S P E L E O G R A F F I T I

The Newsletter of the Australian National University Caving Club.

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EDITORIAL.

VANDALISM IN CAVES.

Cave vandalism rears its ugly head again. A well known member of local communications media has descended to this level by carving her name in letters a good foot high a thousand feet inside Wyanbene. Fortunately, she apparently didn't find the Helictite or Rockfall entrances, or else I suppose those chambers would be damaaged too. Who cares that this object managed to reach this point? Quite frankly, I wish she hadn't, and if that's her mentality I sincerely hope she never does again.

A few members, fortunately freshers, have also resorted to this level - once. The Trip Leader forcibly, but perfectly correctly, expressed himself, and relieved his feelings by pointing out that such behaviour was agains club rules, his principles, the A.S.F. Code of Ethics, and was illegal anyway, and if the offender did it again, the offender would be surfaced for all the trips he led (a fair proportion of the year's total) at least, if not slung out of the club, and incidentally, being surfaced by one leader probably means that no other will have him either, so that being surfaced is tantamount to being thrown out.

Marking black arrows, removing formation, leaving rubbish (including spent flashbulbs) all come under the heading of cave vandalism, as well as leaving names all over the place. Please let's have no more of this.

We're not allowed to print the name of the Wyanbene desecrator, but Michael Webb or David Moore will tell you if you really want to know.

EDITOR.

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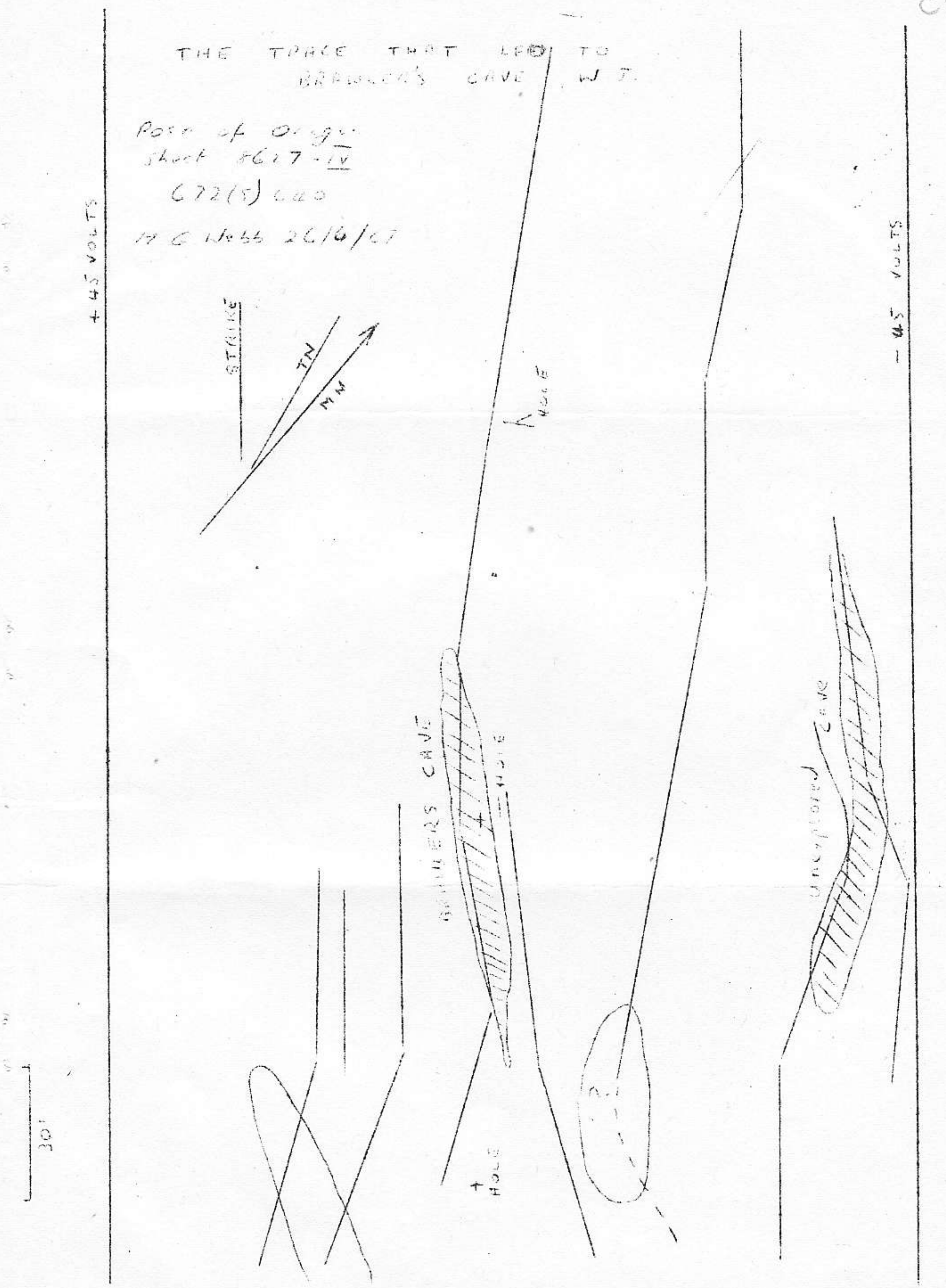
POTENTIOMETRIC SURVEYING or ARMCHAIR CAVE HUNTING.

The system I like to use, and have used with considerable success, involves the use of two long wires of about 300' spaced about 150' apart, with a potential difference of 0.25 volts/foot across them.

Now, since limestone is a rock, its resistivity could well be expected to be considerably lower than that of any air contained within it. Hence, since an electric current tends to flow by the


THE TRACE THAT LED TO
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Posn of Origin
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UNEXPLORED CAVE
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path of least resistance, a map of this path would give an insight into the shape and dimensions of any void within the rock. However, it is impracticable to trace lines of current flow, but equipotential lines are easy to trace, and are also necessarily perpendicular to current flow, so these are traced.

Current is inversely proportional to the resistivity in any current carrying conductor. By some rather more complicated Electromagnetic theory than I am prepared to go into here, it can be shown that the deviation induced into the equipotential lines is dependent upon the resistance, hence resistivity, of the material the current is flowing through.

The same piece of mathematics shows that the maximum depth at which anomalies will deflect a detecting apparatus significantly is approximately the spacing of the wires. This suggests that a good way of determing the depth of an airspace is to keep bringing the wires together until the deviation induced stops increasing. At this point the percentage of air in the rock is the largest it is going to get, so you have the depth of the floor of your cave, and also some idea of its shape, in spite of the fact that you may never have been closer to it than 100', and not have the faintest idea of how to get into it!

Fortunately, Potentiometric (which means to measure field potential - the capacity of the electric field for doing work) Surveying can help there, but only after a bit of interpretation (far and away the hardest part, always). From the trace you get, pick out what you feel is the best or most likely place for an entrance. This nearly instinctive selection comes with practice. Then go over the selection you have chosen at a very narrow separation, e.g., of about 15' or 20'. If there is not a good hefty deviation go away and have another go. Then come back and try again.

A word of warning. Traces can give a reading that is up to a factor of three wide. This is due to the fact that field lines do not suddenly diverge, but rather turn gently. However, the potential electrodes treat the divergence as sudden. This means that an experimenter should neglect anything that shows up on his map less than about 10' wide, unless the rewards are worth low probability guessing, because it probably doesn't exist, although it just possibly could.

Since your map is only as accurate as the angle of the equipotential lines you have traced, it is obviously necessary to have the probable error in these lines as small as possible. To this end, the most accurate meter you can acquire is necessary. It need not have a large f.s.d., since you are tracing equipotential lines, along which potential drop is zero, but it must be sensitive. The one I use is a modified AVOMETER having a full scale deflection on the range used of 25 microvolts, with a sensitivity of 0.05 uV, so I think I can probably claim my maps are accurate.

I said earlier that the deviation from parallel of the equipotential lines depends upon the resistivity of the section under test. Obviously, this means the mean resistivity, i.e., that of the rock in parallel with that of the air inside it. Now resistance is proportional to the volume times the resistivity, so a large volume implies a large resistance implies a large deviation.

Therefore, if you see a large deflection from lines parallel to the wires, draw some lines in perpendicular to the equipotential lines, and see what sort of volume they enclose. This, believe it or not, is your cave. Simple, isn't it? Now all you have to do is find the entrance.

Of course, you may have a possible entrance (e. g. Brawler's) but we are then outside the scope of this article. If you have no apparently suitable entrance, look for a point towards which the cave walls are apparently becoming nearly parallel near, and do a shallow trace over it. If this doesn't work a shallow trace over the area will, although its tedious and time consuming. Otherwise look for convenient pot-holes, and check them. This may sound hard work, but it's really much easier than continuously excavating rubble for the sake of it. Try it sometime.

Good Hunting! MICHAEL WEBB.

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Word reaches an Editorial ear that a new N.U.C.C. trip duration record has been set. No details are yet available, other than that a party of five under MGW were trogging for 18 hours non-stop last weekend. The previous N.U.C.C. record was 16 hours, set in Wyanbene by an avid Wyanbene man, Geoff Marchant (shortly off to the U.S.) in April, 1965. On that occasion they slept underground. MGW & Co. didn't. The new high was also set in Wyanbene.

While the N.U.C.C. does not approve of long hours for the sake of long hours, this new record is of interest, because we do know that Wyanbene is a hard cave. We now have a new idea of just how tough - 18 hours for a trip of 2100' and back! It must have been tough. The trip report will be of interest when it comes to hand.

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WARNING.

There was a severe rock tremor at Wee Jasper on Saturday 24, June. Following this, and probably caused by it, there has been a large collapse and settling of the rock heap leading from Dip 3 to Dip 3 Extension, and the whole mass is in a most unstable and dangerous condition. There have been other falls throughout the entire Dip system. The rock pile at the end of Dip 3 is unsafe, and should not be entered.

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N.U.C.C. GENERAL MEETING.

A General Meeting of the N.U.C.C. was held in the Meetings Room of the Union on Wednesday, July 26, 1967, opening at 7.55 p.m., with 17 members present. John Chappell, of the S.G.S. Geography Dept. gave a very interesting lecture on "Caves and Other Stone Axe Factories of New Guinea". He showed some very good slides of the northern mountain ranges of New Guinea, taken last time he was there, giving an insight into the potential cave systems of this region, where, in one place, there is a possible level difference of 4000' between the entrances and effluxes of caves. Near Goroko, he told us, there are sink holes up to 1 mile across, which, although blocked by rock (a boulder-choke 1 mile across!?!) have side entrances going down many hundreds of feet further, although the exact depth is not known, since no plumb-line has yet reached the bottom.

Mr.Chappell also told us that the stone axes he went to New Guinea to collect were cut from rock by something akin to a saw, but made from wood steeped in sand, and by chipping with hard rock. The stone was collected sometimes by tunnel mining. The axes are made up to 12" across the head. When mounted on a 2' piece of wood, and with a corresponding sized piece of rock opposite to the axe-head as a counter-weight, the whole sounds a fearsome instrument of quite spectacular proportions.

The photographs of typical New Guinea Highland scenery were, to put it mildly, marvellous, needing to be seen to be believed. The general business of the meeting resumed at 8.45, and the various motions involving additions to the Constitution were discussed and all passed. It is hoped that new copies of the corrected Constitution will be circulated by the end of the vacation, or by early next term.

This was followed by a very heated and avid discussion on a new numbering system for Wee Jasper, proposed by David Moore. The idea was to split the WJ limestone belt up into sections to localise the specific parts we cave in. The present system is, bluntly, a mess. The reason for renumbering is that a month ago an N.U.C.C. group discovered at least three new caves while surveying north of the township. Readers may not realise it, but the WJ limestone belt covers a good 60 square miles, and the present system just will not do now that the other 56 square miles are starting to be explored. The main objection to his system was that we should have n WJ13's (Dog Leg). However, this just is not so, with the Moore system, we would have WJ13, 113, 213, etc., for the 13th cave numbered in areas 0, 1, 2, etc. However, most people agreed that the present system, (which isn't anything like systematic) needed revision. It was decided to consult C.S.S. about starting.

Michael Webb then harangued the meeting for ten minutes or so about the need for articles for Speleo-G. as, he tells us, he hasn't time to write the whole thing himself (he usually manages, though) and asked for the names of those at the meeting with First Aid Certificates and with First-Aid kits. He also told us that he wanted volunteers to

do some digging in a 50' deep hole somewhere or other (see under coming trips.) Also discussed was the coming Field Day for the following Saturday.

The meeting closed at about 10 p.m.

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David Moore and Michael Webb attended a C.S.S. General Meeting on Thursday, July 27, and persuaded them that WJ should be renumbered, but they said A.S.F. should first be consulted, but that we were quite welcome to number anything north of the township, as that had never been done, and they had no intention of starting to number it. The meeting passed a motion delegating responsibility for numbering north of the Wee Jasper T-Junction to the N.U.C.C.

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N.U.C.C. FIELD DAY

The N.U. C.C.'s first Field Day was quite well attended in spite of, or maybe because of, its being Bush Saturday. We left Canberra in two vehicles, meeting at Kambah Pool , whence we walked up the Murrumbidgee until we came to the first good set of faces, about 200 yards noth of Red Rocks, where we would have had to fix a ladder in order to continue to our original objective of Red Rocks, so we fixed the ladder anyway, but didn't bother about Red Rocks. We started by demonstrating the use of slings and chock belays for fastening ropes and ladders, after which Peter Aitcheson demonstrated a very fast, but seeingly pretty fearsome, type of abseil, involving wrapping the rope around his arms, and sliding down it.

We then demonstrated and practised the belt and shoulder abseil, and had the Classic Abseil shown to us by Trevor Vollbon. My impression of the classic is that he can have it all on his own, and after trying it, other members thought that too, I feel. We also tried climbing up and down free and walled ladders in the correct manner, instead of the way most people normally do it.

The advantages and disadvantages of a few of the more important knots were taught and demonstrated.

Unfortunately, it was not possible to demonstrate piton traversing owing to the lack of suitable cracks; however, the correct way of setting a piton were demonstrated, and a few of the uses (and abuses) of karabiners (pronounced kar-a-been-ers, thank you) also.

Copies of photographs taken at the Field Day are available from me, so if you think you were on candid camera, come and see. First set free, extras six cents each.

My thanks to Peter Aitcheson for his assistance in instructing.

Michael Webb.

TRIP REPORTS.

Wee Jasper, 1 July, 1967

Brawler's Cave.

After someone vigorously protested about the rude, or at least she thought it rude, name given to this cave we discovered by last week's survey on Carey's property (See No.4), it was decided to call it Brawler's Cave. This was due to numerous disagreements between the trip leaders, whoever he, she, or they may have been about who would go down first.

The cave was dug out, and about a ton of rock removed before the rest fell through. We free climbed the 30' drop into the cave. The chamber at the bottom was very small and the passages narrow. Along one of these passages David Moore found a frog, which was promptly captured and put in his glove. Along another passage a little later could be heard the following conversation (?) :

"Hey Dave! What system's aragonite?"
"B L O O D Y H E L L ! !"

Whereupon a new voice introded upon the scene :

"Have you told Dr. Eggleton yet, Dave?"

What was wrong with David Moore is best left unsaid.

The cave itself is very dry, and very small, and apart from some formations at the end of one passage, it is not really worth the effort and squeezes.

CARLA VAN DRIEL.

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On the way back from Brawler's, we decided to inspect an outcrop about 150 yards north of it. I found one small hole about 18" across, which opens into a large chamber with a rubble floor. It is possible to climb down through the rubble to a small grotto 20' long, 8' wide and 3' high with some good, recently rejuvenated formation. The cave bottoms at about 100'. We were one hour underground.

MICHAEL WEBB.

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I descended a chimney to a large chamber, but was most unimpressed apart from good possibilities in photographing :

a) free-swinging ladder shots, and
b) minor dry but beautiful formation.

The cave descends to about 70', the top part offering good chimneying and climbing.

DAVID MOORE.

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Kybean, 15 July, 1967.

We left Canberra at 9 p.m. Friday. Arrived at Bunyan at 11 p.m. and spent the night at "Cloyne" (Mr.Pfeiffer's property). Left at 8 a.m. Saturday, arrived at Kybean 10.15, and obtained permission from the owner, Mr.Wassink. The party split into two under M.Webb and B.

Deveson and started edploration of K4 (B.J.D.) and the Bullock Hole (M.G.W.) Eleven members managed to negotiate "the squeeze" into the terminal chamber in K.4. This is a small chamber with very good formation. Since the chamber has only just been discovered, the formation has not yet been vandalised, as is the rest of the cave.

M.Webb and his party (Norm Stokes), J.Maggs, P.O'Donnell, L.Ingram) entered the Bullock Hole (15' first pitch, 20' fissure, 30' second pitch.) The sump in the floor of the main chamber was found to be 12' below floor level, a drop of 12' since Oct.1966. M.G.W. found on exploration that the sump narrows to about 2' wide by 18" high, and still had at least 2' of water in it, but he was unable to force it. Some small chambers off the main were explored.

M.G.W. & Co. then entered Danjelong Cave, K3 in an attempt to join it to a very tight squeeze leading from K.4, but were unable to do so. They did report discovery of some very good rimstone pools.

Kydra Cave, K5, was also entered by a combined party. B.Deveson entered a small length of tunnel, previously unexplored, which may connect with a 30' hole, 50' up the hill.

Left Kybean at 5 p.m., stopped in Cooma for tea, and arrived back in Canberra at 9 p.m.

BYRON DEVESON.

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SEARCH AND RESCUE EXERCISE.

With regard to the Call-Out exercise on July 24, the thanks of the N.U.C.C. Committee to go out to those members who volunteered to stay where they could be found, in case they were required for S/R.

It now transpires that the missing party had - somehow - managed to bog a Land-Rover (How?? I've tried hard enough at times, but never managed yet!) , and were perfectly safe. However, we weren't to know that at the time, and so I think we managed quite well, although somewhat more slowsly than we should have.

We'll probably have a S.R. exercise next term sometime to see if we can improve our efficiency.

MICHAEL G.WEBB.
VICE-PRESIDENT. N.U.C.C.

COMING TRIPS.

BUNYAN. 18-20 August. Leader Michael Webb.

Potentiometric Survey indicates large cave approximately 100' down on the BU limestone. One shaft is heading straight for the cavern apparently nearest to the surface, requiring a probable 8' of excavation. Hard work, large rewards.

NARRENGULLEN. 9 September. Leader Michael Webb.

Large cave not previously visited by N.U.C.C. Reported to be 3000' long.

WEE JASPER. 15 September. Leader Ian Raine.

COLONG. Long weekend, October. Leader Norm Stokes.

Woof's Cavern in Colong is nearly as big as Caesar's Hall, but with none of Wyanbene's discomforts.

TUGLOW. 25-26 November. Leader David Moore.

End of term celebration trip. 265' chimney, followed by 4200' of tunnel. Fantastic formation, and spectacular subterranean river.

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Contact a Committee Member before 5 p.m. on the Thursday previous to a trip if you wish to go. Names are below.

PRESIDENT:	Ian Raine 2 Berrigan Cr. O'Connor.	tel.498839
VICE-PRESIDENT	Michael Webb. Flat 19, Hackett Court, or try Physics Library or Laboratories.	
SECRETARY :	John Tilley W.6, Bruce Hall, A.N.U.	
TREASURER :	David Nicholls 17 Hobbs St. O'Connor.	tel. 42271.
EQUIPMENT OFFICER :	David Moore 21 Gawler Cr. Deakin.	tel. 71578
COMMITTEE MEMBERS :	Carla Van Driel Room 130, Burton Hall, ANU	
	Norm Stokes Mt. Stromlo Observatory.	tel.706258
	Peter Aitcheson Maths Bldg, Research School of Physical Sciences.	