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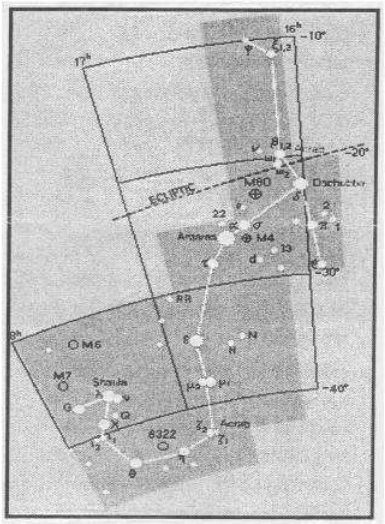
The Journal of the Astronomical Society of Frankston Inc.

RegNo: A268 *ABN: 34569548751* *ISSN: 1445-7032*

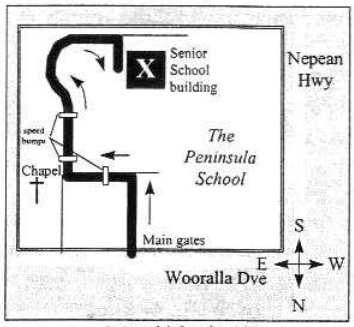
Volume XI, No. 5 (Sept 2002)



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 Mail: P.O. Box 596, Frankston 3199, Victoria, Australia
Internet: http://www.asfnet.20m.com
E-mail: aggro@peninsula.starway.net.au

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

FUTURE EVENTS

General Meetings:

WED 18th September 2002
Session 1: Russell Thompson: 'The Universe in a Nutshell, Pt 2: Beyond the Solar System.
Session 2: Video: BBC's *Space, Pt 1: Life*, narrated by Sam Neill
Session 3: Informal interaction

WED 16th October 2002
Session 1: Peter Lowe: The History of the Development of the Telescope.
Session 2: Video: BBC's *Space, Pt 2: Survival*, narrated by Sam Neill.
Session 3: Discussion on future developments in the A.S.F.

Viewing Nights:

Members Only:

NOTE: Members nights are also now held on Fridays!

Sept 6th/7th and 13th/14th, all at The Briars, Nepean Hwy, Mt. Martha.
Oct 4th/5th and 11th/12th, all at The Briars, Nepean Hwy, Mt. Martha.

New attendees must always confirm with **David Girling** on 5975-6506 or 0421 452 428 before attending. Remember for security reasons you can only attend on planned Members' Nights, unless by prior arrangement with David 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. All events commence at 8pm unless otherwise stated.

THU Sep 12th – Baxter Primary School (Melways 107 G5). Around 100 students expected. Four or five scopes will be needed.

The once-a-month basic public viewing nights at *The Briars* will continue on the first Friday of each month. The next nights are 6th September and 4th October, all at 8pm. Assistants are required. New members are welcome to watch and participate if desired.

Remember the Society's 8 inch telescope, 80mm refractor, and binoculars are available for loan to financial members. Please note that the society's telescope/binocular lending scheme has changed slightly. Anyone wishing to arrange the loan of a telescope or pair of binoculars should now either ring Russell Thompson at home (9787 0079, after 19:30), or speak to him at a meeting to arrange the loan of the equipment. It should be noted that loan equipment will now no longer be brought to general meetings unless this is part of the pick up arrangement.

YOUR SOCIETY

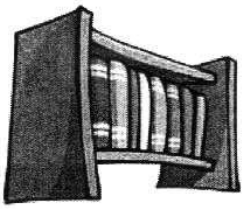
News, Events and Member Contributions

Welcome to the following new members:

Sue & James Everard
Charlie Holmes
Roland Knabe
Helene & Clarrie Rowdon

Current number of members is 170.

DONATIONS TO THE LIBRARY



The following new arrivals are available in the Library:

Brendon Elliget has kindly donated a CD ROM titled *Visions of Saturn*, being images from Voyager 1 and Voyager 2 in GIF format.

Tanya Hill has kindly provided a copy of her astronomy PhD thesis from Sydney University titled *Starburst or Seyfert? Investigations of the Activity in Narrow Emission-Line Galaxies*.

If you are interested in borrowing one of these, please contact the librarians Andrew Thornton or Jane McConnell who are busily cataloguing our collection.

Coming Up: Equinox Dinner

The ASF will be holding an Equinox Dinner at the Foodstar Restaurant, an 'all-you-can-eat' establishment on Nepean Hwy, Frankston (near the Ambassador Motel), Melways Ref 100A D1.

The dinner will be on Friday 20 September, starting at 6.30pm. The price is $15.90, with discounts for children. Our family can recommend it, having been there several times. Please note that I have made the booking in my name, as that was Foodstar's preference.

John Cleverdon

David Malin to speak at Monash

Astrophotographer David Malin will be giving a free public lecture at Monash Uni as part of their annual science series, on Thursday November 14th at 8pm in Lecture Theatre S5 at the Clayton Campus.
No title is available yet.

Looking Ahead to December

DEC 4 Solar Eclipse: The ASF is looking at organising a solar eclipse viewing afternoon/night sky evening at Seawinds park on top of Arthurs Seat for the public. Apparently it will be about 70% coverage from here, and the altitude should prove useful. Starting time will be 6:30pm. Stay tuned for details.
DEC 14 Xmas BBQ: Mark it in your diaries and… stay tuned!

Position Measurement at the Briars

At the Telescope Learning Day (TLD) on Saturday June 22 I took the opportunity to make an accurate measurement of the geographical position of the Briars observing site. This was done using a Garmin Etrex Legend GPS receiver. The measurement was made at the centre of the exposed portion of the lower slab, the part not covered by the shed.

GPS measures position by timing signals from a number of dedicated satellites. The initial position is calculated relative to the centre of the Earth about which the satellites orbit,

and must be recalculated to the Earth's surface. This involves the use of a mathematical model of the shape of the Earth, or the "geoid", used to specify the datum. That commonly in use is the World Geodetic Survey of 1984, WGS 84.

The position given by a GPSR depends on the quality of the signal received from the satellite. The indicated position varies as the information received is updated and for accurate measurement it is necessary to average the readings over a suitable time period. Most GPSRs have the ability to create a "track", recording a series of positions either automatically or at defined intervals of distance or time. To make a position average at a fixed point the track recording is set to a time interval, in this case 1 minute. The receiver was allowed to record the "track", without being moved physically, for a period of 70 minutes. The saved track was downloaded to a PC using a program called G7TOWIN and transferred to an Excel spreadsheet. G7TOWIN can display the positions as either Degree Minute Seconds or Degrees.Decimal. The latter format makes it easier to manipulate the data, and results can be converted back to DMS if needed.

The raw data consists of a series of measurements, each comprising Latitude, Longitude and Altitude. The average and standard deviation of each was calculated and converted to DMS format. The accuracy of the measurement was also calculated in metres. Any position can be set in a GPSR as a "waypoint". The Etrex Legend also allows one to project a waypoint for a selected distance and direction. Projecting for one kilometre

both due north and due east allows calculation of the "scale" in metres/arcsecond, and thus the standard deviation in metres. The scale factors are: -

Latitude 1 sec = 30.9 m
Longitude 1 sec = 24.3 m

These can also be used to calculate accurate positions for other points on the site. The final result is:-

Latitude = -38 deg 16 min, 22.73 +/- 0.07 sec (+/- 2 metres)

Longitude = 145 deg 2 min, 29.53 +/- 0.08 sec (+/- 2 metres)

Altitude = 57 +/- 3 metres

Comments on accuracy

The error quoted here is the RMS value of the readings taken on the day. There are other factors that also reduce the accuracy of measurement, such as variation in the position of the satellites. The effect of this is that the positions quoted above are probably accurate to between 5 and 10 metres. A further series of measurements on different days and at different times could refine this, but for the above should be sufficiently accurate for any work undertaken from this site in the foreseeable future.

Roger Giller

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ASTRONOMY IN THE BIBLE

If you drag it out and dust it down, you will find some references to common stars.
Try Job Ch 38 v 31,32, and from Acts Ch 28 v 11-13 can you plot the course of the apostle Paul as he sailed from Alexandria to Rome? I will look for an answer for next Scorpius…

COURSES AT MT ELIZA COMMUNITY CENTRE

As we cannot get access to Mt Eliza Community Centre in early September, owing to my forthcoming heart surgery, my course on celestial sphere will have to be postponed to November or next year. Apologies to those involved.

Ian Sullivan

Editors Note: I'm sure all members wish Ian all the best with his surgery and hope for a speedy recovery.

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HELP KEEP THE AURORA NETWORK ALIVE AND FLICKERING

Due to trekking around on long service leave, Roger Giller is looking for a replacement to be Co-ordinator of the Southern Australia Aurora Alert Telephone Network. If you have access to a telephone, and are interested in helping keep this group of watchers of lights in the sky vibrant and active, then please get in contact with Peter Skilton. As we are now presumed to be leaving the 11-year solar maximum, the opportunity to spot aurorae should become less and less over time, so this co-ordinator role will not consume inordinate effort on your part. The main task is to issue changes to the list of participants as people arrive and depart from the list of telephone numbers (this list covers across astronomical societies, universities etc. If you have access to email, then you can additionally warn members of impending aurora by receiving updates yourself (though this is not a prerequisite for the co-ordinator role).

Recent Meetings

GENERAL MEETINGS

The July meeting on a cool and drizzly evening was highly unusual in that it was run in parallel with the visit of lunar astronaut Dr. Harrison Schmitt to the Mornington Peninsula at the same time. The Vice-President chaired a very informal gathering of about 20 members at the usual Peninsula School theatrette venue, and ran successfully, especially given that most regular speakers were elsewhere listening to the astronaut. Another 70 members and friends attended an entertaining dinner with Harrison Schmitt at the Mornington Racing Club. Meeting closed at the school at 10:15pm.

The August meeting was chaired by the President on a mild evening, and saw 52 members and visitors in attendance. This meeting was run in conjunction with the Federal Government's National Science Week and was advertised on their website. The meeting opened with one minute's silence for the passing of Ken Bryant, with David Girling adding a few words from Marion Bryant. The President then reported on the successful Harrison Schmitt visit the preceding month, and the IMAX cinema visit to Space Station for which two buses were arranged to transport those members unable to get there any other way. David Girling then fed back on the highly successful Telescope Learning day on 17th August, where members observed a giant equatorial sunspot on the solar disk for which there was a good likelihood of us receiving aurorae at our latitude, and continued late into the evening. The main talk was then started by Russell Thompson, delivering part one of his enhanced version of his Universe in a Nutshell, and concentrating on the Solar System. This was a wonderful powerpoint multimedia event, where the Martians won by crashing Russell's laptop whenever he ran a certain MPEG video file showing Mars' rotation. The remaining part two instalment further afield in the heavens will be next month's talk. The group then broke for the traditional teabreak, then reconvened. There was no second parallel video session as no volunteer could be found to set up the equipment in time (this is a hint for the approximately third of attendees who enjoy the video sessions regularly). About a third continued on with informal chats around instrument making in the cafeteria area, and the

remainder returned to the theatrette to hear Ian Porter deliver his What Goes Up segment, reporting on the now-lost Contour mission to rendezvous with a comet in deep space, and how the space shuttle fleet was grounded after fine fuel-line cracks were discovered on the launch pad by an eagle-eyed technician, and also on the recent successful test (the first in the world) of a hypersonic scramjet at Woomera in outback South Australia. Peter Lowe then followed by speaking on Astrology, illustrating his points by showing the audience the horoscope for Ian Sullivan for the night, and pointing out that the structures that civilisations have put around their explanations of the world around them (whether it be Astrology or Superstrings or whatever) depends very heavily on the available facts and experiences to hand, and whether these facts fit the model that someone wishes to further. In Bob Heale's absence, David Girling then delivered Bob's materials for Sky for the Month and distributed his handouts, which concentrated on the Moon this month. Alfred Kruijshoop then reported on the current irrevokable situation regarding the Federal Government's decision to close down radio VNG (the national time signal standard for Australasia which is widely used by astronomical occultation observers) on December 31 this year. Ian Sullivan then gave an exposee of the Williamstown, Sydney, Adelaide and Fremantle (a fake one) timeballs. Peter Norman showed the audience pictures he had taken from a recent visit to Europe where he and his wife Doreen visited the Nordlingen meteorite crater. This 15 million year old crater is 25 kilometres in diameter, and was 1 kilometre deep. The St.Georg church at Nordlingen was made from the impact site conglomerated materials in the year 1490, and Peter had to quickly climb its 350 steps before the tour bus left, and before he could hack an elicit sample from the walls. The meeting closed at 10:40pm.

PUBLIC VIEWING NIGHTS

The number of requested community viewing evenings has been down recently due to winter conditions, as you might expect.

However, Bruce Tregaskis spoke to the Mt Eliza Probus group of 70 men and women at the Frankston Return Servicemen's League during the daytime on July 5 and showed slides about space and the solar system. That same evening, Richard Pollard also spoke to 30 members of the public at The Briars under a half cloudy sky.

The public night on August 2nd saw about 20 people turn up on a nearly totally overcast evening at The Briars to hear Richard Pollard speak on space. Thanks to all those members who turned up with their telescopes or just to help with general support.

Space Station 3D: Houston, We Have A Problem

On the evening of July 27, several members of the ASF and their families headed off to Carlton to see the IMAX film, Space Station 3D.

Getting there would prove to be half the adventure.

As with previous outings, we utilised the services of the Frankston Council and their hire minibuses to get us there, and, initially everything was smooth sailing. I had decided to use Springvale Rd and CityLink, Don had opted for the Nepean Hwy option.
So off we headed, making good time for our 7:00pm session. However, as I approached Huntingdale Rd, my phone rang, and Phil took a call from Sally Zetter, which included the words "the bus has broken down!"

Fortunately, the bus had come to a halt opposite MacDonalds in Cheltenham so no one was about to starve. The RACV was called and the mechanic arrived as the second bus turned up to assist. Also, the problem wasn't terminal, it seems somehow the radiator cap had dislodged and all coolant was lost. A nearby service station had a replacement cap and using a few bottles of water we had the bus up and running within a few minutes. A quick call to the IMAX theatre secured seats at the 9:00pm session and once we had dragged everyone out of 'Maccas' we were on our way once more. After arriving in Carlton, we had to find a park. Being higher than your standard van the buses would not fit the access to the IMAX carpark, so in a scene reminiscent of the Keystone Kops we drove around the block, finally finding a place in a nearby street .

The film was fantastic (even second time round for me) and everyone agreed it had been well worth the drama in getting there. From the first shot of the station and Tom Cruise saying "what you're seeing is real" to the noisy debris pelting launch of a Soyuz , the spectacular launch of the shuttle Endeavour and on to the end credits, I'm sure everyone enjoyed the film thoroughly. Did anyone else see the yellow sign aboard the ISS? It read:

'Space Station Construction Zone: Speed Limit 17500 mph'

If you still haven't seen this film, I suggest you do, and soon!

Oh, and the trip home was relatively uneventful!

Richard Pollard

Telescope Learning Day #3

Yet another very successful TLD was held on 17th August at the Observatory site with about 25 attendees. This event was held in conjunction with a Lunar viewing night, this time the weather being a little more co-operative than on previous occasions. The upper slab was packed with scopes from the outset: it's always a buzz to see enthusiastic members, old and new, showing off their pride and joys.

The previous TLD had seen a little contest develop… who would be first to locate Venus in the daylight sky… and this event proved no different. It must have seemed a puzzling sight to anyone passing by: ten or so people staring into the blue yonder proclaiming "there it is… wait… no, I've lost it."
The daylight hours also provided the opportunity to safely view Sunspot 0069, which had caused a bit of a stir due to it's tremendous size, last estimated to be around 42 Pacific Oceans! Of course, extreme care is required when using telescopes to

project solar images… I can still smell the smoking cardboard.

Richard Pollard

AstroNews

SATELLITES REVEAL A MYSTERY OF LARGE CHANGE IN EARTH'S GRAVITY FIELD

Satellite data since 1998 indicates the bulge in the Earth's gravity field at the equator is growing, and scientists think that the ocean may hold the answer to the mystery of how the changes in the trend of Earth's gravity are occurring.

Before 1998, Earth's equatorial bulge in the gravity field was getting smaller because of the post-glacial rebound, or PGR, that occurred as a result of the melting of the ice sheets after the last Ice Age. When the ice sheets melted, land that was underneath the ice started rising. As the ground rebounded in this fashion, the gravity field changed.

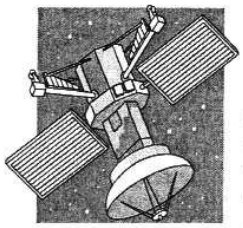
"The Earth behaved much like putting your finger into a sponge ball and watching it slowly bounce back," said Christopher Cox, a research scientist supporting the Space Geodesy Branch at NASA's Goddard Space Flight Centre.

Currently, the Earth has a significant upward bulge at the equator, and a downward bulge at the poles. "Observations of the Earth's gravity field show that some phenomena are counteracting the gravitational effects of PGR. Whereas PGR has been decreasing the bulge in the Earth's gravity field at the equator, this recent phenomena is causing the bulge to increase," Cox said. Such changes in the gravity field can be sensed using ultra precise laser tracking of satellites to observe tiny changes in the orbits of those satellites and by tracking changes in the length of day or rotation of the Earth.

Scientists believe movements of mass cause this recent change from the high latitudes to the equator. Such large changes may be caused by climate change, but could also be part of normal long-period climatic variation.

"The three areas that can trigger large changes in the Earth's gravitational field are oceans, polar and glacial ice, and atmosphere," Cox said.

Cox and colleague Dr. Benjamin Chao have ruled out the atmosphere as the cause. Instead, they suggest a significant amount of Ice or water must be moving from high latitude regions to the equator, and oceans could be the vehicles of this movement.



Estimates of today's glacier and polar ice melting are too small to explain the recent changes in the gravity field. If melting ice were the cause of the recent changes in the gravitational field, it would require melting a block of ice 10 kilometres on each side by 5 kilometres high every year since 1997 and pouring it into the oceans.

"The recent reports of large icebergs calving in Antarctica can't explain this, because they were already floating in the ocean," Cox said. Further, radar altimeter observations of the average sea level rise provided by the TOPEX/POSEIDON satellite show no corresponding change in the rate of the global sea level increase.

Consequently mass must have been redistributed within the oceans. That's where the ocean circulation theory comes in. Ocean currents can redistribute mass quickly, such as the 5-year time frame that these changes were first observed.
The TOPEX/POSEIDON observations of sea level height do show an increase in the equatorial bulge of the oceans corresponding to the observed gravity changes, but the data are not yet conclusive. One critical factor is the temperature of the world's oceans, and its salinity, for which detailed data are not yet available.

In 2002 NASA also launched the GRACE and JASON missions, missions that will help to more precisely track these sorts of changes in Earth's geodesy, and will launch the ICESAT mission this summer.

The Next Great Leap Forward - China Readies Shenzhou 4

As China prepares to launch its fourth unpiloted Shenzhou spacecraft, Western observers continue to speculate about the timing, mission parameters and the crew make-up of that country's first ever manned space mission scheduled for next year. It is currently believed that a dozen or more Shenzhou pilots are undergoing extensive training and evaluation.

While still guarded in discussing details, Chinese space authorities are clearly laying out an extensive campaign of human space exploits, including the creation of a space station. The upcoming test flight will enable China to become the third nation to have an independent human space launch capability. The former Soviet Union orbited its first cosmonaut in 1961, followed by the first U.S. astronaut to orbit in 1962.
At present, the unmanned Shenzhou 4 is being readied for flight, along with its Long March 2F booster at the Jiuquan Satellite Launching Centre of Gansu Province in China. According to government news services, the flight could take place in September.

"We have intensified development of the Shenzhou 4 and its carrier rocket, which we plan to launch sometime in the remaining months of the year," said Zhang Qingwei, president of China Aerospace Science and Technology Corporation (CASC). This Beijing-based industrial firm is heavily involved in the country's space effort. CASC has about 230,000 employees, 30 percent of which are technicians, engineers, and researchers; 40,000 are professors and senior engineers, according to the Center for Nonproliferation Studies at the Monterey Institute of International Studies in California.

Other sources within China's space programme, however, have also stated the next Shenzhou mission might not occur until early next year. China's Xinhua News Agency, for instance, noted August 22 that a deadline had been set for lofting Shenzhou 4. The news organisation quoted an unnamed "expert" that the ship would fly by next January 10, at the latest. The Xinhua News Agency reported CASC's Zhang

as saying that China is pushing forward in spaceship docking, space labs, and deep space exploration. Furthermore, Zhang stated that his organisation is expediting the creation of a new family of launch vehicles, to be flying before 2005. Depending on the success of Shenzhou 4, China is likely to loft its first crew into Earth orbit next year.

"Whenever Shenzhou 4 does go, barring a major flight failure, I expect that Shenzhou 5 will carry the first Chinese crew," reports noted space expert, Phillip Clark, head of the Molniya Space Consultancy in the United Kingdom. "The only real question is whether there will be two or three people on board," Clark told SPACE.com. That first piloted space mission should come in the first six months of next year, Clark said. The Chinese have already said the names of their first space travellers will be announced shortly before the Shenzhou 5 liftoff, suggesting they'll be onboard that craft, he added.

One mystery is what's up with a Shenzhou 3 orbital module that is still circling Earth. That spacecraft segment has been in Earth orbit for months, manoeuvring on several occasions. It was left in space while the Shenzhou 3 descent module parachuted to Earth April 1. One future prospect is that the Shenzhou 4 may carry out rendezvous practice with the still-in-space orbital module.

"The Shenzhou 3 orbital module looks like it will be at the right 31-circuits repeater altitude in September, but the question is whether Shenzhou 4 will be ready to go," Clark said. There was a report earlier this year, Clark added, that the next Shenzhou capsule would end its flight with an ocean landing, presumably in the Pacific. "This would prove that the descent module could survive a water landing as a back-up, although coming down on terra firma will be the prime recovery mode," he said.

Looking into the future, Clark thinks it possible that piloted Shenzhou missions could grace space at a pace of a couple per year. Perhaps a docking between a Shenzhou 7 and Shenzhou 8 might be on tap for early 2004, he speculates. However, one pacing item is China's need for a larger booster. Given a heavy-lifter class rocket, a small orbital laboratory may be launched to which Chinese crews could visit, Clark said.

Another China space watcher sees it somewhat differently. Charles Vick, Chief, Space Policy Division, of the Federation Of American Scientists in Washington, D.C., thinks a Shenzhou 4 rendezvous test might not be in the cards. "I believe that the potential near-rendezvous test with Shenzhou 3's orbital module is still possible but the present indications possibly suggest to the contrary," Vick said. He believes that China may take a much more conservative ramp up to their first manned flight attempt next year with the Shenzhou 5 spacecraft.
"Taking small steps is the rule of safety at this point," Vick added, to assure to the greatest extent possible that a manned mission is successful, he said.
"Depending on what they actually do with this possible last unmanned flight test, the Shenzhou 4 mission could indeed be the prelude to China's first manned flight with Shenzhou 5 in the autumn through spring 2003," Vick said.
"In the final analysis this is strictly dependent upon the upcoming flight test results which could just as easily reveal unforeseen problems, forcing planning decision changes. I wait patiently for this flight test which should come sooner than later," Vick concluded.

"China's manned space programme is like China's desire to host the Olympics - it's all about prestige," said Phillip Saunders, Director of the East Asia Nonproliferation Program at the Centre for Nonproliferation Studies. The Centre is located at the Monterey Institute of International Studies in Monterey, California.

"The U.S. and Russia are the only countries with an independent manned space program. By joining the space club, China is staking a symbolic claim to being in the same league. This is the main reason the Chinese government has been willing to invest resources in the manned space program. This also leads China to downplay the extent and importance of Russian assistance to China's manned space program.
Saunders said that, from the Centre's perspective, one key area of interest is the impact of the manned space program on China's strategic modernisation efforts and on potential military uses of space. Although the manned program attracts more resources to China's overall space effort, Saunders said, it also diverts resources and scarce engineering talent away from areas with direct military applications.

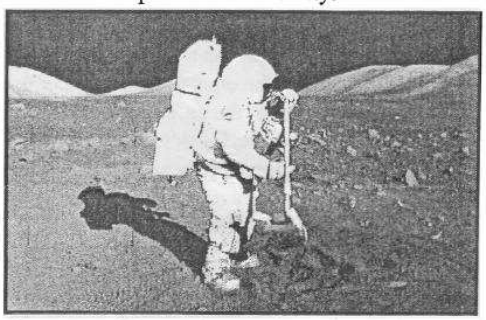
"While China will certainly learn skills and technologies from the manned space program -- such as improved manoeuvring, control, and tracking capabilities -- on balance the manned space program probably slows down Chinese efforts to modernise strategic missiles and to develop a potential space warfare capability," Saunders said.

Space.com

Feature

LAST MAN ON THE MOON COMES TO MORNINGTON

The final man to set foot on the lunar surface, Dr. Harrison Schmitt, visited the Mornington Peninsula on the evening of July 17th this year, and members of the Astronomical Society of Frankston were there in great numbers to meet him. The visit came to the Society's attention earlier in the year, and I had attempted to get him to attend our school meeting, however, this was not possible financially.



Seventy ASF members and friends had the great privilege of attending a sell-out Rotary Club dinner at the Mornington Racing Club, attended by 360 overall, including Federal politicians, media representatives, business millionaires and the cream of seven local Rotary Clubs. Other astronomical societies unfortunately could not be invited (other than by word of mouth) due to the limited space available at this Rotary venue, and public advertising in the media did not occur for similar reasons.

Dr. Schmitt was originally brought to Australia by the US-based Mars Society in order to deliver their keynote address at an annual conference on Mars held in Sydney. They also used him extensively to help lobby in the media and with parliamentarians their cause for the Australian government to pledge a hundred million dollars to their quest of putting a person on Mars (very optimistic I think). Thanks to the financial muscle of the Nepean group of Rotary Clubs (to the reported tune of $20,000!) they were able to pay to entice him down to Mornington for this charity dinner to raise money for the global fight against the disease Polio. As it turned out, the auctions held during the evening before his dinner speech raised $77,000 in funds for this cause, including auctioning a donated goodwill tour photograph signed by the Apollo 11 astronauts in 1969 which fetched $4,500 from a local camera store owner, narrowly beating a similar bid from an amateur astronomer!

Schmitt started a 12 day adventure on 7th December 1972 to the Moon and back, before splashing down in the Pacific Ocean. The Lunar Module, America, landed in the Taurus-Littrow Valley on the eastern side of Mare Serenitatis on the North-East quadrant of the Moon. He was trained by the late famous geologist Eugene Shoemaker, and was the only scientist ever to set foot on the Moon (the others were military personnel, such as test pilots, and presumably more expendable in some peoples' eyes). He took the now-famous full-earth photograph showing Africa, Antarctica and part of the Middle East, as the Apollo vehicle headed towards the Moon and was about a day's coasting out of Earth orbit. We show this slide at all public and school viewing nights as it illustrates several points very well indeed.

Dr. Schmitt noted in his dinner speech that he had had to learn to fly jets and helicopters, and had also subsequently become a Senator in the US Government for his home state of New Mexico, is a businessman (on the lecture circuit), and a lobbyist for various space ventures. He indicated that when the Saturn V's giant engines thrusted up, the Apollo 17 capsule that the three astronauts were perched in started to vibrate like driving a pick-up truck (ute) over railroad sleepers. This continued for 10 minutes until they were safely inserted into Earth orbit, before leaving on a 3.5-day odyssey across the void to the Moon.

Schmitt indicated that none of the photographs brought back from the Moon's surface give justice to how black the night sky really was to the human eye. He likened the stars to jewels sprinkled across an absolutely velvet black background, even though the Sun was in the sky, and he reported that he had never seen a sky so black before.

Dr. Schmitt was a quiet, seemingly reserved man. Unfortunately his arrangements with the Mars Society prevented him from formally signing autographs (though Rotary had anticipated this might be allowed), though he did permit some photography, which helped alleviate the disappointment of many amateur astronomers present clutching their prized books and photos from home.

Dr. Schmitt and possible future astronaut Samantha.

However, he did sign some menus and pieces of paper surreptitiously for at least three persistent children I saw, who no doubt will cherish this in years to come.

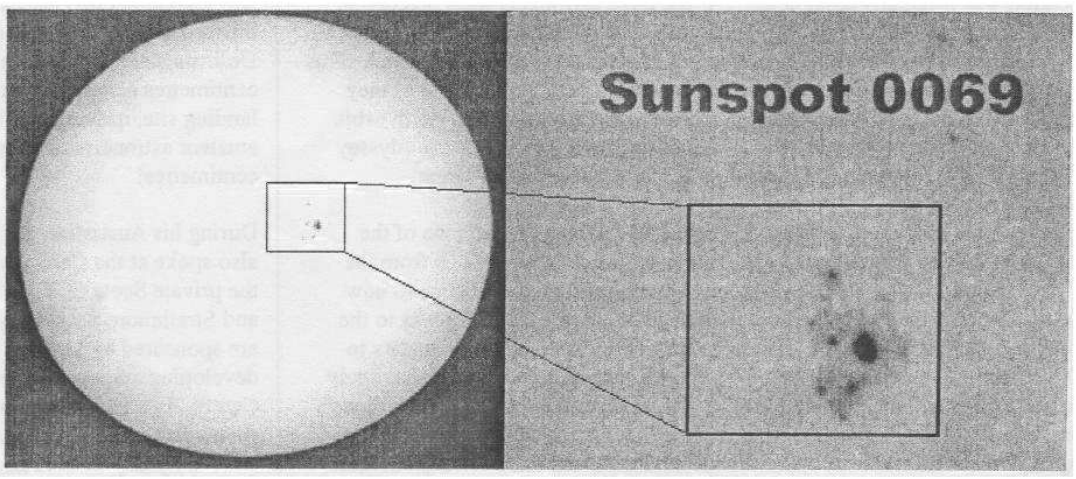
During the evening there was a competition involving a large Rand-McNally Moon wall map, where everyone had the opportunity to place a map pin somewhere on the map. Then, later in the evening, Harrison Schmitt threw a dart at the map, and the closest pin to the dart won another autographed photograph donated by him. Well, those who did their homework beforehand knew where Taurus-Littrow was precisely (his landing site), and it was a good bet that he was likely to throw the dart there - which he did! Unfortunately, the dart strayed about 2 centimetres North East from the landing site, missing a tight cluster of amateur astronomers' pins by about 2 centimetres!

During his Australian tour, Dr. Schmitt also spoke at the Canberra Press Club, the private Scots College in Melbourne, and Strathmore Secondary College who are sponsored by Latrobe University in developing a Space Resource Learning Centre. In addition, on July 18th he gave a free public lecture at Latrobe University as part of their Science Annual Lectures series. While the talk was more technical than delivered to the Mornington audience, including details of the famous orange soil he discovered, and had longer time on non-trivial questions, unfortunately for the attendees both autographs and photographs were banned at Latrobe Uni, and he was rapidly ushered in and out of the venue with little ceremony. There were surprisingly few amateur astronomers present at the Latrobe Uni talk, and there were many spare seats, with the audience being about 200, including a lot of children.

The members who met Harrison Schmitt in Mornington were indeed privileged to encounter one of only twelve individuals who have set foot on another world. Indeed, he was lucky himself. Originally he was assigned to Apollo 18, which never flew due to NASA budget cuts, and he was reassigned to Apollo 17 instead due to his scientific expertise. Because our Society was formed in 1969 as a direct result of mankind's landing on the Moon at the Sea of Tranquility, it was fitting that we were able to come face to face with someone who had actually pranced around on the Moon's regolith. It is sobering to remember, as Dr. Schmitt pointed out, that the men who walked upon the Moon were actually only in their mid-twenties – very young indeed, and very courageous.

Peter Skilton

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



Both images taken by the Editor with a Kodak DC3200 digital camera using solar projection at the August 17 TLD.

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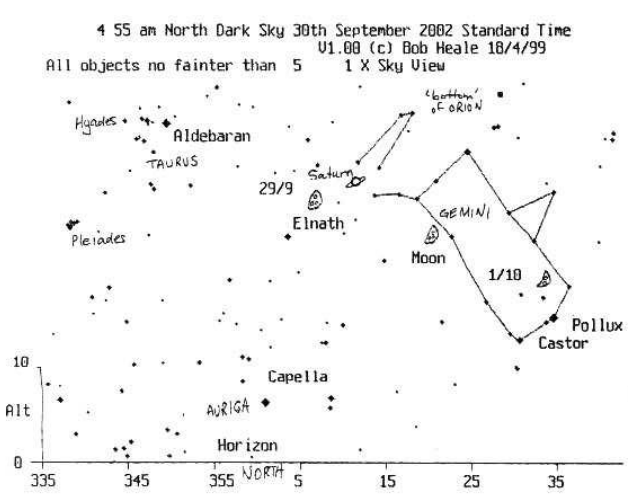
Harrison Schmitt Talk and Dinner at Mornington Racecourse 17th July 2002

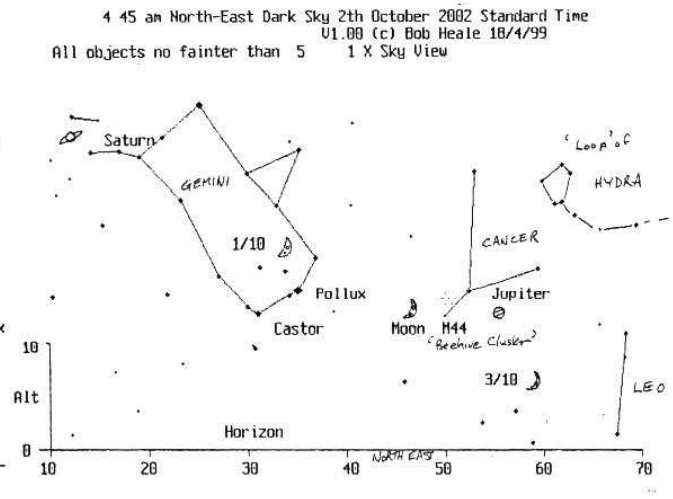
Photos By John Cleverdon

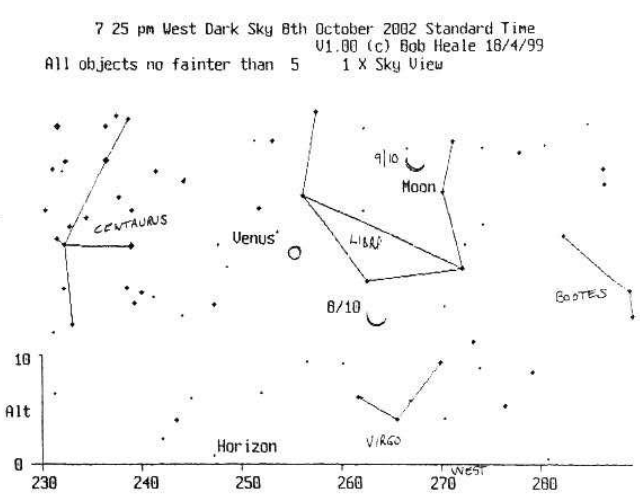
Telescope Learning Day 17th August 2002 Photo by John Cleverdon

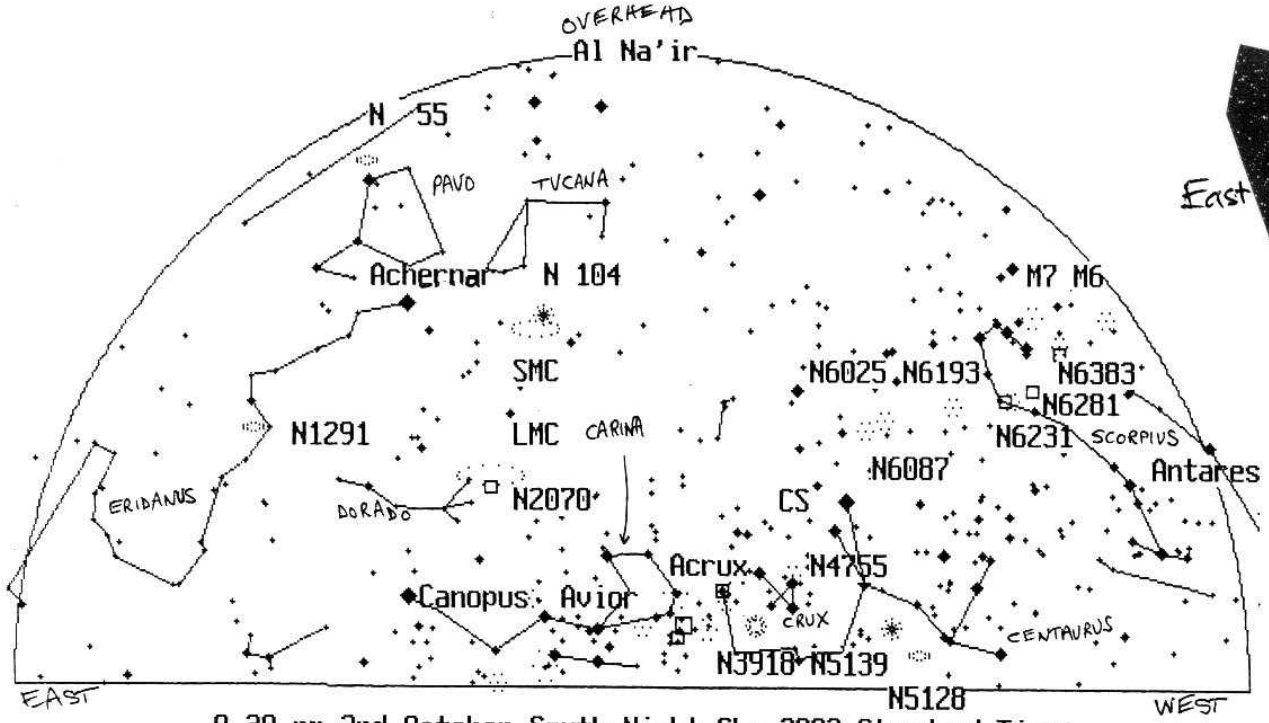
Society Dinner at Food Star Restaurant 20th September 2002 - Photo by John Cleverdon

SKY FOR THE MONTH 18 SEPTEMBER — 15 OCTOBER MORNINGTON PENINSULA 2002



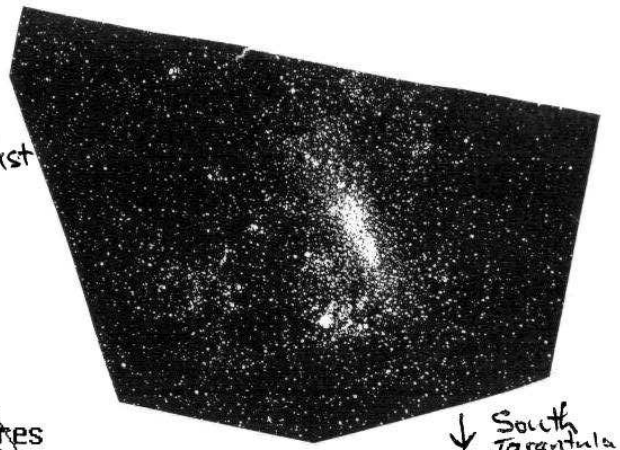






9 30 pm 2nd October South Night Sky 2002 Standard Times

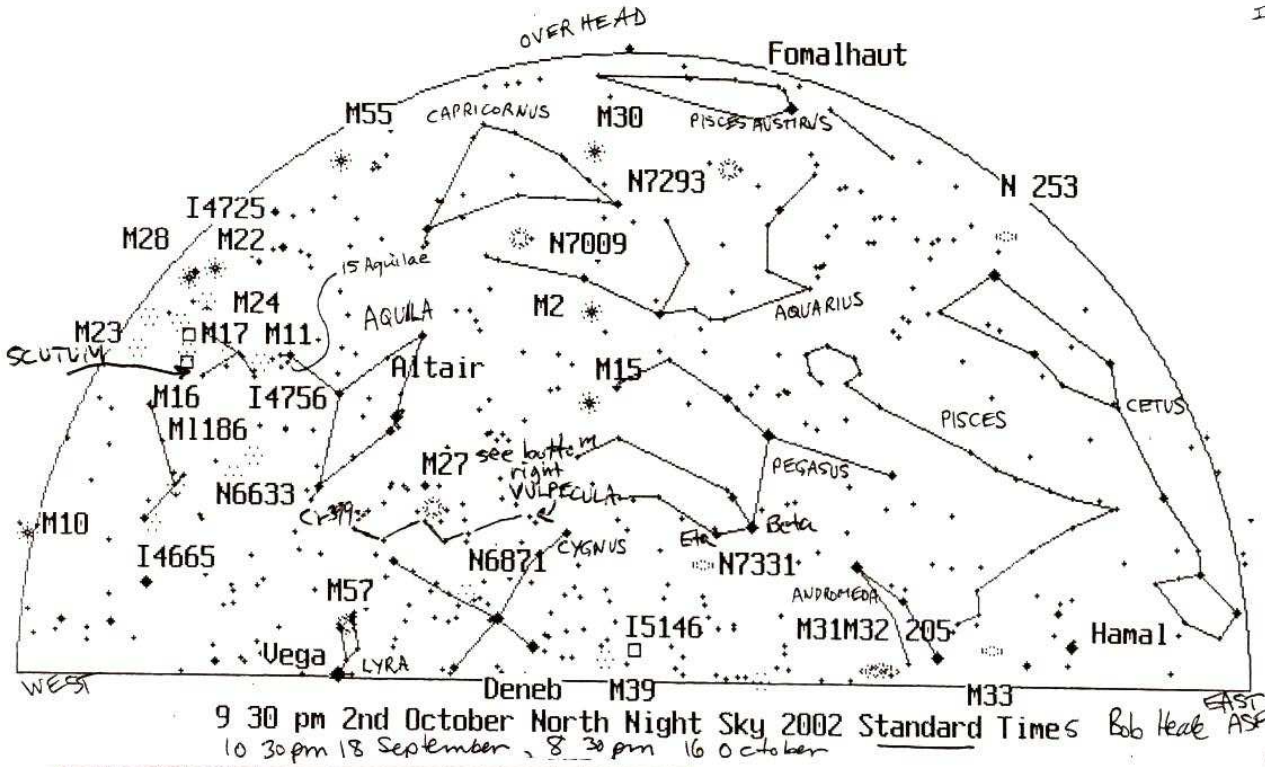
10 30 pm 18 September, 8 30 pm 16 October Bob Heale ASF

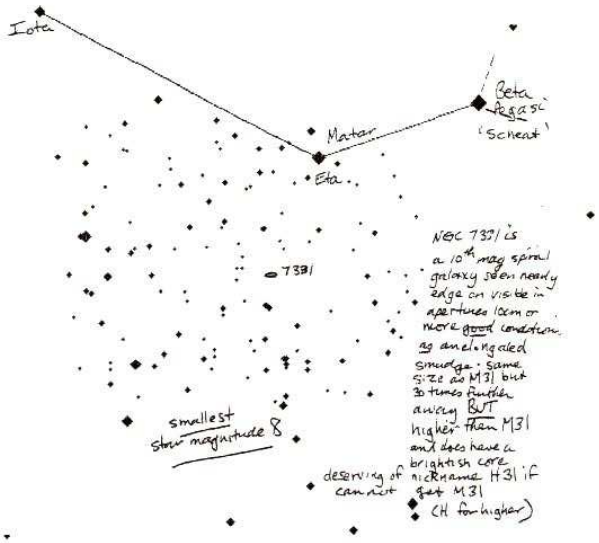


The Large Magellanic Cloud as seen through binoculars. Both NGC 2070 (bright spot at top) and the NGC 1763-69 group (lower right) are faintly visible even to the naked eye. Note the central bar and its disrupted arms.

Bob Heale ASF
17/9/2002

Mornington Peninsula Astronomical Society





CONSTELLATION VULPECULA below
M27 and Cr399

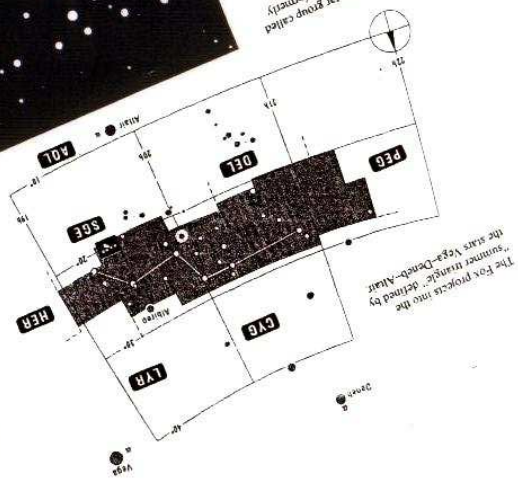


Figure 7.26
The Scutum Star Cloud, as photographed by George Viscome. Exposure time was 30 minutes on ISO 400 film through a 135-mm lens.

The Scutum Star Cloud at left, immerses the brightest (magnitude 3) stars of SCUTUM - quite large

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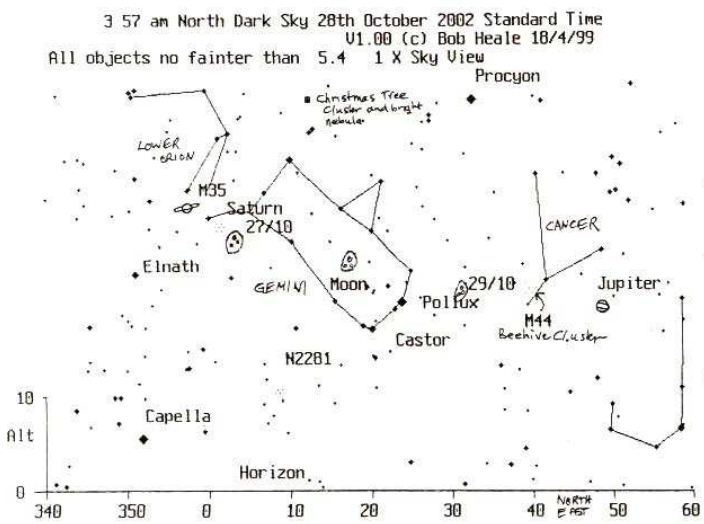
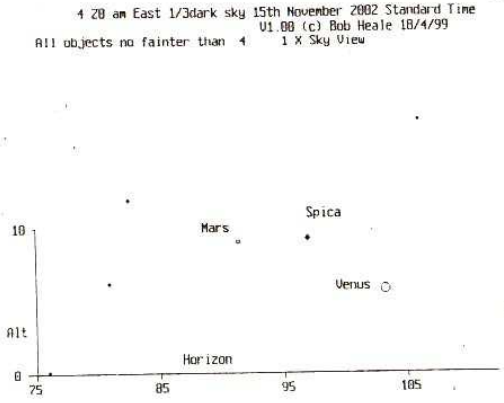
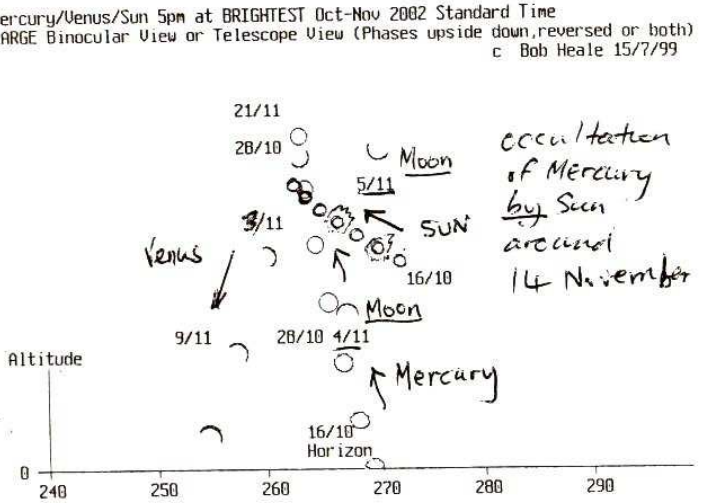
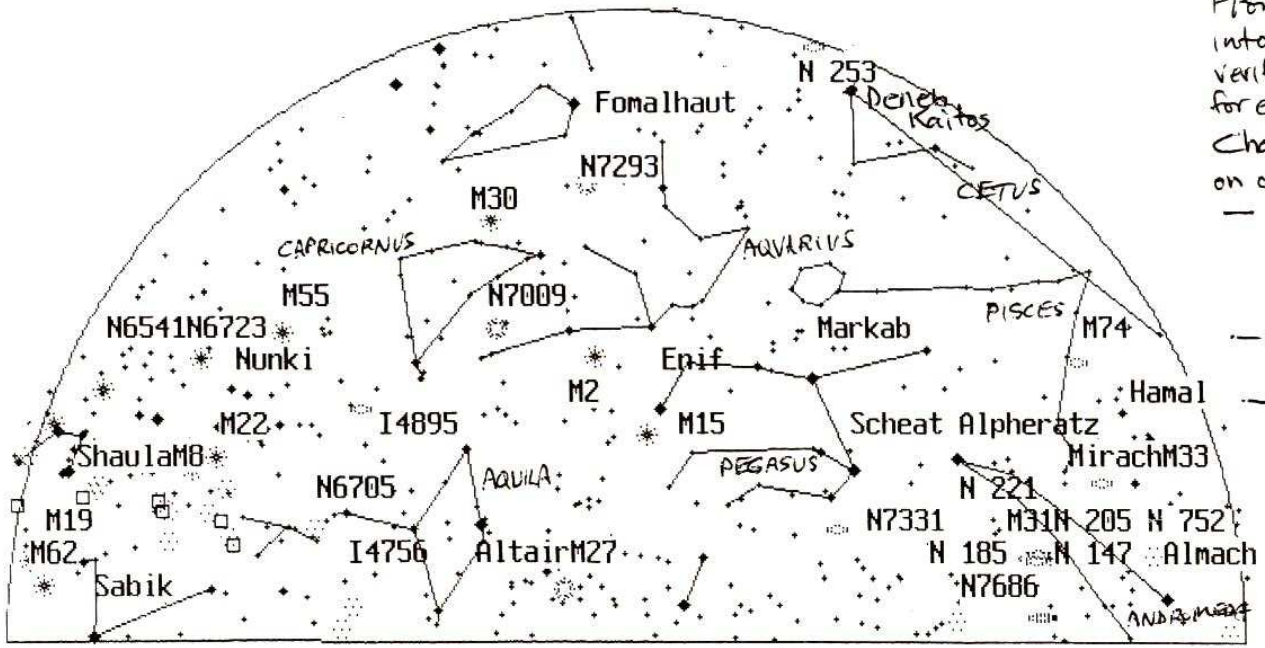
SKY FOR THE MONTH 16 OCTOBER TO 19 NOVEMBER MORNINGTON PENINSULA 2002







occultation of Mercury by Sun around 14 November



From above, clearly Venus is moving into morning sky as of 3/11/2002 and verified a left above. Mercury no go for entire viewing period

Chart at left and also hemispherical one on other side has

- easy Messier objects for 7X50, 10X50 or larger binocs or any decent small telescope. Keep to low power eyepieces for Helix Nebula N7293, M33, N247
- alignment stars names for computer telescopes
- sufficient stars to starhop to any N..., M... or I... object (limit on chart is mag 9-5) (M33 is N 598)

9 30 pm 2nd November North-West Night Sky 2002 Standard Time

Also 10 30 pm 19 October and 8 30 pm 16 November Standard Times

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15/10/2002

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Chart at right is ERIDANUS galaxies etc to mag 10.6, stars to mag 6

A small telescope or large binoculars will show the best multiple stars Omicron 2, 32, p, Theta and suspected solar system near Epsilon, also planetary N1535 (use finder to put field ;- - - -) in view with planetary one point of isosceles triangle, similarly N1291 (this is easy!)

ERIDANUS is unusual in that No Messier objects and only a few of the 400 Herschel objects visible in any good 6" reflector

ERIDANUS is away from Milky Way galaxy so very few galactic nebulae

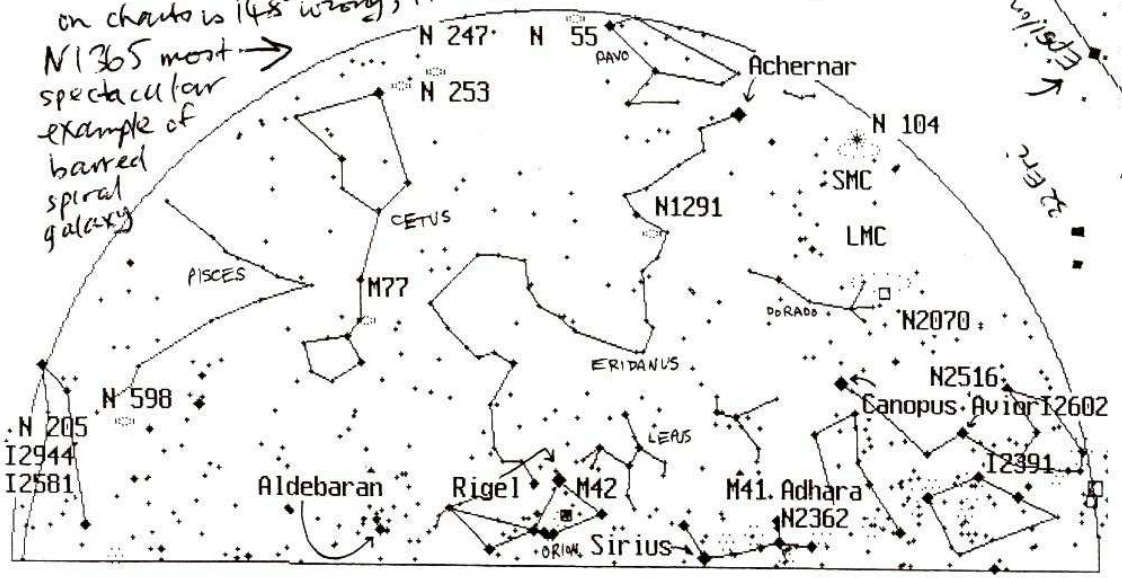
Galaxies N1232 most famous classic face on spiral in 6" a large faint haze that brightens to the core

N1300 is arguably a planetary (not easy use low powers)

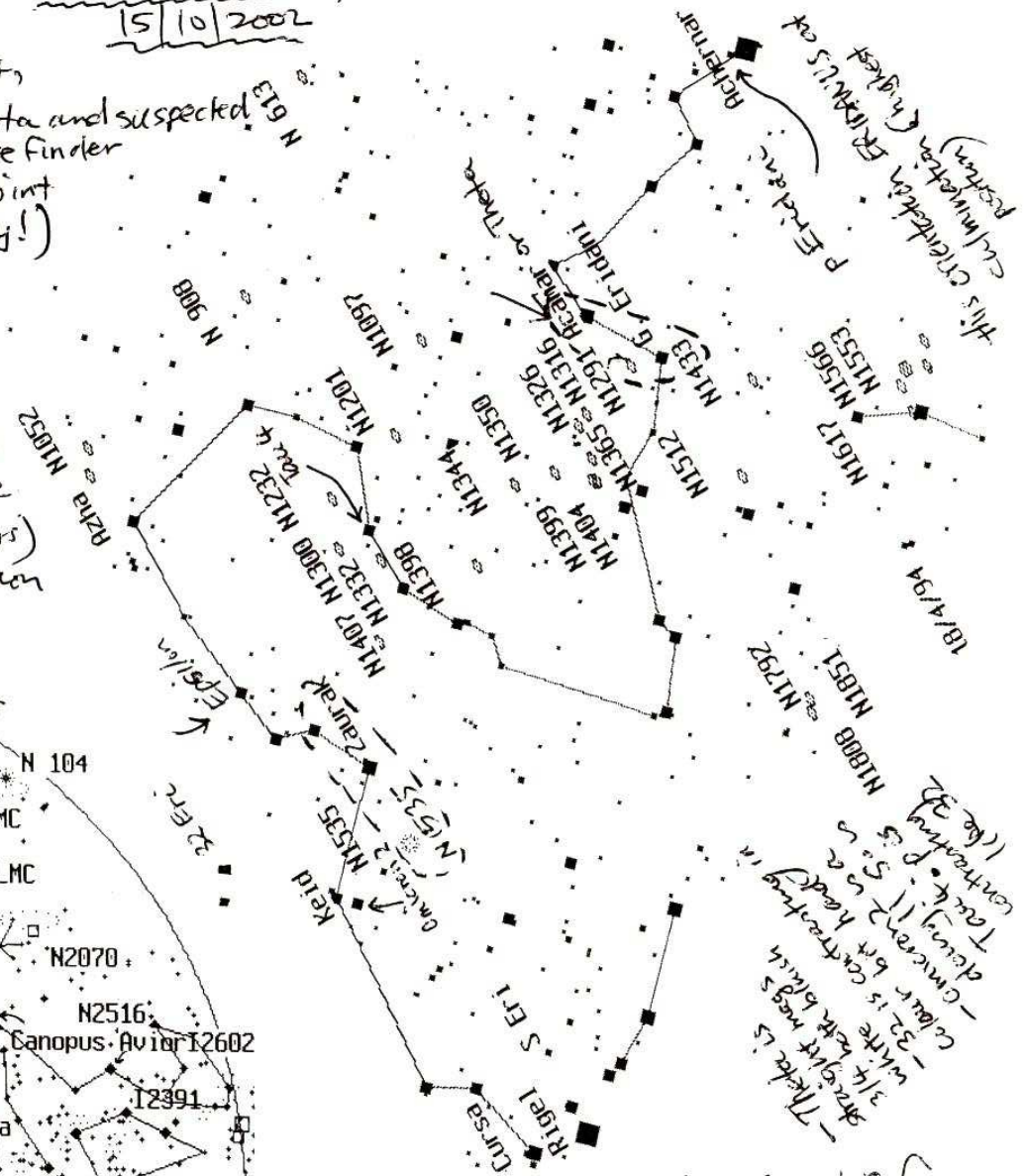
N1332 should be easy very cigar shaped; orientation on charts is 145° wrong; it is 115°

N1365 most spectacular example of barred spiral galaxy

Bob Heale ASF
15/10/2002



9 30 pm 2nd November East Night Sky 2002 Standard Time
Also 10 30 pm 19 October and 8 30pm 16 November Standard Times



orientation ERIDANUS for chart at left.

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