



SCORPIUS

The Journal of the
Astronomical Society of Frankston Inc.
P.O. Box 596, Frankston, Victoria 3199

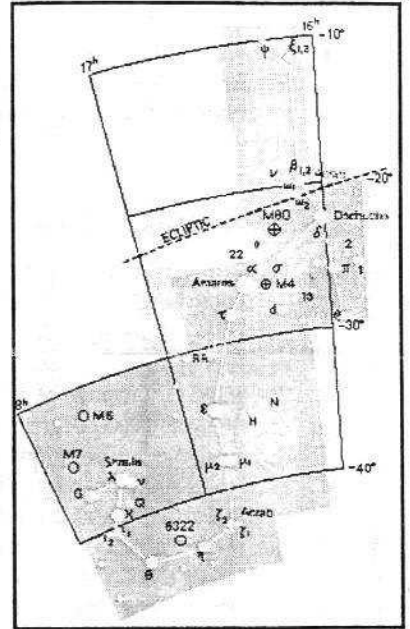
RegNo: A268 ABN: 34569548751

Volume IX, No. 5 2000

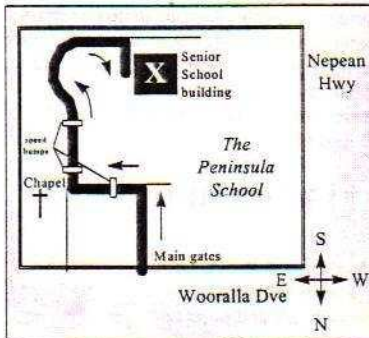
(Sep - Oct)

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.
Phone: 0419 253 252
Internet: <http://www.peninsula.starway.net.au/~aggro/index.html>
Email: aggro@peninsula.starway.net.au



Visitors are always welcome!



Annual Membership	
Full Member	\$32
Pensioner	\$27
Student	\$22
Family	\$43
Family Pensioners	\$37
Newsletter Only	\$16

DUE 1ST OF JANUARY EACH YEAR

President & Editor
Ian Porter a/h (03) 5985 4203

Vice President & Loan Instruments
Richard Pollard a/h 0419 100 802

Treasurer
Bob Heale a/h (03) 9787 1748

Secretary
Roger Giller a/h (03) 9702 2685

Committee of Management
John Cleverdon, Don Leggett, Peter Lowe,
Peter Skilton, Sally Zetter

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

FUTURE EVENTS

General Meetings:

Wed 15th Nov 2000

Annual General Meeting. Nominations for committee positions can be made on the form published in the last edition, or by requesting one from the Secretary.

Session 1: Yet to be finalised. There is a possibility of a speaker on celestial navigation, but this is uncertain at the time of writing.

*Session 2: Video on *The Christmas Star*.*

Session 3: Loan telescope outside if weather is clear.

Please remember that there is NO monthly meeting held in December.

Wed 17th Jan 2001

Session 1: Yet to be finalised.
*Session 2: Video on *2001: A Space Odyssey (what else for this year!)*.*
Session 3: Loan telescope outside if weather is clear.

Viewing Nights:

Members Only:

Sat Nov 25, Dec 2 all at *The Briars*, Nepean Hwy, Mt.Martha (Melways

151/E1).

If weather forecast for the Saturday looks bad, the Friday before may be used instead. New attendees must always confirm with Ian Porter on 5985 4203 before attending. Remember for security reasons you can only attend on planned Members' Nights, unless by prior arrangement with Ian who will liaise with *The Briars* accordingly. Last person out must switch on the shed security light.

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 on Fri 3rd Nov and Fri 1st Dec, all at 8pm. Assistants are required. New members are welcome to watch and participate if desired.
- Camp Manyung, Sunnyside Rd, Mt.Eliza, will be having a viewing night for about 20 visiting students on Mon 20th Nov at 8pm. A speaker and a telescope are required. Melways 105/A6.
- Thomas Mitchell Primary will be having a viewing night at Endeavour Hills on Wed 6th Dec. About 300 grade 5/6 pupils, staff and parents turned up last year. Assistants and telescopes are

definitely required. Melways 91/G5.

- Coast Action, an activities based organisation of the Bureau of Natural Resources & Environment, is planning to have 2 viewing nights, probably on Fri 12th Jan and Mon 15th Jan 2001 at 8pm at *The Briars* Visitor Centre. Melways 145/F12. Please pencil in your diaries if you might be able to assist.
- St.Peters College in Cranbourne has requested a viewing night for about 90 Grade 7 students, probably soon after school starts in 2001.

Phenomenal Events:

- Predictions for minor planet occultations of background stars are available, as are predictions for eclipses of Jupiter's moons for 2000/2001. Timings of any occultations (disappearances or dimmings) of minor planets are used to establish the size and shape of these denizens of the depths of our solar system. We work closely with the Royal Astronomical Society of New Zealand on these observations and have had great successes in the past. The Jovian eclipses are also timed (moment of last disappearance, moment of first reappearance from Jupiter's shadow), and these are used by the Jet Propulsion Laboratory to refine the ephemeris/orbital elements of the four Galilean moons of Jupiter. If you have a small telescope and are interested in making these co-ordinated observations please contact Peter Skilton for instructions.
- The famed Leonids meteor shower, associated with Earth passing through the remnants of the tail of Comet Tempel-Tuttle, will occur between Nov 14th to 21st, with peak activity estimated to be in the early morning hours of Nov 17th, between midnight and dawn - probably. In past times when the Leonids went into storm activity, there were up to 2,400 meteors seen per minute! The meteors appear to radiate from a point in the sky near the sickle-shaped asterism of the constellation of Leo. No guarantees though! At the time of writing we are not sure if any of our regular meteor observers will be present at the November meeting (it clashes with the Leonids) to give an overview and the latest prediction news.

David Girling is leading three Leonids viewing nights at *The Briars* starting 2am AESuT on Fri-Sun 17th, 18th, 19th November. Please contact David if you are interested in coming on 5976 2806.

- Advance planning is underway for an expedition to the next total solar eclipse in Australia; the best since the 1976 total solar eclipse over Victoria. The next eclipse occurs near Ceduna in South Australia on 2002 December 04 and occurs interestingly in the late evening. It is highly likely that many members will make the effort to take holidays around this time to travel to this once in a lifetime event within Australian territory.

Social Events

- The Tenpin Bowling night on Sat 16th Sep at Frankston went ahead and saw about a dozen members play to varying standards of competence, but enjoying themselves nevertheless. It is likely that another such night will be arranged early in 2001 with earlier notification to the general membership via Scorpius.
- The Society outing to view the Australian movie *The Dish* on Sat 21st Oct, was successful with all in attendance enjoying the nostalgic revisit to July 20, 1969 and the relaying of the landing of mankind on the Moon being via the Parkes radio telescope near Alectown in NSW.
- A working bee was held at *The Briars* site on Saturday 14th Oct, with several members in attendance, despite it raining during much of the afternoon. The grass had been growing very quickly due to the rain and subsequent sunshine, and so even the visiting ride-on mower found the going very tough.
- Another Working Bee will be held on Sat 4th Nov (or 5th Nov if weather is atrocious on the 4th) from noon onwards at *The Briars* to plant, stake and settle in about 50 extra indigenous plants, redo the mowing, and whipper snip, weed and spray the mulched areas. Member help with spades and equipment is needed please. Everyone is welcome. There is a gas-bottle BBQ onsite and you are welcome to bring along a BYO picnic and make an afternoon of it.
- The annual society Christmas breakup BYO barbecue will be held

on Sat 2nd Dec at 5pm at Mt.Martha Park, Forest Dve, Melways 150/H7. *The Briars* planned members' night may also be held afterwards, depending on demand and, of course, the weather.

- *L5: First City in Space* is still showing at the giant IMAX cinema in Carlton. It is supposedly quite a spectacular production, revolving around life on a space station in the future at the L5 Lagrange point between Earth and Moon.

YOUR SOCIETY

NEW MEMBERS

Welcome to the following new Society members:

*Carl Groves
Christina & Charles Cornwell
Graham Holland*

The ASF is one of the largest astronomy groups in Australasia. Membership is currently at 152 in the wake of the new GST tax imposition. Please feel free to say hello at general meetings. Specialised badges, windcheaters, T-shirts, books & posters are available at meetings. Society name tags are free to new members who attend meetings. Members are able to borrow library books and videos and are entitled to attend special viewing nights at *The Briars* where you can discover the secrets and glories of the night sky.

HELP NEEDED

Articles, features, book reviews, member observations and points of general interest for this journal are always welcome. New contributors are encouraged. For example do a bit of reading and pass on some information, but remember not to plagiarise. Hand written material is fine; computer text files are perfect. The editor will even correct any mistakes you might make, so don't be bashful.



The Society is after a suitably stocked first aid kit for storing at *The Briars* observatory for emergencies. If any member has expertise or materials in this area, we would be eager to hear from you.

Donations of tables and shelving for the new building at *The Briars* site would be greatly appreciated.

RECENT MEETINGS

September's meeting had a good turnout considering it was competing with the Olympic swimming finals, and saw 45 in

attendance, with the President chairing. The usual What Goes Up segment by Ian Porter (including an update on the international space station) and Sky for the Night by Bob Heale, were both presented via computer, again using the lecture theatre's video projector. Bruce Tregaskis showed the combined BL Tel light curve so far, which appeared to be nearing minimum, and reported on two large sunspot groups that had just appeared. This prompted an advice to expect aurorae in the next week or so. John Cleverdon advised the group of the availability of free SPOT satellite posters of Melbourne and surrounds at about 5 metre resolution, and some of these were available at the meeting for members to take away. After the tea break, three sessions were run. In the front room, a video on the night sky was presented by Richard Pollard. In the theatre, a full screen video on the cutting edge Subaru telescope atop Maunu Kea was shown by Peter Skilton, including its construction, novel design features and showing what it had discovered so far. Being a mild evening, Greg and Val Walton brought along their magnificently built 21 inch Dobsonian telescope (which does not require a step ladder to see through the eyepiece). Their 18 inch one was getting a bit small so they sold it to a friend. The new instrument was setup in the courtyard for observing by interested members. Meeting closed at 10:30pm.

October's meeting, competing directly with the Paralympics opening ceremony, saw 45 in attendance, with the Vice President chairing unexpectedly at the last minute. Bob Heale present Sky for the Night on his laptop computer and Bruce Tregaskis presented the nearly complete light curve for BL Tel, centred around September 25, 2000. Marty Rudd reported on a spectacular aurora he had photographed locally about a fortnight earlier. Unfortunately, Marty was not on the Aurora Alert Phone list at the time. Neil Hewson overcame a blown slide project bulb then presented a detailed slide show of the recent total lunar eclipse, using 76 slides he had taken at home through his 20 cm Schmidt-Cassegrain telescope. Following a detailed explanation of the GST by the Treasurer, the group broke for tea then reconvened to a general chat session and in the front room a video of the scientific side of time travel was shown. One of those who watched it

was heard appropriately afterwards to murmur that they believed "there was no future in it". It was good to see Karen Simonsen resurface for her first astro outing since having a joyous new addition to the family in August. As an astronomer we're sure she'll be used to a little lost sleep. The meeting closed at 10:45pm.

Friday 1st September was a public night at *The Briars*, and saw only 10 show under overcast skies with threatening rain. Ian Porter spoke to the gathering, and the evening was planned to begin with an Iridium satellite flash, and have ten other satellite and rocket casing pass overs during the evening. Some fleeting views of the moon and some celestial sights were possible early in the evening. October's public night was even worse, with complete cloud coverage and only 6 bookings. A lack of local newspaper coverage of both these viewing nights likely also contributed to the reduced numbers. John Cleverdon has been fastidiously emailing details of viewing nights to all the local papers across the Peninsula, however, in the end it relies on the Editors concerned to actually find space to publish the details.

There have been no school viewing nights over the very wet and wintery last several weeks.

AURORA NETWORK

The Society's Aurora Alert Network has now been going for about a year and sports 18 people so far. This is a free service maintained by your Society. For the benefits of newer members, our Society has set up a telephone network of people keen to be told when an aurora is visible in our night skies. Because this phenomenon cannot be predicted well in advance, your only real chance of seeing it is either by sheer good fortune to be looking in the right direction at the right time, or by someone else telling you when one is occurring. On the peninsula and surrounding regions, the southern lights are readily seen by eye, and are due to increase in the next 12 months as our Sun passes through its active phase.

Basically, if any member on the list (which is also open to people from other Astronomical Societies or others interested in aurorae) sees an aurora,

they immediately phone the name above and below them on the list. If contact cannot be made, then they try to leap-frog them and contact the next person on the list. Once contact has been made, that next person repeats the process. Some people wish to have restrictions in place (for example, no calls after 11pm please). This is fine and such details are appended on the list.

If you are interested in finding out more about this network for members, please contact *The Secretary* (refer to front page) who is co-ordinating it.

SECRETARY'S JOTTINGS

Members are reminded that the Society's 20cm Dobsonian, 80mm refractor and binoculars are available for monthly loan to financial members. Just call Richard Pollard after business hours for details on 0419 100 802.

The Society has also acquired some new up-to-date slides especially for use at schools and public viewing nights. The sets cover Space Flight, the Hubble Telescope, Deep Space and Planets.

E-SCORPIUS

The Society maintains an email distribution list (called E-Scorpius) for rapid dissemination of astronomy information to members. In addition, members can send a message to the distribution list, for example asking a question, and have it immediately sent to all other members on the list.

If you feel this might be of interest to you, and you have an internet email address, then simply pass it along to Richard Pollard or any other Committee member, or email your email address to the Society's email address shown on the front page of this edition. This email distribution list is provided as a free service to members in the interest of sharing information between meetings.

LIBRARY MATTERS

The library has acquired some more material that is available for borrowing. Our librarian, Kathy Stabb is more than willing to show you what is available. Members are reminded that borrowings are for a

period of **one month only**, and can be reissued if necessary if you phone any of the committee members who will relay the request to Kathy.

Peter Skilton has kindly donated a copy of *Wonders of the Weather* by Bob Crowder of the Bureau of Meteorology. This superbly illustrated book takes you on a fascinating journey through the wonders of the weather and explains the complex processes that govern our Australian weather and climate. The book has a very strong Australian focus and you'll find out lots of things about Victoria's weather – for example why are planned viewing nights always clouded over.

The library has also some new video arrivals:

Universe by ABC Video. This wonderful 2-video boxed set covers 201 minutes on the subjects of The Big Bang, Stars, Planets and Alien Life, narrated by John Hurt. The series takes you on an incredible journey through time and space using computer generated graphics and breathtaking imagery from the Hubble Space telescope.

Space: Beyond the Final Frontier by Virtual Worlds. This classy 2-video boxed set covers 6 hours of a fascinating and comprehensively up-to-date view of space and space technology, seeing life aboard a space station as well as compelling images of deep space. The prosaically named 12 episodes include Beyond the Infinite, The Hidden Sun, Bright Eyes, Hard Rain Falling, Close Encounters, Human Cargoes, The Pyramids of Elysium, Home Alone, Tigers in the Jungle, Fly Me to the Moon, Heavy Metal and Birds.

Space: The History of Spaceflight from Sputnik to Space Shuttle by Astrovisuals. This 90 minute video covers the history of the manned space flight program, apollo 11, apollo 16, a demonstration of some of the humorous aspects of living in space, and working in space.

Planets: Exploring Our Solar System from the Sun to Pluto and Beyond by Astrovisuals. This 90 minute video covers the Solar System, Voyager, Planet Flyovers, Earth Views and Comets.

Universe: Exploring Deep Space – Stars, Galaxies and Black Holes by

Astrovisuals. This 90 minute video covers Stars, Nebulae, Galaxies, Hubble Space Telescope, History of Astronomy and Australian Astronomy.

JUST FOR STARTERS

AURORA SEEN

Marty Rudd reports that he saw a beautiful aurora on Thursday morning 5th October. It extended between approximately 12:45am and 1:30am (AESuT) and was observed from his backyard in Somerville. Marty said that he "was lucky to do so as was about to go to bed but decided to have one last smoke. I usually go out the back but for some reason went out the front of the house for it. I noticed that it was very bright in the south and started to wonder if it may be the start of an aurora display. My question was answered in about five minutes as huge beams of light began to rise from the horizon. Over the next 45 minutes the sky turned quite red with hints of blue and green. It was quite a display. I took about twelve photos but haven't had them developed yet".

VISIT BY GRAHAM BLOW FROM WELLINGTON

On October 2, Graham Blow, the Director of the Royal Astronomical Society of New Zealand's Occultation Section, was in Melbourne for a few days. After a number of last minute emails and phone calls by Peter Skilton and Alfred Kruijshoop, an informal meeting of nine regular observers of occultations was arranged to catch up, drawn from the ASF, ASV and LVAS societies. Graham was formerly the director of planetarium shows at New Zealand's Carter Observatory, and co-ordinates occultation observations for the Southern Hemisphere. These cover minor planets, Jovian and Saturnian satellites, lunar occultations, solar eclipses and lunar grazes).

Aside from seeing what each other actually physically looks like, the gathering proved useful for trading war stories at the telescope in remote areas, and discussing the likely fate of the much utilised VNG time signal service and the usefulness of other more distant time signals or even GPS satellites.

IN THE NEWS

CLOSE CALL FOR SPACE SHUTTLE

Prior to the recent launch of Space Shuttle Discovery, the so-called ICE team fortunately spotted a problem. The purpose of the ICE team is to go onto the launch pad just prior to launch when all tanks have been stocked with their cryogenic fuels, and perform a last-minute inspection. Needless to say, this is a voluntary job as it is highly dangerous (both for asphyxiation and for explosion), and the engineers involved have to know just about every nut and bolt on the space shuttle and pad.

On October 10, the team found a stray 4-inch pin near the shuttle's external fuel tank while using binoculars to scan the launch pad. The discovery delayed the shuttle mission 24 hours, allowing the team to retrieve the pin and clear the shuttle for a safe launch. If not removed, the pin could have damaged the space shuttle's thermal protection tiles used for re-entry back to Earth from orbit, or could have been sucked into one of the main engines during launch, with devastating consequences.

UNEXPECTED BLACK HOLE

There's new evidence the universe is home to a type of black hole that's not too large and not too small. As black holes go, it's a middleweight that may represent the missing link between its flyweight relatives and the super-heavyweight variety found at the centre of most galaxies.

Using NASA's Chandra X-ray Observatory, several groups of scientists have zeroed in on a mid-mass black hole located about 600 light years from the centre of galaxy M82.

The black hole found in M82 packs the mass of at least 500 suns into a region about the size of the Moon. Such a black hole would require extreme conditions for its creation, such as the collapse of a "hyperstar" or the merger of scores of black holes. This black hole might eventually sink to the centre of the galaxy where it could grow to become a supermassive black hole.

Although previous X-ray data from the German-U.S. Roentgen Satellite, and the Japan-U.S. Advanced Satellite for Cosmology and Astrophysics (ASCA) satellite, suggested that a mid-mass black hole might exist in M82, the crucial breakthrough came when astronomers compared the new high resolution Chandra images with optical radio and infrared maps of the region. They determined that most of the X-rays were coming from a single, bright source.

Repeated observations of M82 over a period of eight months showed the bright X-ray source gradually peaking before dimming. Another critical discovery was that the intensity of the X-rays was rising and falling every 600 seconds. This flickering of the X-ray intensity is similar to the well-studied characteristics of black holes swallowing gas from a nearby star or cloud.

Observations with Japan's Nobeyama Millimetre Observatory have revealed a large expanding superbubble of gas centred on the mid-mass black hole in M82. The energy of several thousand supernovae would be required to produce such phenomena.

In the past, our Milky Way galaxy could have produced mid-mass black holes during periods of vigorous star formation. Hundreds of these massive black holes may exist unseen in our galaxy, in addition to the dozen or so known stellar black holes and the supermassive black hole that is safely confined to the galaxy's nucleus.

LARGEST-EVER OZONE HOLE OBSERVED OVER ANTARCTICA

NASA has reported an Antarctic ozone hole this year that is three times larger than the USA - the largest hole ever observed.

Observations were taken with the Total Ozone Mapping Spectrometer (TOMS) instrument aboard NASA's Earth Probe (TOMS-EP) satellite. The hole expanded to a record size of over 28 million square kilometres on September 3. The previous record was approximately 27 million square km in 1998.

The ozone hole's size currently has stabilised, but the low levels in its interior continue to fall. The lowest readings in the ozone hole are typically

observed in late September or early October each year. This ozone depleted air then wafts over the southern parts of Australasia later in the year.

These observations reinforce concerns about the frailty of Earth's ozone layer. Although production of ozone-destroying gases has been curtailed under international agreements, concentrations of the gases in the stratosphere are only now reaching their peak. Due to their long persistence in the atmosphere, it will be many decades before the ozone hole is no longer an annual occurrence.

Ozone molecules, made up of three atoms of oxygen, comprise a thin layer of the atmosphere that absorbs harmful ultraviolet radiation from the Sun. Most atmospheric ozone is found between 10 and 29 kilometres above the Earth's surface.

Scientists continuing to investigate this enormous hole are somewhat surprised by its size. The reasons behind the dimensions involve both early-spring conditions, and an extremely intense Antarctic vortex. The Antarctic vortex is an upper-altitude stratospheric air current that sweeps around the Antarctic continent, confining the Antarctic ozone hole.

The message is still slip, slop, slap this Summer.

SHUTTLE MAIN ENGINE CONTAMINATION

A test firing of the Space Shuttle Main Engine in June failed when the engine overheated. It has been revealed that 24 square inches of special duct tape was left behind inside the engine fuel system during assembly, passing all normal inspection routines.

The tape came to rest on the fuel and oxygen preburner injectors, with the majority of the tape in the fuel preburner. The tape blocked the multiple fuel-inlet holes causing an oxygen-rich mix, which within 5 seconds increased temperatures beyond the engine's safe operating limits and melted some components upstream of the engine fuel pump.

Fortunately, the shuttle's main engine shut down when it sensed a temperature that exceeded the safe

limits. There was no crew involvement in this test firing of the engines.

FEATURE

THE DISH

The Australian movie, *The Dish*, is currently breaking local box office records, having long ago surpassed what *Crocodile Dundee* achieved in Australia decades ago.

For those with an interest in the Parkes radio telescope and the moon missions, this is really a very good movie. Sure, it doesn't have the glitzy megadollar special effects and stunts that we've all come to expect from American-issue productions these days, but rather it succeeds because of its simplicity.

The story revolves around the recollections of a retired director of the Parkes radio telescope in NSW, played by Sam Neill, who is recalling the days of the Apollo 11 mission when Parkes was pressed into service by NASA for tracking the LEM-Command Service module to the moon and relaying the television pictures and telemetry from the lunar surface. Due to an alteration in the moon walk schedule for Neil Armstrong and Buzz Aldrin, the Southern hemisphere was the only place able to receive the signals, and so Parkes became an integral part of the communication processes as the world watched and waited for those first steps.

The movie was made by the same people that made *The Castle* and on television *The Panel*, though it bears little or no resemblance to either of these.

Would I take young children along to see it? Personally not, due to the occasional coarse language, and this was my only complaint of what would otherwise be a good family afternoon out.

With the Olympics over and done with, where we showed the world how good Australians are at organising an impossibly complex event, and pulling it off seemingly flawlessly, comes a movie that also shows Australians thrust into a position where they are given tremendous responsibilities and end up pulling it off successfully. The story conveys the sense of urgency and downright determination of the fairly ordinary individuals concerned to

succeed in the middle of a sheep paddock.

Some wonderful scenes from the movie show the playing of cricket actually on the surface of the Parkes parabolic dish (I'm envious), and riding the dish upwards from a position when its edge is just about on the ground. Throughout, archival footage from the era is interleaved for reality, and as a further touch the music is contemporary from 1969.

There are plenty of touch and go moments, which are probably full of artistic licence rather than historical accuracy, though the dish did indeed receive the pictures from the lunar surface amid very high winds, above the safe design limit of the antenna. Of course, Honeysuckle Creek also played a very considerable role, however, this was not a documentary as such and so many details are understandably left out.

For me this film was especially close to home as I was fortunate enough to have lived through the event while at Primary school and it is therefore more than just history. I would thoroughly recommend this film to all members and their families.

Peter Skilton

ASTRONOMY 2001 IS HERE

Orders for the 2001 edition of the excellent and highly popular annual sky almanac *Astronomy 2001* will be taken at the November general meeting, or to Peter Skilton on (03) 9776 5898. Price is \$18 to members, or \$20 to non-members. Ordered books can be collected at any society get-together, viewing night or monthly meeting, or by special arrangement with Peter.

Why not order an extra one as a Christmas present for someone special to you?

As in all previous years, remember that all profit made on the sale of these books supports your society library for purchase of all books, videos and other material, so please don't purchase these elsewhere - support the growth of your Society instead.

FUN WITH APERTURE MASKS

Would you like your reflector or SCT to work properly on those nights when stars are blobs? Would you like a telescope with close to the performance of an apochromatic refractor, but at a small fraction of the price? Well, if you have a reflector or SCT it will cost you a few dollars to achieve. Basically, all you need to do is to make up an aperture mask (i.e. a mask with a hole in it, that goes over the front of your scope).

The idea is to reduce the aperture of your scope, such that the hole is clear of the secondary mirror and of the spider vanes. On around 60% of poor viewing nights, when the stars are blobs and the planets look awful, using an aperture mask gives a pretty decent image (even though it may jump around a bit). Such masks also supposedly make it easier to see star colours in double stars, something that I can't confirm.

In my 8 inch Celestron, a mask gives me a clear unobstructed 66mm aperture. The images I get are much better than what I achieve with my 80mm refractor. In my 14.5 inch reflector, I can get an unobstructed aperture of 5.8 inches. The images are nice and sharp.

I asked a knowledgeable gentleman named Ken at the ASV what the difference would be between the view in an apochromatic refractor and that through a masked reflector. He stated that, in his opinion, the images would be very close. He stated that the only differences arose from tube currents and field curvature in the reflector. He convinced me of this with some pretty comprehensive optical ray diagrams. (Isn't it odd how both the ASV and ASF have as members, knowledgeable gentlemen named Ken).

The material I use for my masks is black plastic from large art folders. I firstly cut a long strip to go round the scope, which I secure with tape. I cut out the front of the mask, and attach it to the strip with either black insulation tape or black packing tape. The mask then easily slides on and off the scope.

Binocular Masks

In the past I've felt that 7x50 binoculars are a bit too bright when used in a light polluted back yard. As such, I started using 10x50 and 7x35 binoculars instead. I now realise that all I had to do was make up some

aperture masks for the 50mm binoculars, to effectively make smaller binoculars.

I recently made up a pair of aperture masks for my 7x50 Fuji binoculars, such that they are 7x40 binoculars. There was no perceptible difference in my backyard, but there was at the dark sky site where I observe. To my astigmatic eyes, the masked image had more contrast and was sharper and was less bright than the unmasked image. I couldn't figure out which view I preferred. Anyhow, it's nice to have a choice.

Aperture masks are one of the cheapest and easiest accessories to make, for both telescopes and binoculars. Yet, while amateurs constantly manipulate the aperture of camera lenses to sharpen images, they don't do so for astronomical objects, which could benefit from such reduction at certain times. I think that they're worth playing around with.

Renato Alessio

DO YOU HAVE ANY OLD SKY PHOTOS OF CRUX REGION?

Australian astro map maker, Mati Morel, is asking all societies throughout Australia if any members have any old photos or slides taken of the Southern Cross region between 1960 and 1980 at latest.

The aim is to search for past sky photos showing a possible bright nova in Centaurus that has been missed up until now. The magnitude 7.0 star, which doesn't appear in any star catalogue, is not a plate flaw or defect. The position is (J2000) 13h 27m 34.04s right ascension, -54d 18m 51.7s declination. This places it just 15 arcmin south of the variable star DY Cen, or 2 degrees south west of Epsilon Centauri, and no known nova or other type of eruptive variable star is catalogued near this position.

Unfortunately, the only known record of the event so far is a single, undated, photograph from La Plata Observatory in Argentina sometime from 1961 to 1971. In order to confirm the discovery, Mati is after probably a wide-angle photo or slide that you may have stored away of the region just north of the line connecting alpha/beta Centauri and Crux. The exposure will most likely have been taken without a

telescope, but with a wide open lens of, say, a 35mm standard camera and time-lapse.

It is possible that the nova may have been accidentally recorded when bright by an astrophotographer making an exposure of this very recognisable part of the southern Milky Way. Wide angle exposures are more likely to have included the region north east of the Southern Cross.

Therefore, please examine any astrophotos you've taken back to the 1960's near the Southern Cross region, and look for a "new star" just 2 degrees SW of Epsilon Cen. Dates/times are very important if you have them. Mati is keen to hear from anyone with old exposures of this region, even if they find nothing, as this puts constraining dates on any appearance, particularly if an estimate of the limiting magnitude of the photograph can be obtained.

He is not after a copy of the prints, just a simple report of your archive findings. Mati can be contacted at 6 Blakewell Rd, Thornton, NSW 2322 and by email at morel@ozemail.com.au and by phone at (02) 4966 2078

LOOKING FOR ET

The tally of users around the globe that are using their computer screen savers to search for extraterrestrial signals from deep space is well over the million mark, and covers most countries. The supplied screen save program downloads radio signals from the Arecibo radio telescope in Puerto Rico and analyses them for the presence of an unusual signal whenever the screen saver is activated. You can find out more on the internet at <http://setiathome.ssl.berkeley.edu>. Australia ranks in there, and if you do enough parcels of processing you could see your name on the top tally list.

SPECIAL BUSINESS FOR ANNUAL GENERAL MEETING

In accordance with our constitution, please be advised that a special resolution will be put to the 2000 Annual General Meeting to adjust the annual membership rates as below. This increase unfortunately has been necessary due to underestimation of the impact of the government's GST tax on

the running of the Society, for example in the area of our compulsory public liability insurances.

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

In addition, for any late renewal that is more than 2 months overdue, a new additional administrative fee of \$4 is being introduced. For most members, your mailing label for each edition of *Scorpius* indicates the renewal month and year. The society aims to have all members renew in January each year to avoid prolonged administrative follow-up time and costs. For members whose subscription already extends into 2001, the Treasurer will pro-rata your existing subscription fairly. You should endeavour to provide a renewal amount that will go to the end of 2001. The Treasurer (refer to front page) can advise you of the amount.

Nominations for positions on the 2001 Committee of Management for the Society are still open up until 7 days before the AGM. Should positions still be vacant, our Constitution allows members present at the AGM to be nominated on the night for the unfilled vacancies. Please don't be bashful about coming forward to offer your talents to Committee.

FROM AROUND THE PLANET

Leading Astronomical Societies exchange each other's newsletters to assist in sharing items of interest. This column grabs some of the highlights of recent receipts. You can find out more in the library collection.



Latrobe Valley Astro. Soc. (Vic) – Planning to build a 4 metre observatory, with working bees being used to pour its slab. They provided great praise for the previous VASTROC conference that we ran in Mt.Eliza last year. Membership is currently 36.

Ballaarat Astro. Soc. (Vic) – One new member built a 20cm telescope from scratch taking 10 months to complete the task. Another is starting on a 14.5 inch mirror blank. They are designing the Federation Observatory via an architect, for the 16 inch telescope

funded by the Federation grant. Four trees have been removed for this already. The primary mirror has had its hole bored and the secondary mirror is being ground. They are having possum problems in the 26 inch telescope roof, where holes are being chewed. Articles provided on the history of weather forecasting, and on the life of Galileo.

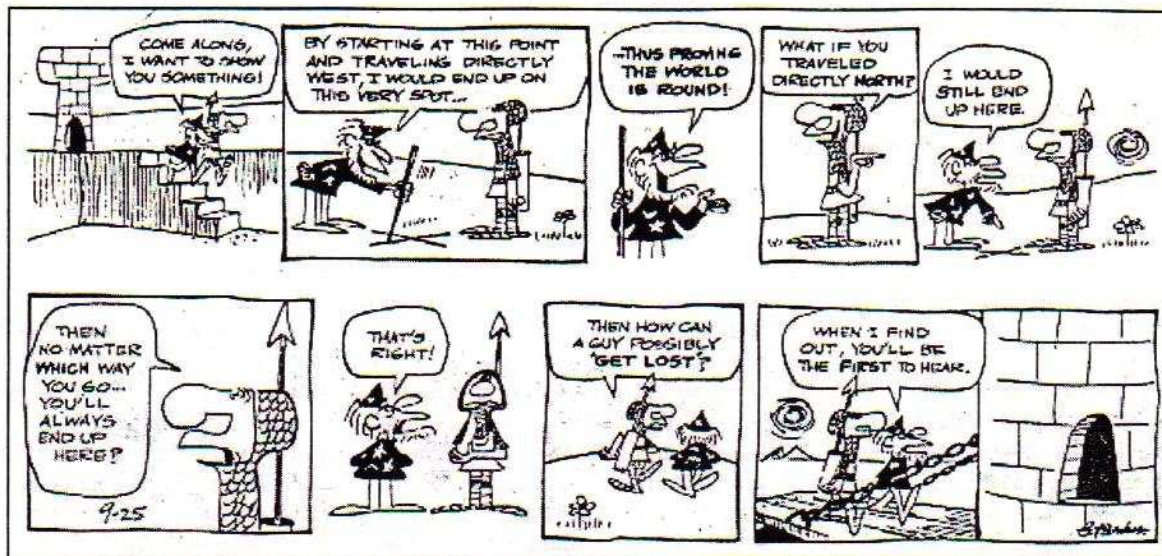
Sutherland Astro. Soc. (NSW) – They have increased fees to cater for GST impact. One member has two impressive plaques: one for the discovery of a comet, and the other for the discovery of a nova, both as an accidental byproduct of observing variable stars regularly.

Astro. Soc. of South West (WA) – The new street light near to their observatory will now be changed to yellow sodium ones. The Vodafone tower next to them has installed movement-activated white mercury security lights and extra mobile phone transmitters. Membership is 33, and they continue to do numerous school and public outreach viewing nights with well organised rosters. They have begun a satellites section for interested members.

Astro. Soc. of NSW (NSW) – Lengthy article on total solar eclipses and how best to see them, based from a six'er who has been to half a dozen already. All about alpha Centauri, including a comprehensive chronology of its observations throughout history. The society has moved their library to be located at their observing site for greater access by members.

Astro. Soc. Tasmania (Tas) – Their 16 inch domed telescope is now available for member use, and it has an adjacent society metal roll-off roof observatory. They are thinking of publishing their newsletter on their website. One member attempted to navigate a boat for 11 hours entirely by navigation means available to the ancients. Did he make it? The society has raised membership fees to cover GST. Membership currently stands at 85.

Astro. Soc. South Australia (SA) – They now run a dark-sky roll-off roof observatory at Douglas Scrubs that they lease from the Girl Guides Association. It houses a 40cm Dobsonian instrument. Membership is 496. Article on the Southern Cross and how its appearance in the sky will change over time.



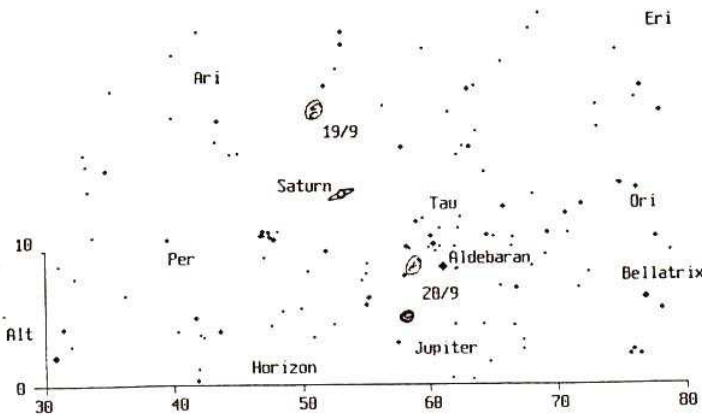
If **undeliverable**, please return to
 Astronomical Society of Frankston Inc.,
 PO Box 596, Frankston, Victoria 3199.

If your name and address details have changed or are incorrectly shown on this label, please send your updated details to the above PO Box number.

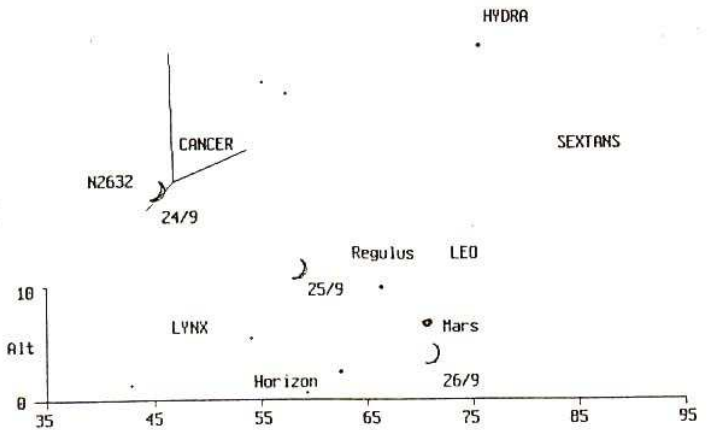
Kindly reproduced by Ken Bryant and collated/posted by Sally Zetter.

SKY FOR THE MONTH 20 SEPTEMBER - 17 OCTOBER (INCLUSIVE)

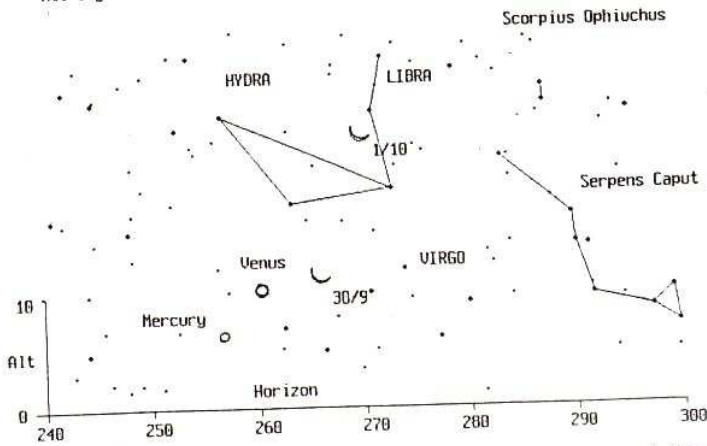
1 40 am Dark Sky 20th September 2000 Summer Time
 U1.00 (c) Bob Heale 18/4/99
 All objects no fainter than 5 1 X Sky View



Mars 6 40 am 2/3 Dawn Sky 25th September 2000 Summer Time
 U1.00 (c) Bob Heale 18/4/99
 All objects no fainter than 3 1 X Sky View



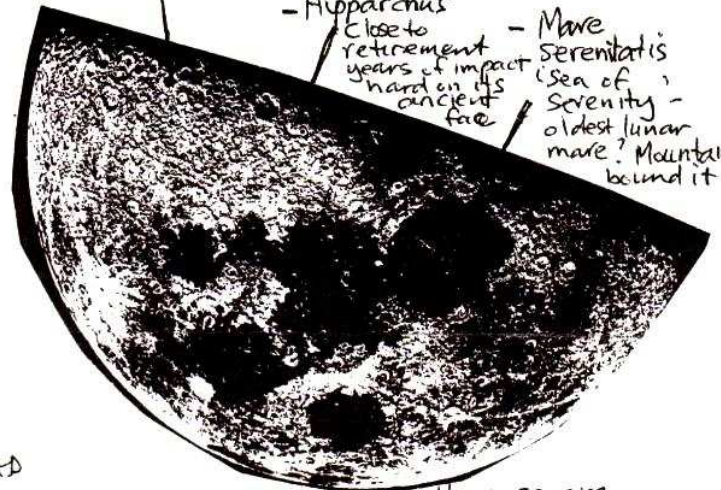
8 50 pm Dark Sky 30th September 2000 Summer Time
 U1.00 (c) Bob Heale 18/4/99
 All objects no fainter than 5 1 X Sky View



- Alacensis rides terminator on 1st Quarter night
 Paired with Werner - a deep lunar pothole. Sharp
 crater walls plummet to dark smooth floor

- Hipparchus
 Close to retirement
 years of impact
 hard on its
 ancient
 face

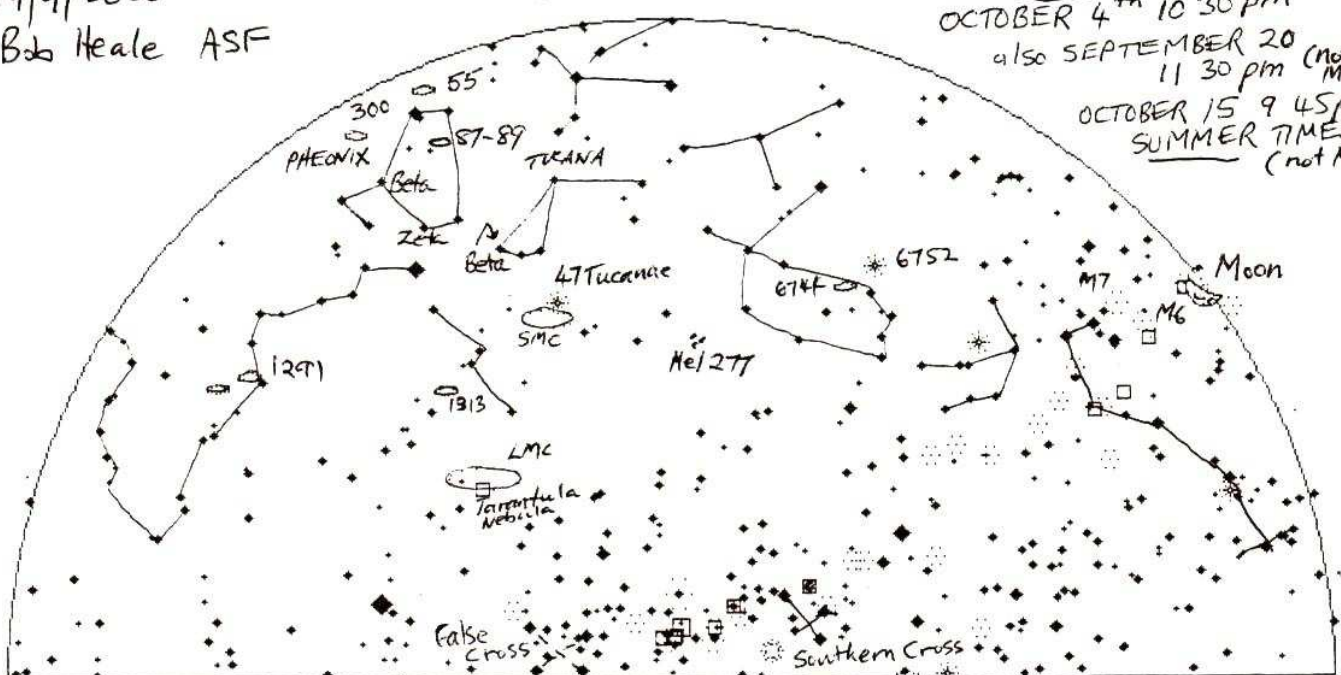
- Mare Serenitatis
 (Sea of Serenity -
 oldest lunar
 mare? Mountains
 bound it



19/9/2000
 Bob Heale ASF

OVERHEAD

OCTOBER 4th 10 30 pm
 also SEPTEMBER 20 11 30 pm (not Moon)
 OCTOBER 15 9 45 pm
 SUMMER TIMES (not Moon)



EAST SCULPTOR NGC 55 mag 8 irregular galaxy, the 'pen light galaxy'. Beta Pheonix is a medium telescope multiple system, so too is Zeta Pheonix. Galaxy group NGC 87-89 and 92 is a challenge to deep skyers. Anyone seen NGC 300? Beta Tucanae is a small telescope triple, Beta 1 and Beta 2 being 27" apart mags 4.4, 4.5 and yellow. PAVO'S NGC 6752 is an easy globular cluster, galaxy Ngr 6744 needs small-medium scope. Mel 277 is a wide open cluster.

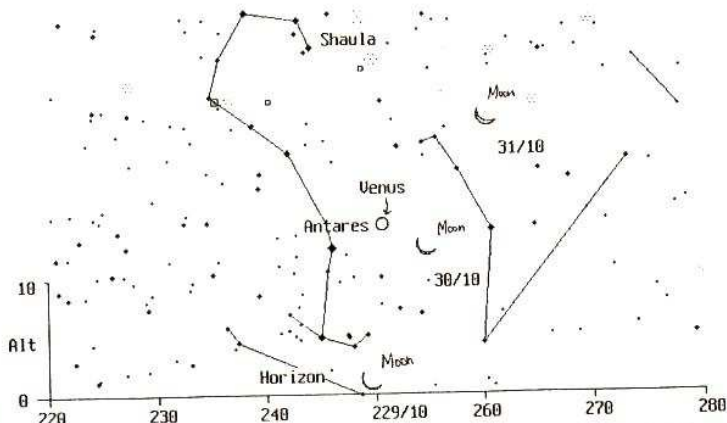
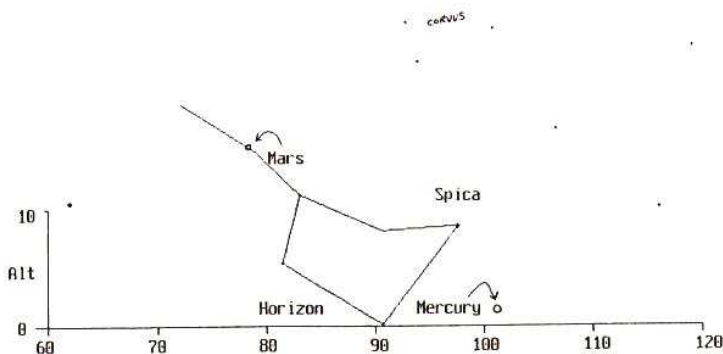
SOUTH

WEST

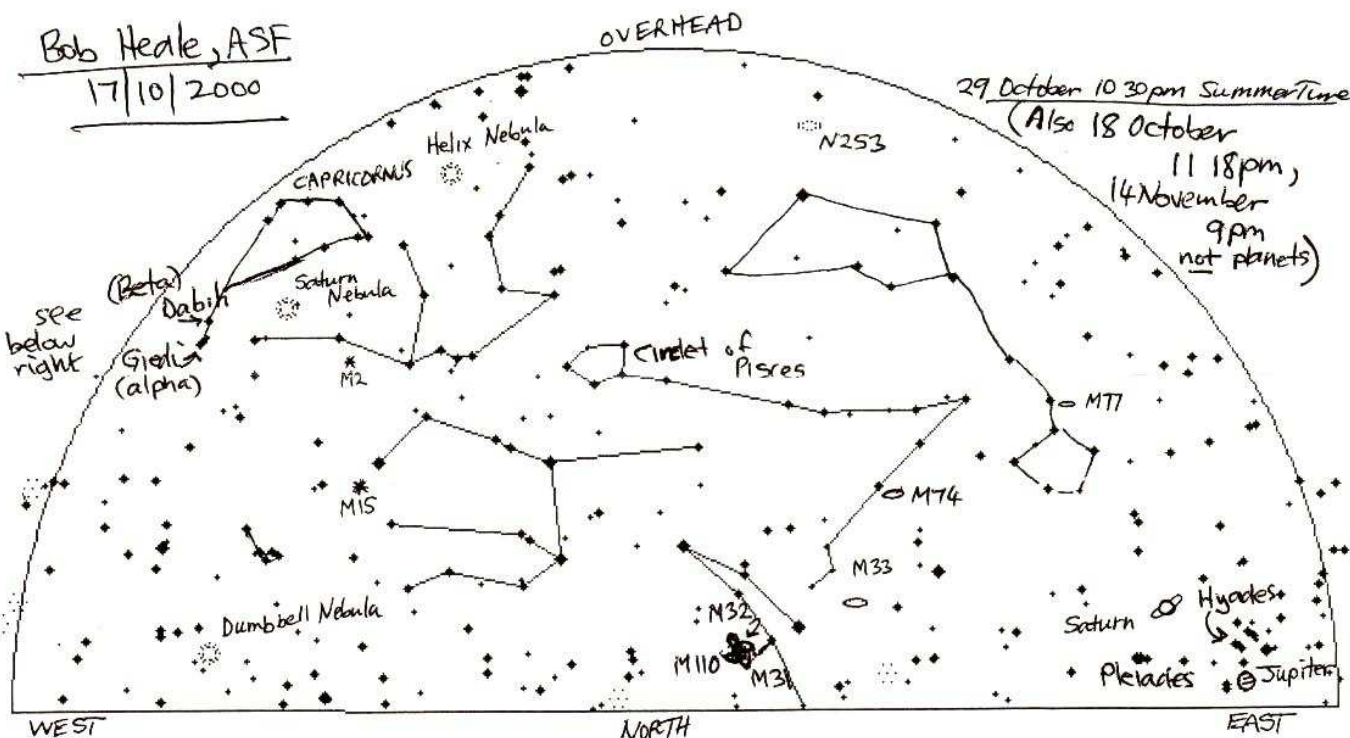
SKY FOR THE MONTH 18 OCTOBER - 14 NOVEMBER (INCLUSIVE)

5:30 am 2/3 Dawn Sky 11th November 2000 Summer Time
 V1.00 © Bob Heale 18/4/99
 All objects no fainter than 3 1 X Sky View

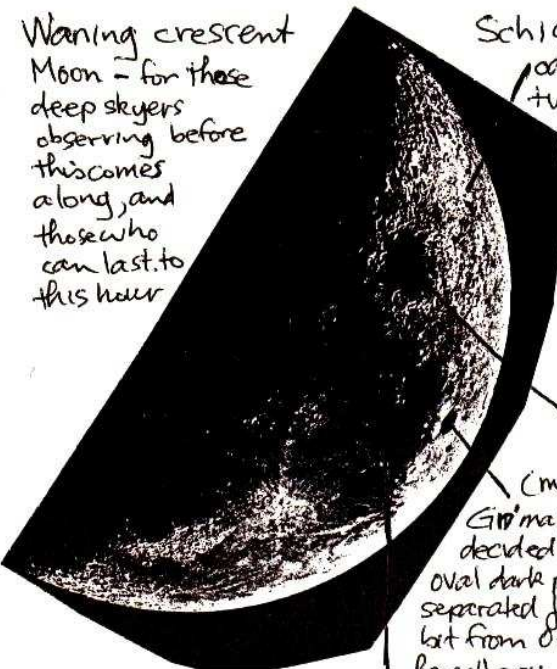
9:30 pm Dark Sky 30th October 2000 Summer Time
 V1.00 © Bob Heale 18/4/99
 All objects no fainter than 5 1 X Sky View



Bob Heale, ASF
 17/10/2000

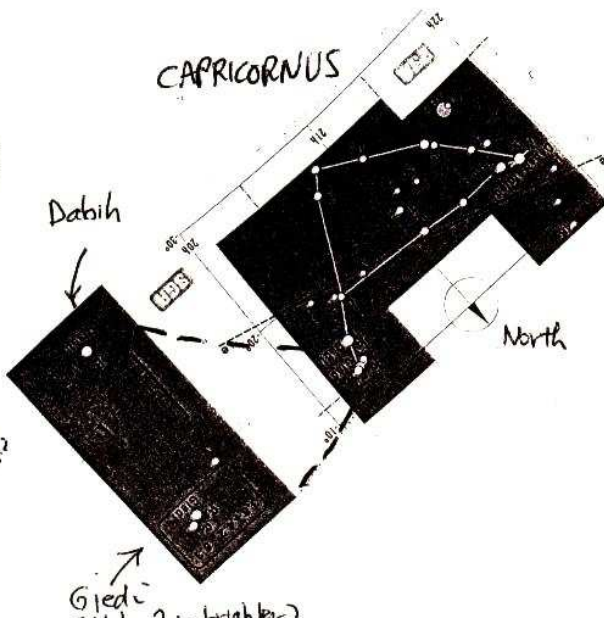


Waning crescent Moon - for those deep skyers observing before this comes along, and those who can last to this hour



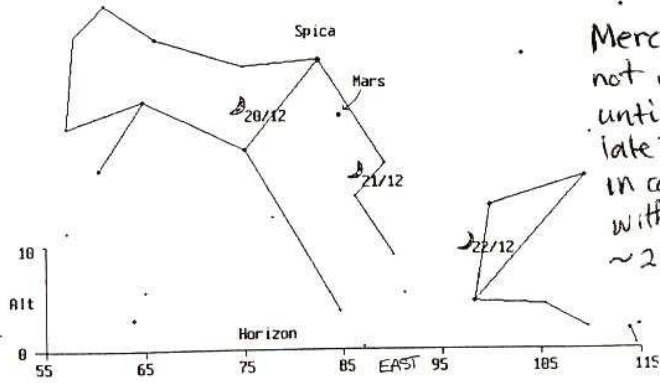
Schickard (I hope) oddly shaped floor, two darker regions sandwiching higher, brighter plateau; striking under right lighting conditions

Sea of clouds unusually dark floor (minor blemishes seen thru' binocs)
 Geminidic decidedly oval dark patch separated just a bit from Oceanus

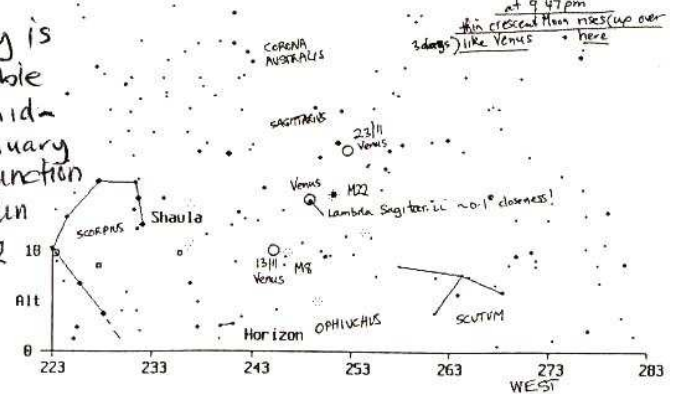


SKY FOR THE TWO MONTHS 15 NOVEMBER 2000 - 16 JANUARY 2001 (INCL)

4 30 am 4/5 Dark Sky 21st December 2000 Summer Time
 U1.00 (c) Bob Heale 18/4/99
 All objects no fainter than 4 1 X Sky View



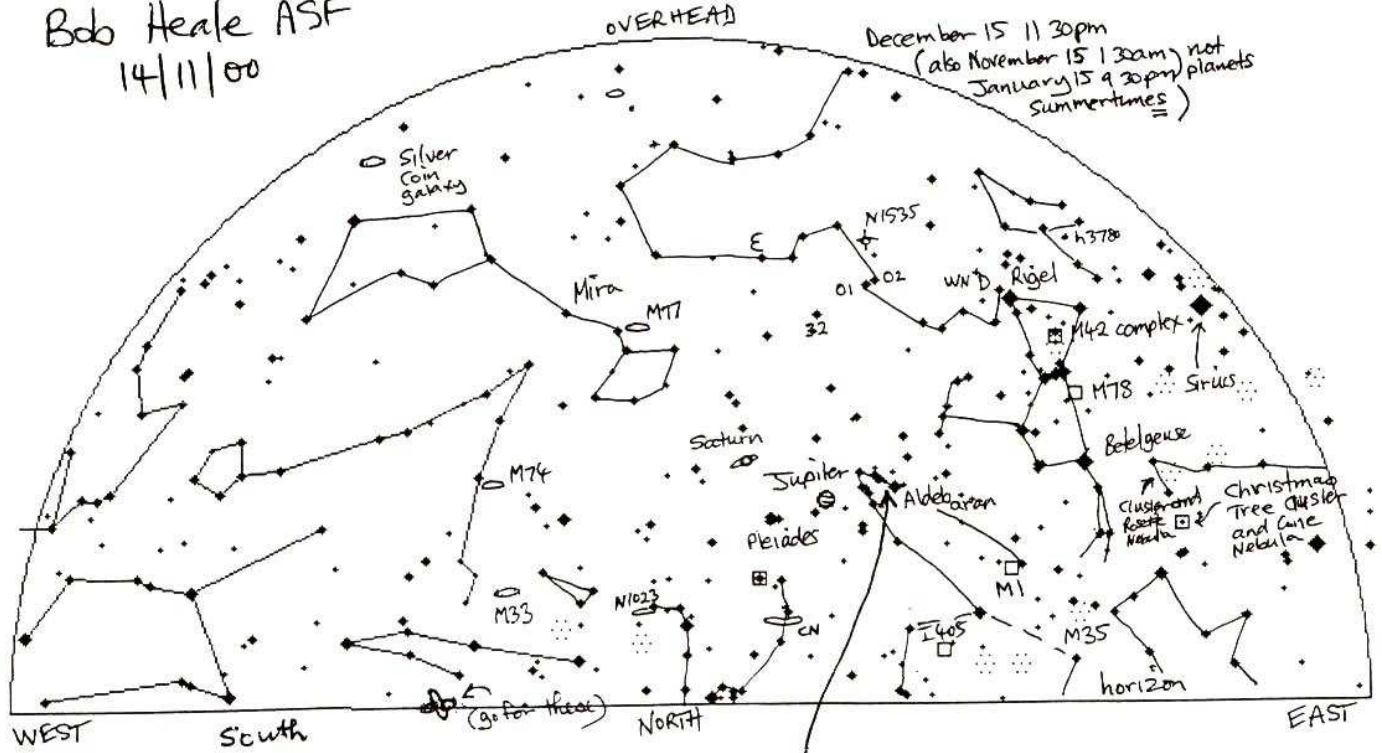
10 00 pm Dark Sky 18th November 2000 Summer Time
 U1.00 (c) Bob Heale 18/4/99
 All objects no fainter than 5 1 X Sky View



Mercury is not visible until mid-late January in conjunction with Sun ~ 25/12

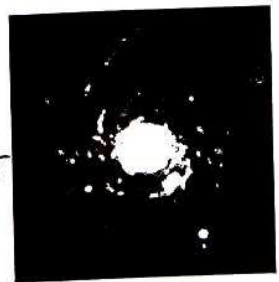
10 days later at 9:47 pm this crescent Moon rises (up over 3 days) like Venus here

Bob Heale ASF 14/11/00



December 15 11 30pm (also November 15 1 30am) not January 15 9 30pm planets summertimes

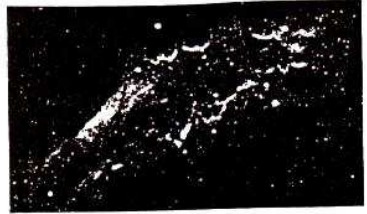
M77 - NGC 1068 is a spiral galaxy of SB type 9.0 mag. at a distance of over 50 million light years. It belongs to the so-called Seven galaxies with very intensive radio radiation from the nucleus.



M77 near Mira North

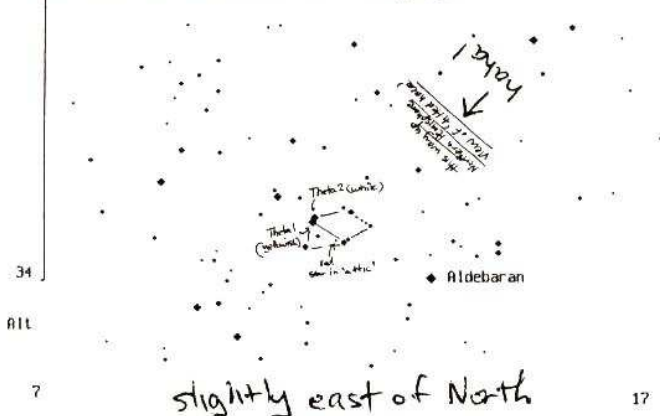
CN California Nebula (Dark sky and filter on binocs?) below Pleiades

Diffuse nebula NGC 1499 - The California Nebula. Apparent dimensions 145 x 40, distance about 2,500 light years.



North

Theta Tauri - 'little tilted house' U1.03 (c) Bob Heale 18/4/99 All objects no fainter than 8.5 1 X Sky View



slightly east of North