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EXPLORATION LICENCE 102/87
QUEENSTOWN, N.W. TASMANIA
REPORT FOR THE YEAR ENDED
21ST APRIL 1989

OPEN FILE

89-2927

MINES	
File Ref. E. L. 102/87	
20 MAR 1989	
Doc. Ref.	
Action Officer	Initials
Refers to	
Letter. 17.3.89	
Resubmit to	Date

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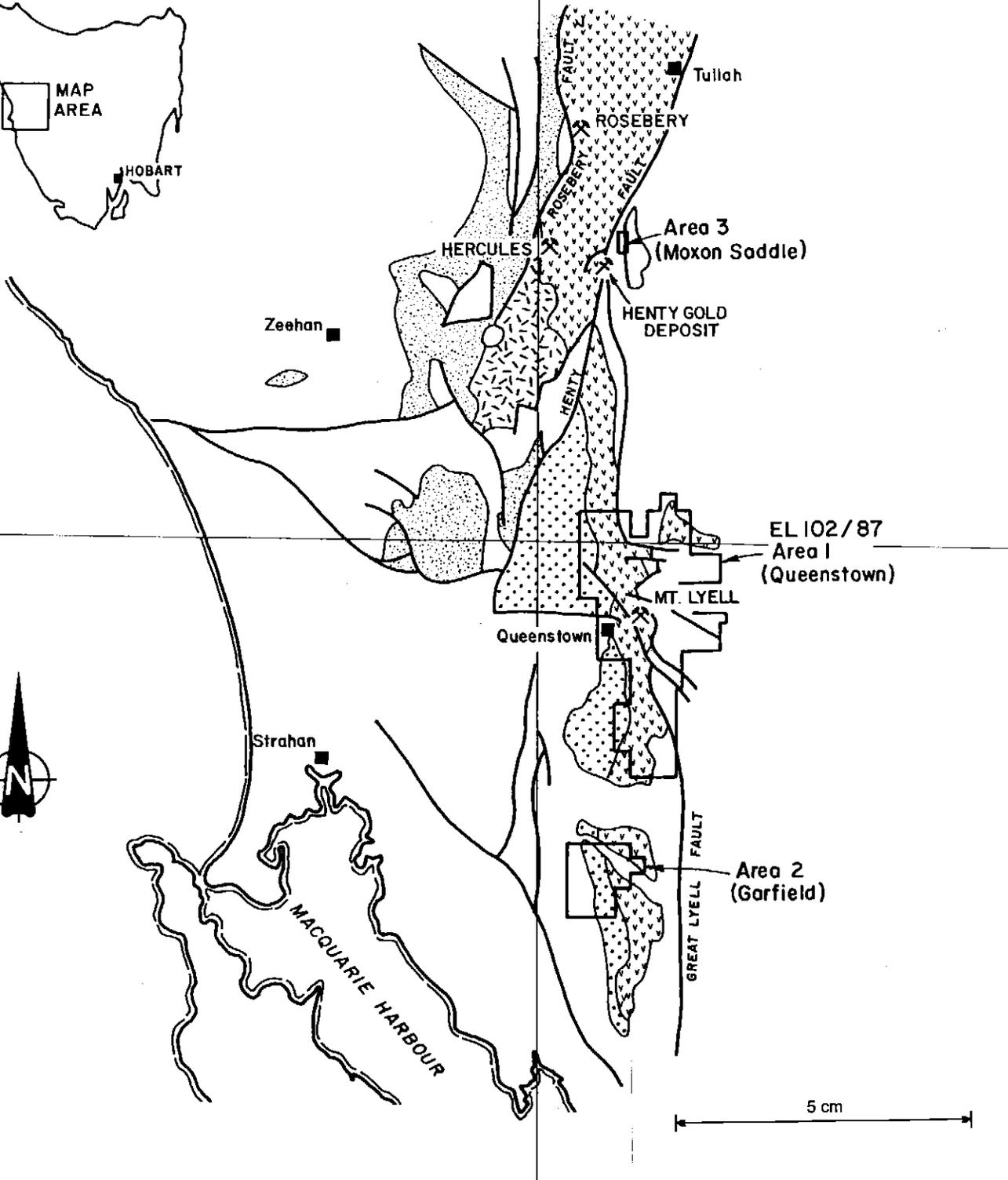
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LOCATION



42° 00' S

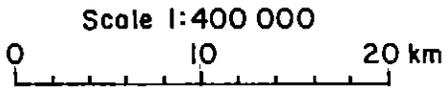


LEGEND

-  DUNDAS GROUP - Middle to late Cambrian flysch and felsic epiclastics
-  White Spur Formation - flysch and felsic epiclastics
-  Central Volcanic Sequence
-  Western Volcano-sedimentary Sequence

-  Fault
-  Geological boundary
-  Mine

5 cm



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EL 102/87, QUEENSTOWN, TASMANIA
REGIONAL GEOLOGY

Project No
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1. INTRODUCTION

This report describes the results of exploration activity during the period April 1988 to March 1989 carried out by BHP Minerals in area 1 of Exploration Licence 102/87 (Queenstown). EL 102/87 was granted to BHP Minerals in April 1988 and initially covered 95 km². Owing to the relinquishment of mining leases around the Mt Lyell mine area, this was subsequently increased to 99 km². The licence is divided into three parts, the bulk of which (area 1) surrounds the Mt Lyell mine at Queenstown (Fig. 1). Area 2 (19 km²) covers the vicinity of the Garfield River and Thomas Currie Rivulet, while area 3 (2 km²) occupies Moxon Saddle, south west of Mt Murchison (Figure 1). The exploration philosophy adopted to explore this ground is to cover as much of the prospective Mt Read Volcanics as is practically possible using large-loop electromagnetics (UTEM) and following up by drilling conductors and surveying these drillholes with downhole EM.

2. SUMMARY OF EXPLORATION RESULTS

Work carried out in this reporting period consisted of a compilation and re-evaluation of previous exploration results, field examination of prospects and checking of previous geological mapping (along with aerial photograph and landsat image interpretation) together with near complete UTEM coverage of the West Sedgwick and Mount Huxley areas.

The UTEM survey failed to detect any significant conductors. Re-evaluation of existing exploration data, however suggests that parts of the Mt Huxley area are prospective for base-metals and gold. A small gossan carrying 4% combined Pb and Zn occurs east of Nasty Knob and sporadic occurrences of pyrite, sphalerite and fuchsitic alteration have been noted as far as 1.5 km south of this. This area of base-metal enrichment is reflected in anomalous Pb and Zn in soils, in stream sediment and in a weak IP response. The lack of a UTEM response suggests that if a conductive orebody is present it lies at depths greater than 200 m.

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A previously recognized zone of anomalous gold in stream sediments extends east-west across the central part of the Huxley grid, and encompasses several (apparently unproductive) gold workings. Although no significant UTEM response was obtained over this zone, the possibility of a gold orebody cannot be discounted.

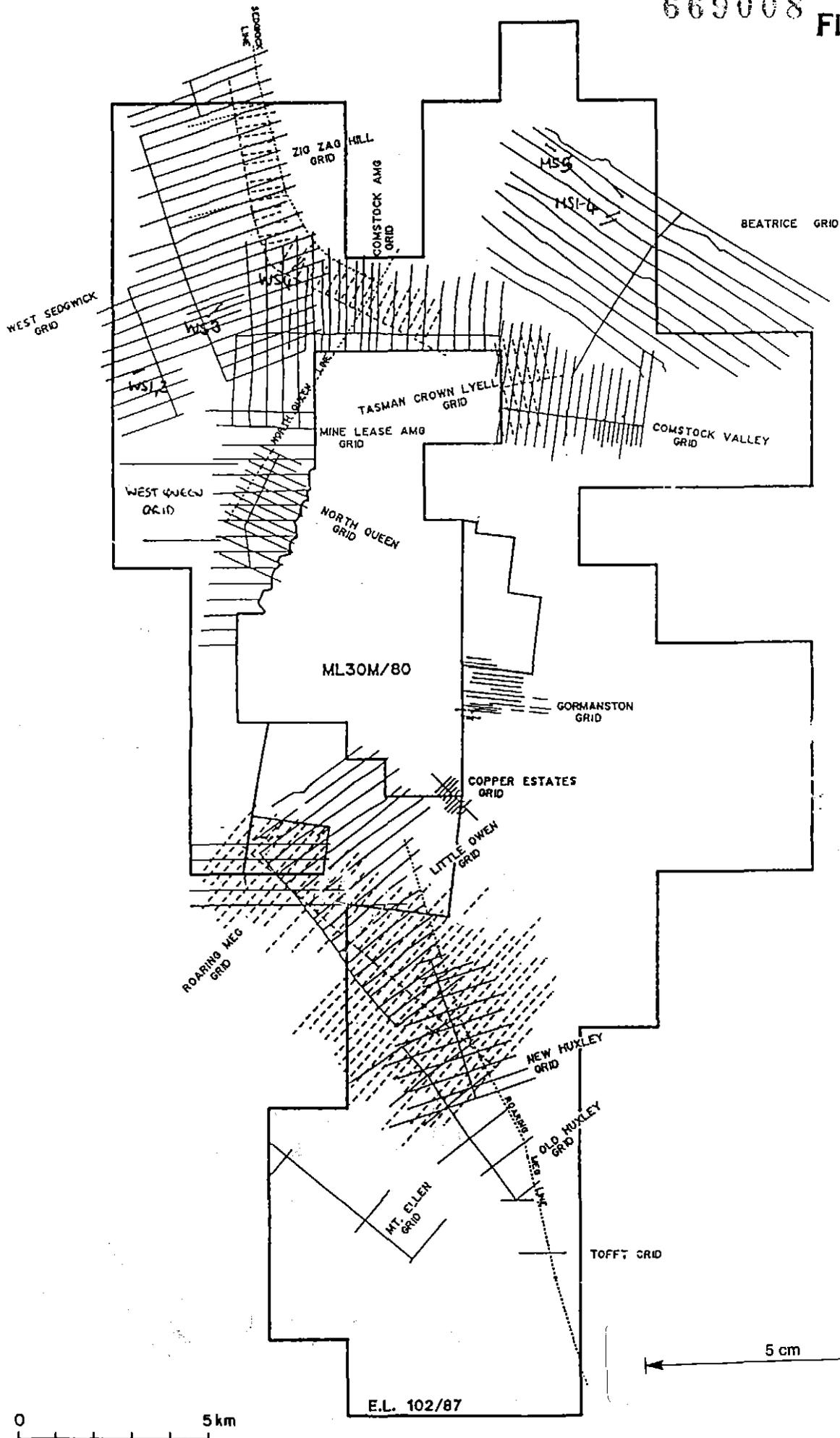
In the West Sedgwick area no UTEM responses were detected over the # 3 Dam zone (a coincident IP and soil base-metal anomaly) and the Zig-Zag Hill (EM and IP) anomaly, or pyritic alteration zones at the northern extremity of the West Sedgwick area (which also lack a significant IP response).

3. PREVIOUS EXPLORATION

3.1 West Sedgwick Area

The West Sedgwick area has been investigated by four companies prior to the granting of the current exploration licence. Rio Tinto Australia (RTAE) carried out several geophysical and geochemical surveys during the period 1956 to 1962. An airborne EM and magnetic survey and follow-up ground EM (Turam) identified a conductor close to the Mt Read volcanics and Owen conglomerate contact near Zig Zag Hill. This resulted in the establishment of a grid following the contact (Zig Zag Hill grid of Fig. 2), which was surveyed using ground magnetics, soil geochemistry, stream sediment geochemistry, gravity and IP. The EM anomaly was never drill tested owing to disappointing IP results.

Pickands-Mather (PMI) occupied the Sedgwick area from 1965 to 1971, but their work was limited. A regional drainage survey covered part of the area and the zone examined by RTAE was re-surveyed by dipole-dipole IP along the Sedgwick Line (Fig. 2) and two orthogonal lines (63N and 93N). An additional line, the North Queen line (Fig. 2) was also surveyed. No significant anomalies were detected and no additional work was carried out.



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LOCATION OF OLD EXPLORATION GRIDS

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Following PMI, the Mt Lyell Mining and Railway Company (MLMRC) and subsequently Goldfields Exploration P.L. (GEPL) held the West Sedgwick area. MLMRC established several grids at varying times of various parts of EL 102/87, (West Sedgwick, North Queen, Mine Lease AMG and Comstock AMG Fig. 2). These grids were surveyed by ground magnetics, gradient array IP and soil geochemistry. A zone of anomalous soil geochemistry (maximum 280 ppm Cu, 1882 ppm Pb and 465 ppm Zn, confirmed by GEPL resampling) was located north-west of the #3 Dam (herein referred to as the #3 Dam zone). This zone is also a zone of IP anomalism, and was tested by three drill-holes WS1-3 one of which (WS3) was surveyed by downhole IP. No significant mineralisation was encountered, the best interval being 1.5m at 93 ppm Cu, 420 ppm Pb and 1100 ppm Zn in WS-3.

GEPL carried out a stream sediment survey during 1982-1983, using samples sieved to -80 mesh and analysed for Cu, Pb, Zn and Ag, and a few were also analysed for gold. Several weak gold anomalies were found in Swan Creek (maximum 0.14ppm), the site of an old alluvial gold working.

Contractor R. Poltock was engaged during 1984-85 to carry out a panned concentrate gold survey, but this survey succeeded only in re-locating the old Swan Creek workings. A small grid was established to the west of the EL, the West Queen Grid (Fig. 2) apparently to cover an area previously ungridded. "Wacker" bedrock samples were collected along the grid but without encouragement.

The RTAE Zig Zag Hill anomaly was re-surveyed in 1986 by GEPL using Sirotem. Two weak responses were interpreted and ascribed to permeable zones within the Sedgwick fault. A single drillhole WS-4 was considered to have tested this zone, and owing to lack of any evidence of mineralisation and alteration a planned DHEM survey was not carried out.

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In summary, West Sedgwick area has been subjected to several generations of geophysical and geochemical surveys over a period of 33 years. During this time only two zones of geophysical and geochemical anomalism were detected: the #3 Dam Zone and the Zig Zag Hill zone. In addition to these, mapping has outlined two small areas of pyritic alteration in the north of the area, known as the N.E. and Upper Haulage pyrite zones. The latter evidently lacks any geochemical or geophysical signature. The former has a weak IP response.

3.2 Huxley Area

PMI carried out a regional stream-sediment survey in 1966 which included the Huxley area. Samples were analysed for cold-extractable Cu, Pb, Zn and As. A zone of copper enrichment was discovered in Roaring Meg Creek, and a grid was surveyed to control ground magnetic, EM and IP surveys. A large part of the PMI Roaring Meg grid extends into the BHP Huxley area (Fig. 2). Five drillholes (RM 201-203) were targeted on an IP anomaly, but apparently did not intersect significant mineralisation. An additional line of IP (Roaring Meg line) extended south from the grid along the southward extension of the Great Lyell fault, as far as the southern limit of EL 102/87. Several minor anomalies were detected, but were not pursued.

During 1971 and 1972 MLMRC established the (old) Huxley grid, which overlapped the southern part of the PMI Roaring Meg Grid. The grid was soil sampled and covered by ground magnetics. The little Owen grid which overlapped the Roaring Meg grid to a greater extent was completed in 1974. It was soil sampled and used to control gradient array IP and ground magnetics. No zones of interest were defined in the area of BHP's EL.

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Exploration of the Huxley area was minimal until 1982, when the western parts were covered by a Dighem survey, and a stream sediment survey carried out. The Dighem survey had a line spacing of 150m and bird height of 35m. A single, low amplitude anomaly was detected on a low hill, thereafter known as Dighem Ridge. This "anomaly", however was possibly due to aerodynamic noise (Peters and Dvorak, 1982). The stream sediment survey covered the area as far east as the Great Lyell fault and south to Mount Huxley. Four hundred and ten samples were analysed for cold and total extractable Cu, Pb, Zn, Mn, Fe and Co. Sixty-nine of these were also analysed for gold. Roaring Meg Creek was again found to be high in copper, but this was attributed to contamination from the now-defunct Mt Lyell smelters. Pb anomalism was detected South-west of Whip Spur and in a creek draining the Slopes south of Nasty Knob. Numerous weak gold anomalies were located in the central part of the area, incorporating old gold prospects of Mt Ellen, West Diorite Creek (alluvial) and Mountain Maid.

Additional stream sediment surveys carried out by GEPL (-80 mesh and panned concentrate gold) confirmed the zone of gold anomalism, despite evidence that the previous survey (carried out by the Golden Apple Mining Syndicate) was poorly carried out and located. Additional gold anomalies were located in the headwaters of the Tofft River, east of Mt Huxley and a lead anomaly was located in a tributary of the King River, south-east of Mt Huxley.

A second grid was surveyed to the North of the EL, the (new) Huxley grid, which was sampled using a power auger, samples being analysed for Cu, Pb, Zn and Ag. This resulted in the discovery of a zone of anomalous Pb and Zn extending from Nasty Knob, for over 1 km to Windy Ridge in the south. This zone was not detected by the MLMRC in its old Huxley grid. Dipole-dipole IP over the new grid delineated a coincident zone of high chargeability, which was tested by diamond drillhole HX1. This hole was

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surveyed by DHEM with negative results, despite the fact that the hole penetrated 16m of argillaceous sediments with over 0.2% Zn.

Two small grids were cut to test the zones of stream-sediment gold anomalism, the Mt Ellen and Tofft grids. These grids were soil and wacker bed-rock sampled and analysed for gold. No significant values were encountered.

In summary, the northern part of the Huxley areas has experienced extensive and overlapping geophysical and geochemical coverage, spanning three companies and 23 years. Only one drillhole has been sunk, despite the presence of a large area between Nasty Knob and Windy Ridge with substantial base-metal anomalism. The southern part has been covered by stream-sediment surveys and two reconnaissance grids only, and no geophysical surveys except for Dighem.

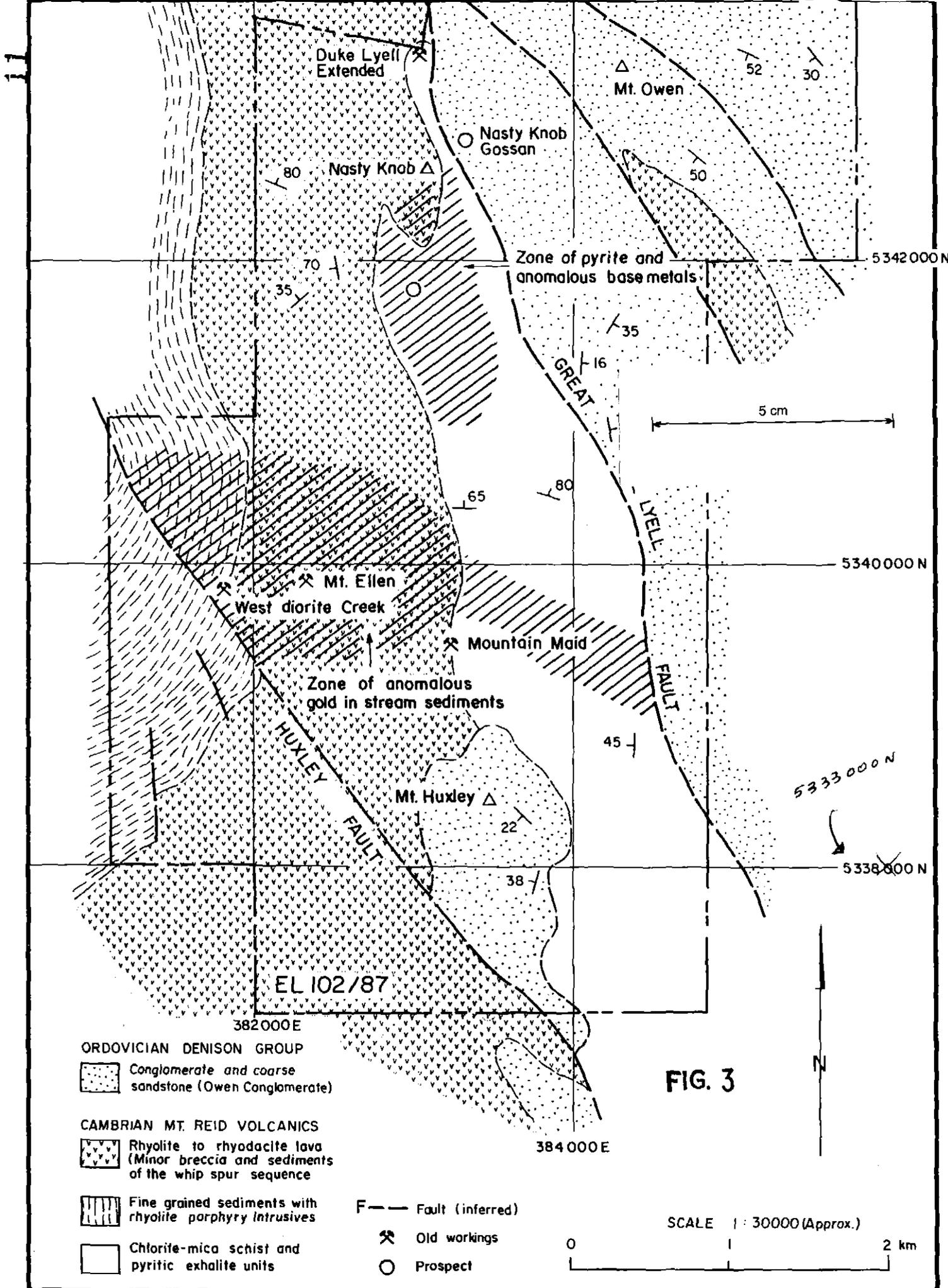
4. GEOLOGY

4.1 Huxley Area

The Huxley area can be divided into four NNW-SSE trending belts of rocks (Figure 3). These are, from west to east: fine to coarse grained volcanoclastic sediments with mafic lavas (including the Miner's Ridge sandstone), felsic-porphyritic lava and breccia (including the Whip Spur Sequence), chlorite white-mica schist and coarse sandstone and conglomerate. The first three of these units are assigned to the Cambrian Mt Read Volcanics and the fourth to the Cambro-Ordovician Denison Group (Owen Conglomerate). A major part of the area, particularly the south-western portion has not been mapped and the geology remains poorly understood.

A fault contact between the clastic rocks of the Denison Group and the volcanic rocks (possibly a continuation of the Great Lyell Fault) is inferred owing to the absence of

609013



ORDOVICIAN DENISON GROUP

Conglomerate and coarse sandstone (Owen Conglomerate)

CAMBRIAN MT. REID VOLCANICS

Rhyolite to rhyodacite lava (Minor breccia and sediments of the whip spur sequence)

Fine grained sediments with rhyolite porphyry intrusives

Chlorite-mica schist and pyritic exhalite units

F — Fault (inferred)

Old workings

Prospect

FIG. 3

SCALE 1 : 30000 (Approx.)

0 2 km

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EL 102/87 AREA I - QUEENSTOWN, TAS.
GEOLOGY OF THE HUXLEY AREA

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Jukes Breccia. The Jukes Breccia, actually a volcanoclastic conglomerate, forms part of the Tyndall Group, south of Mt Huxley. West of the fault is a schist zone, which extends at least 3 km south from Nasty Knob (Figure 3). Within this zone are sporadic occurrences of pyrite and sphalerite (including the Nasty Knob base metal zone) massive hematite and fine-grained pyritic meta-sediments possibly of exhalative origin (Komyshan, 1983; Jones, 1983). Fuchsitic alteration has been observed adjacent to the Great Lyell fault, south of Nasty Knob, and confirmed by S.E.M./EDAX analysis.

A major part of the area is underlain by felsic porphyritic rocks mapped as rhyolitic lavas or ignimbrites. These rocks are frequently associated with breccias, described variously as "crumble" breccias (Jones, 1983), flow breccias (Corbett, 1978) or agglomerate (Poltock, 1984). Petrographic comparison of an "ignimbrite" and unambiguous rhyodacitic lava at Nasty Knob reveals strong similarities (Appendix 1, samples 7209 and 7213), namely glomeroporphyritic feldspar phenocrysts in granophyric intergrowths between groundmass quartz and feldspar. Hence some units may differ at outcrop due to varying degrees of alteration.

The westernmost unit comprises slates, sandstone and basalt, and is exposed only in the extreme west of the area, constituting a small fraction of total outcrop.

All these rocks have been folded and dips are commonly steep. Axial planes strike NNW-SSE as does the prominent foliation. There are several faults also with this orientation, including the Great Lyell fault. A major lineament recognised in aerial photographs and in landsat imagery is seen in the south-west of Mt Huxley, referred to here as the Huxley lineament (Figure 3).

4.2 West Sedgwick Area

The sequence seen in the Huxley area extends north westwards into the West Sedgwick area. But, despite the proximity of the area to the Mt Lyell orebodies, substantial parts have evidently not been mapped in detail. Like the Mt Huxley area, therefore, there are uncertainties in the detailed geology. To the west, predominantly fine-grained sediments are common, although no equivalent of the Miner's Ridge sandstone (or mafics) have been observed. These sediments are commonly pyritic and pyrrhotitic, and traces of chalcopyrite have been observed. The base metal content of these rocks is apparently low, WS3 intersected foliated mudstone ("shale") with the best assay being 1.5 m at 93 ppm Cu and 420 ppm Pb. A sample from this hole however gave an assay of 1.4% combined Pb and Zn. A 3 m wide lens of highly pyritic quartz sericite schist is exposed in a cutting on the Lake Margaret tramway and was tested by WS1 and 2, but evidently did not extend significantly below the surface.

Mafic intrusives form a significant part of the outcrop in the West Sedgwick area (Figure 4). These are known as the Crown Hill andesite. Although generally chloritic and sericitic, the unit typically contains fresh euhedral prisms of amphibole (a hornblende gave 474 ± 3 m.y. model age (Baillie and Green, 1984) probably the result of Devonian metamorphism). The mafics are commonly pyritic, particularly in the vicinity of Agglomerate Hill. Alteration (or metamorphism) has produced an assemblage consisting of epidote and K-feldspar in addition to chlorite and sericite.

Rocks of the Crown Hill andesite are evidently unconformably overlain by volcanoclastic sediments and limestone, assigned to the Cambrian Comstock Tuff. As in the Huxley area, the Cambrian sequence is evidently faulted against younger clastic rocks of the Denison Group (Owen Conglomerate) although the actual contact is not

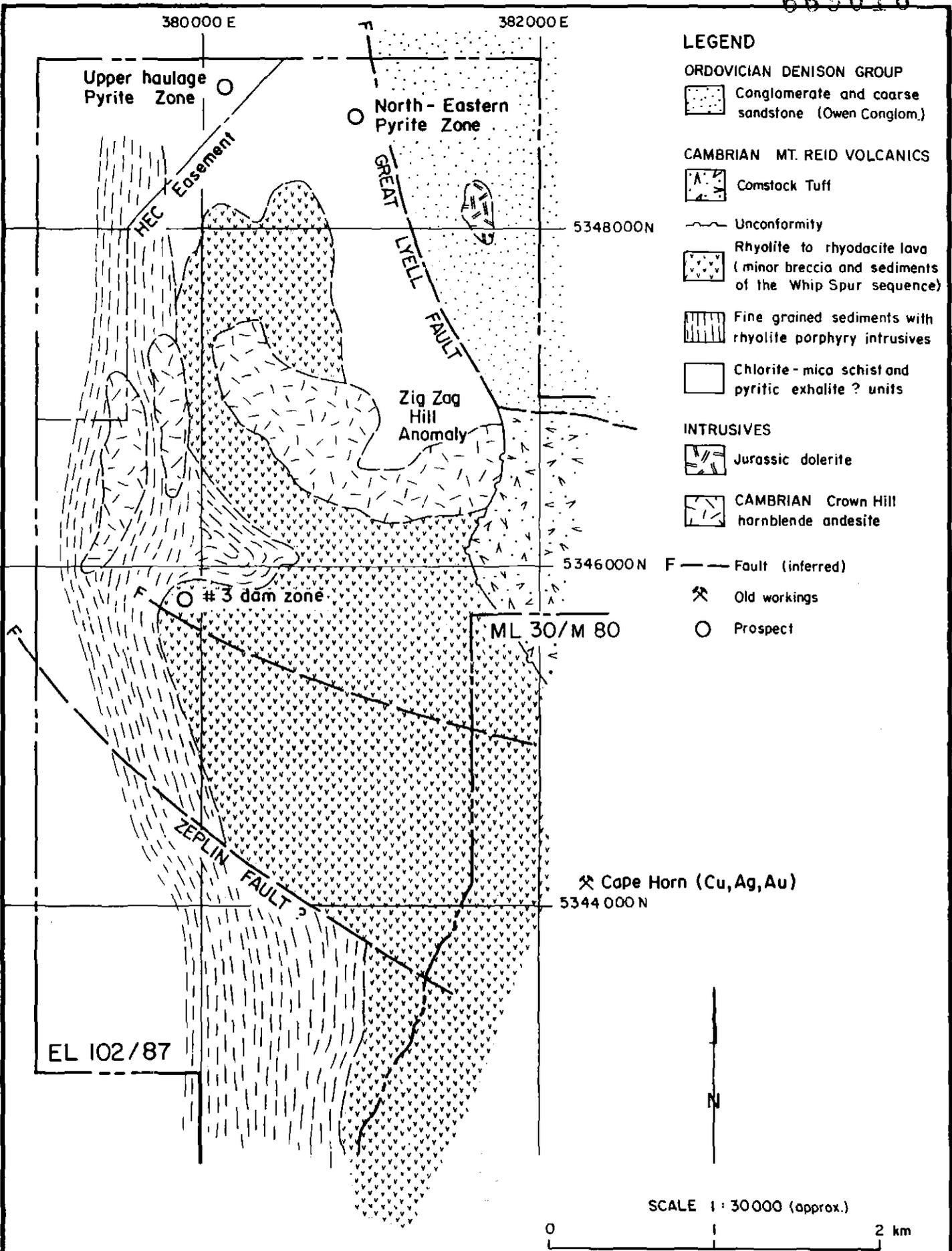


FIG. 4

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EL102/87 AREA I - QUEENSTOWN, TAS
GEOLOGY OF THE WEST SEDGWICK AREA

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seen, due to a cover of glacial sediments and talus. A small Jurassic dolerite plug intrudes the Denison Group sediments.

5. MINERAL OCCURRENCES

5.1 Gold Occurrences North and North-West of Mount Huxley

The central part of the Huxley area contains three old gold workings, Mountain Maid, Mt Ellen and West Diorite Creek. These occur in a broad east-west trending belt of weakly anomalous gold in stream sediments.

Tasmania government geologist Twelvetrees reported in 1901 that the Mountain Maid working consisted of an adit downslope from a trench and that the adit exposed a 50 cm wide layer of "ferruginous felsite" grading at 14 g/t Au. Unfortunately, it appears that the entrance to this adit has collapsed in the intervening years and thus it has not been possible to verify this assay. A pyritic quartz-mica rock is exposed in the trench. This rock contains up to 0.16 g/t Au (Table 1). Similar, and possible stratigraphically equivalent pyritic rocks to the south were found to be anomalous in base metals (up to 0.36% Pb and 0.21% Zn). Petrographic examination of mineralized rock from the trench (Sample 7212, Appendix 1) revealed a foliated, epidote-mica-quartz rock containing 10-15% fine euhedral pyrite. This unit maybe of exhalative origin (Komyshan, 1983).

The Mt Ellen "mine" occurs 2 km north-west of Mt Huxley. From the size of the workings and dumps it is likely that the amount of gold won was negligible. Jones (1983) described a "weak stockwork" comprising quartz veinlets and limonite after sulphide, hosted by an argillically altered and weathered lava, and suggested that the mineralization was a root zone to a stratiform pyrite body, such as that at Mountain Maid. Three samples were assayed by G.E.P.L., only one contained detectable gold at 0.2 g/t. Base-metals were low (maximum 300 ppm Pb).

TABLE 1

Whole-rock analysis for trace elements in samples
from old workings, Huxley area. Ppm unless indicated.
Dash indicates not analysed.

Sample #	Cu	Pb	Zn	As	Ba	Ag	Au
NASTY KNOB							
9894	310	2.25%	3900	440	3350	13.4	<0.01
9895	340	1.56%	4400	520	7800	34	0.03
7205	320	54	165	-	-	0.9	-
DUKE LYELL EXTENDED							
7214	150	500	580	-	-	1	<0.01
7215	1520	2950	700	-	-	6	<0.01
MOUNTAIN MAID & ENVIRONS							
9896	100	400	94	60	940	2.6	0.16
9898	720	22	20	-	-	1.0	0.02
7204	54	3550	2100	90	120	8.0	0.01

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The West Diorite Creek workings are situated approximately 500 m west of Mt Ellen. Jones (1983) considered that the workings exploited quartz lag gravels and found no evidence of significant veining in the exposed bedrock.

5.2 Duke Lyell Extended Copper-Gold Prospect

The Duke Lyell Extended adit is situated at the northern boundary of the Huxley area, and was presumably a copper-gold prospect. The adit was evidently driven to intersect highly altered volcanic rocks adjacent to their faulted contact with clastic rocks of the Denison Group (Owen Conglomerate). Mineralization consists of minor pyrite and chalcopyrite in chlorite schists and gossanous material with malachite encrustations. Visible sulphide comprises less than 2% by volume of the mullock material, and the prospect seemingly yielded little of economic value. Two samples revealed low gold (<0.01 g/t) but high base metals (0.3% Pb, 700 ppm Zn). Petrographic description of a sample of mullock (sample 7223, Appendix 1) confirmed the highly altered nature of the rock. Relic feldspar crystals are pseudomorphed by white-mica. The groundmass is completely replaced by chlorite, K-feldspar, quartz and pyrite, and voids are interpreted to have been calcite veinlets. The rock may originally have been a lava.

5.3 Nasty Knob Base-metal Zone

This zone extends from Nasty Knob in the north, at least two kilometres southward to the H.E.C. access track. This zone is one of sporadic occurrences of pyrite and sphalerite-bearing altered volcanic rocks, a Pb and Zn rich gossan in the vicinity of Nasty Knob, together with anomalous soil and rockchip base-metals and locally Ag and Au. This area was considered to be a high priority target by GEPL although the drilling of a single diamond drillhole (HX-1) and negative DHEM results subsequently provided no indication of significant mineralization at depth.

The Nasty Knob gossan occurs over a strike length of approximately 50 m in foliated white mica-chlorite rocks containing pseudomorphed feldspar euhedra. This host-rock has been described as a tuff (Komyshan, 1983). The gossan is elongated parallel to the foliation and is a few metres wide. Discontinuous outcrops occur to the south over a strike length of 700 m, close to the contact between volcanic rocks and coarse sandstone of the Denison Group. Fuchsite was observed along this contact, an identification confirmed by S.E.M./EDAX analysis.

6. 1988 UTEM SURVEY

6.1 Gridding and Line Cutting

Two grids were established during 1988 to control a UTEM survey. The grids are located in the Mt Huxley area (108.5 line km, Figure 5) and the West Sedgwick areas (106.7 line km, Figure 6). Line cutting was necessary to establish access in most of the gridded area. The grids were surveyed using compass and chain, and slope corrected.

6.2 Survey Details

A reconnaissance UTEM survey was conducted over the Mt Huxley and West Sedgwick Grids during the period September-December 1988. The survey was conducted by Lamontagne Geophysics, Ltd on behalf of BHP. A total of 155 line kilometres was surveyed using 18 loops. Loop sizes varied from a minimum of 900 m x 900 m to a maximum of 1000 m x 2100 m, with the majority being in the order of 1000 m x 1200 m. Readings were taken at 50m intervals along lines 200m apart. At each station the vertical component was read using a transmitting frequency of 26.23 Hz to measure 10 channels of data. Data was generally recorded outside loops, except in the vicinity of powerlines where some in loop data was recorded. Locations of loops and lines surveyed are presented in Figures 5 and 6.

Data is presented in Appendix 2 in the form of continuously normalised profiles with channels 5-10 on the top axis, channels 2-5 on the centre axis and channel 1 on the lower axis. An explanation of symbols and the delay times represented by each channel is presented in Table 2.

6.3 Discussion of Results

An initial interpretation of both the Huxley and West Sedgwick data sets was performed by visual inspection of the continuously normalised plots presented in Appendix 2. This interpretation was complicated by the presence of noise and spurious anomalies due to cultural features such as powerlines, waterpipes etc. No anomalies relating to features of economic significance were identified. Small early time responses were recognised which could be correlated across numerous profiles. These anomalies were interpreted to represent geological features.

Further, more sophisticated processing is currently underway with the aim being to extract detailed geological information and to highlight any subtle features in the data which may not be easily recognised in the original data presentation format. This processing involves the following stages:

- (1) production of stacked profiles of individual channels.
- (2) passing selected data channels through a Hilbert Transform.
- (3) Gridding and imaging of Hilbert Transformed data.
- (4) Interactive image enhancement and interpretation using image processing techniques.

The results of this second processing and interpretation phase will be presented in the next report.

TABLE 2

UTEM DATA PLOTTING SPECIFICATIONS

SYMBOL	CHANNEL NUMBER	NOMINAL TIME WINDOWS (for a base frequency of 26.23Hz)		
		START (ms)	CENTRE (ms)	END (ms)
◇	10	.018	.027	.036
△	9	.036	.054	.072
⊗	8	.072	.108	.144
7	7	.144	.216	.288
△	6	.288	.432	.576
Σ	5	.576	.864	1.152
□	4	1.152	1.73	2.304
\	3	2.304	3.46	4.608
/	2	4.608	6.91	9.216
	1	9.216	13.82	18.43

All channels are plotted as :

$$\frac{\text{Channel} - \text{reference}}{\text{base}} \times 100\%$$

For continuously normalised plots:

- reference = primary (for channel 1)
- = channel 1 (for all other channels)
- base = primary field (total) at reading station

For point normalised plots:

- reference = primary (for channel 1)
- = channel 1 (for all other channels)
- base = primary field (total) at reference station marked with symbol ***>

7. CONCLUSIONS AND RECOMMENDATIONS

Exploration activity for this reporting period focussed on the Mount Huxley and West Sedgwick areas. Previous data was compiled and evaluated, and old prospects were visited and re-sampled. Geological compilations were field-checked and supplemented by aerial photographic and landsat interpretation. Virtually the entire West Sedgwick and Mt Huxley areas were gridded and surveyed using UTEM.

Evaluation of pre-existing data suggests that the Huxley grid shows promising signs of gold and/or base metal mineralization, although lack of a significant UTEM response indicates that any conductive orebody lies at depths in excess of 200 m. In the West Sedgwick area, the only area deemed to be worthy of follow-up is the zone of base-metal in soil and coincident IP anomalism in the vicinity of the # 3 Dam.

The following program is recommended for the 1989-90 period:

- Regional aeromagnetic and gravity interpretation
- IP coverage of Central Huxley gold zone and Nasty Knob zone
- Soil and/or bedrock gold and basemetal geochemistry of these zones
- Follow up UTEM in areas of interest using different loop configurations
- Stream-sediment survey of the West Sedgwick and Mt Owen regions
- Geological mapping in areas of interest
- Re-logging of pre-1988 drillcore

It is recommended that this work in Area 1 be carried out in parallel with our major proposed programmes in the Beatrice, Comstock Valley, Moxon Saddle and Garfield areas (i.e. gridding and comprehensive UTEM surveys).

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APPENDIX 1

Petrographic Reports

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Sample Number : 7206

Identification : Lightly chloritized, heavily epidotized,
abundantly porphyritic trachyandesite

Description :

The sample appears to be part of a water-worn cobble of moderately hard, slightly weathered rock displaying many yellowish grey phenocrysts of altered feldspar and dark greenish grey, fine groundmass. One side of the specimen has a veneer of finer grained rock.

A cobaltinitrite staining test revealed that the groundmass is rich in K-feldspar.

In thin section the sample displays heavy alteration but its primary textures are of abundantly porphyritic, volcanic style. Subhedral phenocrysts about 0.2 to 2mm in size are set in a fine groundmass.

Numerous tabular to prismatic phenocrysts of plagioclase have been heavily altered to fine epidote group minerals. Some of the largest phenocrysts are embayed but unaltered greenish brown hornblende. Smaller mafic phenocrysts of inferred pyroxene have been chloritized and epidotized. There are a few leucoxenized grains of inferred oxide. The groundmass consists of very fine epidote group minerals and anhedral feldspar (apparently potassic), along with minor hornblende, chlorite and leucoxene.

An approximate mode is :

25-30%	heavily epidotized plagioclase phenocrysts
10-15%	chloritized and epidotized inferred pyroxene phenocrysts
2-3%	hornblende phenocrysts
tr	leucoxenized oxide phenocrysts
55-60%	cloudy groundmass of mainly epidote group minerals, K-feldspar

The fine-grained veneer on one side of the specimen is composed mainly of fine epidote group minerals, but has a foliated appearance and broken remnants of altered phenocrysts.

Throughout the rock incipient weathering has generated iron stains on epidote in chloritized phenocrysts of inferred pyrite.

Comments and Interpretations :

This rock is interpreted to have originated as abundantly porphyritic trachyandesitic lava. Latite is an alternative equivalent name.

The rock has been lightly chloritized and intensely epidotized, quite possibly by hydrothermal processes. Surprisingly hornblende remained quite stable. A zone of shearing on one side of the specimen is the only feature which seems likely to reflect incipient dynamothermal metamorphism.

Incipient weathering has selectively iron-stained epidote in chloritized phenocrysts.

669027

25

Sample Number : 7207Identification : Mildly foliated, lightly sericitized, heavily chloritized, andesitic vitric crystal lithic tuffDescription :

The sample appears to be part of a water-worn pebble of moderately hard, only slightly weathered rock displaying many greyish orange phenocrysts of feldspar set in a mildly foliated greenish grey matrix with wisps of darker greenish grey.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the phenocrysts are seen to be lightly sericitized, tabular plagioclase about 0.5 to 2mm in size. However, there are a few examples of lithic clasts, involving in one case porphyritic rhyodacite (plagioclase phenocrysts in micrographic quartz and feldspar) and in several cases unwelded vitric crystal tuff (phenoclasts of plagioclase and leucoxenized oxide set in a fine matrix of albite, sericite and chlorite with ghosts of cusped vitric shards 0.1 to 0.2mm in size). There is a single 0.5mm clast of quartz.

The matrix which dominates the specimen shows an undulating and anastomosing chloritic and sericitic foliation (highlighted by limonitic weathering stains); other components are fine, untwinned plagioclase (about 0.02mm) and very fine rutile. Under low light conditions remnant unwelded vitroclastic textures are barely discernible; the wispy chloritic patches noted in hand specimen seem to represent formerly pumiceous clasts about 1 to 2mm in size.

An approximate mode is :

20-30%	phenoclasts of lightly sericitized plagioclase
3-4%	lithic clasts of andesitic vitric crystal tuff and porphyritic rhyodacite
rare	quartz clasts
35-40%	matrix plagioclase (probably albite)
20-30%	matrix chlorite
5-10%	matrix sericite
1-2%	matrix rutile

Comments and Interpretations :

This rock is interpreted to have originated as unwelded vitric crystal lithic tuff of probably andesitic composition. The vitroclastic and pumiceous unsorted primary textures are consistent with ashflow deposition on land, but subaqueous deposition is not precluded.

Alteration to sericite-chlorite-rutile/leucoxene may well be a product of hydrothermal alteration. Mild foliation of sericite and chlorite in the matrix reflects incipient dynamothermal metamorphism.

Weathering effects are slight and involve mainly release of iron from some chlorite to form limonitic stains mainly along the foliation.

669028

28

Sample Number : 7208

Identification : Lightly sericitized, carbonated, and chloritized trachyandesite

Description :

The sample is a broken hand specimen of hard, lightly weathered, dark greenish grey, fine-grained rock with subtle finely porphyritic textures. Weathering has bleached and mildly softened the rock for 5 to 10mm from an old exposed surface; it has also generated a black stain of manganese oxides on two old joint surfaces and minor limonitic iron-staining as a front beneath the bleached zone and along several cracks and along a faint foliation.

A cobaltinitrite staining test revealed that the rock carries moderately abundant fine K-feldspar.

In thin section the sample plainly displays porphyritic, flow-aligned textures of volcanic style. Subhedral phenocrysts about 0.2 to 1.5mm in size are set in a groundmass dominated by flow-aligned feldspar laths about 0.05 to 0.1mm long. Hints of incipient lenticular metamorphic foliation are provided by faint limonitic stains: the secondary foliation is crudely parallel to the flow foliation.

The main phenocrysts are twinned plagioclase with light flecking by sericite and less commonly calcite. There are many small phenocrysts of magnetic opaque oxide and some chlorite-carbonate pseudomorphs after probable pyroxene. The groundmass features partly recrystallized, poorly twinned feldspars, many specks of opaque oxide, fine chlorite and flecks of sericite.

In the bleached weathering zone the feldspars and sericite persist, but iron oxides, chlorite and carbonate have been removed. Deeper within the sample limonite stains most carbonate and opaque oxide grains and some chlorite.

An approximate mode is :

6-8%	plagioclase phenocrysts
2-3%	opaque oxide phenocrysts (probably mainly magnetite)
1-2%	chlorite-carbonate pseudomorphs of probable pyroxene phenocrysts
40-45%	groundmass plagioclase
25-35%	groundmass K-feldspar
6-8%	groundmass opaque oxides
5-7%	groundmass sericite
4-6%	groundmass chlorite

Comments and Interpretations :

Primary textures in this rock are quite consistent with porphyritic lava and its composition was apparently trachyandesitic. Latite is an alternative name.

The rock is lightly sericitized and carbonated and moderately chloritized. The changes may well be hydrothermal because textural modifications attributable to dynamothermal metamorphism appears to be slight.

Weathering produces a bleached outer zone where opaque oxides, carbonate and chlorite have been removed. Deeper in the specimen limonitic staining affects primary iron oxides, carbonate and some chlorite.

669030

28

Sample Number : 7209Identification : Reddened glomeroporphyritic rhyodacite with completely chloritized mafic silicatesDescription :

The sample is a moderately weathered, but hard specimen displaying two bleached, flat joint surfaces and other surfaces which have been bleached, etched and pitted by weathering. The least weathered core of the specimen displays small orange pink phenocrysts set in a greyish red, fine groundmass. Weathering has bleached and softened the rock for 10 to 15mm from the pitted surfaces and for about 1 to 5mm from the joint surfaces.

A cobaltinitrite staining test revealed abundant fine K-feldspar.

In thin section the sample displays glomeroporphyritic, granophyric textures. Corroded, subhedral phenocrysts about 0.3 to 2mm in size occur mainly as clumps within a micrographic groundmass of feldspars and quartz with grainsizes around 0.1 to 0.2mm.

The main phenocrysts are twinned plagioclase (andesine from its optic sign and twin extinction angles) with very slight flecking by sericite and faint hematitic pigmentation. Other smaller phenocrysts are magnetic opaque oxide and completely chloritized mafic silicates of uncertain original type. The groundmass has quartz (both as simple grains and micrographic grains, hematite-pigmented K-feldspar (all micrographic), laths of plagioclase, many specks of opaque oxide and some fine chlorite.

In the most weathered zone chlorite has been removed (leaving pores) and opaque oxides have been hematized and partly removed.

An approximate mode is :

8-10%	plagioclase phenocrysts
1-2%	opaque oxide phenocrysts
1-2%	chlorite pseudomorphs of mafic phenocrysts
30-40%	groundmass K-feldspar
30-35%	groundmass quartz
10-15%	groundmass plagioclase
5-8%	groundmass chlorite
0.5-1%	groundmass opaque oxides

Comments and Interpretations :

This rock has sufficiently fine grainsizes to represent lava, but its glomeroporphyritic and granophyric nature is more suggestive of a subvolcanic dyke or sill. Its composition is rhyodacite, transitional towards strict rhyolite.

Alteration of probably deuteritic style is virtually restricted to chloritization of mafic silicates.

Weathering is thought to account for pervasive subtle hematitic pigmentation of the feldspars (although deuteritic oxidation is an alternative possibility). Bleached weathering zones reveal destruction of chlorite first, then hematization and removal of opaque oxides.

669031

29
Sample Number : 7210

Identification : Deformed and partly recrystallized, thick quartzofeldspathic veins in an intensely sericitized acid tuffaceous host

Description :

The sample is a slightly weathered, broken hand specimen displaying two veins (or two limbs of folded vein), about 15 to 35mm thick and composed of light grey quartz with intergrown moderate orange pink to moderate reddish orange feldspar. The host rock is greenish grey, fine-grained and carries small phenocrysts or clasts of quartz.

Cobaltinitrite stain revealed that the vein feldspar is potassic and also reacted diffusely with the host rock, implying potassic fine sericite.

In thin section the veins are seen to consist of moderately to heavily strained and partly recrystallized, originally coarse quartz and K-feldspar. The original quartz was anhedral to toothy and at least 2 to 20mm in grain size: the crystals are now distinctly curved, strained and partly recrystallized to sutured, smaller grains. The K-feldspar was mainly about 0.5 to 2mm and interstitial to the long quartz crystals: the grains are now bent, strained, partly recrystallized and show poorly developed microcline twinning. There are a few small patches and crenulated crude veinlets of sericite within the major veins.

The host rock consists mainly of fine sericite, but has broken embayed phenoclasts of quartz (0.1 to 0.7mm) and finely rutilated ghosts of other phenoclasts. The sericite is mildly foliated.

An approximate mode is :

50-60%	quartz within veins
20-30%	microcline within veins
2-3%	sericite within veins
12-18%	host rock sericite
1-2%	host rock clasts of quartz
0.3-0.5%	host rock rutile

Comments and Interpretations :

This sample consists mainly of moderately to heavily deformed and partly recrystallized veins of coarse quartz, K-feldspar (now microcline) and sericite (perhaps partly after primary plagioclase).

The obvious deformation and partial recrystallization will severely complicate any attempted study of fluid inclusions.

The host rock was almost certainly an acid tuff (probably vitric crystal type): it has been severely sericitized and mildly foliated.

669032

30

Sample Number : 7211Identification : Moderately chloritized trachyandesite with quartzose amygdales and a metamorphic cleavageDescription :

The sample is a moderately hard, lightly weathered hand specimen of foliated, dark greenish grey, fine-grained rock. Weathering has bleached and softened the rock for 10 to 20mm beneath an etched weathering surface. A front of limonitic iron-staining occurs beneath the bleached zone. Some darker brown material exposed on foliation surfaces is a superficial growth of moss or some other plant.

A cobaltinitrite staining test revealed moderately abundant fine K-feldspar.

In thin section the sample displays amygdaloidal, very sparsely porphyritic, finely crystalline, flow-aligned textures of volcanic style. Phenocrysts are about 0.2 to 0.5mm, amygdales are irregular and 0.2 to 1mm, and the groundmass features aligned slim laths of feldspar about 0.05 to 0.15mm long. A foliation cleavage is inclined at about 30° to the flow foliation.

The phenocrysts are tabular to lath shaped plagioclase. The amygdales are filled with sutured aggregates of mildly strained quartz. The groundmass involves fine laths of feldspar, chloritic pseudomorphs of prismatic mafic silicates, and two generations of fine opaque oxides and some derived rutile.

The most weathered part of the section shows iron-stained chlorite. Elsewhere there is trivial iron-staining along the metamorphic cleavage.

An approximate mode is :

0.2-0.3%	phenocrysts of plagioclase
35-45%	groundmass plagioclase
25-30%	groundmass K-feldspar
12-18%	groundmass chlorite
6-8%	groundmass opaque oxides and derived rutile
10-12%	quartz amygdales

Comments and Interpretations :

This rock has sparsely porphyritic, finely crystalline, flow-aligned and amygdaloidal textures which are quite consistent with a lava flow. The composition is trachyandesite (or the alternative term latite can be used).

Primary mafic silicates (probably pyroxene) have been completely chloritized : this may reflect hydrothermal action. A cleavage foliation has been generated by incipient dynamothermal metamorphism.

Weathering has attacked chlorite in part of the sample and mobilized some resultant limonite along the cleavage.

669033

31
Sample Number : 7212

Identification : Finely pyritic, cleavage foliated, lightly epidotized, intensely sericitized rock

Description :

The sample is a robust but moderately soft hand specimen of foliated, fine-grained, light grey rock with a superficial thin skin of yellowish jarositic and brownish limonitic weathering products. Microscopic examination reveals plentiful very fine pyrite within the grey rock.

Cobaltinitrite stain gave a conspicuous but diffuse yellow stain.

In thin section the sample is seen to consist mainly of fine mainly non-foliated sericite. There are no distinct or recognisable remnant primary textures.

Numerous disseminated cubes of pyrite (about 0.01 to 0.05mm) along with locally foliated sericite delineate a lenticular foliation. Cells enclosed by the foliation network are about 2 to 5mm in size and display sericite, variable amounts of 0.1 to 0.2mm grains of an anhedral epidote group mineral (probably clinozoisite), and little pyrite. Within a few cells there are remnant equant, anhedral grains of opaque oxide (up to 0.4mm) and some related leucoxene-rutile pseudomorphs.

In one corner of the section there are several finely siliceous patches (half to several millimetres) within which there are 0.3 to 0.4mm laths replaced by sericite.

An approximate mode is :

80-85%	sericite
10-15%	pyrite
3-4%	epidote group mineral
1-2%	opaque oxide and derived rutile-leucoxene
0.1-0.3%	fine quartz

Comments and Interpretations :

There are few clues to the original nature of this rock. It did contain 1-2% of ilmenite and/or magnetite ranging up to 0.4mm in grain size and it seems to have had at least some small feldspar laths about 0.3 to 0.4mm long. A volcanic origin is possible but no confident statement can be made.

The rock appears to have been lightly epidotized and intensely sericitized by hydrothermal processes, then given a lenticular foliation cleavage (probably by dynamothermal metamorphism) and then impregnated with disseminated pyrite emplaced via the cleavage.

Superficial weathering has generated jarosite and limonite from pyrite.

669034

32

Sample Number : 7213Identification : Glomeroporphyritic rhyodacite with light chloritization, light to moderate sericitization and incipient metamorphic foliationDescription :

The sample is a moderately weathered hand specimen with a hard core of mildly porous and iron-stained, finely porphyritic, light olive grey rock and 20 to 30mm of bleached, softened, weathered rock.

A cobaltinitrite staining test revealed abundant, distinct, finely crystalline K-feldspar.

In thin section the sample displays glomeroporphyritic, finely granophyric textures. Corroded, subhedral phenocrysts about 0.2 to 1mm in size occur mainly as clumps within a micrographic groundmass of feldspars and quartz with grainsizes around 0.1 to 0.2mm.

The main phenocrysts are plagioclase, lightly flecked with sericite. Other smaller phenocrysts are now partly leucoxenized opaque oxide, rutile aggregates after opaque oxide, and chlorite-sericite pseudomorphs after prismatic mafic silicates. The groundmass consists mainly of micrographic quartz and K-feldspar, but there are also some plagioclase laths and some chlorite, sericite and leucoxene.

There is local foliation of some chlorite and sericite and also some mobilization and alignment within late fractures.

In the bleached zone of weathering feldspar, sericite and rutile/leucoxene persists, but chlorite and opaque oxides have been removed. Deeper in the specimen chloritized phenocrysts have been partly destroyed, fine chlorite is commonly iron-stained and limonite has mobilized along some sericitic/chloritic fracture veins.

An approximate mode is :

5-7%	phenocrysts of lightly sericitized plagioclase
1-2%	opaque oxide phenocrysts, partly altered to leucoxene and rutile
0.5-1%	chlorite-sericite pseudomorphs of mafic phenocrysts
30-35%	groundmass K-feldspar
30-35%	groundmass quartz
8-12%	groundmass plagioclase
10-12%	groundmass sericite
5-10%	groundmass chlorite
0.5-1%	groundmass leucoxene

Comments and Interpretations :

This rock has sufficiently fine grainsizes to represent lava, but its glomeroporphyritic and granophyric textures are suggestive of a dyke or sill. Its composition is rhyodacite, transitional towards true rhyolite. Phenocrysts are finer and less abundant but there are close similarities to Sample 7209.

33

Alteration of possibly deuteritic or hydrothermal style involves light chloritization and light to moderate sericitization. Minor fracturing and local mobilization and alignment of sericite and chlorite is attributed to incipient dynamothermal metamorphism.

Weathering involves destruction of chlorite and opaque oxides in bleached zones, and iron-staining of chlorite and mobilization of derived limonite deeper in the specimen.

34

Sample Number : 7219

Identification : Incipiently foliated, lightly to moderately chloritized and sericitized, quartz amygdaloidal and veined, porphyritic andesite

Description :

The sample is a moderately bleached, weathered hand specimen. The least weathered part displays greyish orange feldspar phenocrysts and lenticular pores set in a greenish grey groundmass.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample displays abundantly porphyritic, vesicular and amygdaloidal, volcanic textures. Subhedral phenocrysts are 0.5 to 3mm and lenticular vesicles and amygdalae are about 0.2 to 4mm. The groundmass had primary grainsizes around 0.1mm but shows recrystallization to finer grains and incipient development of two sericitic foliations which intersect at angles of at least 45°.

The phenocrysts are mainly twinned plagioclase, liberally flecked with sericite and chlorite and partly pigmented with hematite. Small phenocrysts of inferred ilmenite or titaniferous magnetite have been pseudomorphed by leucoxene and rutile. A few small phenocrysts of inferred pyroxene have been completely altered to chlorite and quartz. The groundmass has poorly preserved primary textures and involves fine, mainly untwinned plagioclase, chlorite, sericite and leucoxene, along with larger (0.2mm) poikiloblastic grains of quartz. The amygdalae are filled with faintly strained, anhedral quartz (0.1 to 0.4mm grainsize) and minor chlorite. Other vesicles are empty or partly lined with similar anhedral to slightly toothy quartz.

There are numerous, but inconspicuous thin fissure veins (0.05 to 0.2mm wide) dominated by quartz, but generally with some anhedral pores and in some cases with chlorite.

An approximate mode is :

20-25%	phenocrysts of lightly sericitized and chloritized plagioclase
0.1-0.2%	leucoxene-rutile pseudomorphs of oxide phenocrysts
25-30%	groundmass plagioclase
15-20%	groundmass chlorite
10-15%	groundmass sericite
8-10%	groundmass quartz
1-2%	groundmass leucoxene
8-10%	amygdaloidal quartz and minor chlorite
1-2%	vesicles
0.4-0.6%	porous and chloritic quartz fissure veins

Comments and Interpretations :

This rock is interpreted to have originated as vesicular, porphyritic andesite lava.

35

Light to moderate alteration produced chlorite, sericite, leucoxene and rutile, vesicles incompletely filled with quartz and minor chlorite and related porous, chloritic quartz fissure veins formed. It is possible that the pores in the veins and vesicles represent carbonate now totally removed by weathering. It is possible that poikiloblastic quartz grains in the groundmass of the andesite are products of light silicification rather than primary crystallization; fine quartz with chlorite has replaced the few phenocrysts of probable pyroxene.

Subsequent low grade regional metamorphism accounts for mild strain in quartz, fine recrystallization of groundmass plagioclase and development of two incipient sericitic and chloritic foliations.

Sample Number : 7220

Identification : Incipiently foliated, moderately to heavily chloritized and sericitized, quartz amygdaloidal and veined, porphyritic andesite

Description :

The sample is a moderately bleached, weathered hand specimen. The least weathered part displays greyish orange feldspar phenocrysts, lenticular pores, a greenish grey groundmass and fine siliceous veins.

A cobaltinitrite staining test revealed no K-feldspar.

In thin section the sample displays moderate to heavy sericitization and chloritization and incipient development of two foliations, but there are obvious remnants of porphyritic, vesicular and amygdaloidal, volcanic textures. Subhedral phenocrysts are mainly 0.5 to 2mm in size and primary groundmass grains were about 0.1mm. Lenticular amygdales and vesicles are about 0.3 to 5mm.

The main phenocrysts are twinned plagioclase, now moderately flecked with sericite and chlorite and pigmented with hematite. There are small phenocrysts of inferred oxide pseudomorphed by leucoxene and rutile and of inferred mafic silicates pseudomorphed by chlorite ± sericite ± quartz ± leucoxene. The groundmass involves a background mosaic of untwinned plagioclase and minor quartz thoroughly flecked with sericite, chlorite and leucoxene. Some amygdales are filled with anhedral, mildly strained quartz and chlorite and other vesicles are incompletely filled. There is a craze pattern of numerous fissure veins (0.02 to 1mm wide) dominated by mildly strained quartz, but with variable amounts of chlorite and irregular pores.

An approximate mode is :

10-15%	phenocrysts of moderately sericitized and chloritized plagioclase
0.1-0.2%	chloritic pseudomorphs of mafic silicate phenocrysts
45-55%	groundmass sericite
8-10%	groundmass plagioclase
8-10%	groundmass chlorite
3-4%	groundmass quartz
1-2%	groundmass leucoxene
2-3%	amygdaloidal quartz and minor chlorite
0.5-1%	vesicles
10-15%	porous and chloritic quartz fissure veins

Comments and Interpretations :

This rock is interpreted to have originated as vesicular, porphyritic andesitic lava, comparable to that represented by Sample 7219, but with heavier alteration and veining.

There has been moderate to heavy alteration to produce sericite, chlorite, leucoxene and rutile, vesicles incompletely filled with quartz and chlorite and many related porous, chloritic quartz fissure veins formed. The pores in veins and vesicles may well represent carbonate removed by weathering. Minor quartz occurs in the groundmass of the rock without any obvious indications of a replacement origin.

37

Subsequent metamorphism has mildly strained quartz, finely recrystallized groundmass plagioclase and developed two incipient foliations.

38
Sample Number : 7223

Identification : Mildly pyritic, intensely silicified,
 chloritized and sericitized felsic
 (?)volcanic rock

Description :

The sample is a hackly and porous, weathered but quite hard hand specimen of greenish grey, fine-grained rock.

A staining test revealed about 10-15% of fine K-feldspar.

In polished thin section the sample is seen to be intensely altered : primary textures are not obvious. There are some vague suggestions of coarsely fragmented and possibly pumiceous textures and very sparse examples of altered phenocrysts about 1mm in size.

The phenocrysts involve sericitic pseudomorphs of inferred plagioclase and porous, weathered pyritized and silicified pseudomorphs of other tabular or prismatic grains. Remnant pyrite is 0.03 to 0.5mm in size.

The bulk of the rock consists of moderately sericitized fine, anhedral feldspars and variable amounts of anhedral quartz (0.05 to 0.1mm grainsize) and of chlorite.

There are irregular thin fissure veins (generally less than 0.1mm wide) of quartz, of quartz plus pores (possibly after carbonate) and of pores alone (possibly after carbonate).

An approximate mode is :

50-60%	quartz
10-15%	feldspars (largely or wholly potassic)
15-20%	chlorite
8-10%	sericite
8-10%	pores
0.5-1%	pyrite and derived limonitic oxide

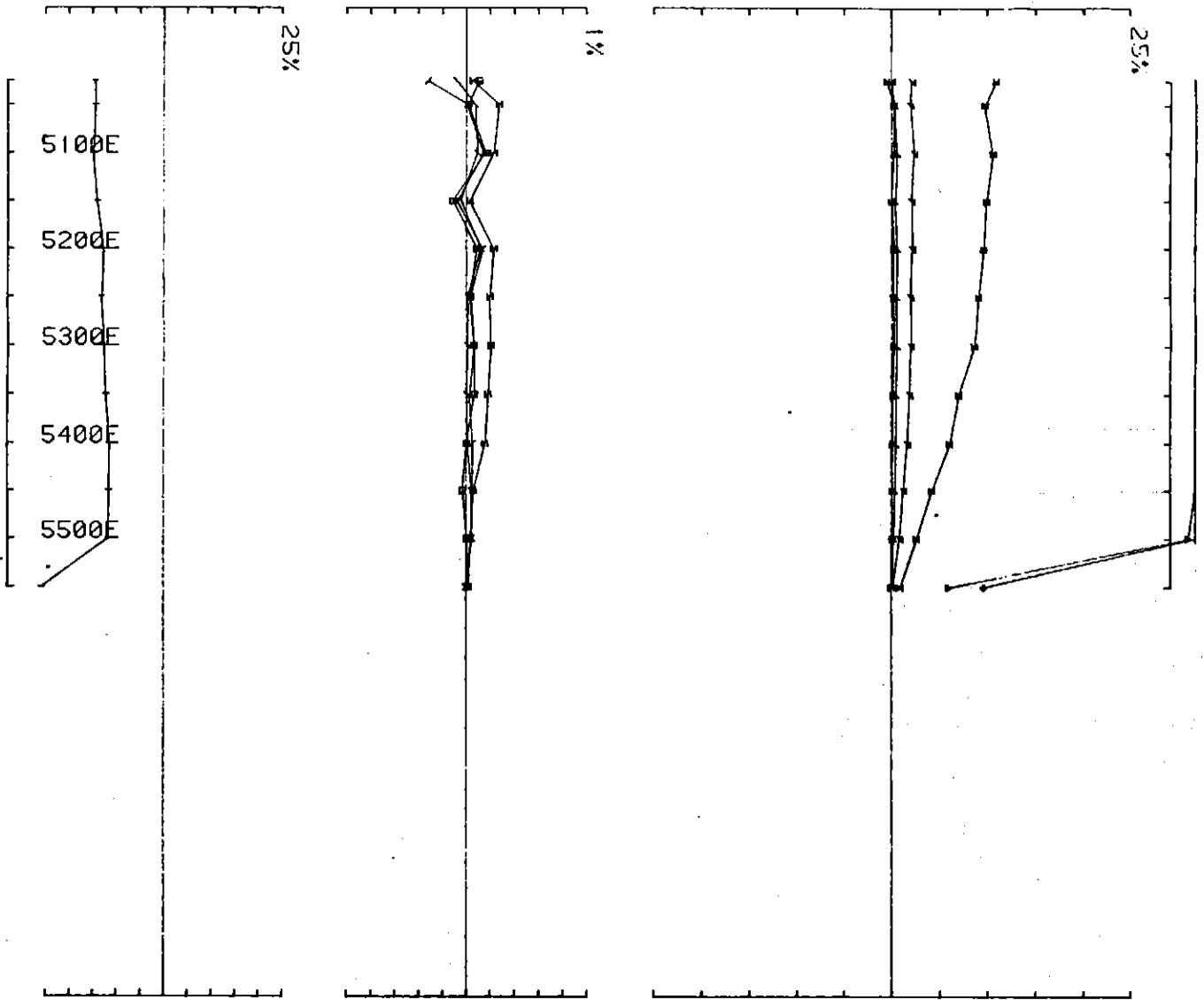
Comments and Interpretations :

This rock has been intensely, finely silicified, chloritized and sericitized and impregnated with minor pyrite. Clean, anhedral weathering pores suggest that it may have carried some calcite, mainly in fine fracture veins, with or without quartz.

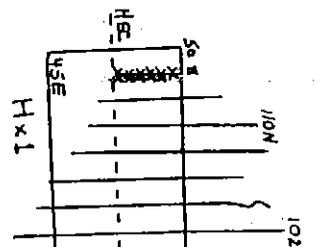
There are no good remnant textures, but the presence of sparse phenocrysts of inferred feldspar and of remnants of groundmass K-feldspar hints at a felsic volcanic parentage. Perhaps the rock was a lava, subjected to some stringy brecciation before or during alteration or perhaps it was flow brecciated pumice.

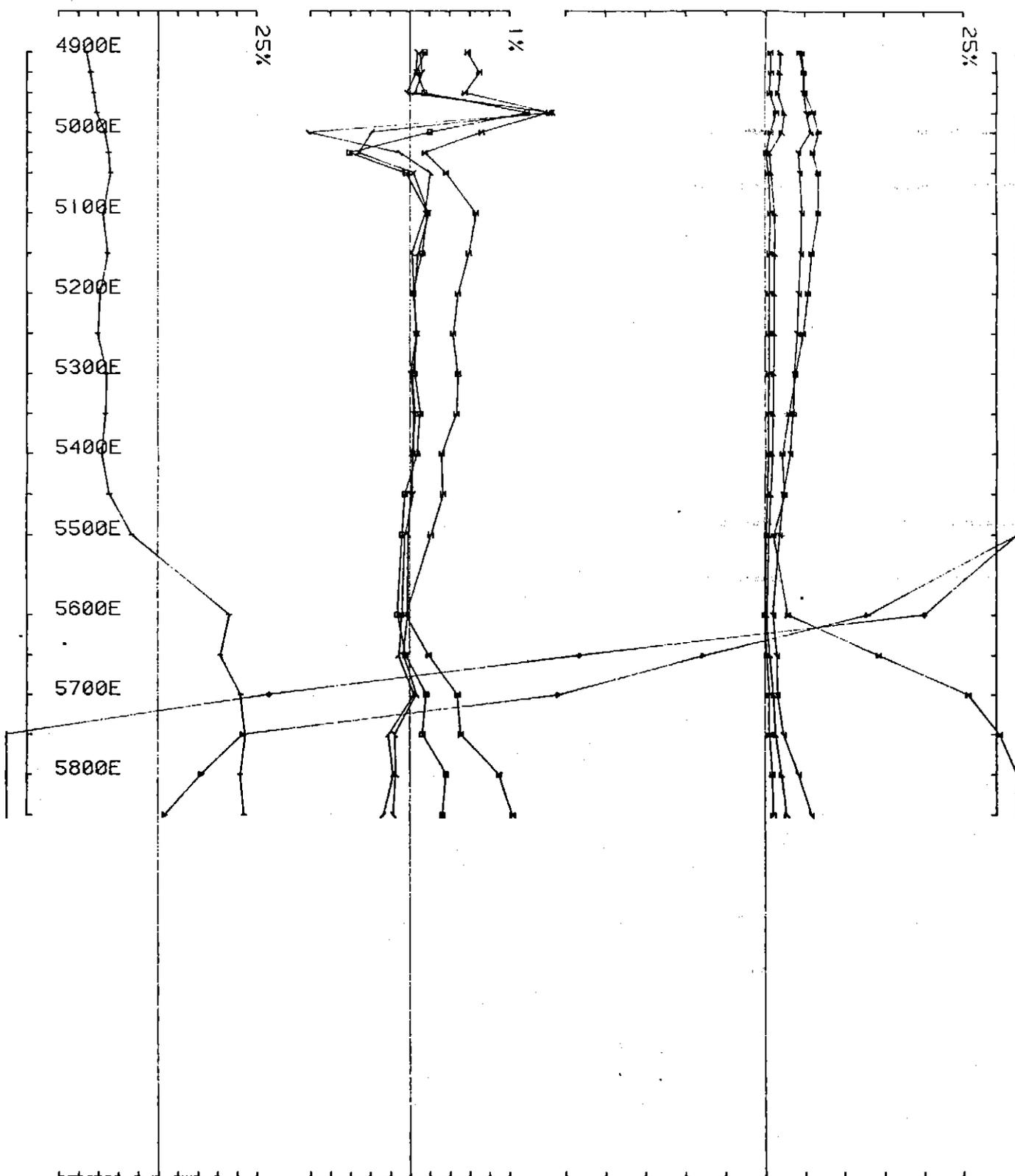
APPENDIX 2

UTEM Data



UTEM SURVEY at MOUNT HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 1 line 11400N component Hz secondary field Ch 1 contin. norm.

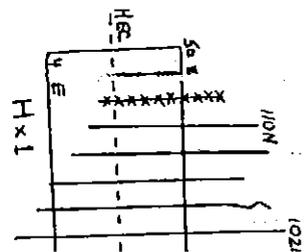




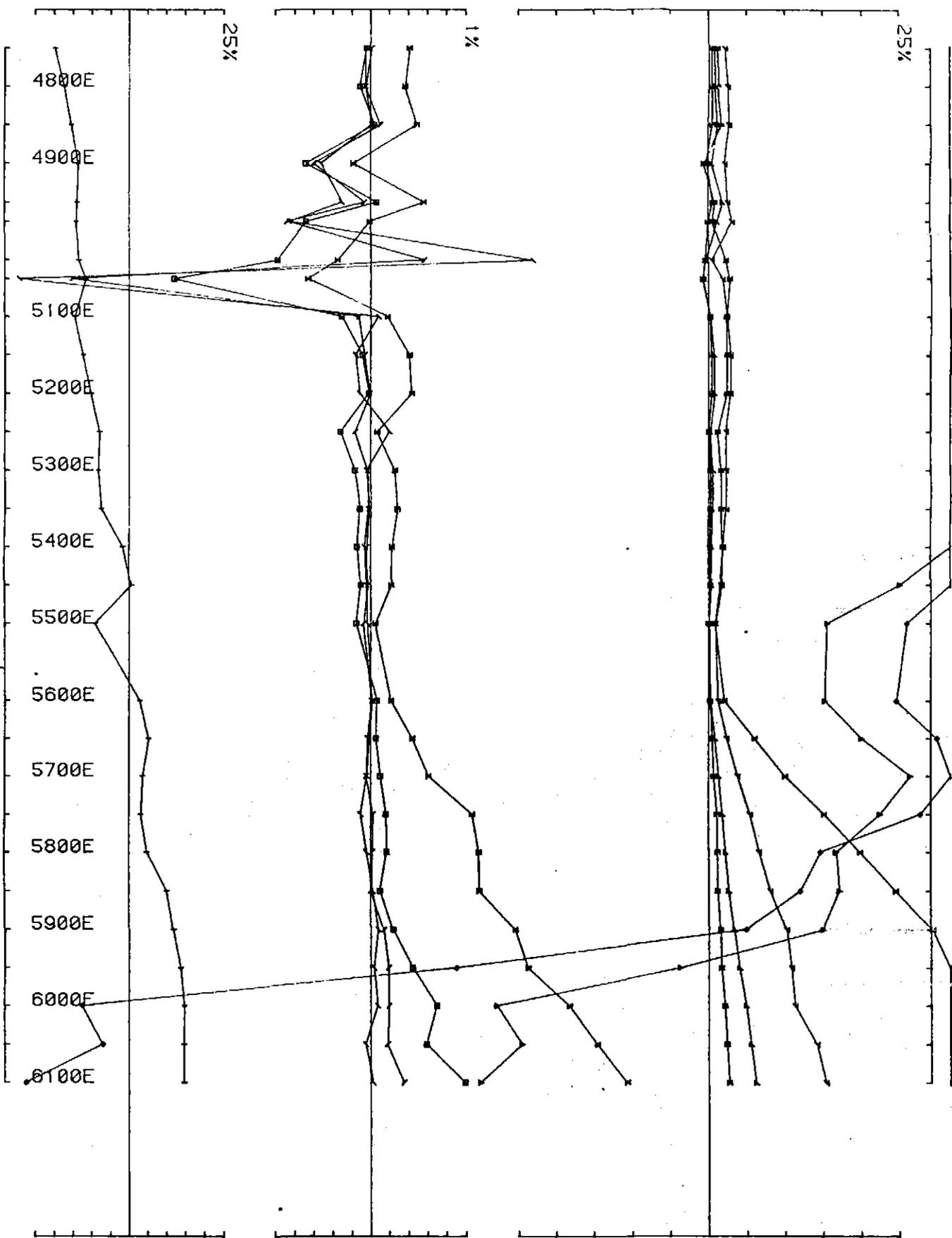
UTEM SURVEY at MOUNT HUXLEY for B H P

conducted by L G L Job 8859 base freq (hz) 26.230

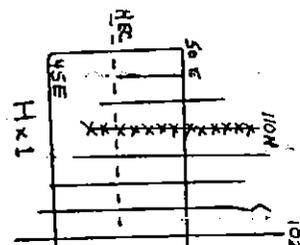
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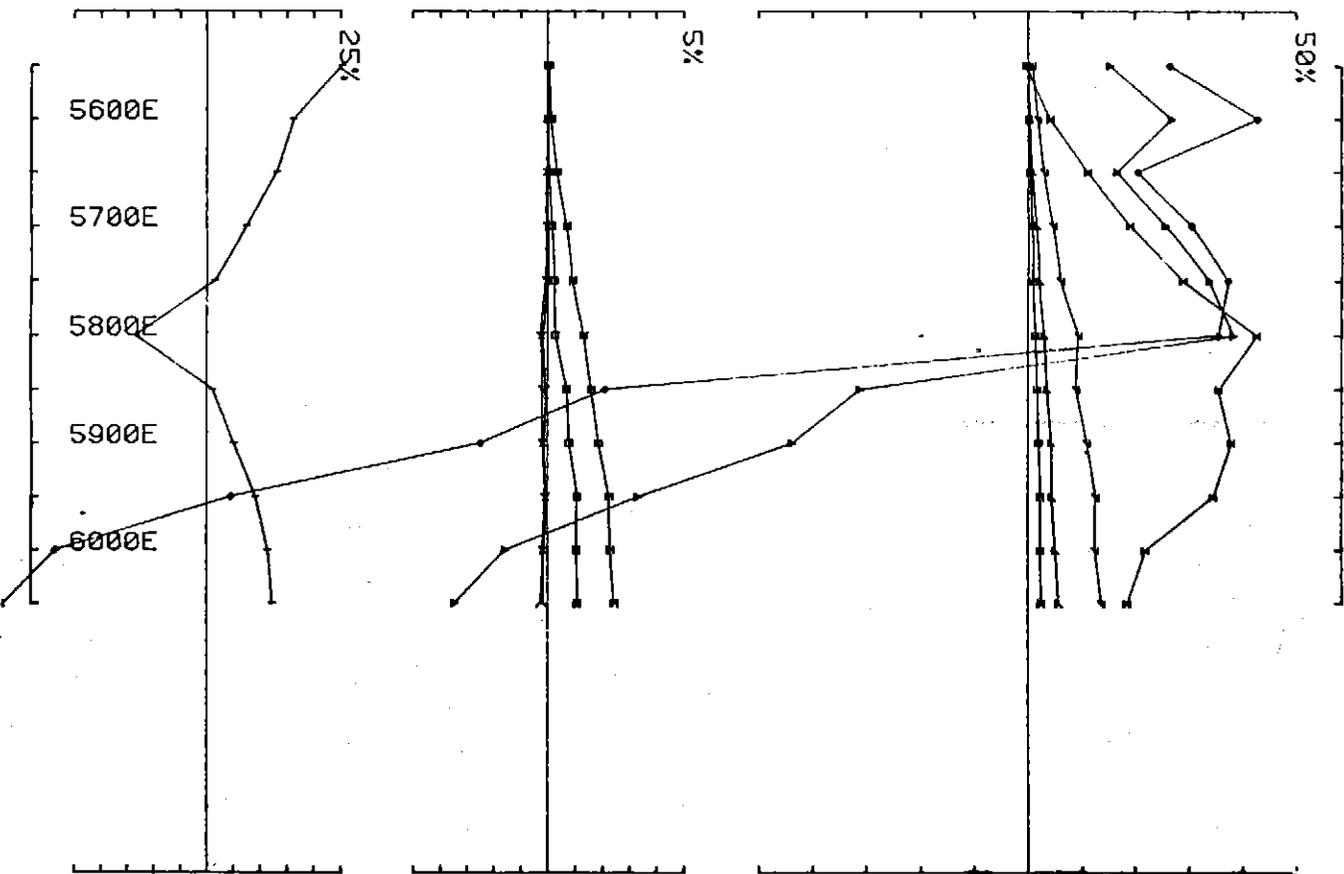


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UTEM SURVEY at MOUNT HUXLEY for B H P
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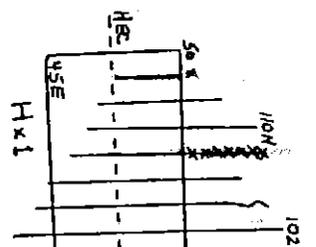




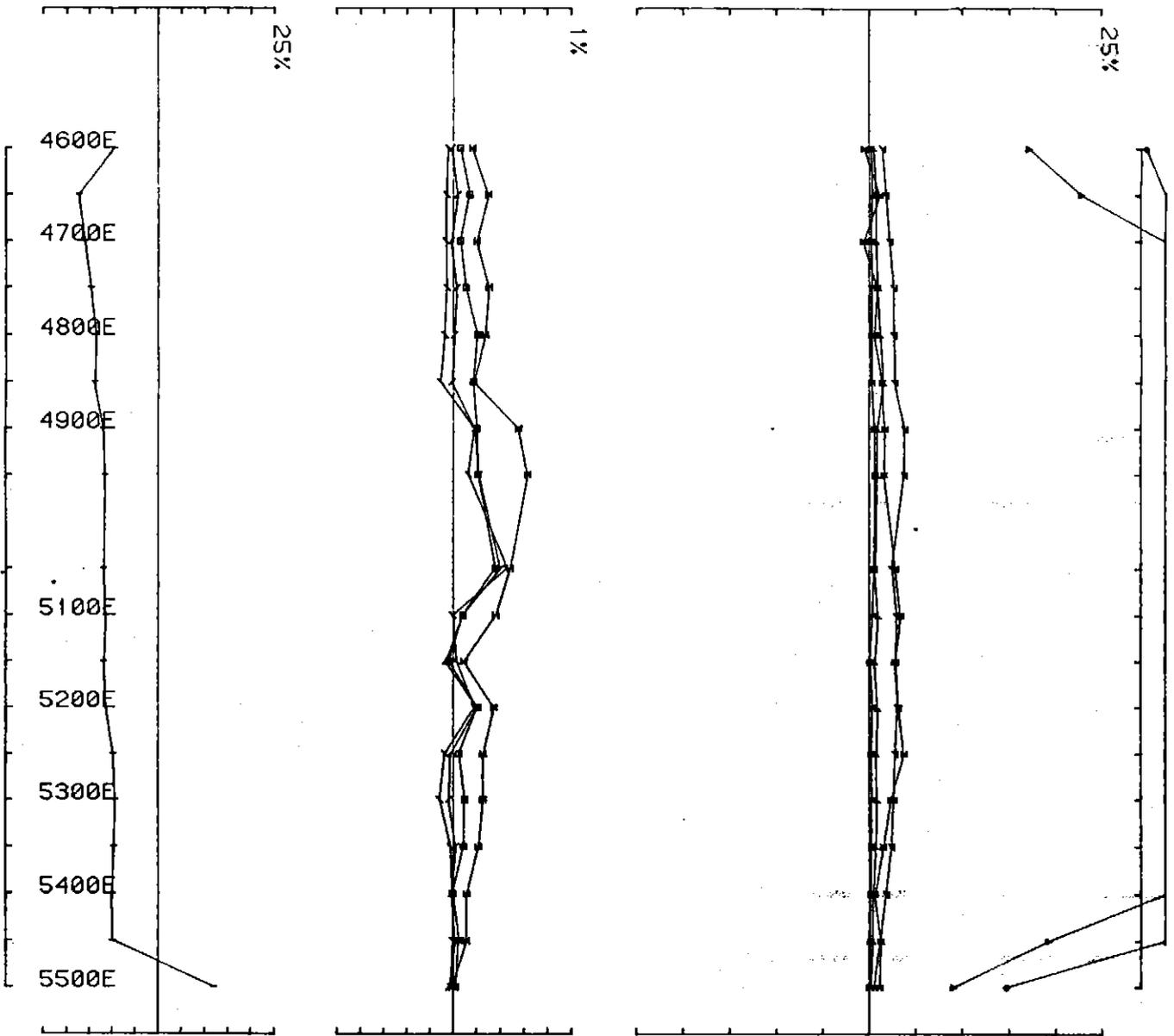
UTEM SURVEY at MOUNT HUXLEY for B H P

conducted by L G L Job 8859 base freq (hz) 26.230

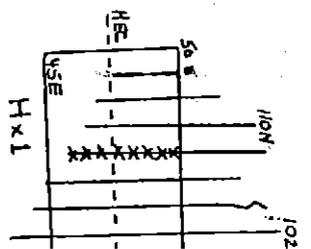
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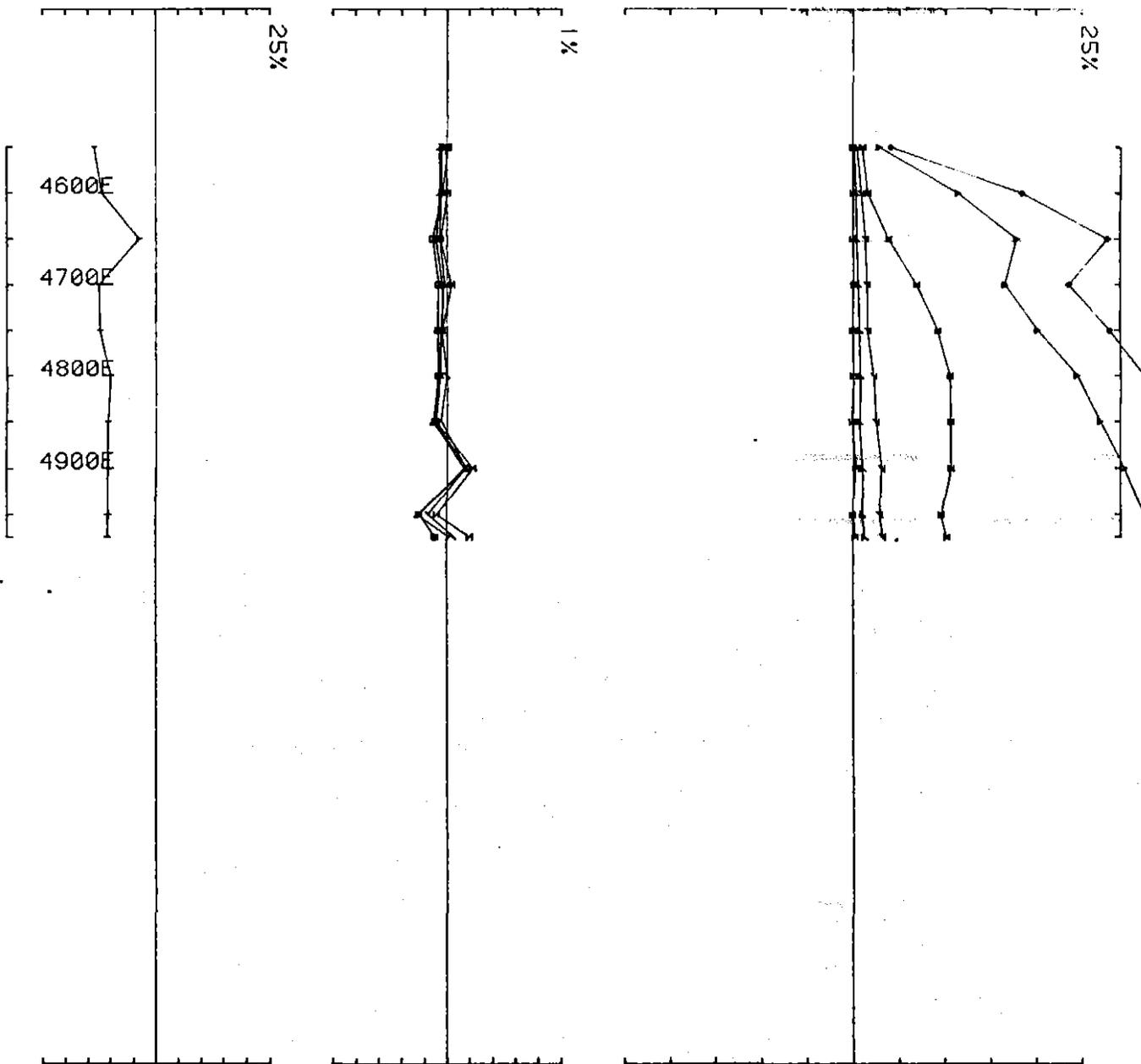


44

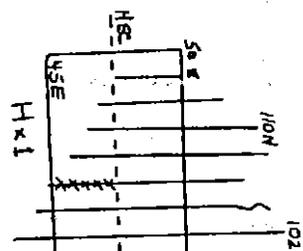


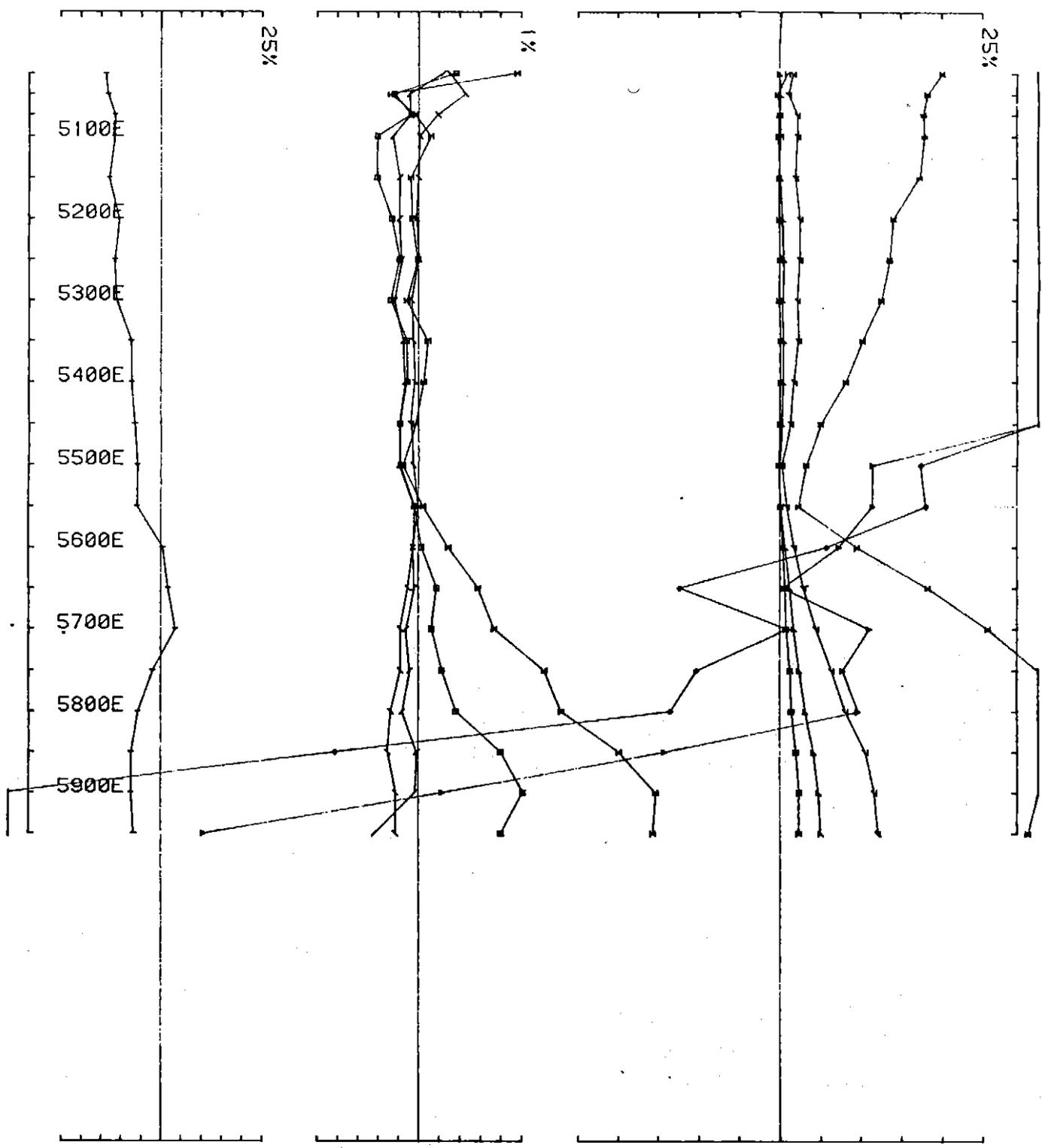
UTEM SURVEY at MOUNT HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 1 line 10800N component Hz secondary field Ch 1 contin. norm.



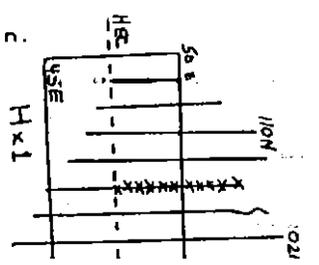


UTEM SURVEY at MOUNT HUXLEY for B H P
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 loop no 1 line 10600N component Hz secondary field Ch 1 contin. norm.

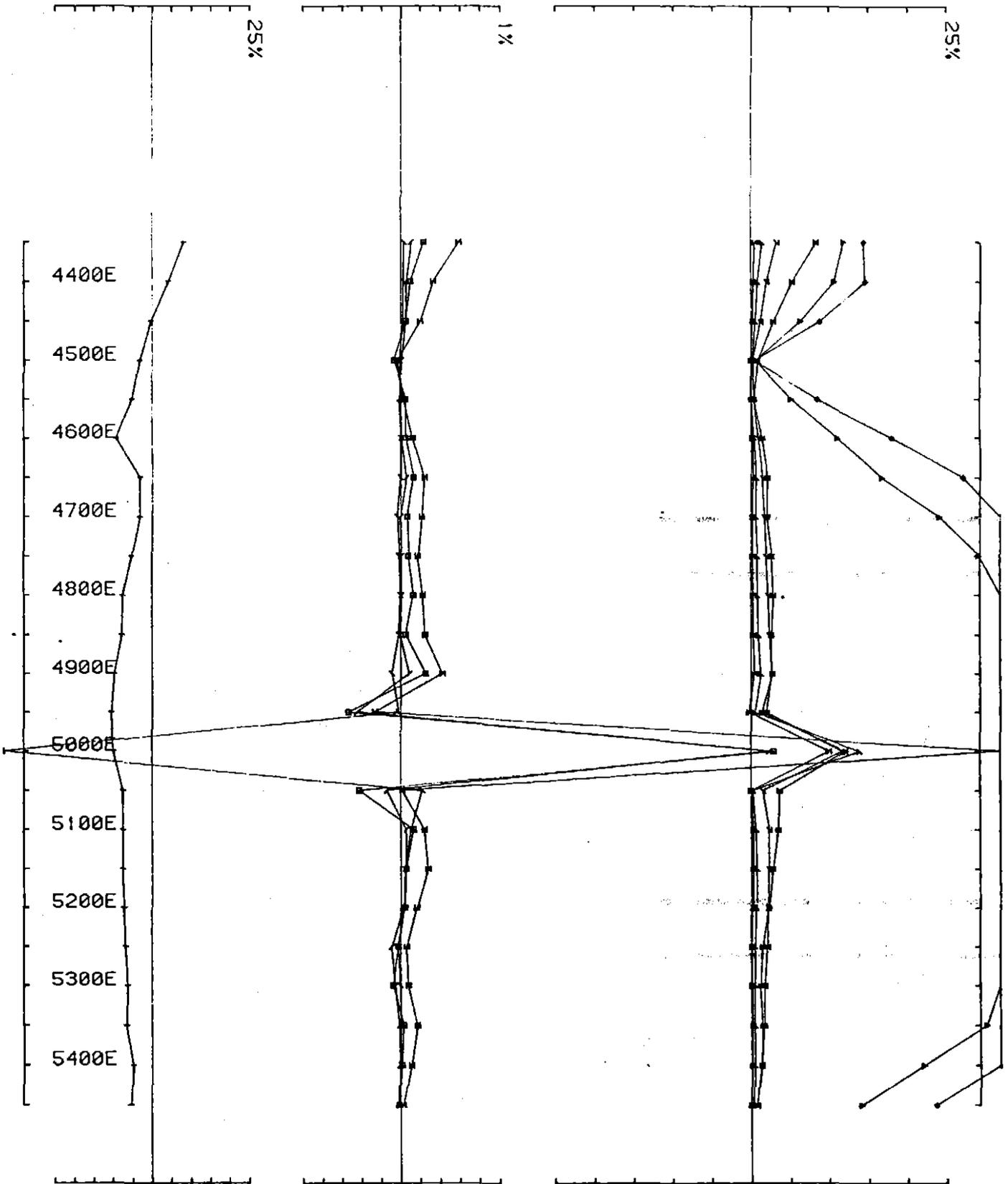




UTEM SURVEY at MOUNT HUXLEY for B H P
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 loop no 1 line 10600N component Hz secondary field Ch 1 contin.



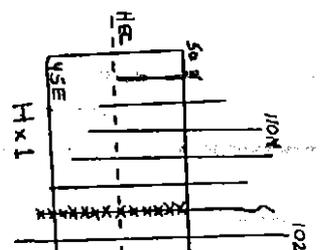
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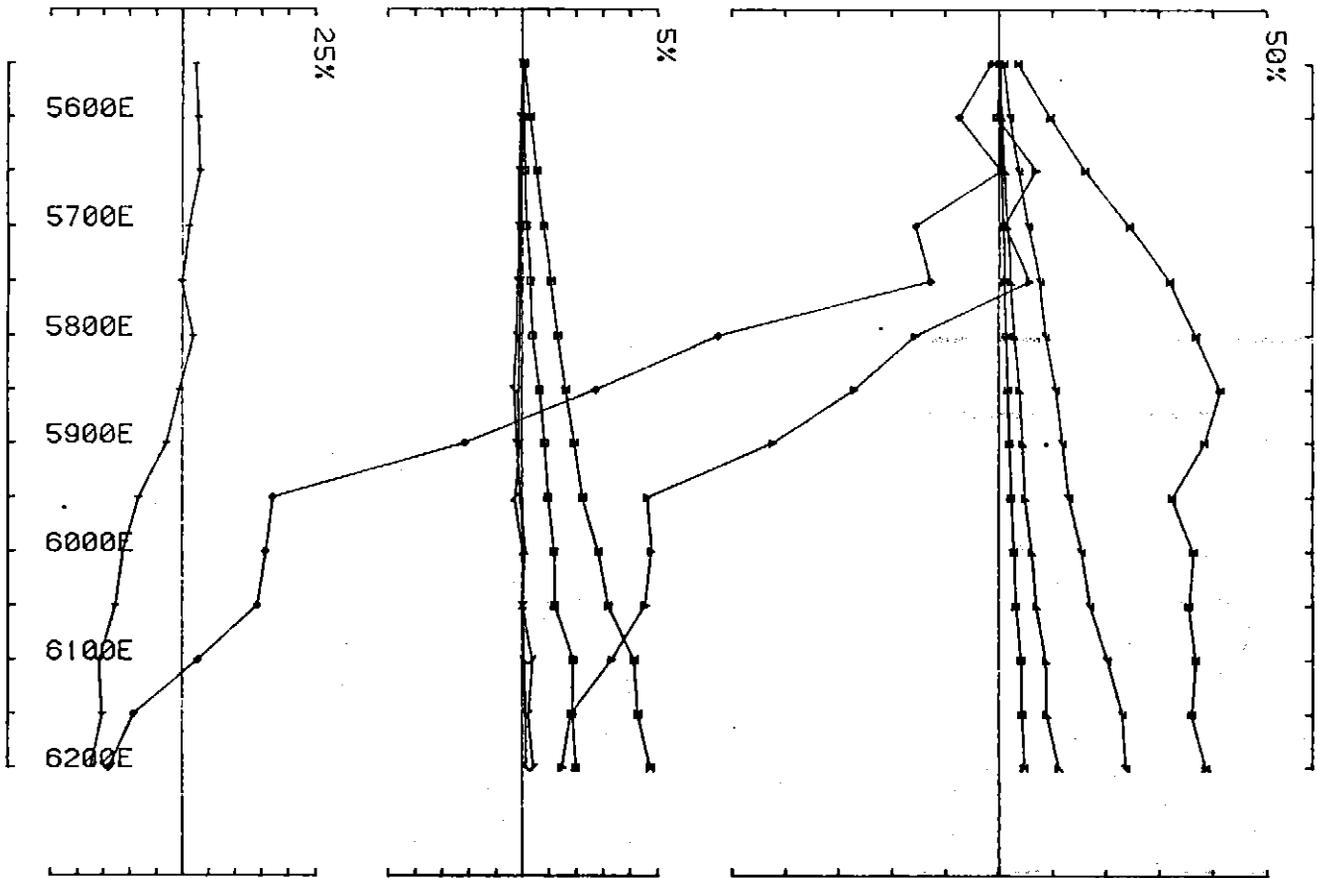


UTEM SURVEY at MOUNT HUXLEY for B H P

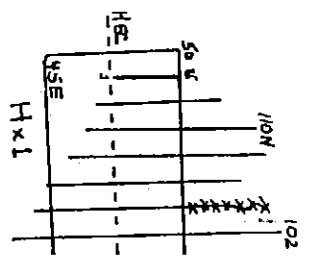
conducted by L G L Job 8859 base freq (hz) 26.230

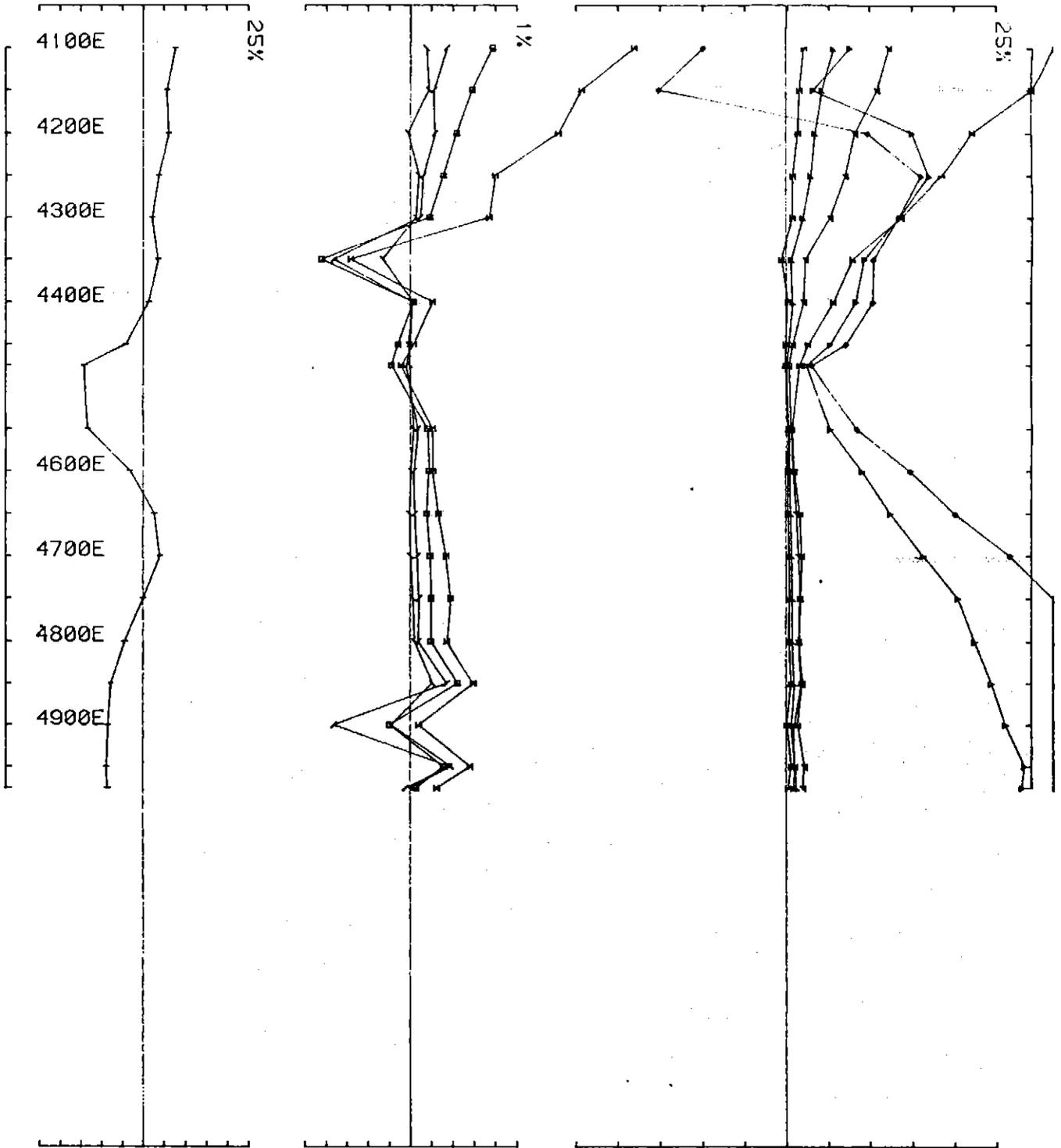
loop no 1 line 10400N component Hz secondary field Ch 1 cont



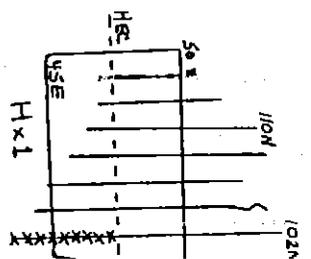


UTEM SURVEY at MOUNT HUXLEY for B H P
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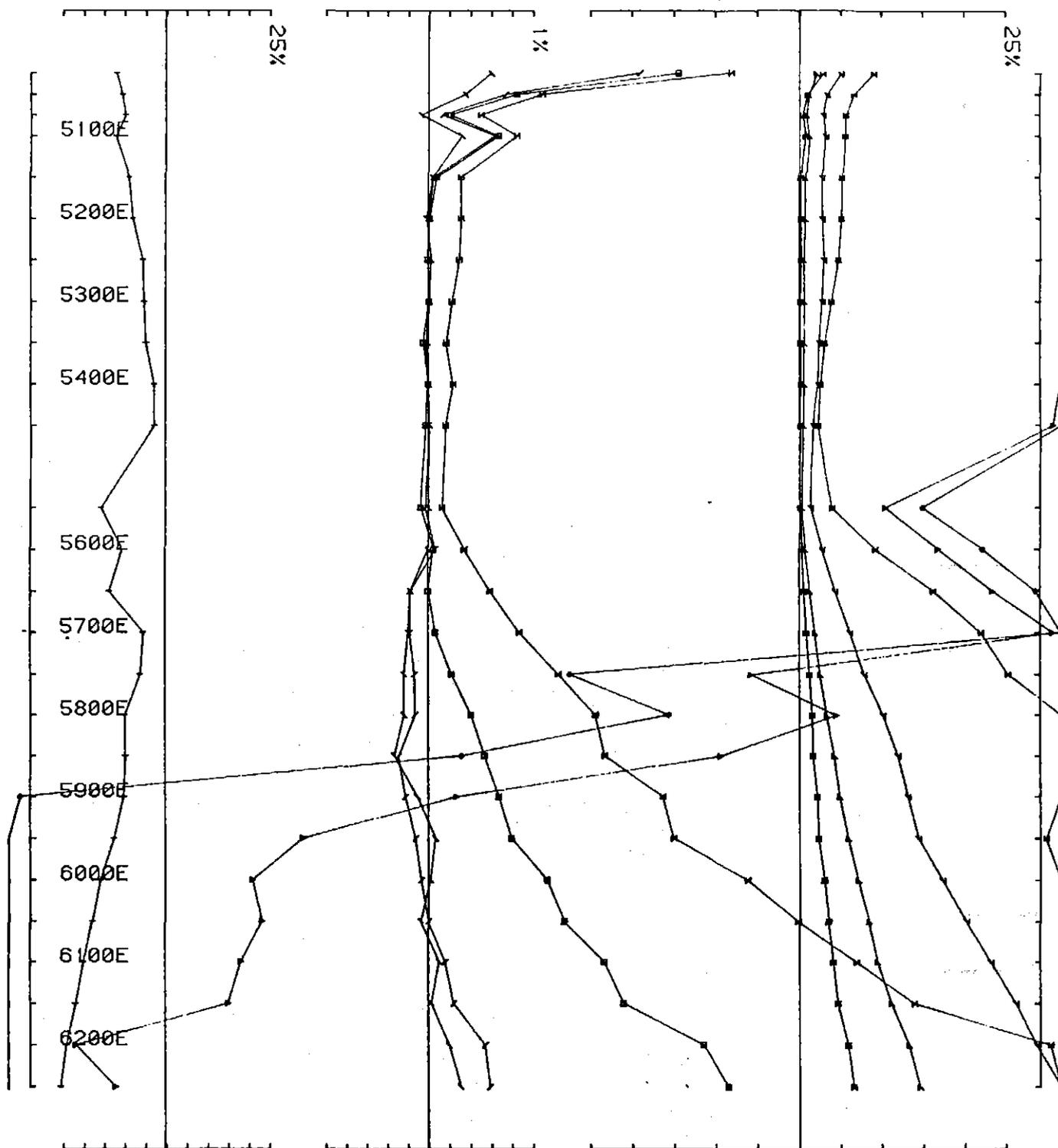




UTEM SURVEY at MOUNT HUXLEY for B H P
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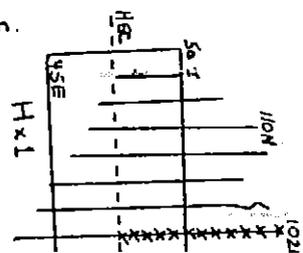
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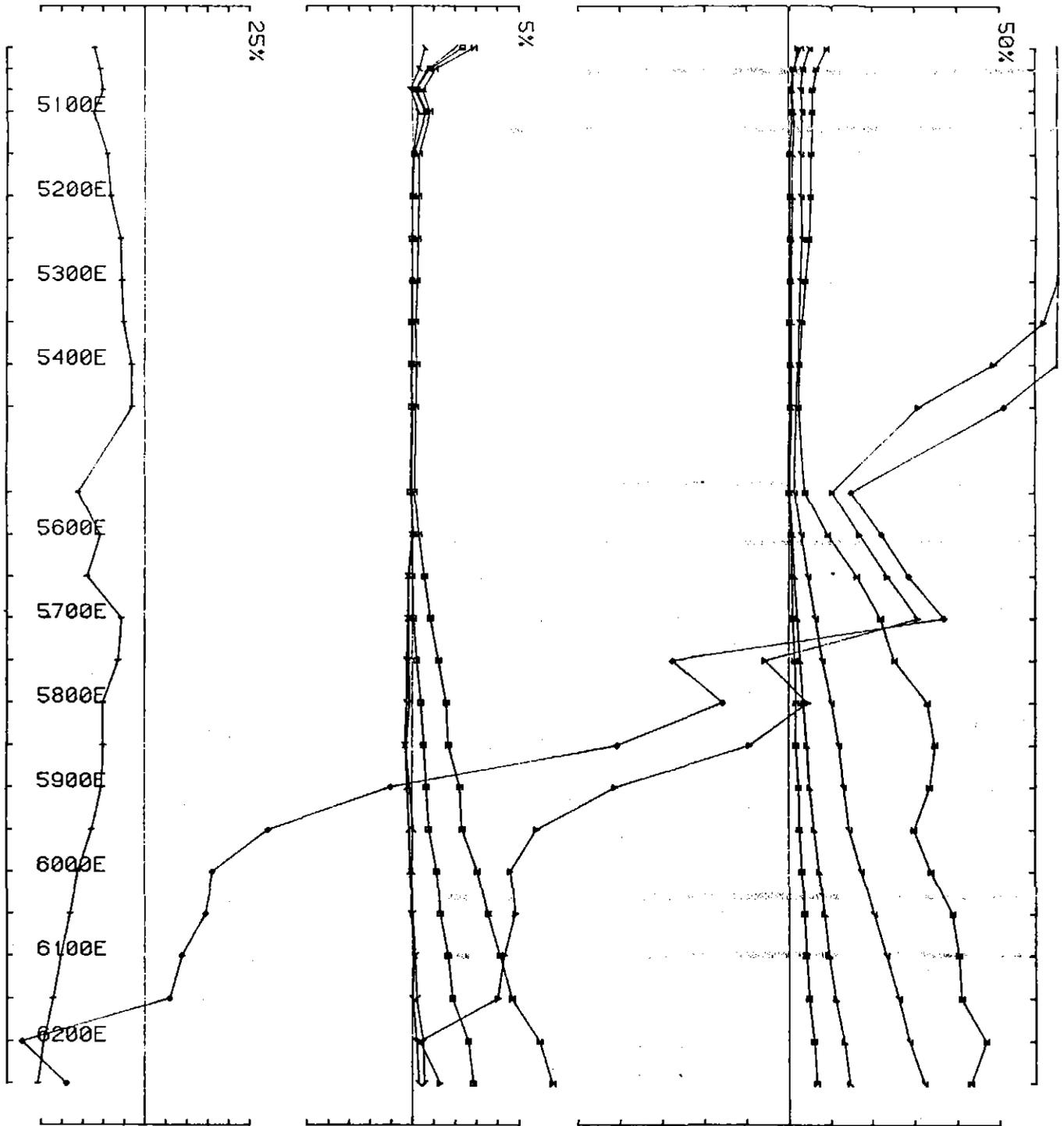


UTEM SURVEY at MOUNT HUXLEY for B H P

conducted by L G L job 8859 base freq (hz) 26.230

loop no 1 line 10200N component Hz secondary field Ch 1 contin.

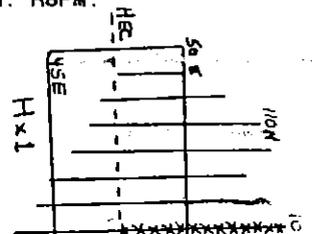


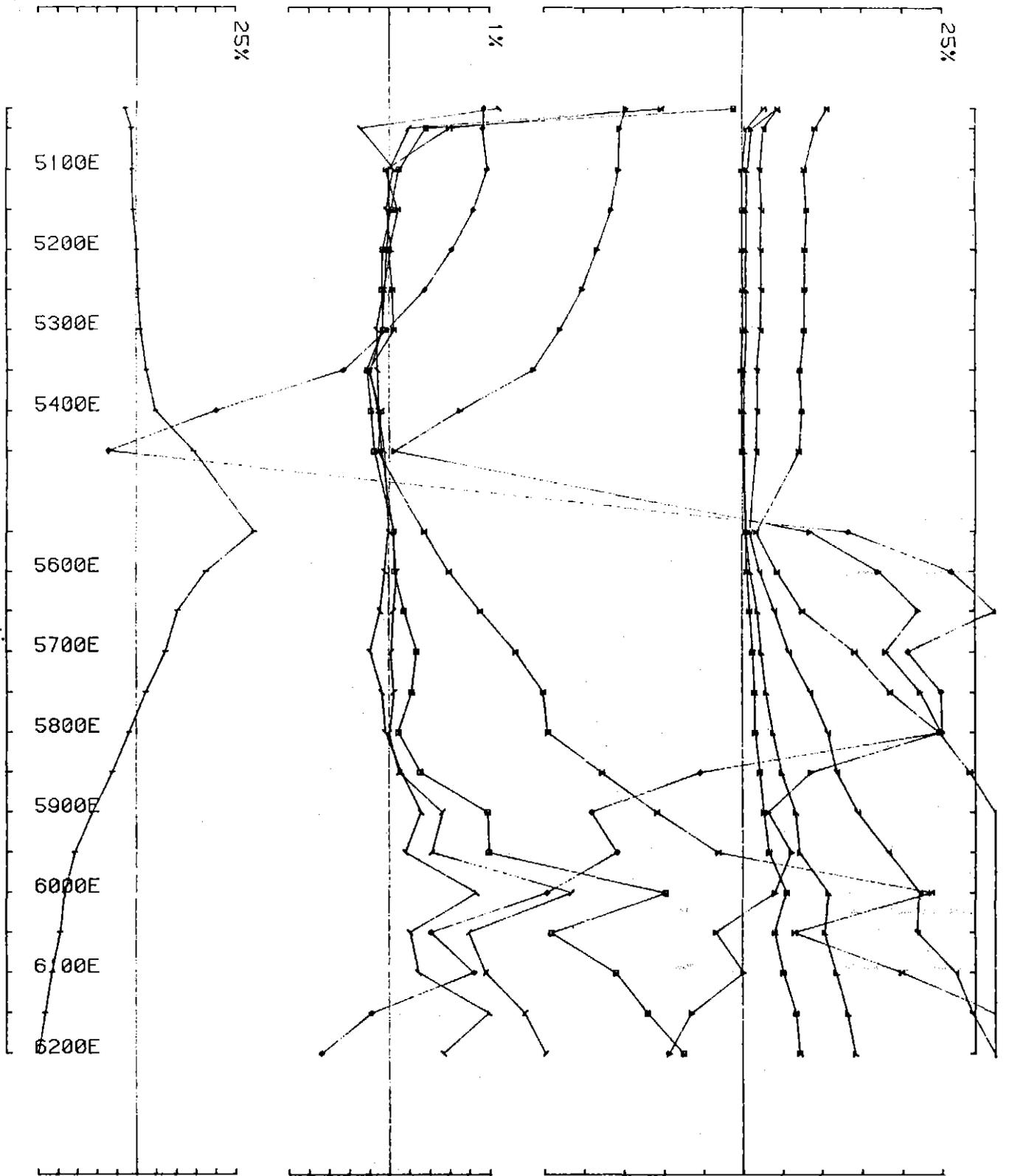


UTEM SURVEY at MOUNT HUXLEY for B H P

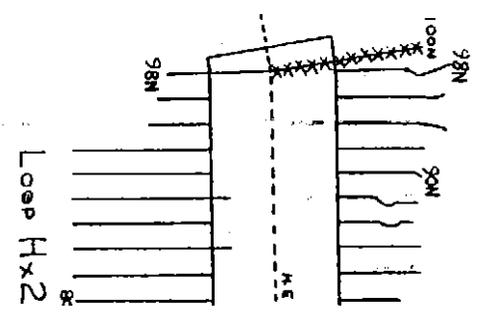
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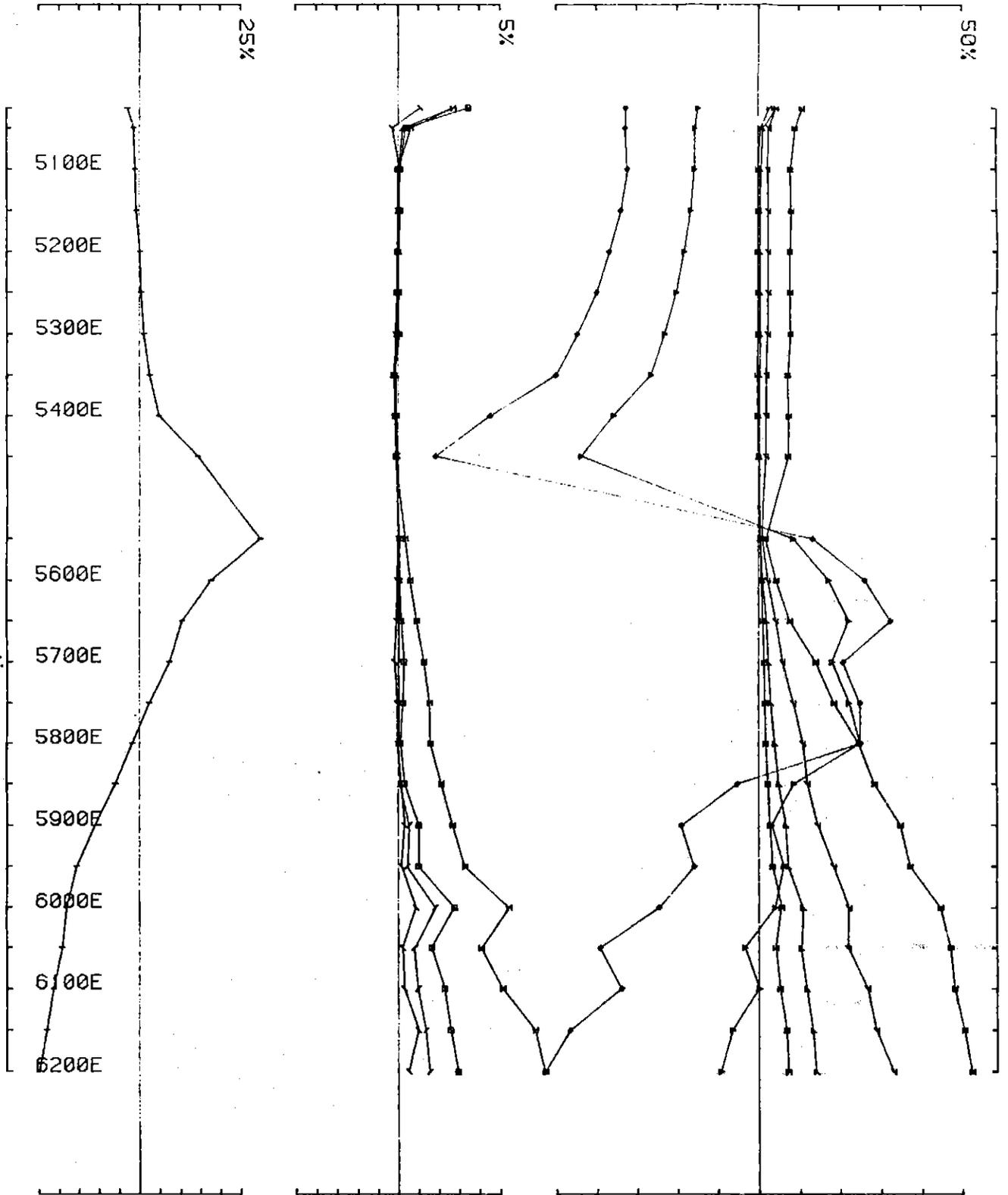
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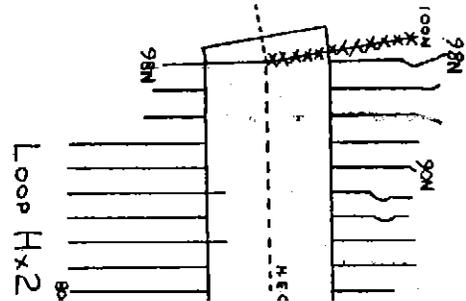


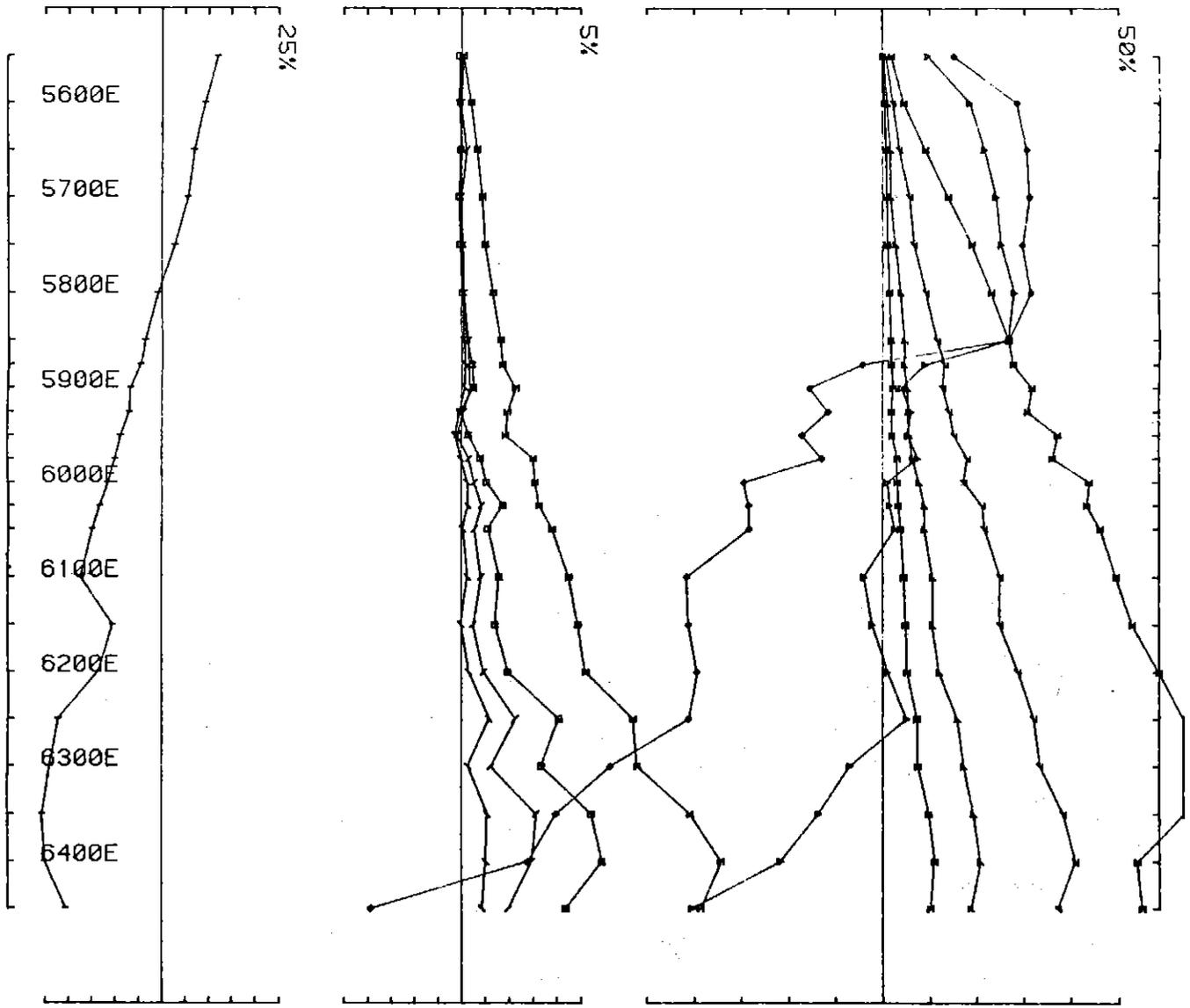
UTEM SURVEY at MT. HUXLEY for B H P
 conducted by L G L Job 8859 base freq (hz) 26.230
 loop no 2 line 10000N component Hz
 secondary field Channel 1 continuously normalized



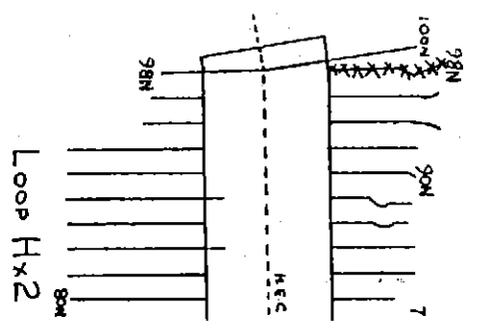


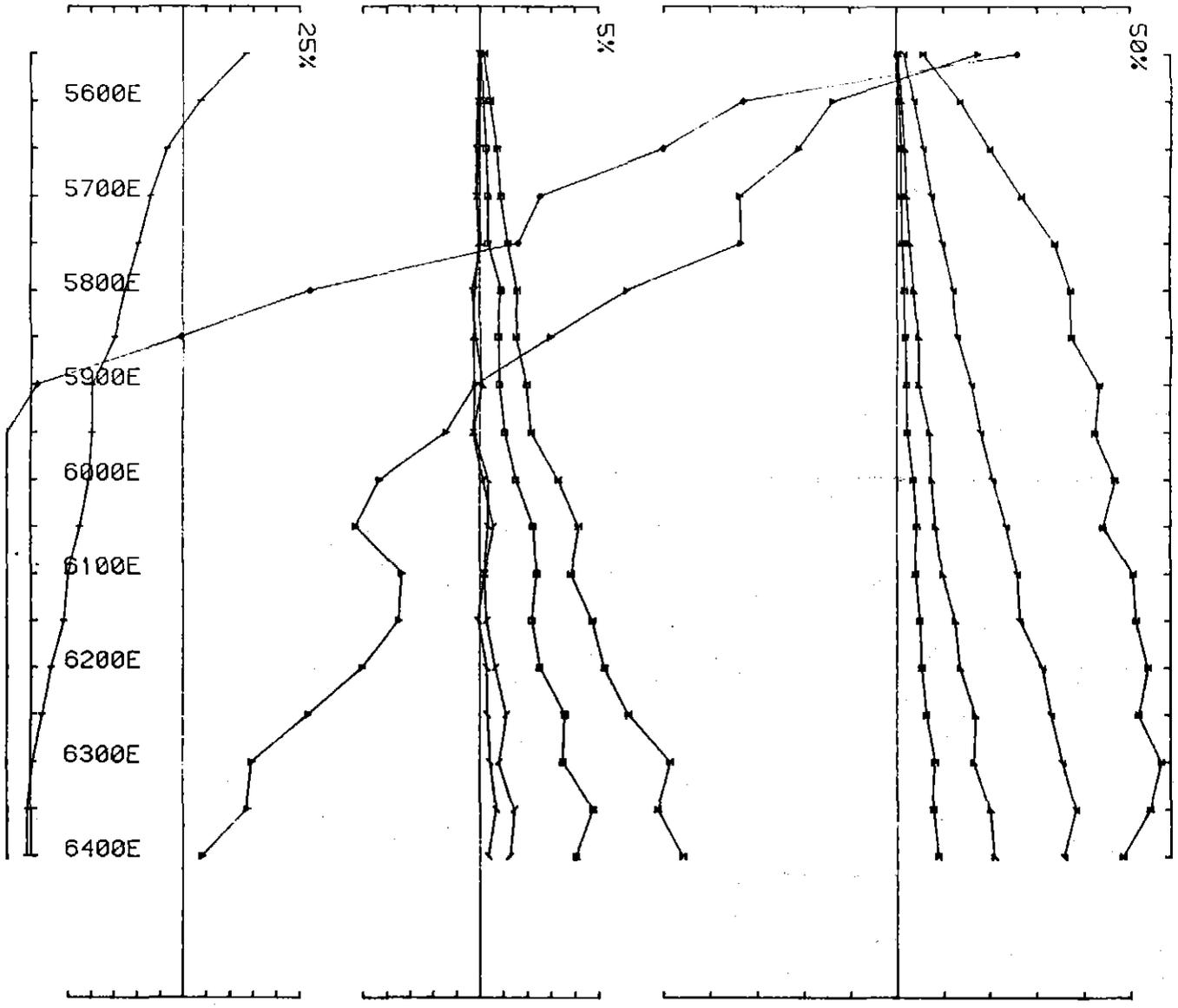
UTEM SURVEY at MT. HUXLEY for B H P
 conducted by L G L Job 8859 base freq (hz) 26.230
 loop no 2 line 10000N component Hz
 secondary field Channel 1 continuously normalized



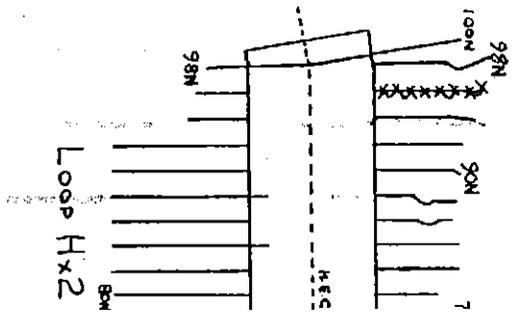


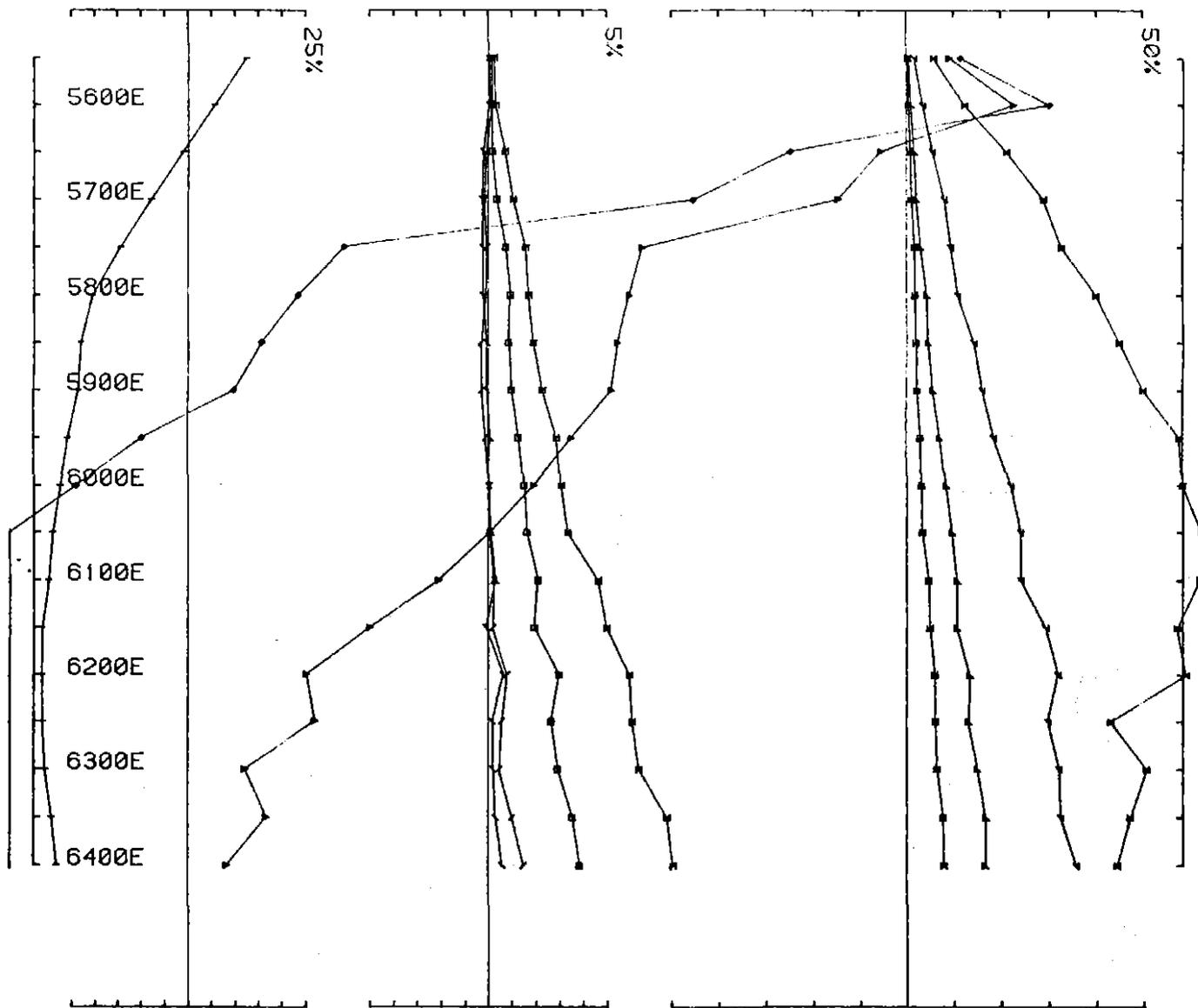
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 loop no 2 line 9800N component Hz
 secondary field Channel 1 continuously normalized



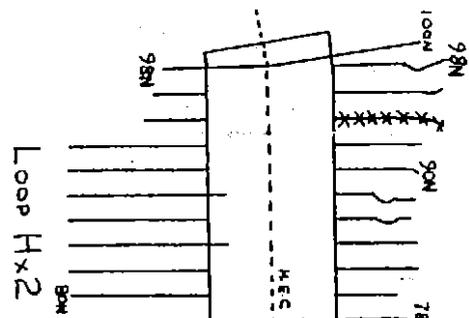


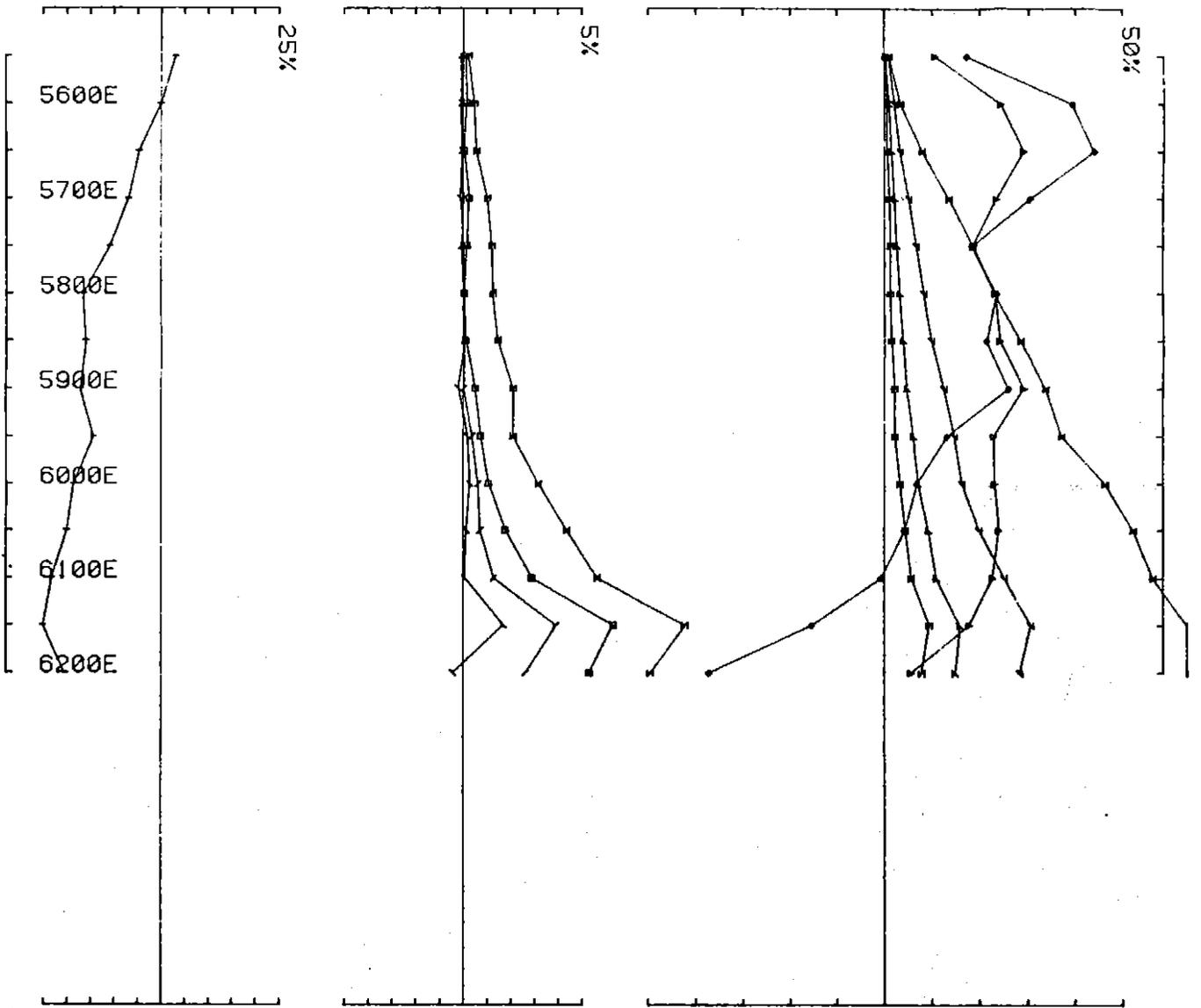
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 loop no 2 line 9600N component Hz
 secondary field Channel 1 continuously normalized



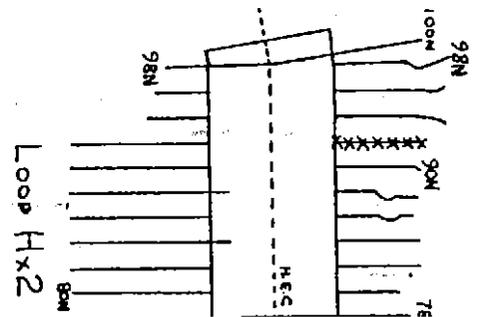


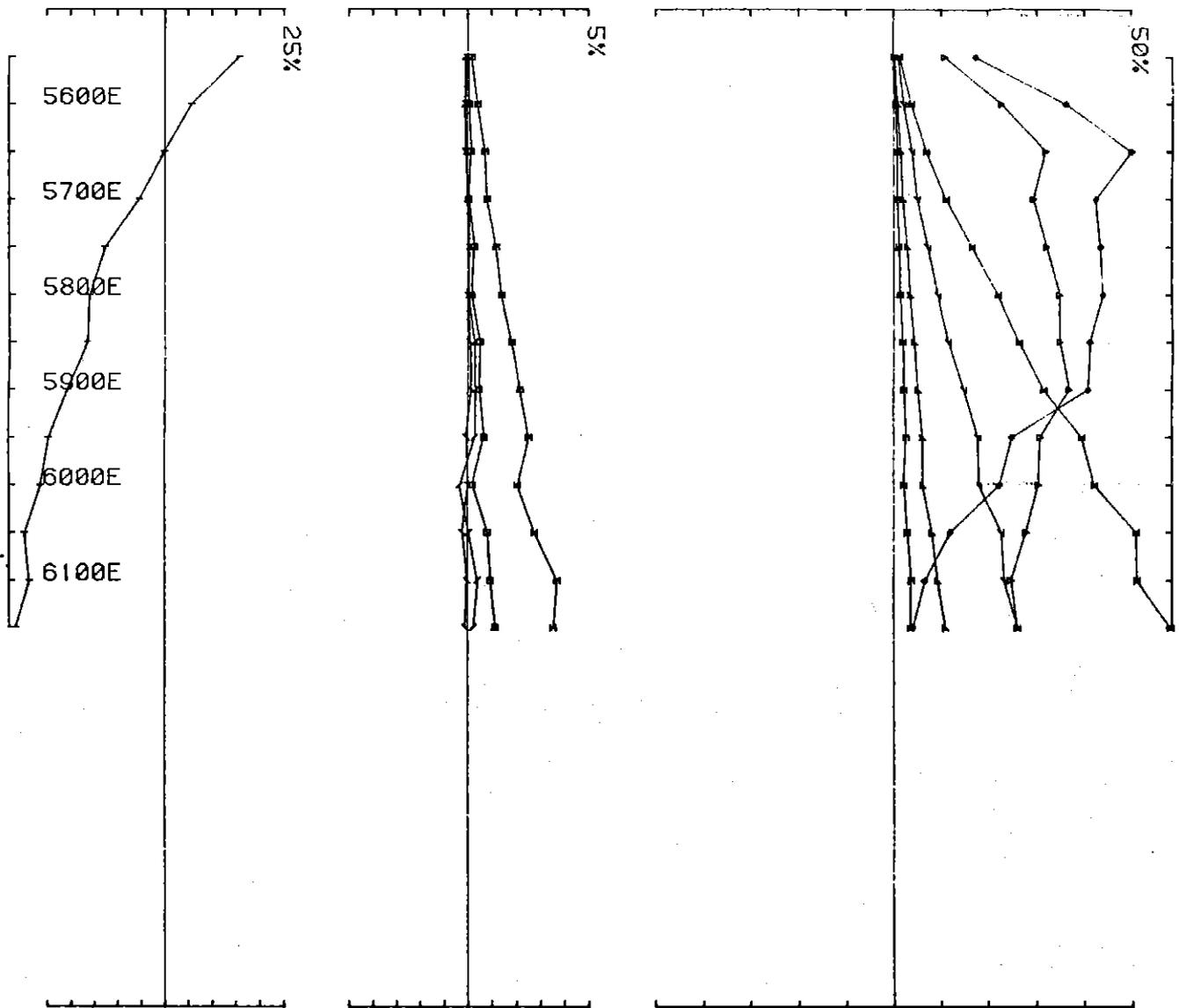
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 loop no 2 line 9400N component Hz
 secondary field Channel 1 continuously normalized



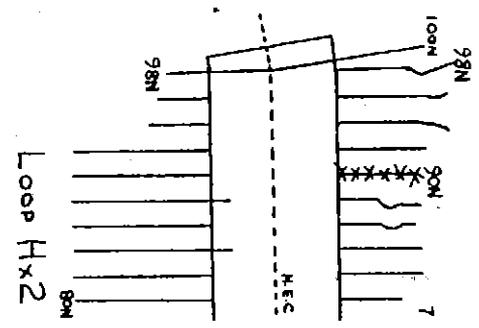


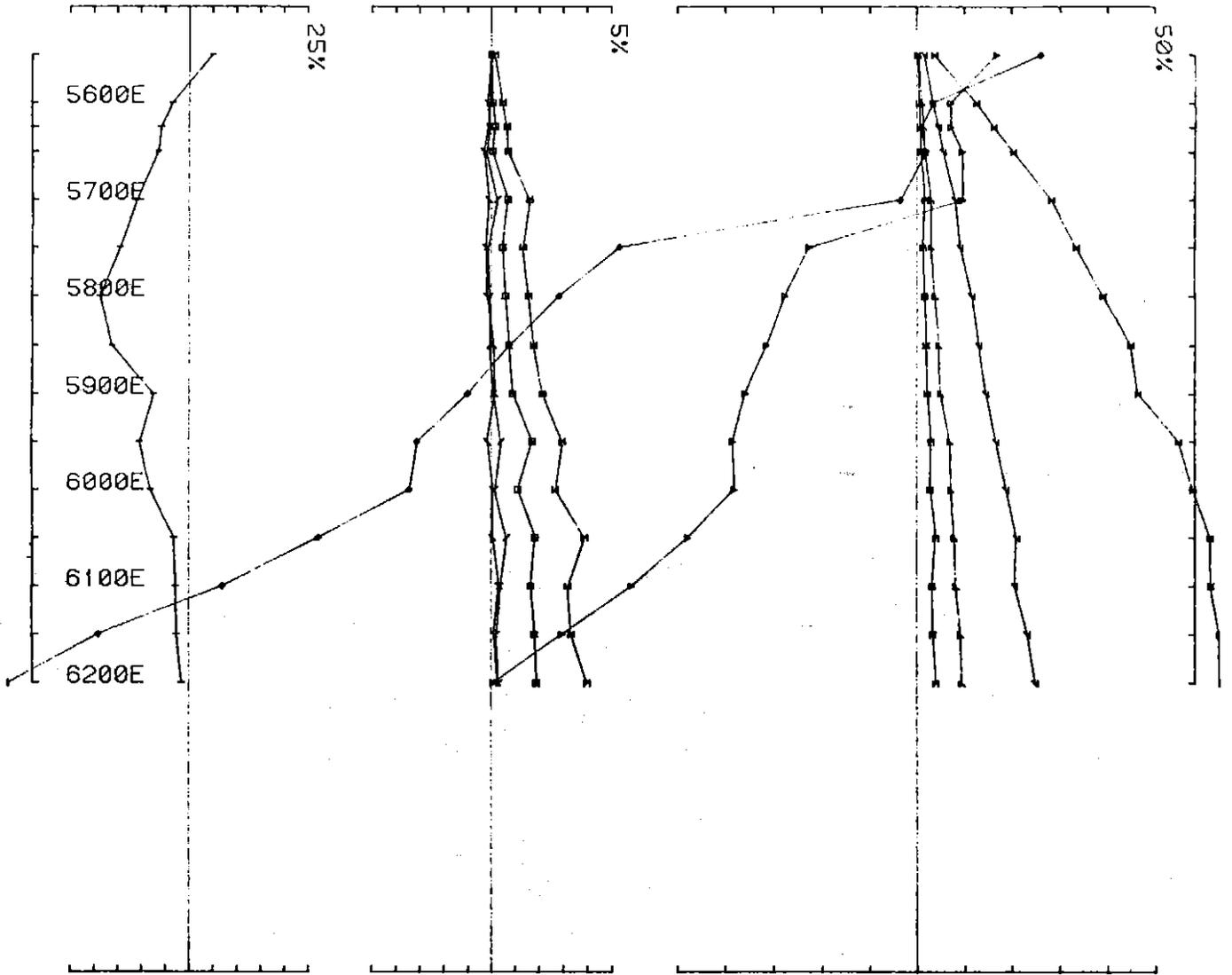
UTEM SURVEY at MT. HUXLEY for B H P
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 loop no 2 line 9200N component Hz
 secondary field Channel 1 continuously normalized



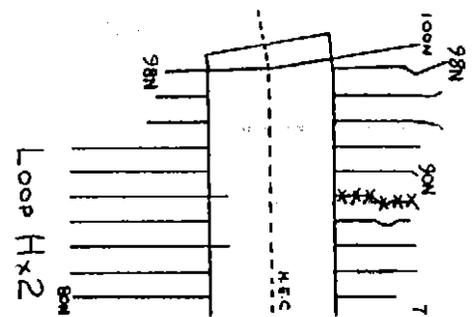


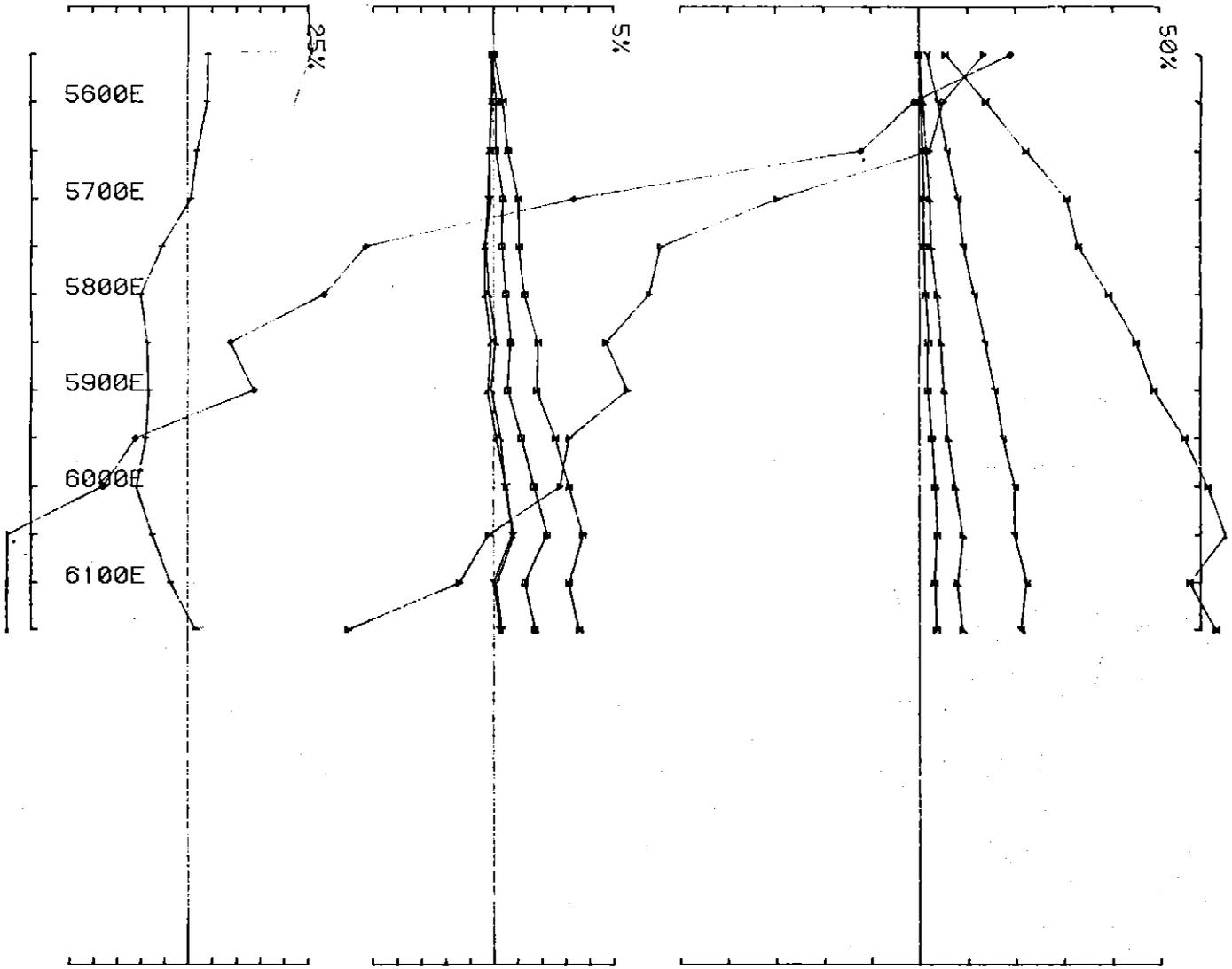
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 conducted by L G L Job 8859 base freq (hz) 26.230
 loop no 2 line 9000N component Hz
 secondary field Channel 1 continuously normalized



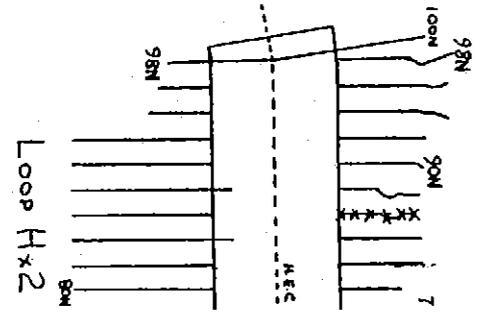


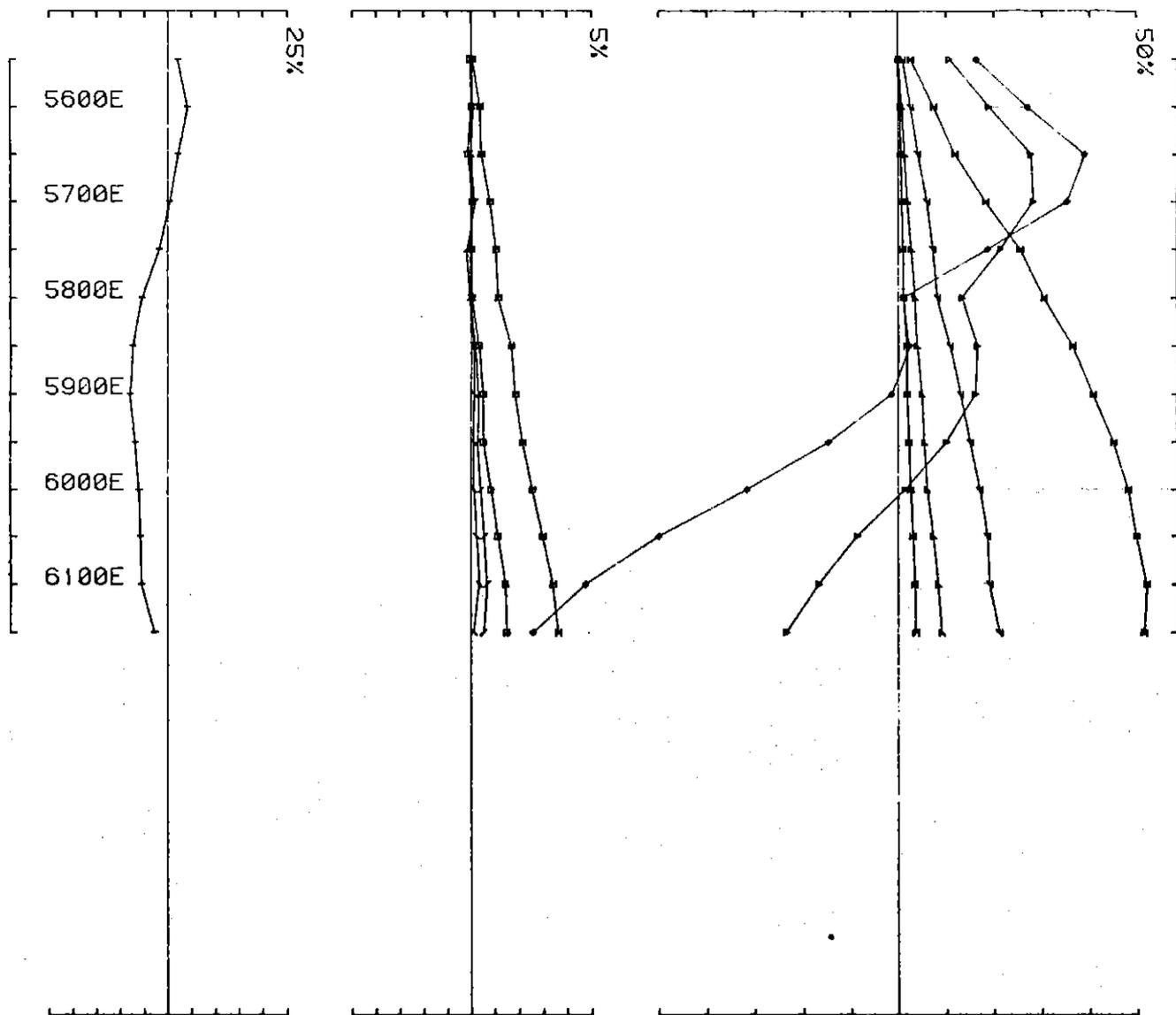
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 secondary field Channel 1 continuously normalized



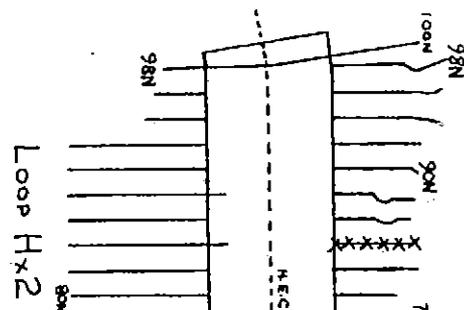


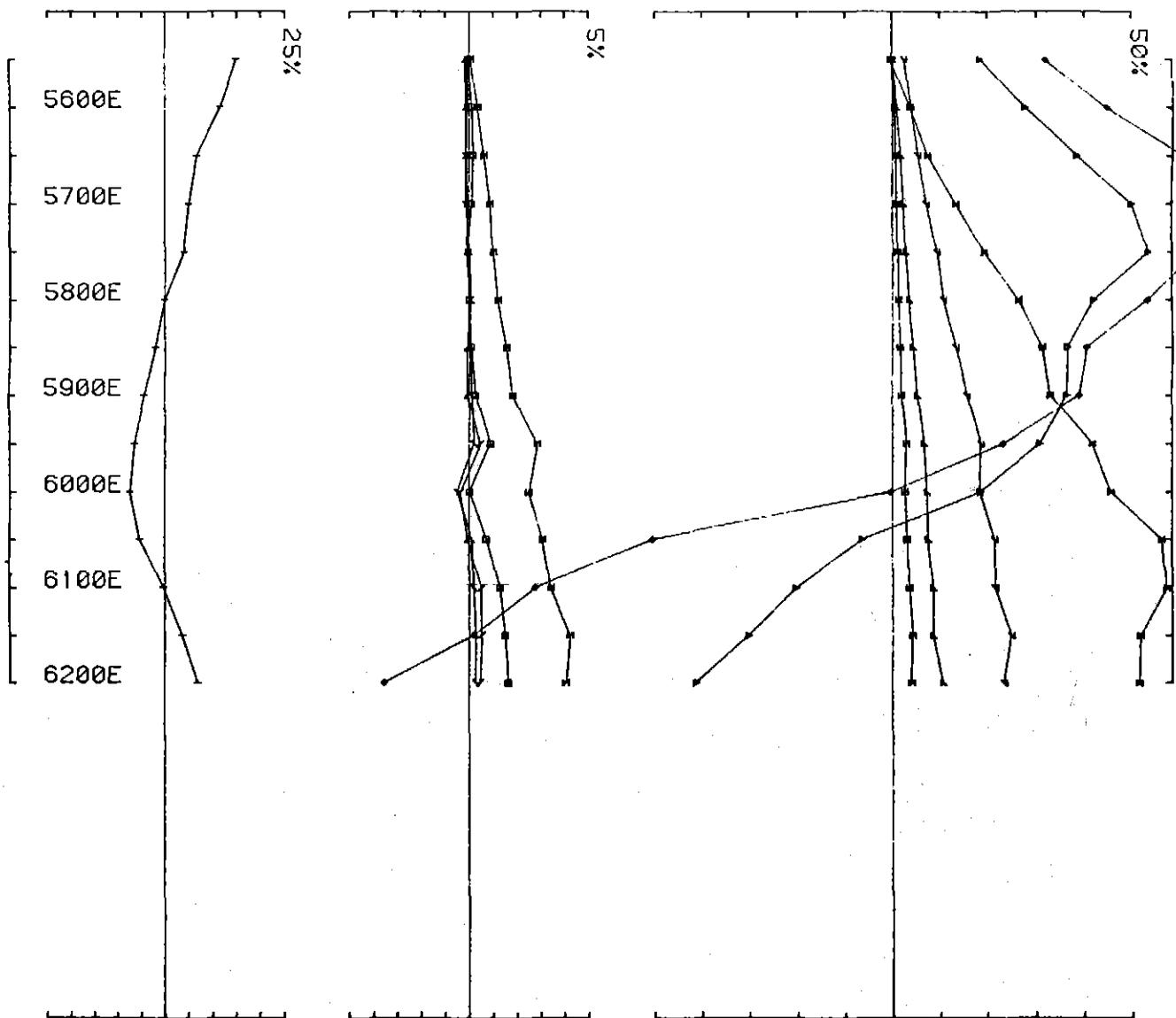
UTEM SURVEY at MT. HUXLEY for B H P
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 secondary field Channel 1 continuously normalized



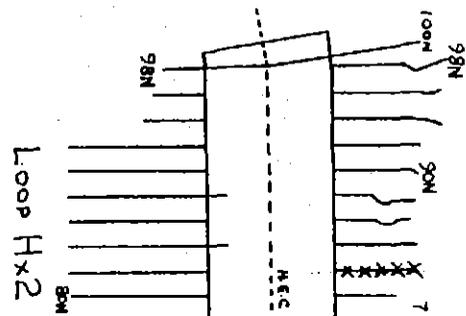


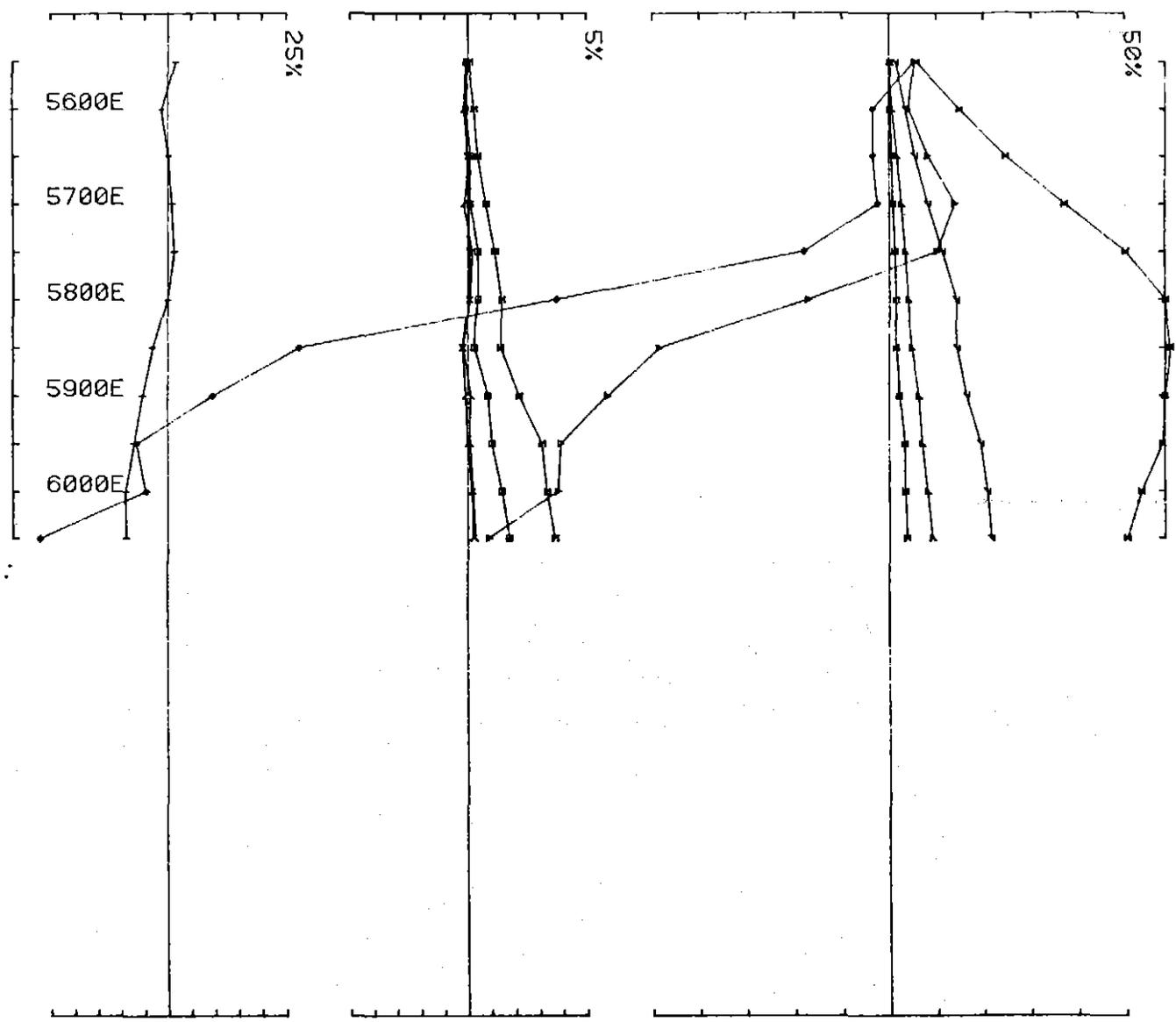
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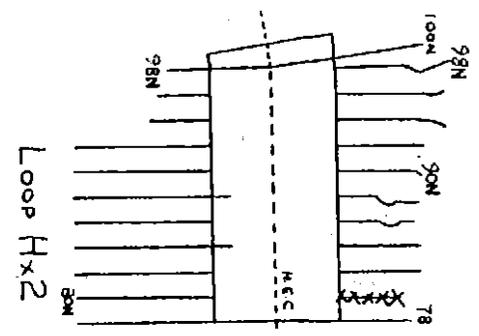


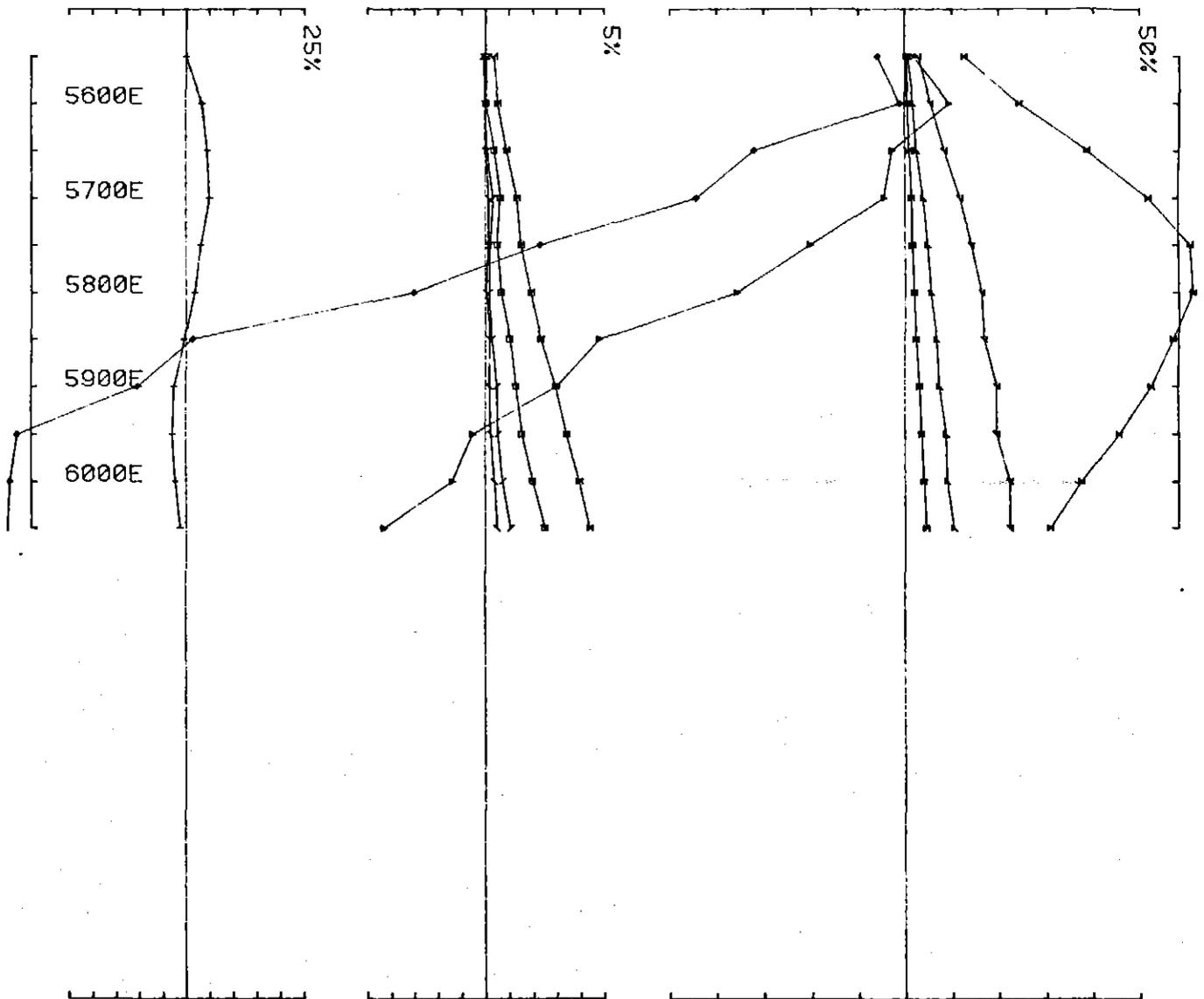
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 loop no 2 line 8200N component Hz
 secondary field Channel I continuously normalized



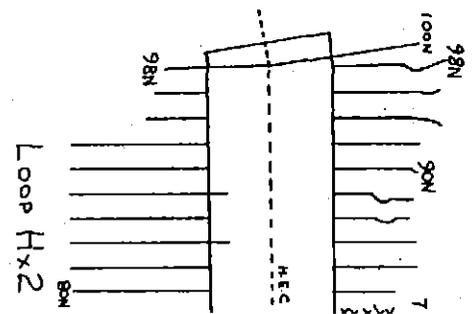


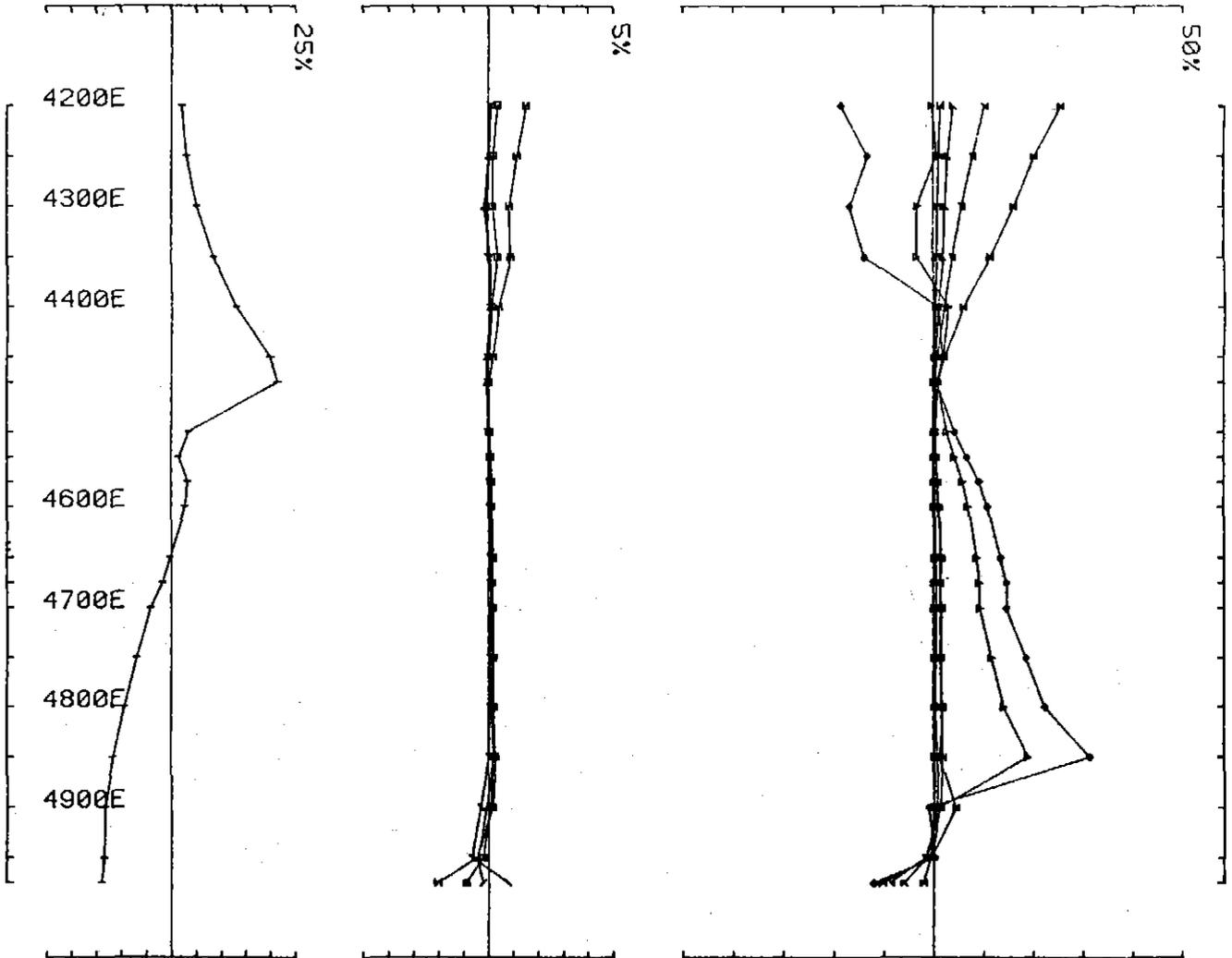
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 secondary field Channel 1 continuously normalized



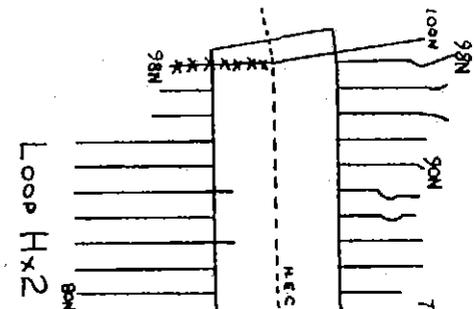


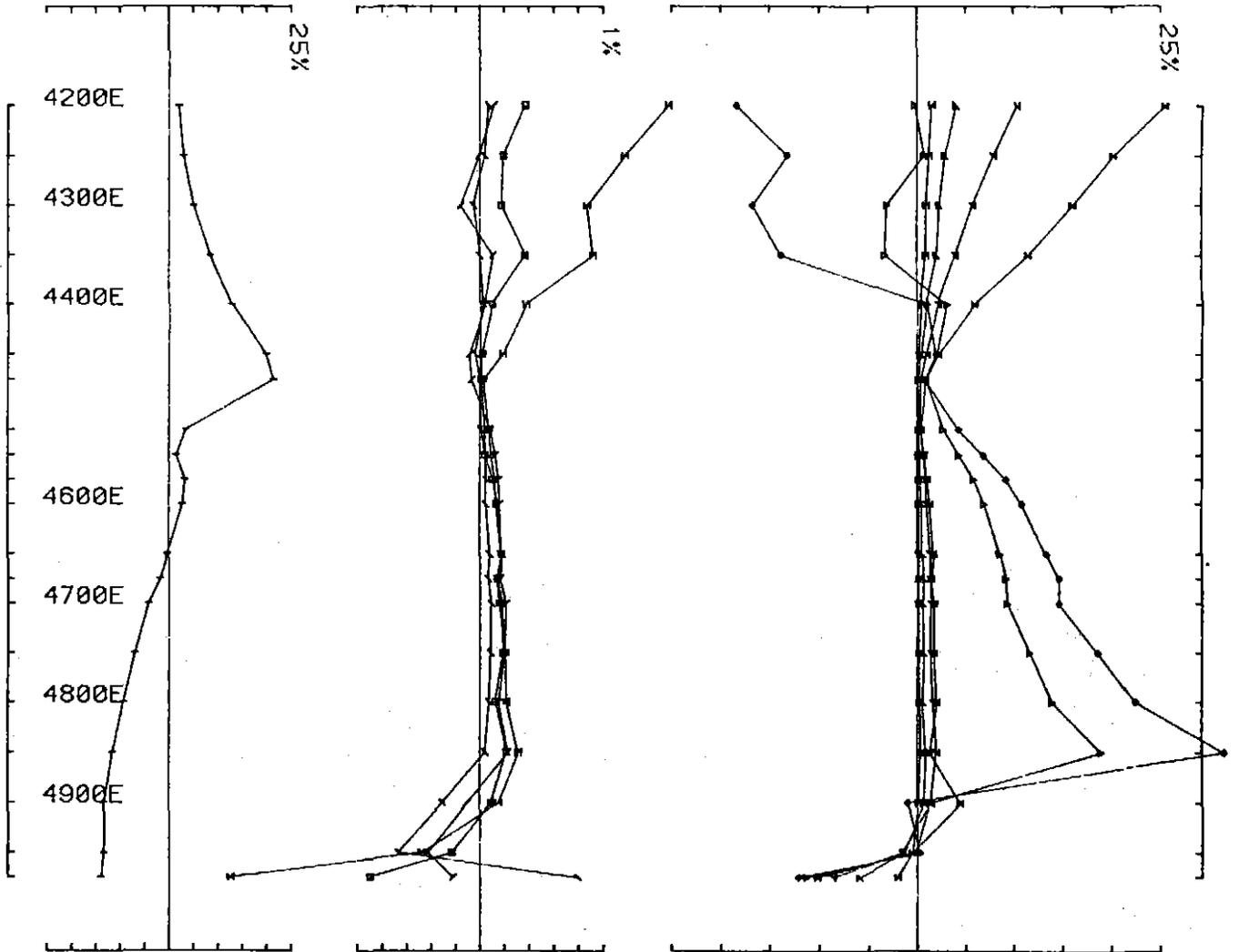
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 loop no 2 line 7800N component Hz
 secondary field Channel 1 continuously normalized



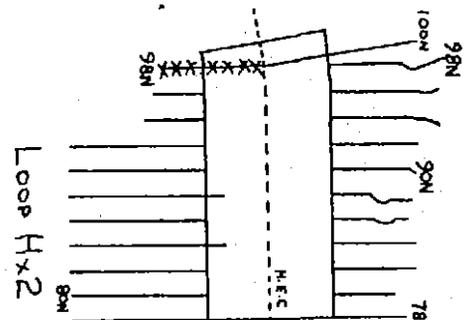


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 secondary field Channel 1 continuously normalized

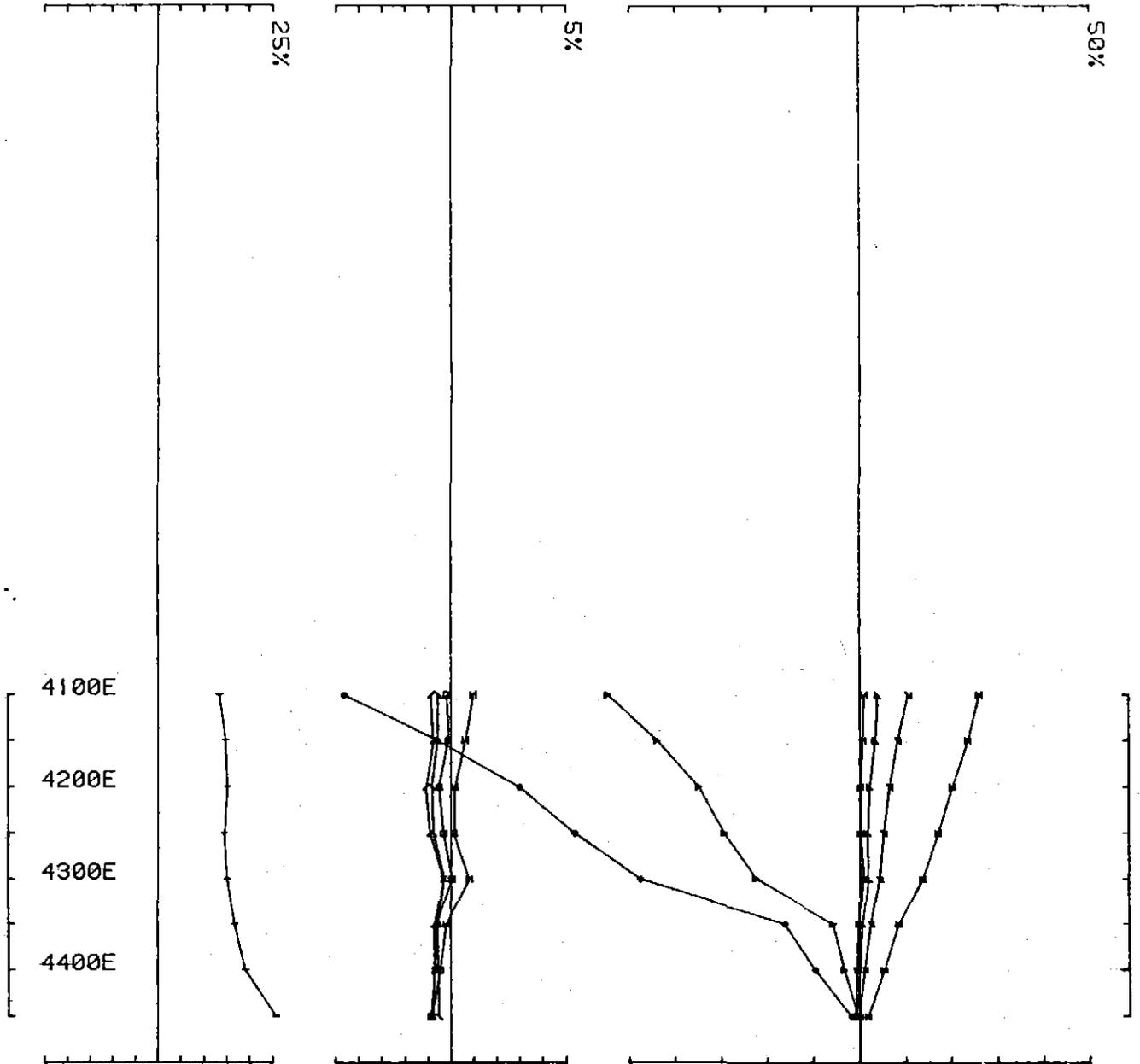




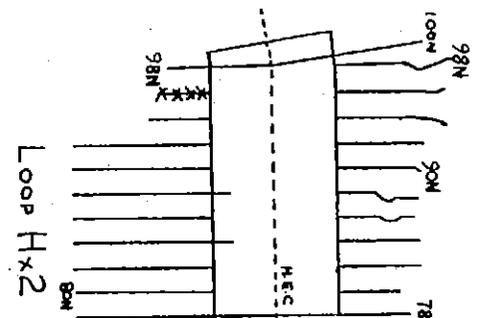
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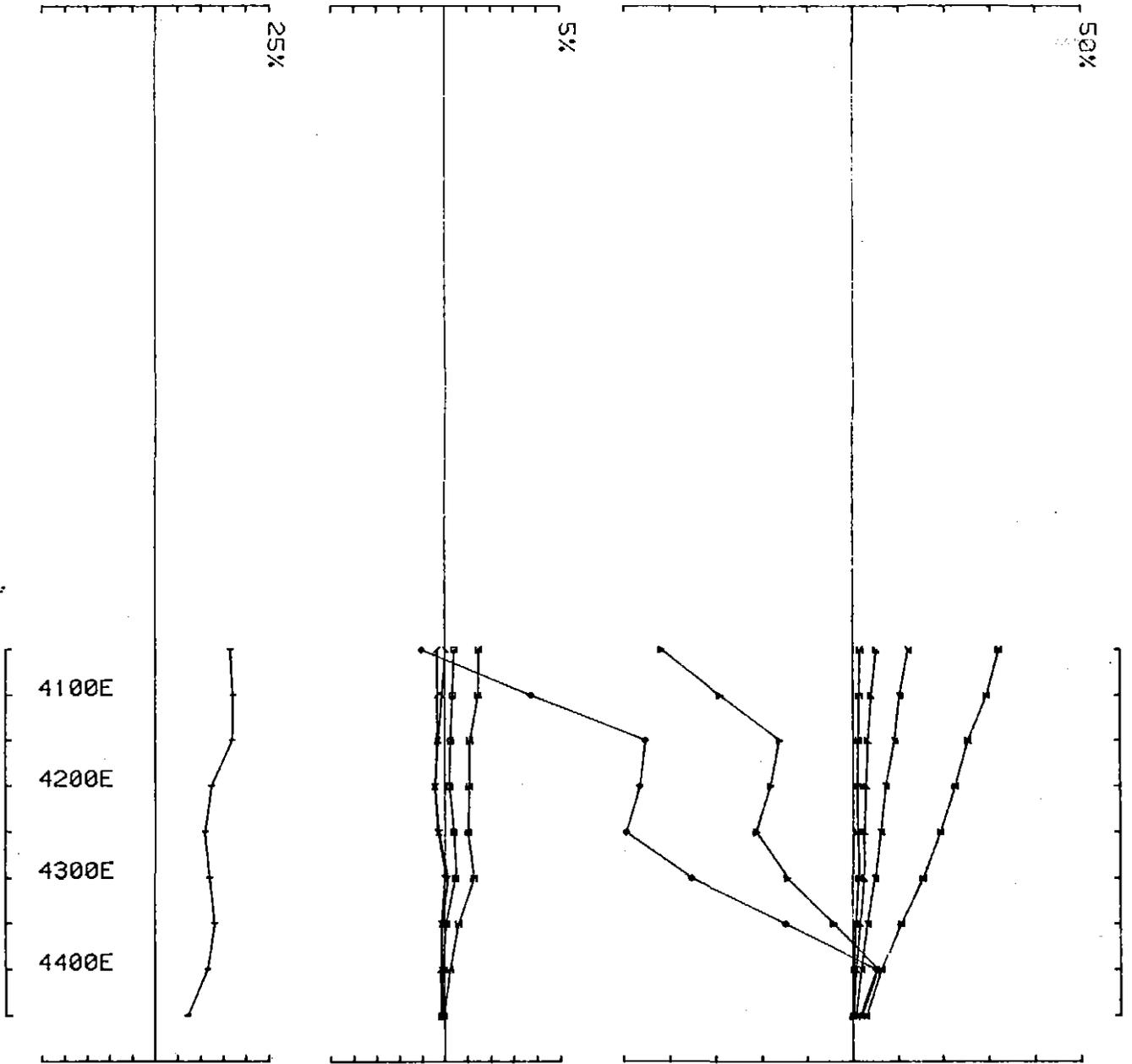


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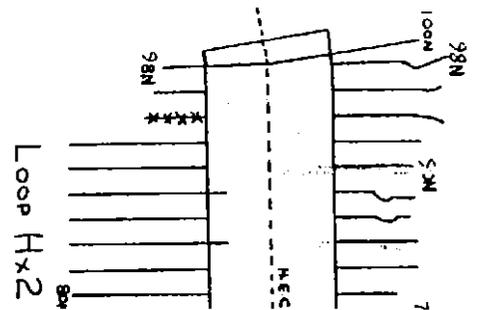


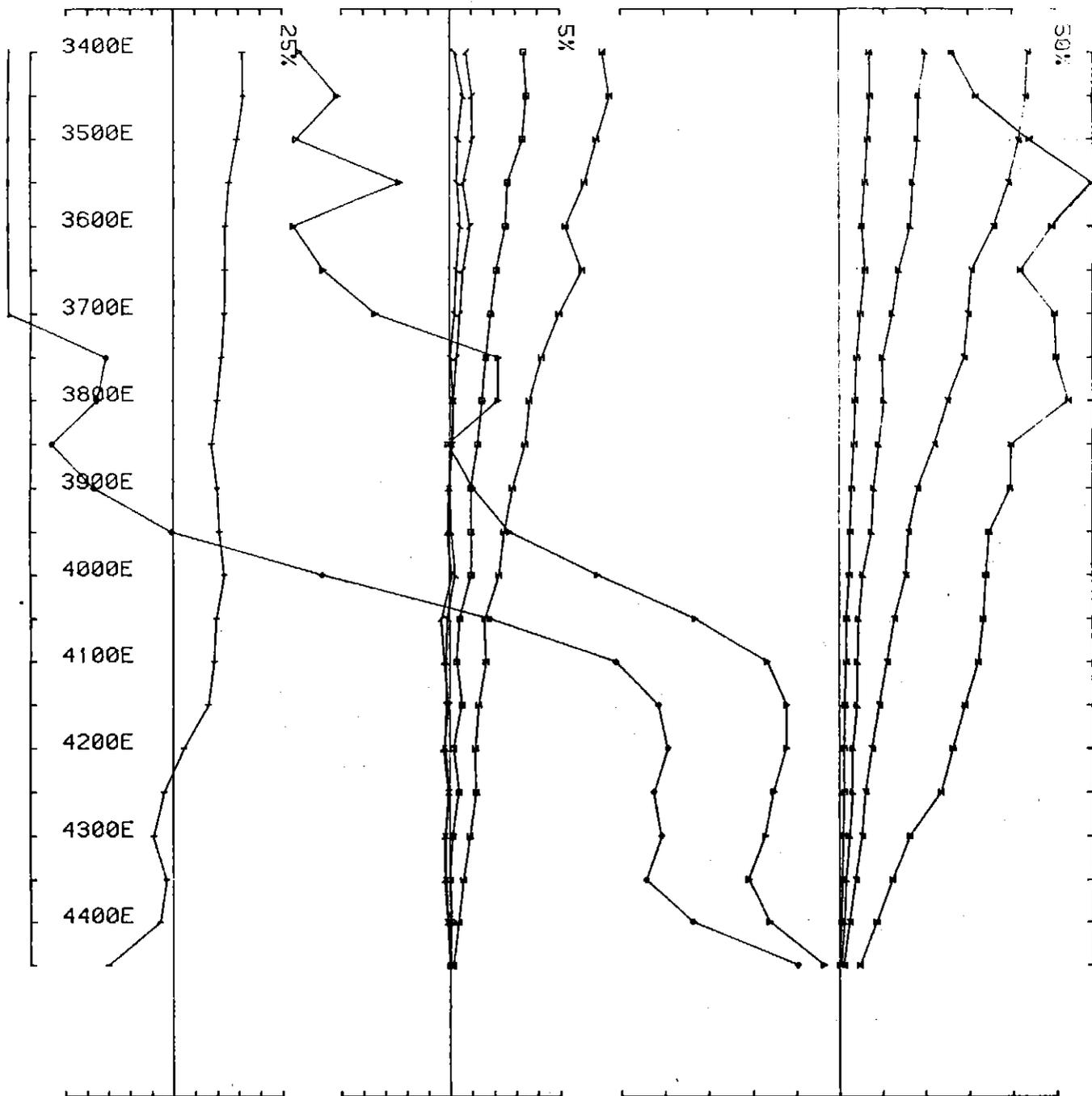
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 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 2 line 9600N component Hz
 secondary field Channel 1 continuously normalized



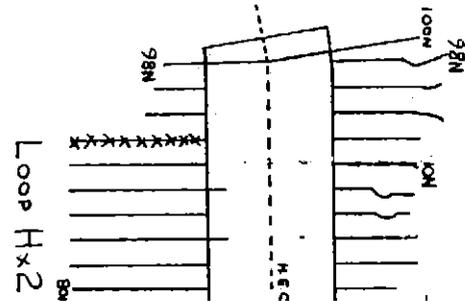


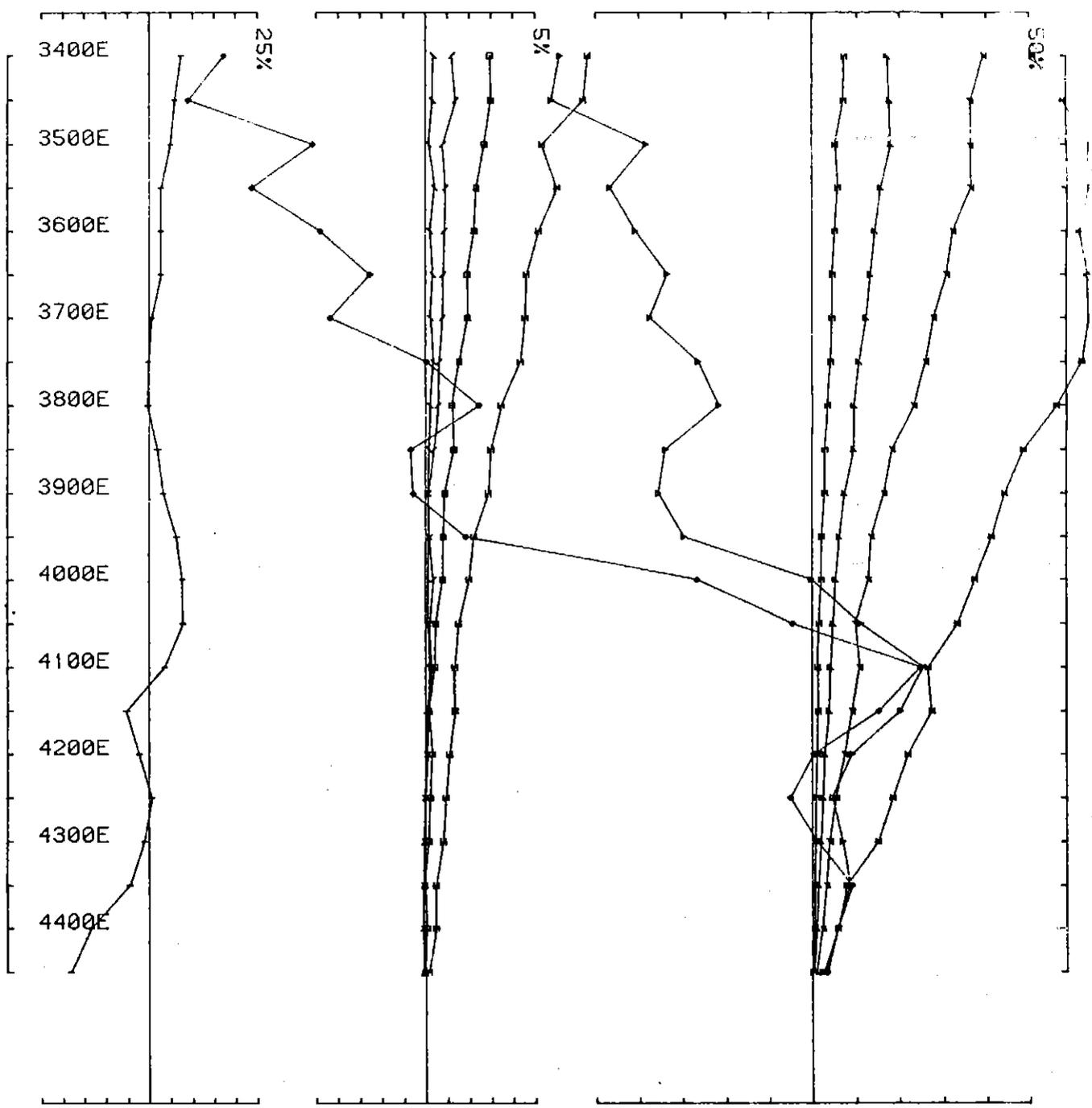
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 loop no 2 line 9400N component Hz
 secondary field Channel 1 continuously normalized



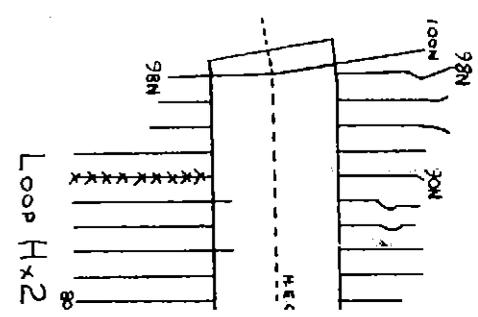


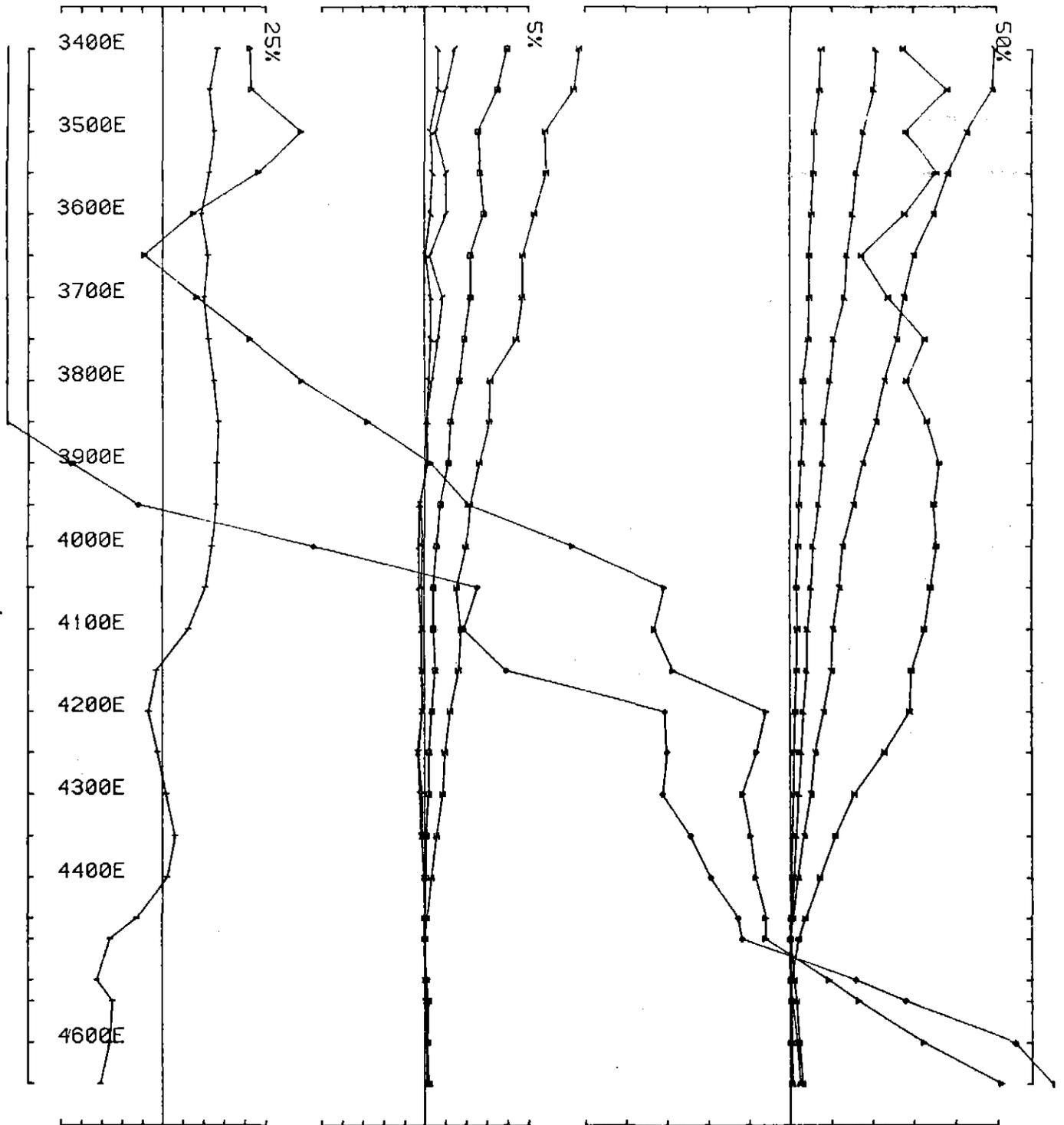
UTEM SURVEY at MT. HUXLEY for B H P
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 loop no 2 line 9200N component Hz
 secondary field Channel 1 continuously normalized



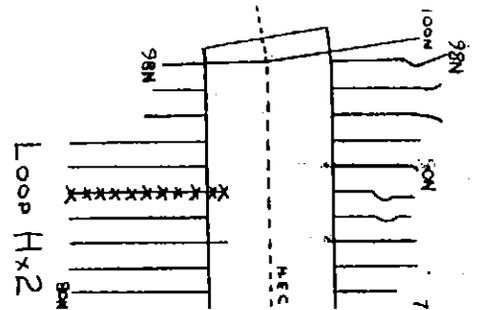


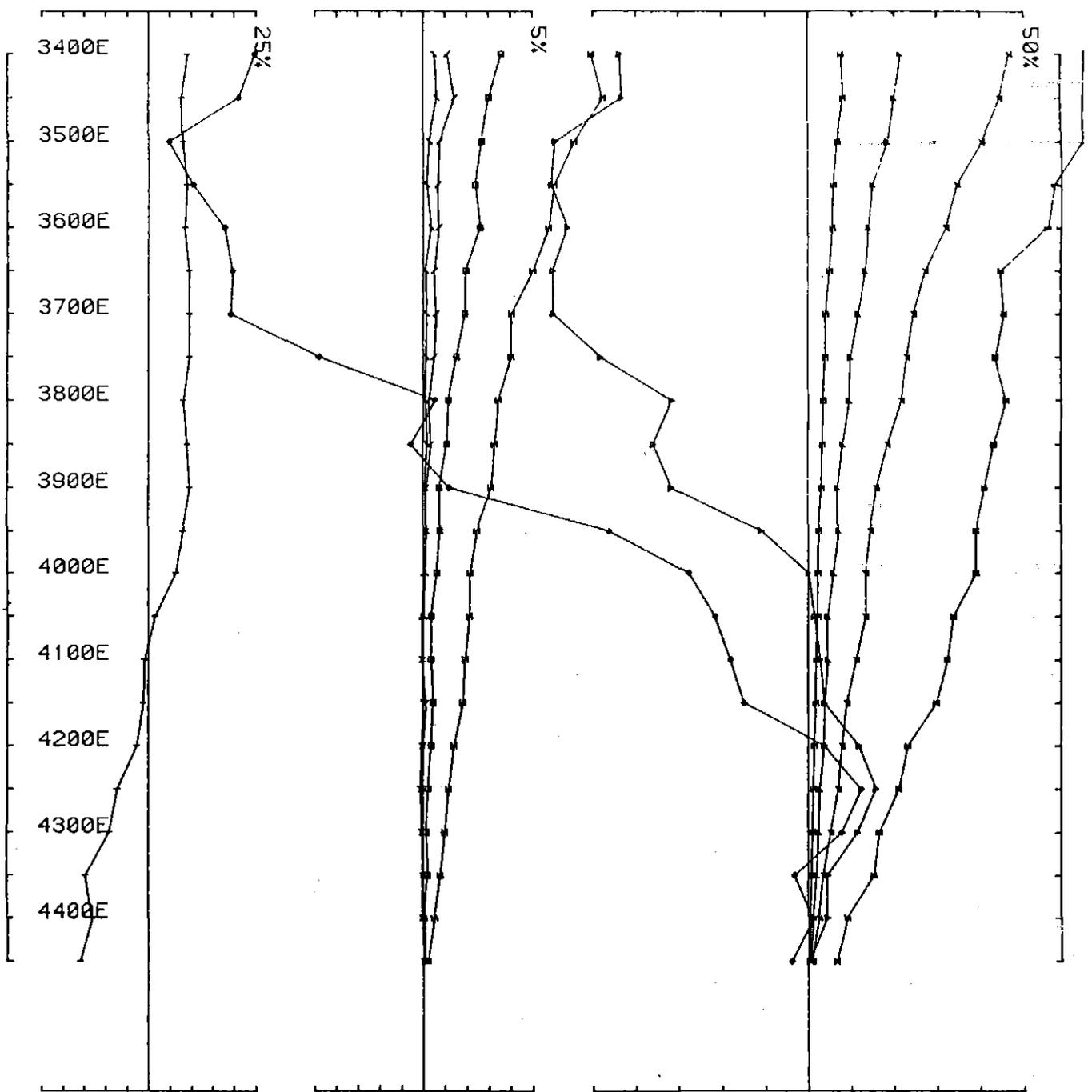
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 secondary field Channel 1 continuously normalized



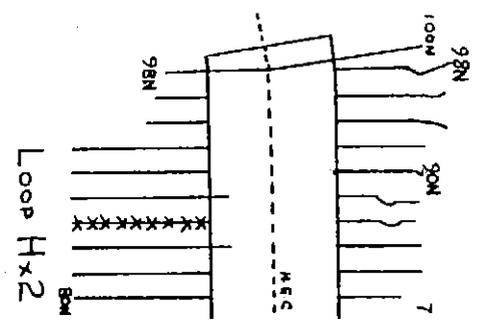


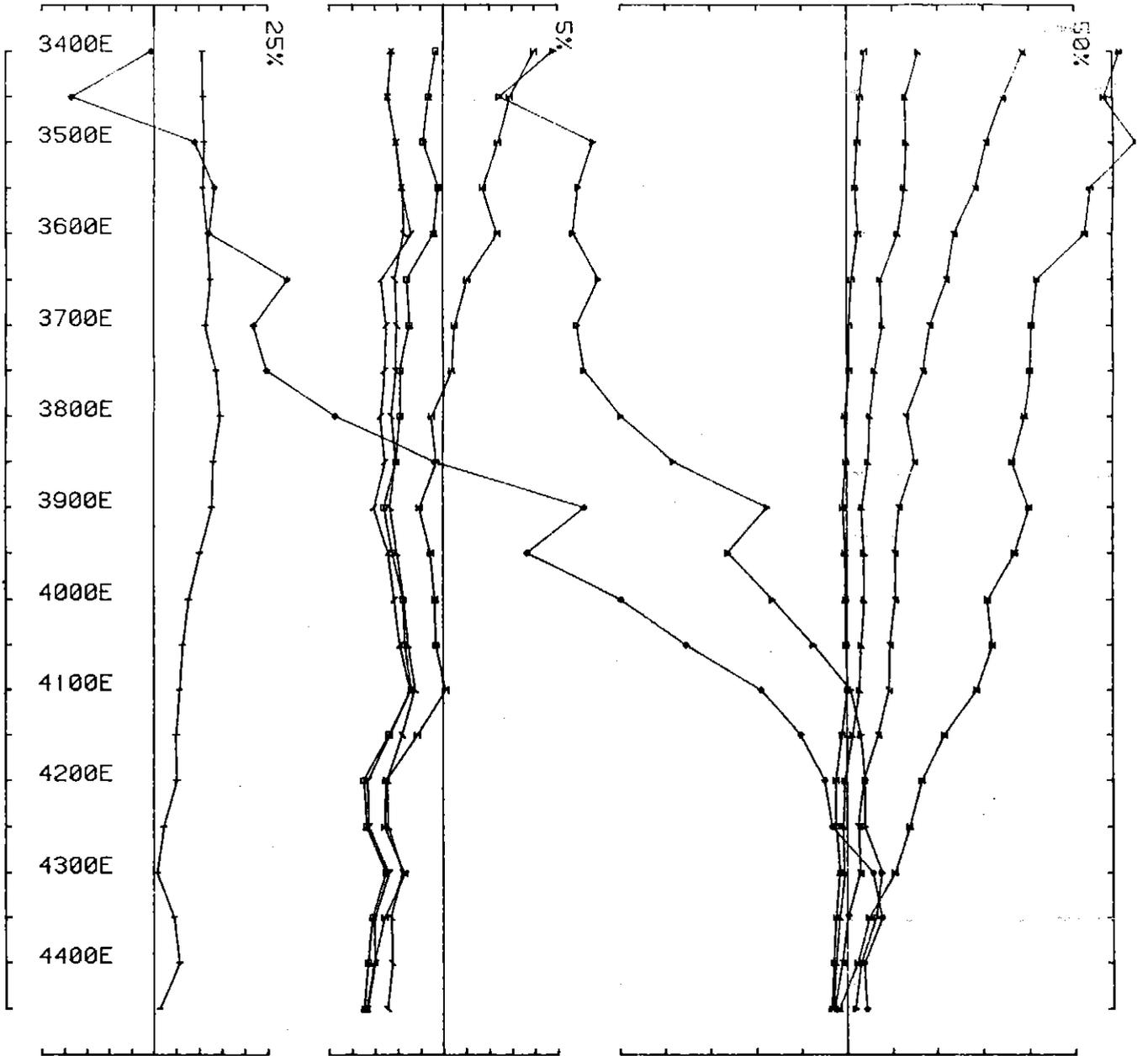
UTEM SURVEY at MT. HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 2 line 8800N component Hz
 secondary field Channel 1 continuously normalized





UTEM SURVEY at MT. HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 2 line 8600N component Hz
 secondary field Channel 1 continuously normalized



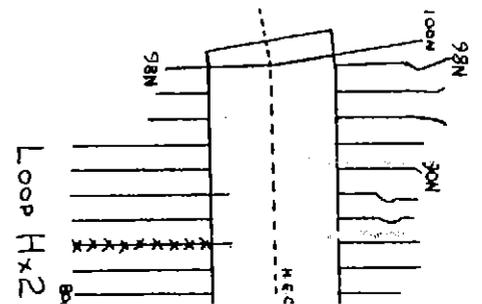


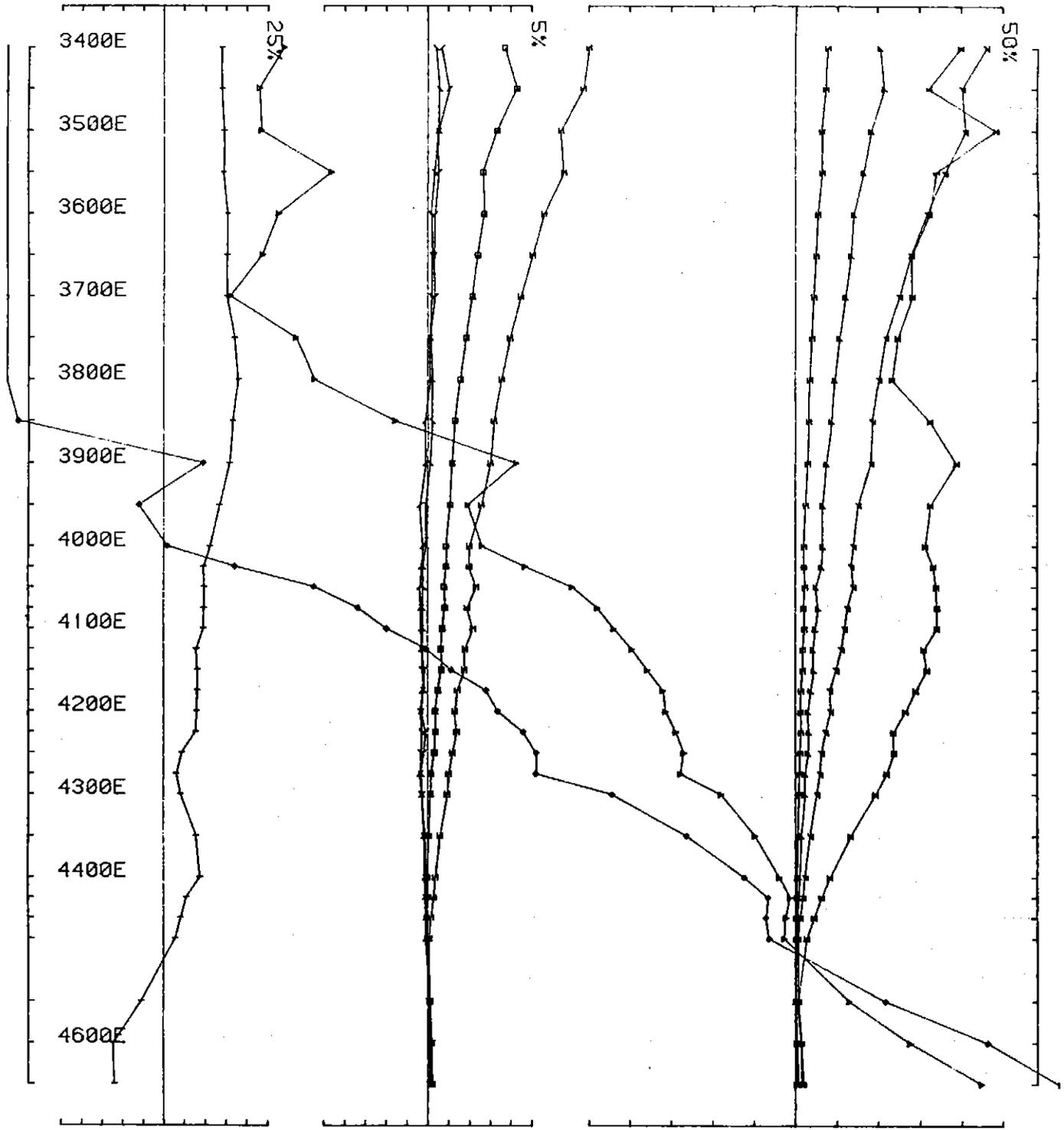
UTEM SURVEY at MT. HUXLEY for B H P

conducted by L G L job 8859 base freq (hz) 26.230 ** FIRST RUN Rx13 **

loop no 2 line 8400N component Hz

secondary field Channel 1 continuously normalized



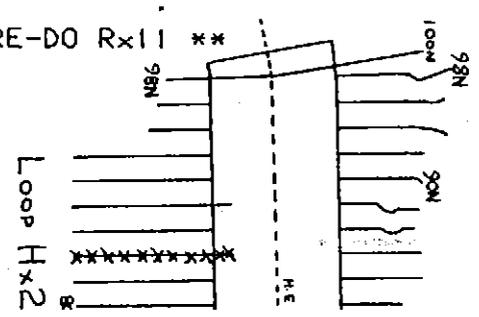


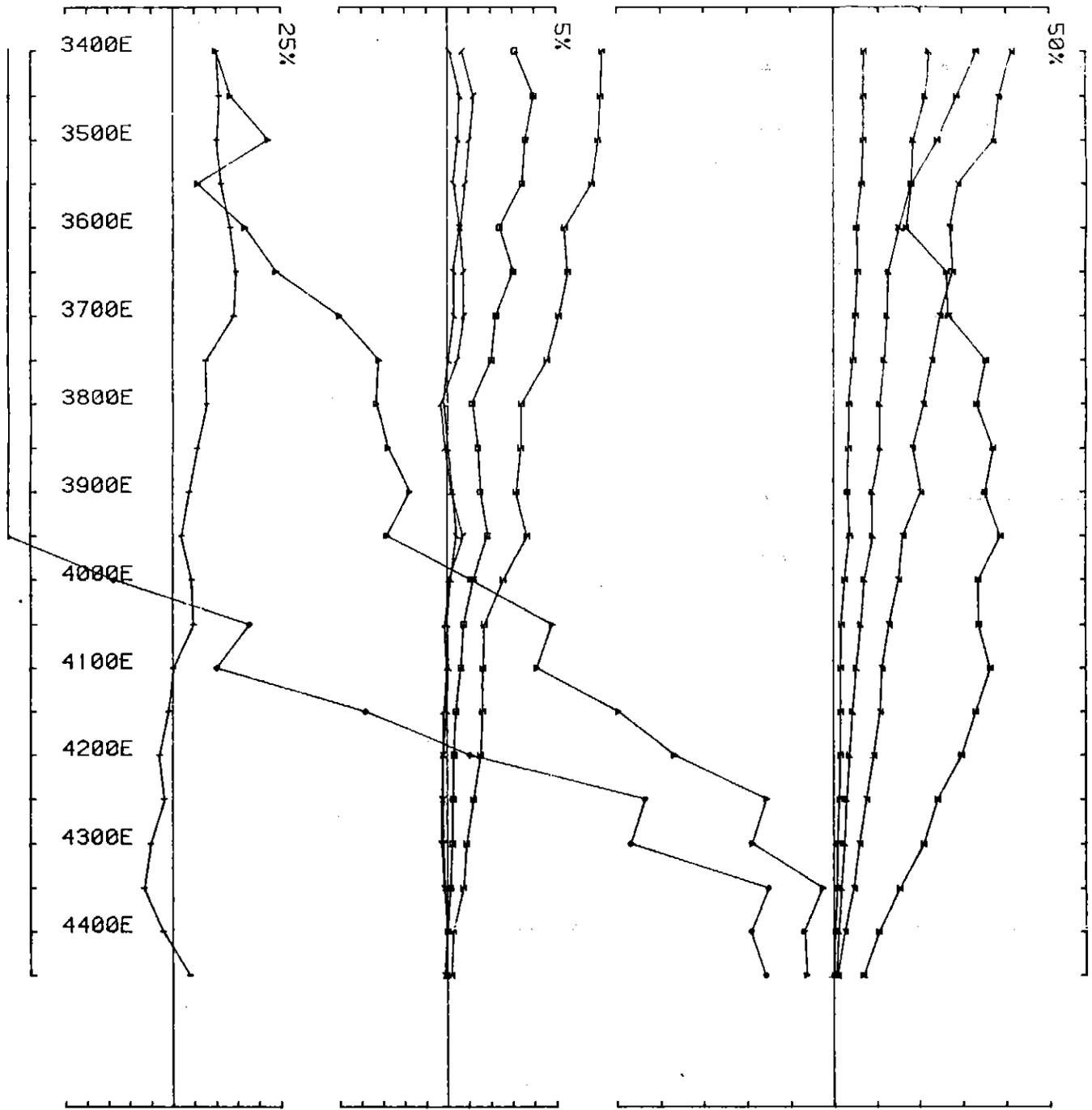
UTEM SURVEY at MT. HUXLEY for B H P

conducted by L G L job 8859 base freq (hz) 26.230 ** RE-DO Rx11 **

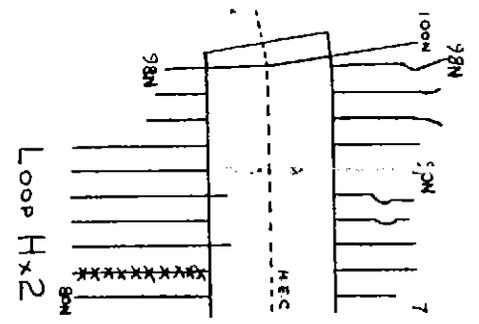
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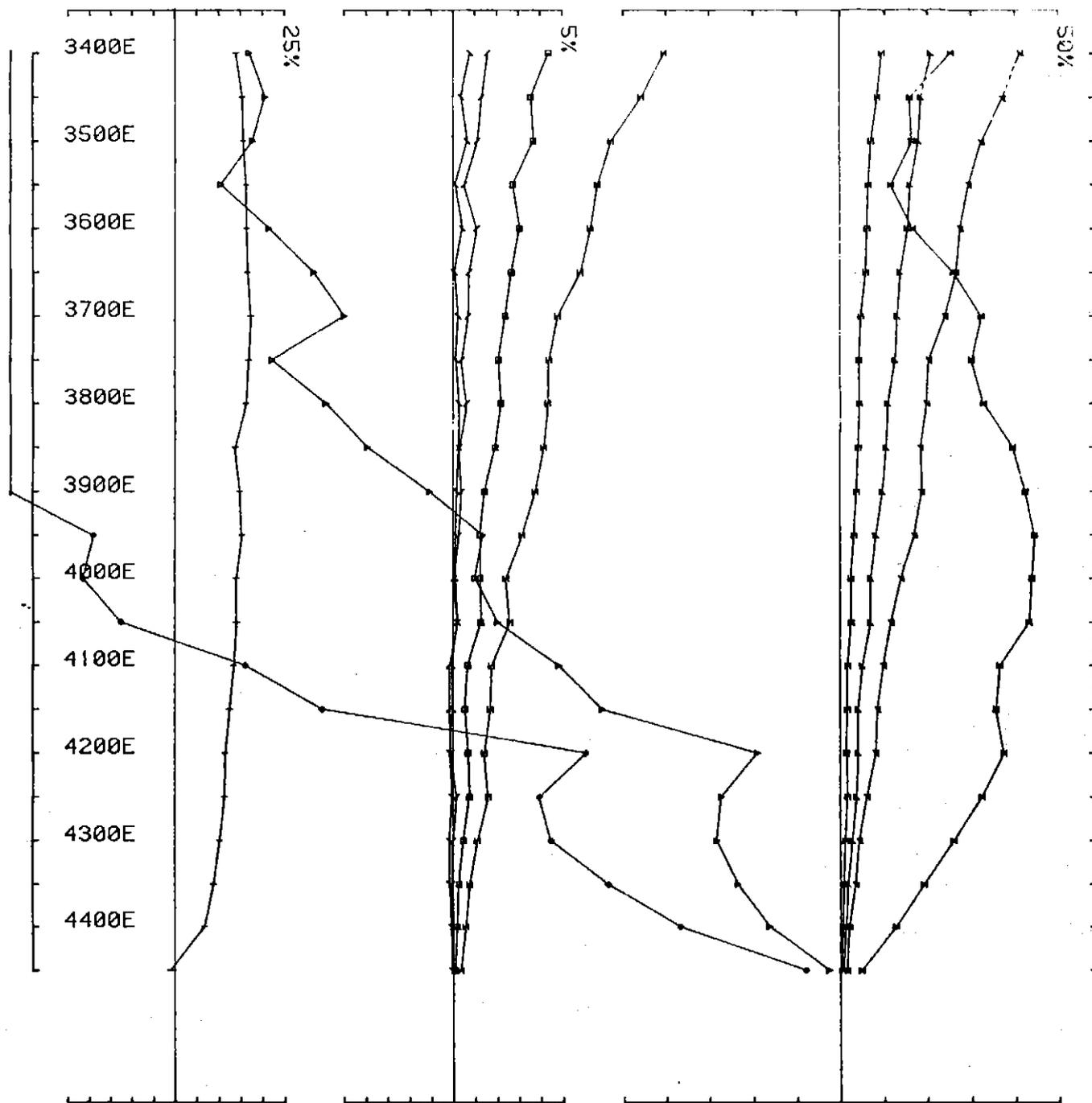
secondary field Channel 1 continuously normalized



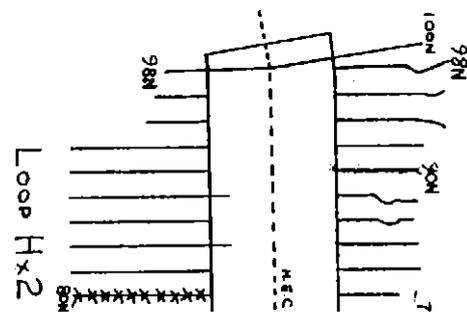


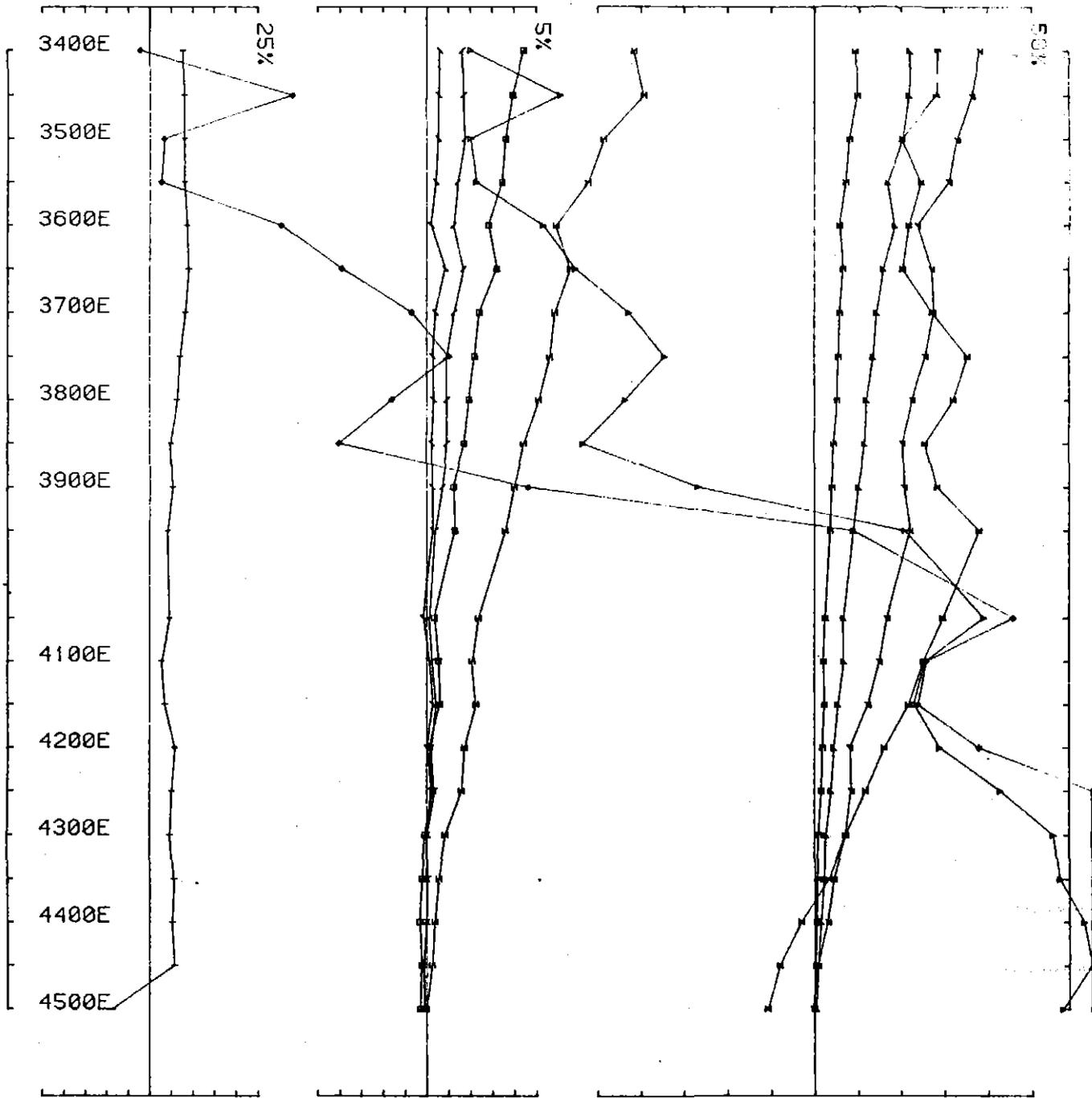
UTEM SURVEY at MT. HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 2 line 8200N component Hz
 secondary field Channel 1 continuously normalized



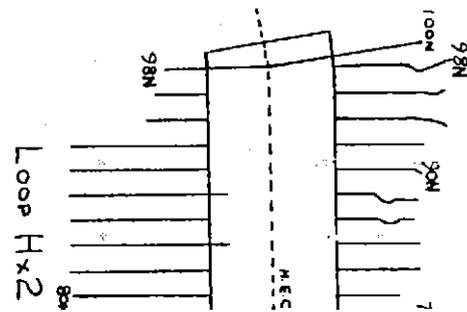


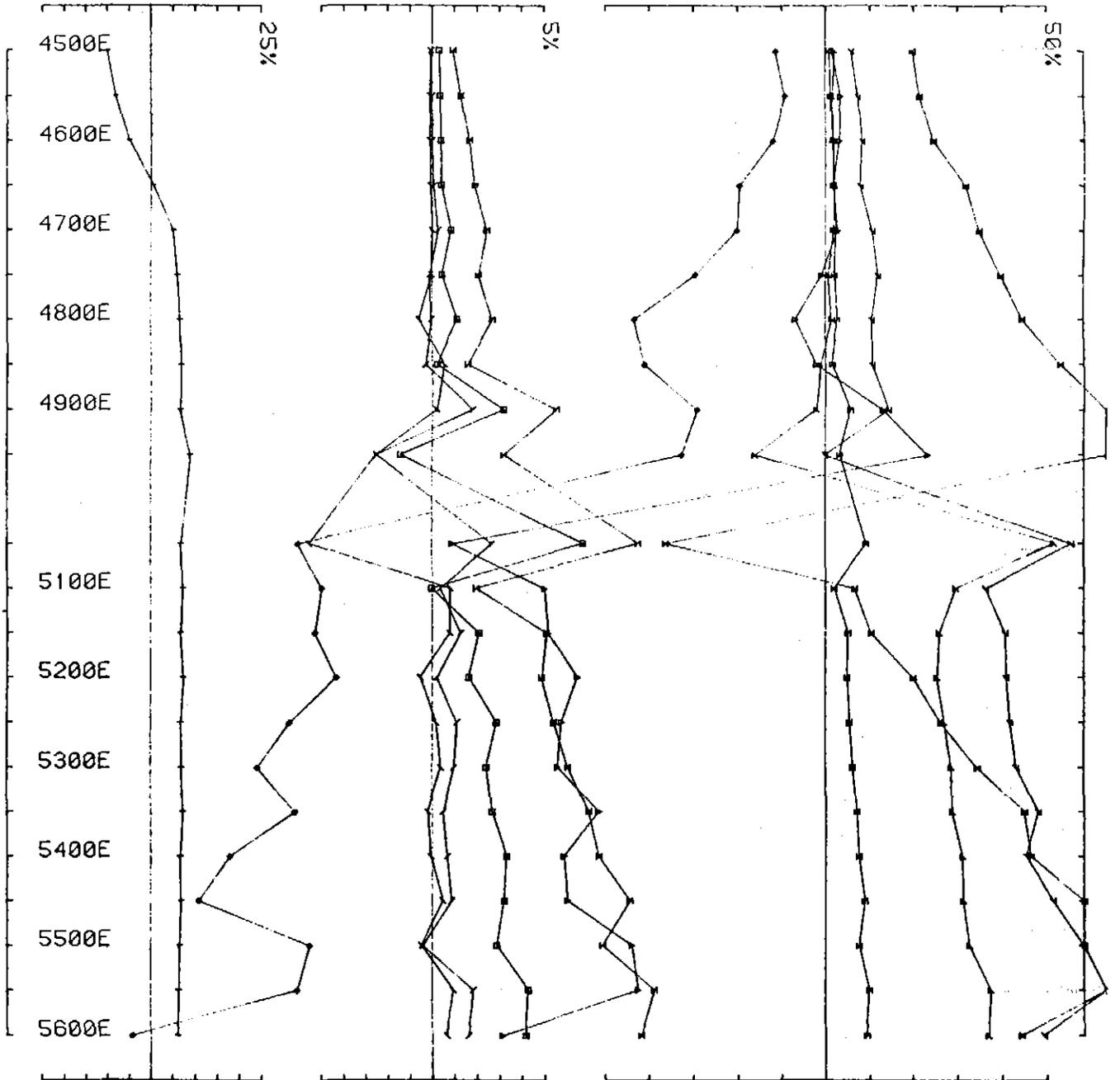
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 loop no 2 line 8000N component Hz
 secondary field Channel 1 continuously normalized



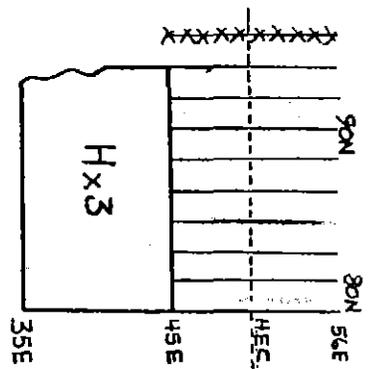


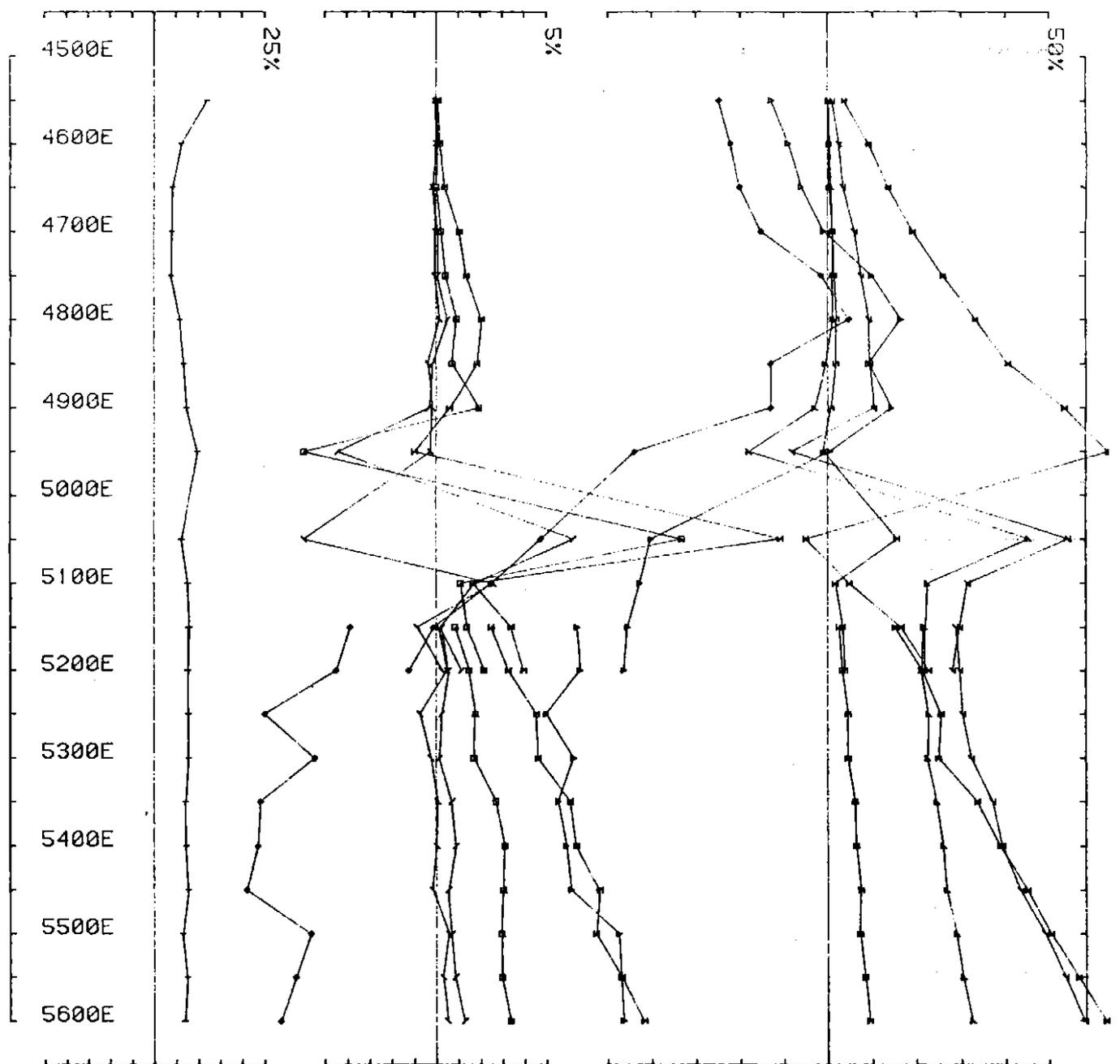
UTEM SURVEY at MT. HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 2 line 7800N component Hz
 secondary field Channel 1 continuously normalized



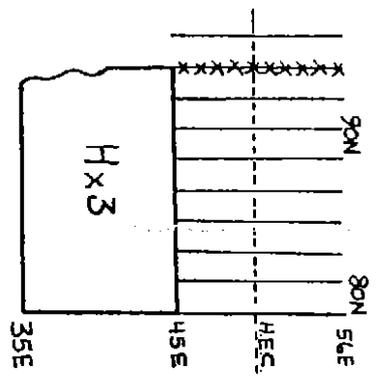


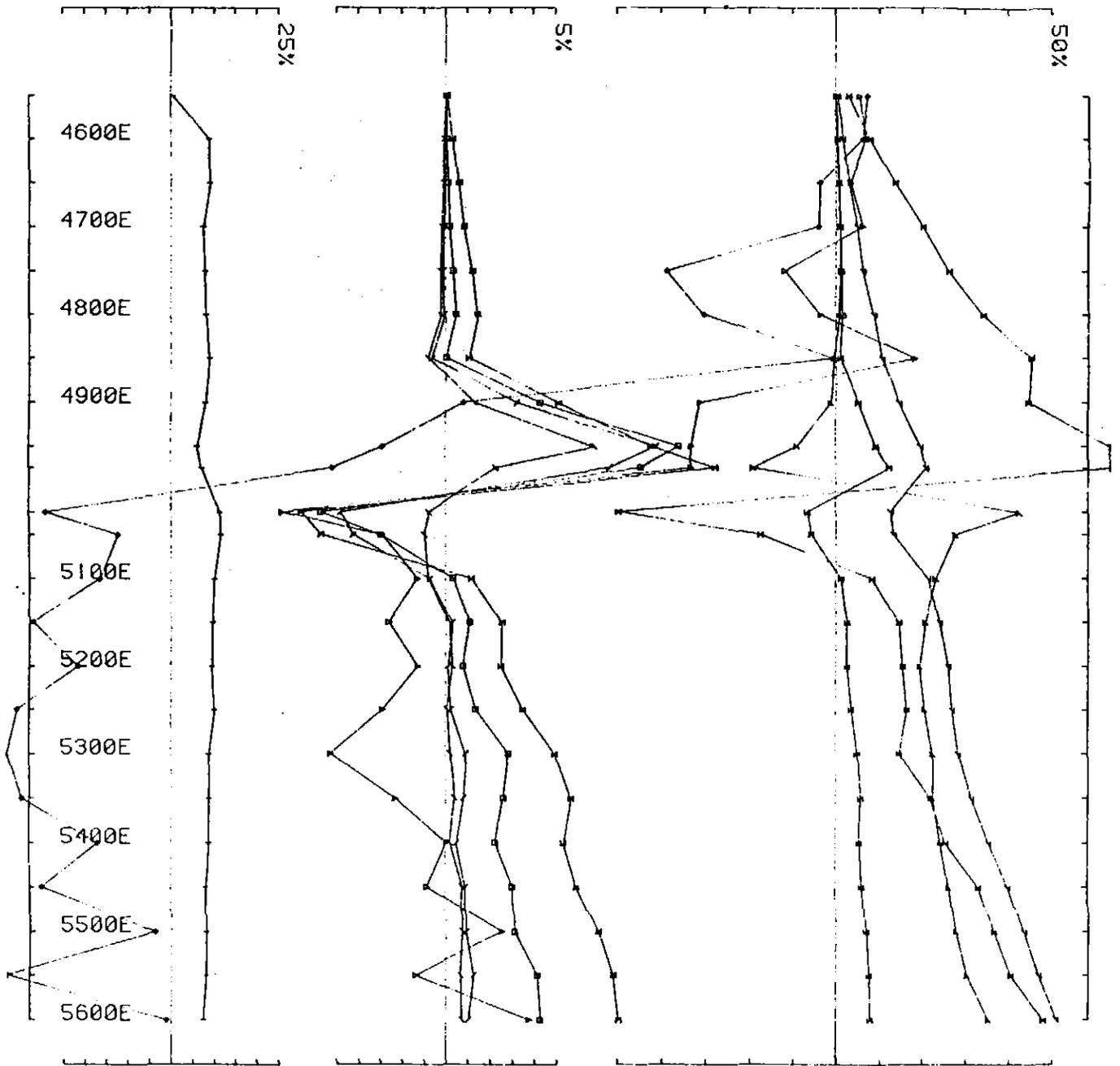
UTEM SURVEY at MT. HUXLEY for B H P
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 secondary field Channel 1 continuously normalized



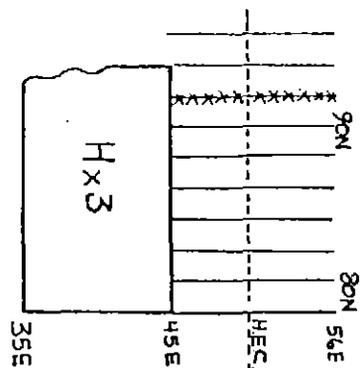


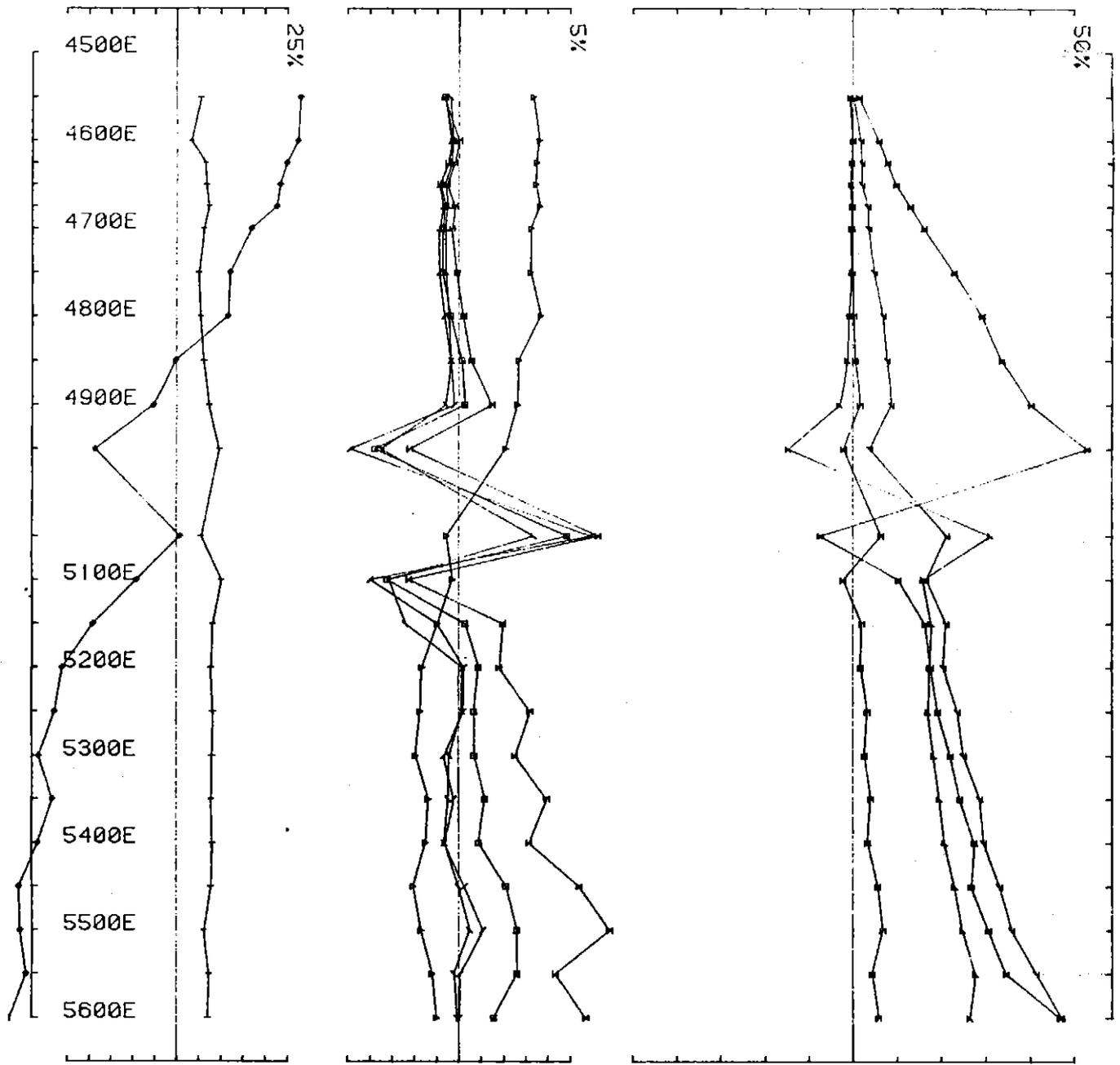
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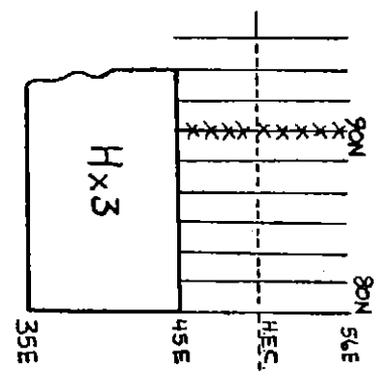


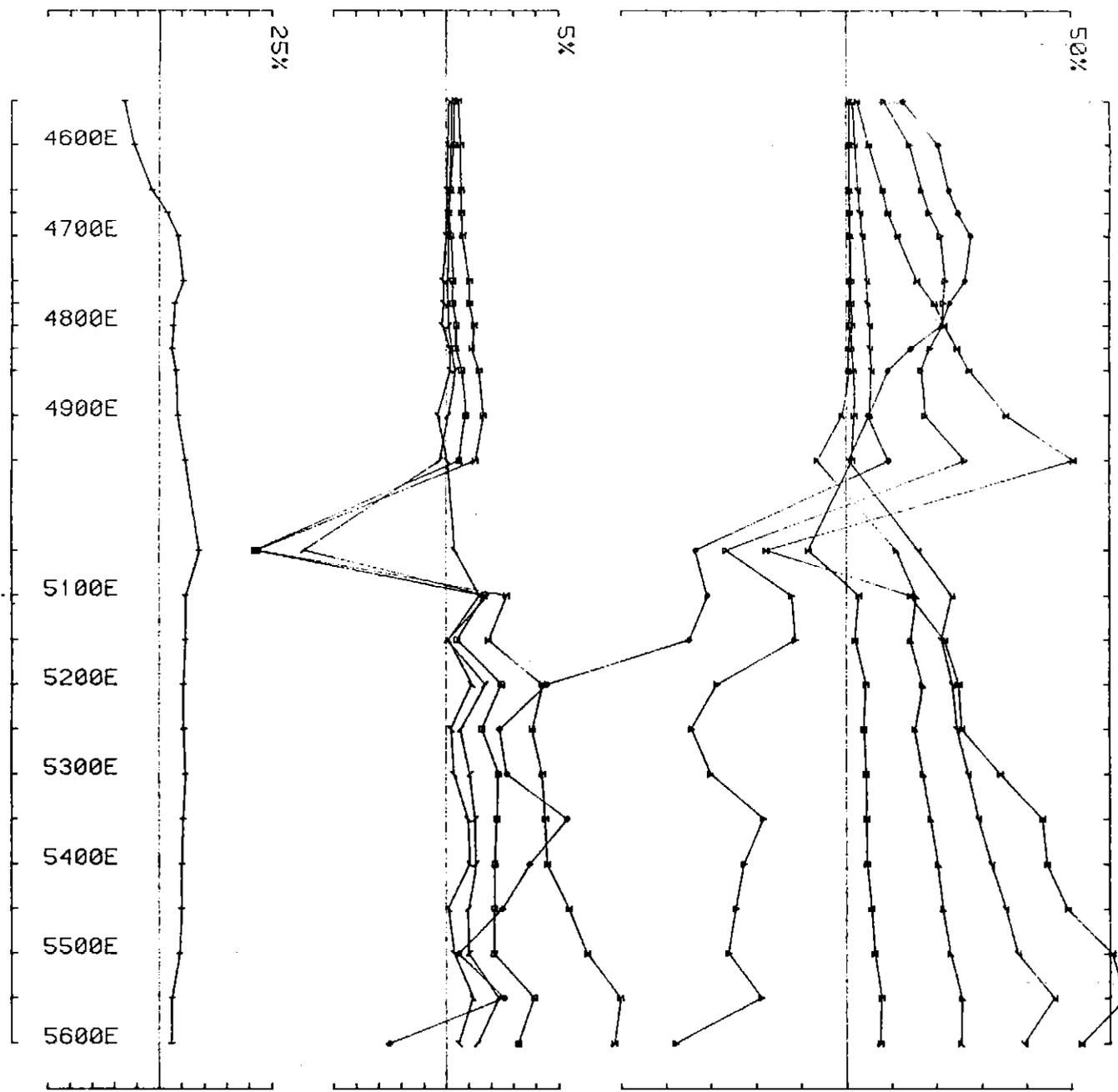
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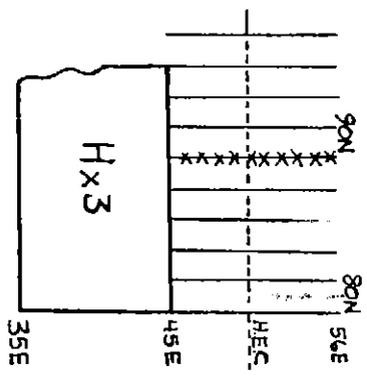


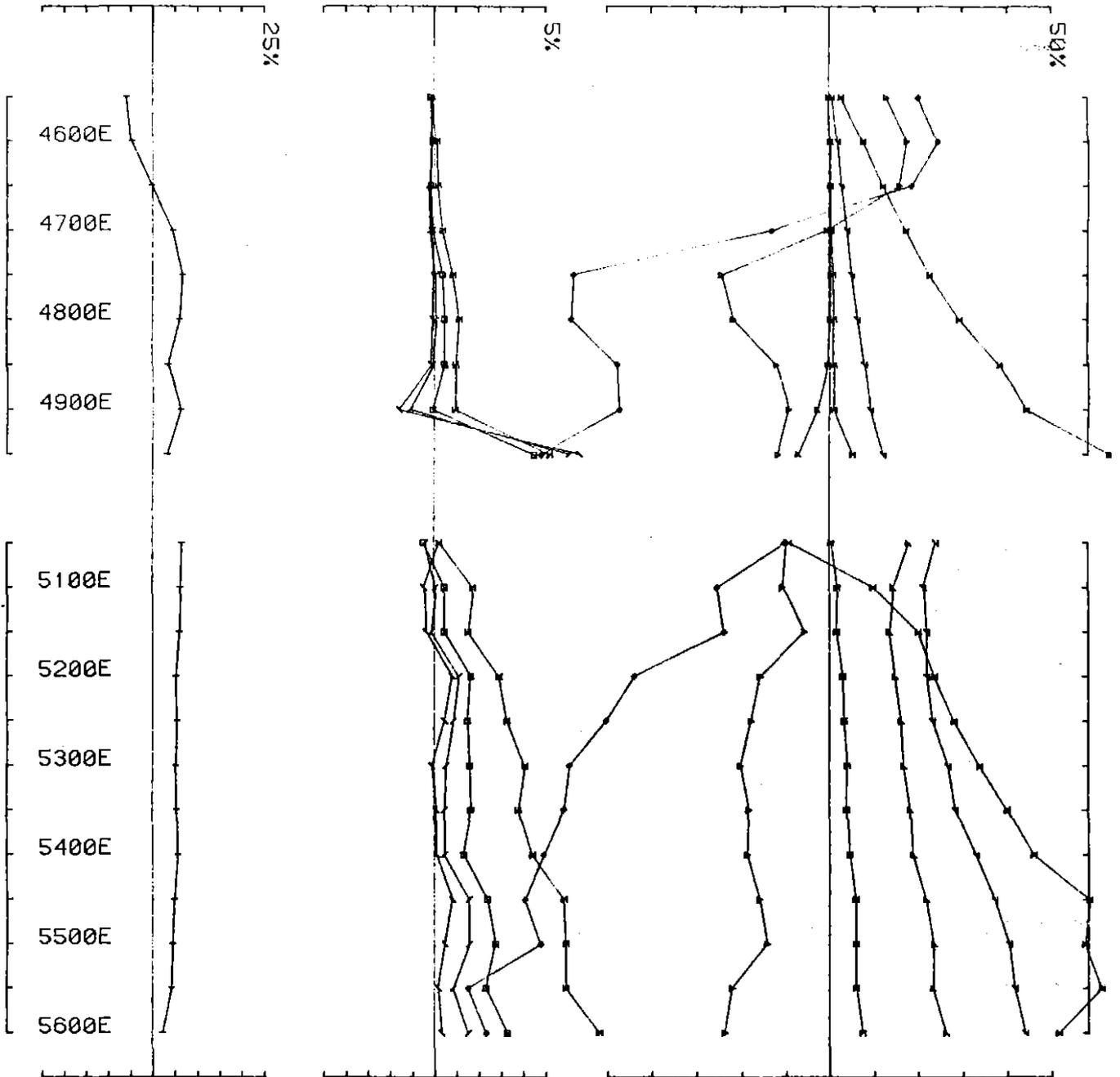
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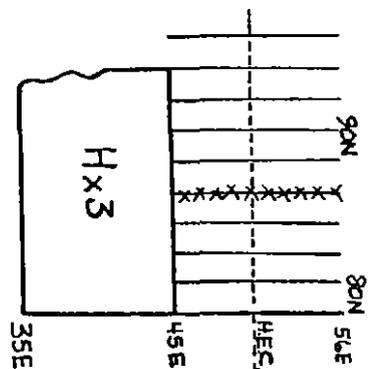


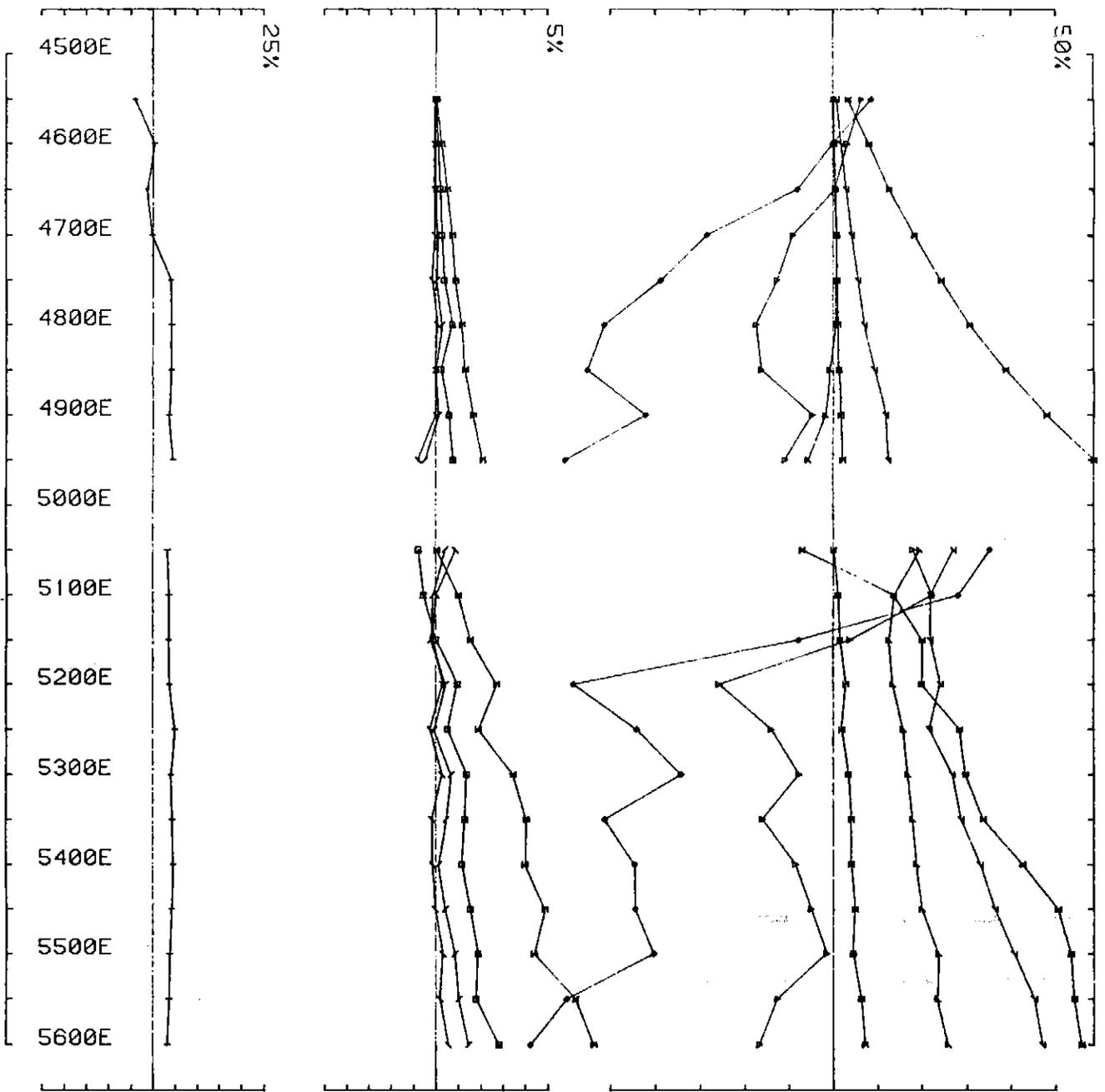
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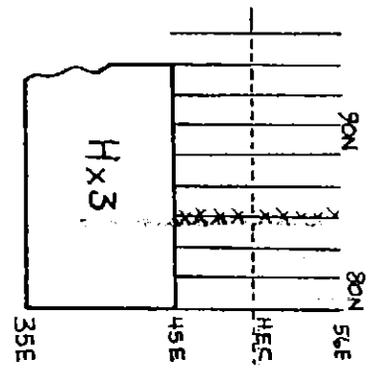


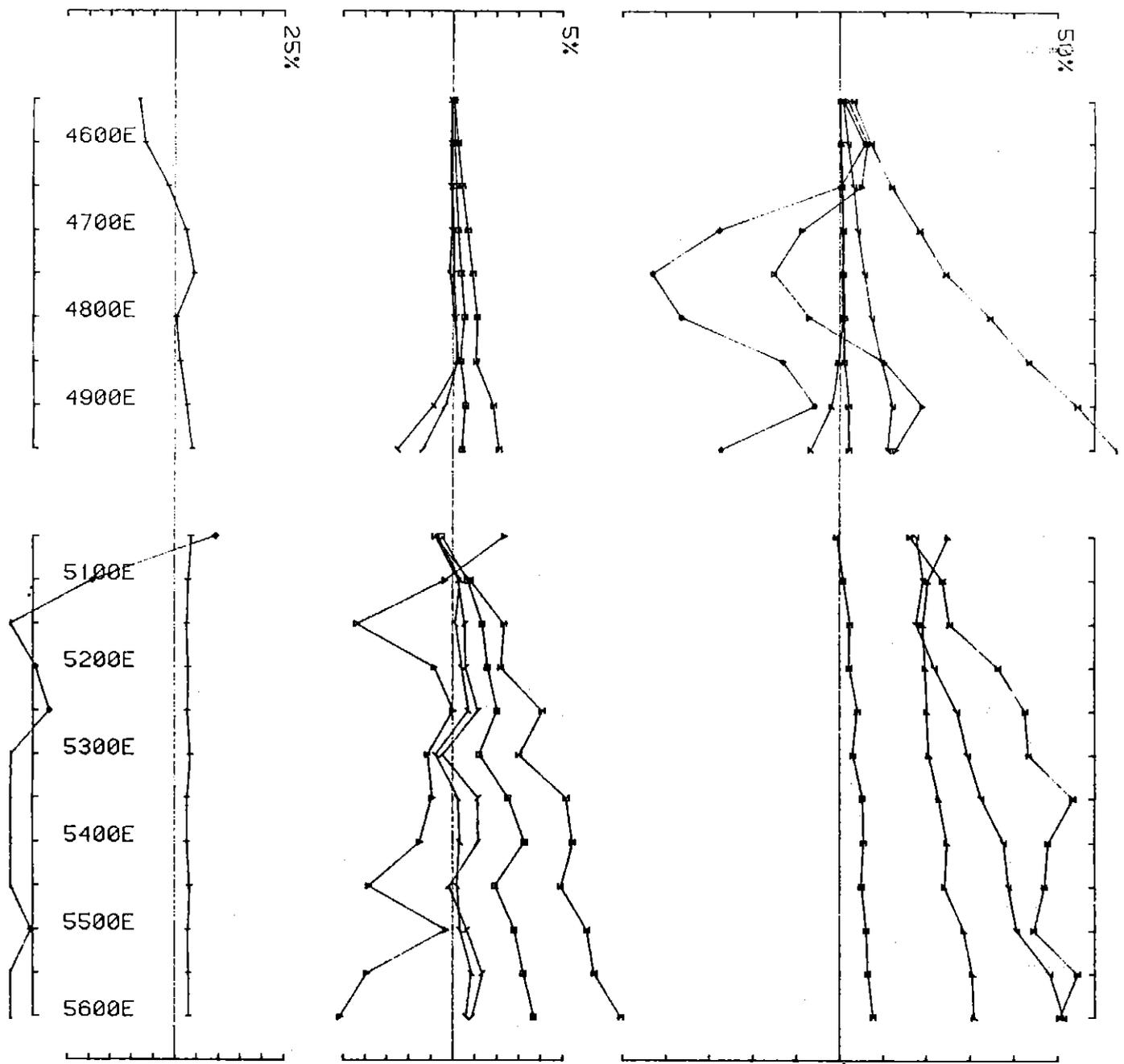
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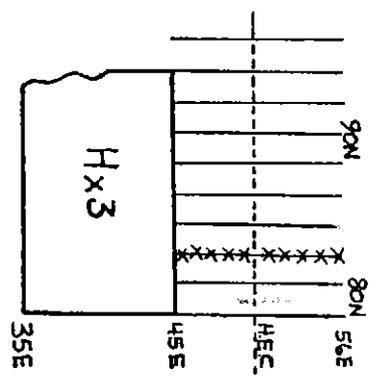


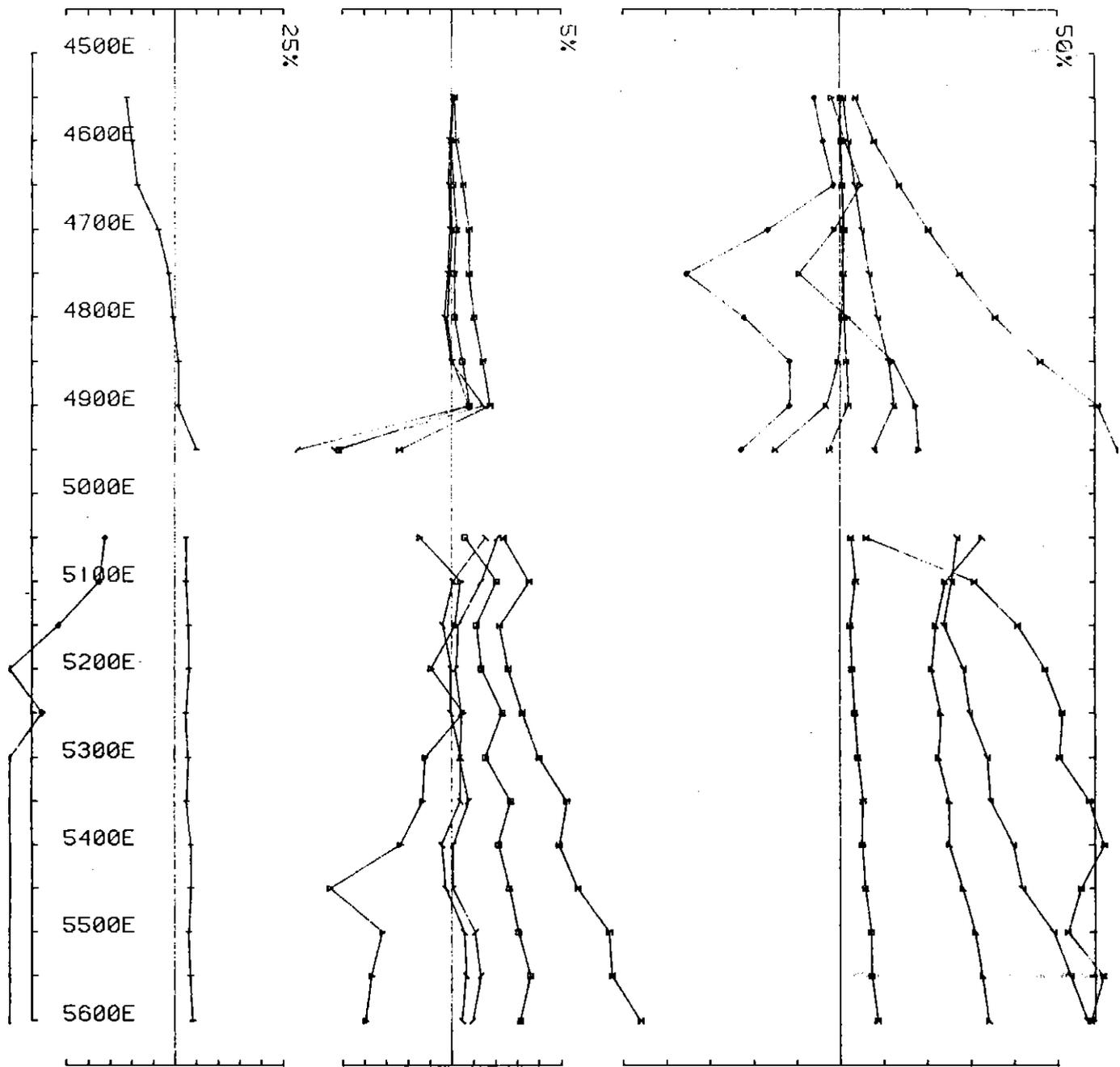
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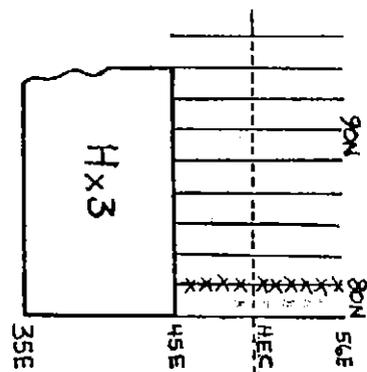


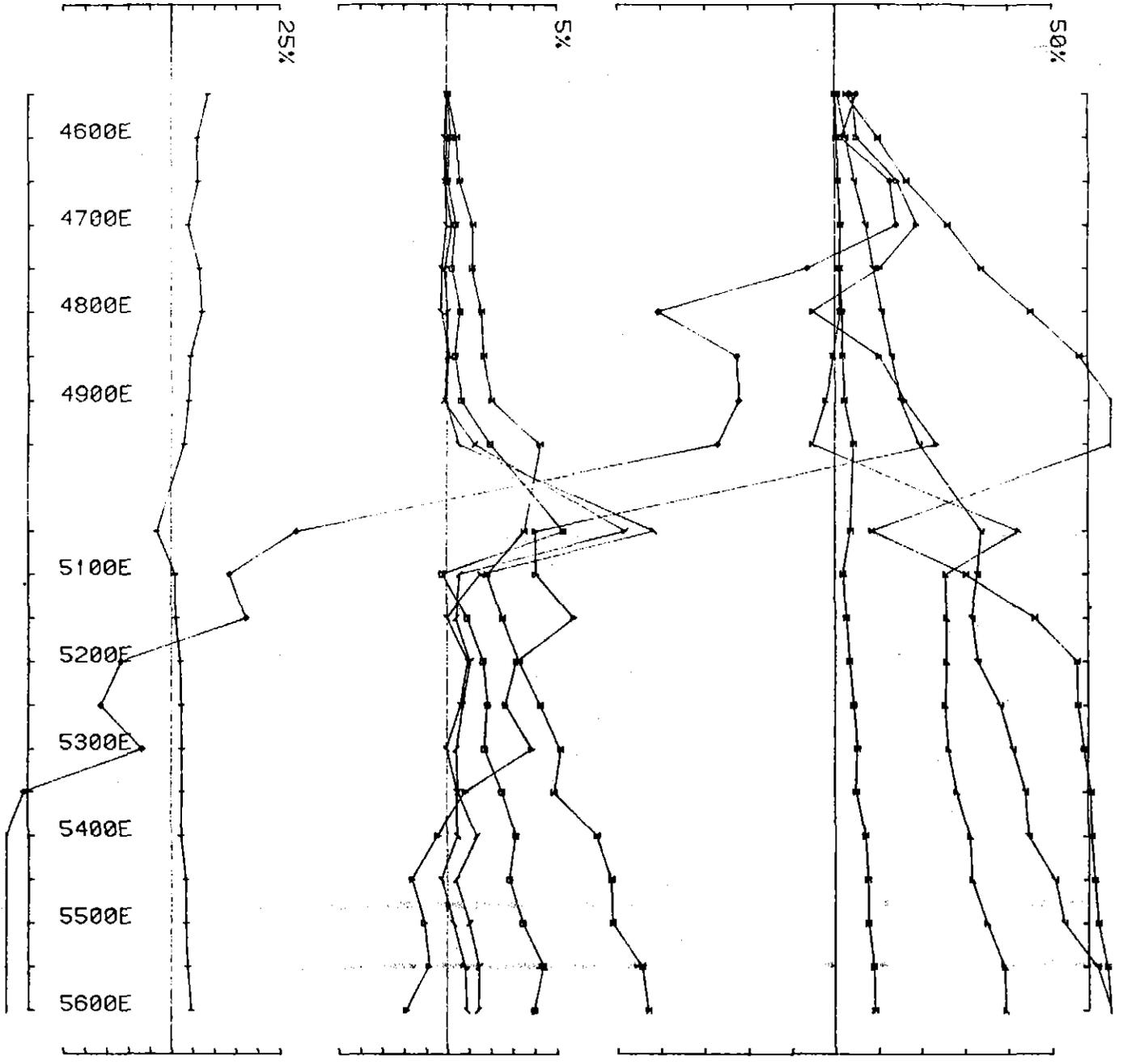
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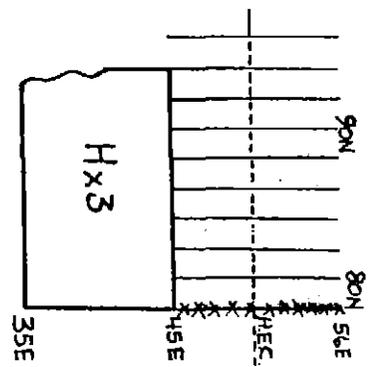


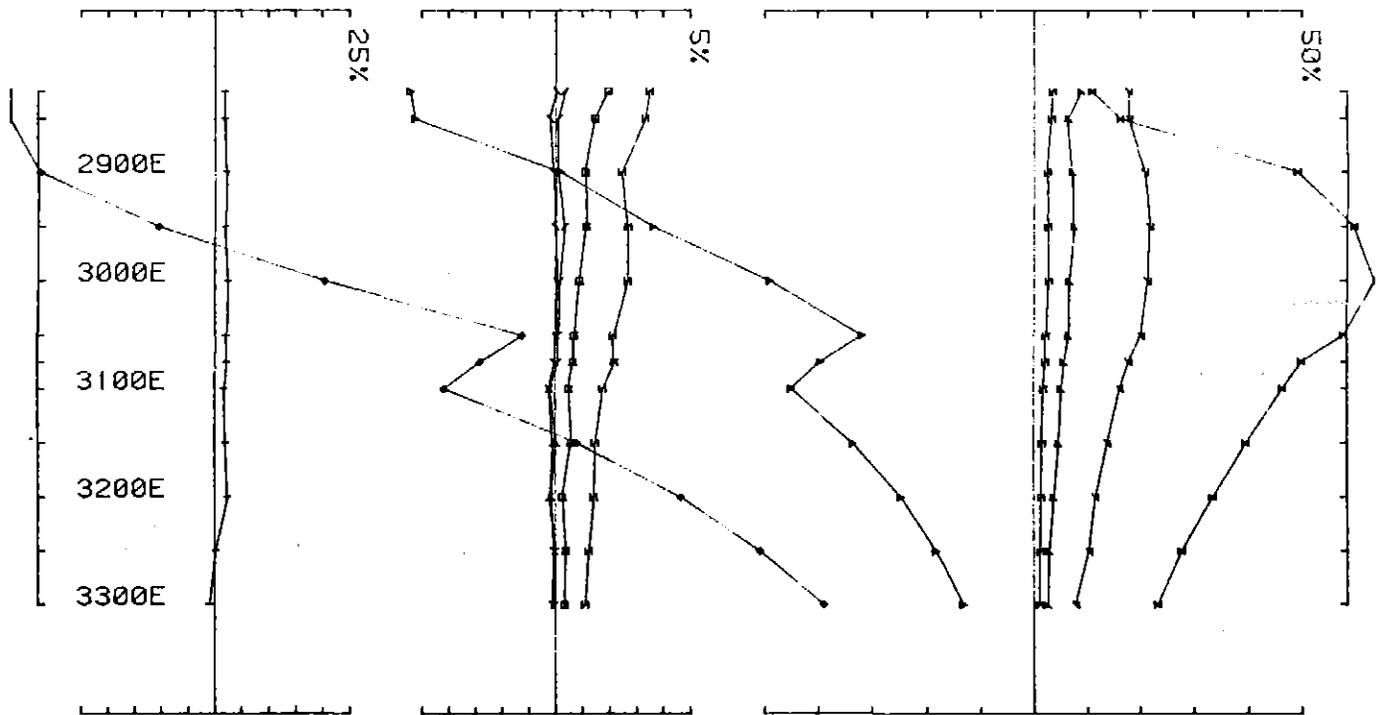
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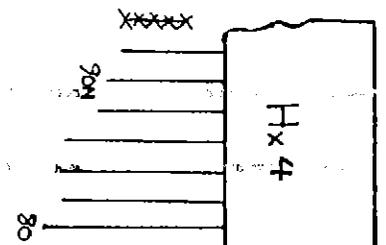


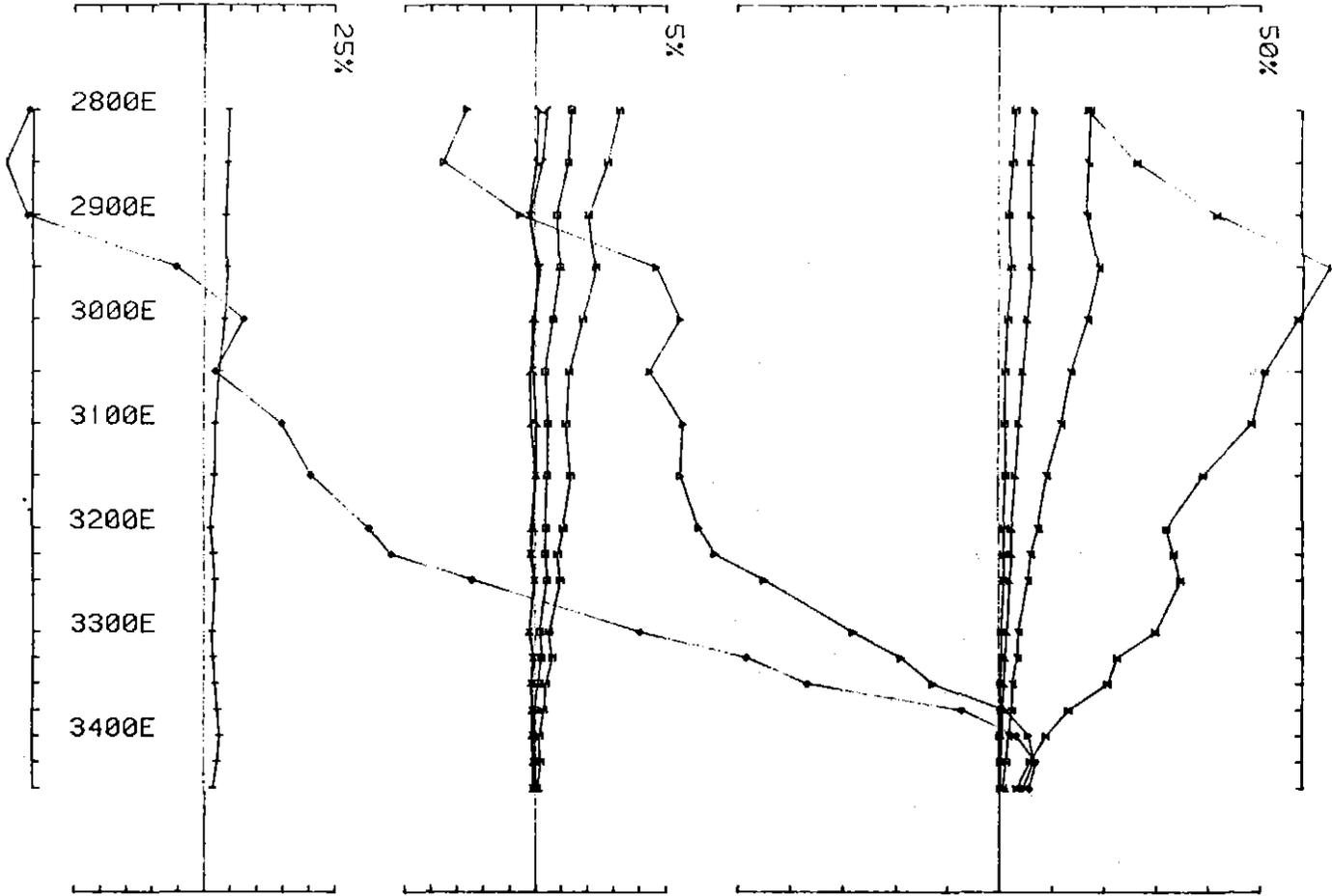
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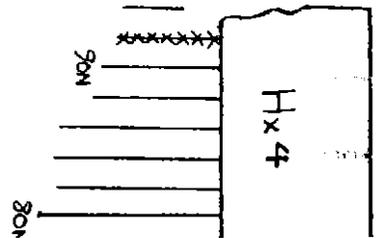


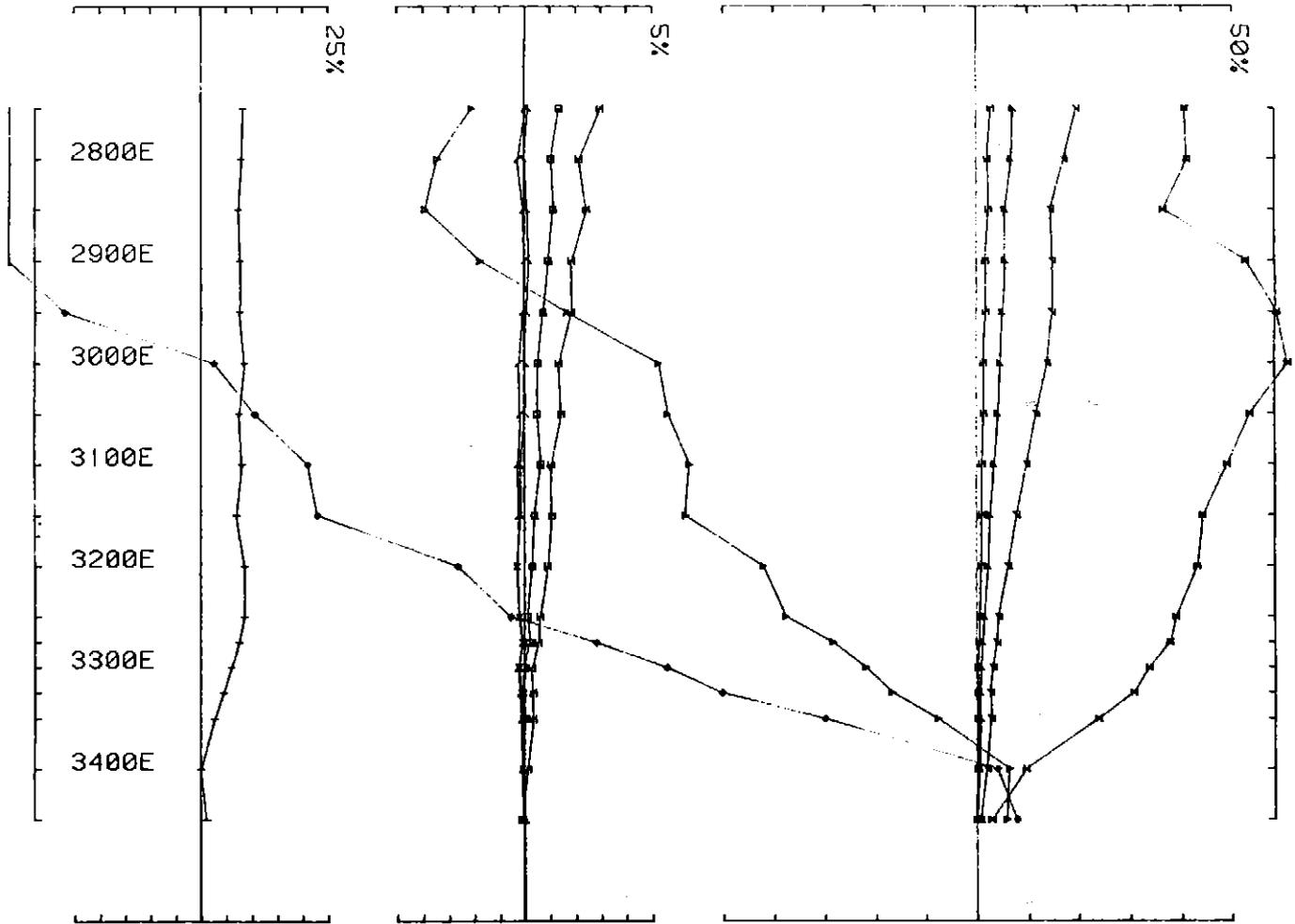
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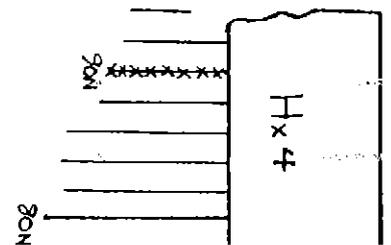


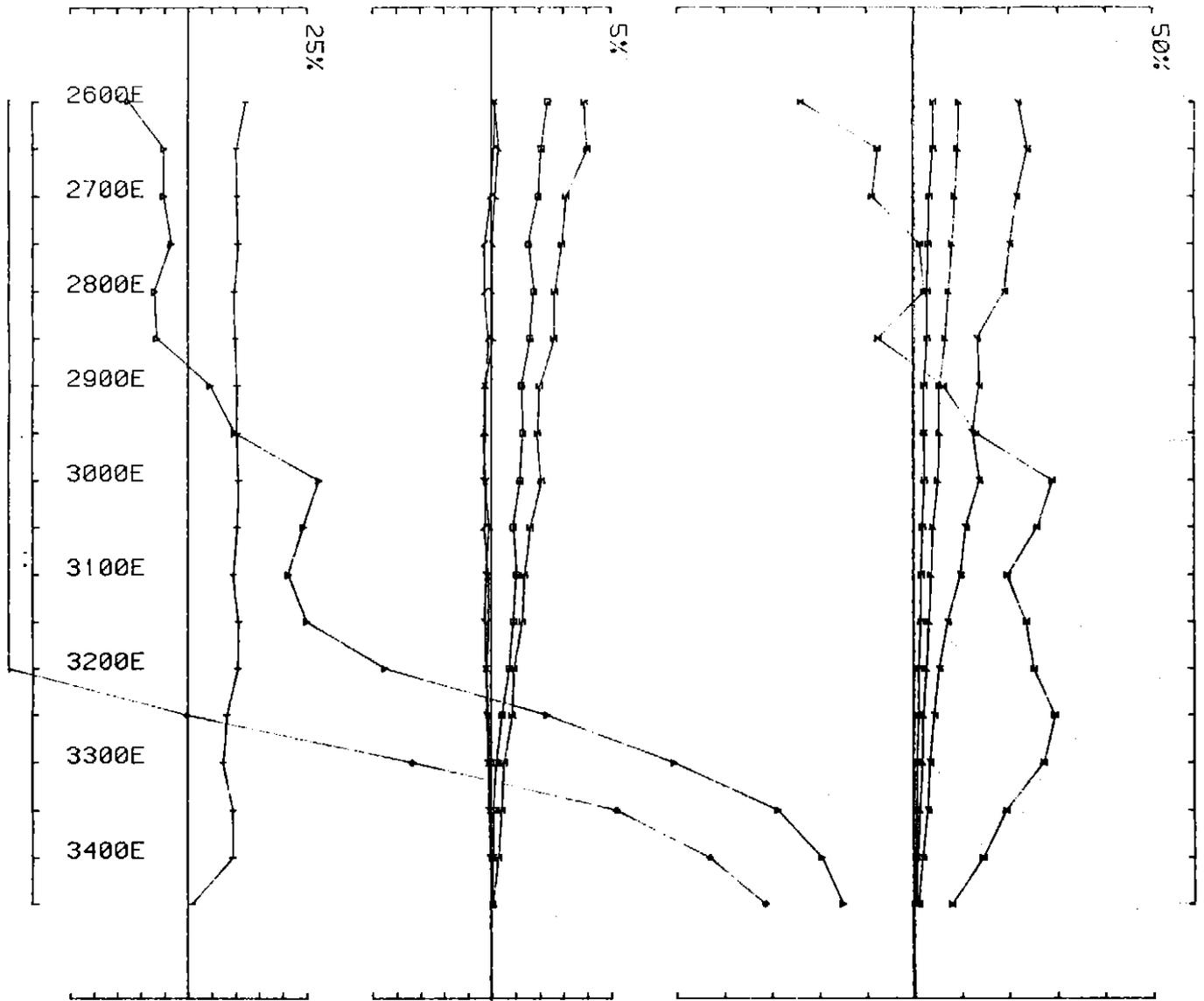
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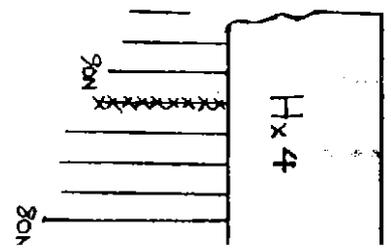


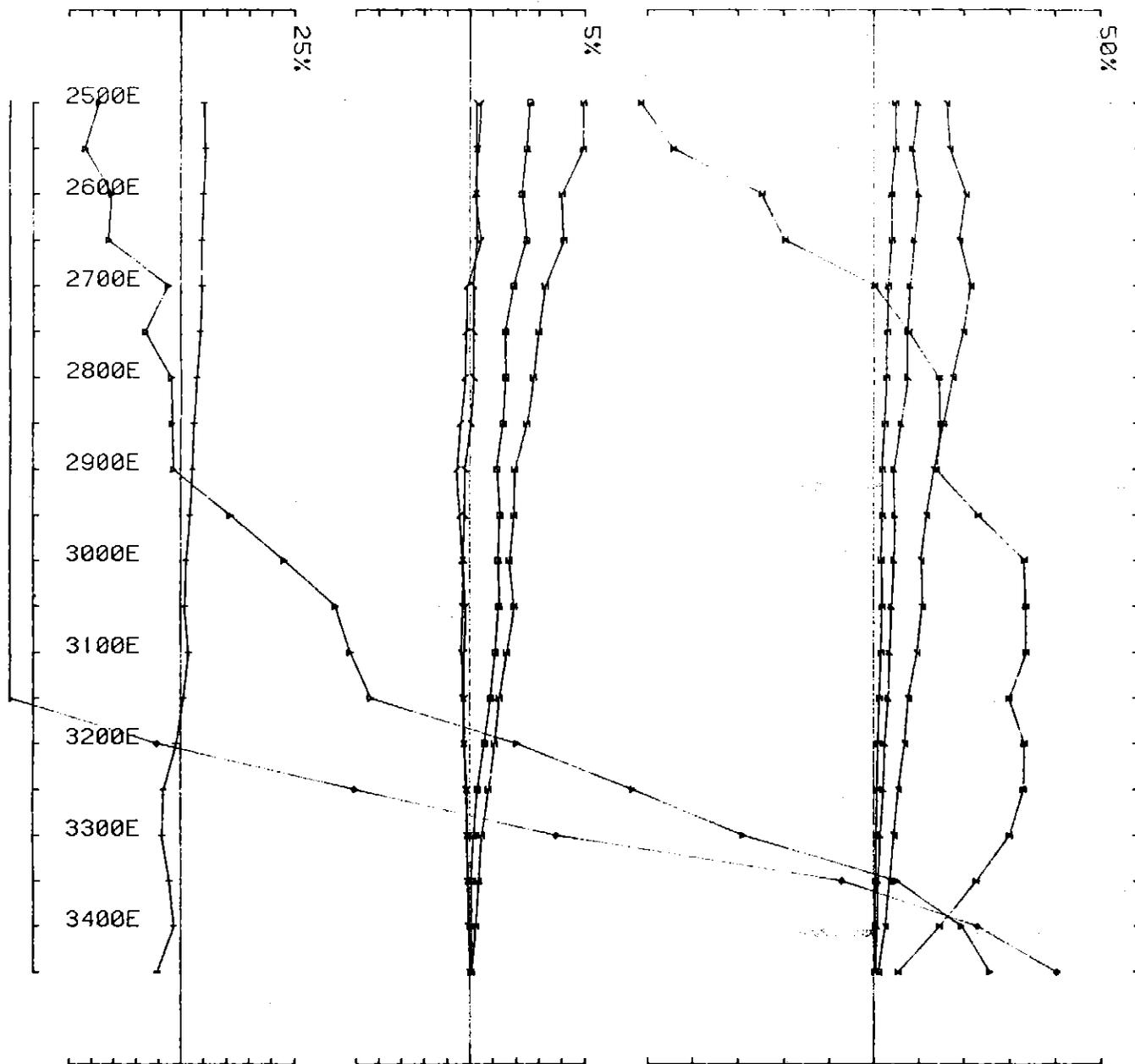
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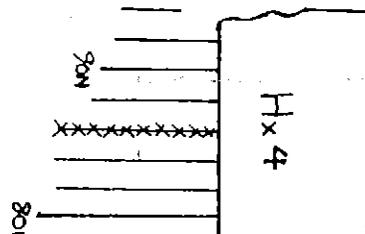


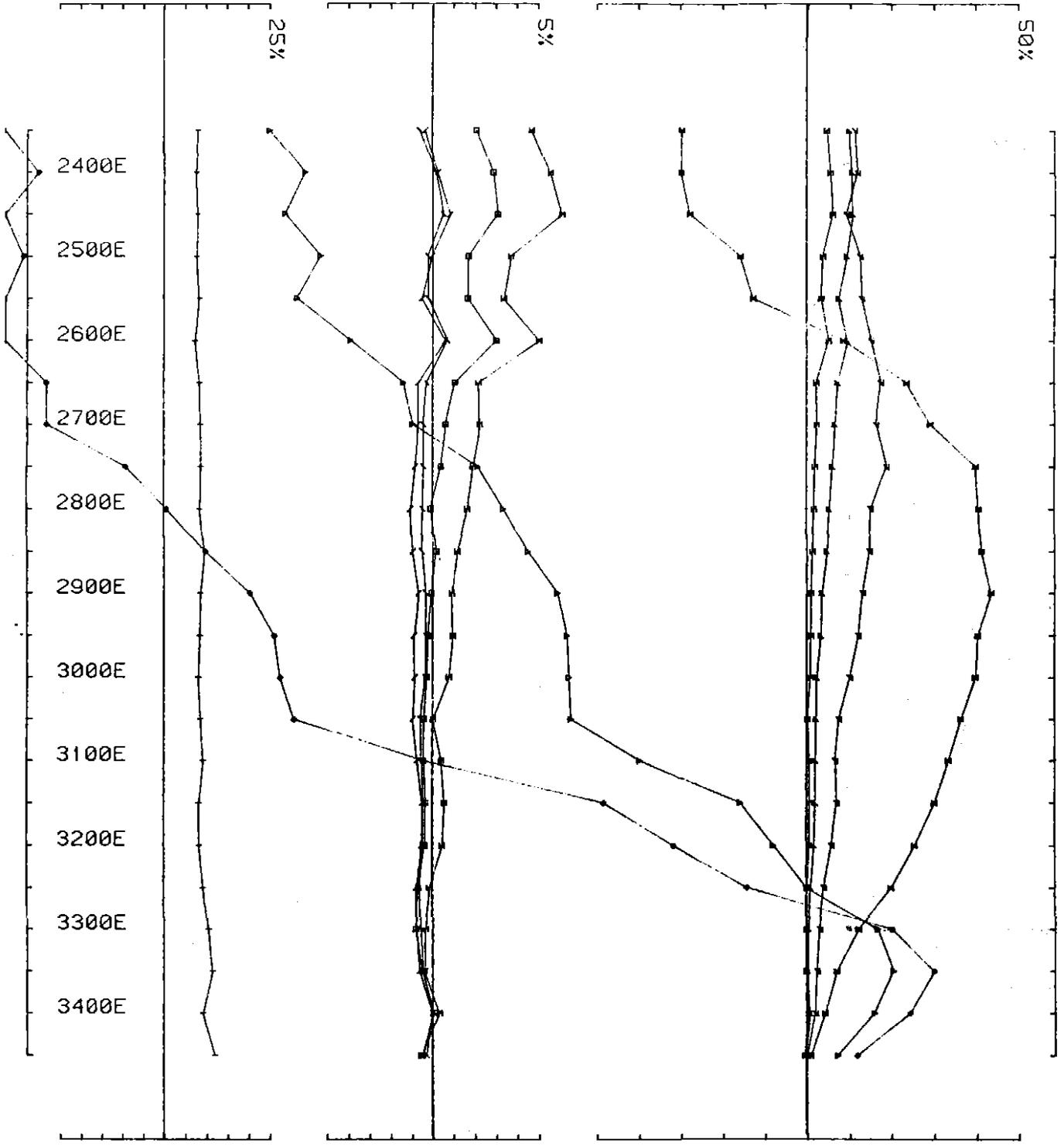
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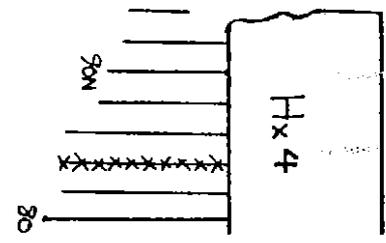


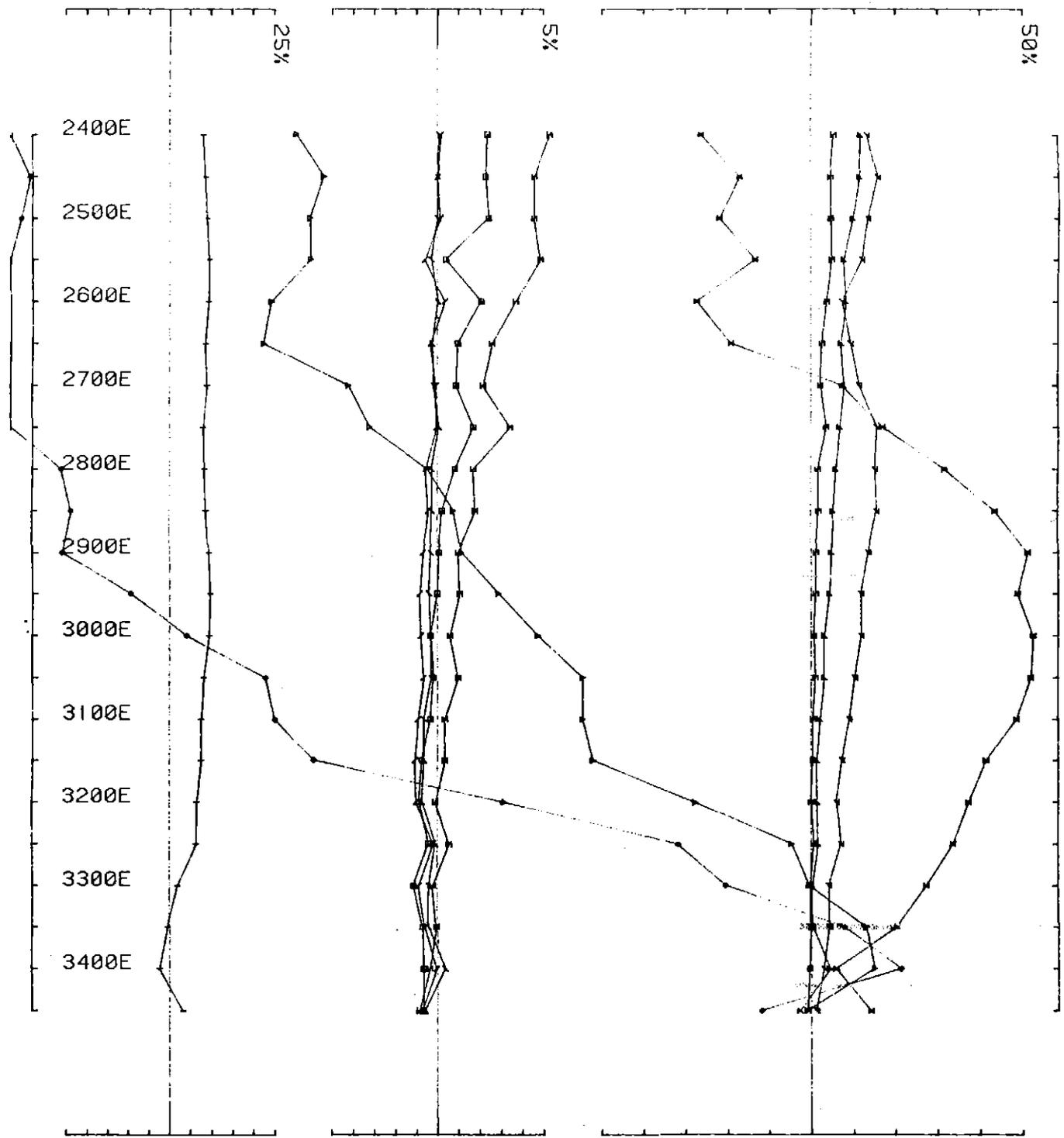
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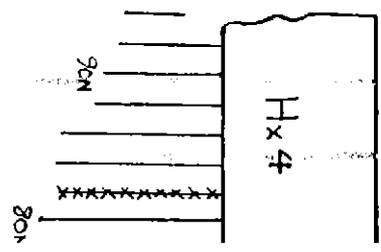


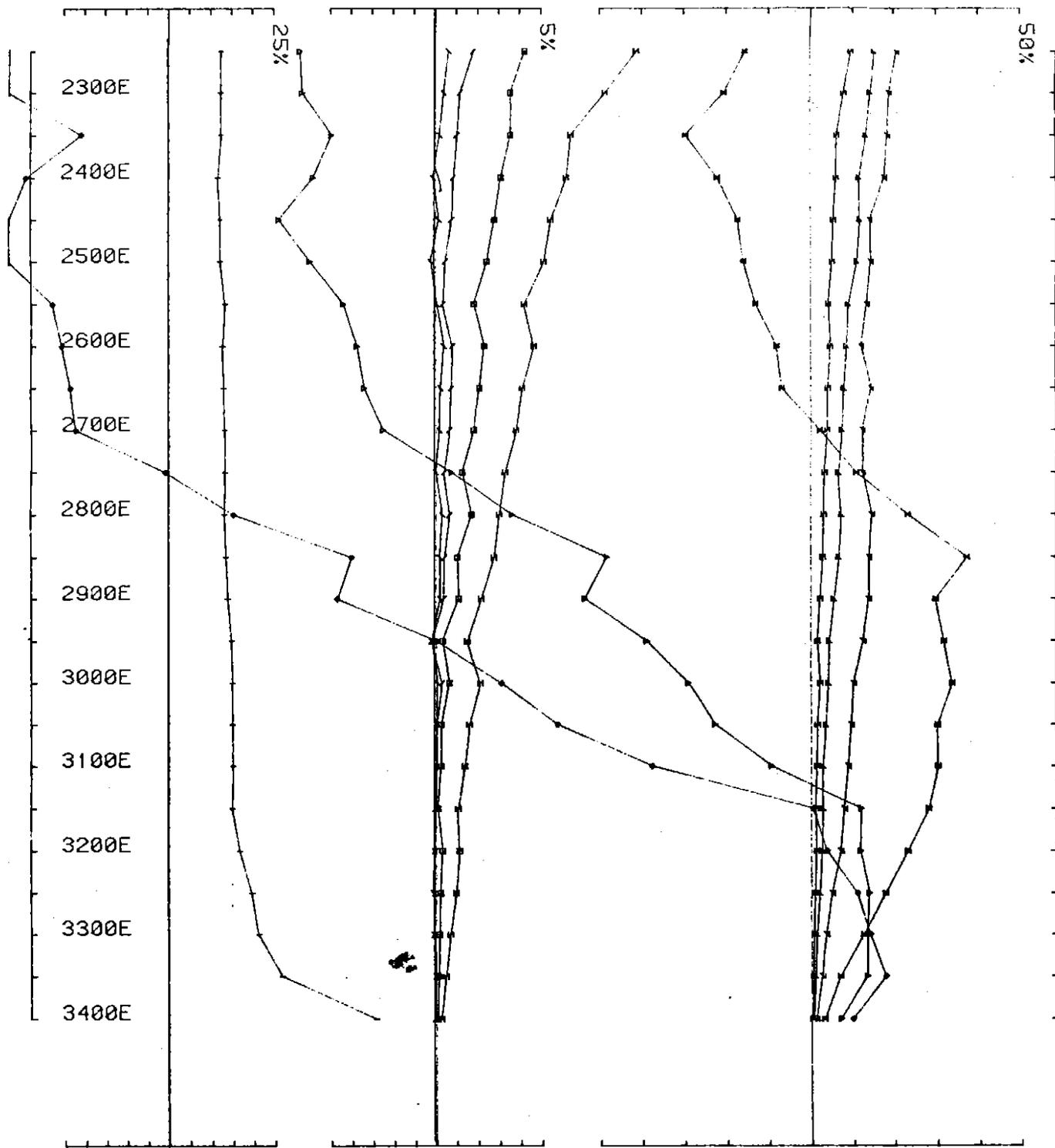
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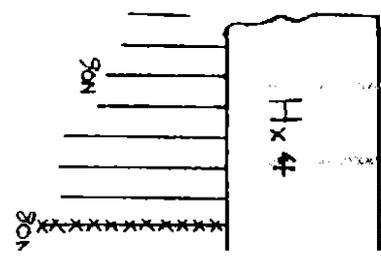


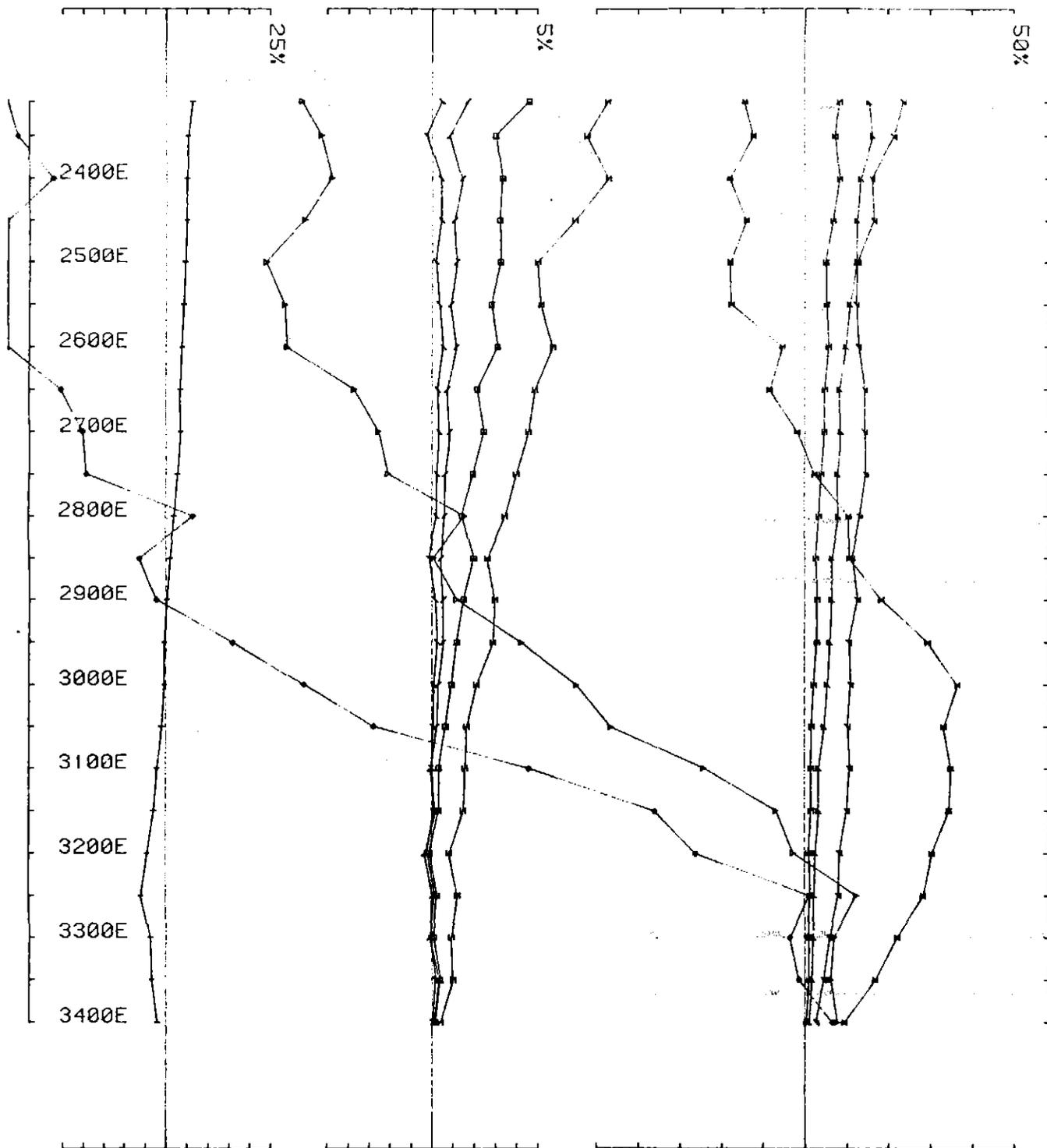
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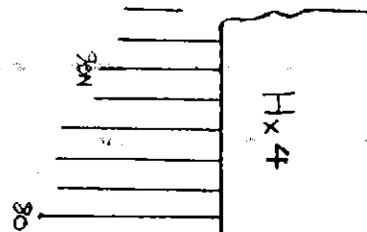


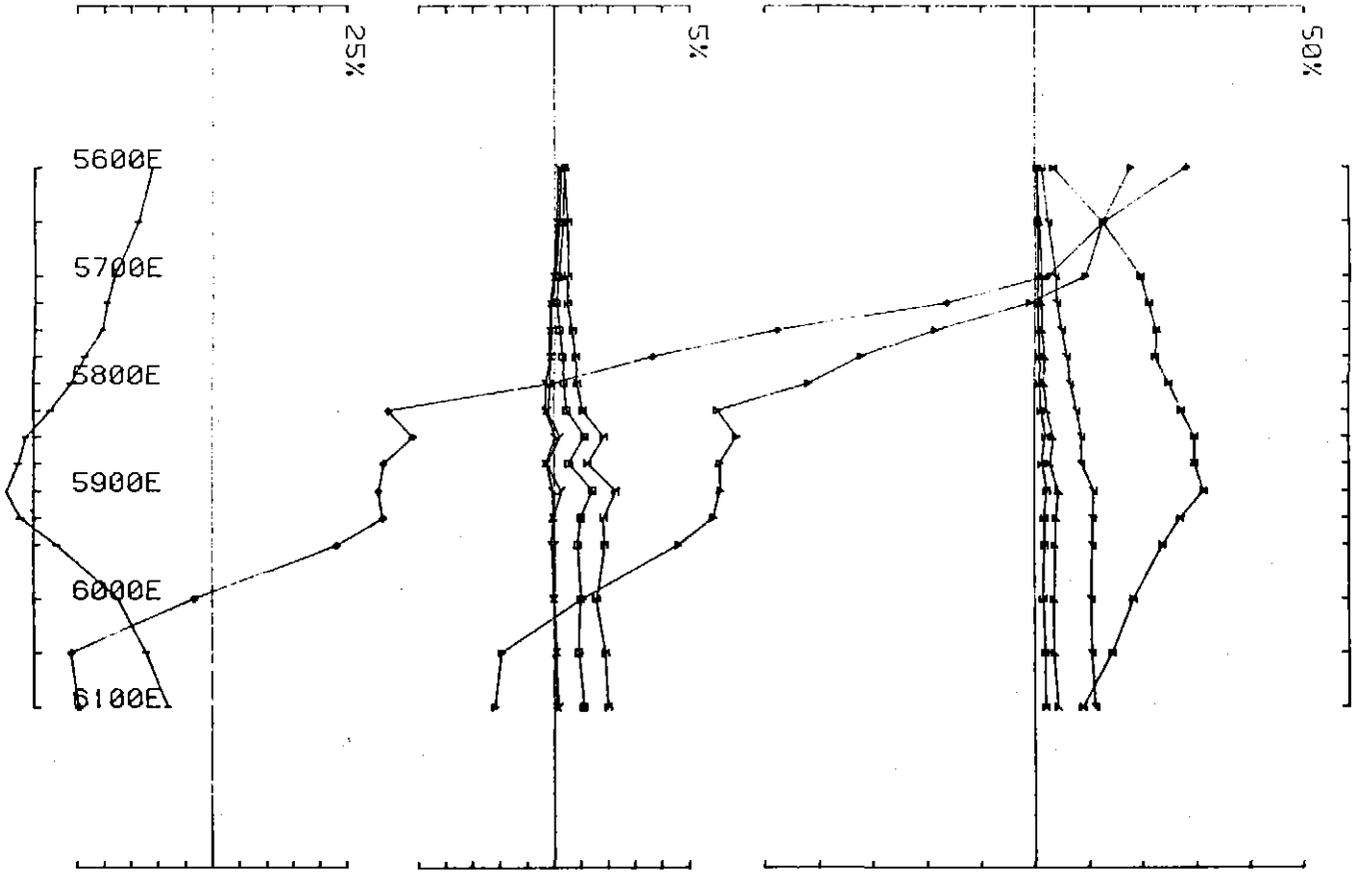
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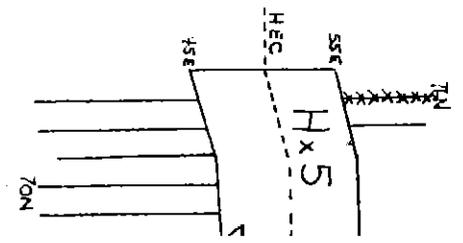


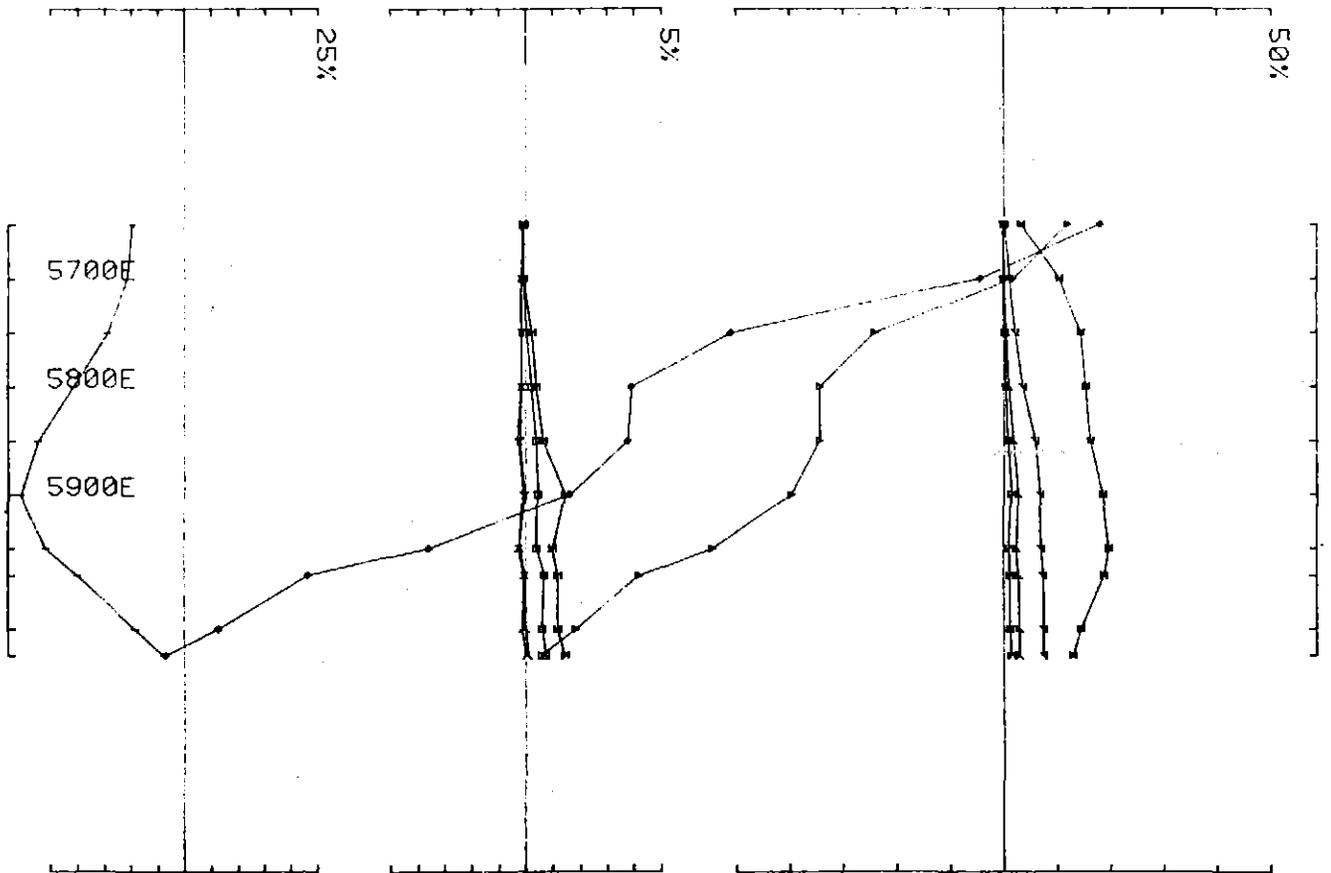
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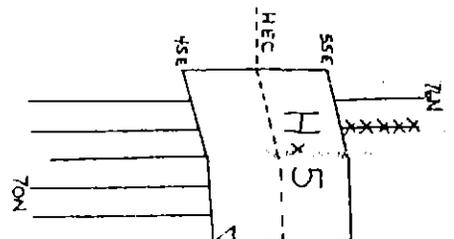


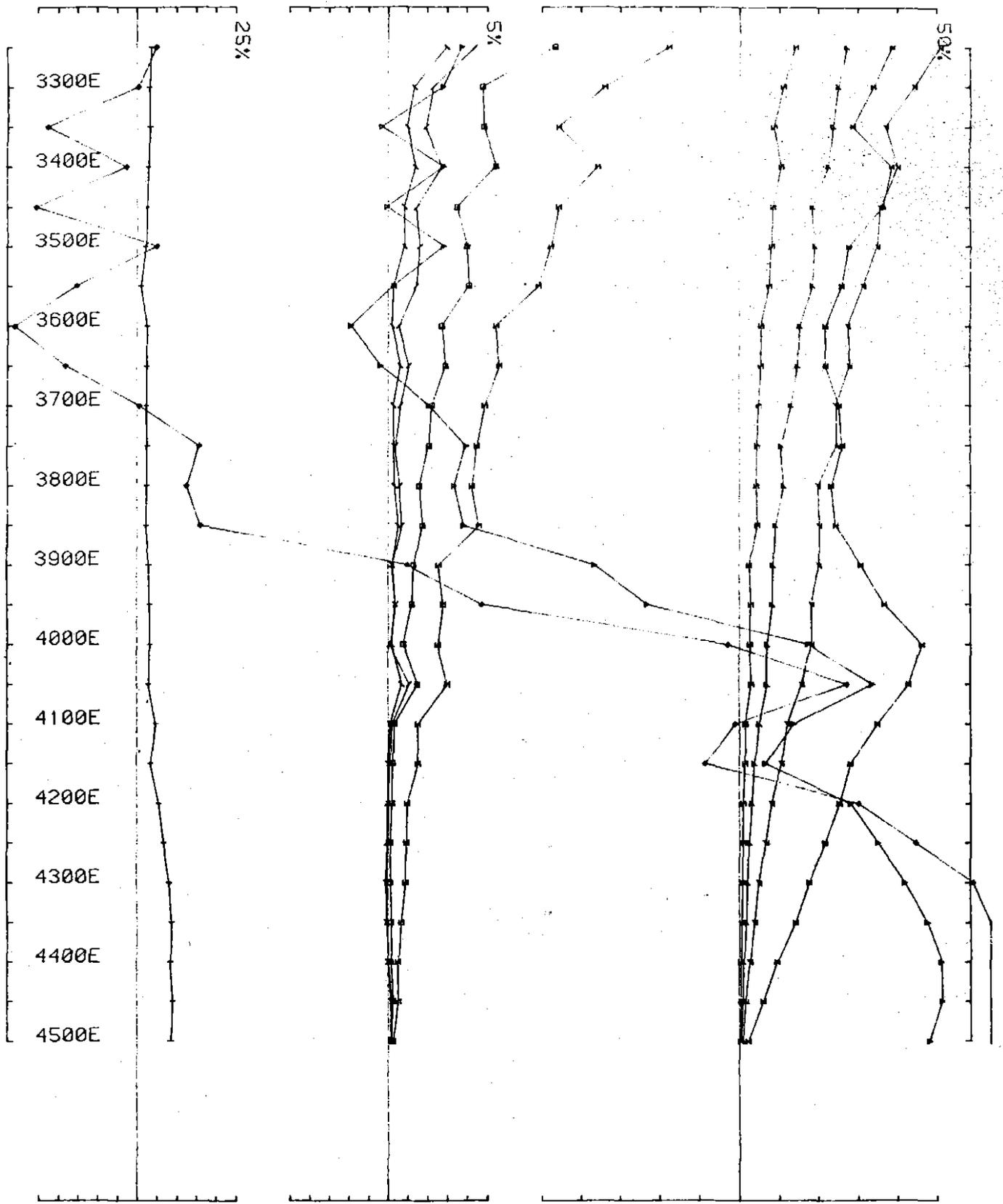
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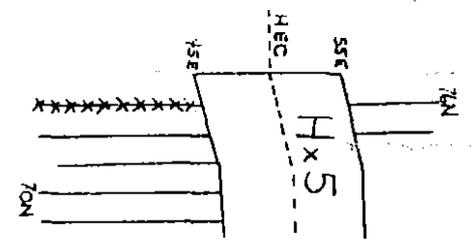


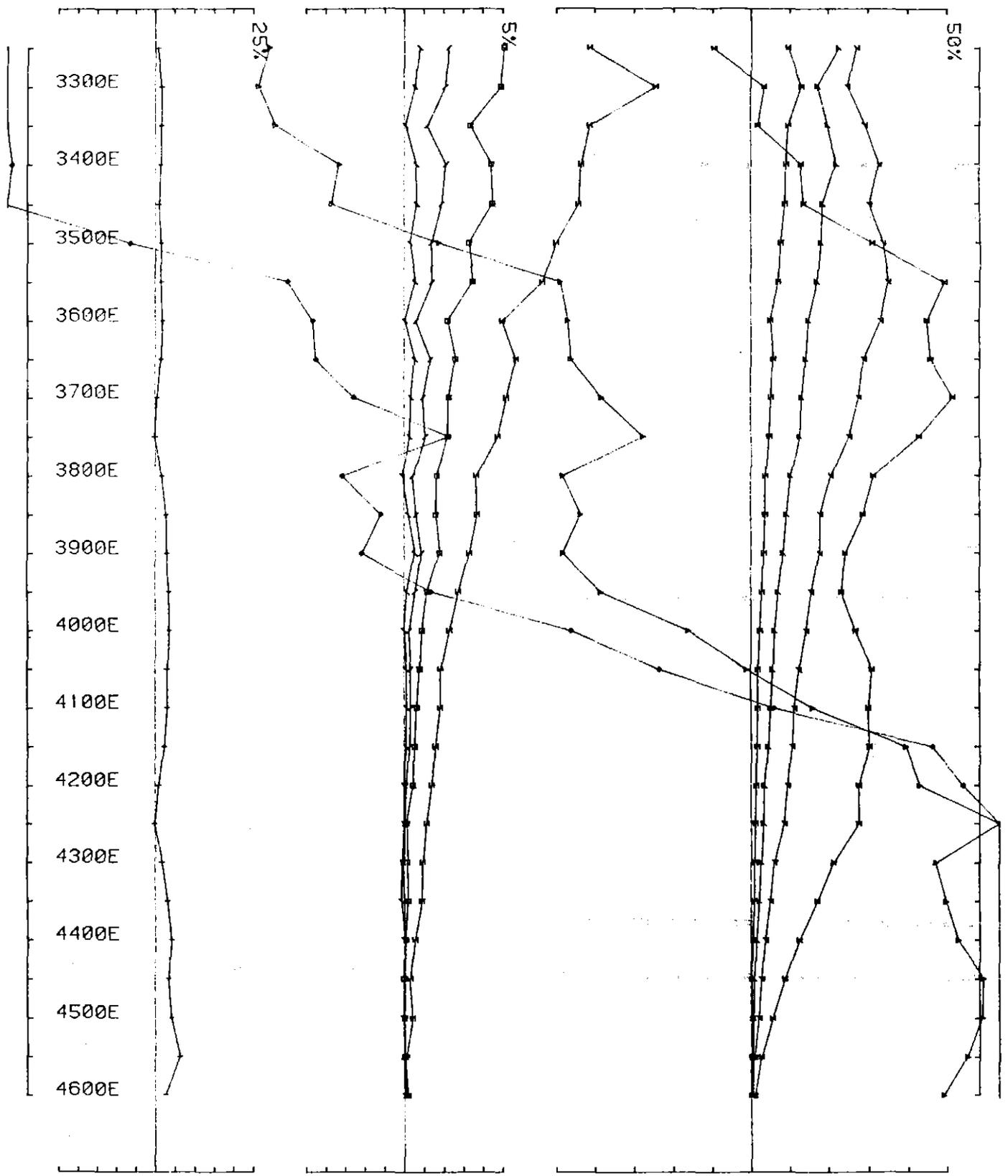
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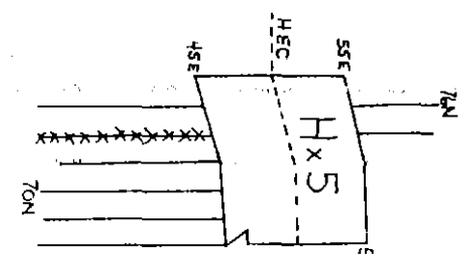


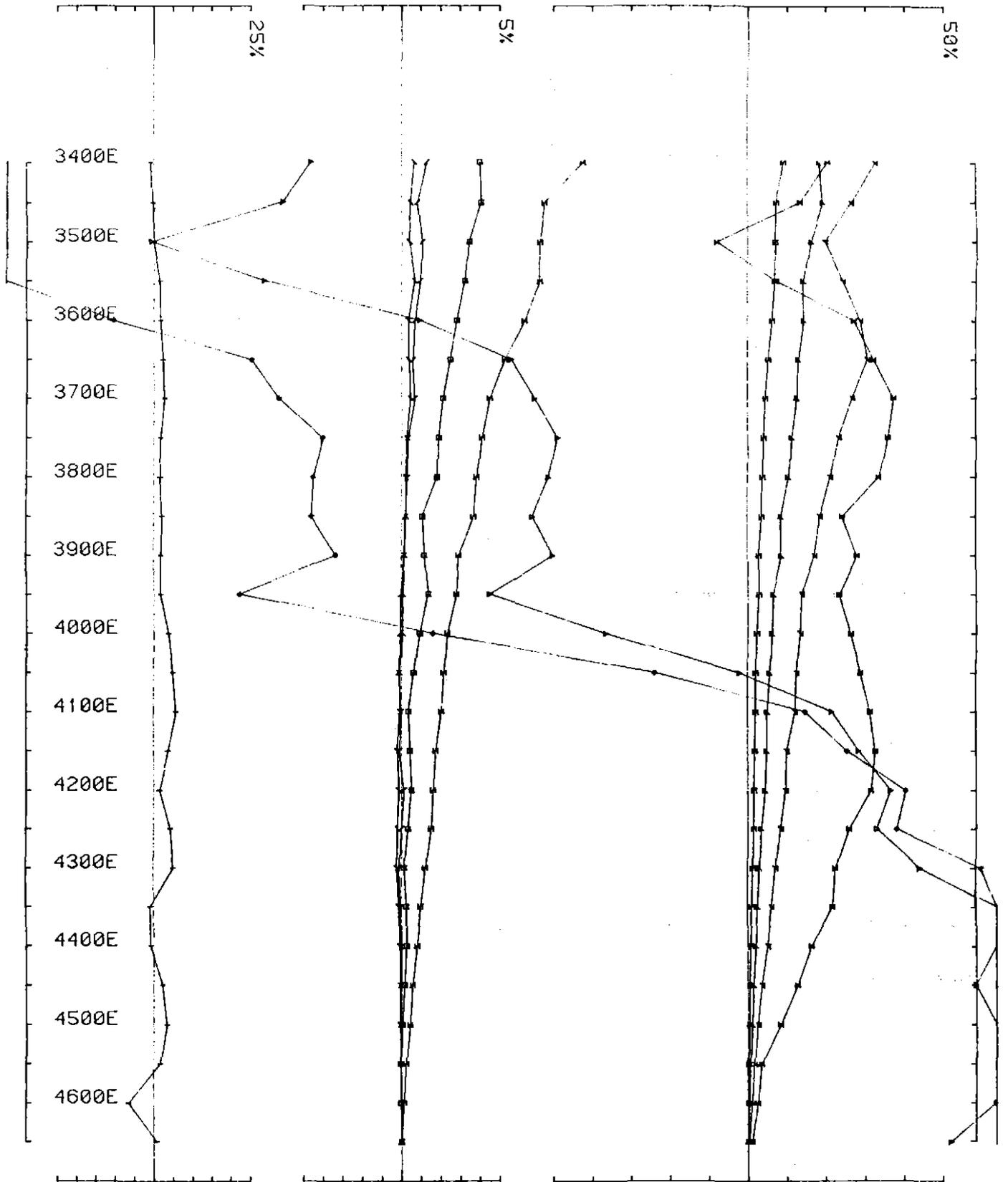
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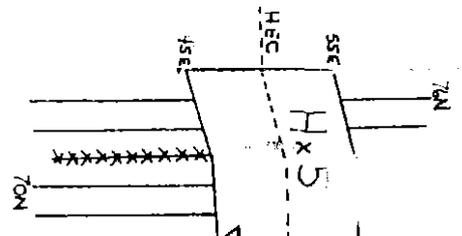


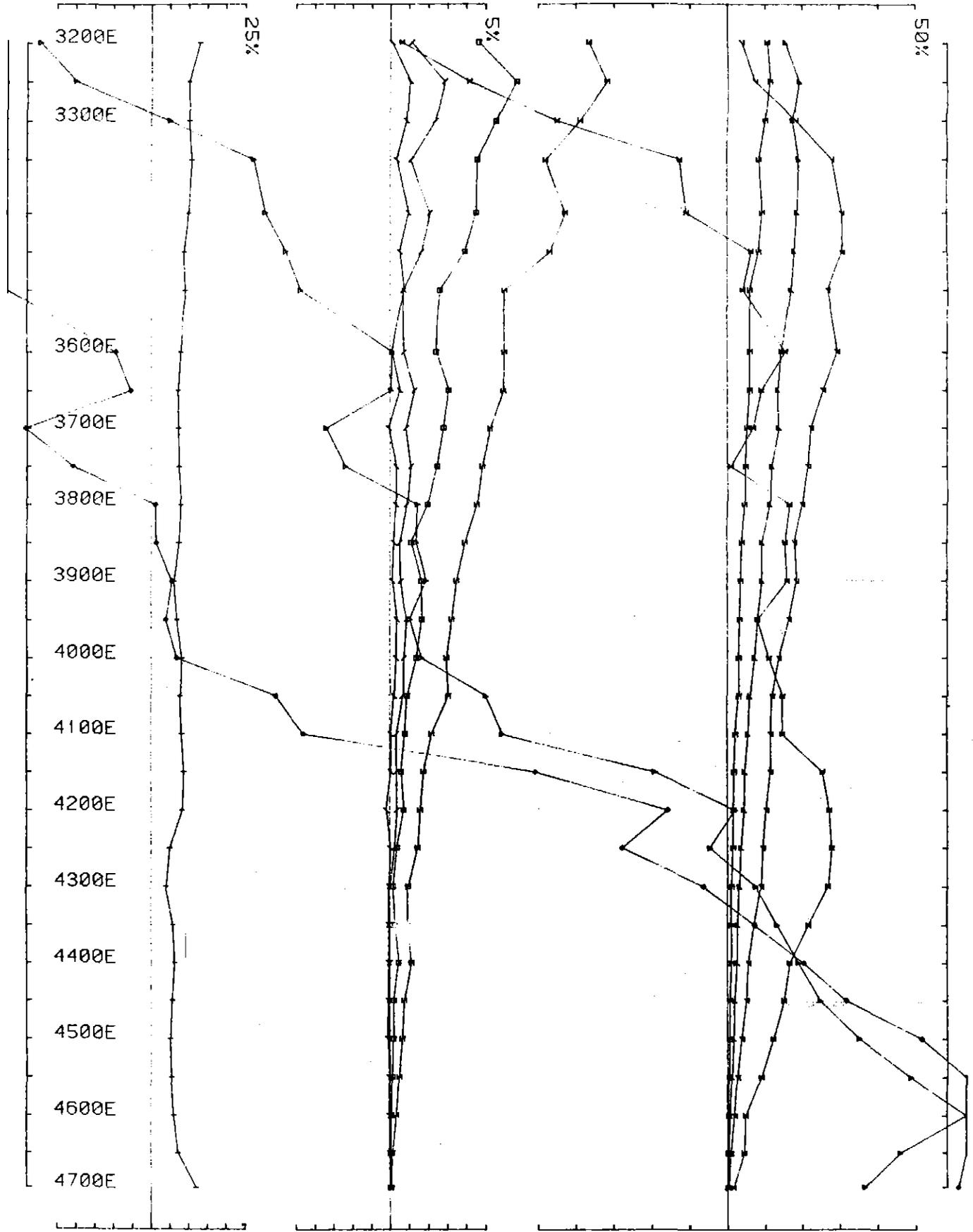
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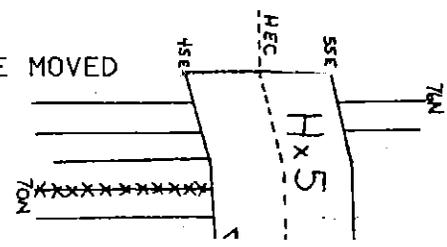


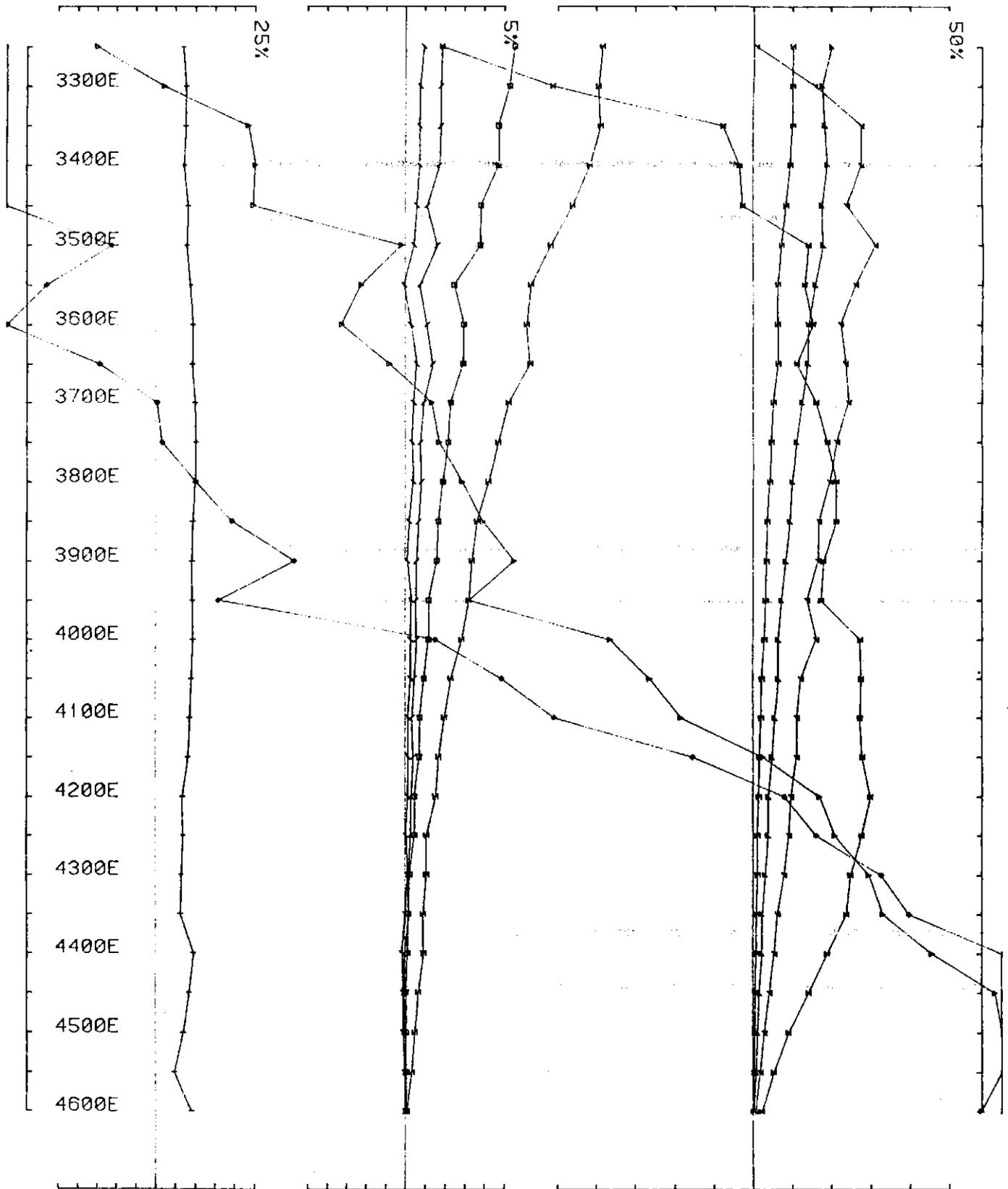
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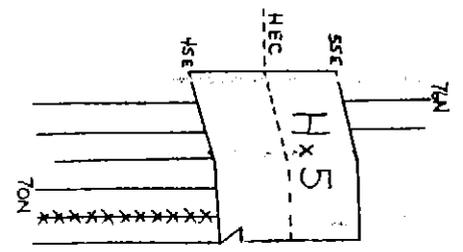


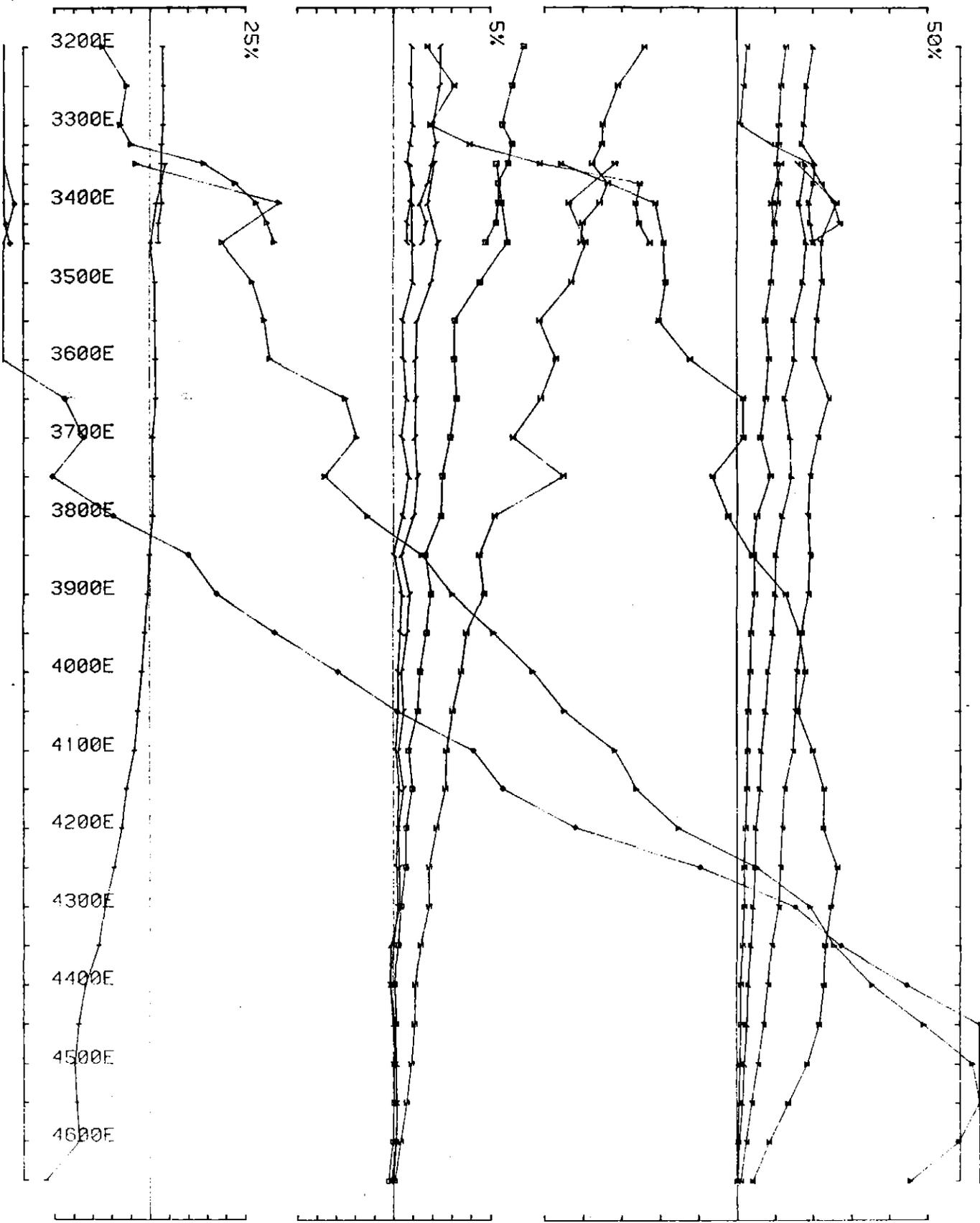
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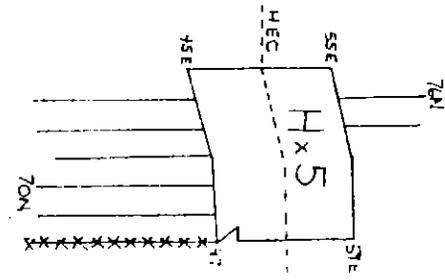


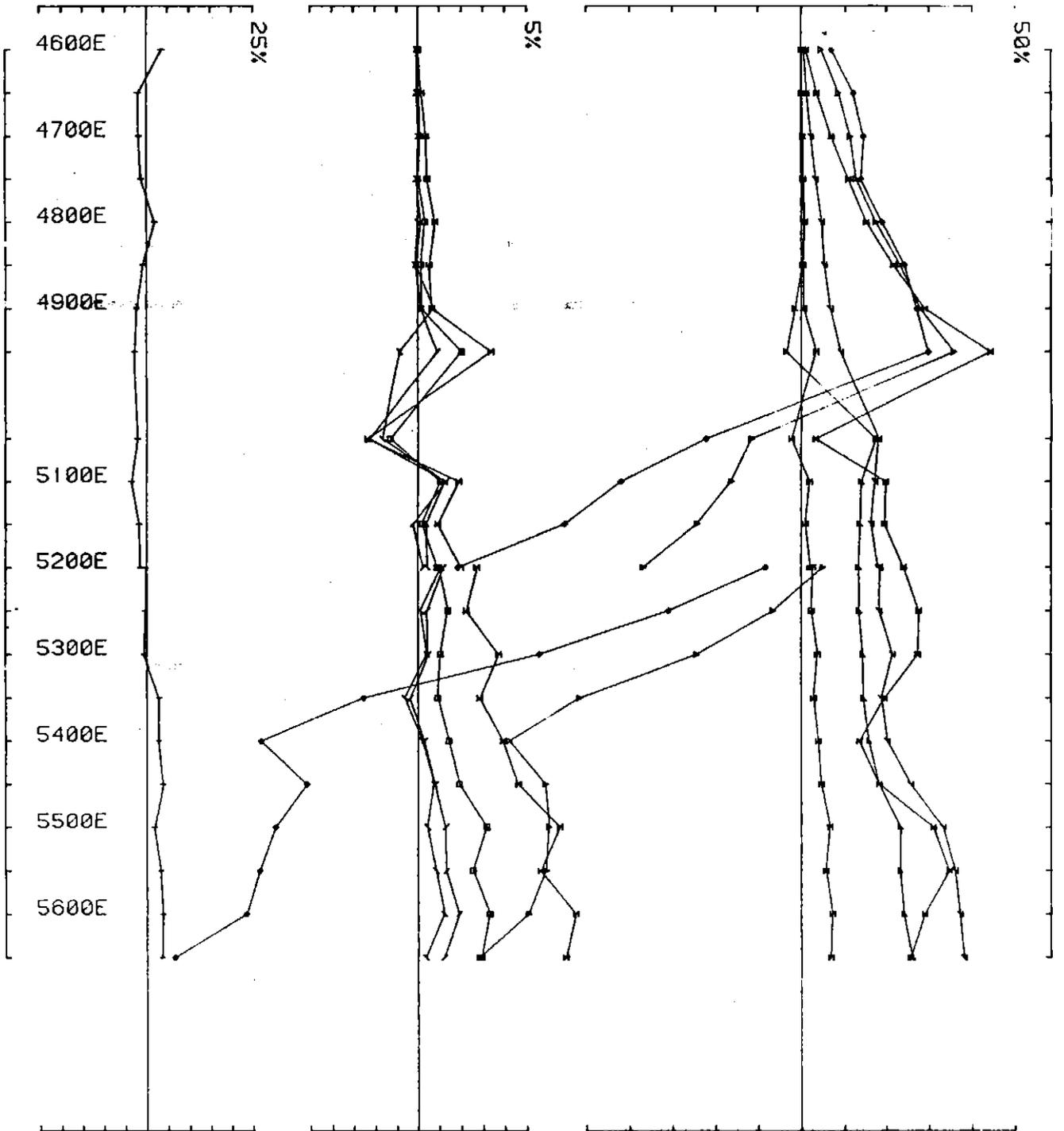
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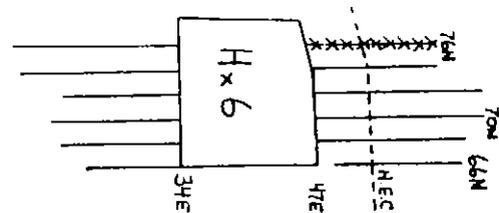


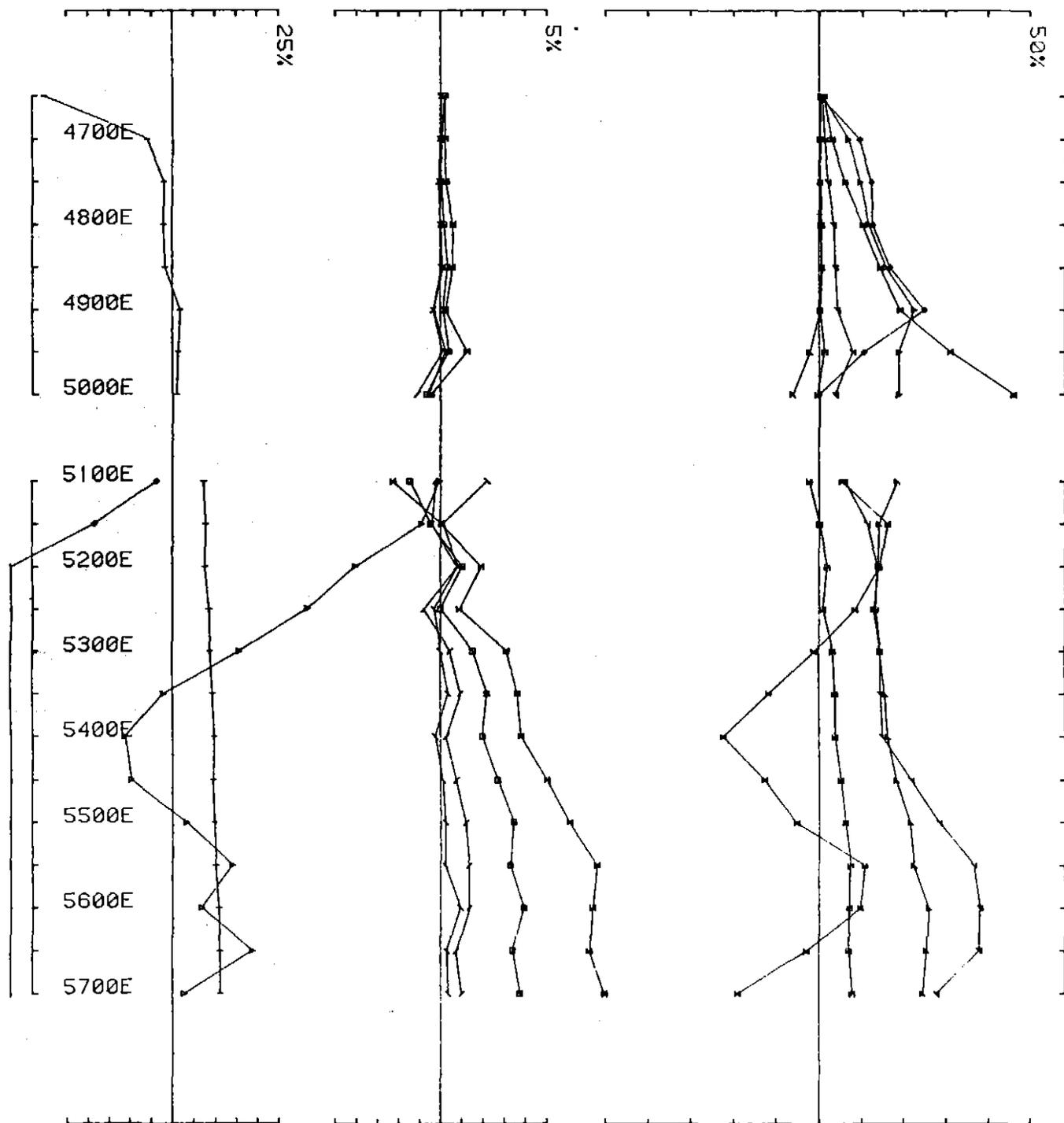
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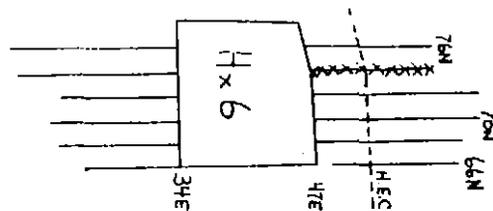


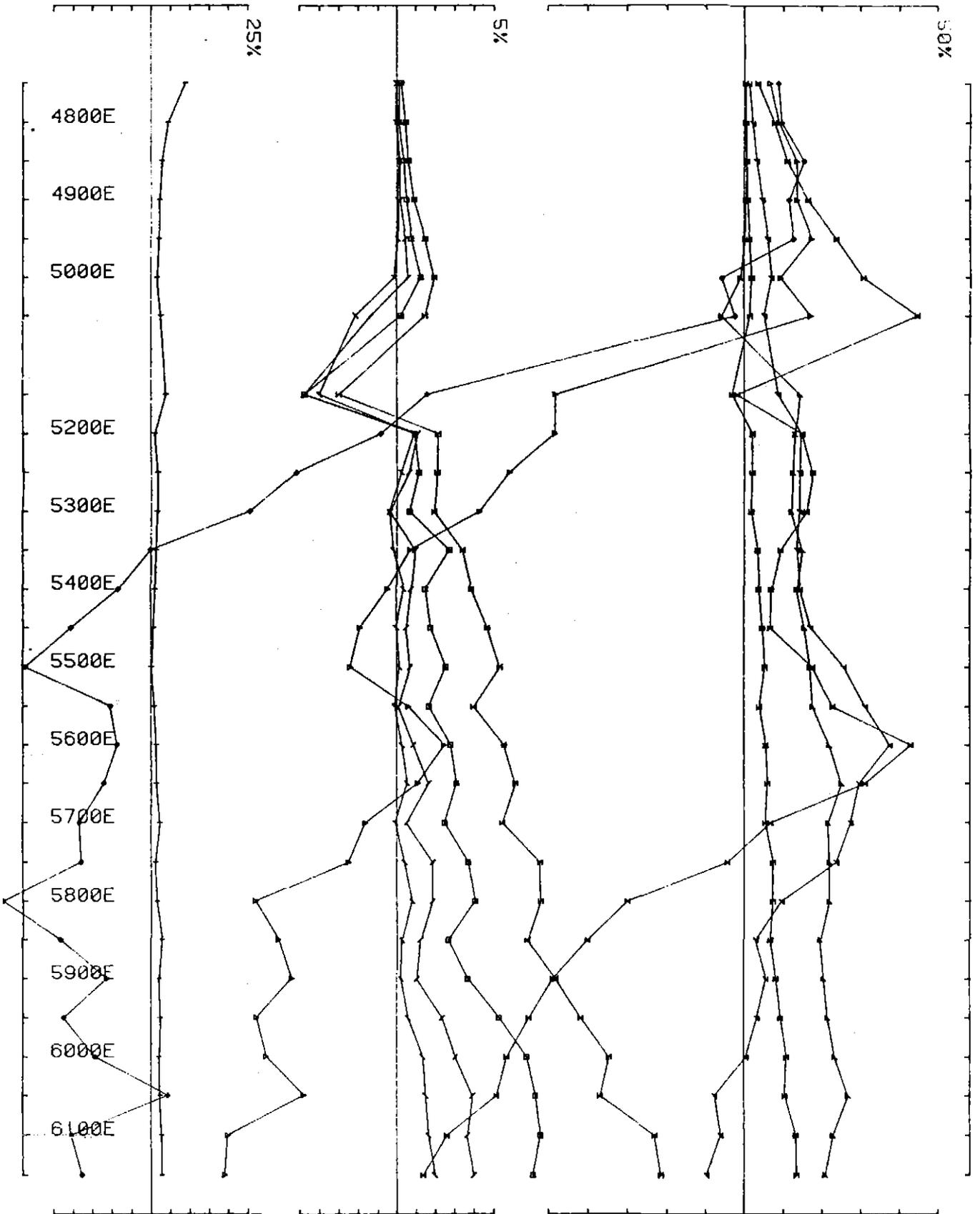
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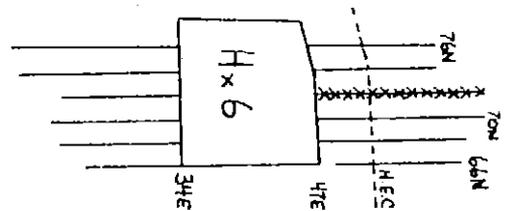


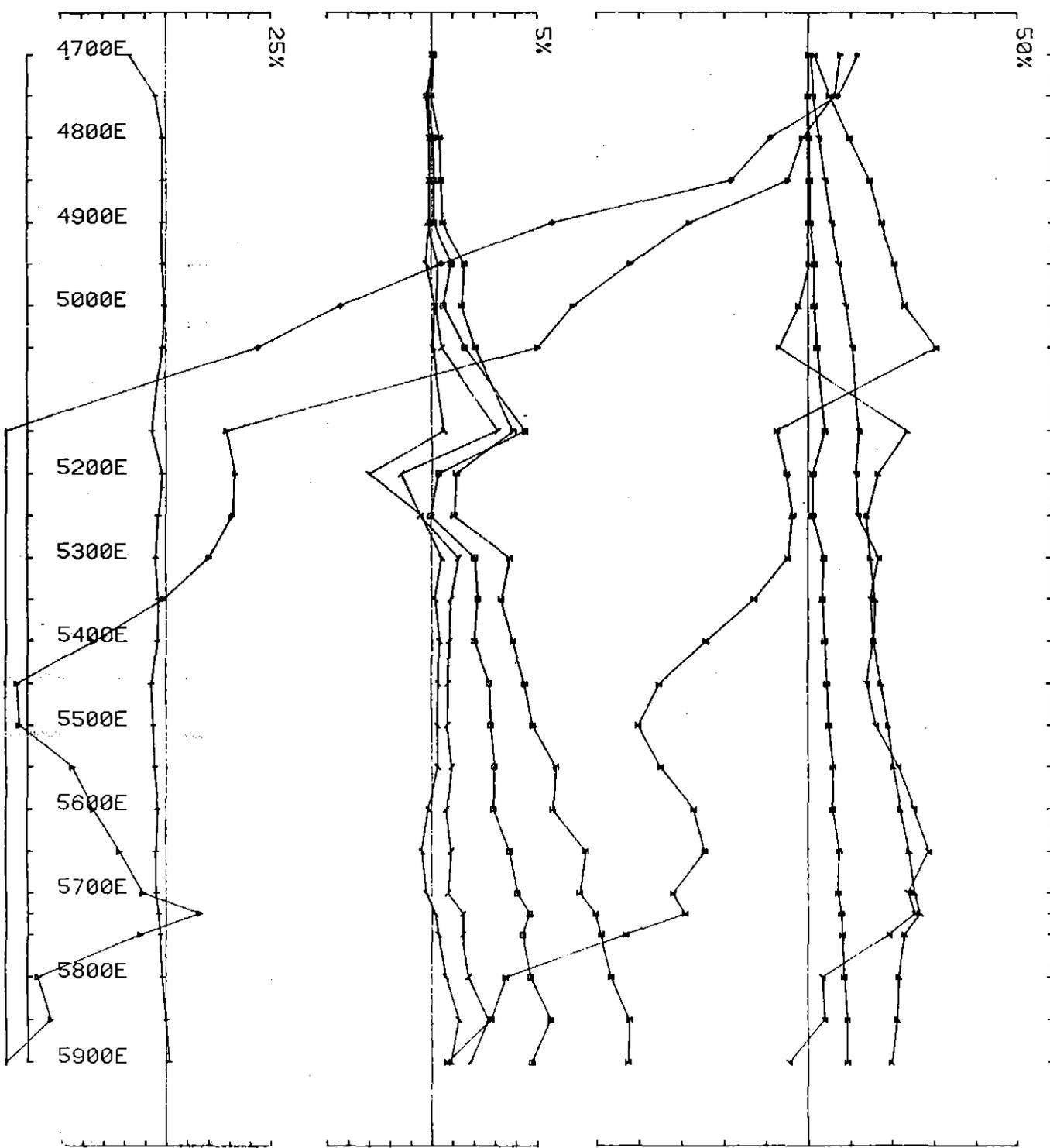
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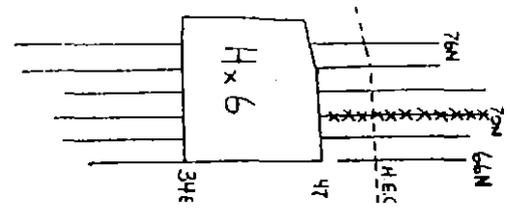


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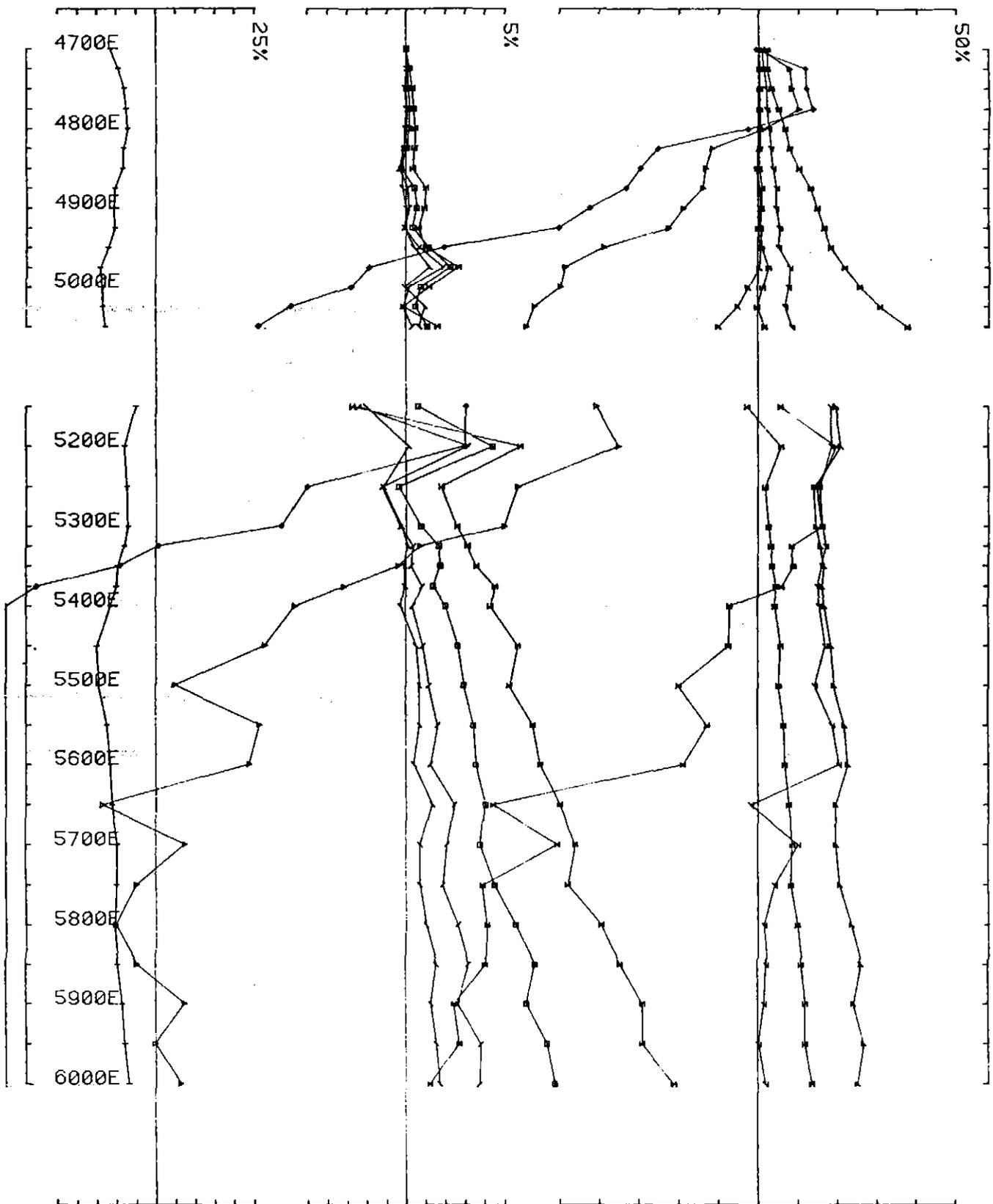


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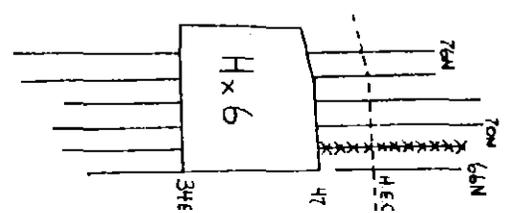


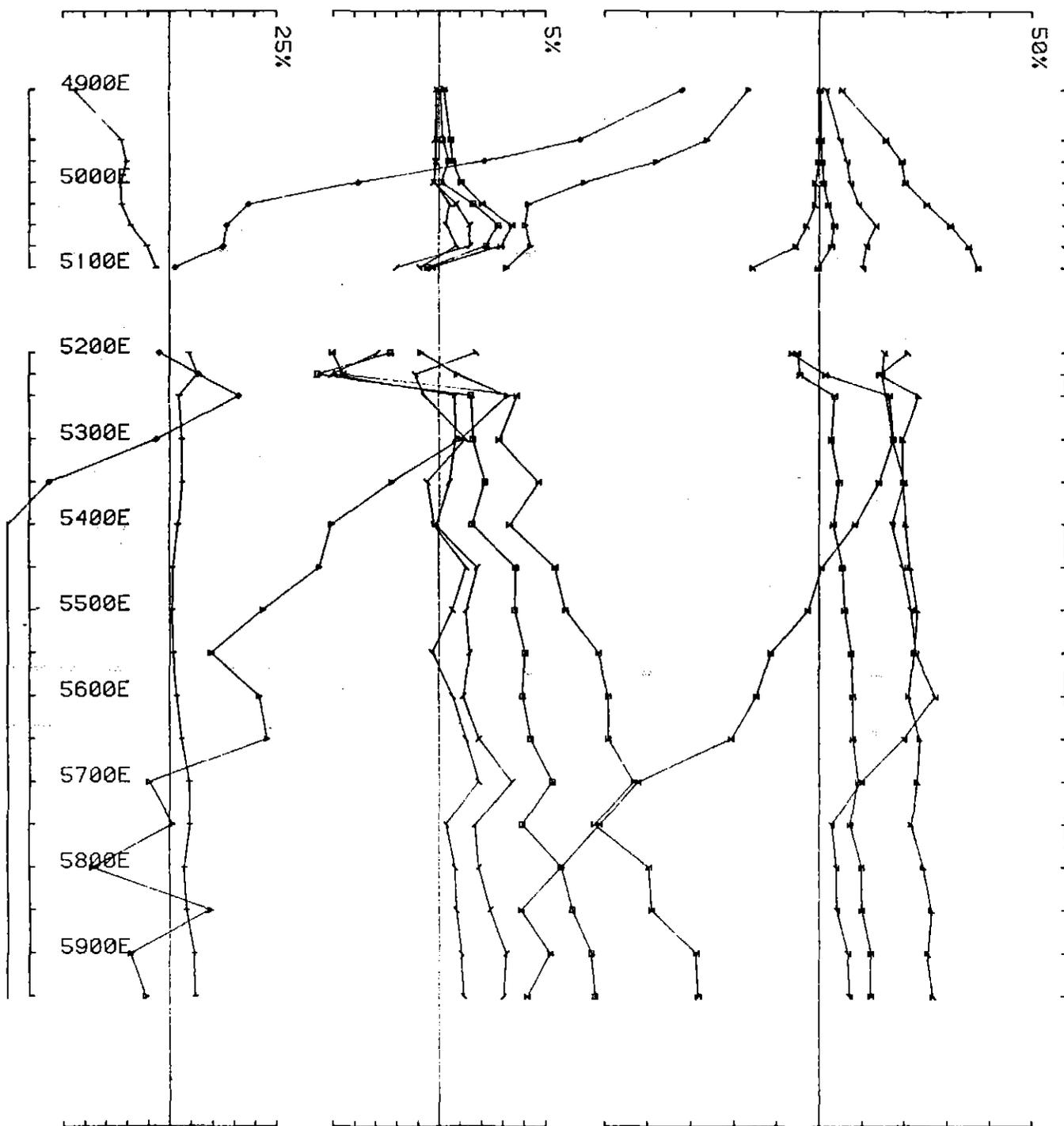
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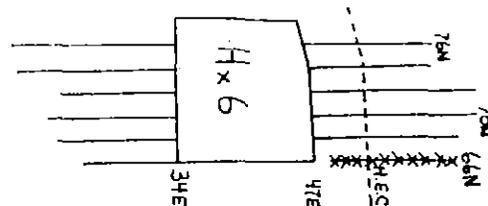


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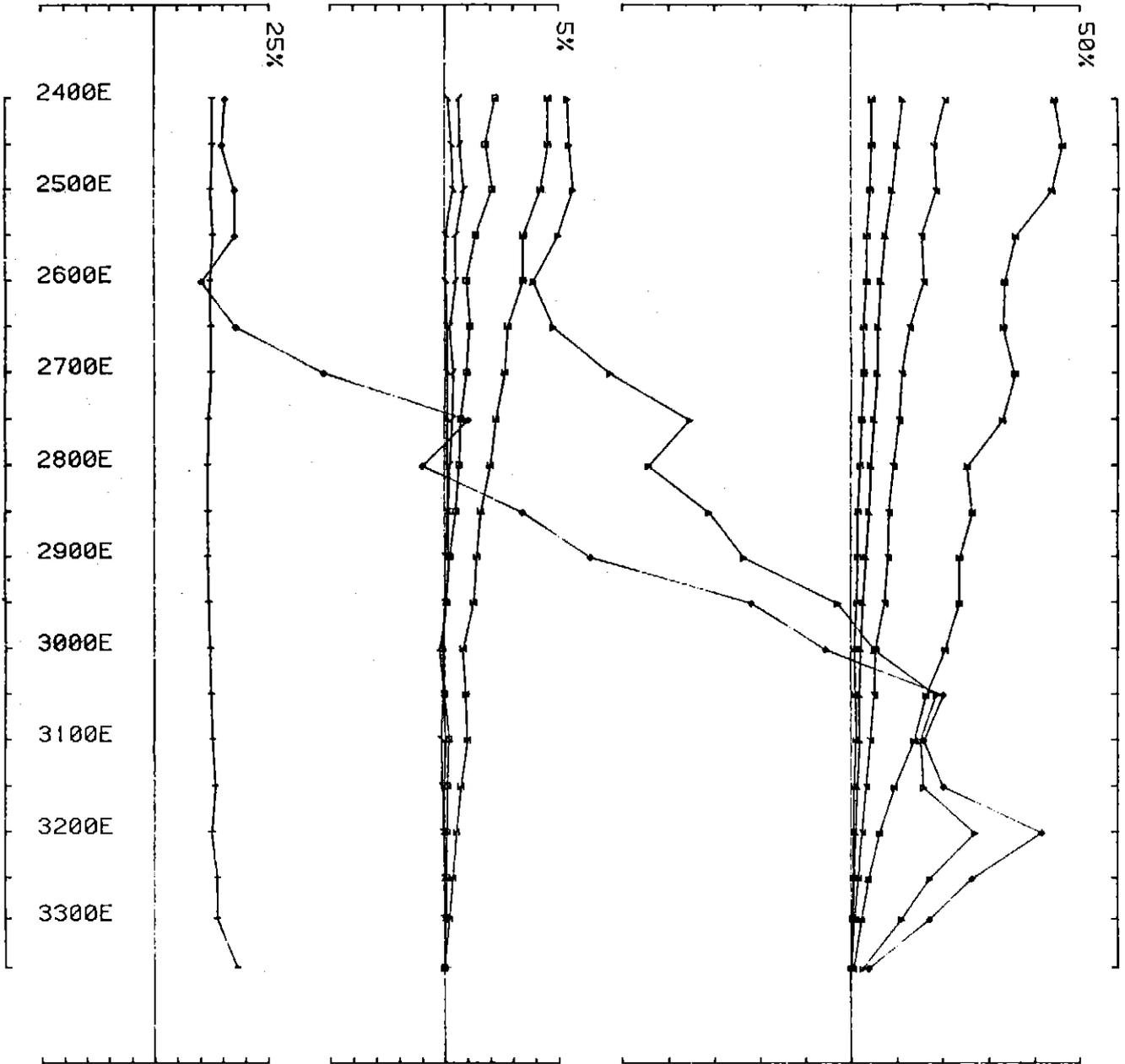


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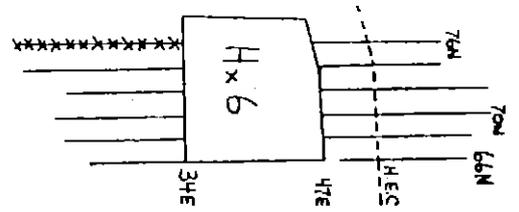


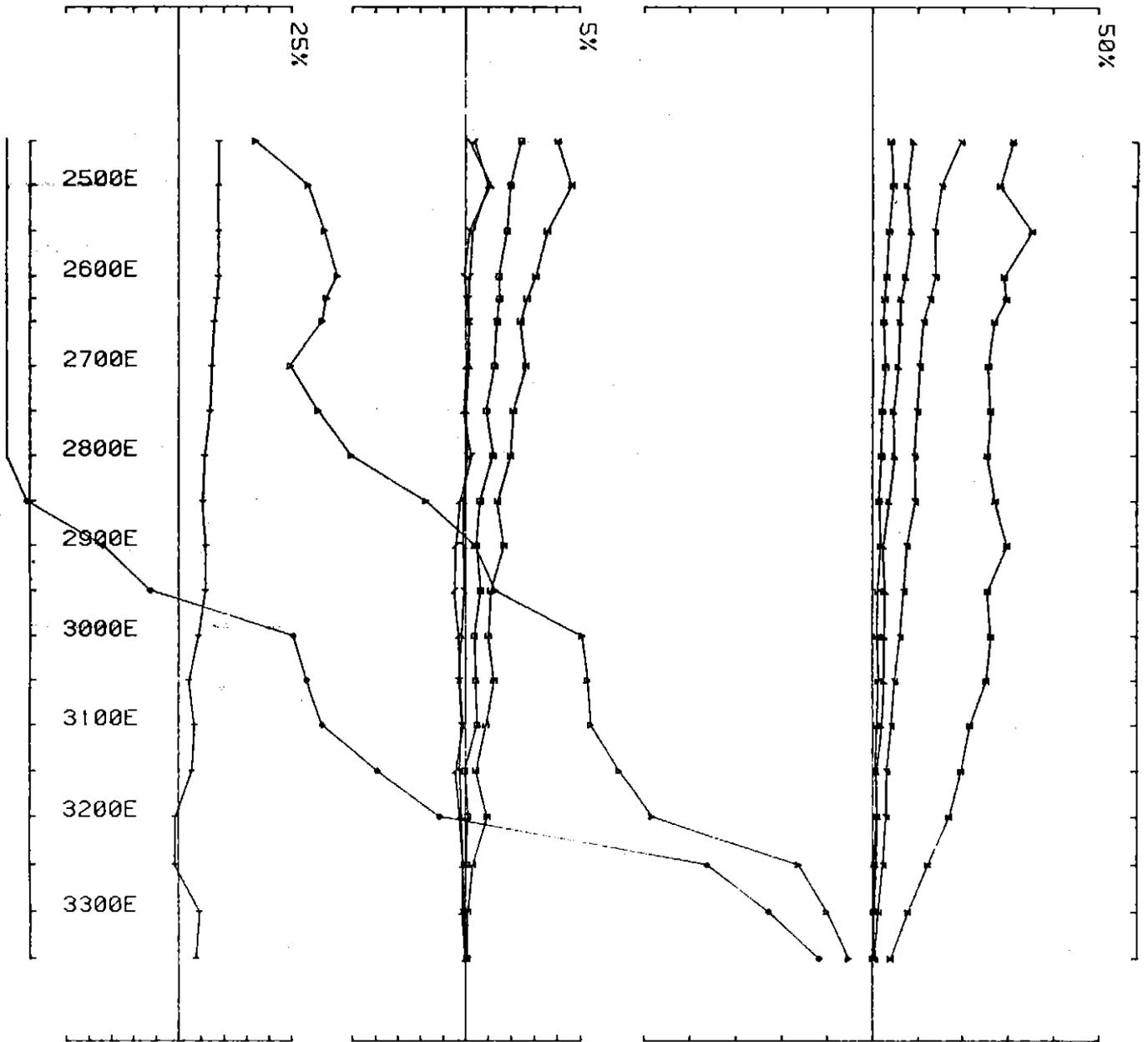
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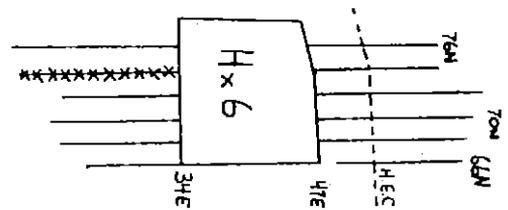


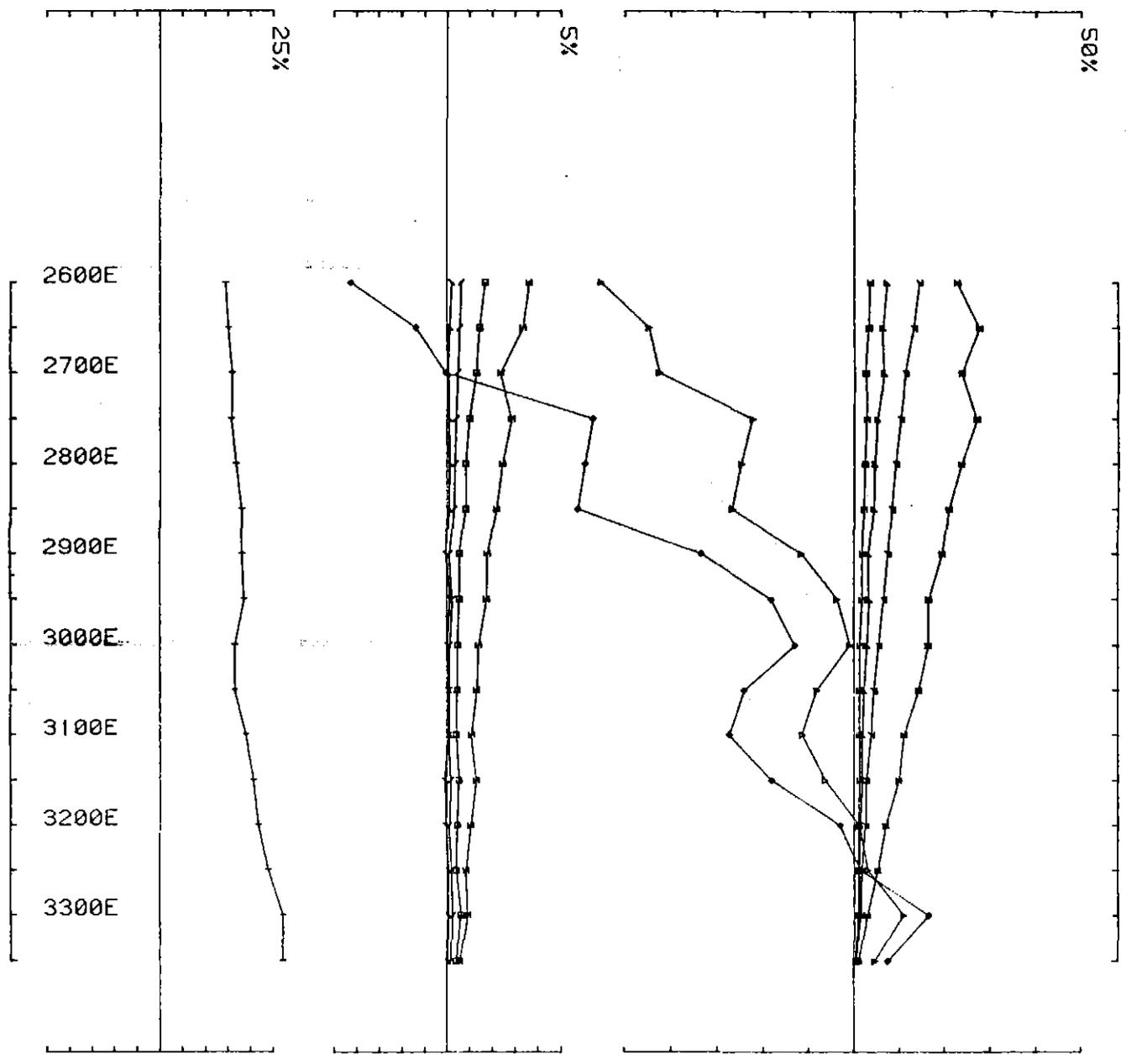
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 secondary field Channel 1 continuously normalized



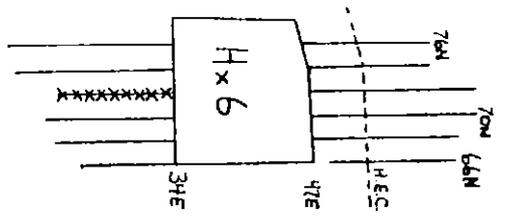


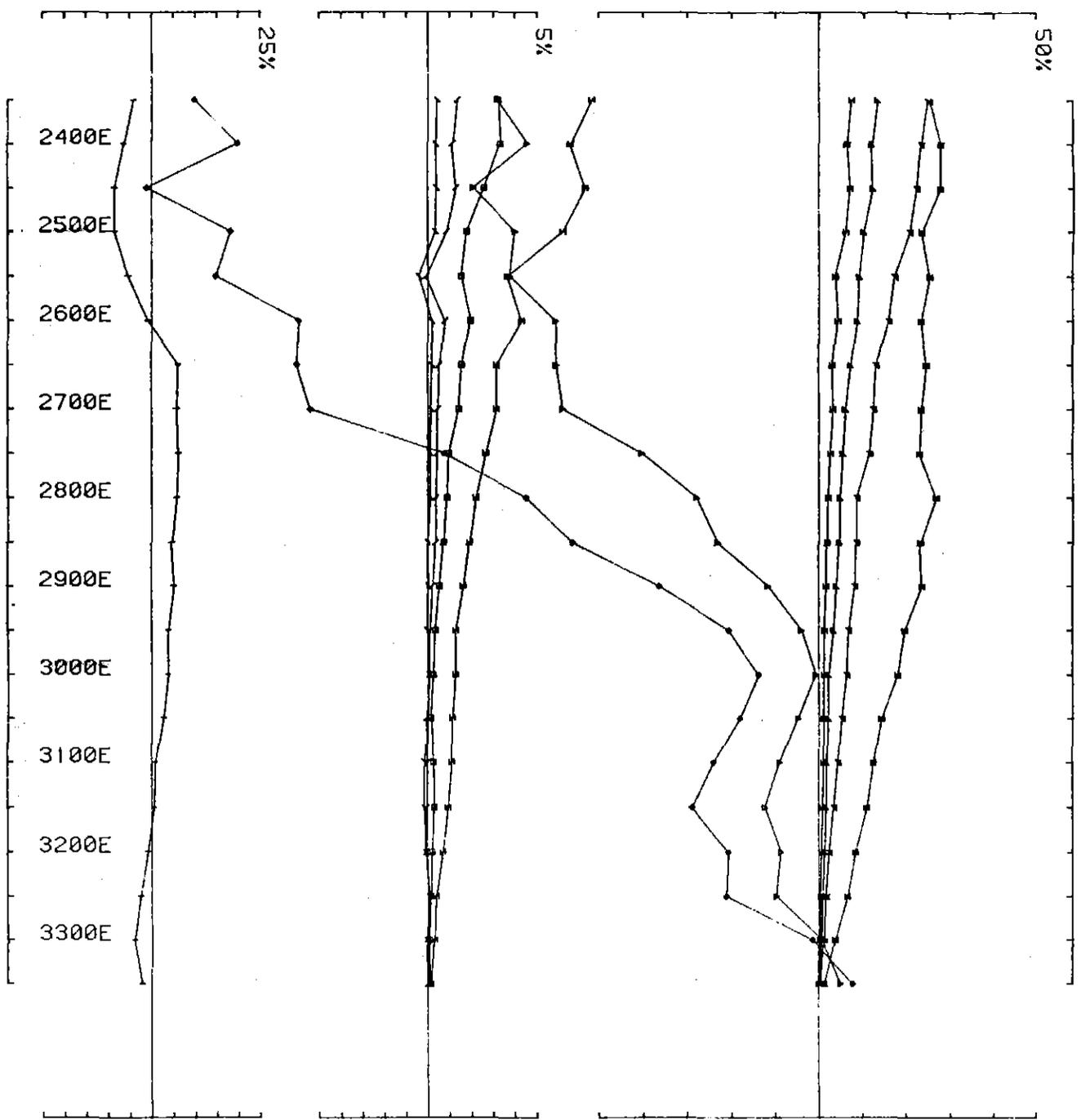
UTEM SURVEY at MOUNT HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 6 line 7400N component Hz
 secondary field Channel 1 continuously normalized



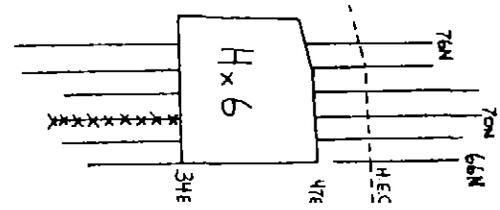


UTEM SURVEY at MOUNT HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 6 line 7200N component Hz
 secondary field Channel 1 continuously normalized

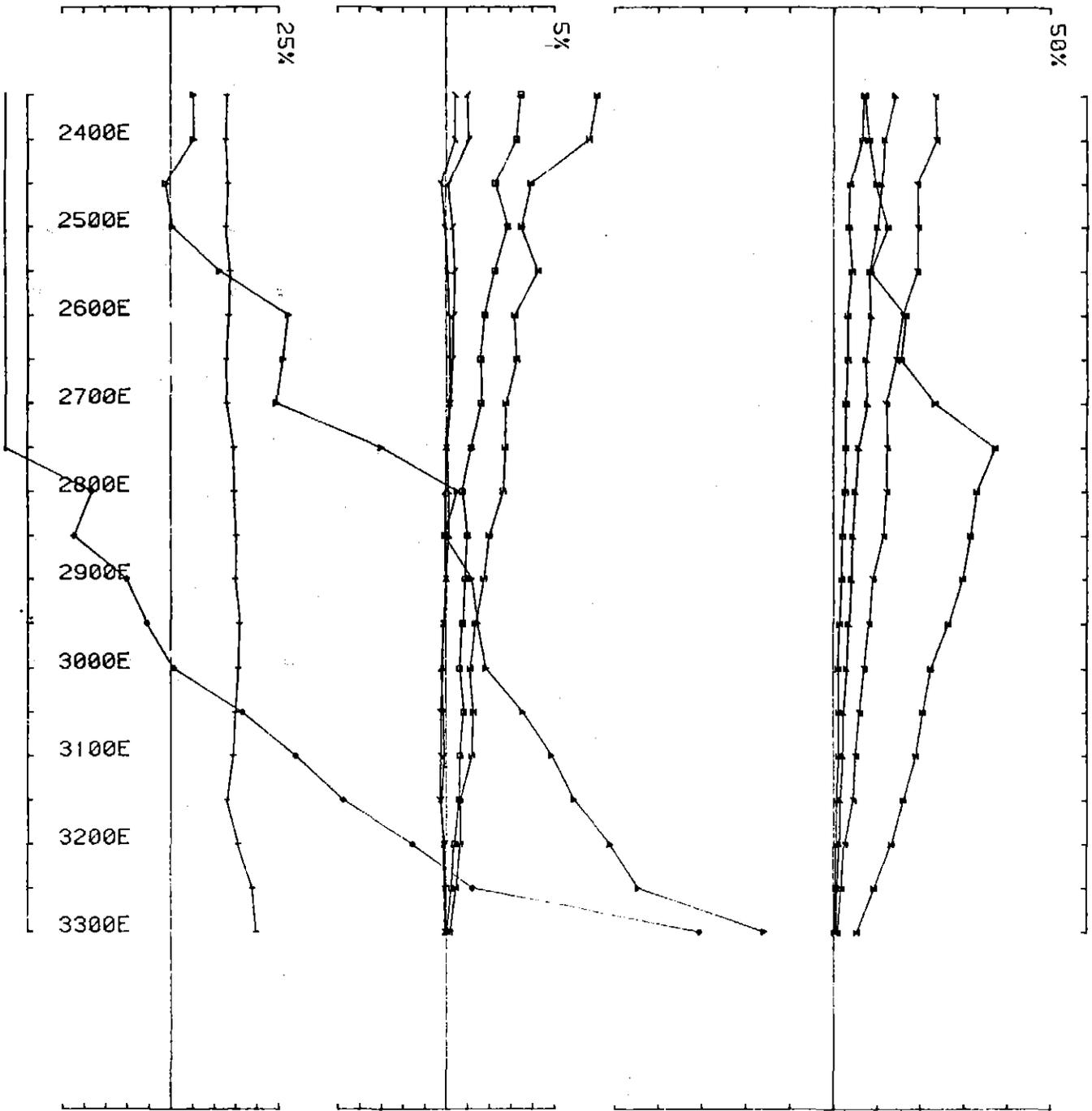




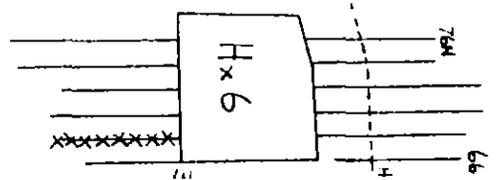
UTEM SURVEY at MOUNT HUXLEY for B H P
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 loop no 6 line 7000N component Hz
 secondary field Channel 1 continuously normalized

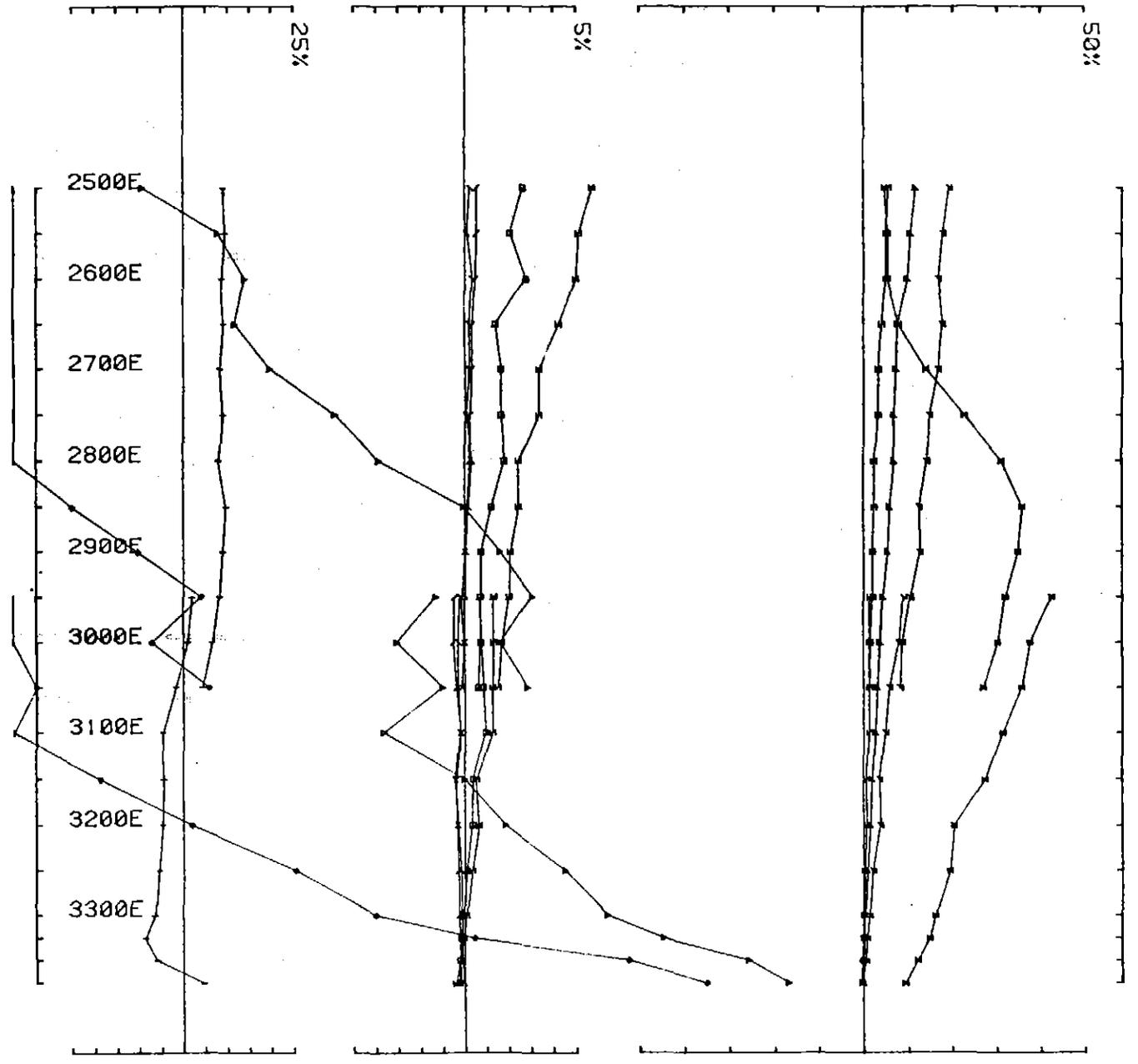


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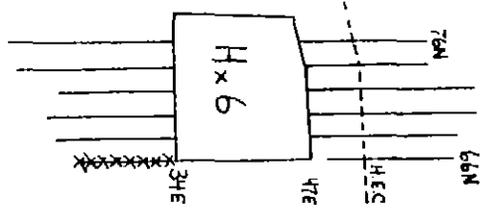


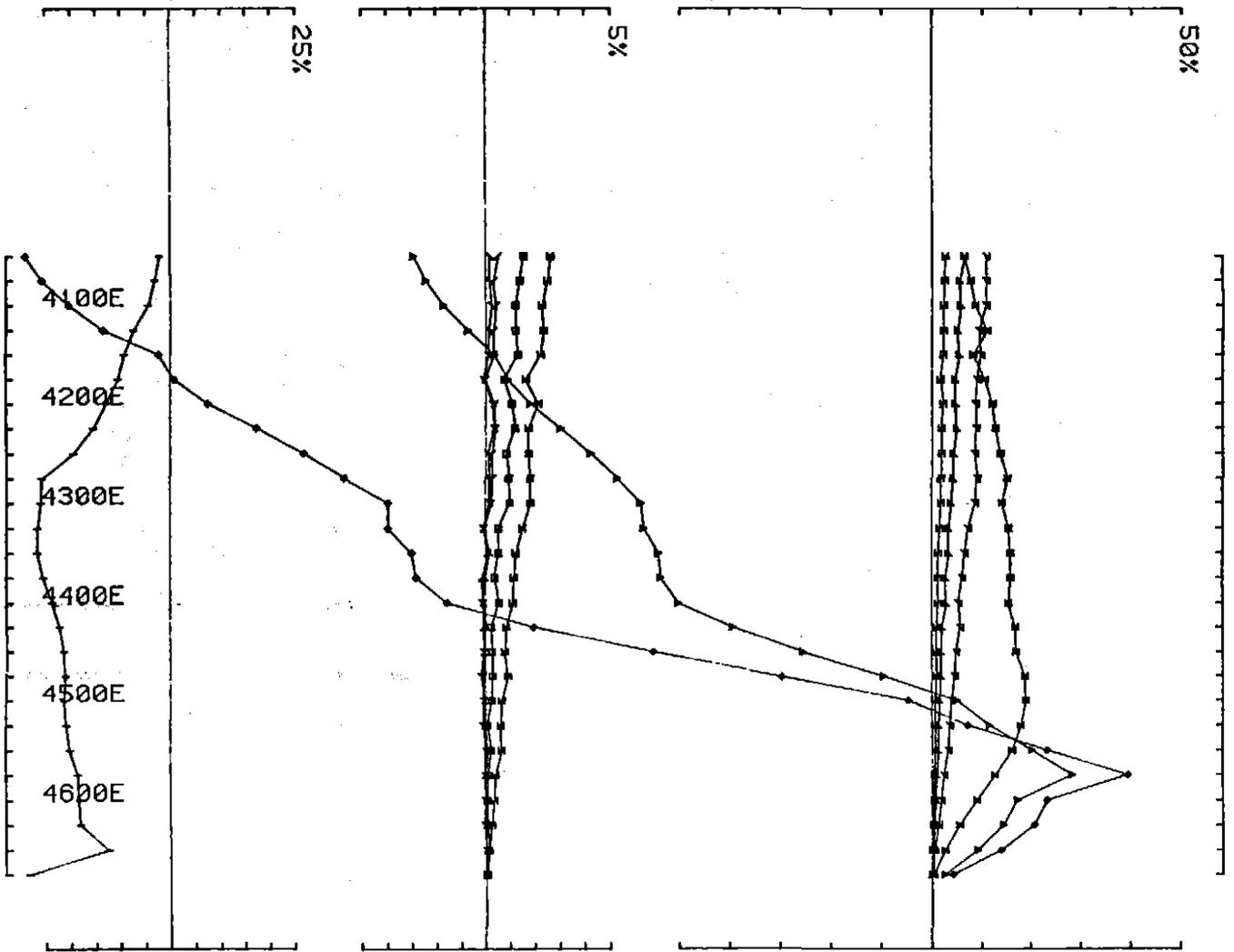
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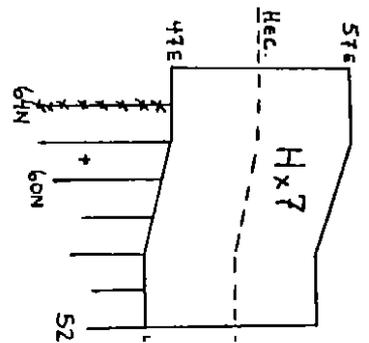


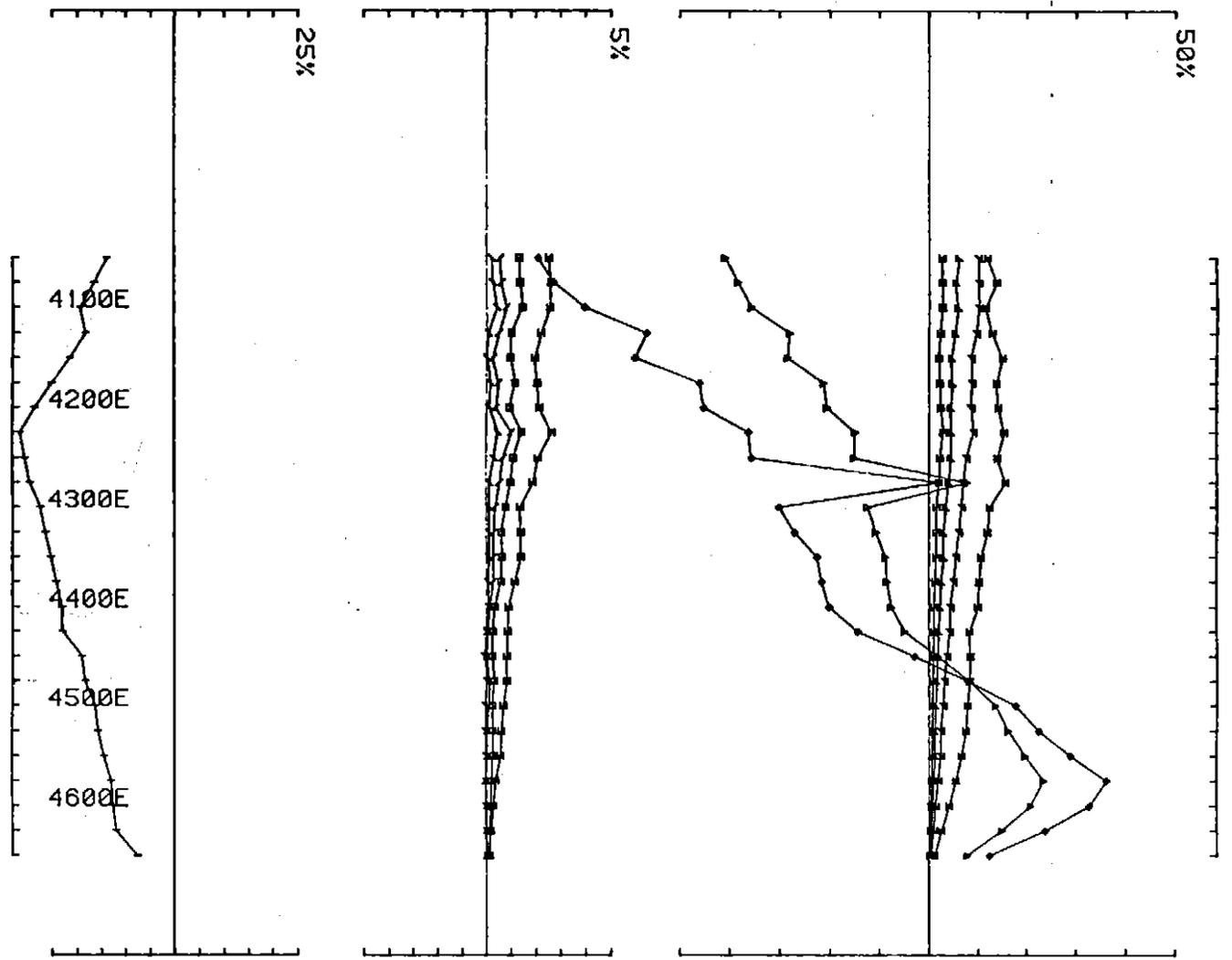
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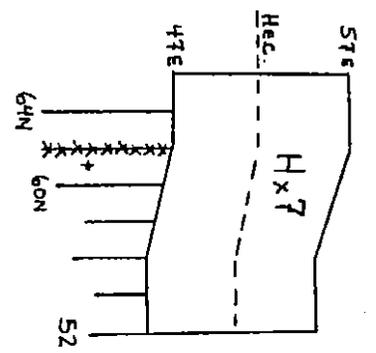


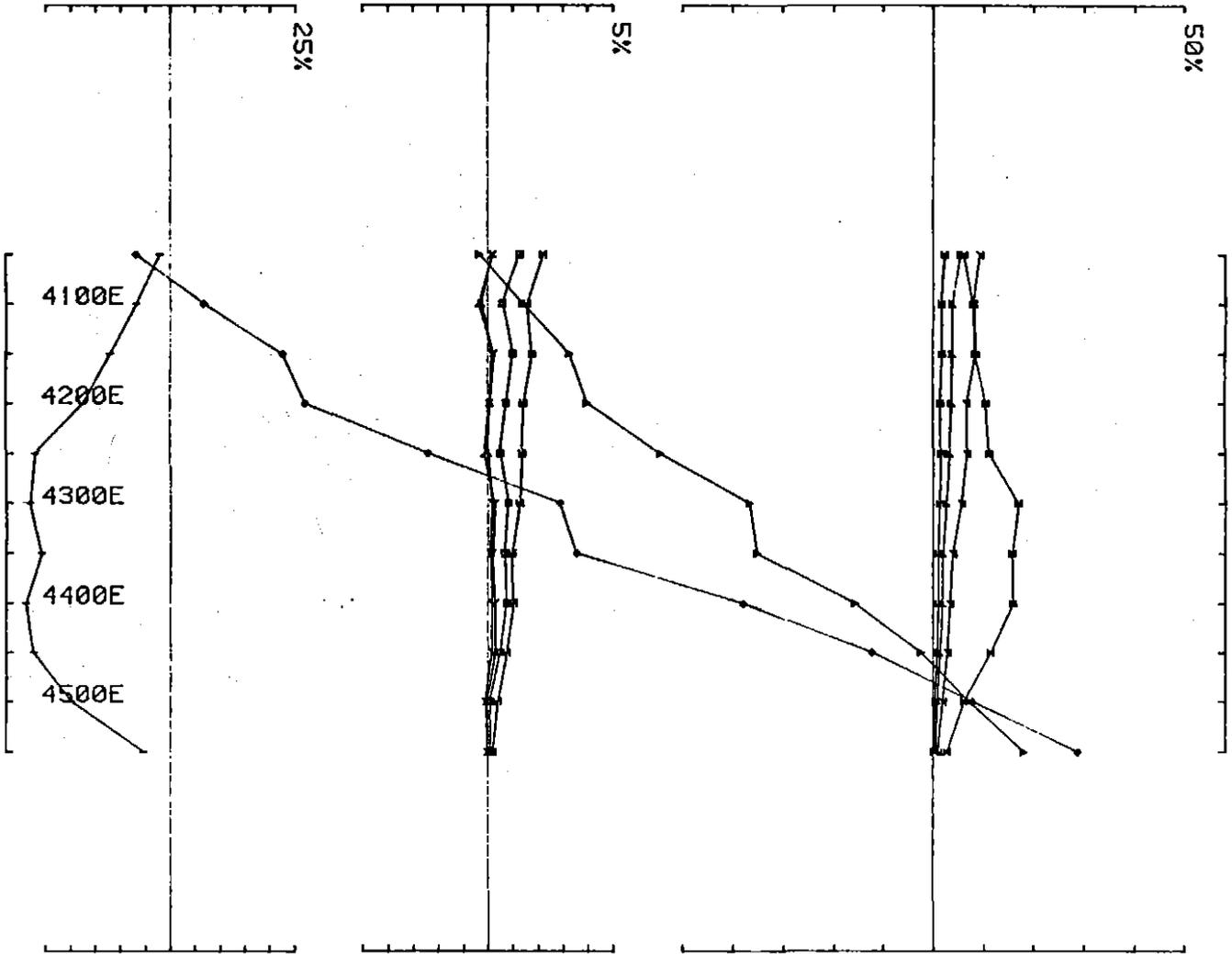
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 secondary field Channel 1 continuously normalized



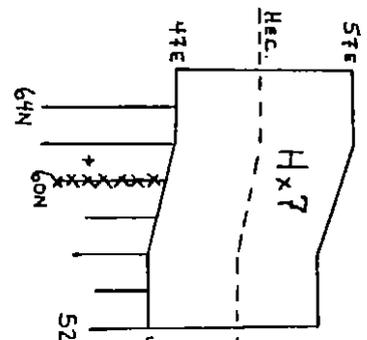


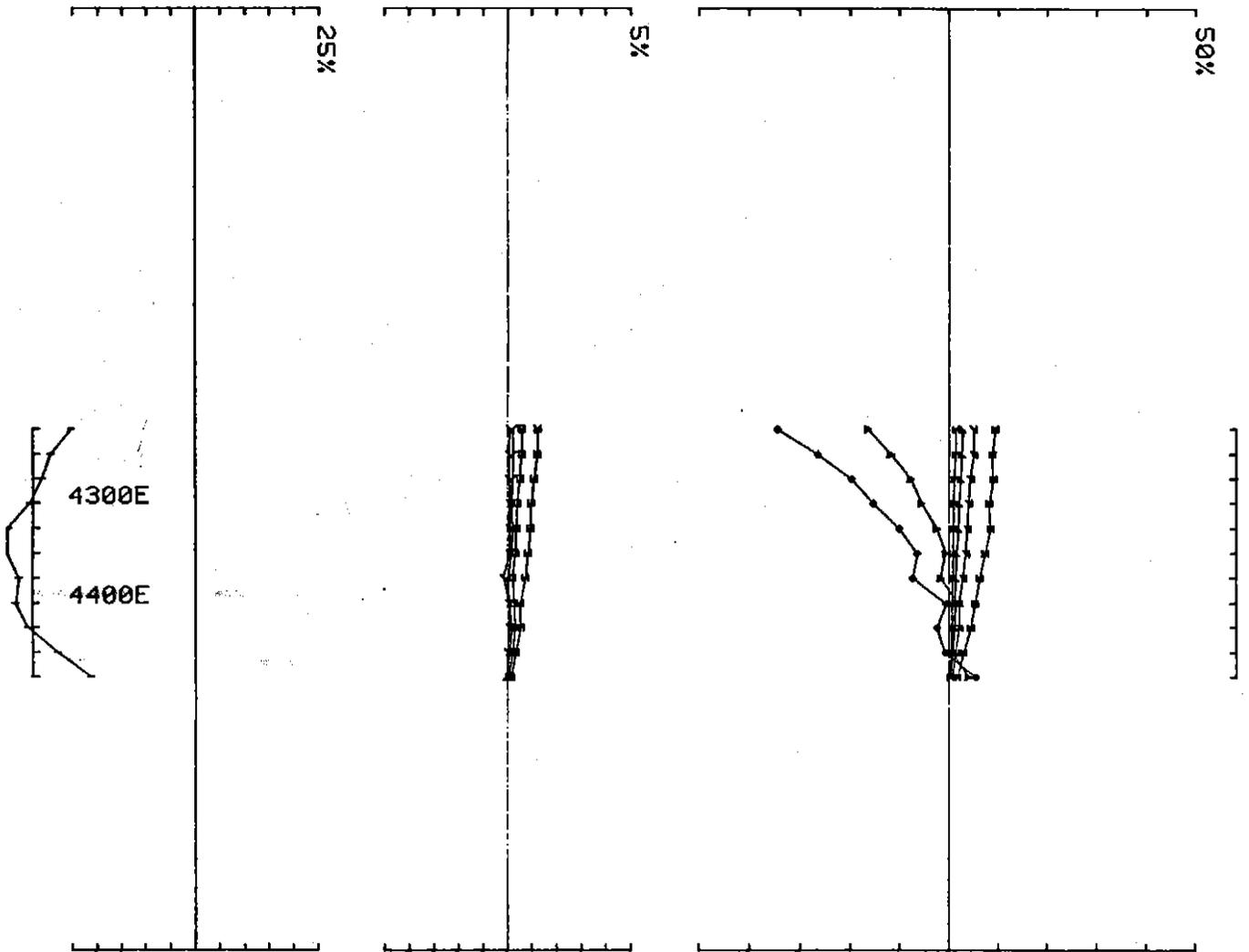
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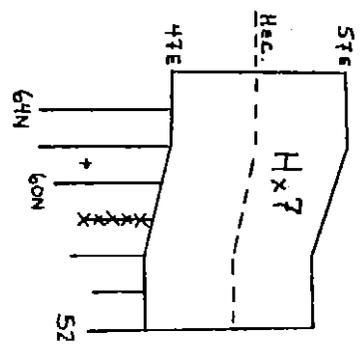


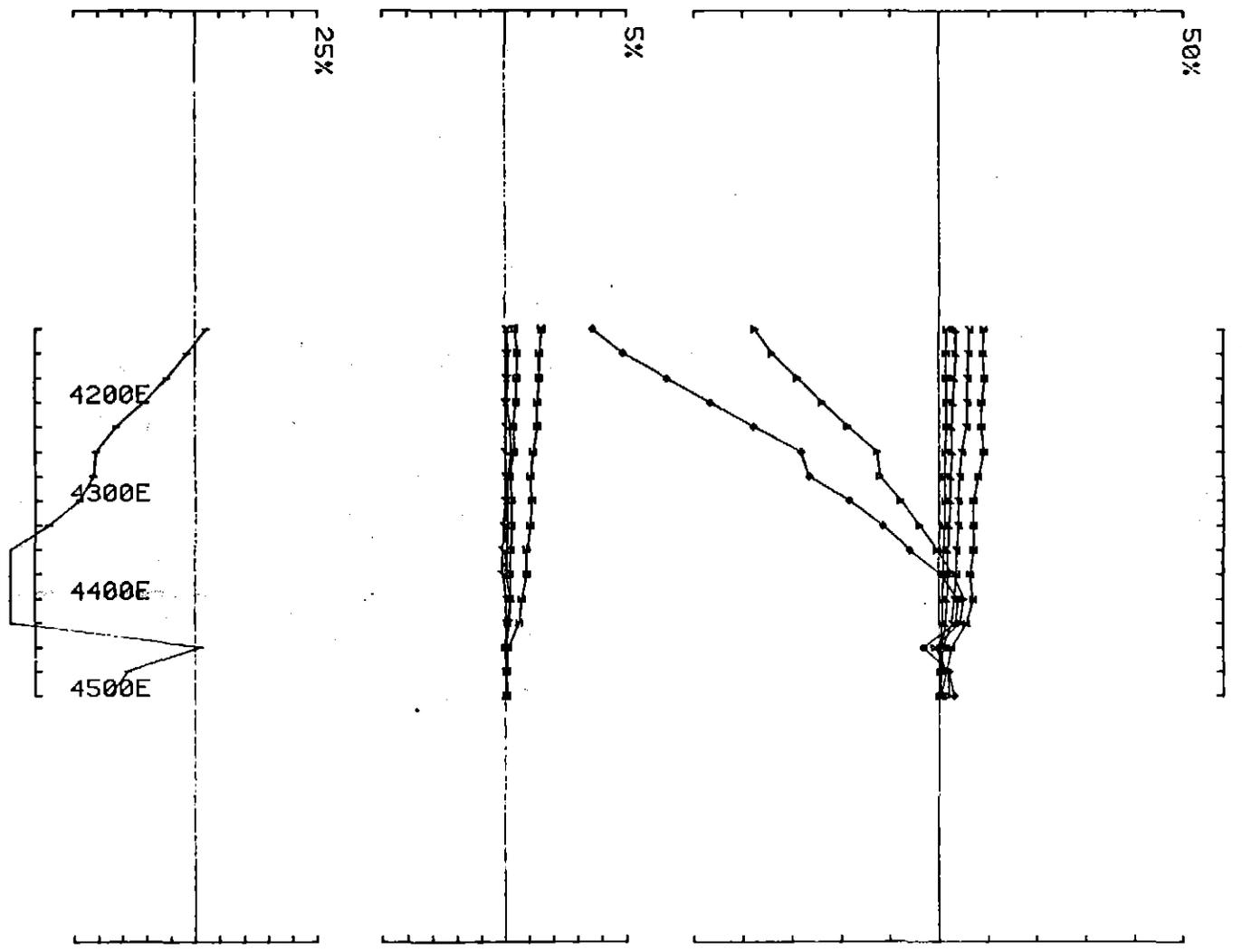
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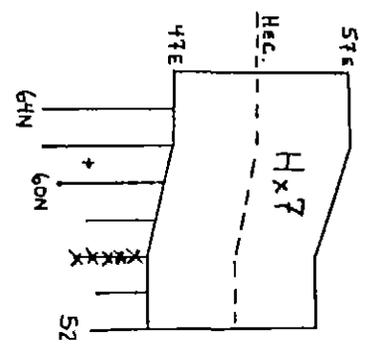


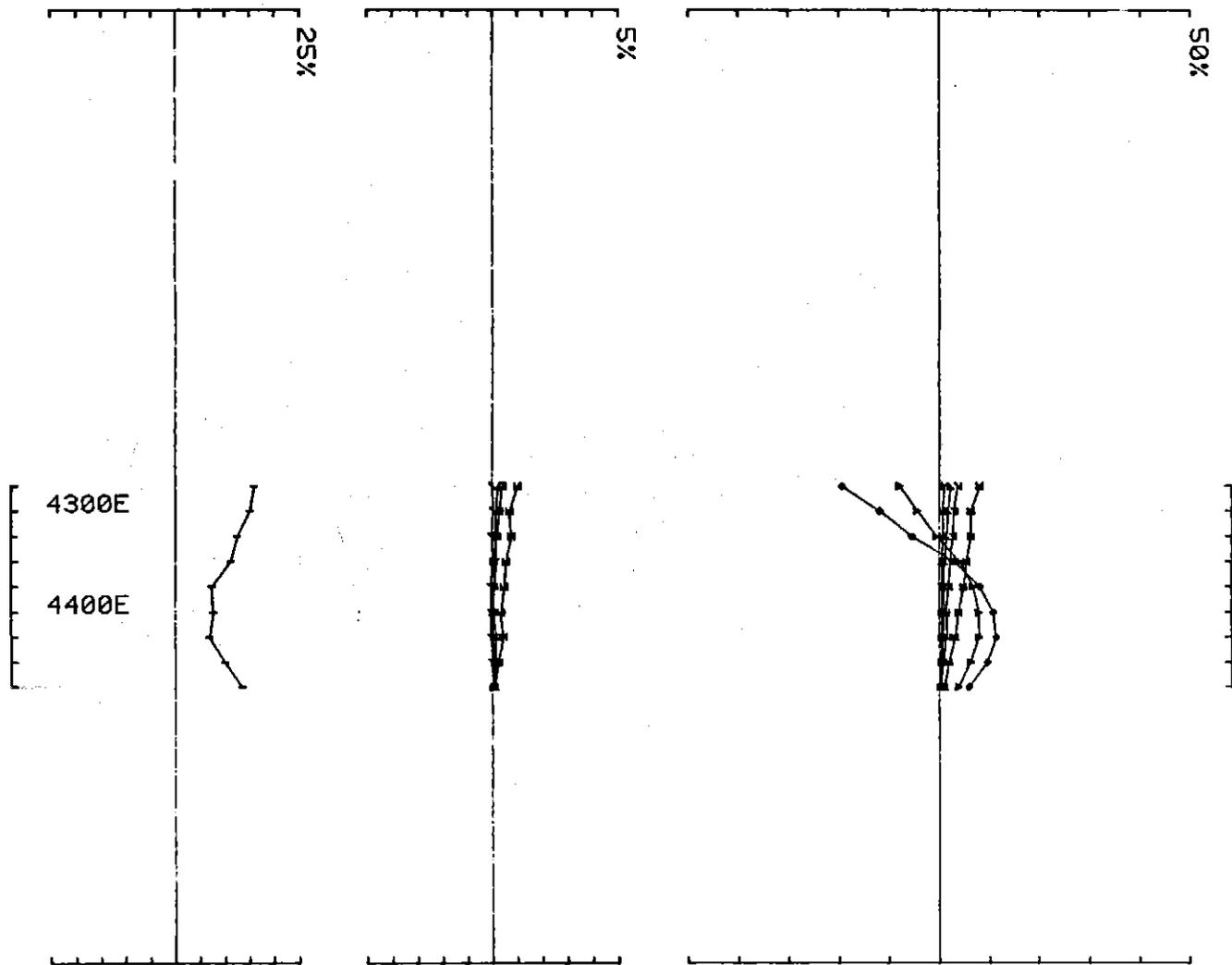
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 secondary field- Channel 1 continuously normalized



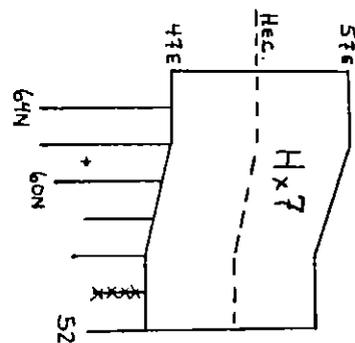


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 conducted by L G L Job 8859 base freq (hz) 26.230
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 secondary field Channel 1 continuously normalized



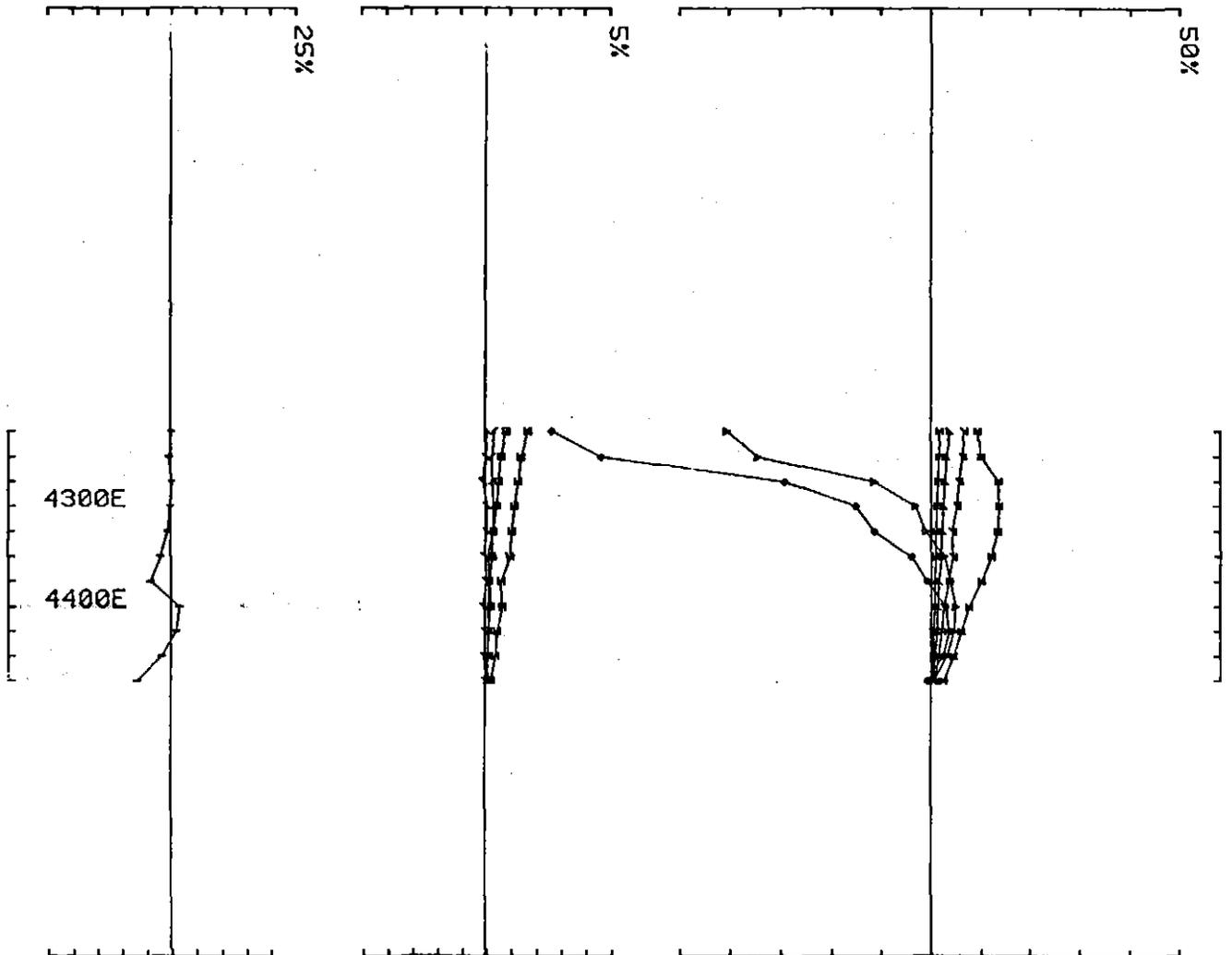


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 loop no 7 line 5400N component Hz
 secondary field Channel 1 continuously normalized

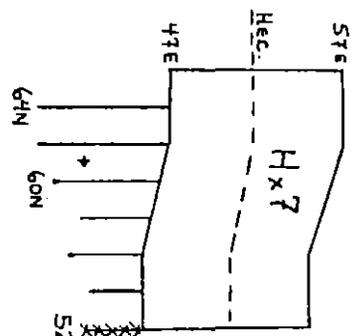


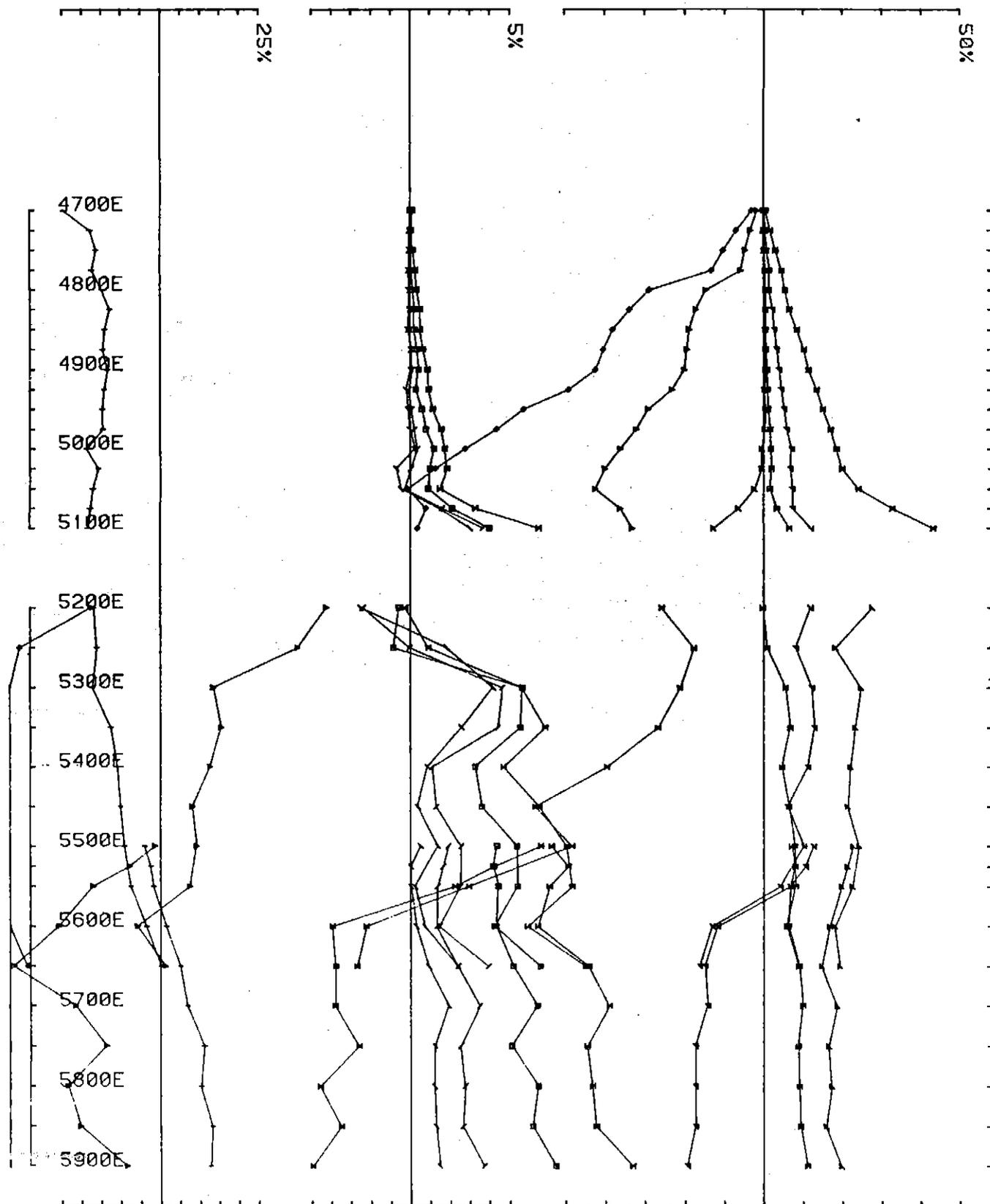
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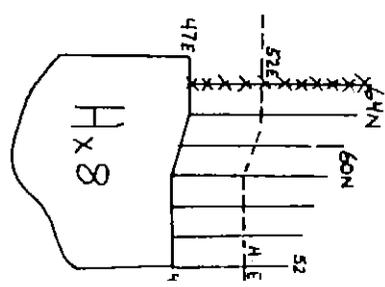


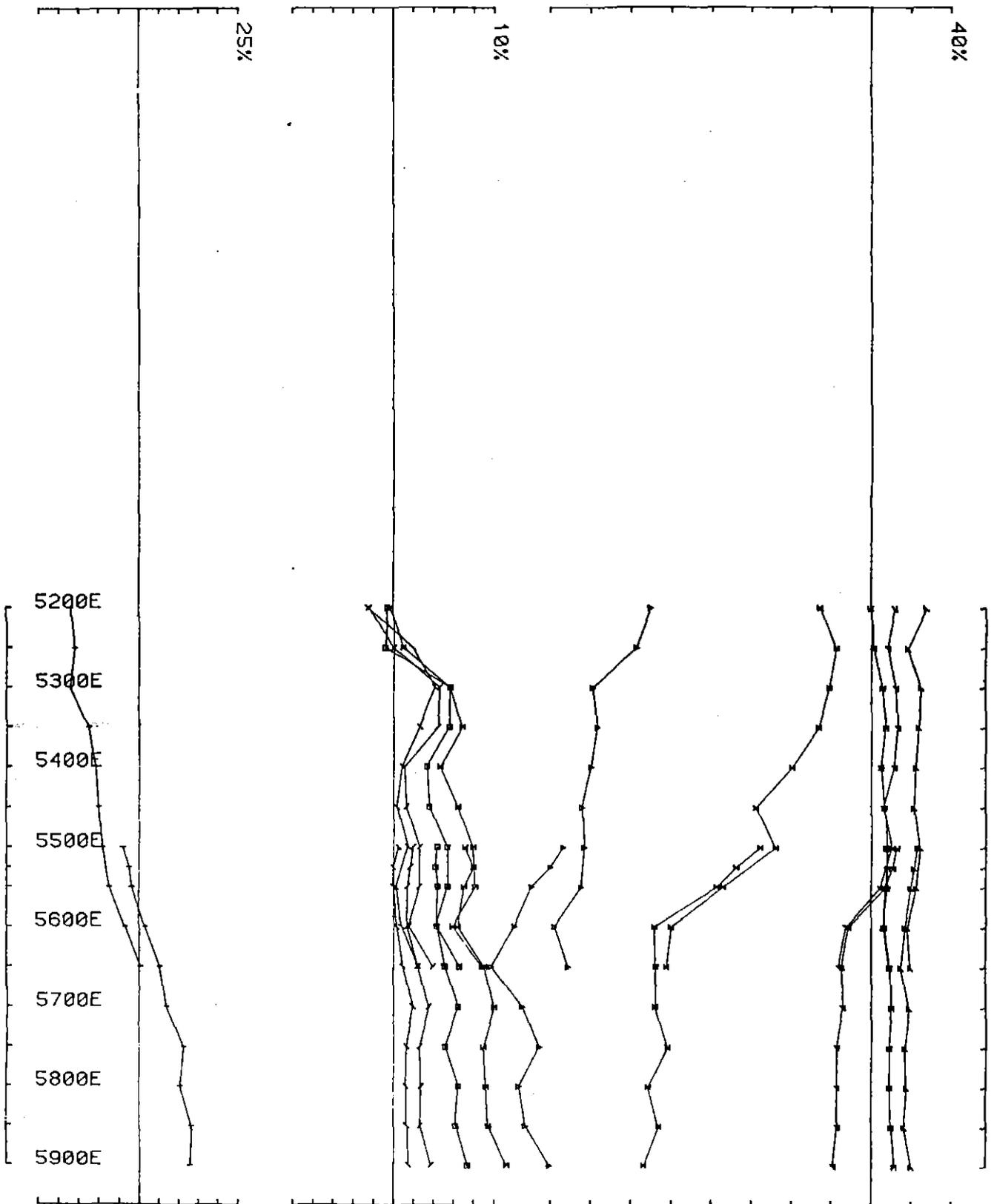
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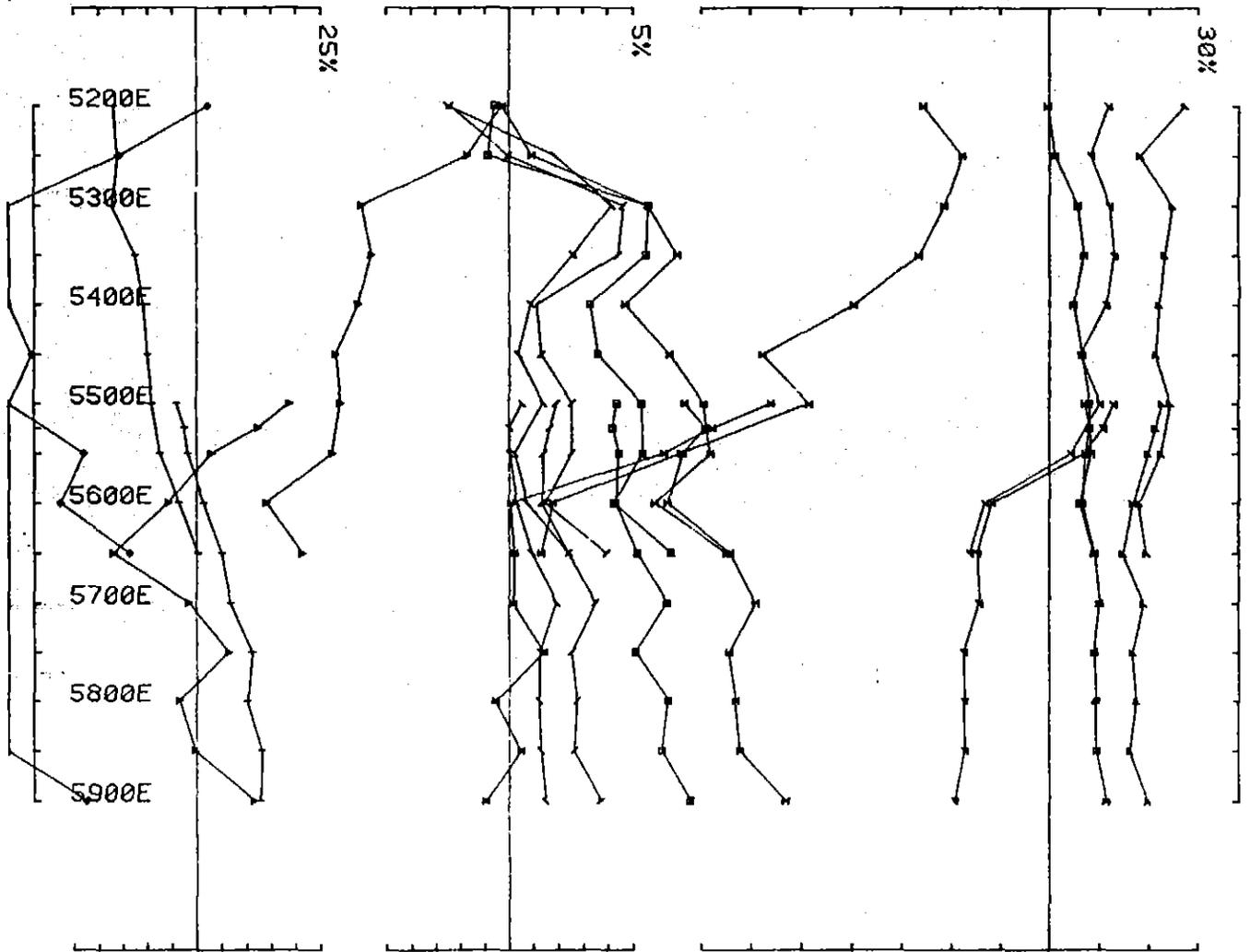


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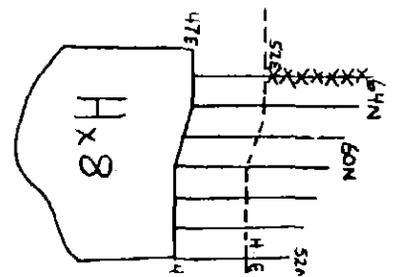




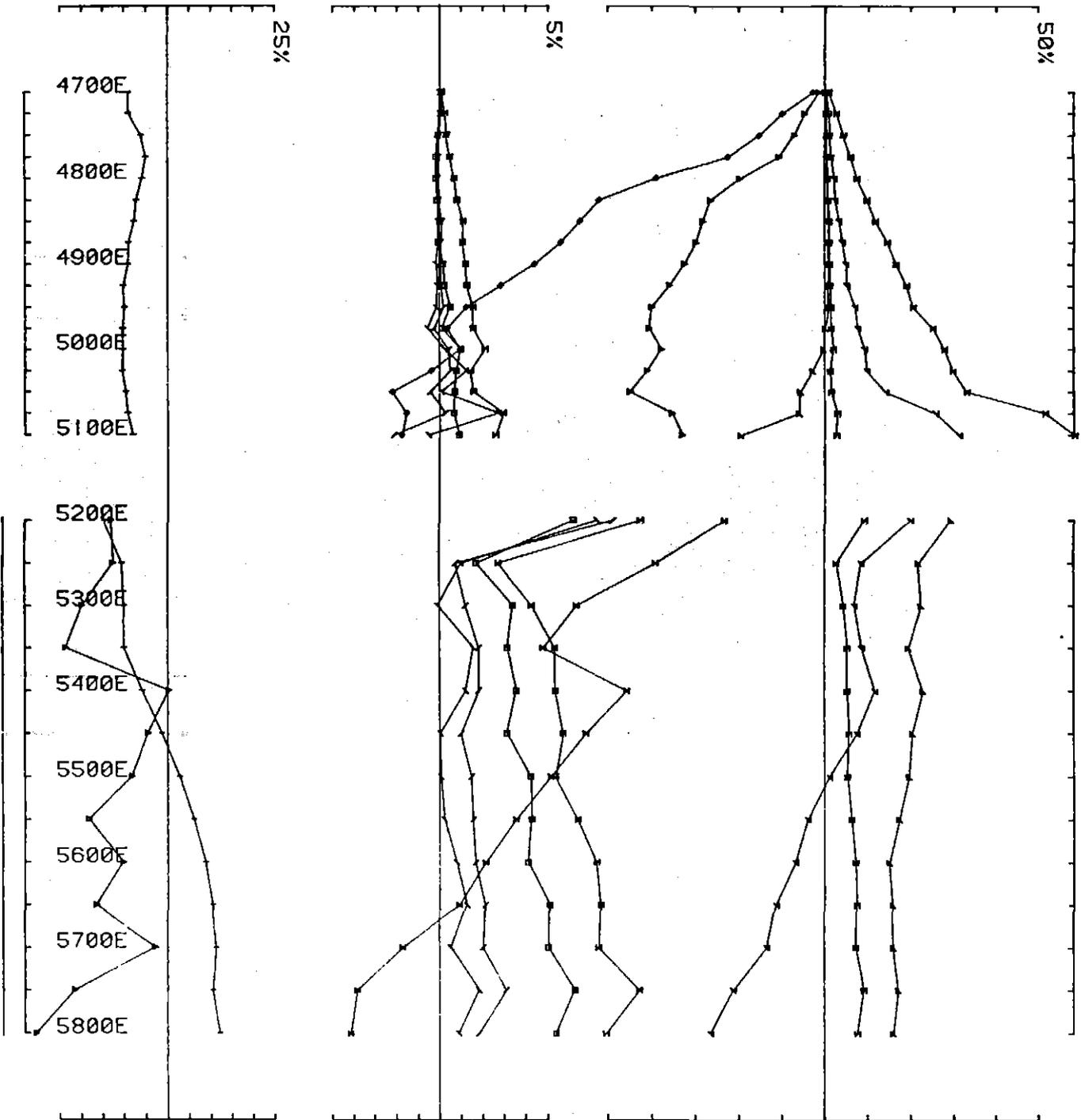
UTEM SURVEY at MOUNT HUXLEY for B H P
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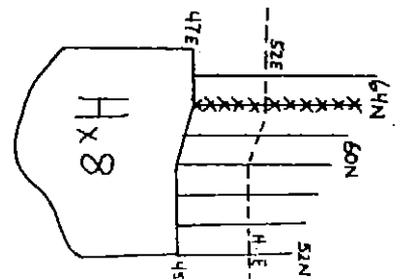
UTEM SURVEY at MOUNT HUXLEY for B H P
 conducted by L G L job 8859 base freq (hz) 26.230 *** RE-PLOT ***
 loop no 8 line 6400N component Hz
 secondary field Channel 1 continuously normalized

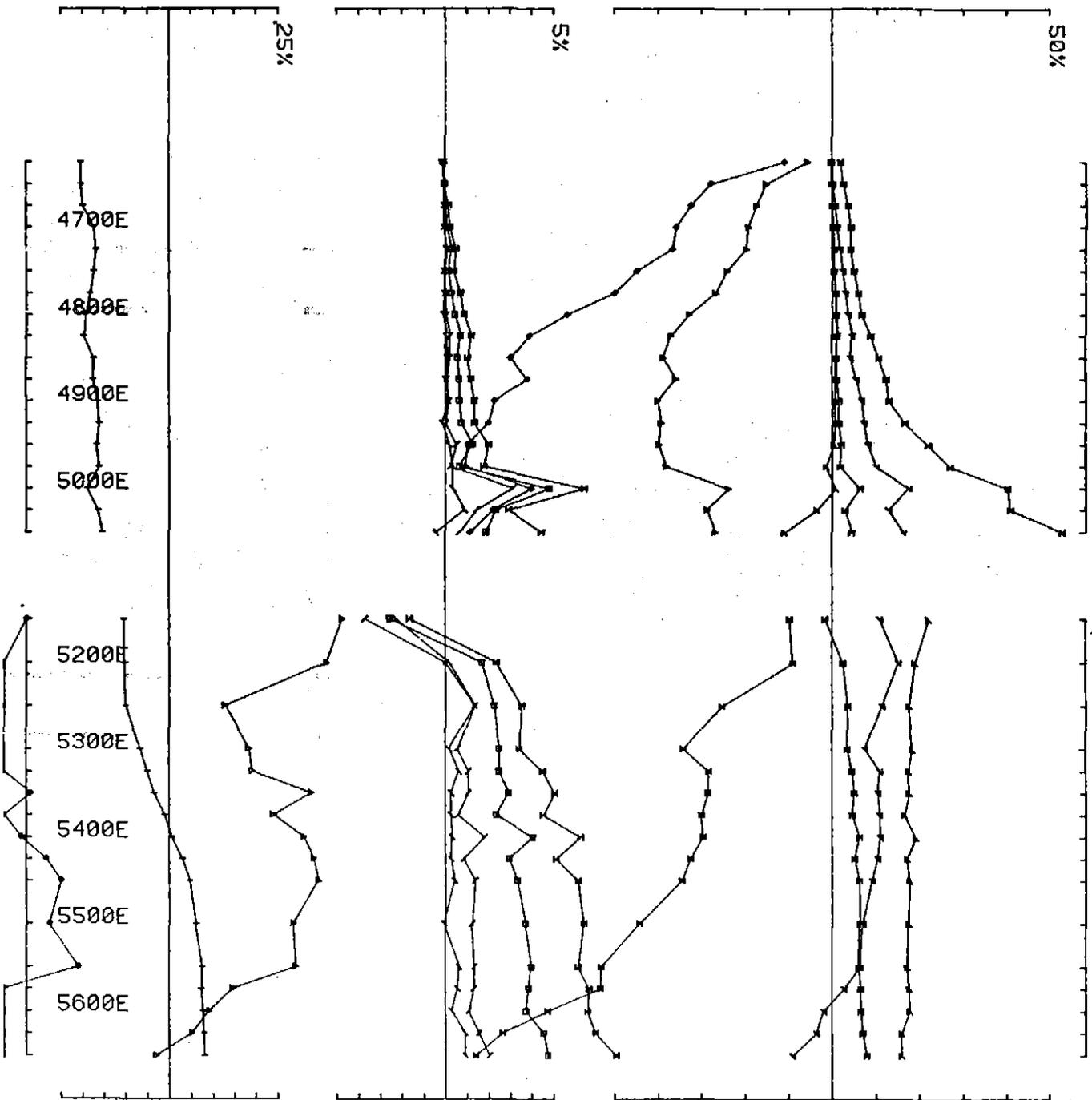


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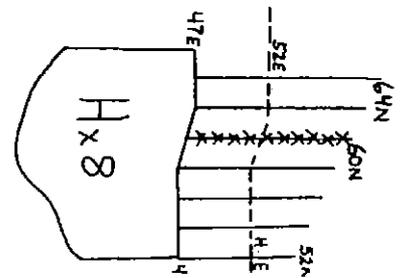


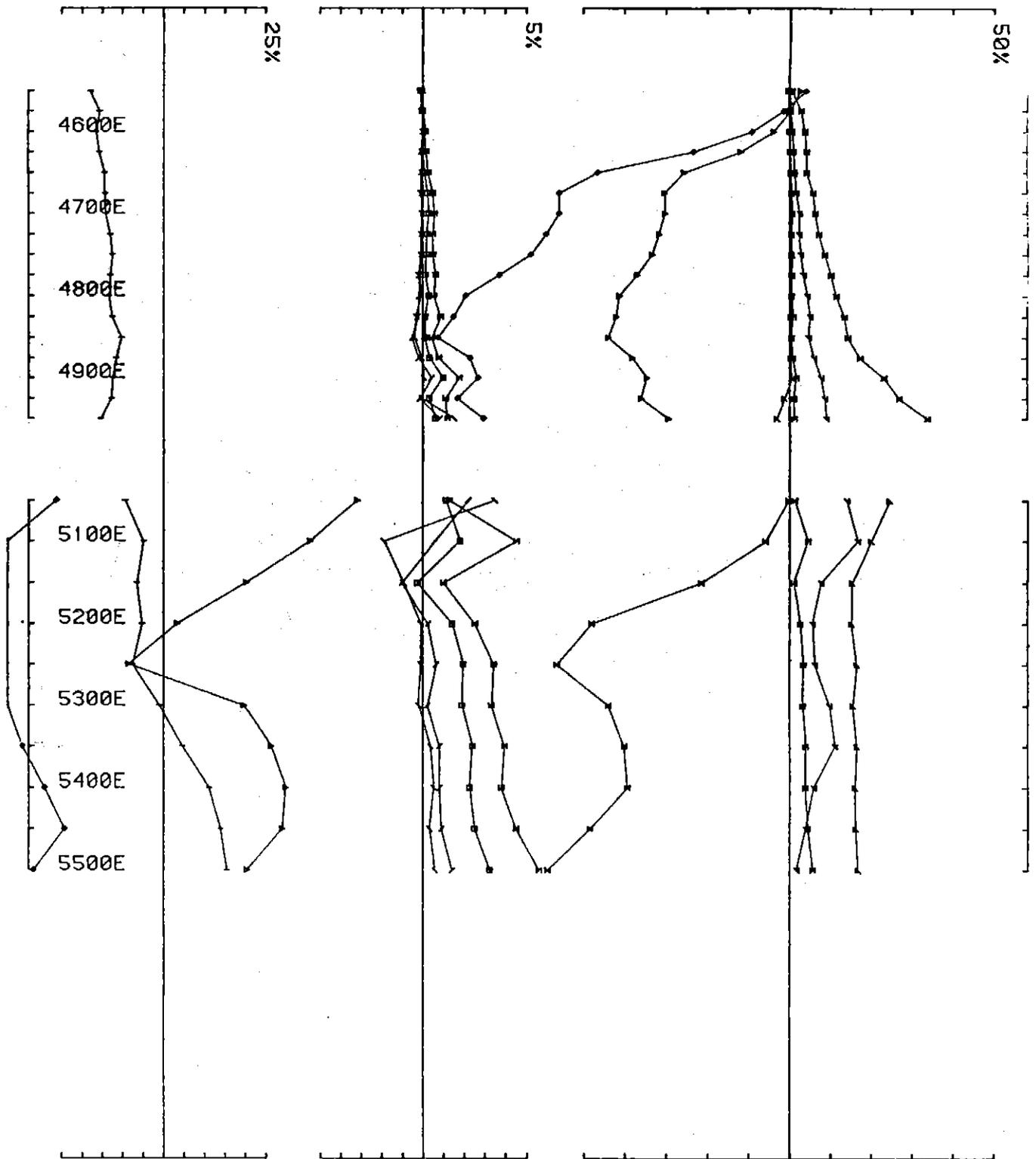
UTEM SURVEY at MOUNT HUXLEY for B H P
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 loop no 8 line 6200N component Hz
 secondary field Channel 1 continuously normalized



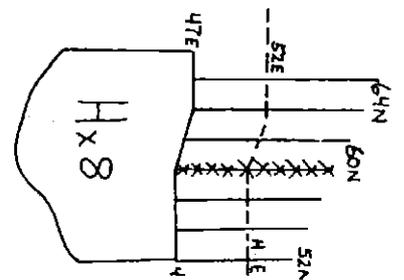


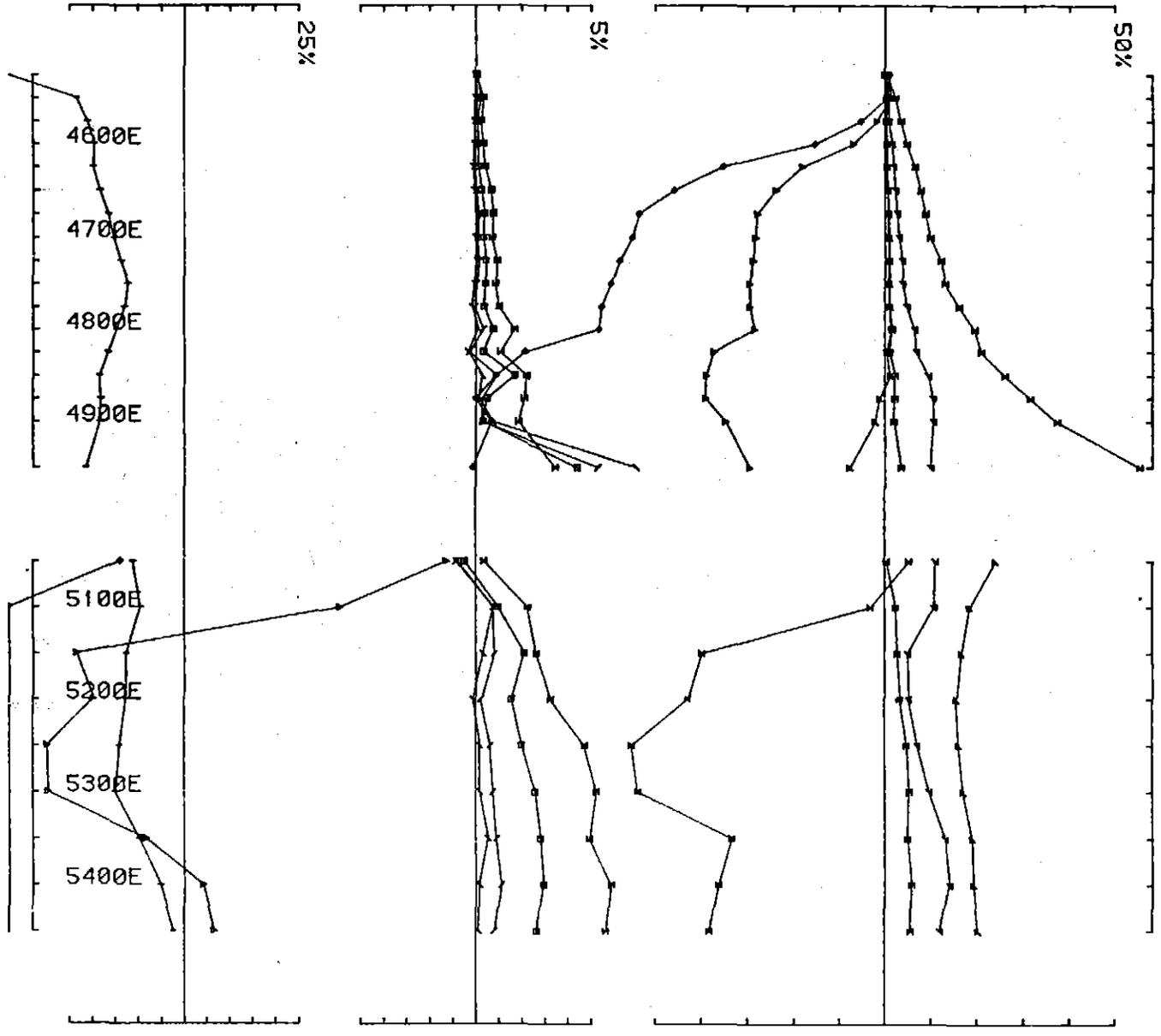
UTEM SURVEY at MOUNT HUXLEY for B H P
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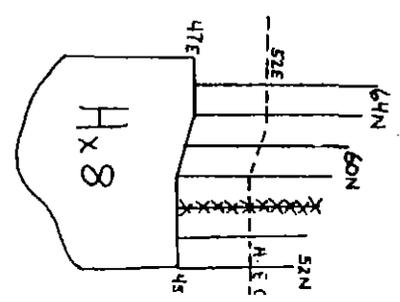


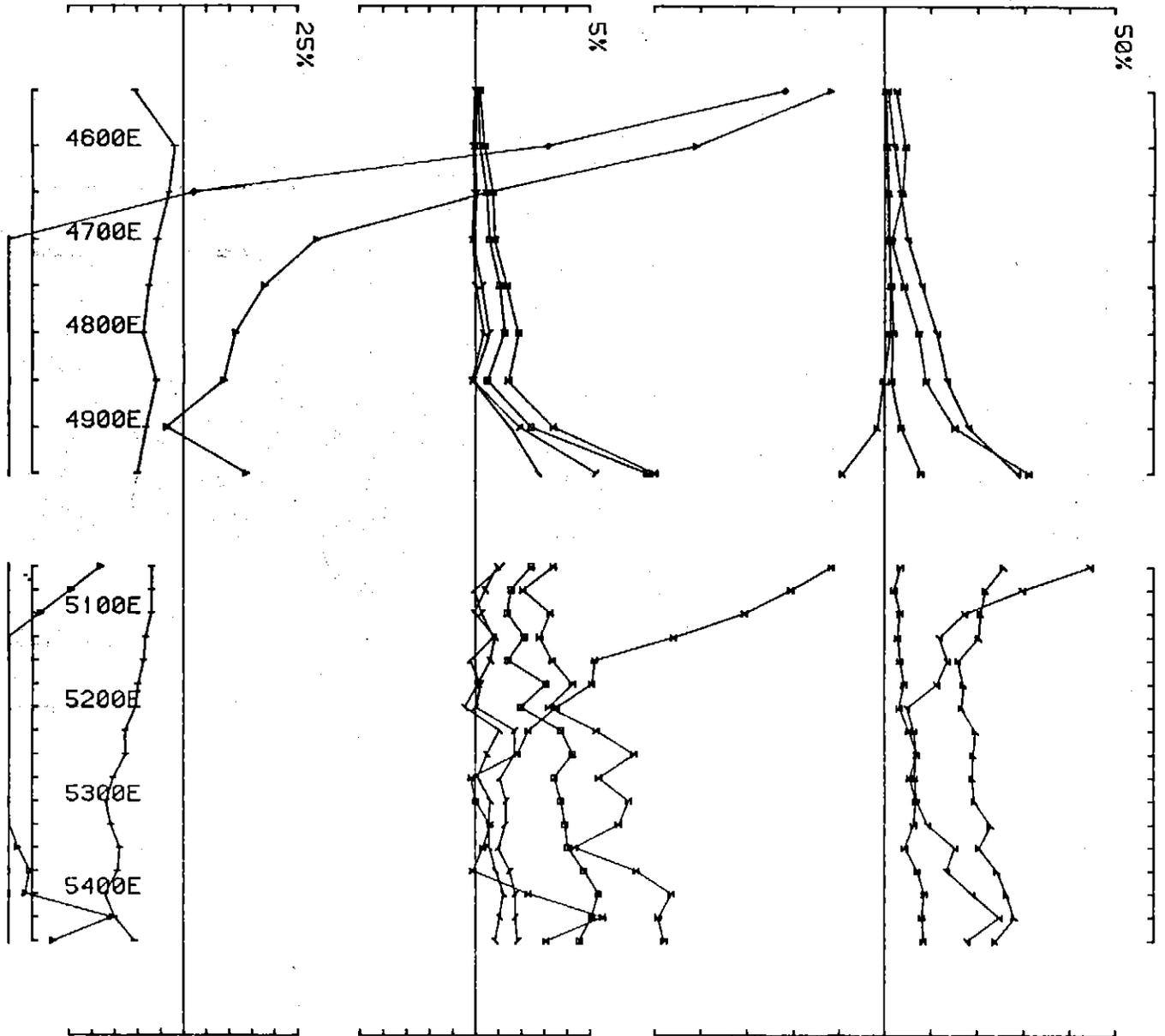
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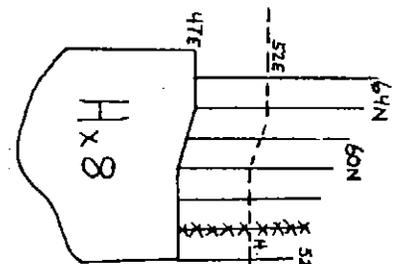


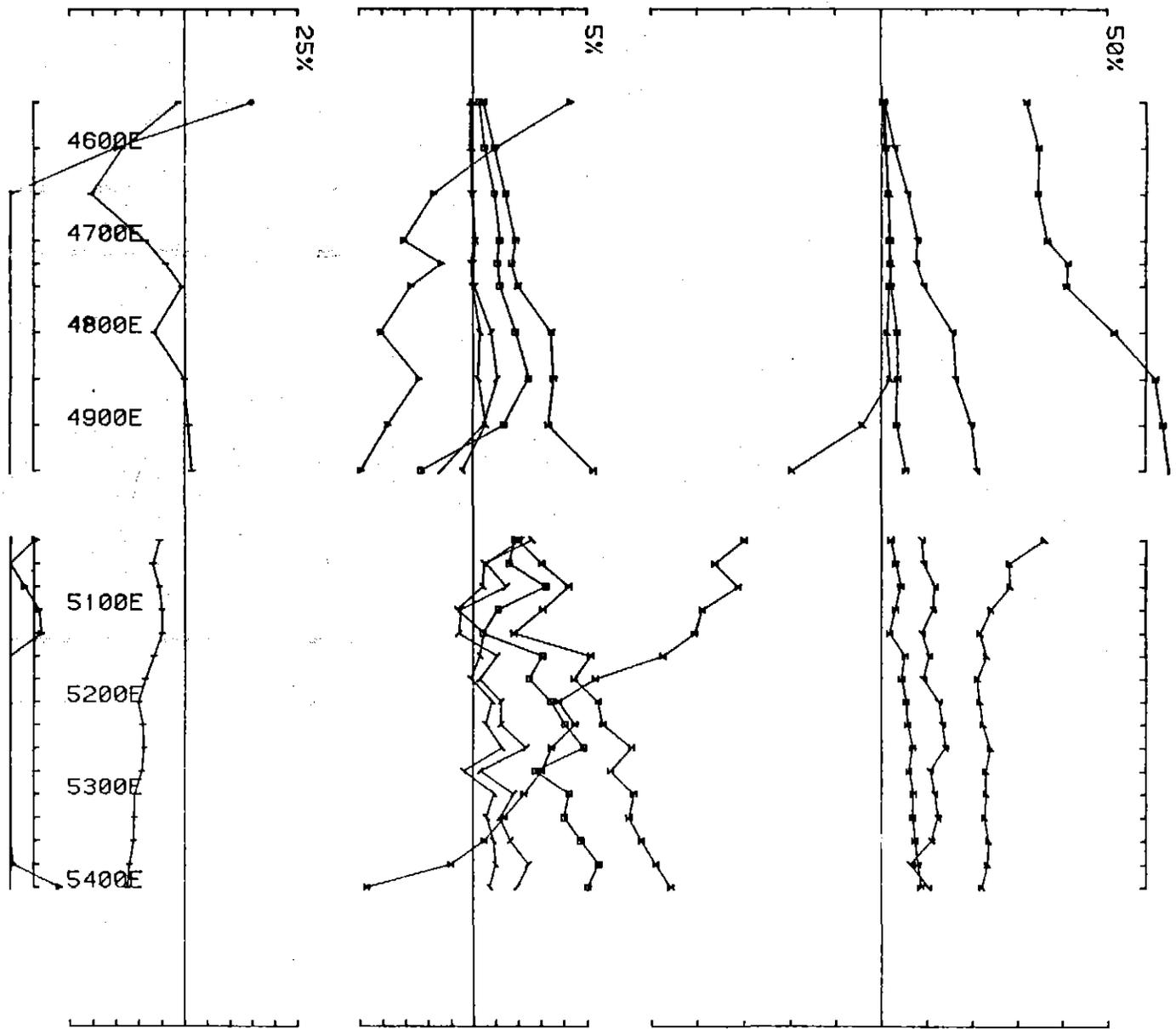
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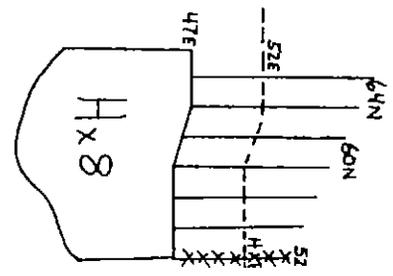


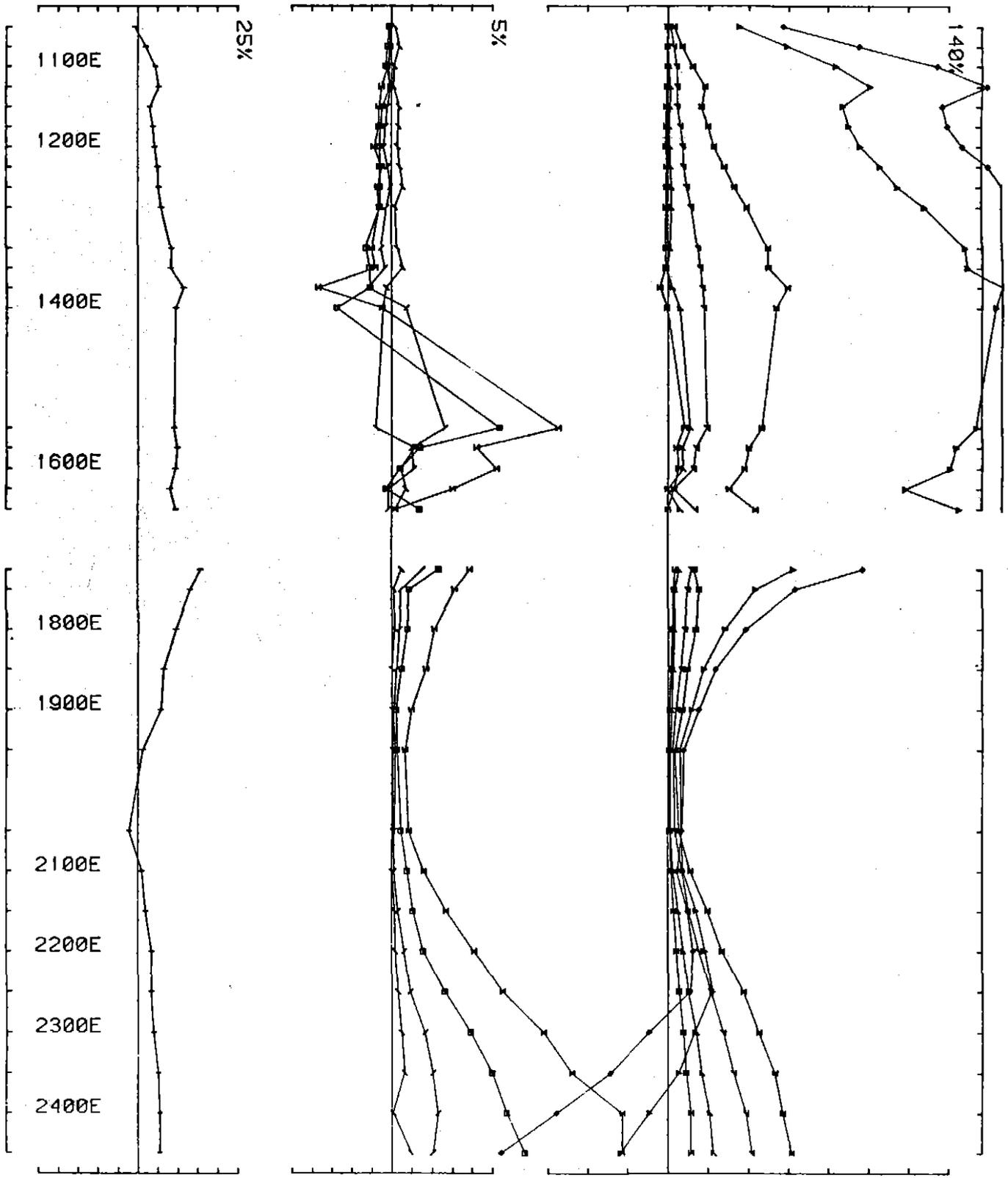
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 secondary field Channel 1 continuously normalized



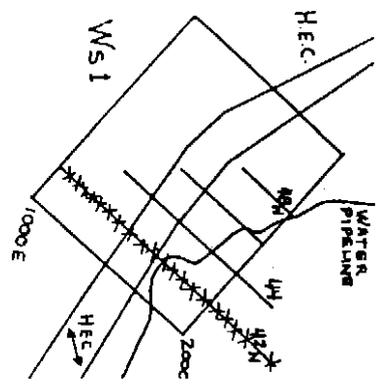


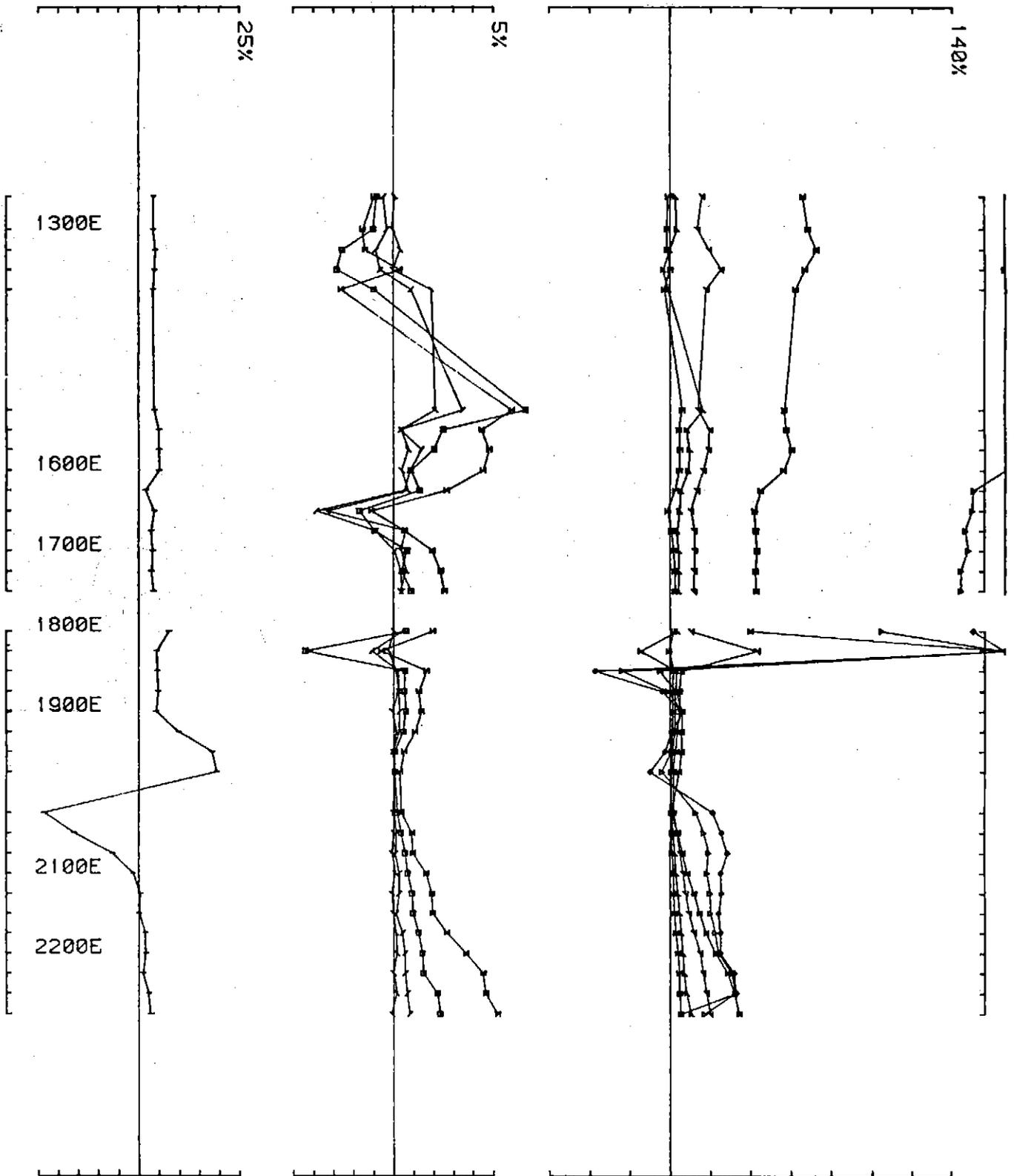
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 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 8 line 5200N component Hz
 secondary field Channel 1 continuously normalized



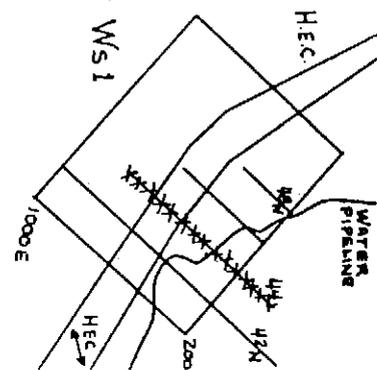


UTEM SURVEY at WEST SEDGEWICK for B H P
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 loop no 1 line 4200N component Hz
 secondary field Channel 1 continuously normalized

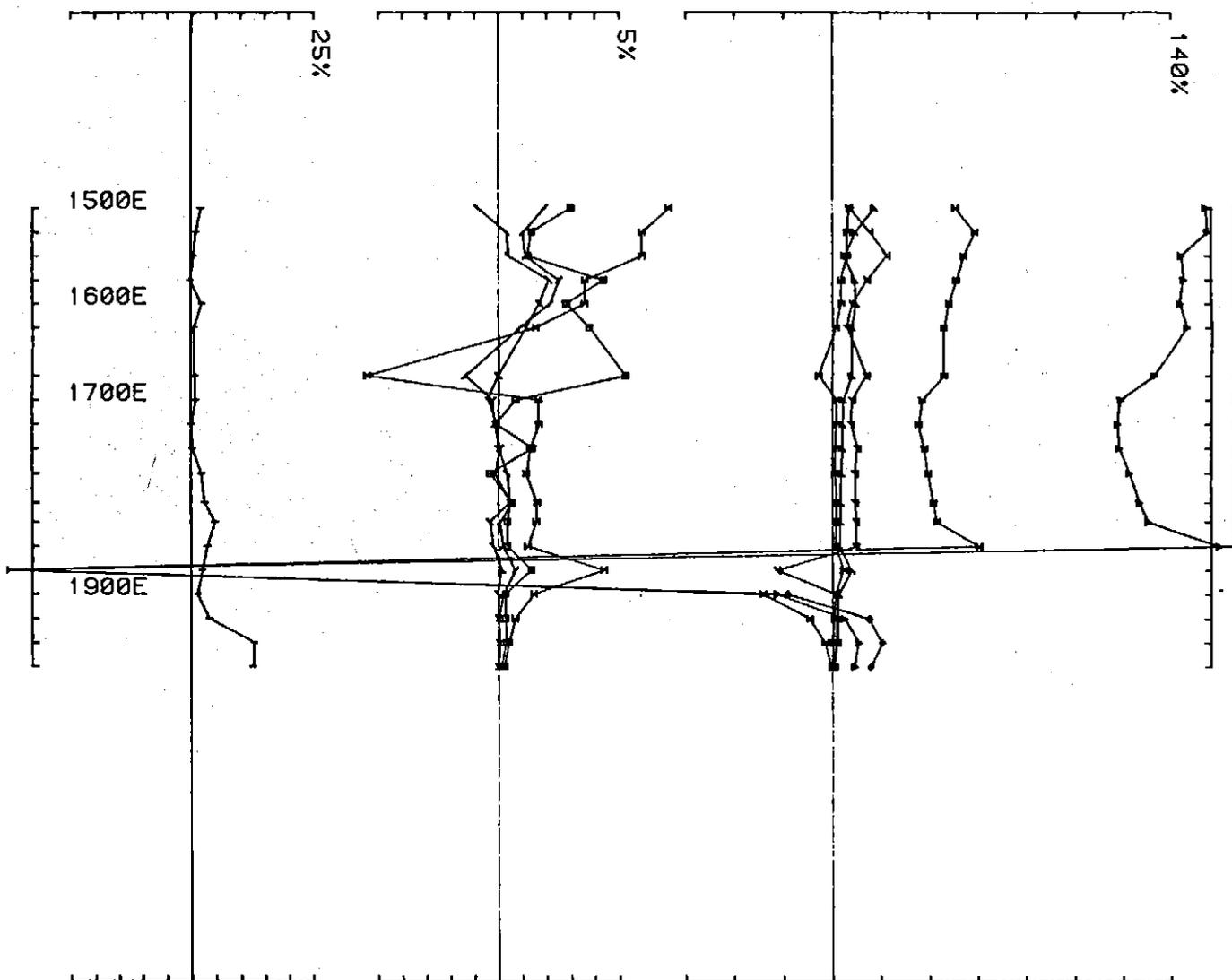




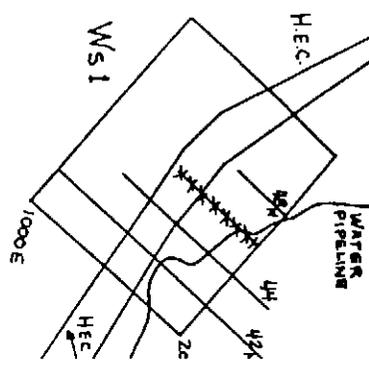
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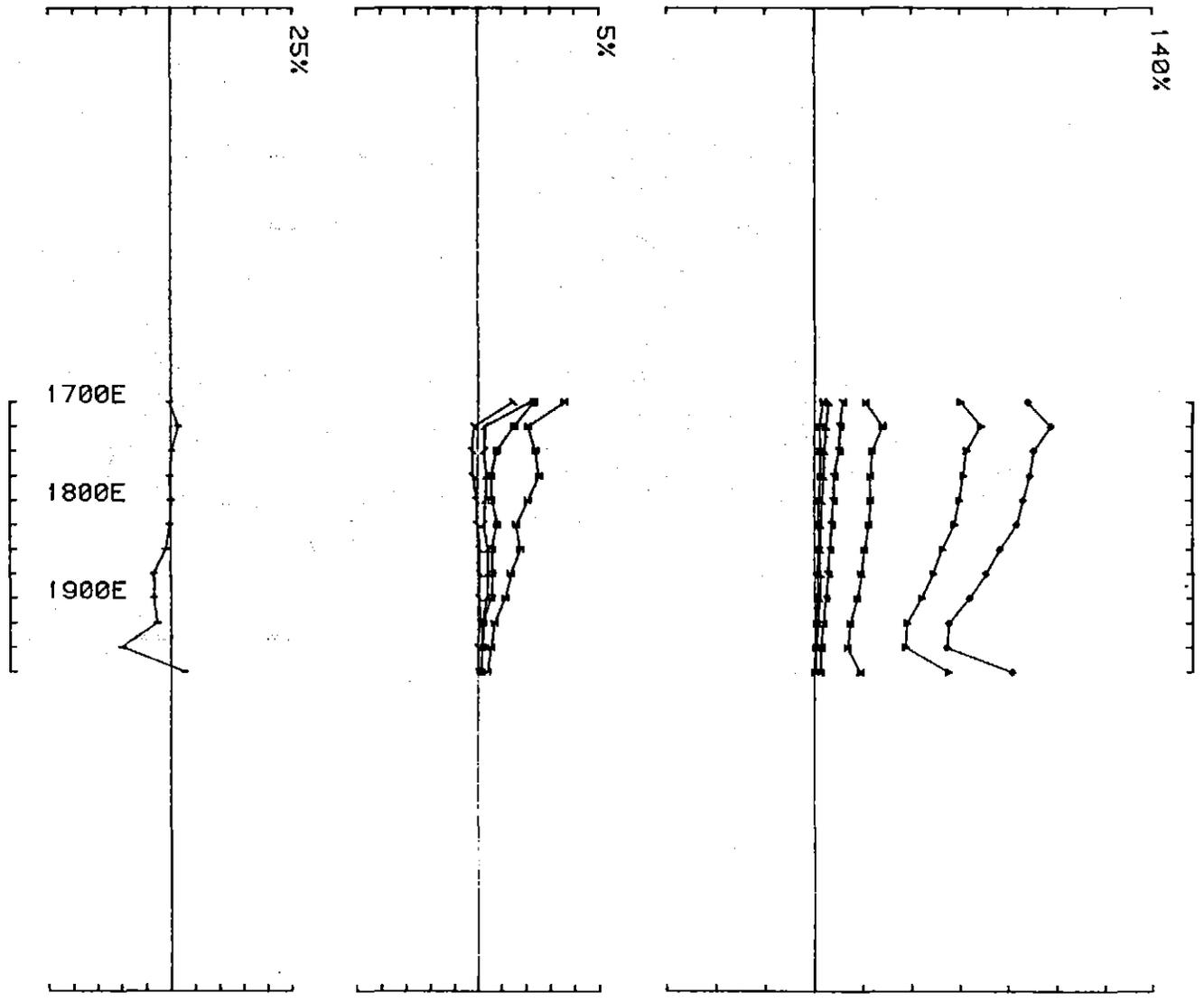


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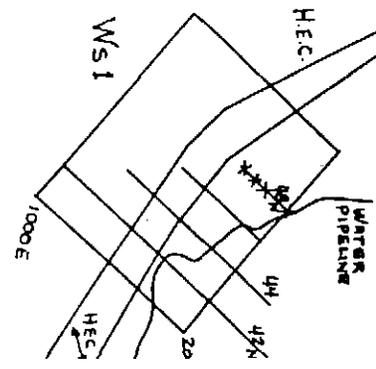


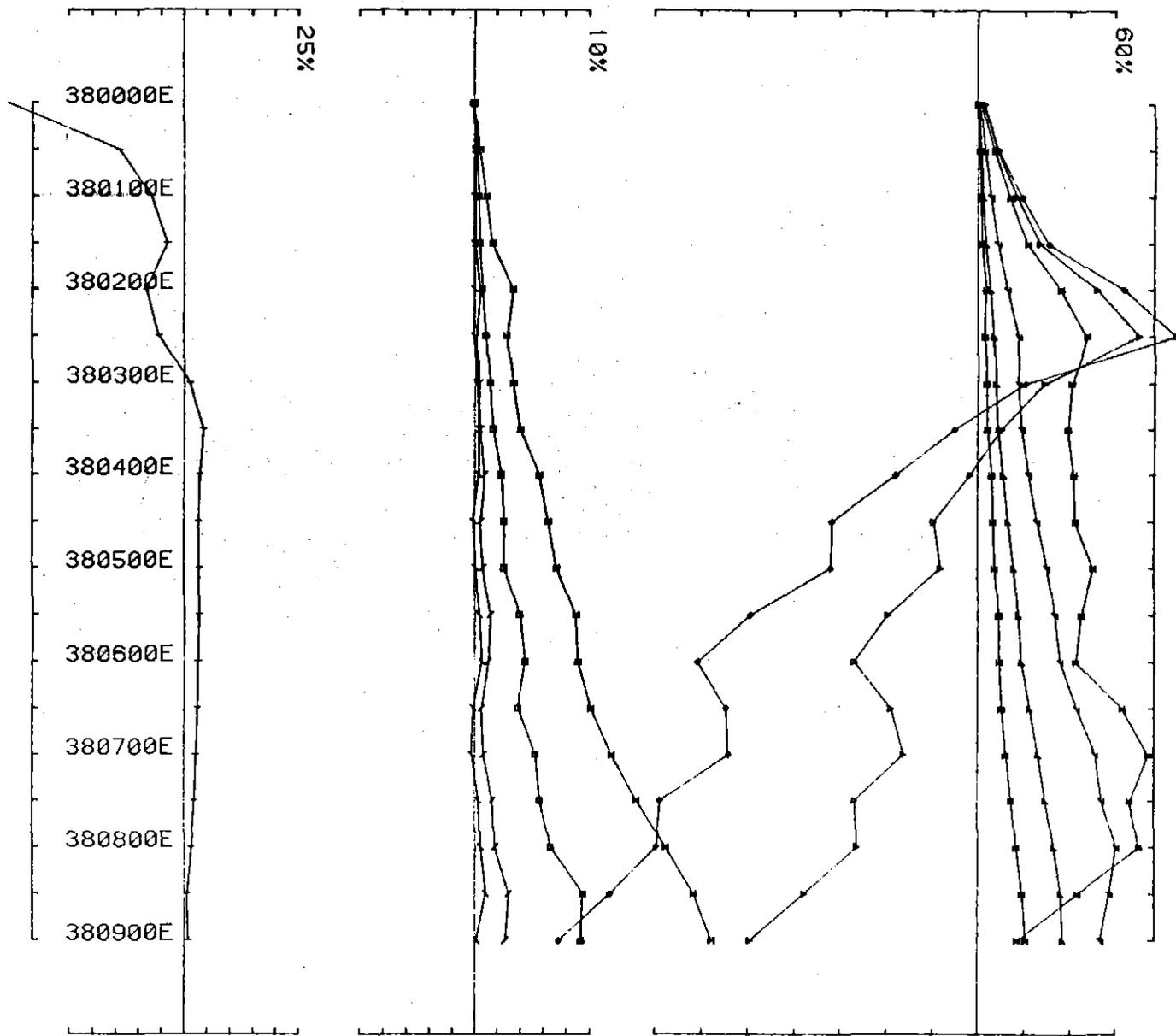
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 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 1 line 4600N component Hz
 secondary field ... Channel 1 continuously normalized



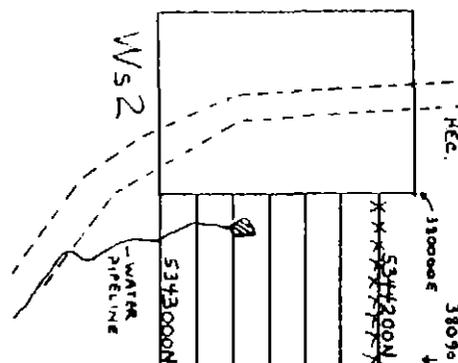


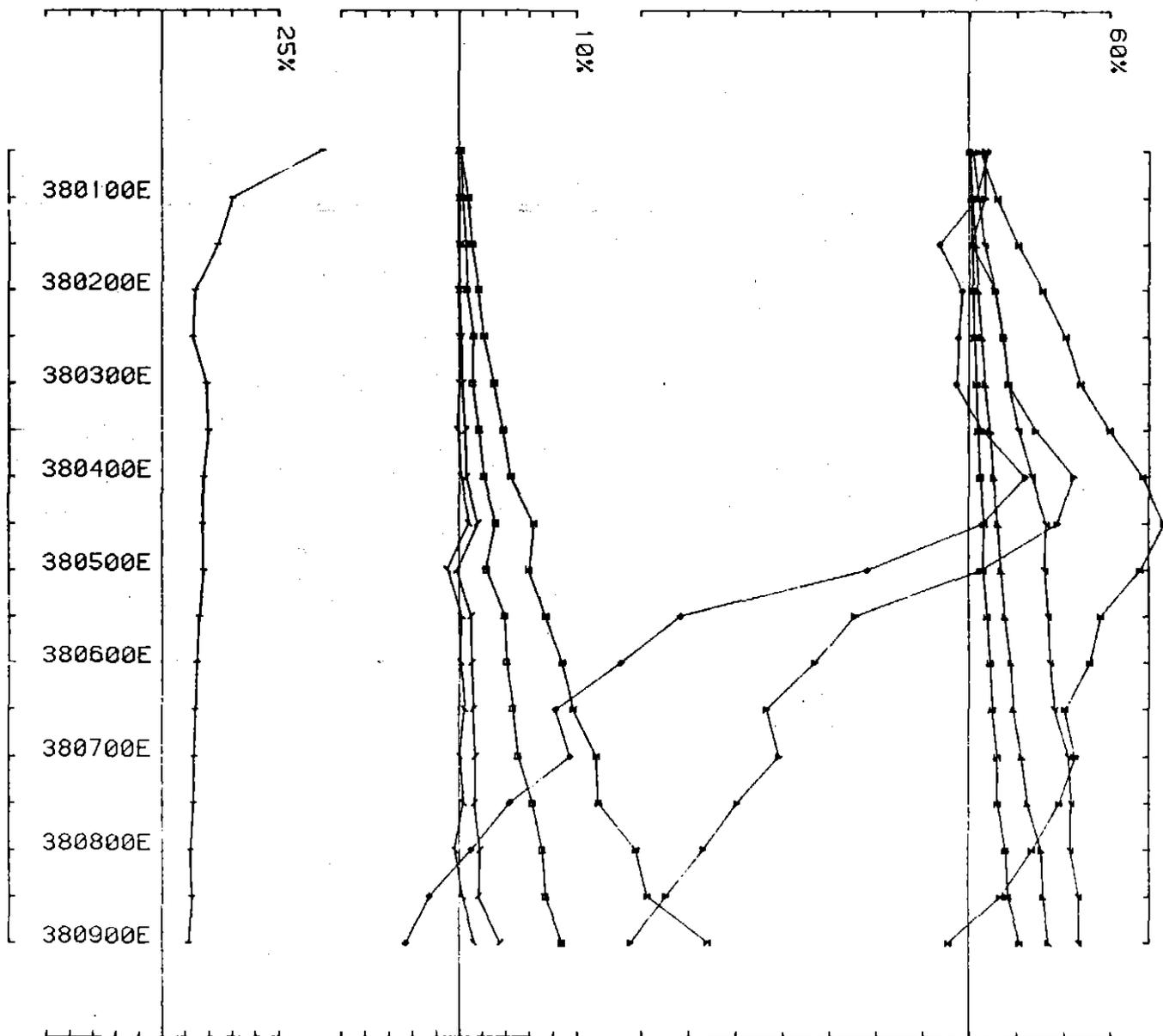
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 conducted by L G L job: 8859 base freq (hz) 26.230
 loop no 1 line 4800N component HZ
 secondary field channel: continuously normalized



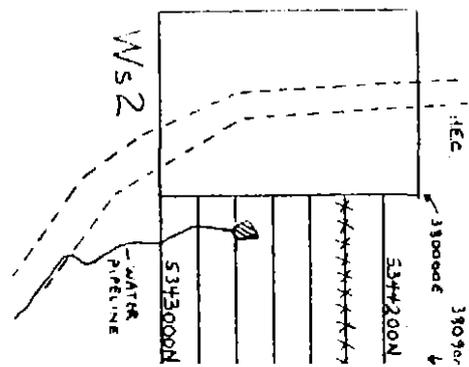


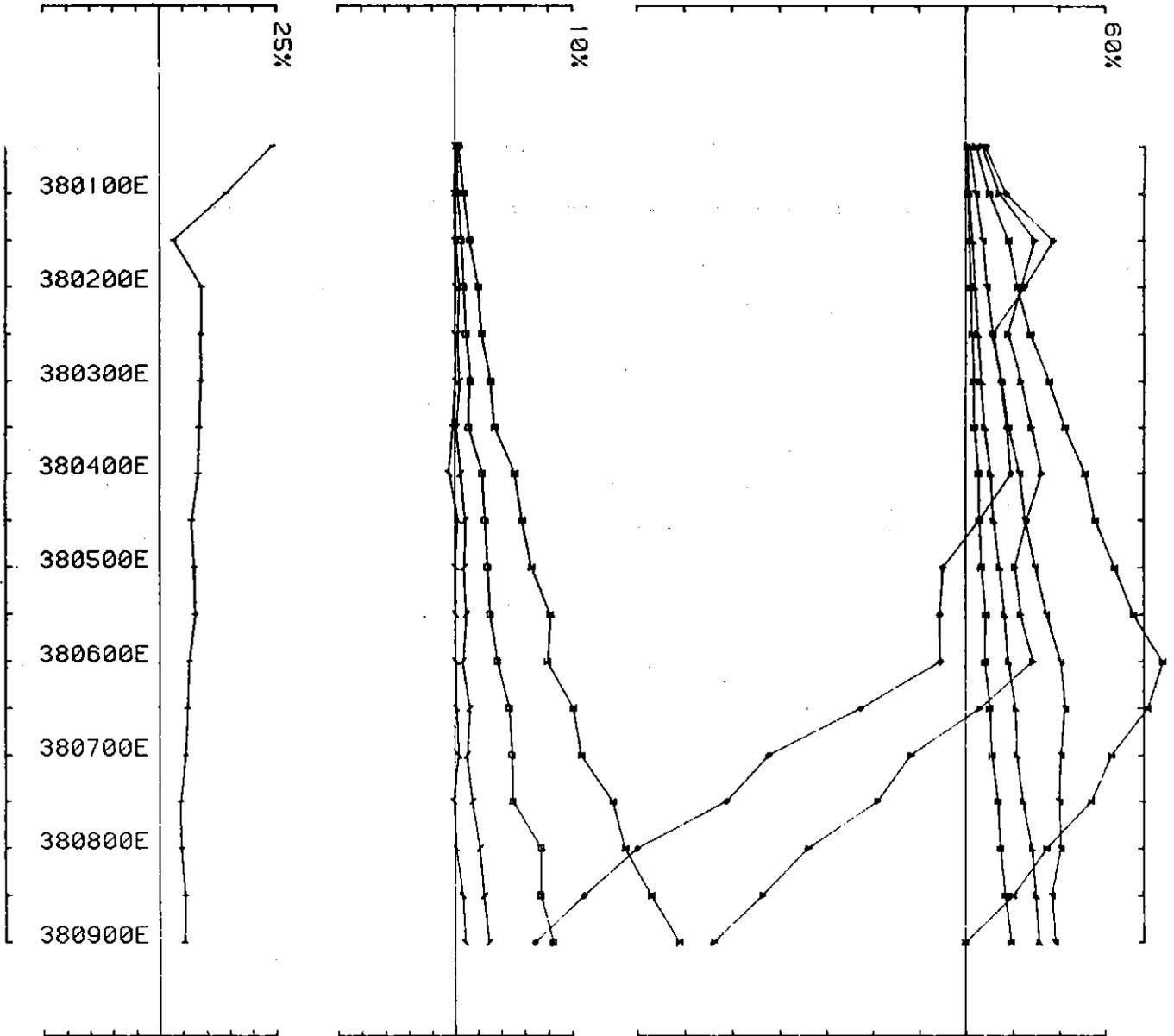
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 secondary field Channel 1 continuously normalized



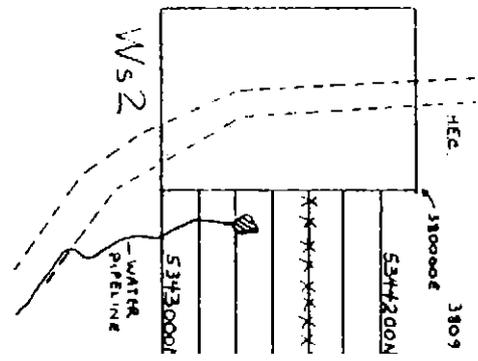


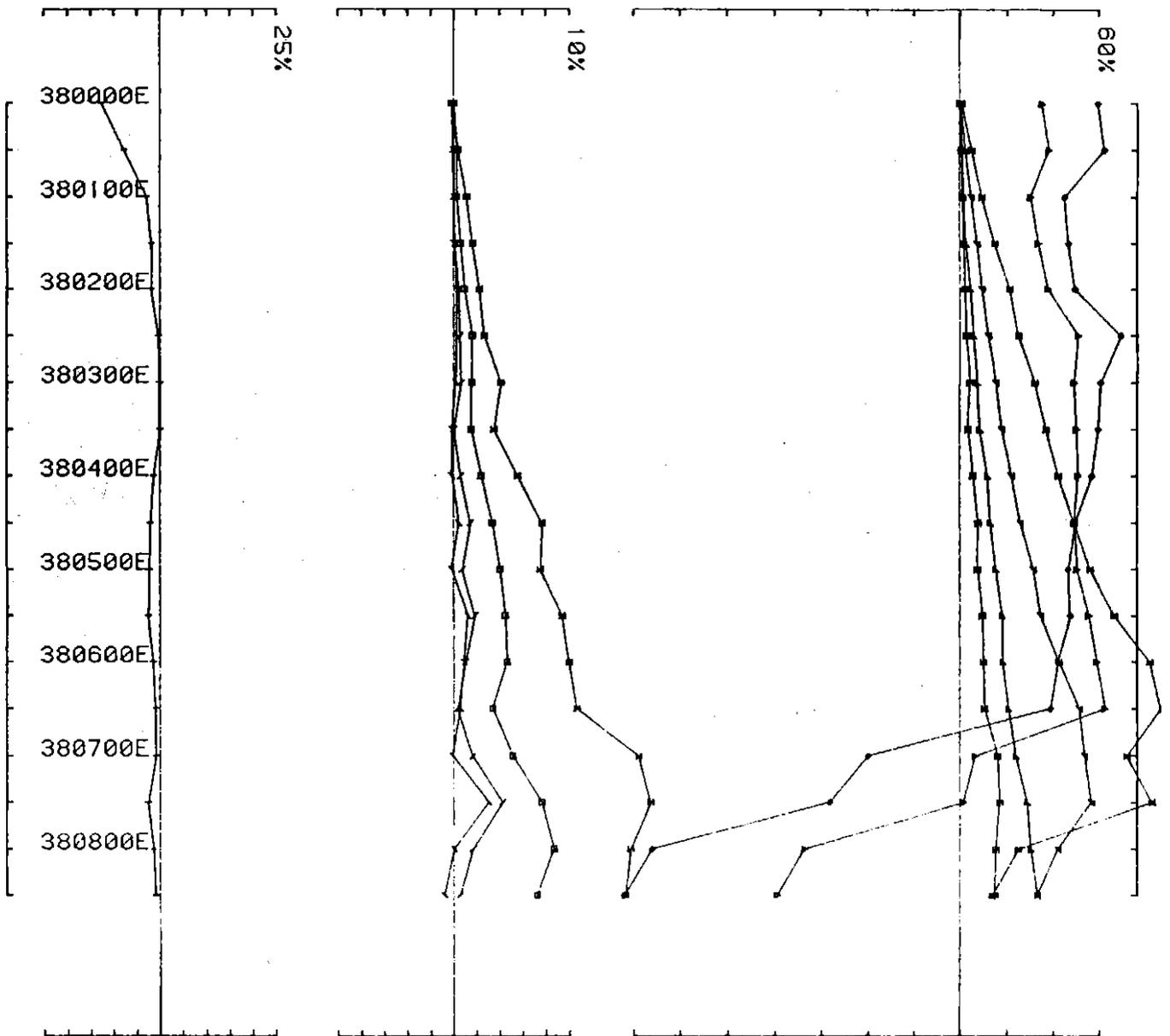
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 secondary field Channel 1 continuously normalized



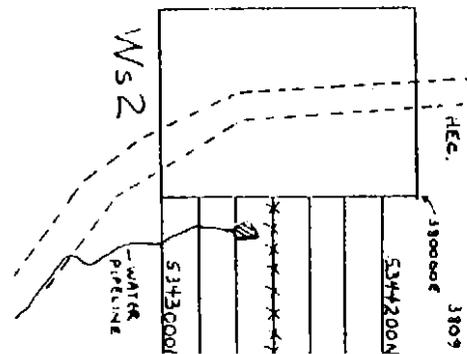


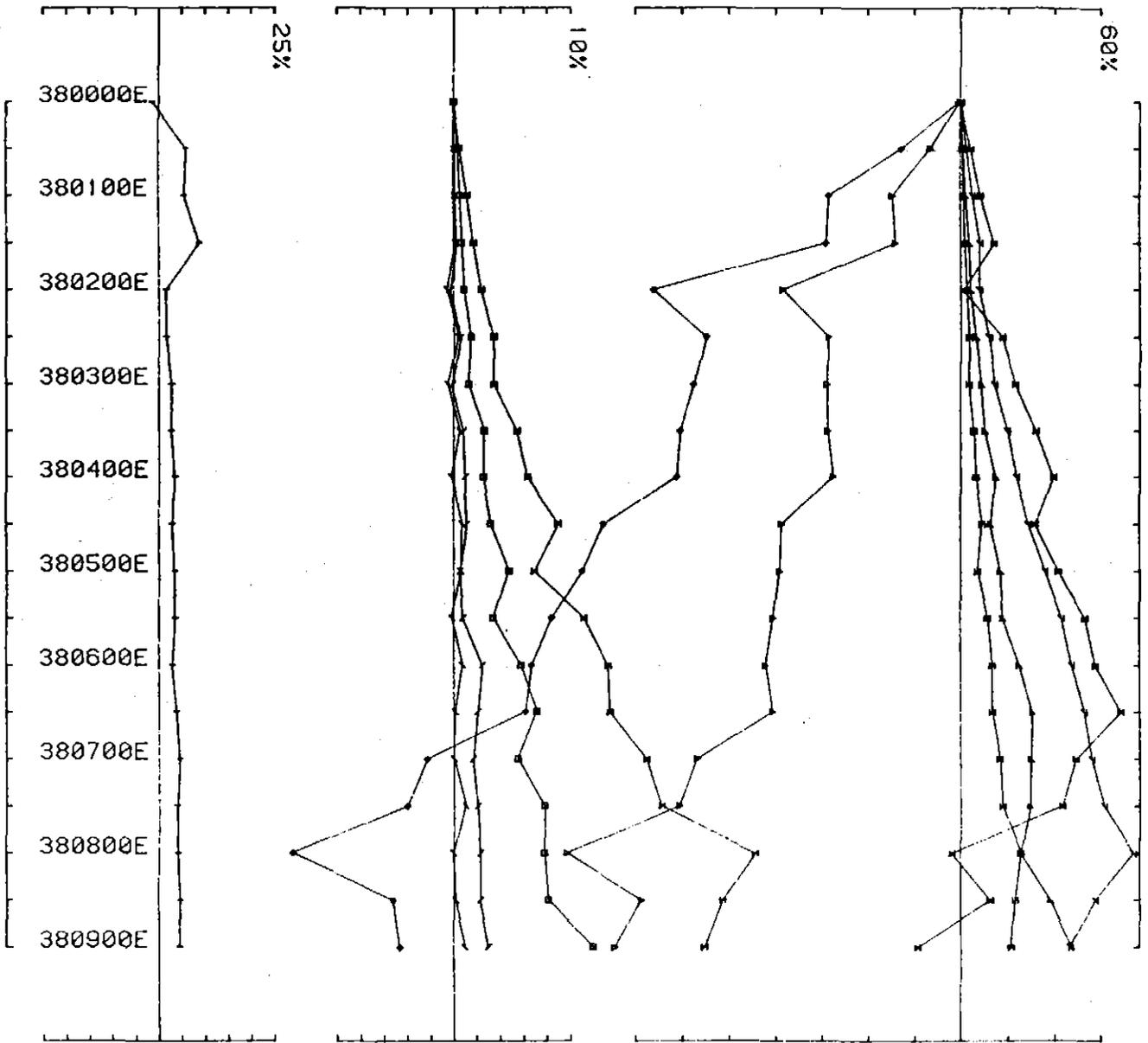
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 secondary field Channel 1 continuously normalized



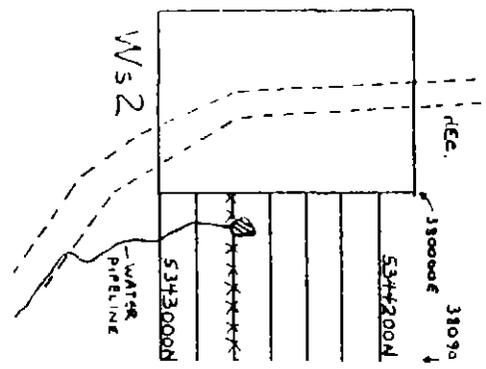


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 secondary field Channel 1 continuously normalized



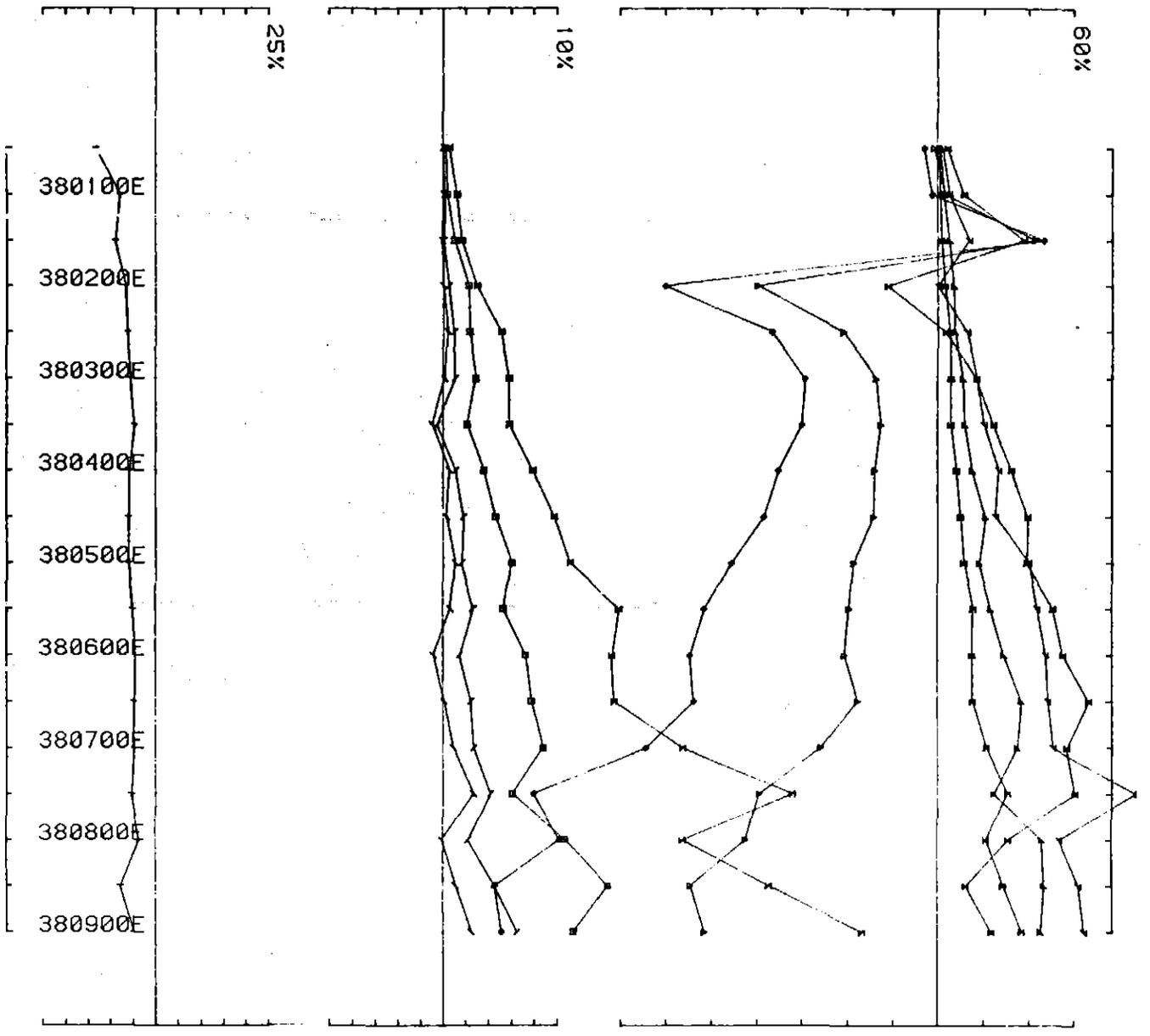


UTEM SURVEY at WEST SEDGWICK for B H P
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 secondary field Channel 1 continuously normalized

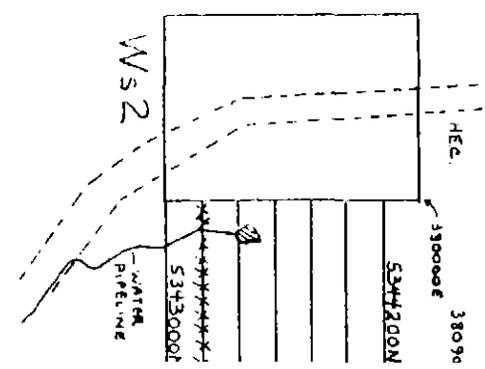


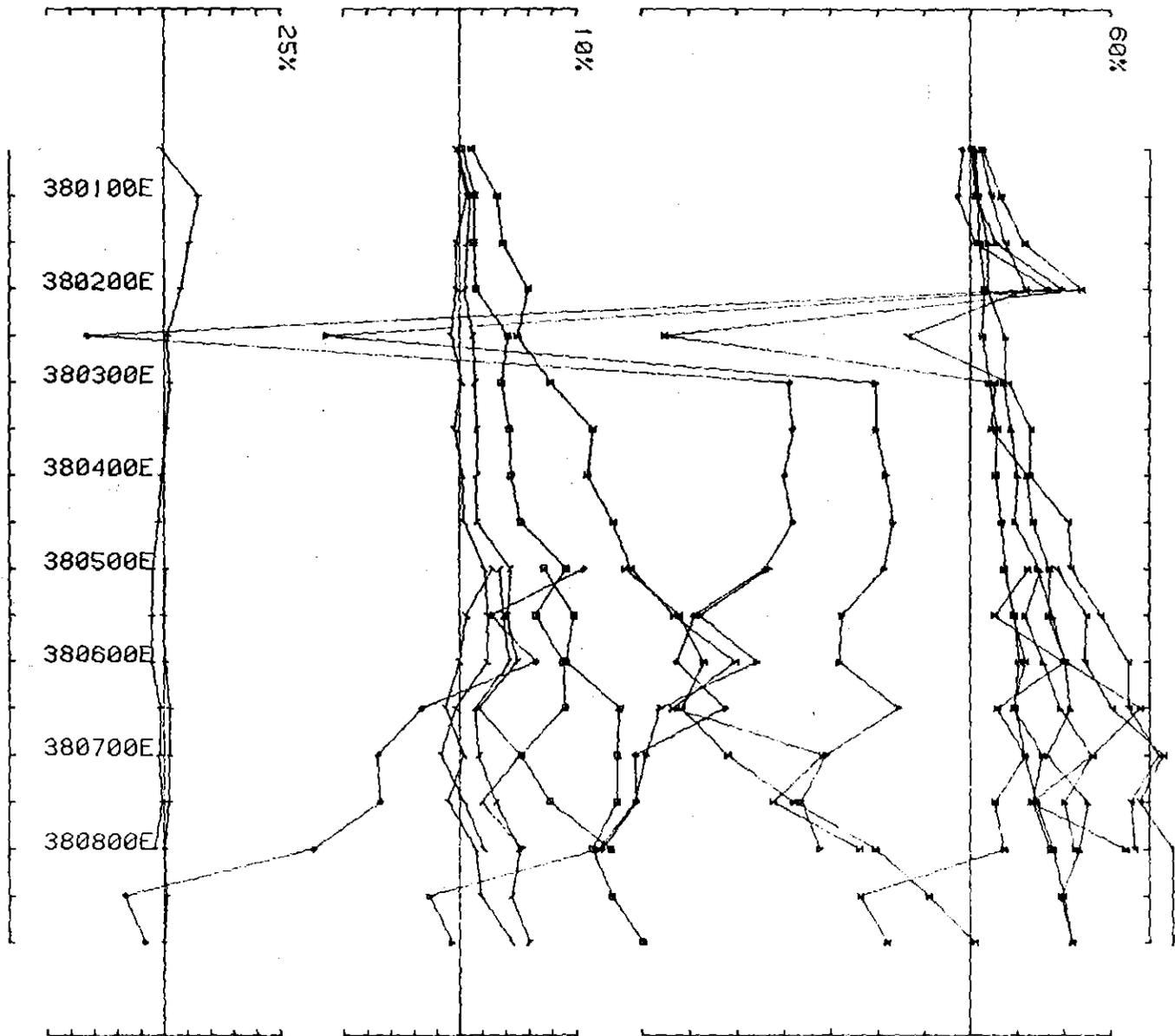
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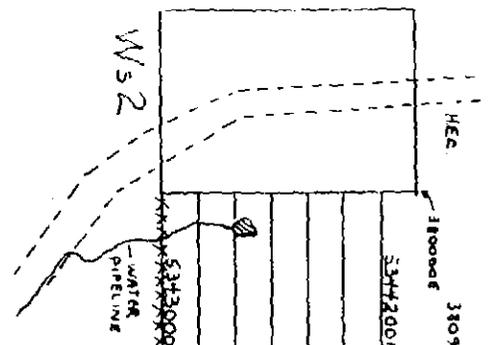


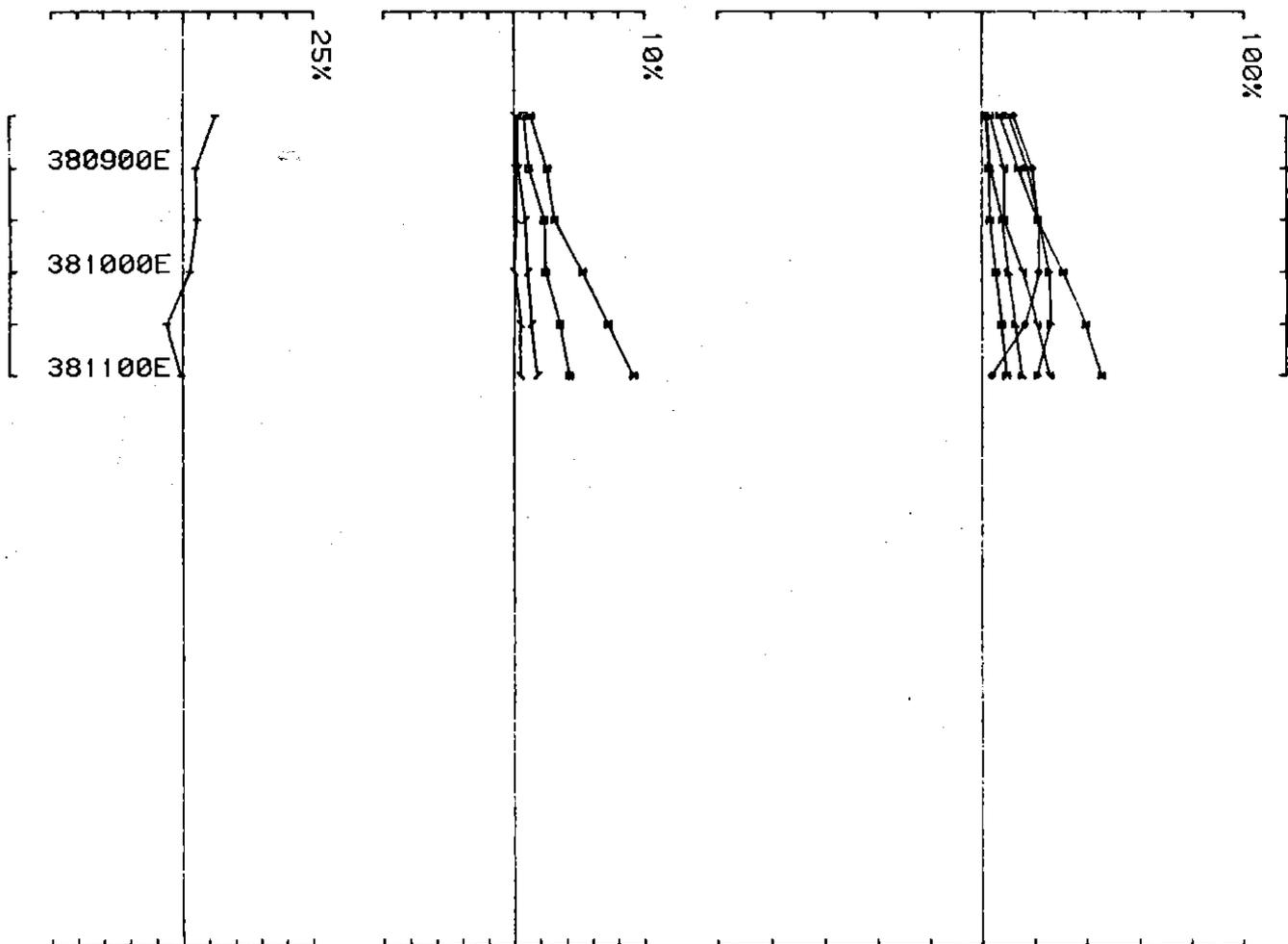
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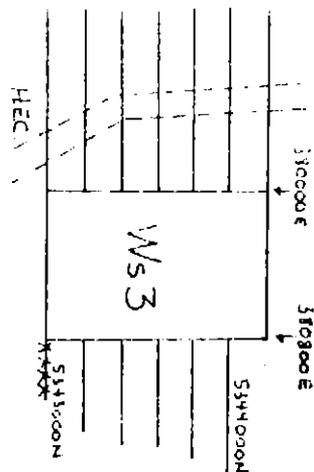


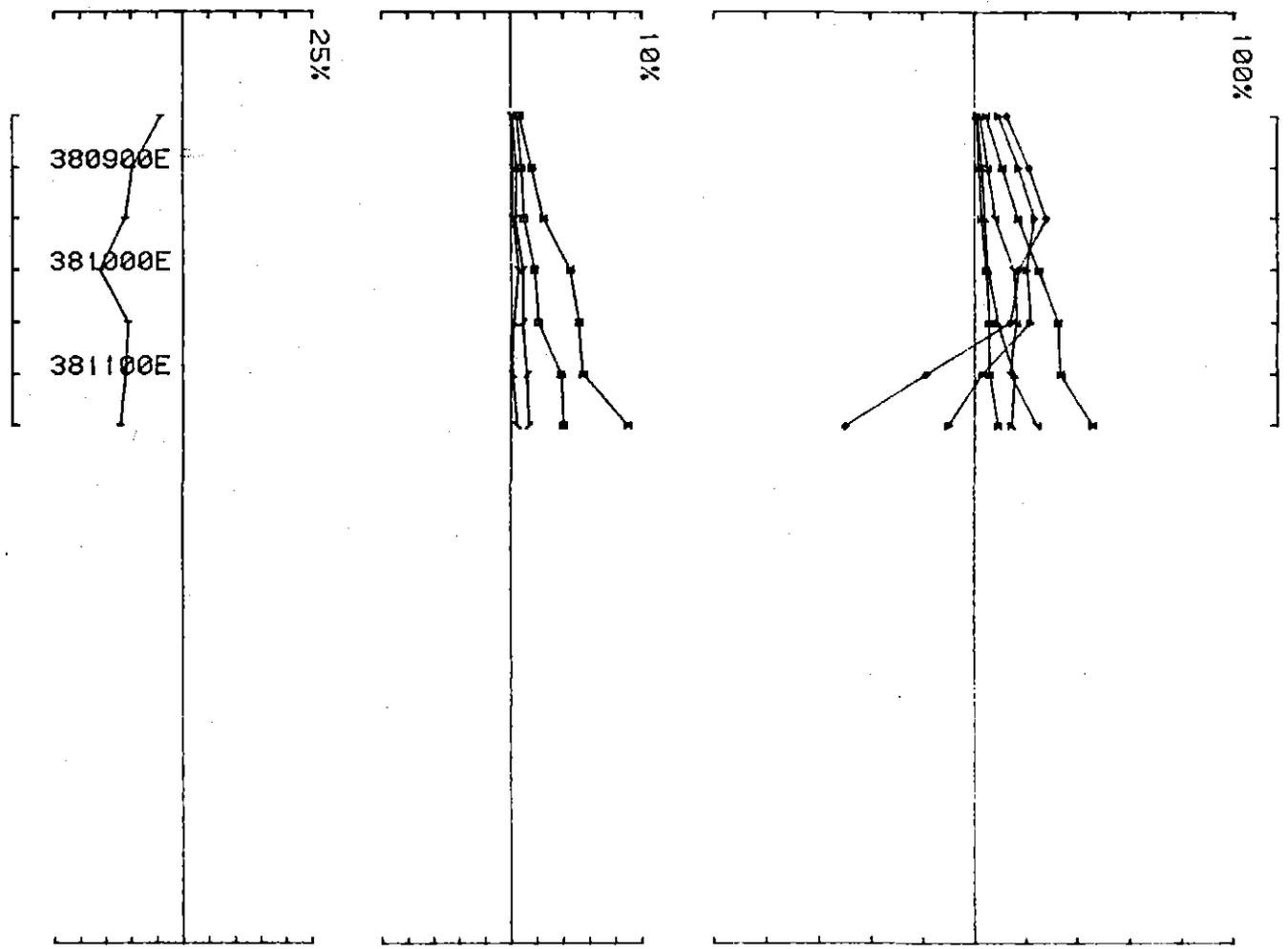
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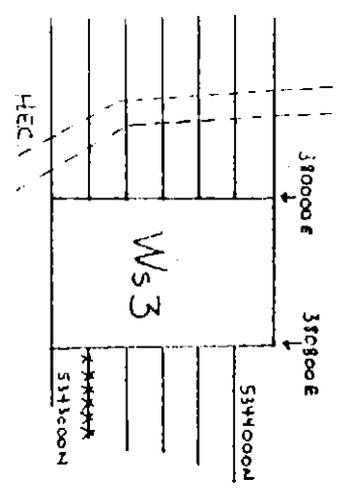


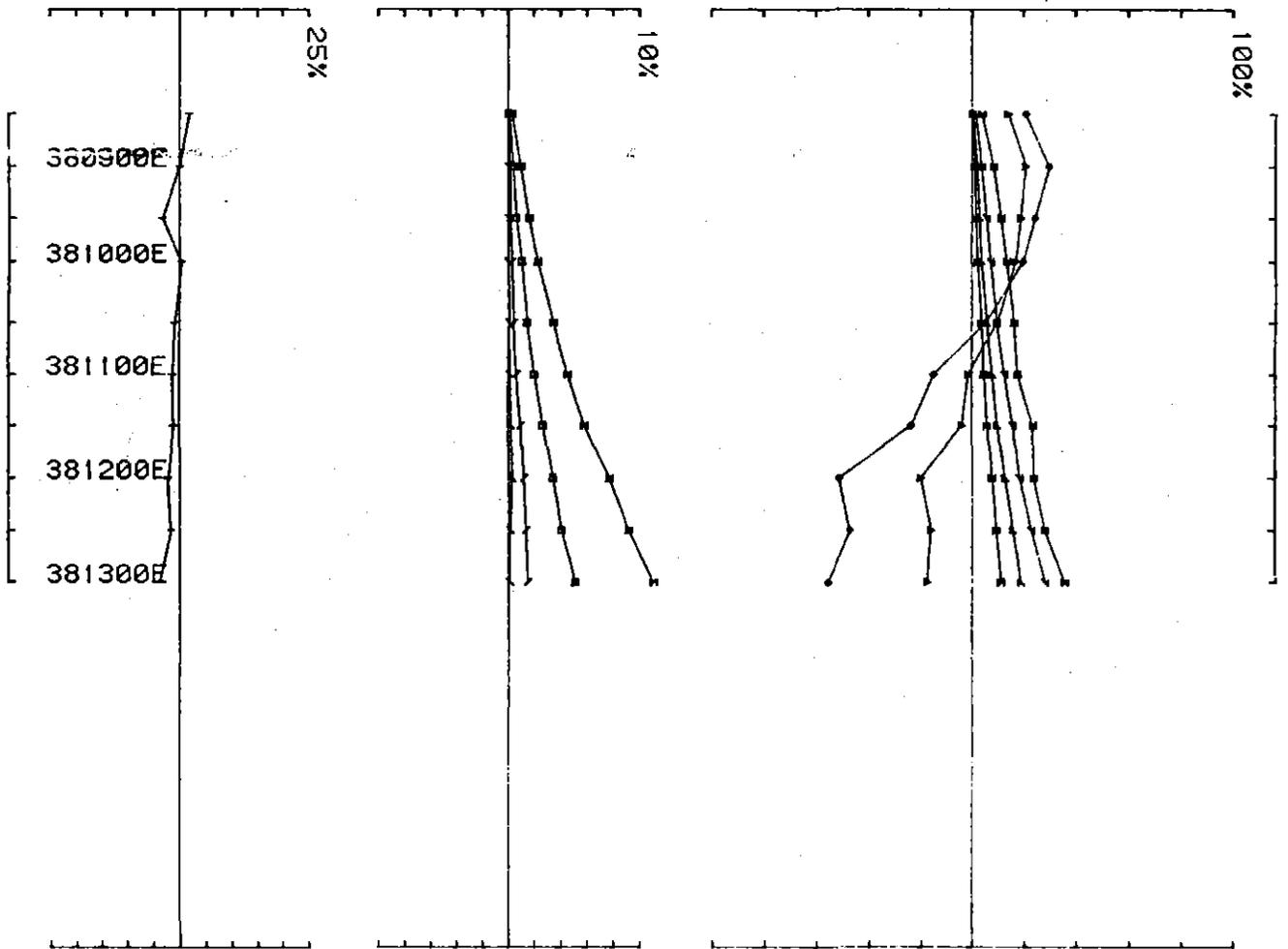
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 secondary field Channel 1 continuously normalized



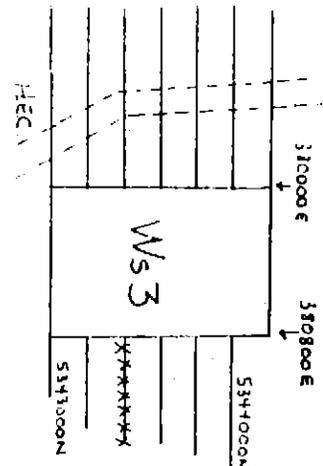


UTEM SURVEY at WEST SEDGWICK for B H P
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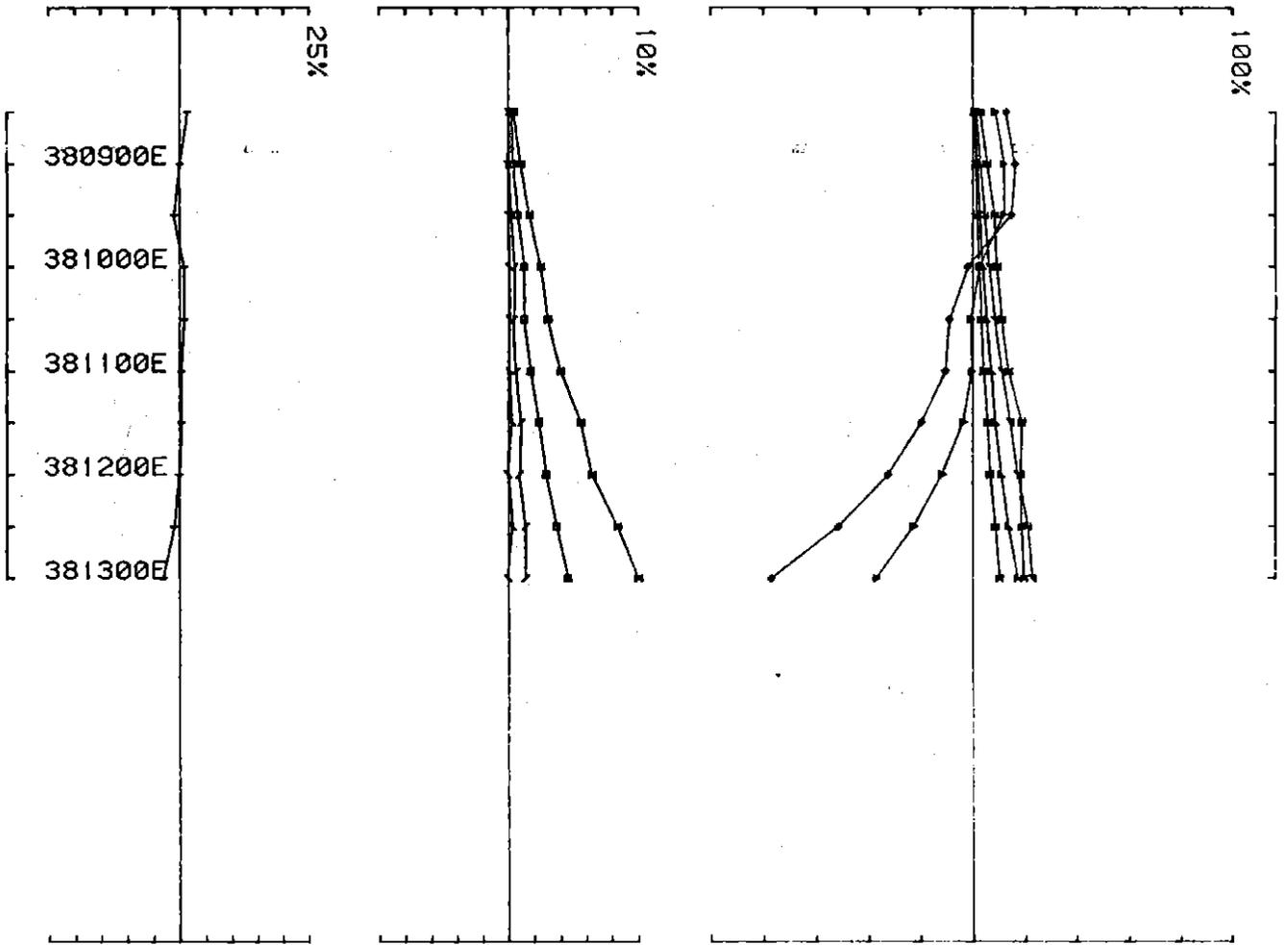




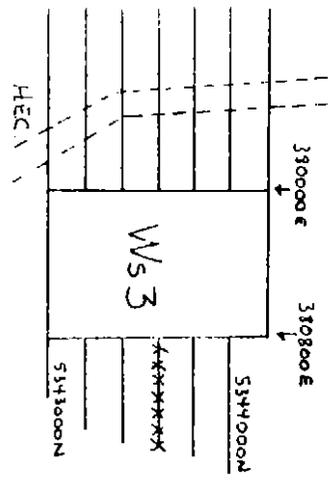
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 secondary field Channel 1 continuously normalized

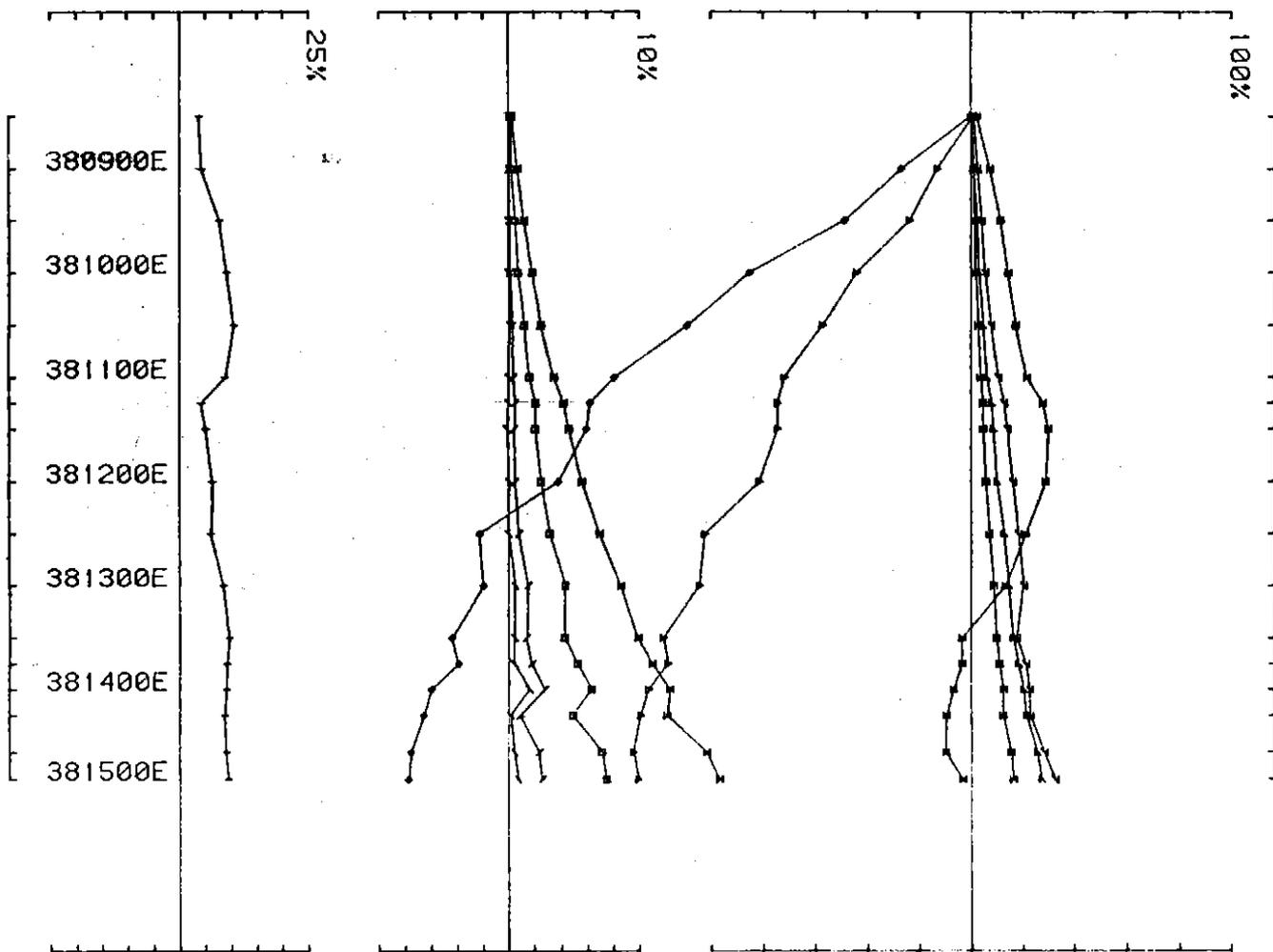


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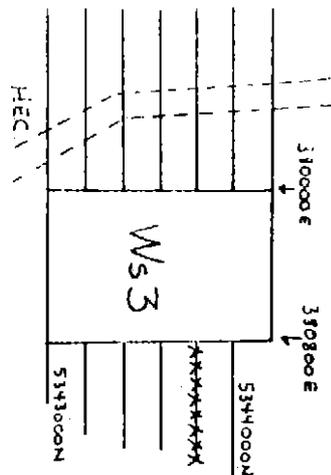


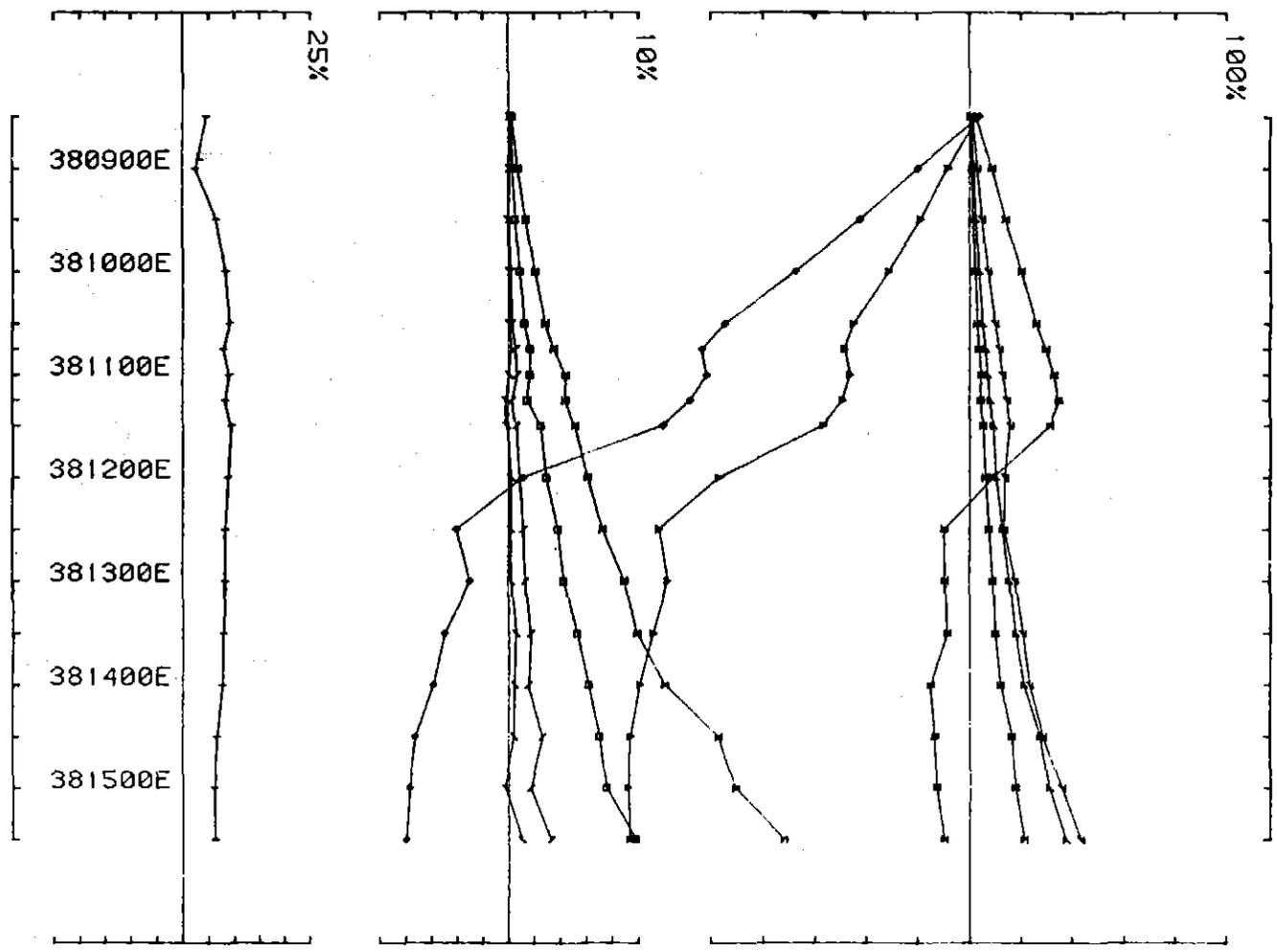
UTEM SURVEY at WEST SEDGWICK for B H P
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 secondary field Channel 1 continuously normalized



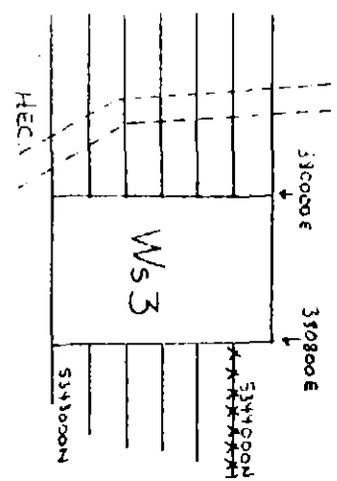


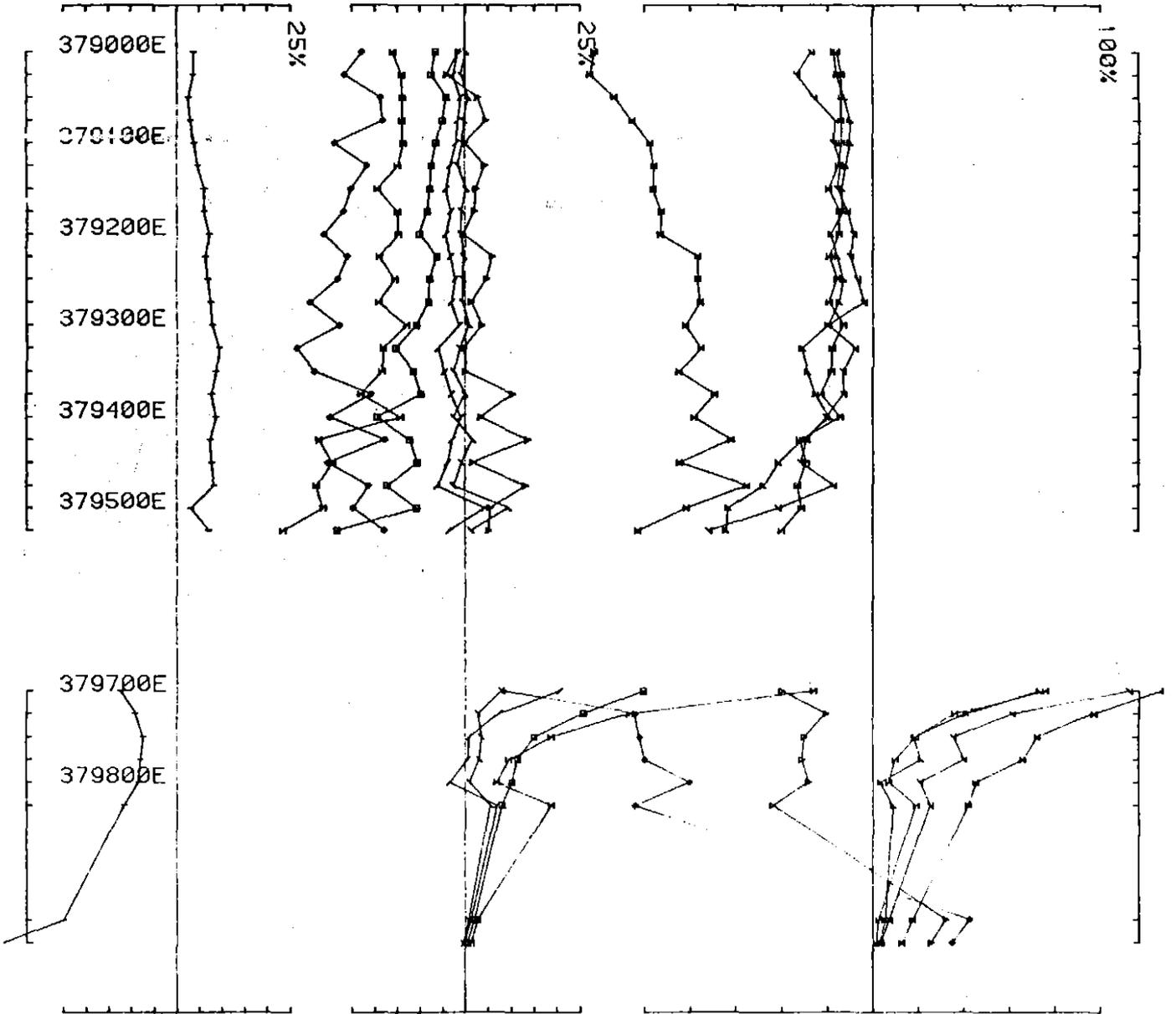
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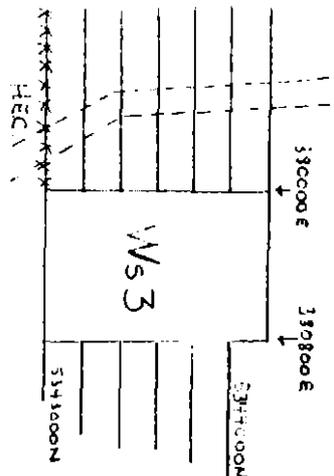


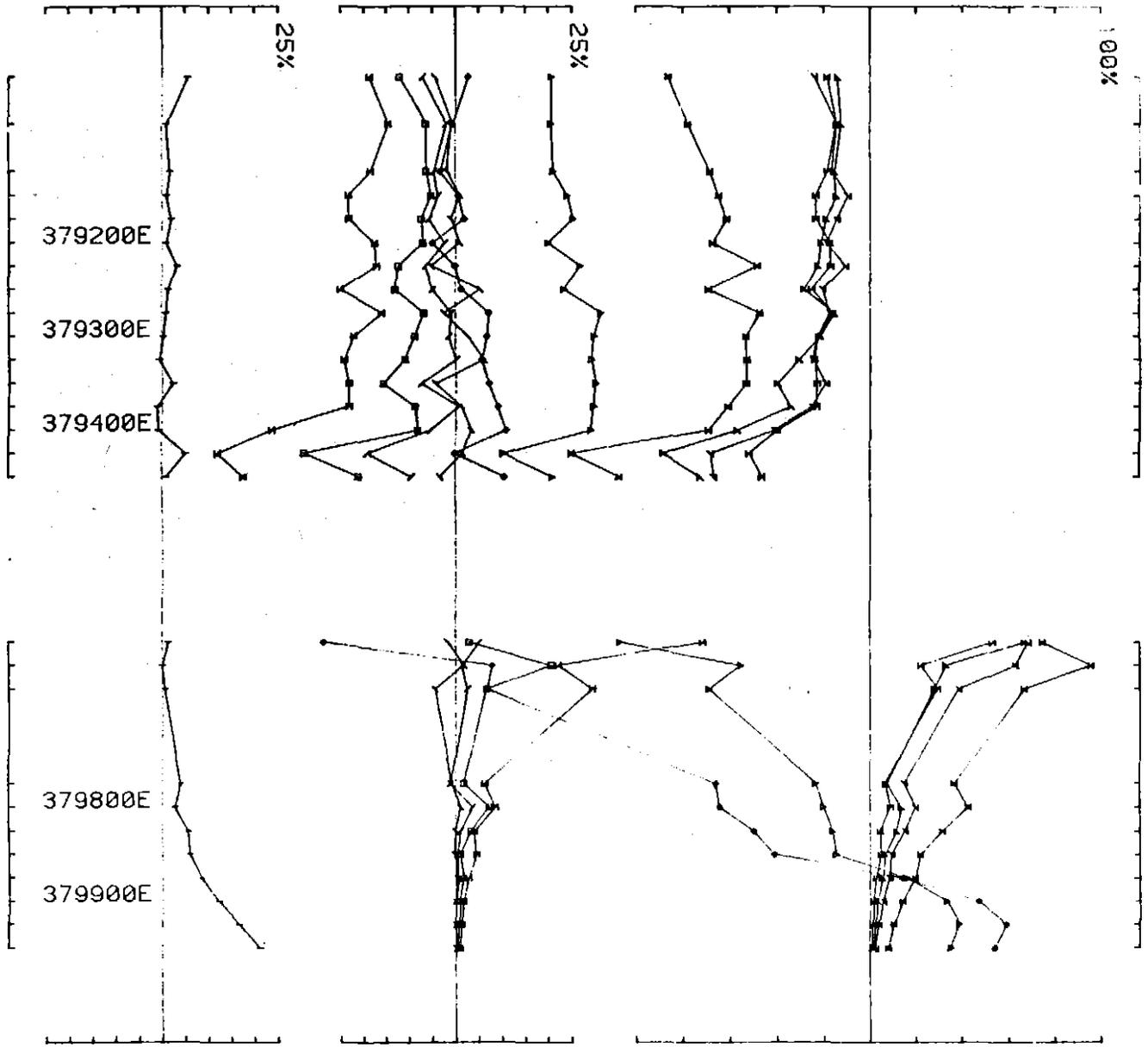
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 secondary field Channel 1 continuously normalized



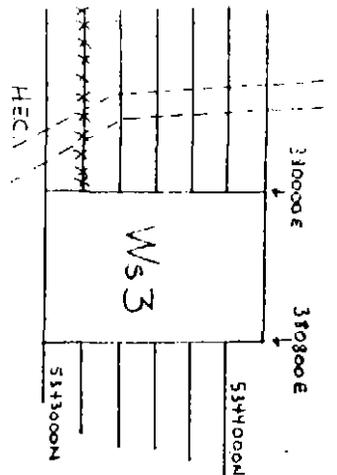


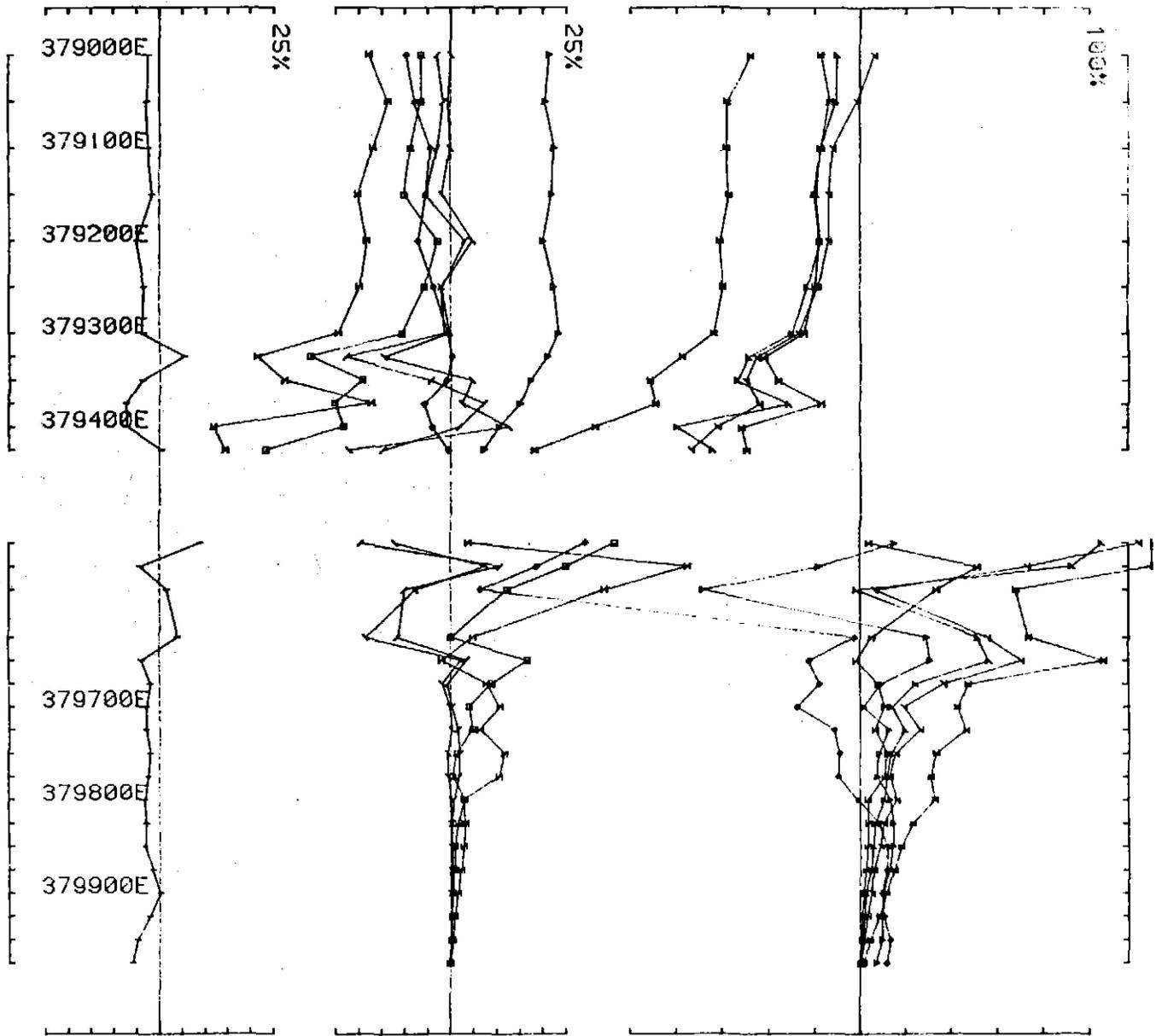
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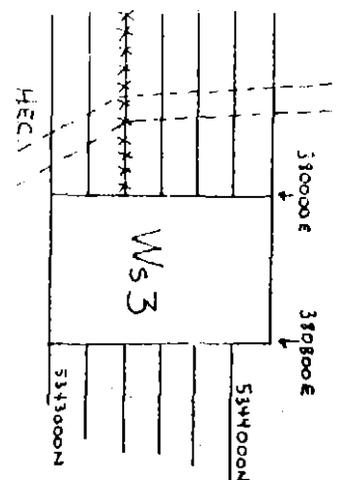


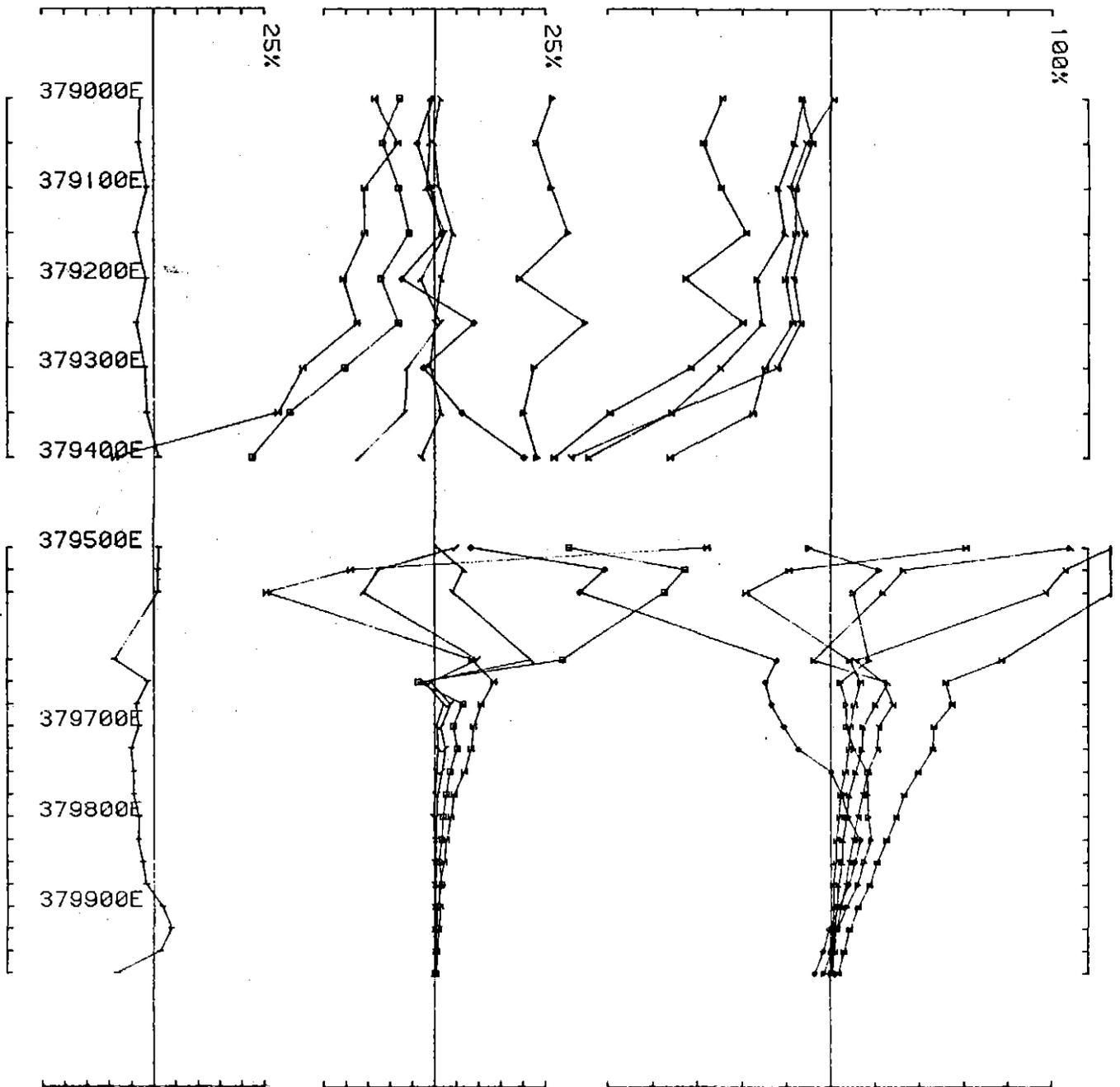
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 secondary field Channel 1 continuously normalized



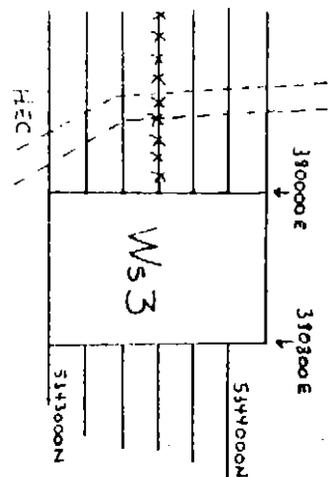


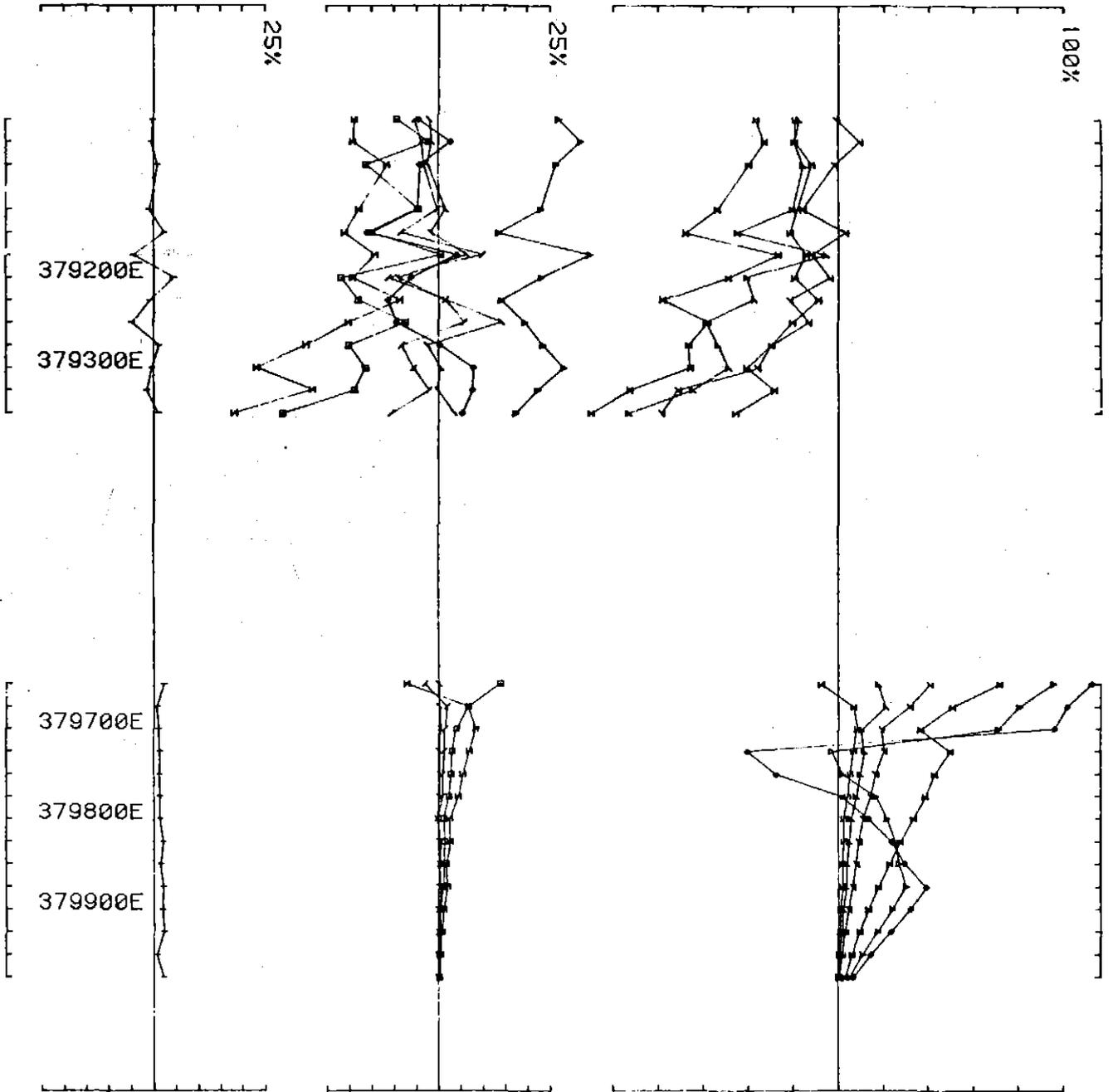
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 secondary field Channel 1 continuously normalized



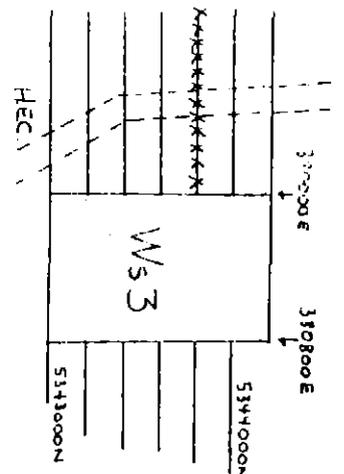


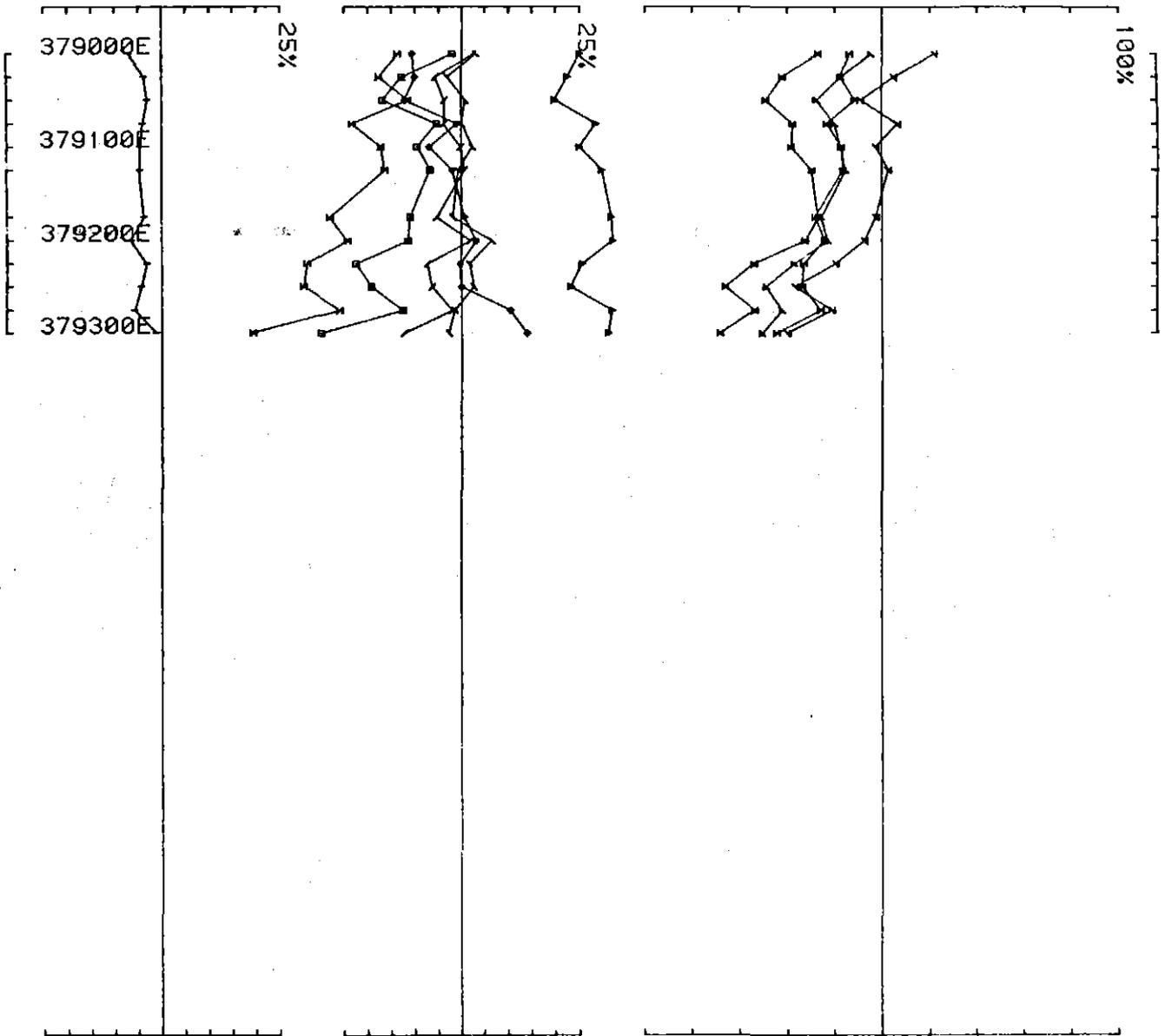
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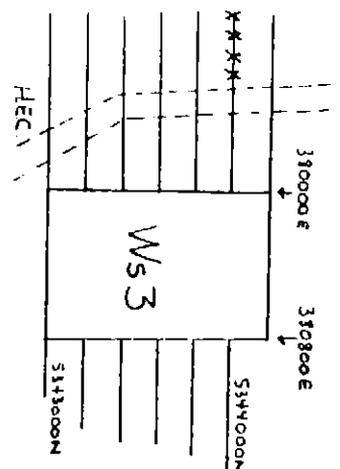


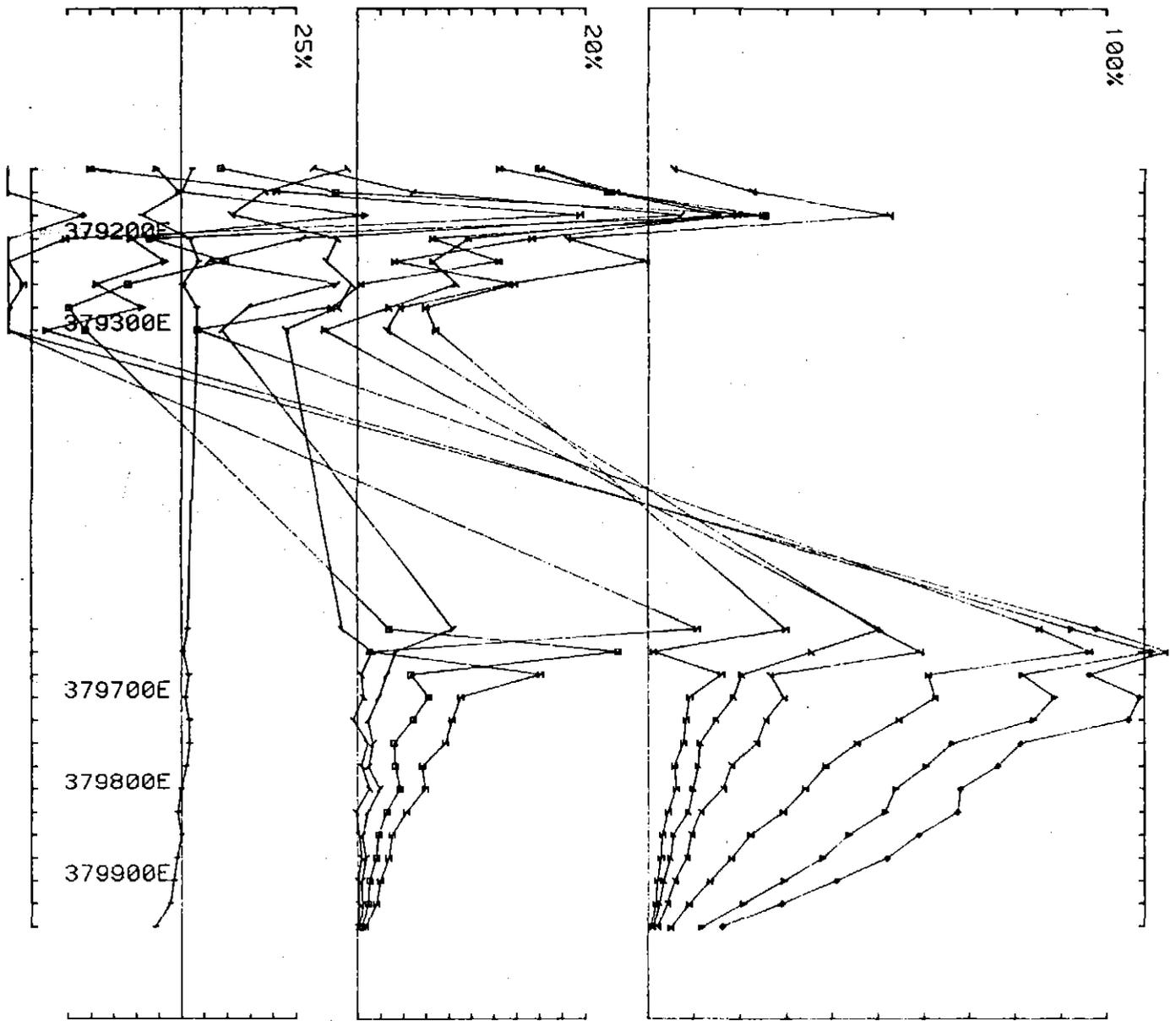
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 secondary field Channel 1 continuously normalized





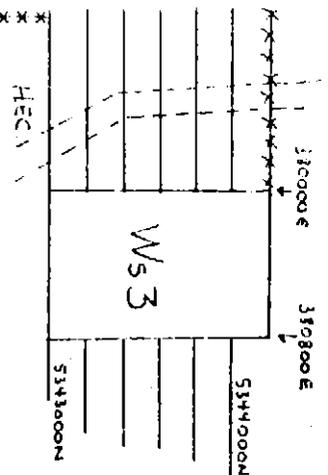
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L & E job 8859 base freq (hz) 26.230
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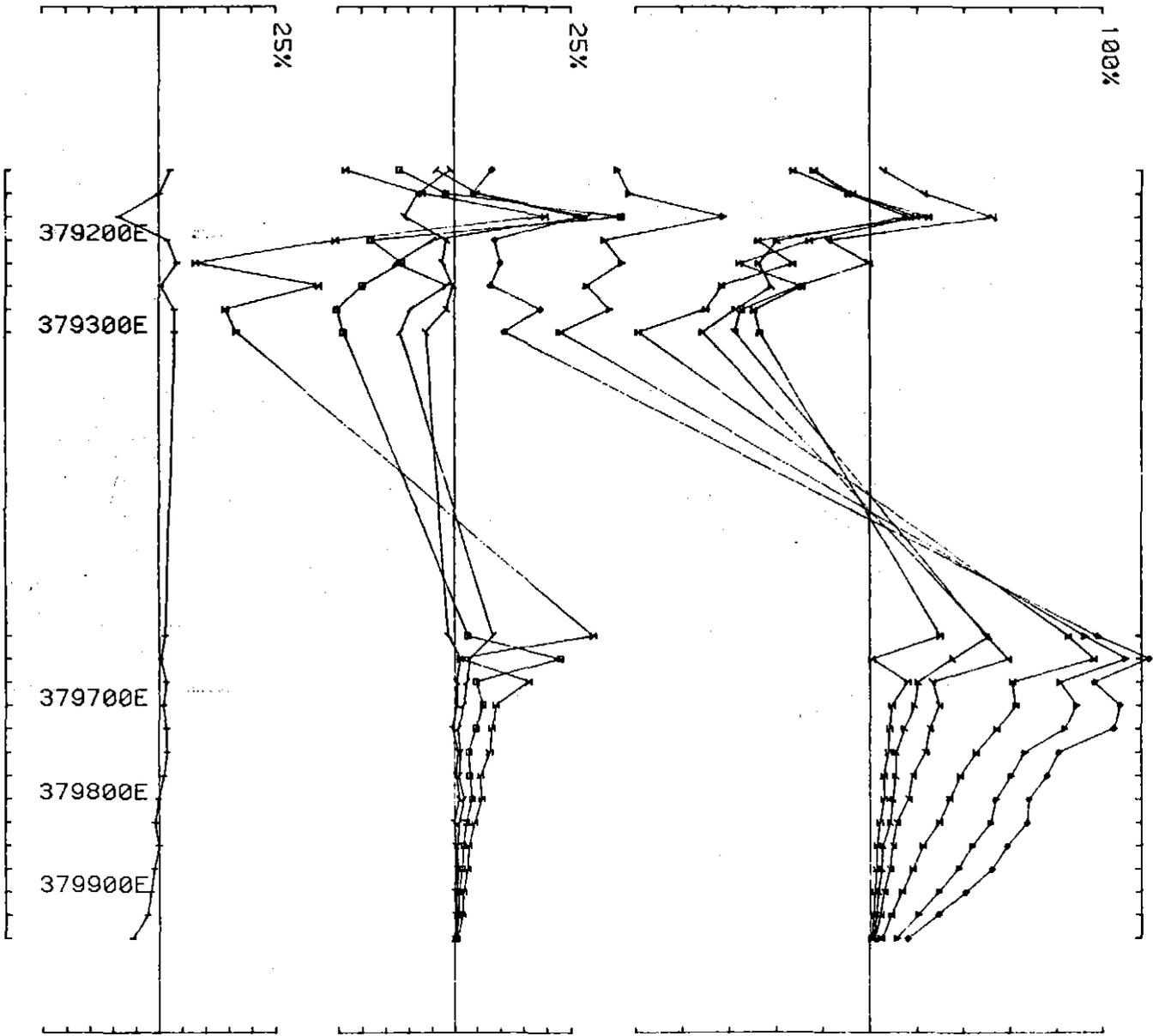




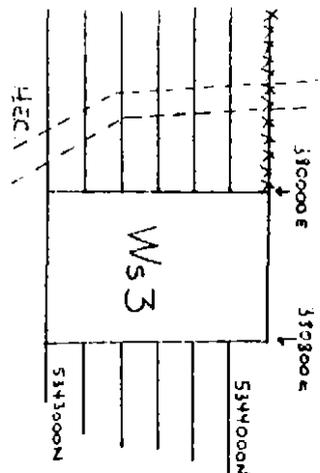
UTEM SURVEY at WEST SEDGWICK for B H P

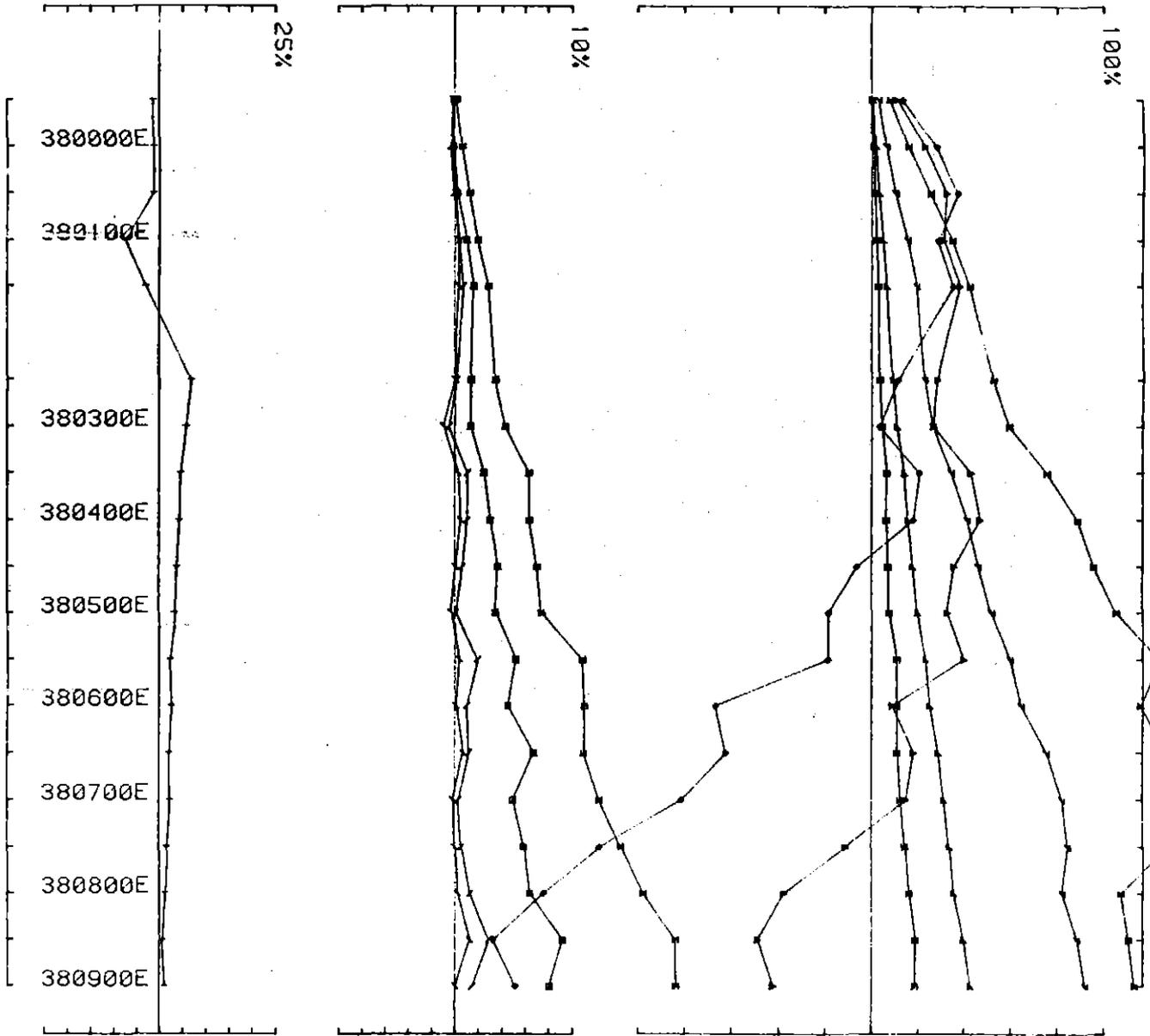
conducted by L. G. L. Job 8859 base freq (hz) 26.230 *** SCALES ***
 loop no 3 line 5344200N component Hz
 secondary field Channel 1 continuously normalized



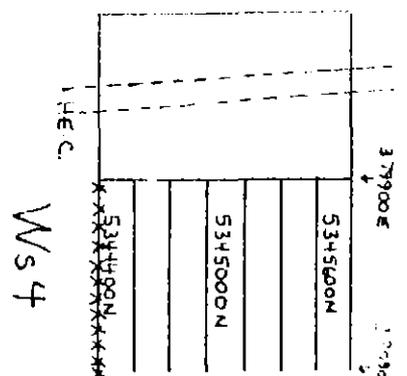


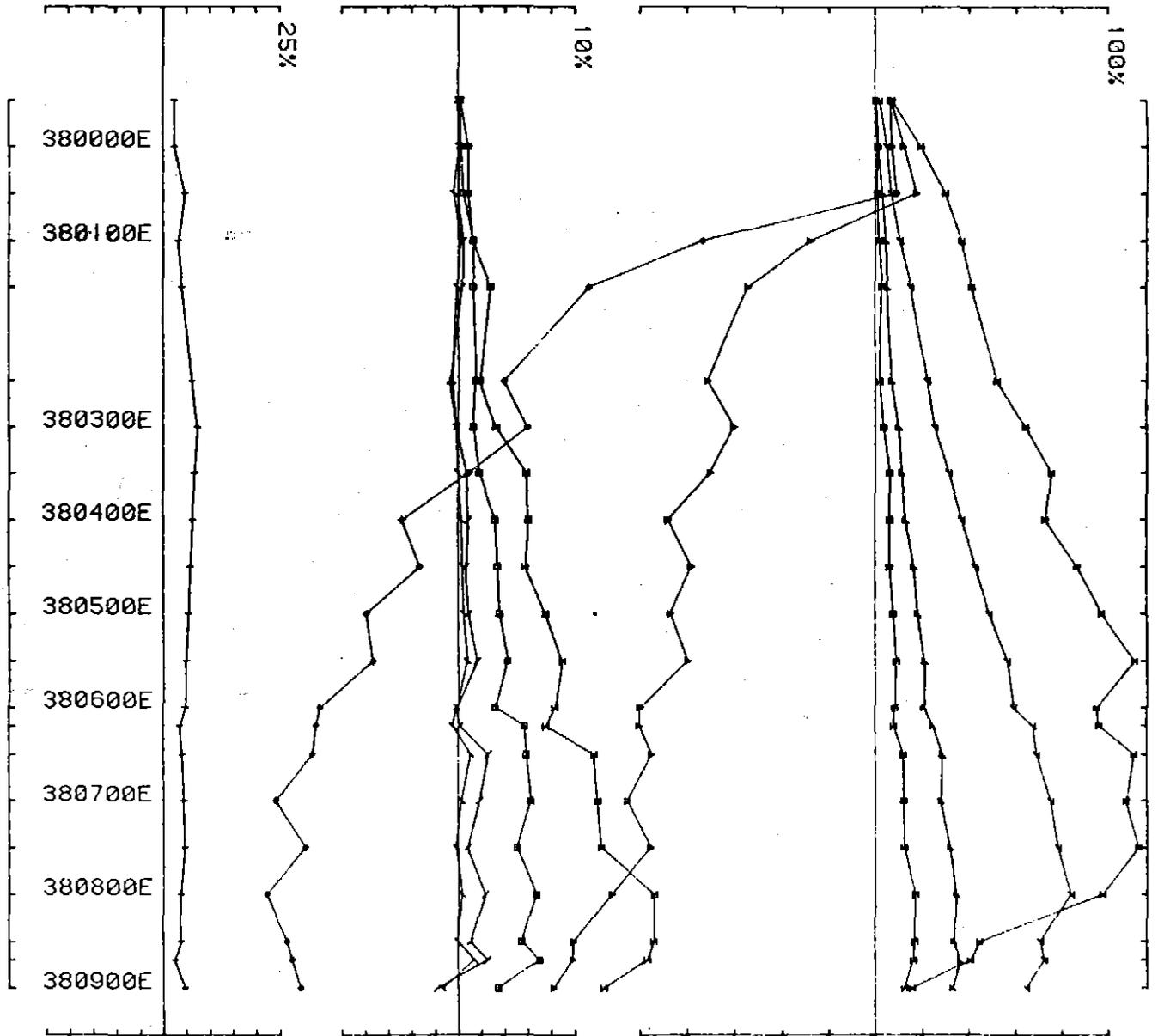
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by E-S-E job 8859 base freq (hz) 26.230
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 secondary field Channel 1 continuously normalized



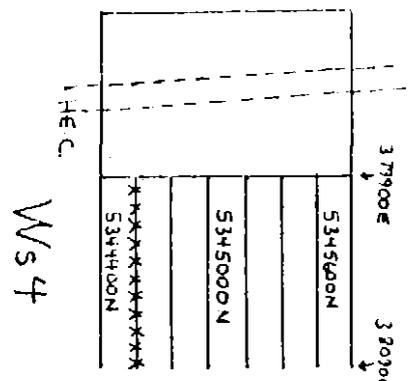


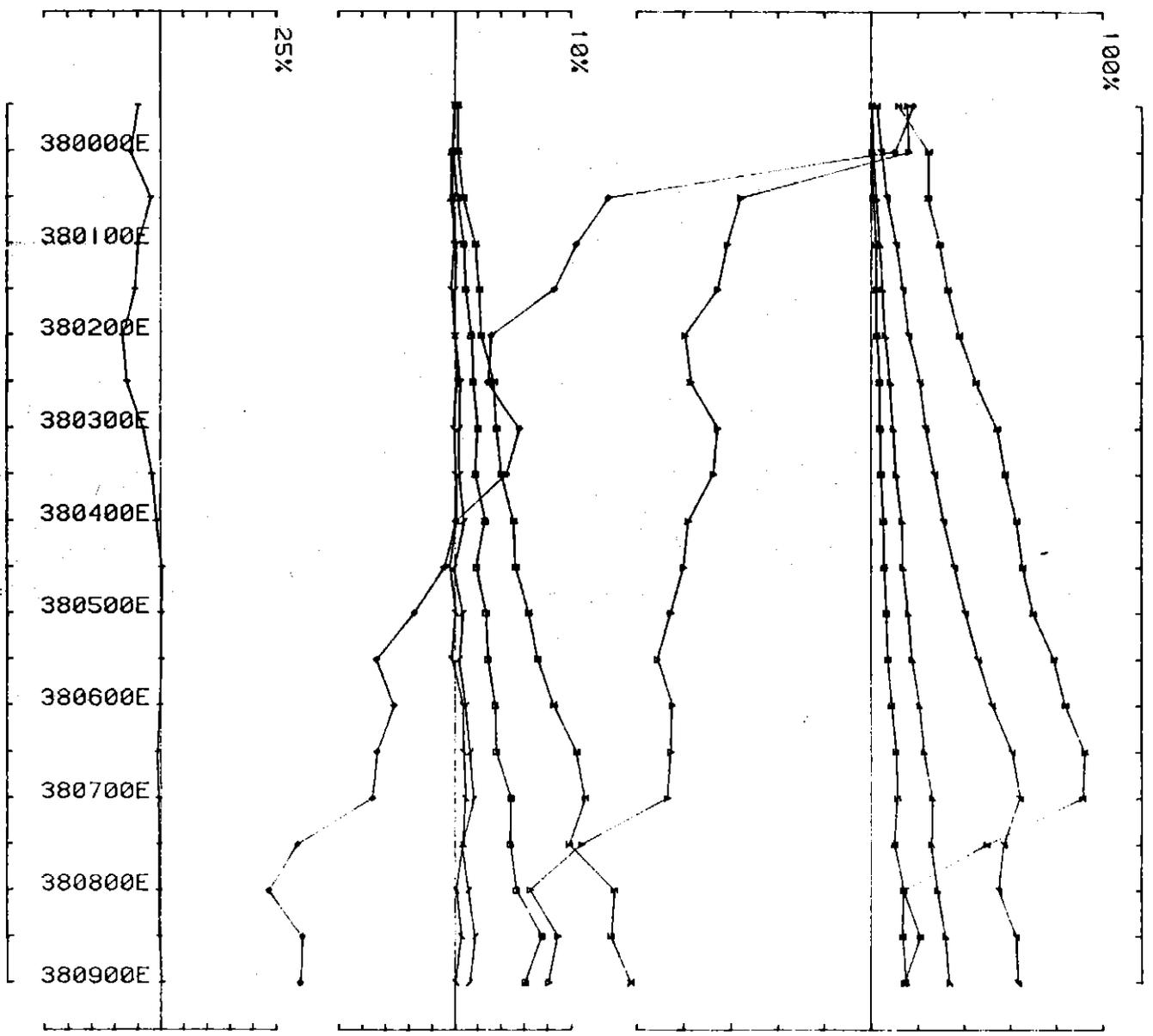
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26 230
 loop no 4 line 5344400N component Hz
 secondary field Channel 1 continuously normalized



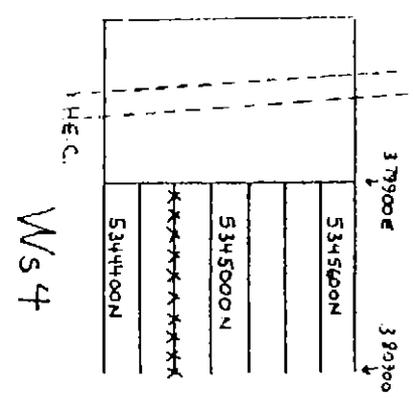


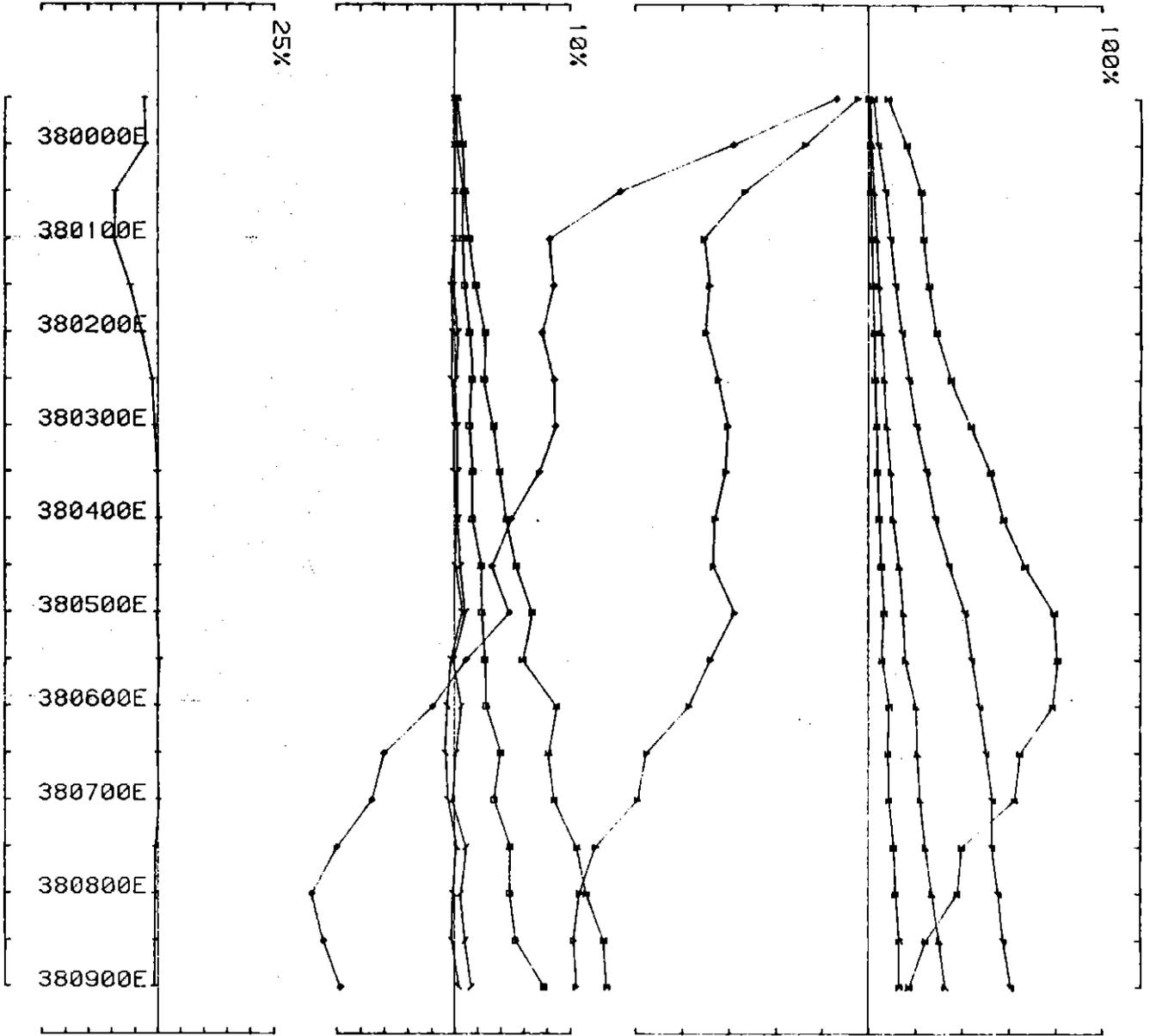
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26 230
 loop no 4 line 5344600N component Hz
 secondary field Channel 1 continuously normalized



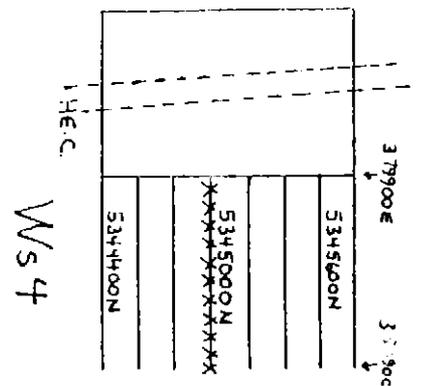


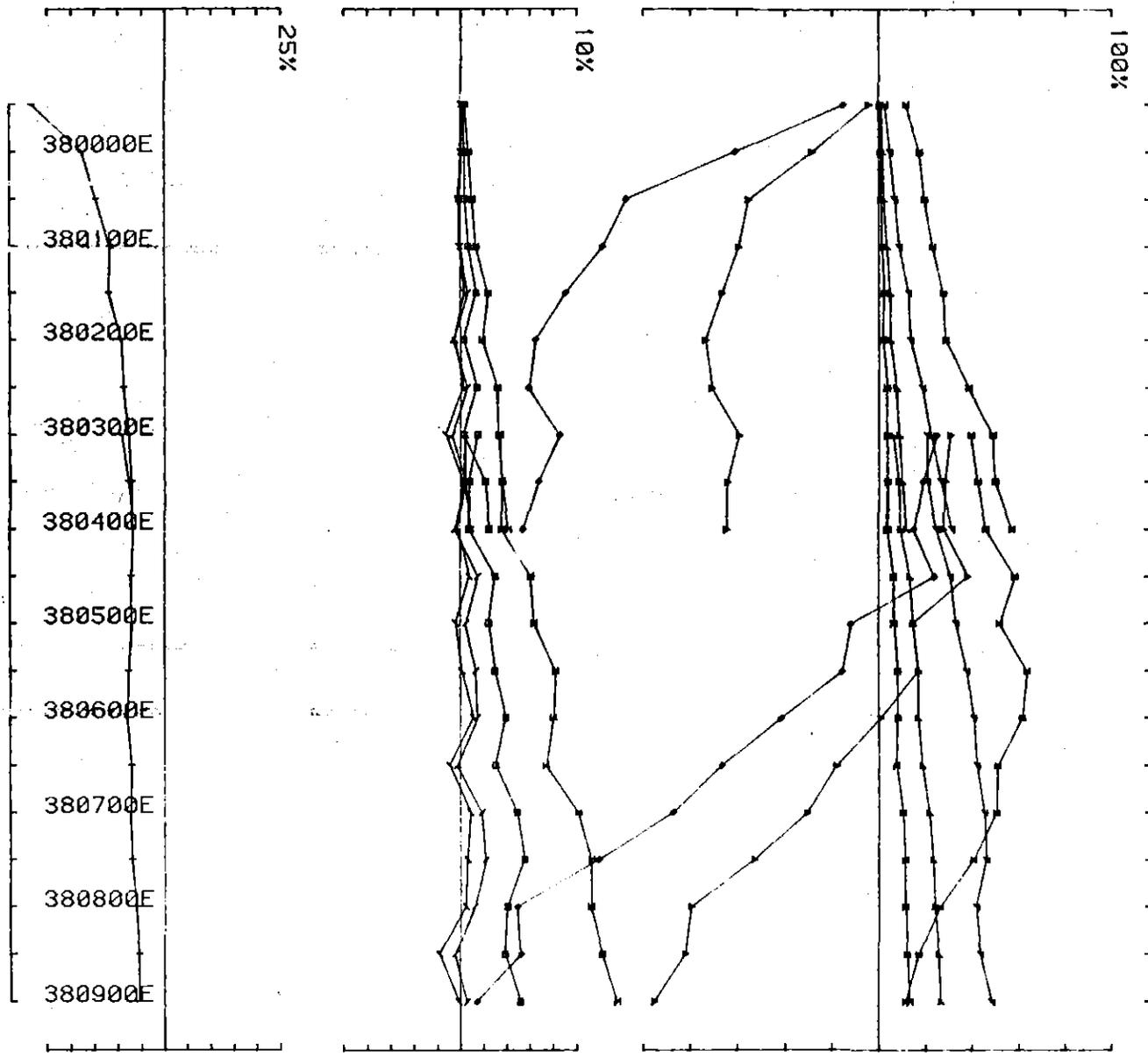
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 4 line 5344800N component Hz
 secondary field Channel 1 continuously normalized



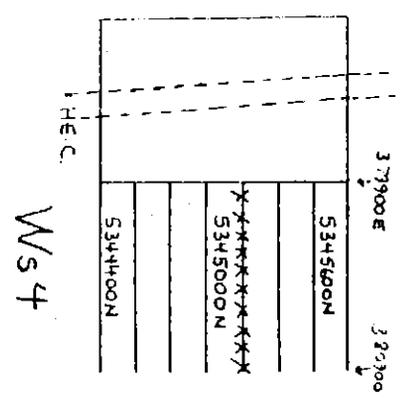


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
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 secondary field Channel 1 continuously normalized

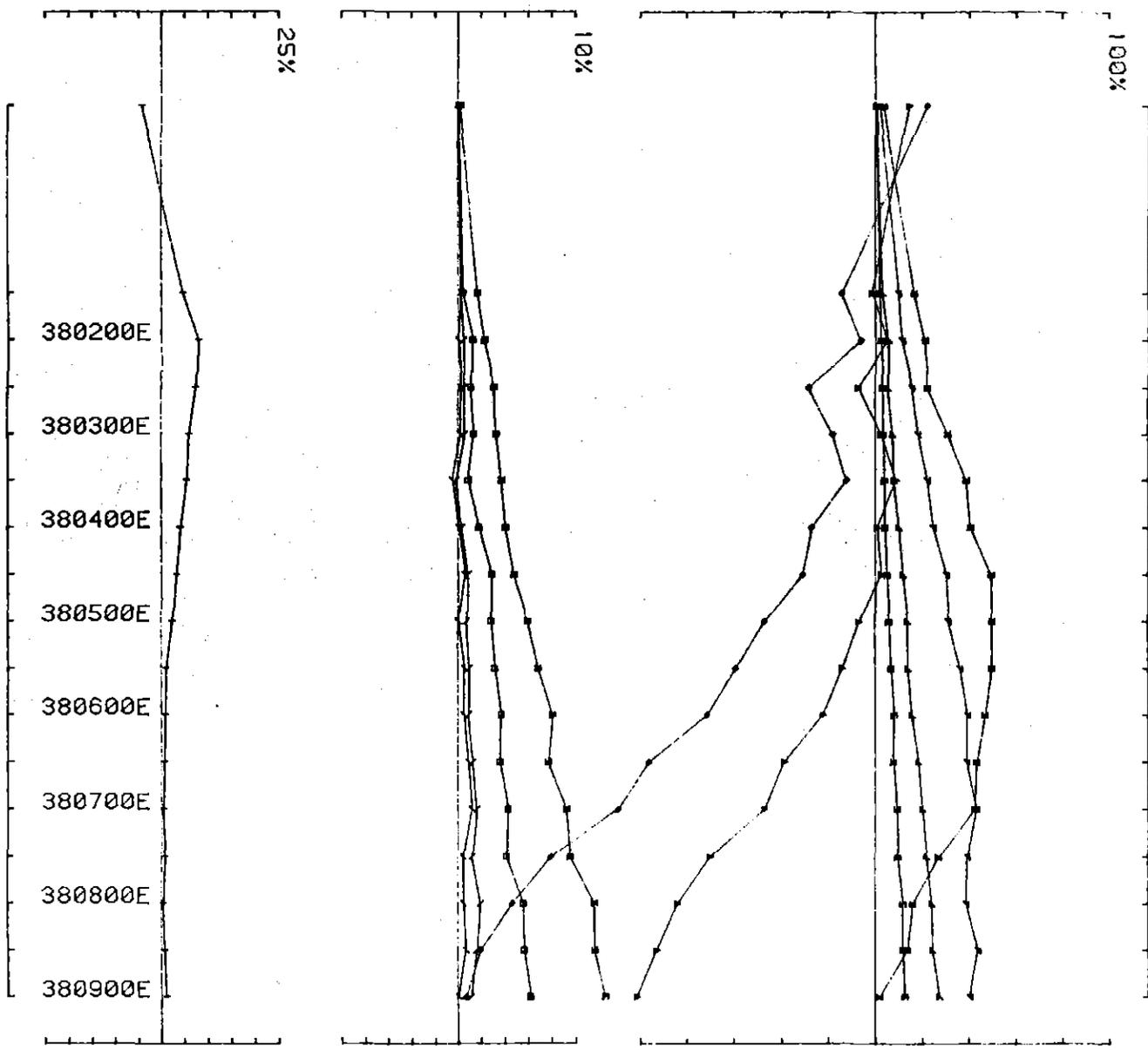




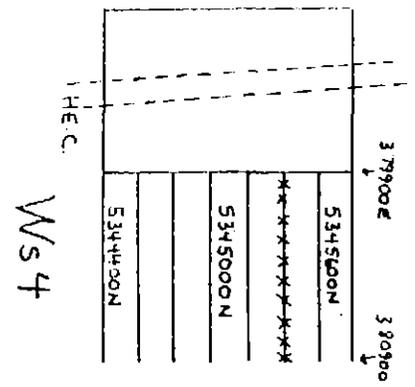
UTEM SURVEY at WEST SEDGWICK for B H P
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 secondary field Channel 1 continuously normalized

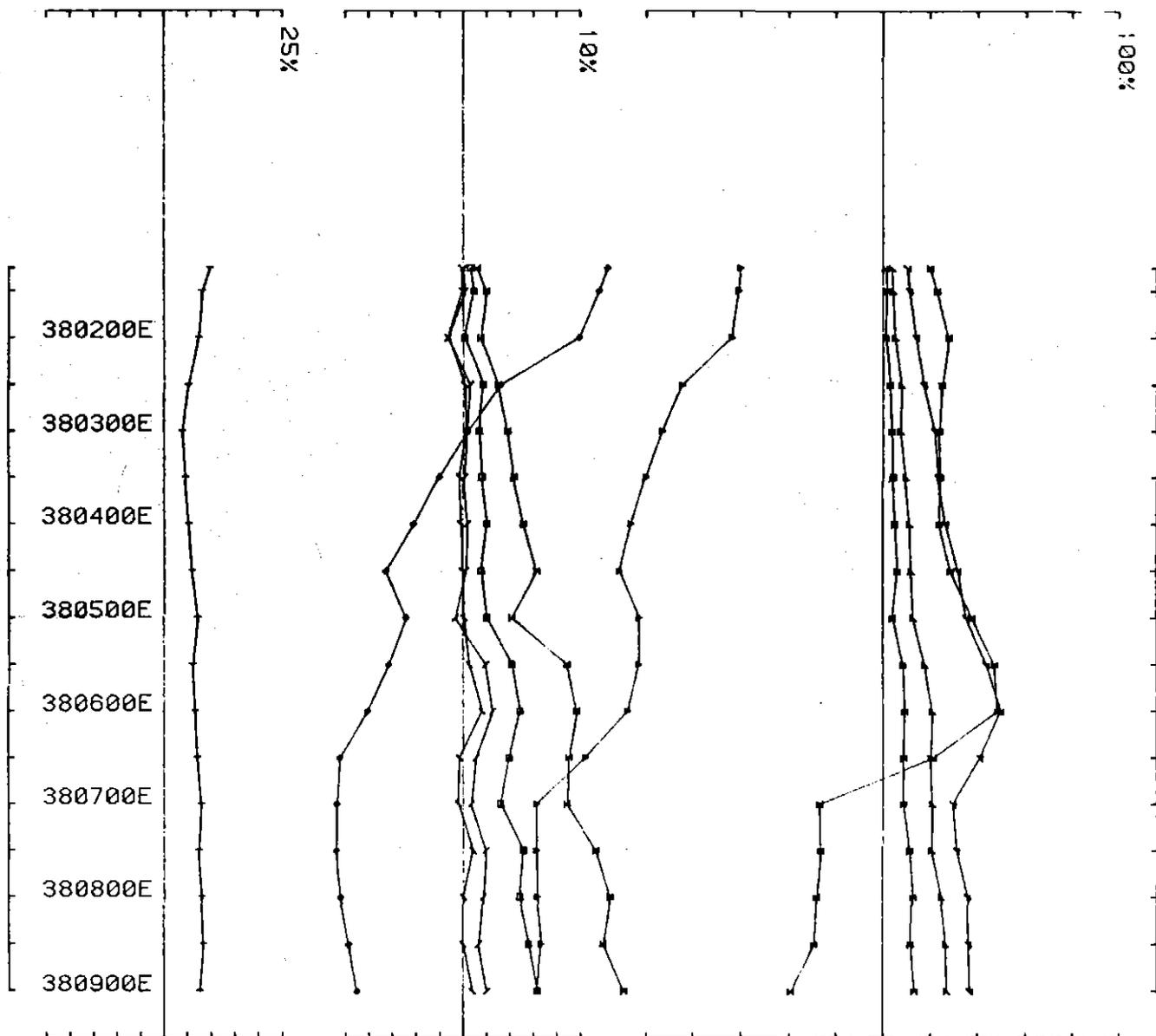


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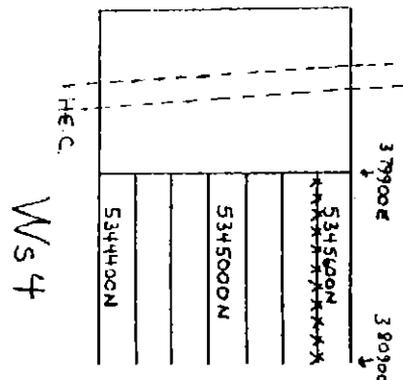


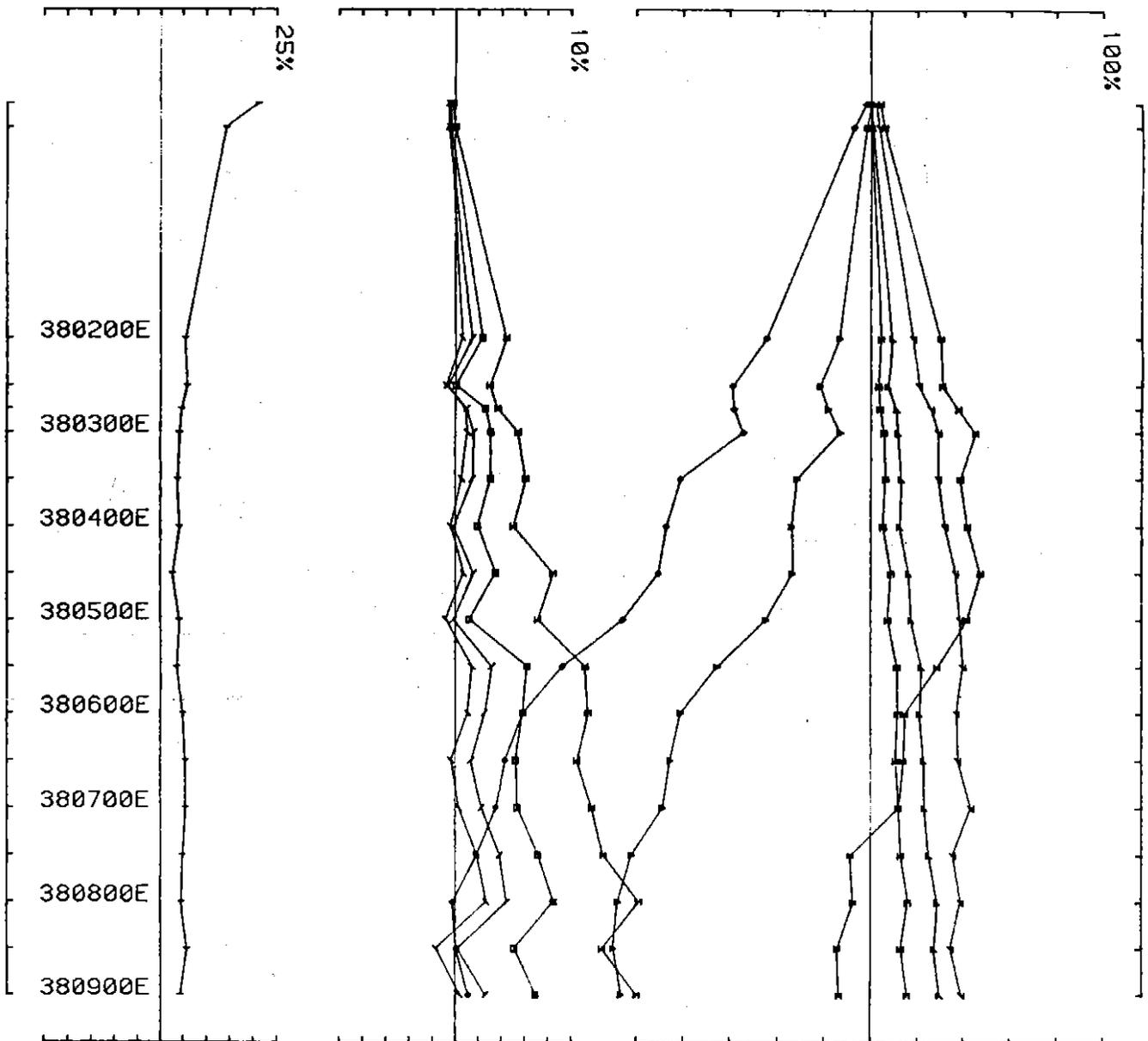
UTEM SURVEY at WEST SEDGWICK for B H P
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 secondary field Channel 1 continuously normalized



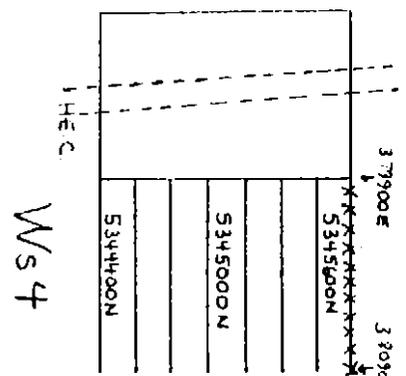


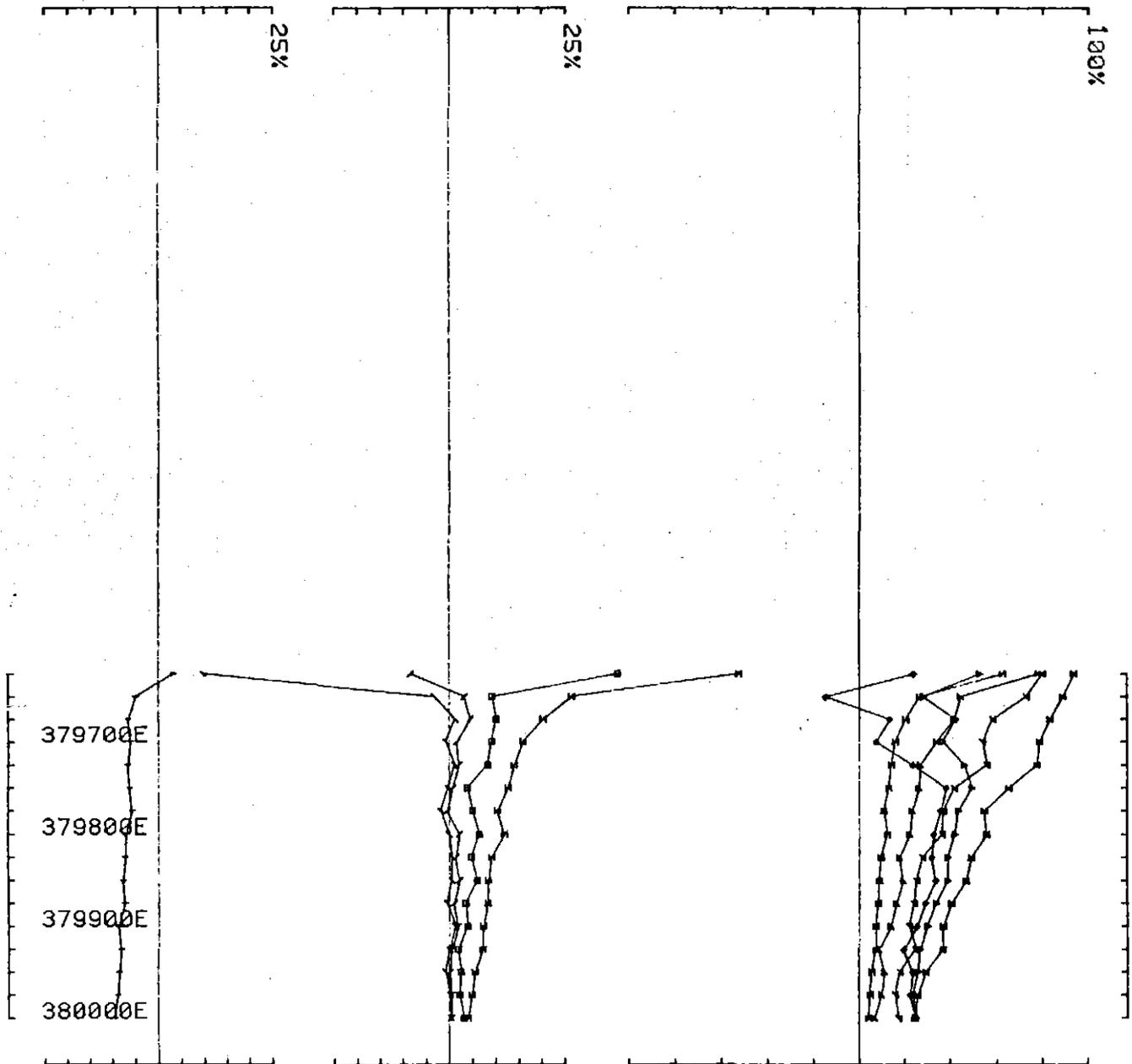
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 4 line 5345600N component Hz
 secondary field Channel 1 continuously normalized



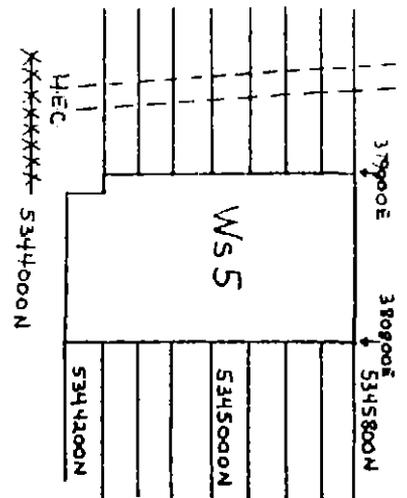


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 4 line 5345800N component Hz
 secondary field Channel 1 continuously normalized

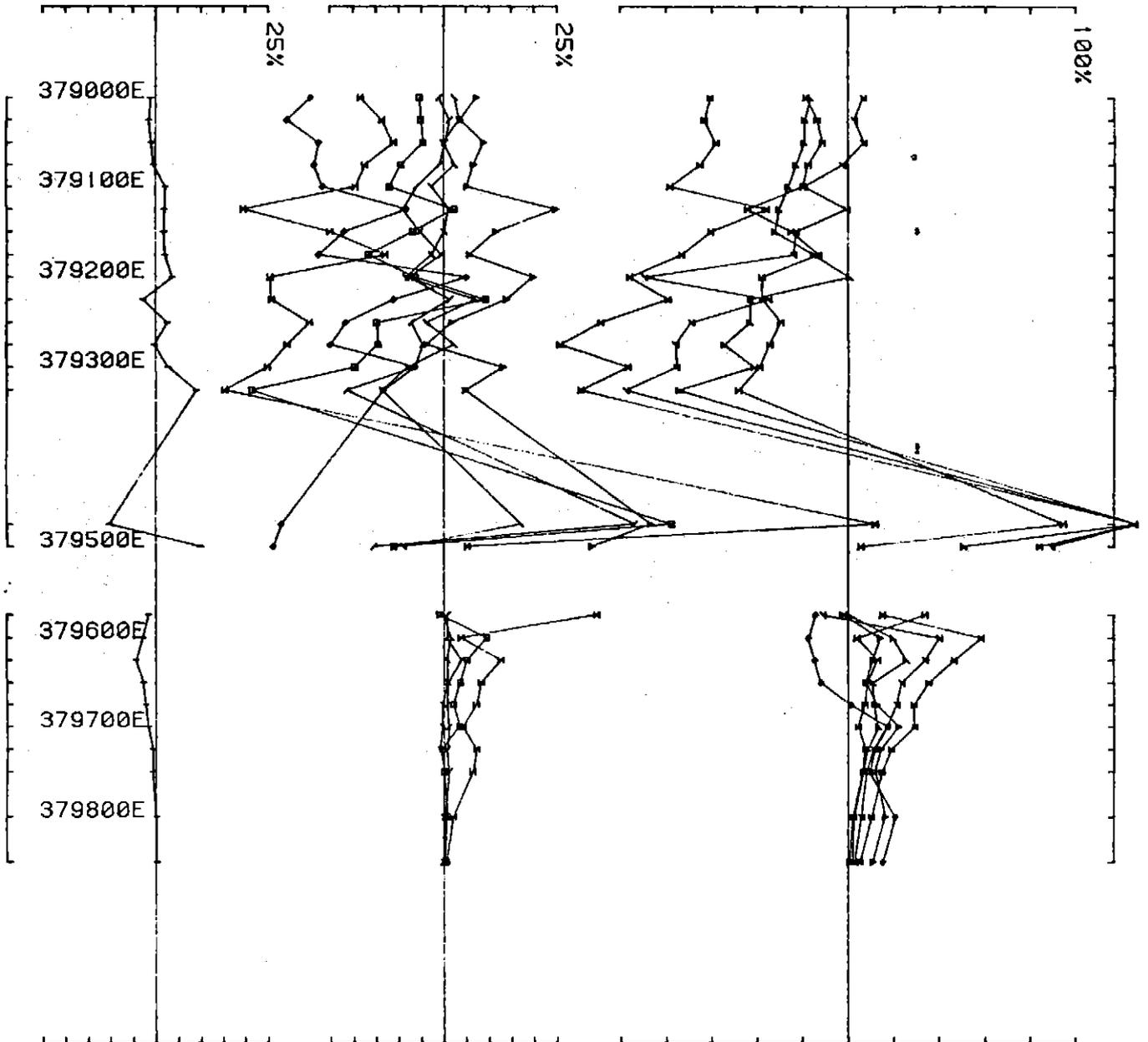




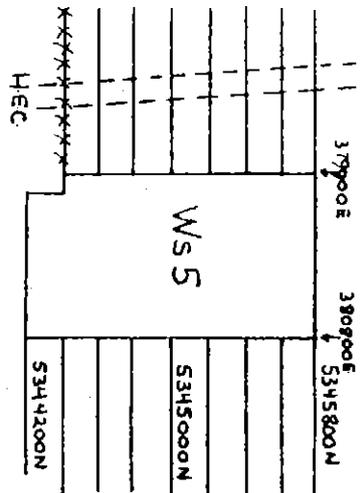
UTEM SURVEY at WEST SEDGWICK for B H P
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 loop no 5 line 5344000N component Hz
 secondary field Channel 1 continuously normalized

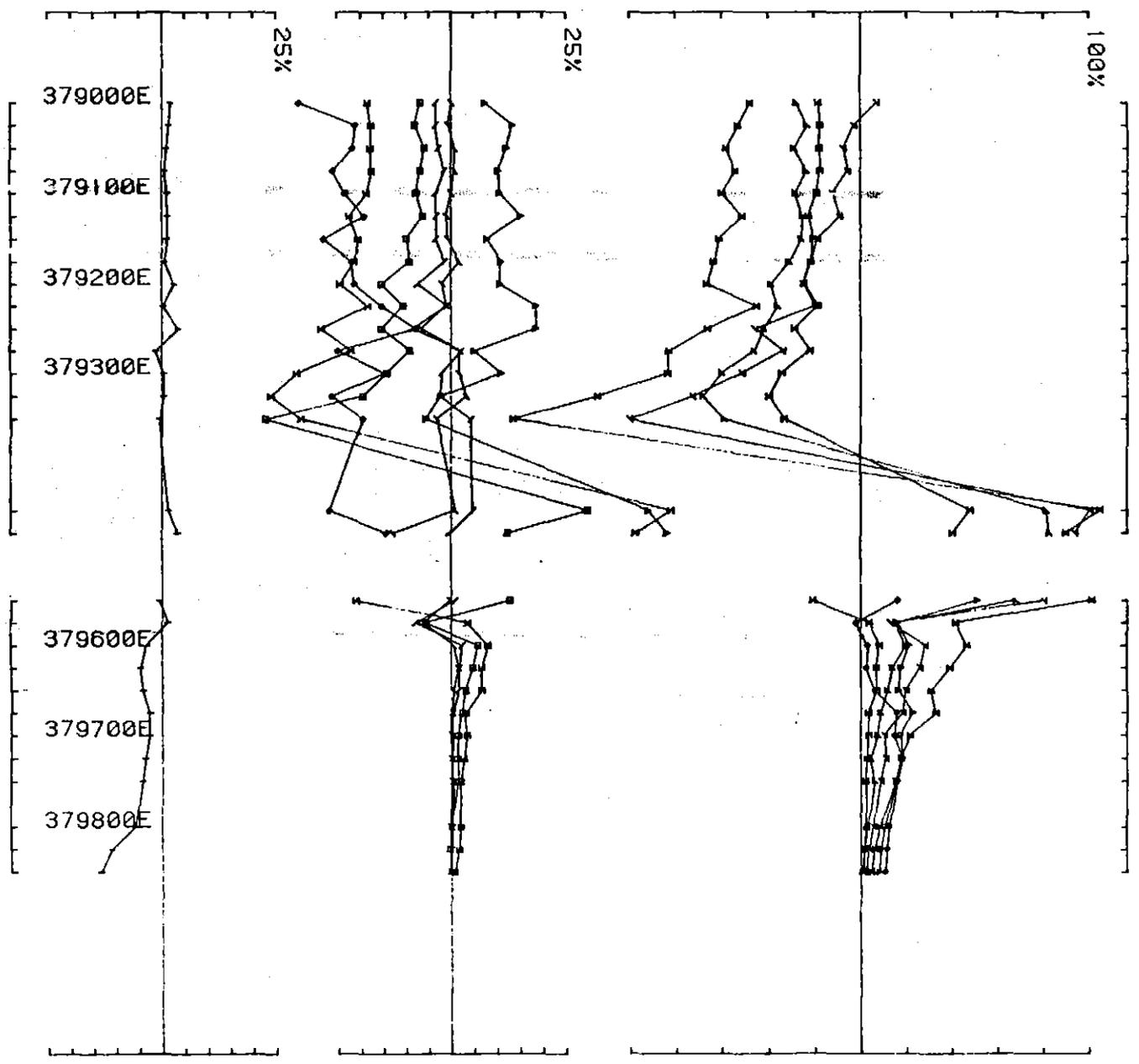


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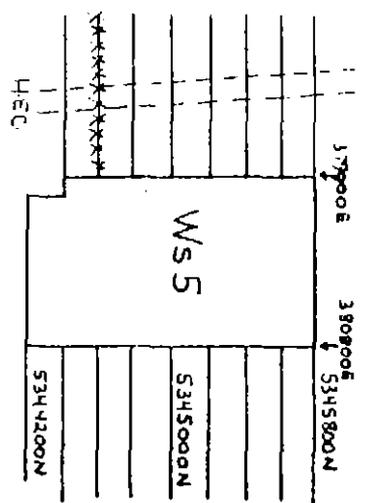


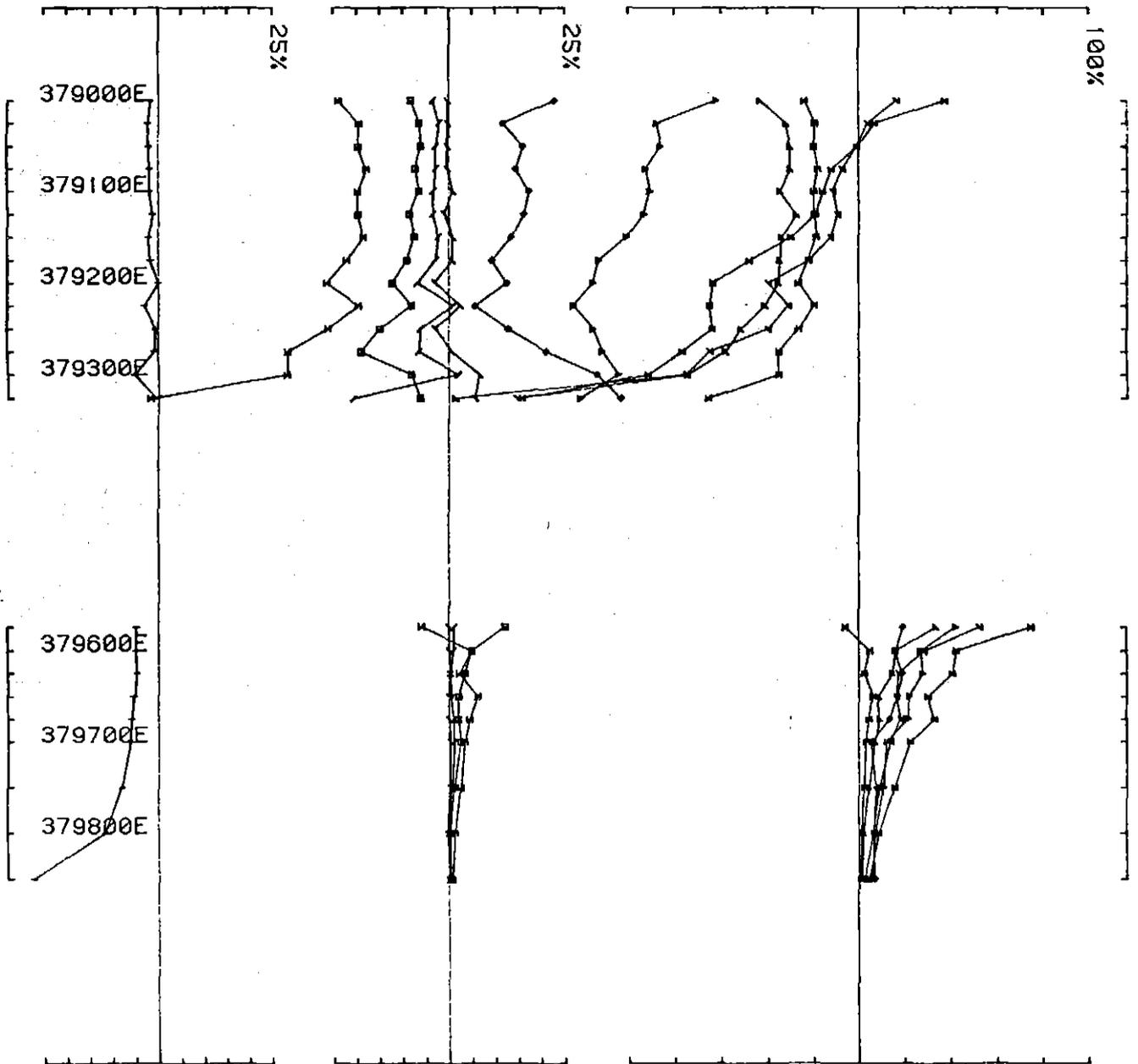
ITEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 5 line 5344400N component Hz
 secondary field Channel 1 continuously normalized



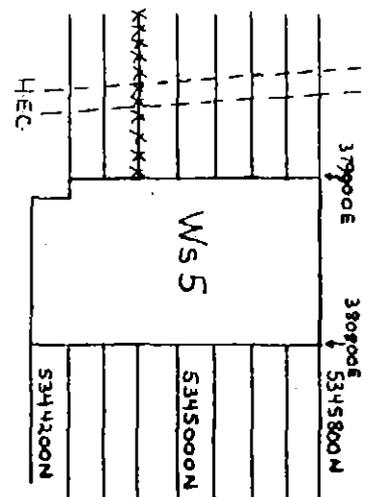


ITEM SURVEY at WEST SEDGWICK for B H P
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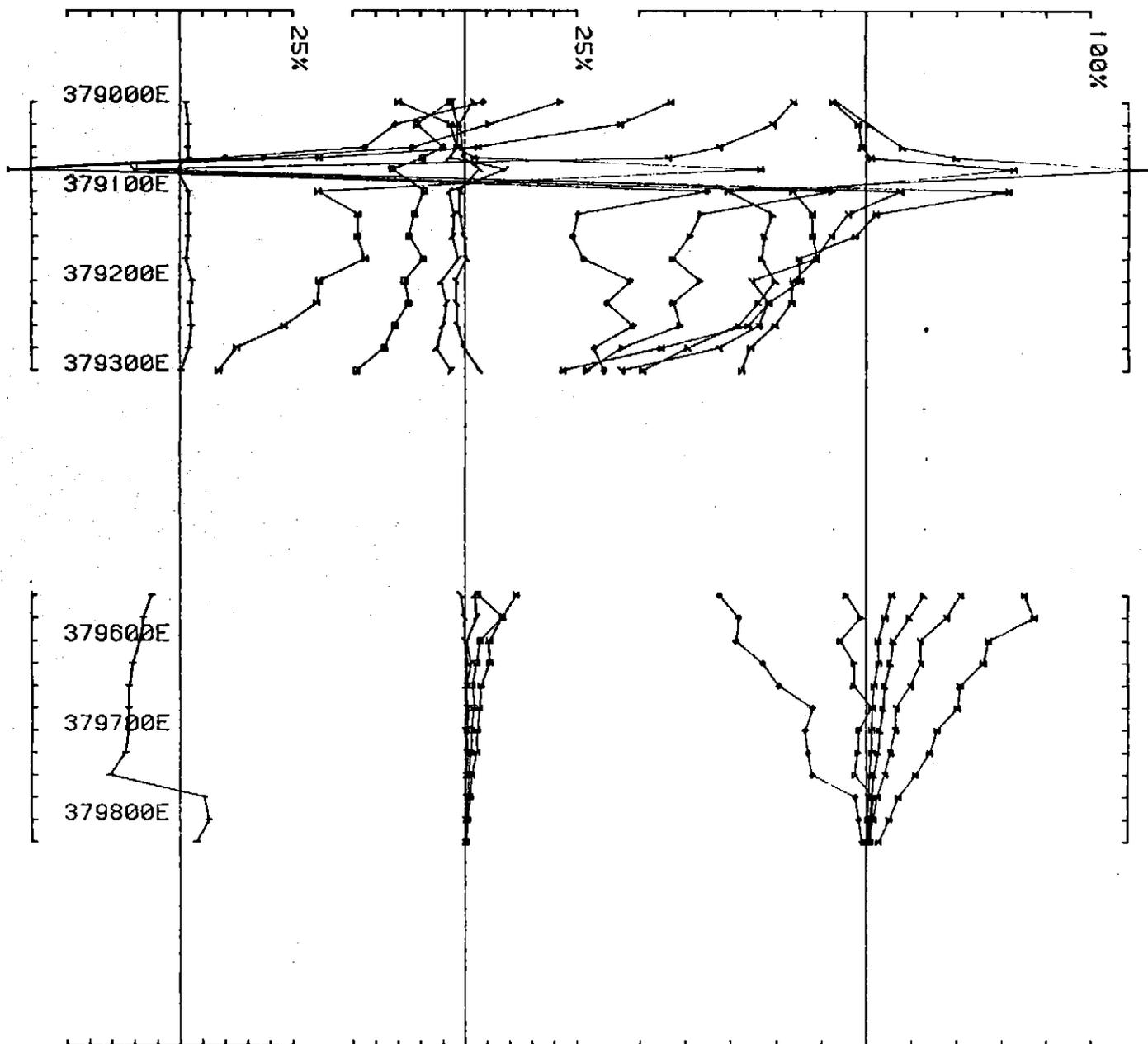




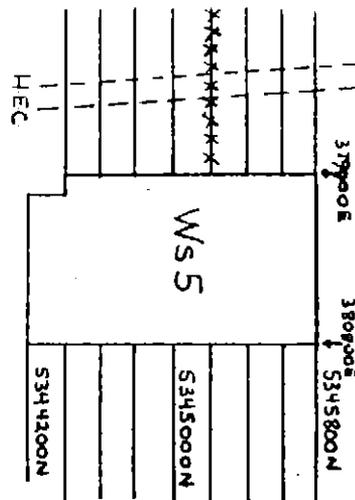
UTEM SURVEY at WEST SEDGWICK for B H P
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 secondary field Channel 1 continuously normalized

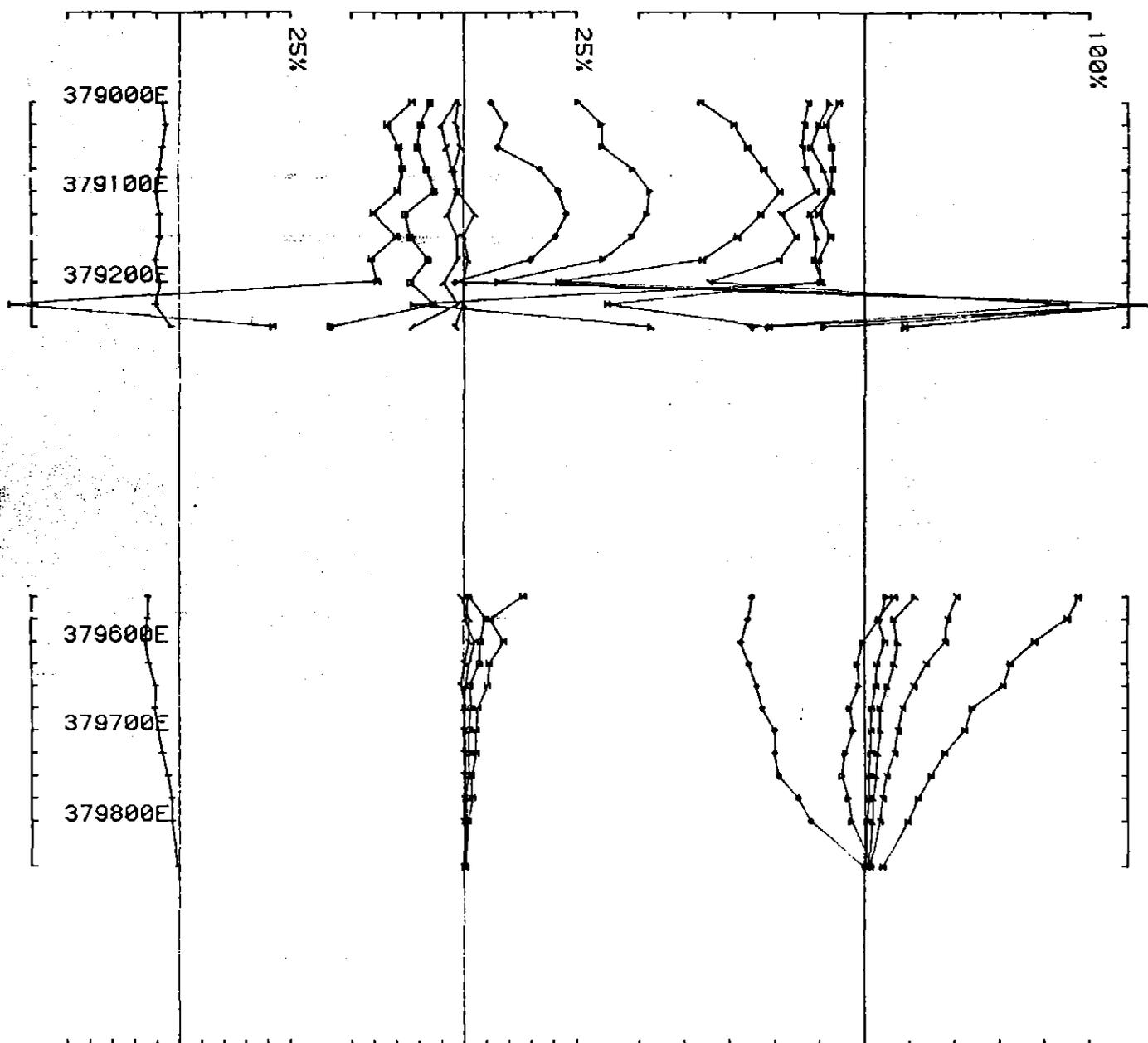


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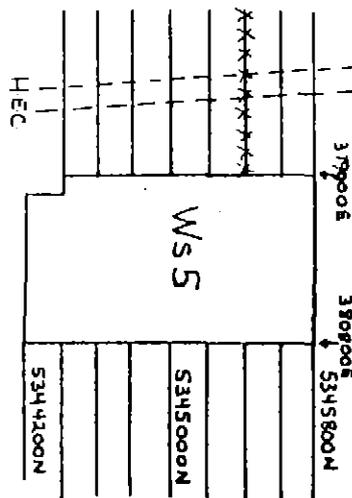


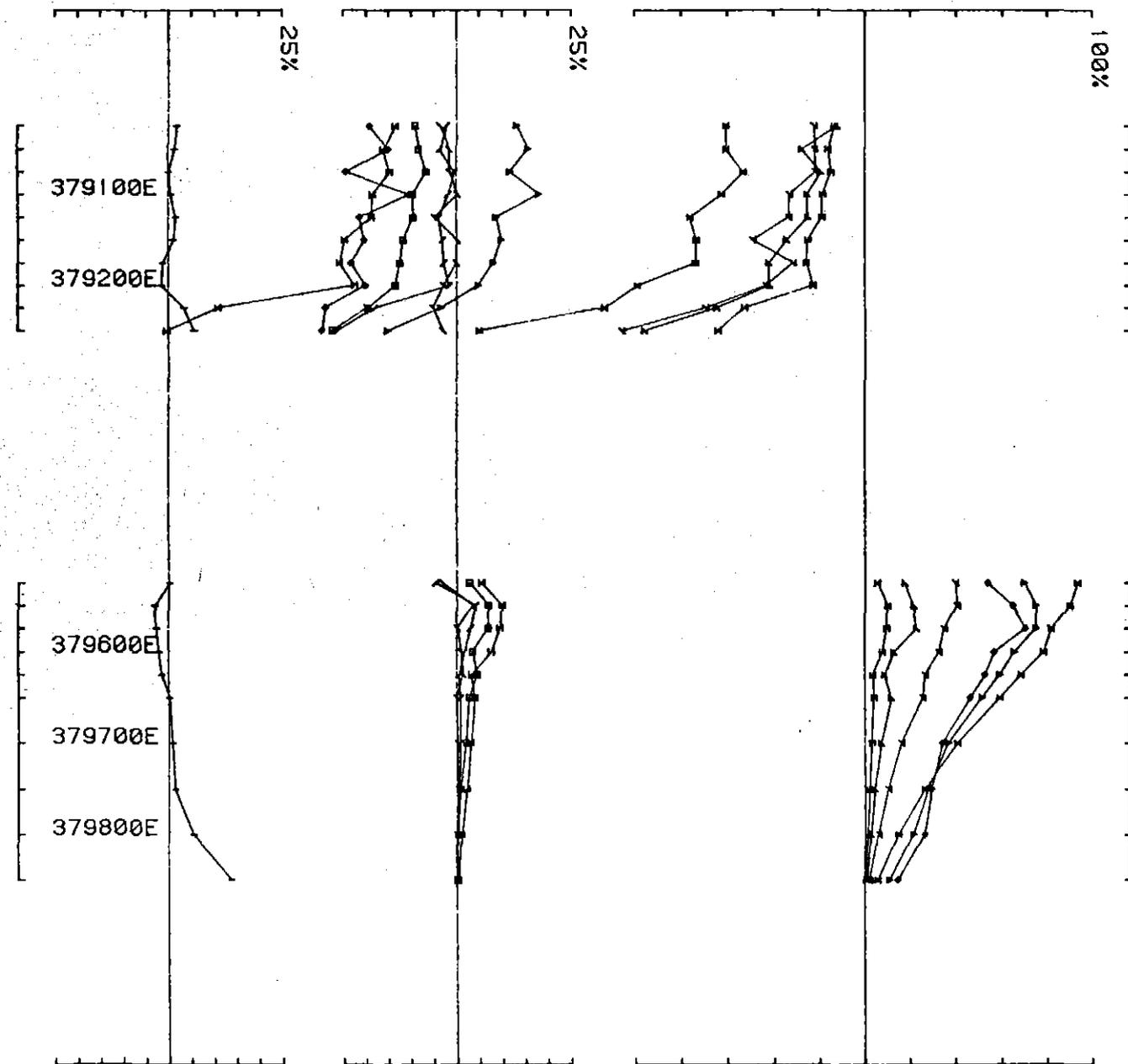
UTEM SURVEY at WEST SEDGWICK for B H P
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 loop no 5 line 5345200N component Hz
 secondary field Channel 1 continuously normalized



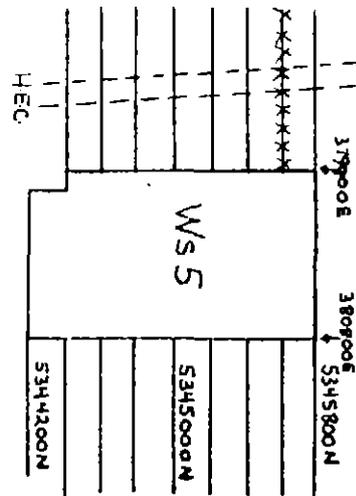


UTEM SURVEY at WEST SEDGWICK for B H P
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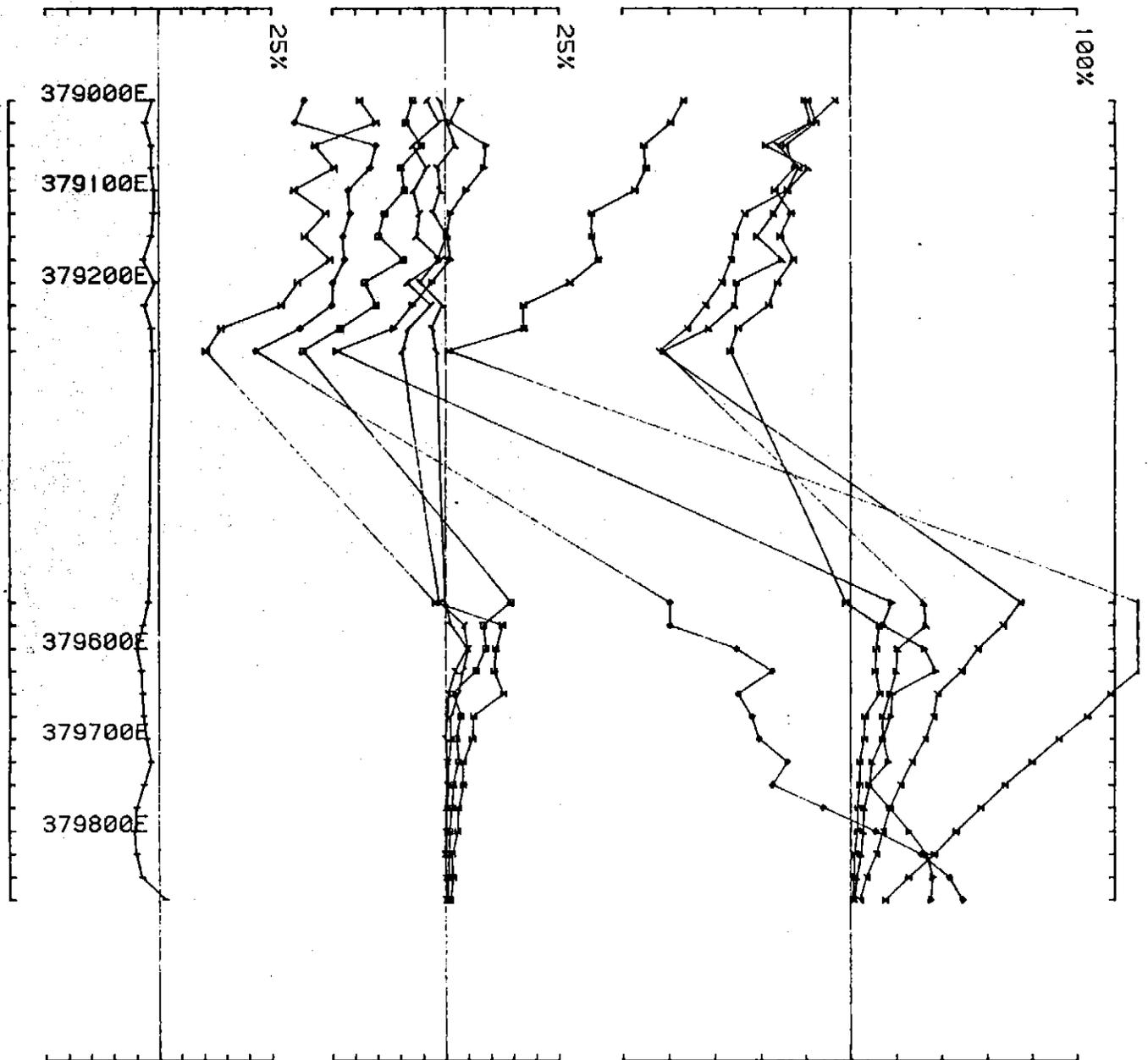


UTEM SURVEY at WEST SEDGWICK for B H P
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 secondary field Channel 1 continuously normalized

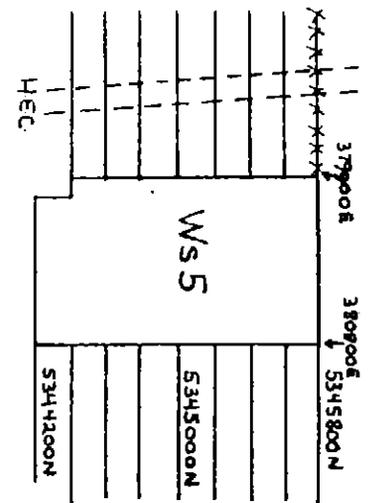


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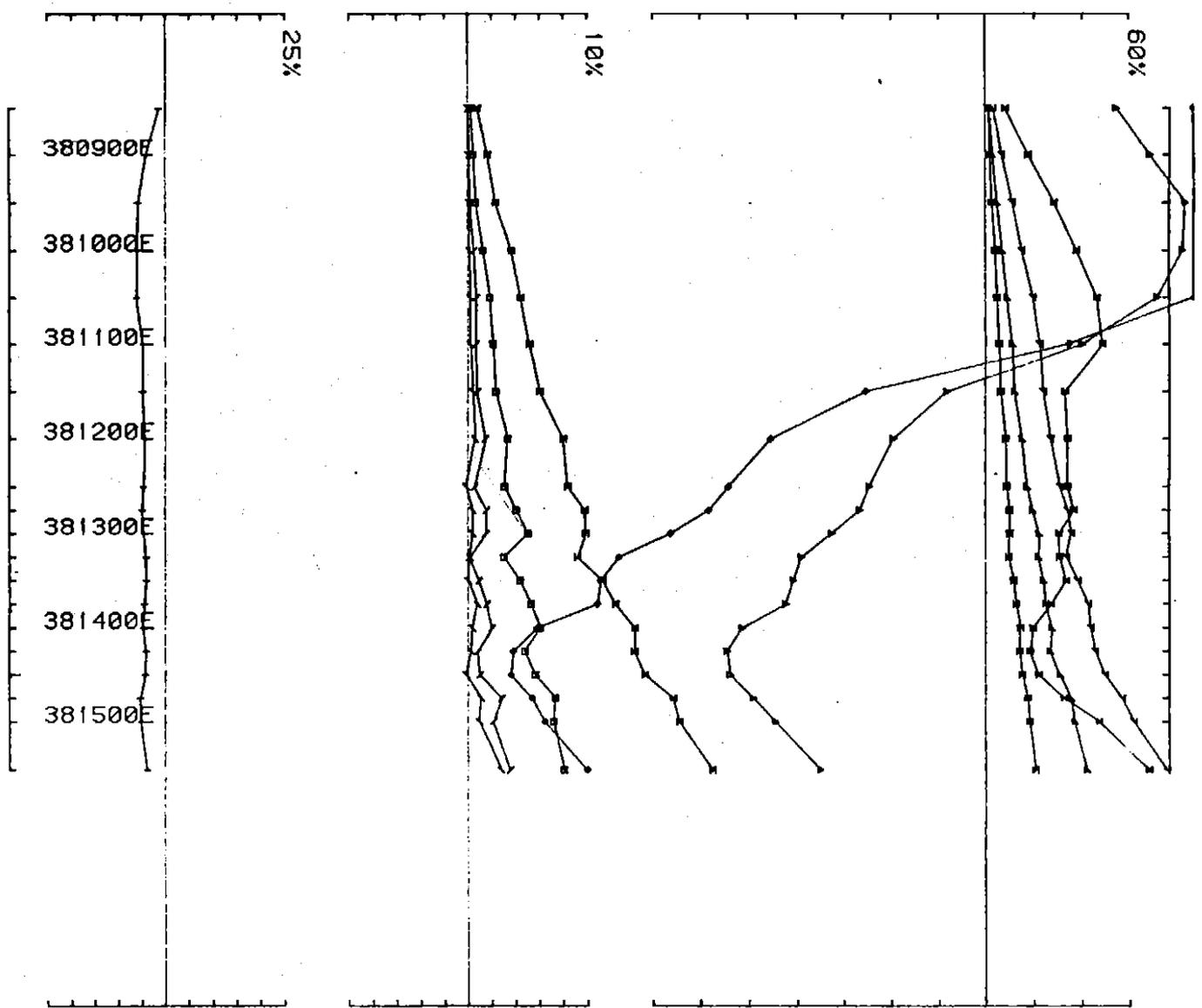


UTEM SURVEY at WEST SEDGWICK for B H P
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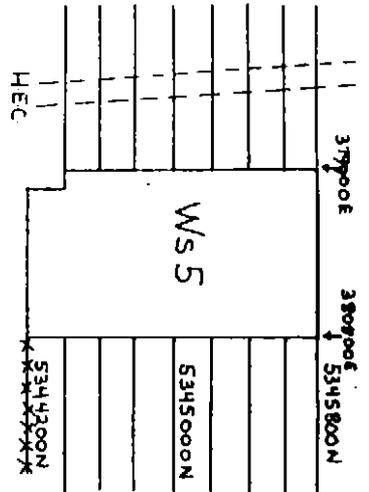


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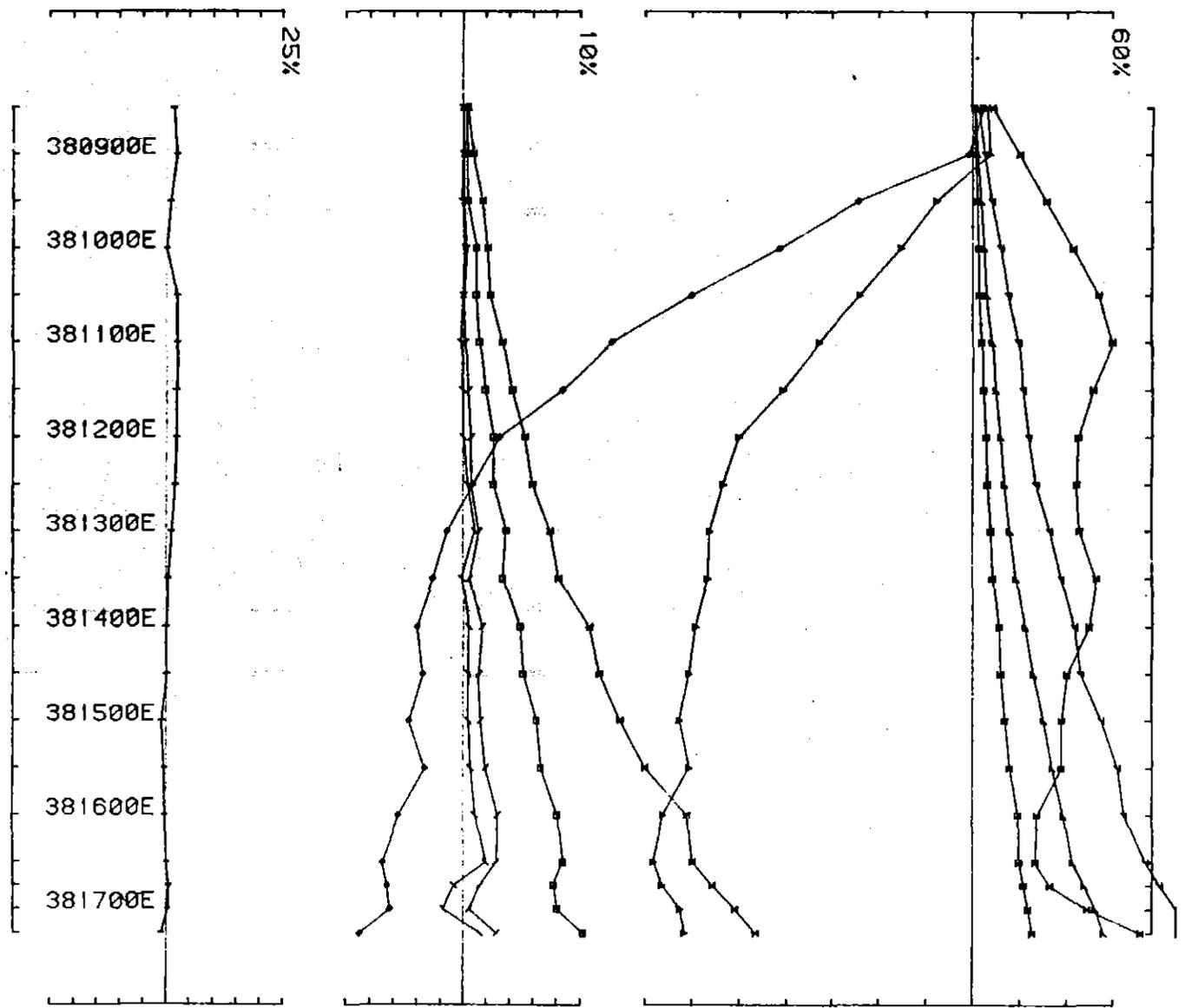


UTEM SURVEY at WEST SEDGWICK for B H P
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 secondary field Channel 1 continuously normalized

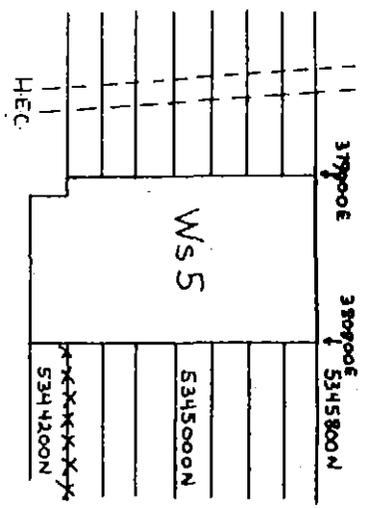


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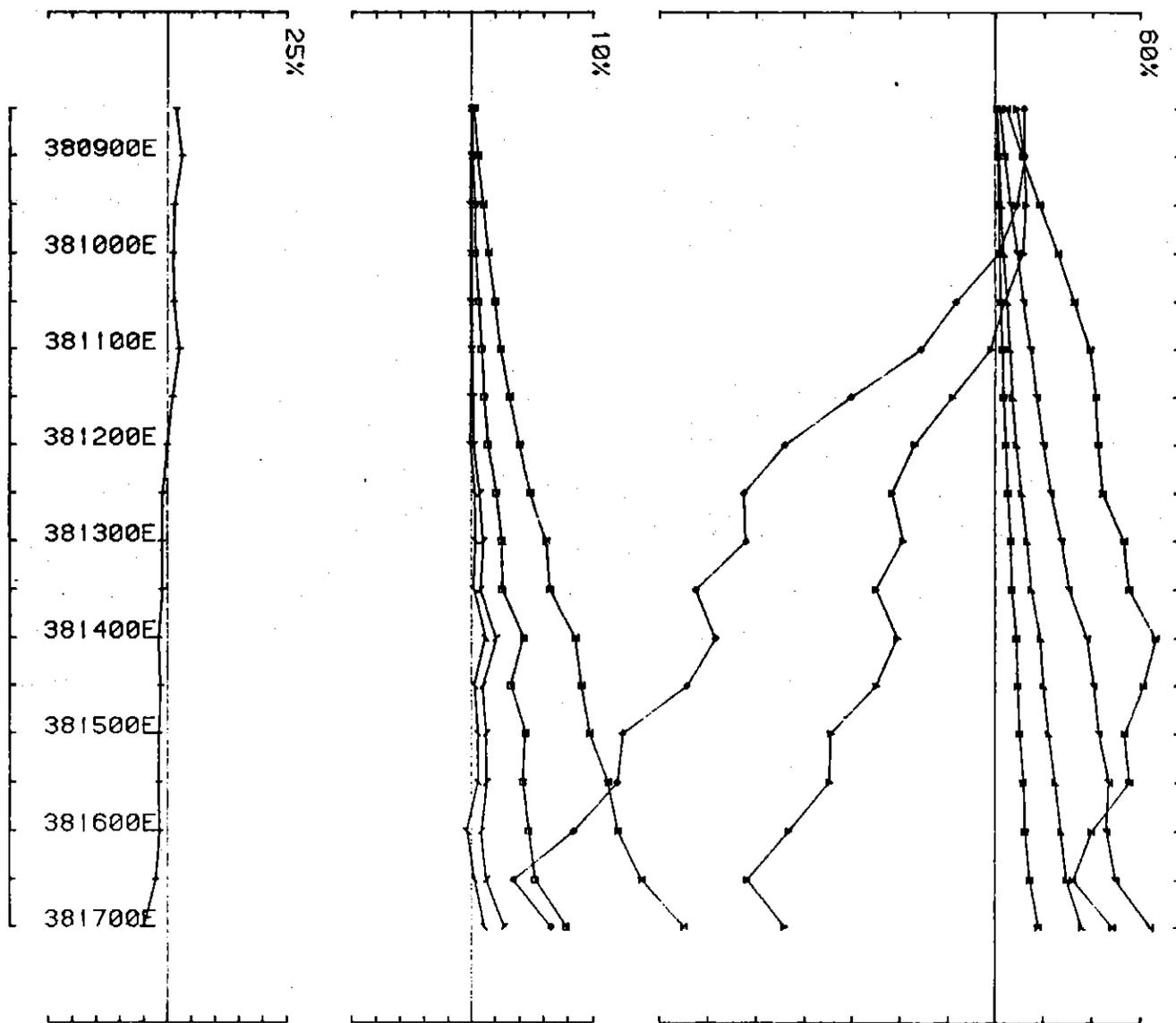


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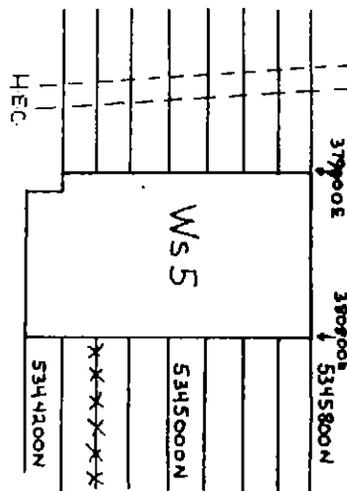


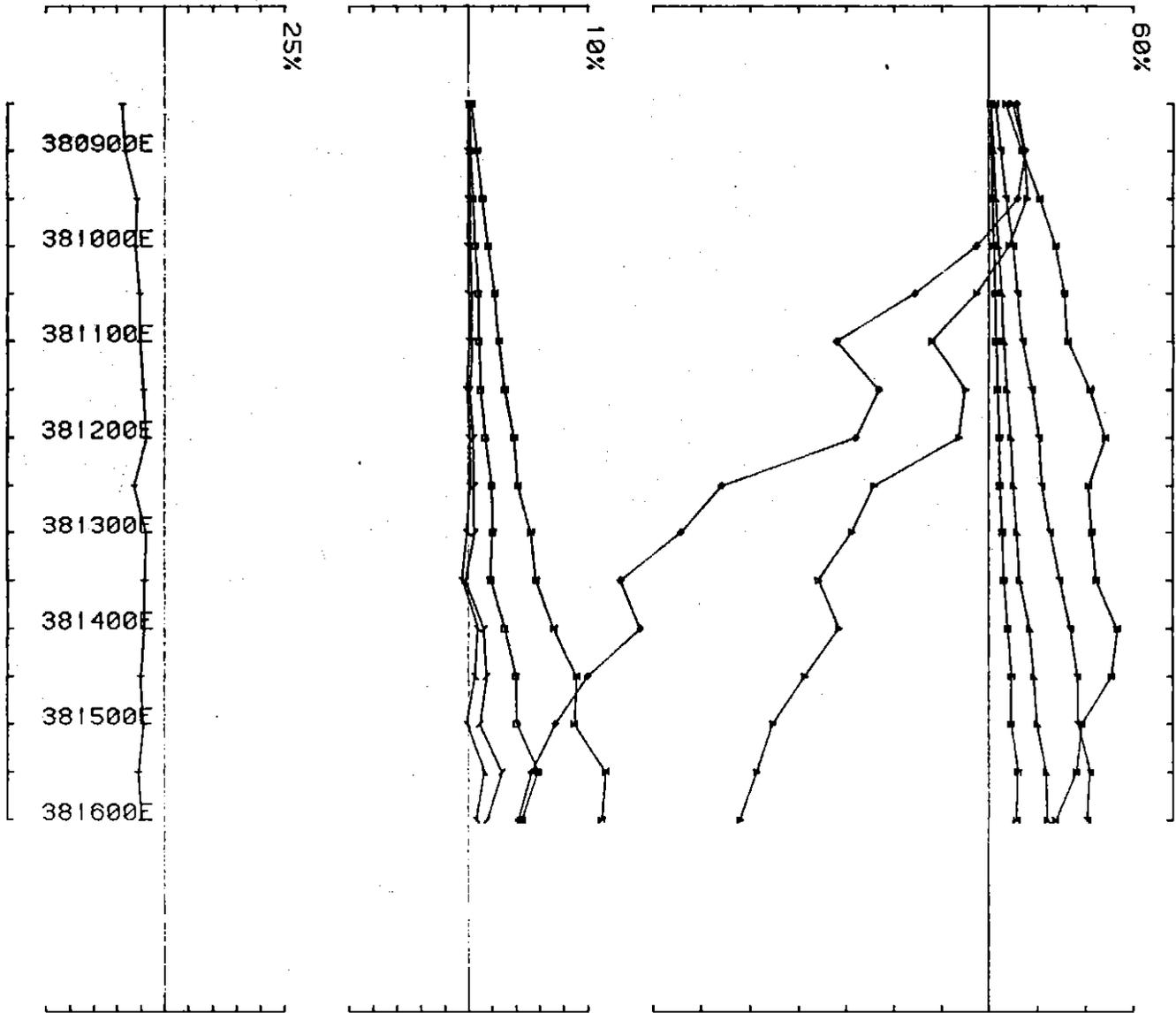
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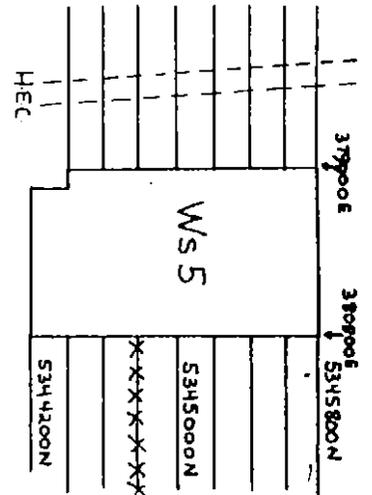


UTEM SURVEY at WEST SEDGWICK for B H P
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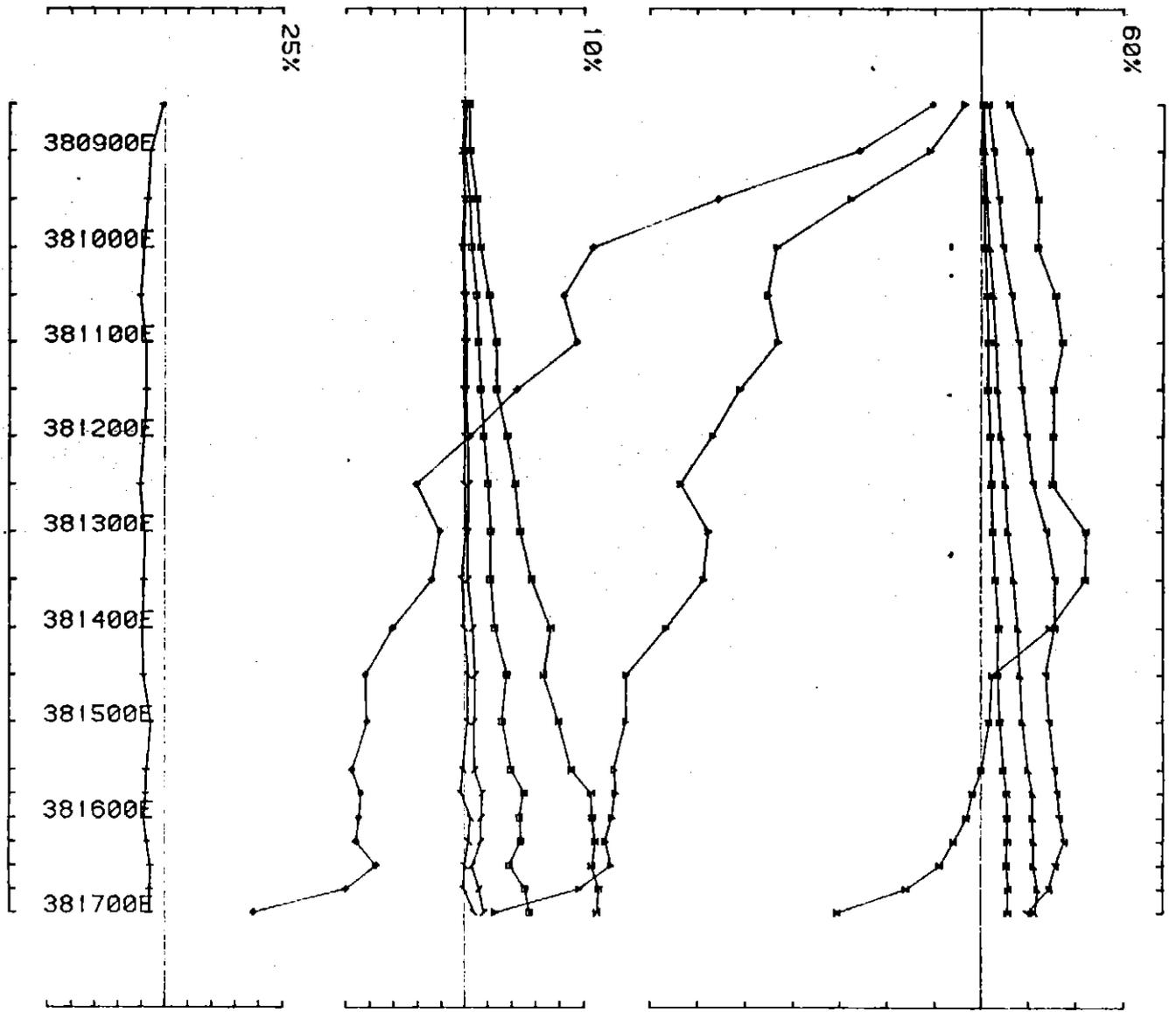


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L. G. L. job 8859... base freq (hz) 26.230
 loop no 5 line 5344800N component Hz
 secondary field Channel 1 continuously normalized

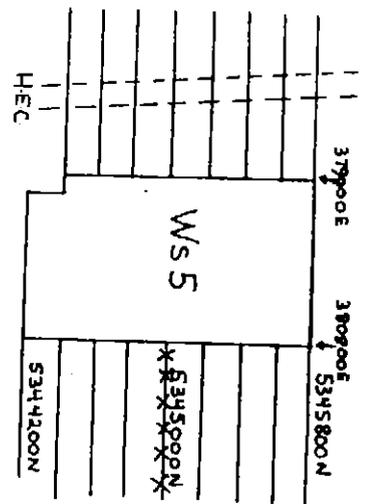


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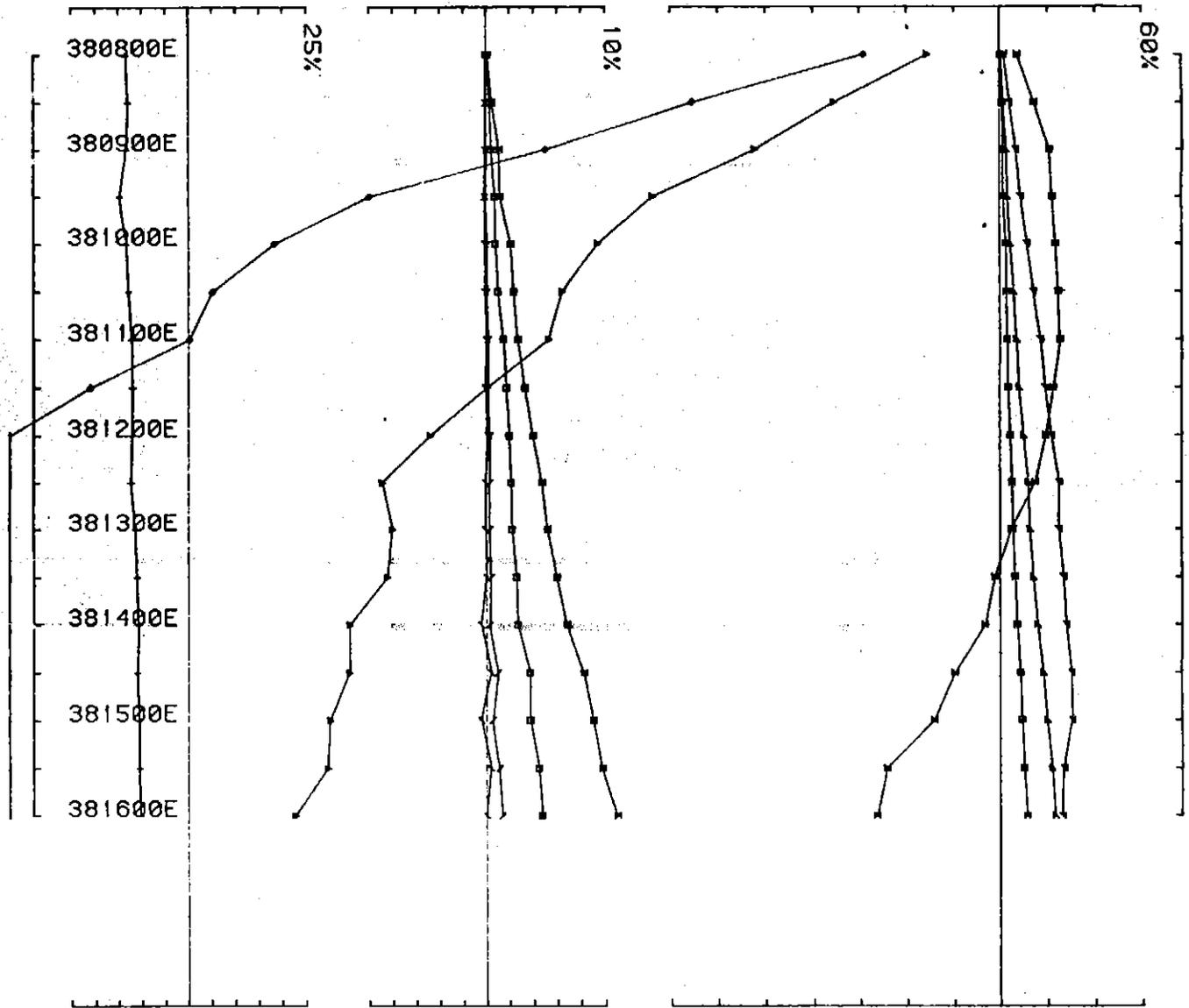


UTEM SURVEY at WEST SEDGWICK for B H P
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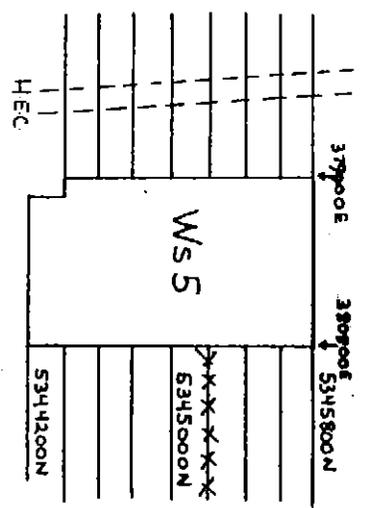


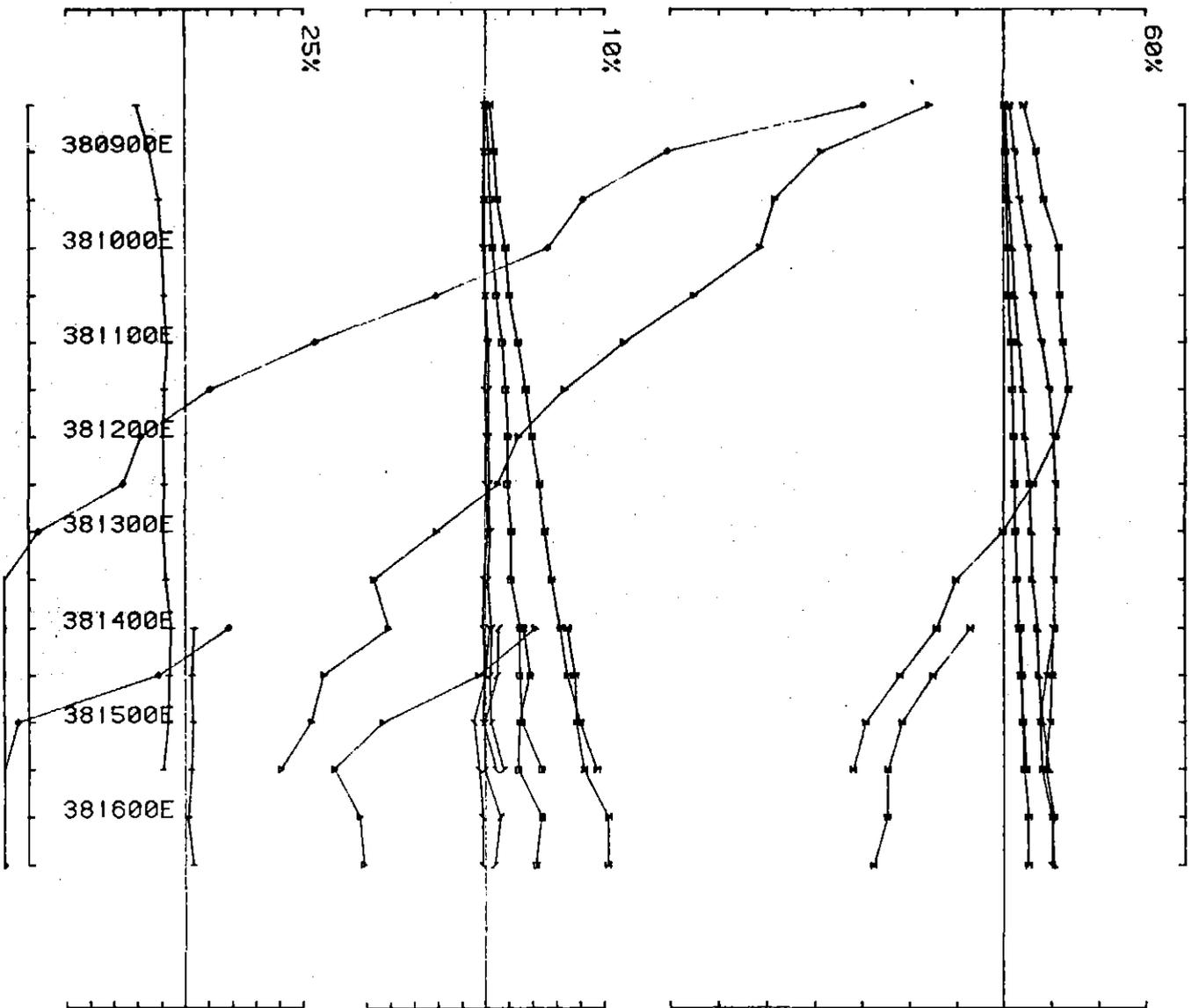
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669182

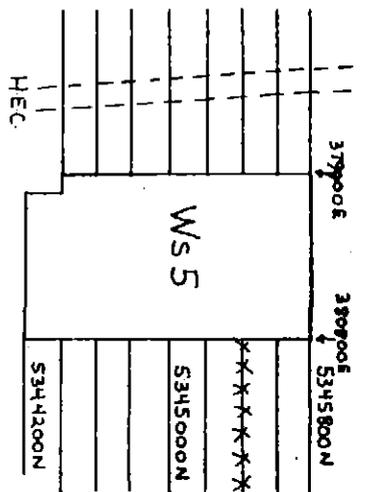


UTEM SURVEY at WEST SEDGWICK for B. H. P.
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 secondary field Channel 1 continuously normalized



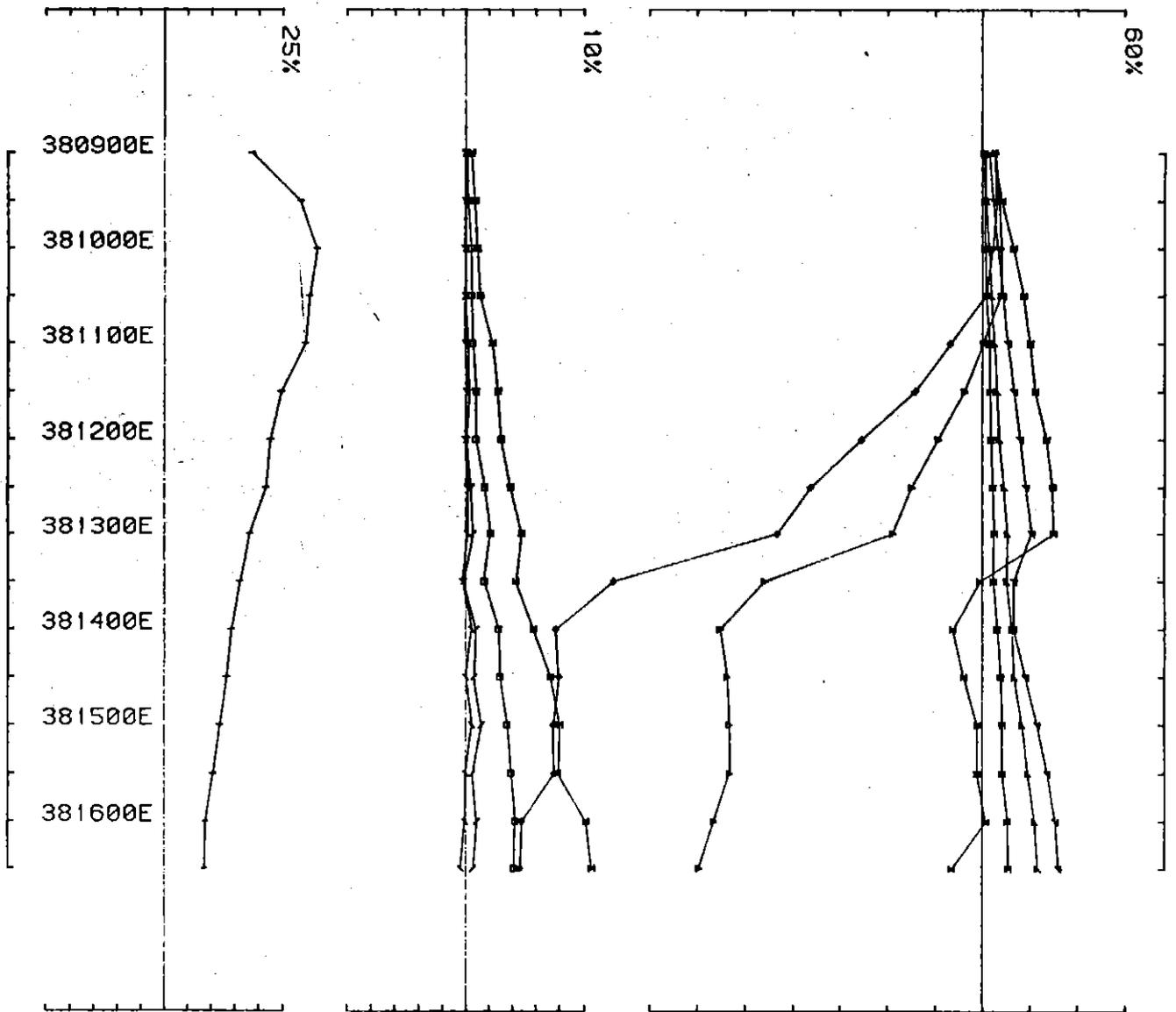


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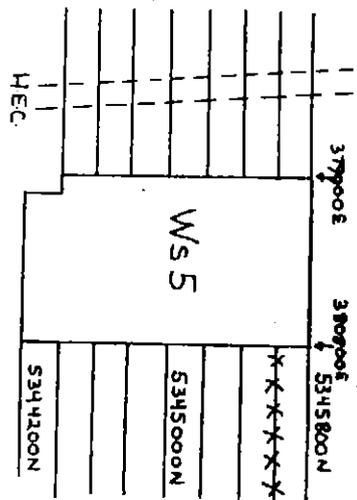


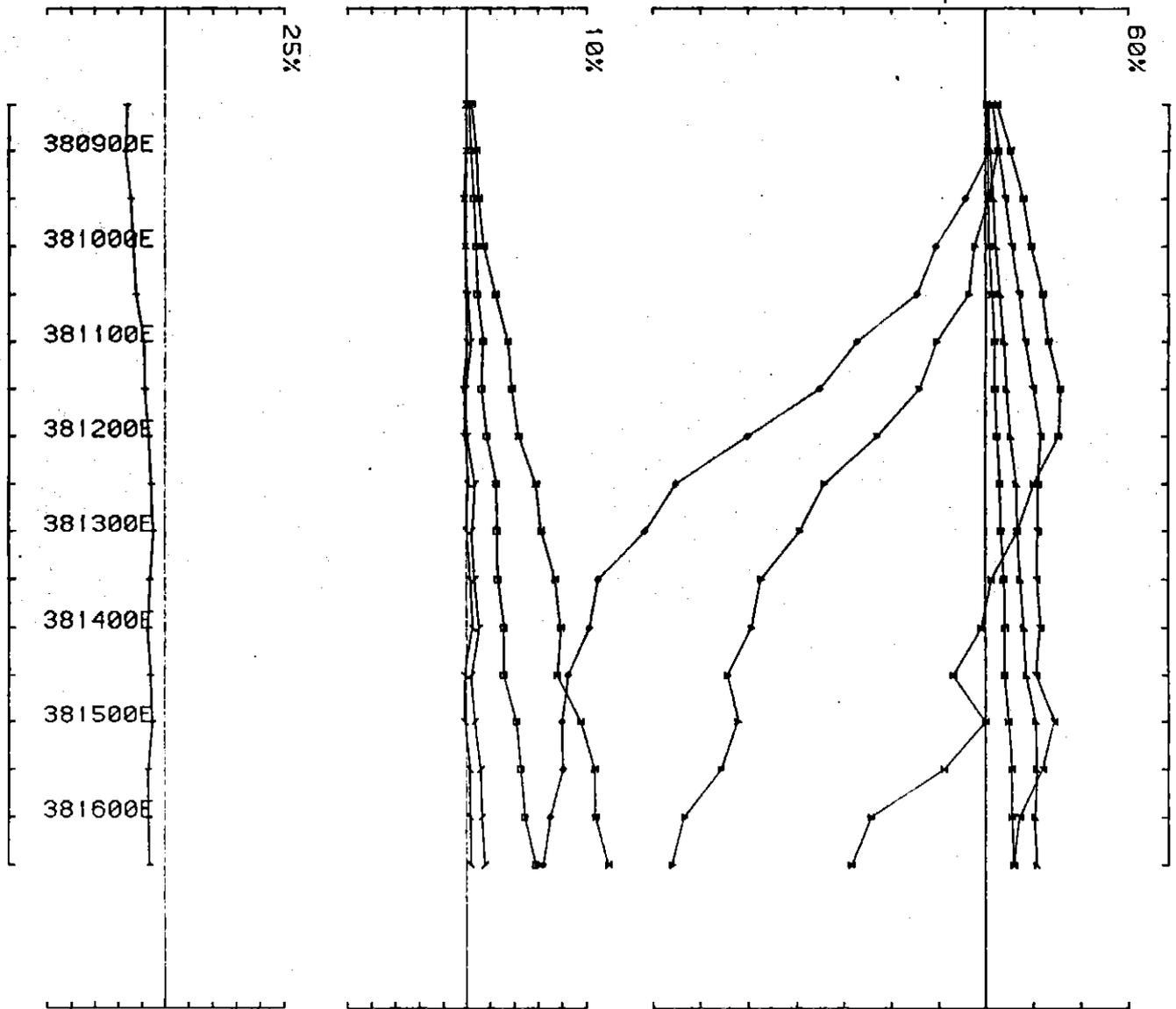
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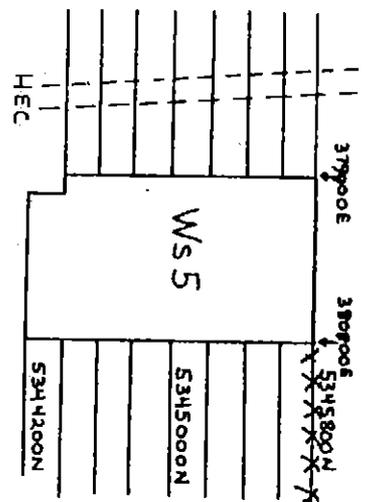


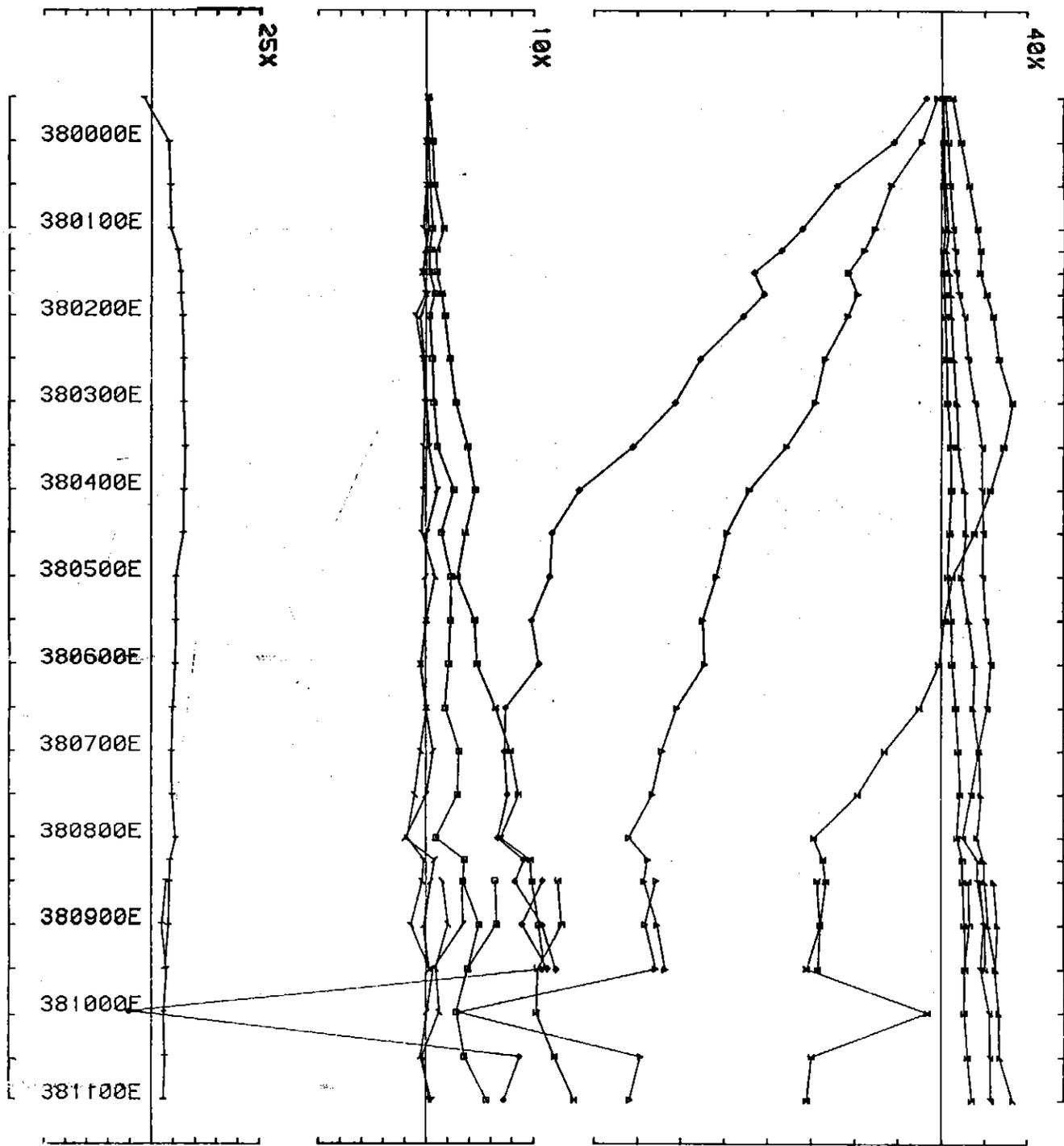
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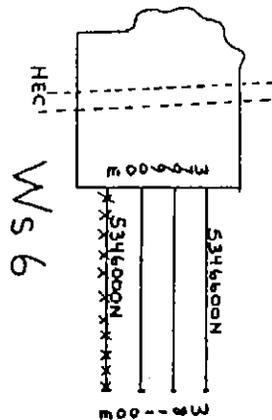


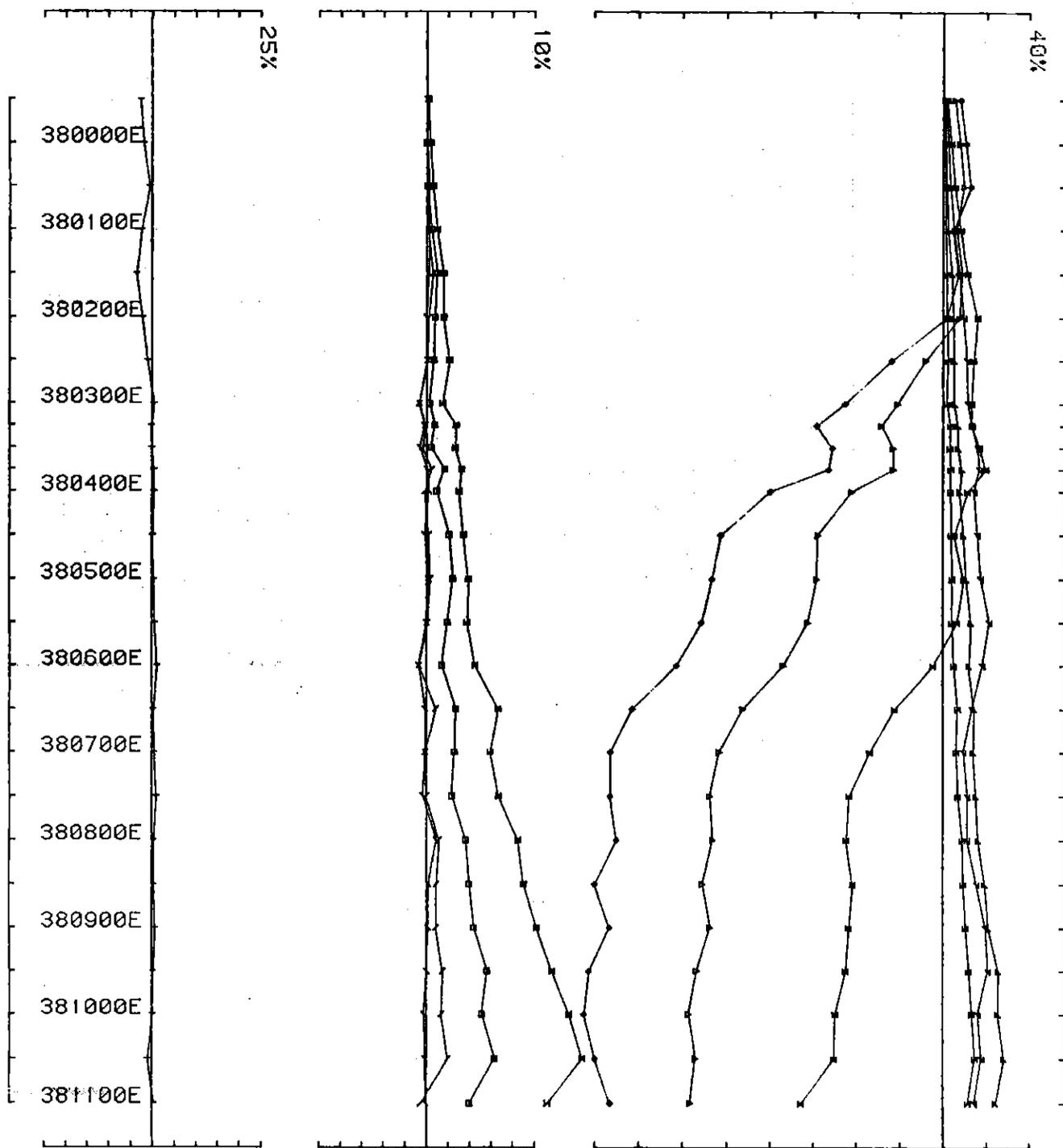
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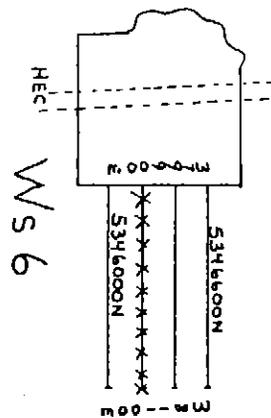


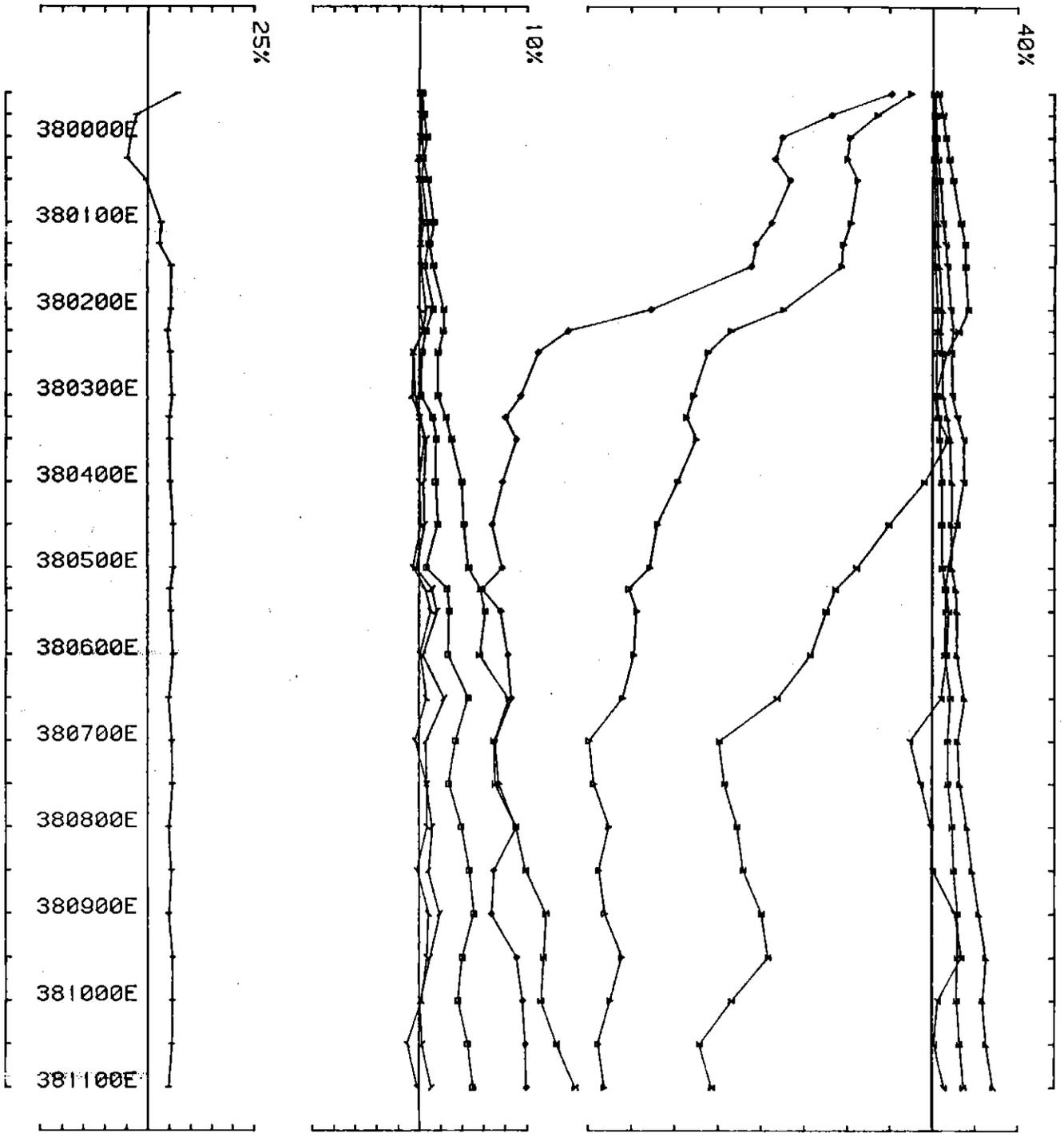
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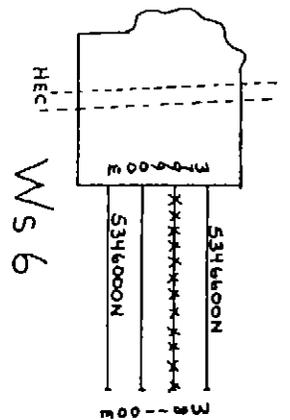


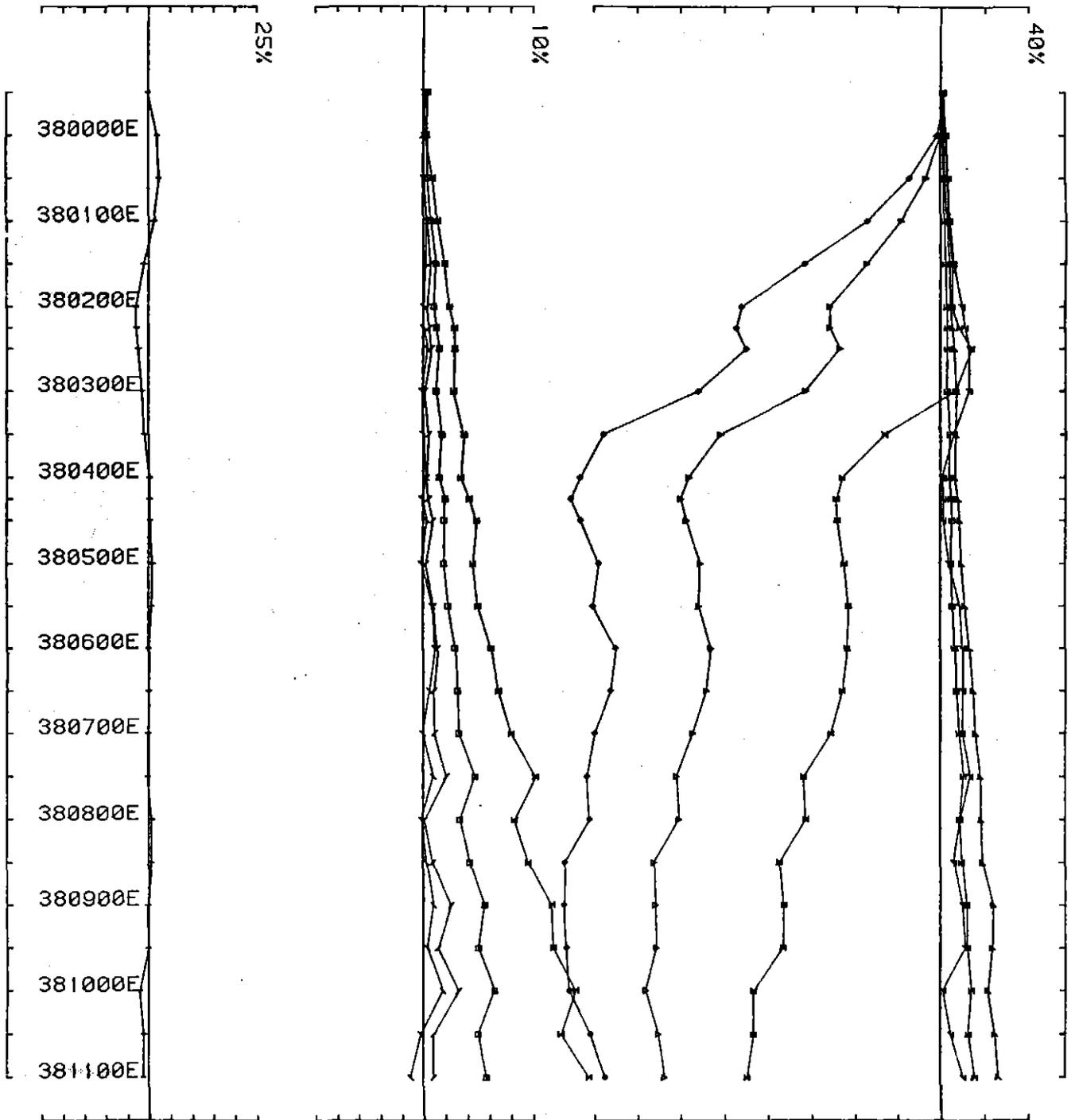
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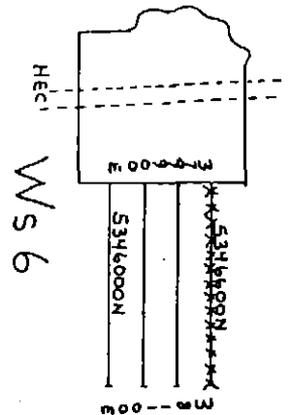


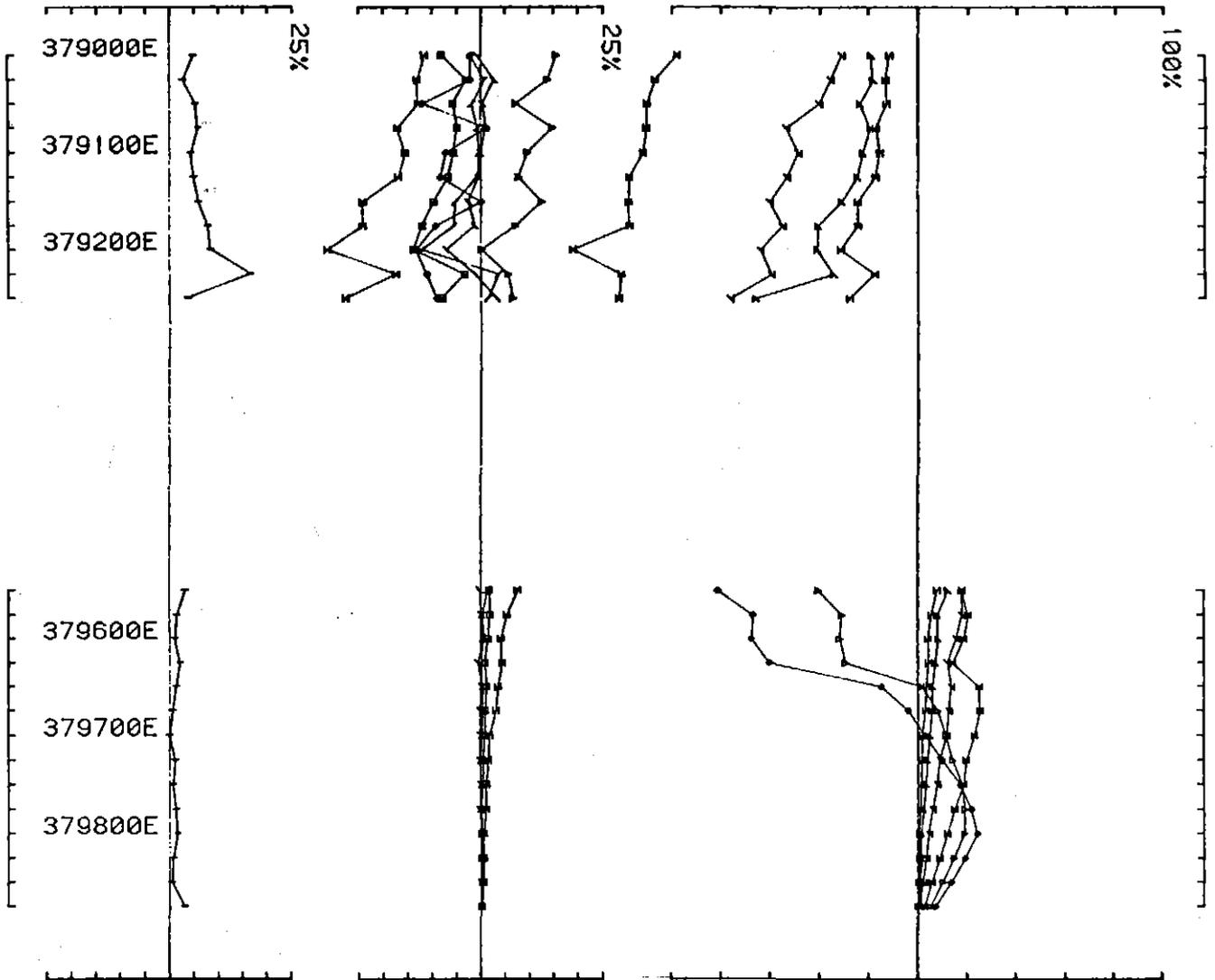
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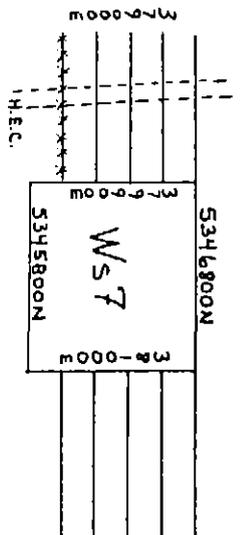


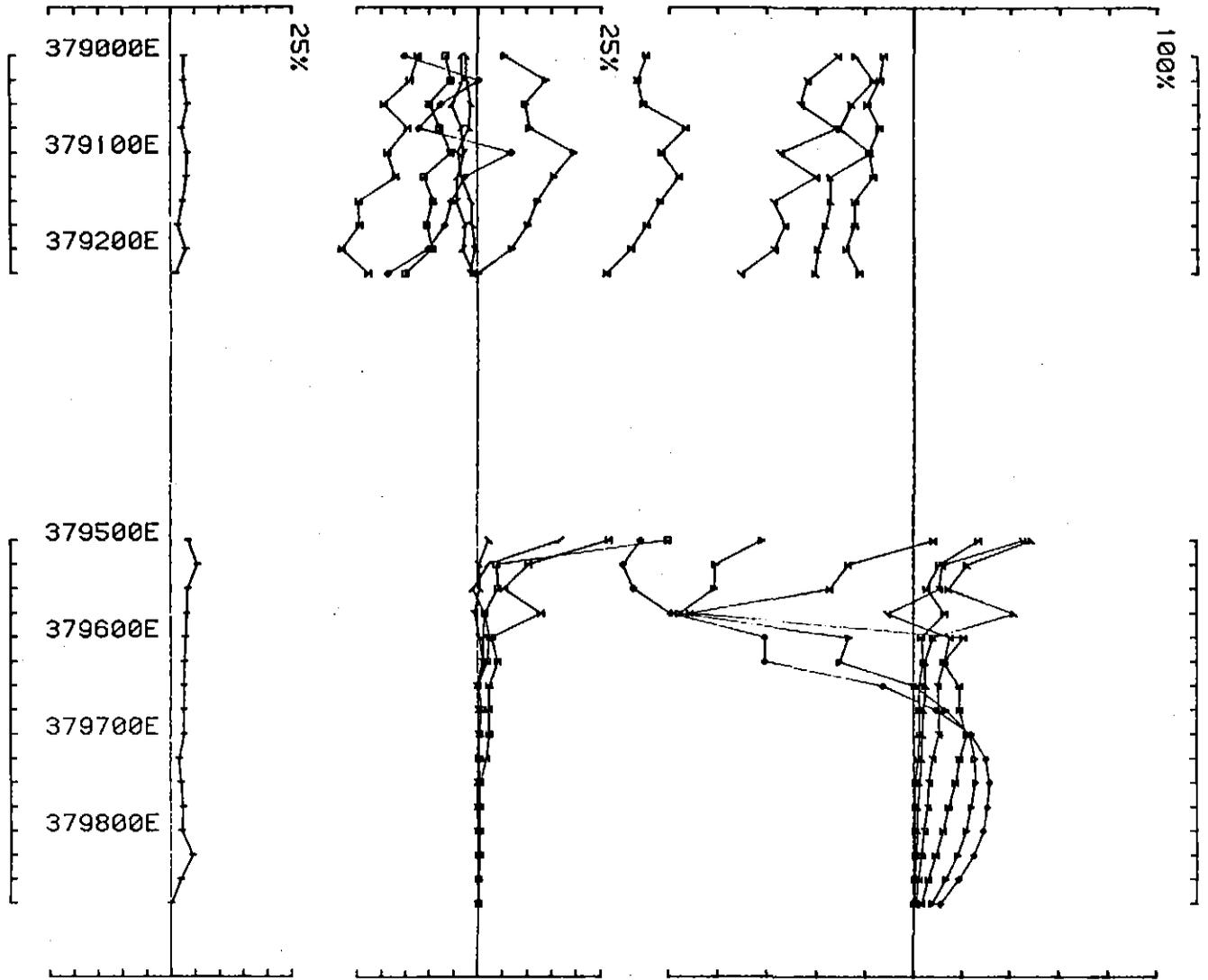
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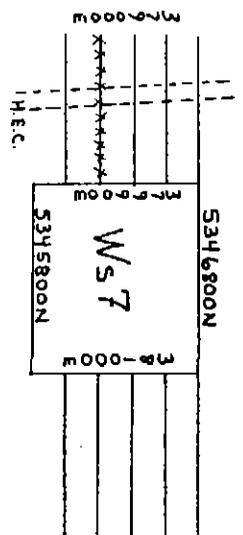


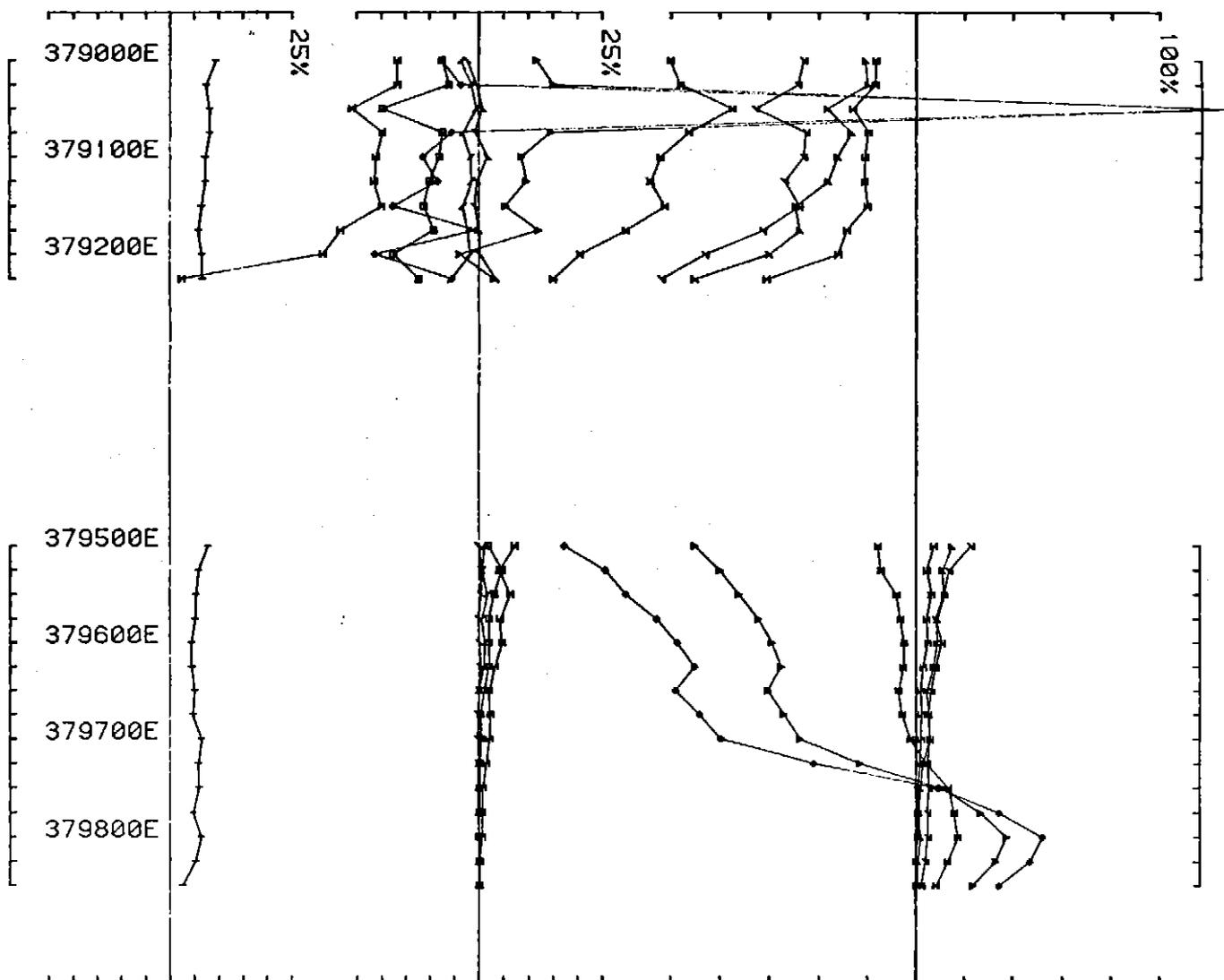
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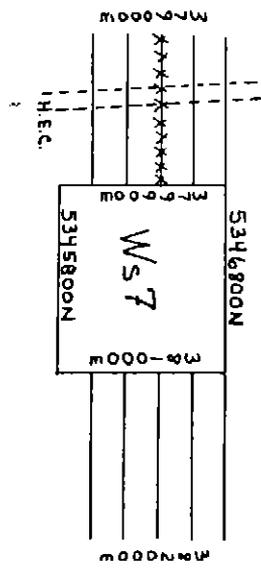


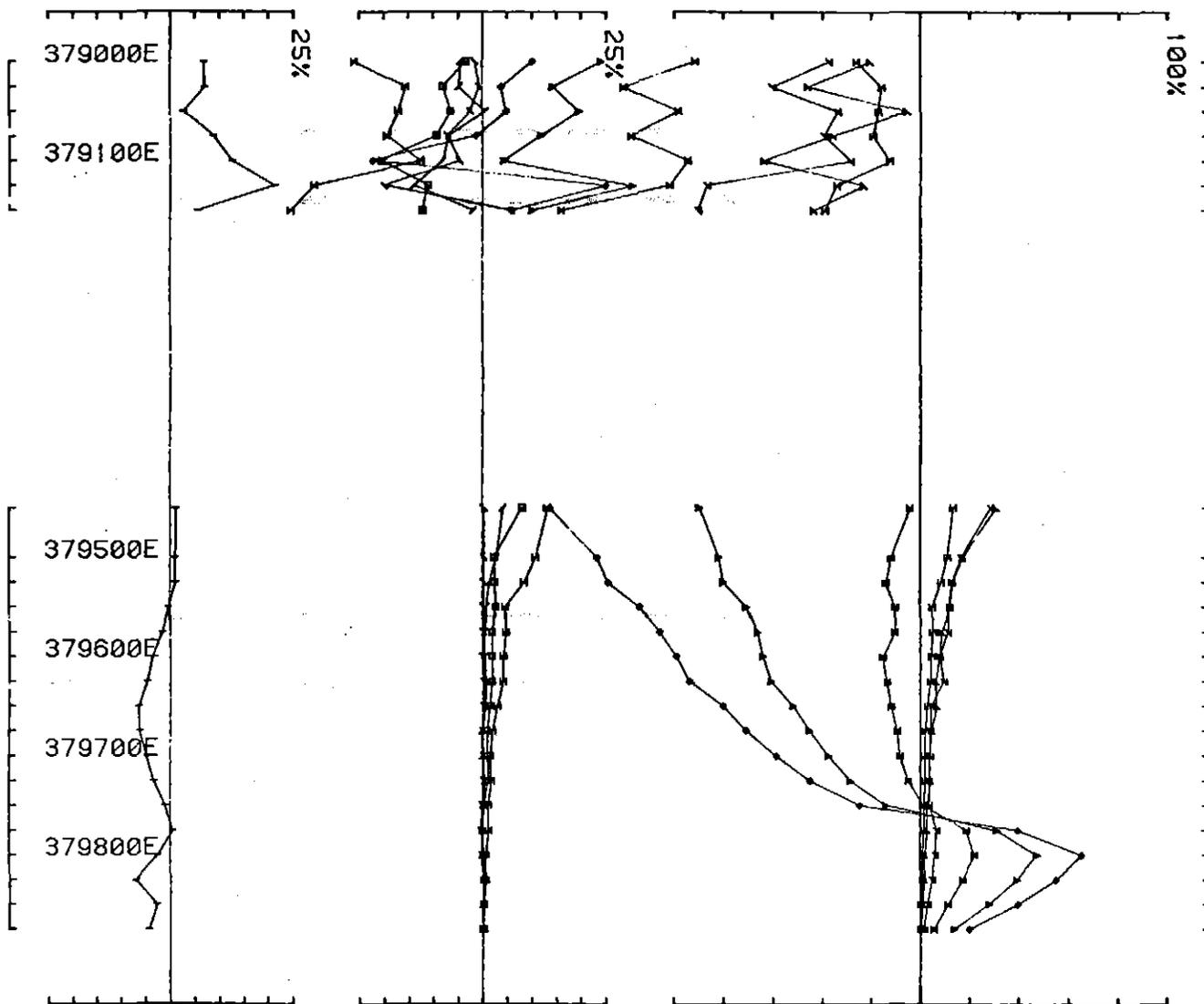
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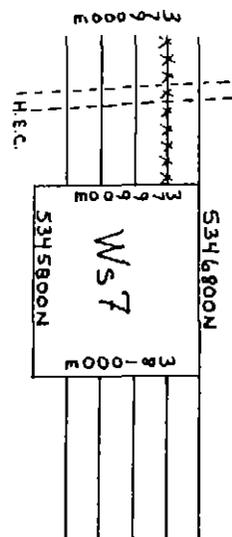


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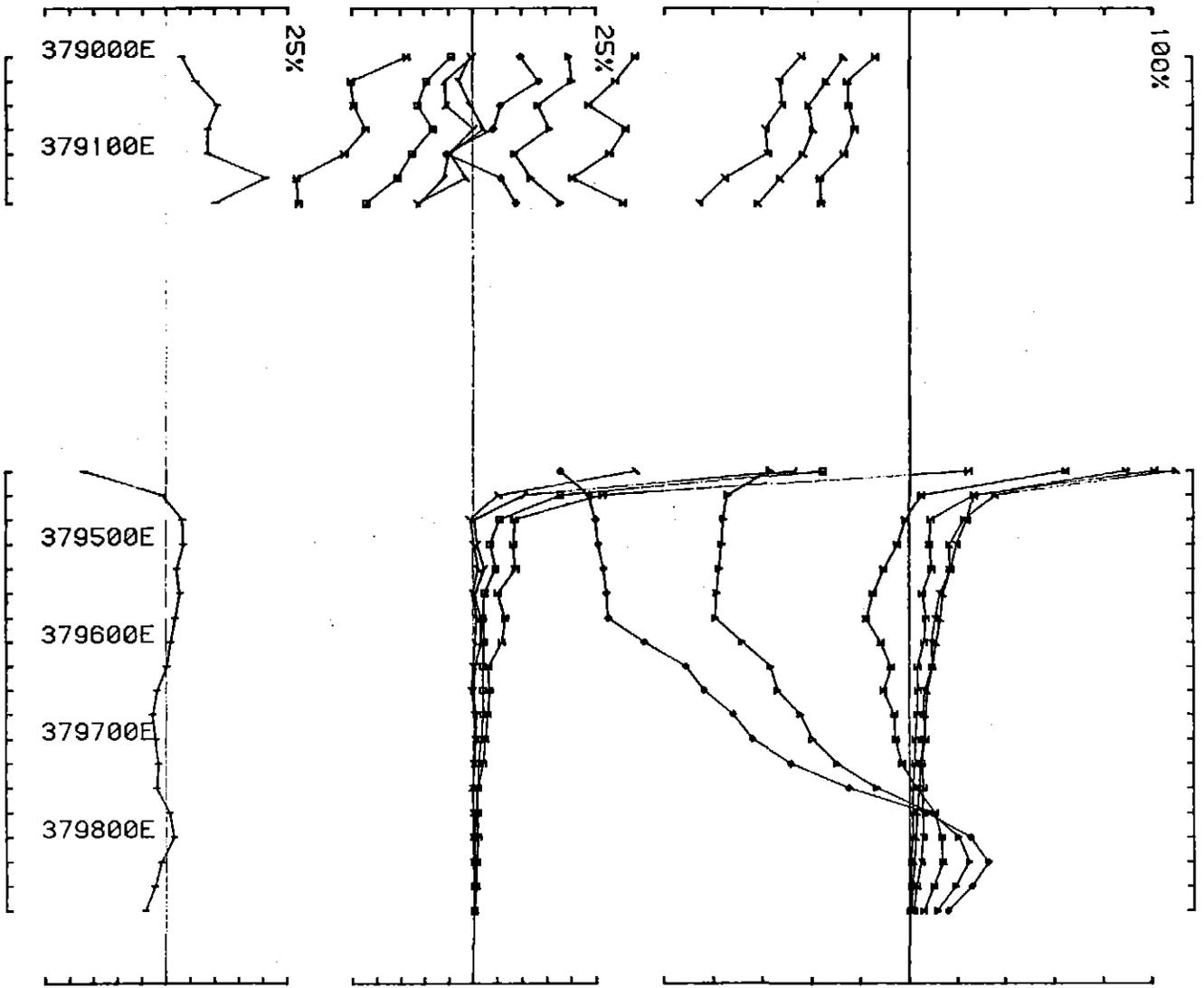




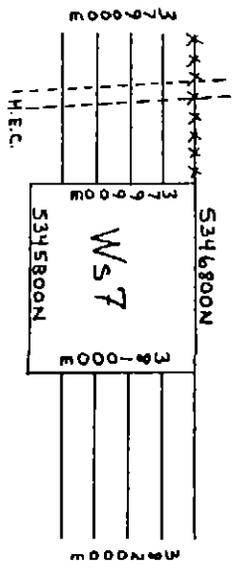
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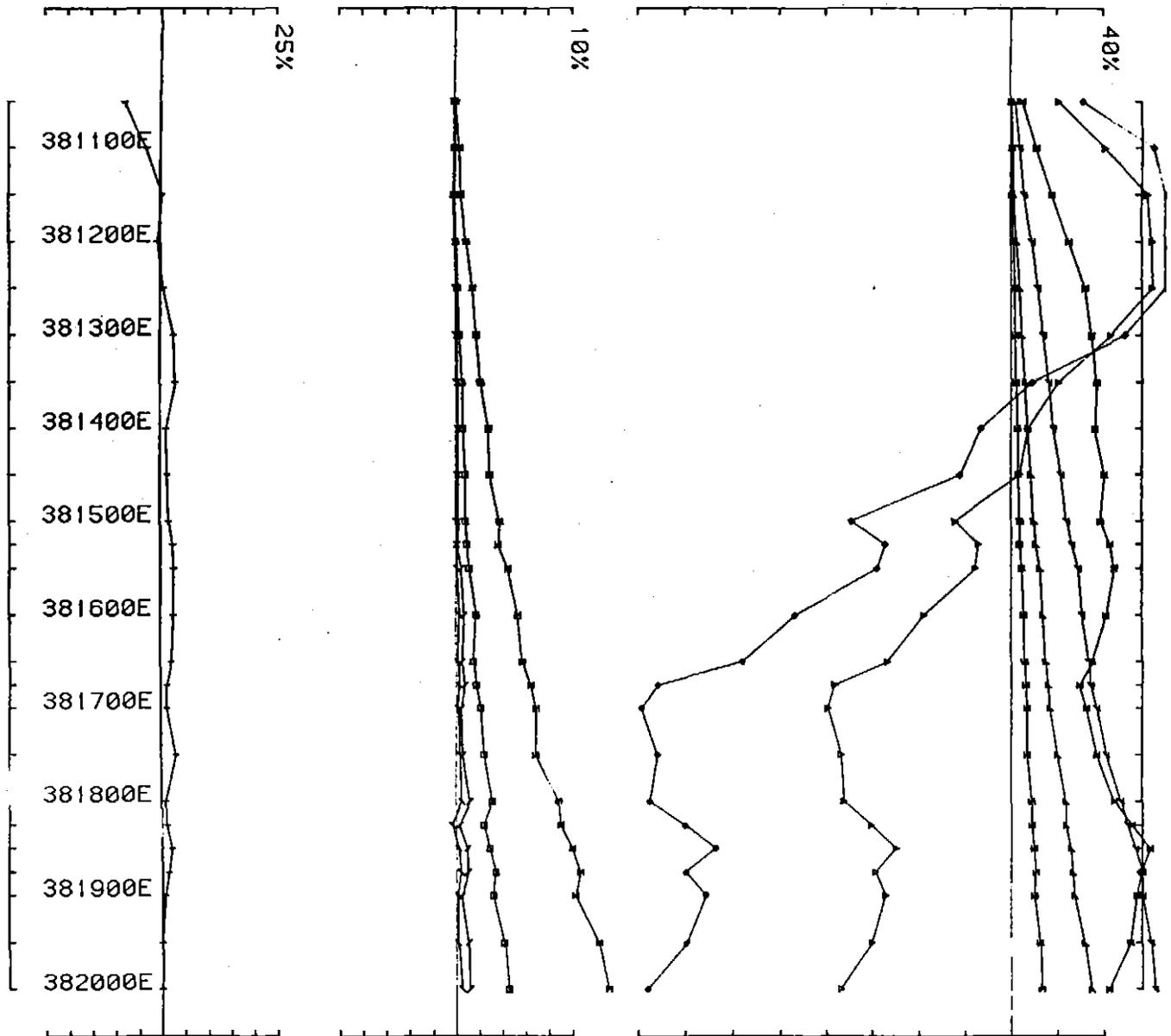


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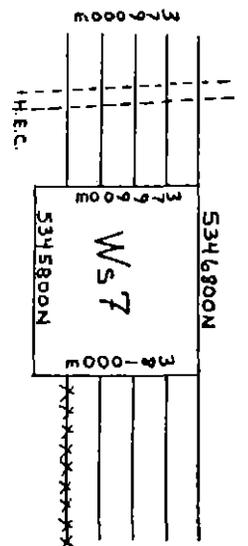


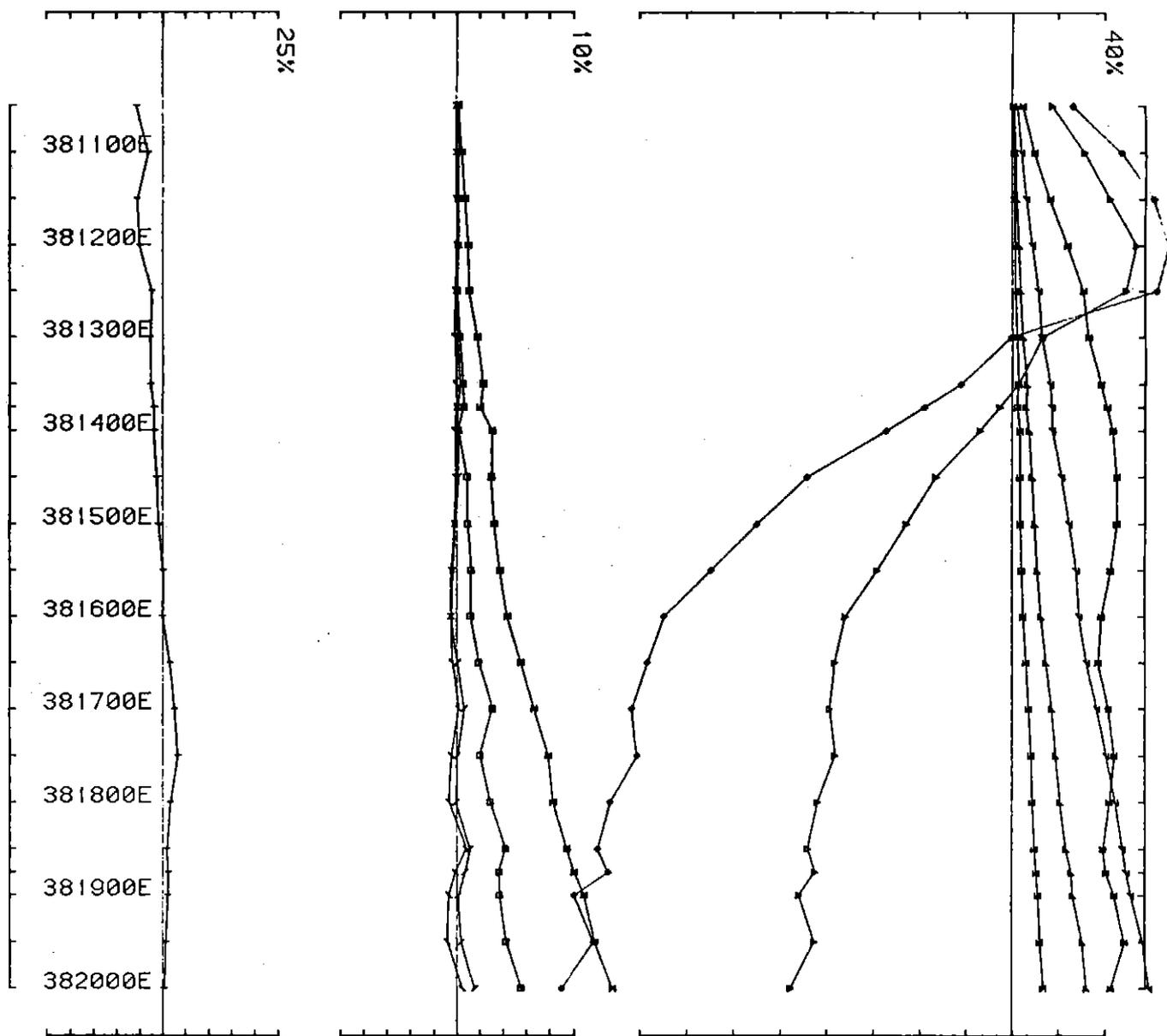
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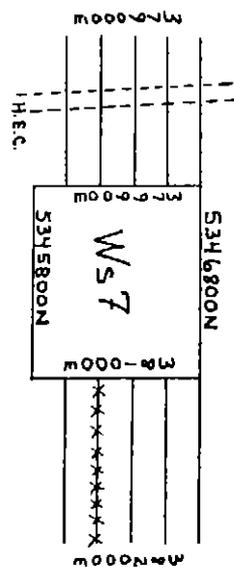


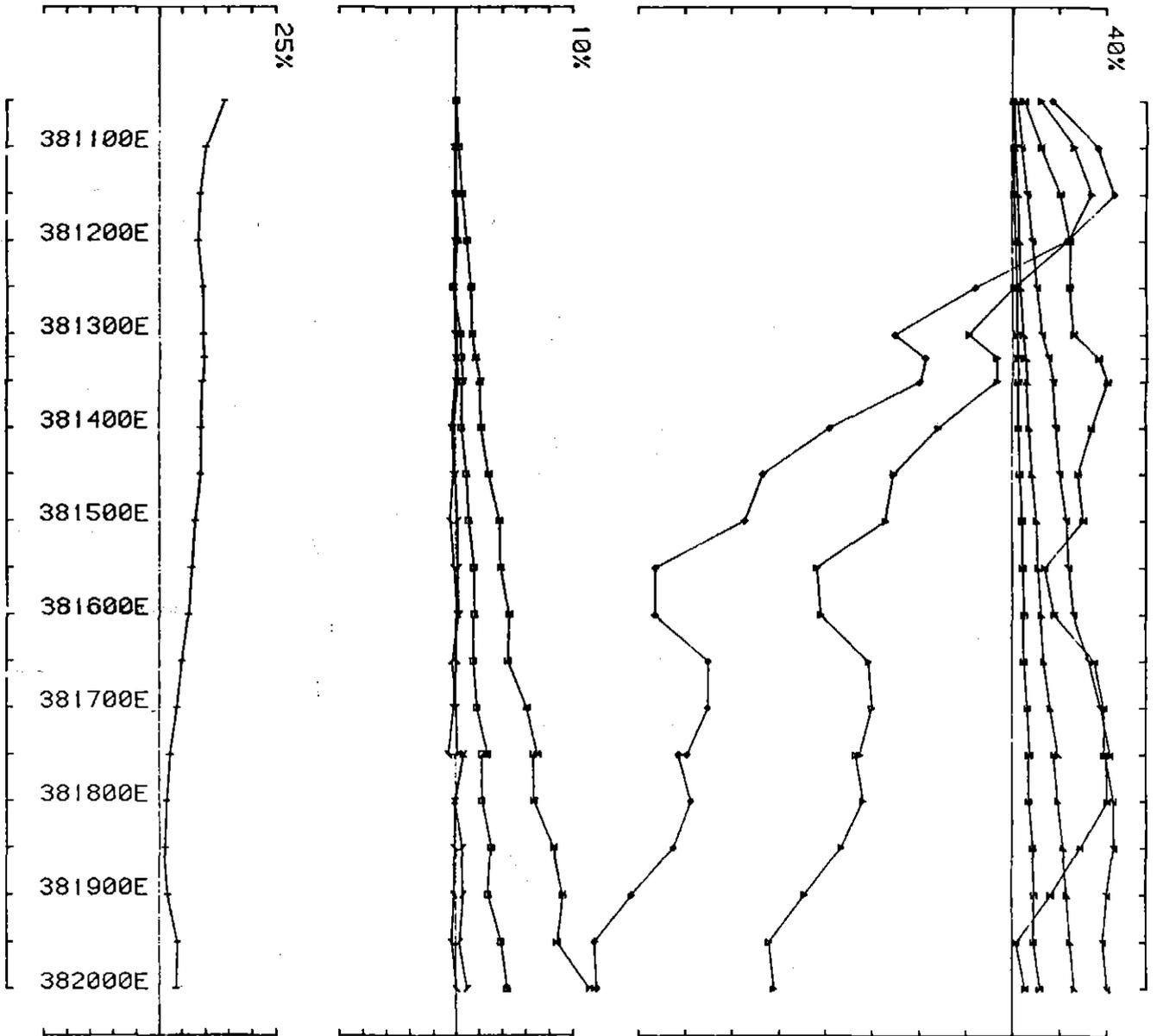
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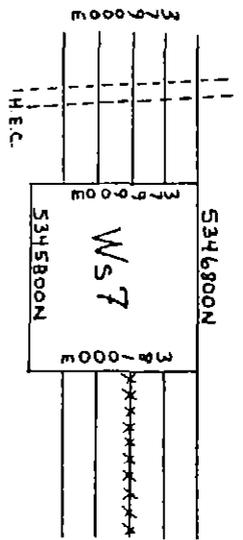


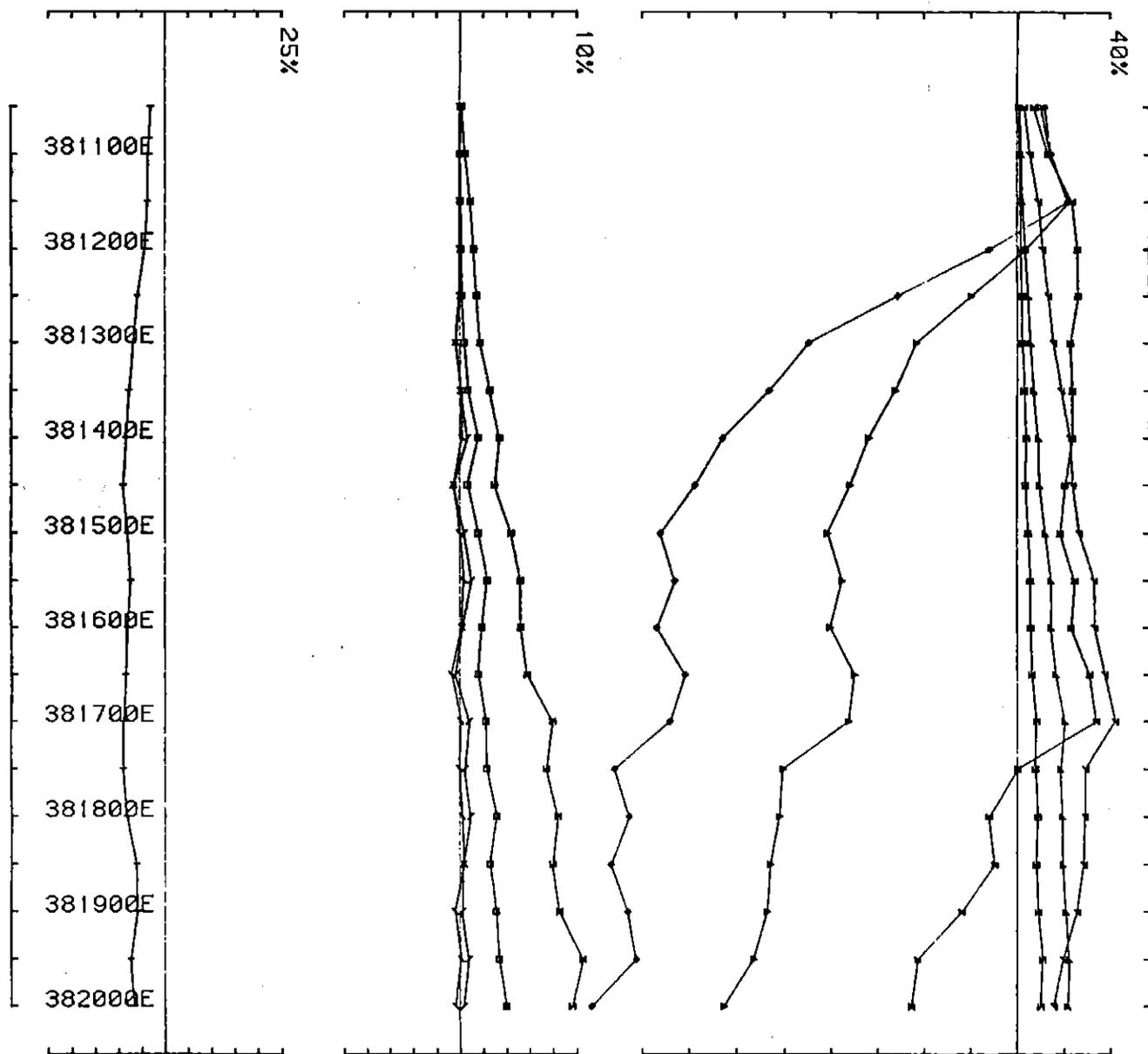
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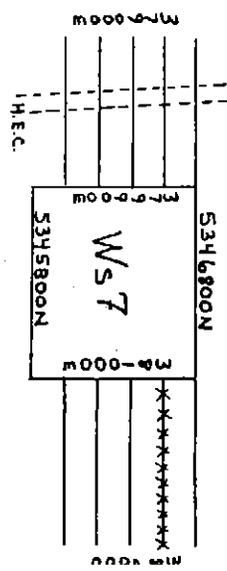


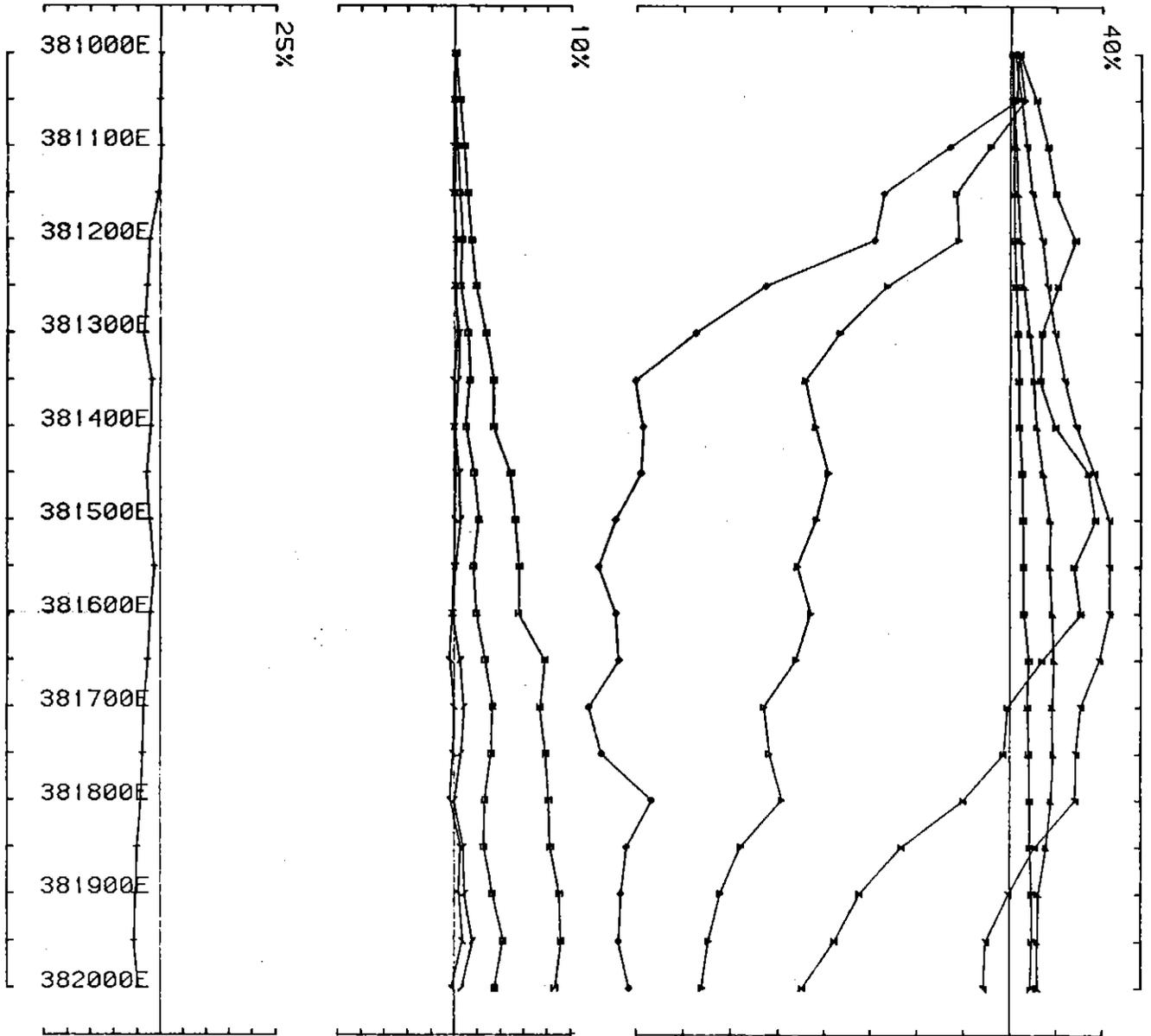
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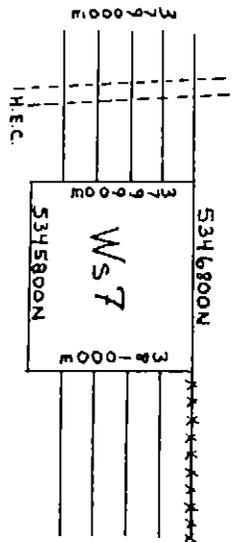


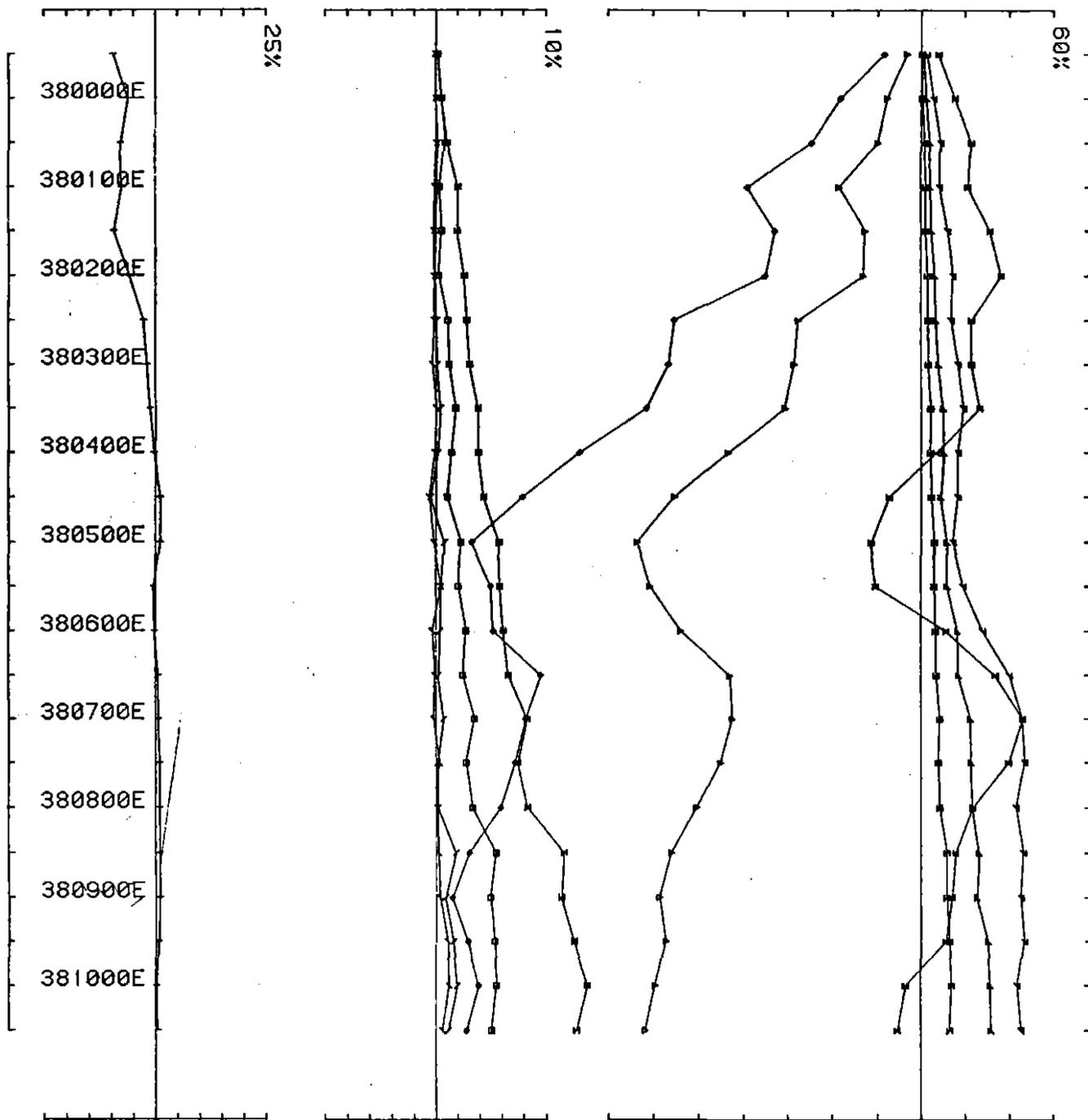
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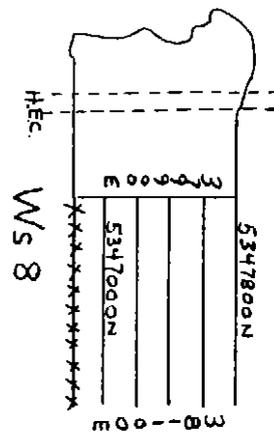


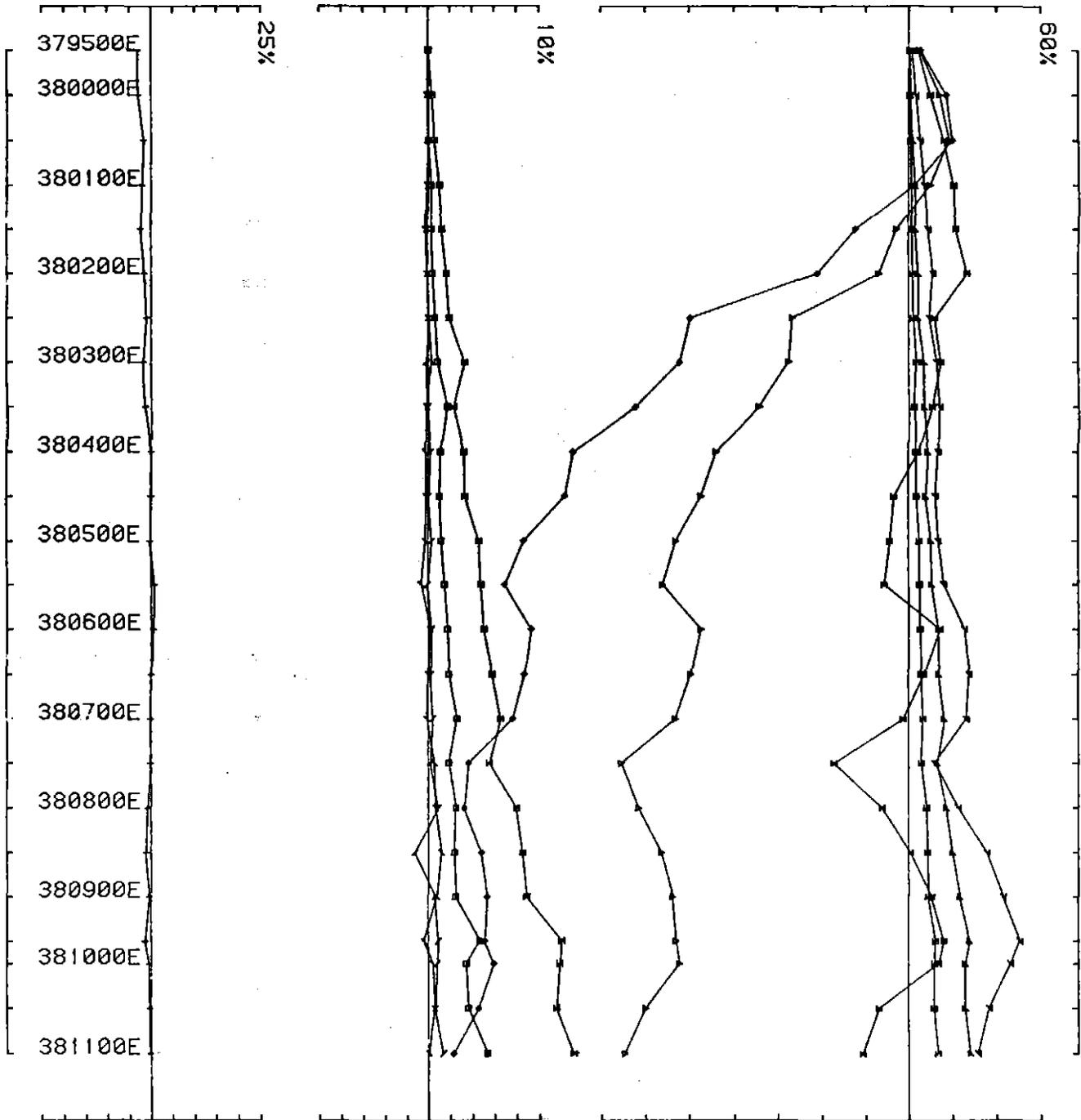
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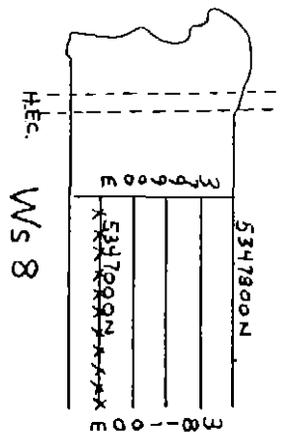


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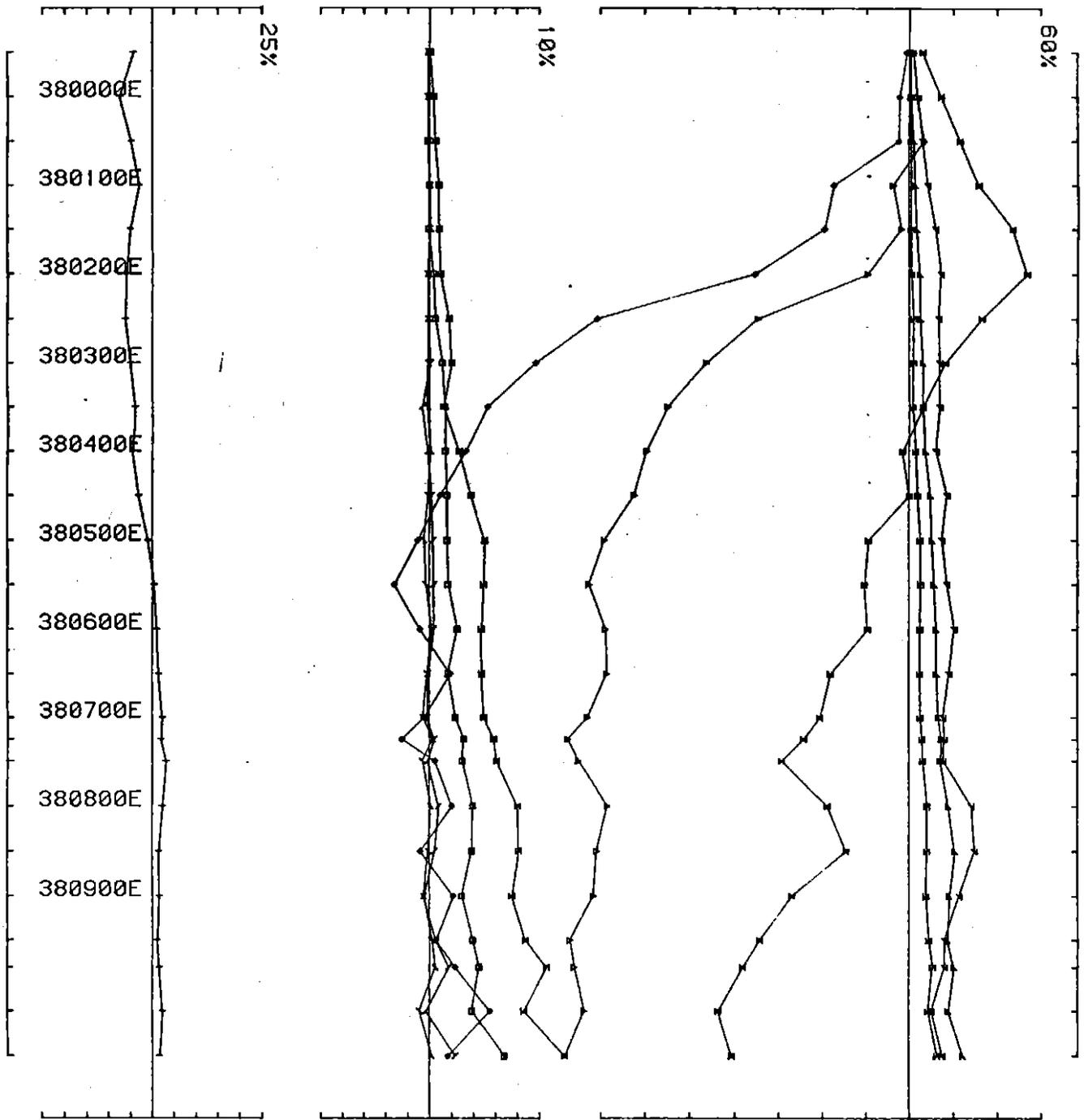


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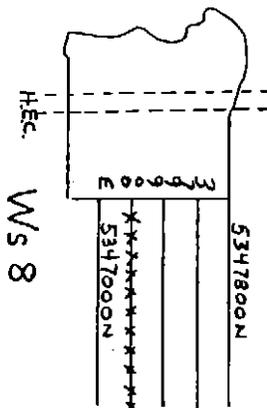


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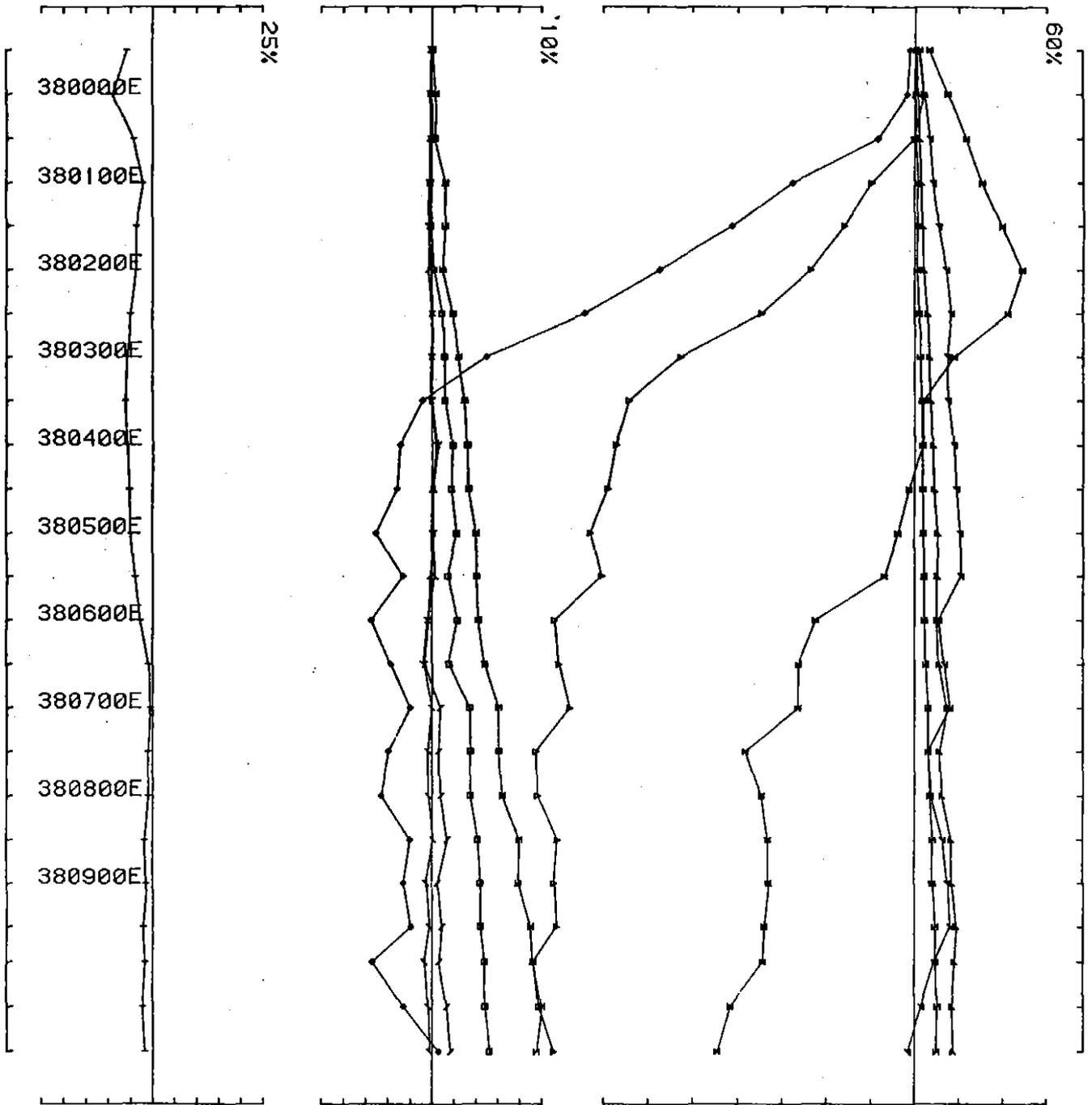
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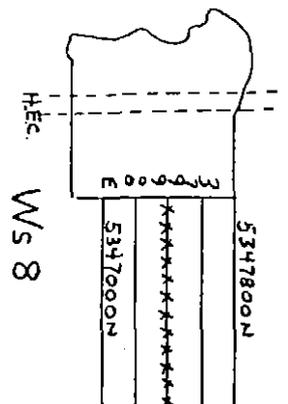
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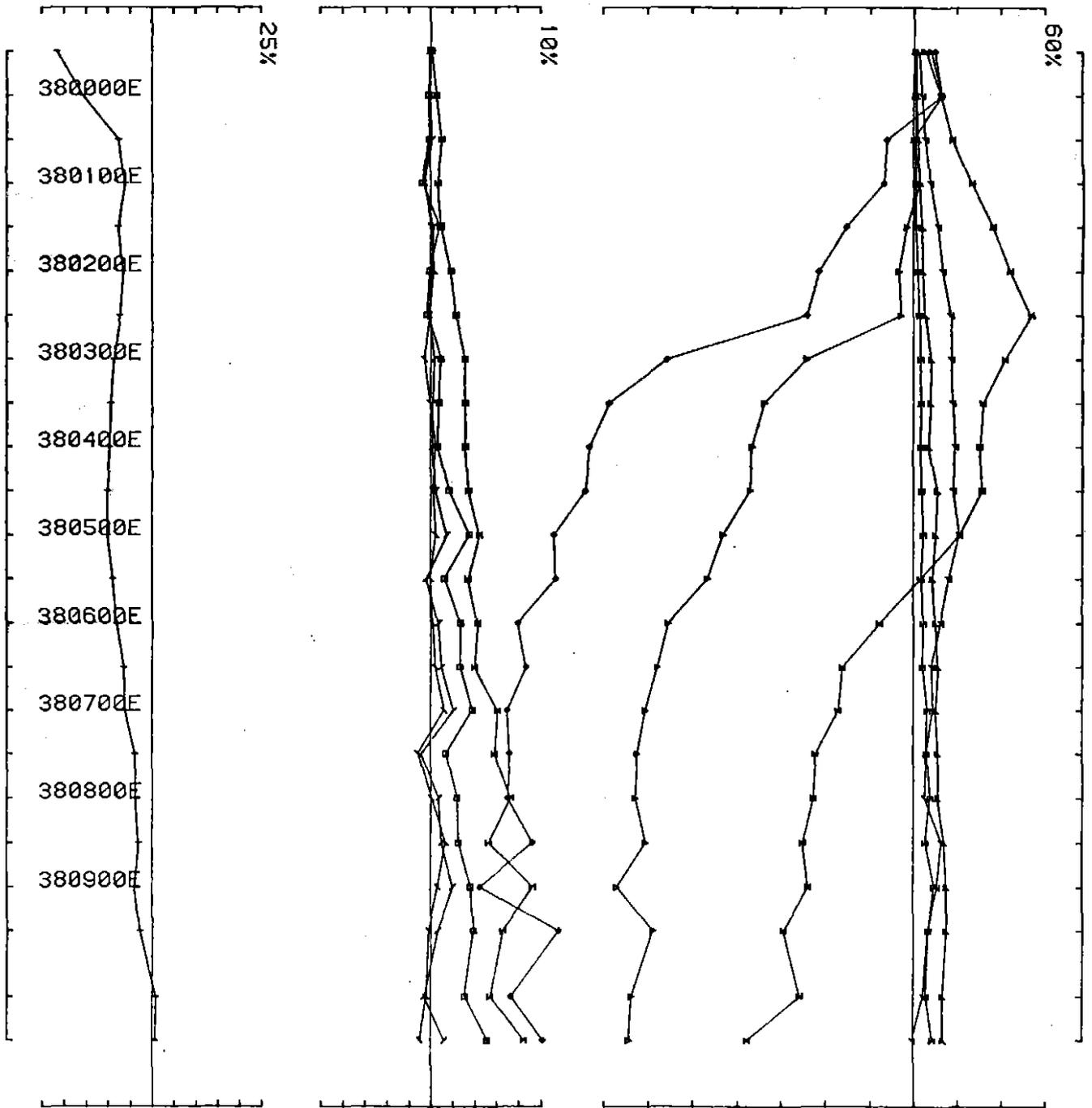


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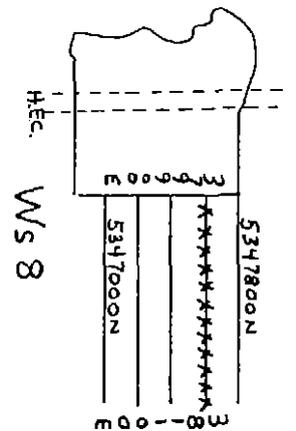


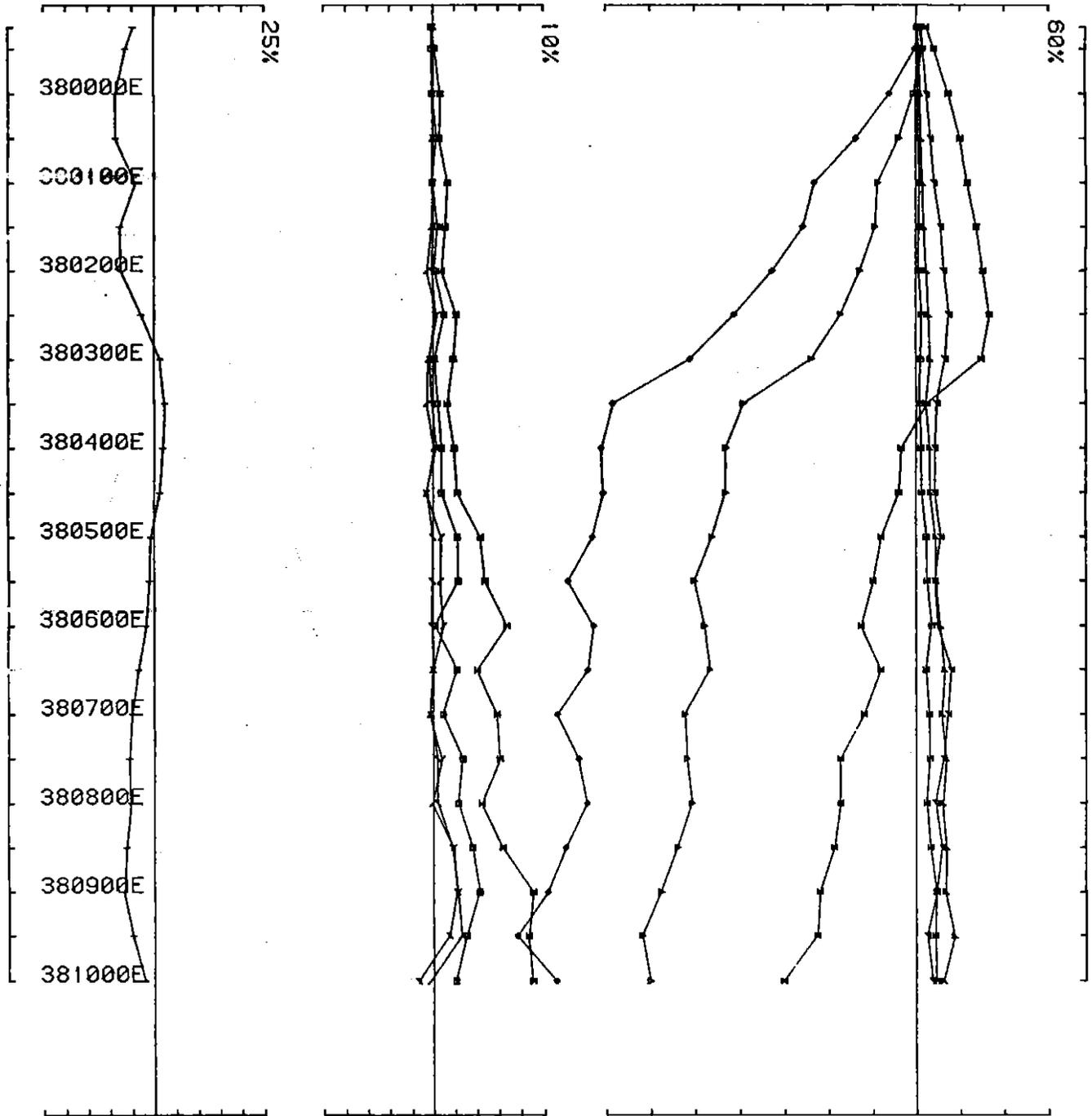
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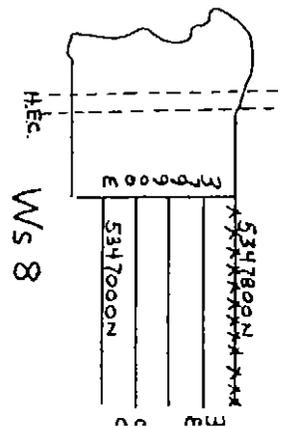


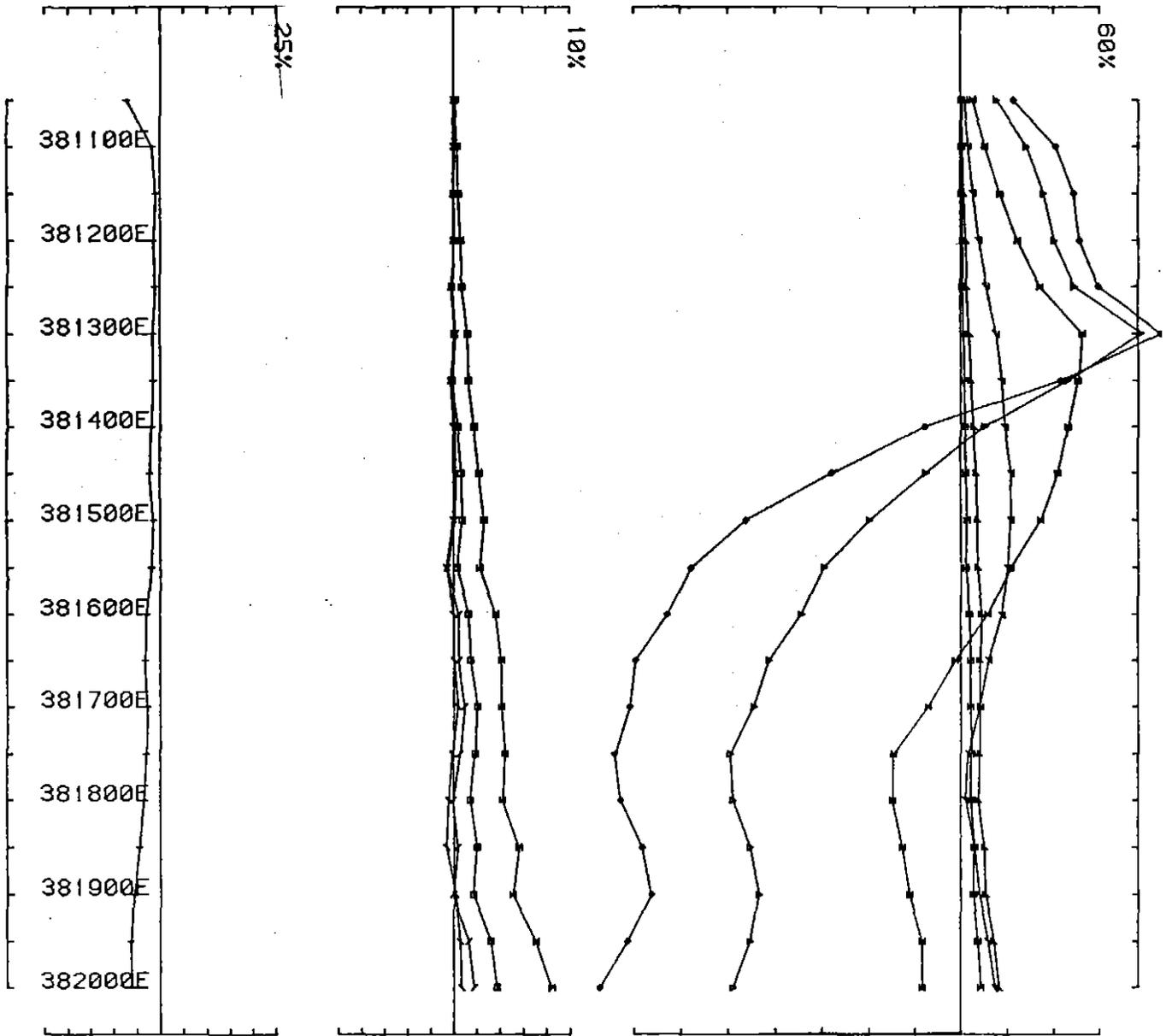
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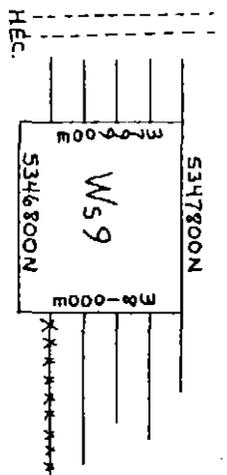


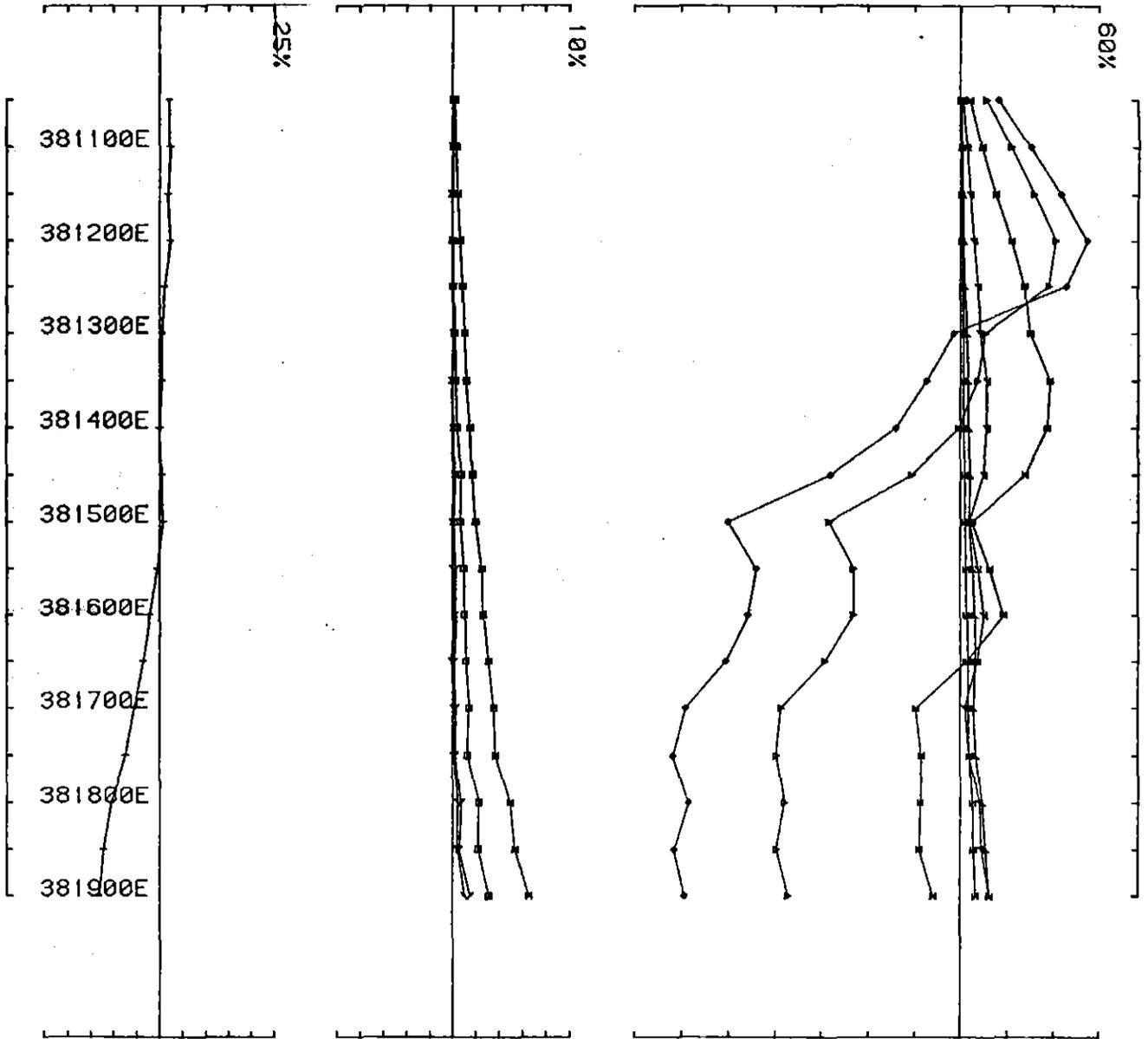
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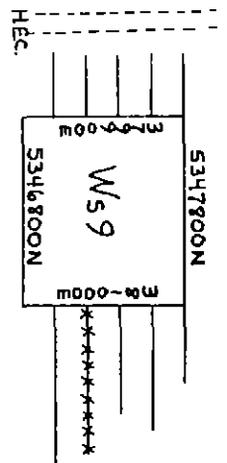


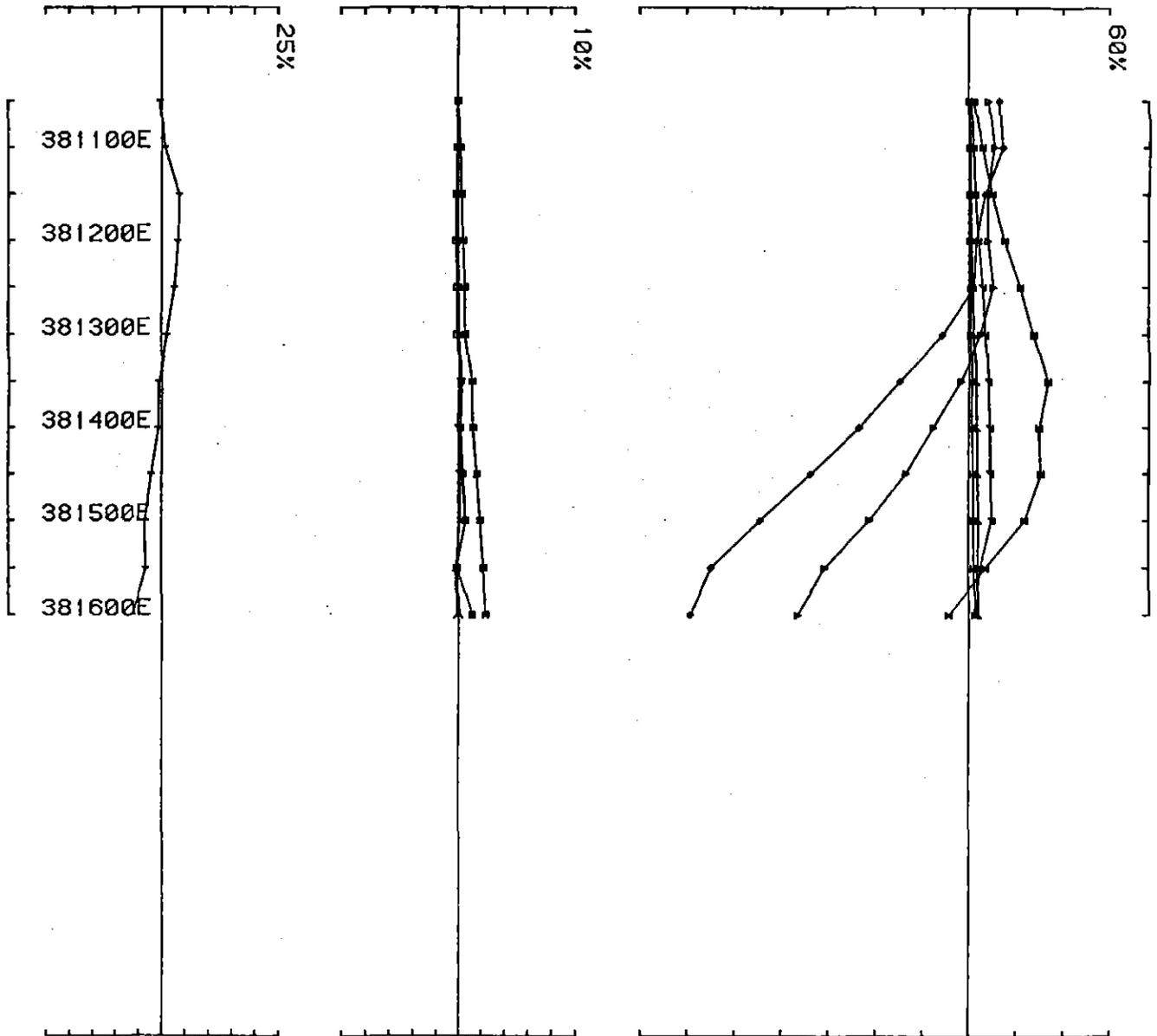
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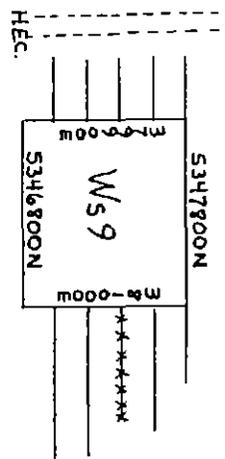


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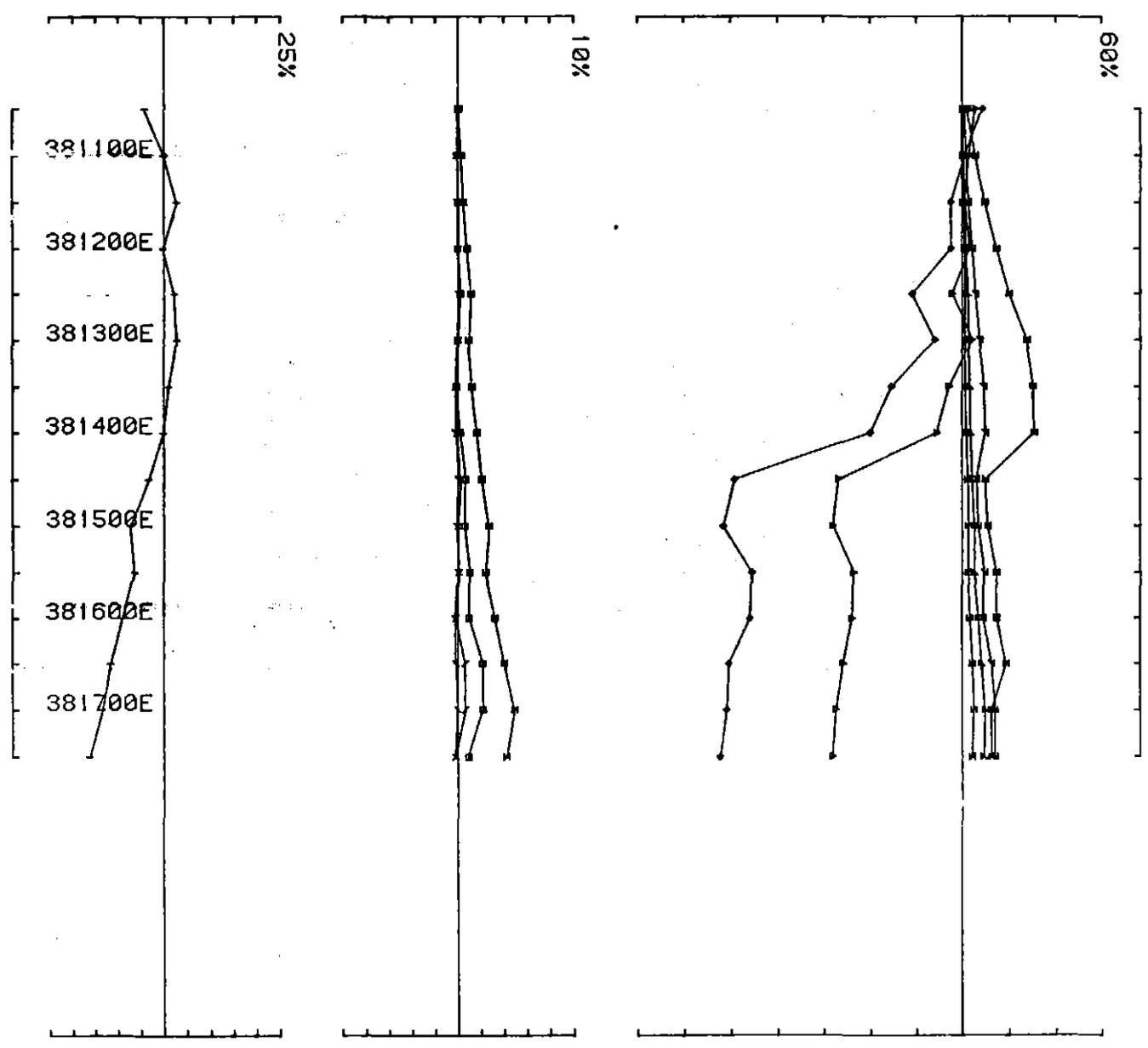


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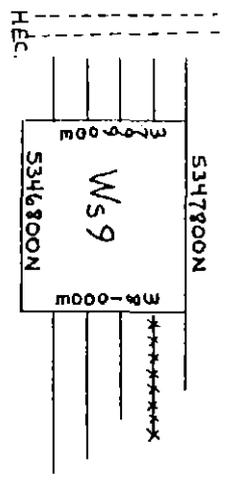


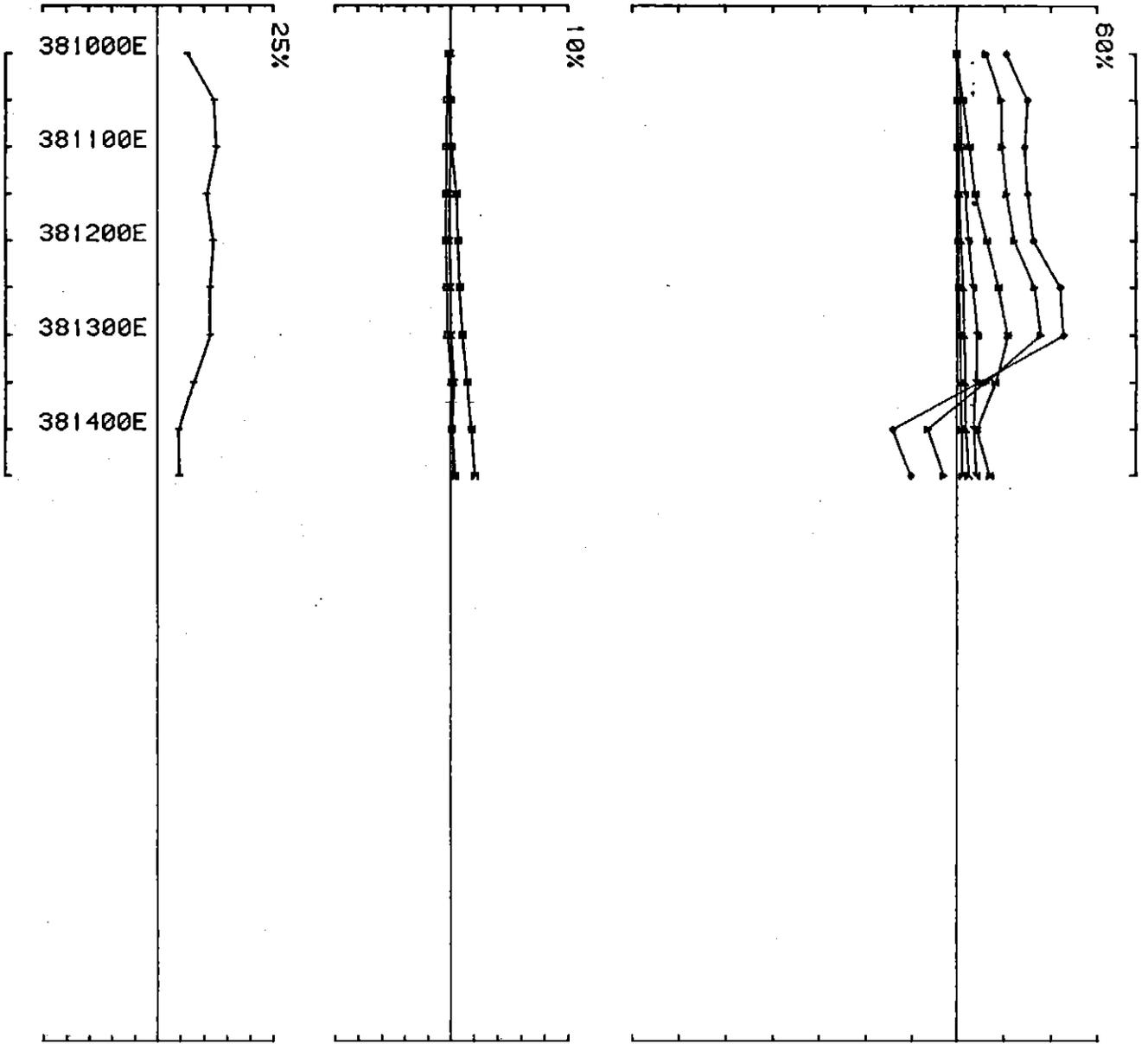
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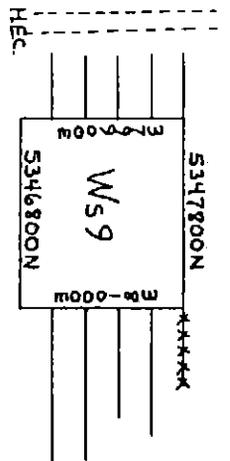


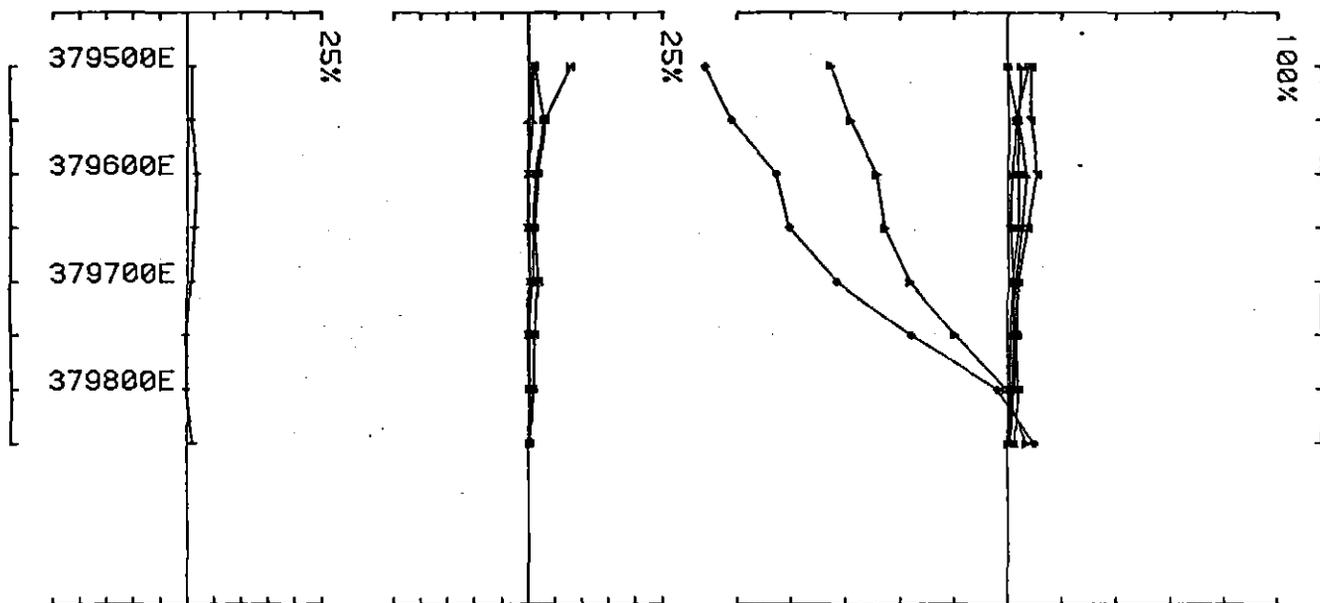
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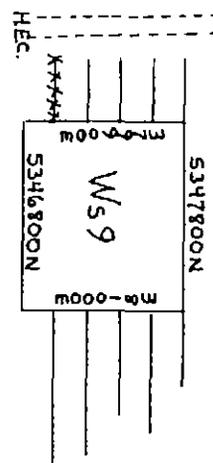


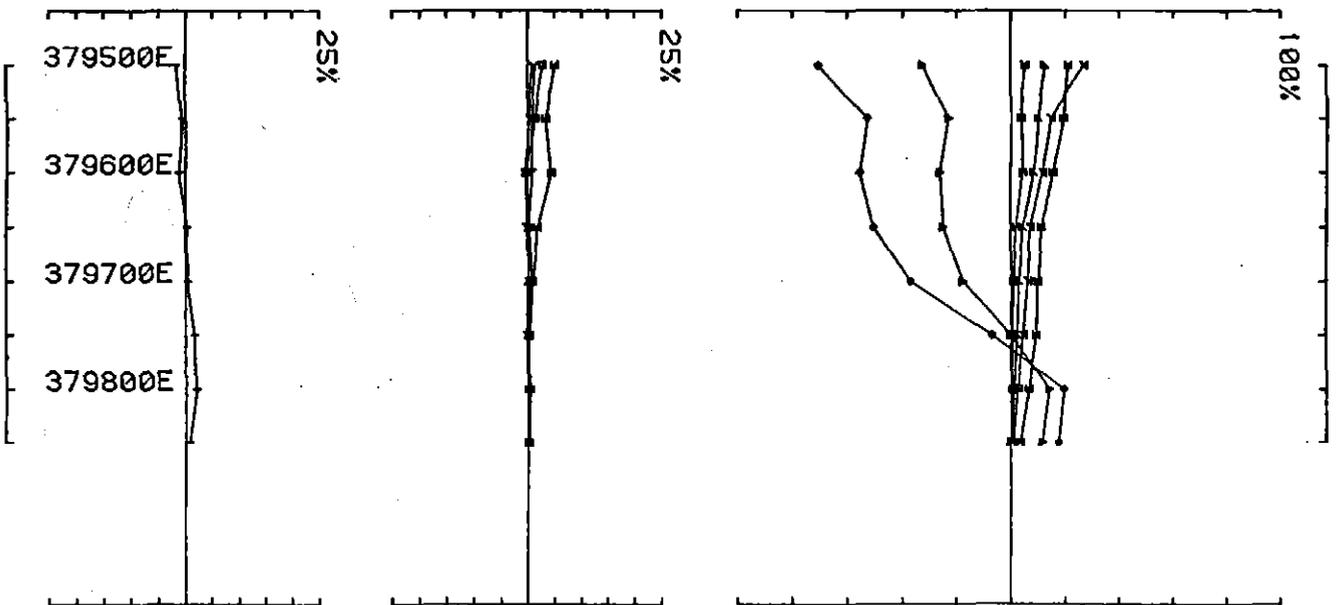
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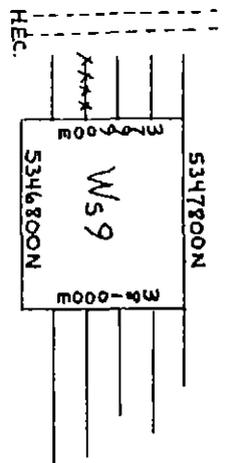


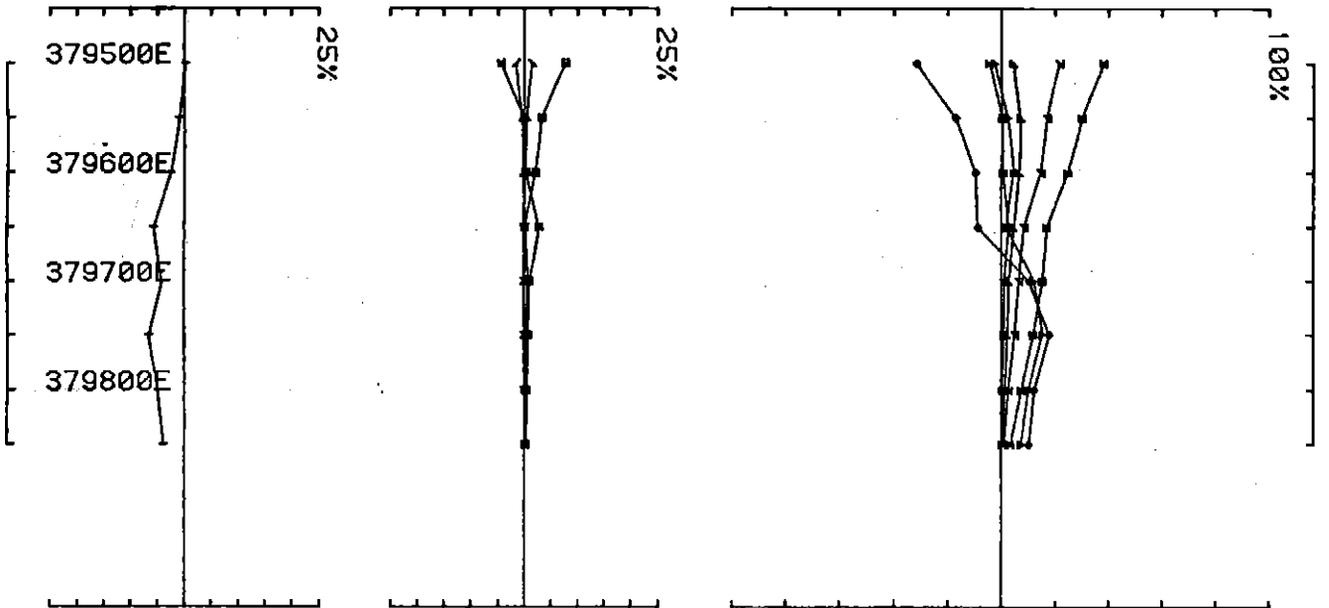
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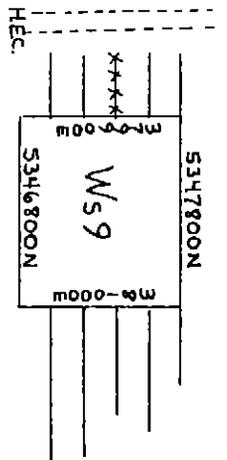


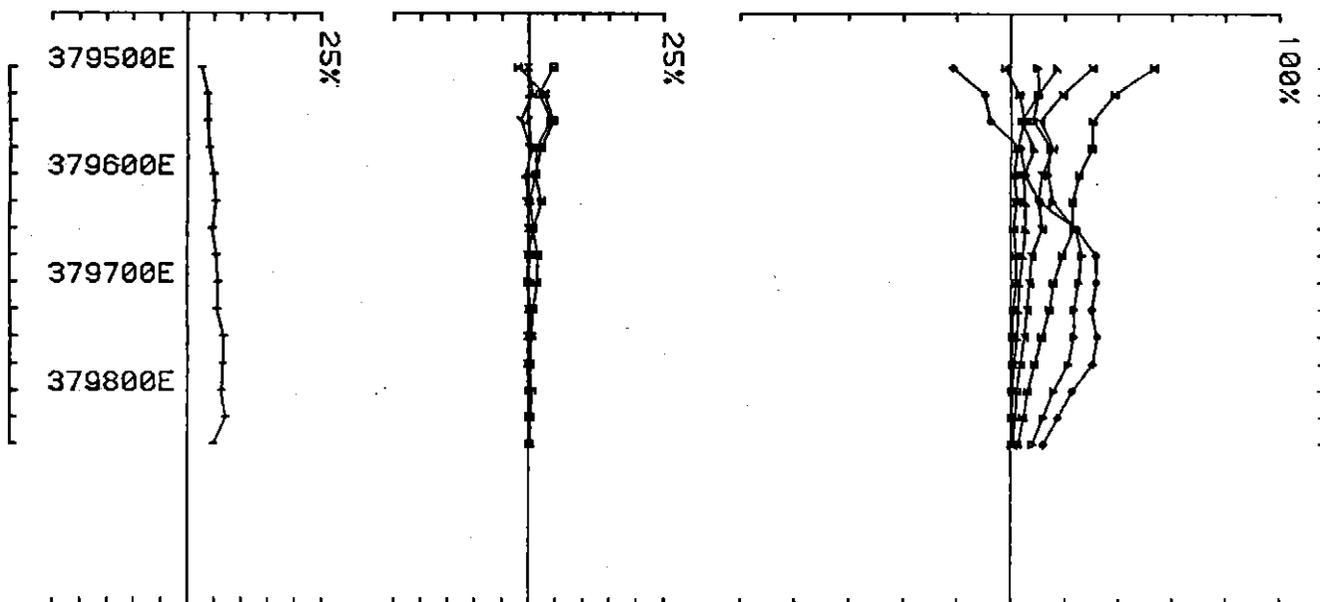
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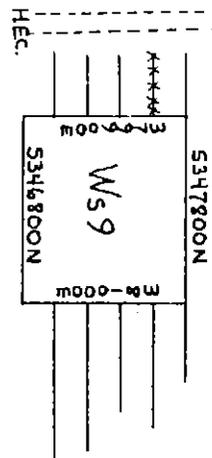


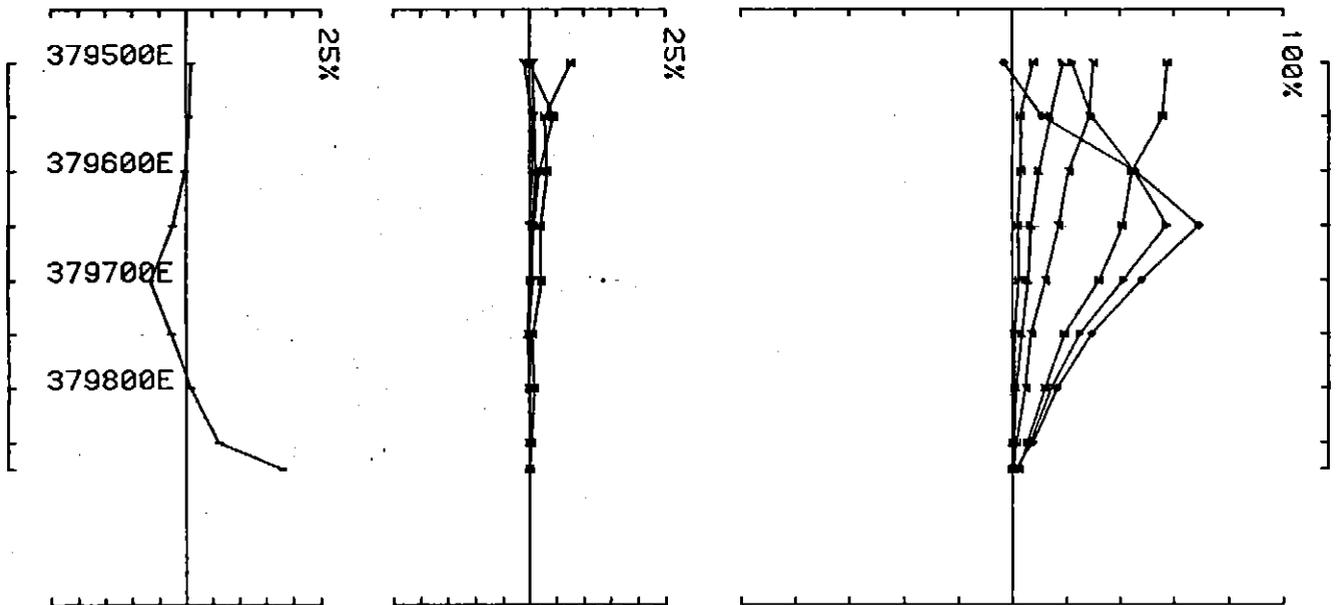
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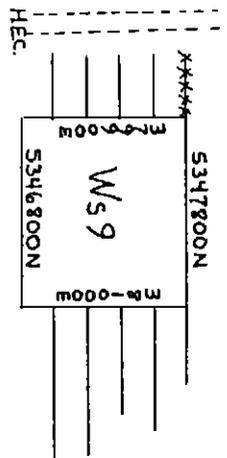


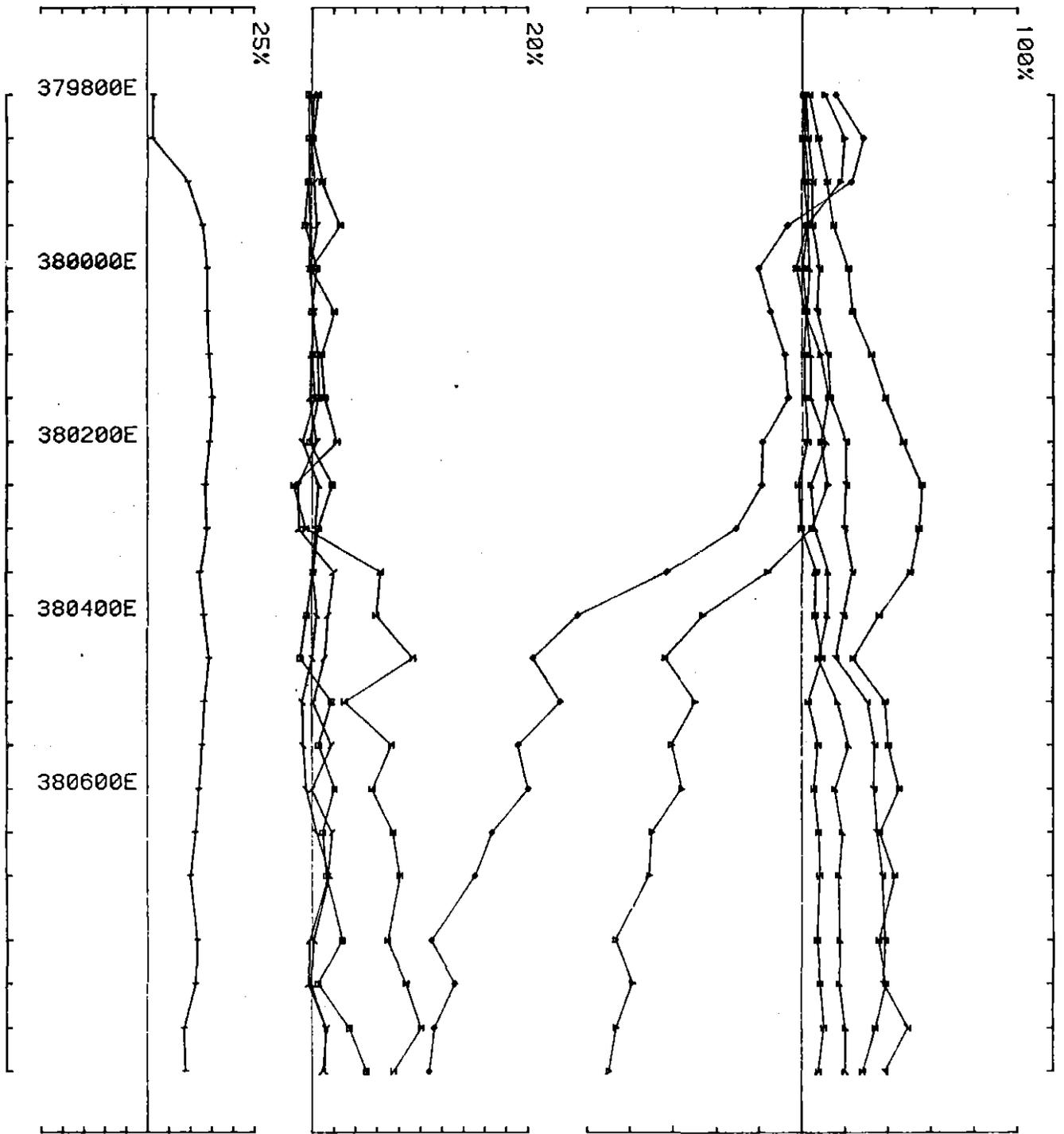
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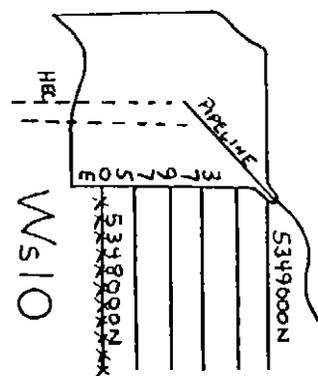


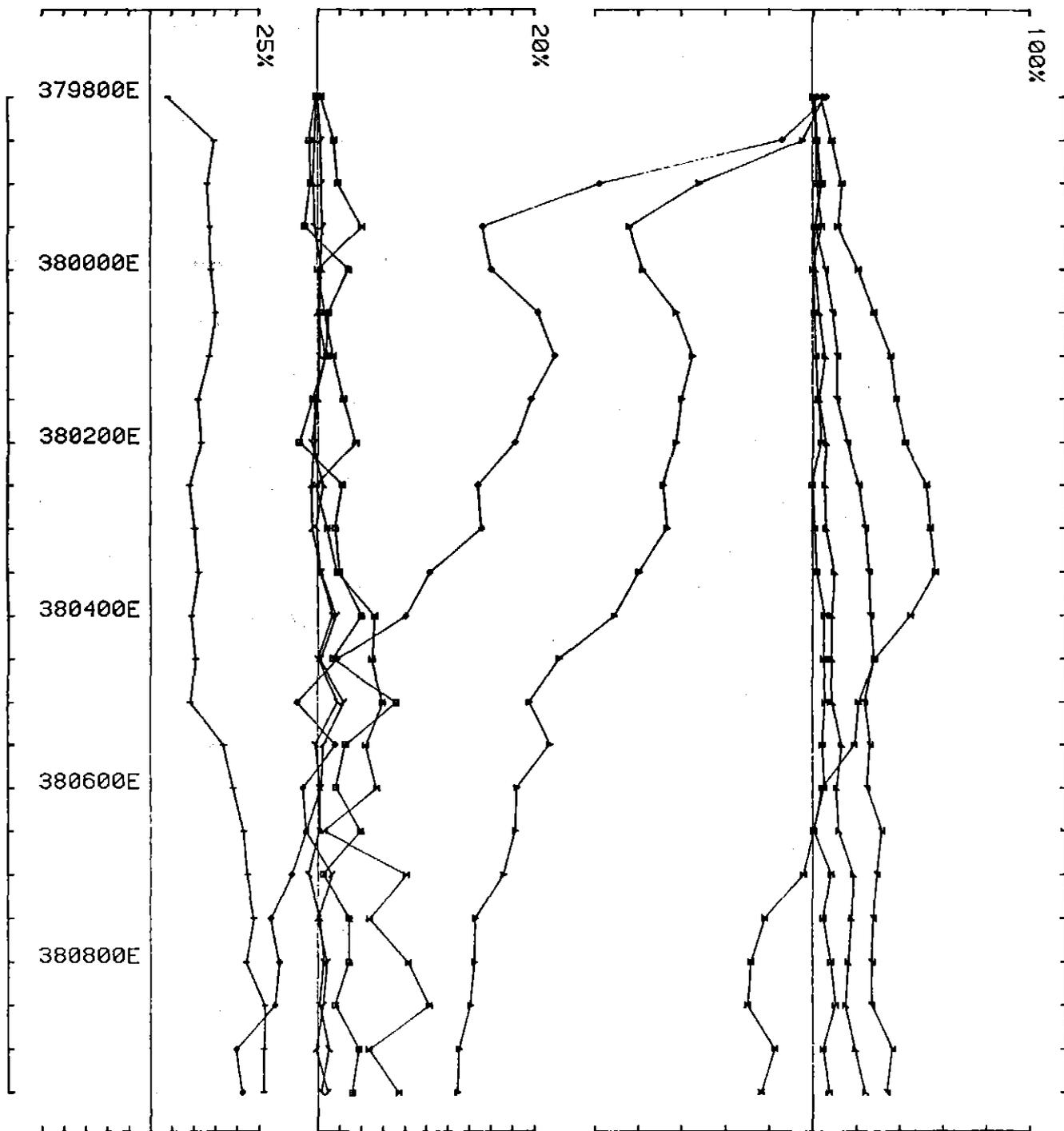
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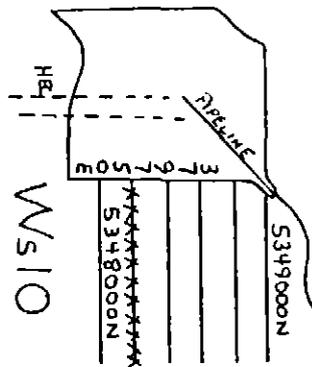


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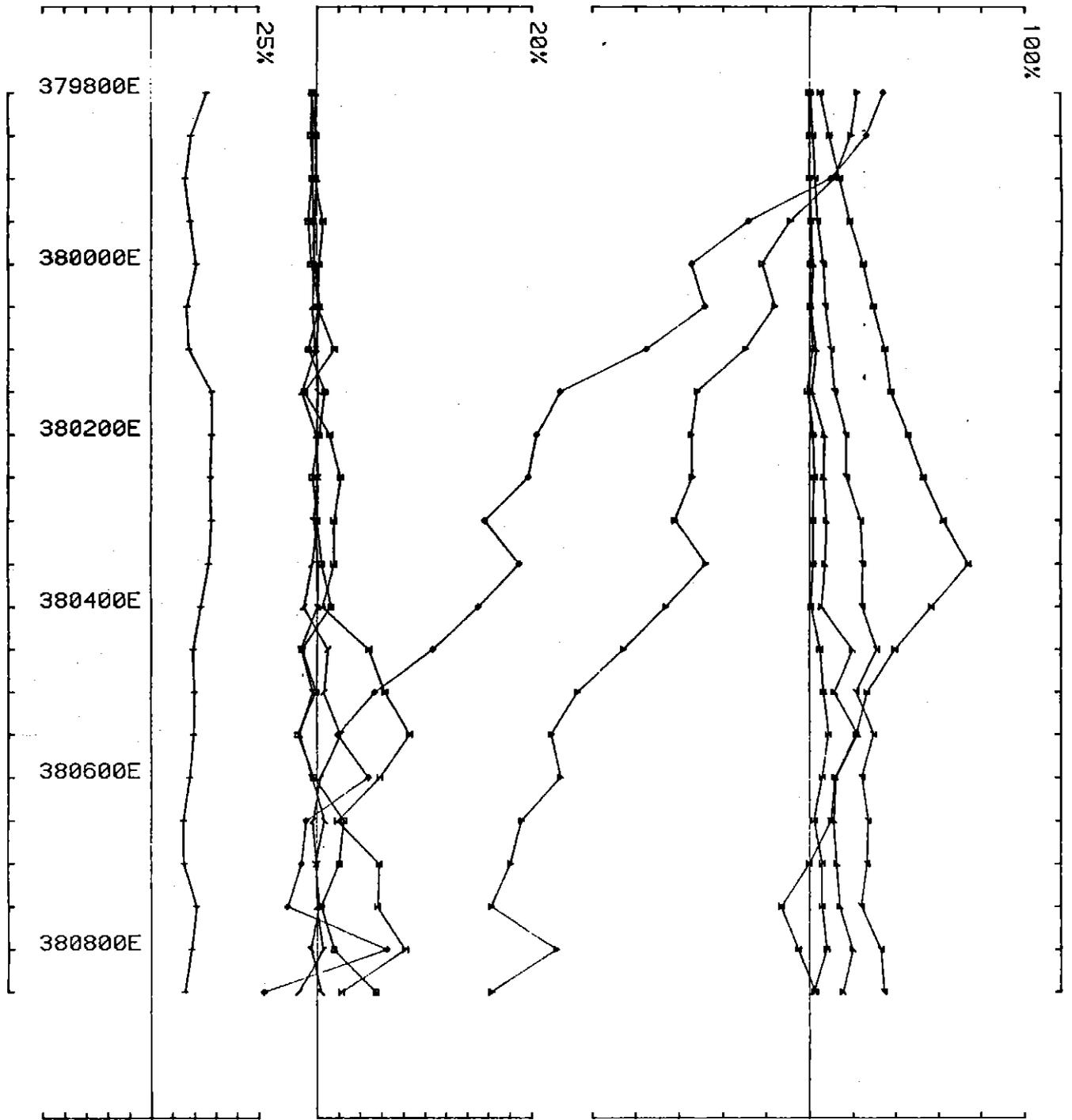


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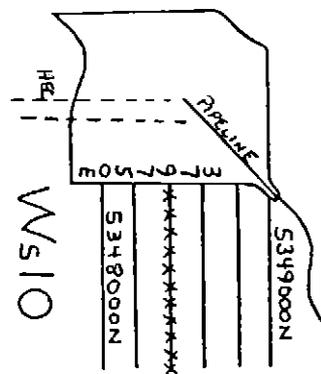


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669218

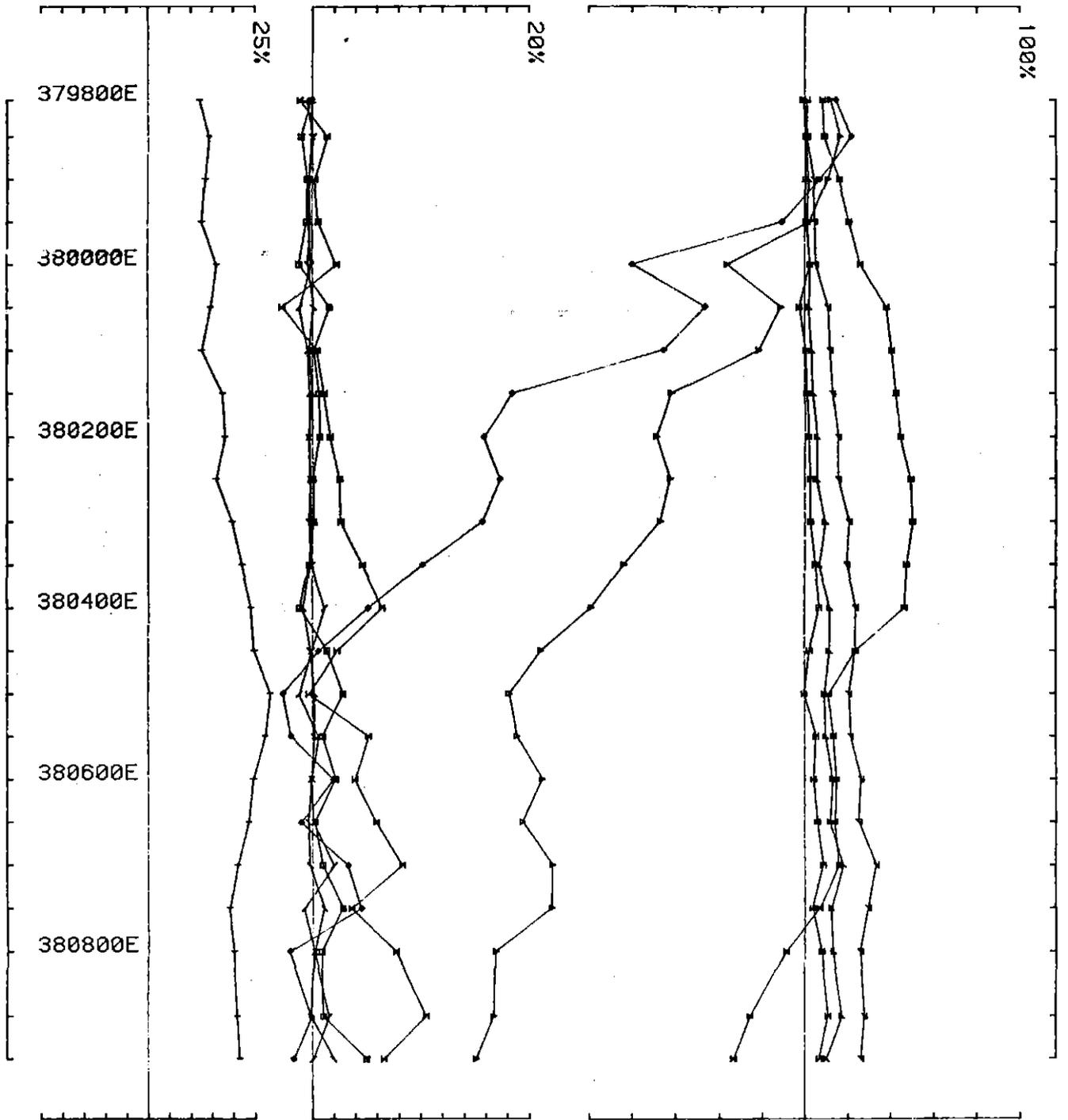


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 10 line 5348400N component Hz
 secondary field Channel 1 continuously normalized



217

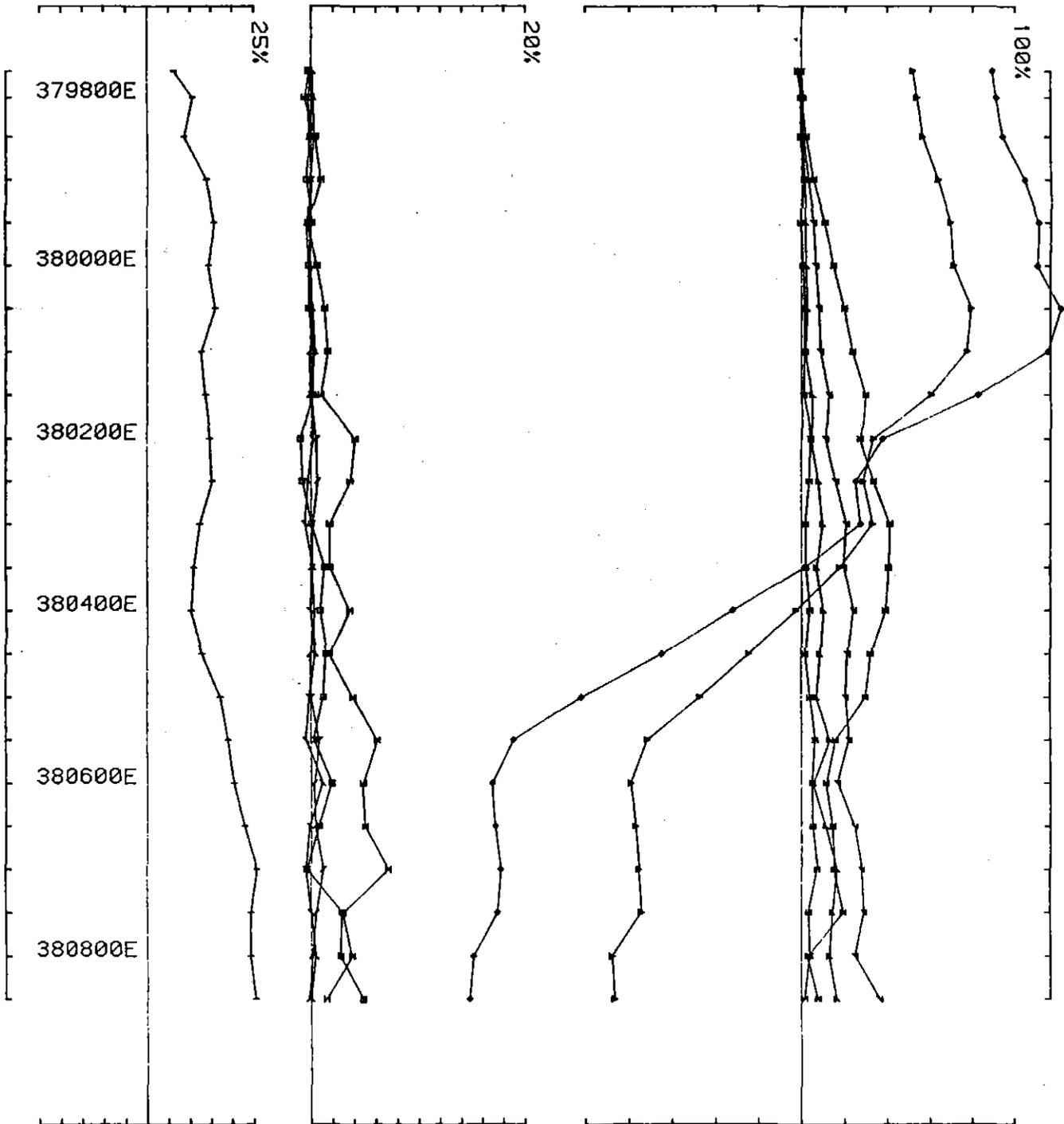
669219



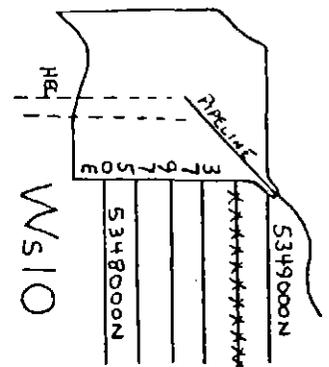
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 10 line 5348600N component Hz
 secondary field Channel 1 continuously normalized

HEC
 379750

 5348000N
 W510
 5349000N

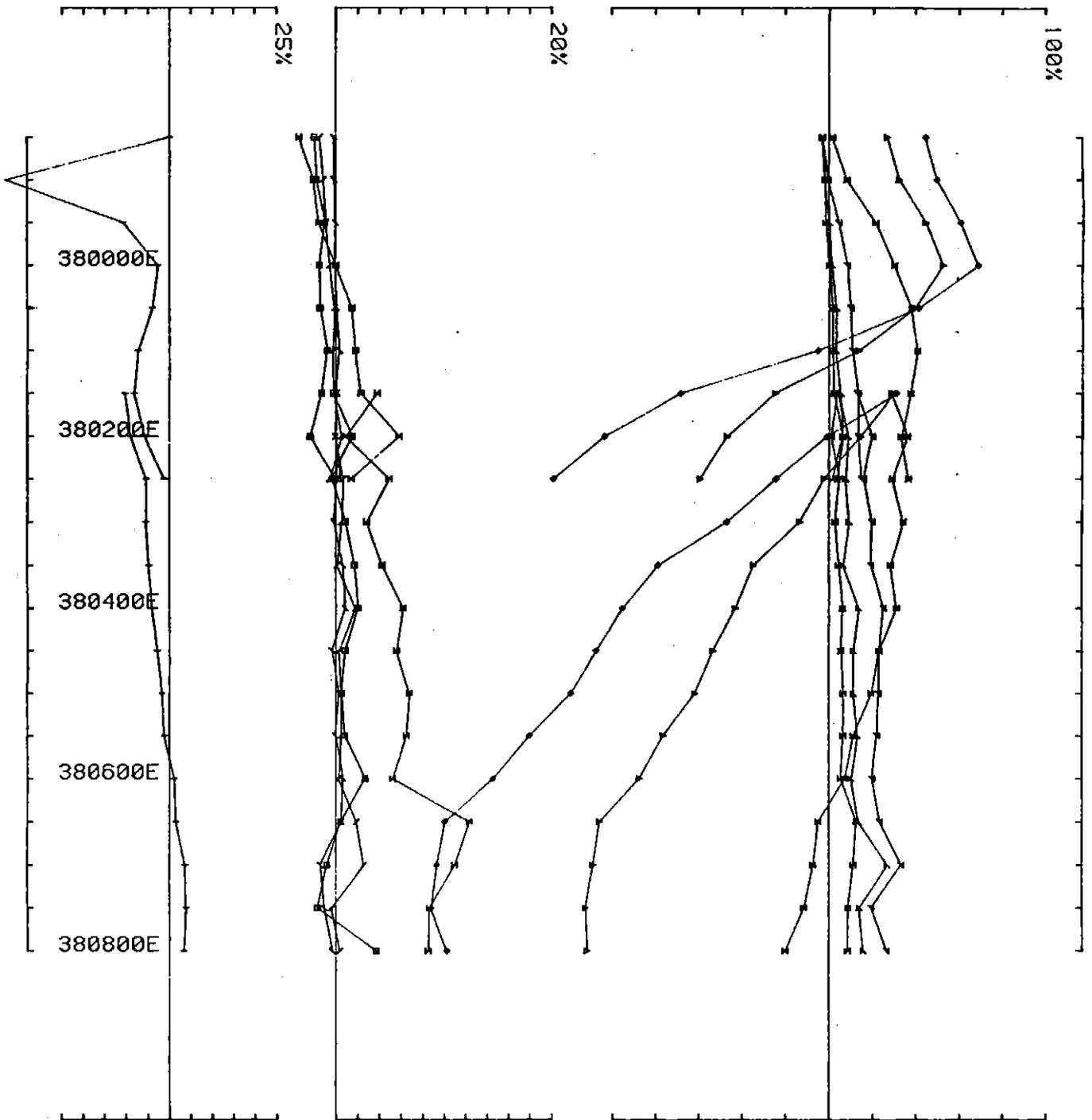


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 10 line 5348800N component Hz
 secondary field Channel 1 continuously normalized



219

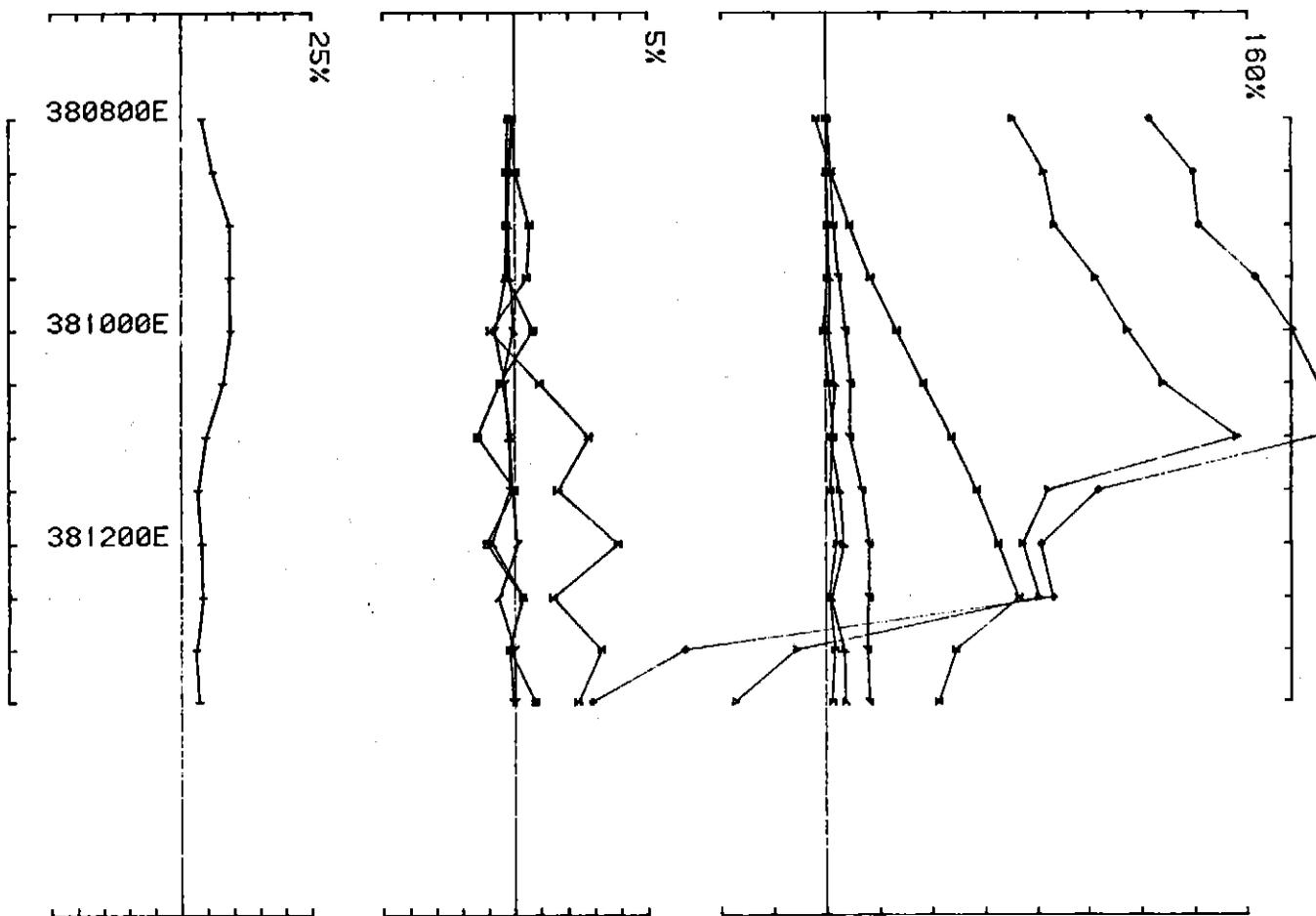
669221



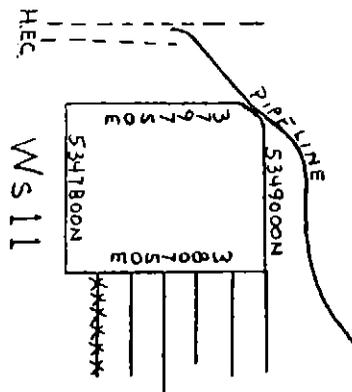
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L Job 8859 base freq (hz) 26.230
 loop no 10 line 5349000N component Hz
 secondary field Channel 1 continuously normalized

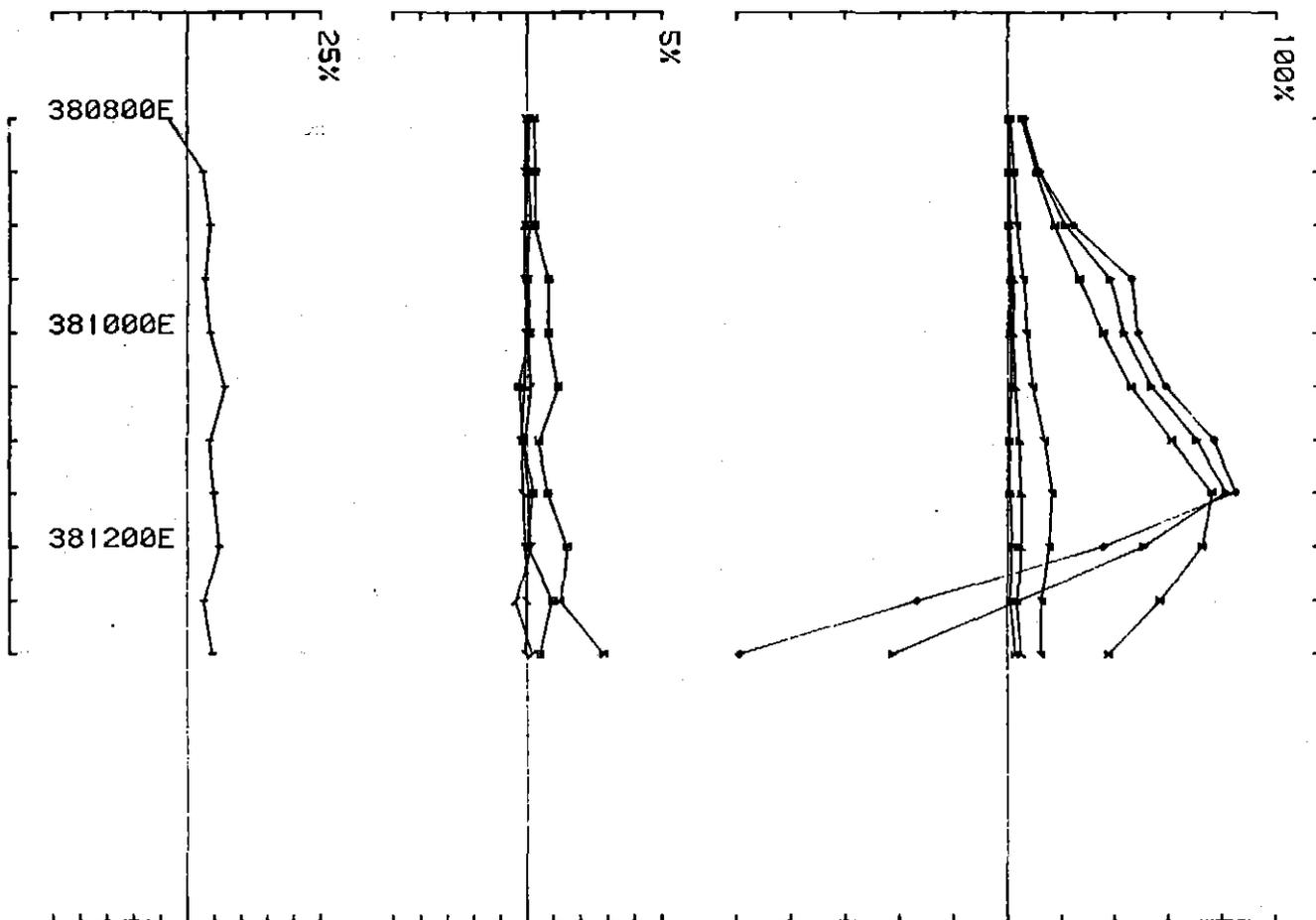
H84
 PRELIM
 M T G N J W
 5349000N
 W510
 5348000N

 5349000N

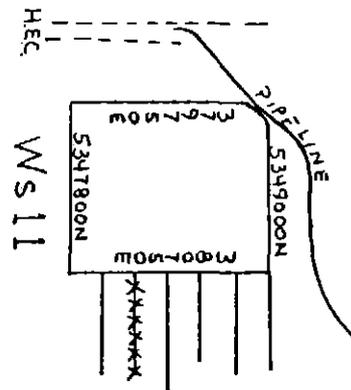


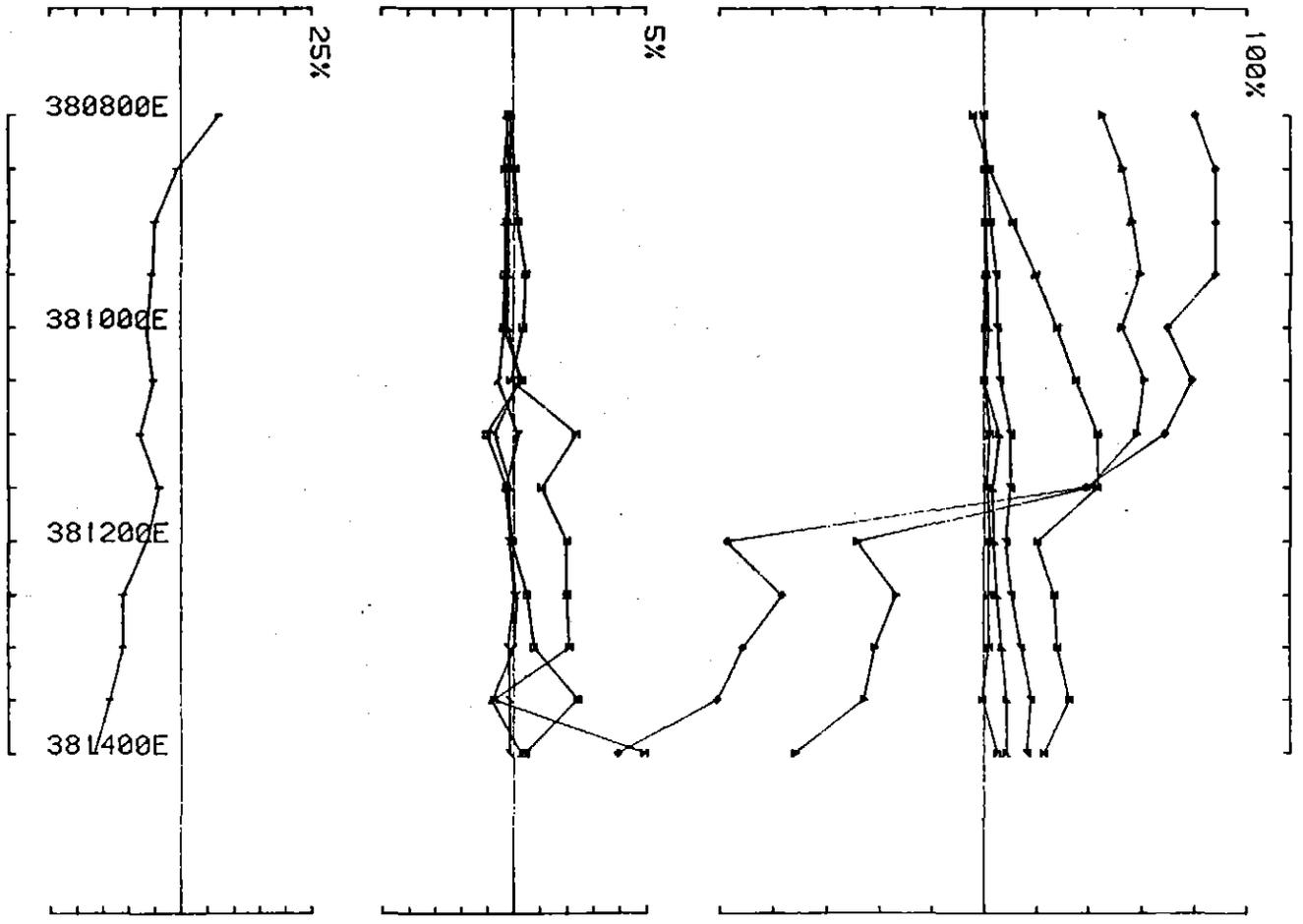
UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 11 line 5348000N component Hz
 secondary field Channel 1 continuously normalized



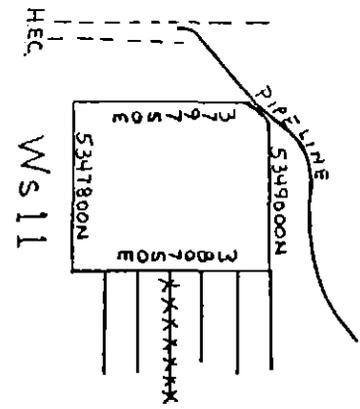


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 loop no 11 line 5348200N component Hz
 secondary field Channel 1 continuously normalized



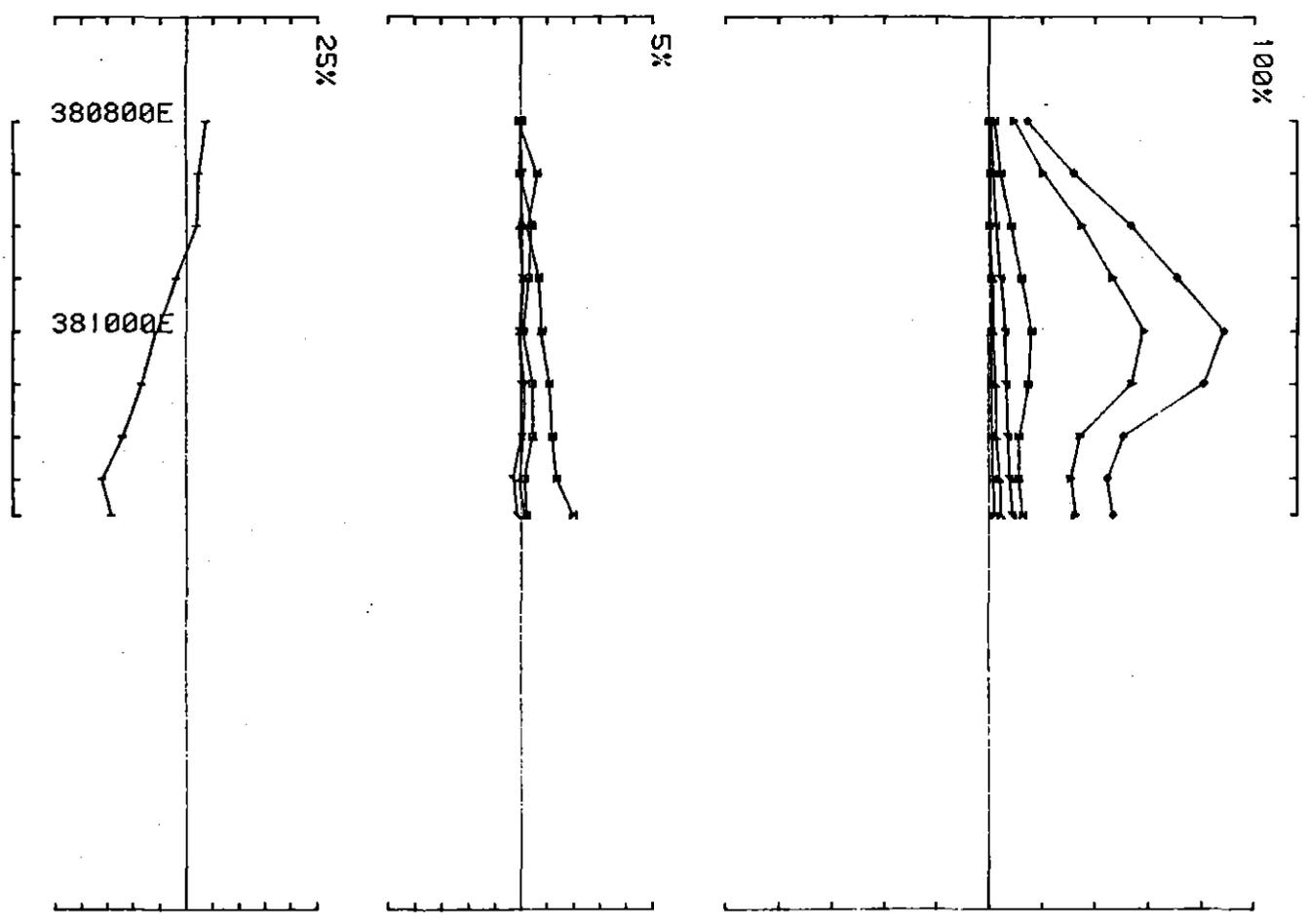


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 11 line 5348400N component Hz
 secondary field Channel 1 continuously normalized

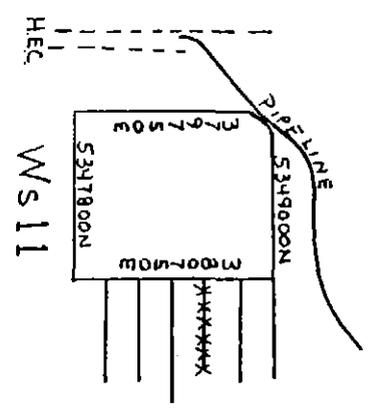


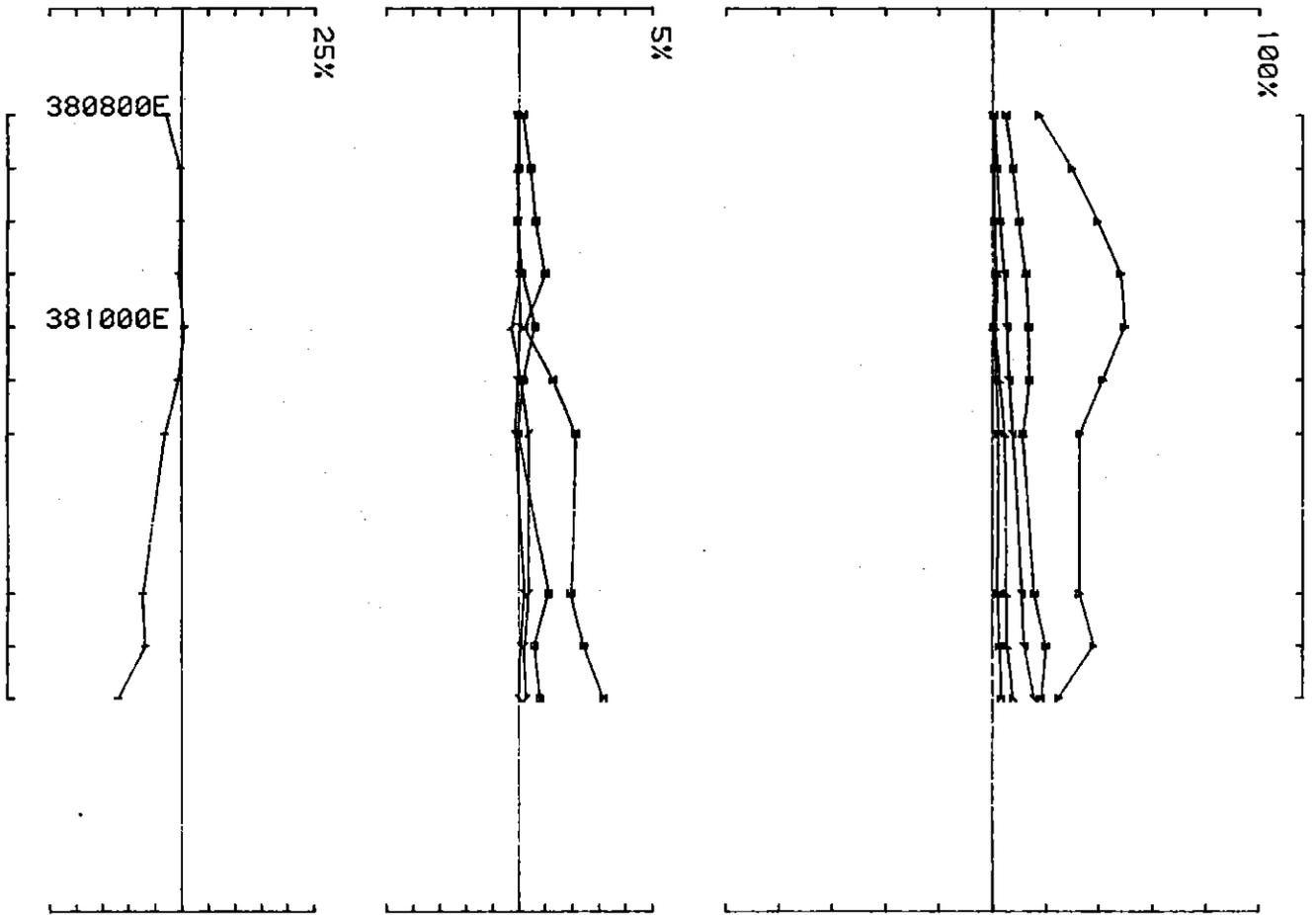
223

669225

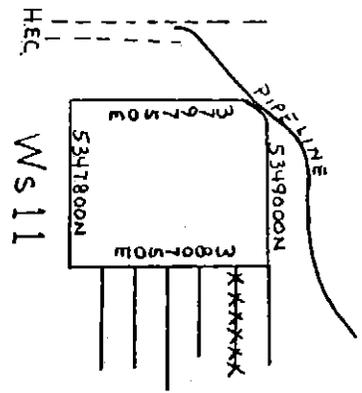


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 11 line 5348600N component Hz
 secondary field Channel 1 continuously normalized



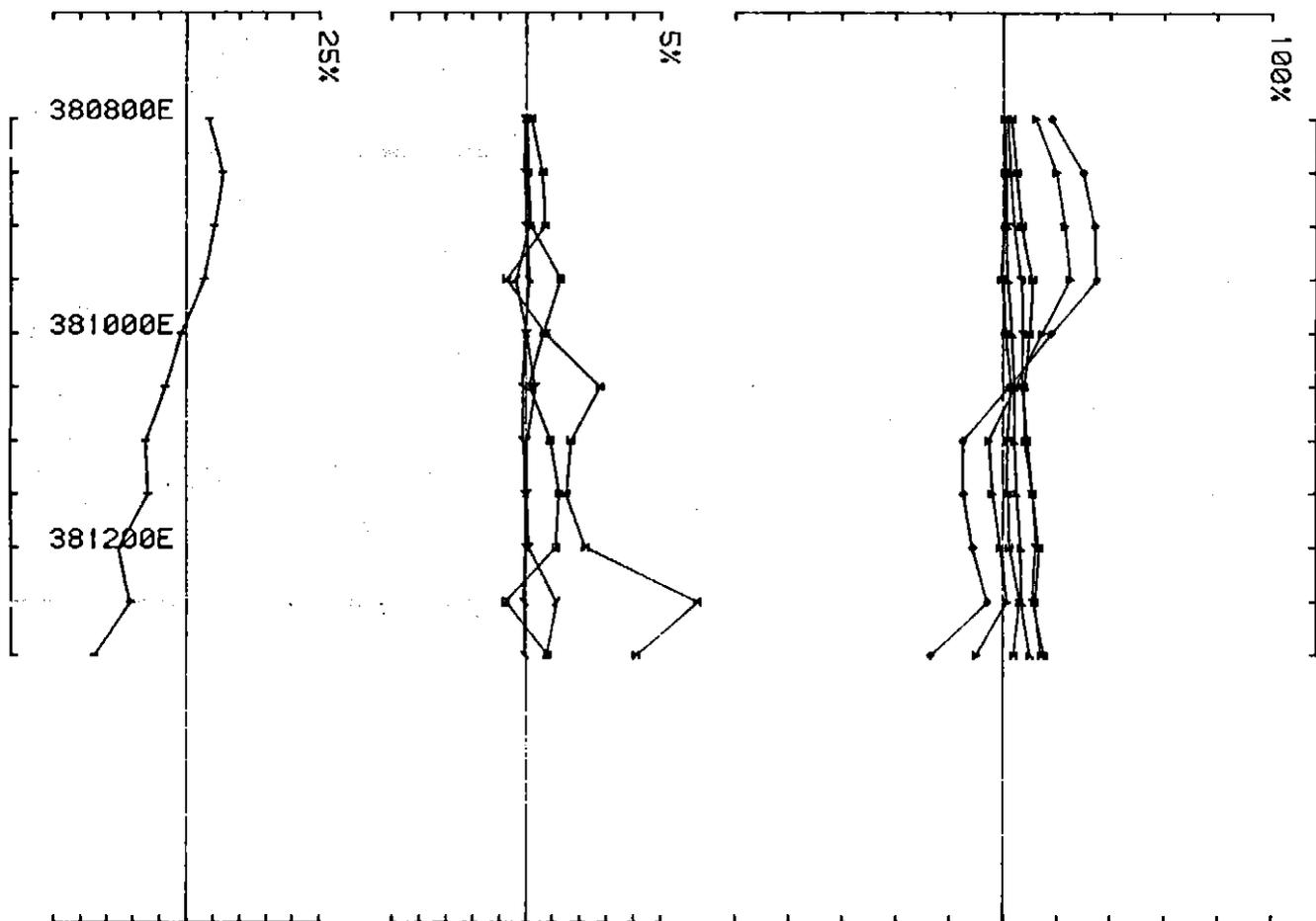


UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 11 line 5348800N component Hz
 secondary field Channel 1 continuously normalized

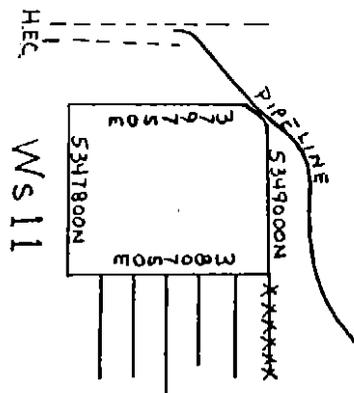


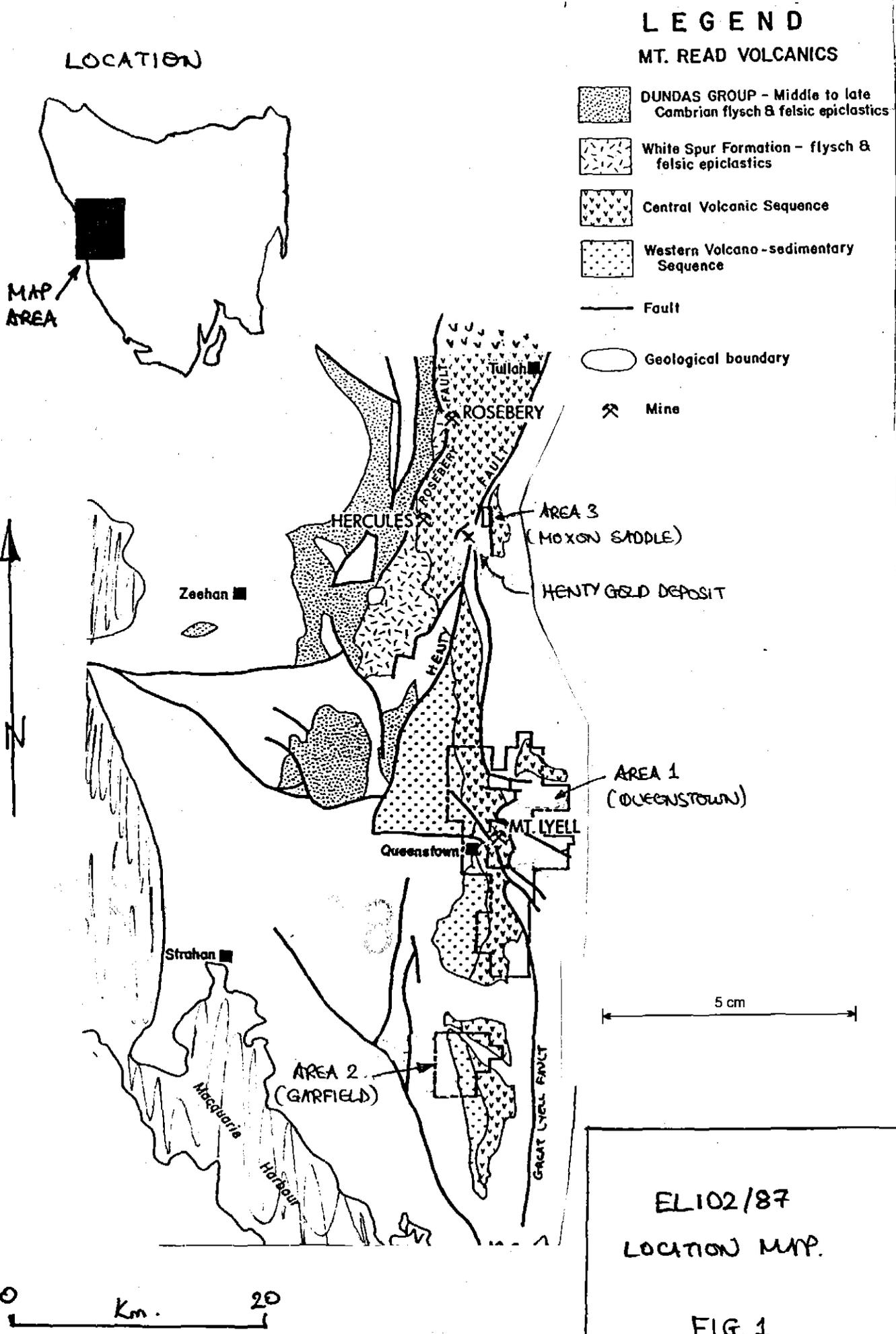
225

669227



UTEM SURVEY at WEST SEDGWICK for B H P
 conducted by L G L job 8859 base freq (hz) 26.230
 loop no 11 line 5349000N component Hz
 secondary field Channel 1 continuously normalized

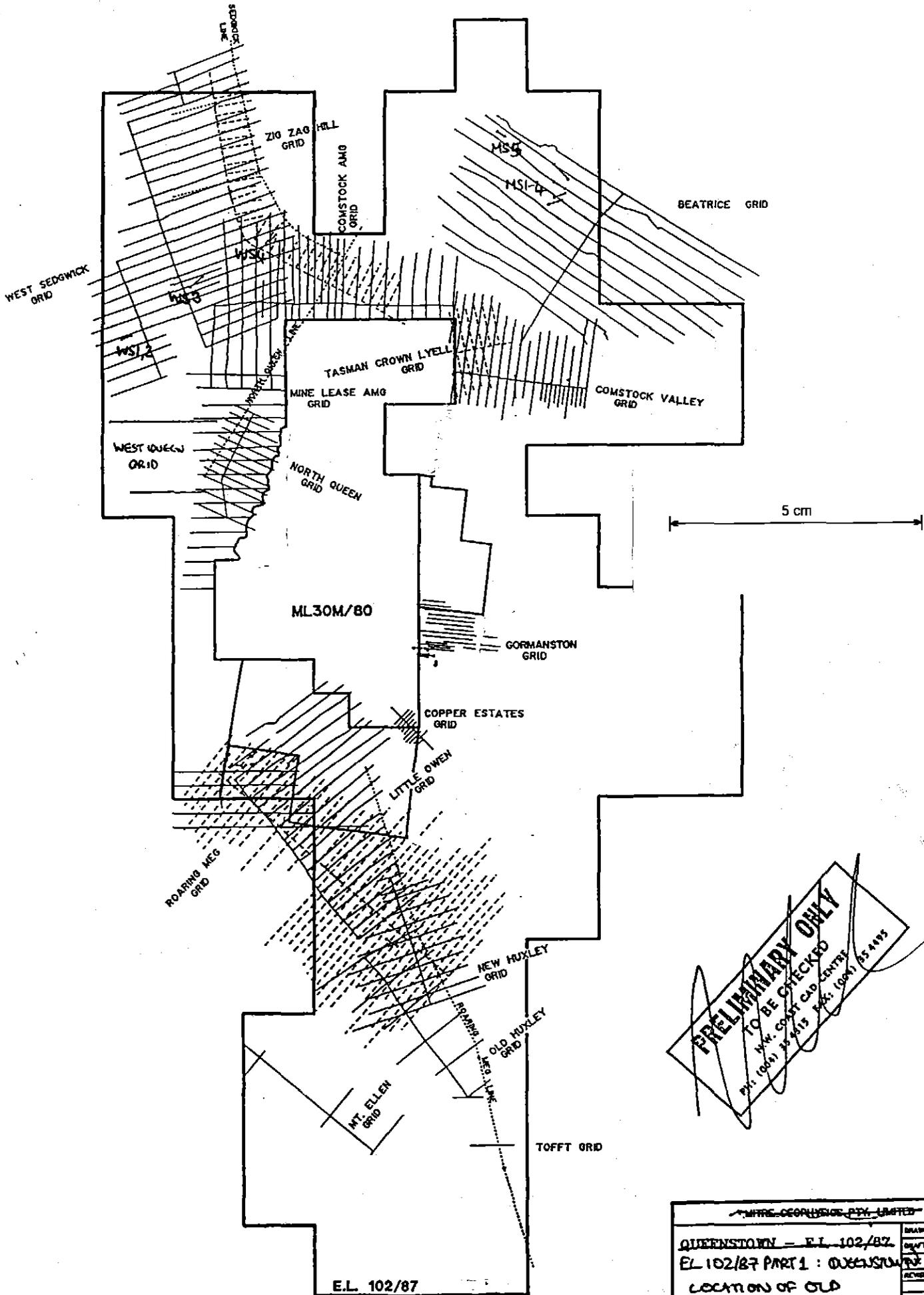




227

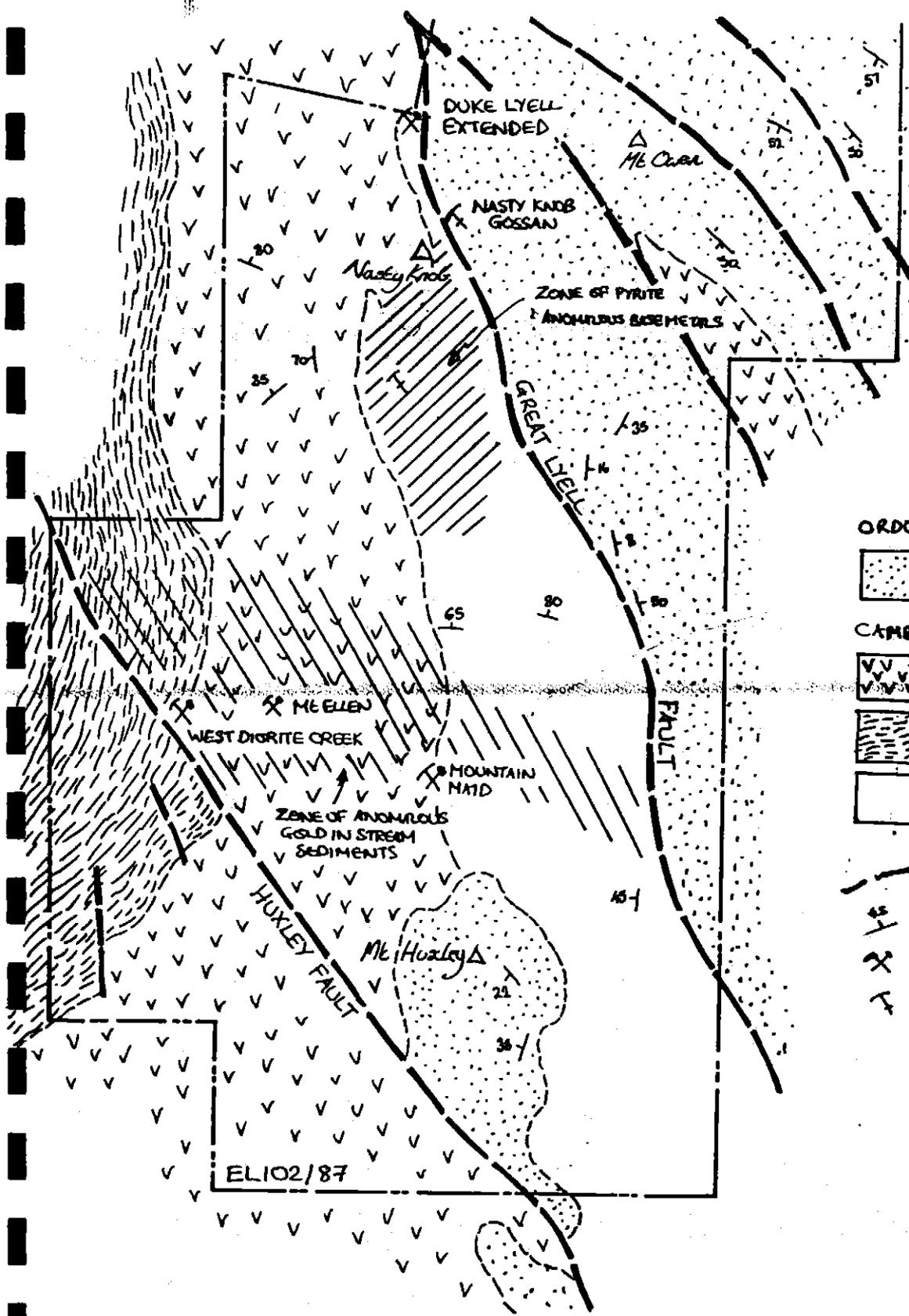
669229

FIG. 2



PRELIMINARY ONLY
 TO BE CHECKED
 N.W. COAST OLD CENTRAL
 P.M. (1961) 15 413 P.M. (1961) 15 413

MIRRE-GEORGINOS PTY. LIMITED	
QUEENSTOWN - E.L. 102/87	DRAWN BY: J.B.
E.L. 102/87 PART 1: QUEENSTOWN	QUANTIFIED: T.O.D.S.
LOCATION OF OLD EXPLORATION GRIDS.	DATE: 1961
	REVISIONS:
	FILE NO.
SCALE 1:50 000	FIG. 2



- ORDOVICIAN DENISON GROUP
 -  CONGLOMERATE & COARSE SANDSTONE (SUCH CONGLOMERATE)
- CAMBRIAN Mc READ VOLCANICS
 -  RHYOLITE TO RHYODACITE LAVA (MINOR BRECCIA & SEDIMENTS OF THE WHIP SPUR SEQUENCE)
 -  FINE-GRAINED SEDIMENTS WITH RHYOLITE PORPHYRY INTRUSIVES
 -  CORALITE-MICA SCHIST AND PYRITIC TEXTALITE UNITS
-  FAULT (INFERRED)
-  STRIKE - DIP OF BEDDING
-  OLD WORKING
-  PROSPECT

1 : 3 3 3 3 3

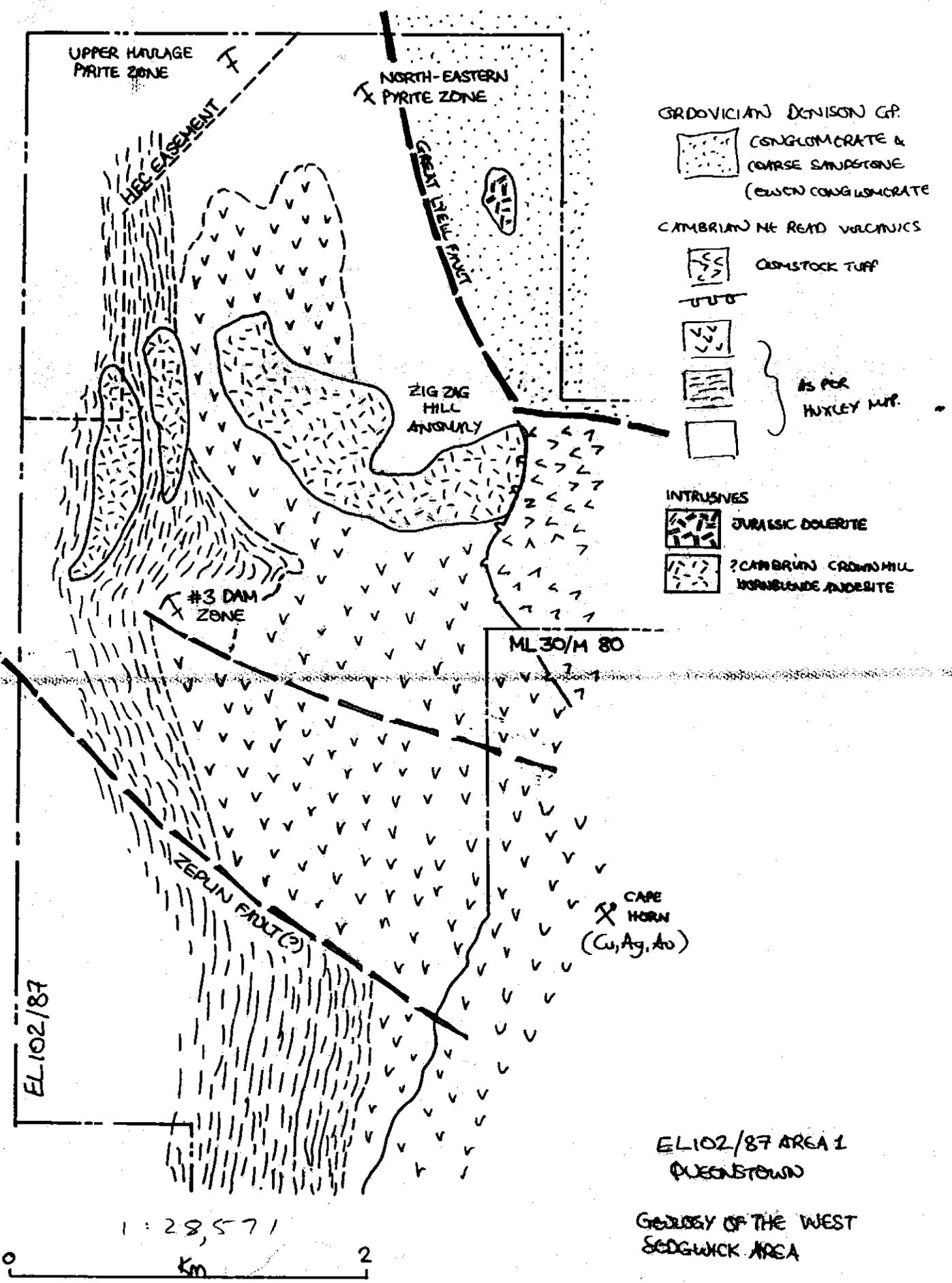
0 Km. 2

5 cm

EL102/87 AREA 1
QUEENSTOWN

GEOLOGY OF THE HUXLEY AREA.

FIG. 3



EL102/87 AREA 1
QUEENSTOWN

GEOLOGY OF THE WEST
SEDGWICK AREA

FIG. 4

81000mE 82000mE 83000mE 84000mE 85000mE

39000mN

38000mN

37000mN

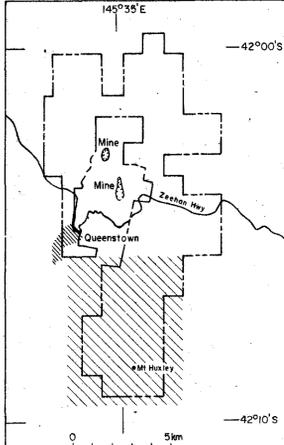
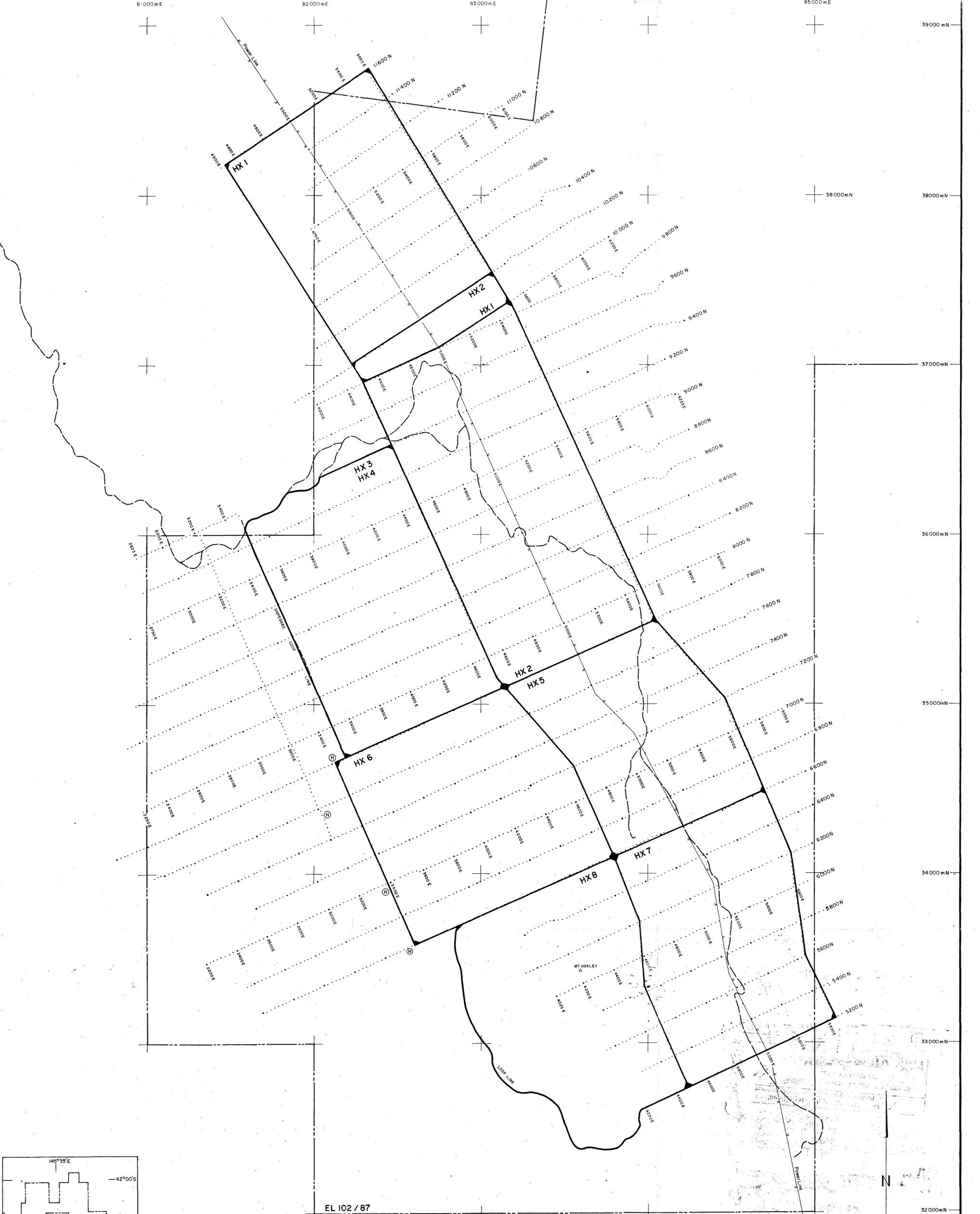
36000mN

35000mN

34000mN

33000mN

32000mN



EL 102 / 87

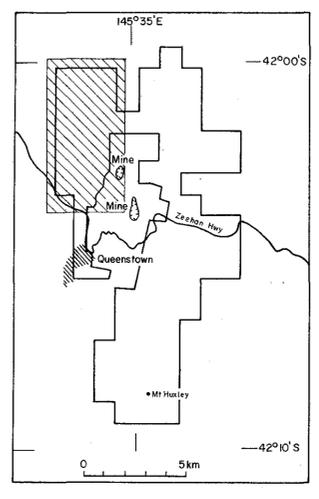
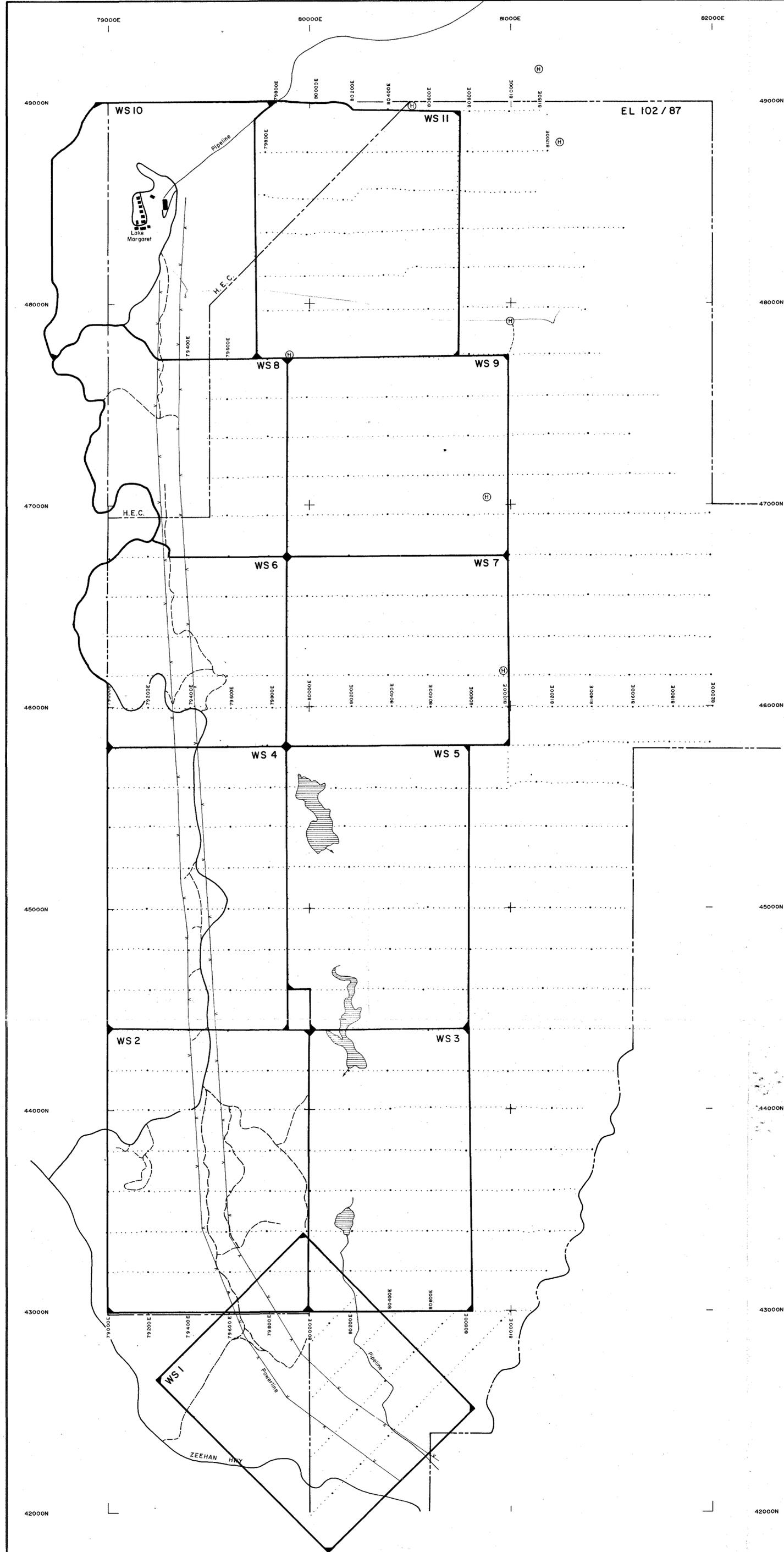
- HX 6** Loop location
- Pegged line (25m peg interval)
- Vehicular track
- - - - Unpegged loop line
- Ⓜ Helipad

5 cm

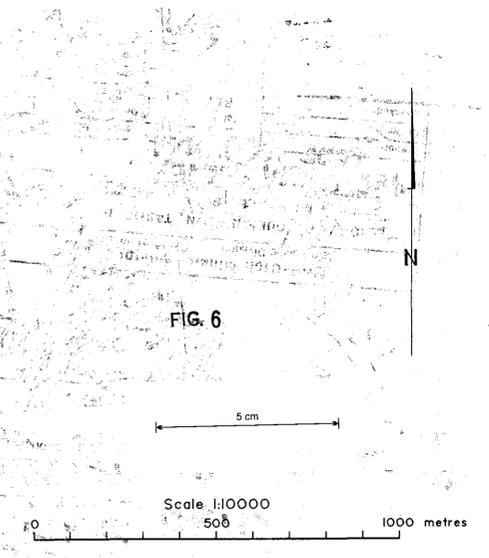
Scale 1:10000
0 500 1000 m

FIG. 5
669233

BHP-Utah Minerals International Asia Pacific Division - Exploration Department		
EL 102 / 87, QUEENSTOWN, TASMANIA MT HUXLEY GRID		
1988 UTEM SURVEY - LOOP LOCATIONS		
Prepared:	Date: April '89	Centre: Melbourne
Drawn: M. Rosker	Project No: B57	Drawing No: AI-2315
Checked: A. Wilde		



- Pegged line (25m peg interval)
- Vehicular track
- ⊕ Helipad
- WS 2 Loop location



669232

BHP-Utah Minerals International Asia Pacific Division - Exploration Department		
EL 102/87, QUEENSTOWN, TASMANIA		
WEST SEDGWICK GRID		
1988 UTEM SURVEY - LOOP LOCATIONS		
Prepared:	Date: April '89	Centre: Melbourne
Drawn: M. Rosker	Project No.: B 57	PLATE
Checked: A. Wilde	Drawing No.: A1-2316	