once-a-month basic public viewing nights at *The Briars* will continue on the first Friday of each month. The next nights are 5th September and 3rd October, both at 8pm. Assistants are required. New members are welcome to watch and participate if desired.

Welcome to the following new Society member(s):

Brian Jones
Ashley Cameron
Marcus Brylski
Maureen Canning
Anna Gates

Current number of members is 175, with 42% being female.

DIGITAL PHOTOGRAPHY ISN'T EASY

Digital cameras are all the rage in recreational astronomy. So if you are going to purchase one for everyday use, you may also wish to first check out the Scopetronix web site and see whether it can easily be connected to a telescope. There you will find a large listing of adaptors for various camera makes.

Any camera with the standard, quarter inch tripod thread can be connected to a telescope via a universal adaptor. But the man from Scopetronix told me that this was not such an easy process, the problem being to get everything lined up right, and getting the camera lens as

close as possible to the eyepiece lens, to minimise vignetting.

If the camera you purchase has a thread around it's lens, then there are a variety of adaptors available that enable you to securely connect the camera to eyepieces that come with rubber eyeguards (such as Meade Superplossls).

Scopetronix lists all the desirable features of a digital camera for use in astro-imaging, and states that the Nikon Coolpix 990, 995 or 4500 cameras have all of them. The most important feature is manual focus control, as auto focus won't work properly on small dim objects.

One feature that they list as highly desirable is pretty much essential in practice. The aforementioned Coolpix cameras have a swivel head, which makes it easy to twist the LED screen to a comfortable viewing position, no matter where the scope is pointed. There are other cameras on the market with a swivel head, or with a detachable/rotatable LED screen that performs the same function. These include the Olympus 5050, Nikon 5400, 5000 and 5700, Canon G3 and G5. Without this feature, you would be spending an awfully uncomfortable time acquiring your target and trying to achieve focus, while craning your neck to peer at difficult angles into the LED screen.



The other highly desirable feature of the Nikon Coolpix 990, 995 or 4500 cameras is that, unlike nearly all other cameras, they have an internal zoom lens. Thus you can easily zoom in and out on say the moon or Jupiter, without having to worry about the camera's expensive lens hitting and/or mangling the telescope's expensive eyepiece.

So I bought the Nikon CoolPix 4500, a camera that has every feature in a camera that I've ever read about. And I bought a Scopetronix 18mm wide-angle eyepiece that screws directly into the Coolpix's lens thread, for the closest coupling. After studying the 150 page

manual – where every page is crammed with useful information. I had to write notes to myself as to how to get it into manual focus mode, with the manual exposure settings and then set the self timer, I finally set about taking pictures of the planets and the moon. My results were hardly satisfactory.

It is very difficult getting the focus correct using just the LED screen display. A lot of bracketing is required, that is, taking shots either side of focus, in the hope that one position is correct. It was actually easier to get a decent picture of a planet with my old SLR and magnifier. But on the other hand, all the wasted shots in a digital camera didn't cost me anything.

The maximum exposure time on cameras varies quite a bit. On many it is only 2 seconds. On my Nikon it is 8 seconds. On some Canons it is 15 seconds. The longer the exposure, the more noise one gets (i.e. dots in the picture, where there shouldn't be any). Most of the higher end cameras have a noise reduction mode to suppress this somewhat.

While 15 seconds isn't much exposure time, some quite reasonable images of Deep Sky Objects have been taken, many being posted at the Scopetronix site. The technique is to take many pictures of the same object with the small exposure times, and then to stack them using a free downloadable program called "Astrostack", which builds up the image and eliminates the noise.

I bought an electronic Nikon Remote cable for my Coolpix (cost \$225). The Remote cable increases the bulb time to a maximum of 5 minutes – but you have to keep your finger on the button during the entire time. I've taken some interesting tripod mounted shots in this mode. Perhaps those who are into capturing meteors may find this feature of interest.

A final point. Don't be too worried about your night vision when playing around with digital cameras at night, since you won't have any night vision at all. The LED screens are very bright. Apparently at star parties people devise all sorts of various methods including red cellophane to dim the screens.

Renato Alessio

Recent Events

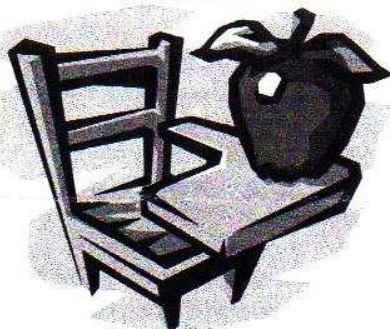
Peter Skilton chaired July's meeting, with 62 in attendance on a cold evening. It has been exactly one year now since Dr. Harrison Schmitt, the last man to walk upon the Moon in Apollo 17, came down to visit us in Mornington, as many members will recall. John Cleverdon reported on the Pluto night that at least saw some clear weather this year for those members who attended to hunt down this elusive planet. Peter Skilton reported on the successful Alkeste minor planet occultation observation by numerous members of the star beta Virginis, with the ASF having had scores of observers trying it, though most being thwarted by cloud or fog on the night. Several additional reports were received after the meeting. A similar occultation prediction for binoculars was also relayed for asteroid Benjamina. Reports of two aurorae seen in the southern suburbs on May 30th were relayed, with the aurora network swinging into action twice on the one night! Several members noted having had excellent views of Mars at the moment as it approaches Earth for the closest opposition in about 60,000 years. Barry Adcock from the Ballarat Astronomical Society and the ASV then gave a colourful powerpoint presentation of this opposition of Mars, explaining the circumstances of the close approach and its rarity, some of the history of observations of the Red Planet, and of course how best to observe the planet in telescopes. A particularly well-received suggestion was to wrap coloured cellophane plastic wrapping from the newsagent around your eyepieces to act as filters, thereby getting around the need for expensive glass threaded filters. A red or orange filter is best for seeing many of the dark features on the planet, with a green or blue helping to bring out the polar caps and cloud cover best.

After a half hour teabreak, the group reassembled into the two parallel sessions. In the library room, a video on Mars – Pioneering the Planet, was shown, while in the main theatre Bob Heale presented Sky for the Month and provided an audience handout sheet. Ian Sullivan presented slides on an eclipse theme, and Peter Skilton explained about the forthcoming minor

planet occultations. The meeting closed at 10:25pm, and the videotape is catalogued in the library.

SCHOOL/PUBLIC NIGHTS

On June 23rd, fifty-five children from Resurrection Primary school were visited at Camp Manyung, with the talk being given by Ian Sullivan. Thanks in the field with instruments and assistance to Rhonda Sawosz, Alan Saunders, Bruce Tregaskis, Greg Walton and Don Leggett.



On July 3rd, the entire St. Michaels Grammar school year 1 to 6 pupil and teachers received some astronomy at the Briars Education Centre. The talk was given by Don Leggett to 35 children and teachers – small school! Thanks in the field to Bruce Tregaskis, Greg Walton, Rhonda Sawosz and Simon Birch.

On July 4th, the society's monthly public viewing night was held at the Briars and saw 45 in attendance to hear Richard Pollard speak on the solar system. Thanks in the field to all those numerous members who helped out with telescopes and assistance under clear skies.

The public viewing night at the Briars on August 1st saw 50 present on a cold evening, but which was extremely clear, affording excellent views of Mars and its north polar cap. The talk was given by Peter Skilton, and thanks in the field to Greg Walton, Brenda and Alan Saunders, Paul Taylor, Ashley Cameron, Simon Birch, Don Leggett, John Cleverdon, Roger Chandler, Jane McConnell and other members who may not have stayed for the entire evening.

Somers Primary school year 3 and 4 pupils and teachers had their first viewing evening on August 5th at the Briars Education Centre, and were positively busting with questions about the Universe. Although the evening

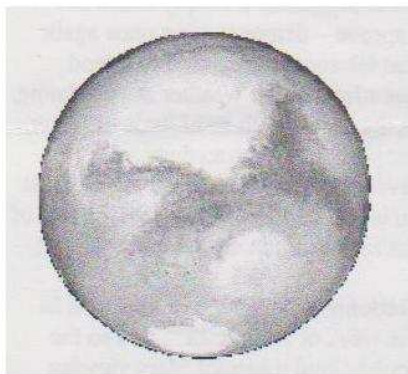
started out with cold, rainy, totally overcast weather, by the time the talk by Peter Skilton had finished, the skies were perfectly clear from horizon to horizon, though the wind was cold. This enabled excellent views of Mars, clearly showing the north polar cap, Syrtis Major and Nilosyrtis in the telescopes, and of course the nearly first quarter moon, jewel box and double stars. There also were several bright meteors seen in the south west during the evening. Thanks especially to Paul Taylor and Greg Walton with "Sky Dancer" for having the faith to come along with instruments even though the inclement conditions further north suggested it simply could not improve – demonstrating once again that telescopes are asked to attend regardless of the weather at your home, as the Briars with its altitude has over the years demonstrated uniquely favourable weather conditions (almost an island of clear skies when the rest of the metropolitan area is under cloud).

National Science Week was held in the week of August 22nd, and so the society held a special Mars viewing night as part of it for the public at The Briars. Richard Pollard ably delivered two first class interactive Mars presentations back-to-back around the supper due to the phalanxes of attendees pouring in (cars were parked up the road past the vineyard). The seeing conditions at the Briars were excellent and the images particularly steady, bright, contrasty and displaying the polar caps and dark markings very prominently, and allowed everyone to get a really good long look at the Red Planet through several different instrument types. Those members of the public (about 140) who attended were richly rewarded with what they saw in a cloud free sky, and had to wait only a couple of minutes in line to see a very bright and contrasty Mars, Uranus and several other sights on show for as long they desired. Martian canals were even reported ;-).

13 ASF members' telescopes were set up, up to 18 inches diameter, including those of Alois Dvornik, Simon Judge, Jeremy Scott, Ian Sullivan, John Cleverdon, Bruce Tregaskis, Bob Heale, Greg Walton and Roland Knabe, and other members who were there. Thanks also to Don Leggett, Greg Richards and Brenda and Alan Saunders, and to some newer members whose names weren't noted down

unfortunately, and also to those who didn't even need to set up their telescopes due to the fantastic turnout present, and left them in their cars.

The small, faint moon of Mars, Deimos, was seen through Alois Dvornik's telescope at the Mars Briars public night, where he had strategically placed a bar blocking the light of Mars. If you'd like to try observing Deimos or Phobos yourself, conditions are currently optimal for doing this. Details are on the internet at: http://SkyandTelescope.com/observing/objects/planets/article_1004_1.asp



Meanwhile, 30 km away, reports from attendees at Braeside Park (where the ASF has conducted many public nights over the years) on the same night as the Briars one, said the ASV was caught completely by surprise at the public enthusiasm generated from the TV and national newspaper exposure of their scheduled Mars nights. Unfortunately our Mars nights and those of the other regional societies in Victoria did not get the exposure, despite attempts to do so in the radio and print media. Attendees at Braeside relayed that 10 telescopes were set up on the same night to cater for up to 10,000 people, and the streets around the park were gridlocked. This apparently meant that each person had to queue for up to 2 hours to get a few seconds' glimpse of Mars only, and the seeing was quite turbulent as well. This is to be expected with this number of people, each radiating about 60 watts of heat into the air. Some ASF members reportedly tried to get there with telescopes to help out later in the evening, but couldn't get in! Surprises aside, the interest generated in the public by the media coverage is to be commended, and will hopefully lead to an increase in astronomy society attendances in general across the State.

On August 26th, fifty Black Rock Primary school pupils were visited at the Briars Education camp to hear Peter Skilton give the talk tailored around Mars of course. Afterwards, the grade 5 students and teachers (and some members of the public of high initiative who turned up on the off-chance we'd be there) went out to the telescopes, where excellent views of Mars were had for about an hour. Thanks in the field with assistance to Bob Heale, Paul Taylor, Ian Sullivan, Greg Walton and Jakub Bukovsky.

Due to high public demand, an unscheduled public Mars viewing night was held at The Briars visitors centre on August 29th. The day and evening had been totally overcast and this contributed to only 60 people showing up on the night, mostly families. There were many more bookings, with radio 3MP having mentioned the nights a few times. After the Mars talk by Peter Skilton, the attendees were richly rewarded when the clouds dutifully parted around the Briars region for about an hour (while everyone else was under cloud), allowing a first rate view of Mars, its south polar cap and the regions around Mare Sirenum. This has consistently happened many times in the past and must be connected with the local topology of Mt. Martha – hence members should always show up regardless of the weather at their homes. Thanks in the field with telescopes to Marty Rudd, Bob Heale, Don Leggett, John Cleverdon, Bruce Tregaskis, Sebastian and Andrea Szalai, Jane McConnell, Roger Chandler, Rhonda Sawosz and Mary Westaway.

The TLD or Telescope Learning Day on Saturday August 9 proved to be an excellent afternoon of instruction, on how to determine the central meridian for Mars, and handout sheets for sketching. A barbeque /pizza party was followed by Dave organizing for the presence of Mars at a nice big 23 odd arc seconds diameter and good seeing.

The Moon turned up as well. An abundance of very clear features were observed during the practical demonstration. There was also an impromptu public night as a large group of parents and children staying at the Briars camp, were led by one parent to our Mars/Moon show. This particular parent happened to be a member of

the ASV and was quite surprised to see how active our group is.

A great variety of telescopes gathered light for our eyes.

Instruments used included two refractors, two Schmidt cassegrains, two Newtonians, and a Maksutov, with apertures ranging from 80mm to 250mm and all telescopes gave excellent views.

Nights like this are rare, and I am sure all the owners of these telescopes got maximum enjoyment.

Thanks to Dave for organizing the event, and the great company of viewing enthusiasts.

Mark Hillen

Upcoming Events

The Melbourne Museum is giving a free public lecture on Saturday 13th September in the Age Theatre, Melbourne Museum, Carlton, Melways 2BJ10, from 10:30am to 11:30am. Bookings to 9380 2399. The talk by Dr. Burkard Polster is on *Magic, Mathematics and Origami*, and is aimed at those interested in producing the perfect map, putting giant telescopes into space, or in general doing the impossible, or finding out about origami beyond all the paper animals.

Astronomy classes are being run again by Ian Sullivan at the MtEliza Community Hall on a regular basis on Saturdays at the moment. They are aimed at all levels of prior astronomy knowledge (including no prior knowledge), and are very popular and worthwhile for those who wish to learn something new. Both members and non-members are welcome, with a small charge on the day to cover expenses. If you wish to seize the opportunity to attend, please phone Ian on 9555 6913 for further details.

NACAA - The 21st National Australian Convention of Amateur Astronomers will be held at Wrest Point hotel in Hobart from April 9-12 over Easter next year. Registration papers have not yet been issued, and this is an early advice only for your diary.

Mars Attracts! Earthlings Love the Red Planet

By Seth Shostak - SETI Institute

This month, the Red Planet is closer than at any time since Neanderthals roamed the forests of Europe, nearly 60 millennia ago. Anyone who takes the trouble to step out of the house in the late evening will see Mars hanging in the southeast like a pinkish, Christmas-tree light. It will be bright enough to throw shadows, although this particular trick will go unnoticed unless you're someplace very dark. There are five planets we can see with our naked eyes, but no one doubts that the most appealing is -- and long has been -- Mars. Mars attracts. Why is this? What's so special about this planetary neighbour?

Well, of course, it sports a bit of colour, looking slightly reddish-orange to our eyes. In contrast, Mercury, Venus, Jupiter are all blandly white, and Saturn is only faintly yellow. Mars' ruddy complexion might remind you of blood, as it did the Romans -- which is why they named this object after their god of war. (With blood in mind, the Romans could have opted for their god of medicine, Aesculapius. But who could pronounce that?)

Mars has visual appeal. But let's face it: the Red Planet developed a fan club only after the invention of the telescope. Not because the telescopes made Mars appear much bigger. The planet is only half the diameter of Earth, and even through large glass it's not a dramatic sight. But the point is, when you look at Mars -- as small as it is -- you see the real deal. You are actually looking at the surface. Unlike Venus, Jupiter or Saturn, blanketed by weather, Mars has a transparent atmosphere that permits us to see the ground. Open your eyes to Mars, and you're looking at Martian dirt.

By the eighteenth century, telescopes were good enough to reveal that Mars had bright, white polar ice caps, and large, dark areas... markings that could have been swamps or forests. Even the best astronomers were unsure. Just enough was known about the Red Planet to raise our suspicions that it might be inhabited.

We still have such suspicions. They've been fuelled by evidence of microbial fossils from Mars' past, cryptically hidden in a meteorite. But this evidence is highly controversial, and the jury charged with deciding if Mars has (or ever had) Martians is still out after two centuries.

Should we expect that this month's proximity to the Red Planet will bring that jury back to the courtroom? Will sidling up to Mars produce major discoveries? After all, there's ample precedent. During Mars' close approach in 1877, Asaph Hall at the U.S. Naval Observatory was able to spot the two Martian moons, Deimos and Phobos (not an entirely trivial accomplishment, as Deimos is only about one-millionth the brightness of Mars). At the same time, Giovanni Schiaparelli, using an eight-inch refracting telescope at the Milan observatory, said he saw "canali" criss-crossing the Martian epidermis. That dramatic, if faulty, claim remained big news for nearly a lifetime.

In 1924, there was also a close opposition to Mars, an event that encouraged a search for radio broadcasts from its inhabitants. This was an early, largely forgotten, and somewhat naïve, SETI experiment.

But the remarkable, if mostly unstated, fact about orbital encounters with the Red Planet is that they're no longer much of a deal. In the last four decades, we've given up the idea of making major discoveries about Mars with instruments bolted to mountaintops here on Earth. The big opposition of 2003 is a hundred years too late. We no longer wait for Mars to "come to us," because our spacecraft can go to Mars.

So will we learn something dramatic about the Red Planet in the near future? That's quite possible. After all, there are four spacecraft currently en route to Mars. But if, in the next few months we make a major discovery about this mesmerizing world, it won't be because the vagaries of planetary orbits have brought Mars a few percent closer than usual. It will be thanks to the far greater distance humans have travelled since Neanderthals hunted and grunted in their dark, arboreal homes.

(Space.com)

Feature

Building the 18" Dobsonian Telescope -- by Greg Walton

Why on earth did you build such a large Telescope?

I have been asked this many times. Well I never, ever intended to build a telescope in my life - it just happened. When I was 4 years old my father would take the family fishing at night. I would lie on my back and look at the stars trying to make shapes in the stars. Everyone knew the pot (Orion), Southern Cross and the seven sisters, but I saw speedboats, cars and rocket ships. I left school at 15 to work in my father's small engineering firm where I did an apprenticeship in fitting and machining. So most of my life I have had an interest in machines and how they work. I would buy books on machines; the universe was just another machine to me, so I ended up with a lot of books on the universe and the machines which studied the sky.

A life long friend of the family is Ken Marriott, an electrician, and one day whilst working at my home, he mentioned he had a mirror out of a telescope; it was 18 inches in diameter and 2 inches thick. I raced to my bookcase to find all the books I had on telescopes (there was a lot). So work stopped and the rest of the day was spent pouring through the books and talking telescopes.

In one of the books was a picture of John Dobson with some of his telescopes. We soon learned all about the Dobsonian telescope. Reading a book by Tom Clarke, we thought that an 18inch telescope was a baby and every home in the USA had one. So Ken went to see Roger Davis at the *Binocular and Telescope Service Centre* to buy a secondary mirror, focuser and eyepieces, and Roger checked the mirror and said it would be OK. Soon Ken was back at my workshop with all the goodies. A bit more head scratching and we decided the Tom Clarke design would be right

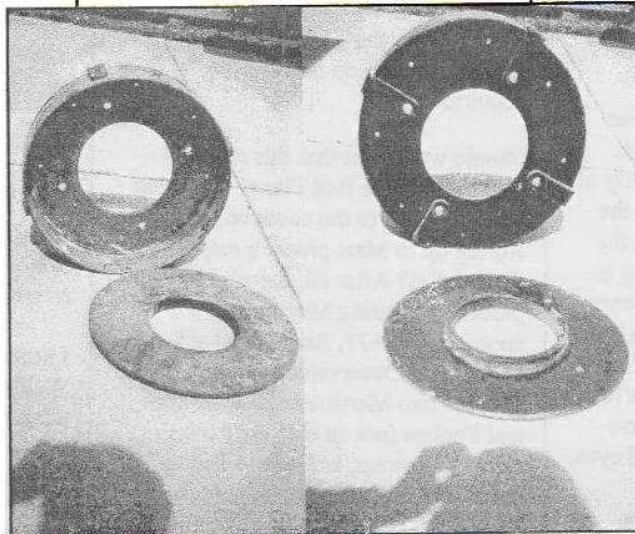
for us - a truss tube with an upper cage that fits inside the mirror box for storage.

First we made the secondary mirror holder and spider from steel (these could have been bought) then we built the upper cage from 1/2inch square aluminium tube - very easy and very light. We found a disc (see point A in the diagram) then I wrapped the 1/2inch tube around the disc one and a half times, because it will spring open to about the right diameter. After cutting to achieve the right diameter, we joined

the ends by sliding a piece of 3/8inch diameter aluminium x 40mm long inside one end about 20mm, but I bent a curve in it first to match the hoop. I then drilled a 1/8inch hole through the tube and dowelled 10mm from the end, then I hammered a 1/8inch roll-pin in and filed it flat. A roll-pin is hollow spring steel so it will not fall out. Then sliding the other end over the 3/8inch dowel and drill and pin, and now we have a hoop (see point B in the diagram).

Next I cut 6 spacers of the same 1/2inch tube to join the 2 hoops (note the ends must be square). Then I cut 12 pieces of 3/8inch diameter aluminium rod at 40mm long and drilled a 3.5mm hole 20mm deep in one end - must be dead centre - then tapped 4mm about 12mm deep. I slipped one in each end just below the face and pinned as before but 30mm from the end (see point C in the diagram). Now we used dividers to mark the position of the holes in the hoop. Before bolting in the 4 spacers, I drilled the cross-holes, which the spider attaches to (see point S in the diagram). The other 2 spacers hold the focuser so we have to work out the distance between them and drill 4 holes in the hoops half way between the spider vanes. Assemble the cage so we can work out the position of the focuser

then drill and screw the focuser in place. Before installing the spider I lined the cage with 0.25mm thick sheet aluminium and pop riveted in place. Now we can fit the spider. I made 4



Recent front and rear views of the 109-year-old cast iron mirror housing used as part of Greg Walton's 18-inch telescope.

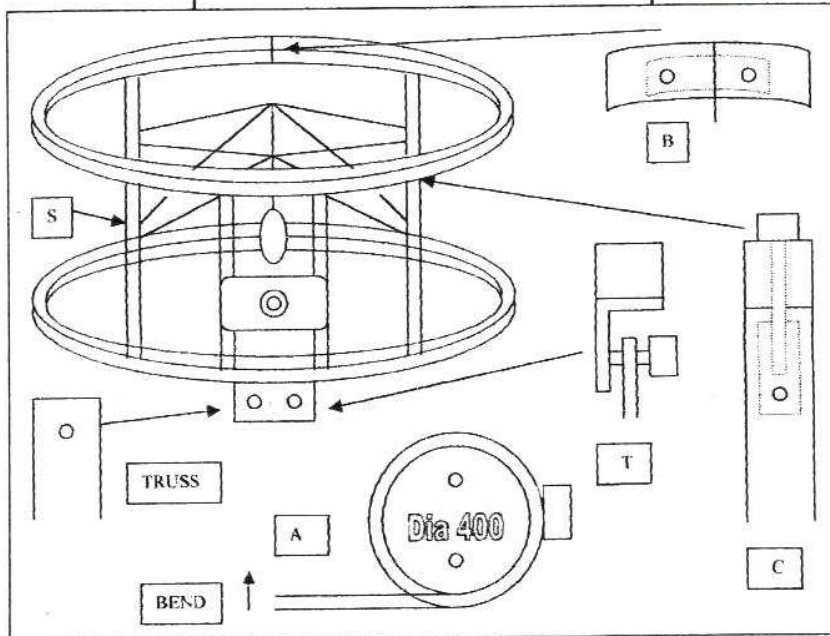
angle brackets to attach to the lower hoop, so when I joined the trusses, its centre line would be in line with the centre of the 1/2inch square tube (see point T in the diagram). I could have just cross-drilled though the lower

measured that distance as 99 inches, then divided this by the mirror aperture of 18 inches, giving a focal ratio of f/5.5. But Roger worked this out by other means and said for the secondary mirror you will need a 3.1 inch which I have got.

Next I made a 9-point floating mirror cell from 6mm aluminium plate - I calculated this myself but I will not explain now. I made the mirror box to Tom Clark's design but instead of using plywood, I used plastic coated craft wood - I got cheap offcuts almost the right size. If I had used plywood it might have been lighter but then the bearings would have been higher or I might have had to add balance weights.

Next I made 8 aluminium clamp blocks 4RH+4LH to clamp the 22mm diameter aluminium tube for the trusses, and then I made 8 trussers by flattening one end and drilling a 1/4inch hole through the flat. I made a jig to cut them accurately to length, by bolting each truss in the jig

by the 1/4inch hole then cutting to length. I know that they are all the same, so I can put any truss in any position and know it will be accurate. I joined the upper cage, trusses and mirror box with mirror in place. I then laid it all horizontal and found the balance point on the side of the mirror box. I made the Altazimuth bearings 200mm in diameter x 30mm wide from aluminium and cut slots for adjustment. I used chopping board



hoop, but I would have had to make the mirror box larger, and I wanted the clamp blocks inside the mirror box. The whole telescope had to fit though a standard door way.

How did you get the focal length?

We placed the mirror in the Sun and burned a hole in a piece of wood and

plastic for the bearing pads, it worked well (I can still hear screaming from the kitchen)! Now I can make the rocker box knowing the height of the bearings. All timber joints are with 63mm long screws but no glue; I might wish to get it apart one day. Next I made the usual Dob ground board.

I supported the edge of the mirror with 50mm diameter rollers which I made, and placed them in the 4 corners of the mirror box - this meant when adjusting the primary mirror it would not drag. So it must be in contact with the 9-point mirror cell all the time.

Then I dragged it outside for a look at the moon, but the focuser could not focus. I moved the eyepiece back by hand out of the focuser - but just white light was seen. Out came the screwdriver and I removed the drawtube so the eyepiece can fit inside the focuser. It slid in 40mm, then WOW craters! I almost froze to the telescope that 1999 winter night. Next day I went for broke and cut 50mm off all the trusses and fitted the *Quick finder*. That night was marvellous except all the neighbours turned up to hog the eyepiece - they said we thought you had gone mad standing on a ladder all night.

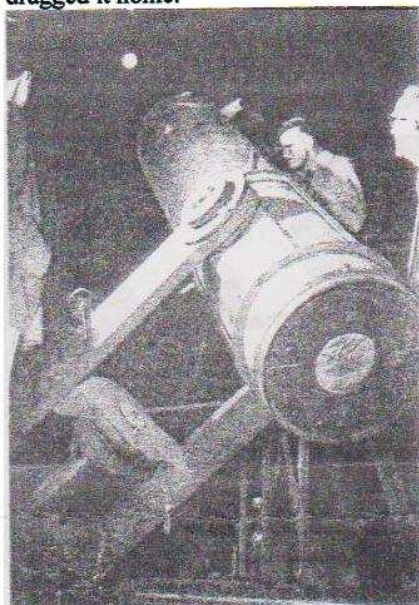
Next day Val (my wife) made the black material sack and I painted the mirror box black inside. Every day we made some improvement. I fitted half a pair of binoculars for a spotting scope and I glued a piece of fuse wire behind the eye lens for a sight. We broke the first rule in Dob building - never leave the scope on wheels, but we had worn the ground pads out in the first month by dragging the scope here and there. I am surrounded by 15 metre tall trees, so every new object meant moving the scope. So rubber swivel wheels were fitted. If I found a clear spot I can place bricks under the ground board so the wheels do not touch the ground. One windy night though the scope was blown down the road when we looked away. When we caught up with it, it was still focused on the same object! That year the scope got a lot of use - we are very happy with it.

We joined the *Astronomical Society of Frankston*, a good bunch of people. Some of them almost fell over when I said the 18 inch Dob is my first scope and the only scope I have ever looked through.

Where did the 18 inch mirror come from?

Well, one day Ken was working at a school and they said they were having a clean out, and that mirror over there with cast iron housing would be going to the tip. Ken asked if there were any

other parts, and they said no. "Somebody gave it to the school 10 years ago, and you can have it if you like". Ken likes collecting things so he dragged it home.



Recently we found a journal on *Telescope making in Australia* and we saw a photo (above) of a lost telescope - the 18" Robert Wigmore telescope, built 109 years ago in Melbourne. It had a cast iron equatorial mount. In the photo it showed the cast iron mirror housing - it looks exactly the same as our cast iron housing. But the Wigmore 18inch scope was said to be f/7 or 8, and our 18inch mirror is f/5.5. In the photo of the Wigmore scope, it does not look like f/7 or 8 to me. Maybe someone can clear this up for us some day.

I have since sold my share to Ken, because I have found another mirror and I am building the next scope, which I will write about soon.

Clear skies Greg & Val Walton

and finally,

FROM THE QUESTION BOX, someone asked for the words for Twinkle, Twinkle little star:

Jane Taylor wrote the words below to "The Star" or "Twinkle, Twinkle Little Star" in 1806, but the tune we are familiar with today is actually Mozart's piano variation of an 18th Century French folksong called "Ah! Vous dirai-je, Maman"

Twinkle, twinkle, little star,

How I wonder what you are.
Up above the world so high,
Like a diamond in the sky.
Twinkle, twinkle, little star,
How I wonder what you are!

When the blazing sun is gone,
When he nothing shines upon,
Then you show your little light,
Twinkle, twinkle, all the night.
Twinkle, twinkle, little star,
How I wonder what you are!

Then the trav'ler in the dark,
Thanks you for your tiny spark,
He could not see which way to go,
If you did not twinkle so.
Twinkle, twinkle, little star,
How I wonder what you are!

In the dark blue sky you keep,
And often thro' my curtains peep,
For you never shut your eye,
Till the sun is in the sky.
Twinkle, twinkle, little star,
How I wonder what you are!

'Tis your bright and tiny spark,
Lights the trav'ler in the dark:
Tho' I know not what you are,
Twinkle, twinkle, little star.
Twinkle, twinkle, little star,
How I wonder what you are!

WHAT FILTERS (OR COLOURED CELLOPHANE WRAPPING PLASTIC) TO USE OVER YOUR EYEPIECES FOR MARS?

Red - enhances polar caps.
Orange and Yellow - increases the contrast of the darker rocky deserts from the lighter dusty deserts.
Green - increases contrast of polar caps and dust storms.
Blue - improves polar caps and some surface features such as cloud cover.
Violet - improves polar caps.

If you have something you'd like published in *Scorpius*, simply e-mail it to me, either in a document file or as part of an email to: rlpollard@iprimus.com.au or, post it to 9 Genista Rd, Cranbourne 3977.
Thanks, Richard Pollard (Editor)



Left - Working Bee at the ASF Briars site on 5th October 2003
Both Photos - *By John Cleverdon*

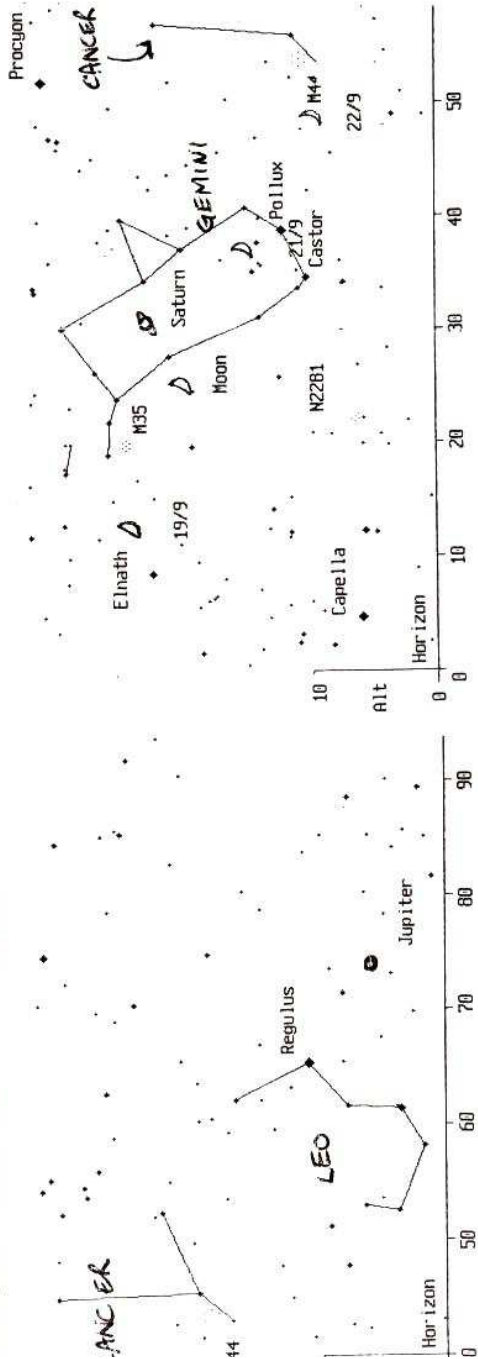


Below - Telescope Learning Day at the ASF Briars site on 9th August 2003
Both Photos - *By John Cleverdon*

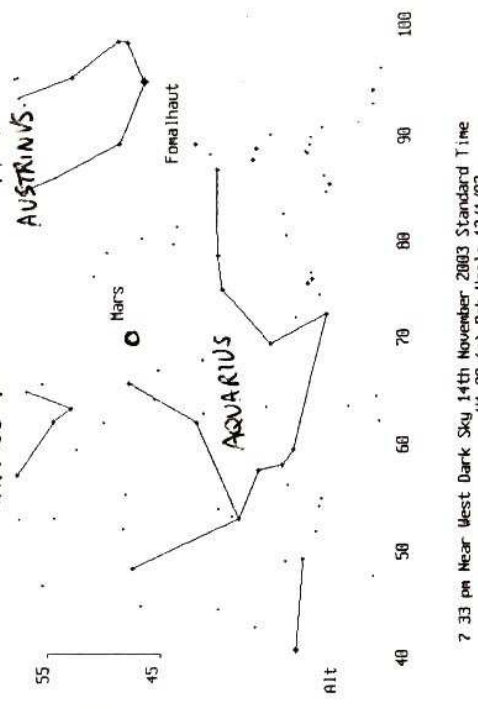
Kindly reproduced by Jane McConnell and collated/posted by Mary Westaway

SKY FOR THE MONTH 17 September - 18 October 2003 Mornington Peninsula

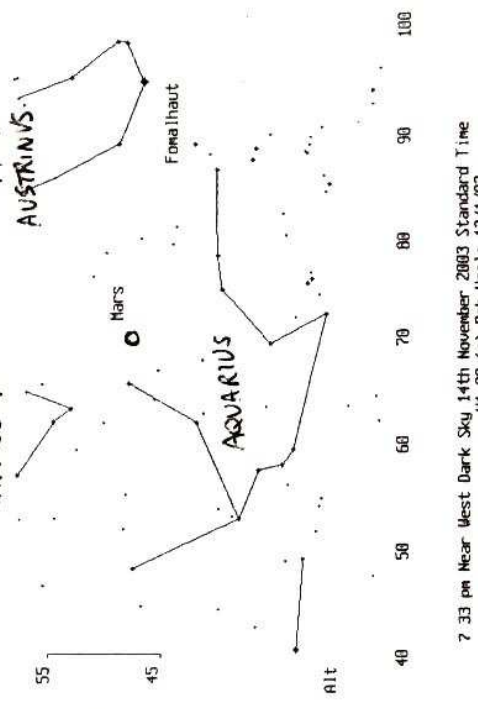
4 35 am Near East Dark Sky 14th October 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 5.5 1 X Sky View



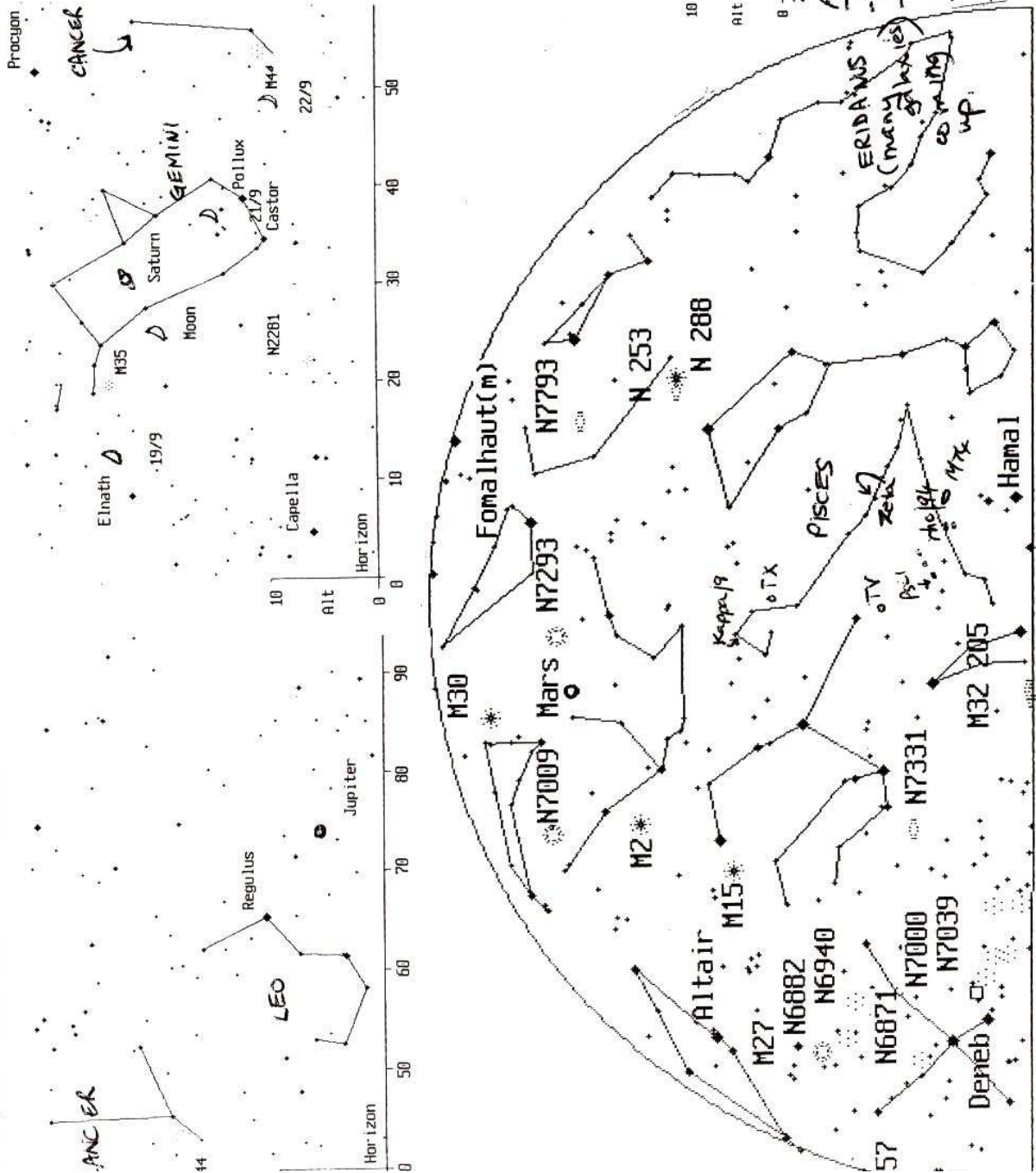
5 14 am East Dark Sky 20th September 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 5.5 1 X Sky View



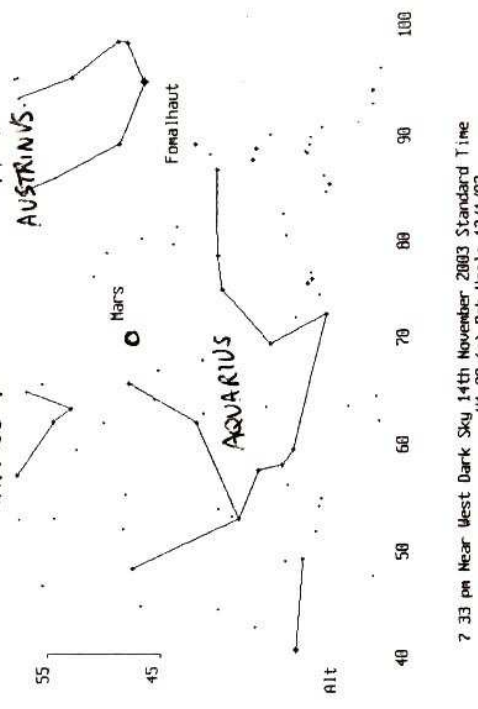
7 18 pm Near East Dark Sky 29th October 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 5.5 1 X Sky View



9 15 pm 2nd October North-East Night Sky 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 5.5 1 X Sky View

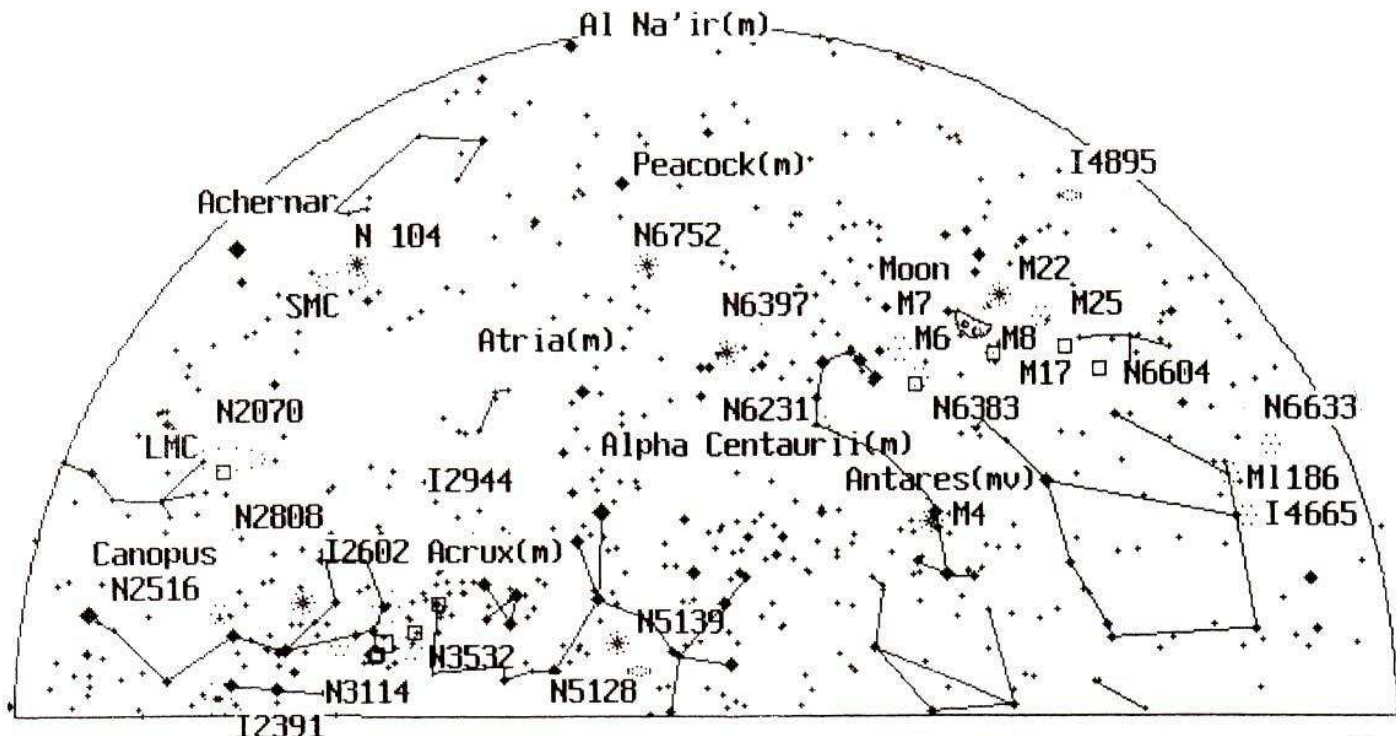


7 33 pm Near West Dark Sky 14th November 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 5.5 1 X Sky View

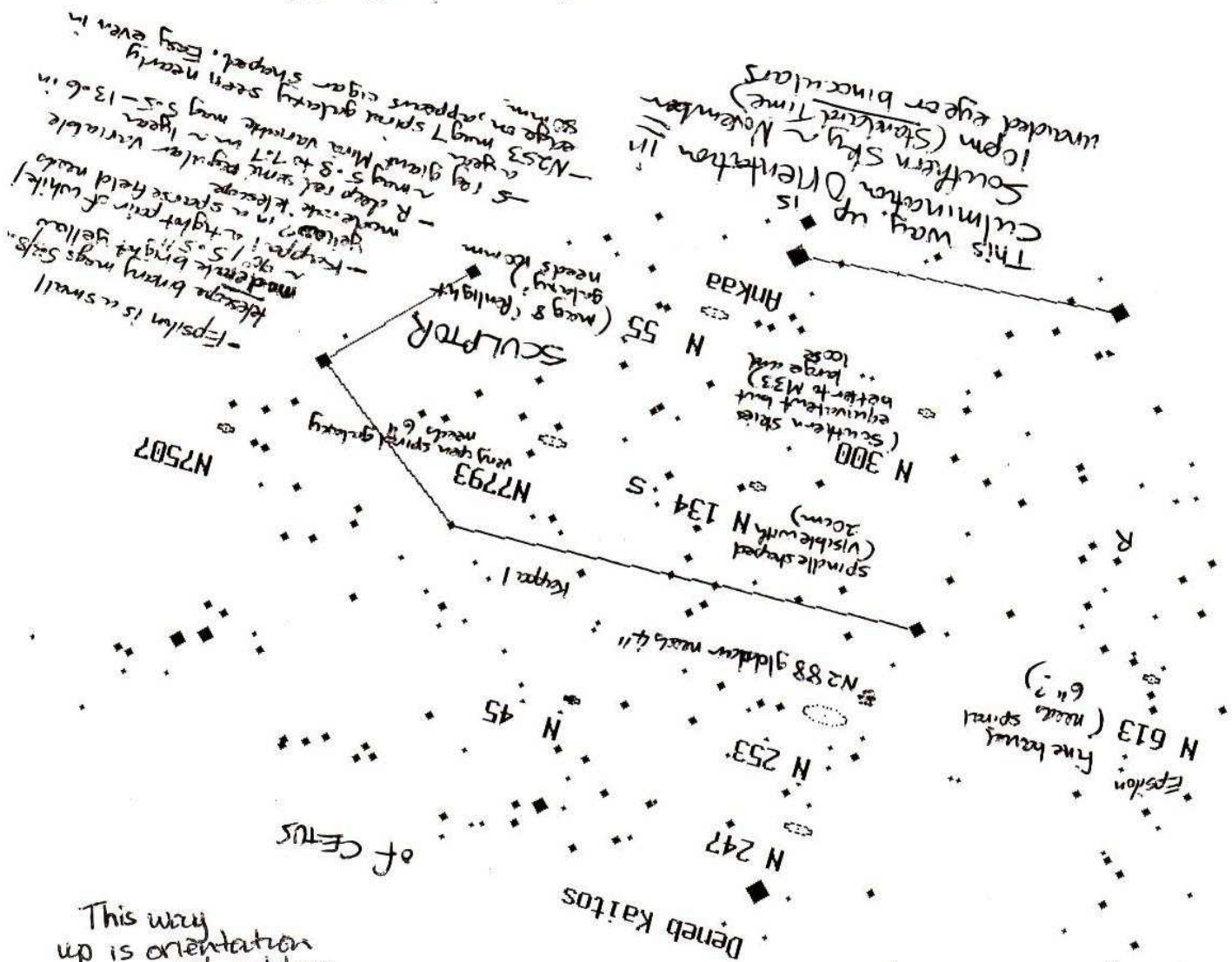


9 15 pm 2nd October North-East Night Sky 2003 Standard Time
 Also 10 25pm 17 September (Not Mars) and 8 30pm 18 October (Not Mars)

PISCES - Zeta small telescope binary yellow/white? mag 5.2/6.4. May be multiple
 - Kappa wide binocular double with 9 PISCES 4.9/6.3 - the mag 5.3 white easy binocular close with unrelated
 - orange 94 PISCES mag 5.5
 - Psi 1 small telescope tertiary blue 5.3 blue 5.6 white 11.2
 - TV red giant semi regular variable 4.57-5.4 every 7 weeks
 - TX or 19 PISCES deep red irregular variable 4.8-5.2
 - M74 mag 9 face on spiral galaxy - needs 6" 17/9/2003



9 15 pm 2nd October South West Sky 2003 Standard Time
 Also 10 25pm 17th September (Not Moon) and 8 30pm 18th October (Not Moon)

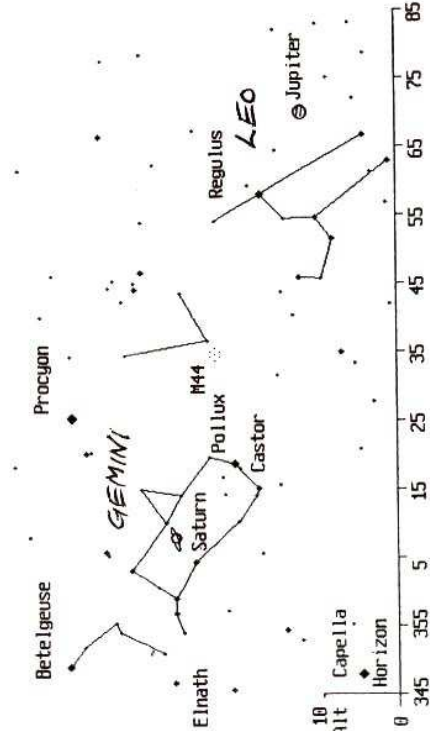


This way up is orientation as on 2nd October North East chart on other side, unaided eye or binoculars

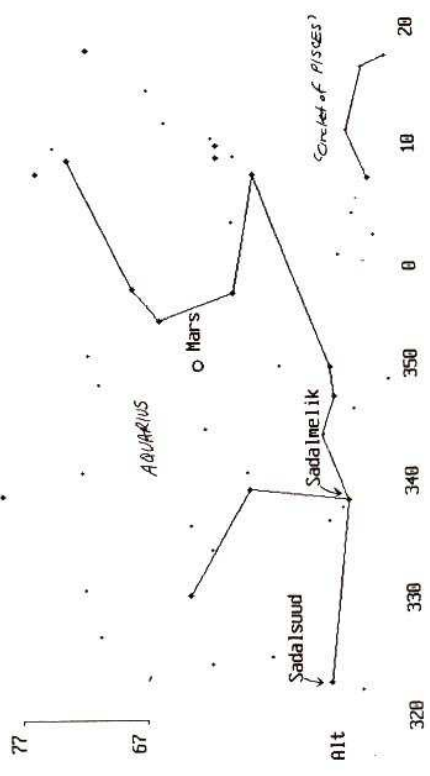
Bob Heale, ASF
 17/9/2003

SKY FOR THE MONTH 15TH OCTOBER TO 15TH NOVEMBER 2003 MORNINGTON PENINSULA

4 34 am North-East 2/3 Dark Sky 31st October 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 4.5 1 X Sky View

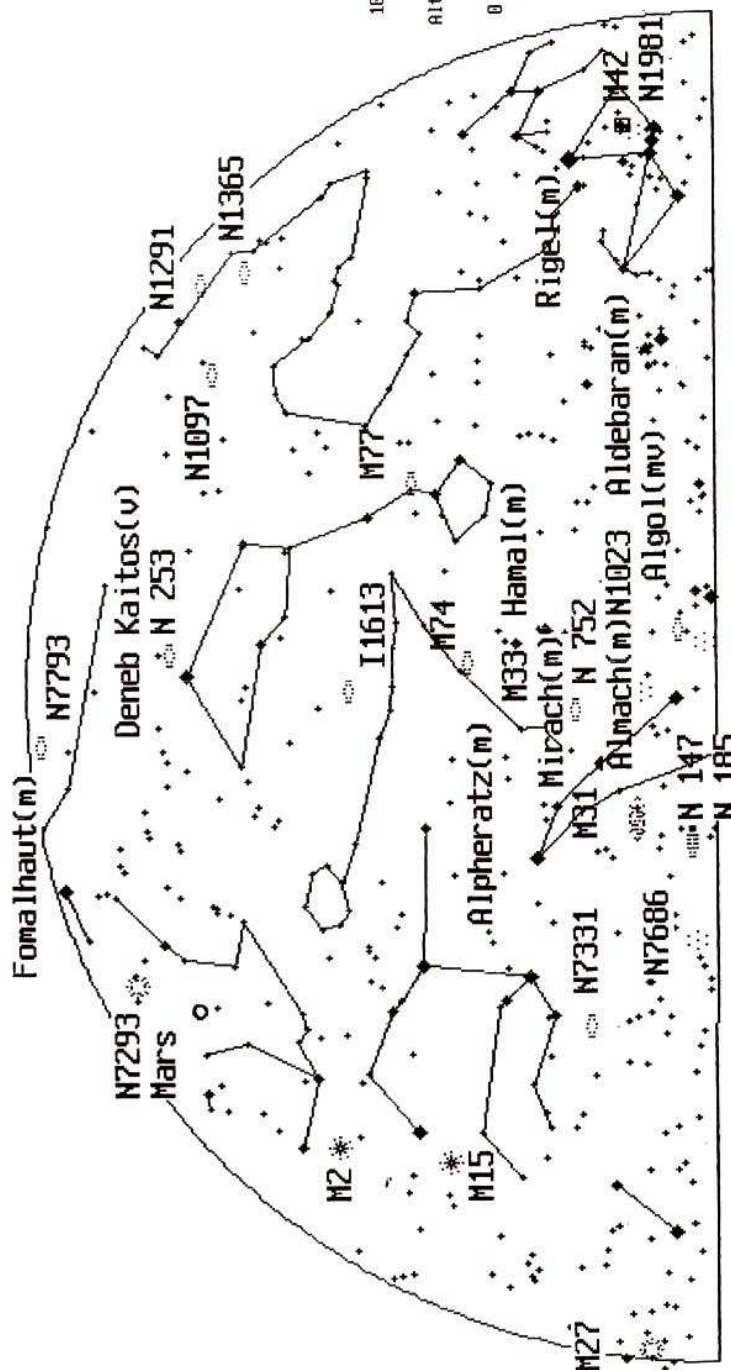


7 30 pm Near North Dark Sky 2nd November 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 5.5 1 X Sky View



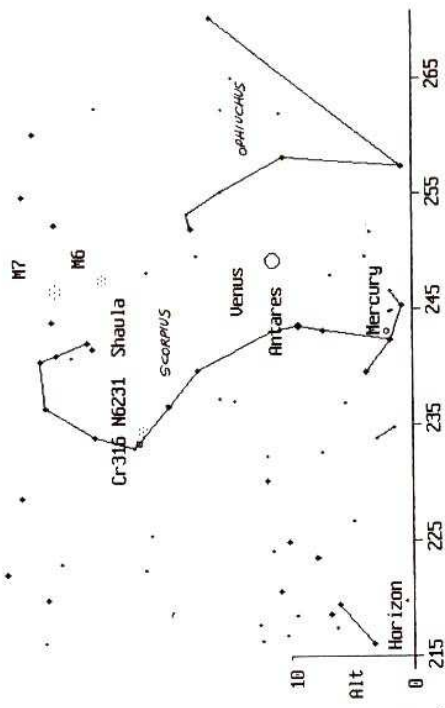
The closest 'big harness' of quite a few bright asteroids in LEO occurs in early November, but latter constellation is now in mid morning NE sky, with Jupiter keeping it company. Next closest is in 2006 so computer telescopes/computer software users or others, find this November asteroid lot!

7 52 pm South West 1/2 Dark Sky 14th November 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 4.5 1 X Sky View



9 45 pm 31st October North North East Dark Sky 2003 Standard Times
 Also 10 45 pm 17th October and 8 45 pm 14th November (Not Mars)

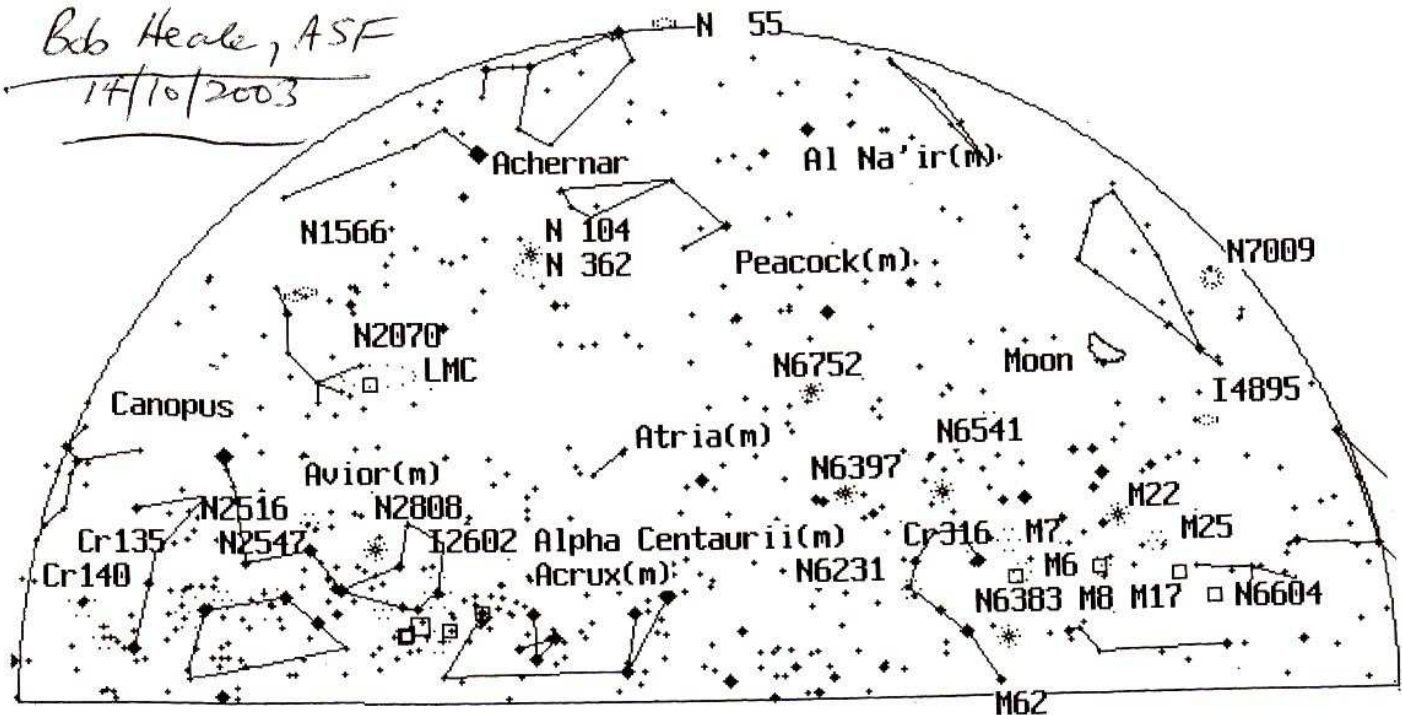
7 52 pm South West 1/2 Dark Sky 14th November 2003 Standard Time
 U1.00 (c) Bob Heale 13/1/03
 All objects no fainter than 4.5 1 X Sky View



Easy multiple stars
 Gamma Andromedae
 Psi Centauri

Bob Heale ASF
 14/10/2003

Bob Heale, ASF
14/10/2003

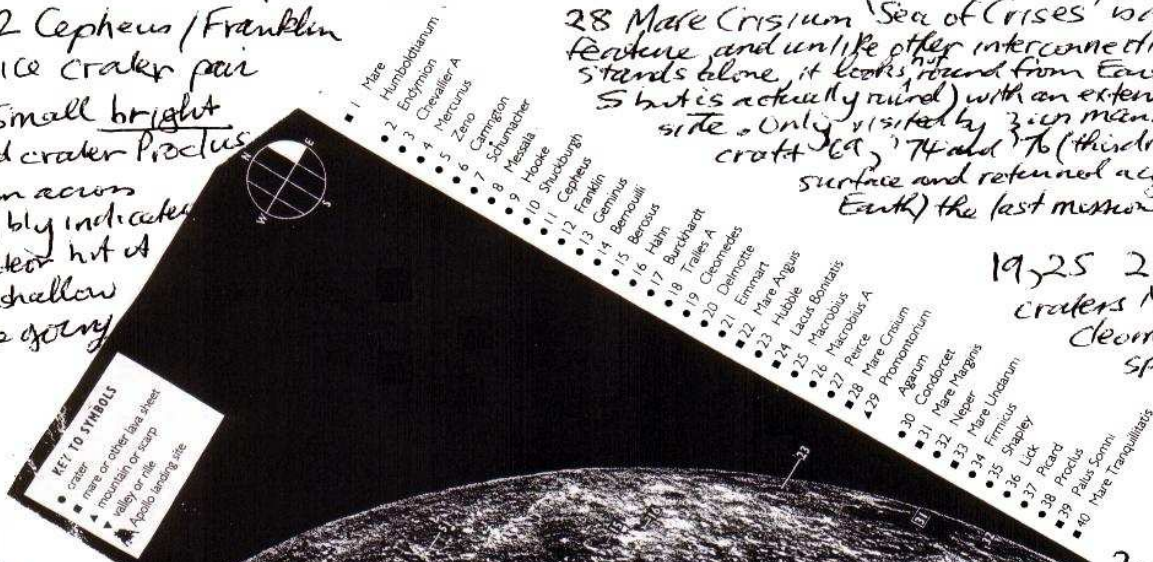


9 45 pm 31st October South South West Sky 2003 Standard Times
Also 10 45 pm 17th October and 14th November 8 45 pm (Not Moon)

11, 12 Cepheus / Franklin
Nice crater pair
38 Small bright
rayed crater Proclus
29 km across
possibly indicates
a meteor hit at
a shallow
angle going
NE

28 Mare Crisium 'Sea of Crises' is dominant
feature and unlike other interconnecting mare, it
stands alone, it looks ^{not} round from Earth (elongated all
S but is actually round) with an extension on eastern
side. Only visited by 3 un-manned Soviet space
craft (Zond 7, 8 and 9) to (thick drilled 4 cm, below
surface and returned a cylinder of soil to
Earth) the last mission to the Moon

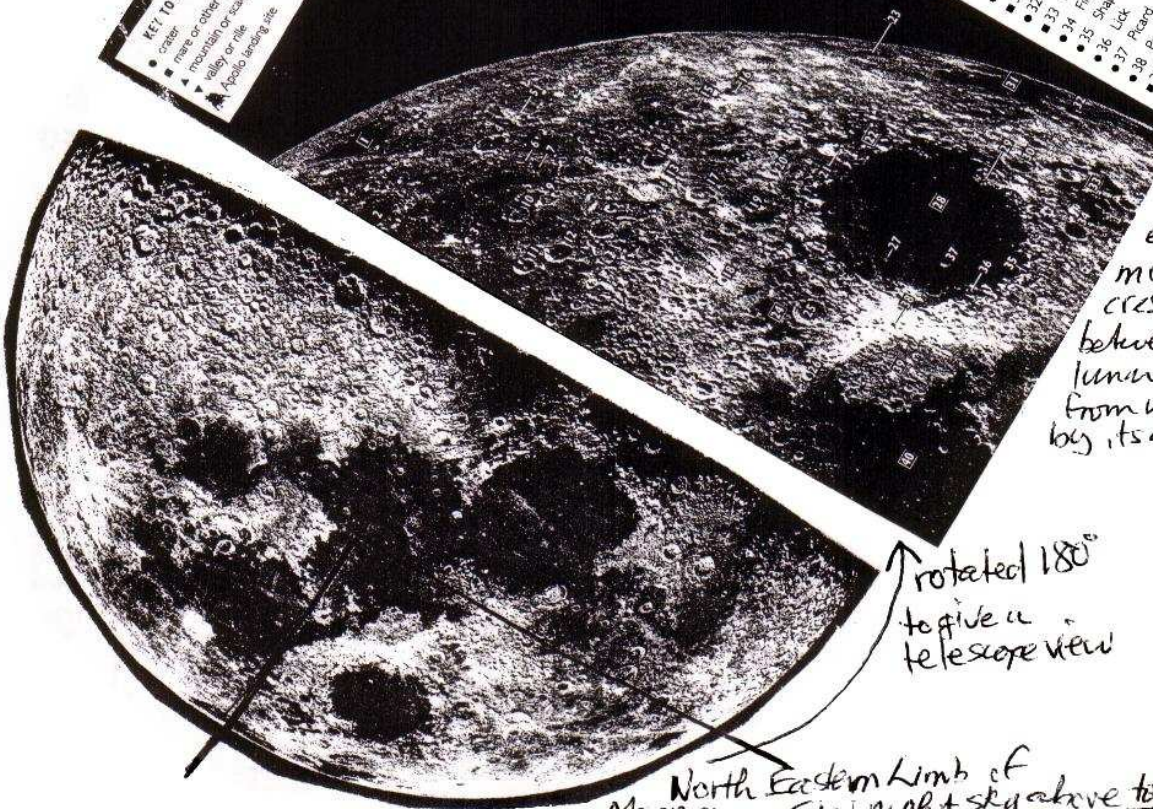
19, 25 2 dark floor
craters Macrobius 25
Cleomedes 19 (the
sports a rille on
its northern
floor



2 - Endymion
a large distinguish
crater that is most
easily seen during the
middle of the waxing
crescent phases. Found
between Mare Frigoris and
lunar limb; it is set apart
from immediate surroundings
by its dark floor

Easy multiple
stars
rho, beta
Capricornic

rotated 180°
to give a
telescope view



North Eastern limb of
Moon as in SW night sky above top

best seen when
Moon is 2 weeks
or about 2 weeks before
just after Full

Scorpius Extra!!!!!!

Who Was Robert W. Wigmore?

by Wayne Orchiston and John Perdrix

Tom Richard's fascinating article about a Victorian Planetary Scrapbook (Crux 3, June/July 2004) ended with the following query: "... who was Mr. R.W. Wigmore, 48 Queen St., of the Melbourne Branch of the British Astronomical Association?" Let us provide a brief answer.

R.W. Wigmore (1856/57–1947) was a leading Australian astronomer at the end of the nineteenth century, who pioneered amateur telescope-making and played a key role in the formation and running of the short-lived Victorian Branch of the British Astronomical Association (henceforth BAA).

To elaborate: Robert W. Wigmore was born in 1856 or 1857 and spent his early years in Tasmania, before moving to Melbourne and training as a lawyer. His real passion however, was astronomy, and during his life he made more than three dozen reflecting telescopes. Some found their way into schools and other

institutions, and others went to amateur astronomers, who otherwise could not afford telescopes.

Robert's two largest telescopes were 45.7cm (18") Newtonian reflectors. He was working on the first of these in 1893, and when finished it was housed at his home in Caulfield. Later, it moved with him to Rye, where it was protected from the elements by a large tarpaulin - he never built an observatory for it.

During the 1920s, Robert decided to donate the telescope to Swinburne Technical College (as it was then known), and it was installed in a roll-off shed observatory on the roof of the Arts School. Later, it was transferred to the roof of the Chemistry building, where it was used for occasional 'public nights', and during the late 1950s, by students taking adult education classes in astronomy at the College (see Fig. 1). Around 1960, Swinburne donated the telescope to Carey Grammar School, and a few years later it simply vanished whilst being transferred to Haileybury College. Although a number of us from the ASV's Historical Section tried very hard to locate it during the 1980s and 1990s, we had no success whatsoever. Any information on its current whereabouts would be much appreciated.

Robert's second 45.7cm mirror ended up in Sydney, in a telescope owned by a prominent NSW Branch member of the BAA, George Hoskins, and was housed in his observatory at Beecroft. George Hoskins was one of the founders of what later became BHP, and as his business commitments escalated his opportunities for observing rapidly diminished. In 1919, Hoskins decided to donate the

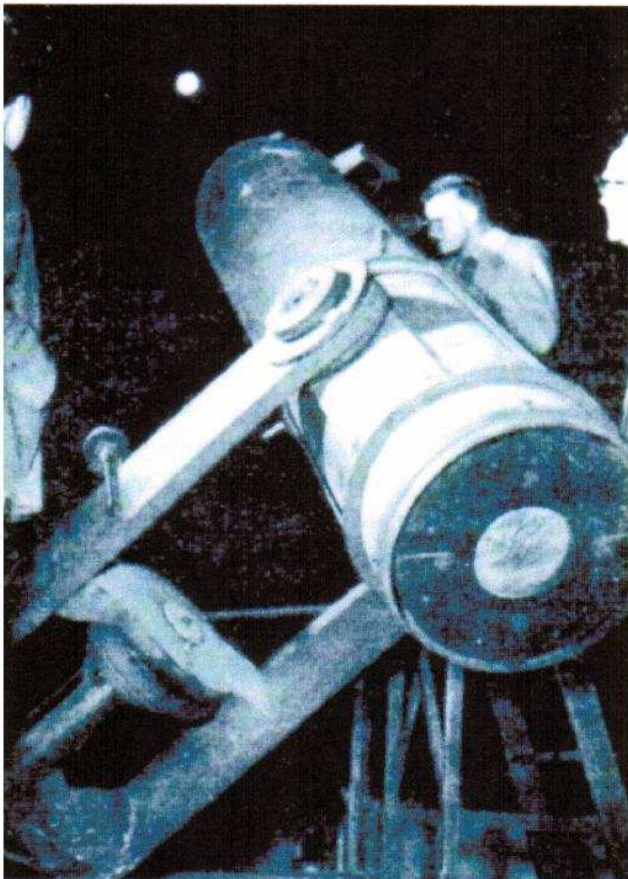
telescope to the Sydney Technical College, where, for many years, it was used on public viewing nights. For obvious reasons, we like to refer to Robert's two largest reflectors as the "Technical College Telescopes", and more information about them can be found in Orchiston (2000) and Orchiston and Bembrick (1995).

When Robert made his last telescope, in 1945, he was 88 years of age, and he used this 30.5cm reflector to teach a youthful David Mercer the art of mirror making. This f/5.4 fork-mounted, equatorial telescope was the twin of a 30.5" reflector that Robert made earlier for Corpus Christie College at Werribee - now Werribee Park (see Fig. 2). Ironically, Robert's final telescope was purchased by the late Ray Carroll (who later became a President of the ASV), and in the late 1980s he donated it to the Society.

After the late Bill James, Robert Wigmore would have to rank as Victoria's most accomplished telescope maker, but like many of those who responded to the technical challenges that instrument making offered, he was no habitual observer. Indeed, his sole observational claim to fame is the independent discovery of Comet C/1907 L2 (Daniel), which for a time was known in Australia as "Comet Wigmore".

Apart from his telescope-making exploits, Robert deserves to be remembered for the role he played in founding the Victorian Branch of the BAA. For about a decade from 1879, Victoria's amateur and professional astronomers found common ground in Section A of the Royal Society of Victoria, which was founded by Robert Ellery, Director of the Melbourne Observatory. For reasons

▼ One of Robert W. Wigmore's two 45.7cm (18") Newtonian reflectors being used by students taking adult education classes in astronomy at Swinburne Technical College in the 1950's.



that are by no means clear this group lapsed (see Orchiston, 1998), and it was only in 1897 that another Melbourne-based astronomical group was formed.

At this time, Robert was one of four local BAA members who successfully petitioned London to form a branch, and on December 16th, 1897 the inaugural meeting of the Victorian Branch was held. The membership boasted an interesting mix of amateur and professional astronomers (with the latter drawn equally from the Melbourne Observatory and the University). Robert was undoubtedly one of the Branch's leading amateurs, and at the inaugural meeting was appointed Secretary.

Despite a large and distinguished membership, and a relative abundance of telescopes, there was little overall commitment to observational astronomy, and interest in Branch activities gradually waned. In May 1905 Robert exhibited one of his telescopes, a 25.4mm (10") reflector, at a monthly meeting, and the last General Meeting was held just five months later. The final Council Meeting occurred on May 3rd, 1906 and the Branch slipped into oblivion (Orchiston and Perdrix, 2002). It existed for just eight and a half years, and during this interval Robert played a pivotal role in its survival.

The ASV was founded 16 years later, in 1922 (see Perdrix, 1972), and Robert soon became an active

member. Eventually he moved to Warburton, and in 1942, was visited by one of the Society's founders who "... found our old friend as active and interested as ever, despite his 85 years. Mr. Wigmore had completed a 12" mirror and mount, and was engaged in completing another 12" mirror, without mount. A 9" mirror had given its maker great satisfaction, since the hours spent in polishing had brought the figure to a very perfect sphere, from which the final paraboloid was obtained in only seven minutes polishing. Congratulations to the hand that has

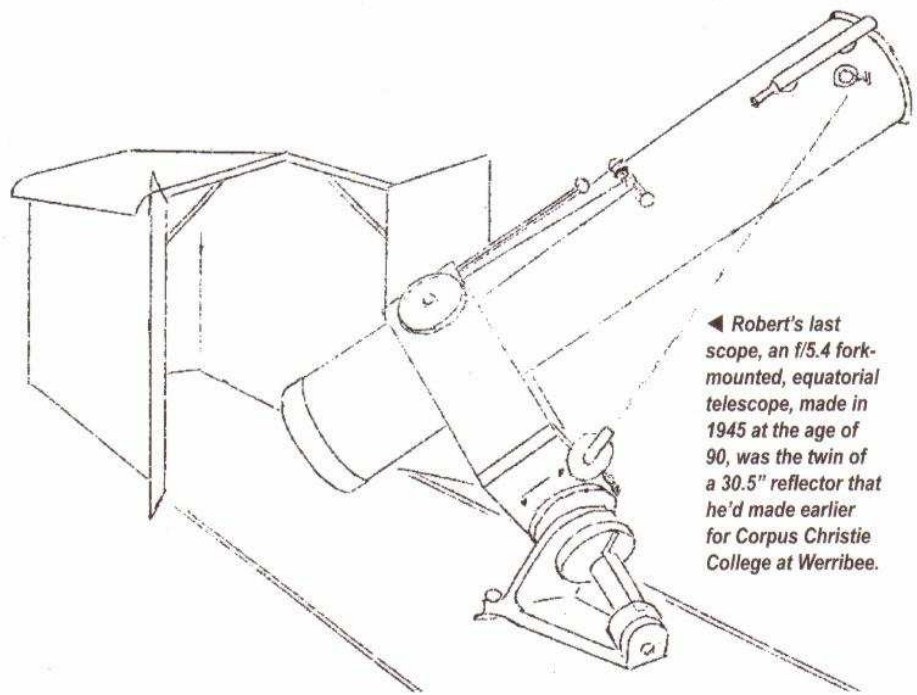
not lost its cunning!" (Veteran Mirror Maker, 1942). Just five years later Robert W. Wigmore left this world. ■

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and

John Perdrix

Astral Press, PO Box 4 Mead Grove,
Floreat, WA 6014
(astral@inet.net.au)



◀ Robert's last scope, an f/5.4 fork-mounted, equatorial telescope, made in 1945 at the age of 90, was the twin of a 30.5" reflector that he'd made earlier for Corpus Christie College at Werribee.

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- Veteran telescope maker. *Bulletin of the Astronomical Society of Victoria*, **151**: 4 (1942).
- For sale. 12-inch equatorial reflector. *Bulletin of the Astronomical Society of Victoria*, **188**: 6 (1945).

Robert Wigmore and the "Technical College Telescopes"

The other leading early Melbourne telescope-maker and co-founder and stalwart of the Victoria Branch of the BAA with Ross was lawyer Robert W. Wigmore (see Orchiston and Perdrix 1990). Wigmore was born in about 1856 and spent his early life in Tasmania before moving to Melbourne and completing a law degree. He died in 1947 after a long and active life.

By 1900, Wigmore was Victoria's leading amateur telescope-maker. Over the years he ground, polished, and figured more than three dozen mirrors in the aperture range 15.2–45.7cm. Through his efforts, many Australian amateur astronomers and a number of schools and colleges acquired telescopes. Wigmore completed his last telescope in 1945 (when nearly 90 years of age), in order to teach a youthful Melbourne amateur astronomer, David Mercer (pers. comm., 1982), the rudiments of mirror making. This was a 30.5cm Newtonian reflector, which was subsequently offered for sale (see *Astron. Soc. Victoria Bull.*, 1945). Unlike Ross, Wigmore did not use any of his own reflectors for systematic observing. He nonetheless achieved some observational fame in 1907 by independently discovering Comet Daniel (C/1907 L2). For a time, it was known locally and in Sydney as "Comet Wigmore" (e.g. see Lenehan 1907).

Wigmore is known to have completed two different 45.7cm mirrors, and was working on the first of these in 1893 (see Orchiston and Bembrick 1995: 65–67). When it was finished, he installed the $f/7-8$ mirror in a Newtonian telescope with an unusual fork equatorial mounting at his home in suburban Melbourne. Later it was moved to Rye, near Melbourne, where he ran a chicken farm (Mercer, pers. comm., 1982). Apparently when it not in use the instrument was stored vertically, shielded by a large black-painted cover (Robb 1938). During the 1920s Wigmore donated this telescope to the Swinburne Technical College in Melbourne (now Swinburne University of Technology), and it was housed in a roll-off shed observatory on the roof of one of the buildings on campus. In the late 1950s it was used occasionally for observing sessions associated with adult education astronomy courses offered by the College (see Figure 6), but in about 1960 it was donated to a local secondary school. It eventually moved to a second school and then simply disappeared. Extensive attempts to locate it during the 1980s proved unsuccessful.

Wigmore's second 45.7cm mirror turned up in Sydney in 1917 when a wealthy young amateur astronomer named Hoskins replaced his 30.3cm reflector with a 45.7cm instrument. The pages of the *Journal of the British Astronomical Association* describe this telescope:

"The mirror has a focal length of 12 feet 4 inches, and is equatorially mounted. The polar axis extends beyond the bearings, and branches into a fork. The heavy mirror cell brings the centre of gravity to within about 4 feet of the mirror end, and is swung in the fork, the Declination Circle and Finder being on one axis and a counterpoise on the other. The eyepiece end, which revolves, is reached by a step ladder, 12 feet high. The movements are beautifully smooth, and vibration is entirely absent. All the castings for the mount were made in Sydney ... and reflect credit on the designer and engineer." (Report of the Branches, 1917: 285).

The fork mounting is somewhat reminiscent of the telescope at Swinburne in Melbourne. A later BAA New South Wales Branch report discloses that the mirror "... was ground and figured to a true parabolic curve by R.W. Wigmore, of Melbourne, who was a very successful maker of reflecting telescopes". (Reports of the Branches, 1921: 299).

Hoskins and other local members of the BAA did make good use of this telescope (Orchiston and Bembrick 1997), but in 1919 Hoskins decided to donate it to the people of Sydney. It was then installed at the Sydney Technical College, under the control of the NSW Branch of the BAA. The telescope saw use in the 1920s, but by 1973 it was no longer required, and its BAA association was long forgotten (by both the College and local BAA members).

Archival research conducted in about 1980 revealed the telescope's BAA connection, and the College then disclosed that the instrument had already been transferred to the Commonwealth Scientific and Industrial Research Organisation for a planned public observatory at Narrabri. It took several years of negotiation before the NSW Branch could return this historic telescope to Sydney. It is now stored at Macquarie University, and will be installed in their new observatory complex when this is built (see Vaughan 1990).

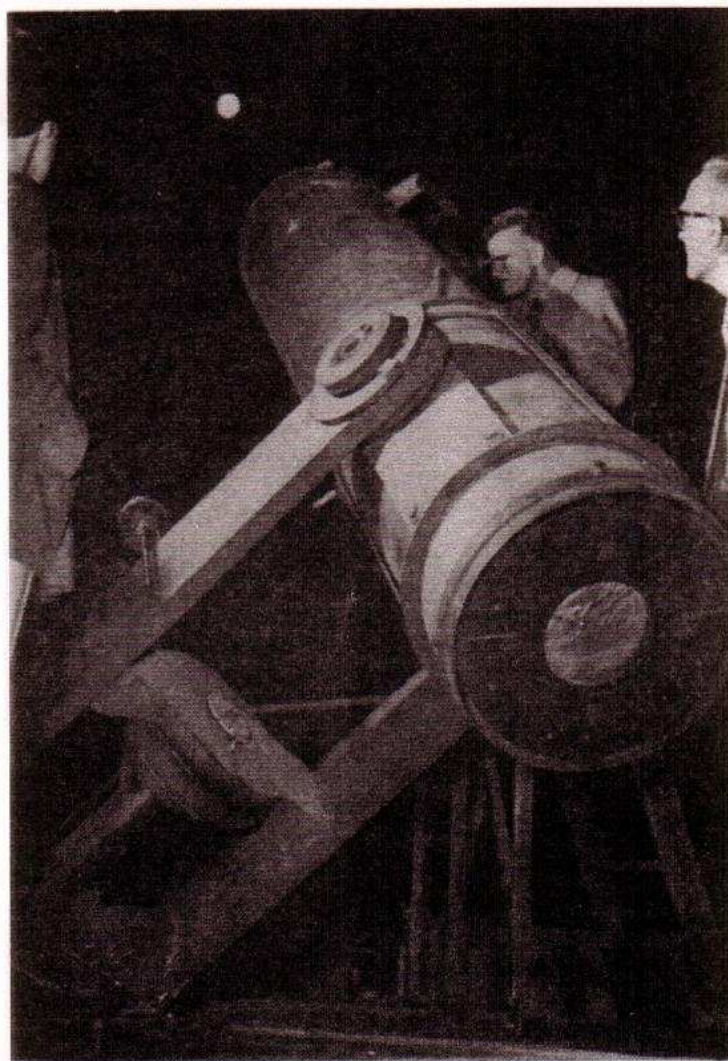


Figure 6: Robert Wigmore's 45.7cm reflector, being used by students from the Swinburne astronomy class in 1959 (after *Journal of the Astronomical Society of Victoria*, 1959).

The case of the missing telescope

by Annabelle Hart -Work experience student

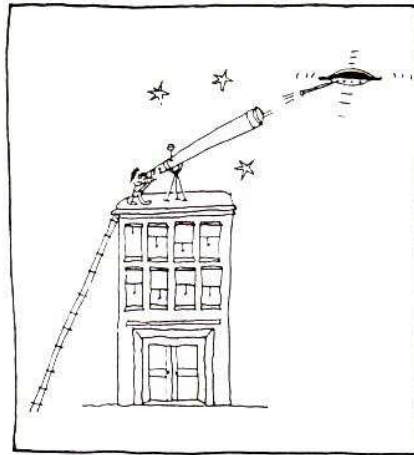
Mystery surrounds the whereabouts of an astronomical telescope which was last seen on the roof of the Chemistry Building in 1960.

The large Newtonian Reflector* was donated to the College in November 1928 by a Mr R.W. Wigmore who himself built the telescope back in 1894.

The telescope was initially installed on the roof of the old Arts (Film and Television) School building but for obvious reasons structural problems developed with the roof and the telescope was removed and placed in storage for many years.

It was decided that the telescope would be used again for an astronomy class commencing in 1952 and that it would be located on the roof of the Chemistry Building. Following a thorough overhaul, including re-aluminiumisation of the mirror at the Mt Stromlo Observatory, the telescope was positioned and housed in a roll-off shed running on rails.

The evening astronomy classes which followed for several years did not attract a great deal of student interest. But in 1959 four astronomy enthusiasts who had used the telescope formed an Astronomical



Group associated with the College. The group, including staff members Jim Long and a Mr Bingham were given keys and access for a trial period of 12 months; they instructed interested members of the public during 1960. This arrangement was suddenly discontinued when the decision was made to add a new floor to the building.

The telescope and shed are said to have been removed quickly and disposed of by the College after 1960. But what then? The subsequent movements are not known.

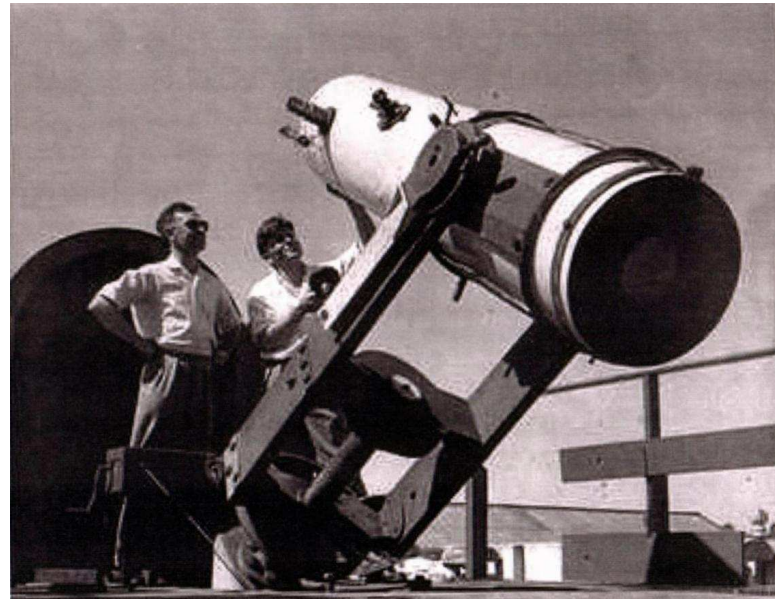
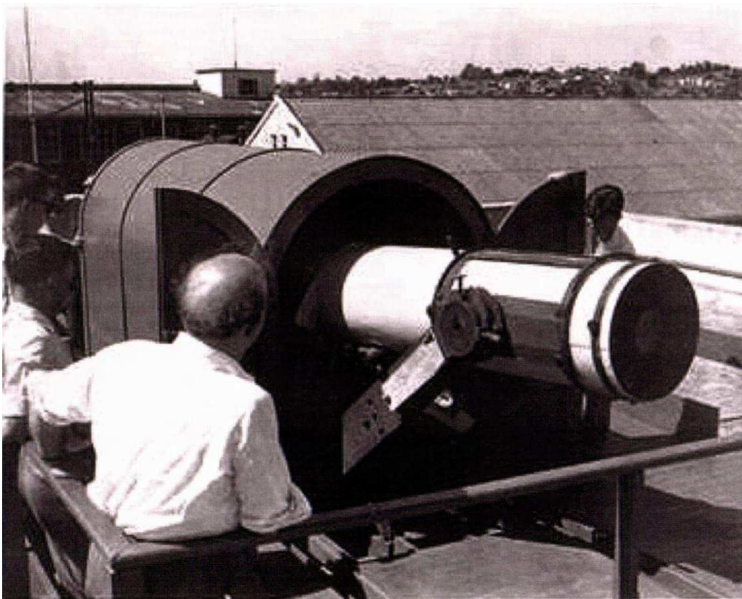
Now, exactly one hundred years after it was built, the case has been reopened to find out what became of the telescope.

Do you know where the telescope is? Simply overlooked and lost in a basement? Or perhaps suspicious circumstances surround the disappearance...

Anyone with any further information is asked to contact Geoff Dudley in Learning Services.

* The telescope was a Newtonian Reflector of $f/7$ - $f/8$ focal ratio with a 46cm (18") diameter circular mirror of 7.6cm (3") thickness and having a paraboloidal figure. It had a Brashear diagonal mirror. The sheet metal tube was about 3.5m in length and supported on an equatorial mount employing a large fork. A falling weight clockwork motor wound up by a handcrank was used to drive the telescope about its polar axis.

Information supplied by the Historical Section of the Astronomical Society of Victoria



Here you can see the similarity between the mirror cell (left) & the back or rear cell of the Wigmore telescope (above)

When we got the mirror it was in its cell & had cork ring & tar paper behind the mirror. The mirror had a silver coating, but was about 50% gone with lots of holes, but still enough to test the mirror. We took the mirror to Roger Davies telescope shop for testing & he said it was OK. Roger knew of the Wigmore telescope but did not twig at the time.



Photos on this page - Ken Marriott up the ladder looking at the Moon in the day.

Ken & I spent many nights just look at the night sky

I Built the telescope for Ken Marriott & after many year of use Ken decided to sell the telescope to me.



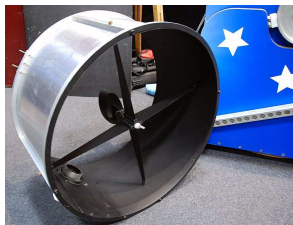
Sky Drover revisits Swinburne on the 20th February 2009

My other telescope is named Sky Dancer so I was keeping a theme going with the names of my telescopes. Sky Drover was built on the Tom Clark design where the upper cage fits in to the mirror box for storage.

Photo Below - from left ?????, Rod Brown, Christophe Fluke, Barry Clark & Greg Walton



Photos - From Rod Brown



Brief Notes on the Swinburne 18" Astronomical Telescope

The Swinburne College Council was informed in November 1928 that Mr. R -W. Wigmore was **willing to donate** to the College, a large astronomical telescope built by him in 1894. Councilor's inspected the telescope and Mr. Wigmore's offer was accepted. Arrangements were then made to remove it to the College in December 1928.

The telescope was a Newtonian Reflector of f/7-f/8 focal ratio with a 46cm (18-inches) diameter circular mirror of 7.6cm thickness (3-inches) and having a paraboloidal figure. It had a Brashear diagonal mirror. The sheet metal tube was about 3.5m in length and supported on an equatorial mount employing a large fork. A falling-weight clockwork motor wound up by a hand crank was used to drive the telescope about its polar axis.

The telescope was installed initially on the roof of the old Arts School building but structural problems developed with the roof and the telescope was removed and placed in storage for many years.

In 1951 it was decided to bring the telescope into use again for a class in astronomy commencing in 1952 and the decision was taken to locate it on the roof of the Chemistry School roof (the Chemistry School Building later came to be known as the Applied Science Building).

In August 1951, the Public Works Department was asked to report on the proposed installation. This report was duly received stating that the building's roof could take the additional load. In the meantime the telescope was given a thorough overhaul and the mirror was sent to Nit Stromlo Observatory for re-aluminisation. The telescope was installed subsequently and housed in a roll-off shed running on rails.

Astronomy classes were held thereafter for a number of years following the telescope's installation and the telescope was used in the evenings for that purpose. The classes, however, did not attract the interest of many students. Enthusiasts with more astronomical knowledge than that conveyed in the class instruction used the telescope as well and in 1959 four of these enthusiasts asked Council for permission to form an Astronomical Group associated with the College. Staff member Jim Long, then the instructor of the astronomy class and a member of the group of four, was provided with keys for access and made responsible for liaison with the College Physics staff principally with Mr Bingham who had also been an instructor in astronomy.

Access was made available to the group for a trial period of 12 months and they instructed interested members of the public during 1960. The arrangement was discontinued suddenly by mutual agreement when the decision was made to add a new floor to the building. The telescope and roll-off shed were removed quickly and disposed of by the College after 1960. Unfortunately, the telescope's subsequent movements are not known with certainty

Rod Brown Director Historical Section Astronomical Society of Victoria, on 29th June 1994

Below a Letter I sent to Geoff Dudley

To Geoff Dudley
Swinburne University of Technology
2 John Street Hawthorn 3122
Phone 61 (3) 9214 8396

Dear Geoff,

Date - 2/10/2003

Thank you for the photos of the Robert Wigmore 18" telescope and some extra insight about the history of this telescope. You said in your letter that the primary mirror was a speculum metal, but the mirror Ken Marriott has is glass. This mirror was in a cast iron mirror housing which looks exactly the same as the Wigmore 18" housing (See Photo). You also said the Wigmore telescope had 2 focusers. After a bit of pondering and reexamining the picture in ATM Journal, I noticed that the observer is viewing through the focuser which is closest to the primary mirror end, the same focuser you said was for astrophotography. The only explanation I can think of is the Wigmore telescope had 2 mirrors. The speculum metal mirror with a F ratio of 7-8 to suit the focuser furthest from the primary mirror end and the glass mirror with a F ratio of 5.5 to suit the focuser closest to the primary mirror end. Most likely the speculum metal mirror was replaced with the glass mirror, the same mirror Ken Marriott has. The cast iron mirror housing is most likely part of the original Robert Wigmore telescope. It's a shame that the telescope left Swinburne as it may have survived, but it most likely has been melted down for its scrap metal value.

Ken is still using the telescope I built for viewing with his family and friends; Ken is also a member of the ASF.

I hope this may jolt some memories and some more parts of the puzzle will fall in to place. Please keep me informed of any new news about this telescope.

Clear skies, Greg Walton

Sky Drover today, *By Greg Walton*

Sky Drover is still being used on a regular bases at the MPAS Briars site & travels to ASV's LMDSS once a year for Monash University. See links - Monash at LMDSS 2014 <https://vimeo.com/108736453>

Also I have added an Argonavis to help find deep sky object faster & a 31mm Nagler eyepiece, I had to add some weight to the back of the mirror box to make it all balance, as the 31mm Nagler is almost a Kg. I replaced the ground board bearings with plastic roller which made it much smoother to move.

