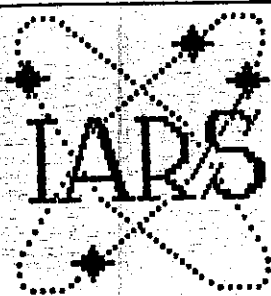


THE PROPAGATOR



ILLAWARRA AMATEUR RADIO SOCIETY

MONTHLY NEWSLETTER OF THE ILLAWARRA AMATEUR RADIO SOCIETY.
VOLUME - 87, NUMBER : 3
REGISTERED BY AUSTRALIA POST PUBLICATION NUMBER : NBH - 1491.
APRIL 1987

MEETINGS ARE HELD ON THE SECOND TUESDAY OF EACH MONTH,
(EXCEPT JANUARY) AT 7.30.PM. AT THE STATE EMERGENCY SERVICES,
BUILDING, IN MONTAGUE STREET, NORTH WOLLONGONG.
VISITORS ARE MOST WELCOME TO ATTEND THE MEETING'S.

D.O.C. GUIDELINES ON T.V.I.

Our Club Committee held a special meeting on the 21st of March at the home of Jim Hayes VK2EJH and for more details on this meeting you will find the information on page 5 in this issue of the propagator.

Also would like to thank John VK2JT for making his time available for taking part in editing and trying to scratch up bits and pieces for the propagator.

OVERSEAS NEWS:

A northern spy for the Propagator has come up with an overseas news flash which has Denis VK2DMR reputed to be putting up wire antennas in long john underwear. We are hoping it was a track suit but will await further developments.

At the April meeting on the 14th there will be entertaining slides from our traveller Dave VK2YKQ/VAV of his trip to Nepal. and if time permits a video of a Ham in action, ect ect.....

Further planning was announced by Dave VK2YKQ for the Incorporation of the Club.

Members mentioned a new outbreak of pager interference on 146.850.

The March monthly meeting was well attended. Our treasurer Dave announced that the Society is in good financial standing and that the club has now paid off the copier. The speaker for the meeting was VK2ABS Barry Sullivan our local R.I.

Barry's talk covered the guidelines that D.O.C. is now using for TVI complaints. These require the complainant to have an antenna of minimum gain of

6 db directed at the station concerned. They also mean that fringe reception (below 350 uv) is not regarded as acceptable for TVI complaints and that where front end overload is due to design faults in the booster or receiver the onus is on the viewer to remedy things. Barry then discussed some aspects of EMI with particular reference to power transmission lines and the ways in which their hardware can radiate noise.

One interesting fact to emerge was that DOC has found that a radius of about 40 km with no houses or transmission lines is necessary for sensitive monitoring or receiving services.

Keith our president then thanked Barry for a most interesting talk and the meeting finished with the usual cuppa and bickies in the canteen.....

REPEATER REPORT - GRAEME - VK2CAG

I.A.R.S. REPEATER REPORT FOR APRIL 1987.

6850 has been suffering interference from a paging transmitter. The interference started on approx. 3/3/87 just after a new paging transmitter had been installed at Knight's Hill. The problem is being caused by a wandering spurious signal being emitted from the paging transmitter, and the people who are involved with its installation are aware of the problem. The best thing we can do for the present is to ignore the interference for the time being, and give those responsible a chance to fix it. The interference stopped on 11/3/87, but re-appeared less frequently a week later.

A letter of complaint about the pager interference to Sublime Point 7275 repeater still has not been submitted to the department because no-one has handed me any written logs to back up my letter. I can only assume that the interference to this repeater is not bothering anyone, and that I am wasting my own time trying to do something about it. I do not listen to Sublime Point myself, apart from the monthly I.A.R.S. broadcasts, because the continual racket from the pager drives me up the wall! Its your repeater, so if you want the noise investigated, maybe even eliminated, let me have some ammunition in the form of a written log stating what you hear, when you hear it, and any constructive remarks about it.

Our packet digipeater at High Range is making a name for itself. Recently it has become the all important link in contacts between Sydney and Canberra. Its path to Sydney is excellent and several Sydney stations are able to access it direct. Its path to Canberra has been usable only a couple of days in the last month when propagation conditions have been favourable. It looks very promising for when the VK1 boys get their digipeater going. Newcastle and Central Coast stations are working via it fairly regularly. My own path to it is not as good as hoped, and to get into Sydney I frequently use the path CAG (Towradgi) - DFK (Woonona) - BFI-1 (High Range) - RPH (Hornsby repeater). Sometimes I use the path up to HA (Mosman), then to High Range and back into Sydney. Thats a zig-zag path but sometimes its the only way out of here.

RE-BUILD OF 6850 MT. MURRAY.

There has been a change of plan on the re-building of this repeater. Originally we were to build a carbon copy of our tried and proven 7275 repeater. However, on reading through the documentation for 7275 it became apparent that there is insufficient information for a construction project. We have had another look at it and decided that a simpler approach would be more practical. What the repeater committee proposes is that we obtain a standard mounting rack suitable for mounting in the space available in the repeater cubicle, make up two RF proof boxes to fit onto the rack (one to house the TX and the other for the RX). A third chassis will carry the control circuits, timers, decoder and ident unit. We will make use of the existing more recently added equipment such as the remote control decoder, the

REPEATER REPORT CONTINUED

CMOS ident unit, high/low power switching unit and solar charging unit. These units will be re-housed to suit rack mounting. The only completely new items will be the actual transmitter, receiver and control board.

We will as far as possible make use of parts and equipment already on hand in our club store, and ask you, the members for either donation or negotiate purchase of suitable equipment from members before we consider as a last resort spending the club's money on store-bought gear. Here, briefly, is what we are looking for:-

One 2 metre receiver, or VHF high band transceiver capable of being converted to 2 metres. Sets such as the AWA RT80 or Philips 828 series are particularly suitable, since they have separate TX and RX boards and good front end selectivity and cross-mod performance which is necessary for repeater service.

One 2 metre transmitter, or VHF High band transceiver, 25 watts.

One standard 19 inch equipment rack and 3 chassis panels.

Certain types of radio are not suitable, such as the STC 151 and similar older units, because of inherent lack of receiver performance and inadequate transmitter heatsinking. Remember that the existing repeater has state of the art performance with regards to sensitivity and noise rejection, so anything less than a top line performer to replace it with would be a backwards step.

Anyone who can help with these items, please contact myself, Graeme VK2CAG on phone 833623, and if suitable for the job, we will put it to a better use than gathering dust on the shelf, or negotiate a suitable price if necessary.

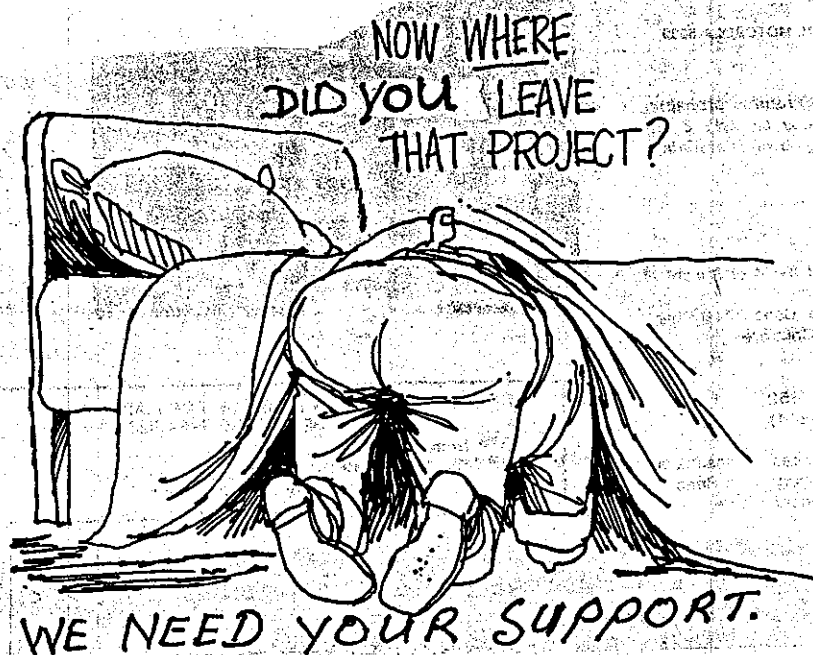
COAST-WIDE COMMUNICATIONS

LOT.B. LAWRENCE -
HARGRAVE, DRV. THIRROUL

WE STOCK: CB RADIOS
CB AERIALS - COAX CABLE
MARINE RADIOS
TV - AERIALS, ETC ETC.
SALES AND SERVICE

OPPOSITE THE
SHELL - GARAGE
PHONE : 67 2134.

VK2KWN WAYNE NEWPORT



REMEMBER 3.550. MHZ.

REMEMBER 3.550.Mhz.

So you have a full call or novice license at last. You have worked hard studying up on your theory, learning the "CODE" and regs and now you have passed the D.O.C. exam you are ready to hit the airwaves.

But, before you do, cast your mind back to those early days when you were a rookie in the Ham fraternity and how glad and grateful you were to those Club Members and other Amateurs who gave you all those tips and helped you with the "CODE". Especially the "CODE".

Do you remember how you sat down at that Radio you bought and glued your ear to the speaker listening for the W.I.A. C.W. Broadcast due on 3.550.0.Mhz.

There you sit all keyed up writing pad ready, pen poised. Then deflation, disappointment, yes even madness comes to you. For there they are again, those thoughtless inconsiderate Amateurs who are suffering from amnesia, up on the same frequency that only a short time ago they were listening to with all their concentration trying to get those dits and dahs when they were only beginners themselves.

So what about it fellas, when you sit down to tune in, remember your own early days in Radio and give 3.550.0.Mhz. a wide berth and prove to the Amateur fraternity that you are courteous to your fellow man.

Remember the beginner of today could be your contact of the future.

(VK2PZY Dave).

Dont make expensive mistakes by buying blind
What should you expect as a minimum when
purchasing an IBM compatible?

- * Dual speed 4.77MHz & 8MHz
- * 8088-2 Processor
- * Fully socketed Mother Board
- * Socket provided for 8087 arithmetic chip
- * Eight Expansion slots (2 should only be occupied)
- * Extra sockets for ROM's
- * Minimum 640K on Mother Board
- * 135w Power Continue output
- * Built in cooling fan
- * Centronic parallel printer port
- * 2 RS-232 serial Communication port (you will probably end up with a Modem & Mouse or A/D card etc)
- * Joystick Port
- * Dual floppy Controller
- * Battery backed clock/calendar
- * Legal Bios eg. ERSO
- * 2 Quality Floppy Japanese Disk Drives as used in Sperry, IBM, Olivetti etc.
- * An on site Warranty & Insurance must be available from Computer Shield or Hills Industry (Nationally protected).
If these companies dont offer maintenance on the machine you are purchasing then forget it, Companies only offer maintenance contracts on machines they believe are reliable.

PHONE J.E.E. SOLUTION SELLERS.

We have been selling Computers since 1979 as a family run business where Personal Service is a —(PRIORITY)—

Mon - Fri 7.30-9.30pm. Phone: (042) 61-5451.
OPEN FOR BUSINESS ALL WEEK END

FERRITE-BEAD FILTERS

FERRITE-BEADS for R.F.
Attenuation:

For several years, television receivers have made use of small beads of ferrite materials to introduce added lossy impedance on wire leads.

Most common use is for decoupling heater lines but they are also fitted to suppress parasitic oscillation and for other purposes.

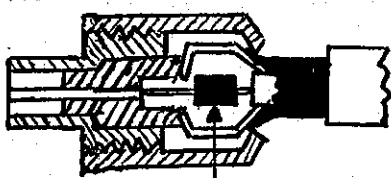
A ferrite bead threaded on to a wire acts as a single turn toroid and because of the high permeability of the material provides a considerable increase in the effective impedance of the lead beads are made for use between 2 and 15 Mhz and also for 15 to 100 Mhz.

Several beads can be used to provide maximum effect, simply by threading them along a wire. One can think of many transmitter applications where such beads should be useful decoupling and parasitic suppression.

G3HWR has come up with and ingenious use of these beads to prevent RF from leaking into AF equipment.

He simply fits one of the beads inside a standard Belling Lee coaxial connector so that all screened leads used in AF equipment are lossy RF.

Taken from A.R.&E.A.



FERRITE BEAD

At a committee meeting held on Saturday 21st March at the home of the Secretary (Jim VK2EJH), the Memorandum of Association and the Rules of the Association of the Illawarra Amateur Radio Society Incorporated were accepted and signed by seven of the Committee members. These documents will now be sent off to the Corporate Affairs Commission with the club's application for incorporation. A motion declaring the intention for the IARS to be taken over by the IARS Inc. was also passed unanimously. Copies of all of these documents will be on display at the

next General meeting. A special resolution will be put to the June meeting, to wind up the unincorporated society. It will be necessary for all members to sign an application for membership to the 'new' society.... but I have printed these forms from the computer database, filling in names and addresses, so all you need to do is to check the form for correctness, and sign at the next meeting. Also members should pay their 1987 subscriptions as soon as possible.. they remain the same as last year (\$10 or \$5 for pensioners/students).

—FOR—
**COURTESY TO
AMATEURS AND
VALUE
IN
OUR AREA
NOT USUALLY
SEEN ELSEWHERE**

WE RECOMMEND!!!!

CAUTIONS

11. MOLLOY STREET. BULLI.

PHONE: 042-84-6838

**TO ALL OUR CLUB
MEMBERS.**

E.M.E. REPORT BY LYLE VK2ALU

Moonbounce Report - April 1987

The following is the draft of a summary of the EME Project, as requested by the University of Wollongong.

How to give a new lease of life to a Radio Telescope.

Early in the 1960's the CSIRO installed a 30 feet diameter parabolic reflector type radio telescope as part of their Solar Research Station at West Dapto. It became surplus to their needs when they moved to Parkes a few years later and was left on site for the then Wollongong University College to put to use as a University facility. Unfortunately however, no work could be found for it at the time and it was starting to show signs of deterioration by 1969, when a joint group of Wollongong amateur astronomers and radio amateurs requested that they may be permitted to develop it as a combined radio telescope and experimental radio communications facility. The University agreed and was able to promise limited financial assistance on the understanding that it be made available as an Undergraduate instructional facility on occasions.

The amateur astronomers left the project shortly afterwards but the radio amateurs continued to construct the necessary equipment to carry out experiments over the Earth - Moon - Earth radio path on the ultra high frequency of 432 Megahertz, with view to investigation of the characteristics of this most difficult means of radio communication and possible transfer of information to the few overseas groups in USA and Europe engaged in similar work.

The Moon's surface was to be used as a very lossy passive reflector of radio waves, which were also attenuated over the great distance involved to such an extent that less than one billion billionth of one percent of the energy transmitted towards the Moon was received back on the Earth.

Initial tests were carried out in 1970, using the Sun as a noise source of known position and magnitude to calibrate the receiving equipment and to check the accuracy of pointing of the dish antenna.

The transmitting equipment was made operational by 1972 and in that year the first radio echos of our own signals were received back from the Moon. Signals were first heard via the Moon from another station (located in California, USA) a few months later, but it was not until May 1973, after repeated tests, that the first two way EME communication was achieved. In the process it was necessary to develop virtually state-of-the-art receiving equipment, with the assistance of others working overseas, some in development laboratories, in order to be able to detect the extremely weak signals from the limited power transmitters and using antennas generally much smaller than those available to military and commercial groups, or much more highly funded research establishments.

By 1977 the group had used the dish to detect radio noise from the stars at the centre of our galaxy, carried out experiments on

E.M.E. REPORT CONTINUED

radio propagation characteristics of the path to the Moon during the period that it eclipsed the Sun and had used the EME path to communicate with other experimenters in Europe, Japan, Africa and North and South America. It was working towards the use of more sophisticated forms of EME communication when the Project at West Dapto was abruptly terminated by vandals who caused severe damage to equipment in late 1977 and irreparable damage in early 1978.

Alternative sites were considered as a means of continuing the Project and eventually a location on top of the escarpment to the north west of Wollongong was selected as capable of meeting the stringent requirements of the type of experiments visualised. This location provided a lower level of background radio noise from various man made sources than had been experienced at West Dapto so it was decided to utilise the higher frequency of 1296 Megahertz, where less experimentation had taken place, for future work. Fortunately the state-of-the-art had advanced sufficiently since the early 1970's to allow the much higher Earth Moon Earth path loss at approx. 1300 Megahertz (nearly 10 times that at 432 Megahertz) to be overcome, even when using a transmitted power level of only 20% of that required in 1972.

Construction of completely new equipment commenced as soon as the dish relocation was finalised in mid 1982. Again, assistance by donation of specialised and costly components by overseas experimental groups and interested parties elsewhere in Australia helped to contain costs within our means. Various members of the Illawarra Amateur Radio Society again willingly assisted in reconstruction of the dish antenna operating equipment etc. as they had done in the early 1970's at West Dapto.

By September 1983 experimental EME communication had been established and improvements continued to be made in order to upgrade results while working in with similar groups in Europe, North America and Africa. During this period the Project also served as a vehicle for an Undergraduate thesis which provided it with an antenna tracking computer and associated software, based on the orbital parameters of the Moon.

In 1986 the Project began to suffer damage from intruders and this developed to the point where serious damage was being experienced despite security measures. In February 1987 thieves broke into the operating building and removed nearly all of the equipment which it had been necessary to leave on site. At the same time increasing concern was being felt for the mechanical condition of the dish antenna structure, as internal and external corrosion was worsening. Also, it was felt that most of the worthwhile objectives had been achieved on the wavelength used and type of equipment available to the group. It was thus decided to terminate the Project at this point.

Ever higher frequencies in the microwave region still pose a challenge to experimenters in Earth Moon Earth radio communication but the accuracy of construction of the old 30 feet diameter dish antenna is not adequate for serious work at these frequencies. Costly repair work would be required and less demanding work would have to be found for it.

E.M.E. REPORT CONTINUED PAGE 8.

E.M.E. REPORT CONTINUED

It therefor appears that the 17 year extension of life to the old ex CSIRO dish antenna may be now at an end and that it will become a small part of radio telescope history.

In another sense the Moonbounce Project, which was operated by the members of the Illawarra Amateur Radio Society, could be viewed as a good example of interaction between the University of Wollongong and a local community group, over an extended period, in order to achieve a worthwhile experimental objective and in the process to use a University facility which otherwise may not have been put to productive use.

Lyle Patison.
IARS Moonbounce Coordinator.

F.R.L.2. WINNERS

Week No : 20 M. Woodward
Week No : 21 G. Parsons
Week No : 22 T. Stone
Week No : 23 M. Keech

ON THE NET

1st. March. 1987.

VK2ENV-Morry, Co-ordinator
VK2DFL-Dave, VK2JTB-Tom,
VK200-Ray, VK2PHD-Ray,

8th March 1987.

VK2ENX-Tony, Co-ordinator
VK2BIT-Peter, VK2NNJ-John,
VK2MT/mb3-Rob, VK2EBI-Kevin,
VK2PZY-Dave, VK2PHD-Ray,
VK2AXI-Brian, VK2ENV-Morry.

15th March 1987.

VK2PZY-Dave, Co-ordinator
VK2EBI-Kevin, VK2NNJ-Tony,
VK2DFL-Dave, VK2FCP-Fred,
VK2JT/P-Jock, VK2PHD-Ray,
VK2ENV-Morry.

22nd March 1987.

VK2ENV-Morry Co-ordinator
VK2EBI-Kevin, VK2BIT-Peter,
VK2QU/3-Jim, VK2AXI-Brian,
VK2DFL-Dave.

NEW CALL

Congratulations to John
with his new call VK2XGJ.

FOR SALE

FOR FREE!!!

1. AERIAL MAST CONSISTING OF 1 LENGTH OF 6" PIPE WELDED TO 1 LENGTH OF 4" PIPE WITH A PEICE OF 2" PIPE WELDED TO THE TOP OF THAT. IT IS SELF SUPPORTING AND HAS STEPS WELDED TO THE SIDES OF IT. IT ALSO HAS A VERTICAL RINGO ATTACHED TO THE TOP OF IT. FOR DETAILS

CONTACT JIM
VK2EJH ON
(042) 84-9317.

FOR SALE

DUMB TERMINAL ex Gov.
Screen & Terminal is Detachable. RS232 Interface and Provision for Printer, 40 Column or 80. Ideal Unit for Packet Application.

Price \$65.

CONTACT PHIL VK2KPL
AT 048-682-920.

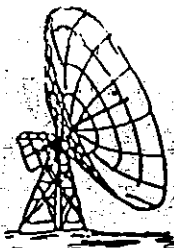
WOLLONGONG ALUMINIUM CENTRE

Available Ex Stock a Range of ALUMINIUM:-

- * Rectangular Hollows.
- * Round Hollows.
- * Square Hollows.
- * Flat Bars.
- * Channels.
- * Cutting Service Available *

All at COMPETITIVE WHOLESAL
PRICES. Suitable for building
your own antennas.

Situated At :-
79 Gipps St; WOLLONGONG
Located close to railway
crossing.
Phone: 299382 or 285932.



SATELLITE NOTES BY LYLE VK2ALU

Satellite Notes - April 1987 (prepared 26/3/87)

Recent checks on the Oscar 10 transponder passband indicate that users are cooperating with the request not to try to use it during this and next month (March and April) because of the severely depleted level of charge of the on board batteries as a result of the predicted lengthy eclipse periods occurring over this period.

It is hoped that it will be available for communication use sometime in May. Check in on the Sunday evening Amsat Australia Net for up to date information.

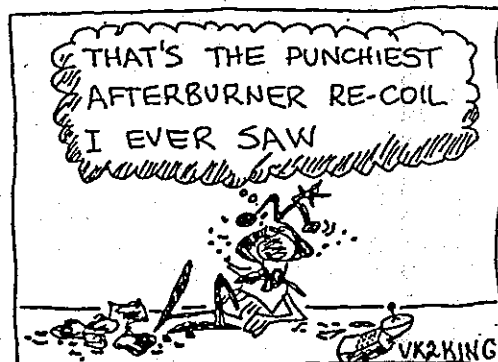
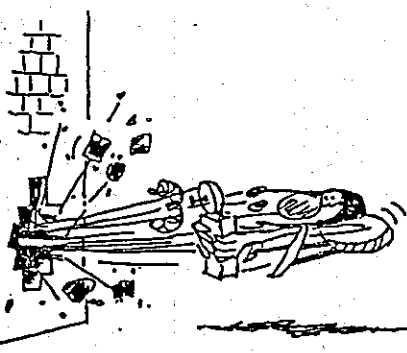
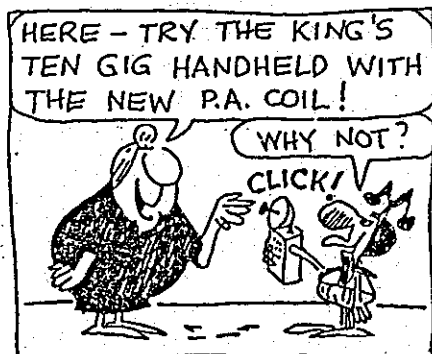
It is understood that the launch date for the new Russian satellites has been further delayed because of rocket payload priorities.

The Japanese satellite FO12 is performing well. Its digital communication facilities have been made available for general use (but the periods that it can be so used are fairly short because of its relatively high battery drain). Packet contacts are now regularly taking place as well as those on SSB and CW.

Anyone wanting frequencies for Packet operation may contact me directly as the associated available operating periods are a bit complex for this satellite.

The next satellite in the American Phase 3 series is now nearly ready for service but, because of the well known launch vehicle problems (in the Ariane rocket program), is not now expected to be placed into orbit until some time in 1988.

Lyle VK2ALU.



COMET-WILSON

To get another bright comet a year after Halley, in fact a year to the month after, is surely good fortune. To get one like Wilson is astounding. Both closest approach to the Sun and to the Earth occur while the comet is circumpolar (i.e. it does not set but rotates around the South Celestial Pole). Furthermore, it passes within 3° of the Small Magellanic Cloud and through the Large Magellanic Cloud!

Taken its visual aspects first, it will be naked eye brightness from later this month (or even now) until the end of May. I just glimpsed it on the morning of March the 27th under very poor conditions with large binoculars. It was then magnitude 7. At brightest it will reach magnitude 3.3, just a touch brighter than Halley. I've heard that it won't develop much of a tail. This could be due to its orbit, but there is no reason why it shouldn't develop a sizeable coma. In any case, this is

the first time we have seen this comet so it could do anything (nearly anything).

I would like to see a good animation of the path of this comet. (And so you shall. Steve Russell has taken the Comet Wilson orbital data and created an animation of the Comet's path using a Commodore 128 computer. This will hopefully be shown in the next issue, when it comes available.) The most striking feature is that it is inclined at nearly 90° to the Earth's orbit. The comet is now moving nearly due South. It will pass within 15° of the South Celestial Pole and then move nearly due north again. Much of its east-west motion is due to the Earth's motion.

Initially, Comet Wilson was in the evening sky. It has since moved west, passing behind the Sun during January. This was not due to it being closest to the Sun, it is just our perspective. It is now on the Capricornus-Microscopium border, moving SSW. By the April meeting will have crossed into Indus. From the

17th of April to the 8th of May it is circumpolar. Closest approach to the Sun around the 17th of April and closest approach to Earth is on the 2nd of May. This coincides with its brightest period.

Any tail present at this time will point away from us and so appear much foreshortened. Also, as it is on the same side of the south pole as the Sun, it will be under the pole around midnight. Best view will be in the morning sky at least up to the end of April. After this flurry it again moves north, passing through the Milky Way at Puppis. By July it will be invisible to the naked eye and nearly stationary, stuck in the empty wastes of Hydra (poor thing).

Comets like this only appear once a decade. Their rapid motion and constantly varying appearance provide a feast of viewing, a feast which, too soon, is over. Make the effort to get up and see it. I know you will be glad you did.

David Wheeler.

Comet Wilson

Date	Rises/Sets	Az.	R.A.	Dec.	Mag.	Culminates
14/3	02:10 (rises)	115°	2040	$-26^\circ 56'$	6.0	09:20
21/3	01:25	125°	2050	$-29^\circ 57'$	5.6	09:00
28/3	00:50	130°	2058	$-33^\circ 55'$	5.2	08:40
4/4	00:00	140°	2108	$-39^\circ 23'$	4.7	08:20
11/4	23:05	147°	2124	$-47^\circ 14'$	4.2	08:40
18/4	Circumpolar		2156	$-58^\circ 49'$	3.8	08:20
25/4	Circumpolar		2352	$-74^\circ 01'$	3.4	09:40
2/5	Circumpolar		0553	$-71^\circ 45'$	3.3	15:10
9/5	04:10 (sets)	200°	0736	$-51^\circ 44'$	3.6	16:30
16/5	00:40	225°	0807	$-35^\circ 50'$	4.1	16:40
23/5	23:35	240°	0822	$-25^\circ 14'$	4.7	16:20
30/5	22:50	247°	0832	$-18^\circ 12'$	5.2	16:00

Times are A.E.S.T.

Handed in by VK2EJH Jim Hayes.

FOR SALE

SI00 2650 :-

COMPUTER SYSTEM

- * 11 Slot Mother board
- 10A Power Supply
- * SBC-2650 Processor 2Mhz.
- * DK640 U.D.U.
- * 22K Static ram
- * Eprom board
- * Disc Controller
- * Clock/calender
- * Eprom Programmer
- * Speech Synthesizer
- * Extender board
- * Acos 3000 Baud cassette.

Keyboard, Green 12" Monitor, Cassette Recorder, Dual Disk drives - NEW 3" Chinon, 5 1/4" Mitsubishi DSDP. All manuals, software basic, DOS, Also with Word-processor plus Editor Assembler etc.

Contact Mike Burton
UK2BLR Shellharbour TV
Service PH: 95-1175.

SO THE STORY GOES

A Ham named George invited his mate Fred round to Sunday dinner, and to give his shack the "onceover".

Now George had heard Fred mention during a session "ON AIR" that his favourite food was pork and the crackling, so George told his wife to have pork for this special Sunday dinner.

Fred arrived on time that Sunday and after a bit of chit chat George took him up to inspect his shack. On the way there and as they passed the kitchen window, Fred saw George's little boy, (whose head was covered all over with scabs and sores), scratching his scabs etc and picking the crackling off the pork.

So it came to pass that when Fred sat down to dinner George was amazed when Fred knocked back the pork etc.

With dinner over Fred was still famished so filled himself up with a few helpings of steamed pudding when this was put on the table.

After dinner George and Fred returned to the shack for a tinnie and a fag. After having a few, Fred's tongue started to wag and he told George the reason he didn't have the pork for dinner.

When George heard what Fred said about the antics of his young Son he called the Boy into the shack.

"SON" said George, " why didn't you keep that cloth over your head like I told you". The Boy replied, "I couldn't Dad, Mum wanted it to boil the steam pudding in".

WHICHEVER WAY YOU LOOK AT IT
YOU CANT GO PAST

MARINA GARAGE

FOR SERVICE CALL IN AND SEE
PETER CHIECO

For Your :-

- * Electronic tune up * Wheel balancing
- * Front end alignment * Brakes
- * And also Rego Checks.

146 PRINCES HIGHWAY. CORRIMAL

PHONE: 84 5650

NEWTEK-

ELECTRONICS

WE STOCK:

ALARMS - ANTENNAS
BOOKS - BOXES
COMPONENTS-COMPUTERS
HARDWARE - KITS - TOOLS
WIRE AND A LARGE RANGE
OF SEMICONDUCTORS FOR
THE PROFESSIONAL AND
HOBBYIST : 116 CORRIMAL
STREET. WOLLONGONG.
(JUST FROM HARP-HOTEL)
PHONE : 27 1620.

FOR SALE

1. Large ironcore choke
1. Multimeter, peak 20,000 Ohm/Volt
1. Telephone
1. 24V. to 32V. Power suppl
1. Signal meter 1mA scale
2. Small B&W TVs & extra tube
1. RF Signal generator 100 - 150 Mhz.
1. Printer.
1. Bag 30 to 30pf Electro cantepe new.
1. Box old circuits boards
1. Box old radio bits
2. Box old transformers
1. Box odds and ends speakers pots knobs etc
- Speakers:-
- 2.x33ohm Magnavox
- 1.x68ohm
- 1.x16ohm Oval shape
- 1.x8ohm 2. 1/2"
- 1.xpeak multimeter 20,000 ohm/volt model CT.500P
- W.I.A. Publications:-
- Into Electronics
- Learning Morse Code
- Novice Electronics
- BOOKS:-
- 1985 A.R.R.L. operators handbook Dec '78.
- 84/85 Call book
- Learning Morse Code
- Into Electronics
- 3 x Stotts lessons books.
- Also Crystal marker E.T.I. 157.
- CONTACT Fred UK2FCP on 56-1060, or Tom UK2JTB on 56-2213.



THE ILLAWARRA AMATEUR RADIO SOCIETY

P.O. BOX 1838. WOLLONGONG 2500. N.S.W.



MEETINGS: Are held every 2nd Tuesday of the Month except January, at 7.30.p.m. in the S.E.S. Headquarters, Montague street, North Wollongong.

REPEATERS: VK2RAW - 146.850. - (VOICE) VHF Mt Murry.
VK2RIL - 147.275. - (VOICE & R.T.T.Y) VHF Sublime Point.
VK2RUW - 438.225. - (VOICE) UHF Hill 60 Port Kembla.
VK2RIL - 438.725. - (VOICE & R.T.T.Y) UHF Sublime Point.

BROADCAST: On Sunday evening prior to the club meeting, at 7.00.p.m. R.T.T.Y. Mode, and at 7.15.p.m. on voice. Transmitted on 147.275.VHF, and relay on 3.562.Mhz. Callbacks will be taken after the voice broadcast.

W.I.A. RELAY: On 146.850. at 11.00.am. and at 7.30.p.m. each Sunday.
CLUB - NETS: On 3.562.Mhz. SSB on Sunday at 8.00.p.m. and a slow morse net on 28.440.Mhz. on Thursday evenings at 8.00.p.m.

NEWSLETTER: "THE PROPAGATOR", published monthly to reach FINANCIAL-MEMBERS in the week preceeding the club meeting. All articles, adds etc, to the editor must be in, or try, by the 3rd Tuesday each month.

MEMBERSHIP: The Secretary, I.A.R.S., P.O.Box.1838. Wollongong. 2500. Full membership is \$10 per annum; students & pensioners concessional members \$5 per annum.

AWARDS: The award of the Illawarra Amateur Radio Society is the LAWRENCE-HARGRAVE-AWARD. VK stations require 10 contacts with I.A.R.S. members. Overseas stations require 5 contacts with I.A.R.S. members. A contact with VK2AMW is sufficient for the award. Band-details, date, frequency, station worked and \$2 or 4 I.R.C.'s. to THE AWARD-MANAGER, I.A.R.S., P.O.Box. 1838. WOLLONGONG. 2500. No QSL-CARD is required.

STORE: The club store operates at each club meeting. by COMMITTEE-MEMBERS.

COMMITTEE:

PRESIDENT	VK2OB - KEITH CURLE. 24. Beach Drv, Woonona.
VICE-PRESIDENT	VK2DYU- BILL CHADBURN. 45. Beltana Ave, Dapto.
SECRETARY	VK2EJH- JIM HAYES. 1 Kathleen Cres, Woonona.
TREASURER	VK2VAV-YKQ-DAVE HENDERSON. 8. Gladstone st. Bellambi.
AUDITOR	VK2ZHU- GEOFF CUTHBERT. 1 Nioka Ave, Kieraville.

GENERAL-COMMITTEE: VK2EXN- IAN CALLCOTT. VK2ENX- TONY MOWBRAY. VK2MT- ROB McKNIGHT.
VK2ALK- LES KIRCHMAJER. VK2DWR- DAVE ROUTLEDGE. VK2JAM- PETER WOODS.
VK2OE- WOJCIECH TOMCZYK. VK2BMH- MARTIN HUTCHINGS.

REPEATER - CHAIRMAN: VK2CAG - GRAEME DOWSE.

REPEATER - COMMITTEE: VK2EXN - IAN CALLCOTT. VK2EMV - MORRY.v.d.VORSTENBOSCH.
VK2DFK- MIKE KEECH. VK2MT- ROB McKNIGHT. VK2JAM- PETER WOODS. VK2EZY- DAVE COLLESS.

QSL-CARD'S OUT : VK2EXN - IAN CALLCOTT.

QSL-CARD'S IN : VK2DWR - DAVE ROUTLEDGE.

E.M.E. CO-ORDINATOR: VK2ALU - LYLE PATISON.

PUBLICITY - OFFICER: VK2VAV/YKQ - DAVE HENDERSON

BROADCAST - OFFICER: VK2ENX - TONY MOWBRAY.

CARTOONIST : VK2AXI - BRIAN WADE.

PROPAGATOR-EDITORS : VK2PZY - DAVE CAPON. VK2EMV- MORRY.v.d.VORSTENBOSCH.

PRINTERS : VK2DFK - MIKE KEECH. AND POSTED BY VK2EJH- JIM HAYES.

LIFE - MEMBERS : VK2CAG- GRAEME DOWSE. VK2OB- KEITH CURLE. VK2ALU- LYLE PATISON

SUNDAY - EVENING - CLUB-NET - ROSTER:

FIRST SUNDAY OF THE MONTH :	VK2MT - ROB McKNIGHT.
2 nd SUNDAY OF THE MONTH :	VK2ENX- TONY MOWBRAY.
3 rd SUNDAY OF THE MONTH :	VK2PZY- DAVE CAPON.
4 th SUNDAY OF THE MONTH :	VK2DWR- DAVE ROUTLEDGE.
5 th SUNDAY OF THE MONTH :	VK2EBI- KEVIN MURPHY.