COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

DIVISION of FISHERIES and OCEANOGRAPHY

Report No. 90

SEA SURFACE CURRENT AND TEMPERATURE DATA REPORT FROM THE "SPRIGHTLY" PROGRAMME OFF WESTERN AUSTRALIA 1973-1976

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I. INTRODUCTION

Between November 1973 and October 1976 R.V. "Sprightly" was engaged in a multidisciplinary programme off the west coast of Australia. The project was designed to study the biology of the western rock lobster larvae *Panulirus longipes cygnus* (Chittleborough and Thomas 1969) and monitor the environment in which they are found. The environmental studies concentrated on a small area of shelf and near-shelf waters between Perth and Geraldton.

Cruises were made into this area approximately every month to occupy hydrology stations and continuously record sea surface currents, temperatures and salinities. Current meters were moored at selected sites on the shelf and were serviced during many of these cruises. During the latter part of the study satellite-tracked free drifting buoys were released in these waters.

Many of these data are reported elsewhere (Edwards 1977, Cresswell 1977, Cresswell, Golding and Boland 1977, Golding and Symonds 1977, Cresswell and Vaudrey 1977). This report presents only the sea surface current and temperature data from each of the environmental cruises.

II. DATA

The surface current vectors were recorded by a G.E.K. (von Arx 1962) in waters seaward of the continental shelf. Vectors were taken about every hour and were rounded to 5 cm/sec and 5 degrees.

Sea surface temperatures were recorded on analogue strip charts from either a towed thermograph or a Plessey Thermosalinograph. Values were digitised from these charts at hourly or two-hourly intervals.

Positional accuracy is difficult to estimate. Until the latter part of 1976, when a satellite navigation system was installed, celestial navigation and dead reckoning were used to fix positions. Navigational uncertainties of up to 8 miles were occasionally encountered.

All of the data, except the G.E.K. data, are available from the Division's data bank. The G.E.K. data are available from the authors.

III. PRESENTATION

The data are presented on two maps for each cruise. The maps contain the latitude range 33° - 28°S, (vertical axis), and longitude range 112° - 116°E, (horizontal axis). This range is sufficient to contain most of the cruises. There were occasional cruises which went outside this area and Table 1 gives complete details of the area covered by each cruise.

The two contour lines are approximate representations of the 200 m isobath (shelf edge) and the coast line.

G.E.K.

The crosses on each vector are the points where the vectors were taken and directions are read away from these. All the vectors which were recorded in the map areas are presented.

Surface Temperatures

The cruise tracks were generally such that it was impossible to contour surface isotherms. Spot values are therefore given in sufficient number to indicate general patterns of the surface temperatures. The centre of each circle is the point of observation and the temperatures are proportional to the diameters of the circles.

Acknowledgements

The officers and crew of R.V. "Sprightly" are thanked for their assistance in the programme.

IV. REFERENCES

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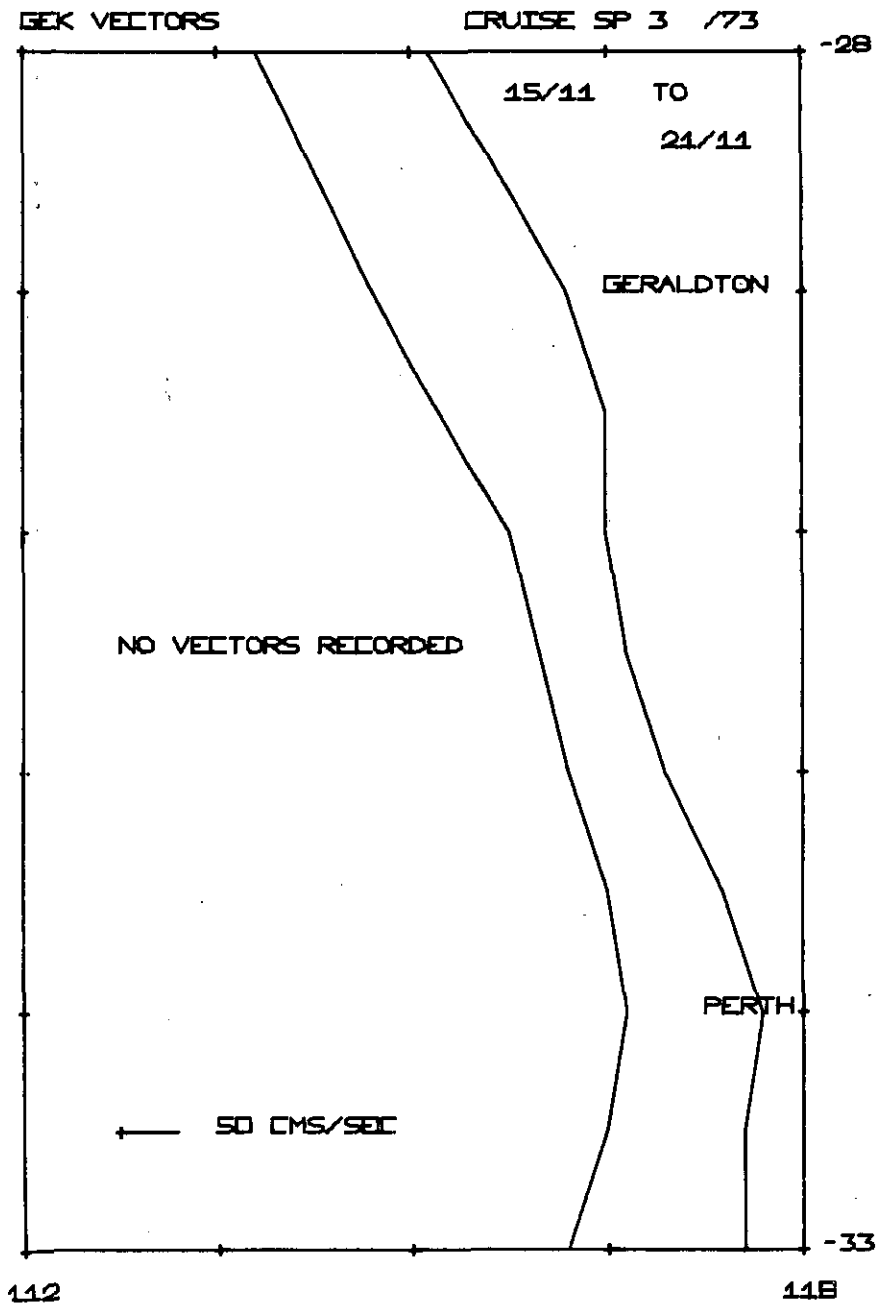
TABLE 1

Cruise	Dates	Latitude Range °S	Longitude Range °E	G.E.K.	Surface Temperature	Surface Salinity	XBT	Shallow Hydrology	Deep Hydrology
3/73	15.11.73-21.11.73	29° -32°	115°30'-113°		✓			✓	✓
6/73	13.12.73-17.12.73	29° -32°	115°30'-113°	✓	✓			✓	✓
2/74	10. 1.74-12. 1.74	29° -32°	115°30'-114°	✓	✓			✓	
5/74	22. 2.74-26. 2.74	29° -32°	115°30'-114°	✓	✓			✓	
8/74	27. 3.74-31. 3.74	29° -32°	115°30'-113°	✓				✓	✓
9/74	6. 4.74-10. 4.74	29° -32°	115°30'-113°	✓	✓			✓	✓
10/74	17. 4.74-21. 4.74	29° -32°	115°30'-112°30'		✓			✓	✓
12/74	29. 4.74-4. 5.74	29° -32°	115°30'-112°30'	✓	✓			✓	✓
16/74	13. 5.74-17. 5.74	29° -32°	115°30'-112°30'	✓	✓			✓	✓
17/74	29. 5.74-2. 6.74	29° -32°	115°30'-112°30'	✓	✓			✓	✓
20/74	10. 6.74-14. 6.74	29° -32°	115°30'-113°30'	✓	✓			✓	✓
21/74	24. 6.74-28. 6.74	29° -32°	115°30'-113°30'	✓	✓			✓	✓
23/74	8. 7.74-12. 7.74	29° -32°	115°30'-114°	✓	✓	✓		✓	
24/74	9. 8.74-15. 8.74	29° -32°	115°30'-113°	✓	✓	✓		✓	✓
26/74	27. 8.74-29. 8.74	29° -32°	115°30'-114°	✓	✓	✓			
29/74	7. 9.74-12. 9.74	29° -32°	115°30'-112°30'	✓	✓	✓		✓	✓
33/74	5.10.74-5.10.74	29°30'-32°	115°30'-113°30'		✓	✓		✓	✓
34/74	9.10.74-12.10.74	31° -32°	115°30'-114°	✓	✓	✓		✓	
37/74	2.11.74-8.11.74	29° -32°30'	115°30'-112°30'	✓	✓	✓		✓	✓
39/74	20.11.74-23.11.74	28° -32°	115°30'-112°30'	✓	✓	✓			✓
41/74	30.11.74-5.12.74	29° -32°	115°30'-112°	✓	✓	✓		✓	✓

Table 1 Cont'd

Cruise	Dates	Latitude Range °S	Longitude Range °E	G.E.K.	Surface Temperature	Surface Salinity	XBT	Shallow Hydrology	Deep Hydrology
43/74	17.12.74-20.12.74	29° -32°	115°30'-112°30'	✓	✓	✓		✓	✓
1/75	3. 1.75-8. 1.75	29° -32°	115°30'-112°30'		✓	✓		✓	✓
5/75	31. 1.75-6. 2.75	29° -32°	115°30'-112°30'	✓	✓	✓		✓	✓
9/75	28. 2.75-5. 3.75	29° -32°	115°30'-112°30'	✓	✓	✓		✓	✓
10/75	15. 3.75-25. 3.75	29° -32°30'	115°30'-112°30'		✓	✓		✓	✓
11/75	7. 4.75-17. 4.75	29° -32°	115°30'-105°	✓	✓	✓		✓	✓
12/75	6. 5.75-12. 5.75	29° -32°	115°30'-110°	✓	✓	✓		✓	✓
20/75	20. 8.75-25. 8.75	29° -32°	115°30'-112-35'	✓	✓	✓		✓	✓
24/75	23. 9.75-26. 9.75	30° -32°	115°30'-113°	✓	✓	✓	✓	✓	✓
32/75	11.11.75-15.11.75	29° -32°	115°30'-112°30'	✓	✓	✓		✓	✓
34/75	30.11.75-3.12.75	32° -33°30'	115°30'-110°30'	✓	✓	✓		✓	✓
36/75	8.12.75-10.12.75	32° -29°30'	115°30'-113°30'	✓	✓	✓		✓	✓
39/75	19.12.75-22.12.75	32° -29°	115°30'-113°30'	✓	✓	✓	✓		✓
8/76	4. 2.76-5. 2.76	32° -30°	115°30'-114°	✓	✓	✓	✓	✓	✓
10/76	22. 2.76-5. 3.76	29° -37°	115°30'-113°	✓	✓	✓		✓	✓
13/76	21. 3.76-24. 3.76	29° -32°	115°30'-112°30'	✓	✓	✓	✓	✓	✓
15/76	4. 4.76-12. 4.76	30° -32°	115°30'-105°	✓	✓	✓	✓	✓	✓
19/76	11. 5.76-14. 5.76	29° -32°	115°30'-112°30'	✓	✓	✓	✓	✓	✓
21/76	9. 6.76-14. 6.76	29° -32°	115°30'-112°30'	✓	✓	✓	✓	✓	✓
30/76	29. 9.76-11.10.76	29° -32°	115°30'-112°30'		✓	✓	✓	✓	✓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15/11 TO
21/11
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PERTH
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112
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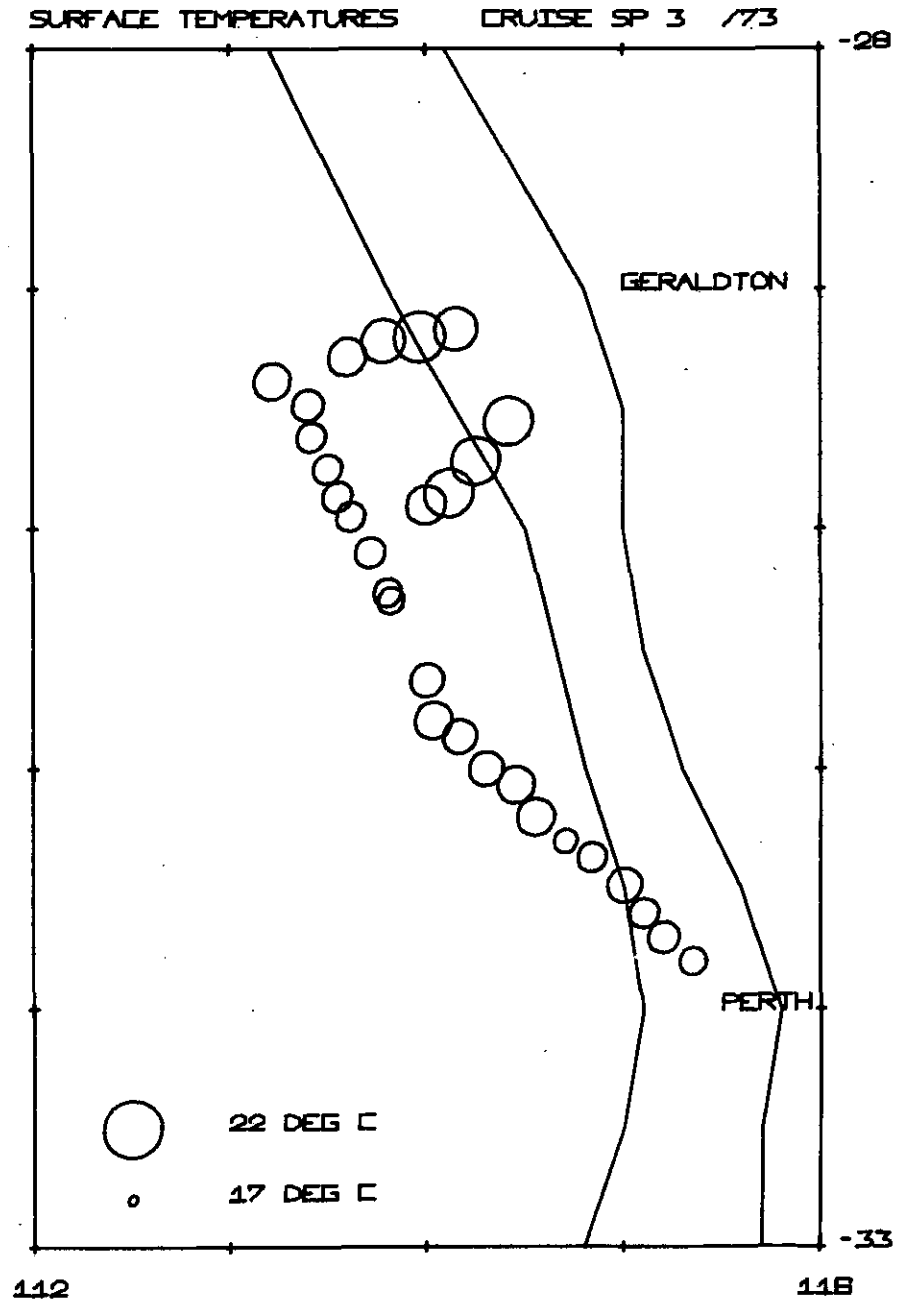
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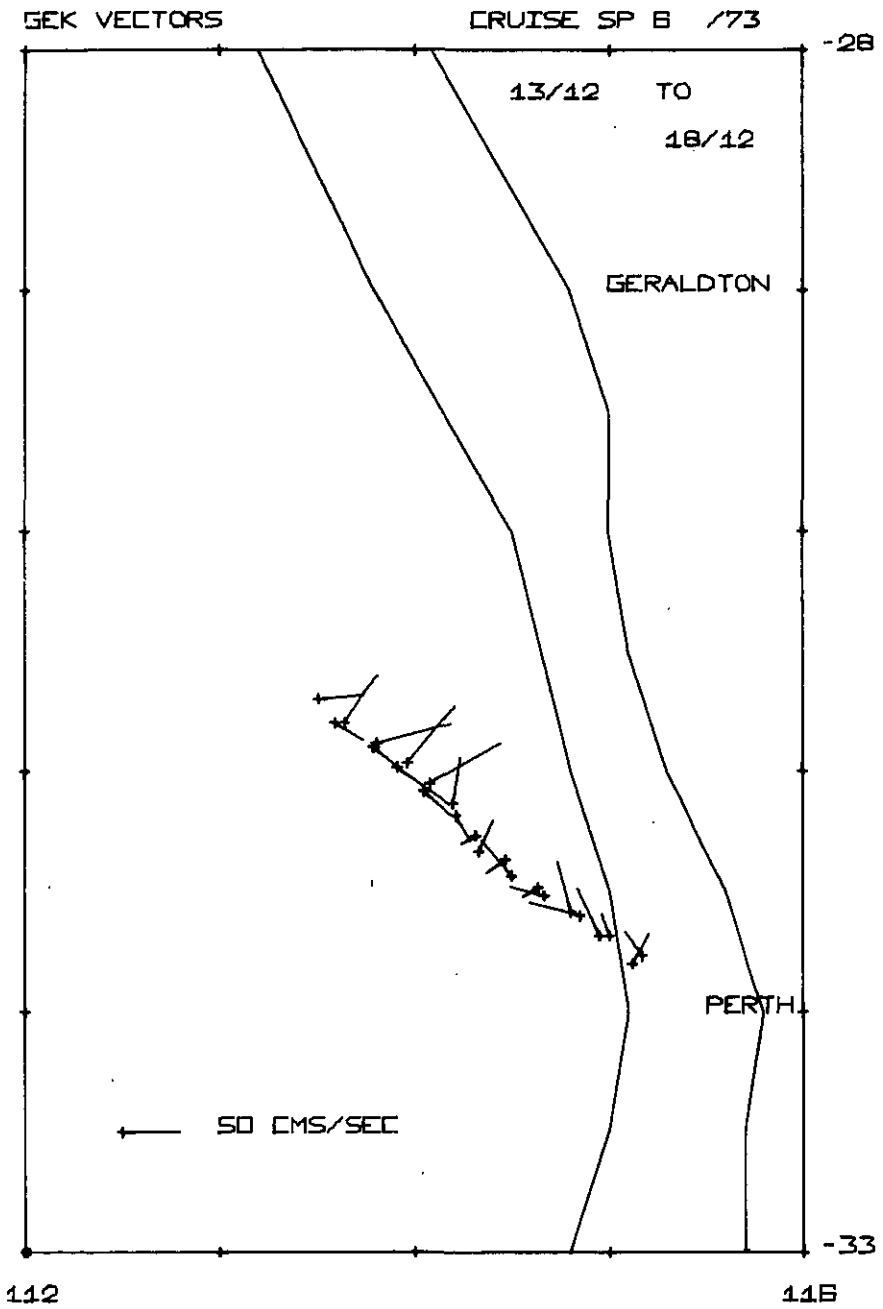
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13/12 TO
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PERTH
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-28
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112
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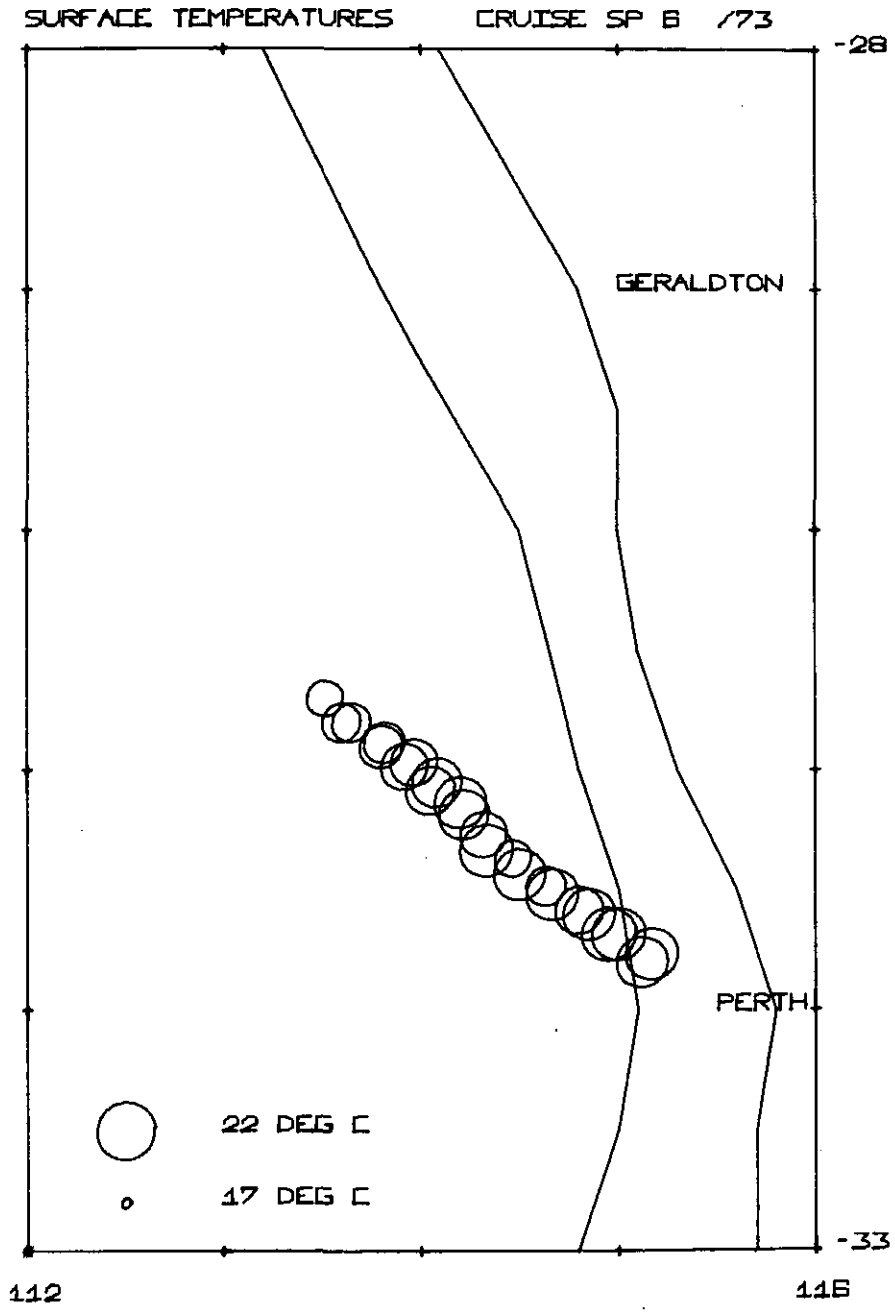
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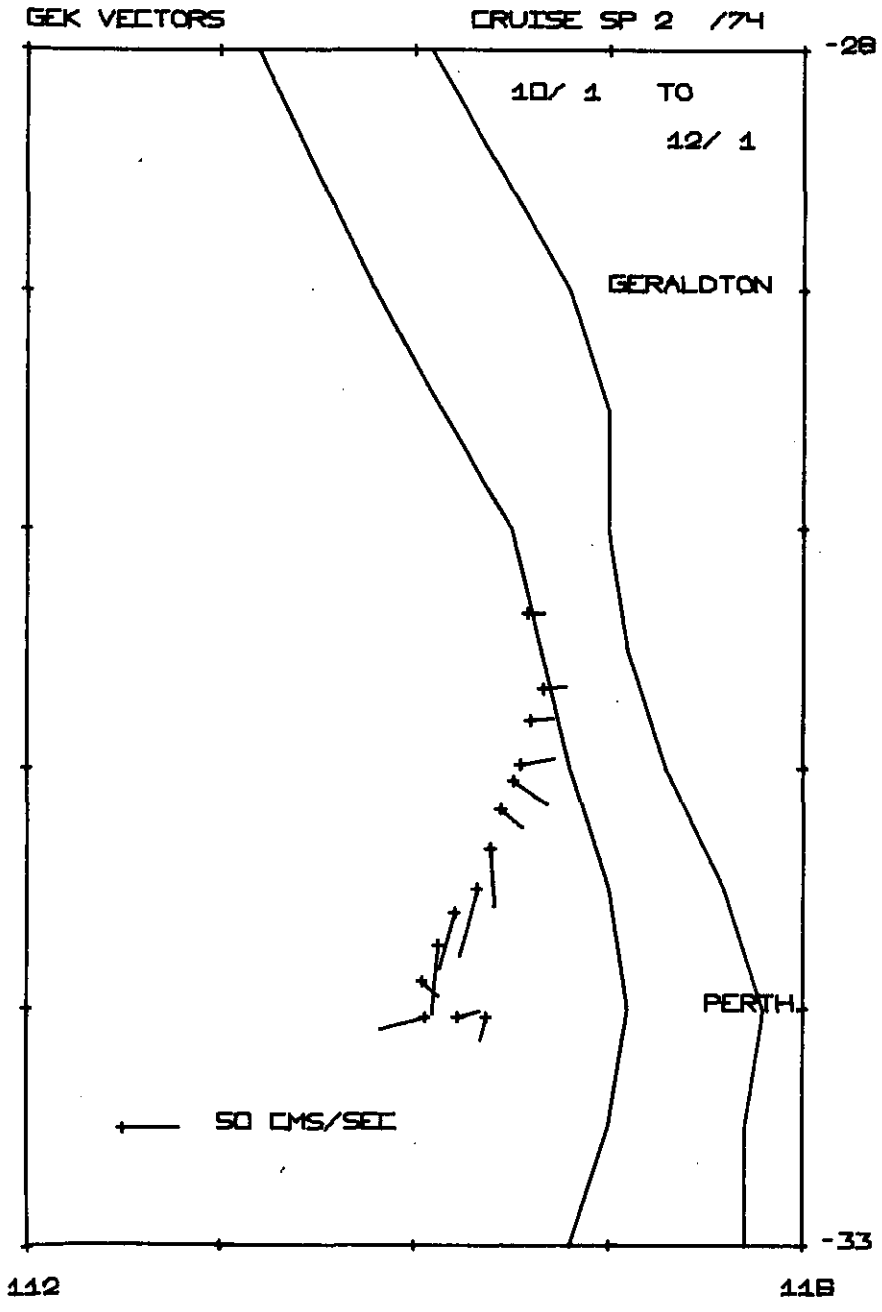
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10/ 1 TO
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PERTH
50 CMS/SEC
-28
-33
112
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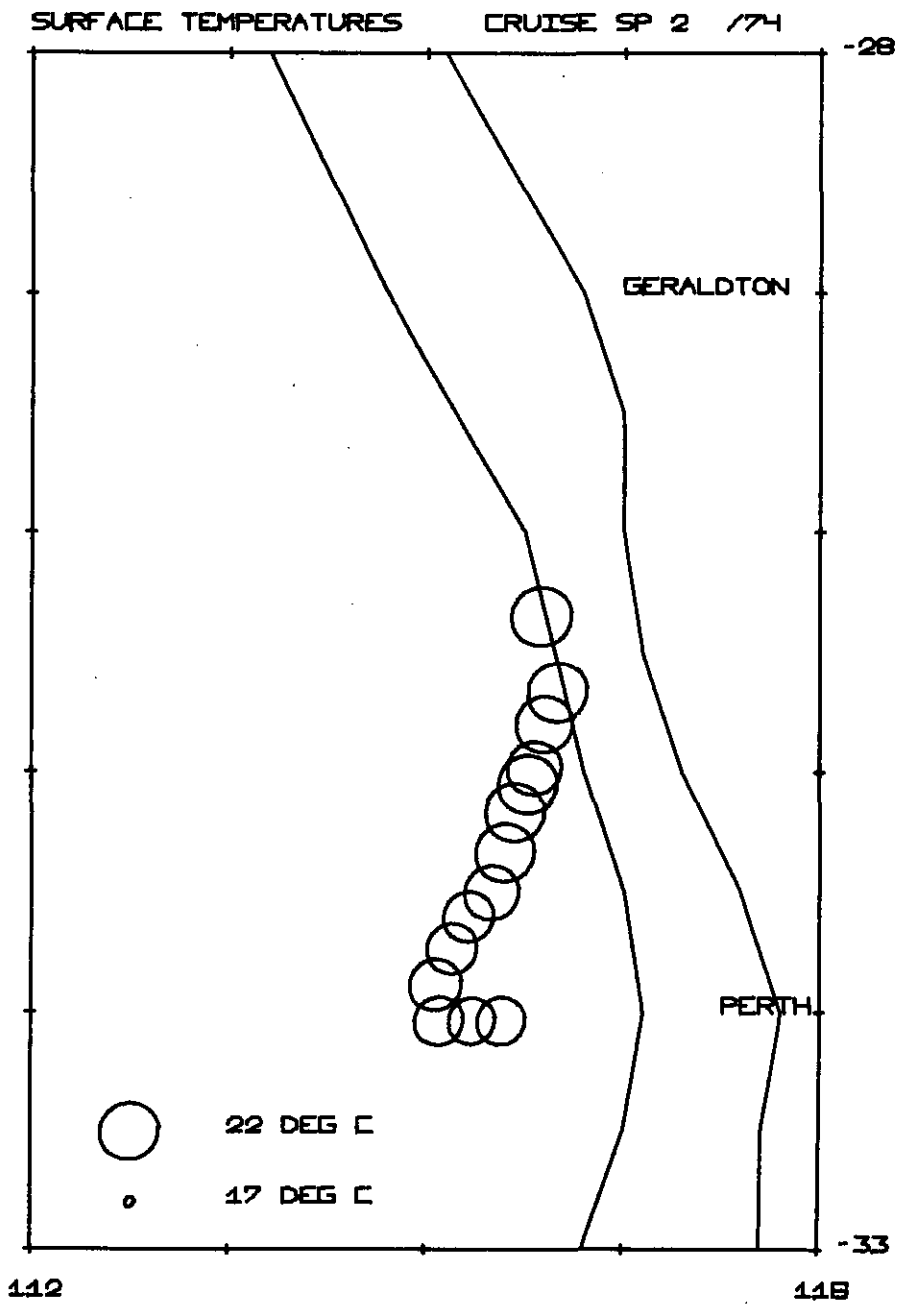
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PERTH
22 DEG C
17 DEG C
-28
-33
112
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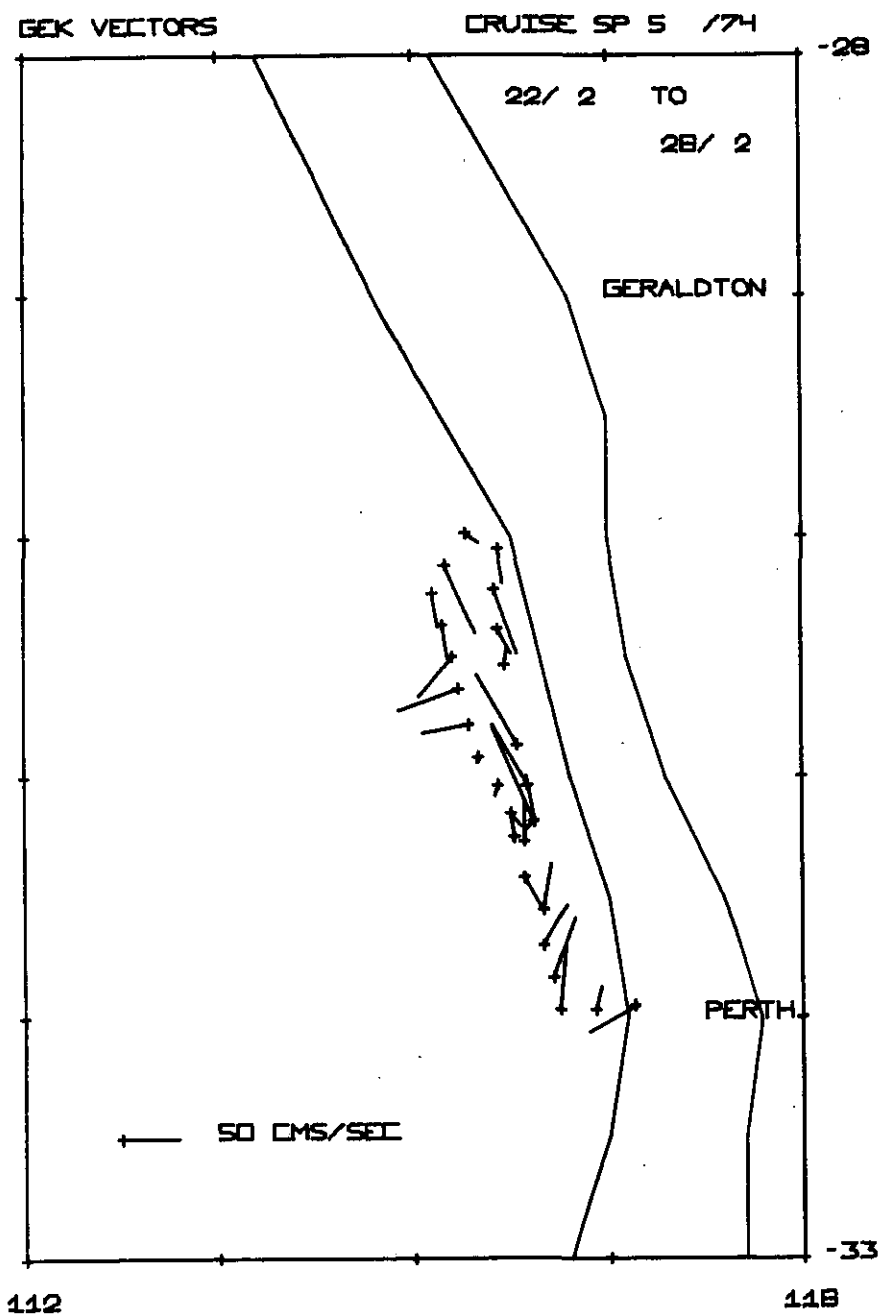
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-28
22/ 2 TO
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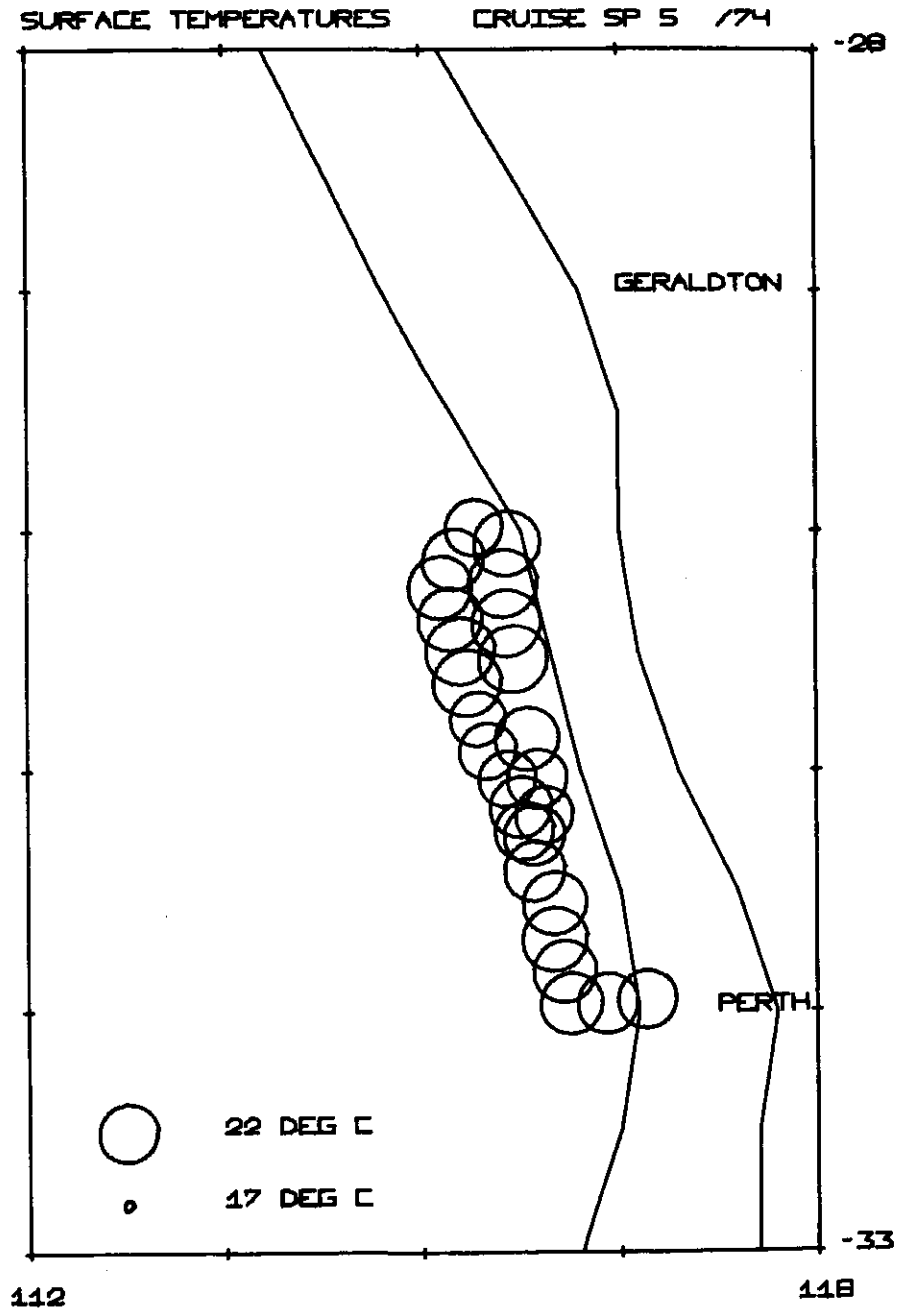
PERTH
50 CMS/SEC
-33
112
118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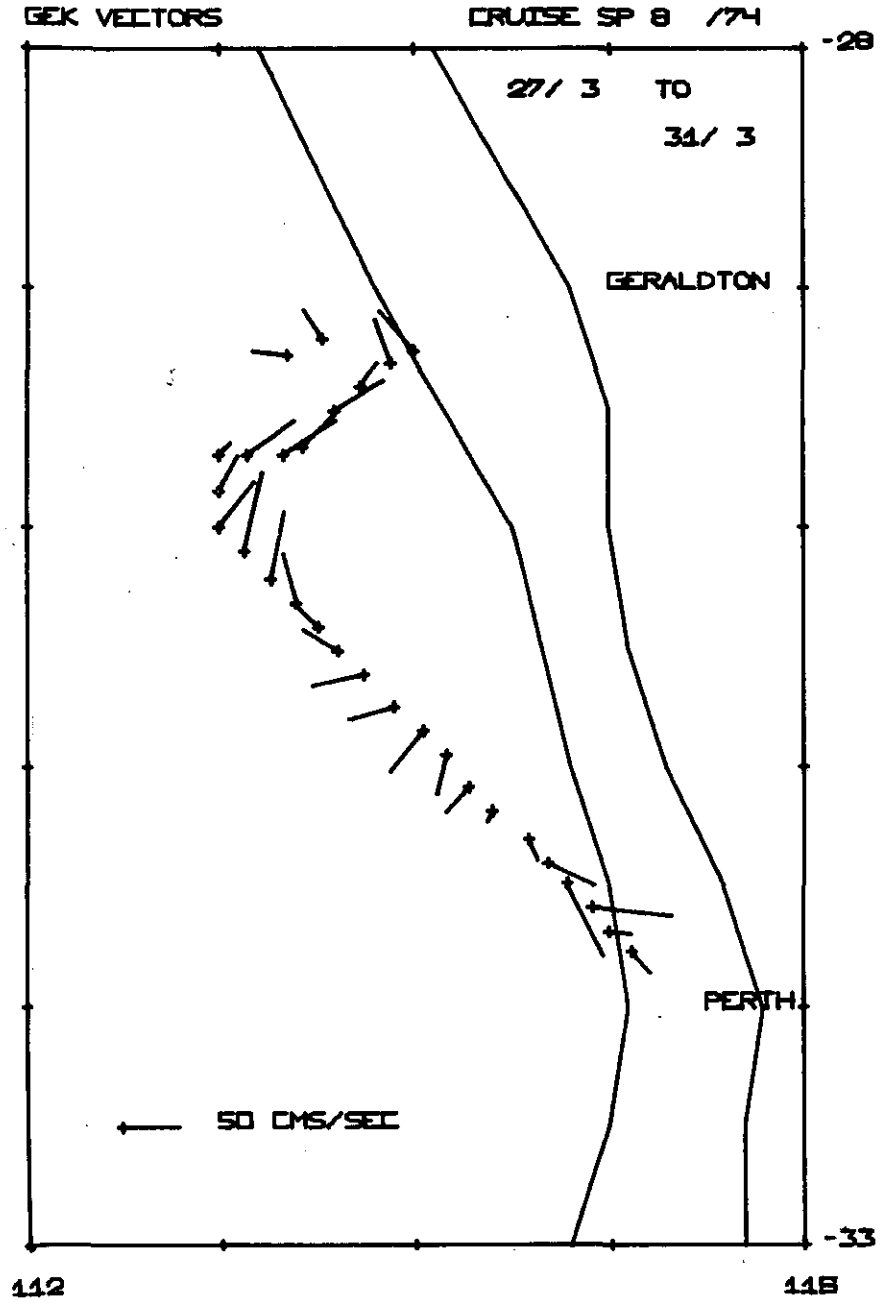
GERALDTON
PERTH
22 DEG C
17 DEG C
-33
112
118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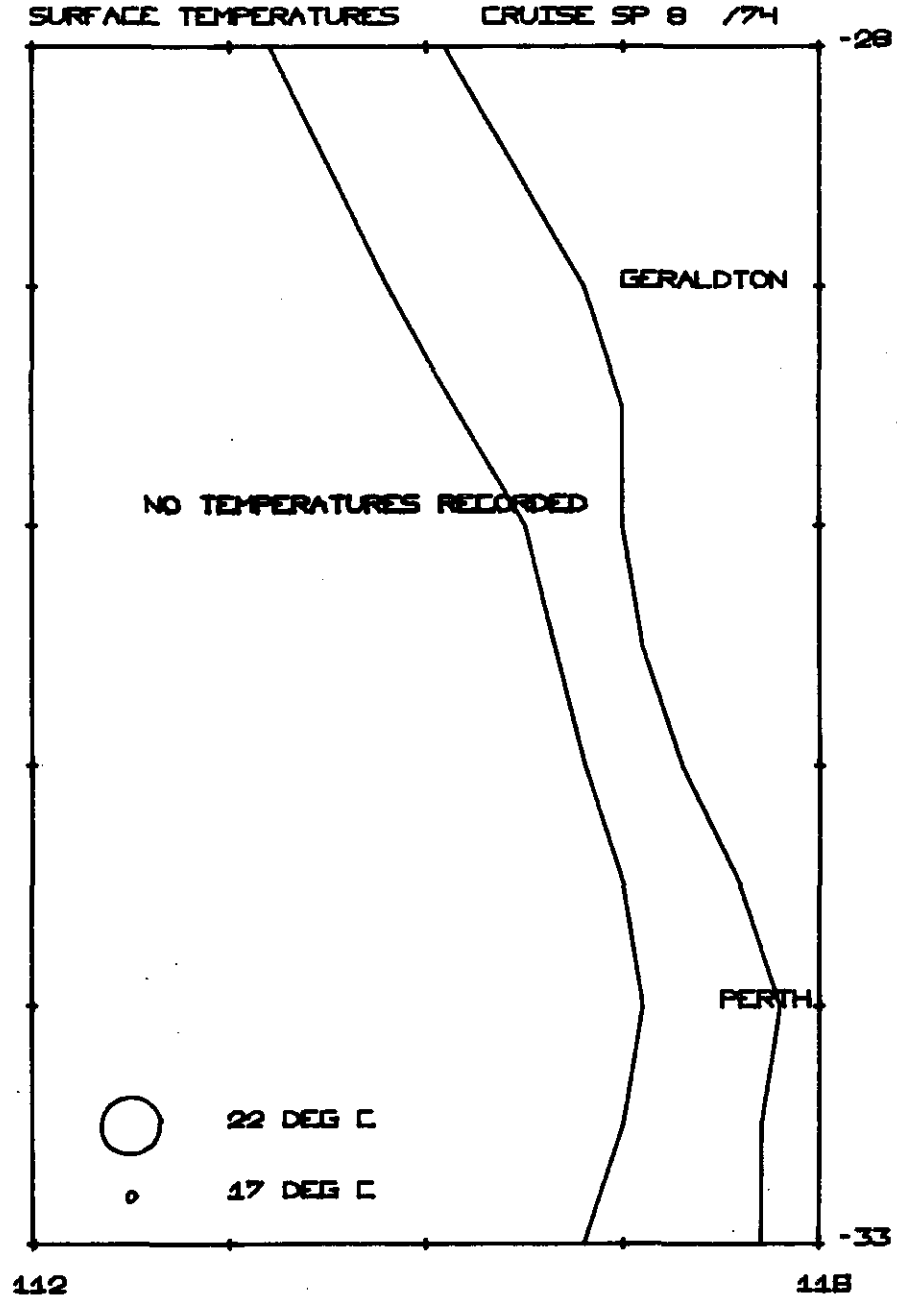
-28
27/ 3 TO
31/ 3
GERALDTON
PERTH
50 CMS/SEC
-33
112
118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GERALDTON
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PERTH
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17 DEG C
-33
112
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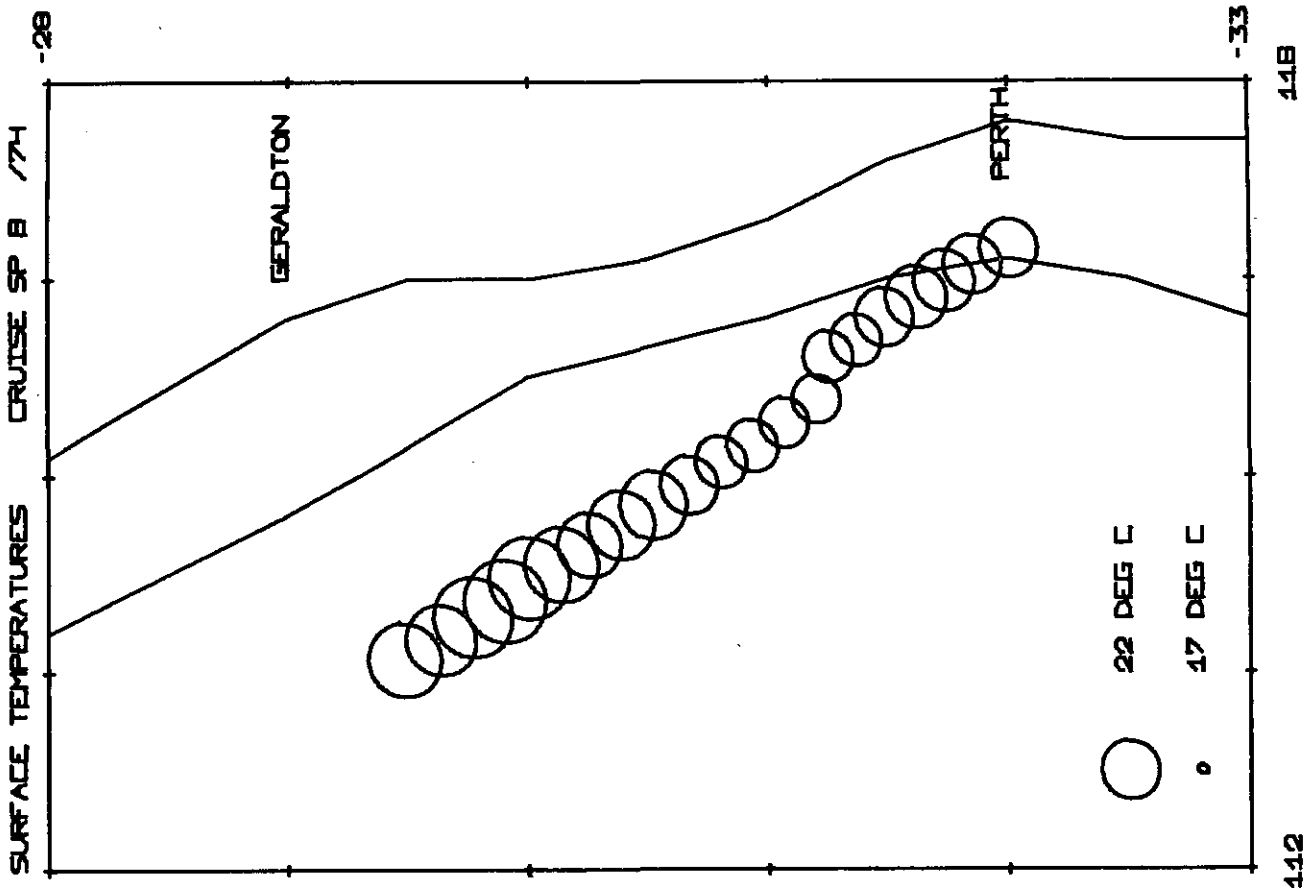
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PERTH
-28
-33
112
118
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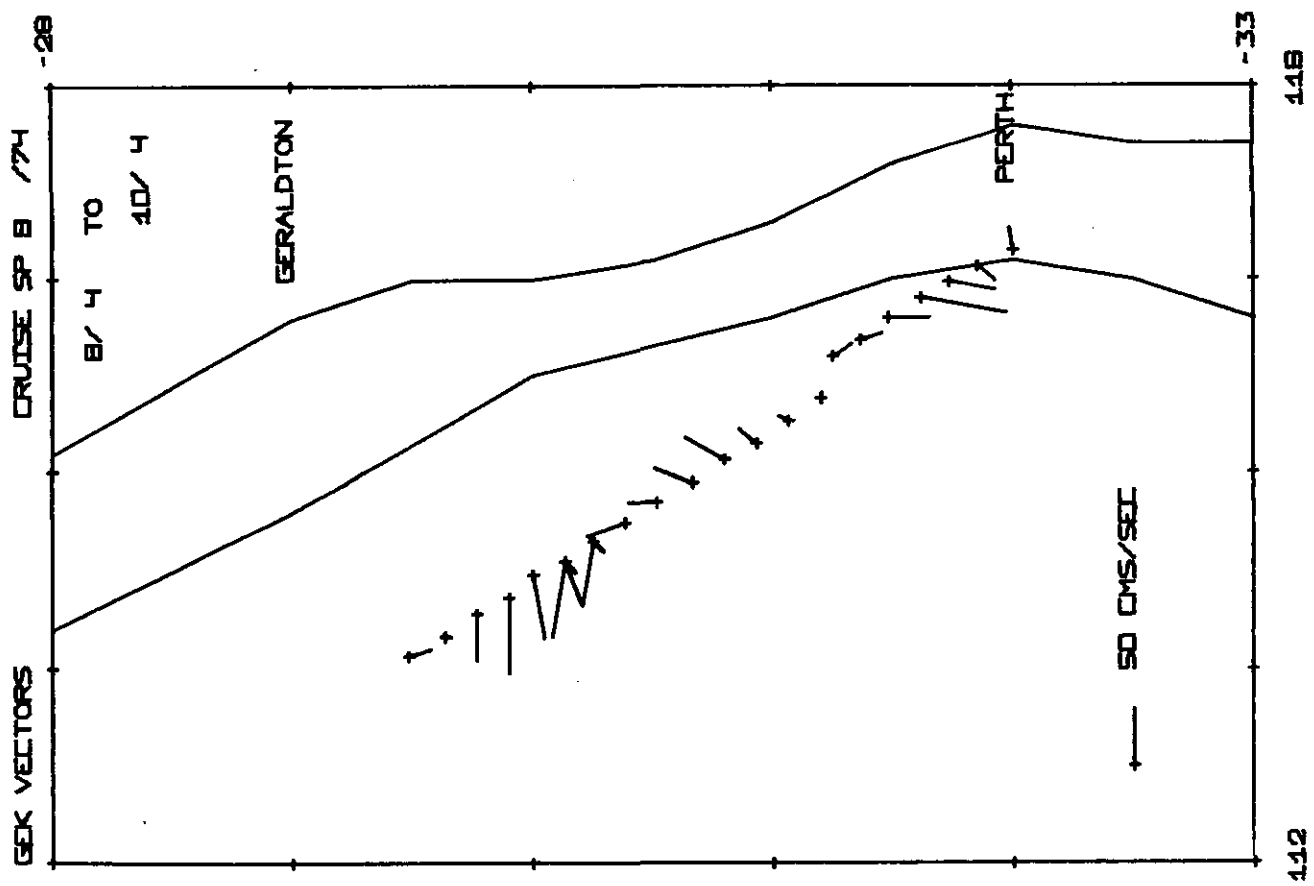
17 DEG C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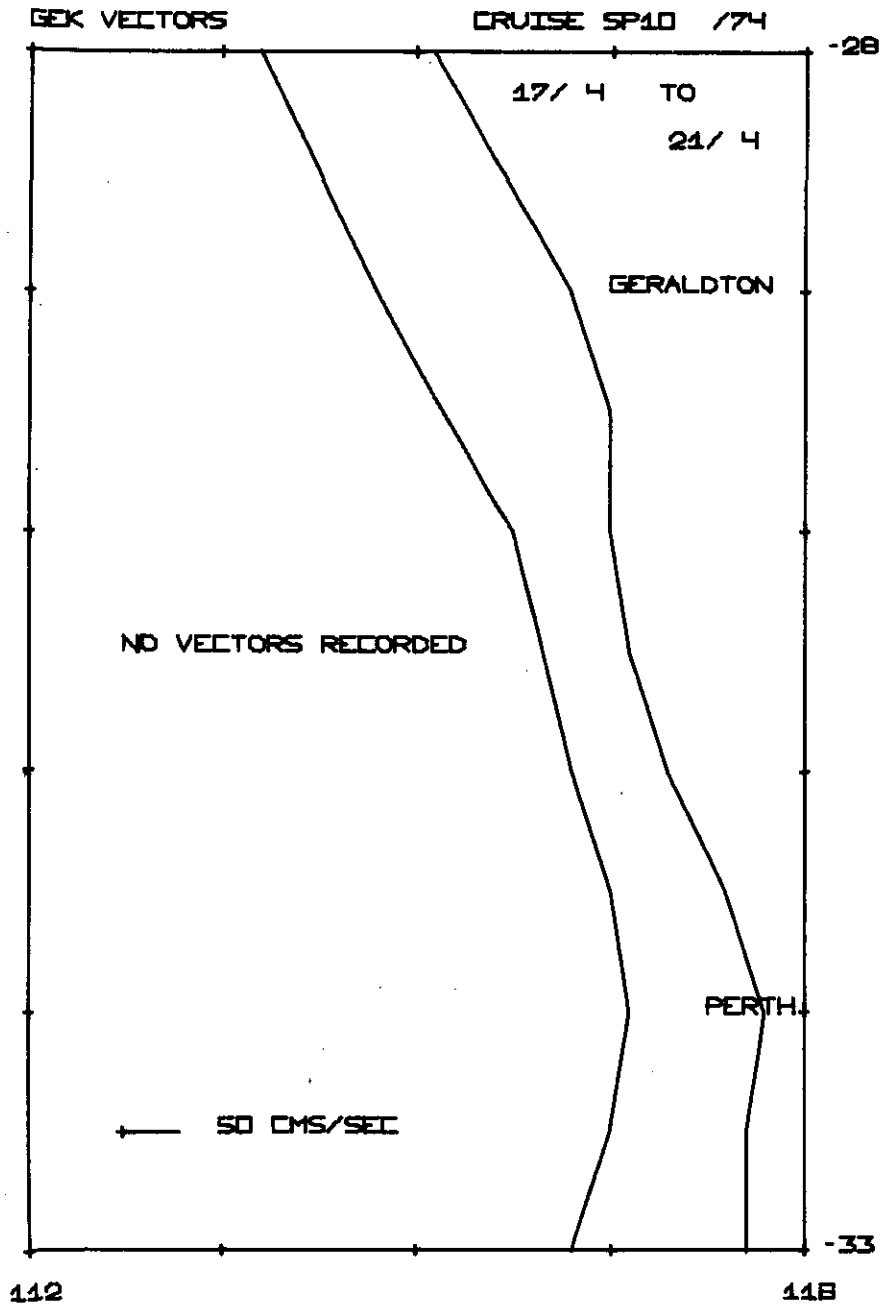
8/ 4 TO 10/ 4
GERALDTON
PERTH
-28
-33
112
118
50 CMS/SEC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-28
17/ 4 TO
21/ 4
GERALDTON
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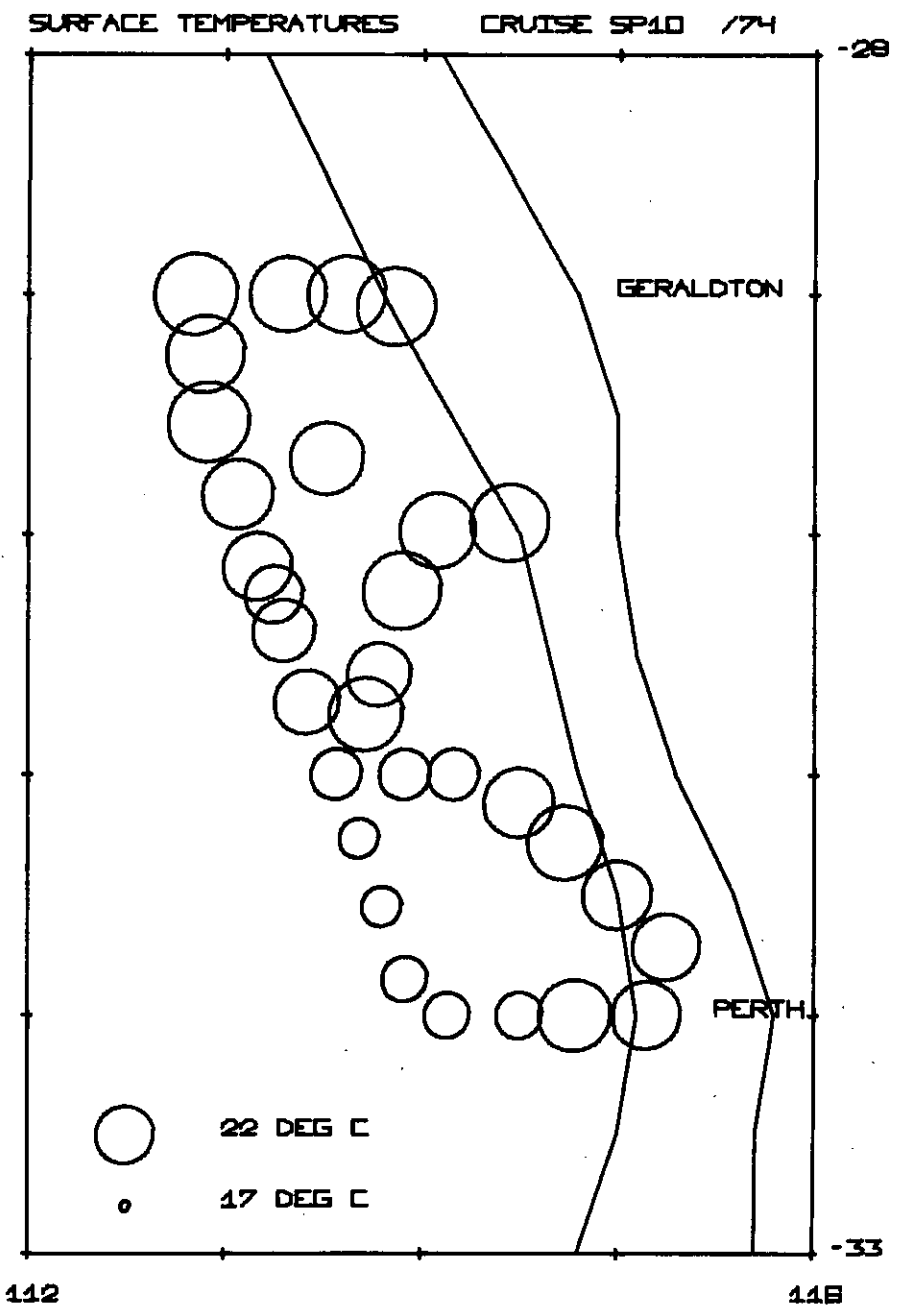
PERTH
50 CMS/SEC
-33
112
118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GERALDTON
PERTH
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17 DEG C
-33
112
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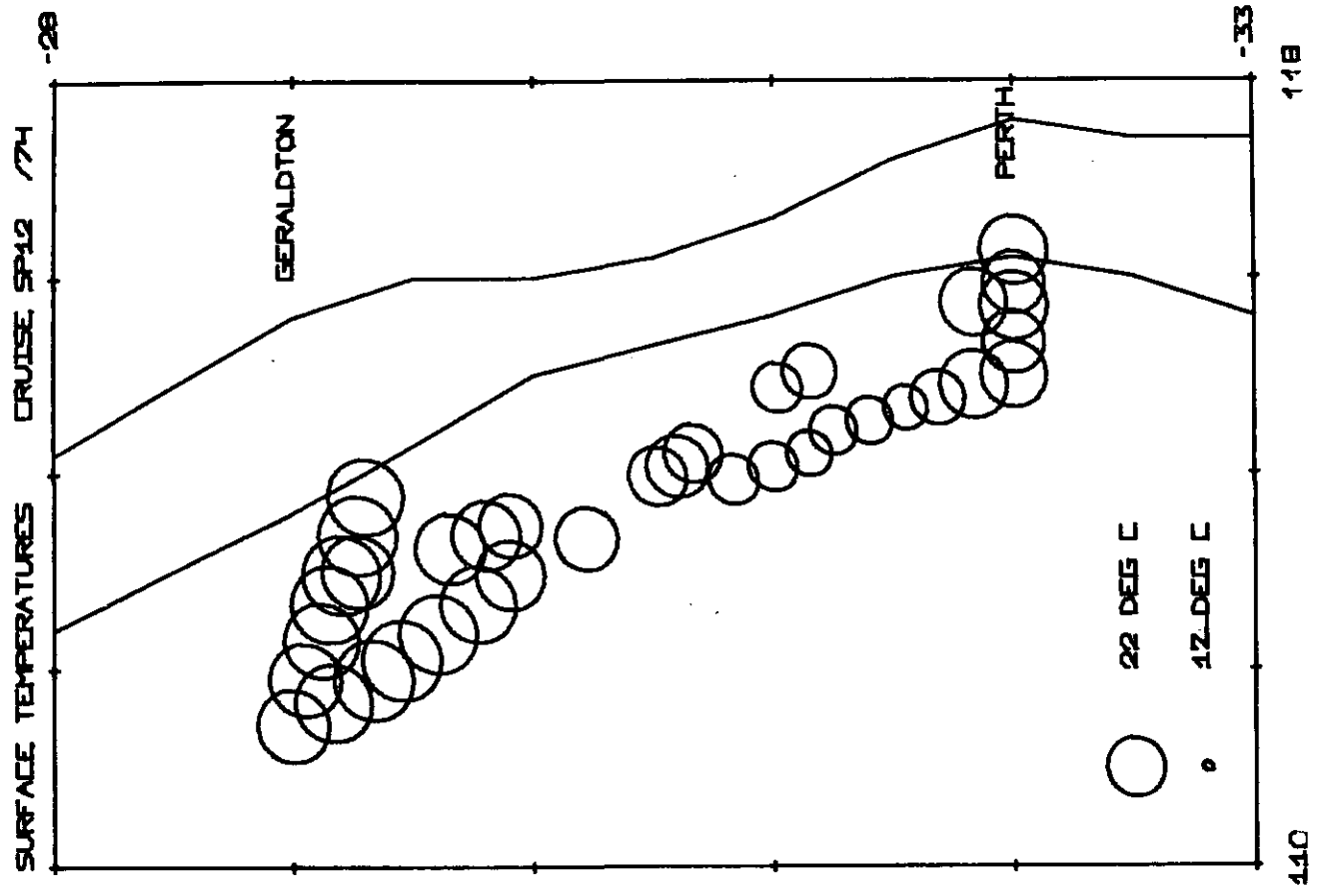
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-28
-33
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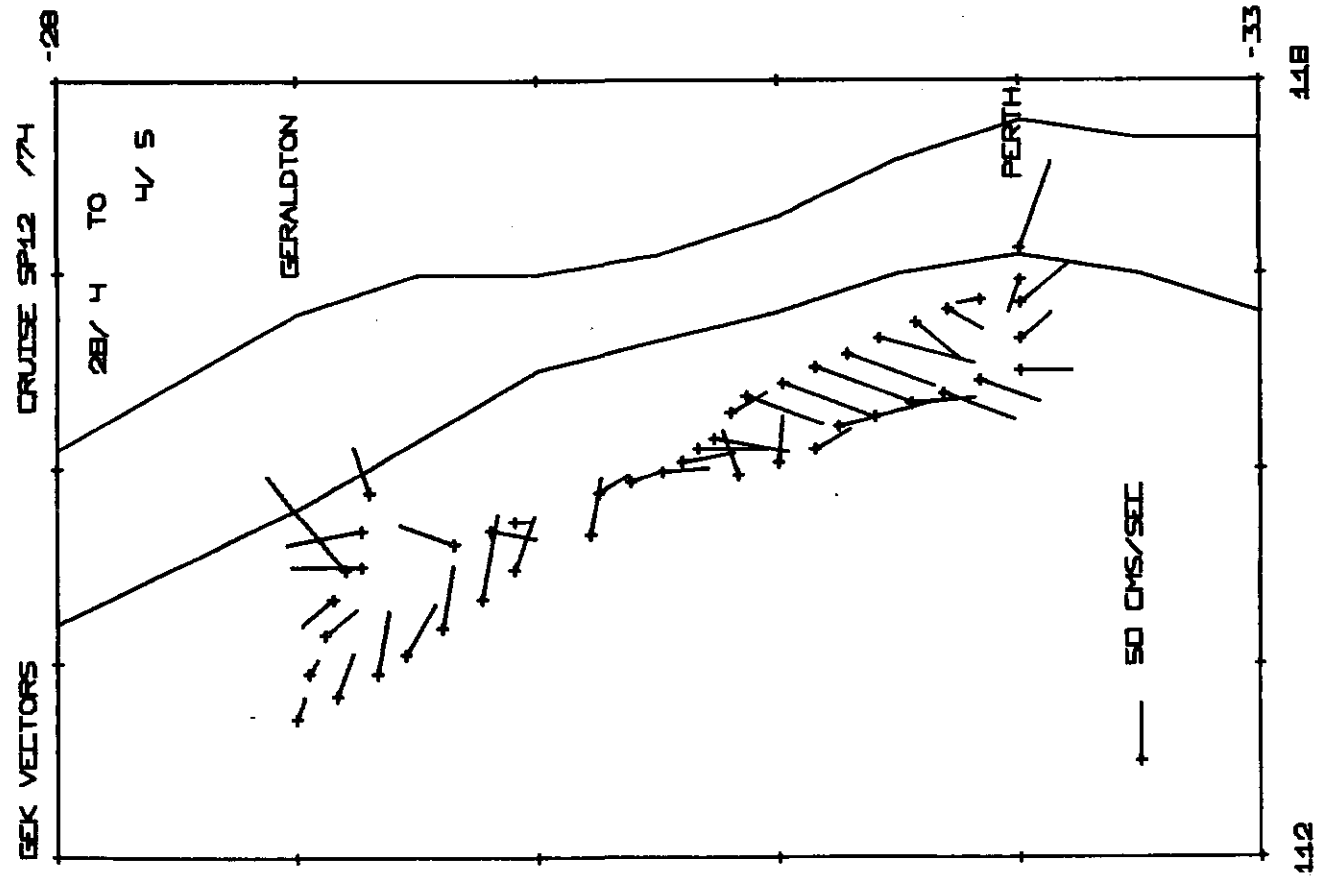
118
GERALDTON
PERTH
22 DEG C
12 DEG C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28/ 4 TO 4/ 5
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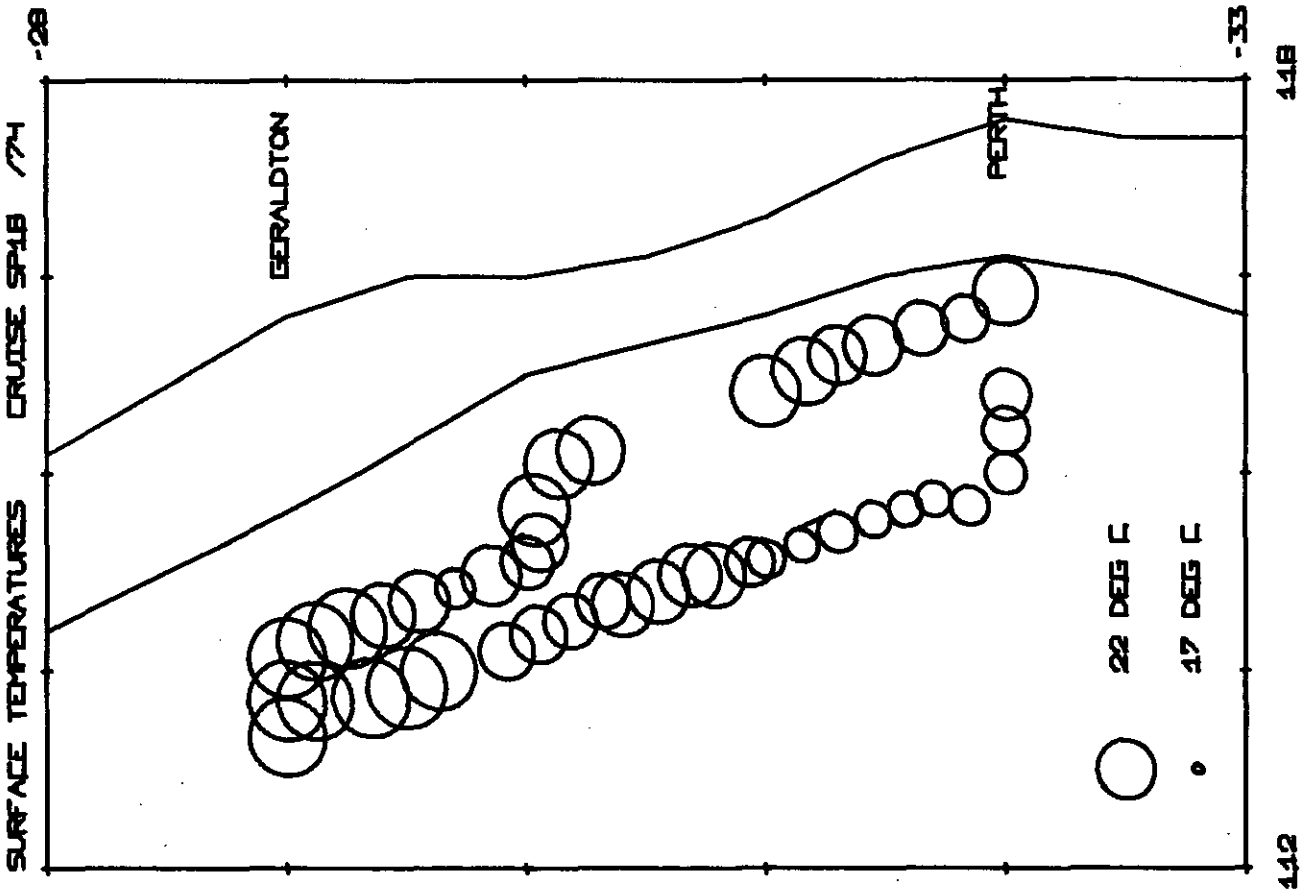
GERALDTON
PERTH
50 CMS/SEC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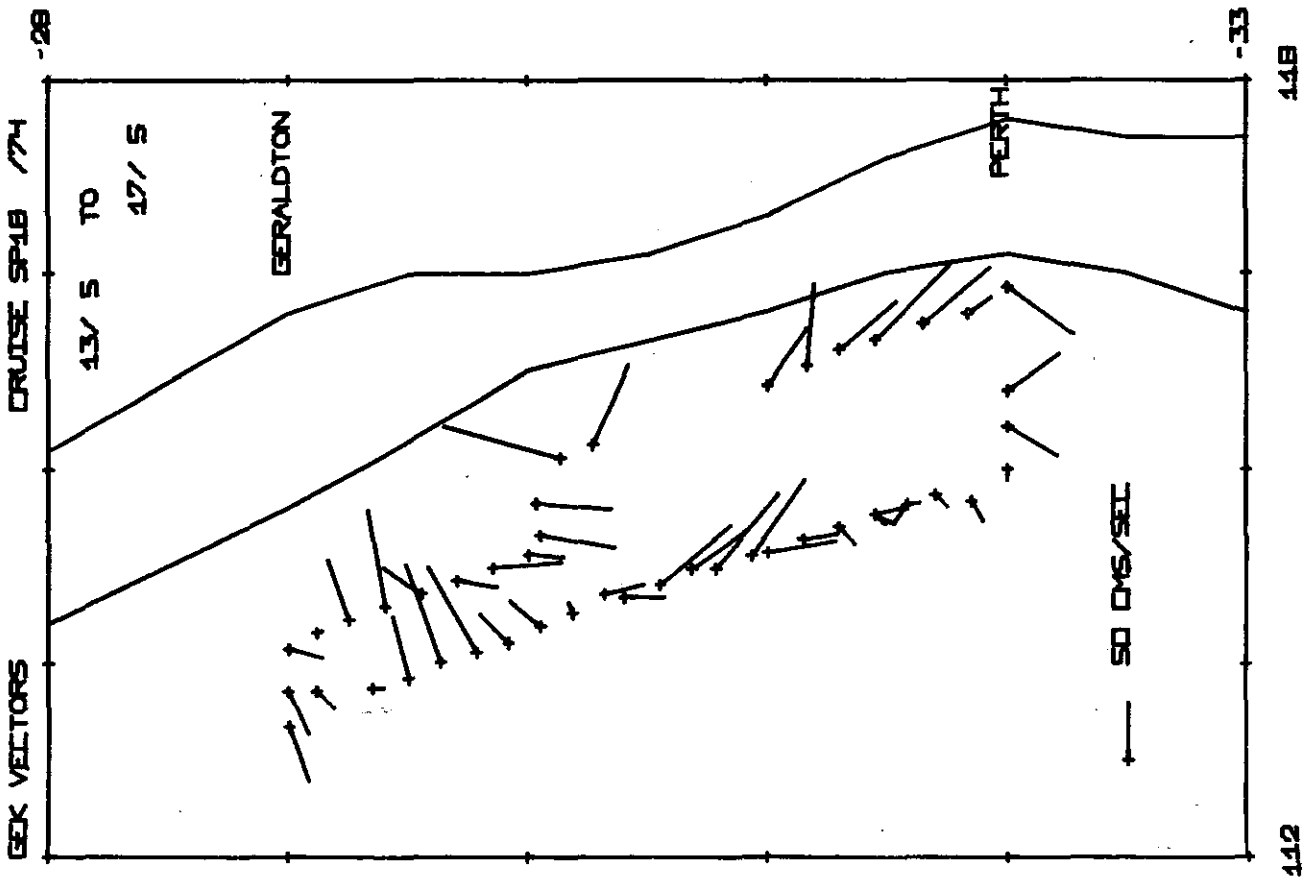
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118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13/ S TO 17/ S
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PERTH
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-28
-33
112
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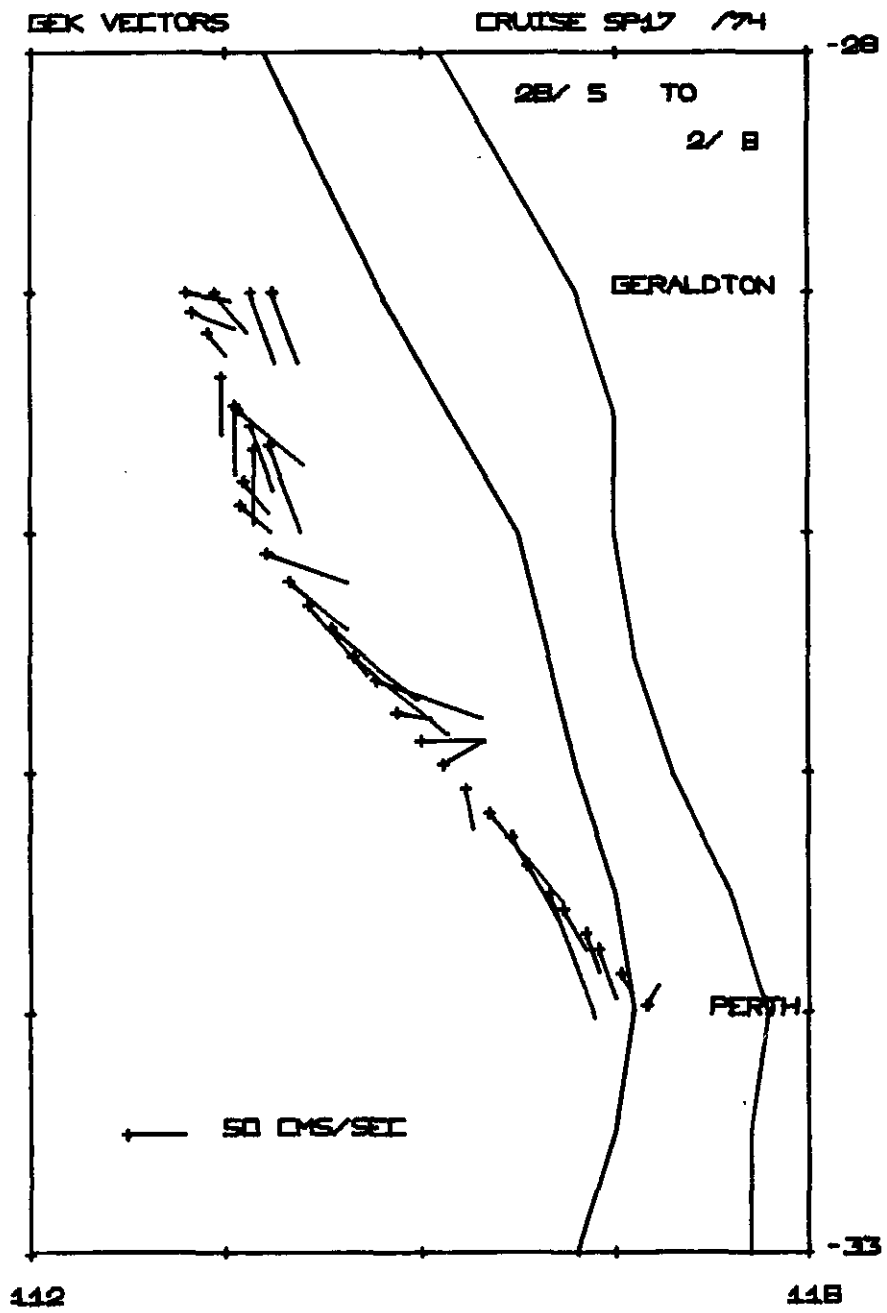
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28/ 5 TO
2/ 8
GERALDTON
PERTH
50 CMS/SEC
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-33
112
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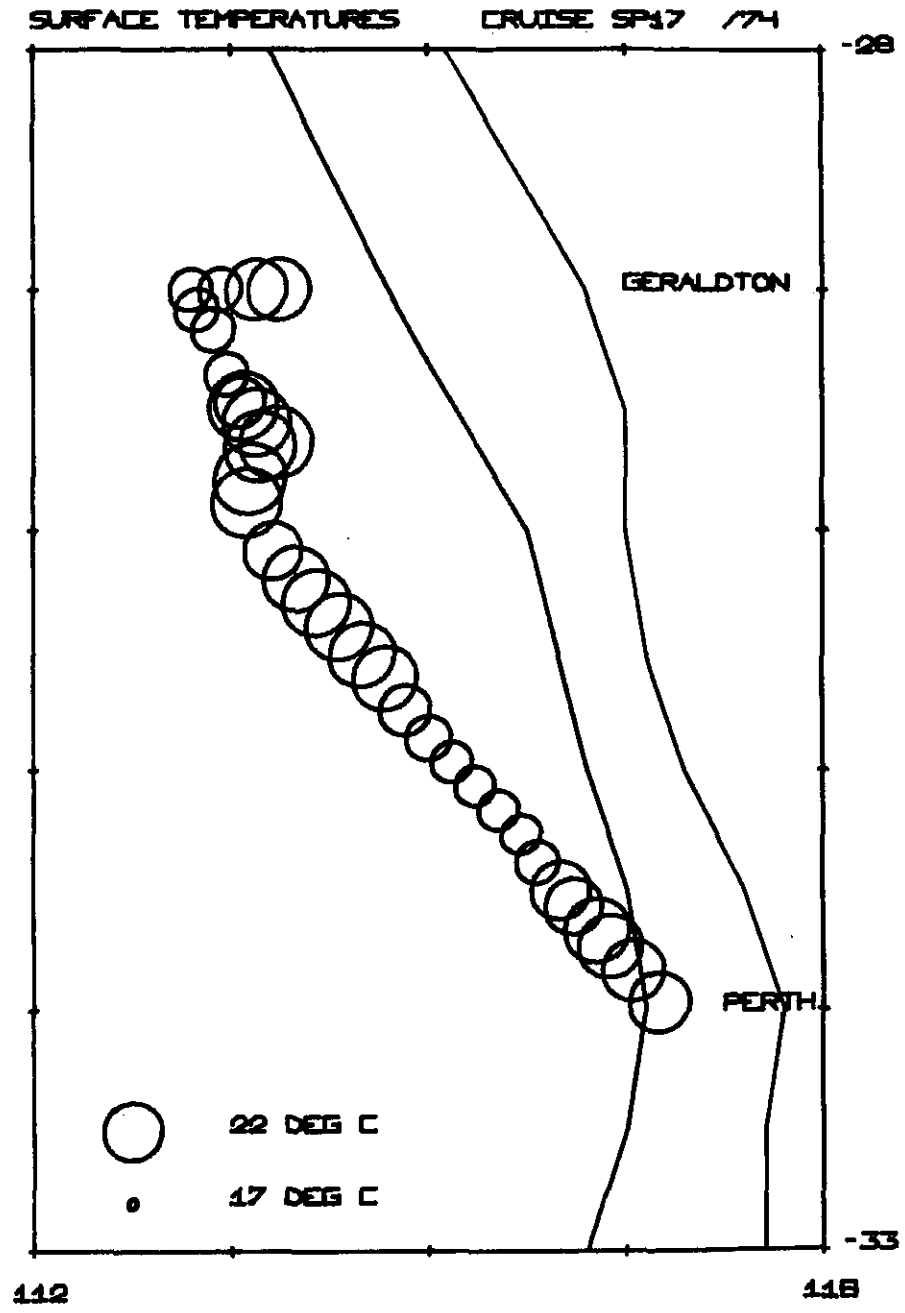
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GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
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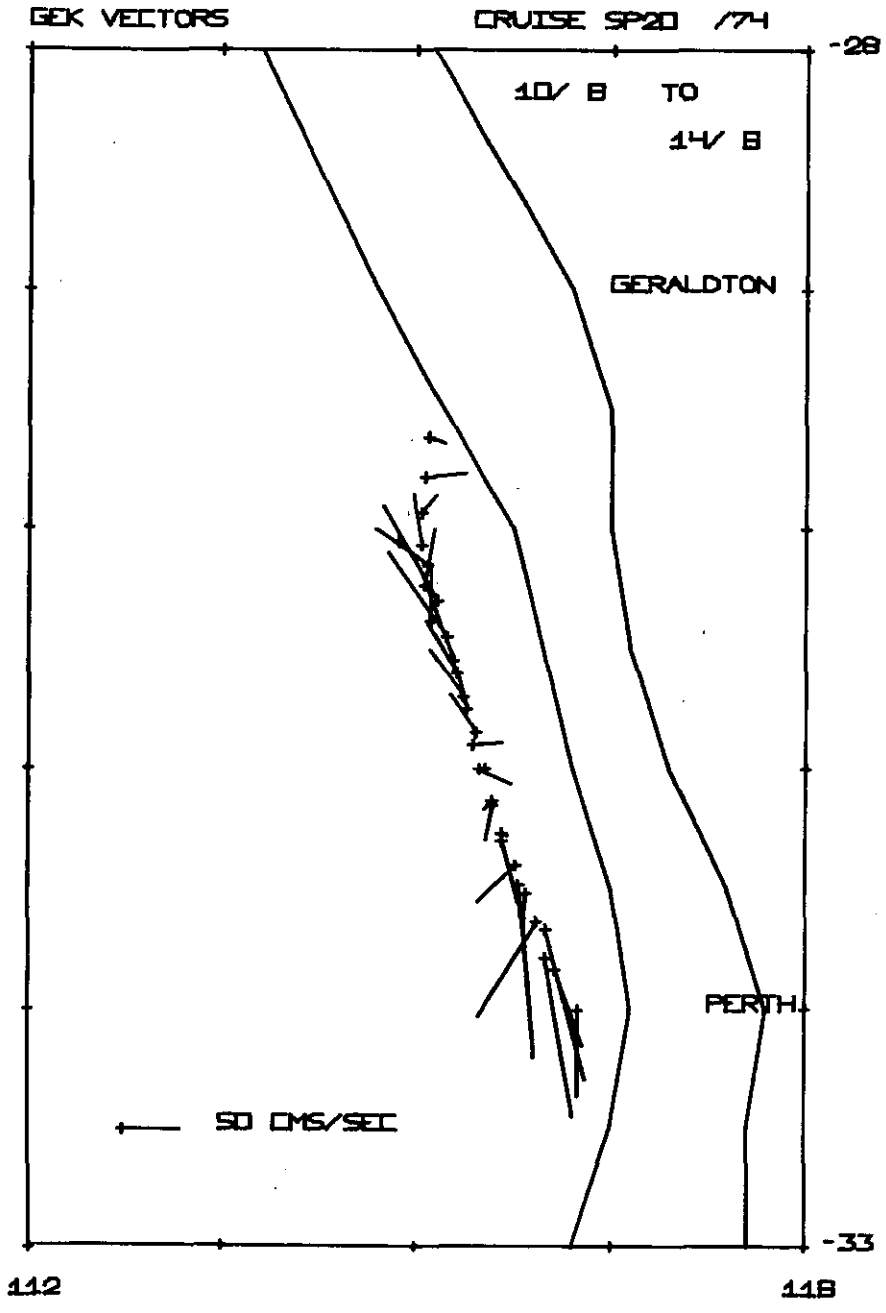
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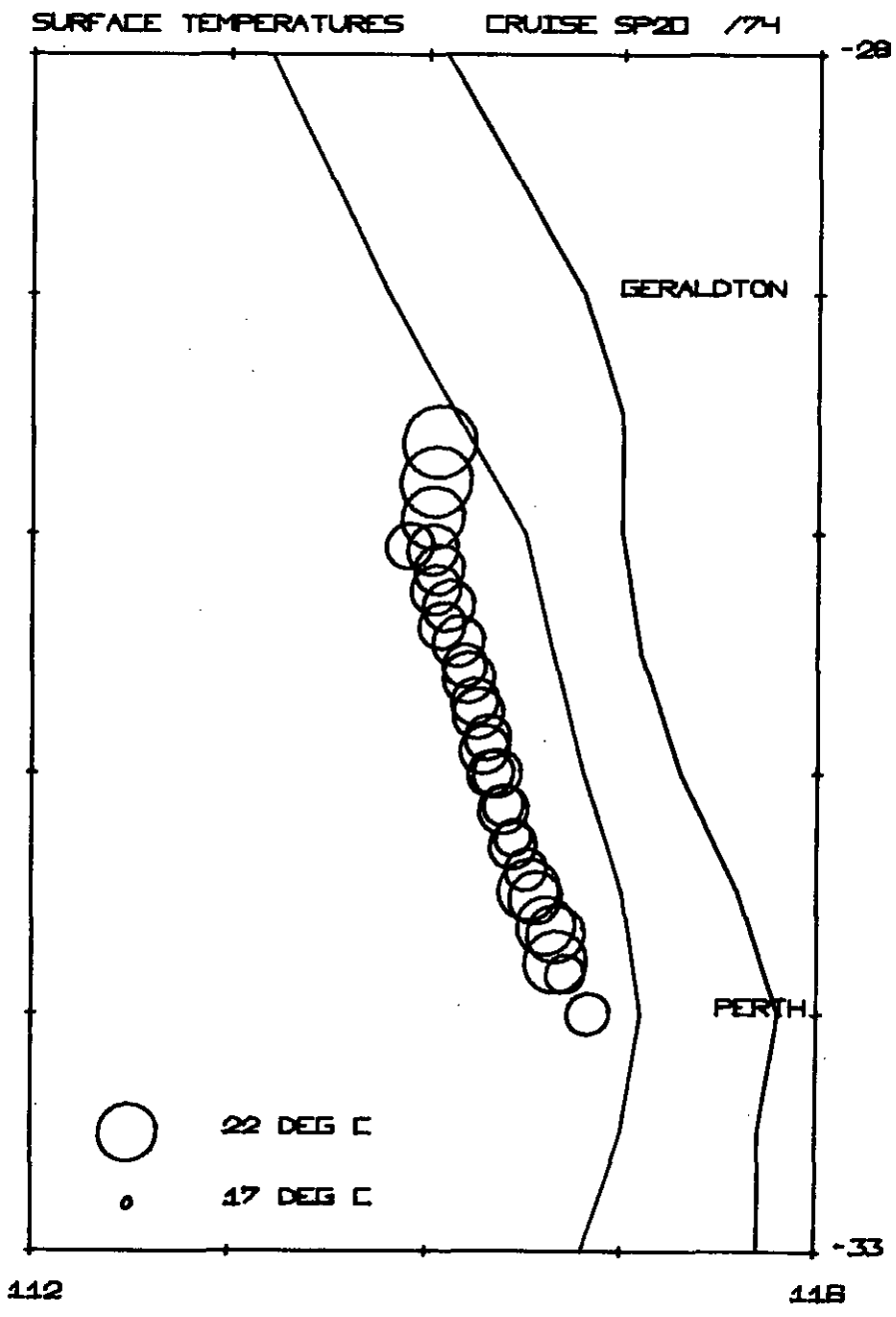
10/ 8 TO
14/ 8
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118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GERALDTON
PERTH
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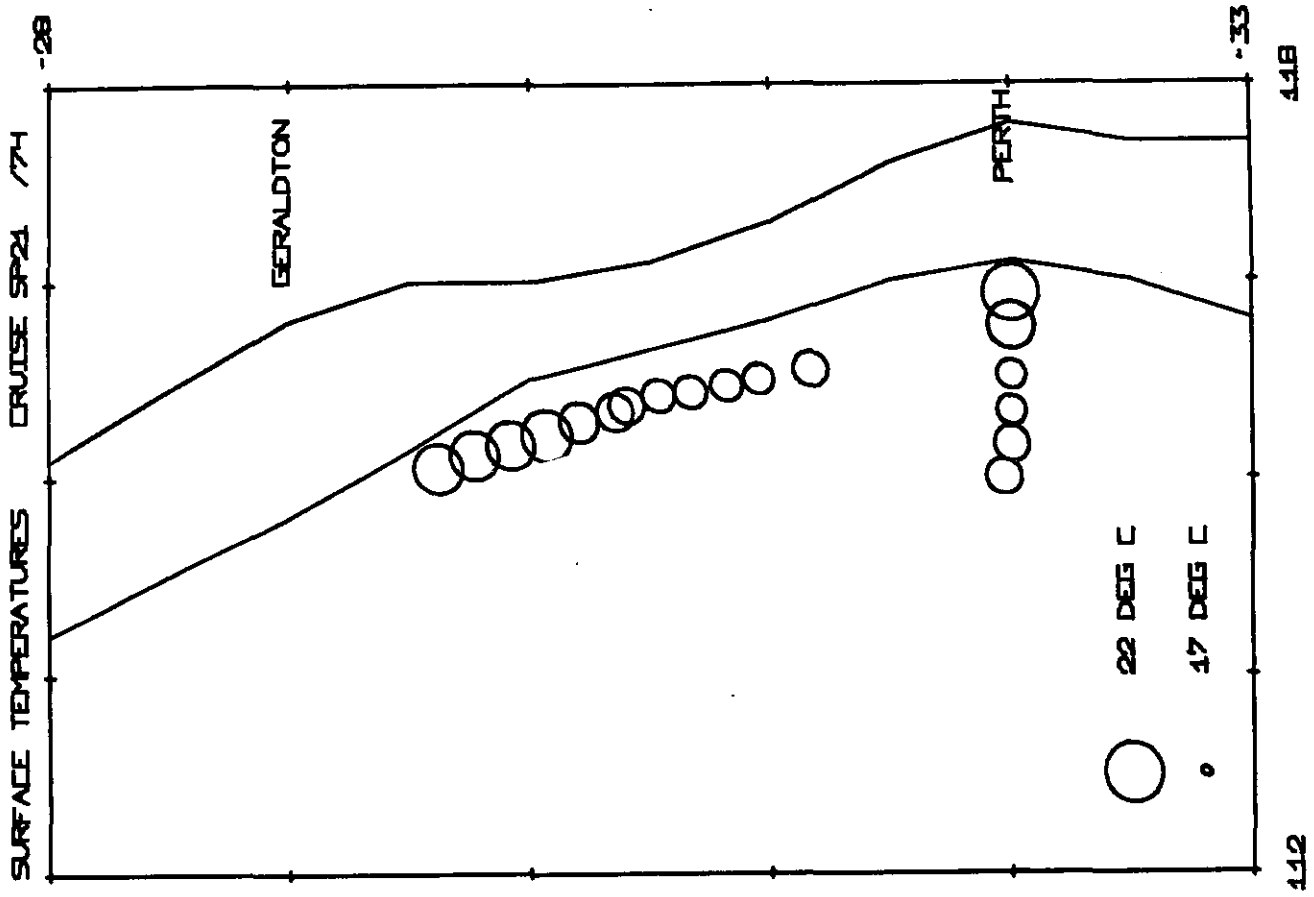
17 DEG C
-28
-33
112
118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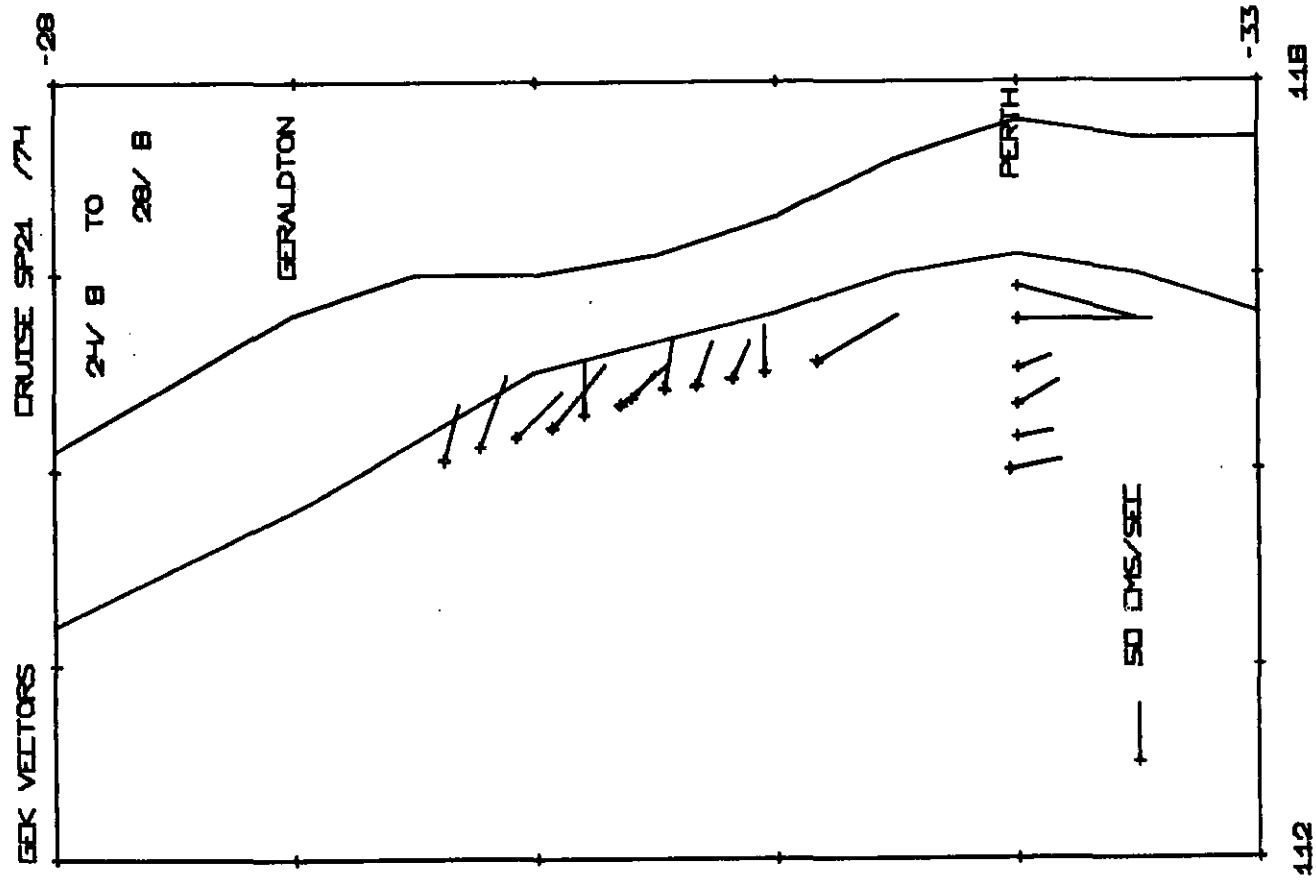
-33
112
118
GERALDTON
PERTH
22 DEG C
17 DEG C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24/ 8 TO 28/ 8
-28
-33
112
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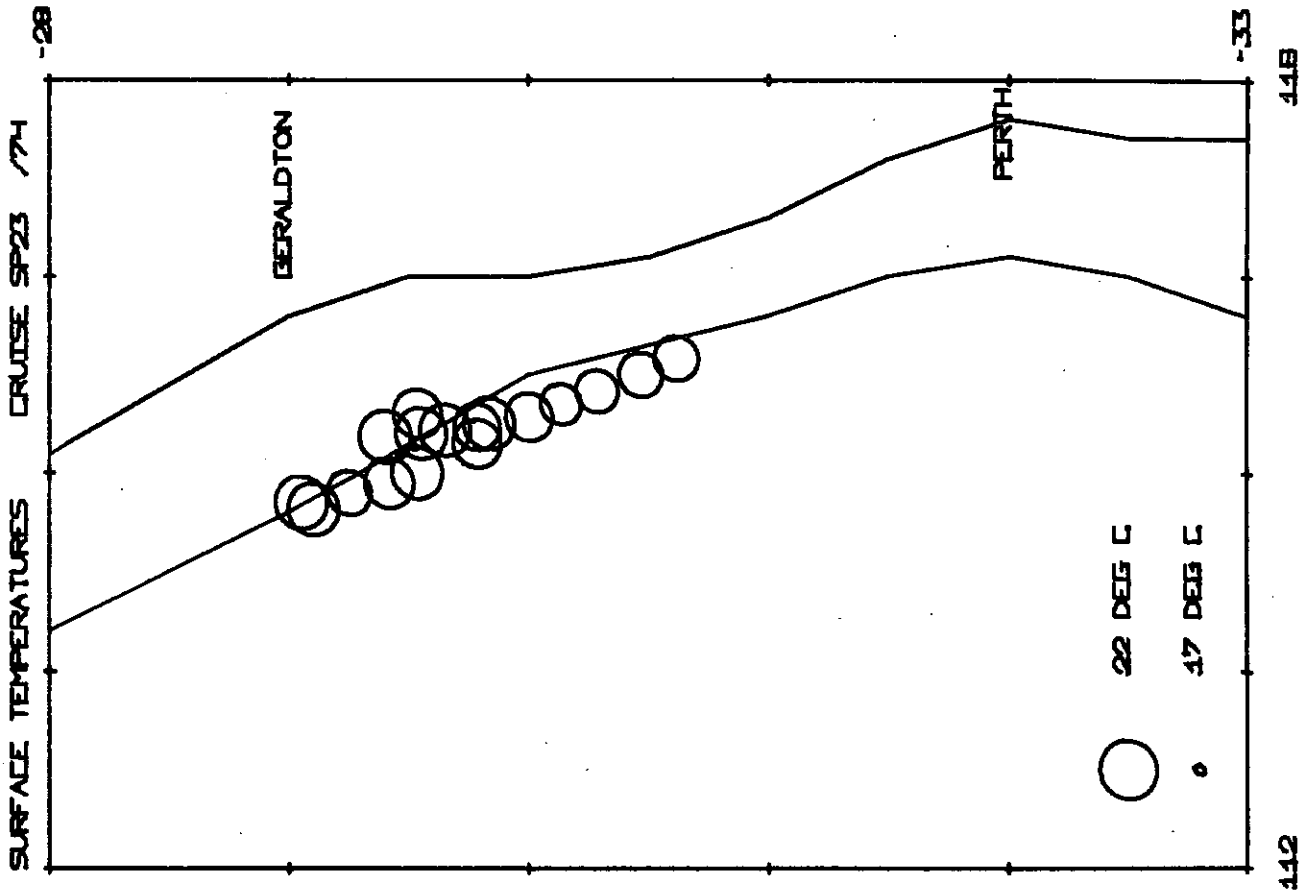
GERALDTON
PERTH
50 CMS/SEC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-33
112
118
GERALDTON
PERTH
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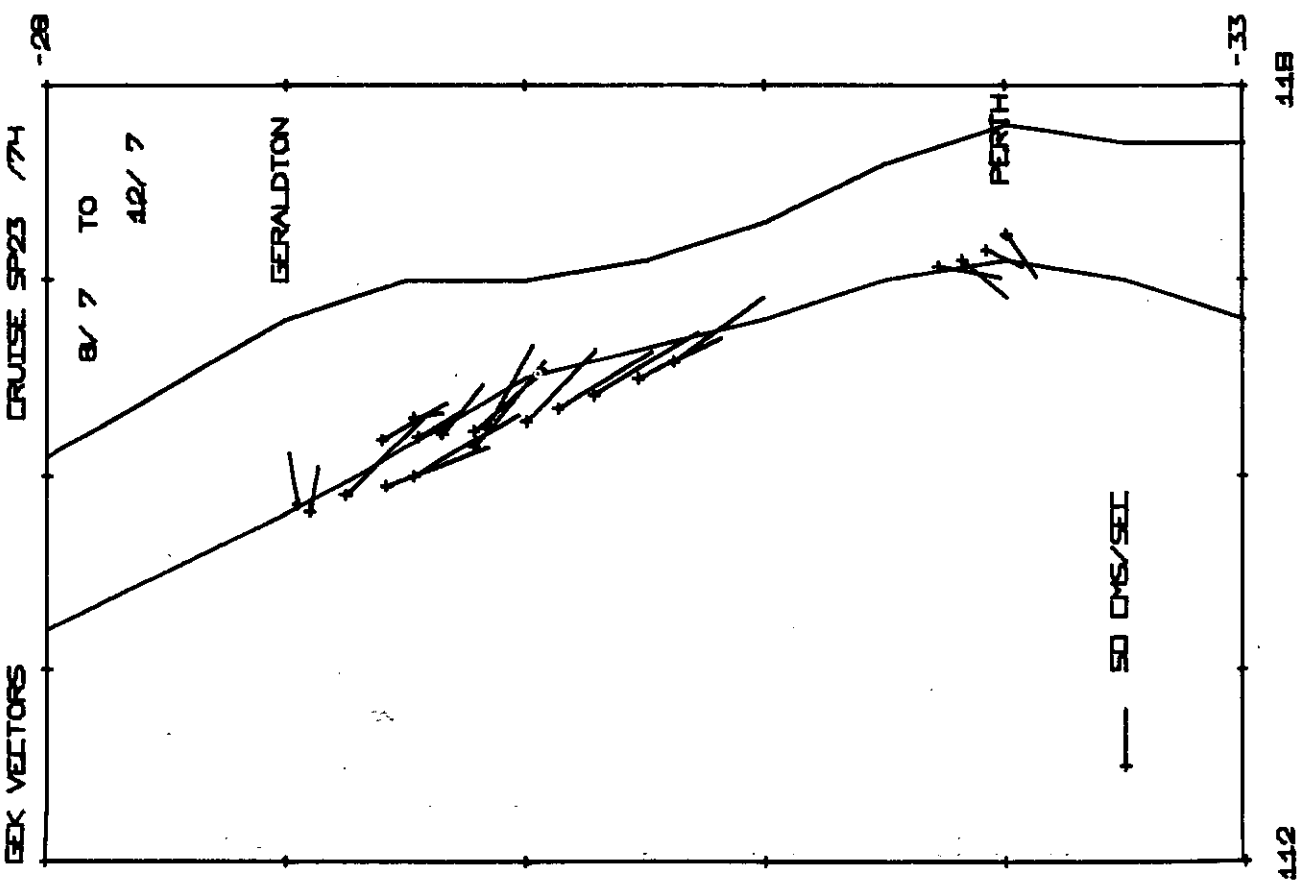
17 DEG C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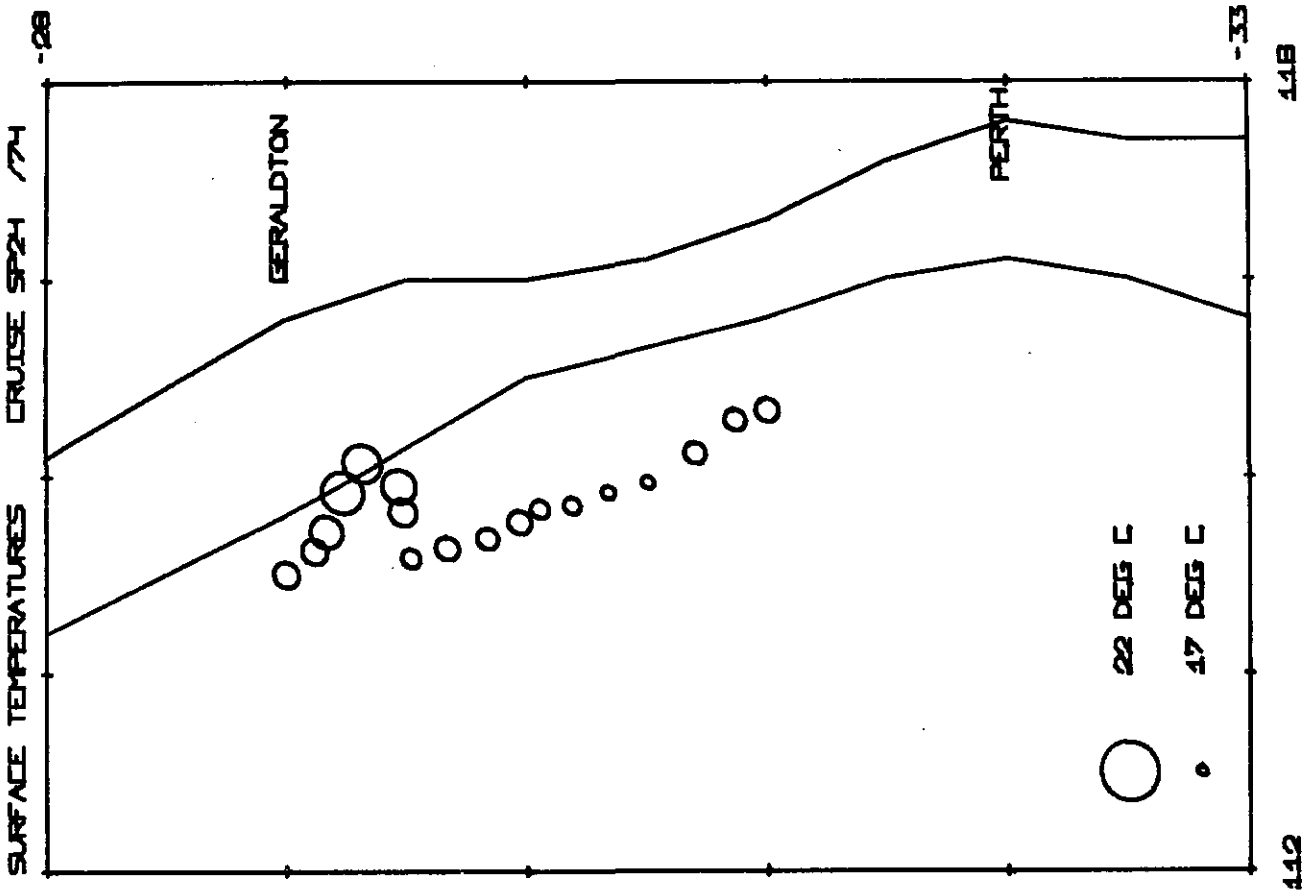
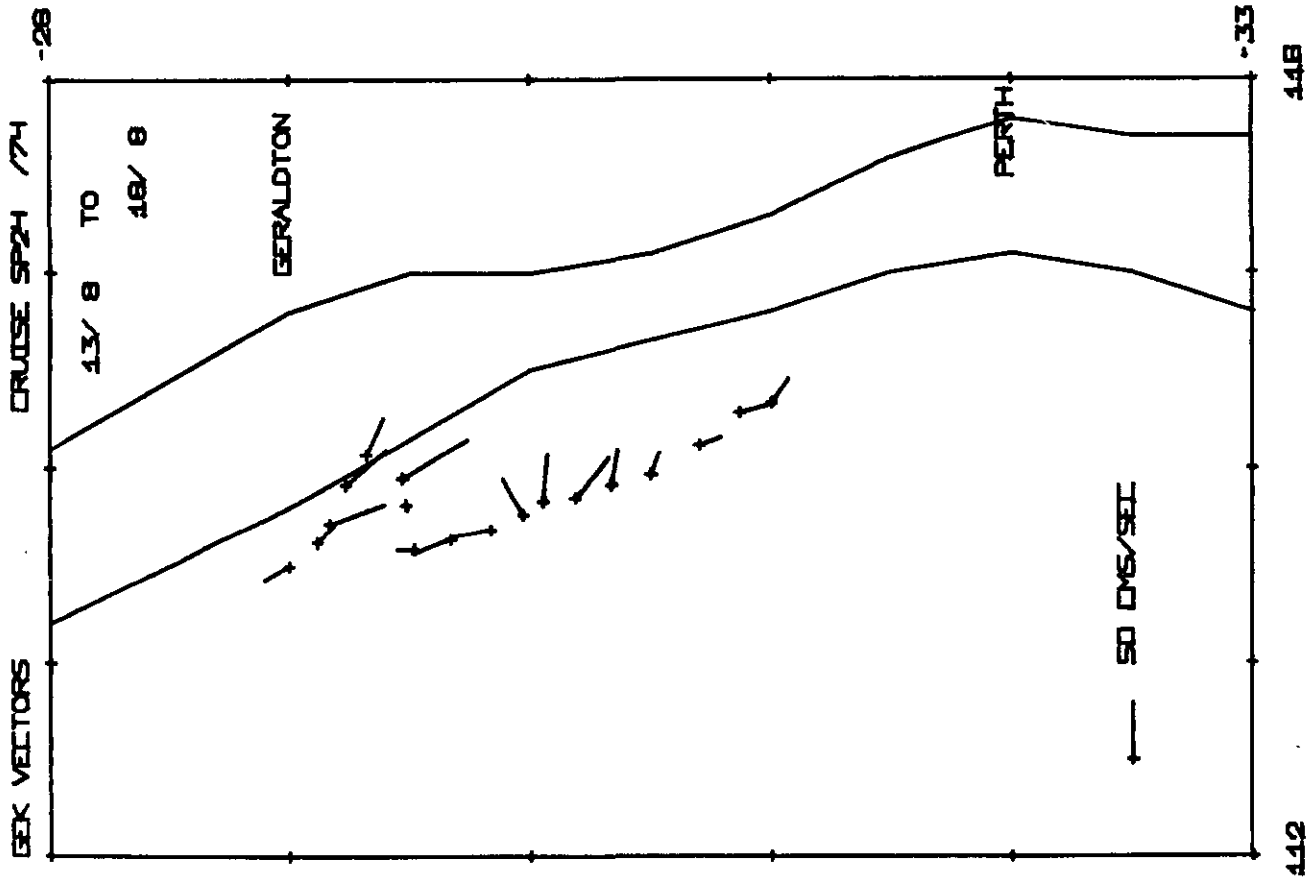
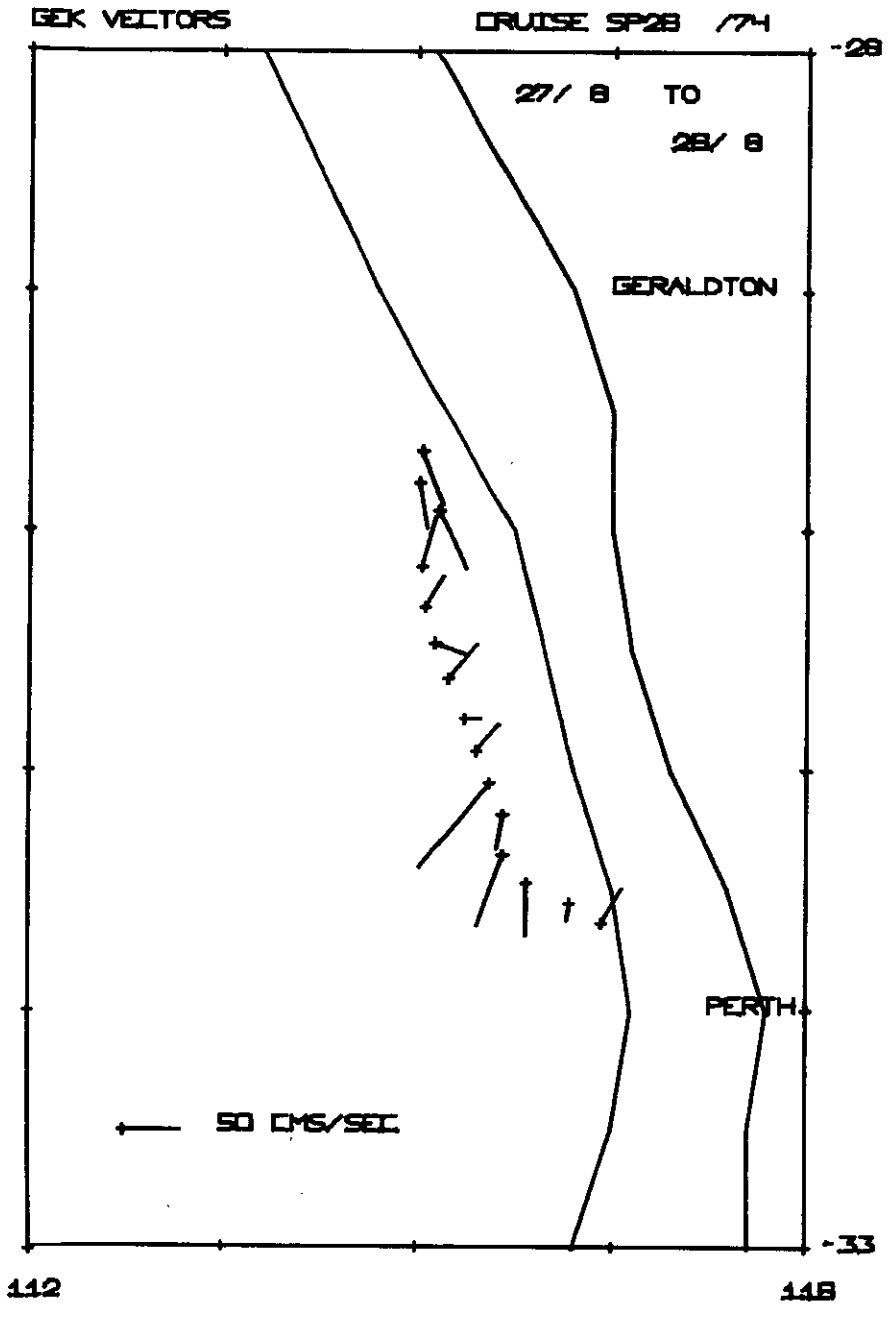
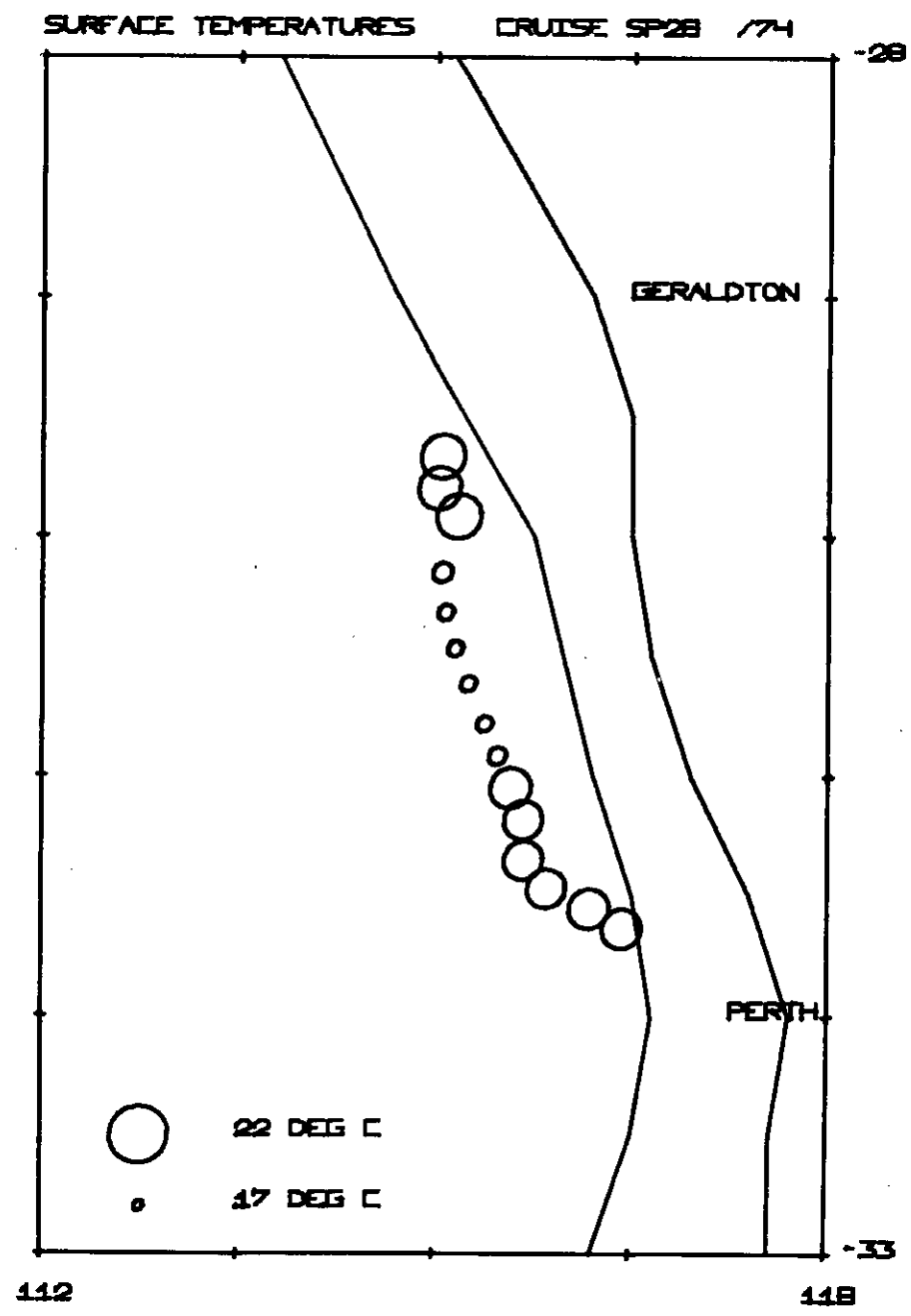
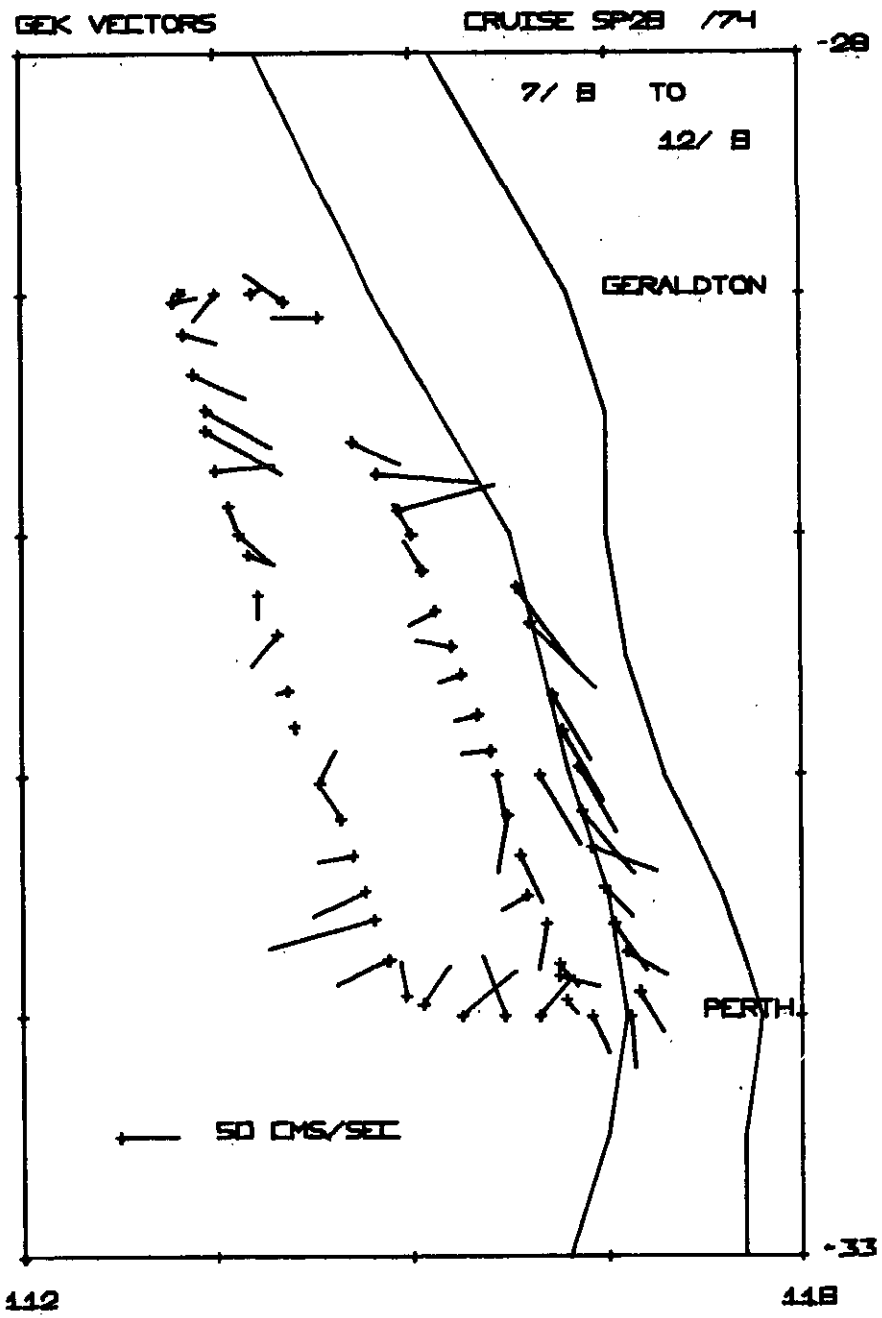
8/ 7 TO 12/ 7
-28
-33
112
118
GERALDTON
PERTH
50 CMS/SEC

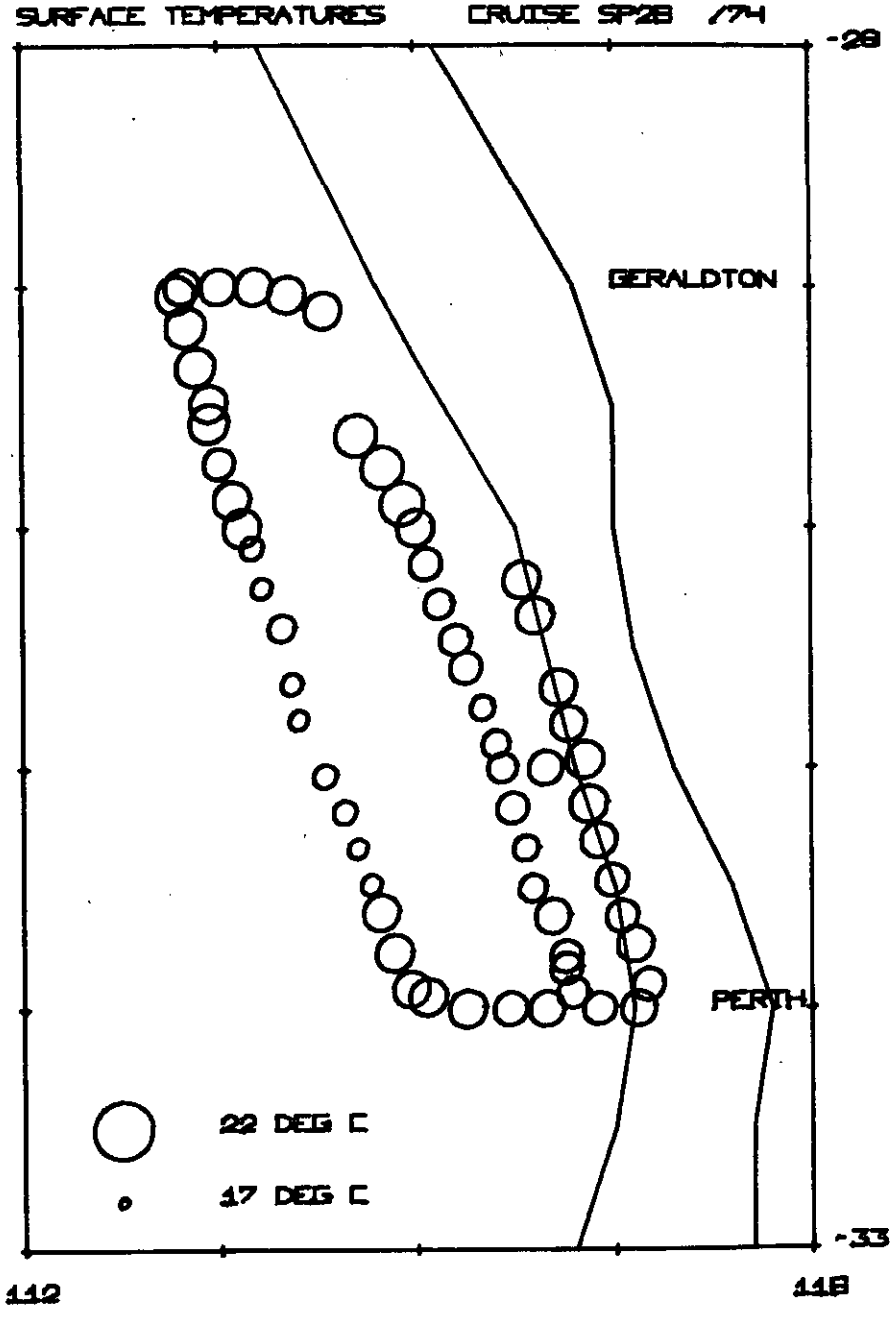

SURFACE TEMPERATURES CRUISE SP24 /74
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

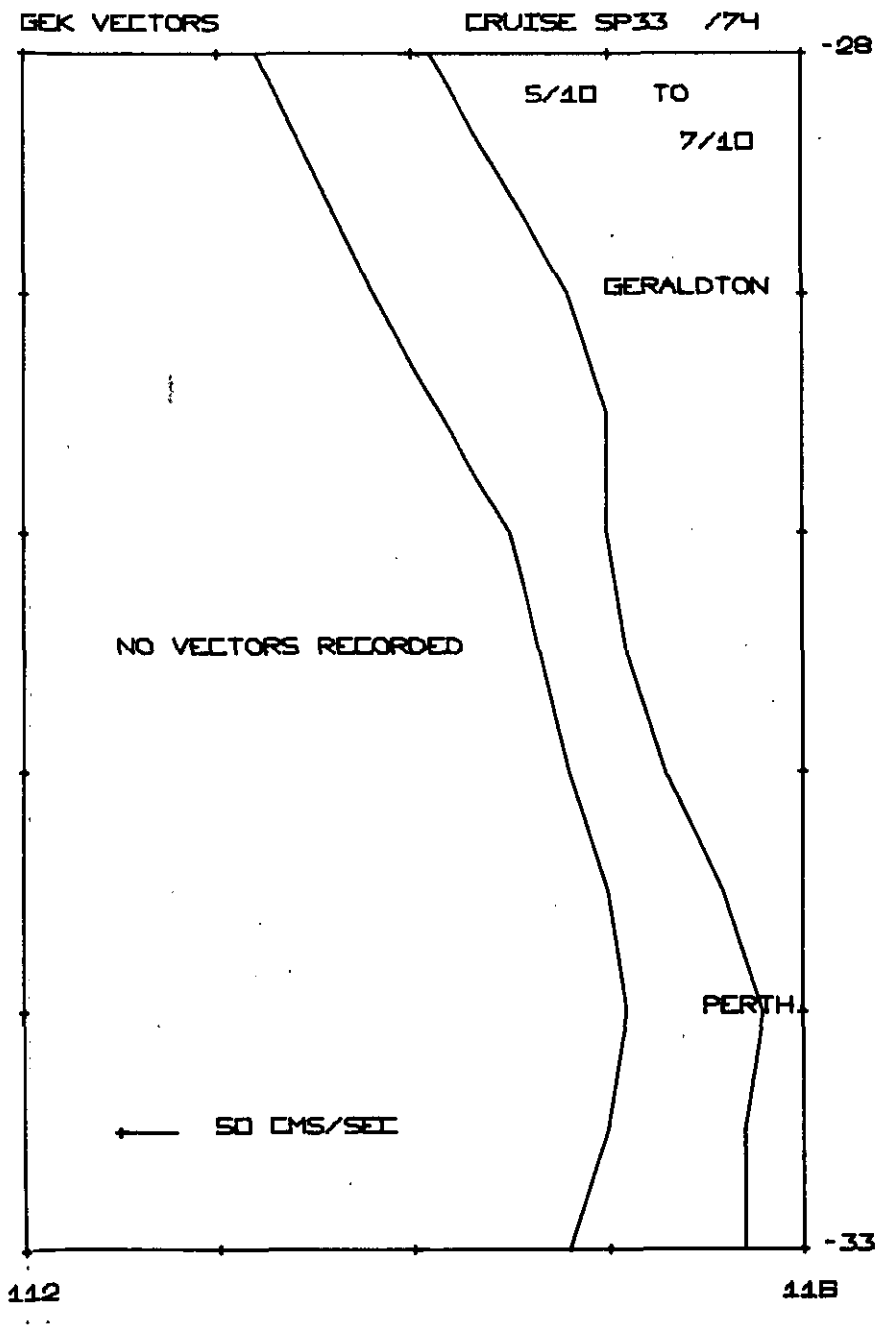

DEK VECTORS CRUISE SP24 /74
13/ 8 TO 18/ 8
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

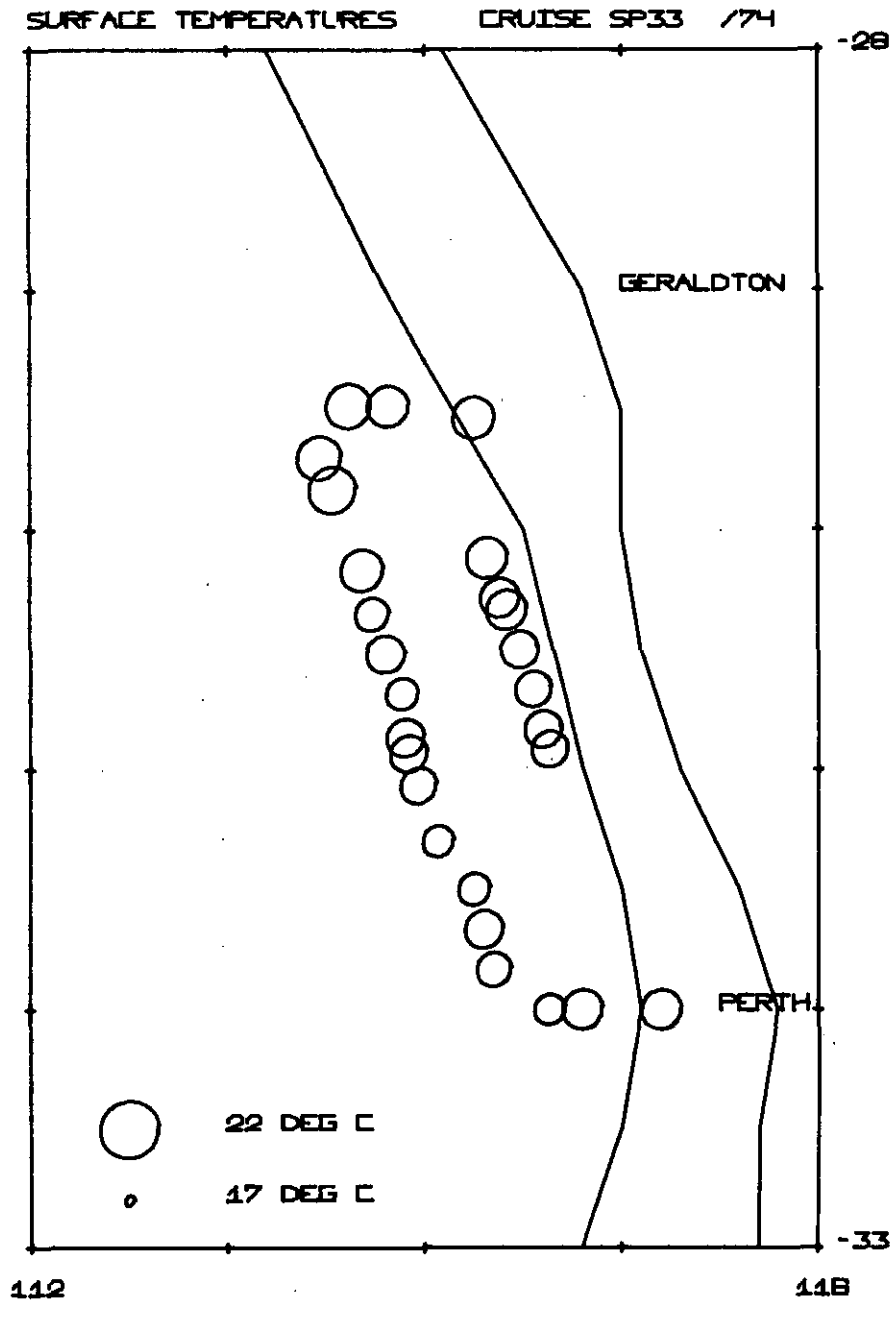

GEK VECTORS
CRUISE SP28 /74
27/ 8 TO
28/ 8
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118


SURFACE TEMPERATURES
CRUISE SP28 /74
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118


GEK VECTORS
CRUISE SP28 /74
7/ 8 TO
12/ 8
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118


SURFACE TEMPERATURES
CRUISE SP28 /74
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118


GEK VECTORS
CRUISE SP33 /74
-28
5/10 TO
7/10
GERALDTON
NO VECTORS RECORDED
PERTH
50 CMS/SEC
-33
112
118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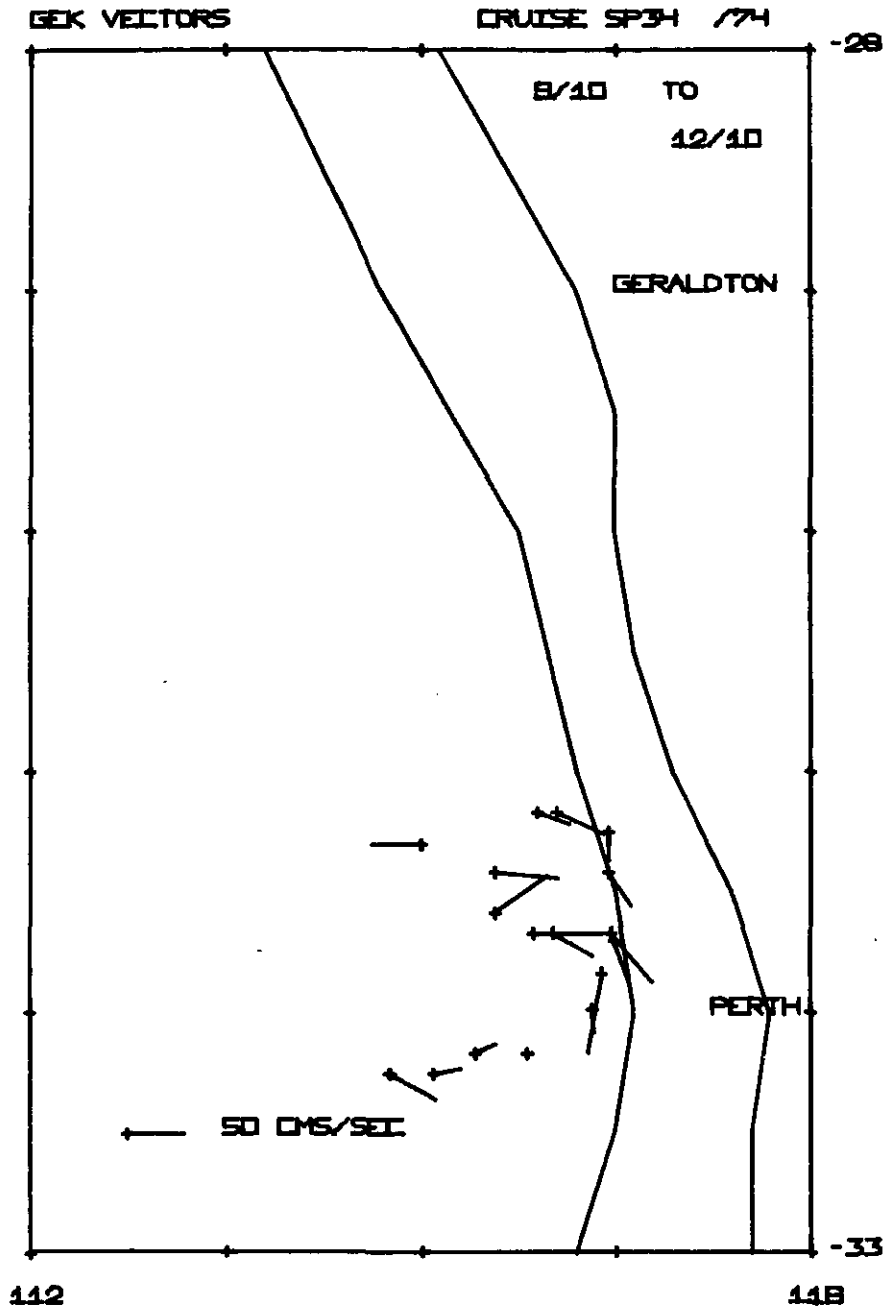
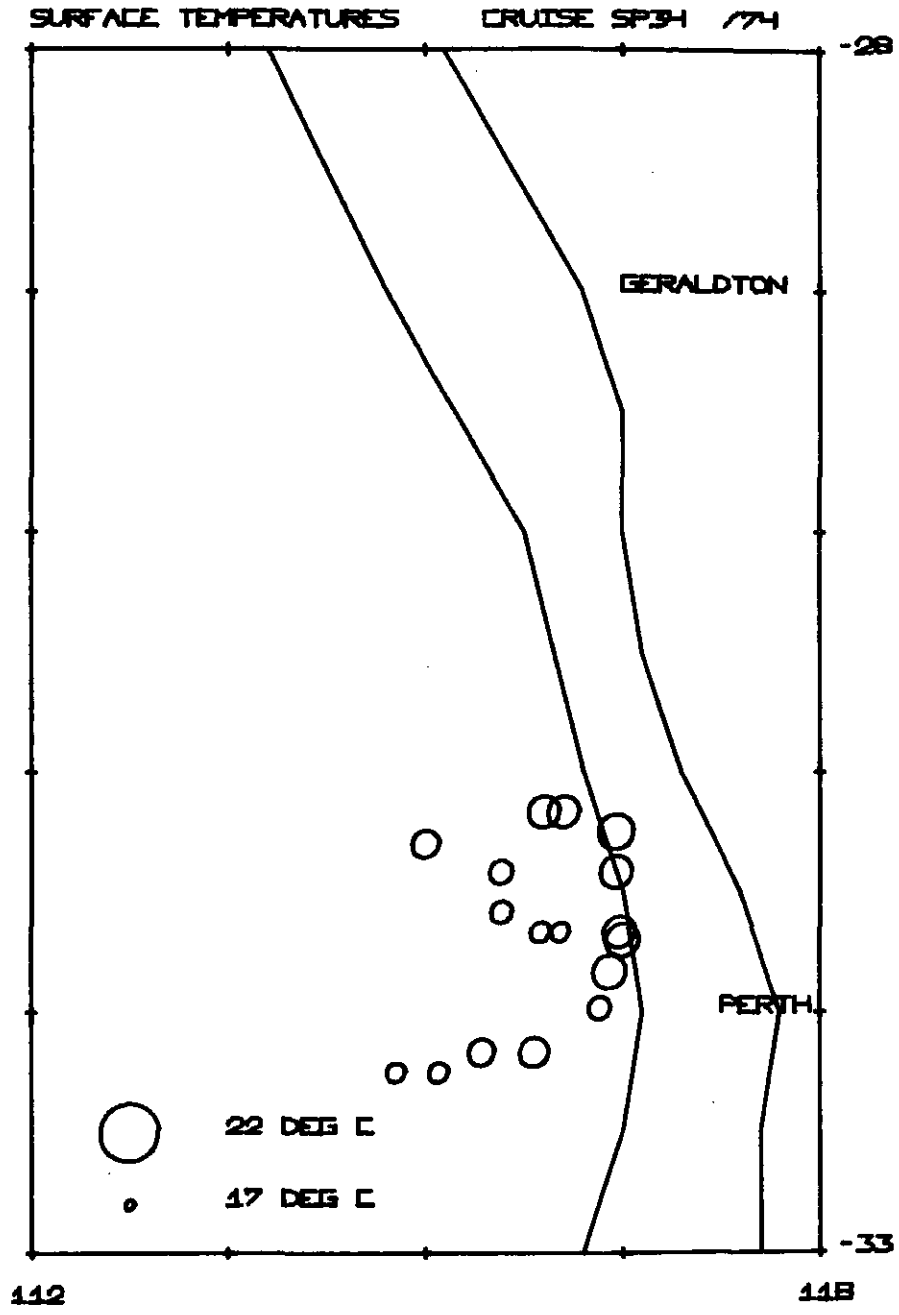
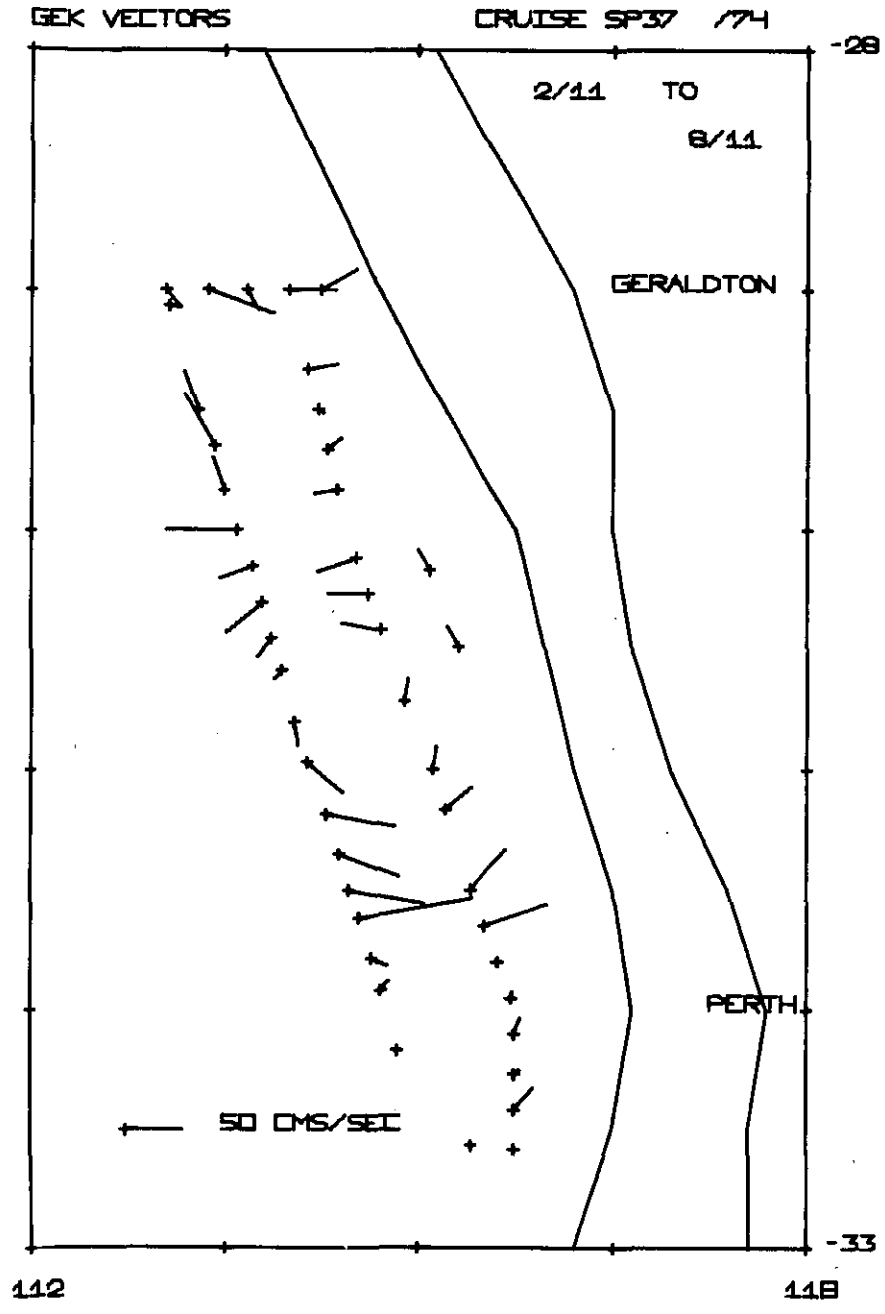
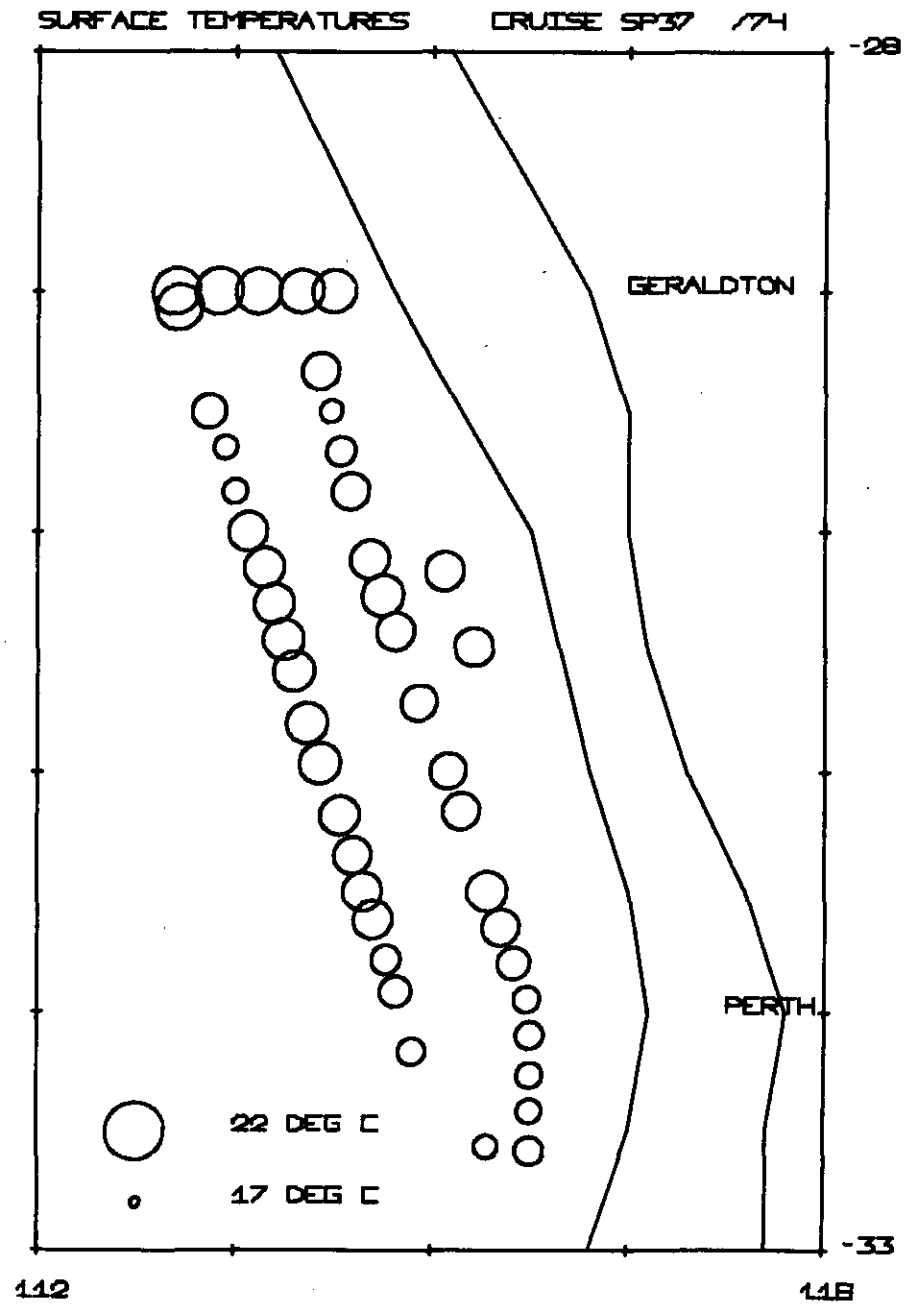
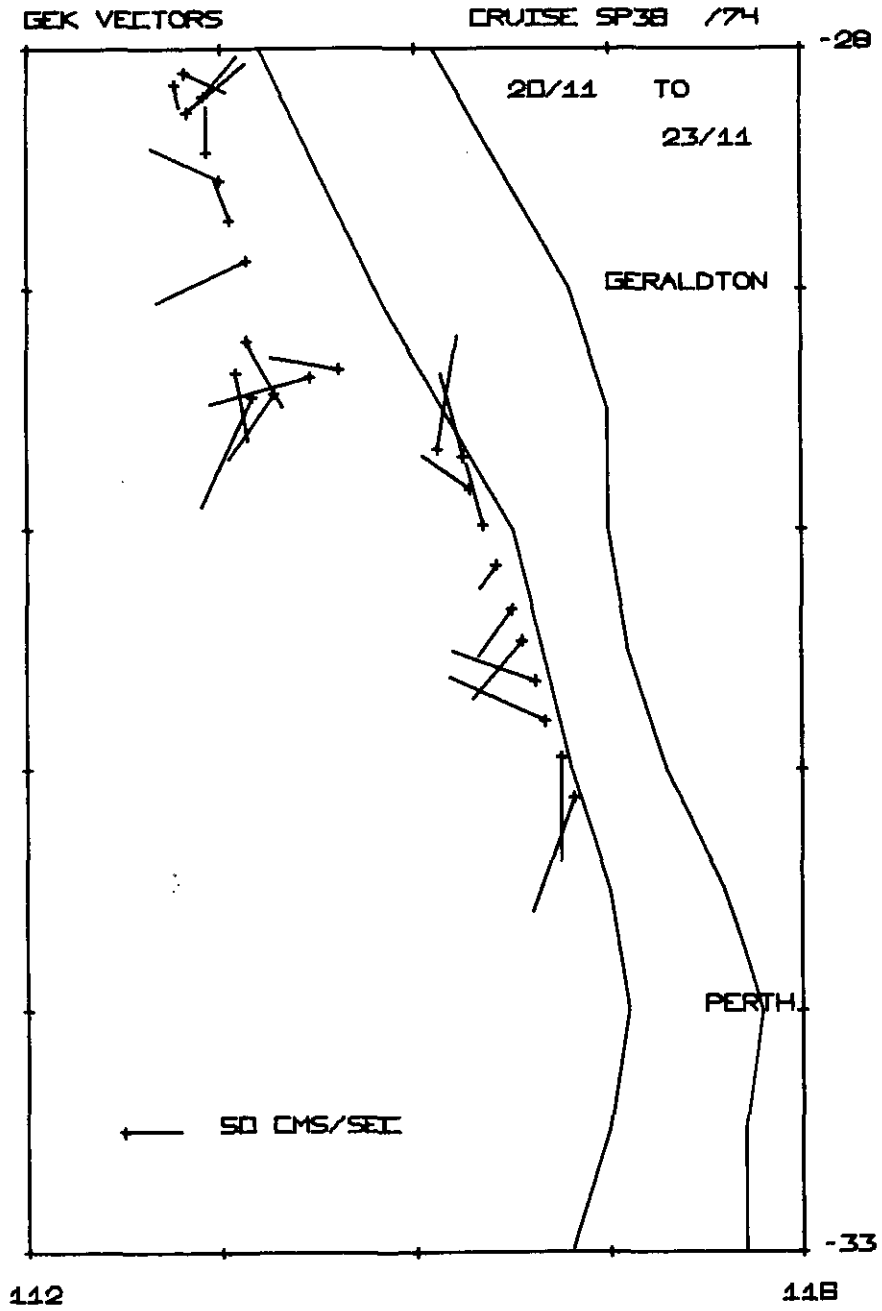
CRUISE SP33 /74
-28
GERALDTON
PERTH
22 DEG C
17 DEG C
-33
112
118

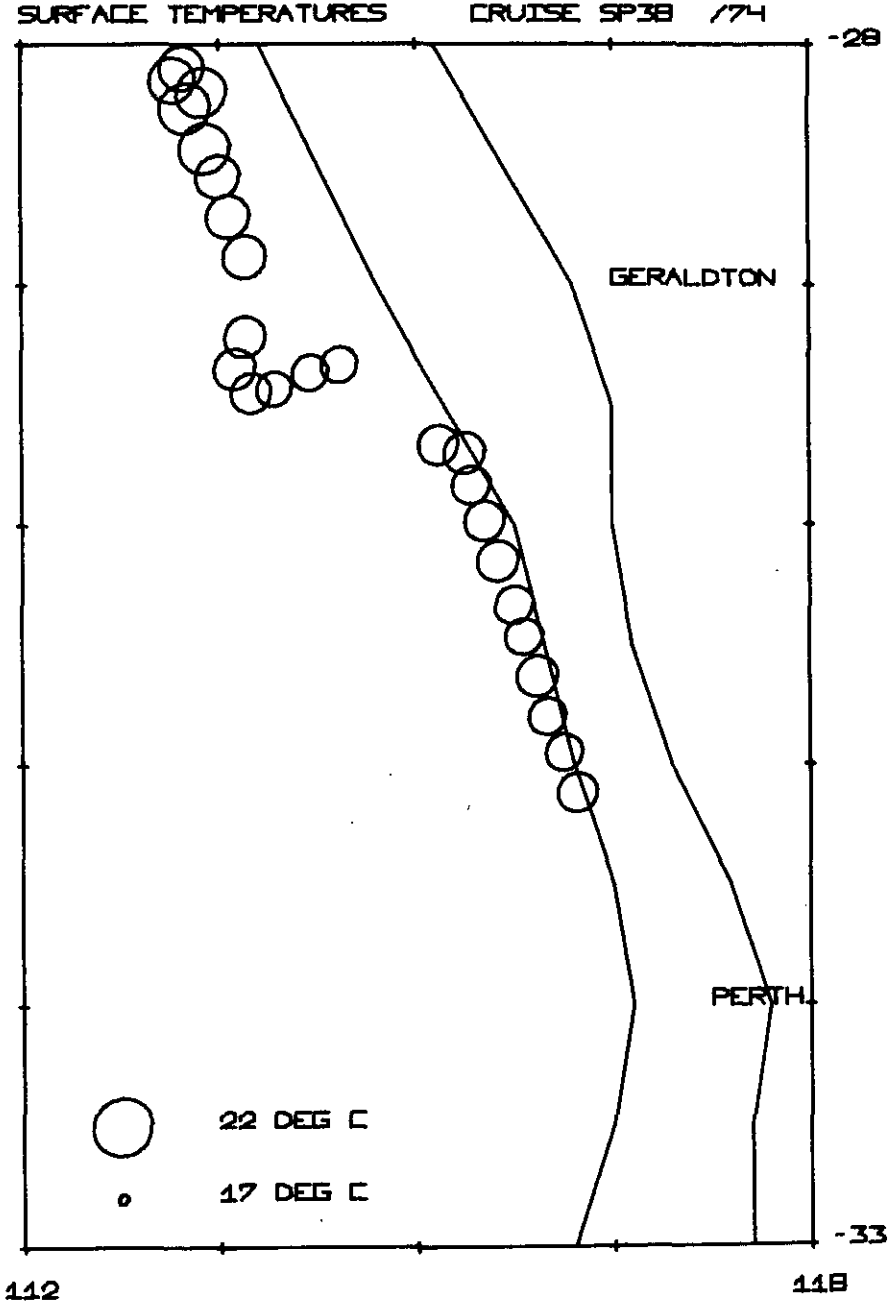

GEK VECTORS
CRUISE SP34 /74
8/10 TO
12/10
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

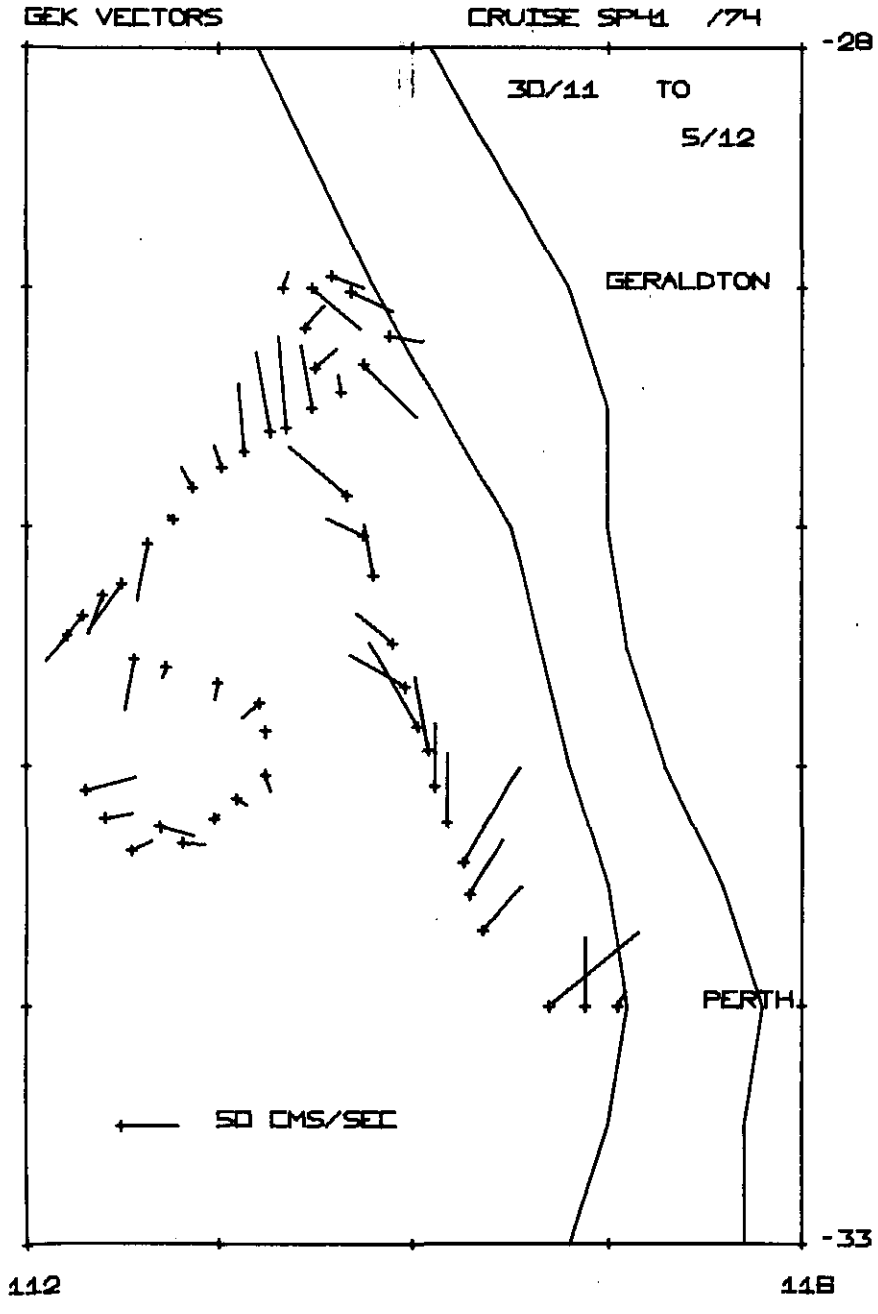

SURFACE TEMPERATURES
CRUISE SP34 /74
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

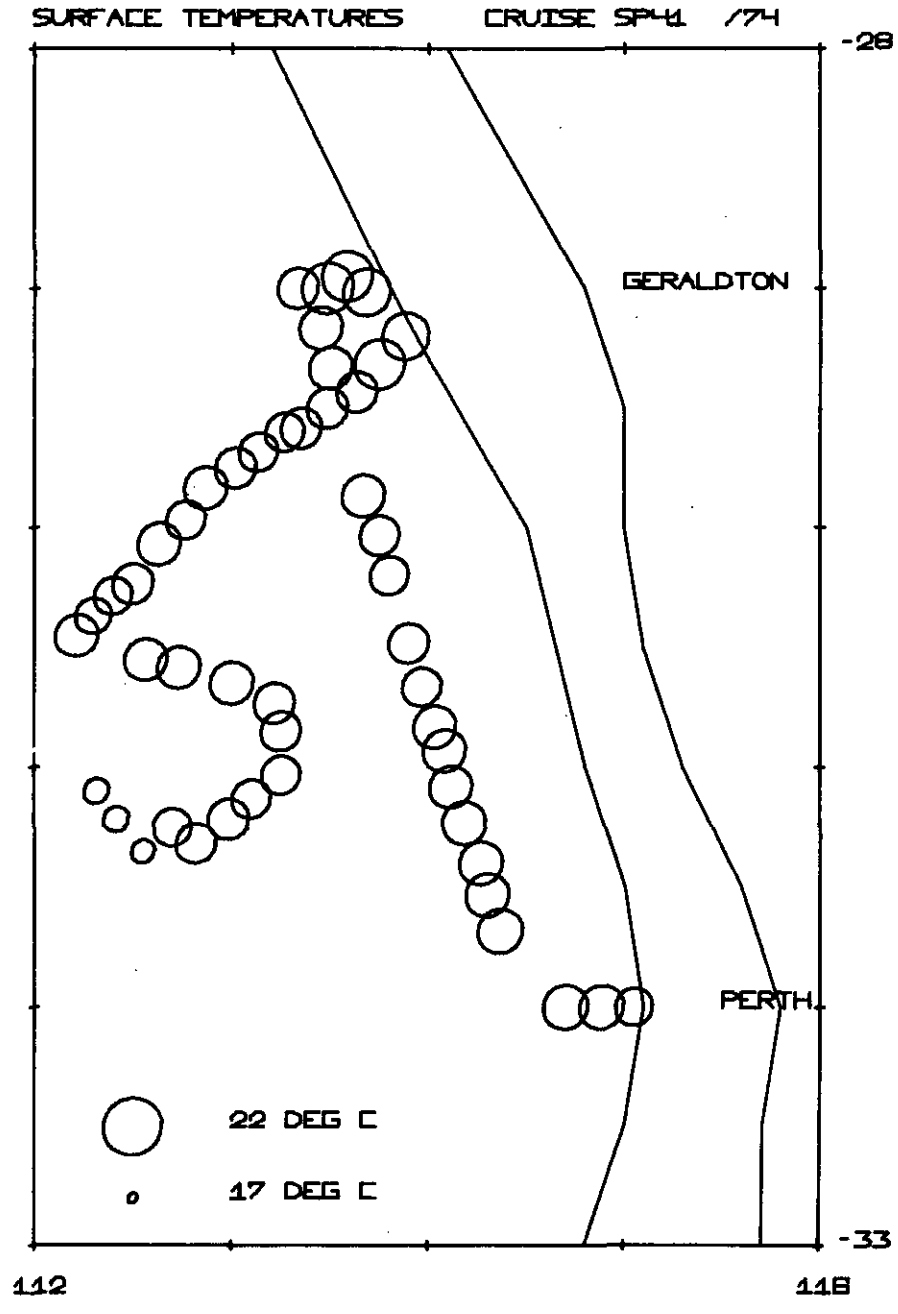

GEK VECTORS
CRUISE SP37 /74
2/11 TO
8/11
-28
GERALDTON
PERTH
-33
50 CMS/SEC
112
118

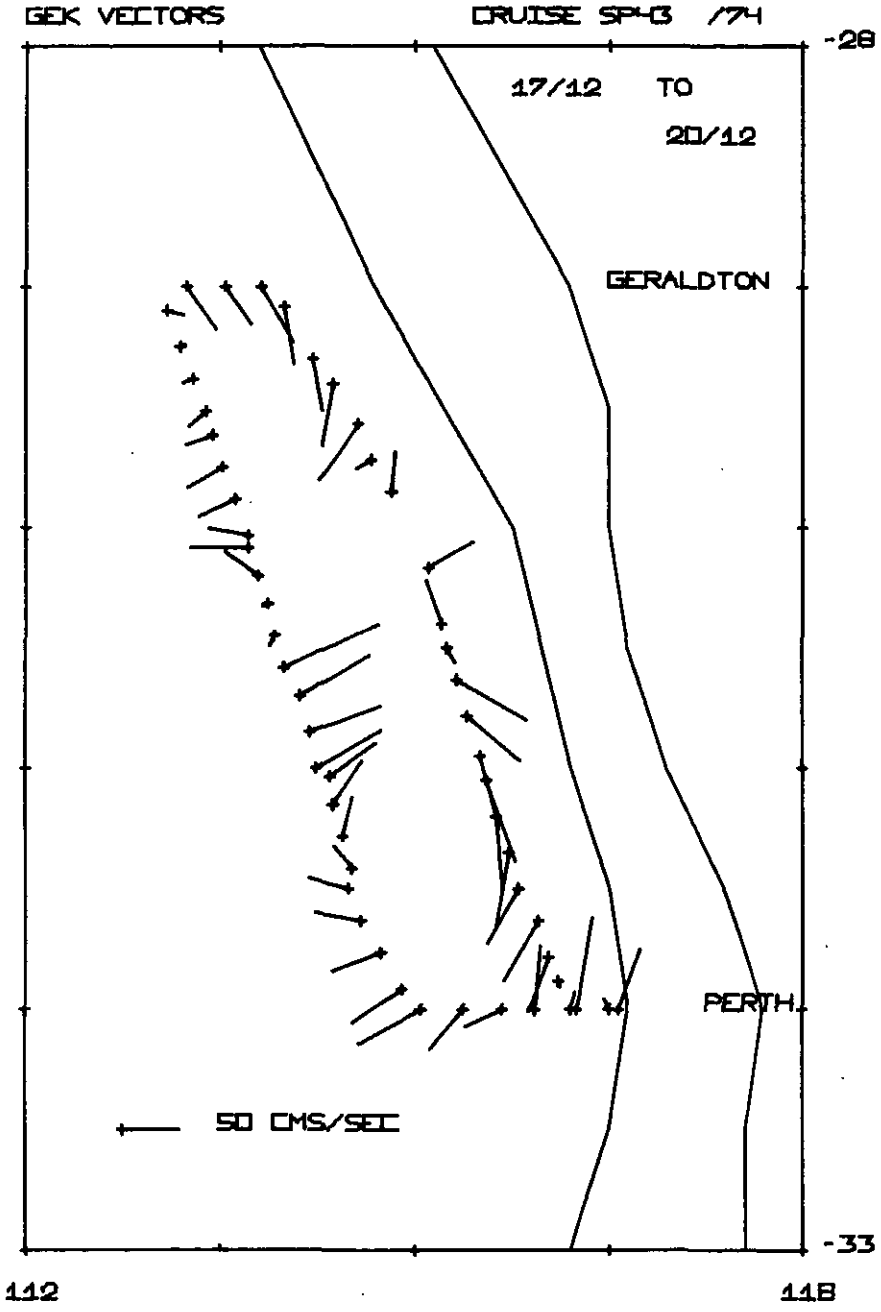

SURFACE TEMPERATURES
CRUISE SP37 /74
-28
GERALDTON
PERTH
-33
22 DEG C
17 DEG C
112
118

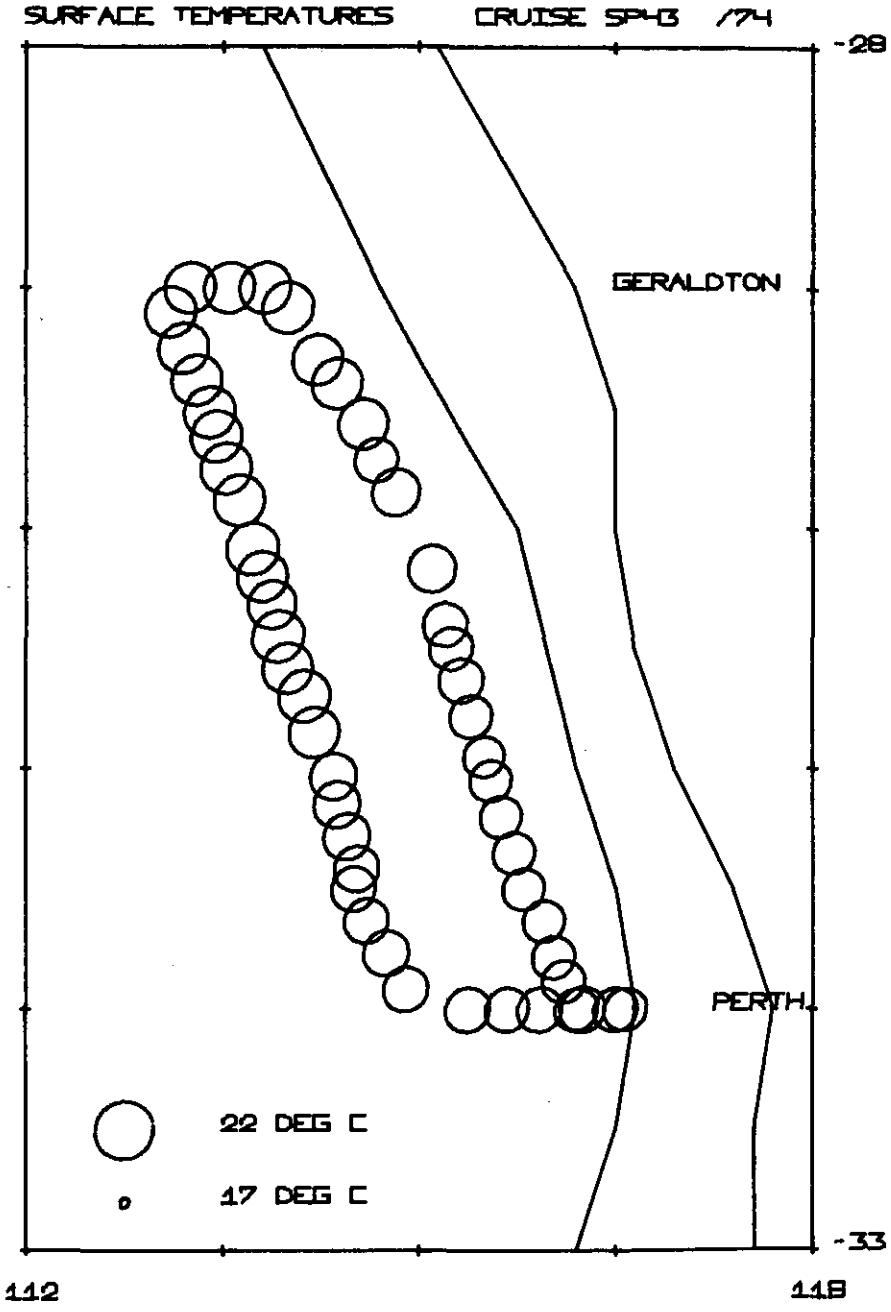

GEK VECTORS
CRUISE SP38 /74
20/11 TO
23/11
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

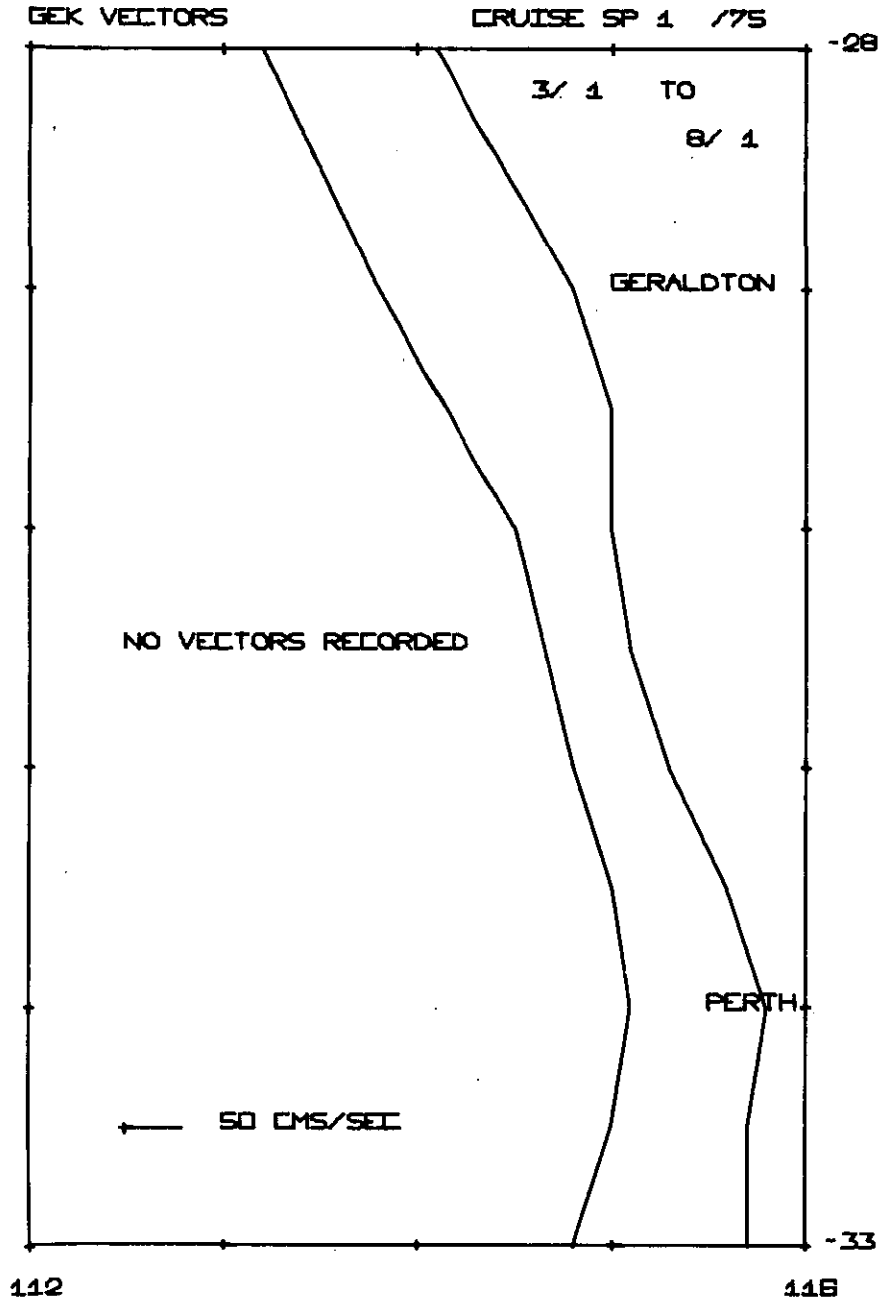

SURFACE TEMPERATURES
CRUISE SP38 /74
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

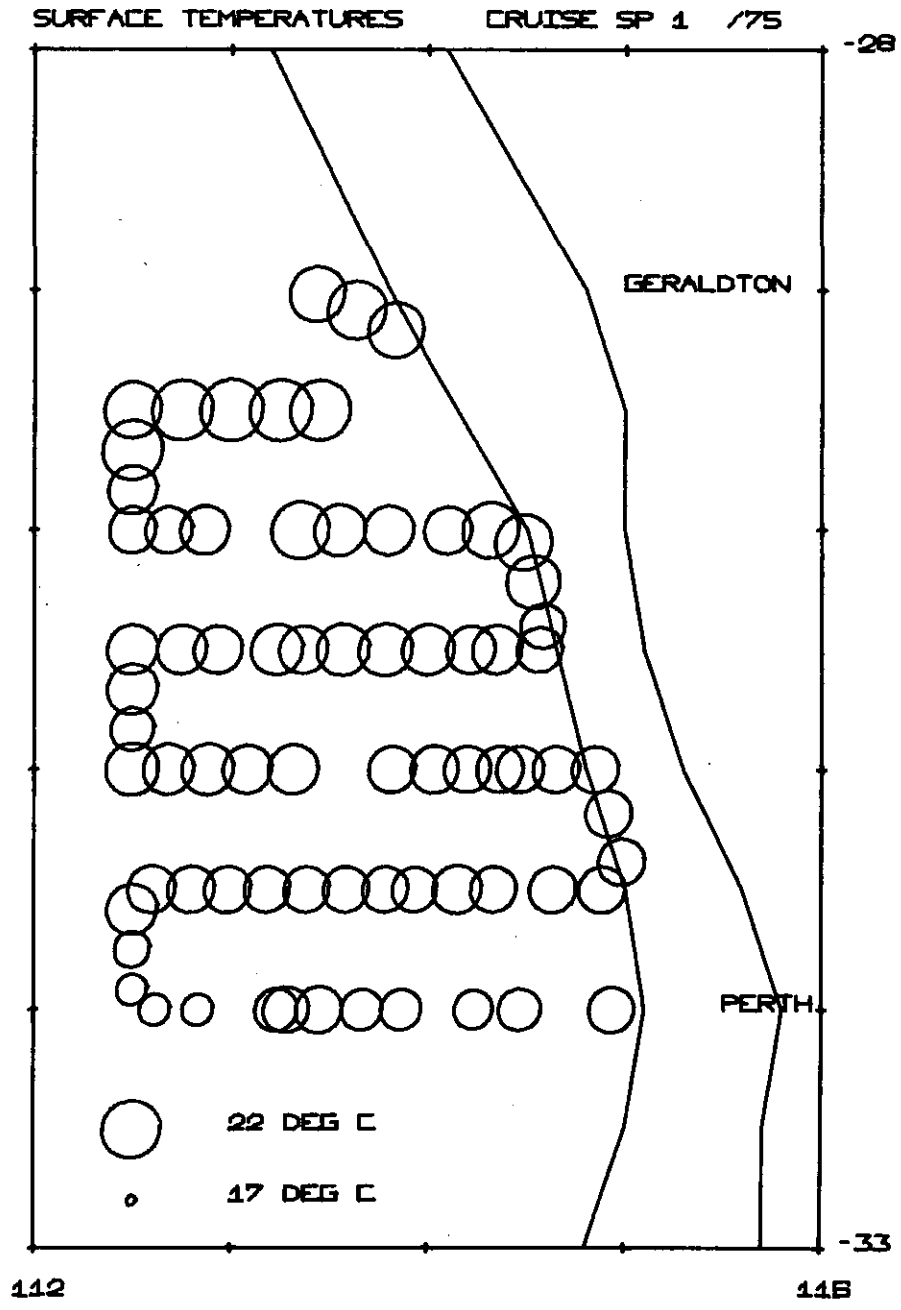

GEK VECTORS
CRUISE SP41 /74
30/11 TO
5/12
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

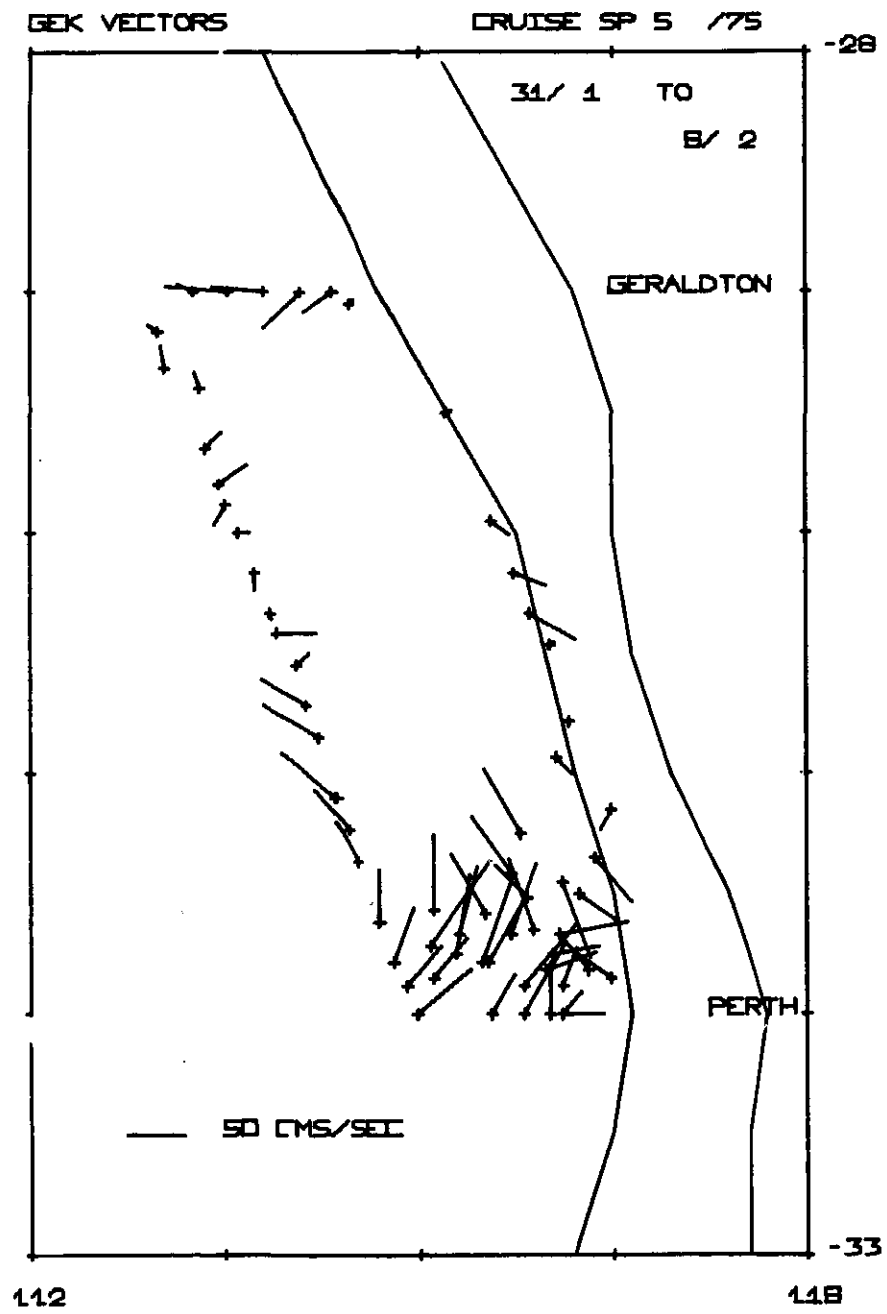

SURFACE TEMPERATURES
CRUISE SP41 /74
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

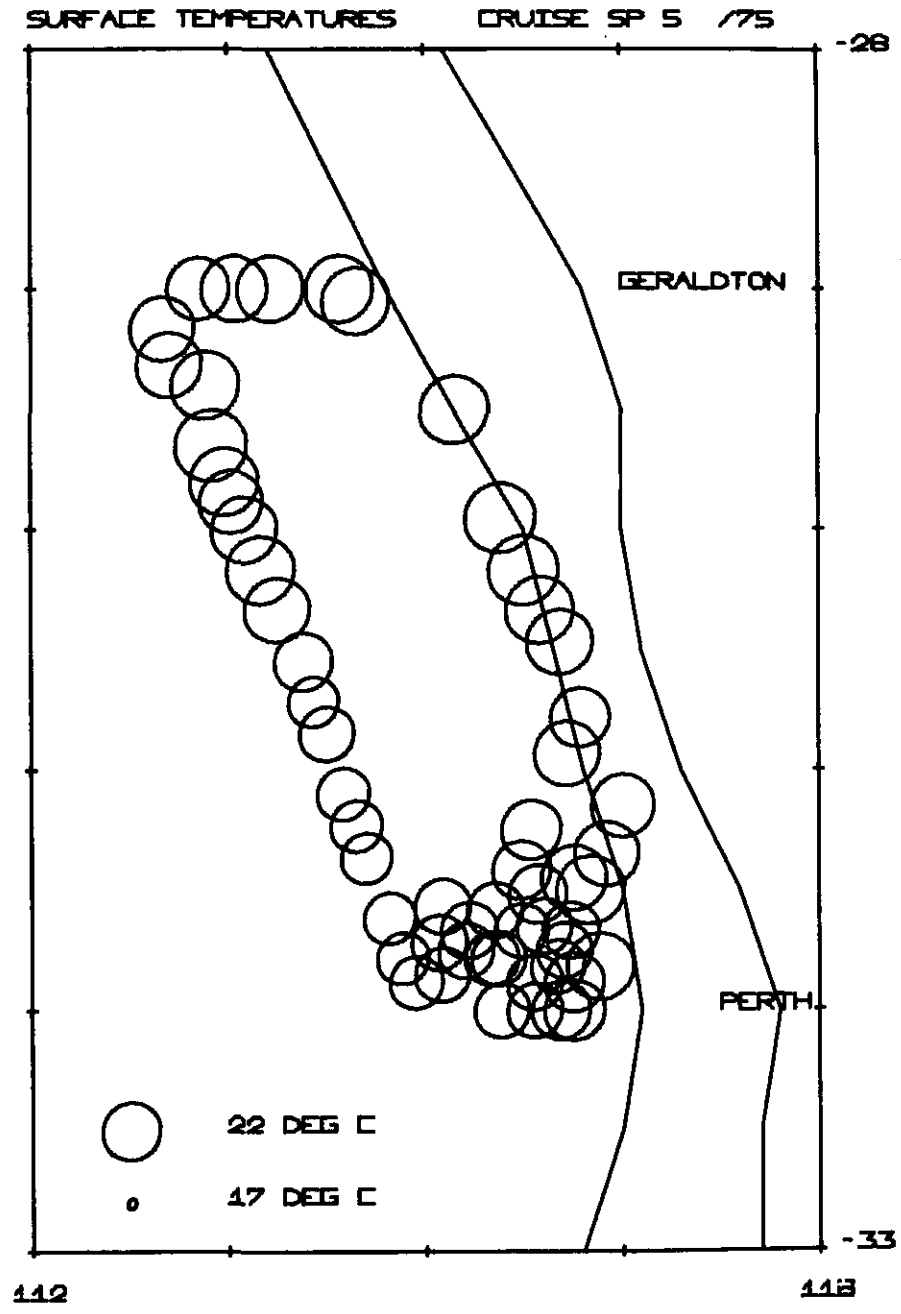

GEK VECTORS
CRUISE SP43 /74
17/12 TO
20/12
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

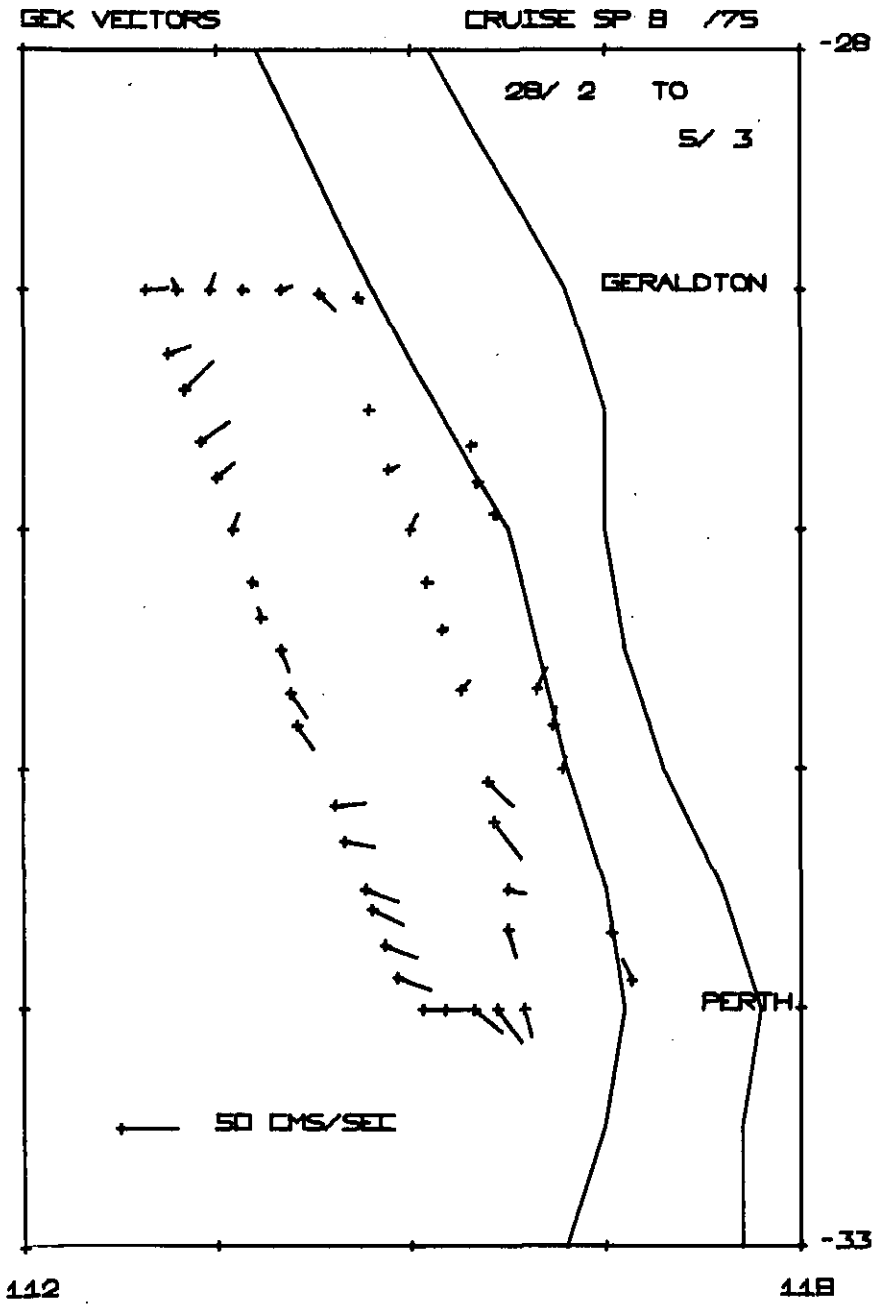

SURFACE TEMPERATURES
CRUISE SP43 /74
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

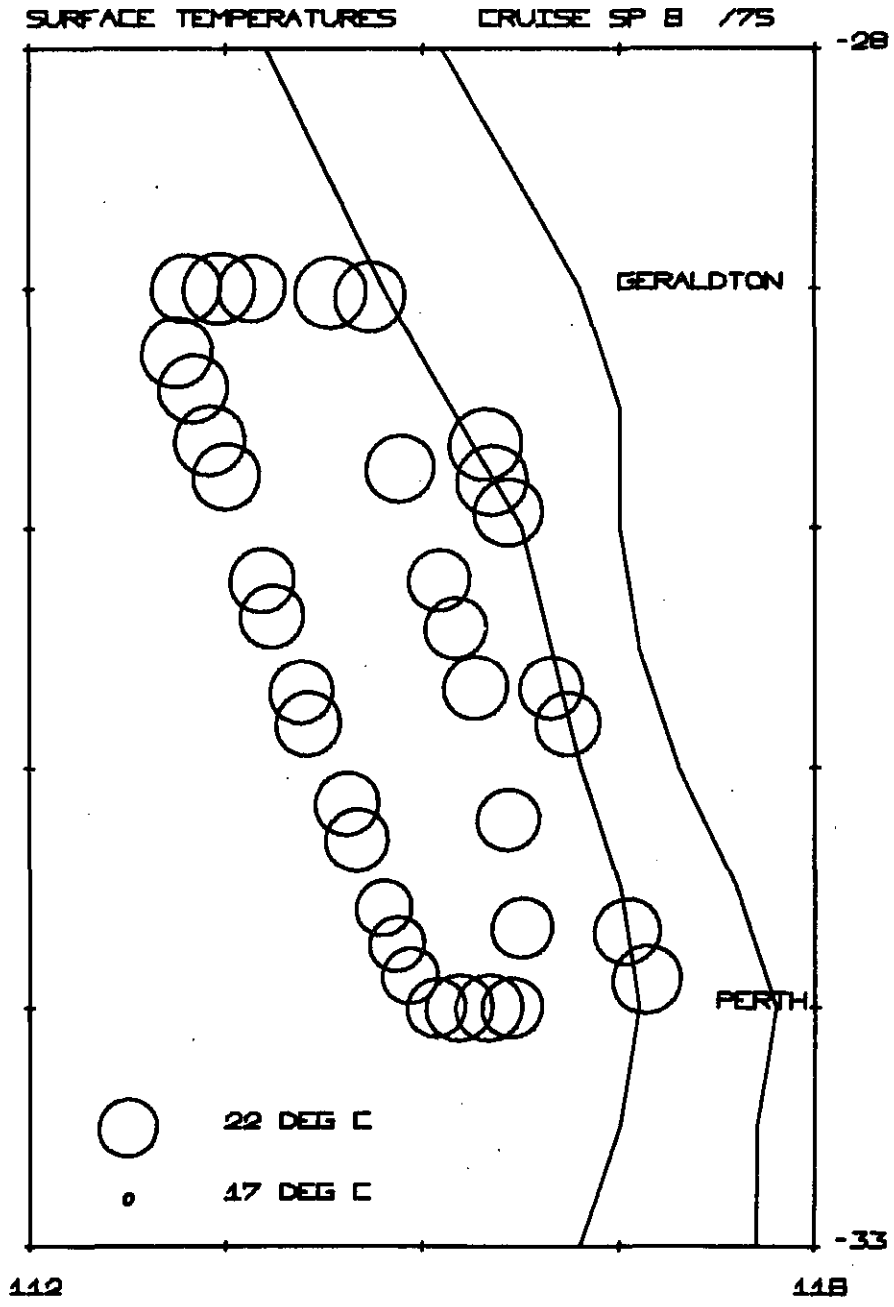

GEK VECTORS
CRUISE SP 1 /75
-28
3/ 1 TO
8/ 1
GERALDTON
NO VECTORS RECORDED
PERTH
50 CMS/SEC
-33
112
116

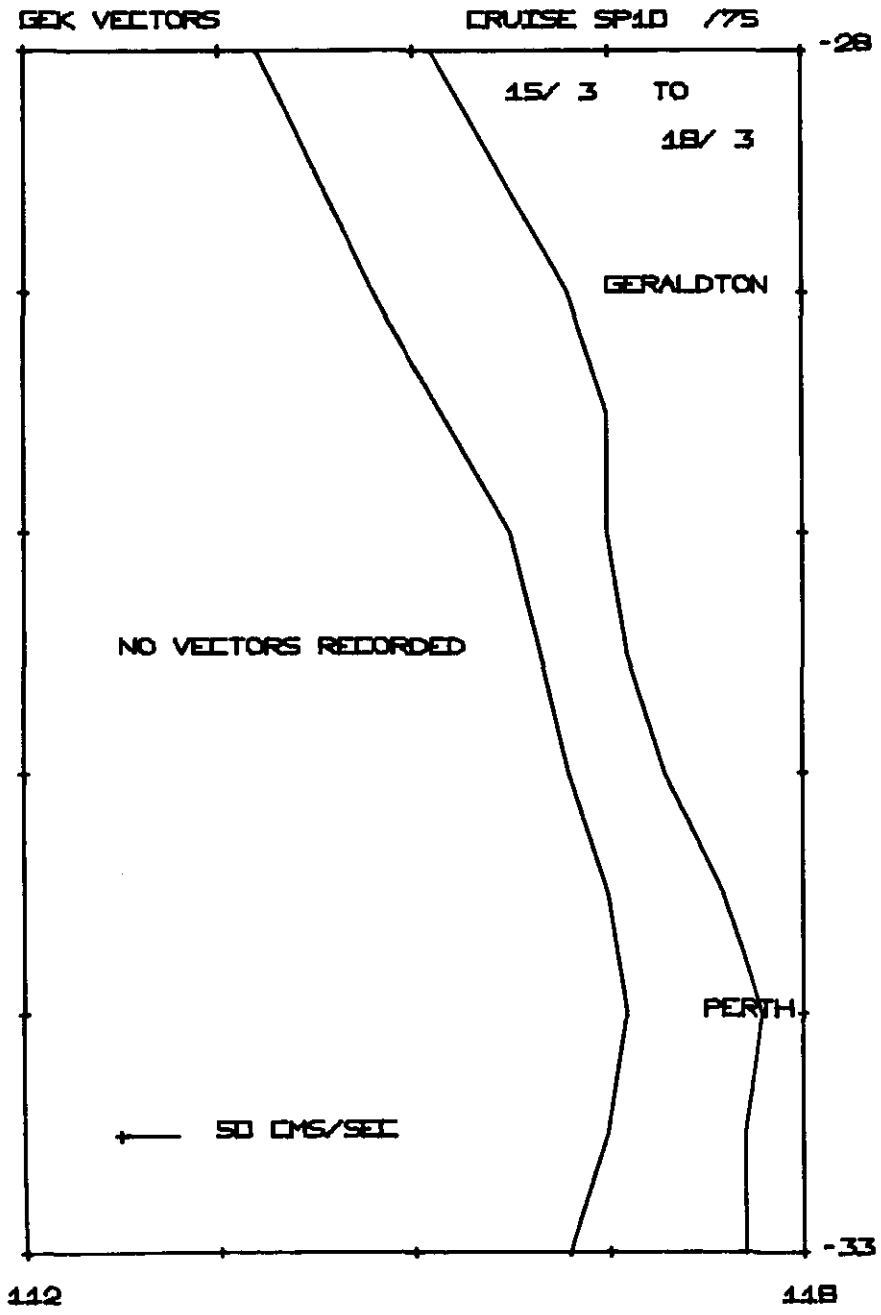

SURFACE TEMPERATURES
CRUISE SP 1 /75
-28
GERALDTON
PERTH
22 DEG C
17 DEG C
-33
112
116

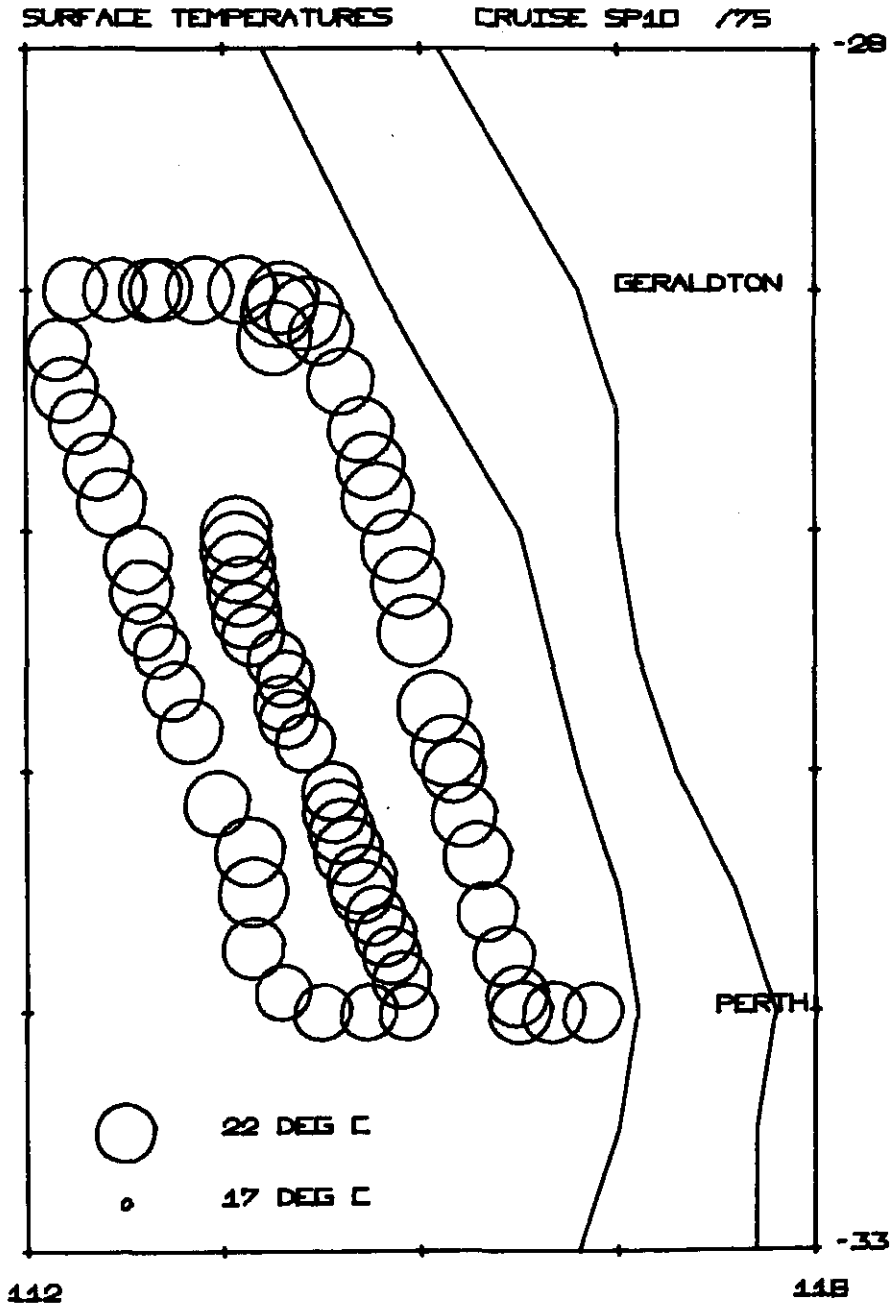

GEK VECTORS
CRUISE SP 5 /75
31/ 1 TO
8/ 2
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

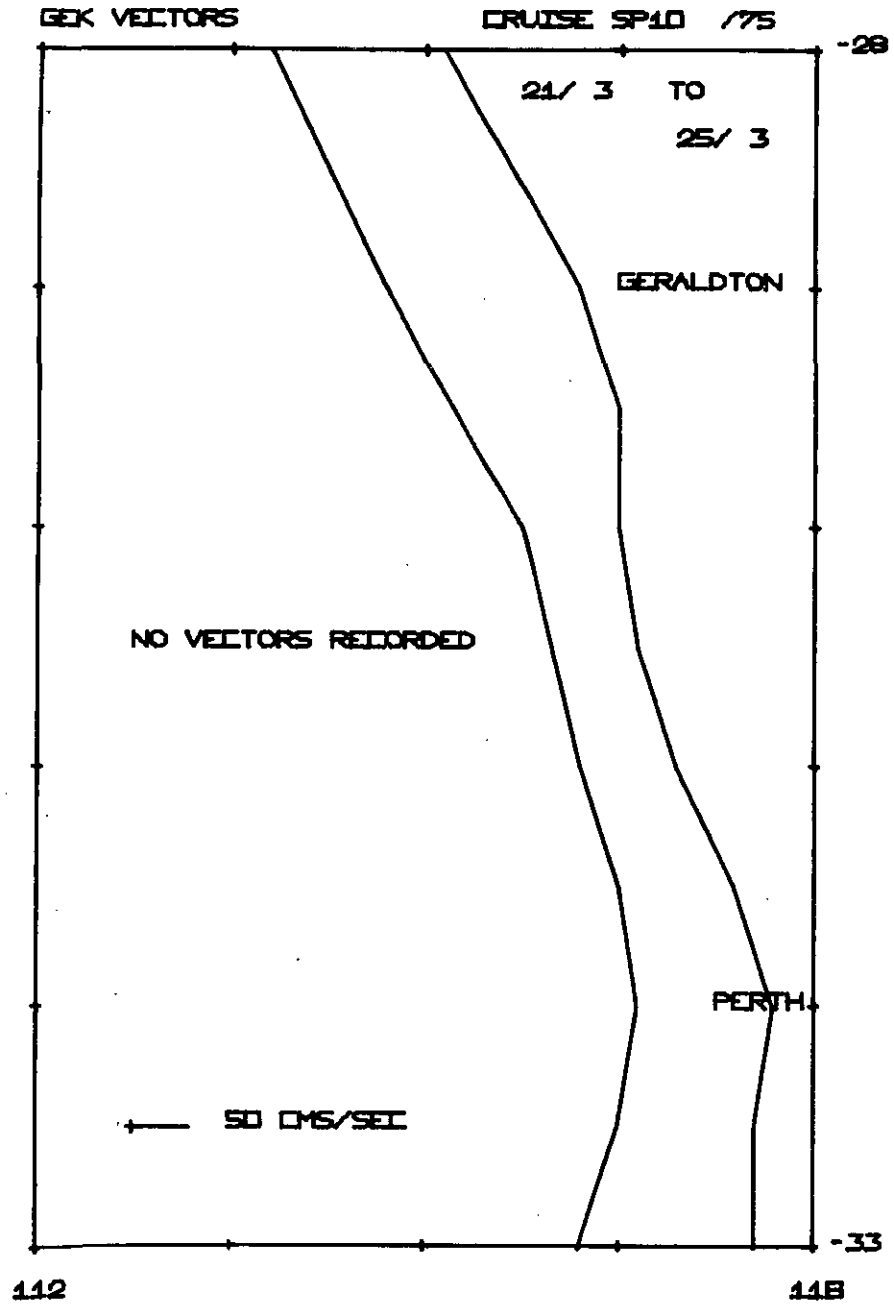

SURFACE TEMPERATURES
CRUISE SP 5 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

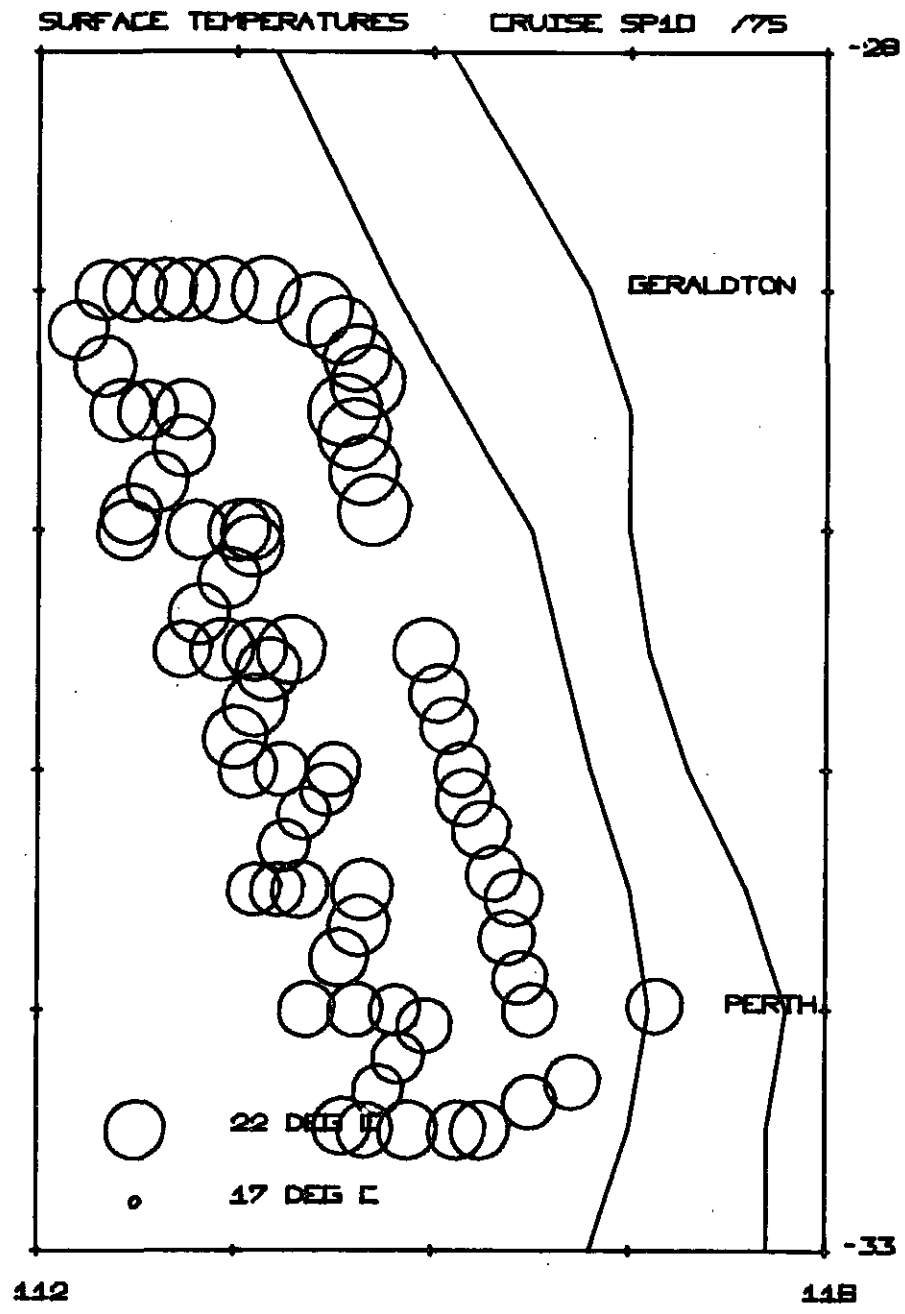

GEK VECTORS
CRUISE SP 8 /75
28/ 2 TO
5/ 3
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

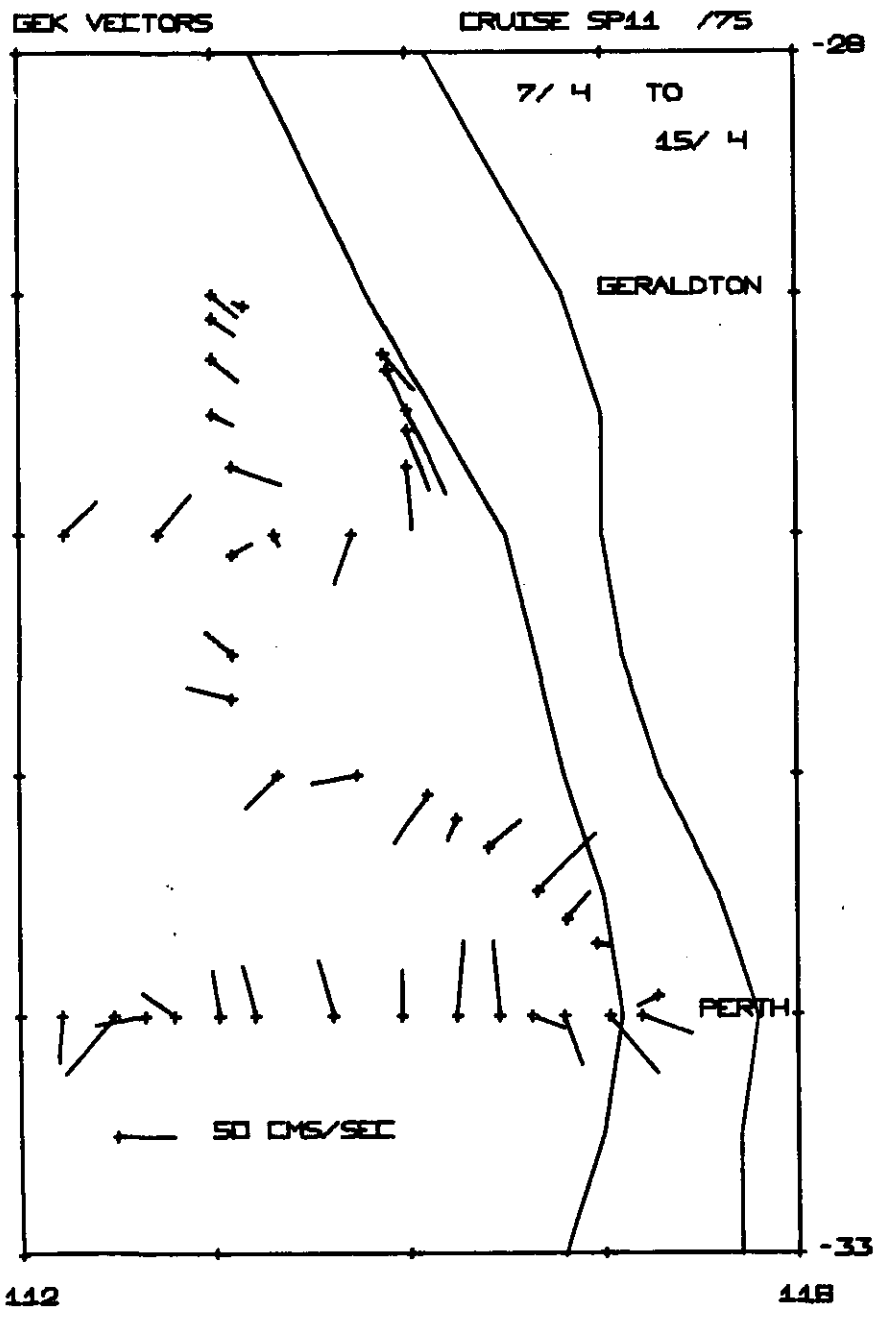

SURFACE TEMPERATURES
CRUISE SP 8 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

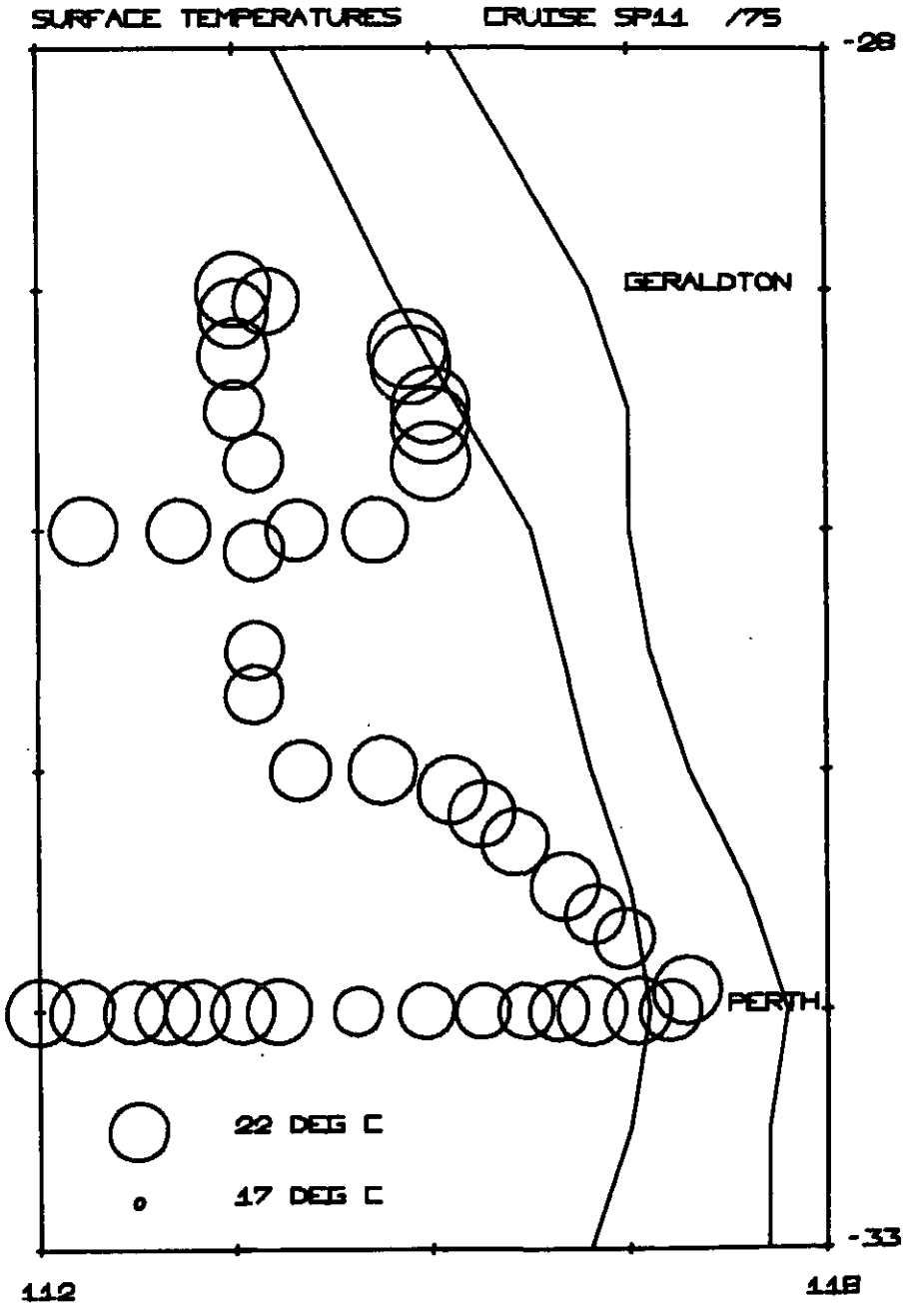

GEK VECTORS
CRUISE SP10 /75
15/ 3 TO
18/ 3
GERALDTON
NO VECTORS RECORDED
PERTH
50 CMS/SEC
-28
-33
112
118

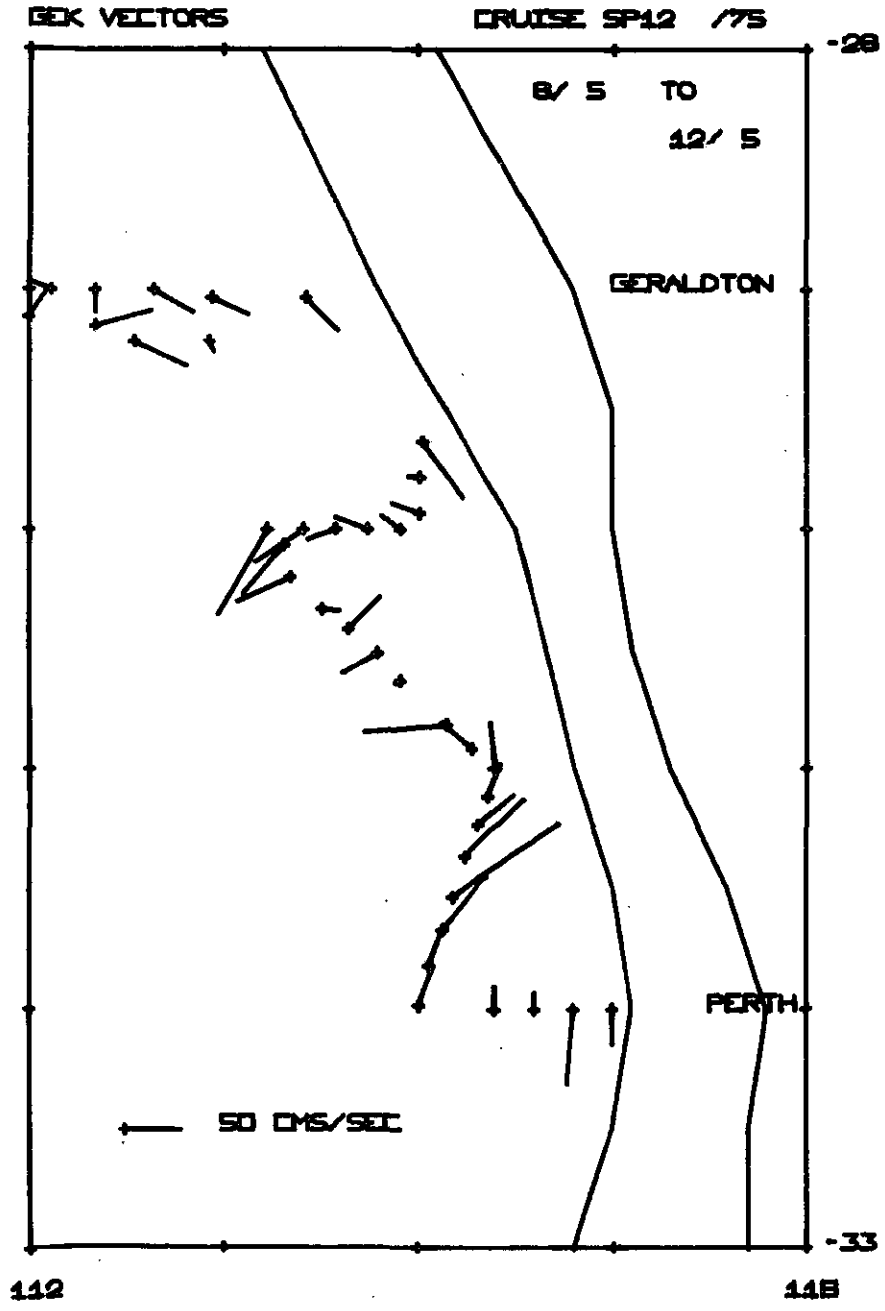

SURFACE TEMPERATURES
CRUISE SP10 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

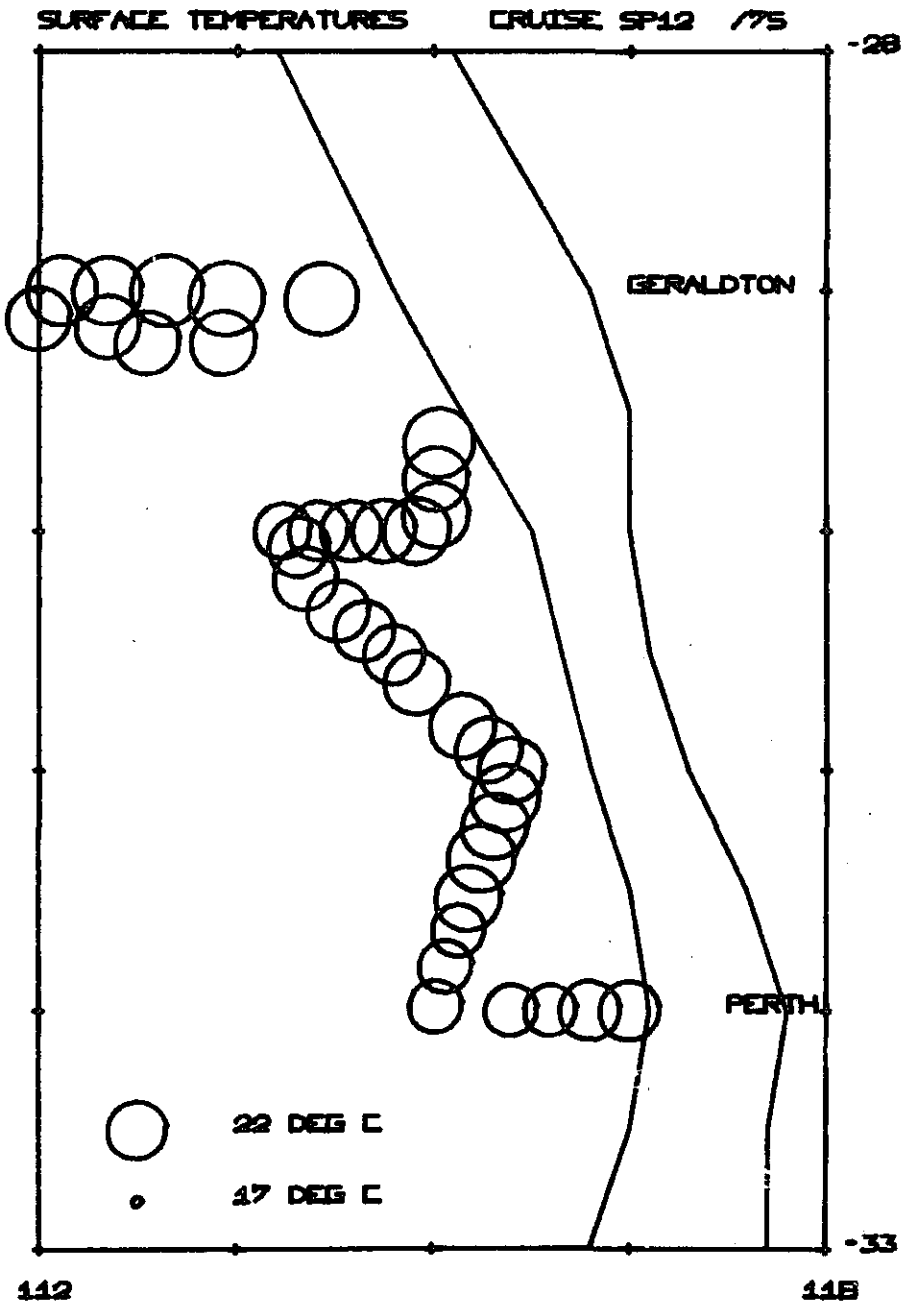

GEK VECTORS
CRUISE SP10 /75
-28
21/ 3 TO
25/ 3
GERALDTON
NO VECTORS RECORDED
PERTH
50 CMS/SEC
-33
112
118

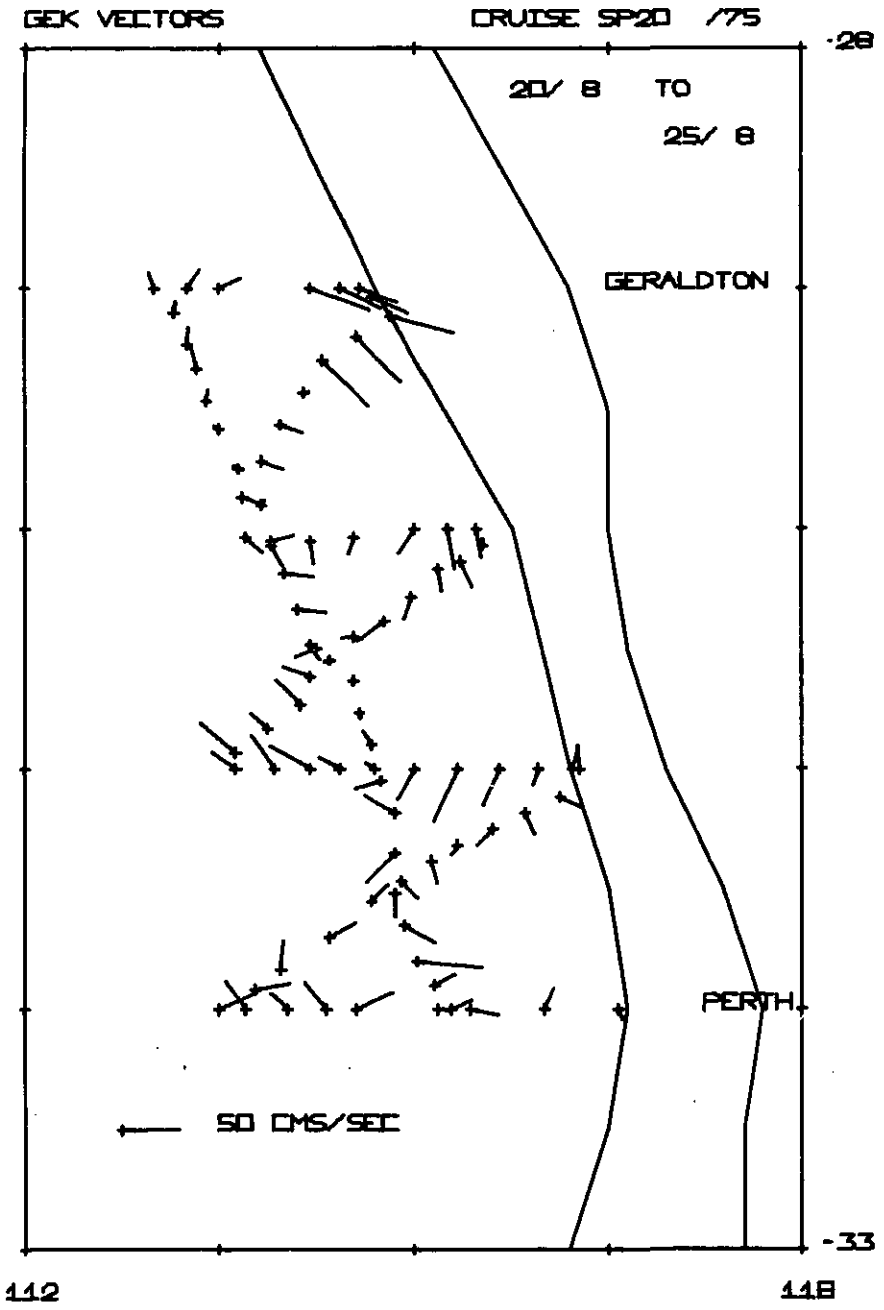

SURFACE TEMPERATURES
CRUISE SP10 /75
-28
GERALDTON
PERTH
22 DEG C
17 DEG C
-33
112
118

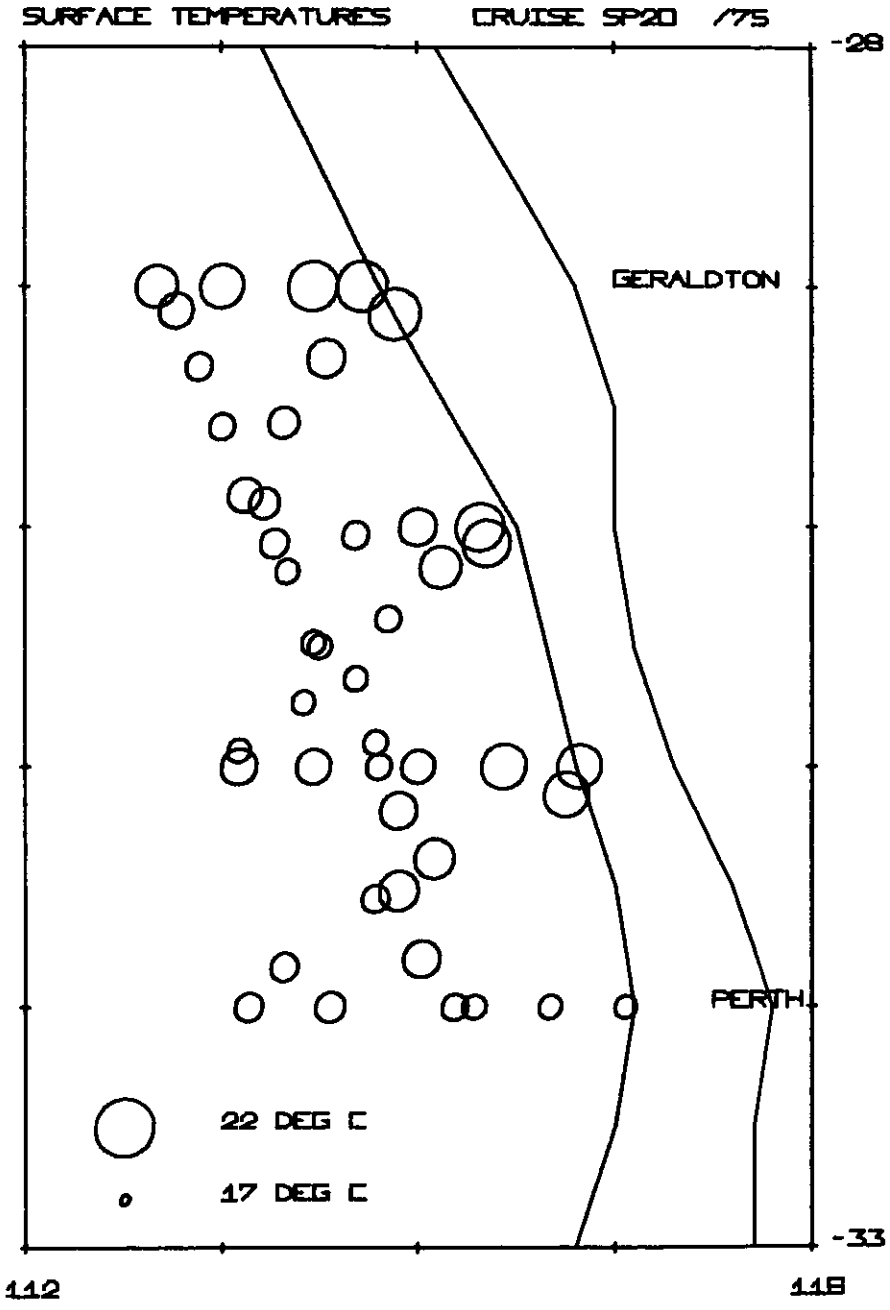

GEK VECTORS
CRUISE SP11 /75
7/ 4 TO
15/ 4
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

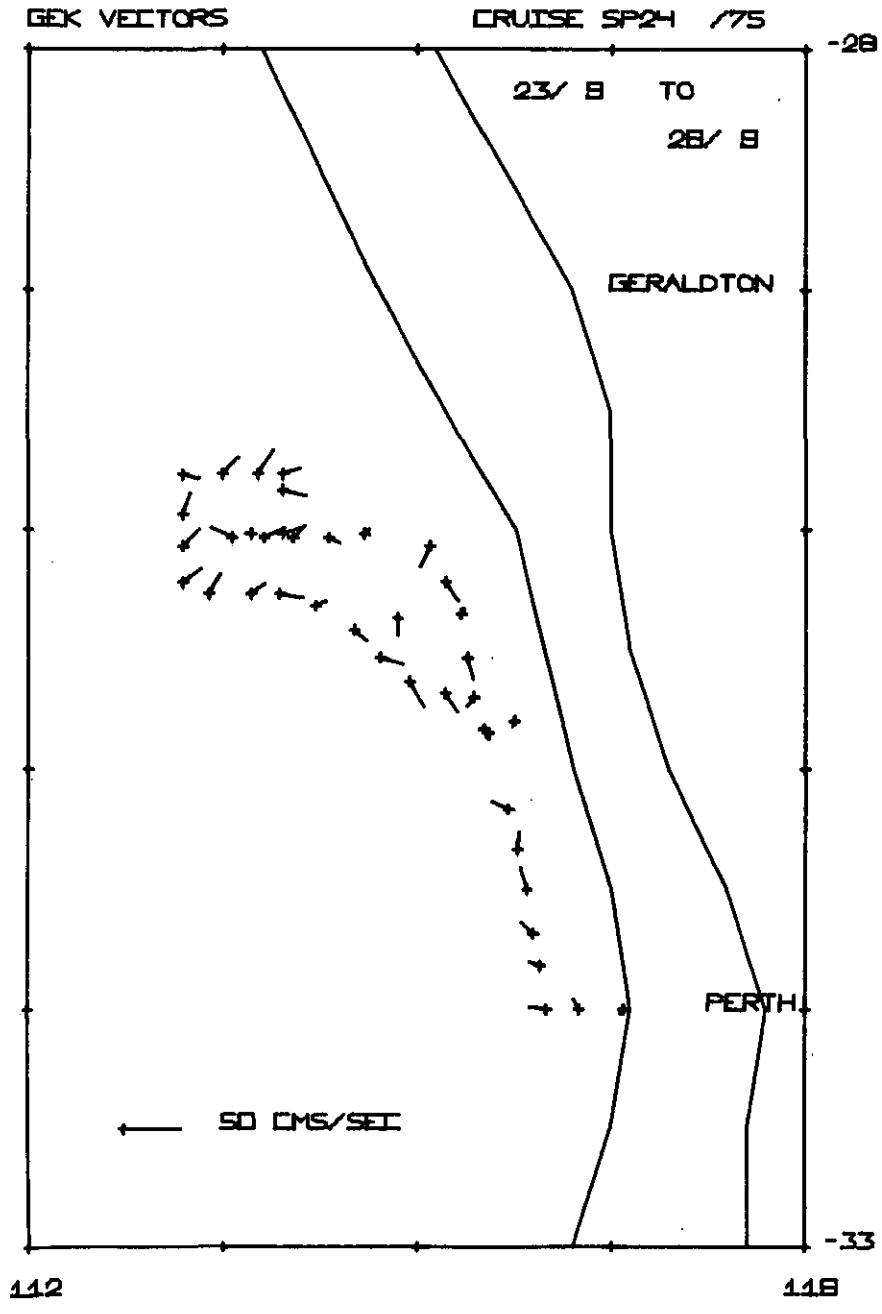

SURFACE TEMPERATURES
CRUISE SP11 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

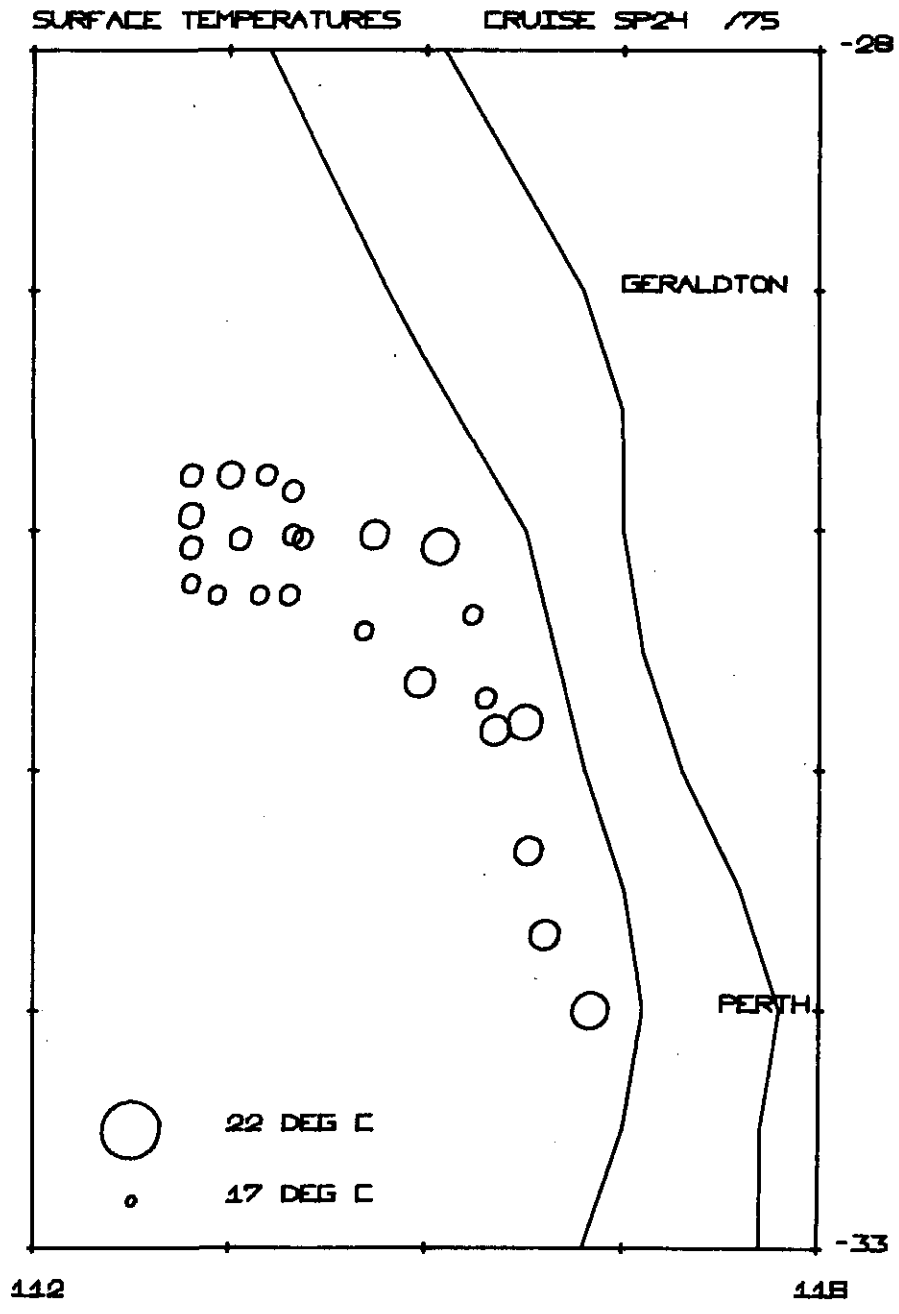

GEK VECTORS
CRUISE SP12 /75
8/ 5 TO
12/ 5
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

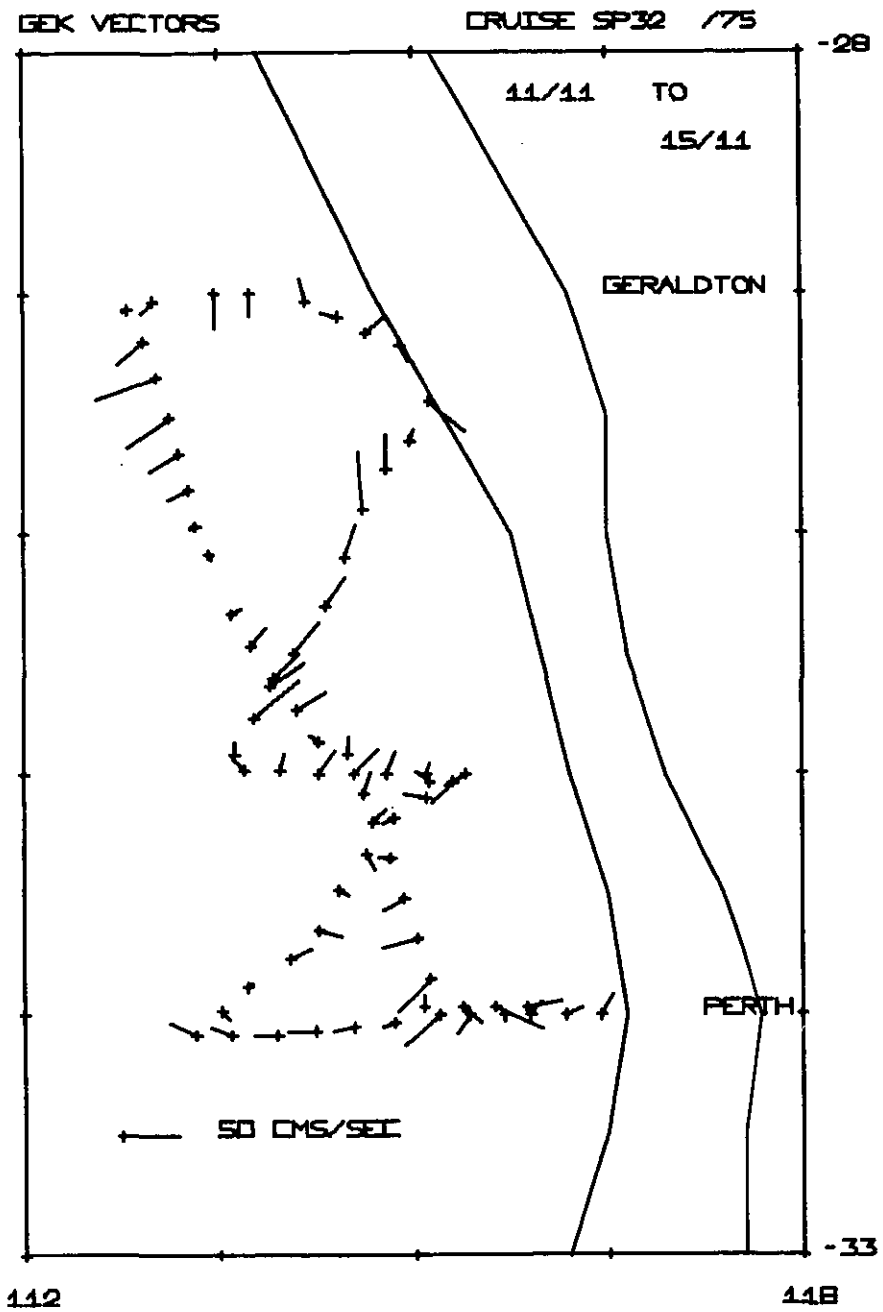

SURFACE TEMPERATURES
CRUISE SP12 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

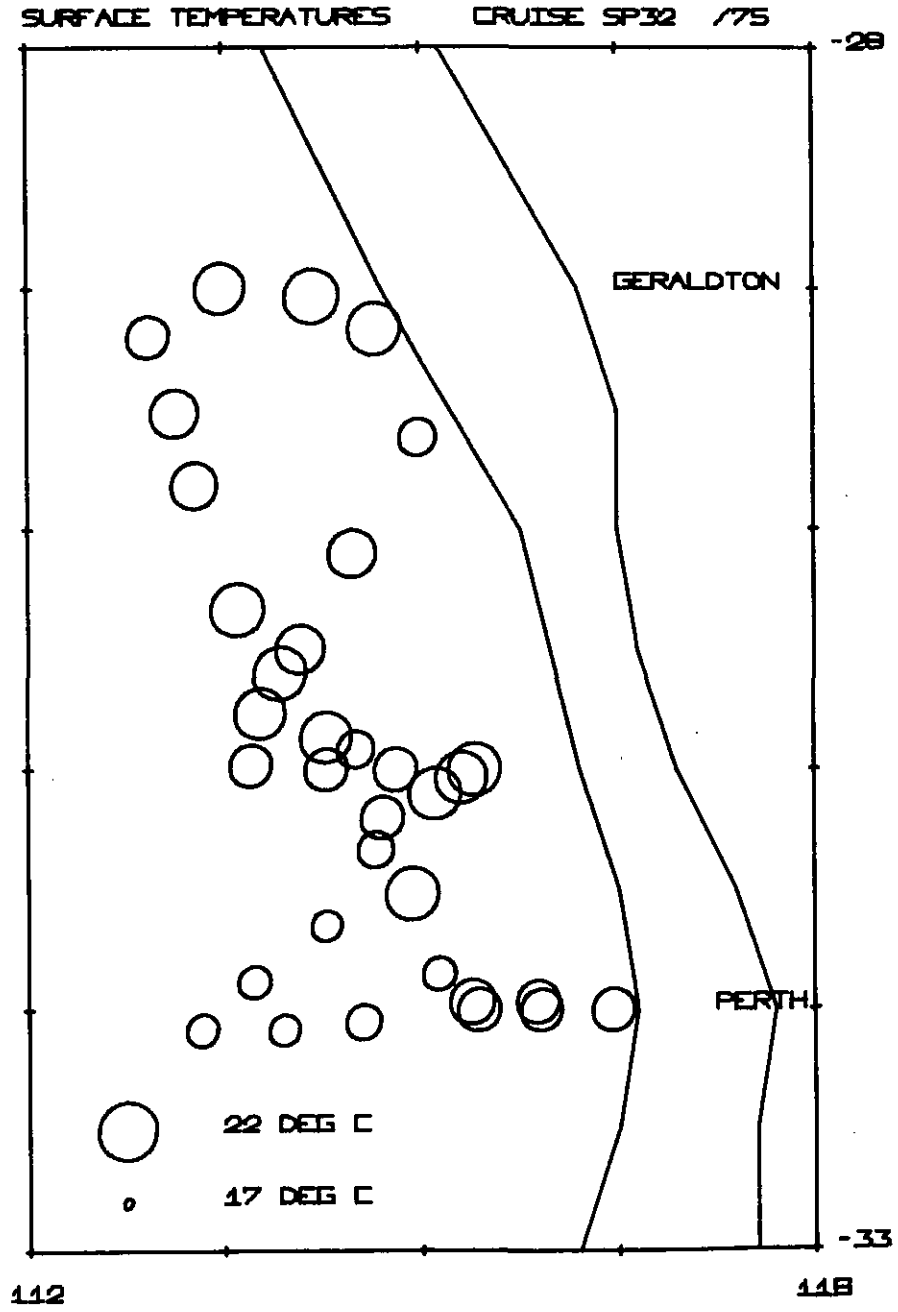

GEK VECTORS
CRUISE SP20 /75
-28
20/ 8 TO
25/ 8
GERALDTON
PERTH
50 CMS/SEC
-33
112
118

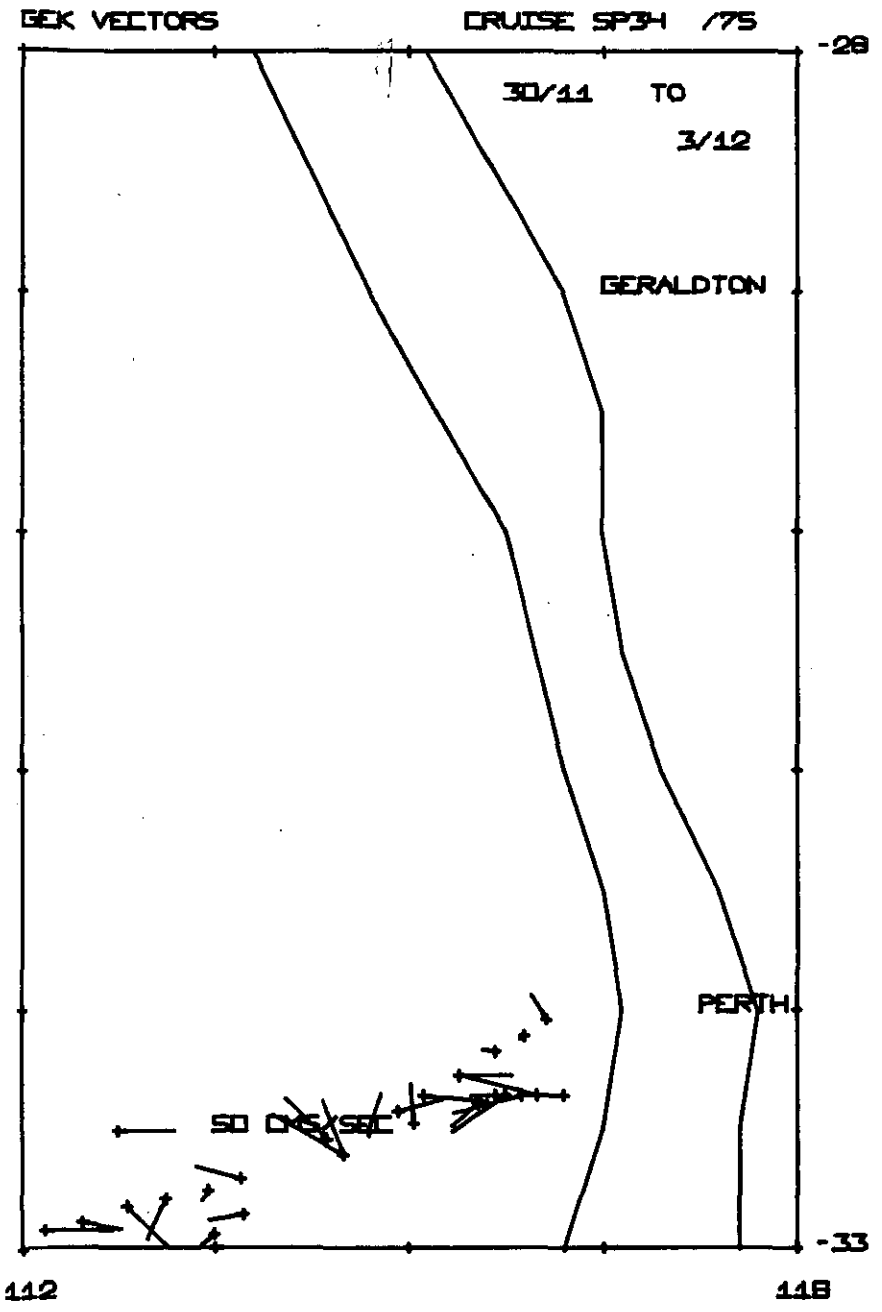

SURFACE TEMPERATURES
CRUISE SP20 /75
-28
GERALDTON
PERTH
22 DEG C
17 DEG C
-33
112
118

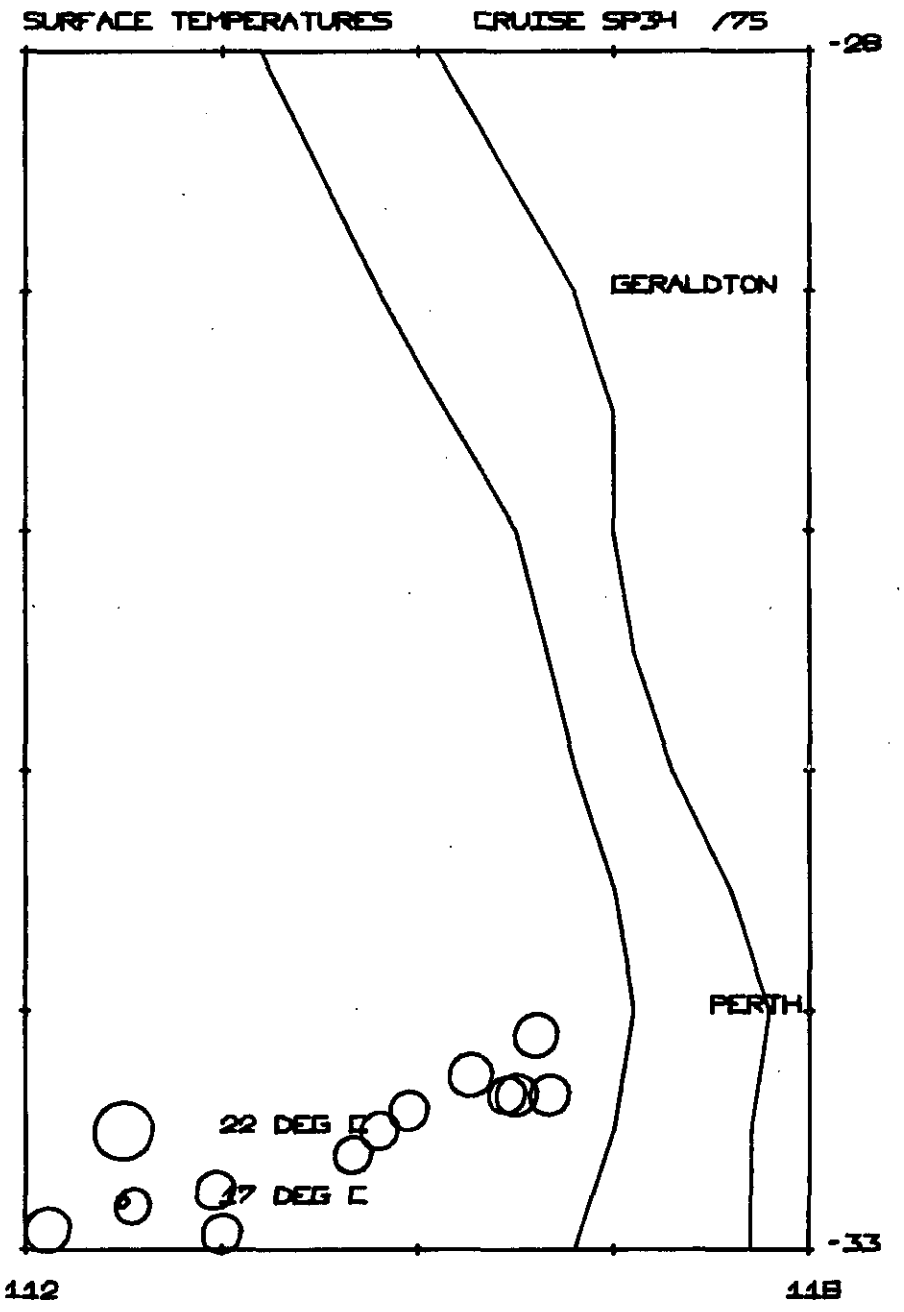

GEK VECTORS
CRUISE SP24 /75
23/ 8 TO
28/ 8
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

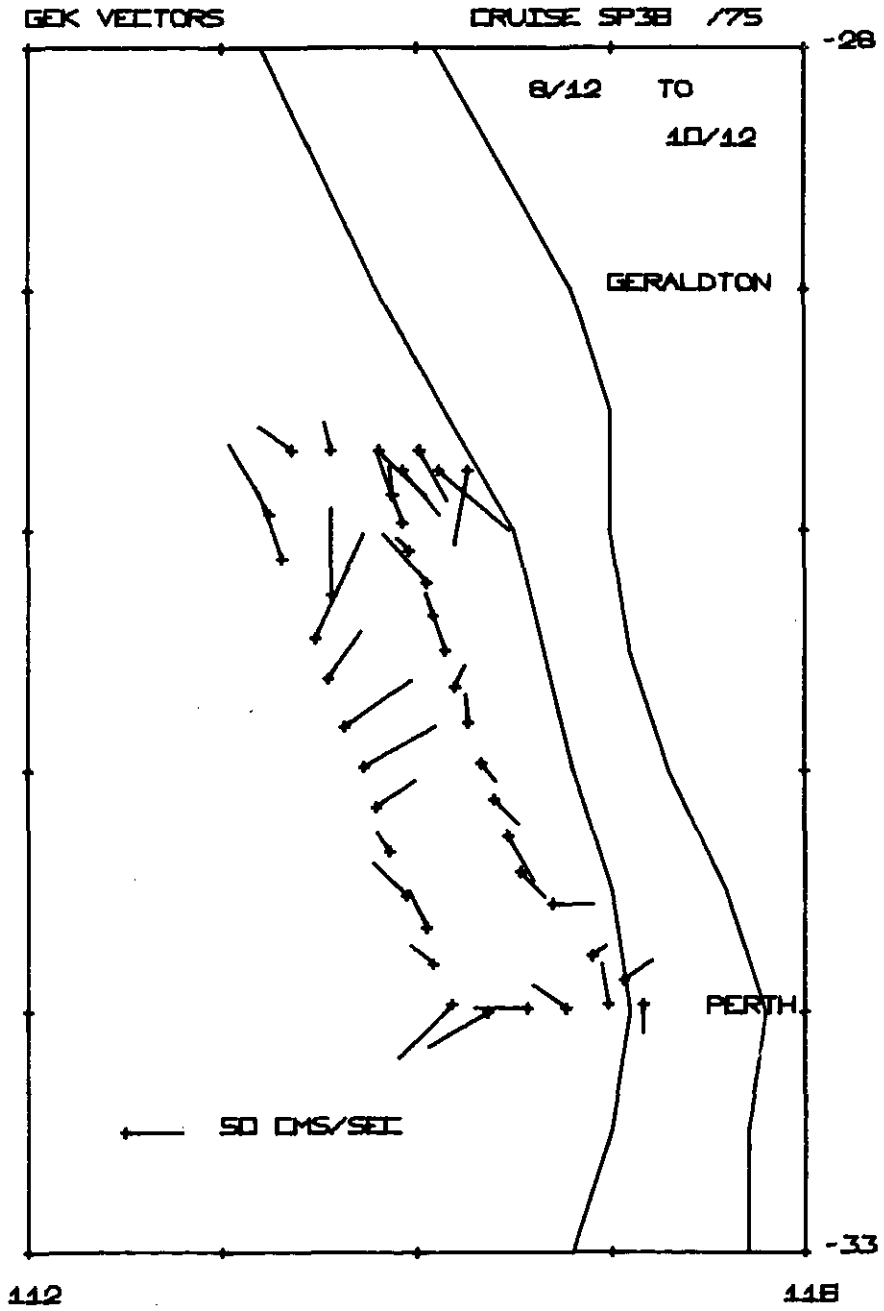

SURFACE TEMPERATURES
CRUISE SP24 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

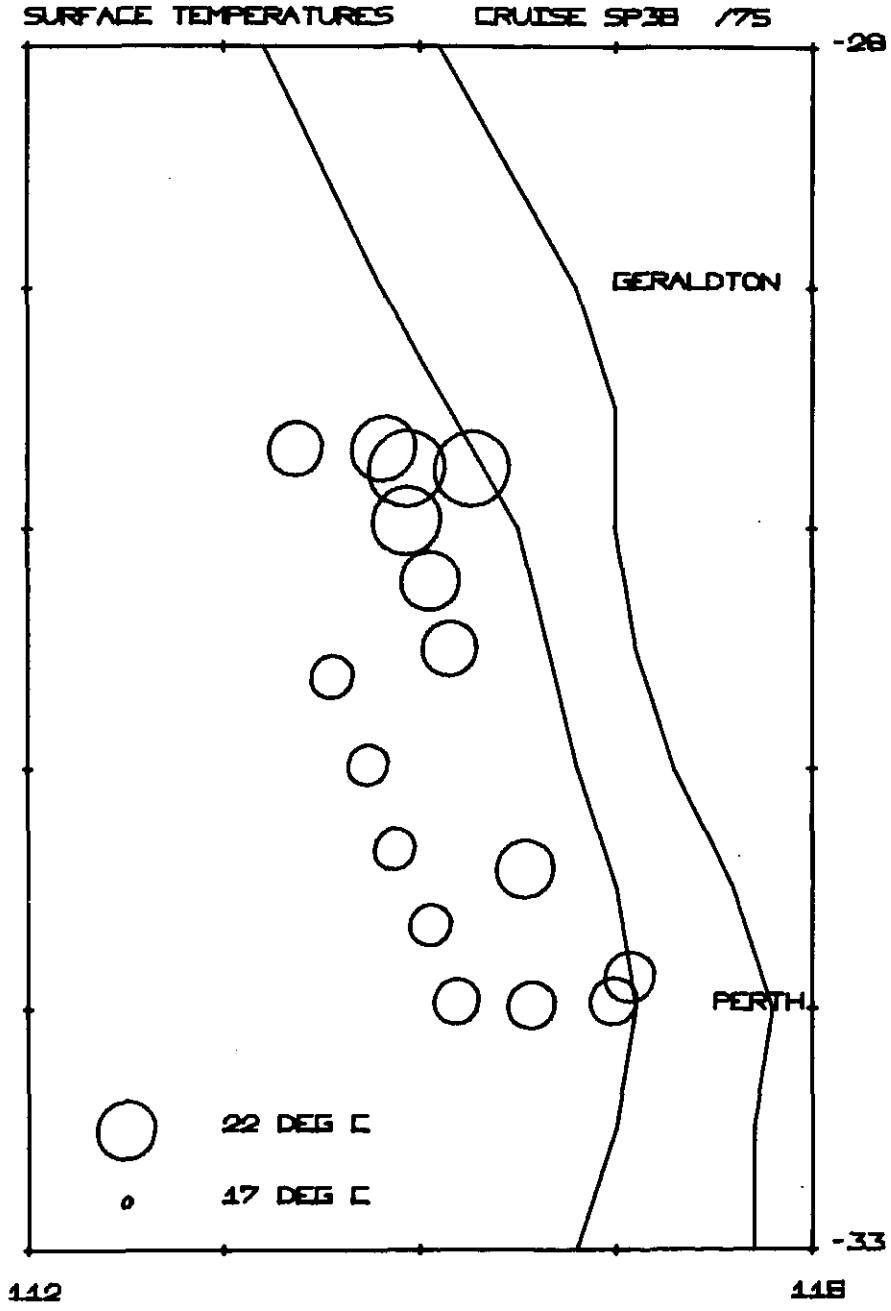

GEK VECTORS
CRUISE SP32 /75
-28
11/11 TO
15/11
GERALDTON
PERTH
50 CMS/SEC
-33
112
118

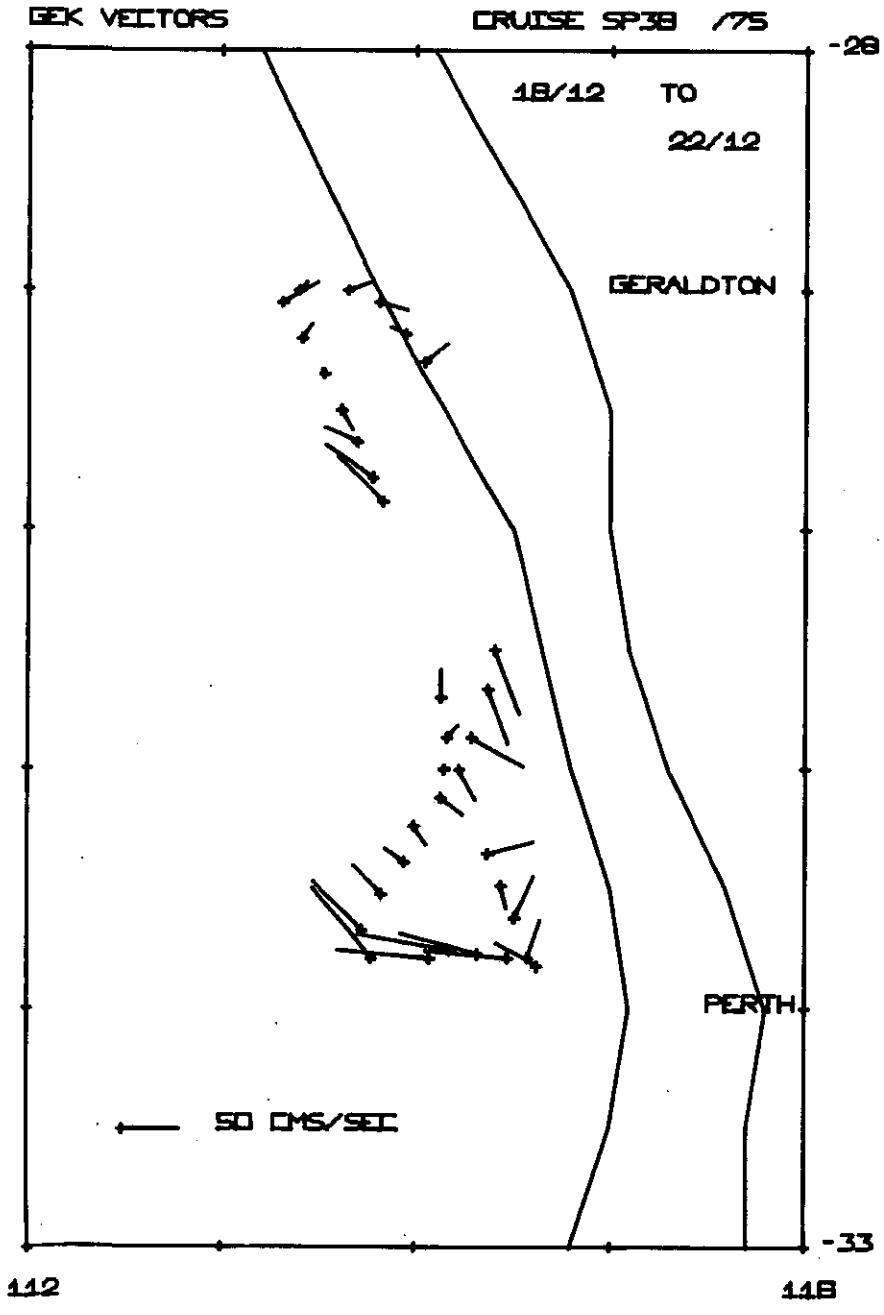

SURFACE TEMPERATURES
CRUISE SP32 /75
-28
GERALDTON
PERTH
22 DEG C
17 DEG C
-33
112
118

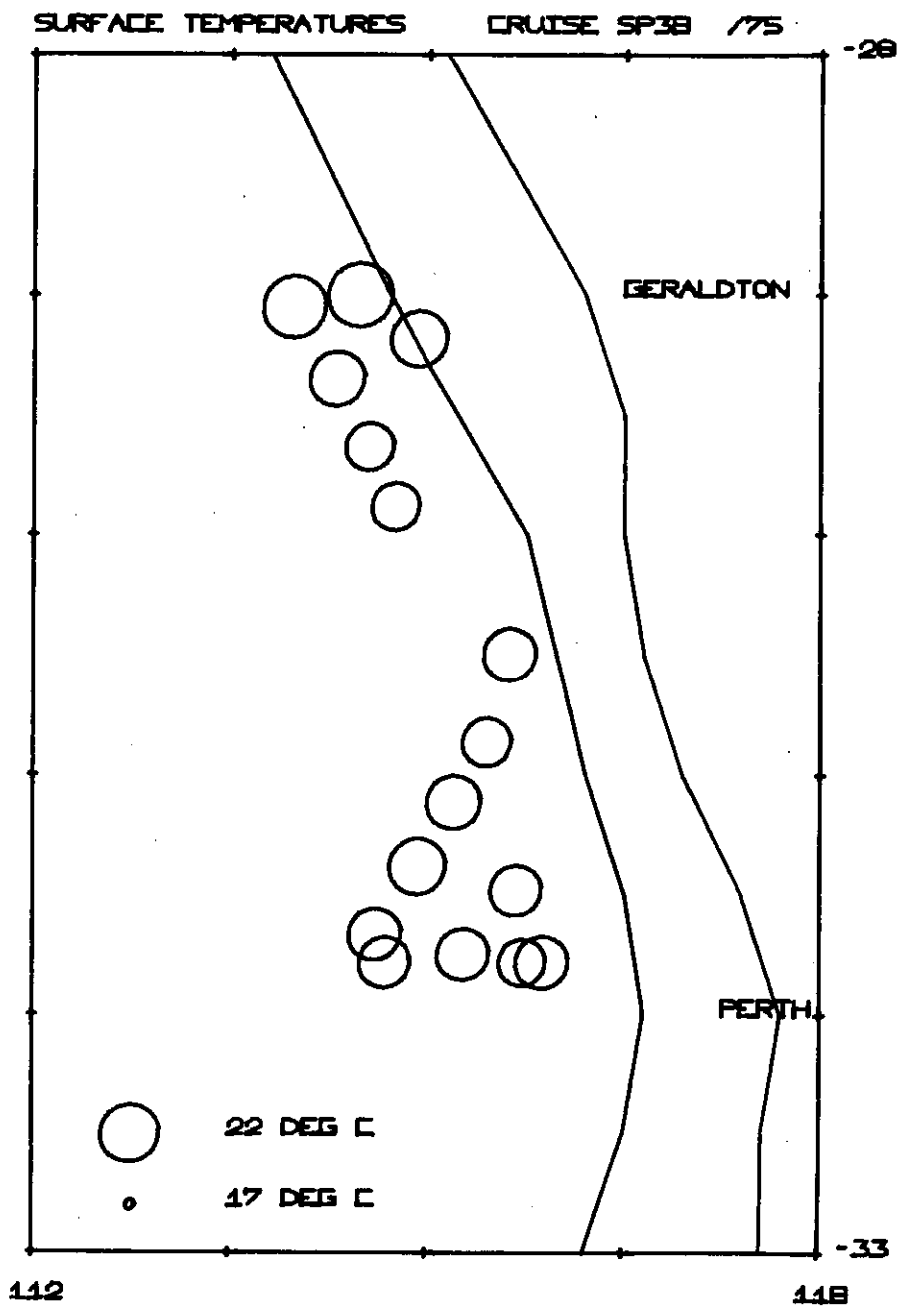

GEK VECTORS
CRUISE SP3H /75
-28
30/11 TO
3/12
GERALDTON
PERTH
50 CMS/SEC
-33
112
118

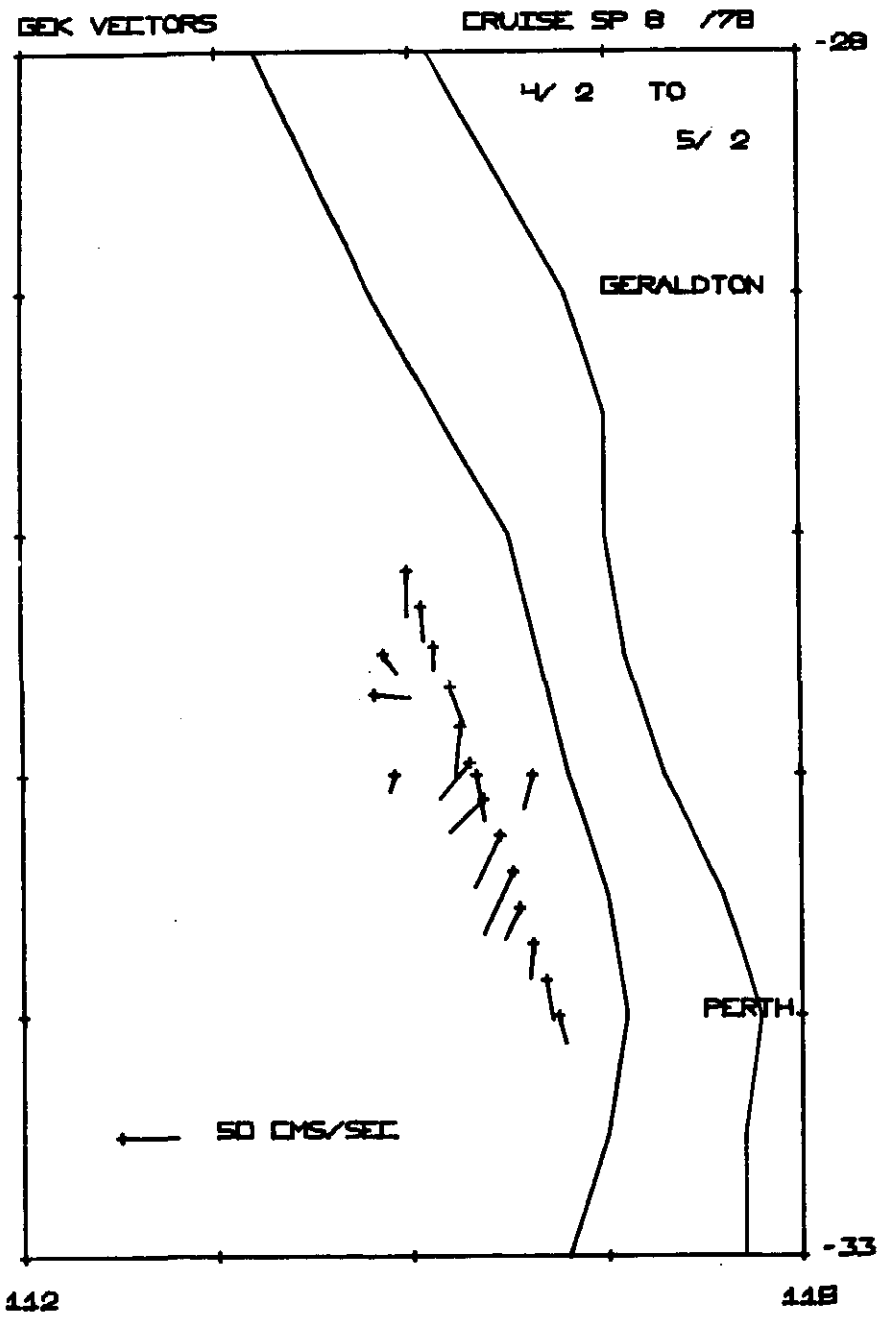

SURFACE TEMPERATURES
CRUISE SP3H /75
-28
GERALDTON
PERTH
22 DEG C
17 DEG C
-33
112
118

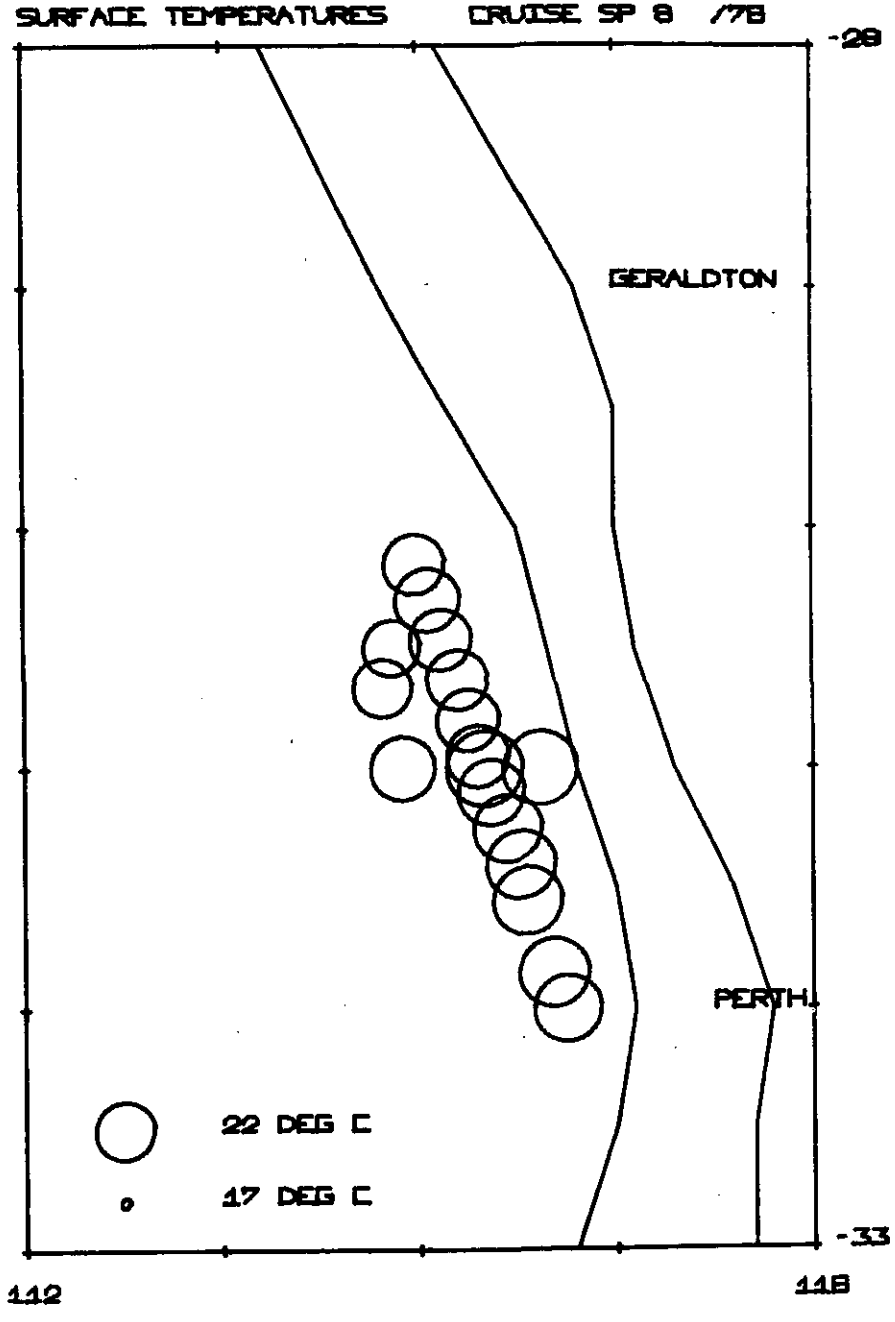

GEK VECTORS
CRUISE SP38 /75
8/12 TO
10/12
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
116

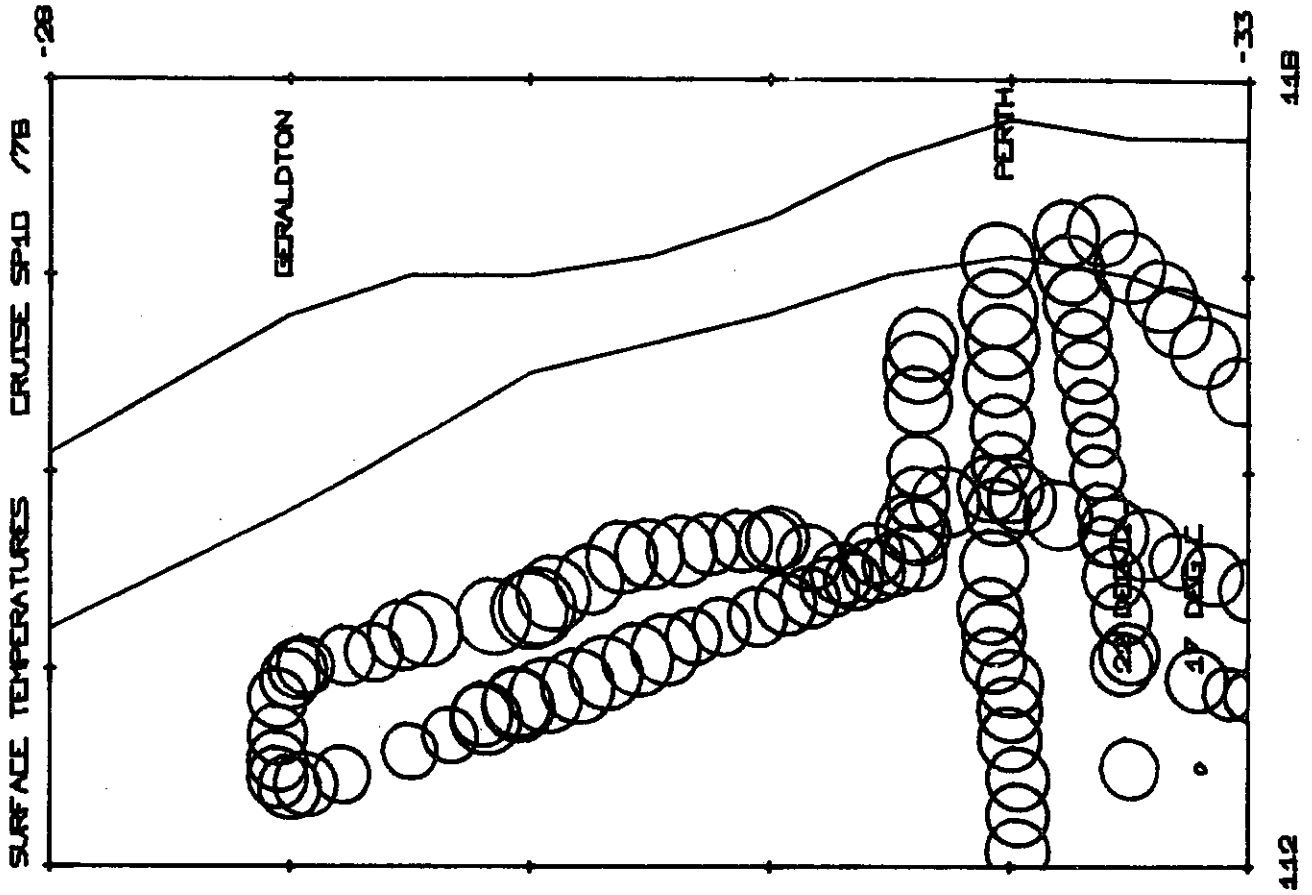

SURFACE TEMPERATURES
CRUISE SP38 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
116

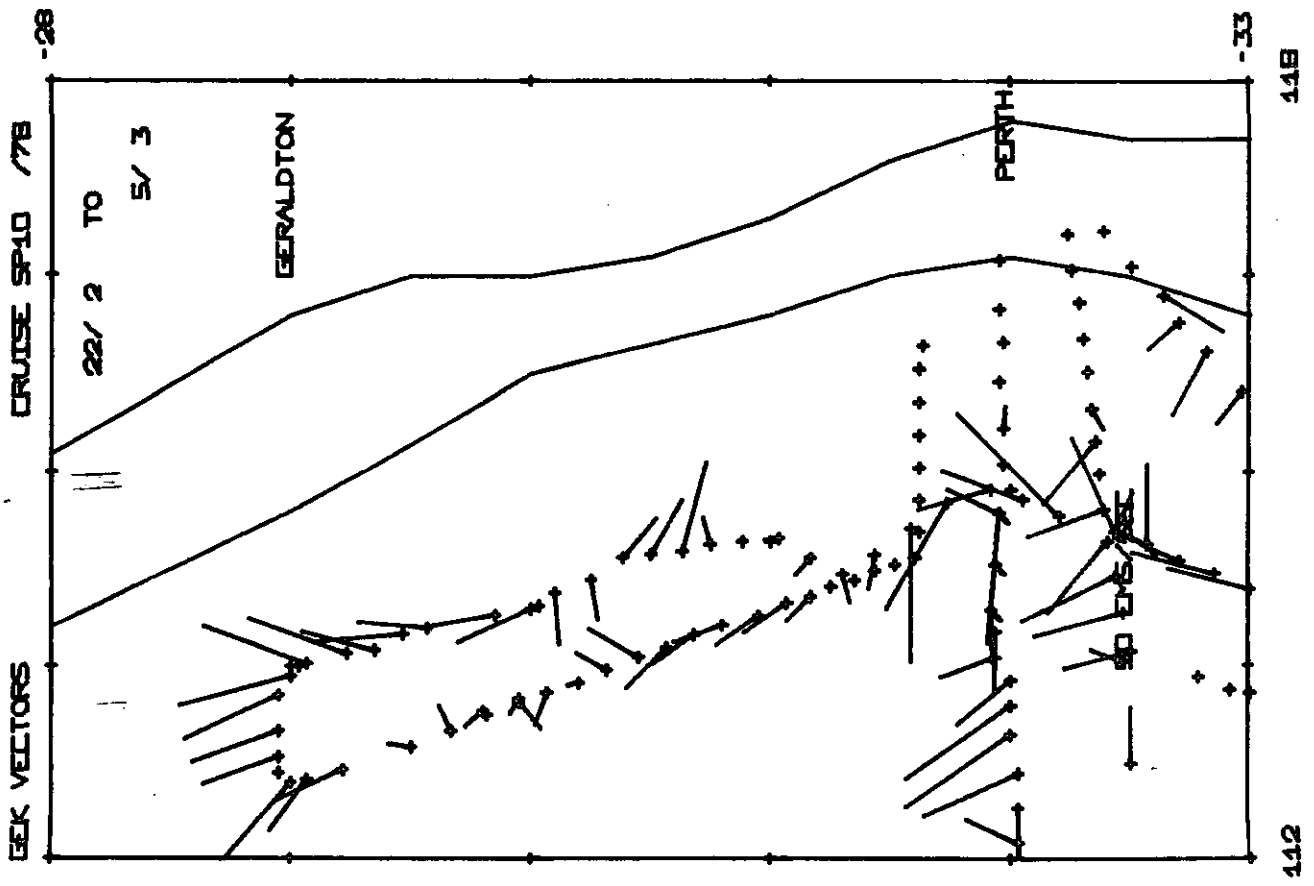

GEK VECTORS
CRUISE SP38 /75
18/12 TO
22/12
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

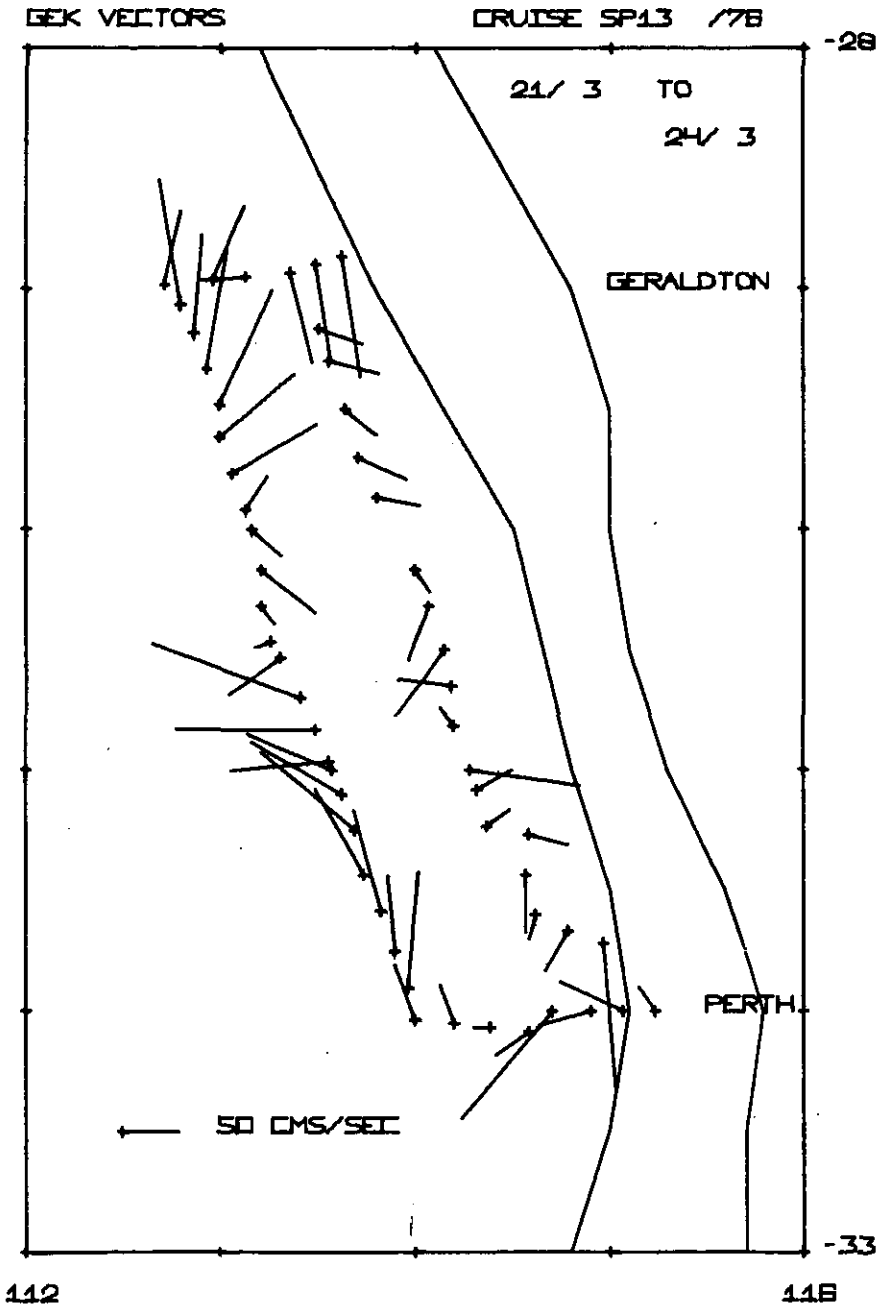

SURFACE TEMPERATURES
CRUISE SP38 /75
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

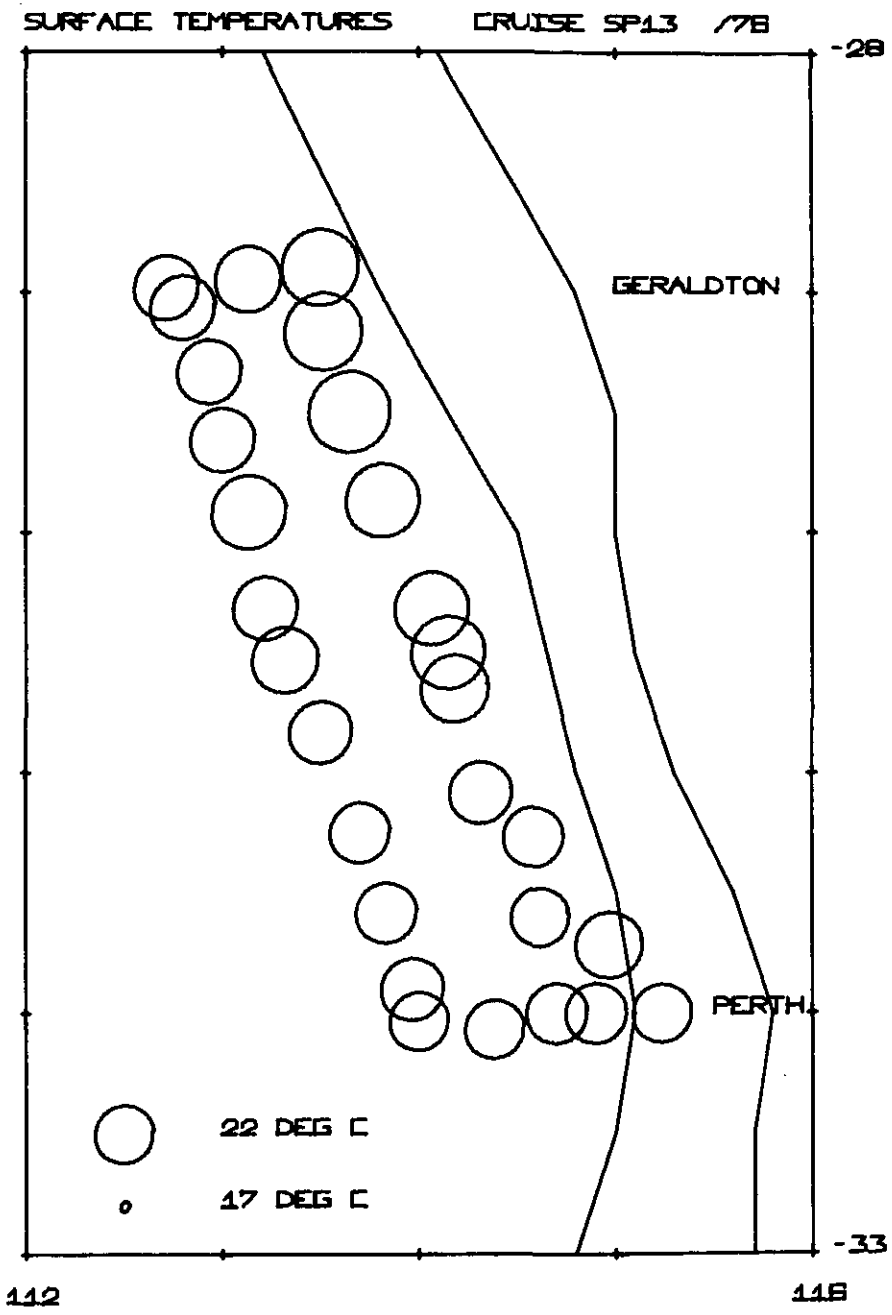

GEK VECTORS
CRUISE SP 8 /78
4/ 2 TO
5/ 2
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

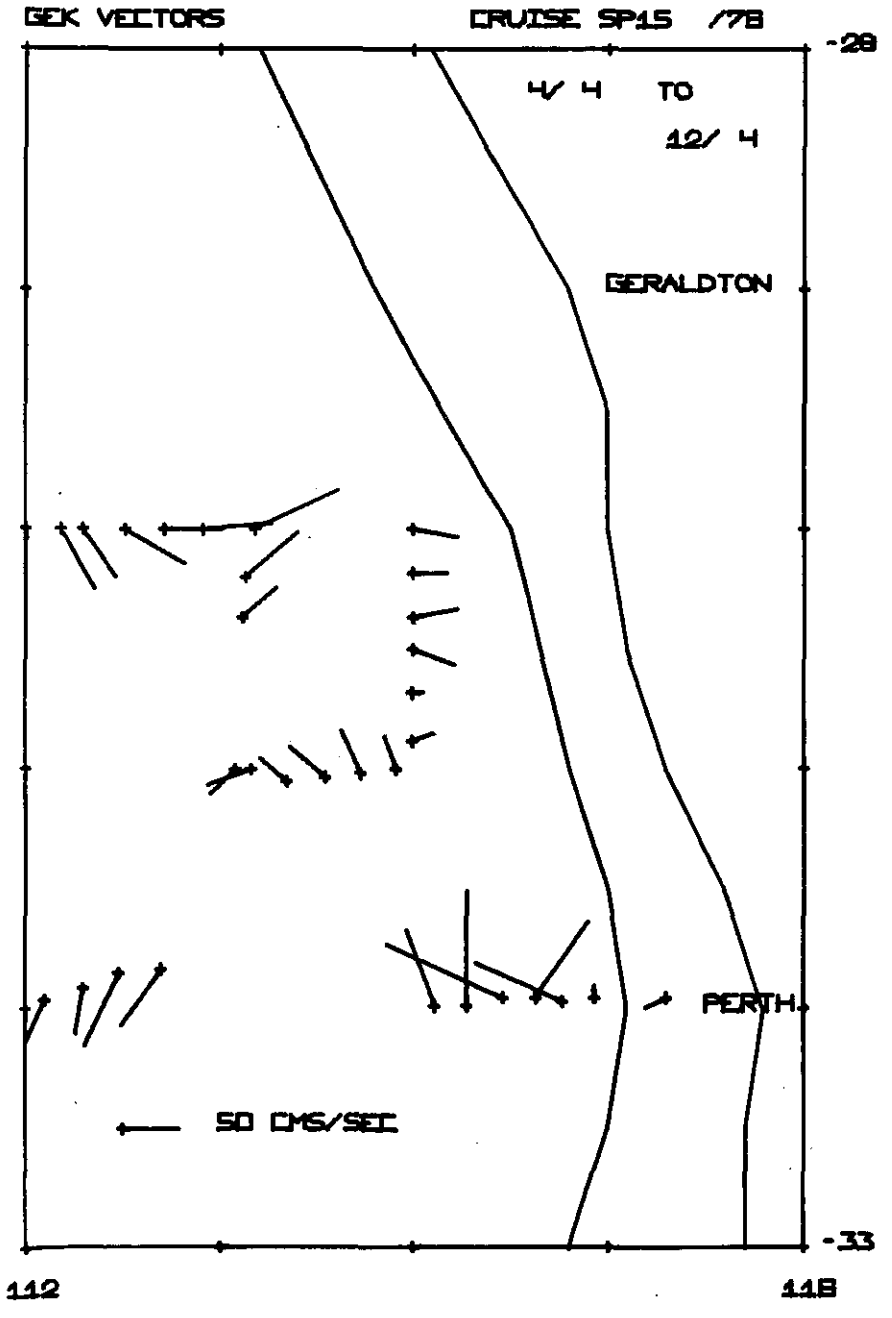

SURFACE TEMPERATURES
CRUISE SP 8 /78
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

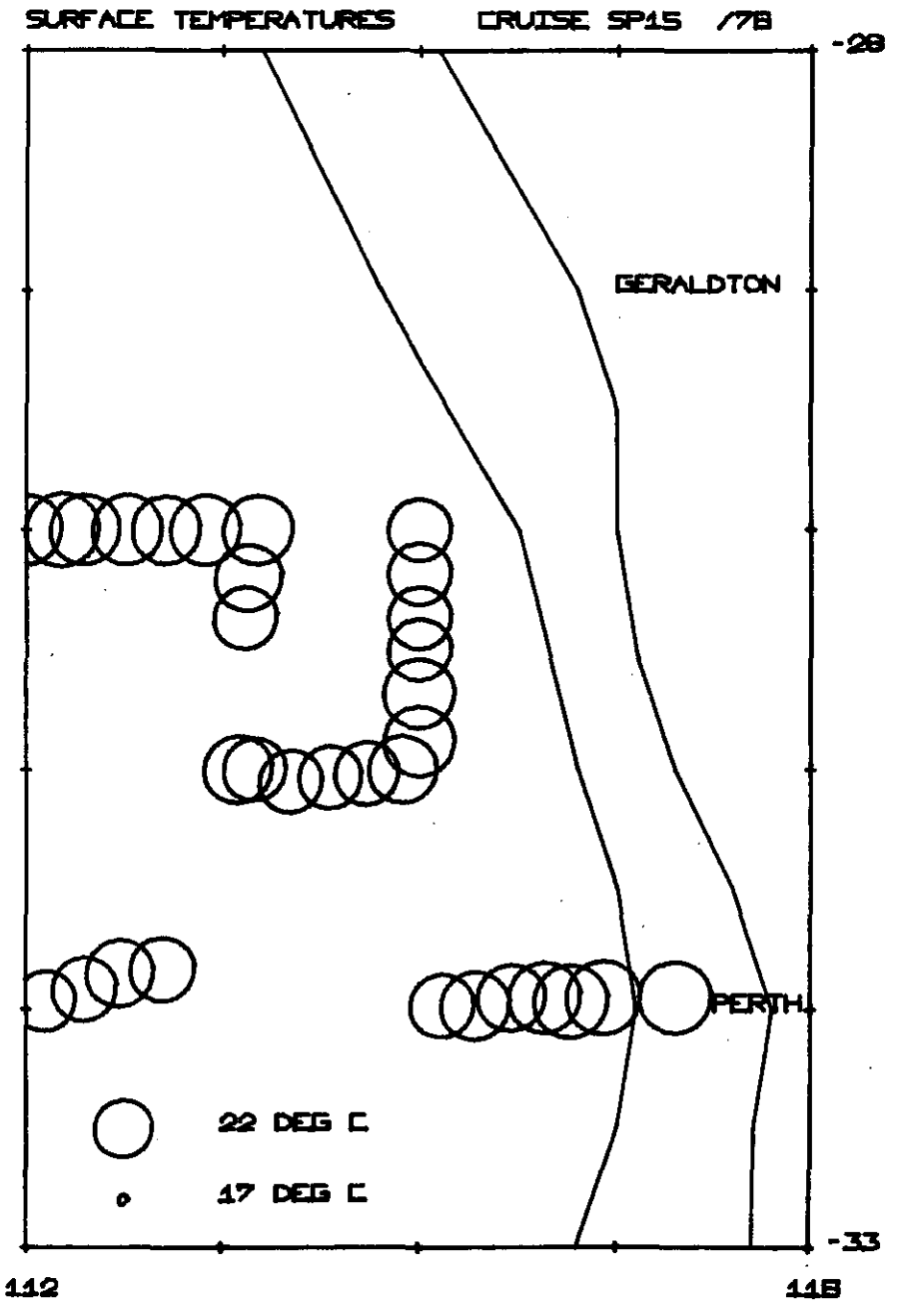

SURFACE TEMPERATURES CRUISE SP10 /78
GERALDTON
PERTH
-28
-33
112
118
24 DEG
17 DEG

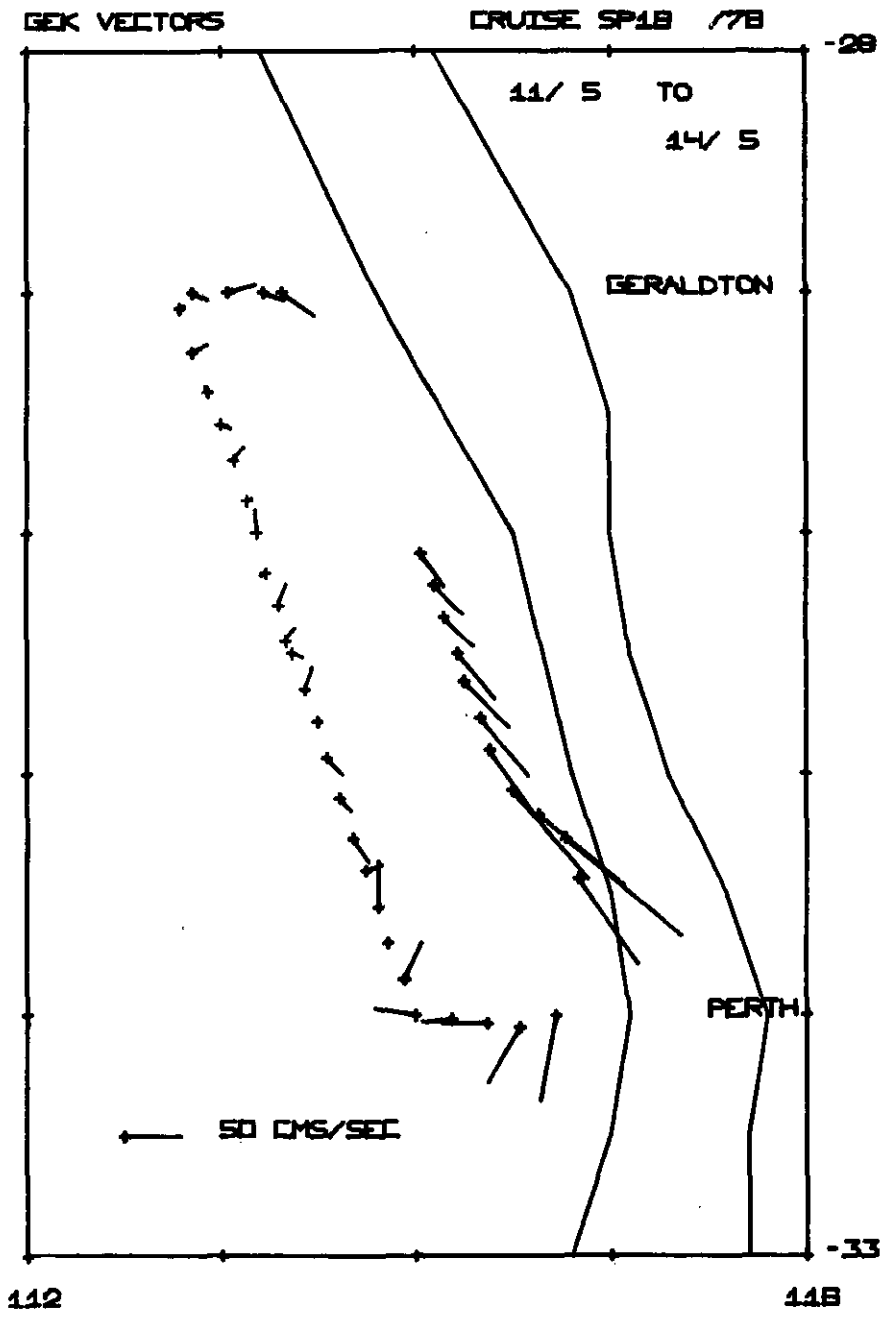

GEK VECTORS CRUISE SP10 /78
22/ 2 TO 5/ 3
GERALDTON
PERTH
-28
-33
112
118
50 CM/SEC

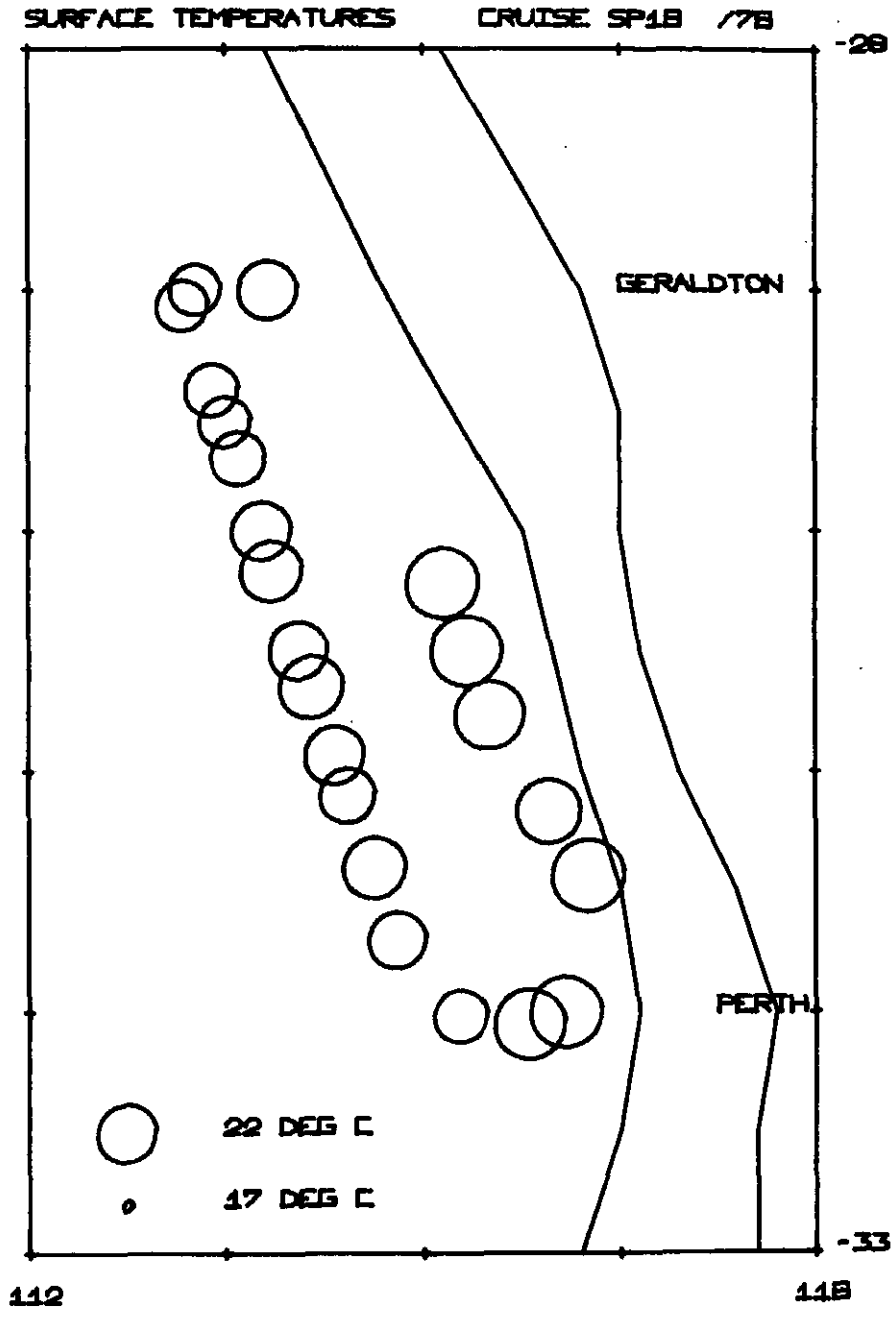

GEK VECTORS
CRUISE SP13 /78
21/ 3 TO
24/ 3
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

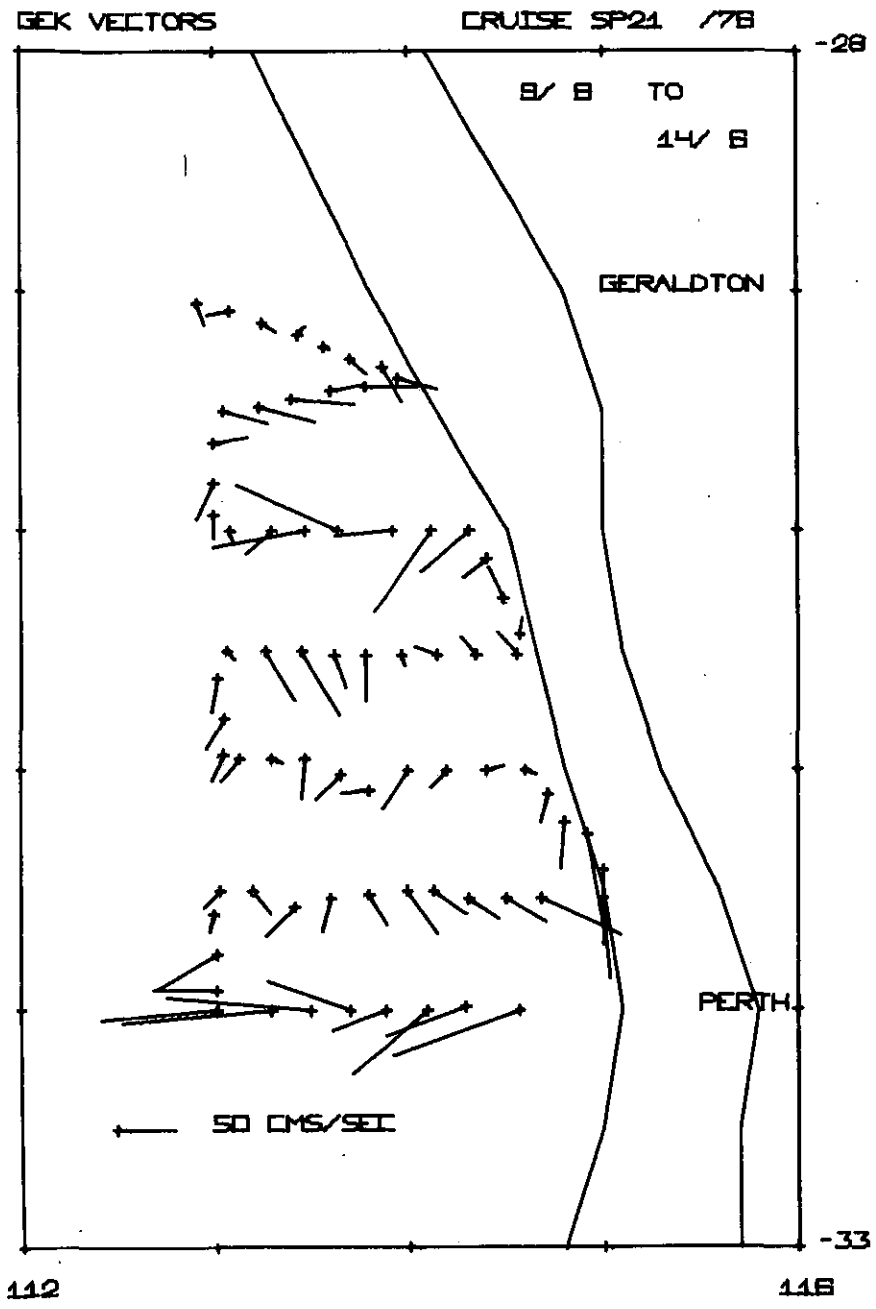

SURFACE TEMPERATURES
CRUISE SP13 /78
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

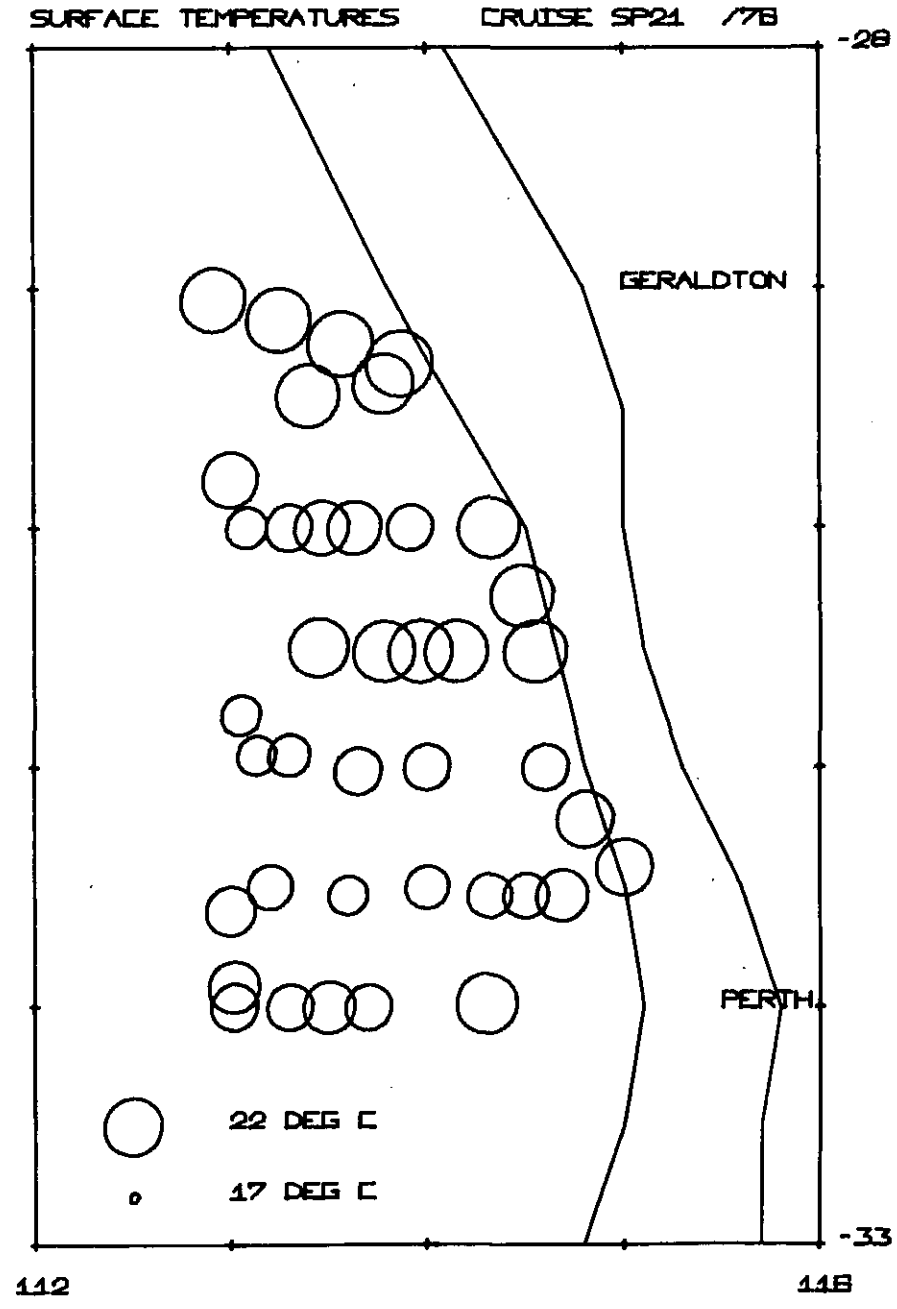

GEK VECTORS
CRUISE SP15 /78
4/ 4 TO
12/ 4
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118

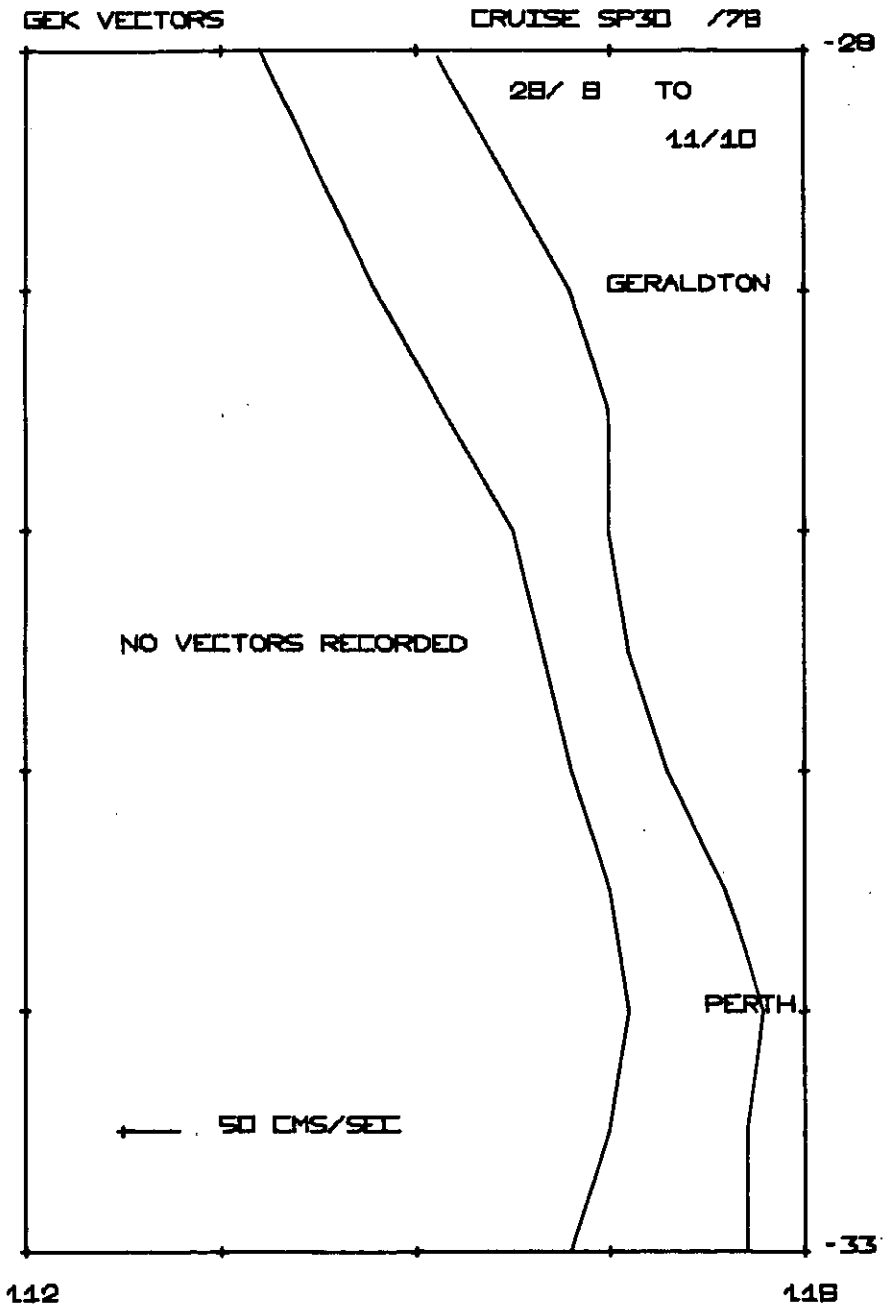

SURFACE TEMPERATURES
CRUISE SP15 /78
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118

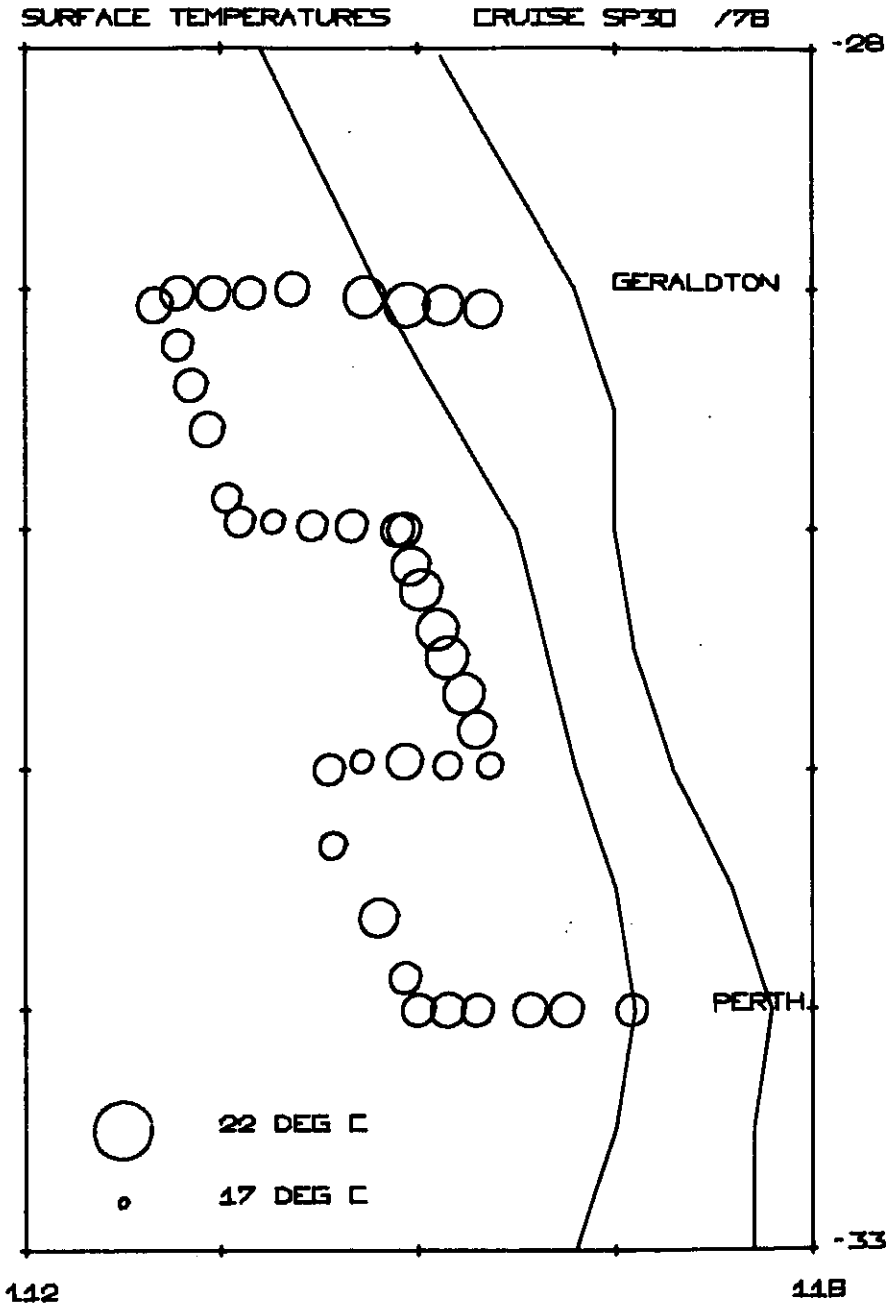

GEK VECTORS
CRUISE SP18 /78
11/ 5 TO
14/ 5
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
118


SURFACE TEMPERATURES
CRUISE SP18 /78
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118


GEK VECTORS
CRUISE SP21 /78
8/ 8 TO
14/ 8
GERALDTON
PERTH
50 CMS/SEC
-28
-33
112
116


SURFACE TEMPERATURES
CRUISE SP21 /78
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
116


GEK VECTORS
CRUISE SP30 /78
28/ 8 TO
11/10
GERALDTON
NO VECTORS RECORDED
PERTH
50 CMS/SEC
-28
-33
112
118


SURFACE TEMPERATURES
CRUISE SP30 /78
GERALDTON
PERTH
22 DEG C
17 DEG C
-28
-33
112
118