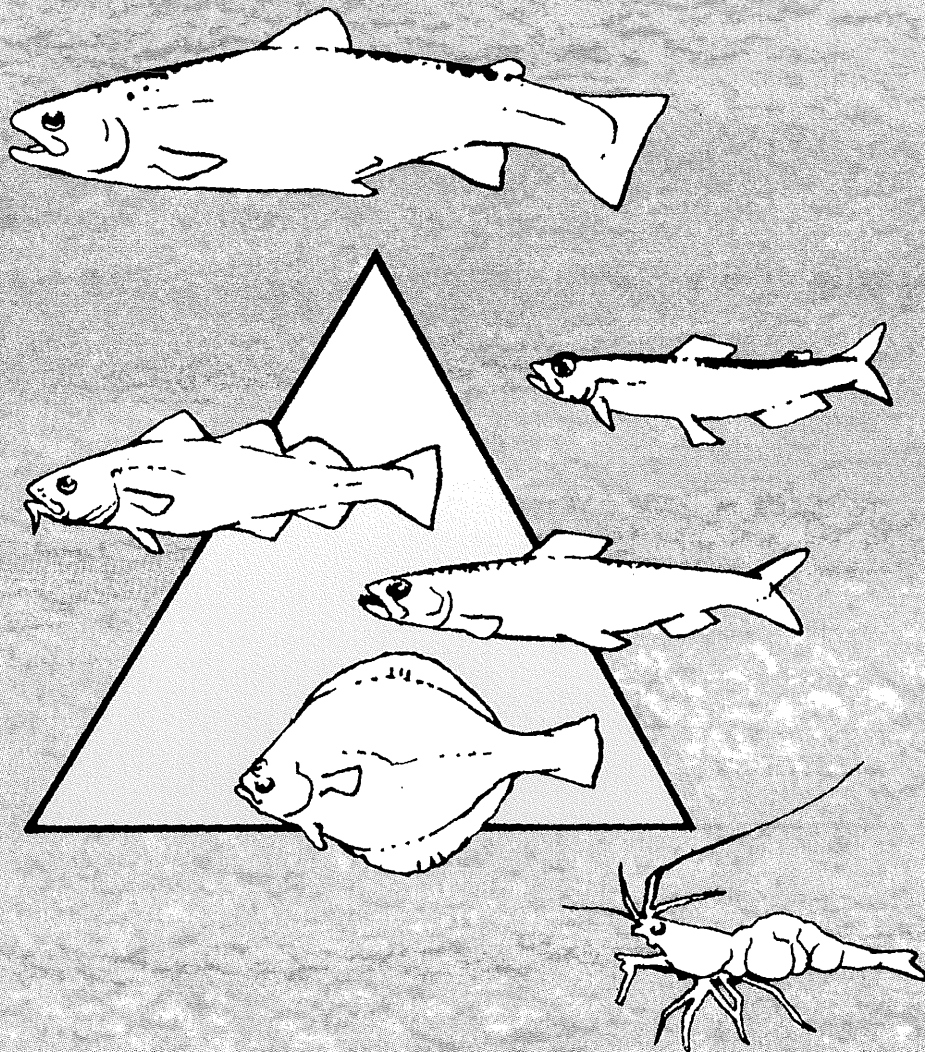


report on oceanographic cruises and data stations

1991

Harald Kismul



HAVFORSKNINGSINSTITUTTET

SENTER FOR MARINT MILJØ

**report on
oceanographic cruises
and data stations
1991**

Harald Kismul

ICES Annual Report on Oceanographic Cruises and Data Stations.

Country: NORWAY.

Year: 1991

Ship: G.O.Sars

Ship no: 15

Cruise and Ship number.	Period of Cruises.	Number of stations.																Cont. obs.				Page of track chart.					
		Classical Oceanogr. st. COS	Vertical Oceanogr. st. CTD	ARGOS Drifters	Rosette Samplers	ADCP	Aanderaa Current Meters	Bottle Cast (Niskin)	Oxygen	Nutrients	Chlorophyll	Oil Hydrocarbons	Pelagic Trawl	Bottom Trawl	Mocness Trawl	Pelagic Eggs and Larvae	Zooplankton	Phytoplankton	XXXXXXXXXX GRAB ST.	XXXXXXXXXX ISAAC K100	XXXXXXXXXX JUDAY NET		Surface Temperature	Transparency	Echo Sounding	Echo Integration	
1/15	0501 - 0402		98			X							70	2			11	36					X	X	X	X	12
2/15	0402 - 0303		119			X							6	99									X	X	X	X	13
3/15	0403 - 2303		105			X							24	3	4		39	39					X	X	X	X	14 - 15
4/15	0304 - 1404		130			X							15			130			6				X	X	X	X	16 - 17
5/15	1504 - 2904		121			X							1		40								X	X	X	X	18 - 19
6/15	3004 - 2505	30	152			X			30				165	6		12	31	31	2				X	X	X	X	20 - 21
7/15	2505 - 1506		104	3		X							58	6	16		61	61					X	X	X	X	22
8/15	1506 - 1806	37	37			X		37	37											1	1		X	X	X	X	23
9/15	1806 - 0207		116			X							78		13		82	82	3	1			X	X	X	X	24 - 25
10/15	0207 - 2007		74			X							79										X	X	X	X	26 - 27
11/15	2008 - 0909	25	87			X							104	41									X	X	X	X	28
12/15	1309 - 0610		76			X							95	5									X	X	X	X	29 - 30
13/15	1410 - 0711		47			X							11	47									X	X	X	X	31 - 32
14/15	0811 - 1312		388			X							40	2			24	24					X	X	X	X	33 - 34
Total:		92	1654					37	67				746	211	73	142	248	273	11	2	1						

ICES Annual Report on Oceanographic Cruises and Data Stations.

Country: NORWAY.

Year: 1991

Ship: MICHAEL SARS

Ship no: 11

Cruise and Ship number.	Period of Cruises.	Number of stations.														Cont. obs.				Page of track chart.							
		Classical Oceanogr. st. COS	Vertical Oceanogr. st. CTD	ARGOS Drifters	Rosette Samplers	ADCP	Aanderaa Current Meters	Bottle Cast (Niskin)	Oxygen	Nutrients	Chlorophyll	Oil Hydrocarbons	Pelagic Trawl	Bottom Trawl	Mocness Trawl	Pelagic Eggs and Larvae	Zooplankton	Phytoplankton	Shrimp Trawl		ISAC ISAC K100	GRAB GRAB ST.	Surface Temperature	Transparency	Echo Sounding	Echo Integration	
1/11	1201 - 1102		2										7		18								X	X	X	X	35
2/11	1302 - 1303		48									29	1	25						12			X	X	X	X	36 - 37
3/11	1403 - 0104		134																			X	X	X	X	38 - 39	
4/11	0205 - 1306		172									104	169									X	X	X	X	40 - 41	
5/11	1406 - 3006	22	124				39	39	39					1	117							X	X	X	X	42 - 43	
6/11	0107 - 2107		89									89										X	X	X	X	44 - 45	
7/11	2207 - 0708		25									6										X	X	X	X	46	
8/11	1608 - 0909		109									99	71									X	X	X	X	47	
9/11	1309 - 0510		93									60	1									X	X	X	X	48	
10/11	1410 - 2910		109									6								115	2	X	X	X	X	49 - 50	
11/11	0411 - 1112		169									84										X	X	X	X	51 - 56	
Total:		22	1074				39	39	39			477	249	26	135					115	12	2					

ICES Annual Report on Oceanographic Cruises and Data Stations.

Country: NORWAY.

Year: 1991

Ship: JOHAN HJORT

Ship no: 12

Cruise and Ship number.	Period of Cruises.	Number of stations.														Cont. obs.				Page of track chart.										
		Classical Oceanogr. st. COS	Vertical Oceanogr. st. CTD	ARGOS Drifters	Rosette Samplers	ADCP	Aanderaa Current Meters	Bottle Cast (Niskin)	Oxygen	Nutrients	Chlorophyll	Oil Hydrocarbons	Pelagic Trawl	Bottom Trawl	Mocness Trawl	Pelagic Eggs and Larvae	Zooplankton	Phytoplankton	Shrimp Trawl		XXXXXXXX CURRENT MOORING	XXXXXXXX GRAB ST.	Surface Temperature	Transparency	Echo Sounding	Echo Integration				
1/12	0701 - 1301		39			X										11	2									X	X	X	X	57
2/12	0401 - 1202		146			X											54									X	X	X	X	58 - 59
3/12	1702 - 0203		52			X										22	42									X	X	X	X	60
4/12	1503 - 1704		69			X										21	15									X	X	X	X	61 - 62
5/12	1804 - 2804		56			X										14	15									X	X	X	X	63 - 64
6/12	2904 - 1005		85			X																				X	X	X	X	65
7/12	1305 - 2005		104		104	X			104																	X	X	X	X	66
8/12	0506 - 2207		262													70	50									X	X	X	X	67-68-69-70
9/12	2407 - 0708		84			X										12	1	10								X	X	X	X	71 - 72
10/12	0808 - 1808		43			X										50		8								X	X	X	X	73 - 74
11/12	1908 - 0909		93			X										88	4									X	X	X	X	75 - 76
12/12	1109 - 1110		194			X										58	6									X	X	X	X	77
13/12	1410 - 0411		76			X										12	61									X	X	X	X	78 - 79
14/12	0511 - 2711		86			X										6		9								X	X	X	X	80 - 81
Total:			1389		104	X			104							364	250	27	93	484	332					X	X	X	X	

ICES Annual Report on Oceanographic Cruises and Data Stations.

Country: NORWAY.

Year: 1991

Ship: G.M. DANNEVIQ

Ship no: 16

Cruise and Ship number.	Period of Cruises.	Number of stations.													Cont. obs.			Page of track chart.									
		Classical Oceanogr. st. COS	Vertical Oceanogr. st. CTD	ARGOS Drifters	Rosette Samplers	ADCP	Aanderaa Current Meters	Bottle Cast (Niskin)	Oxygen	Nutrients	Chlorophyll	Oil Hydrocarbons	Pelagic Trawl	Bottom Trawl	Mocness Trawl	Pelagic Eggs and Larvae	Zooplankton		Phytoplankton	Shrimp Trawl	Beachsein	Hand Line	Surface Temperature	Transparency	Echo Sounding	Echo Integration	
	0801 - 1001		4												4												82
	1201 - 1801		29					29	29	29					5												82
	2101 - 2501		11												33												82
	3101 - 0102		12					9	12	12																	82
	1504 - 0105		92					92	92	92																	85
	0705 - 0905											6			6												83
	1205 - 1905		54					54	54	54																	83
	2305 - 2405		23																								87
	3005		6																								88
	0206 - 1206																	15									86
	1306 - 1406		12																								83
	1406 - 1506		5																								88
	1906 - 2006		21																								89
	1807 - 2007		12					9	12	12																	83
	Total:																										

ICES Annual Report on Oceanographic Cruises and Data Stations.

Country; NORWAY.

Year: 1991

Ship: G.M. DANNEVIG

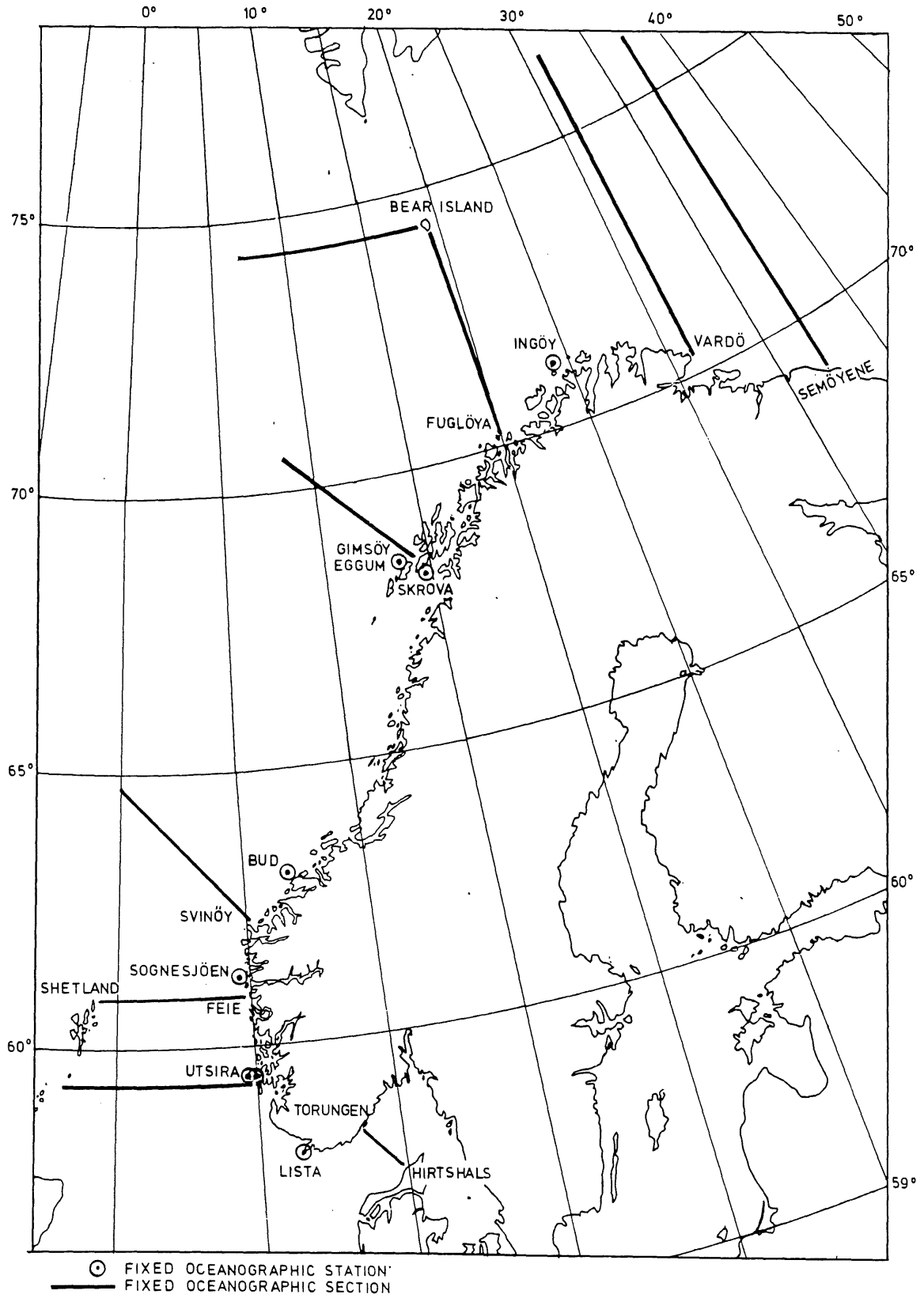
Ship no: 16

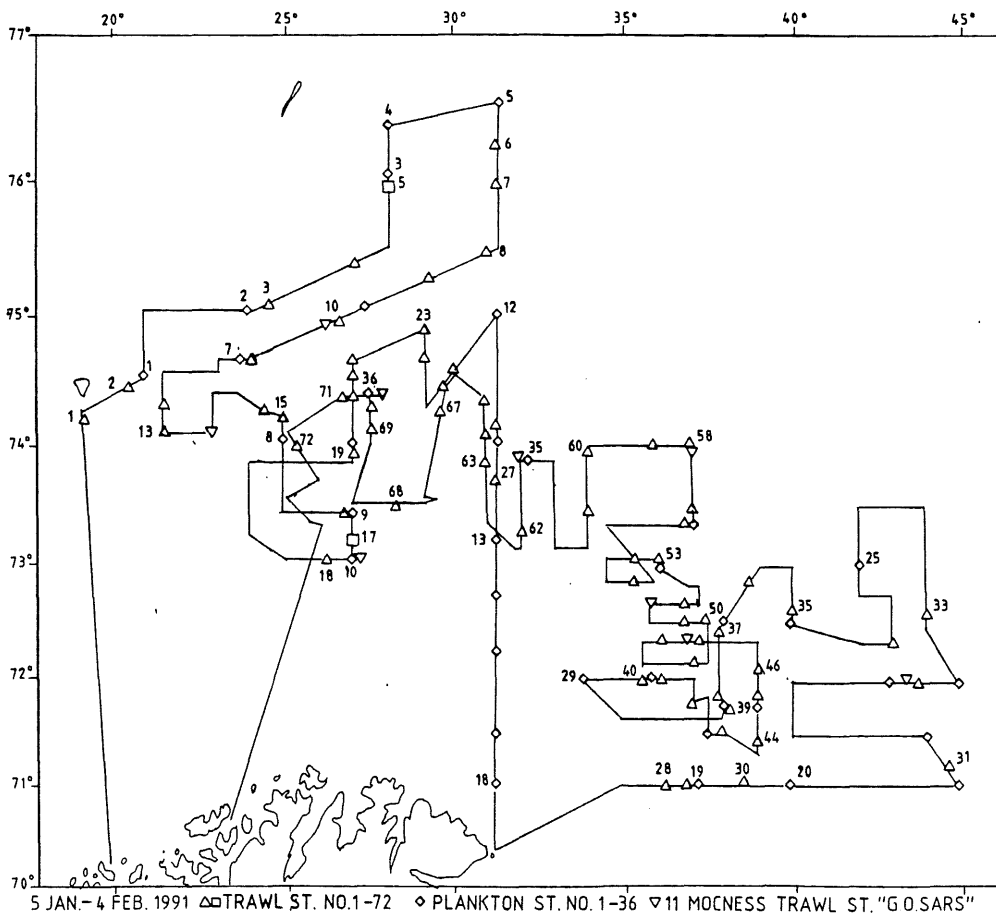
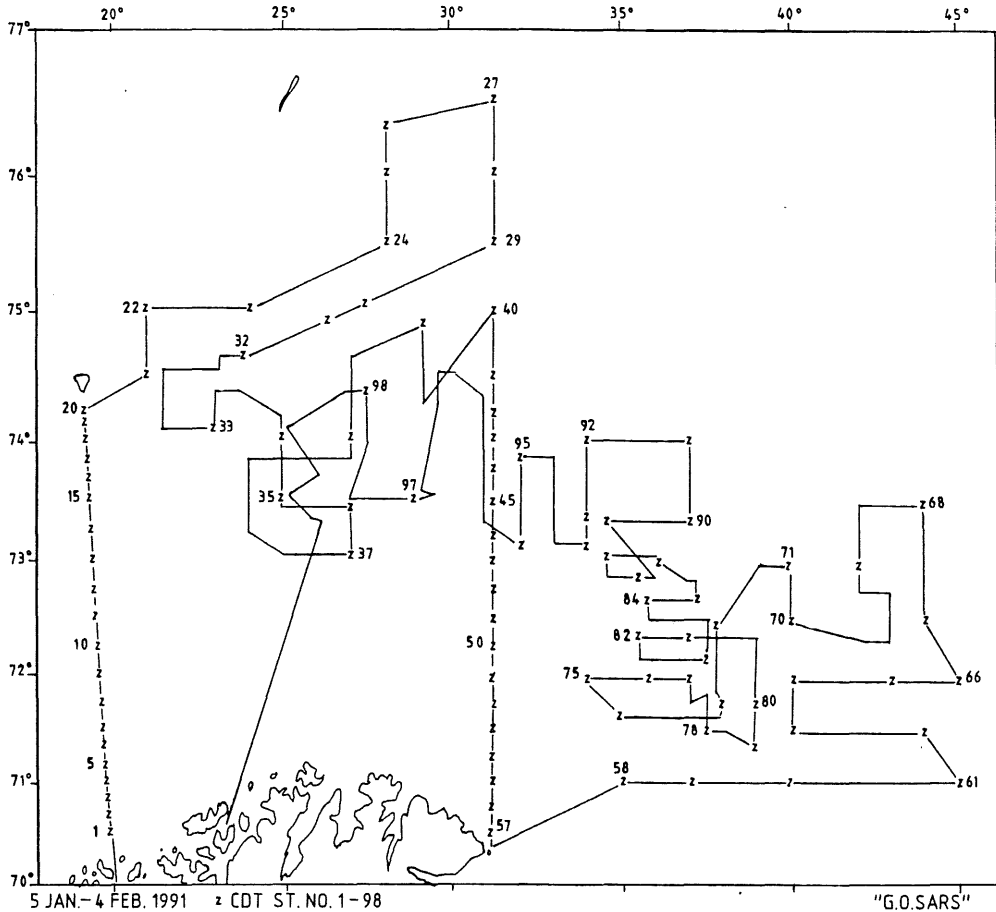
Cruise and Ship number.	Period of Cruises.	Number of stations.													Cont. obs.			Page of track chart.									
		Classical Oceanogr. st. COS	Vertical Oceanogr. st. CTD	ARGOS Drifters	Rosette Samplers	ADCP	Aanderaa Current Meters	Bottle Cast (Niskin)	Oxygen	Nutrients	Chlorophyll	Oil Hydrocarbons	Pelagic Trawl	Bottom Trawl	Mocness Trawl	Pelagic Eggs and Larvae	Zooplankton		Phytoplankton	Shrimp Trawl	Beachsein	Hand Line	Surface Temperature	Transparency	Echo Sounding	Echo Integration	
	1408 - 1608		12					9	12	12																	83
	1209 - 1309		12					9	12	12																	83
	1709 - 0310		31																	22							90
	1410 - 1510		12					9	12	12																	83
	1411 - 1611		11													15											83
	1811 - 1911		12					9	12	12																	83
	2611 - 2911		11													15											84
	0812 - 1112		11													15											84
	1212 - 1412		13					9	12	12																	84
	1512 - 1912		19													19											84
	Total:		425					238	259	259		6				112				15	22						

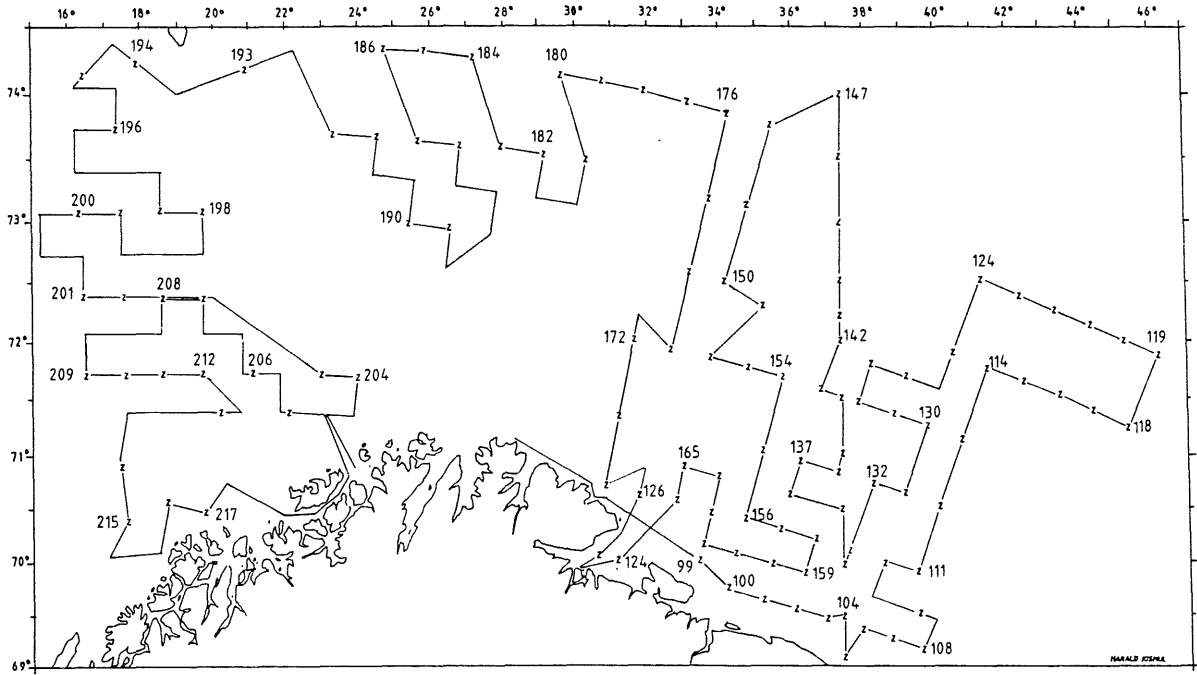
ARGOS DRIFTERS						
CATALOGUE NO.	I.D. No.	DEPLOYED DATE □	RECOVERED DATE △	DROGUE DEPTH IN METRES	DROGUE LOST	PAGE OG TRACK CHART
129	1558	0604	1209	30		96
131	1575	0706	2007	30		96
132	1576	0706	0110	30		96
133	1577	1304	1604	30		96
134	1578	0704	0904	30		97
135	1581	0704	0907	30		97
136	1586	0504	2404	30		97
137	1586	0706	2609	30		97
138	1587	0704	0407	30		98
139	1583	0504	0408	30		98

FIXED OCEANOGRAPHIC STATIONS	YEAR: 1991												
	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL
LISTA N58°01' E06°32'	9, 21,	1, 11, 26	7, 16, 26,	6, 15, 26,	7, 18, 29,	10, 19, 27,	9, 18, 29,	9, 21,	2, 12, 20, 30,	10, 21, 28,	15, 27,	6, 16,	33
UTSIRA Y N59°19' E04°48'	7, 14, 22,	2, 10, 20	1, 9, 23,	3, 14, 23	6, 13,	16, 25,	2, 11, 23	8, 19, 31,	9, 16, 26,	5, 14, 23,	2, 15, 23,	9, 9, 27,	34
UTSIRA I N59°19' E04°59'	7, 14, 23,	2, 10, 20	1, 9, 23,	3, 14, 23	6, 13,	16, 25,	2, 11, 23	8, 9,	9, 16, 26,	5, 14, 23,	2, 15, 23,	9, 9, 27,	33
SOGNESJØEN N61°01,4' E04°50'	26,	2,	15, 23,	15, 29,	13, 24,	4, 15,	2, 11, 19, 29,	6, 26,	7, 16, 23,	1, 11, 23	16,	2, 27,	25
BUD N62°56' E06°47'	16, 29,	11, 22,	9, 22,	4, 18, 30,	13, 24	8, 22,	8, 22,	5, 19,	2, 17, 30,	14, 26,	8, 26,	10,	25
SKROVA N68°07,5' E14°39'	4, 11, 26,	4, 8, 15, 25,	4, 11, 18, 25,	2, 8, 16, 23, 30,	8, 14, 21, 28,	4, 12, 19, 26,	6, 13, 20, 31,	7, 15, 21,	6, 12, 20, 26,	3, 19, 27,	3, 9, 15, 22,	4, 13,	44
EGGUM N68°22,9' E13°39'	11, 26,	8, 22,	6, 18,	1, 11, 23,	7, 22,	5, 15, 26,	7, 20, 31,	12, 24,	7, 21,	4, 16, 28,	9, 22,	19, 31,	28
INGØY N71°08' E24°01'	11, 20,	2, 11, 20,	4, 13, 21,	3, 15, 23,	3, 11, 19, 27,	4, 14, 23,	1, 10, 21, 30,	9, 19, 28,	5, 14, 23,	6, 15, 24,	3, 14, 23,	10, 19,	36

FIXED OCEANOGRAPHIC SECTION	YEAR 1991												
	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL
TORUNGEN-HIRTSHALS	8/16-12/16 14/16-16/16 18/16-21/16 31/16				1/16 12/16 15/16	13/16	18/16	14/16	12/16	14/16	14/16 18/16 26/16	8/16 11/15 12/16 15/16	22
UTSIRA - WEST		2/12			2/1		8/12						3
FEIE - SHETLAND	2/12				2/1		8/12						3
SVINØYA - NORTH/WEST	1/12			5/12 4/15			9/12				14/12		5
GIMSØYA - NORTH/WEST								9/12					1
FUGLØYA - BJÖRNØYA	1/15		3/15						11/12	12/12			4
VARDØ - NORTH	1/15		3/15				6/11		8/11				4
SEMØYA - NORTH								8/11		12/12	14/12		3
BJÖRNØYA - WEST										12/12	14/12		2
SHIPS NAME	NO.	SHIPS NAME					NO.	CRUSE NO./SHIP NO.					
"G.O.SARS"	15	"G.M. DANNEVIG"					16	1/15					
"MICHAEL SARS"	11	"JOHAN RUUD"					8						
"JOHAN HJORT"	12	"HÅKON MOSBY"					1						



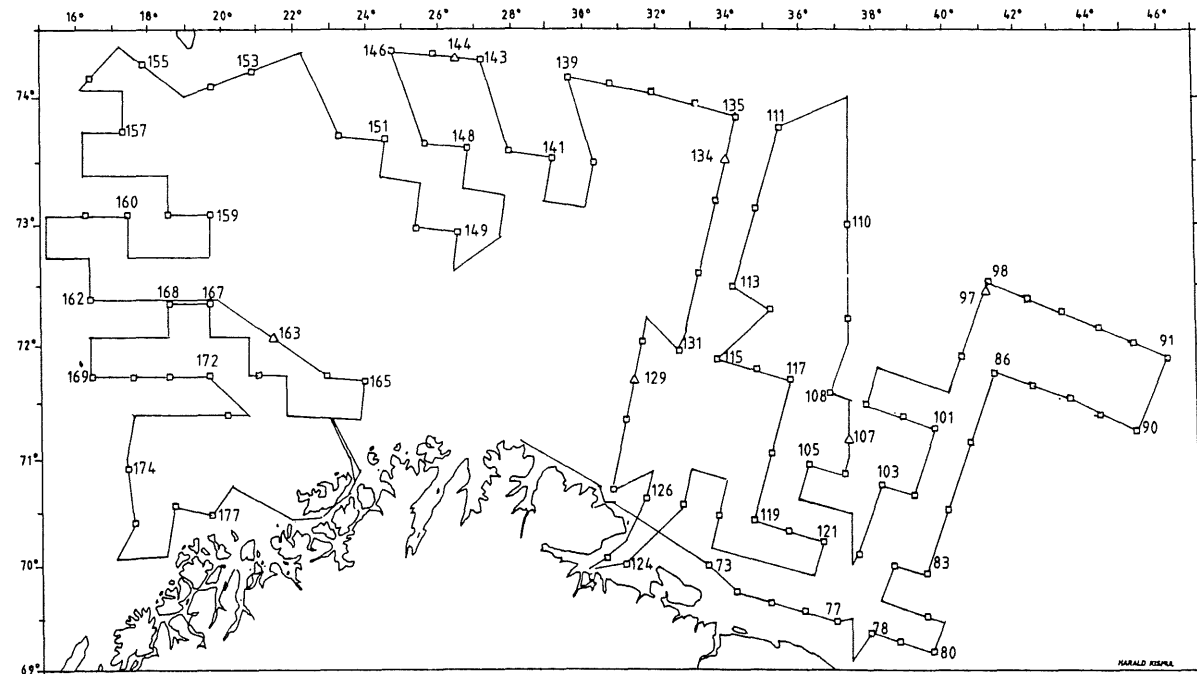




4 FEB - 3 MAR 1991 z CTD ST. NO. 99-217

"G.O.SARS"

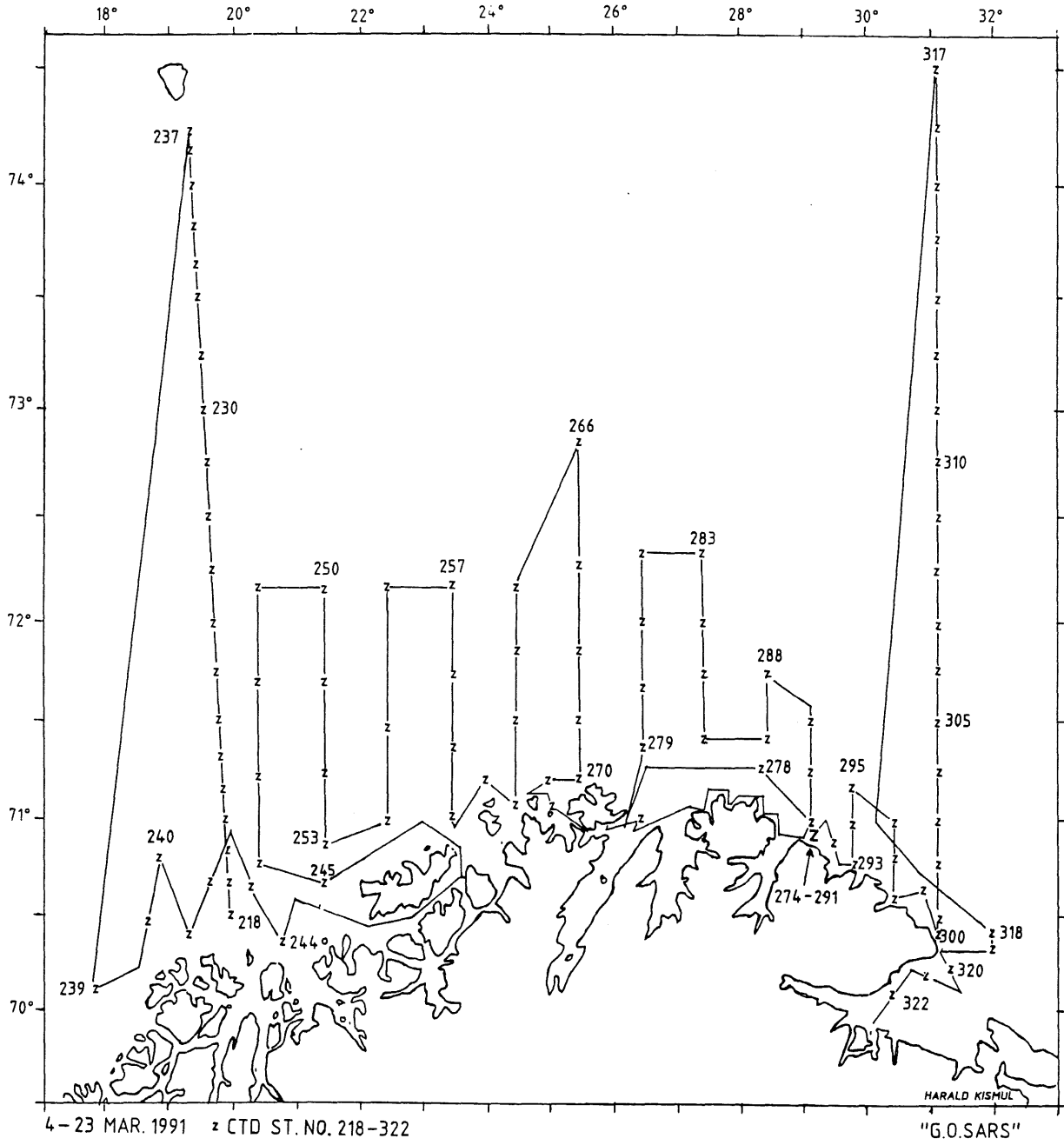
MARALD KJESLA

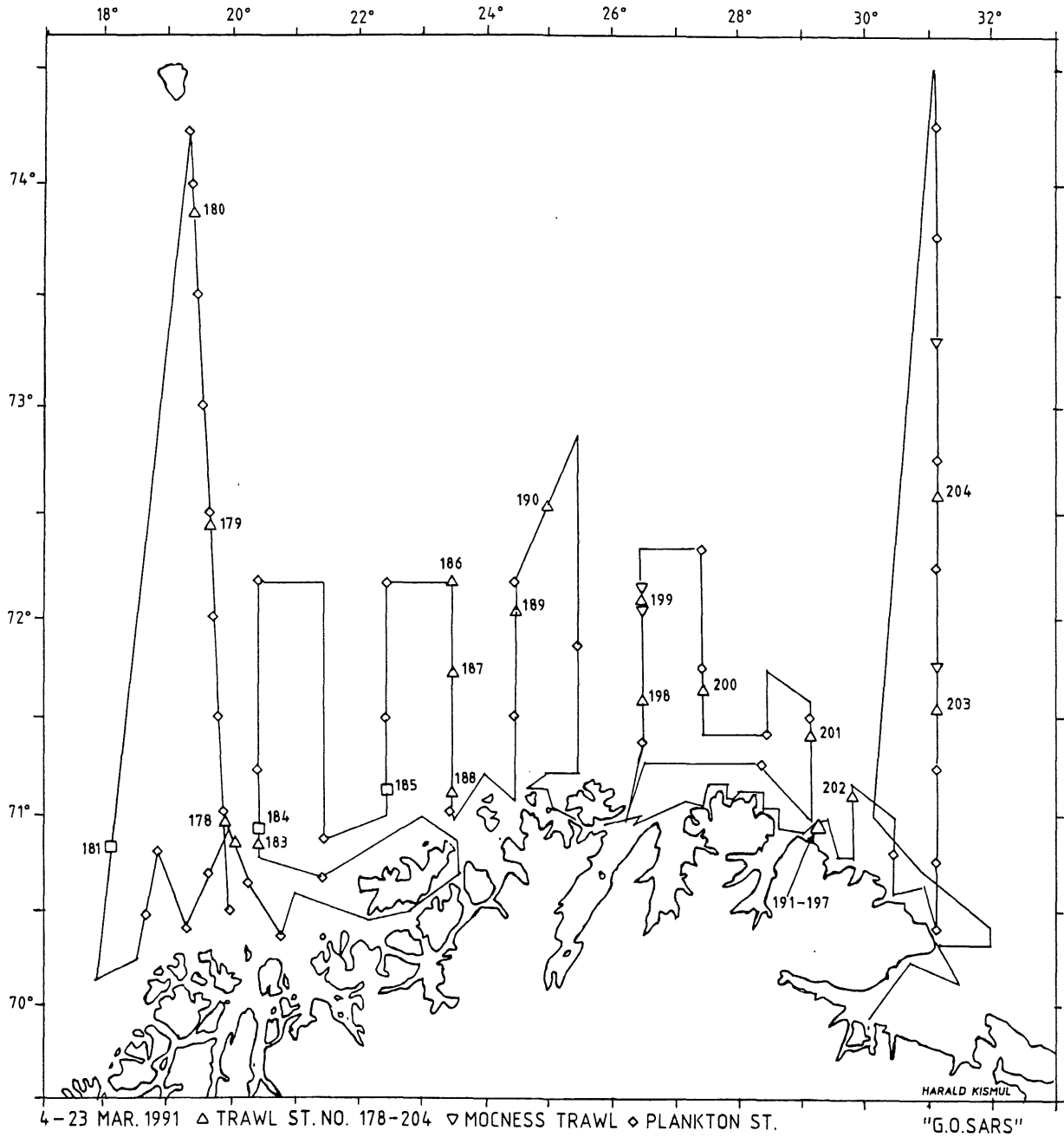


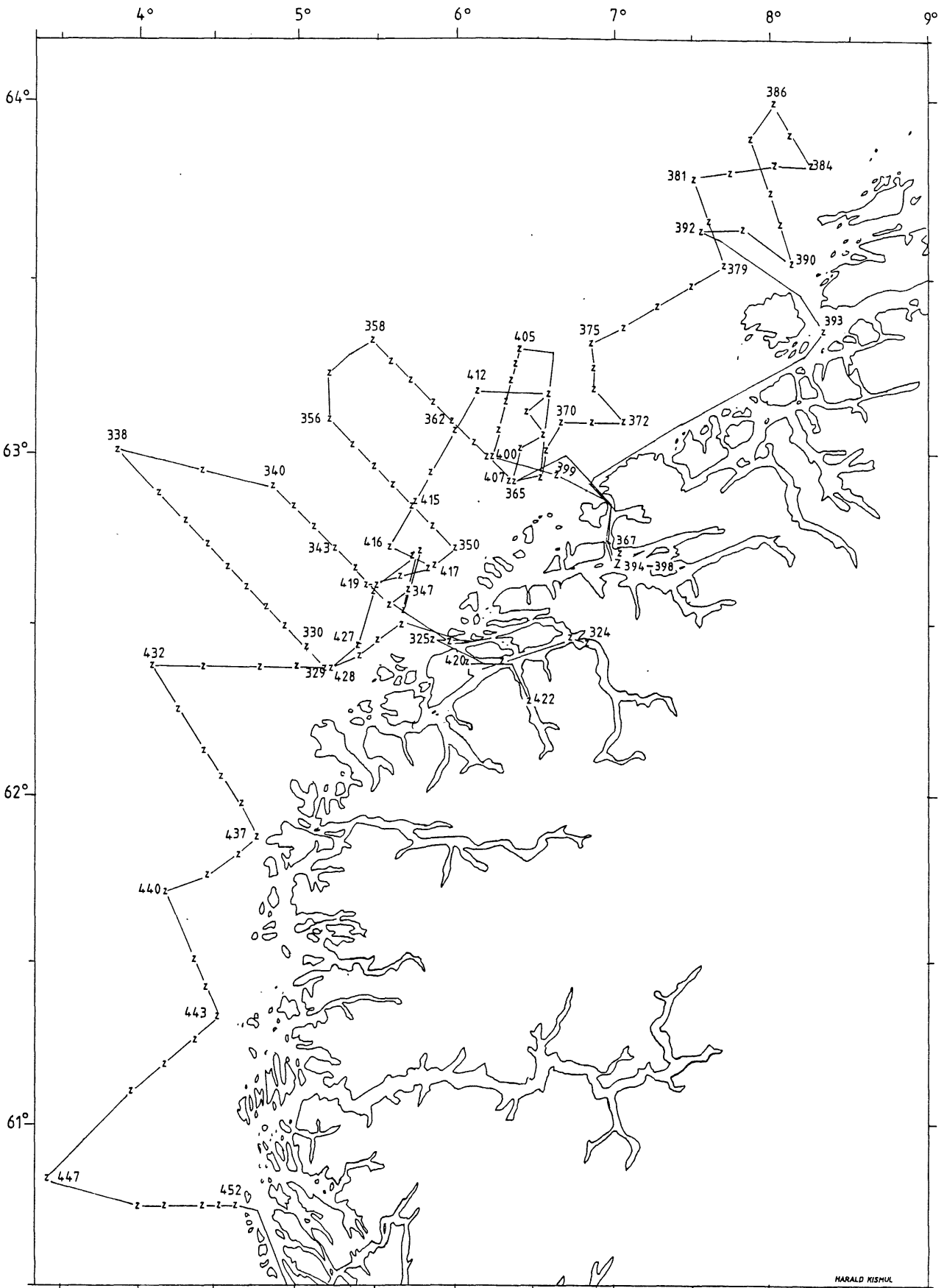
4 FEB - 3 MAR 1991 □ TRAWL ST. NO. 73-177

"G.O.SARS"

MARALD KJESLA

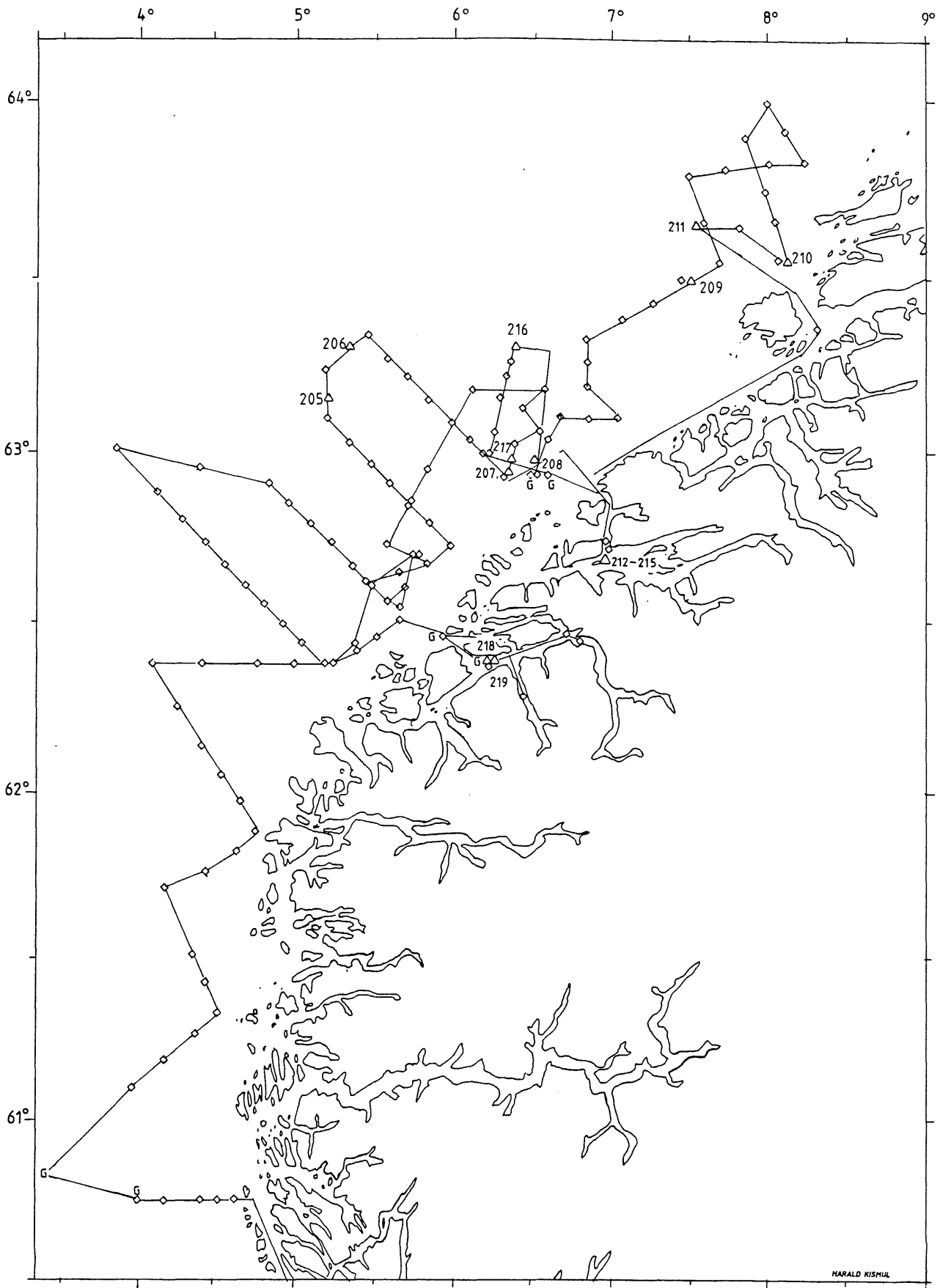






3-14 APR. 1991 z CTD ST. NO. 323-452

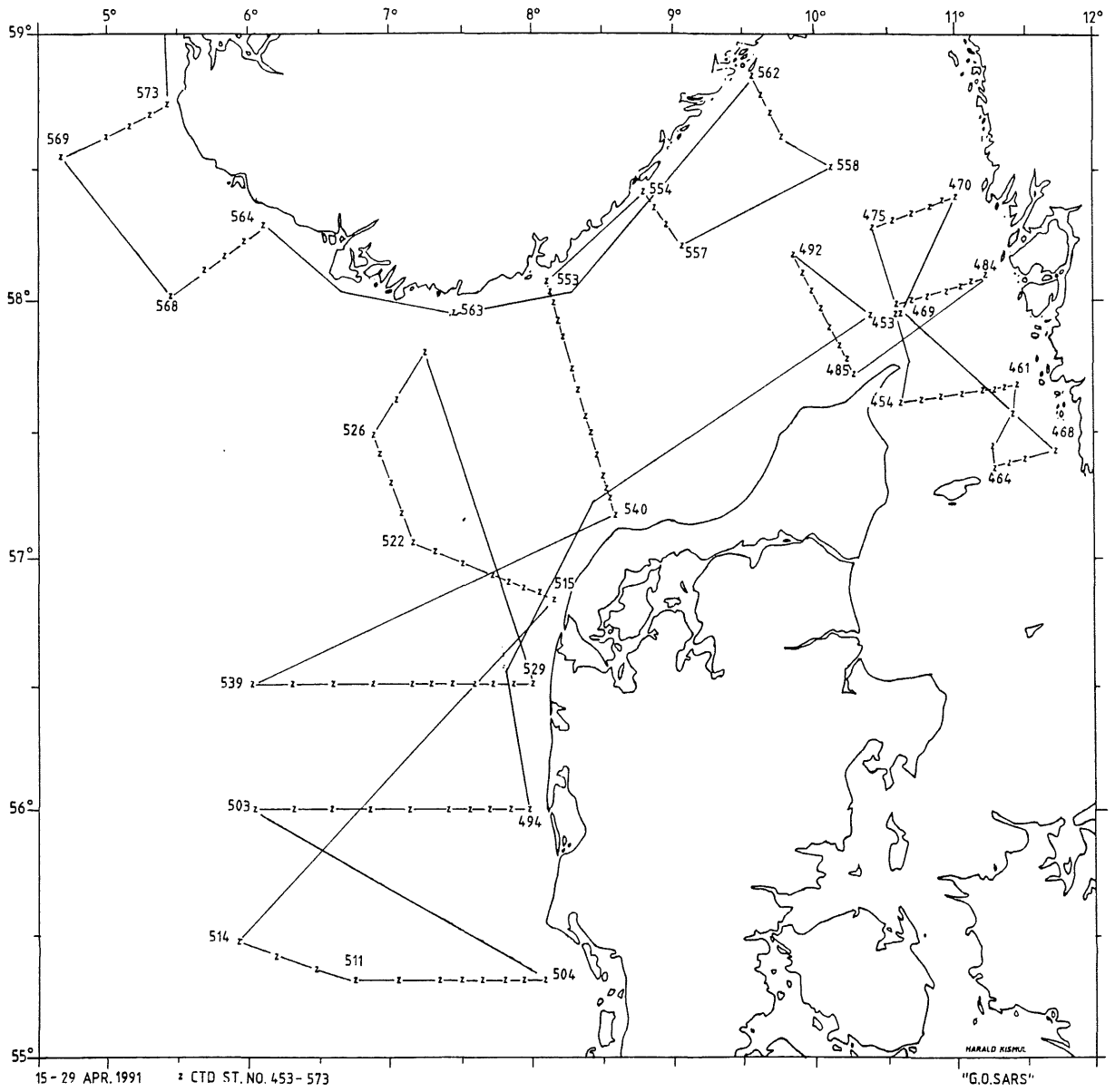
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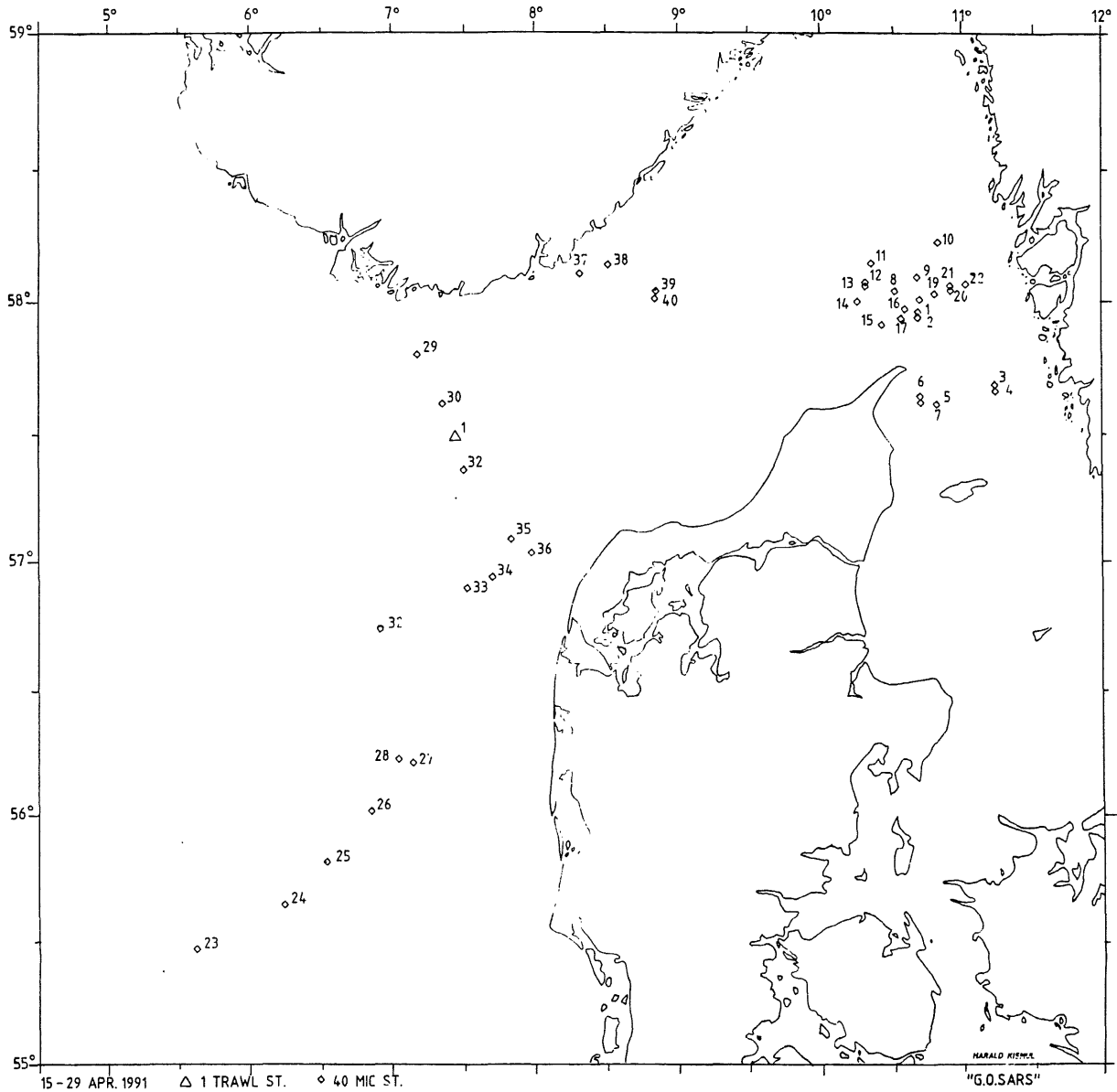


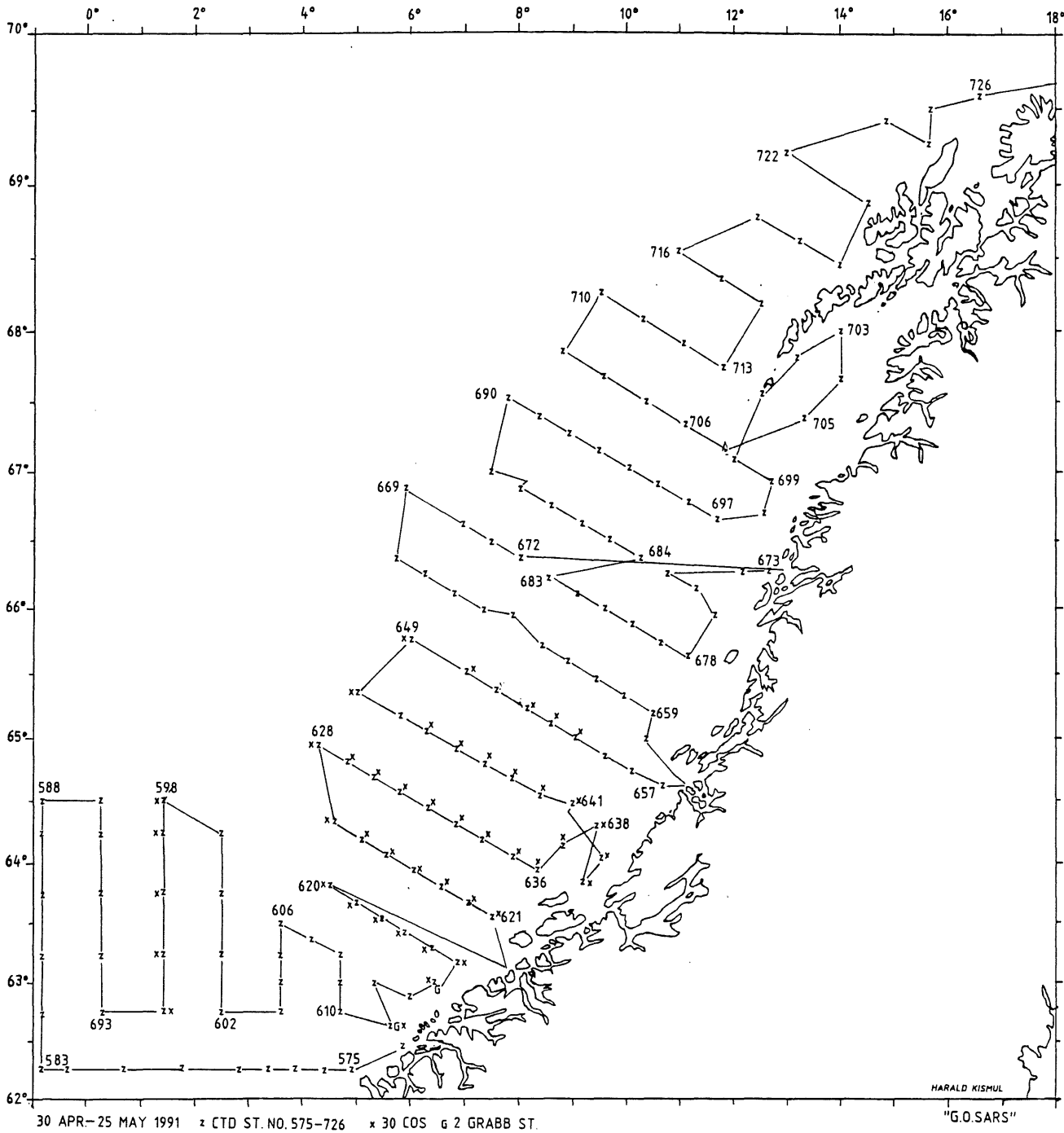
HARALD KISHUL

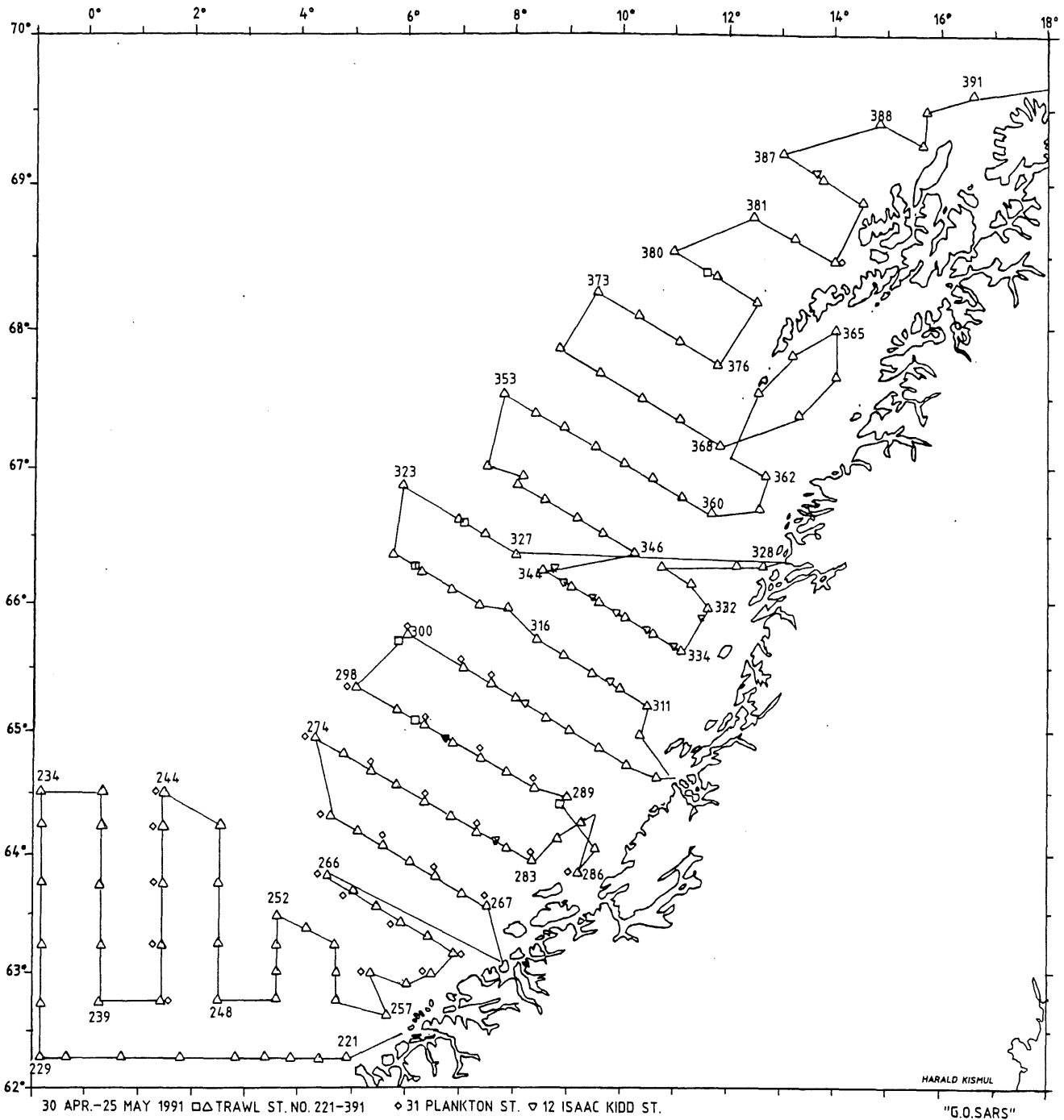
3-14 APR. 1991 △ TRAWL ST. NO. 205-219 G GRABB ST. ◇ EGG, PLANKTON ST.

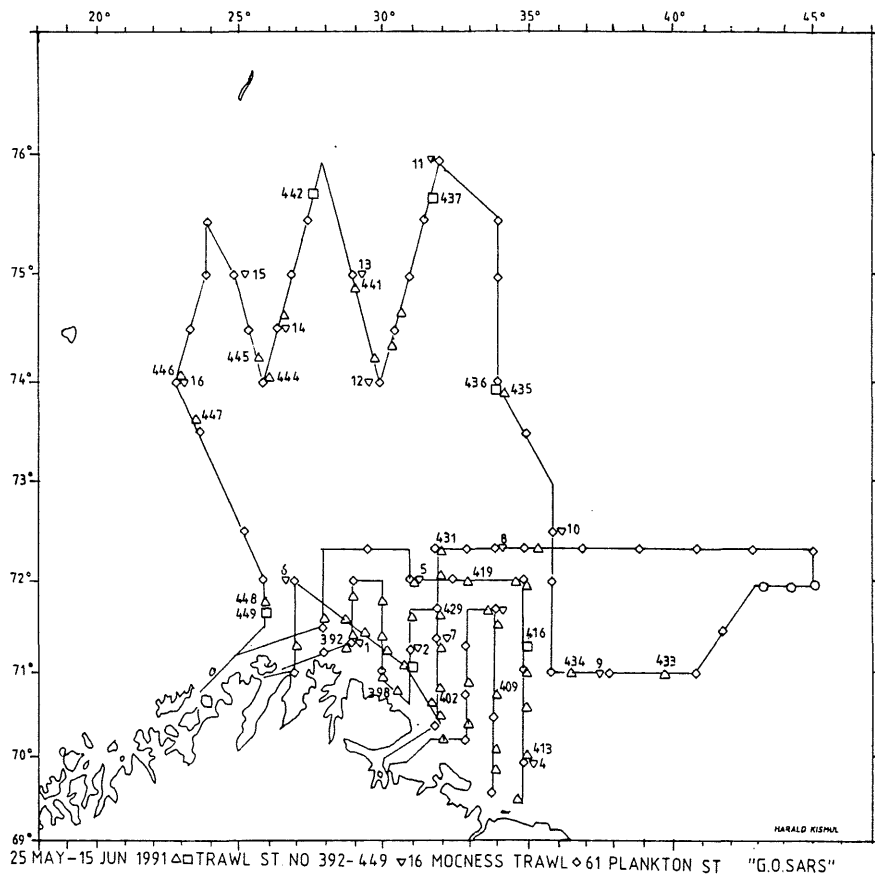
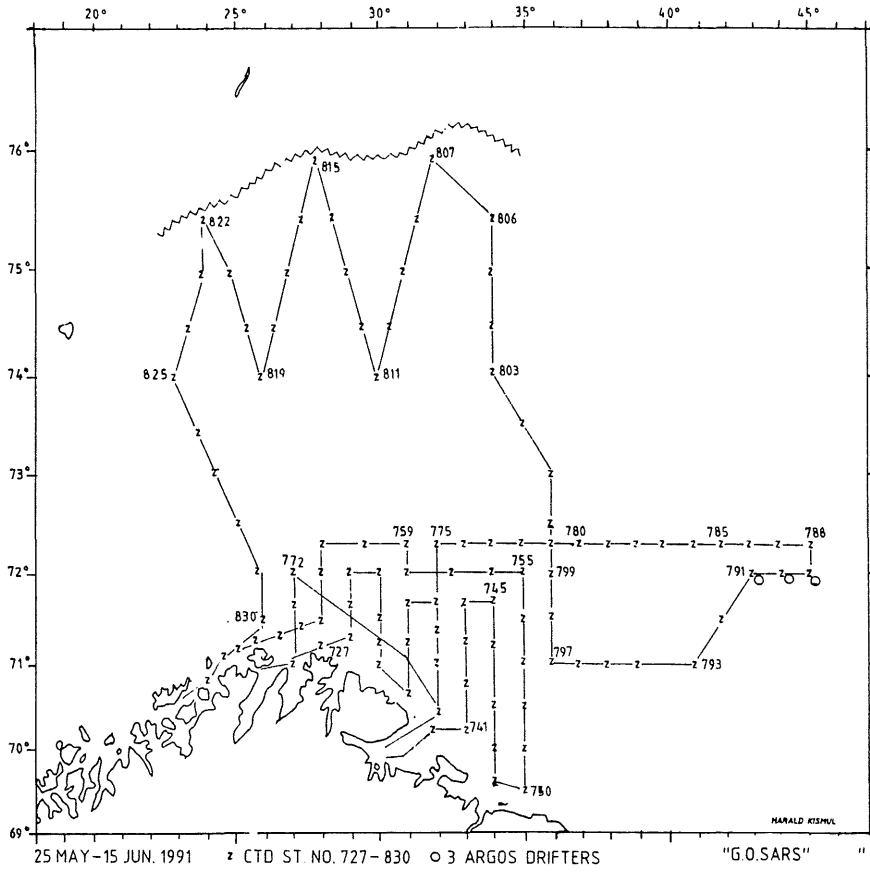
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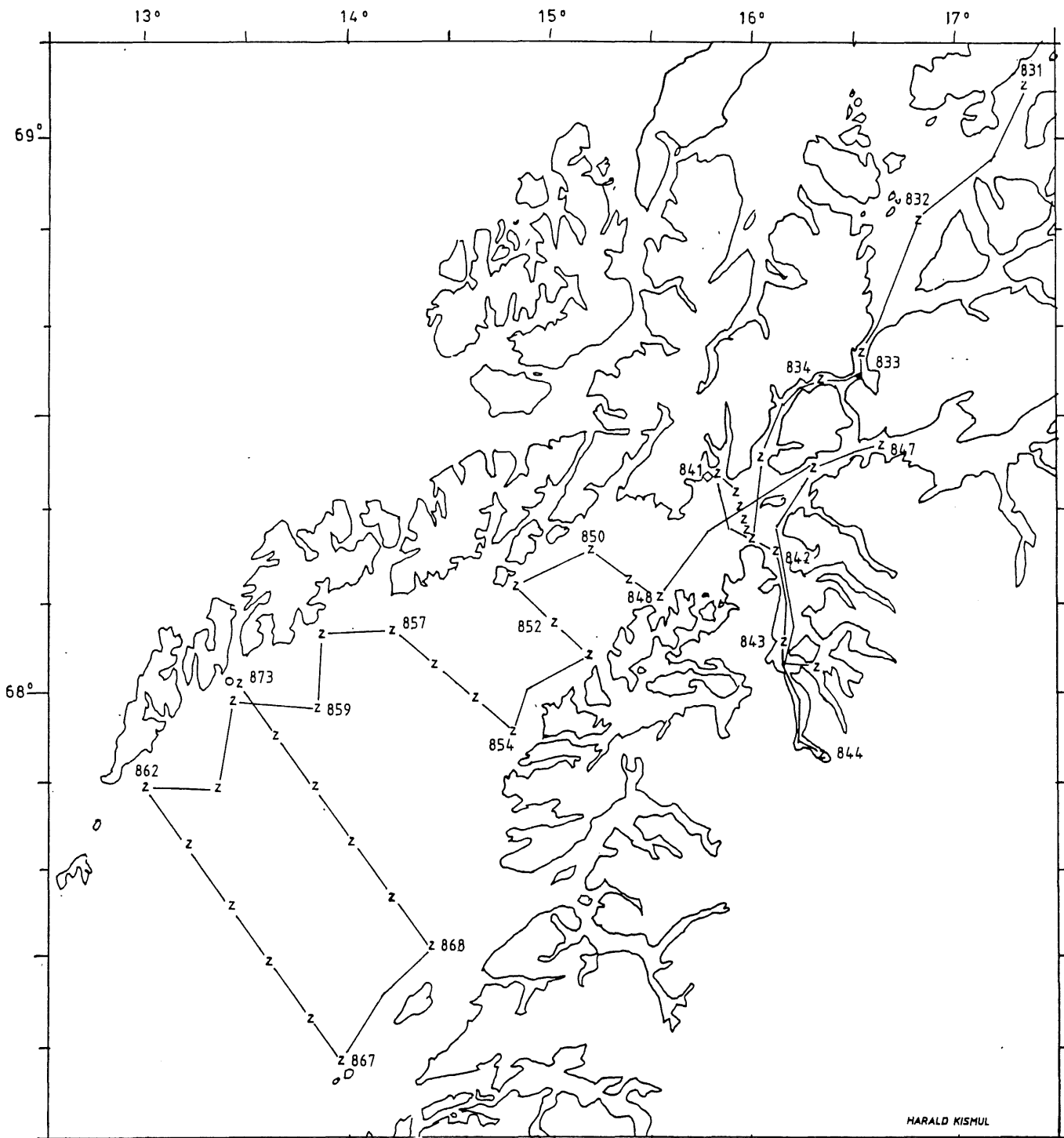








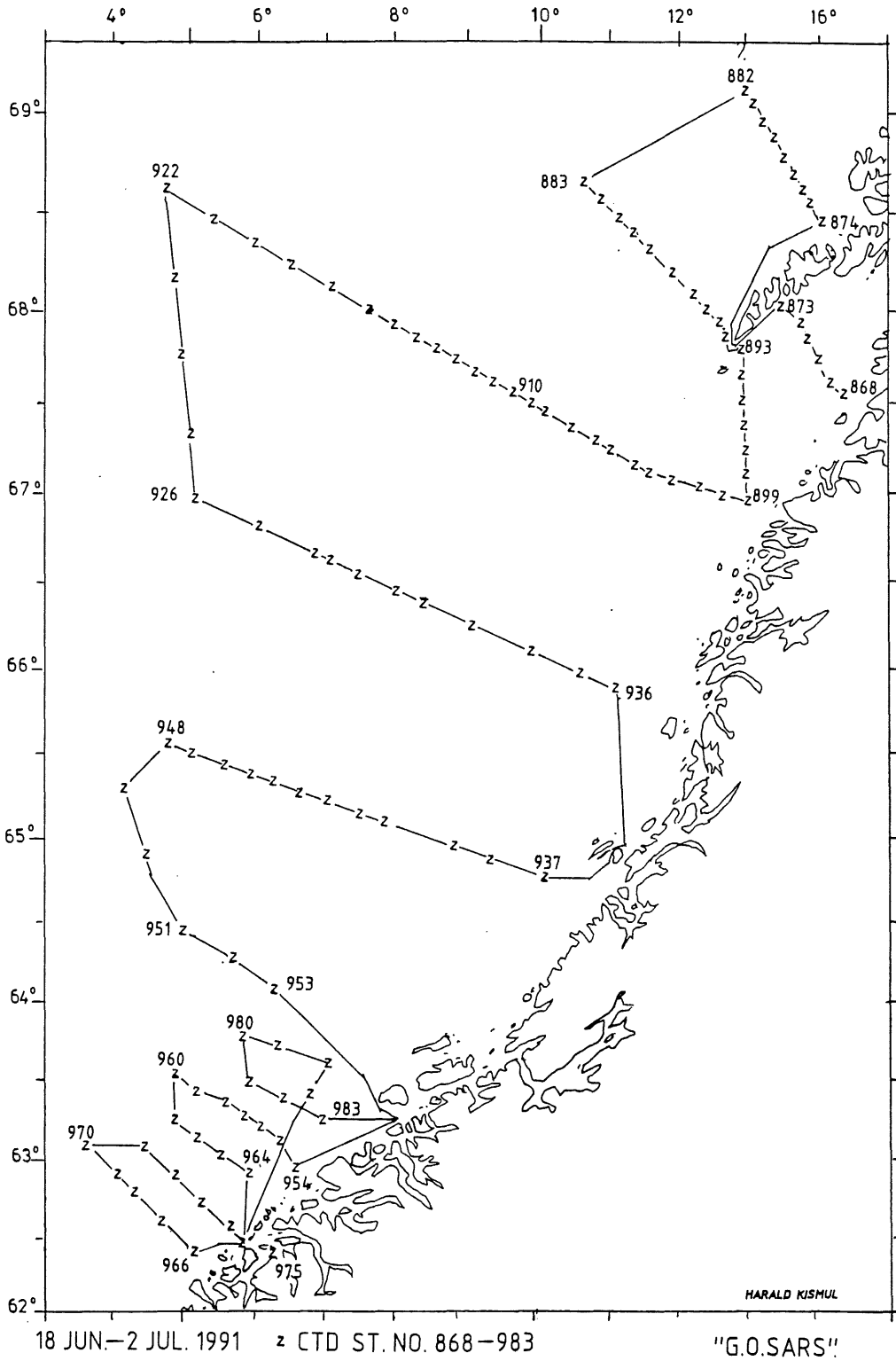


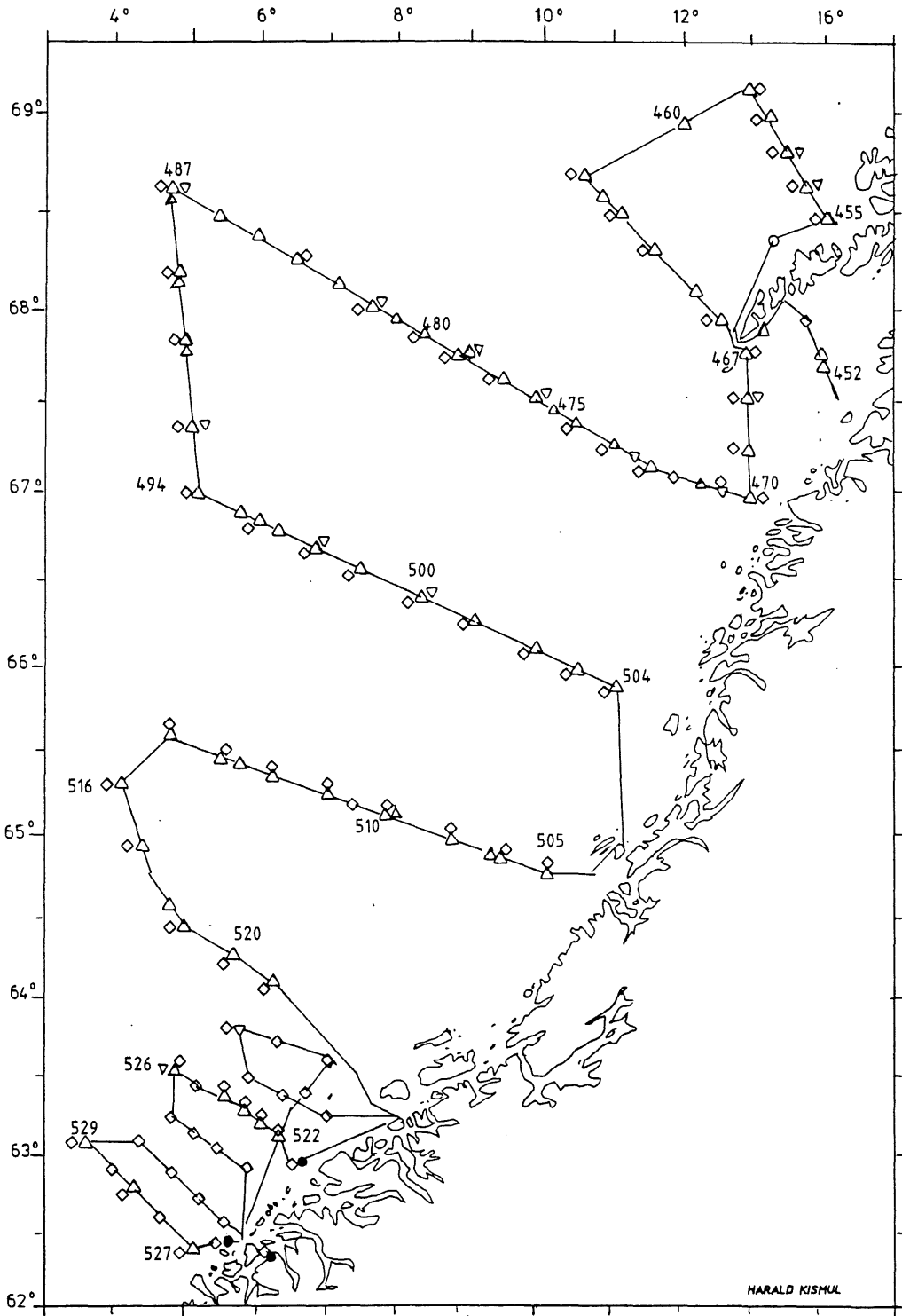


HARALD KISMUL

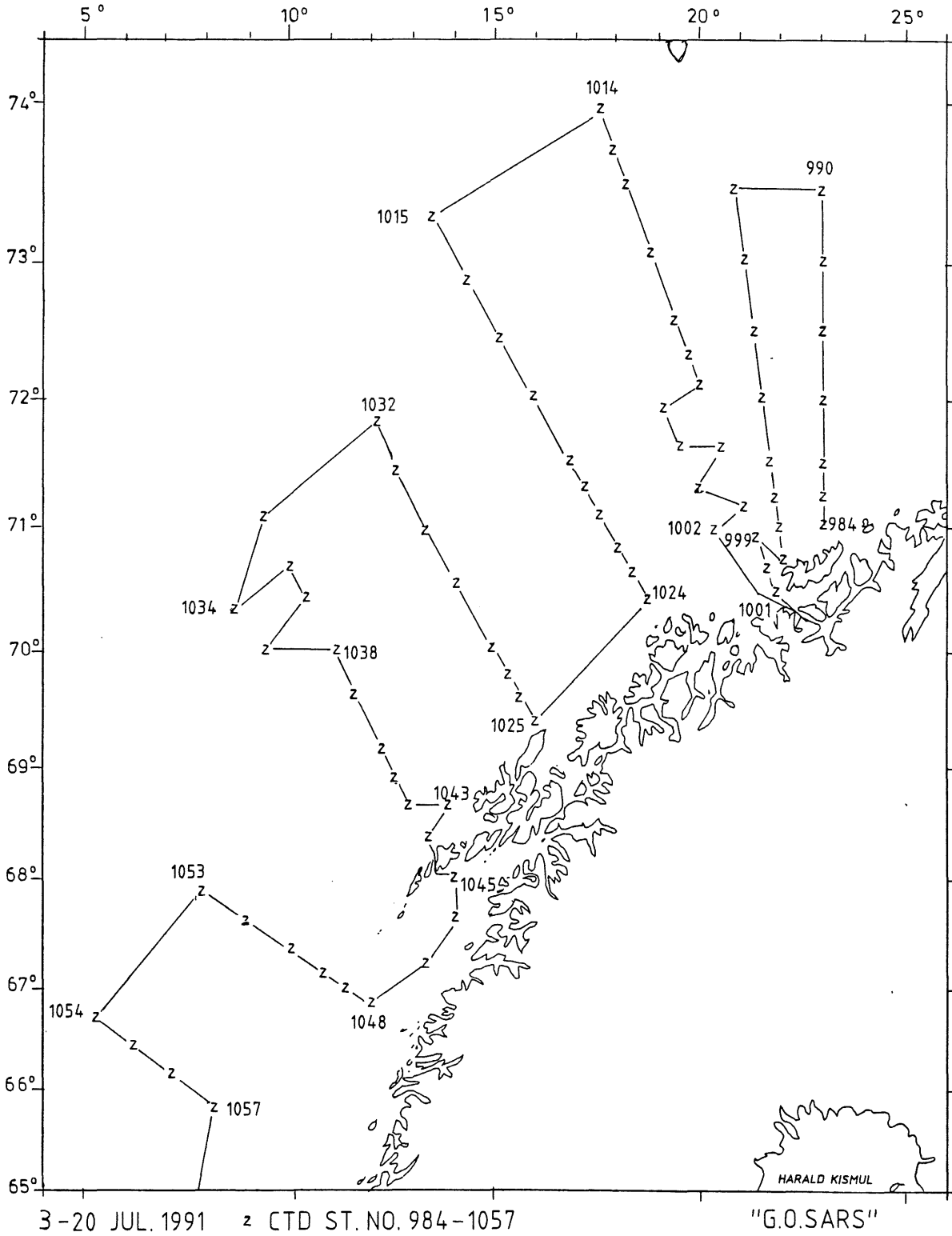
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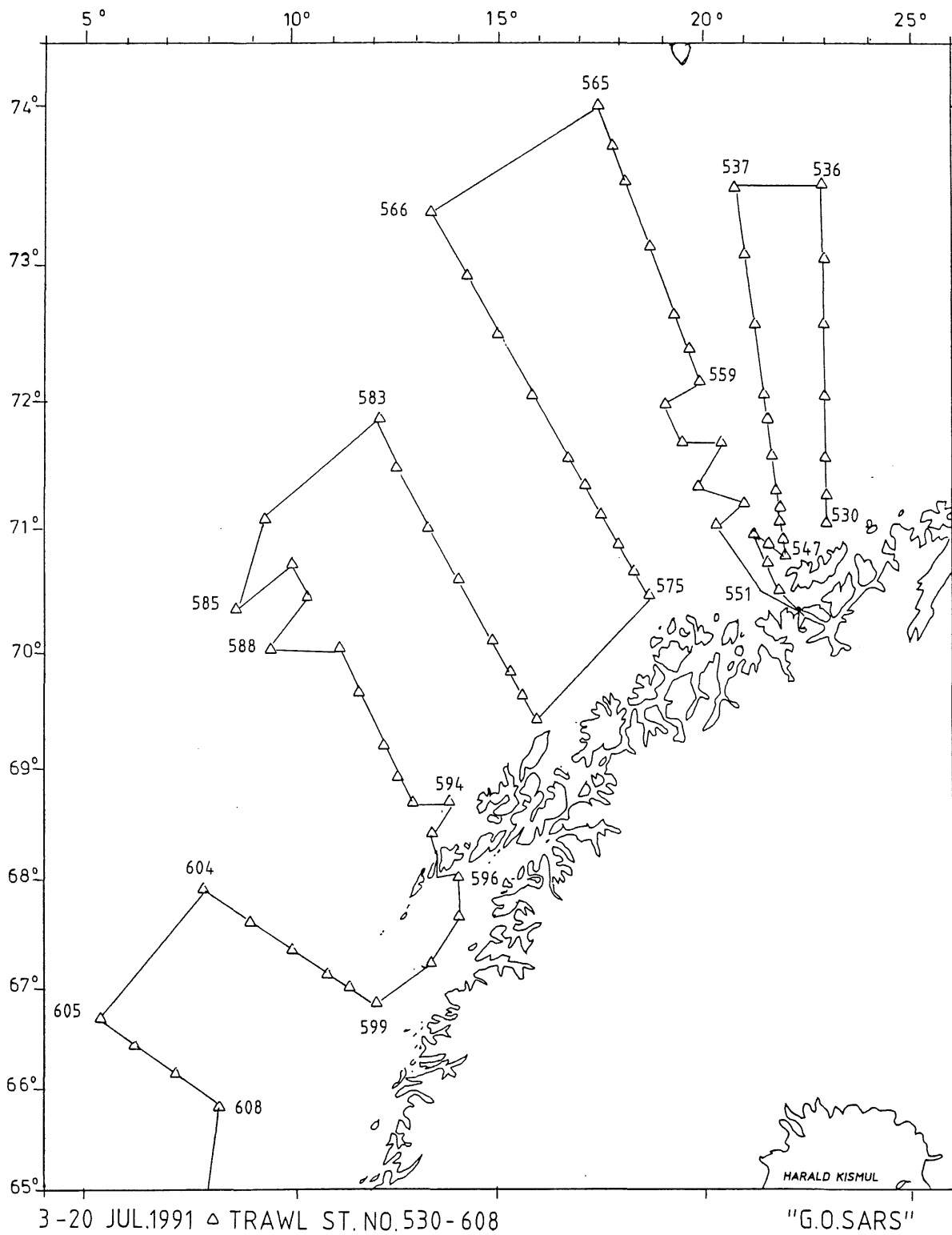
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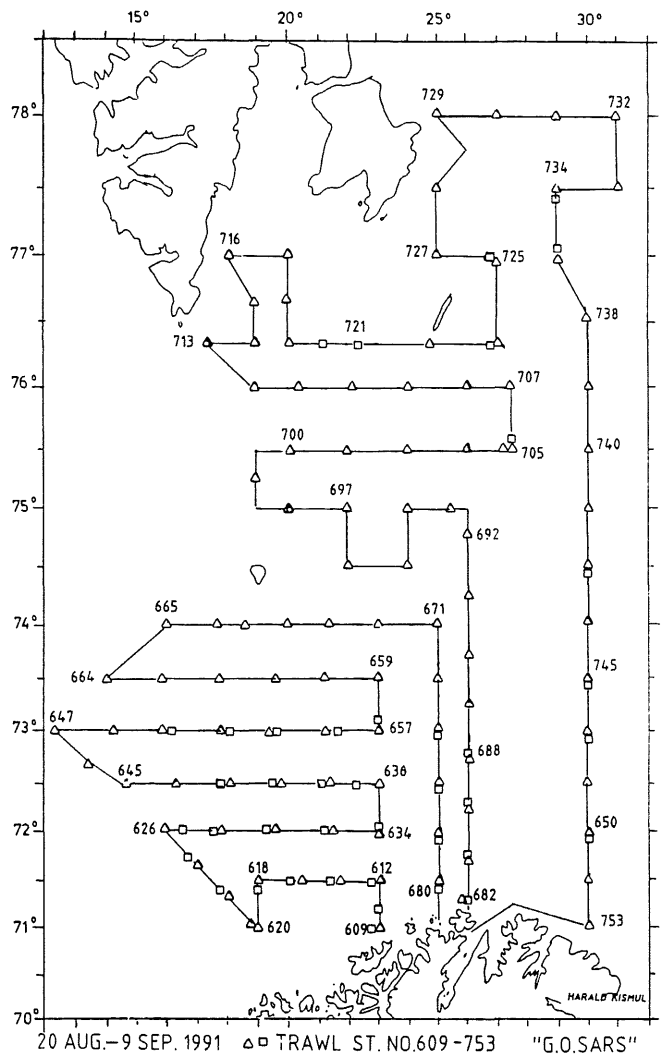
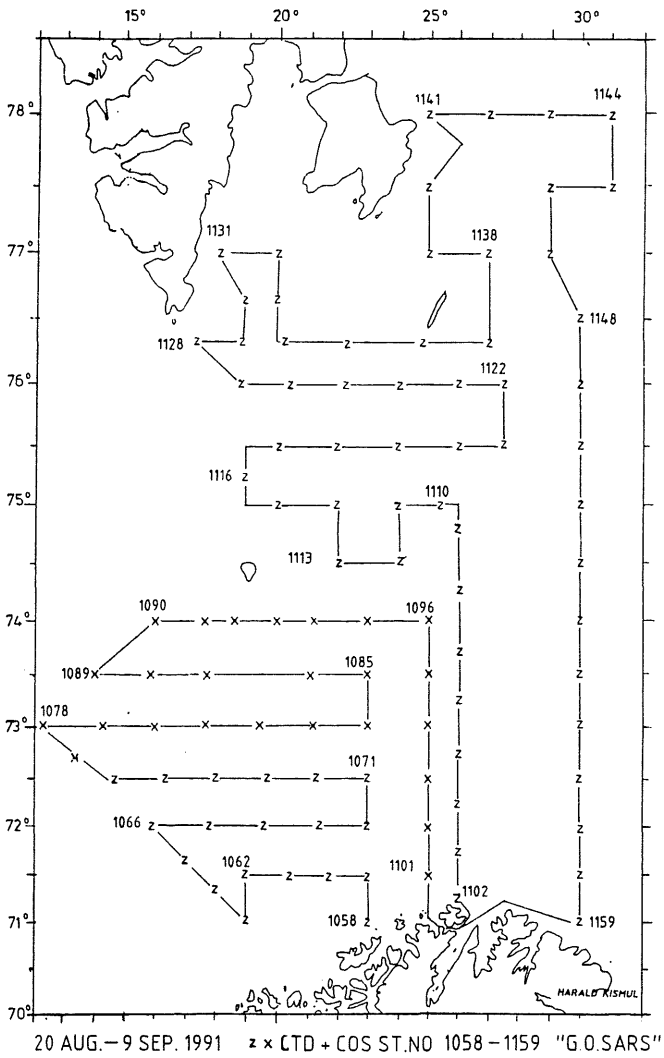


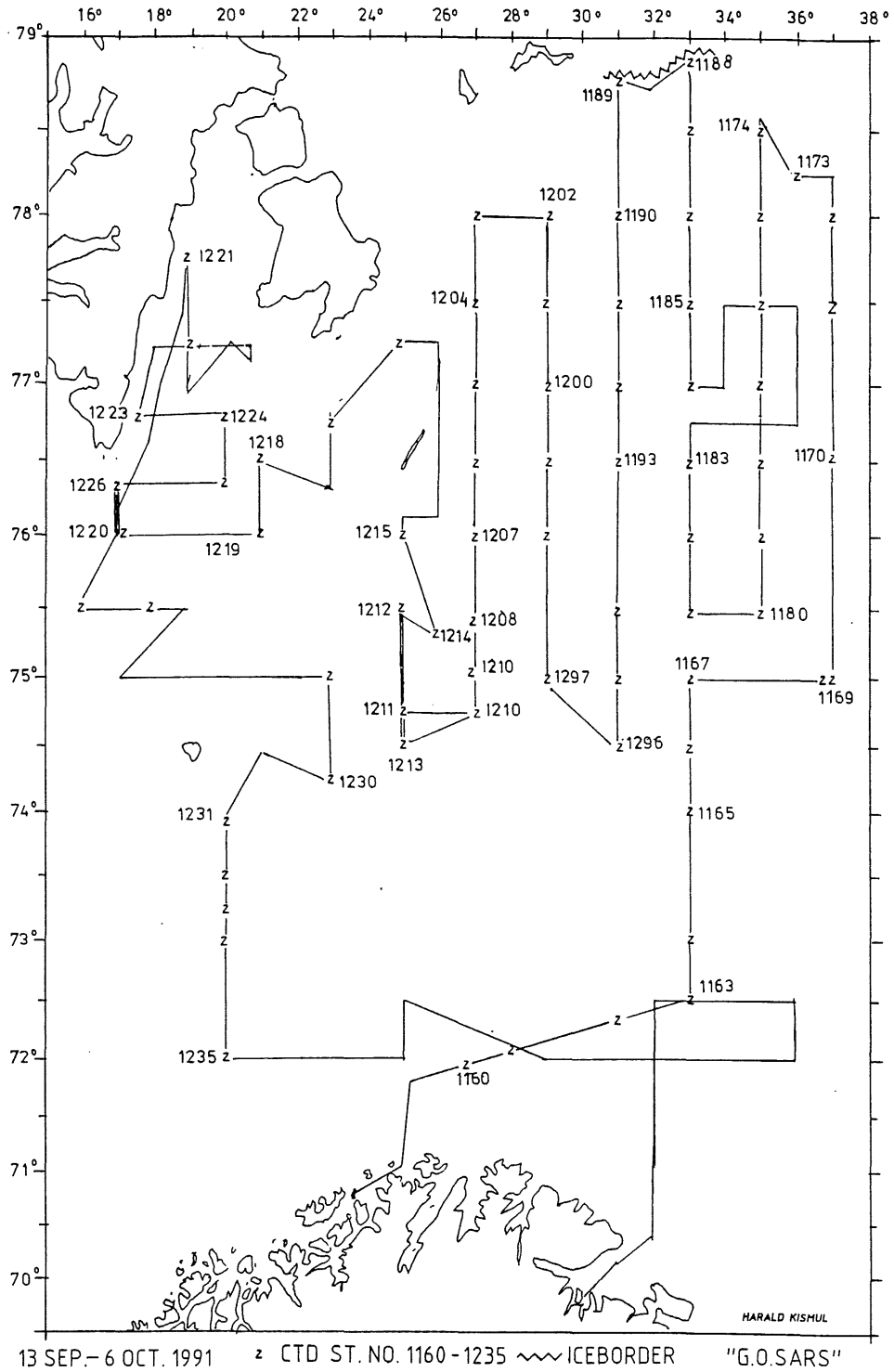


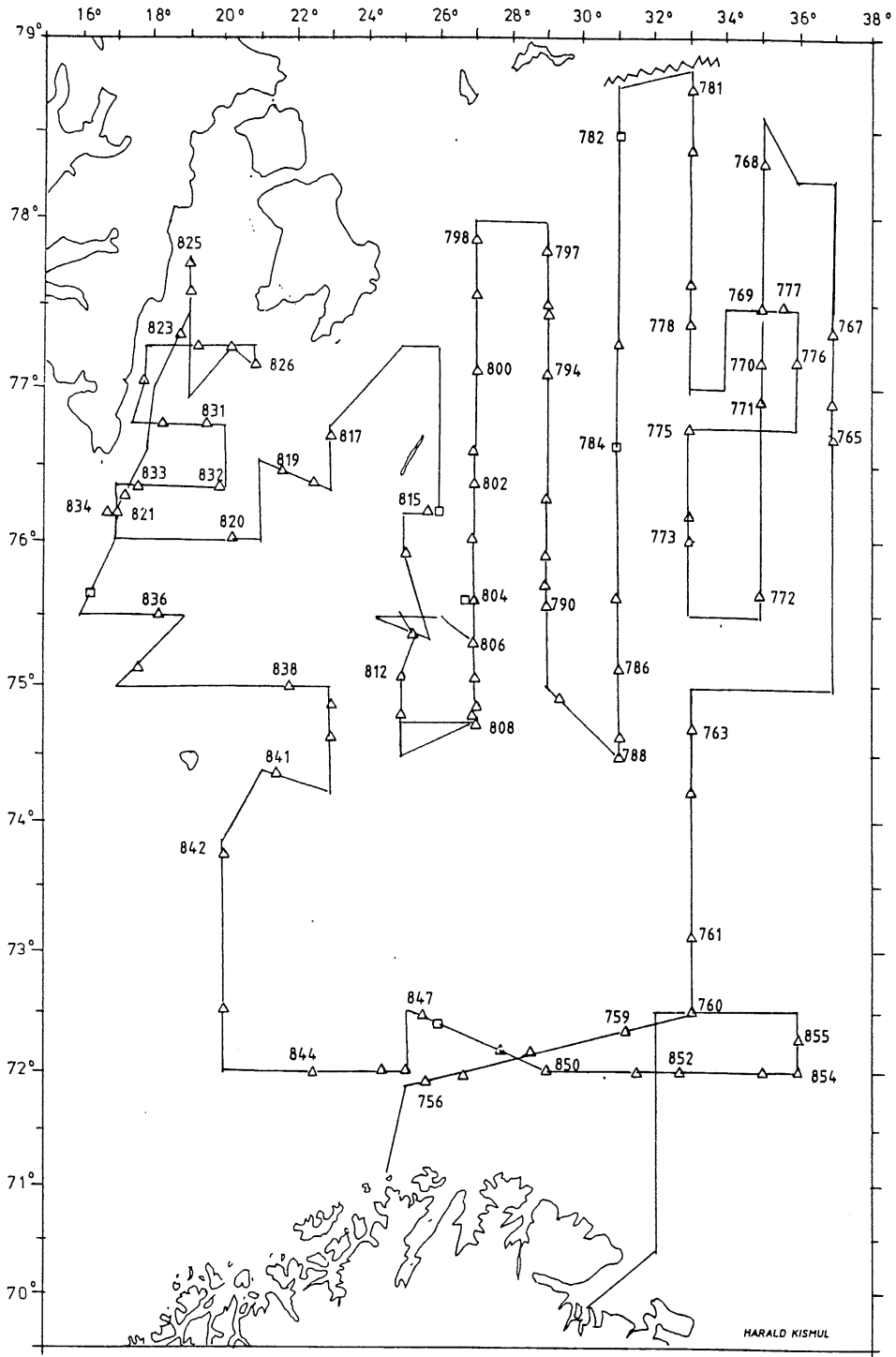
18 JUN.-2 JUL. 1991 \triangle TRAWL ST. NO. 452-529 ∇ 13 MOCNESS ST.
 \diamond 82 JUDAY NET ST. \bullet 3 GRAB ST. \circ 1 ISAAC KIDD "G.O.SARS"





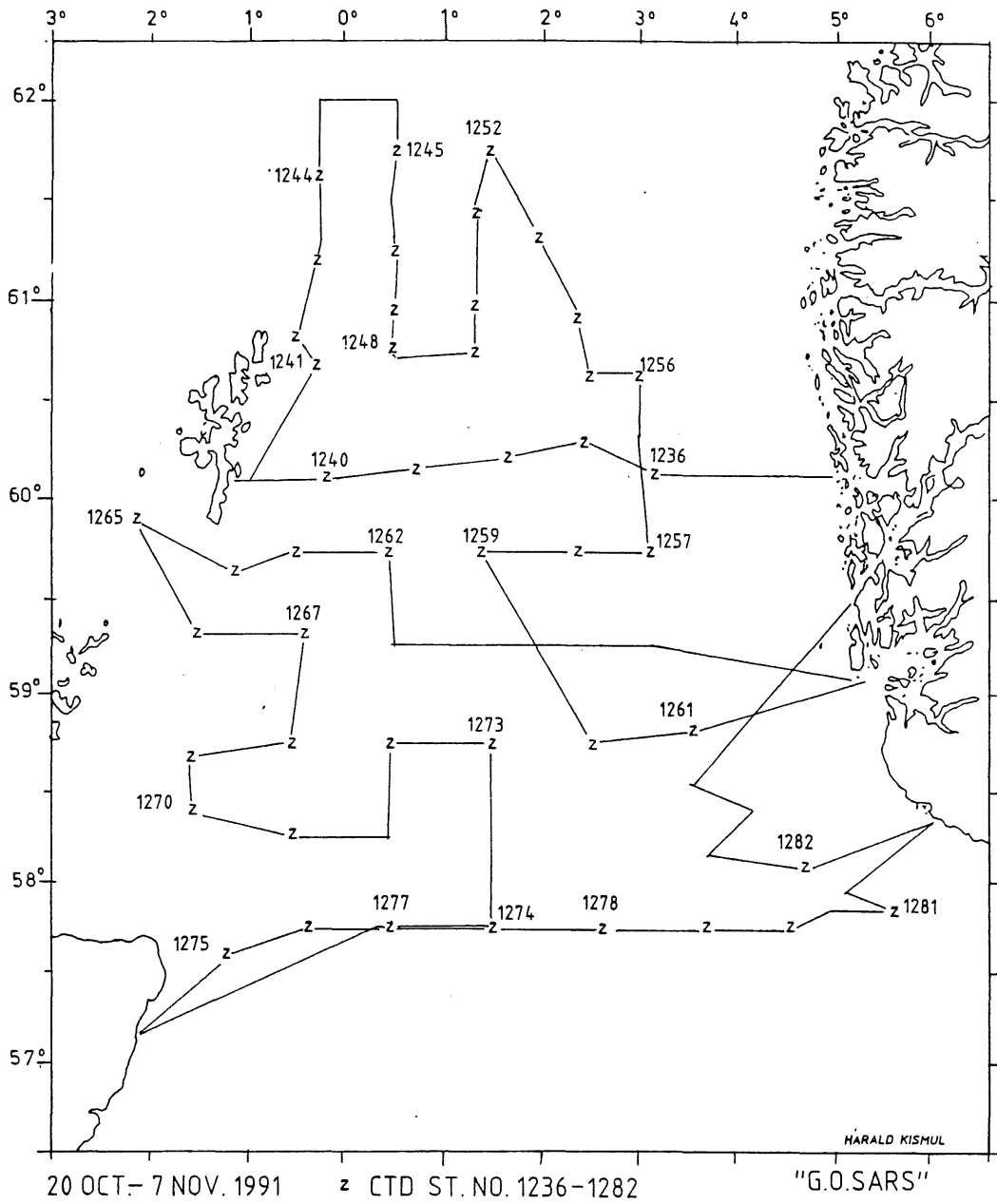


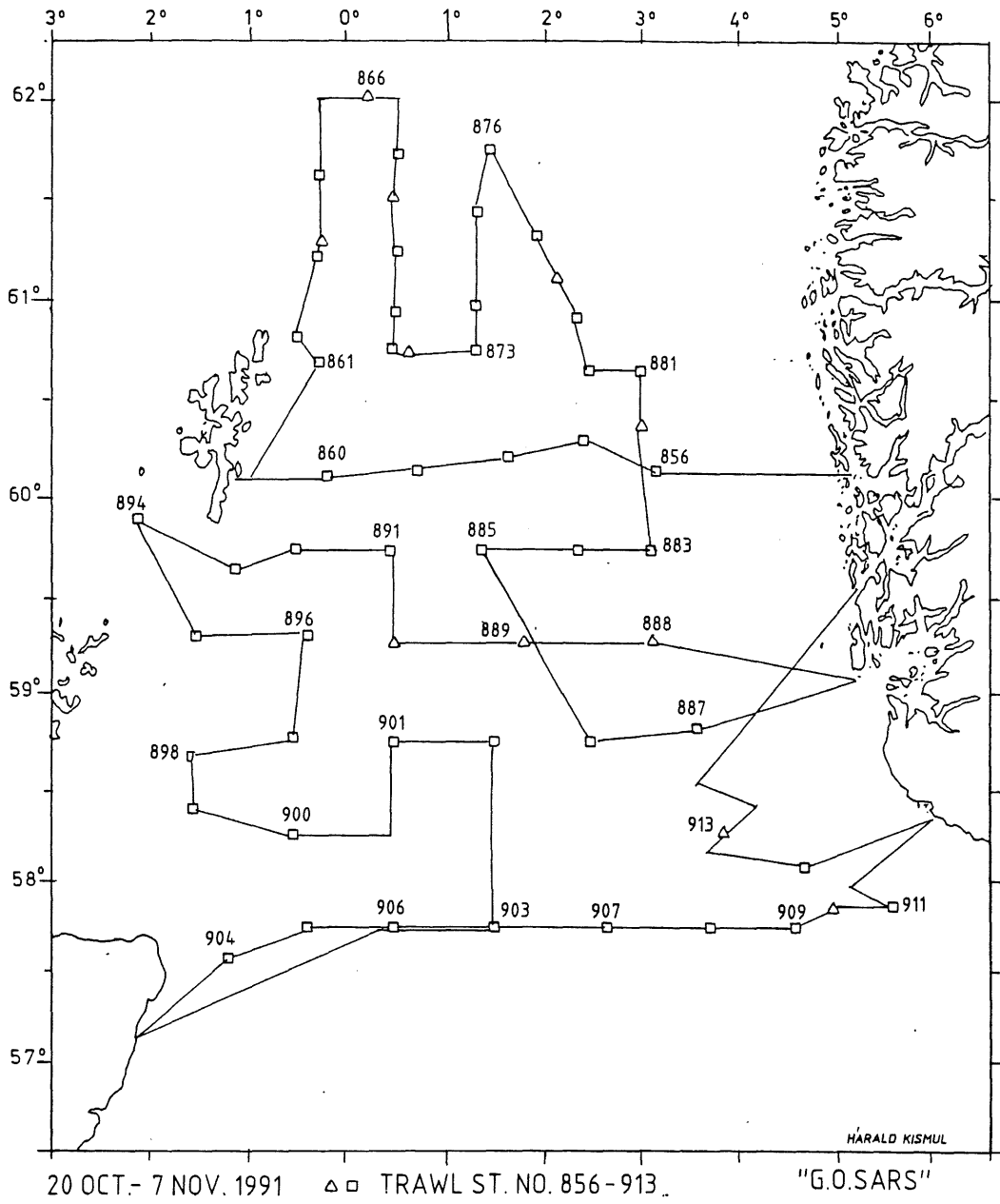


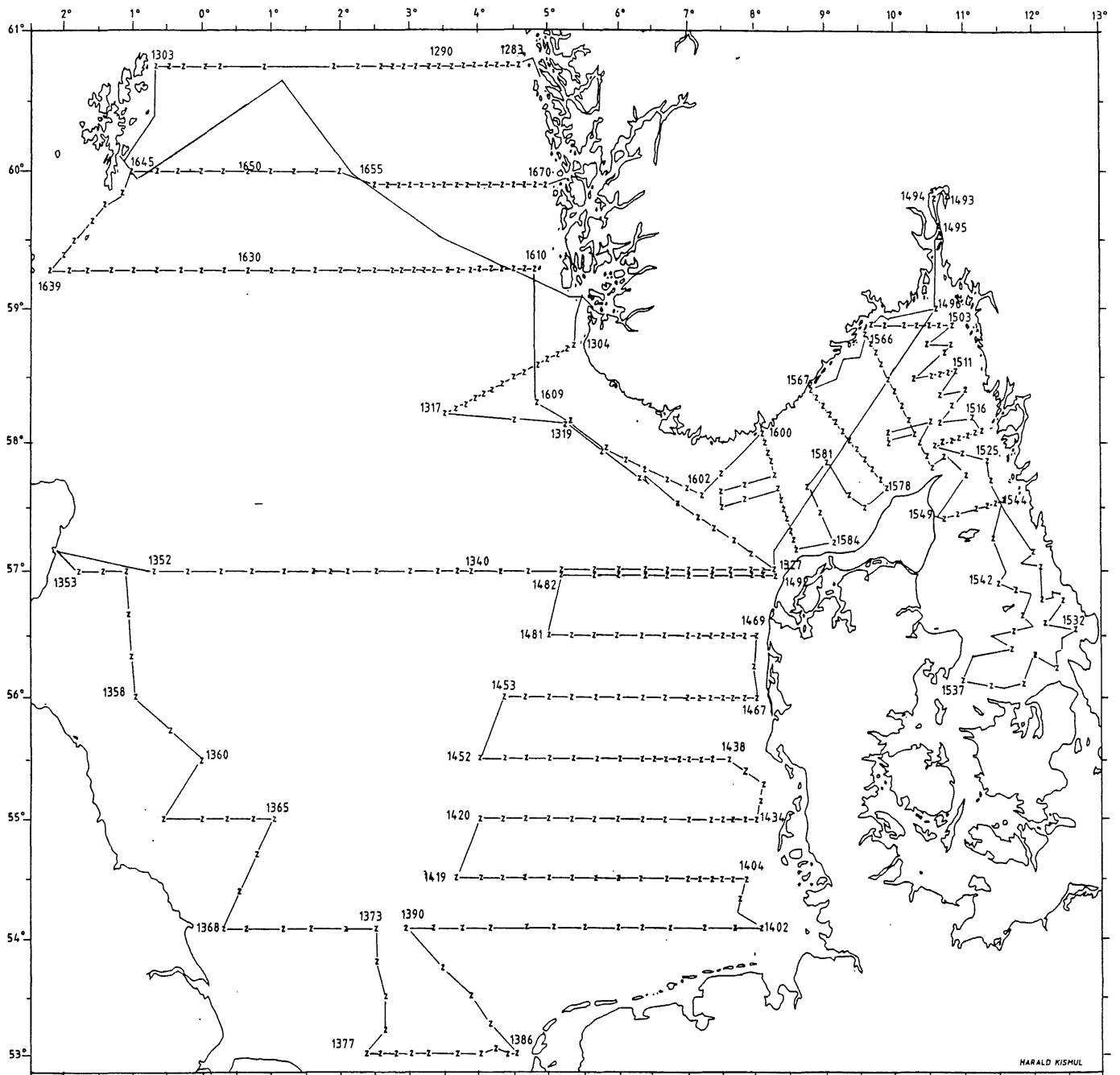


13 SEP.-6 OCT. 1991 □ Δ TRAWL ST. NO. 756-855

"G.O. SARS"



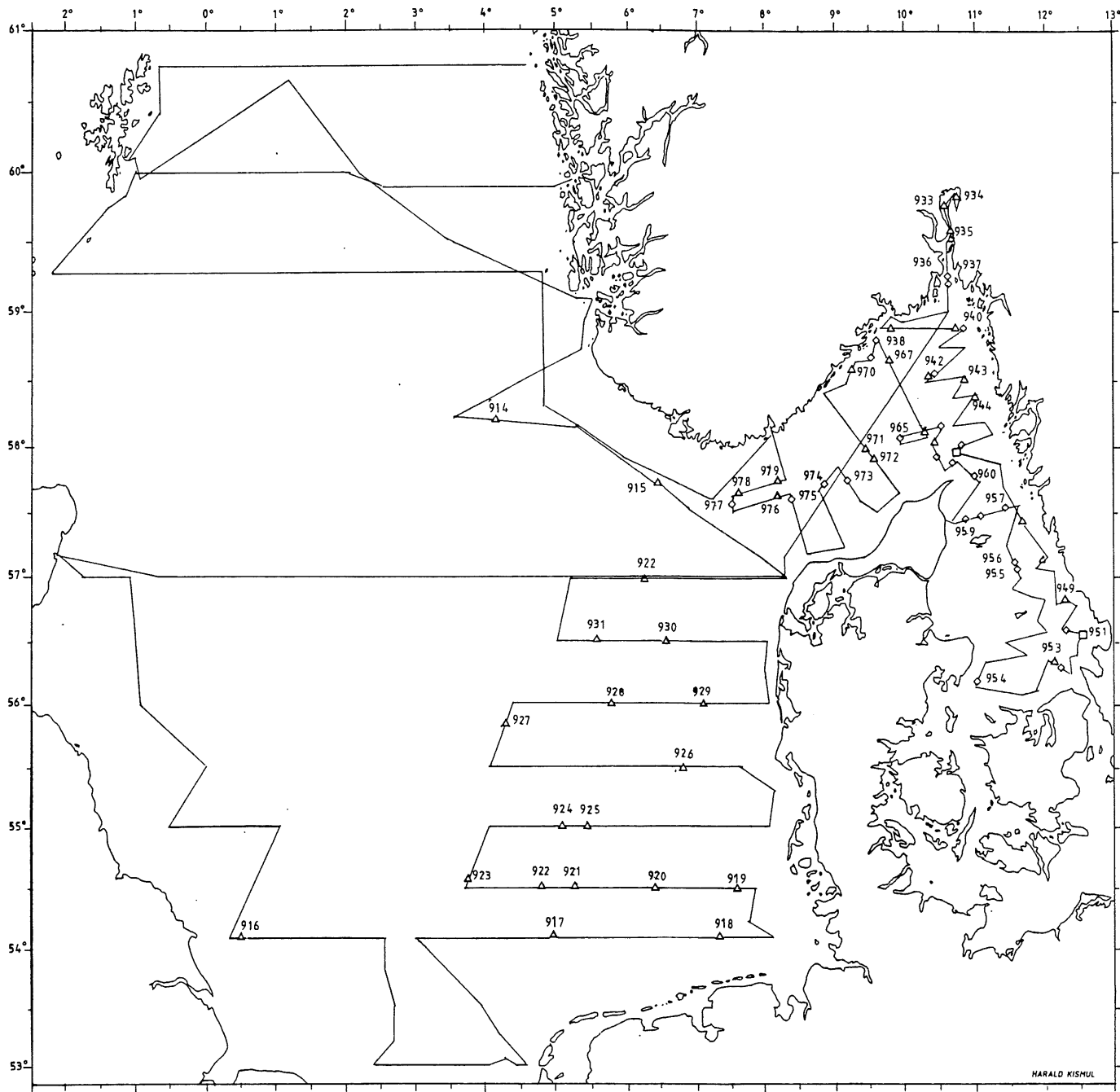




8 NOV.-13 DEC. 1991 z CTD ST. NO. 1283-1670

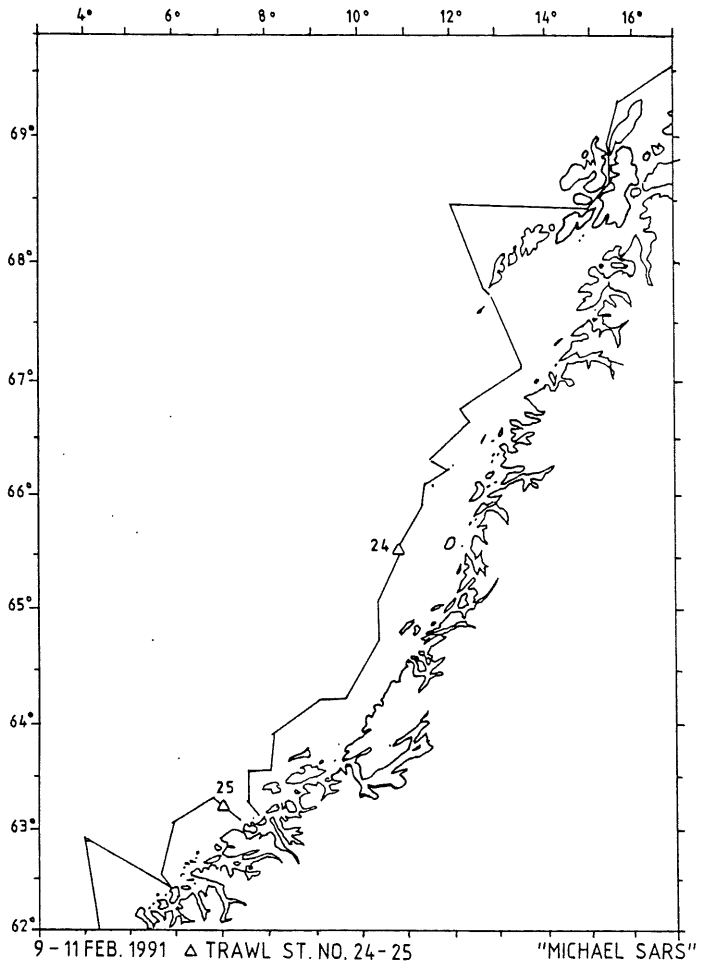
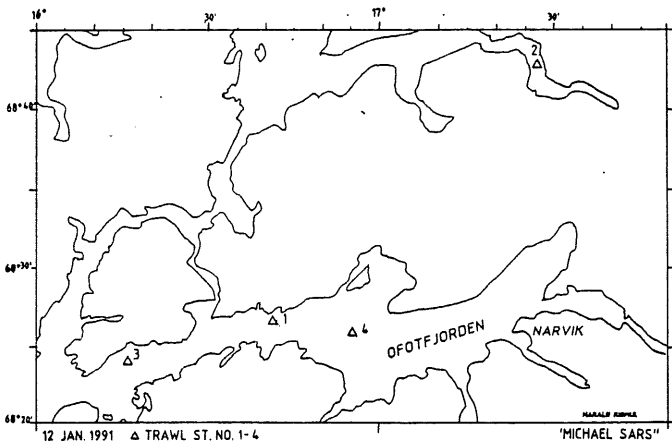
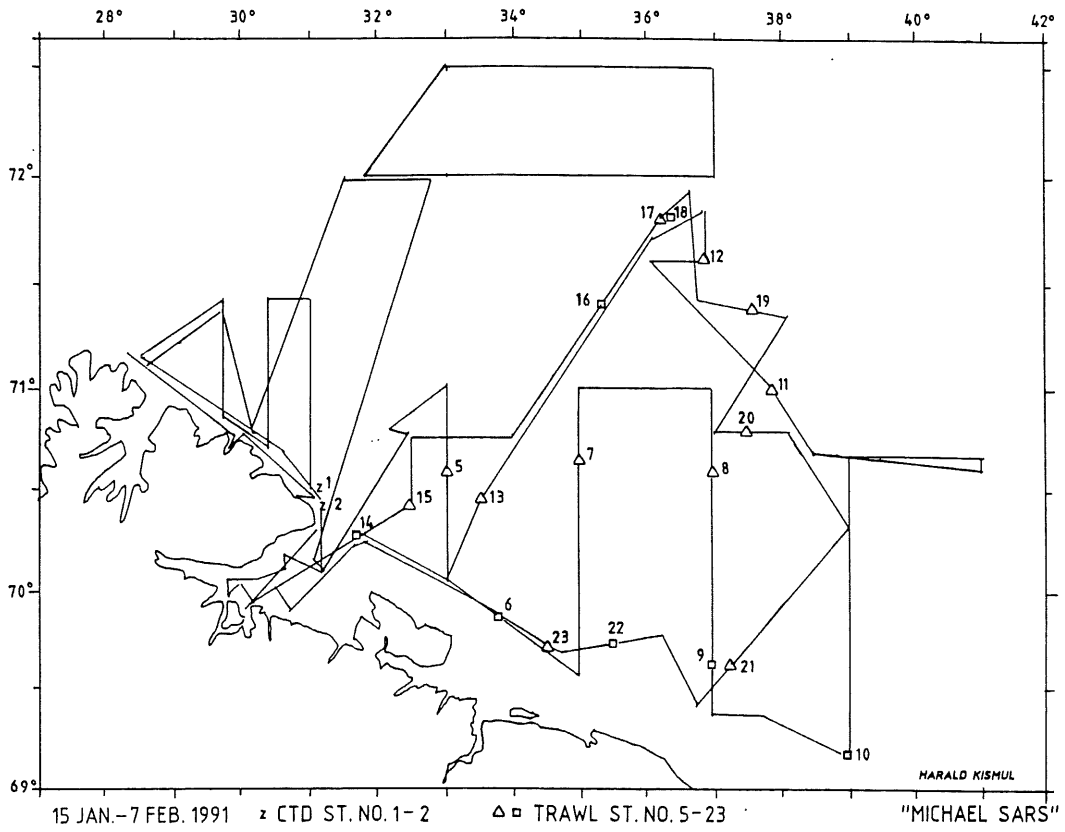
HARALD KISMUL

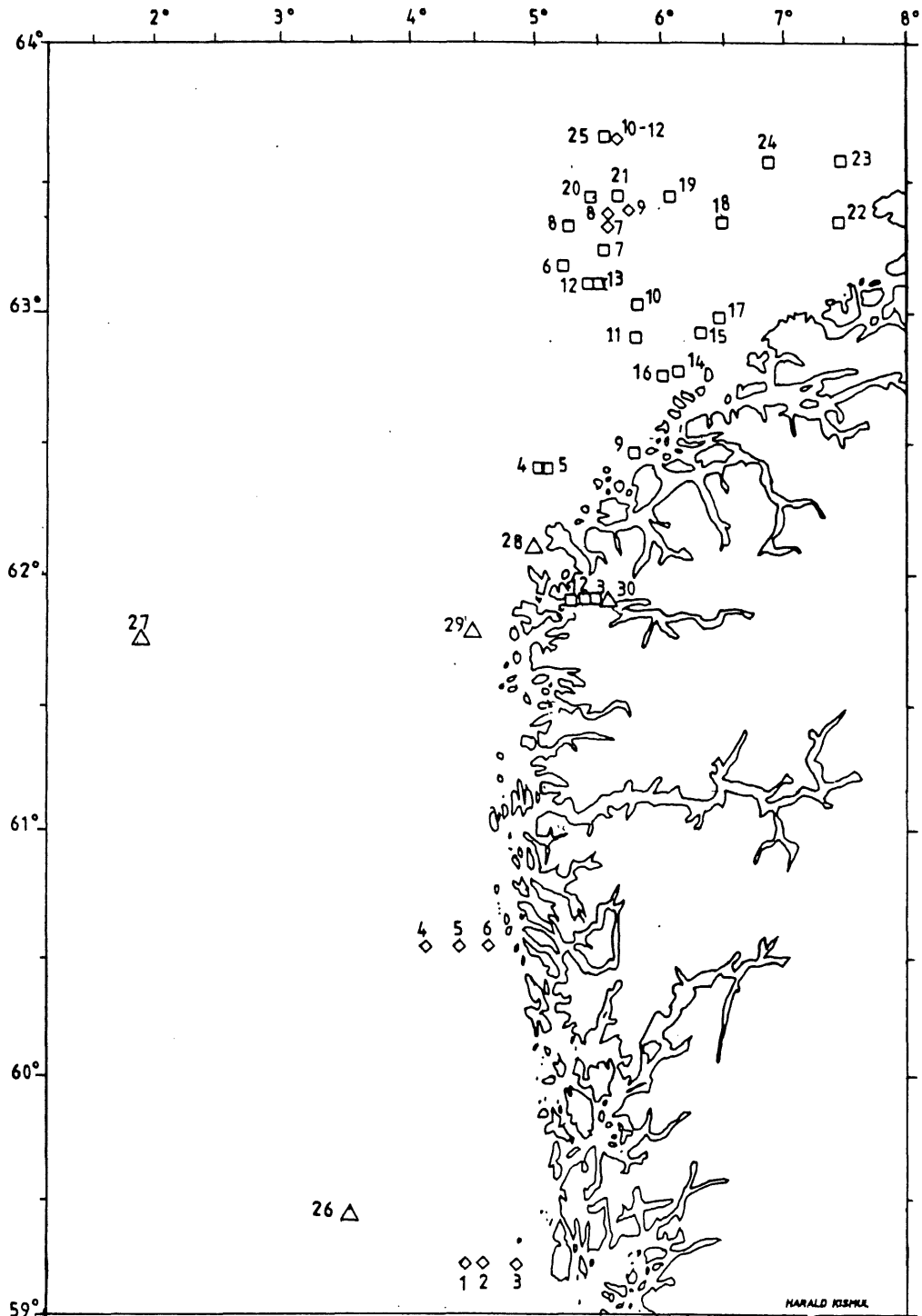
"G.O.SARS"



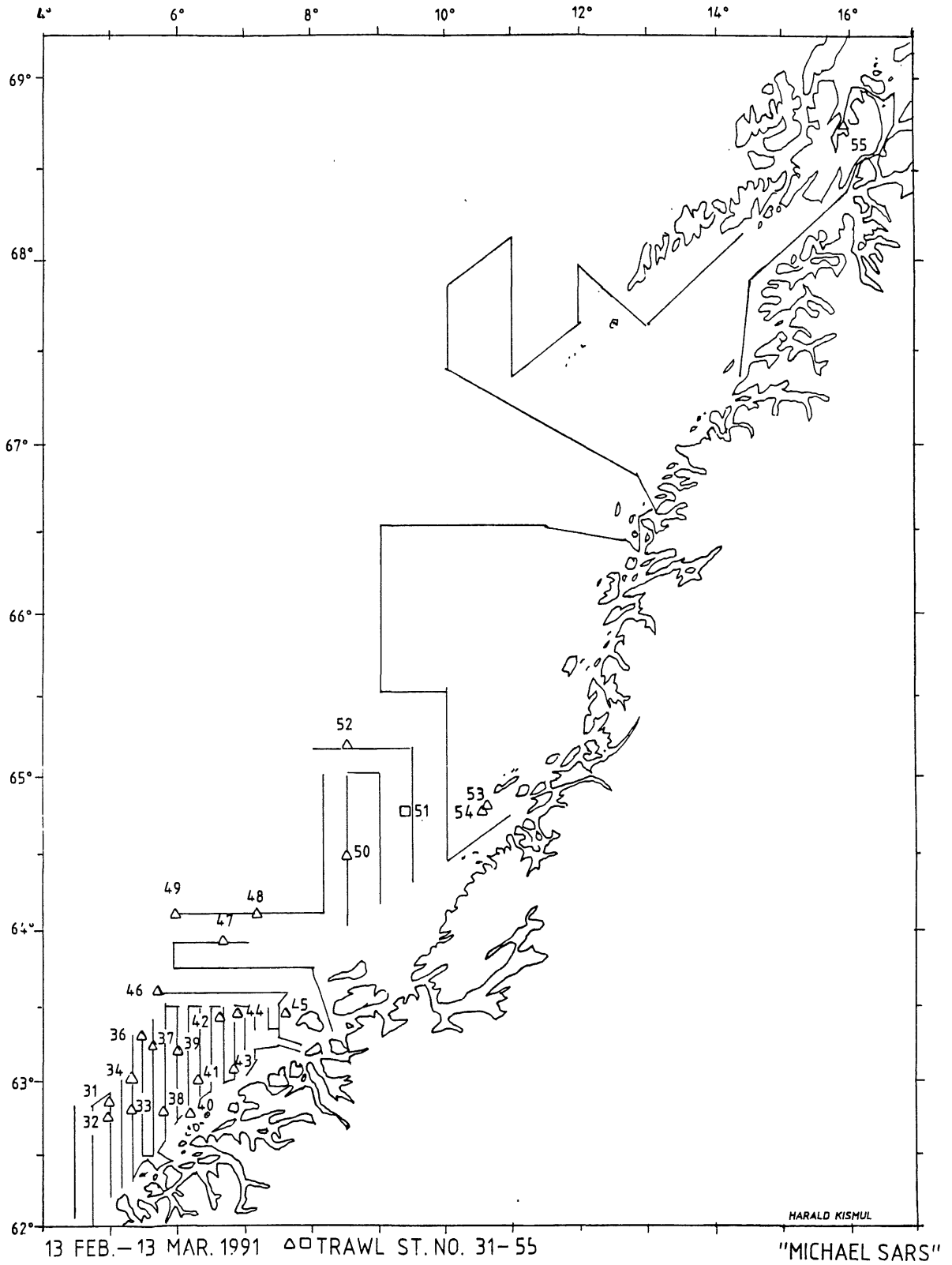
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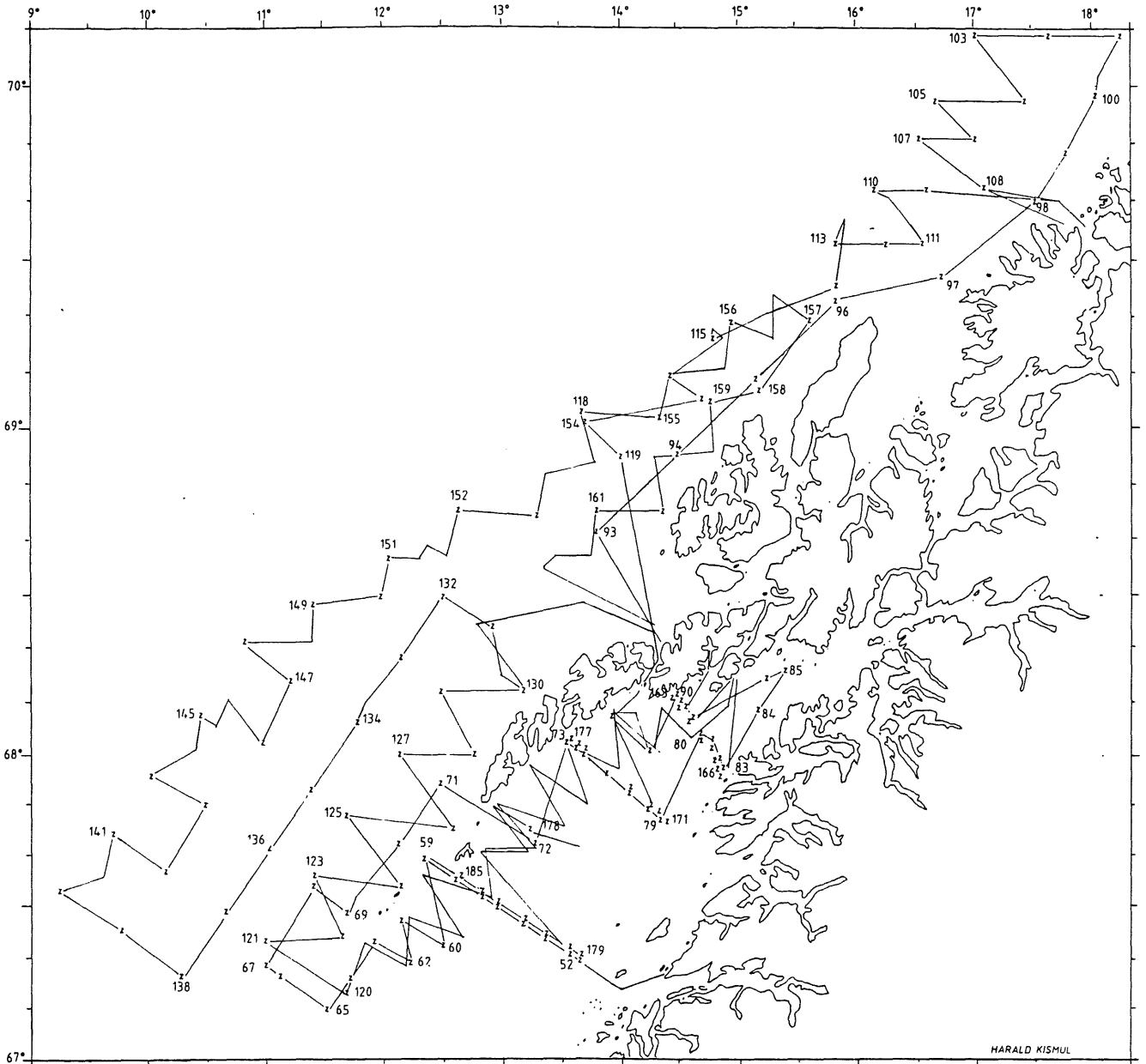
"G.O.SARS"





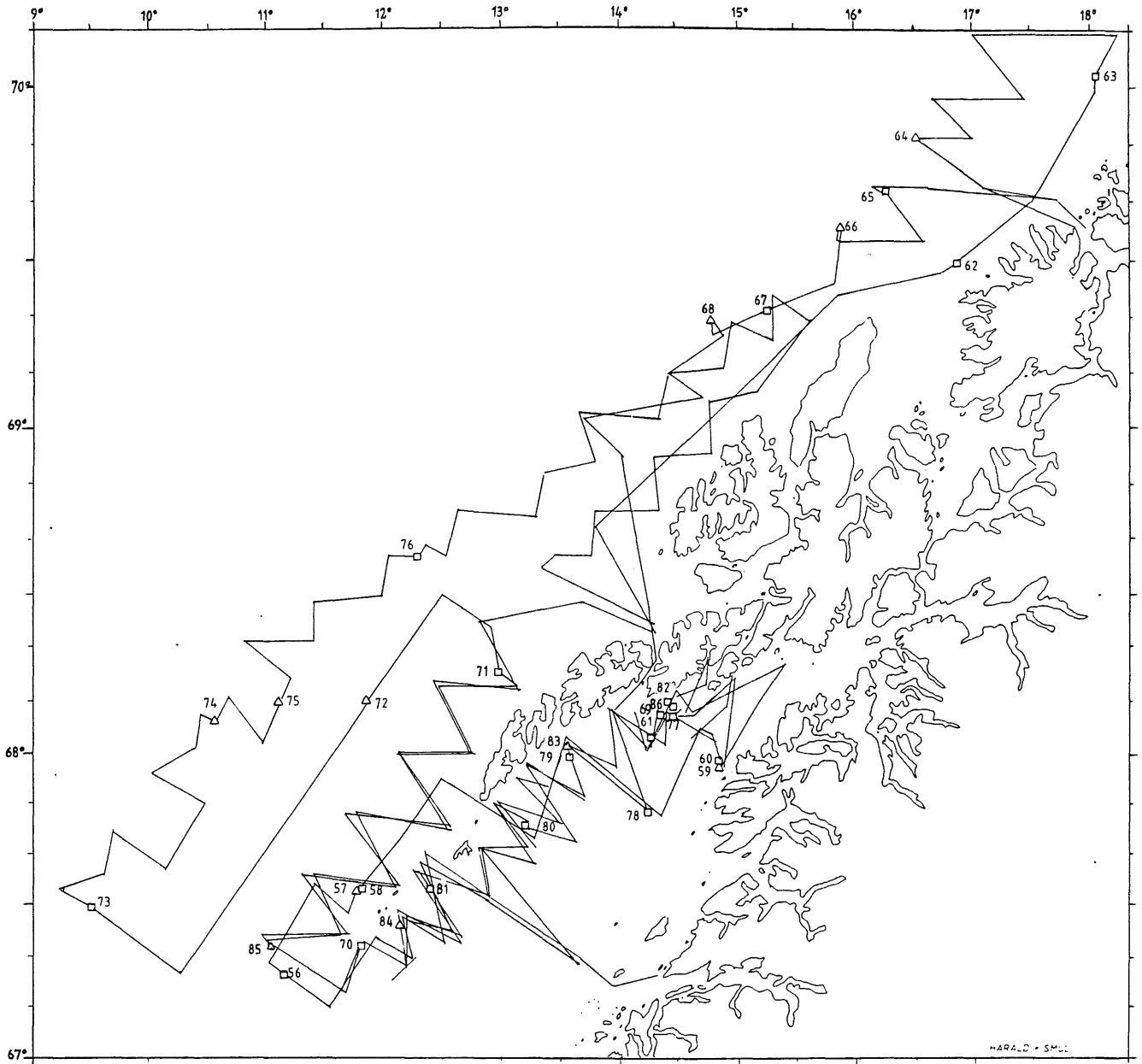
13 FEB.- 3 MAR. 1991 Δ TRAWL ST. NO. 26-30 \square MOCNESS 1-25 \diamond ISAAC KIDD 1-12





14 MAR - 1 APR 1991 * CTD ST. NO. 52-185

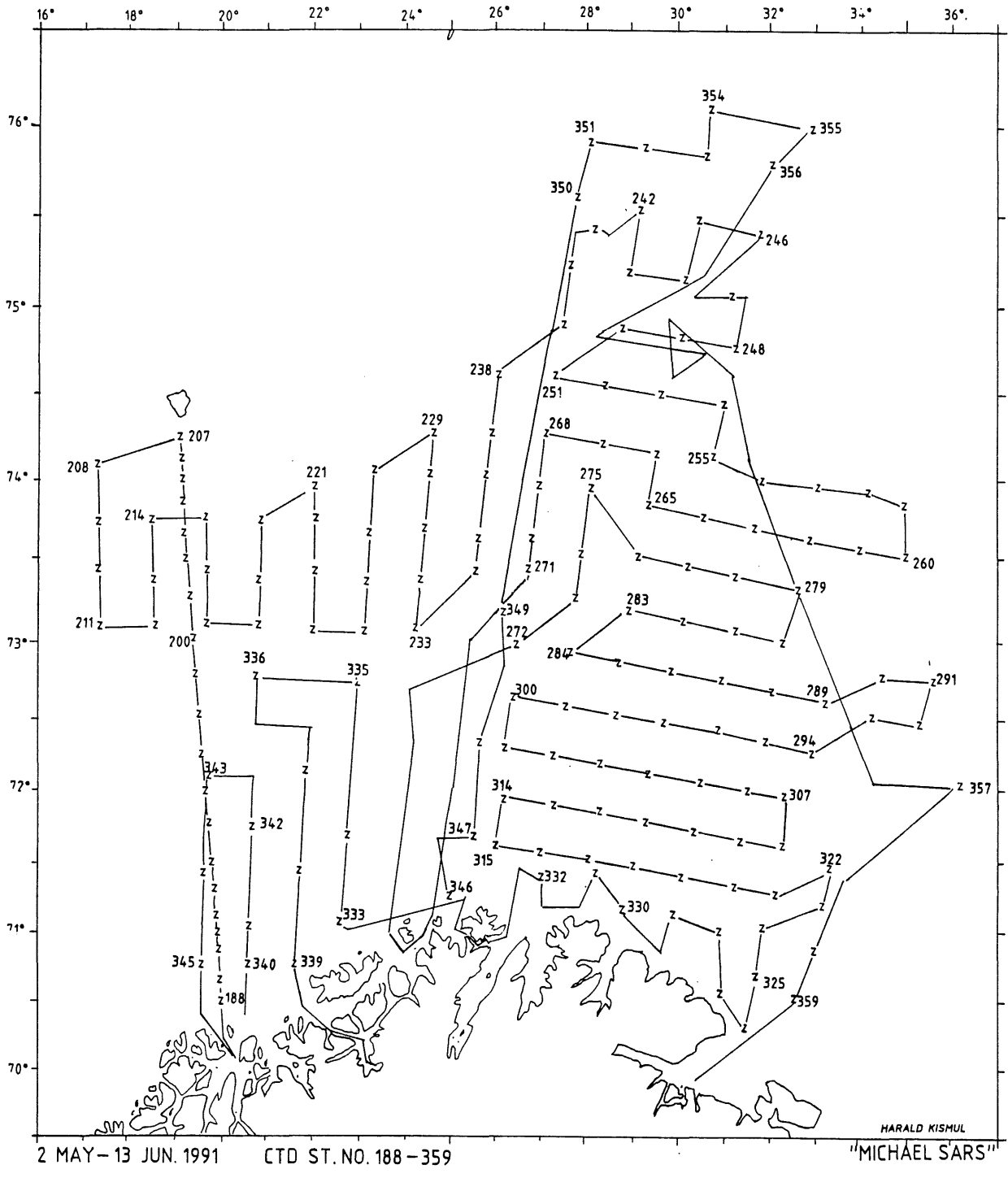
HARALD KISMUL
"MICHAEL SARS"

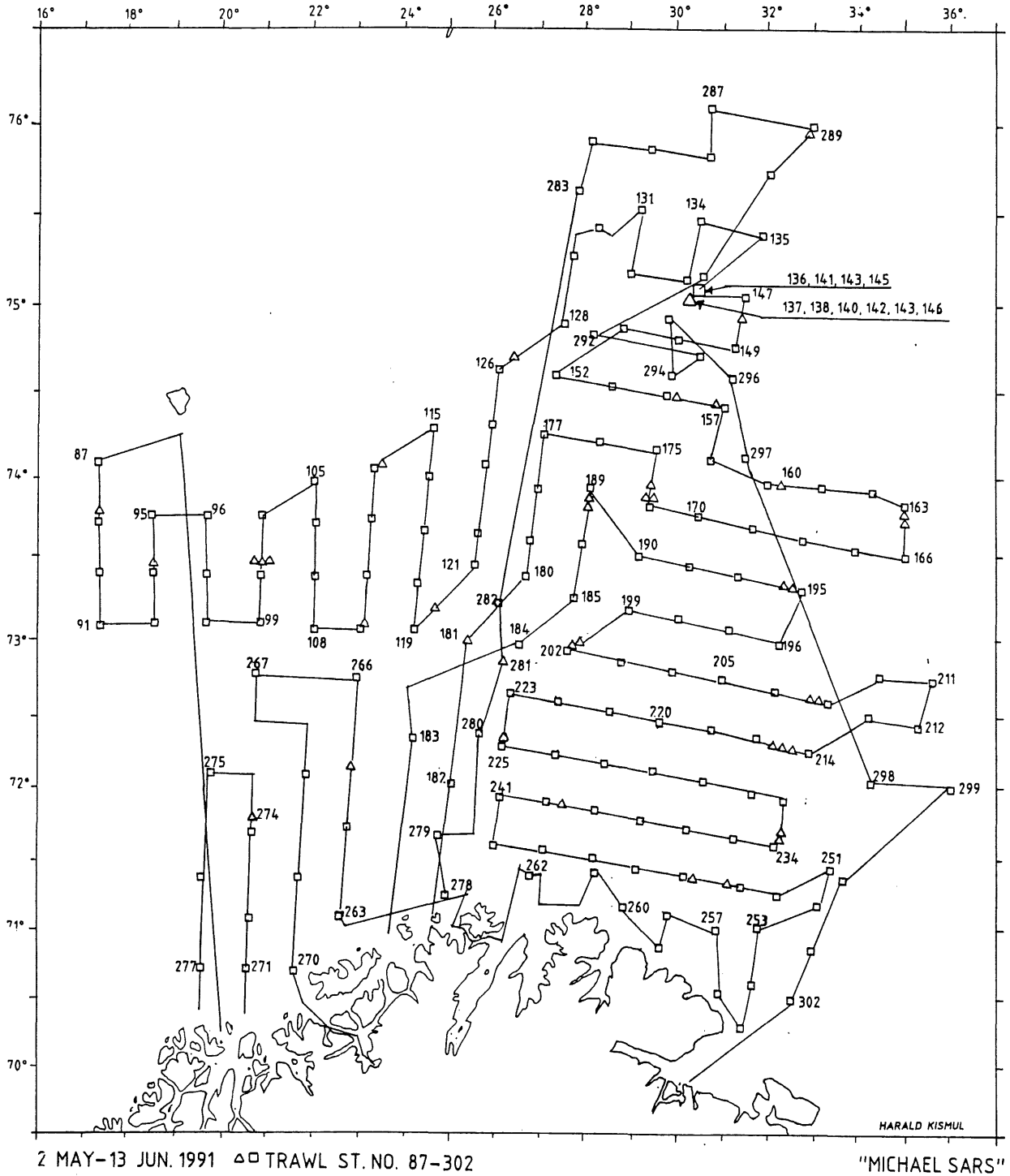


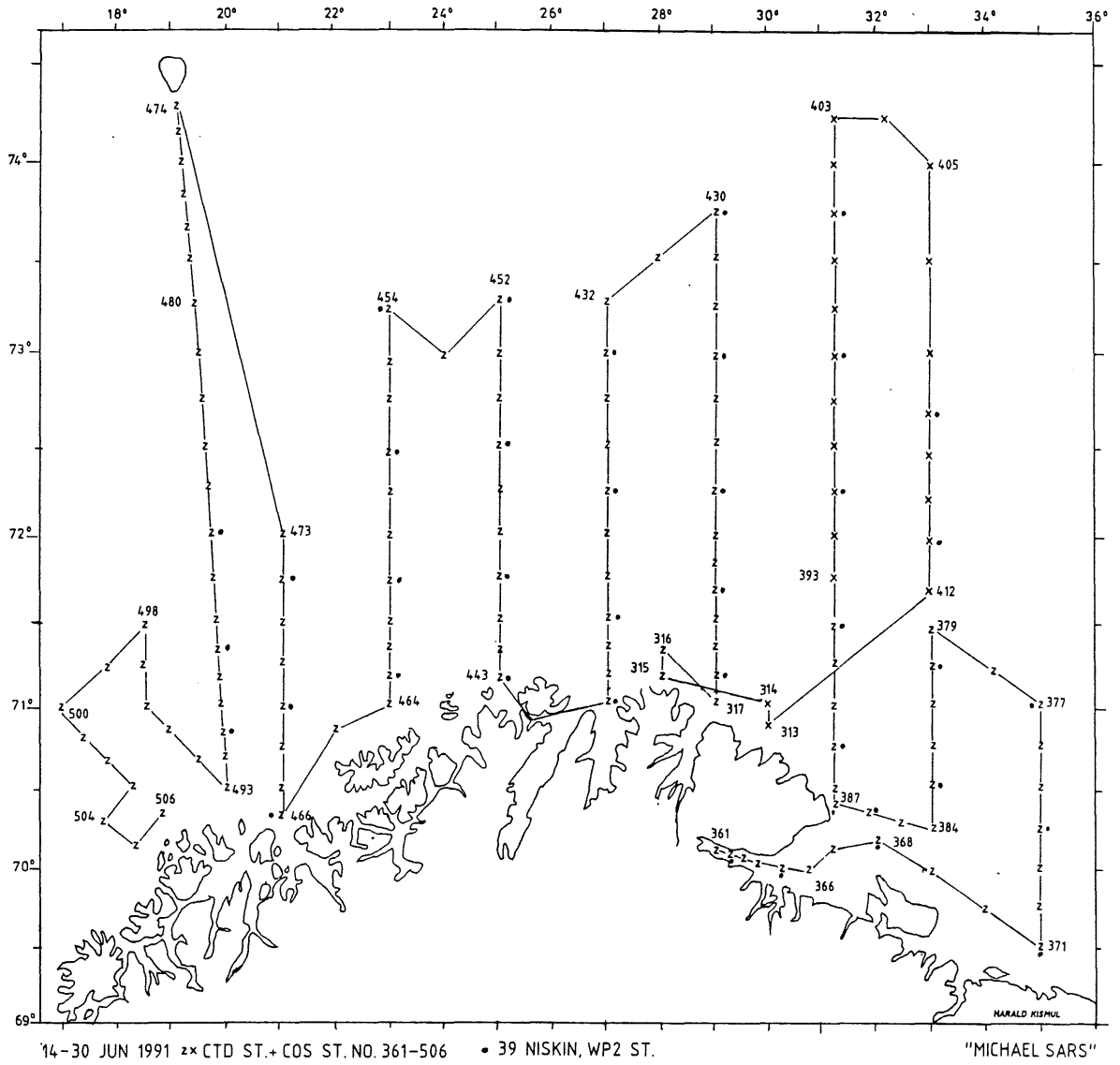
14 MAR.- 1 APR 1991 \square \triangle TRAWL ST. NO. 56-86

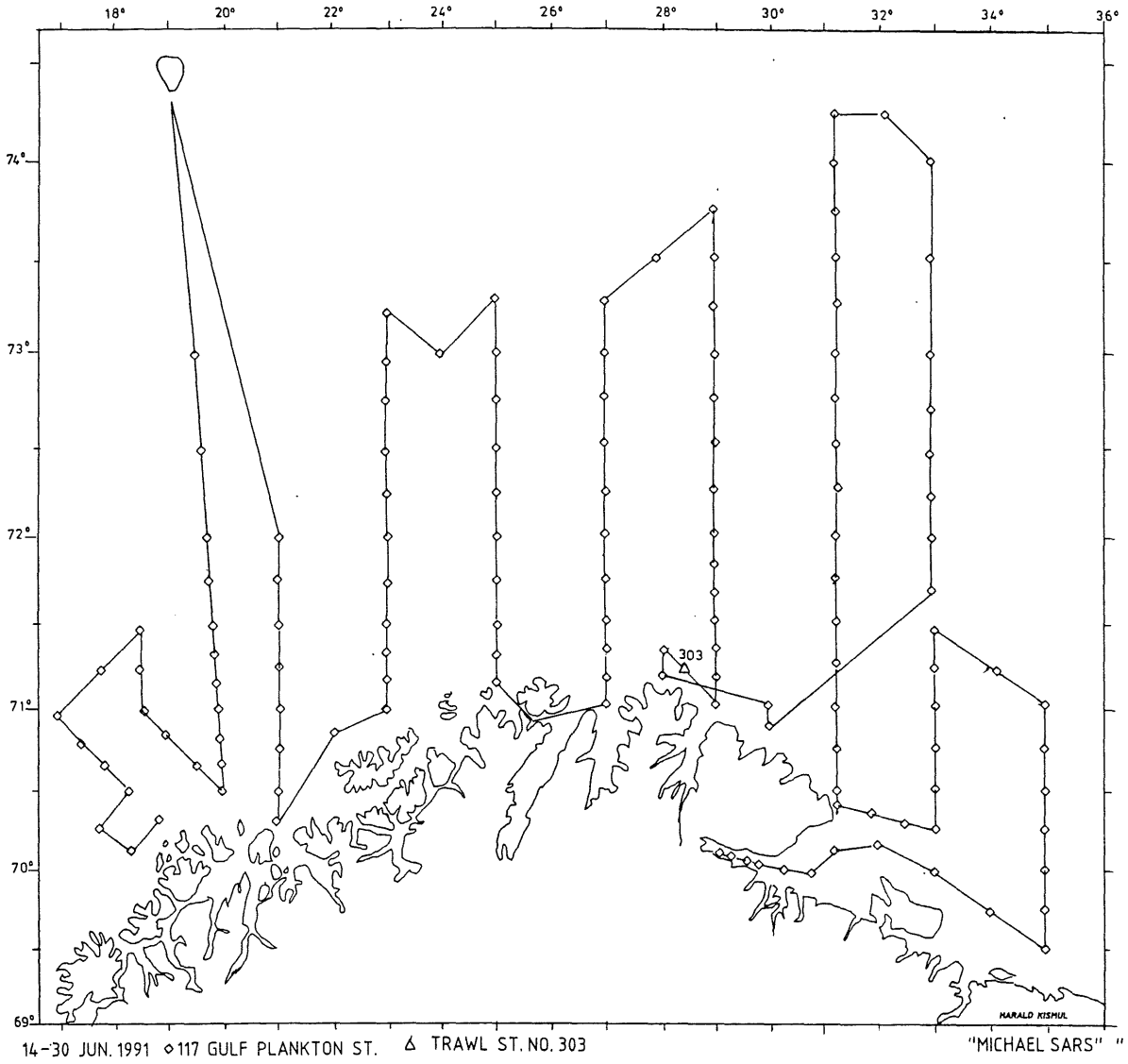
HARALD SMUL

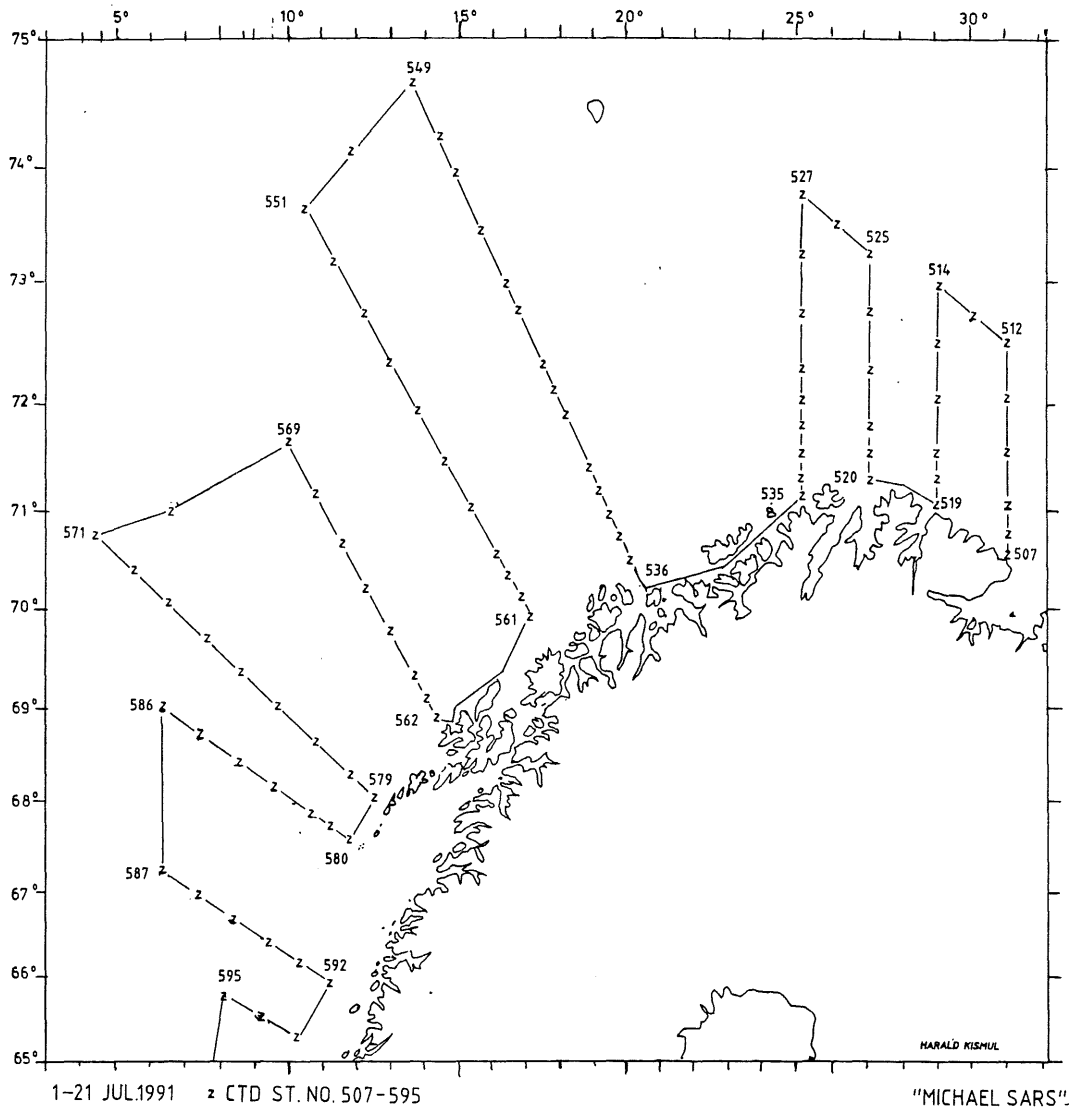
"MICHAEL SARS"

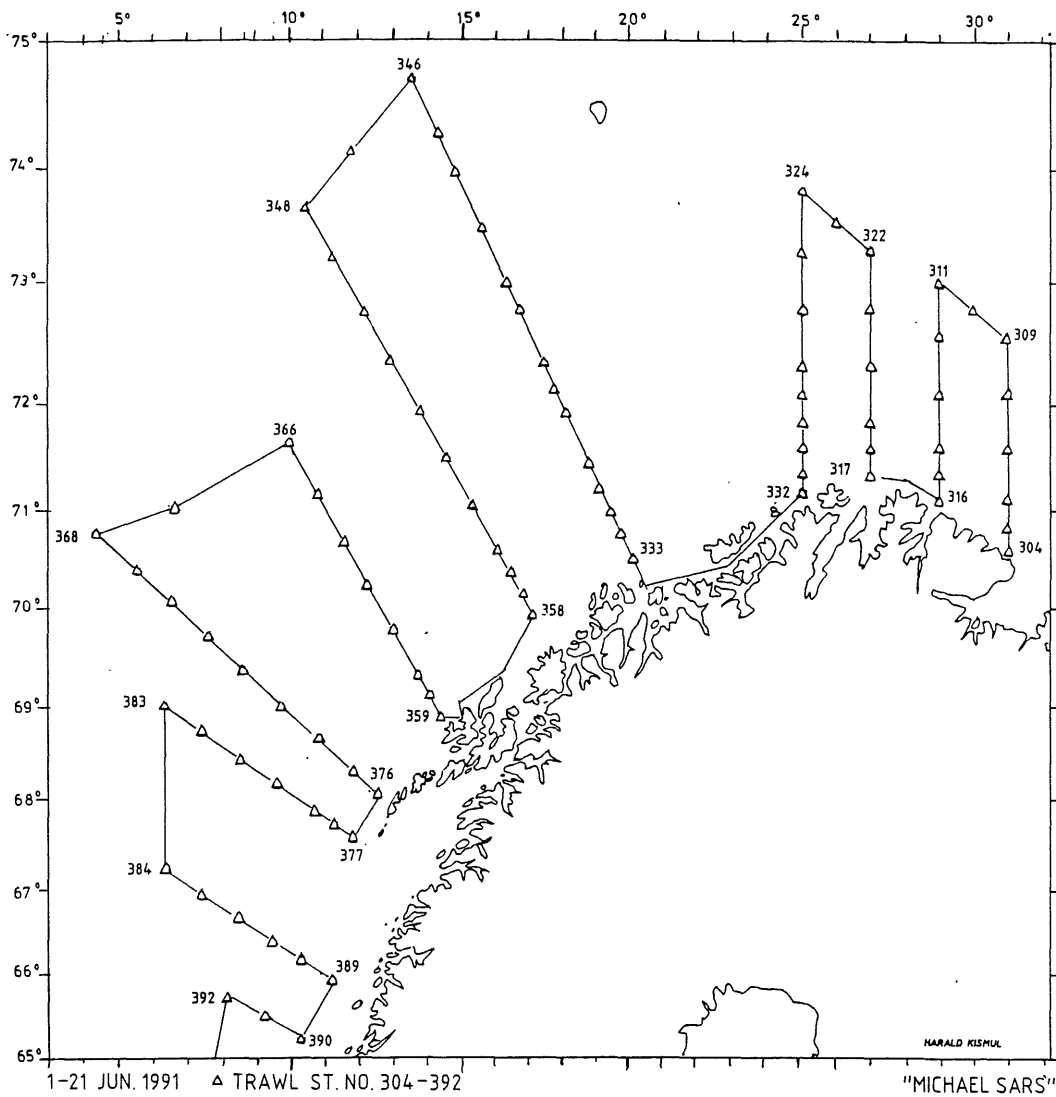


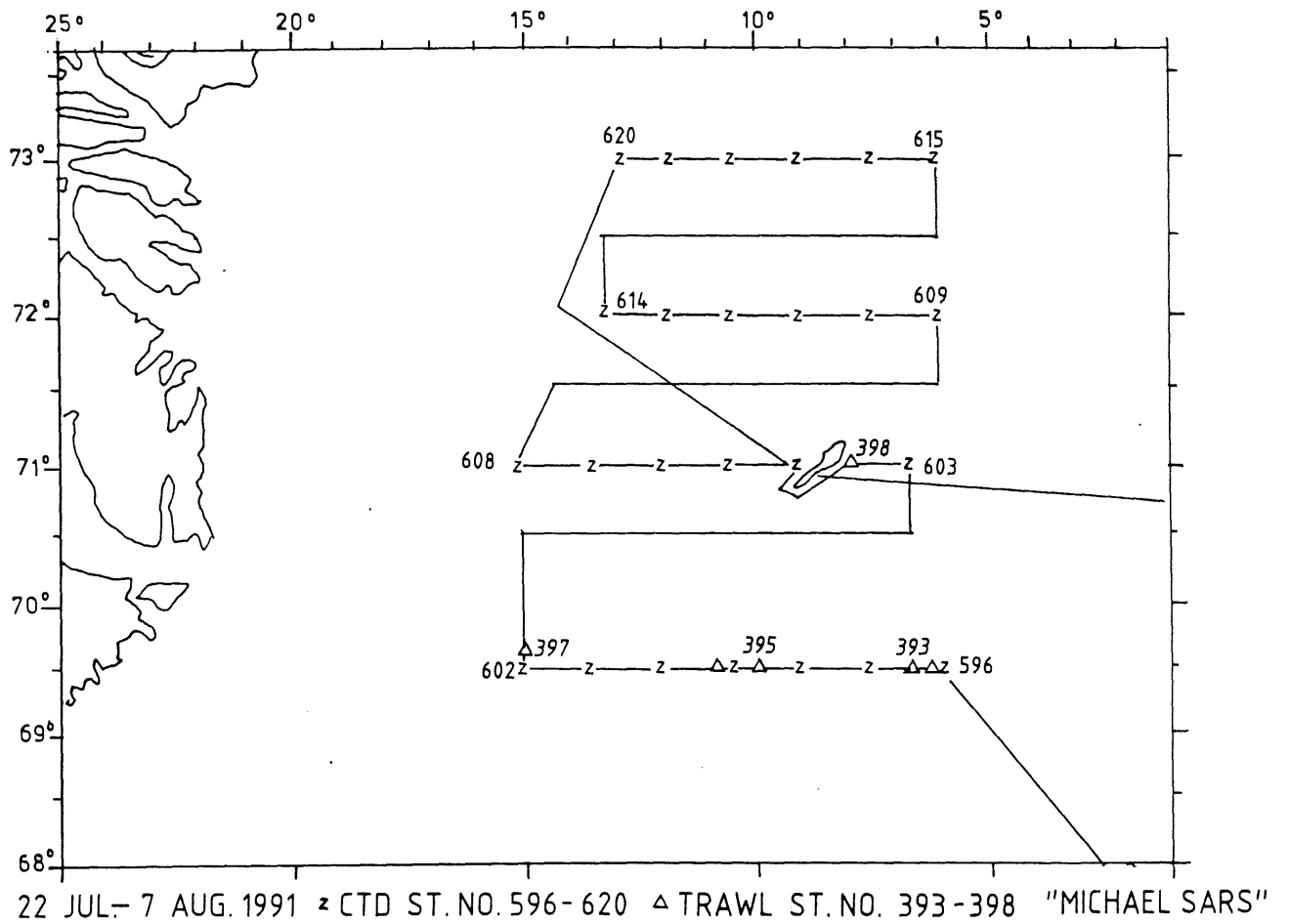


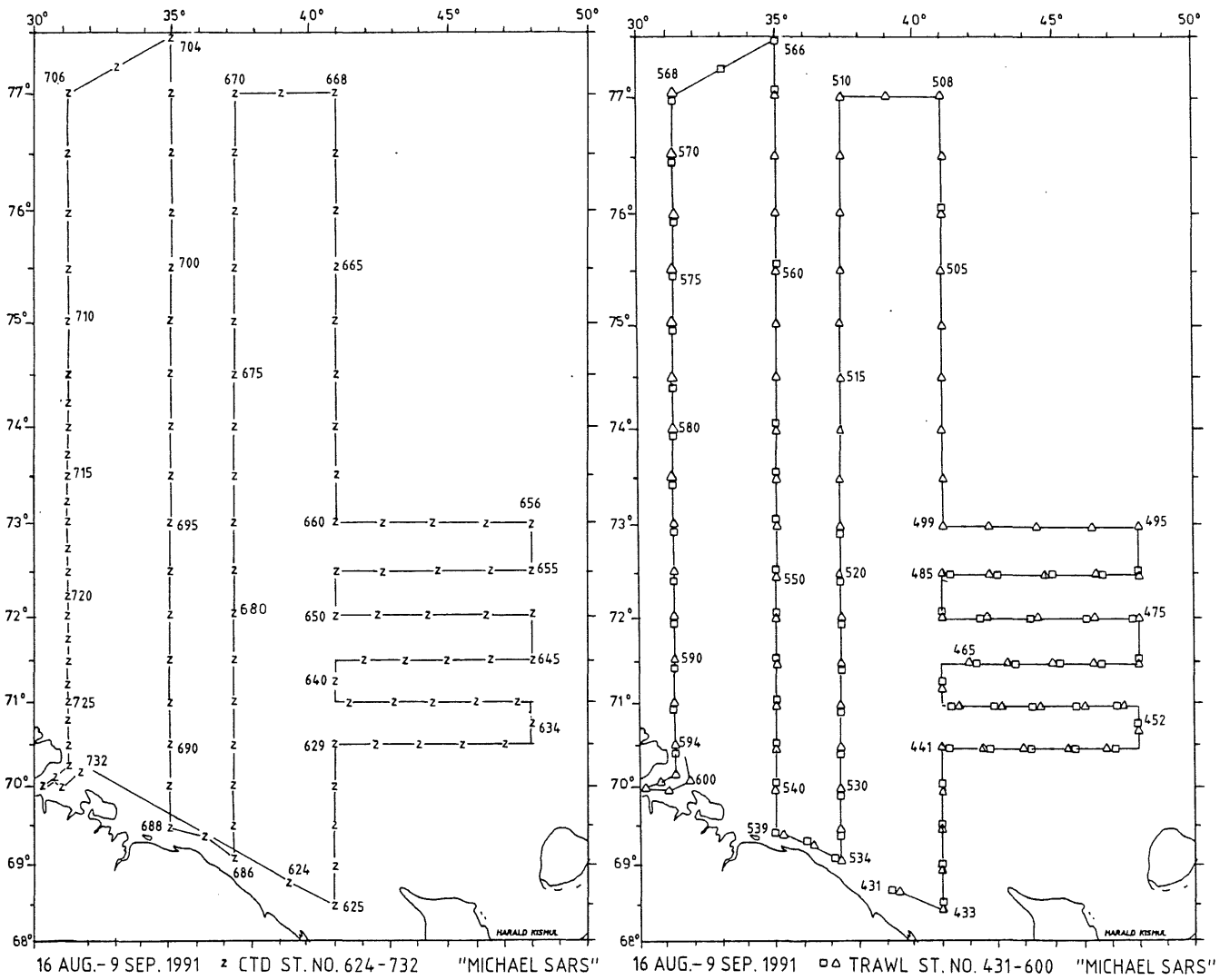


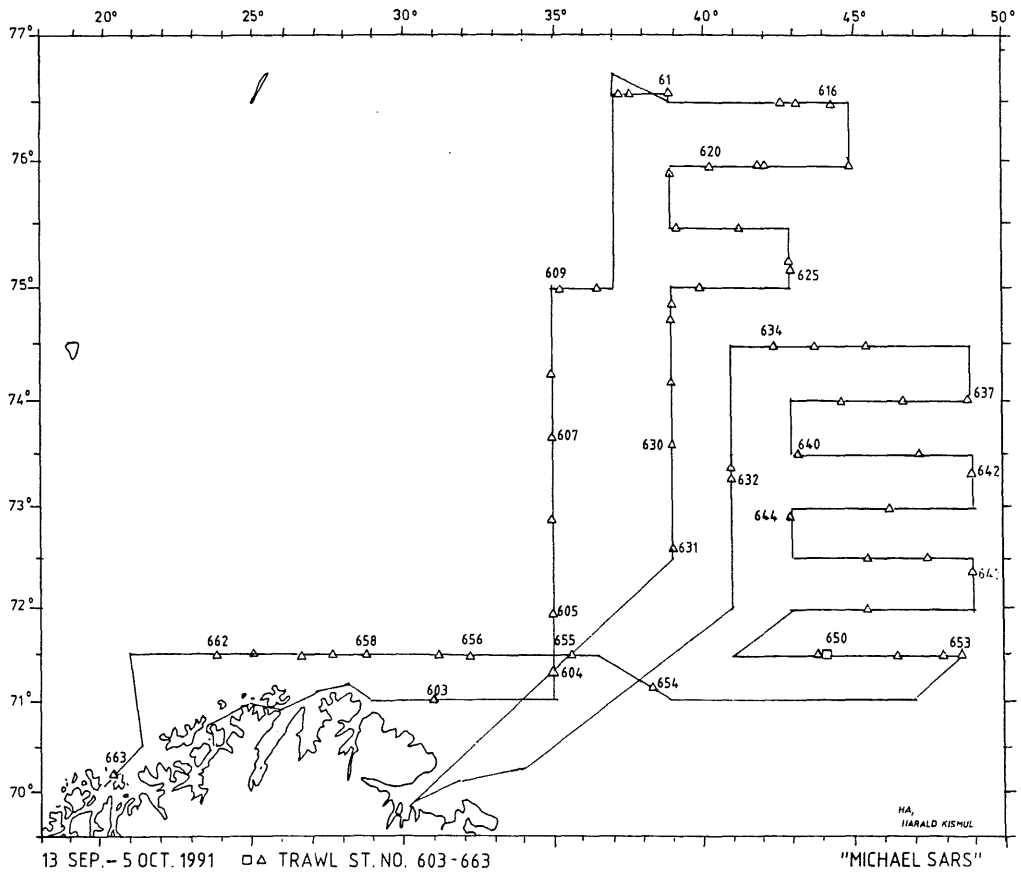
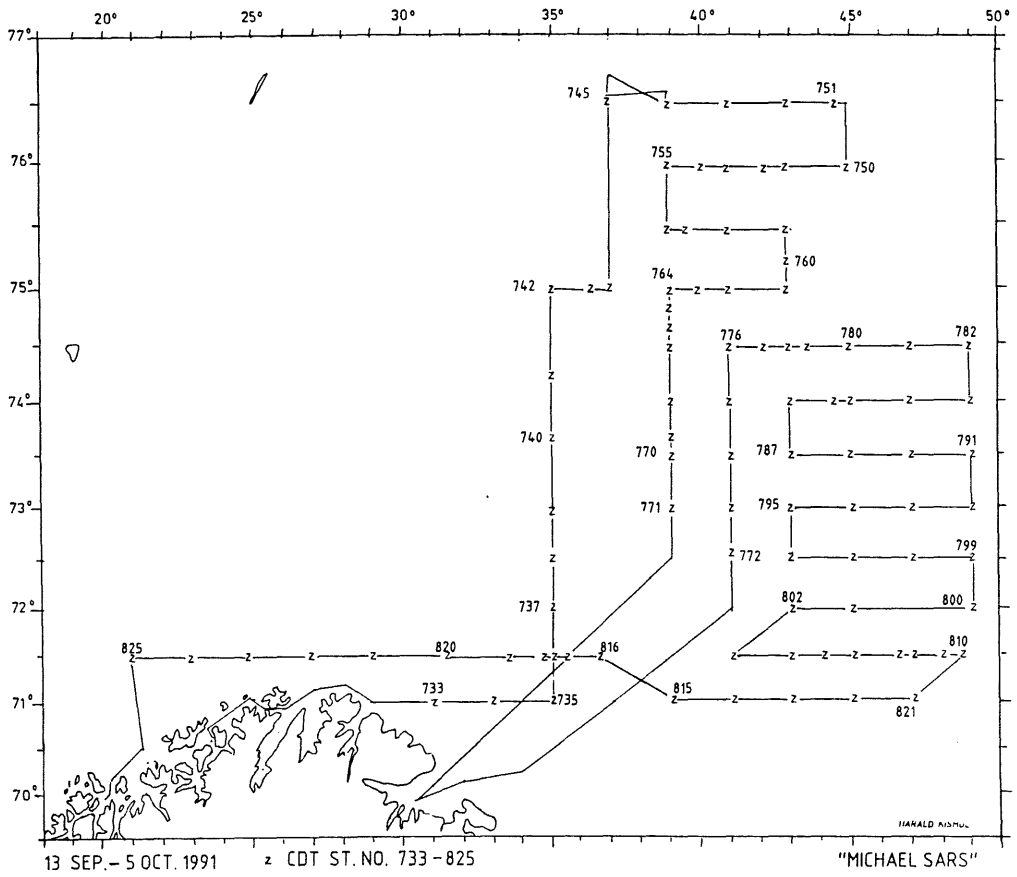


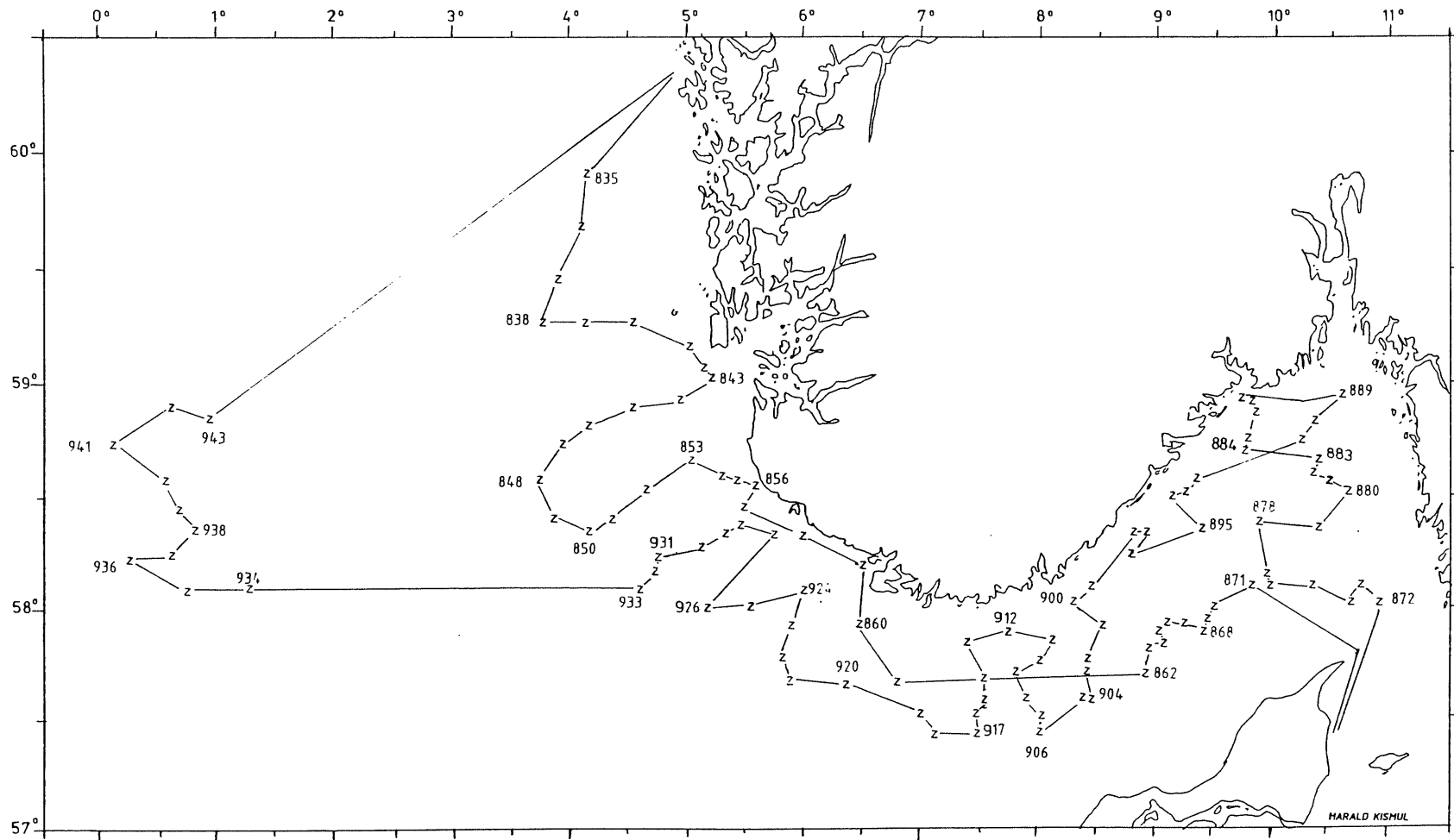






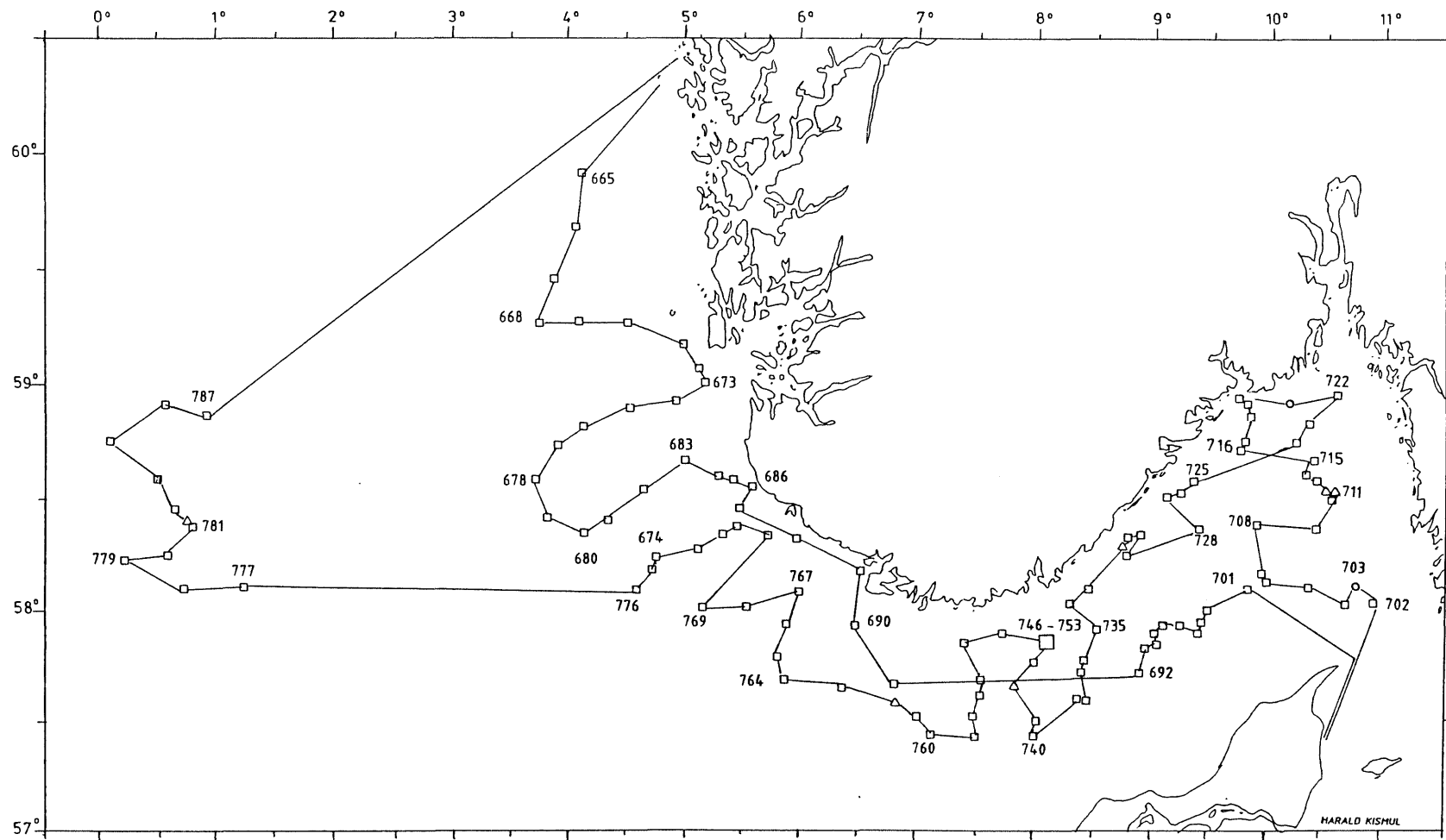






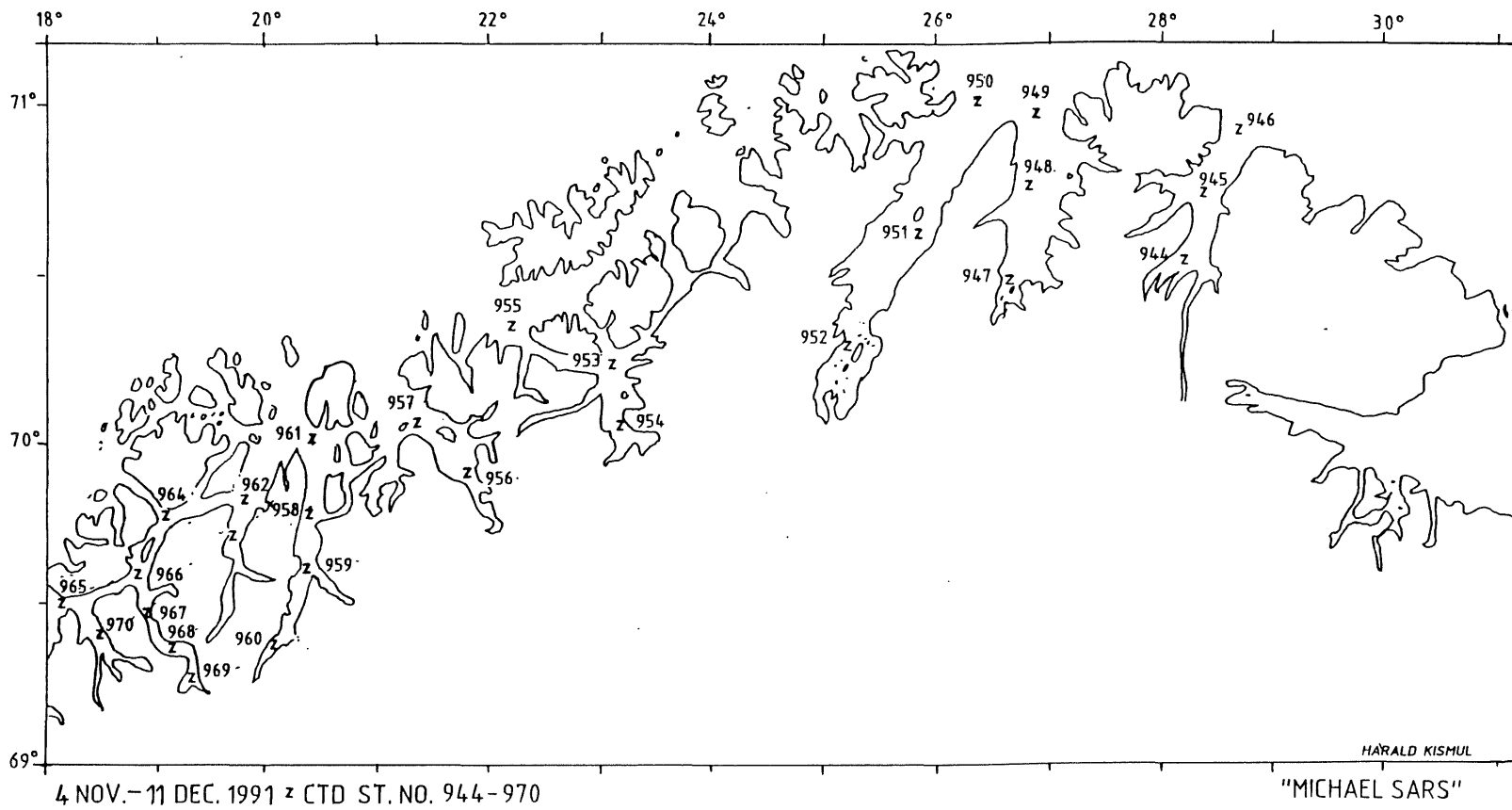
14-29 OCT. 1991 z CTD ST. NO. 835-943

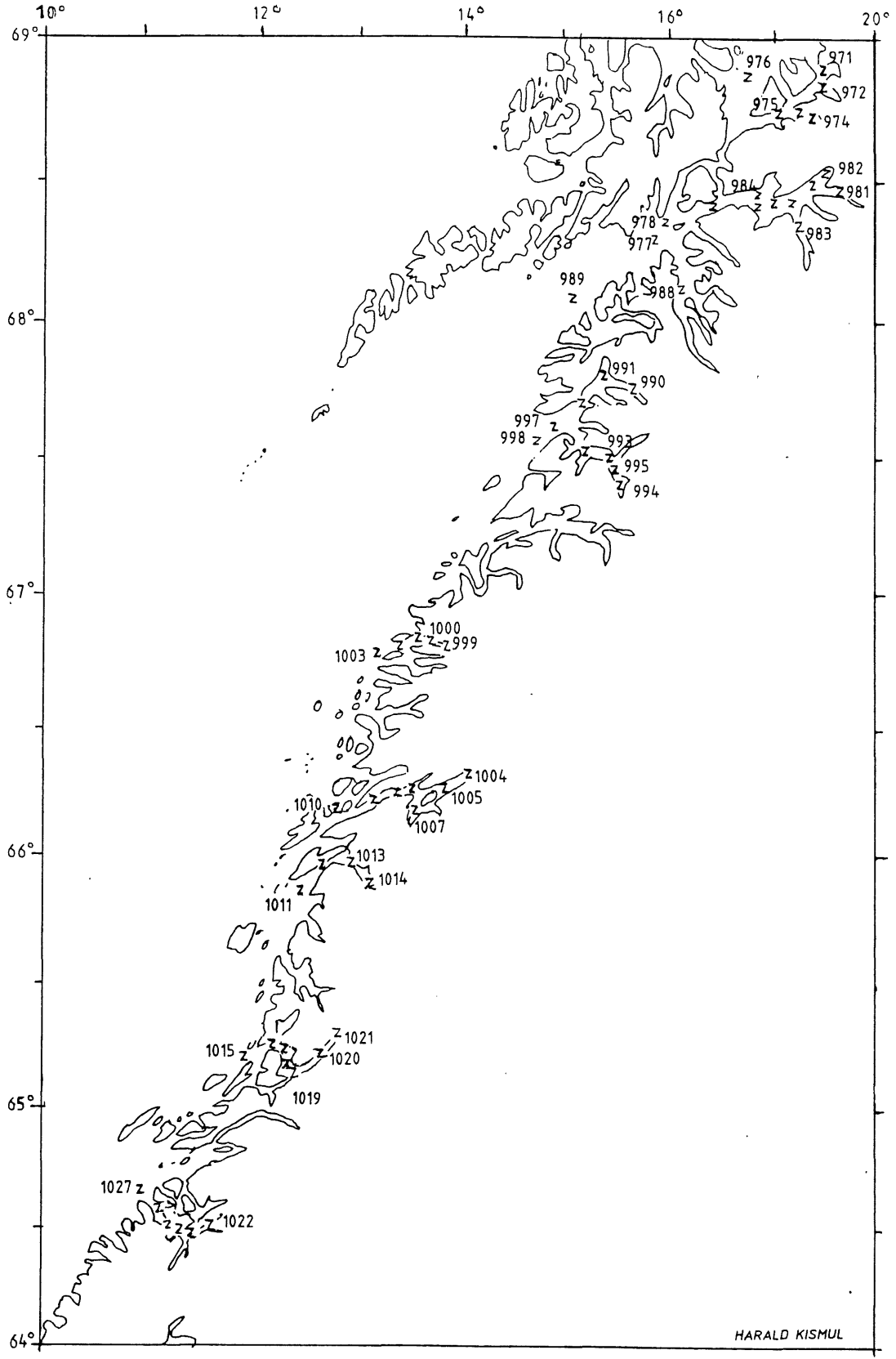
"MICHAEL SARS"



14-29 OCT 1991 □△ TRAWL ST. NO. 665-787 ○ 2 GRAB ST.

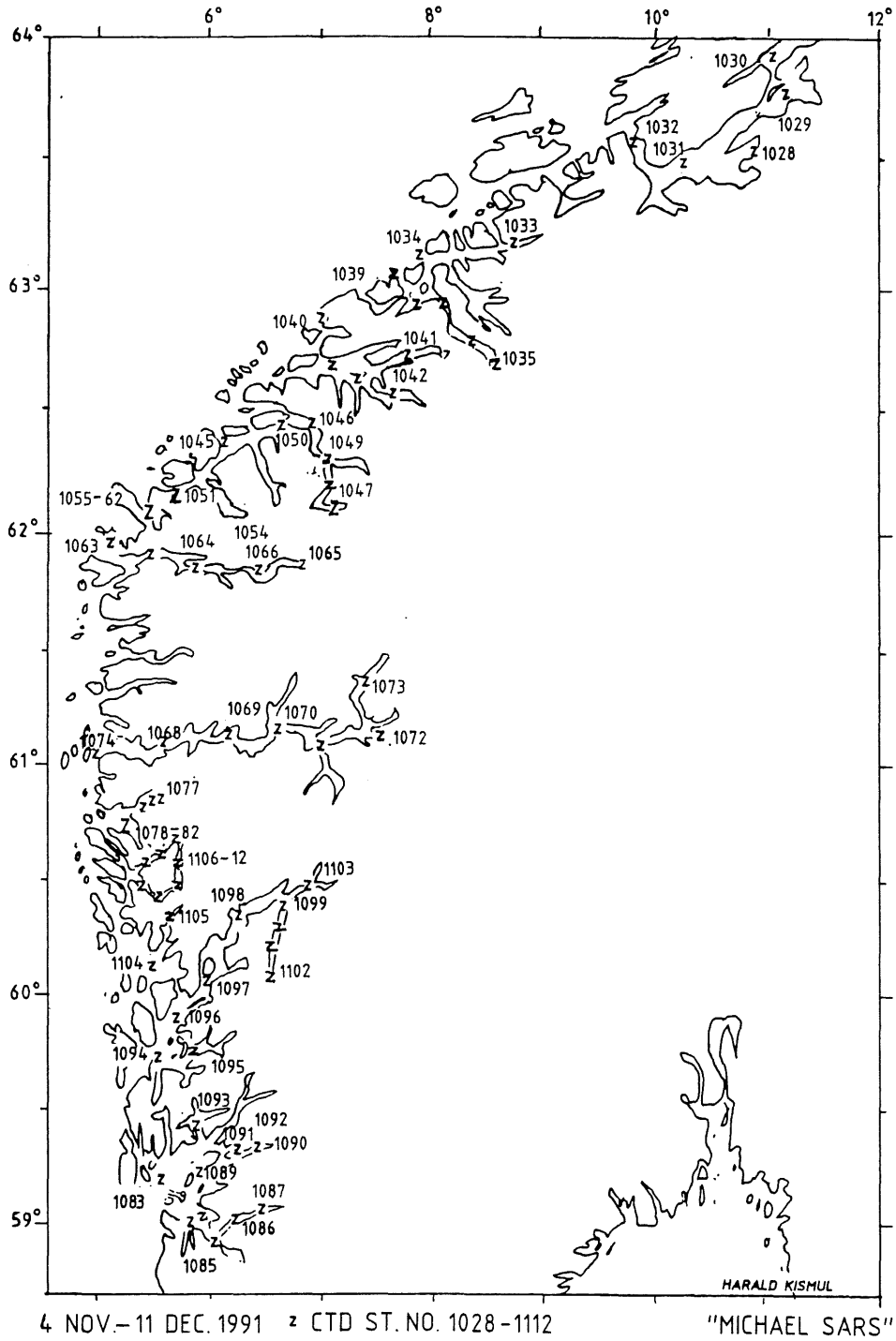
"MICHAEL SARS"

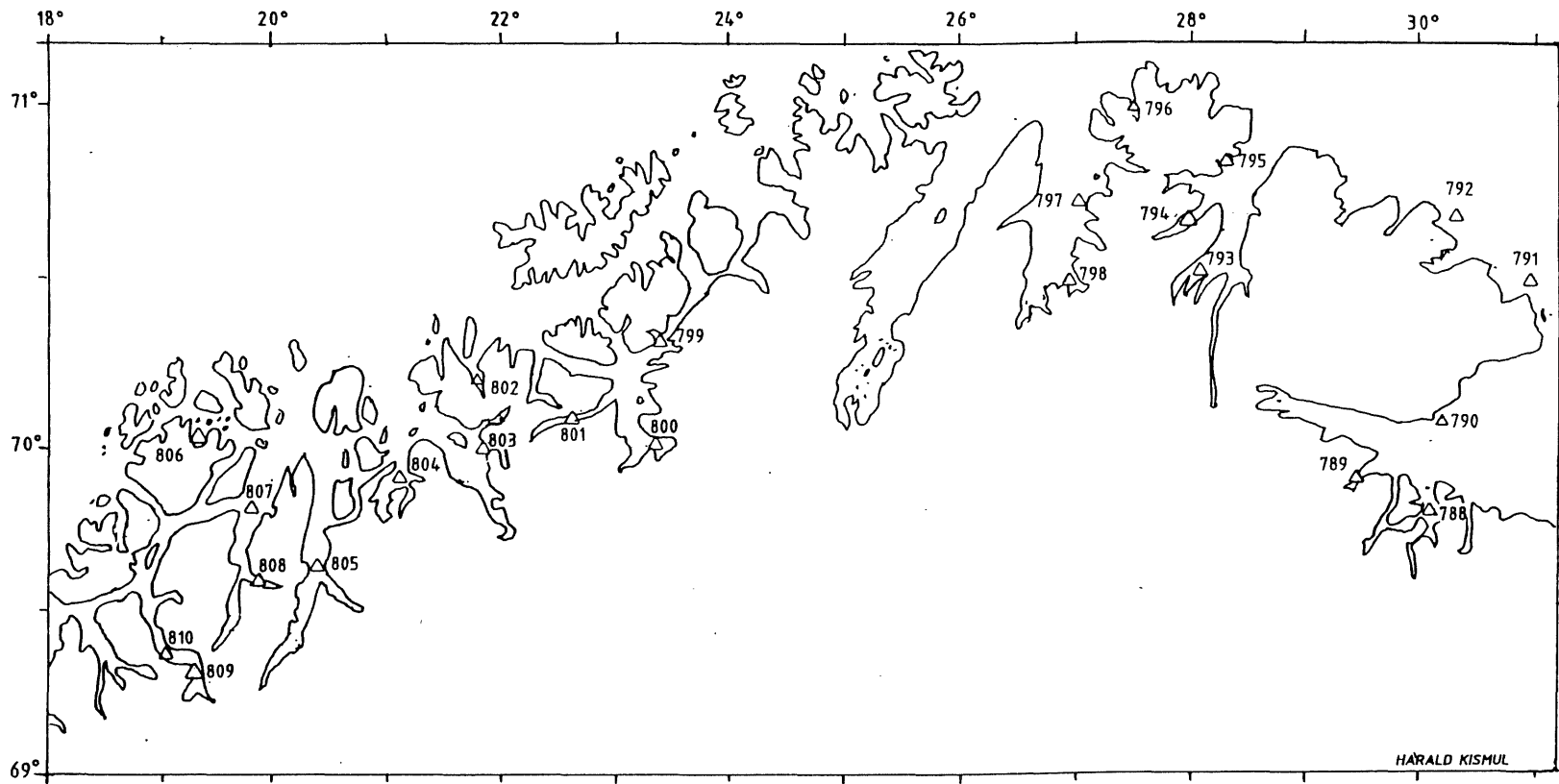




4 NOV.-11 DEC. 1991 z CTD ST. NO. 971-1027

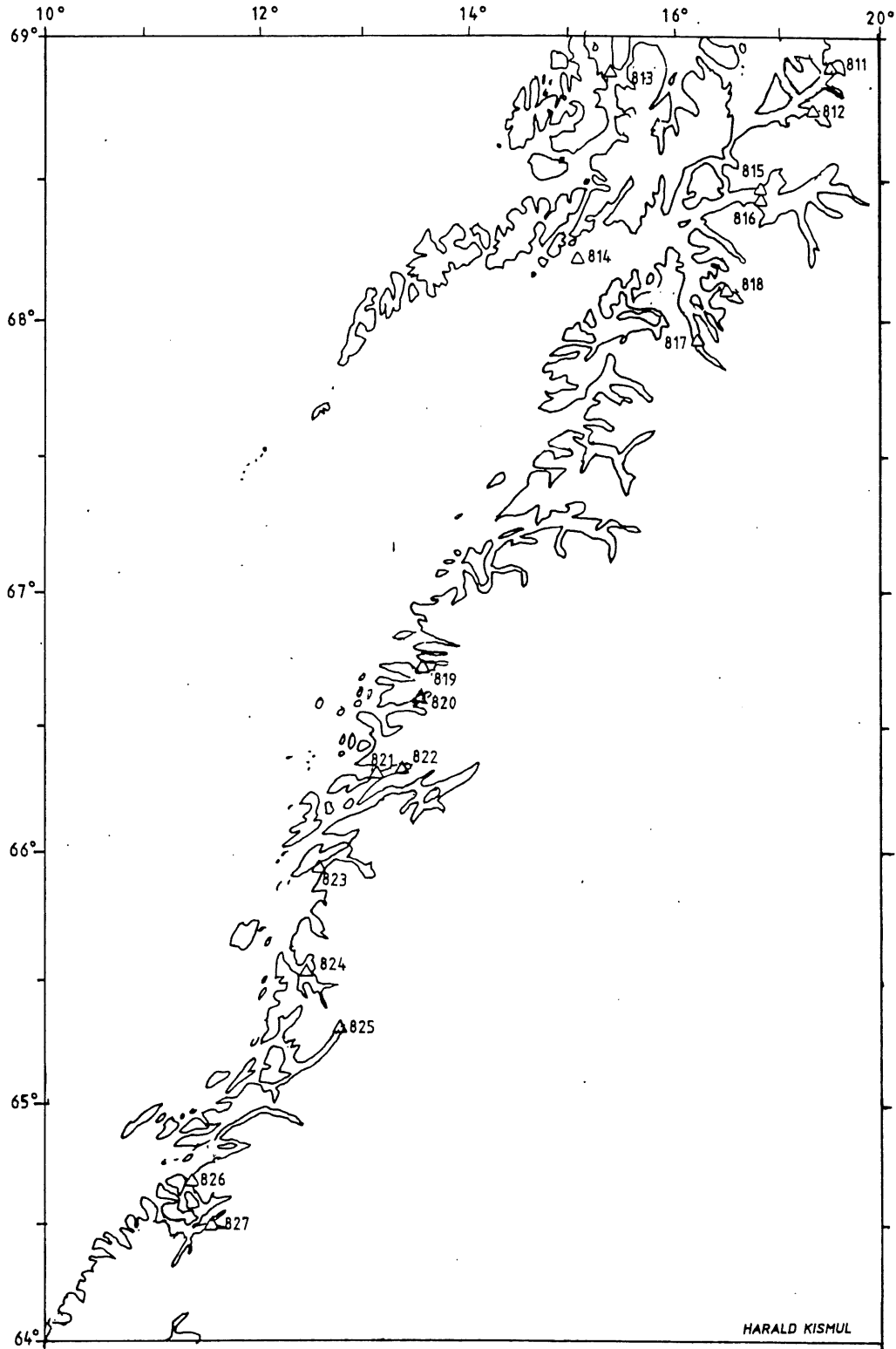
"MICHAEL SARS"





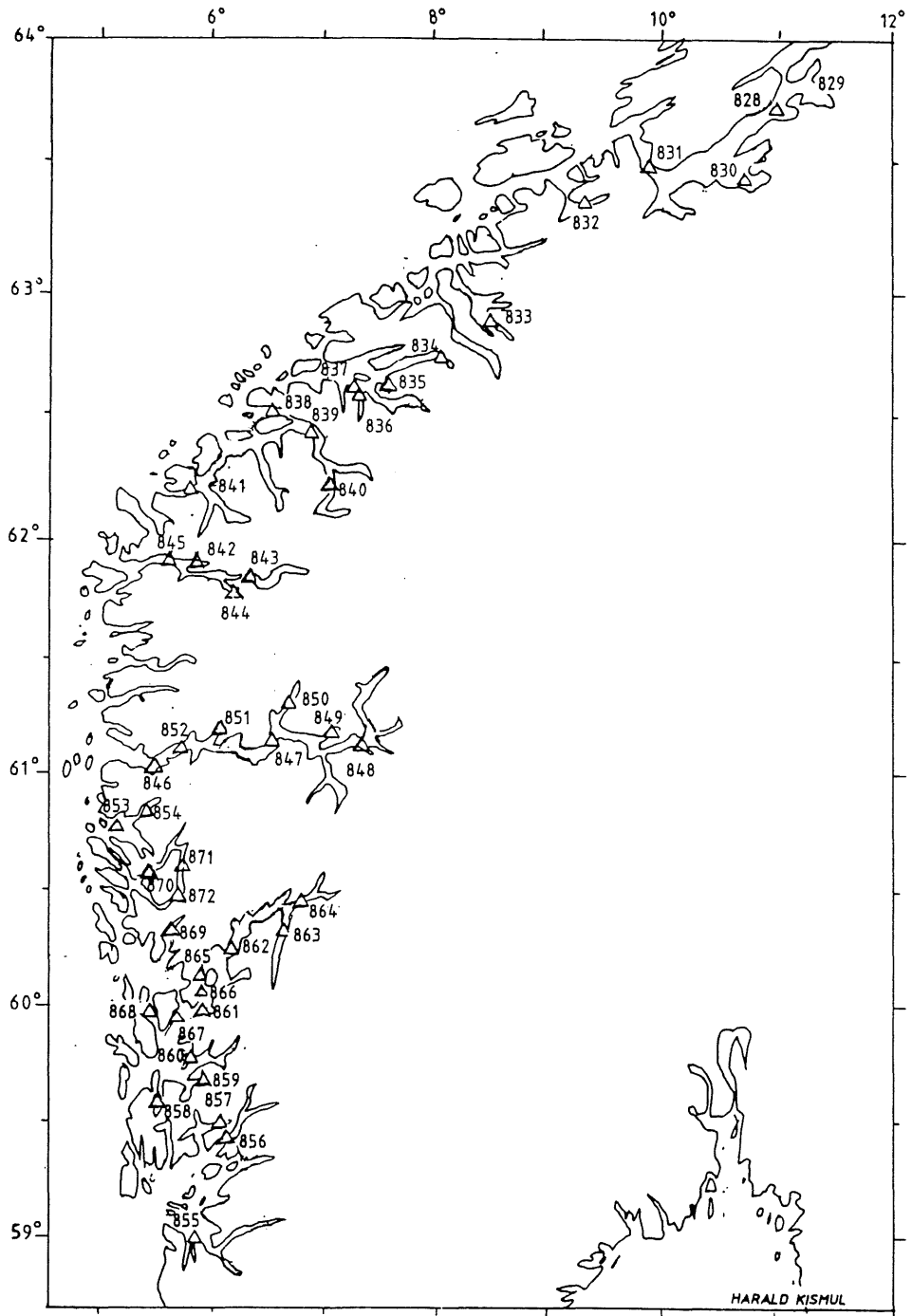
4 NOV. - 11 DEC. 1991 Δ TRAWL ST. NO. 788-810

"MICHAEL SARS"



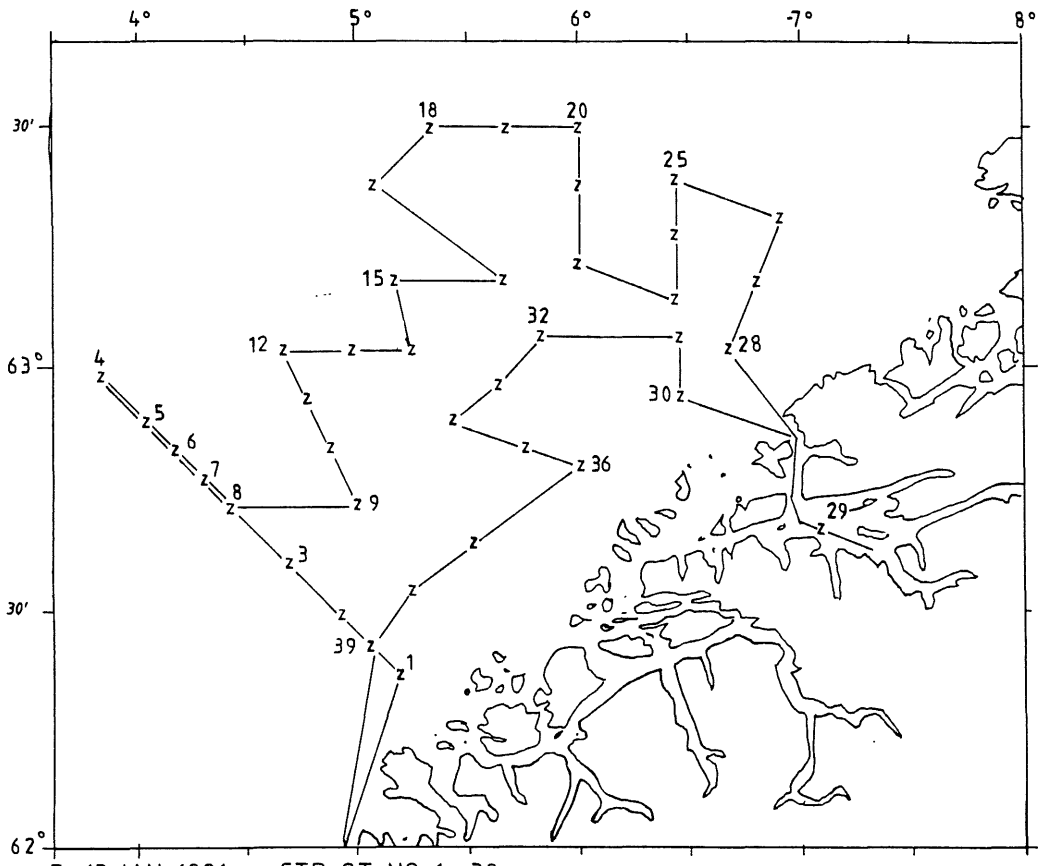
4 NOV. - 11 DEC. 1991 Δ TRAWL ST. NO. 811-827

"MICHAEL SARS"



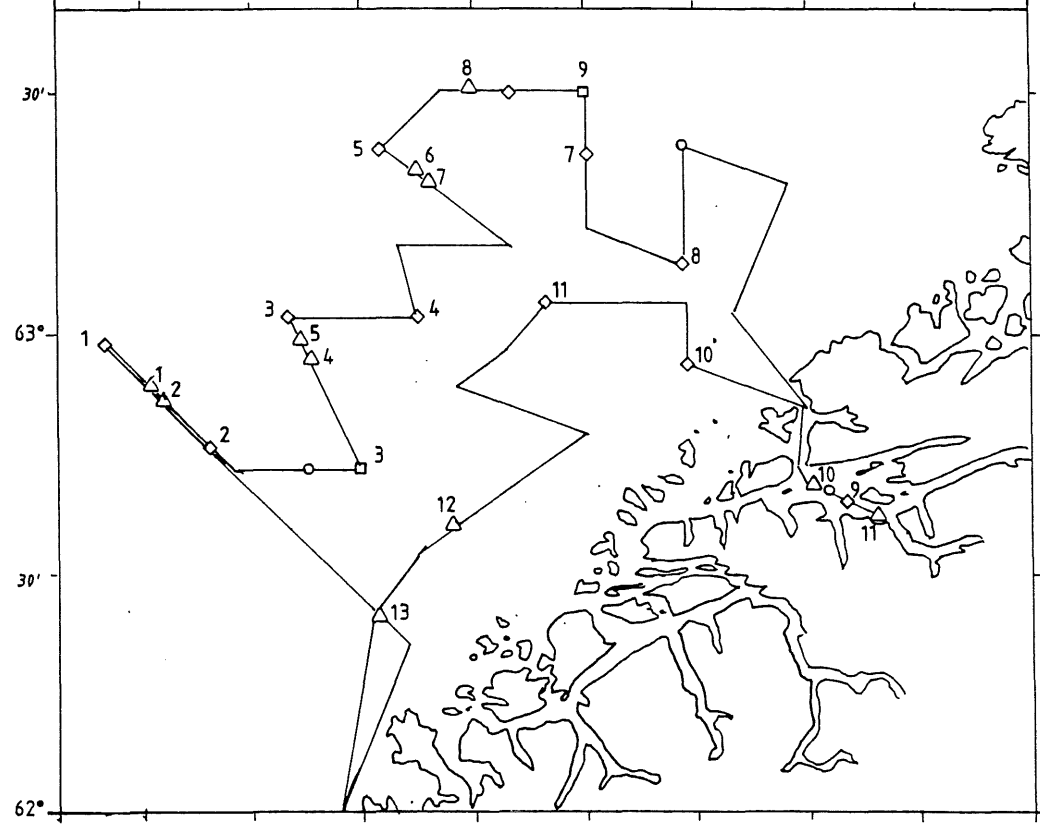
4 NOV.- 11 DEC. 1991 Δ TRAWL ST. NO 828-872

"MICHAEL SARS"

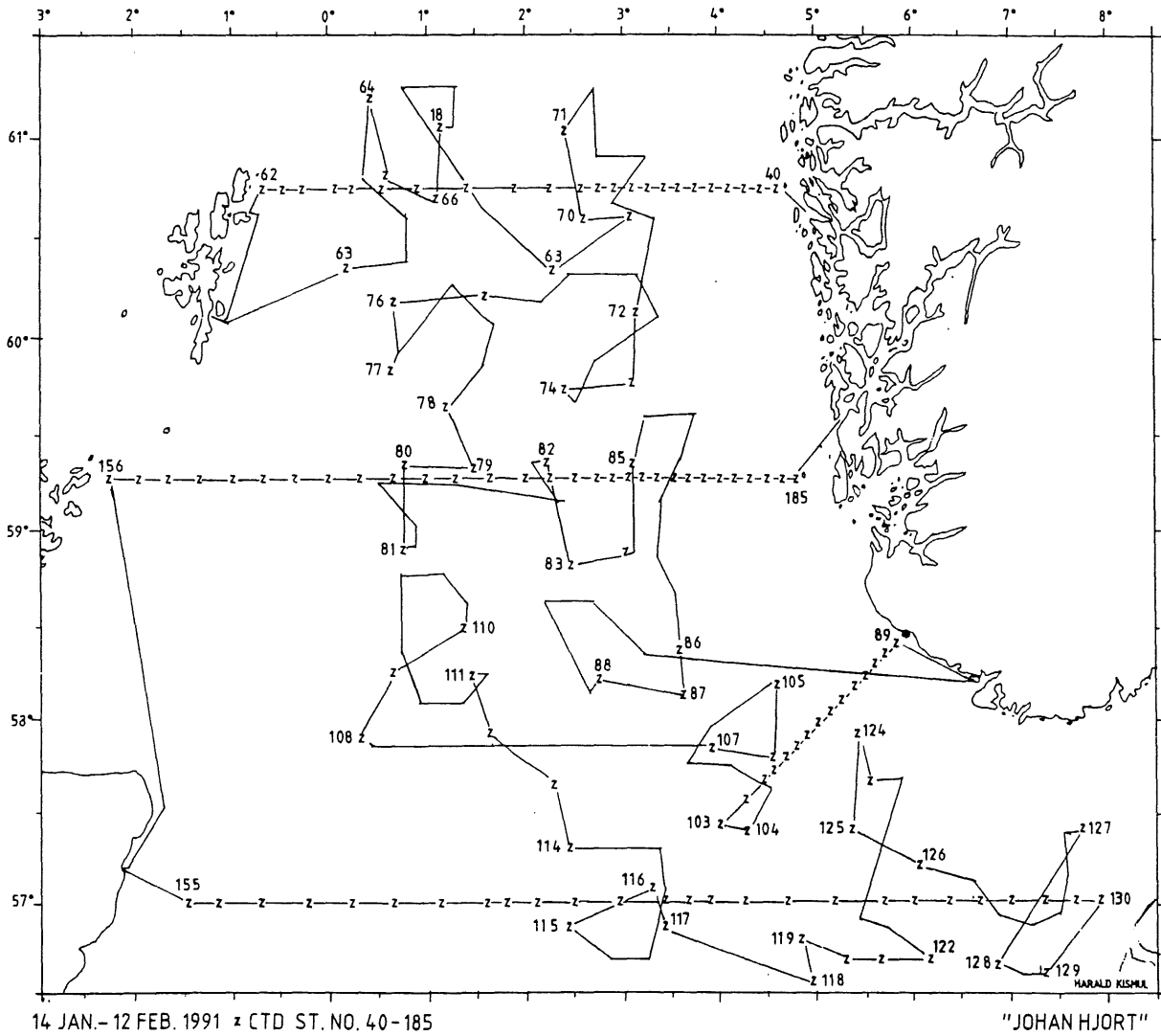


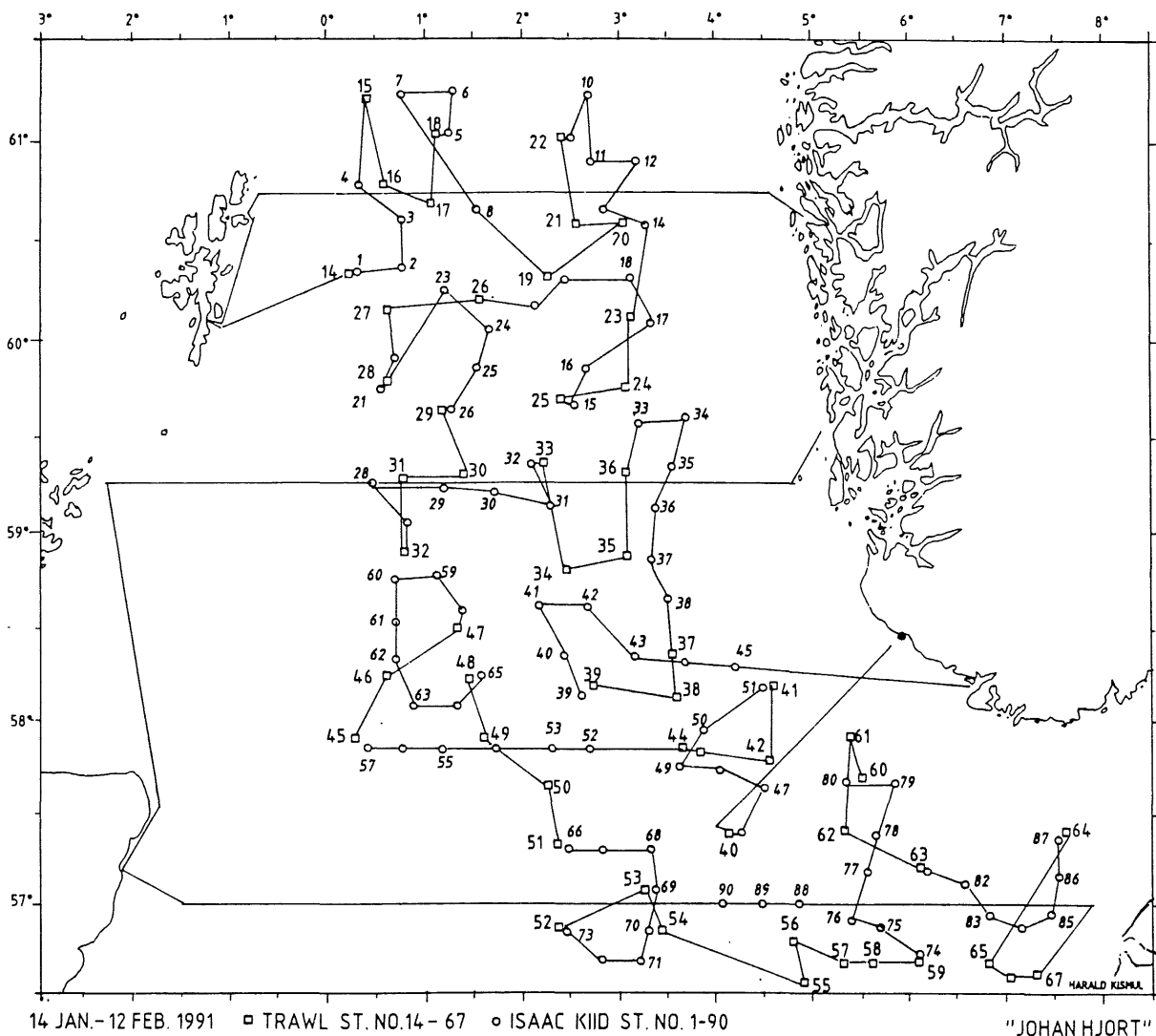
7-13 JAN. 1991 z CTD ST. NO. 1-39

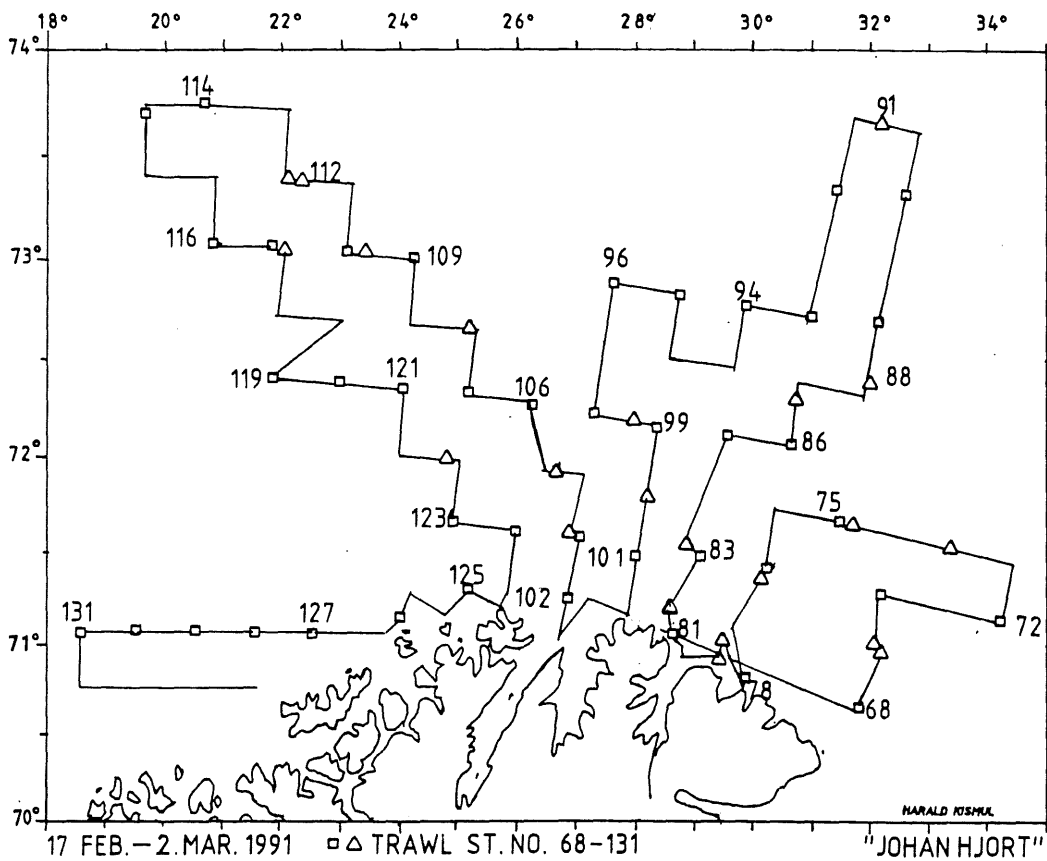
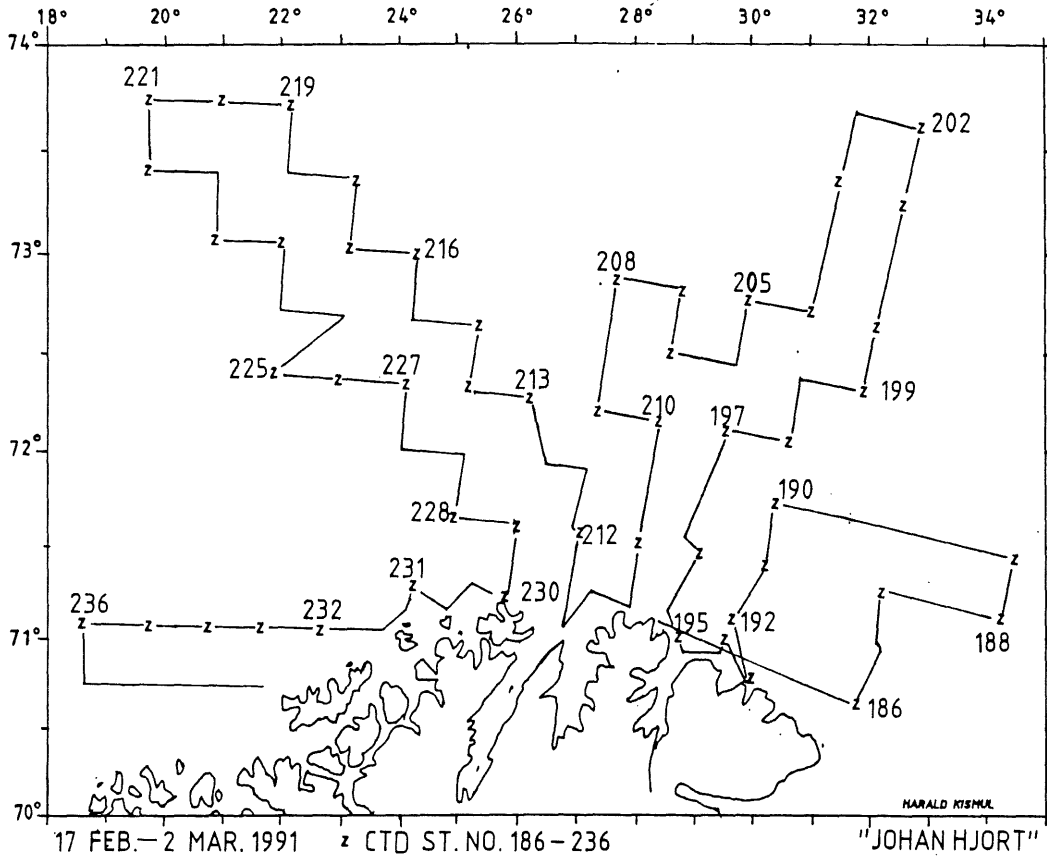
"JOHAN HJORT"

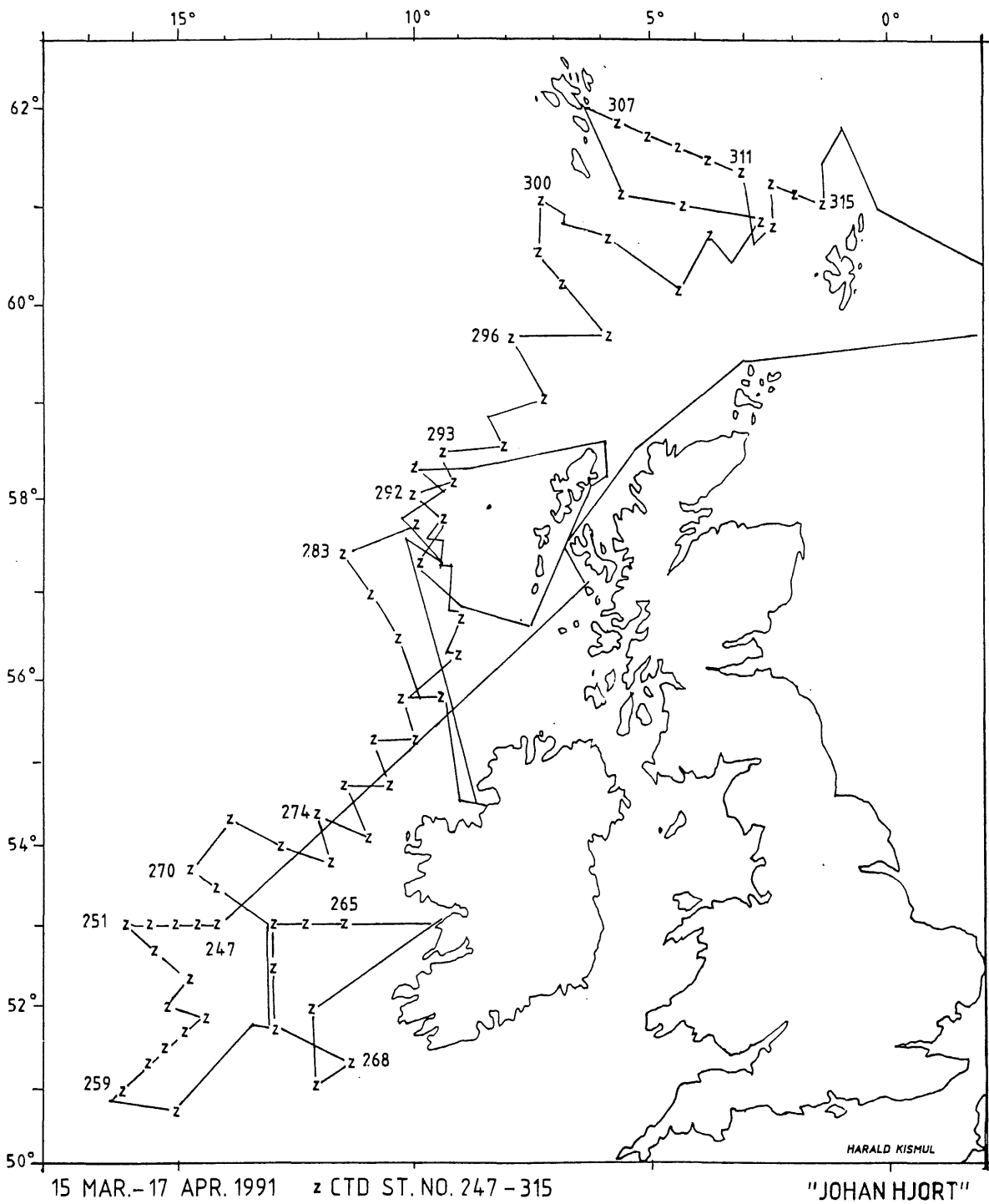


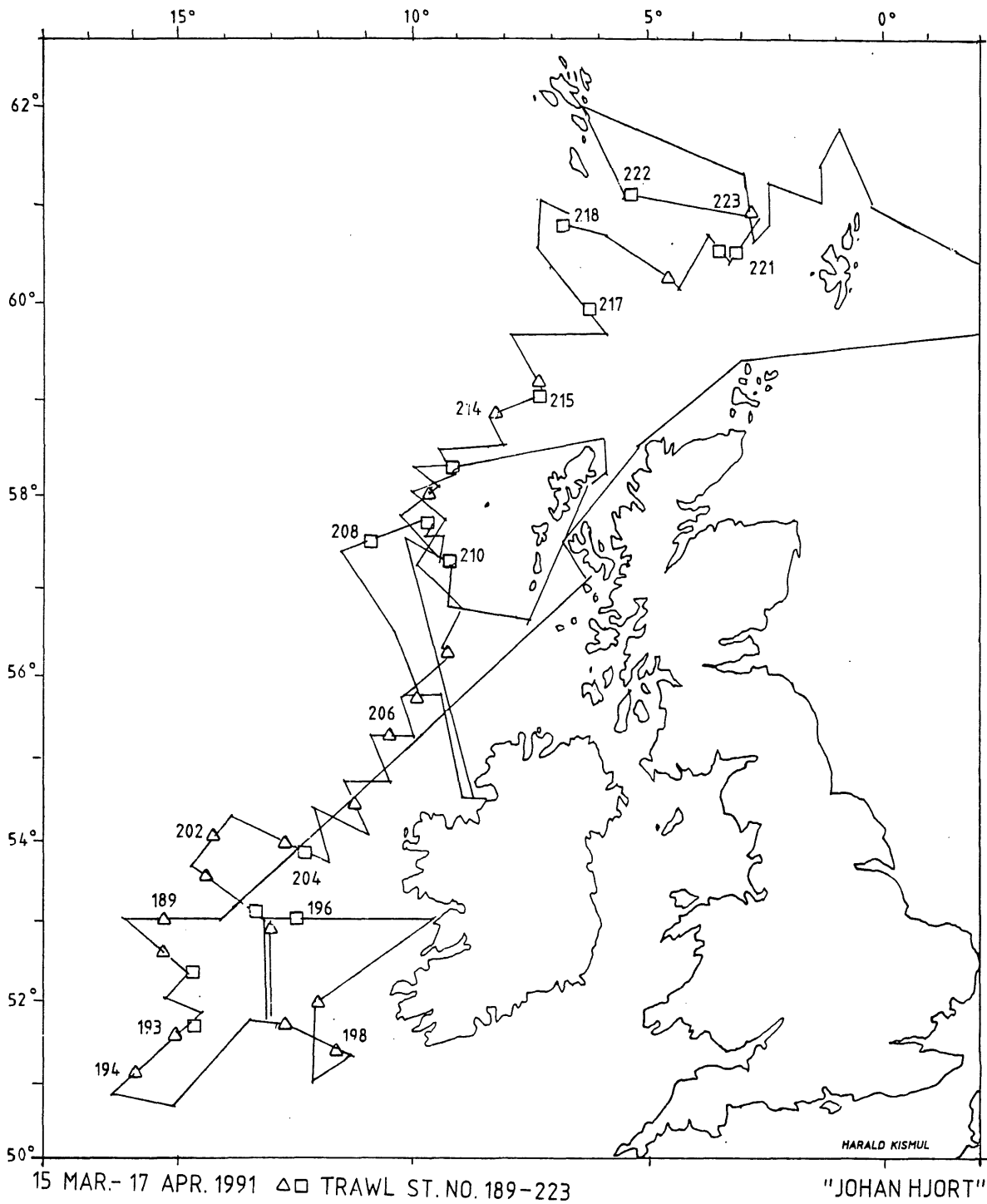
△ □ TRAWL ST. NO. 1-13 ◇ MOCNESS TRAWL ST. NO. 1-11 ○ 3 ISAAC KIDD ST.

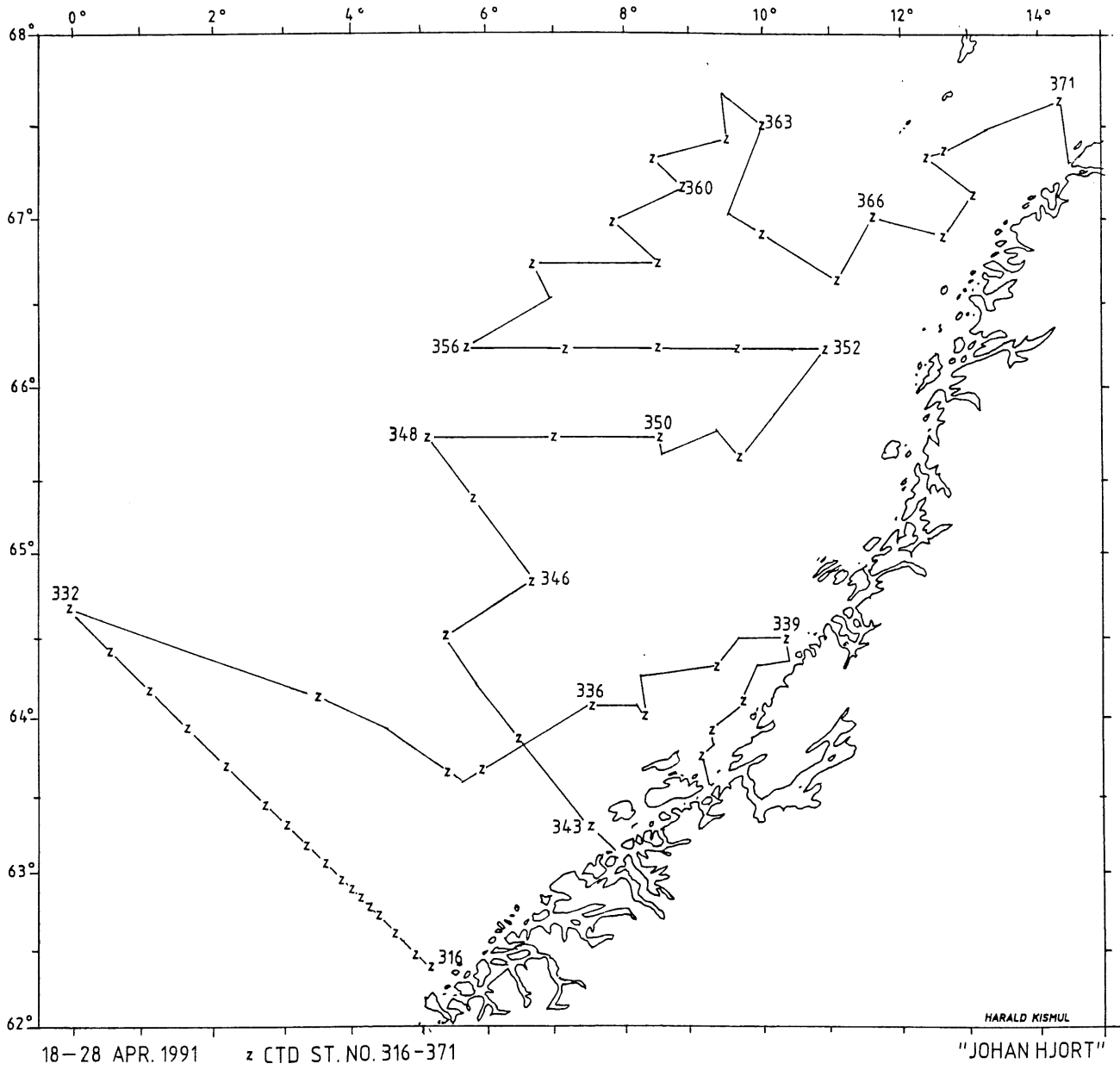


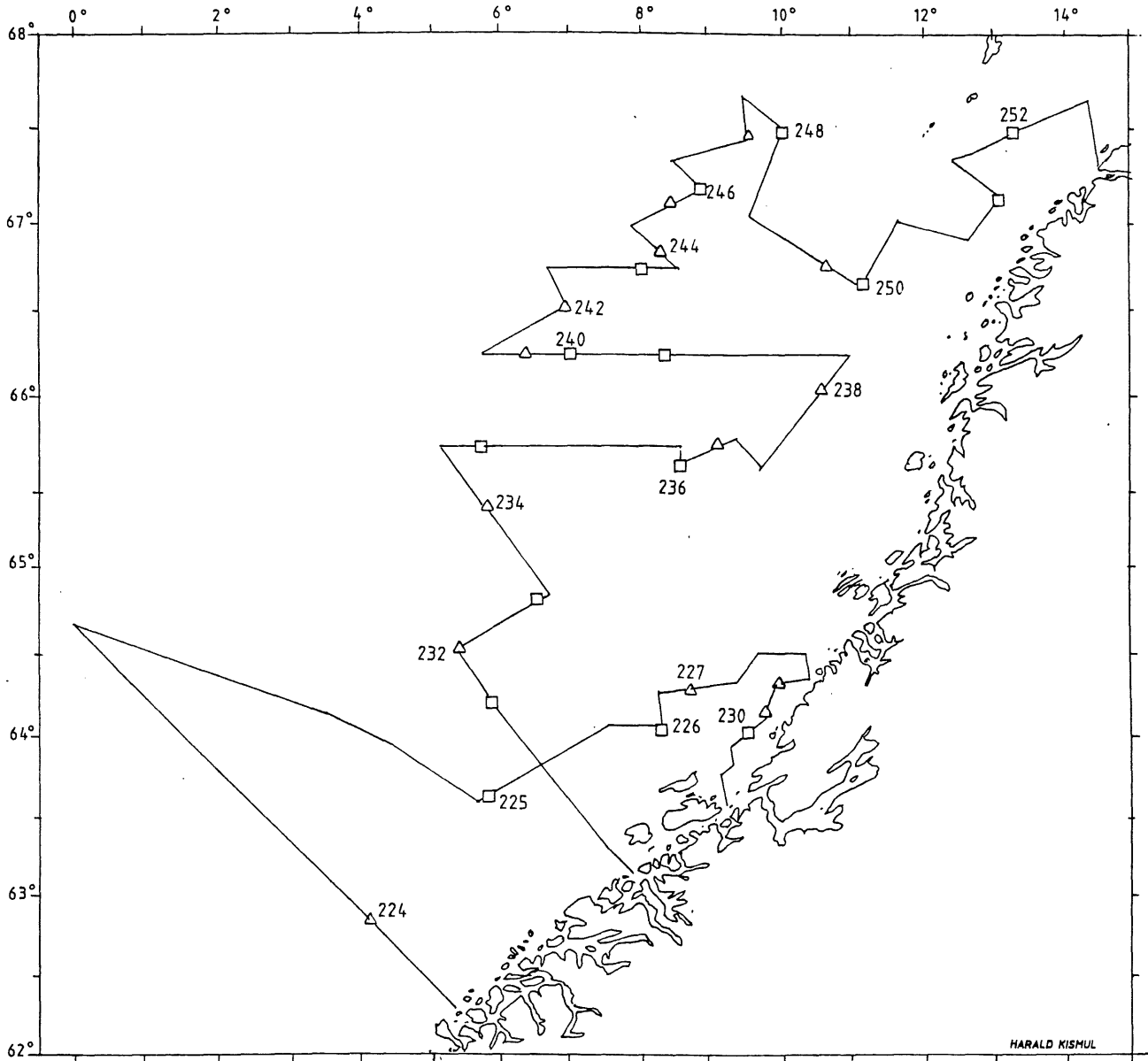








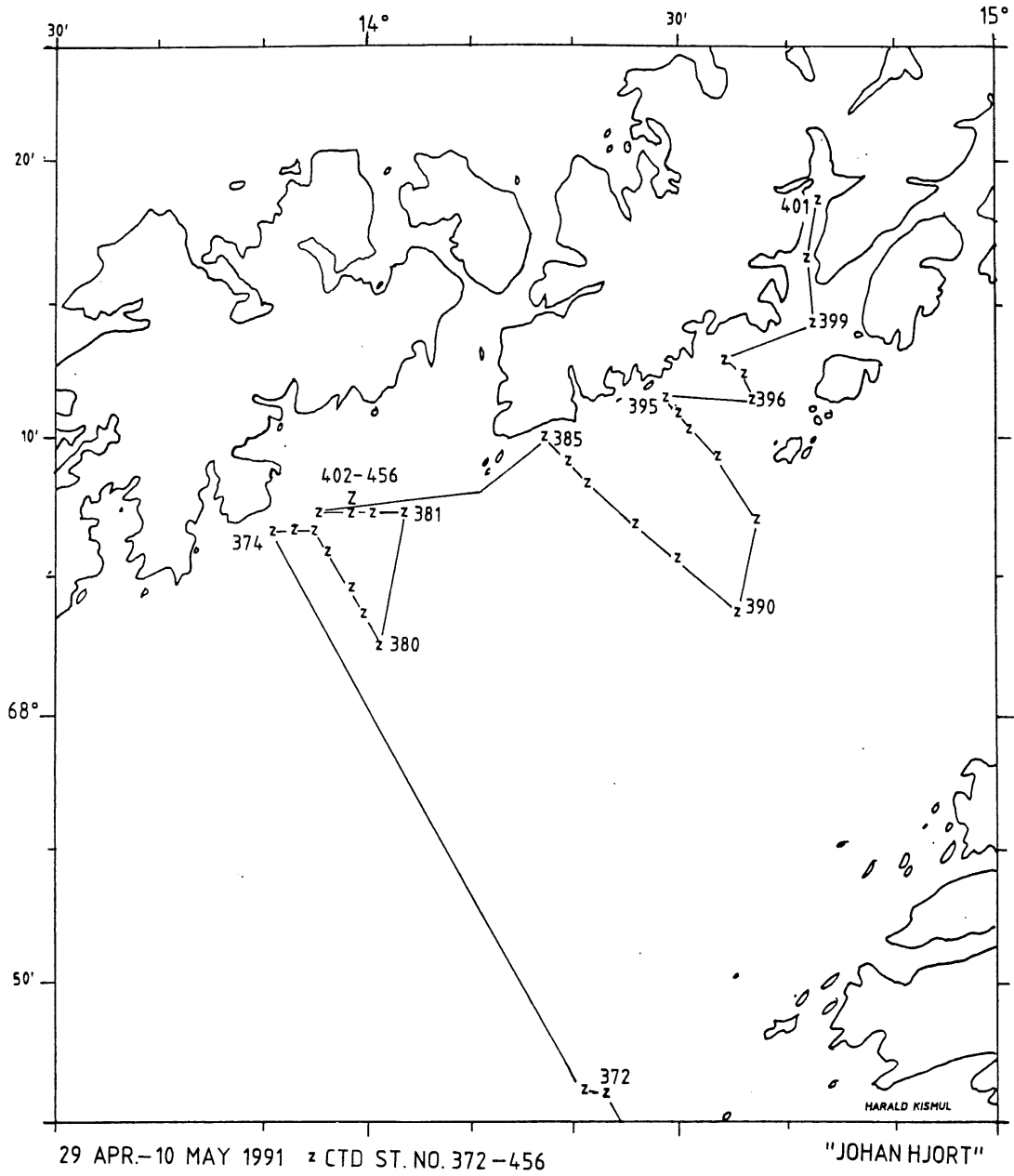


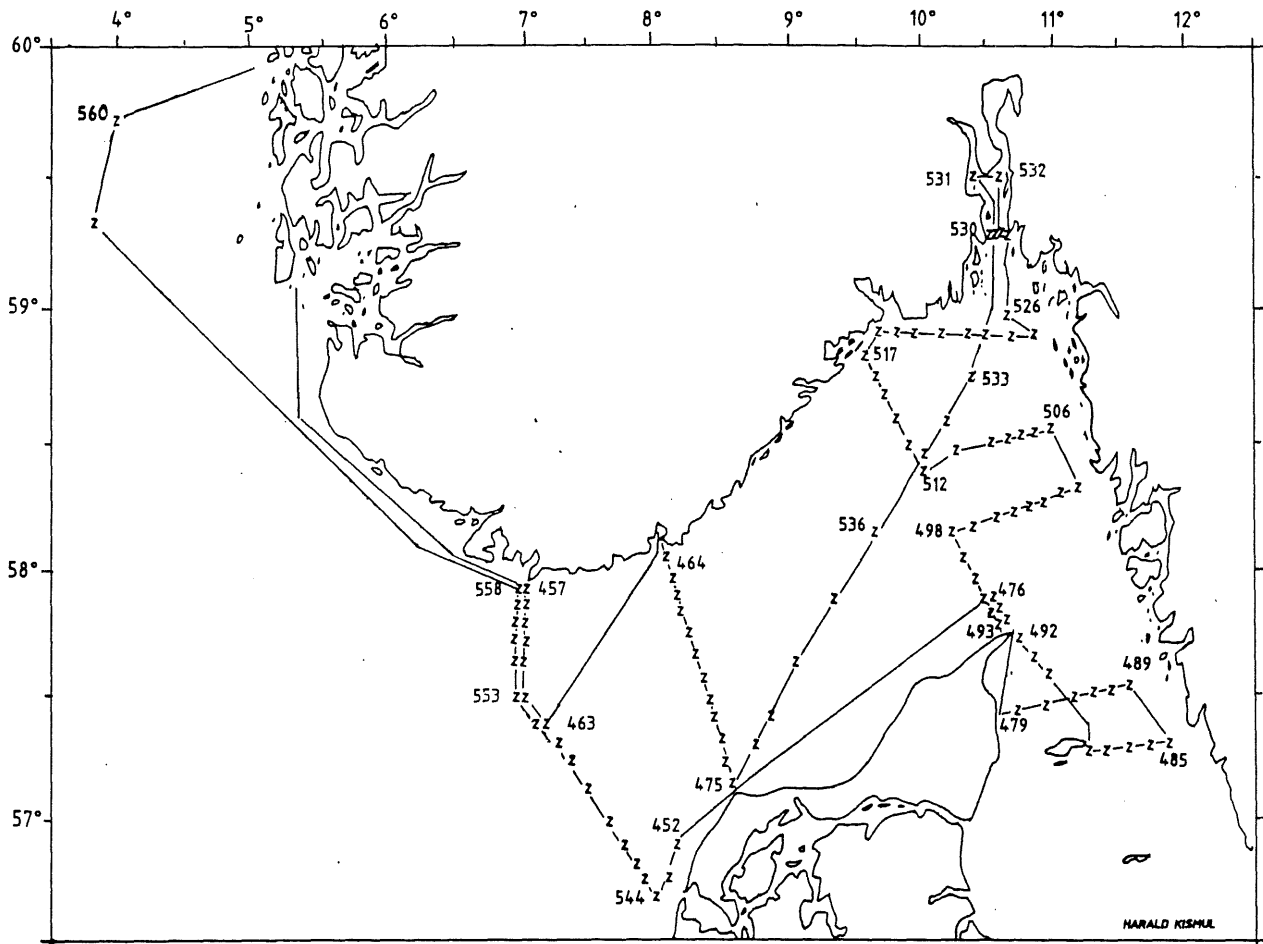


18 - 28 APR. 1991 Δ □ TRAWL ST. NO. 224 - 252

"JOHAN HJORT"

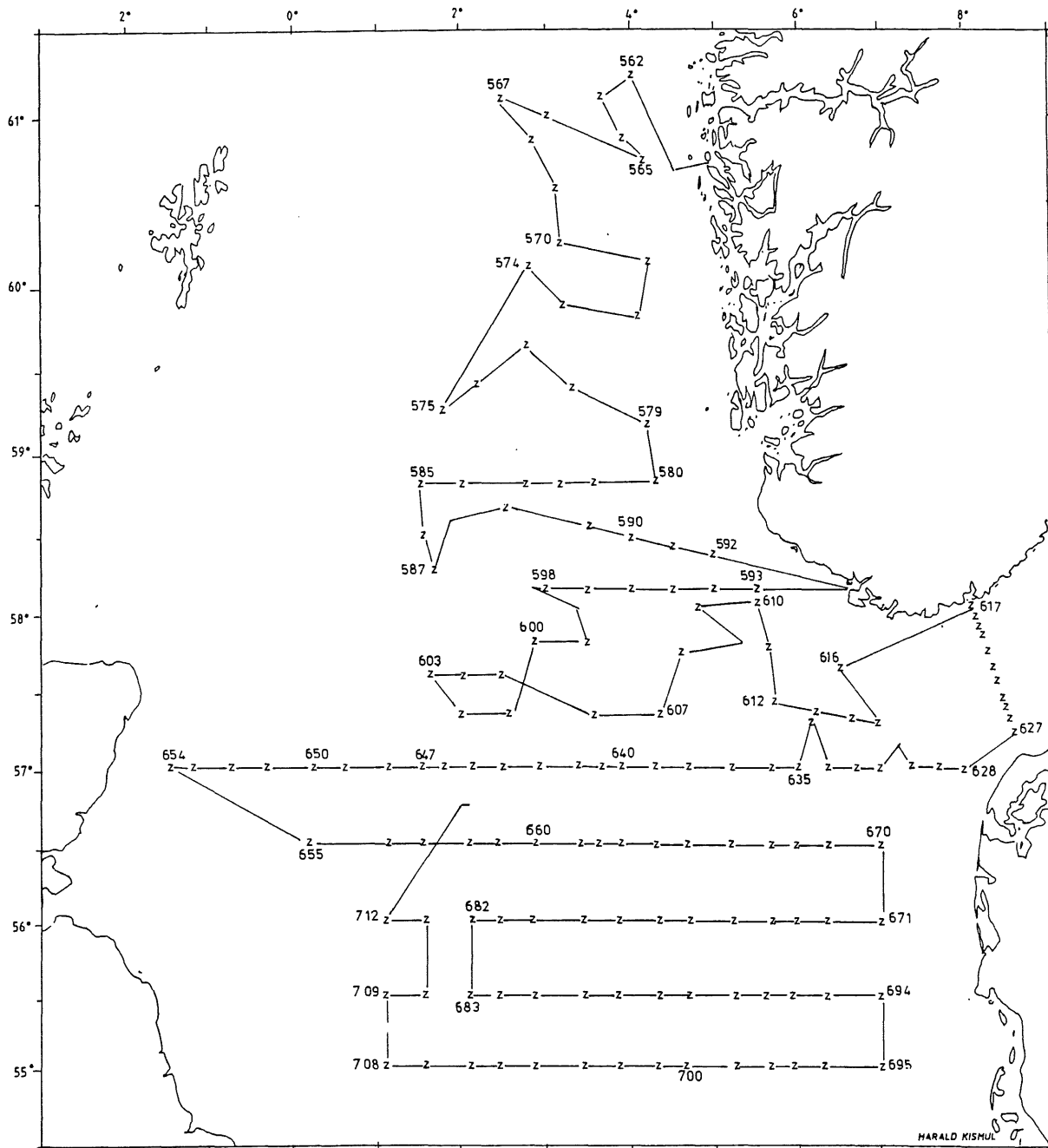
HARALD KISMUL





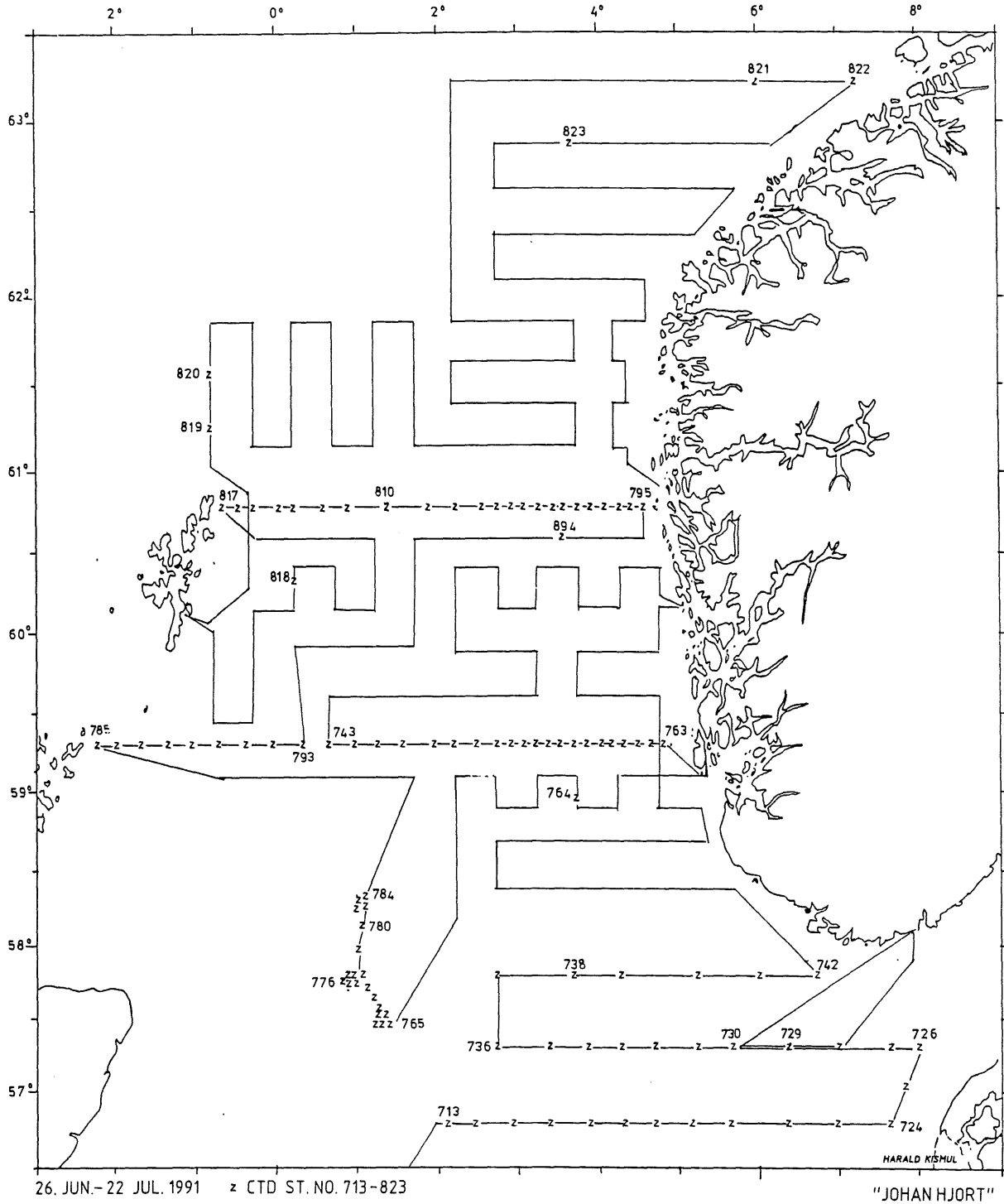
13-20 MAY 1991, z ROSETTE SEMLERS ST. NO. 457-560

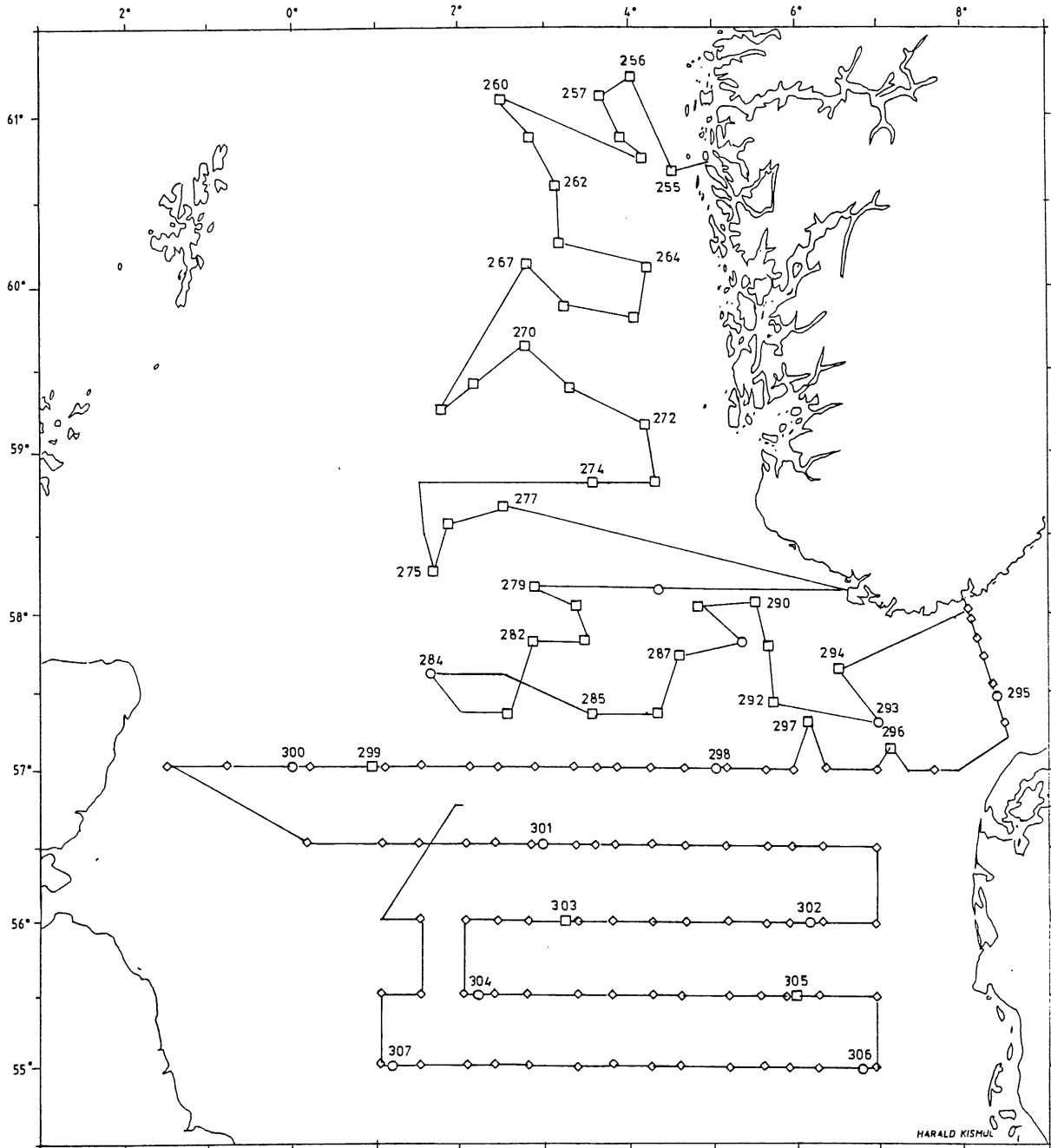
"JOHAN HJORT"



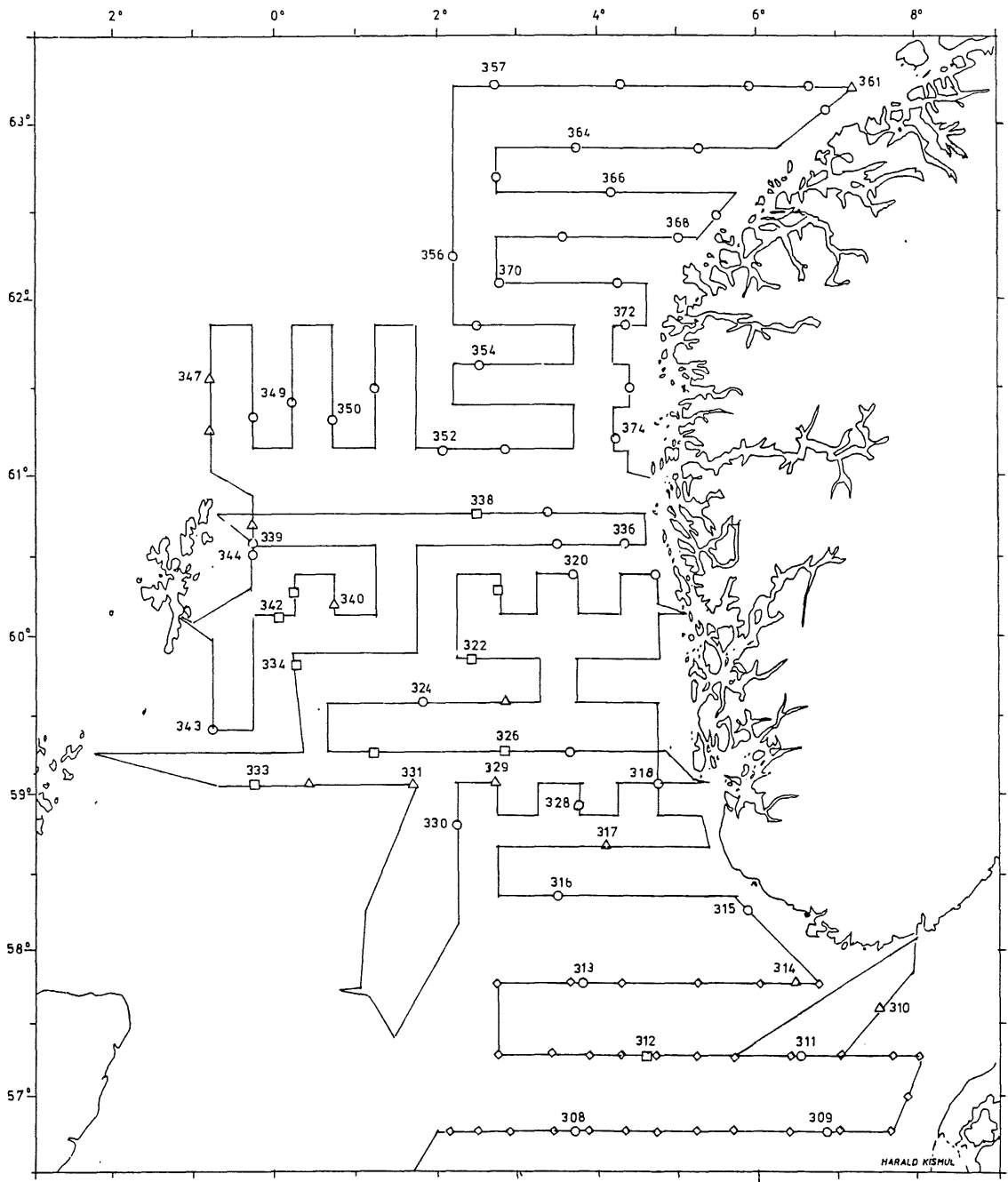
5-26 JUN. 1991 z CTD ST. NO. 562 - 712

HARALD KISHMUL
"JOHAN HJORT"

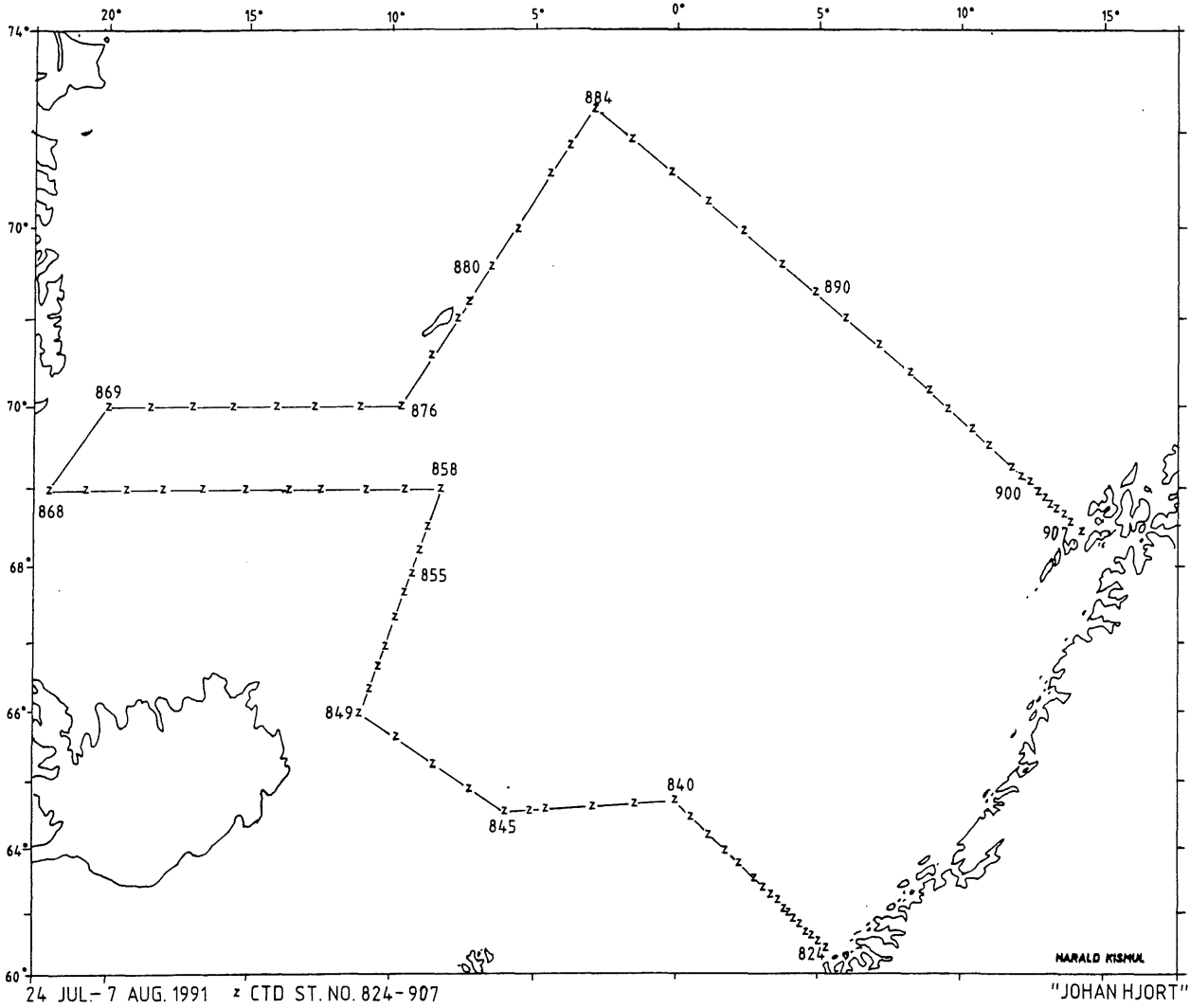


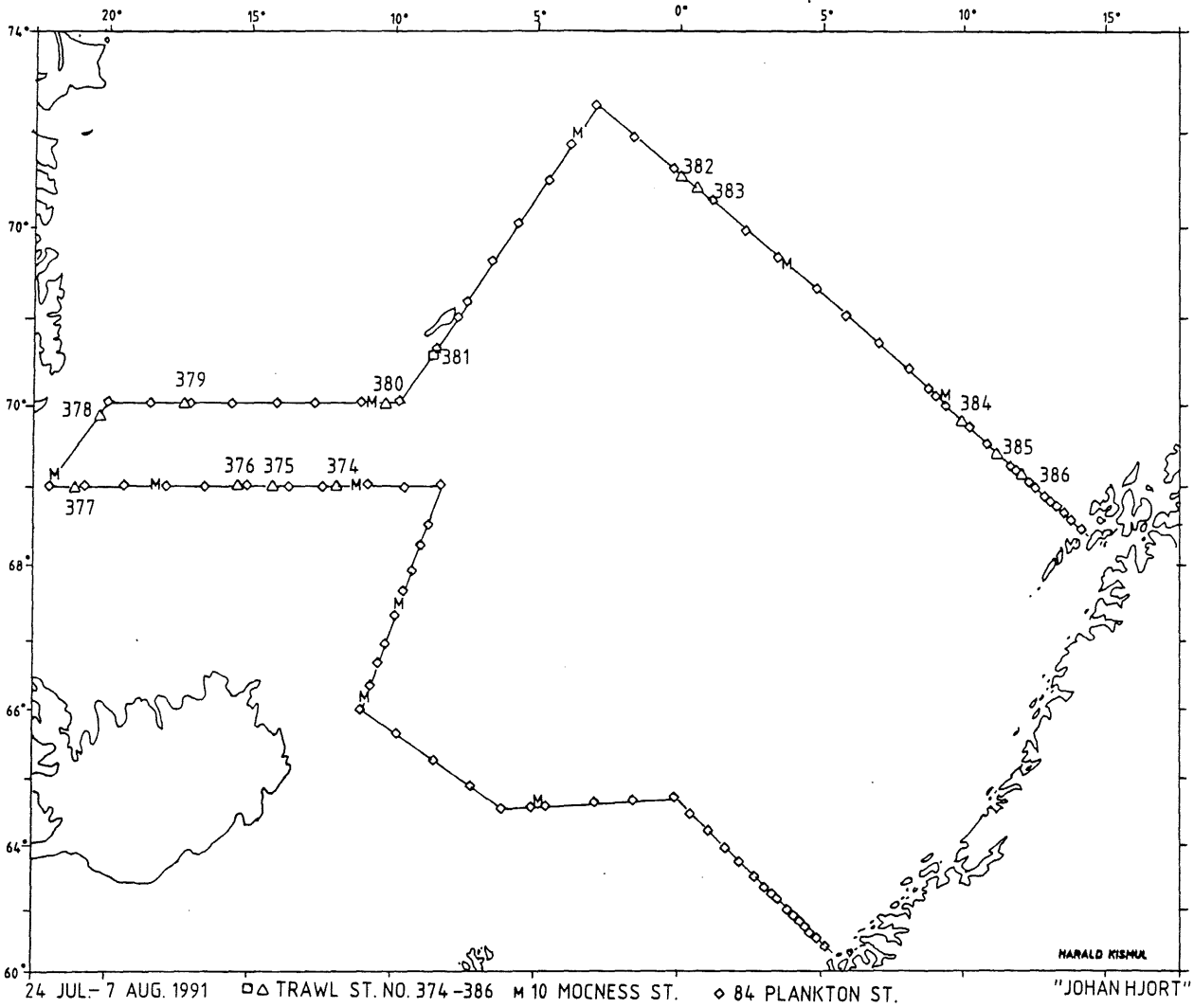


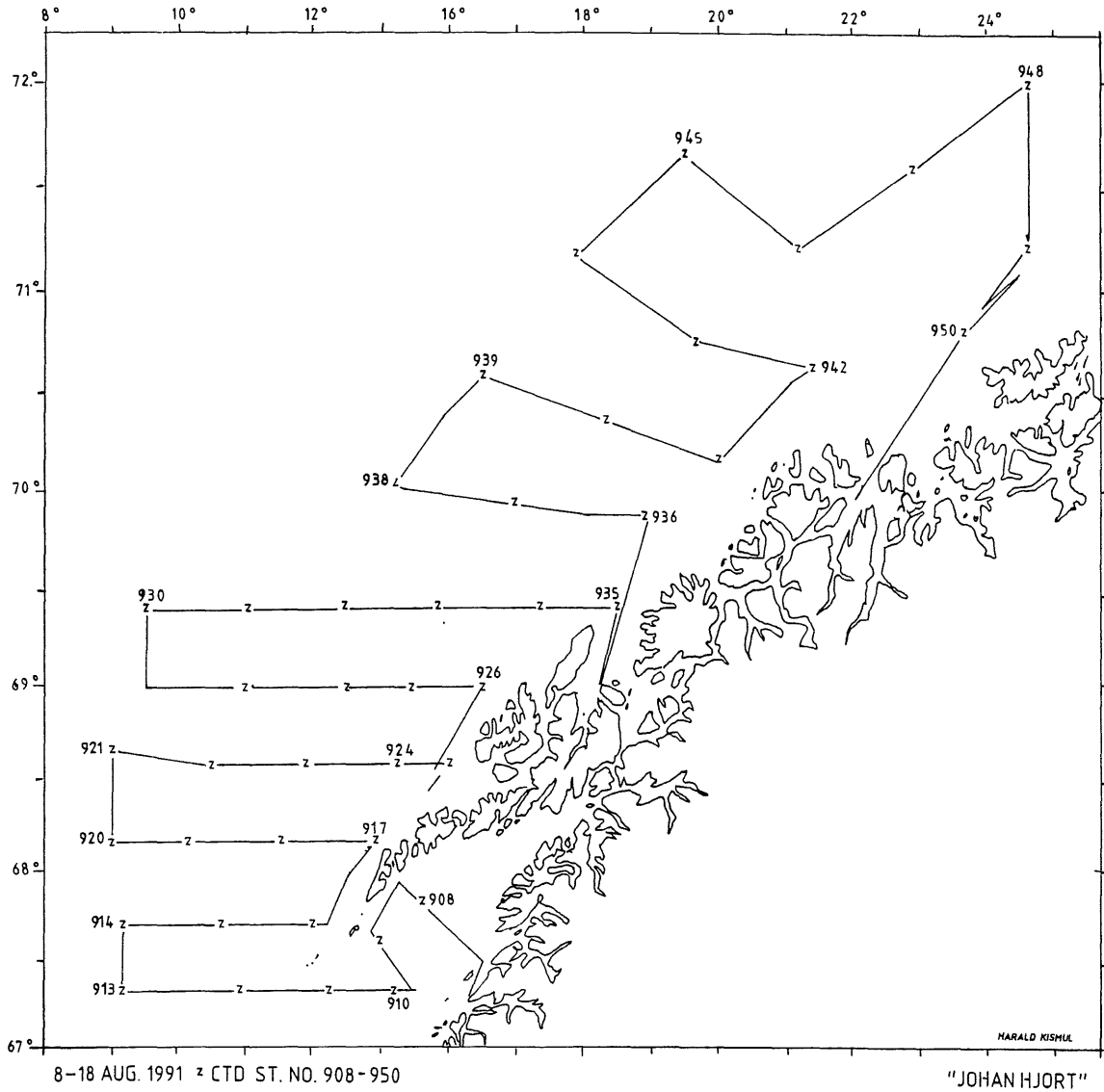
5-26 JUN 1991 □ BOTTOM TRAWL ○ PELAGIC TRAWL W/ BUOYS ST. NO. 255-307 ◇ 82 BONGO ST. "JOHAN HJORT"

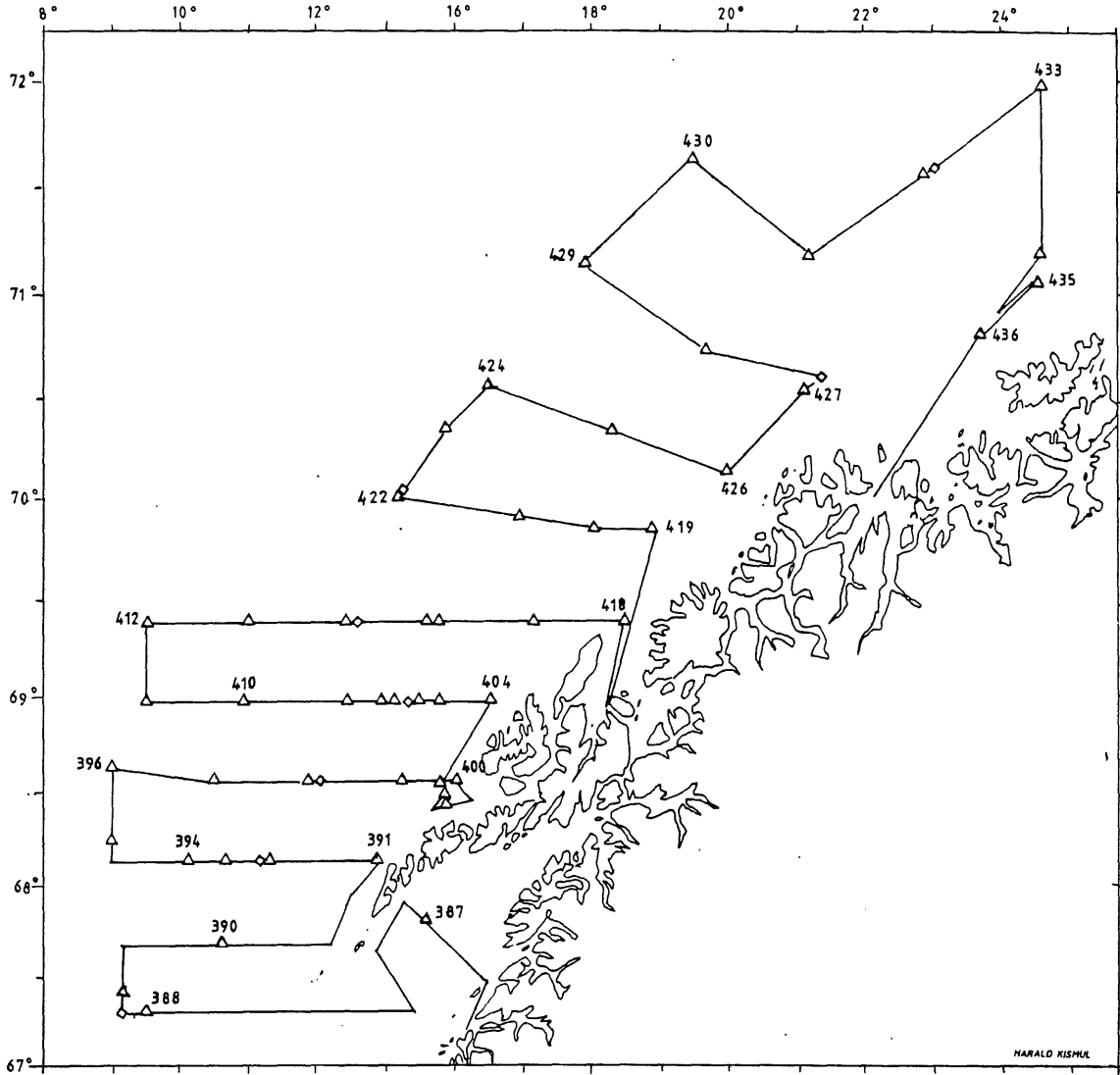


26 JUN - 22 JUL. 1991 □ BOTTOM TRAWL △ PELAGIC TRAWL ○ PELAGIC TRAWL W / BUOYS ST. NO. 308-374 ◇ 30 PLANKTON ST.





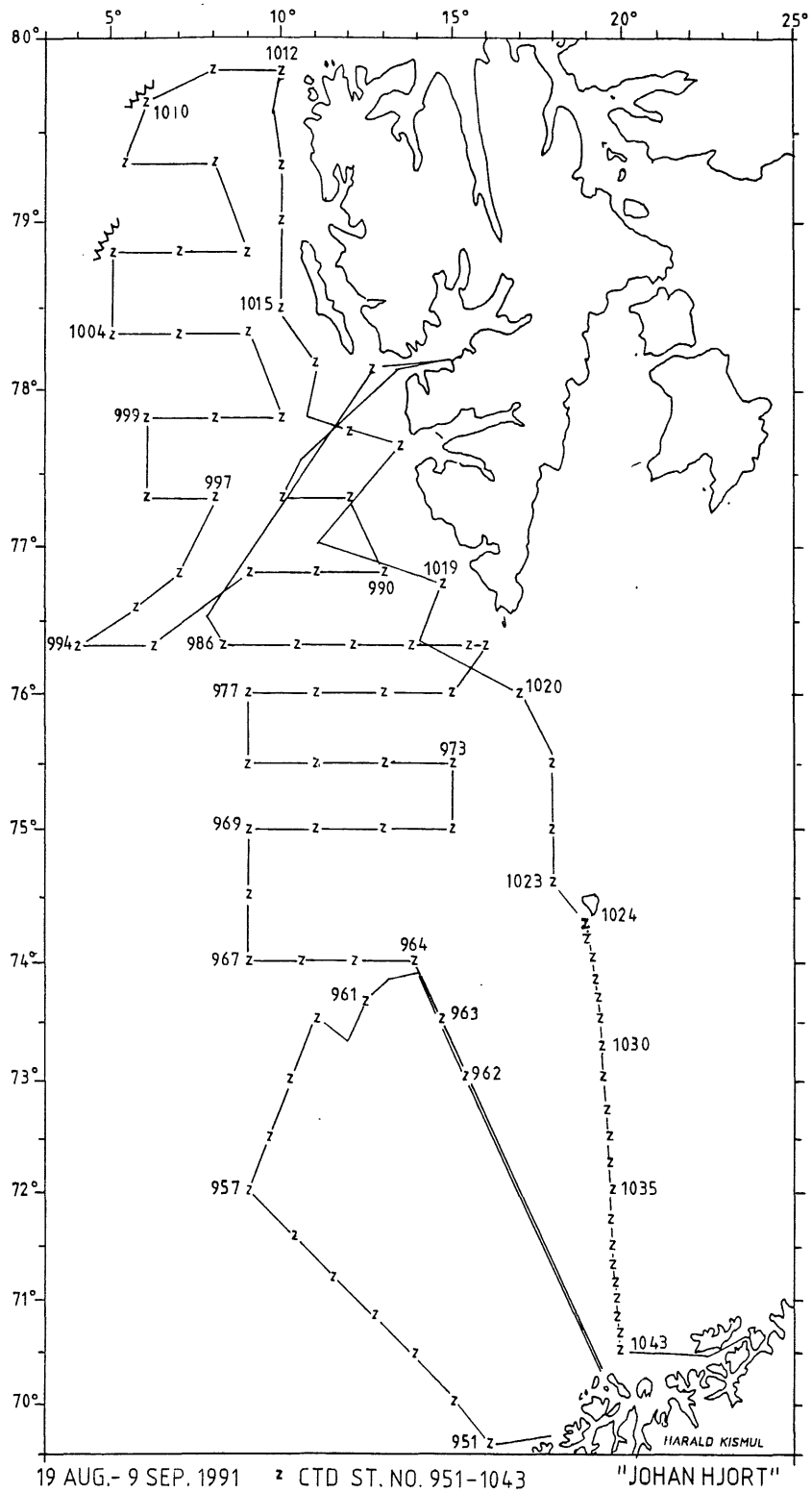


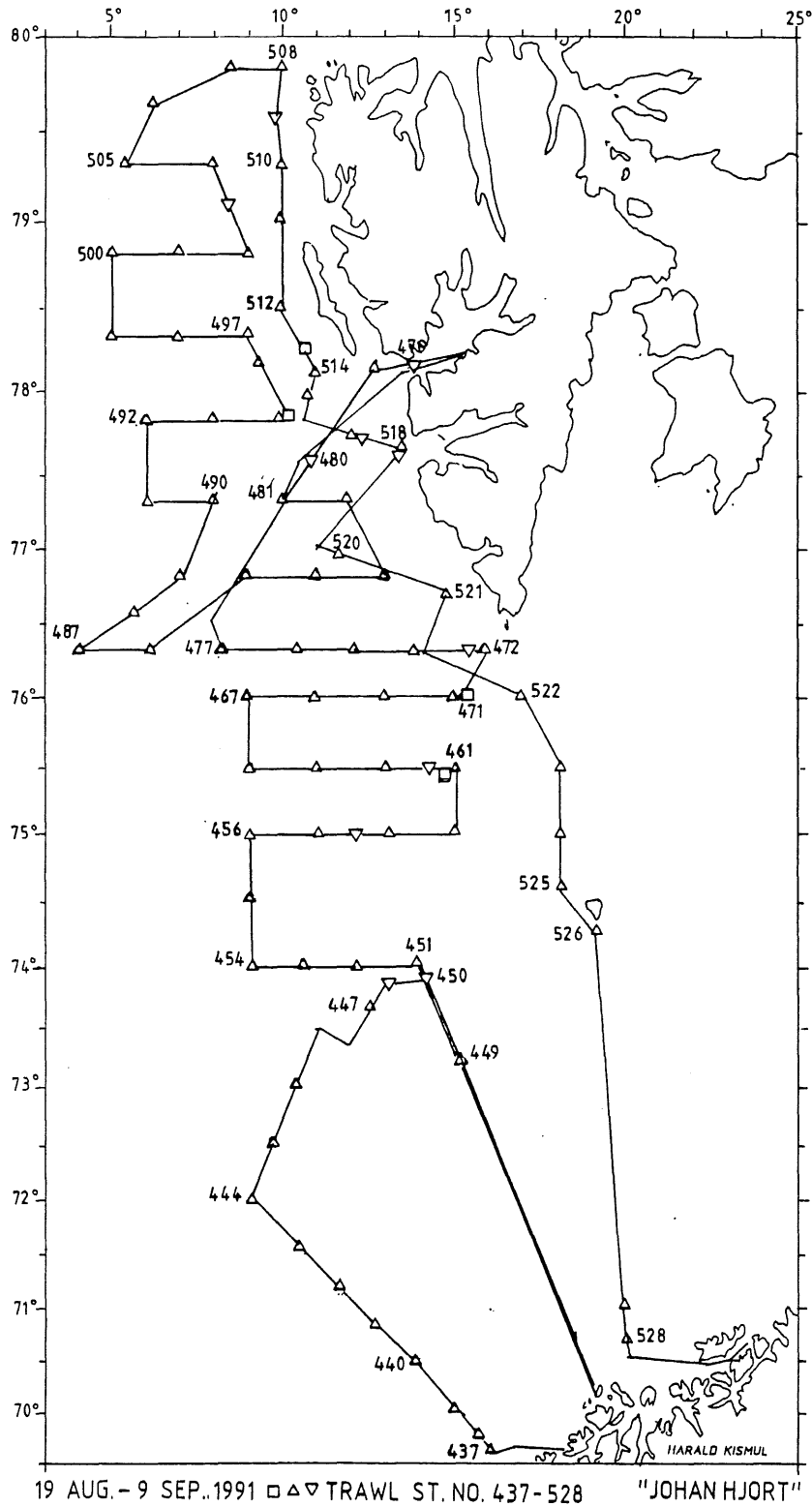


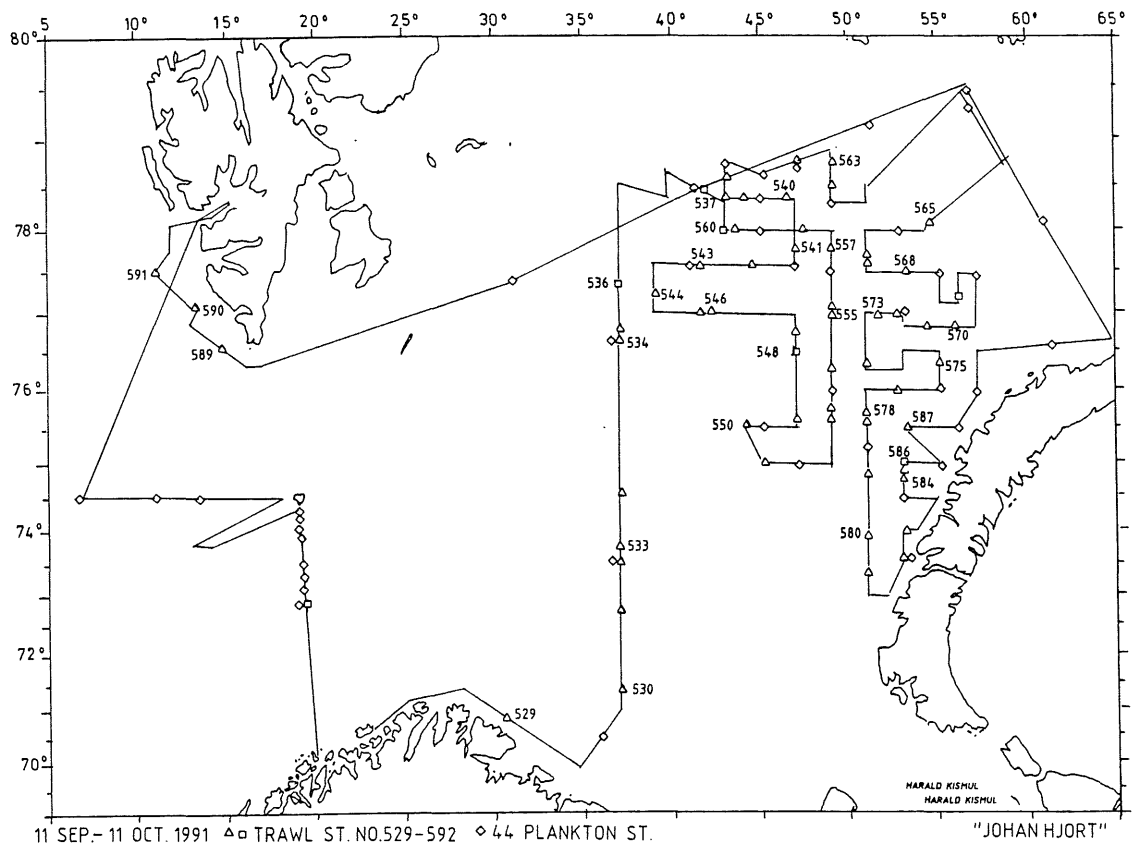
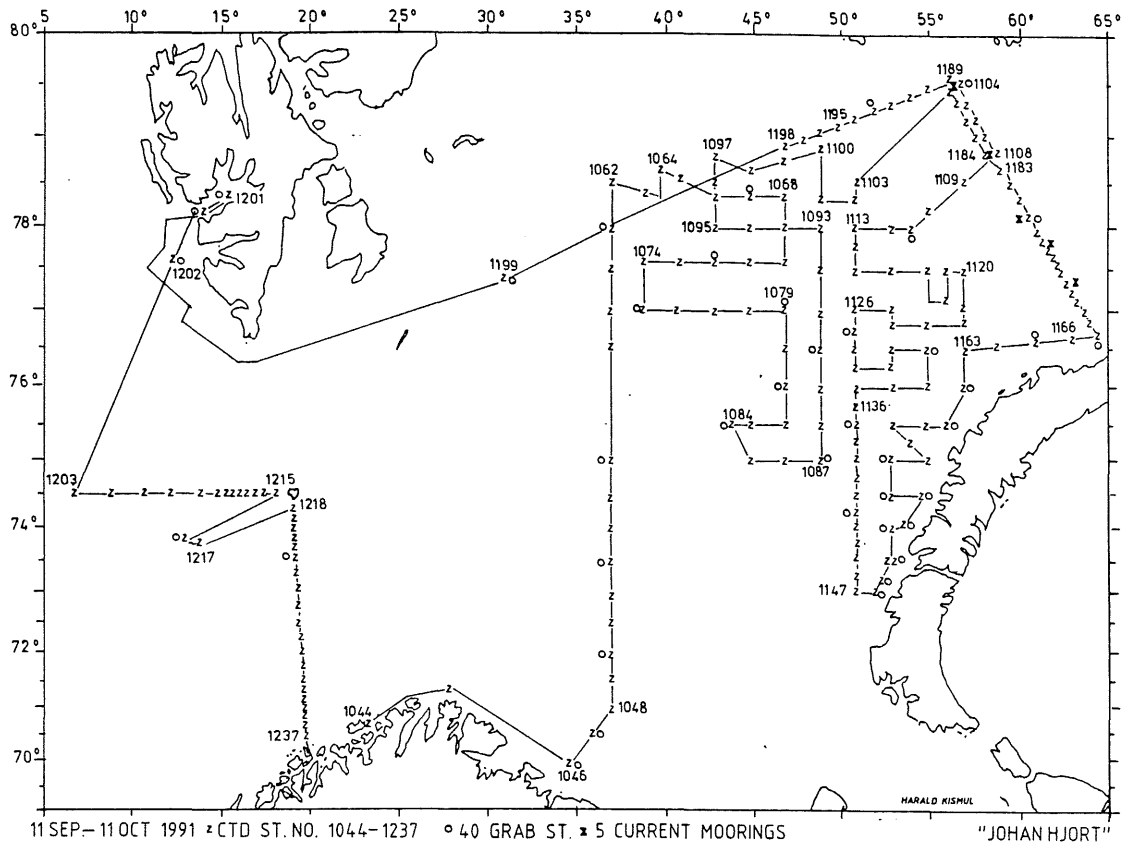
8-18 AUG. 1991 △ TRAWL ST. NO. 387-436 ◇ 8 MOCNESS ST.

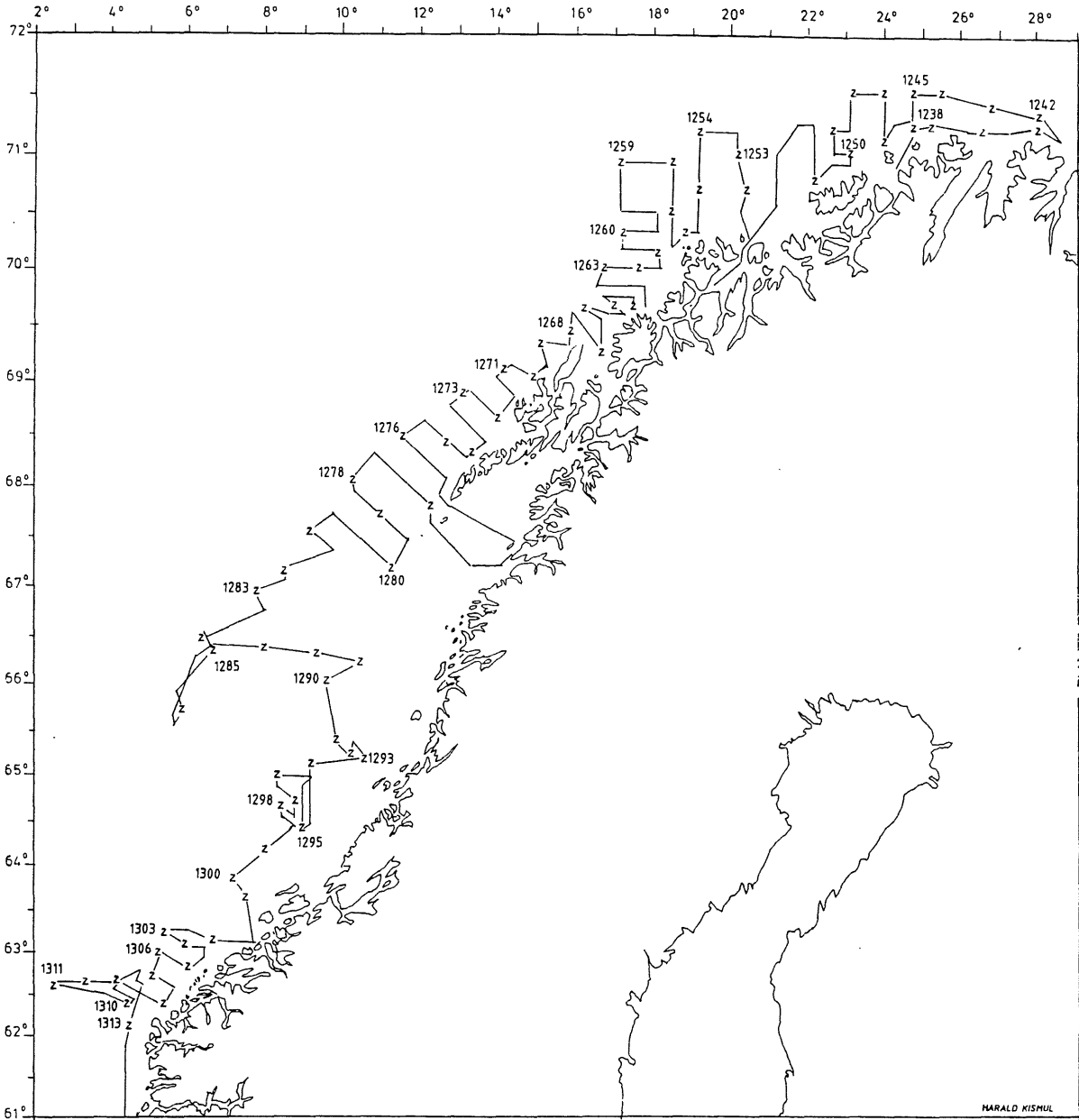
"JOHAN HJORT"

HARALD KISHU



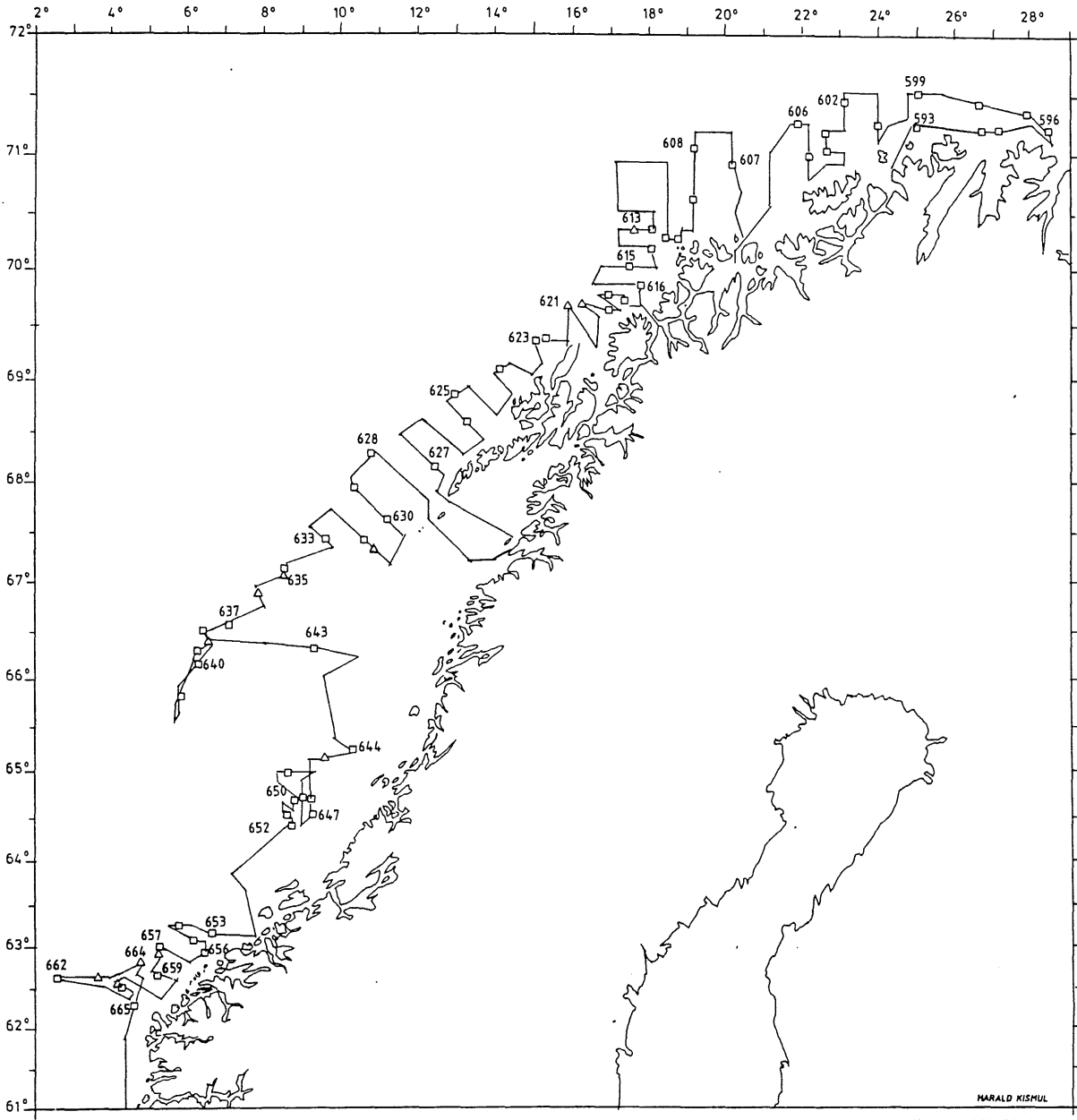






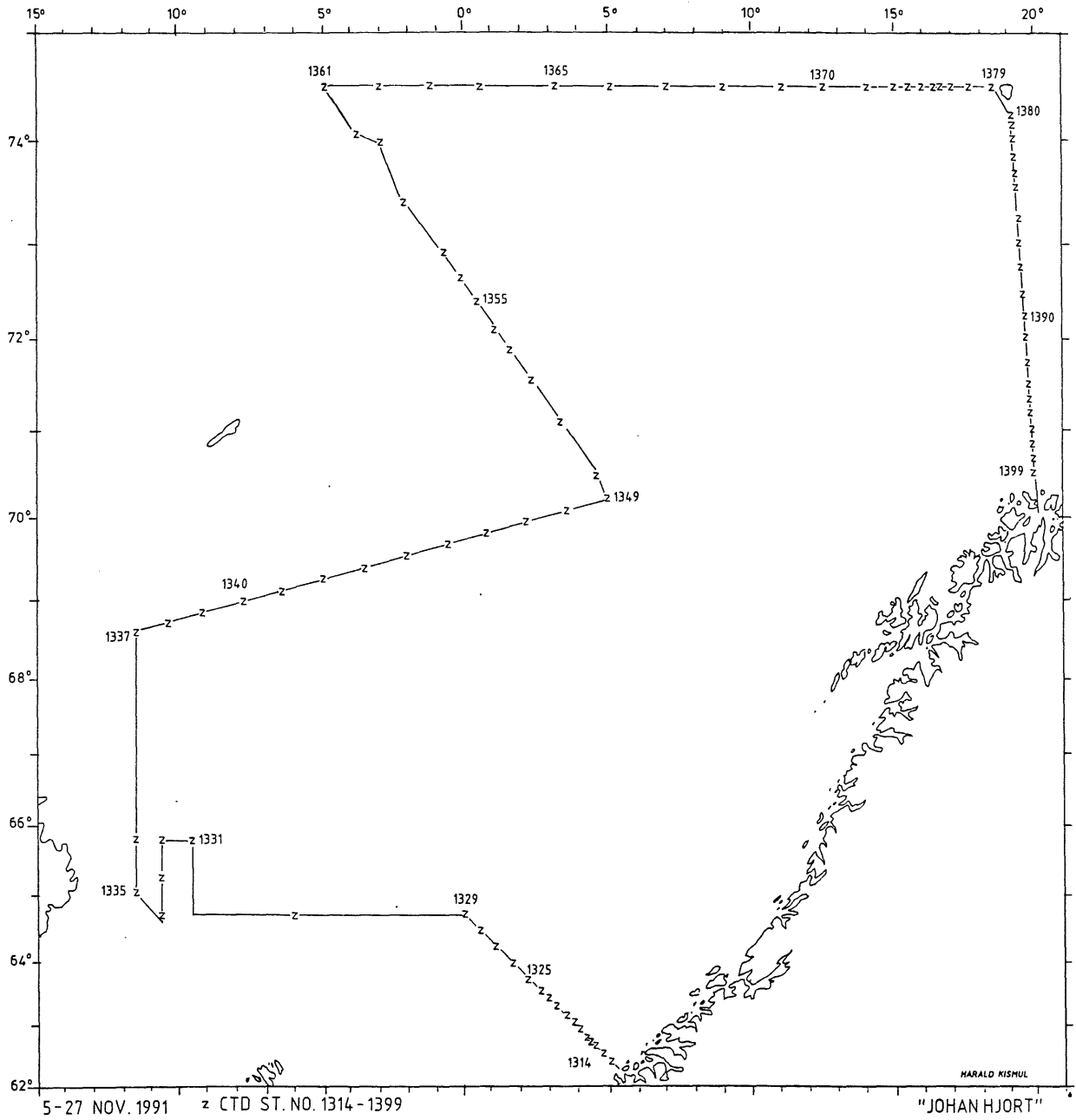
14 OCT - 4 NOV, 1991 z CTD ST. NO. 1238-1313

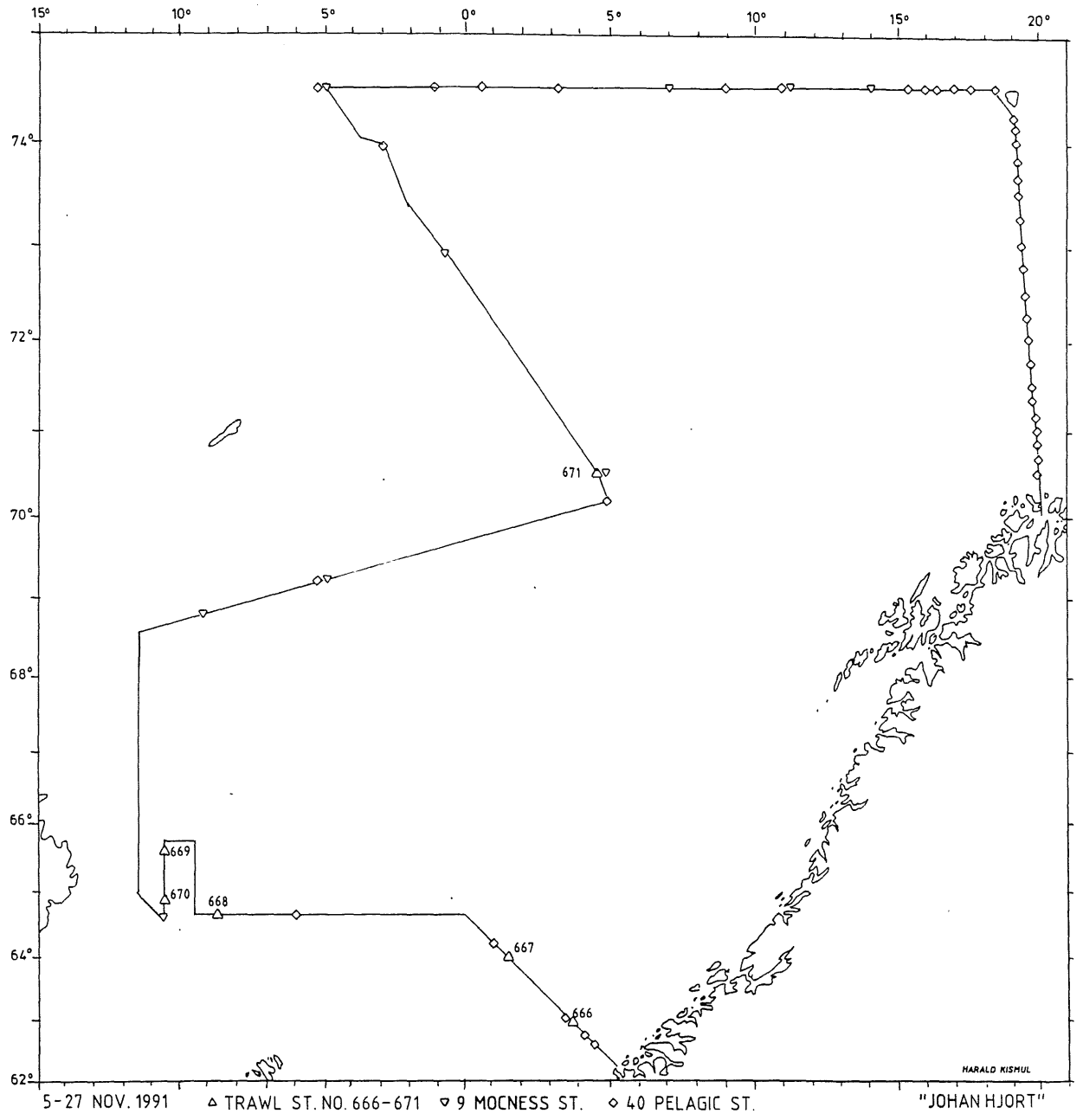
"JOHAN HJORT"

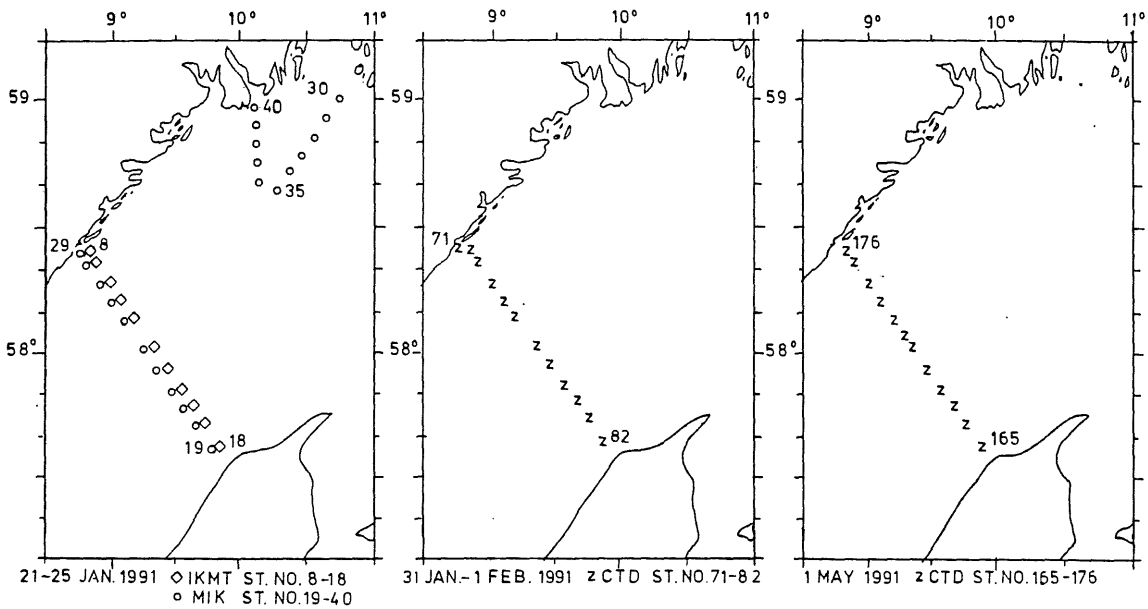
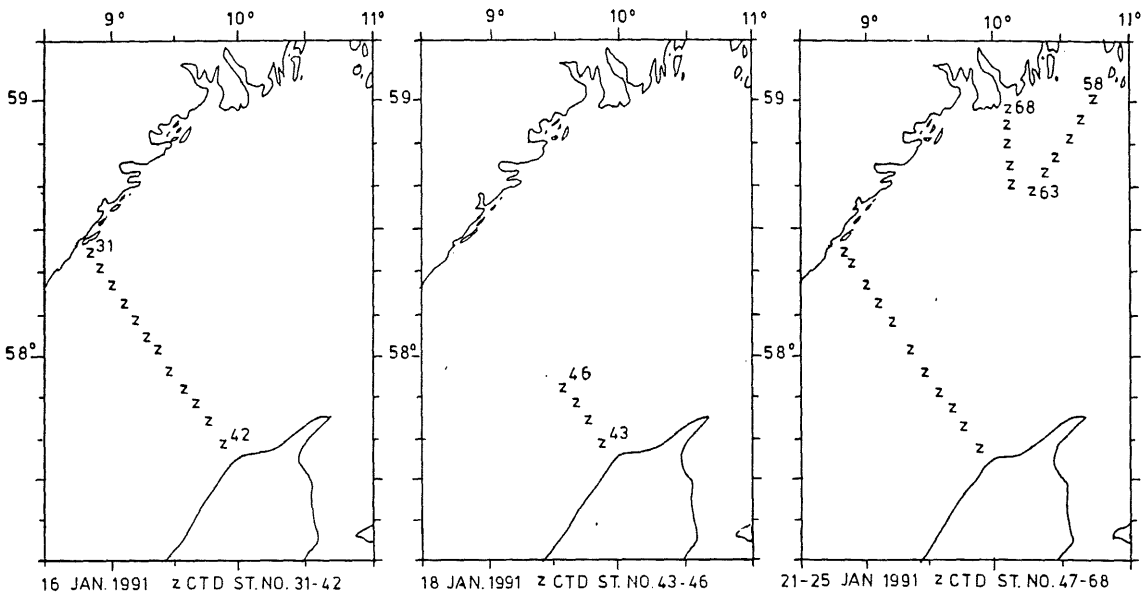
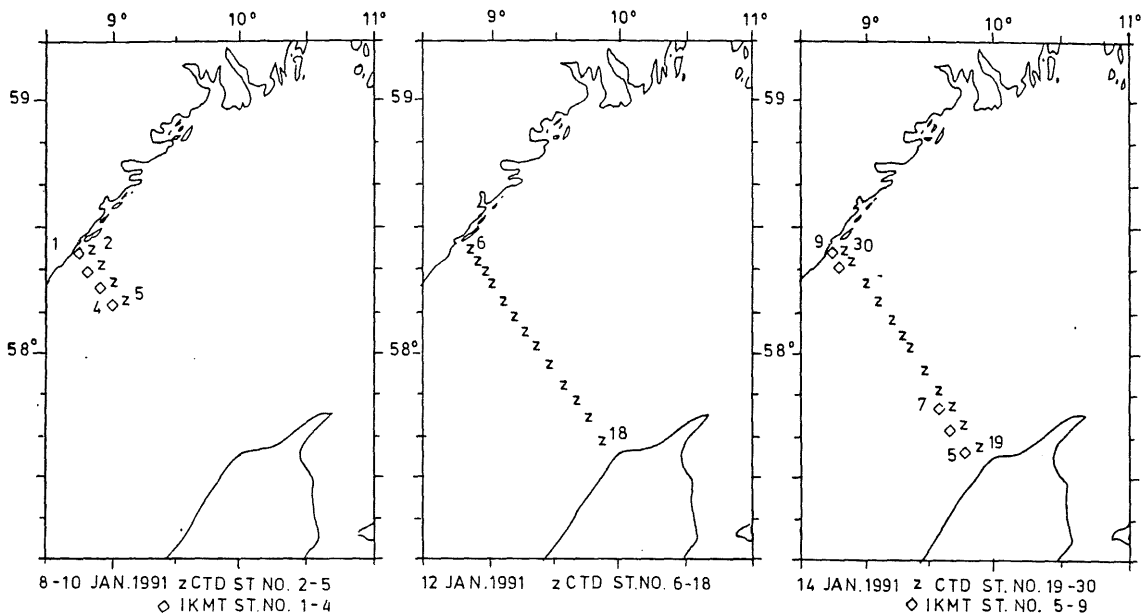


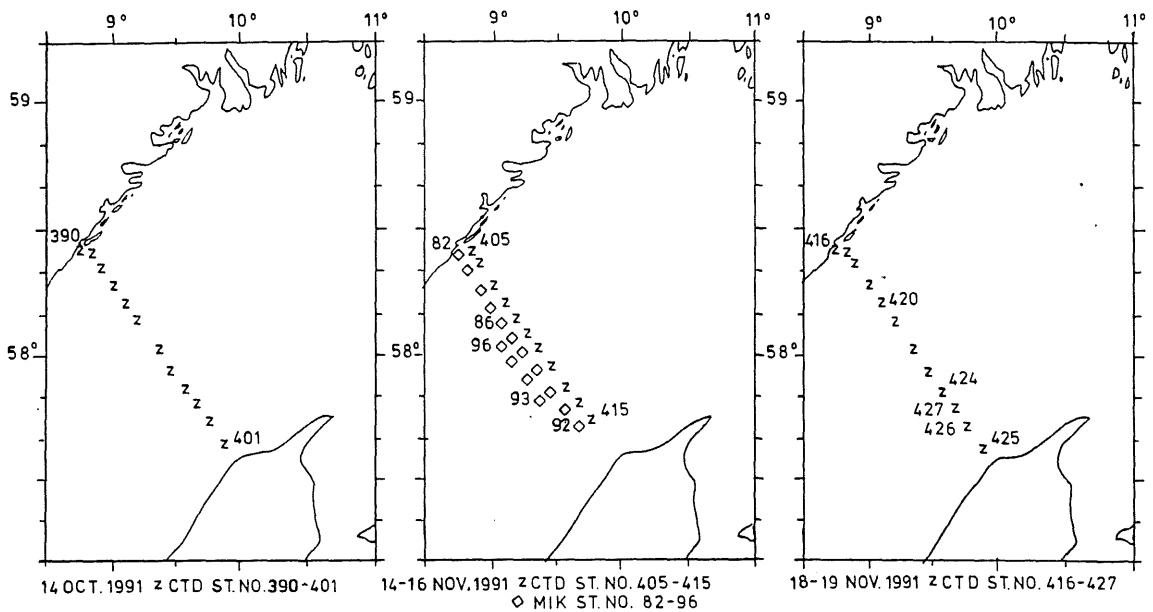
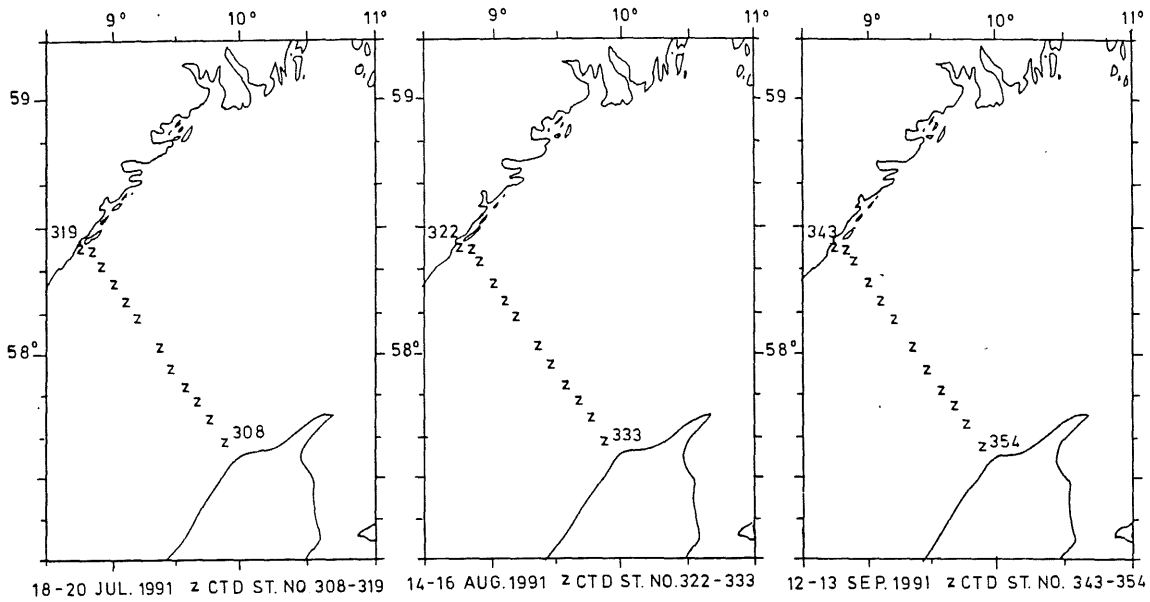
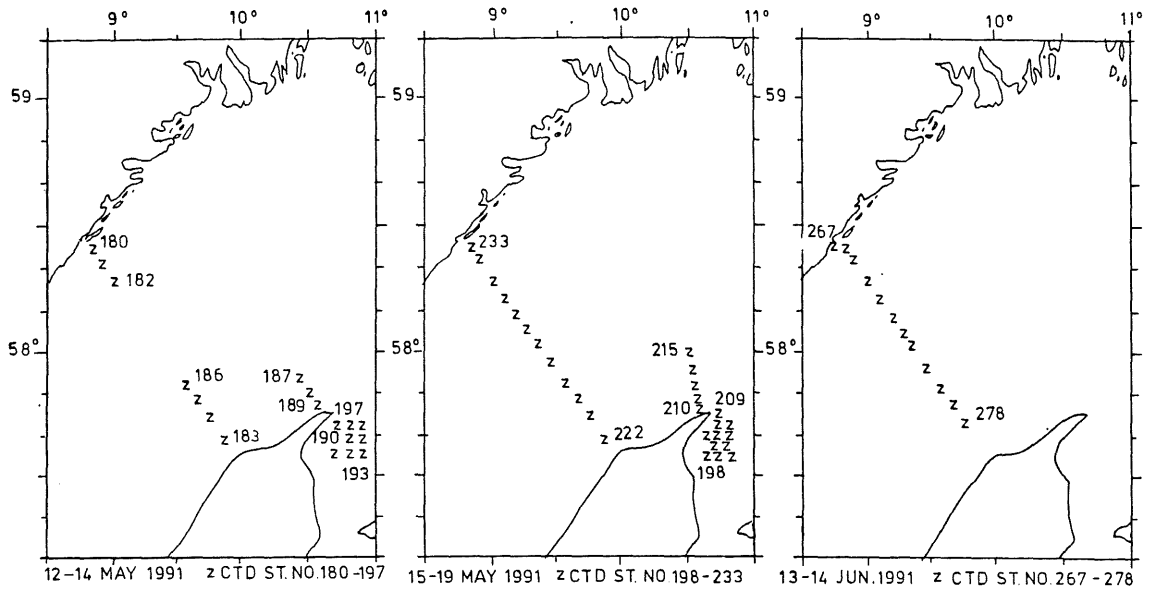
14 OCT - 4 NOV. 1991 ◻ ◻ TRAWL ST. NO. 593-665

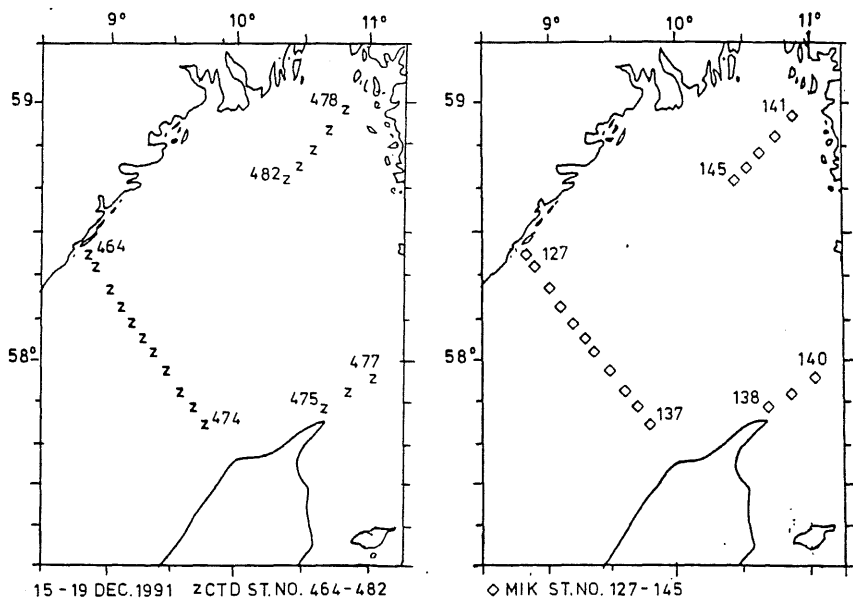
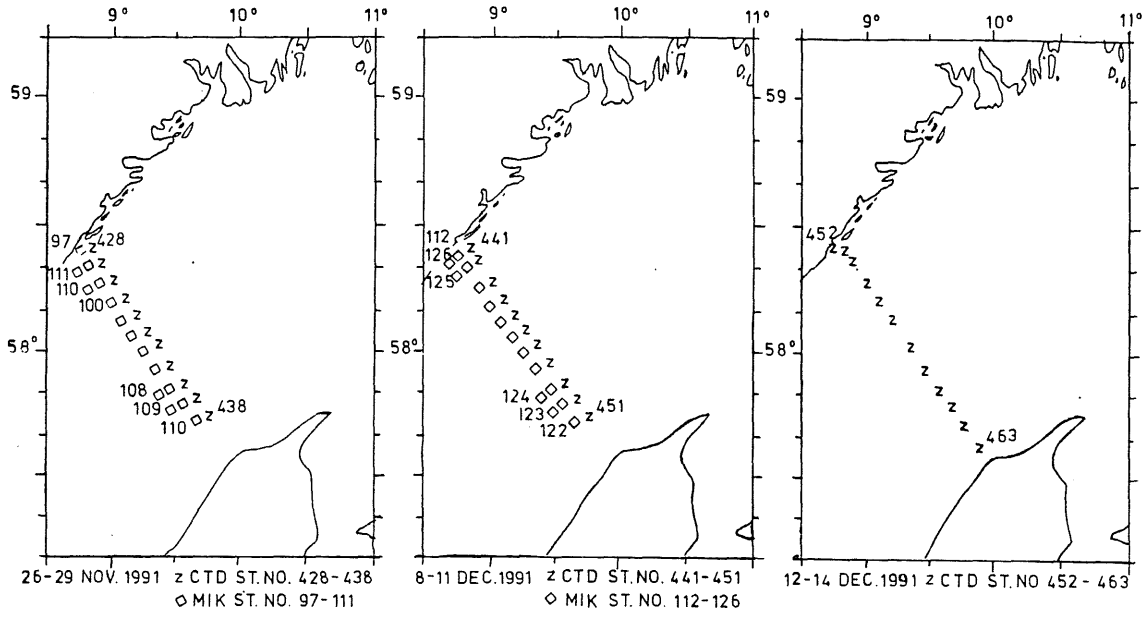
"JOHAN HJORT"

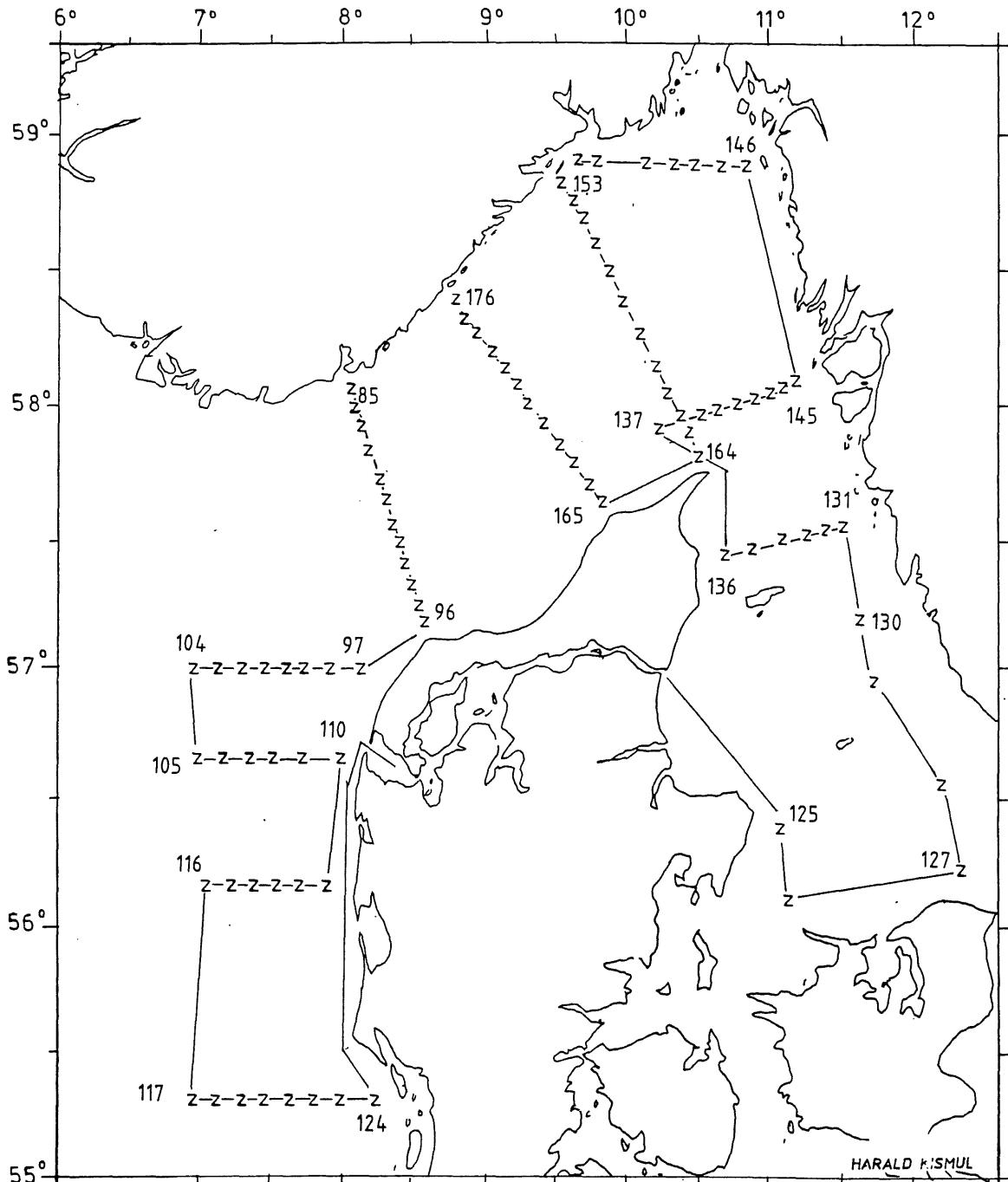






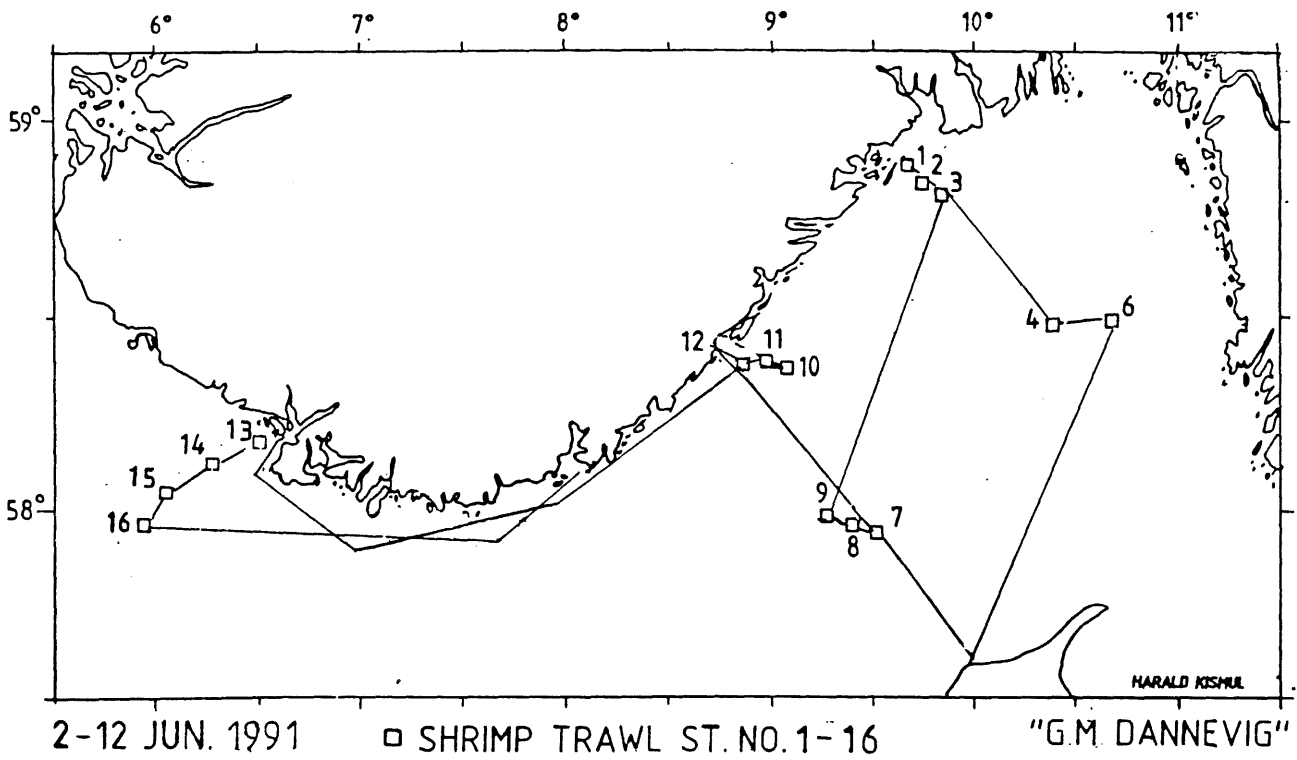


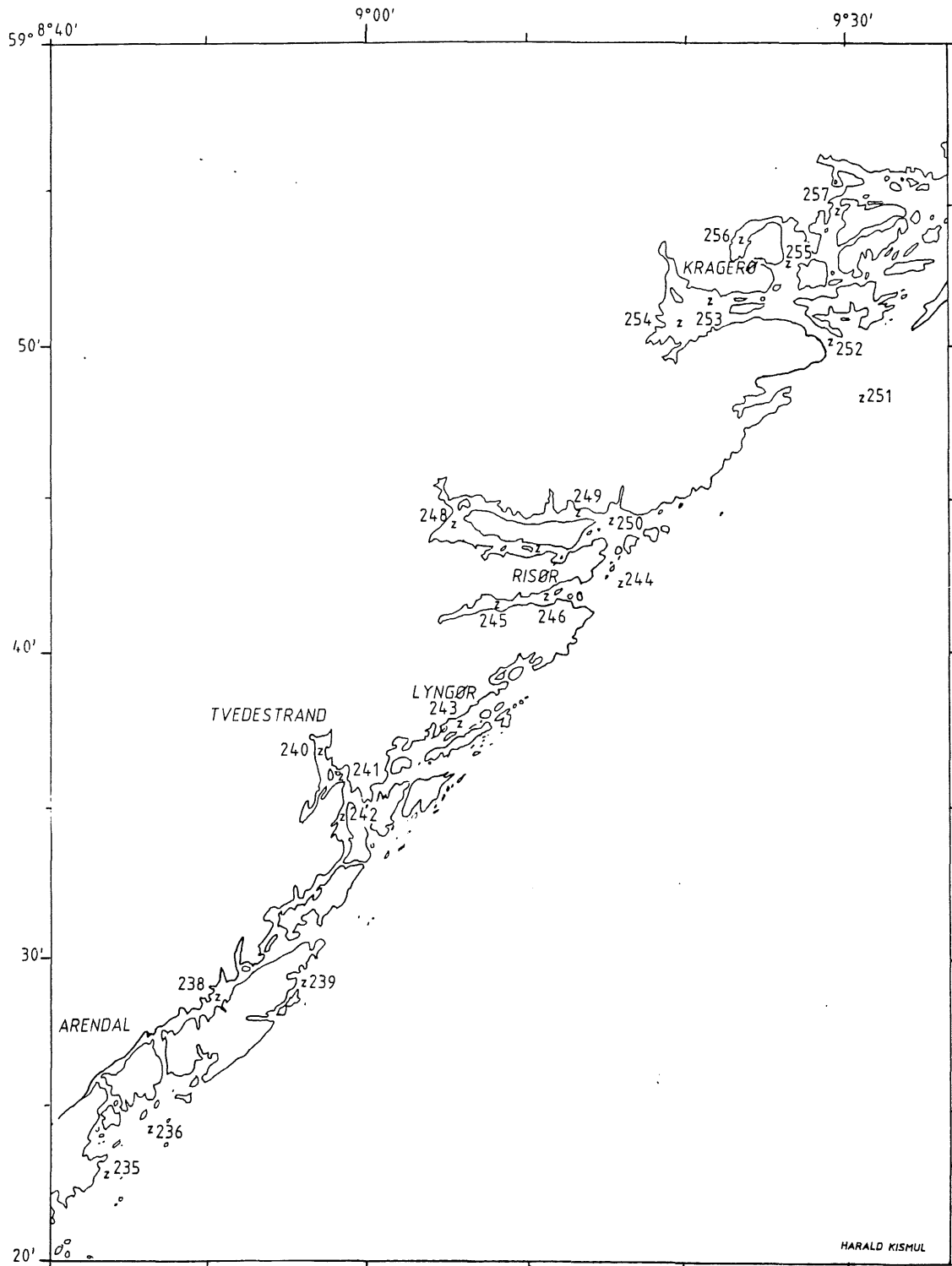




15 APR.-1 MAY 1991 z CTD ST. NO. 85-176

"G.M. DANNEVIG"

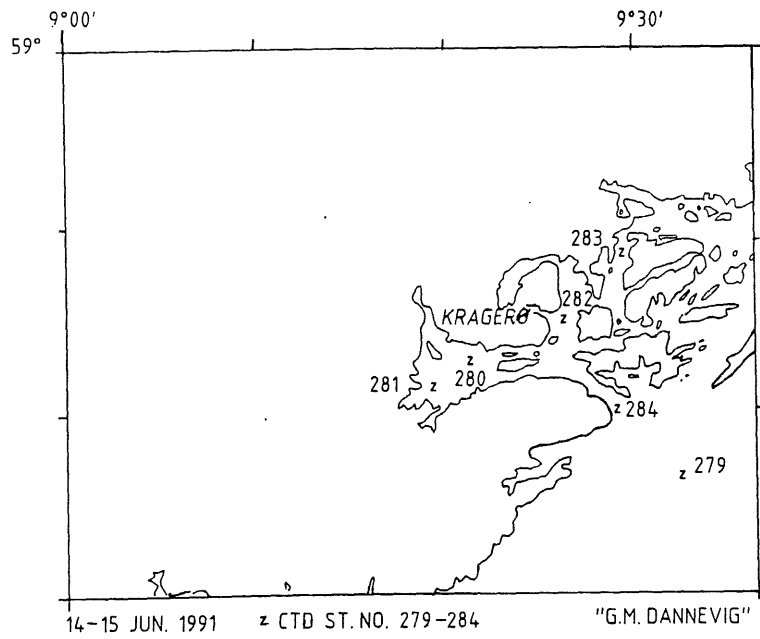
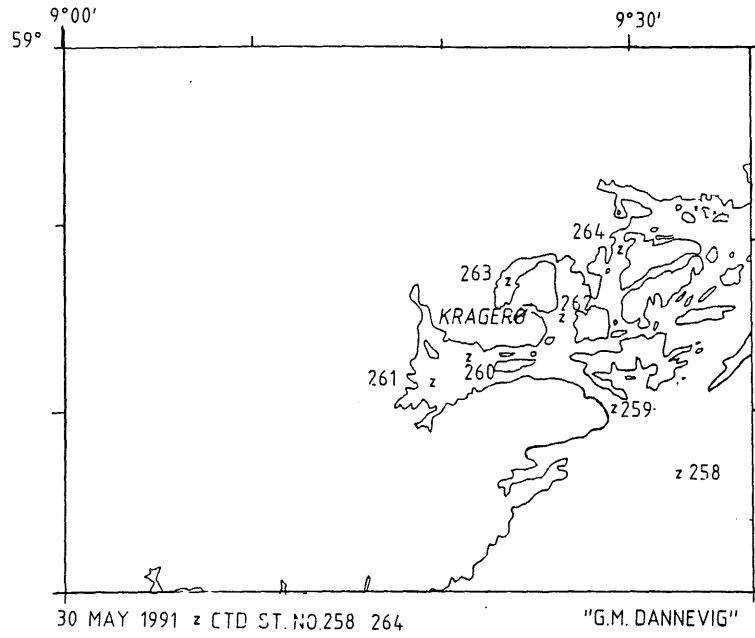


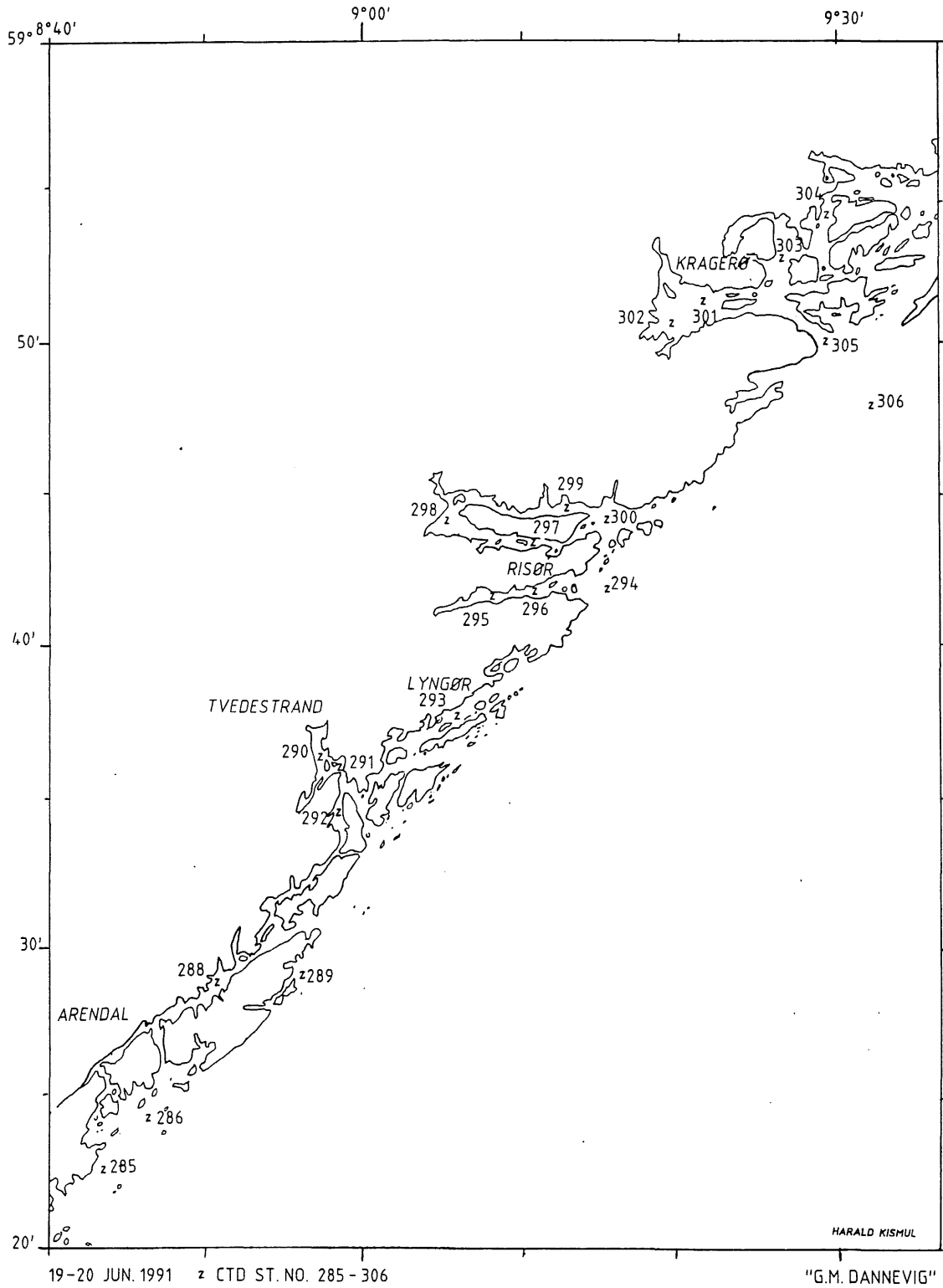


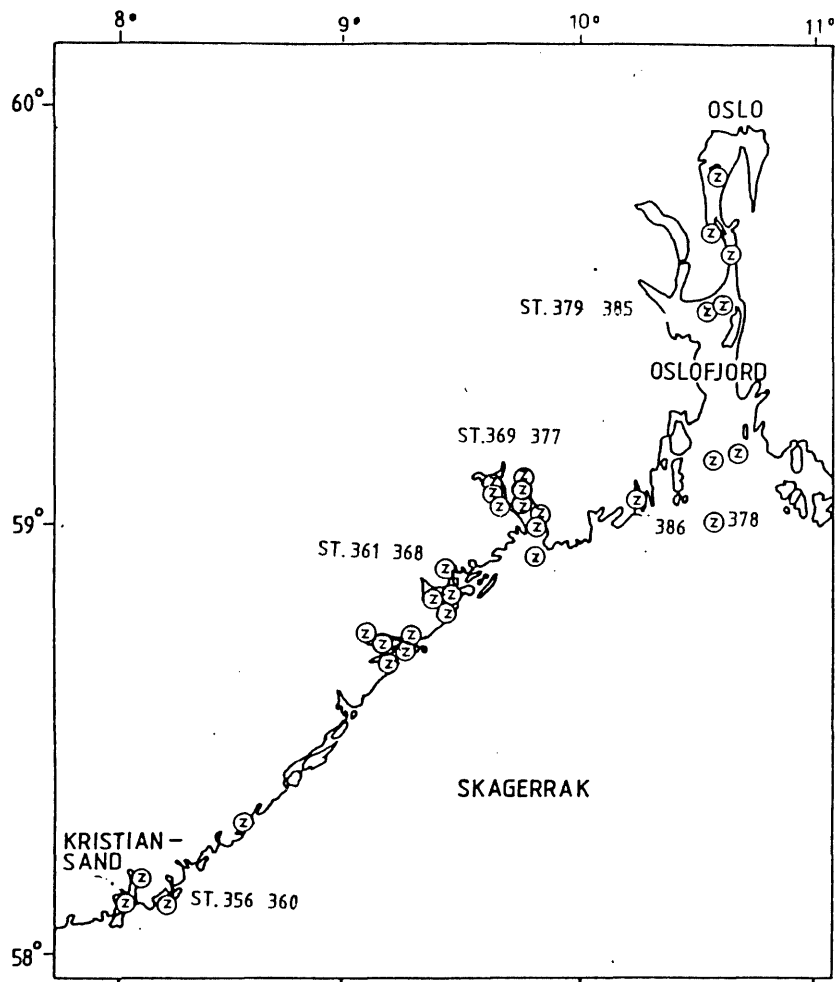
23-24 MAY 1991 z CTD ST. NO.235-257

"G.M. DANNEVIG"

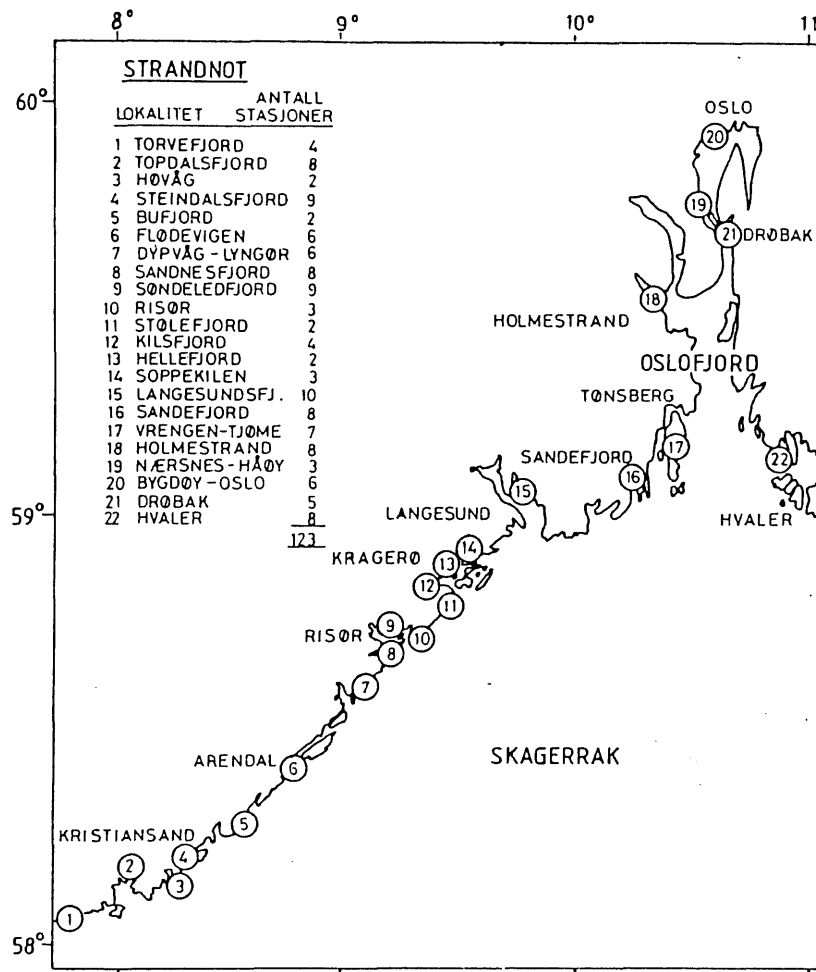
HARALD KISMUL







17 SEP.-3 OCT. 1991 CTD ST. NO. 356-386

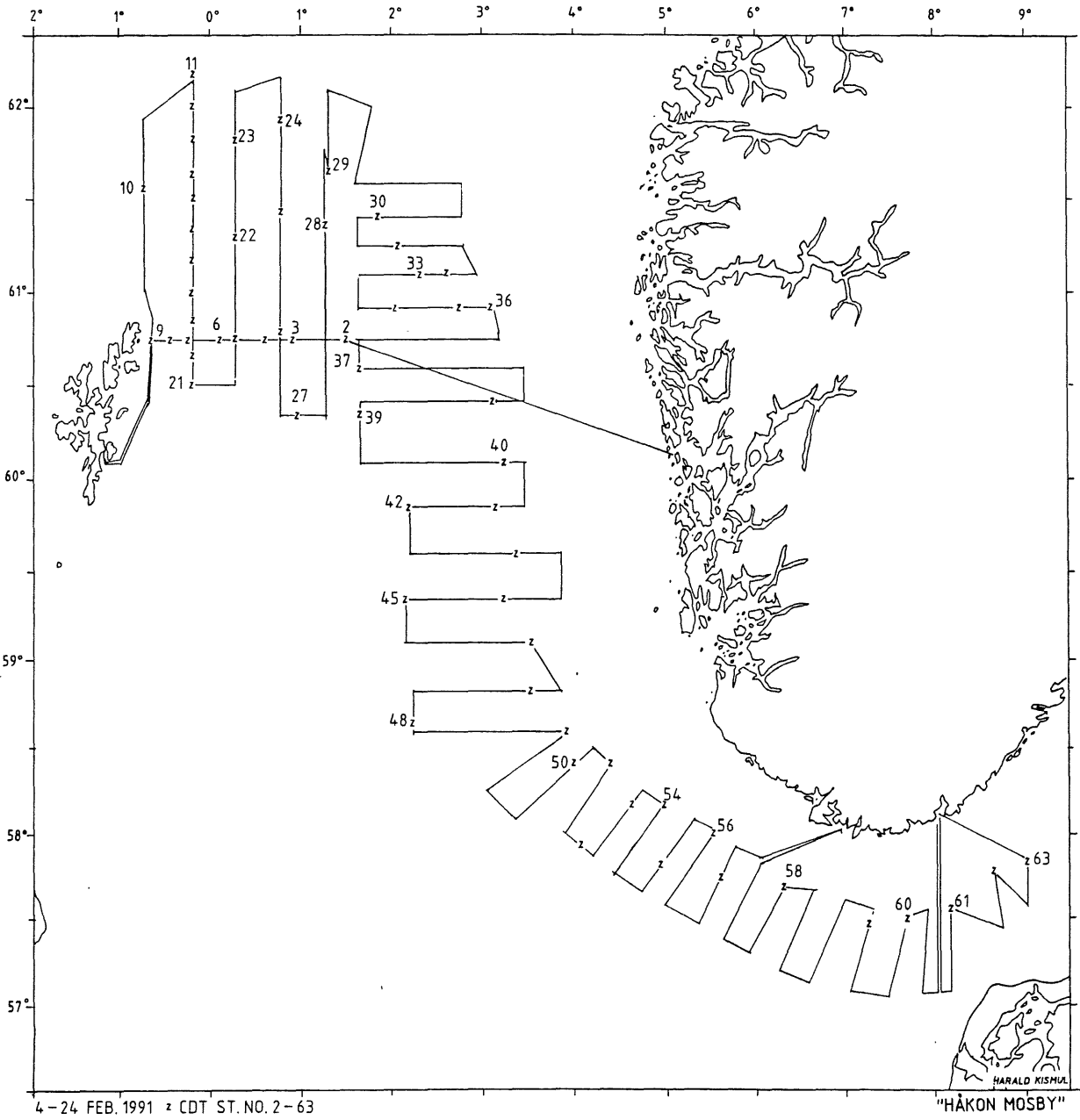


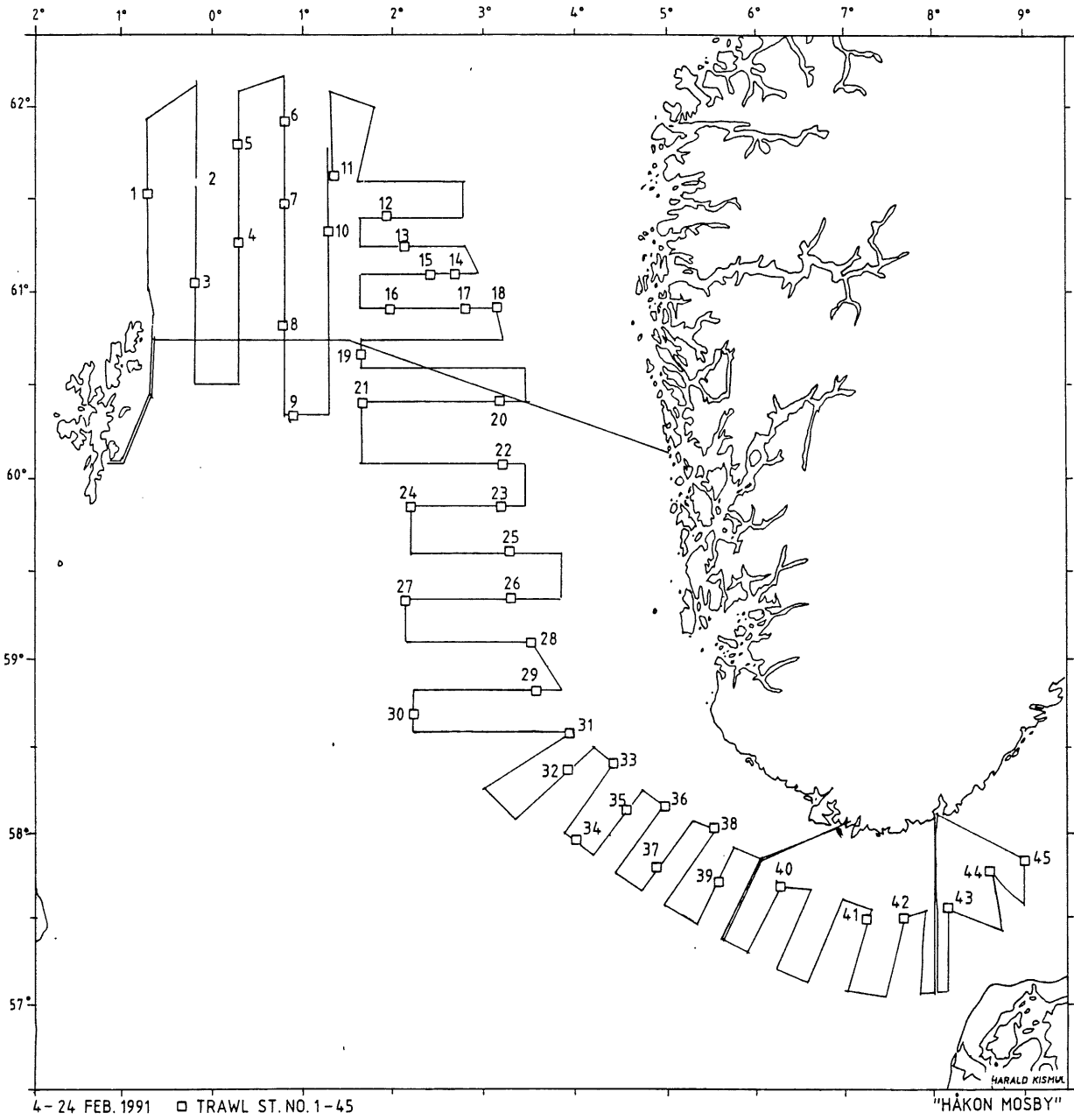
○ BEACHSEIN 1-22

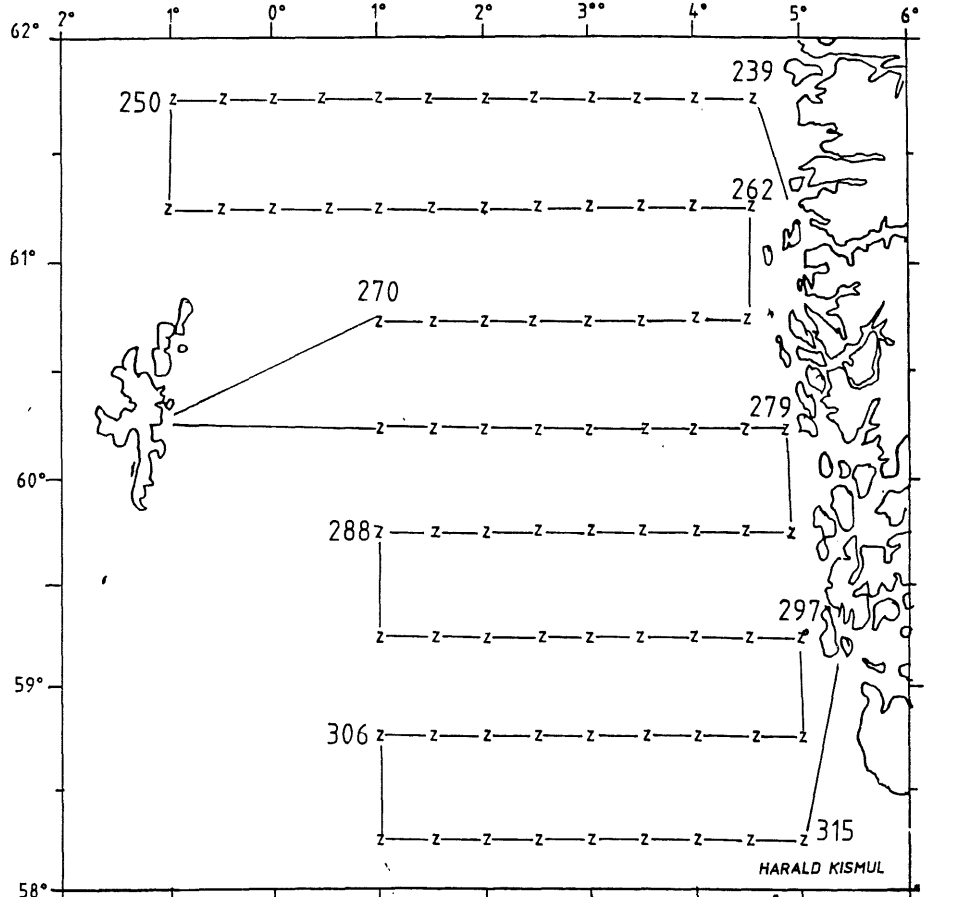
"G.M. DANNEVIG"

STRANDNOT

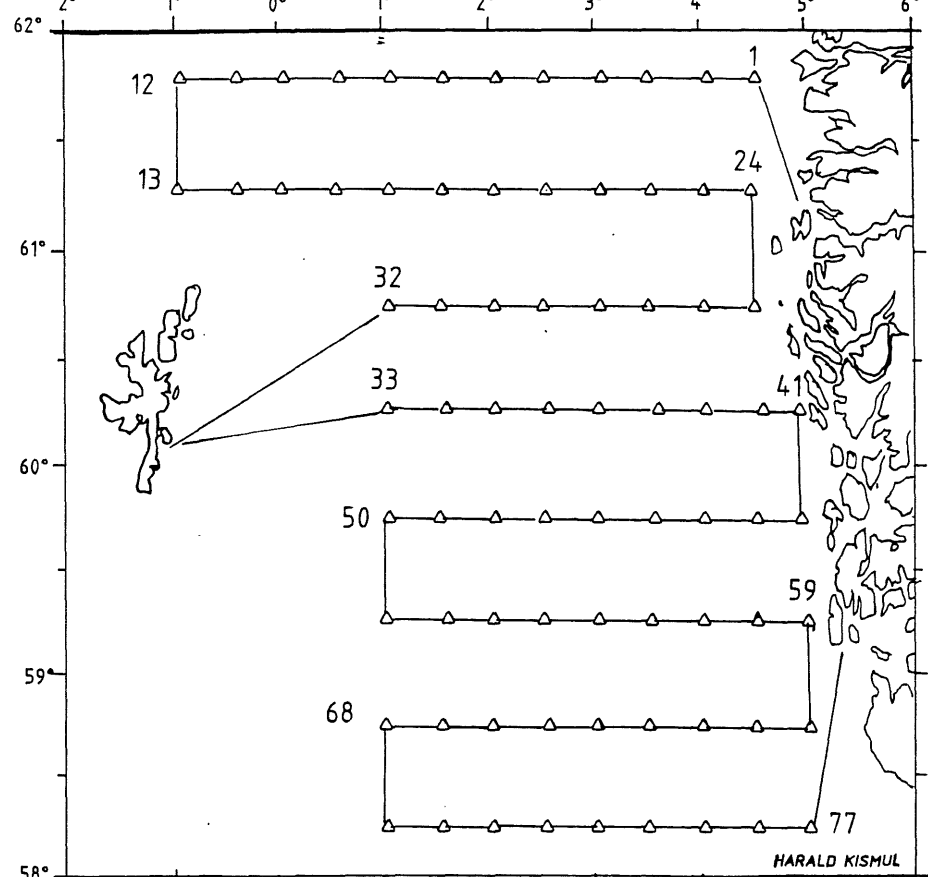
LOKALITET	ANTALL STASJONER
1 TORVEFJORD	4
2 TOPDALSFJORD	8
3 HØVÅG	2
4 STEINDALSFJORD	9
5 BUFJORD	2
6 FLØDEVIGEN	6
7 DYPVÅG - LYNGØR	6
8 SANDNESFJORD	8
9 SØNDELEDFJORD	9
10 RISØR	3
11 STØLEFJORD	2
12 KILSFJORD	4
13 HELLEFJORD	2
14 SOPPEKILEN	3
15 LANGESUNDSFJ.	10
16 SANDEFJORD	8
17 VRENGEN-TJØME	7
18 HOLMESTRAND	8
19 NÆRSNES - HÅØY	3
20 BYGDØY - OSLO	6
21 DRØBAK	5
22 HVALER	8
123	123



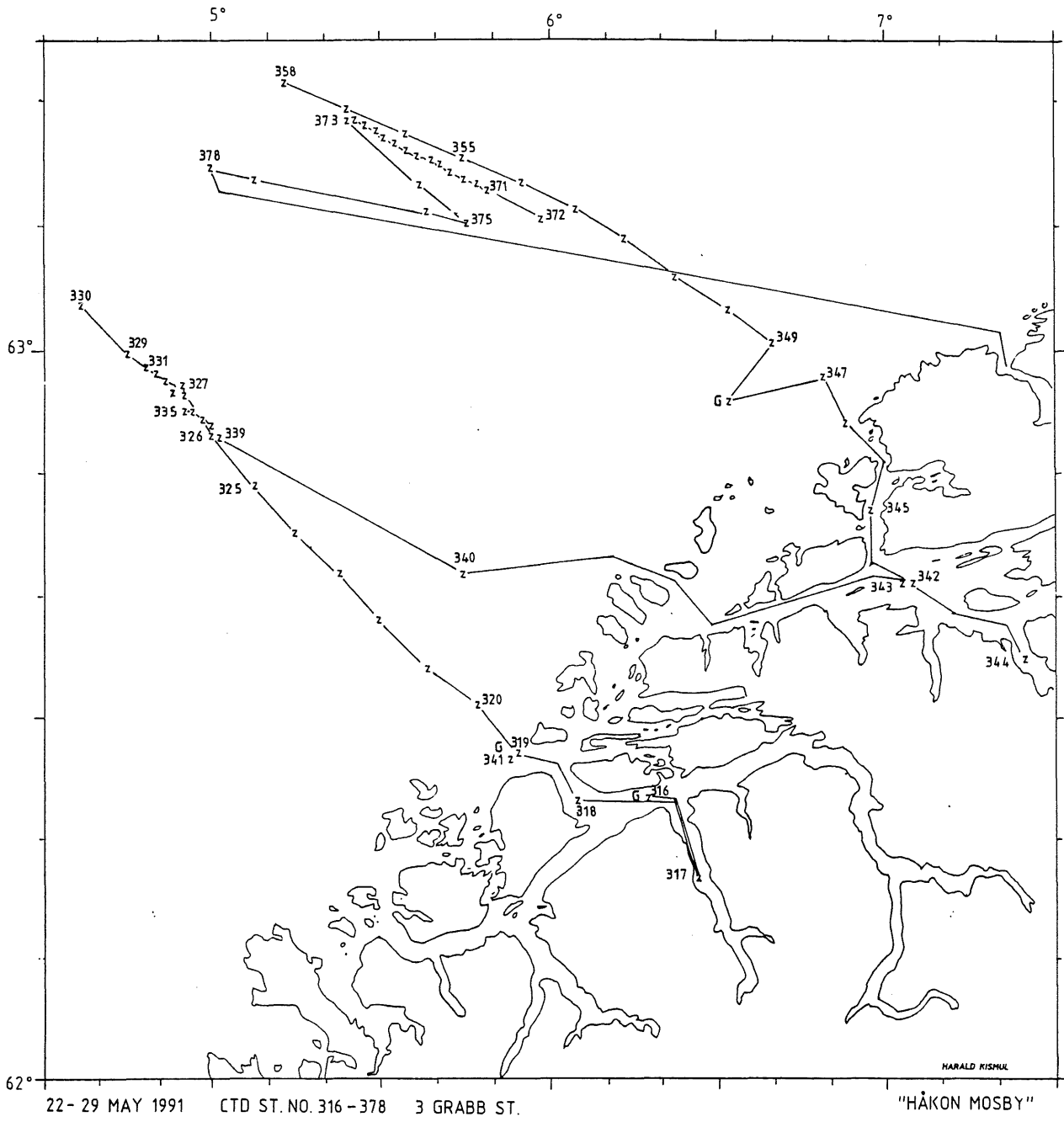


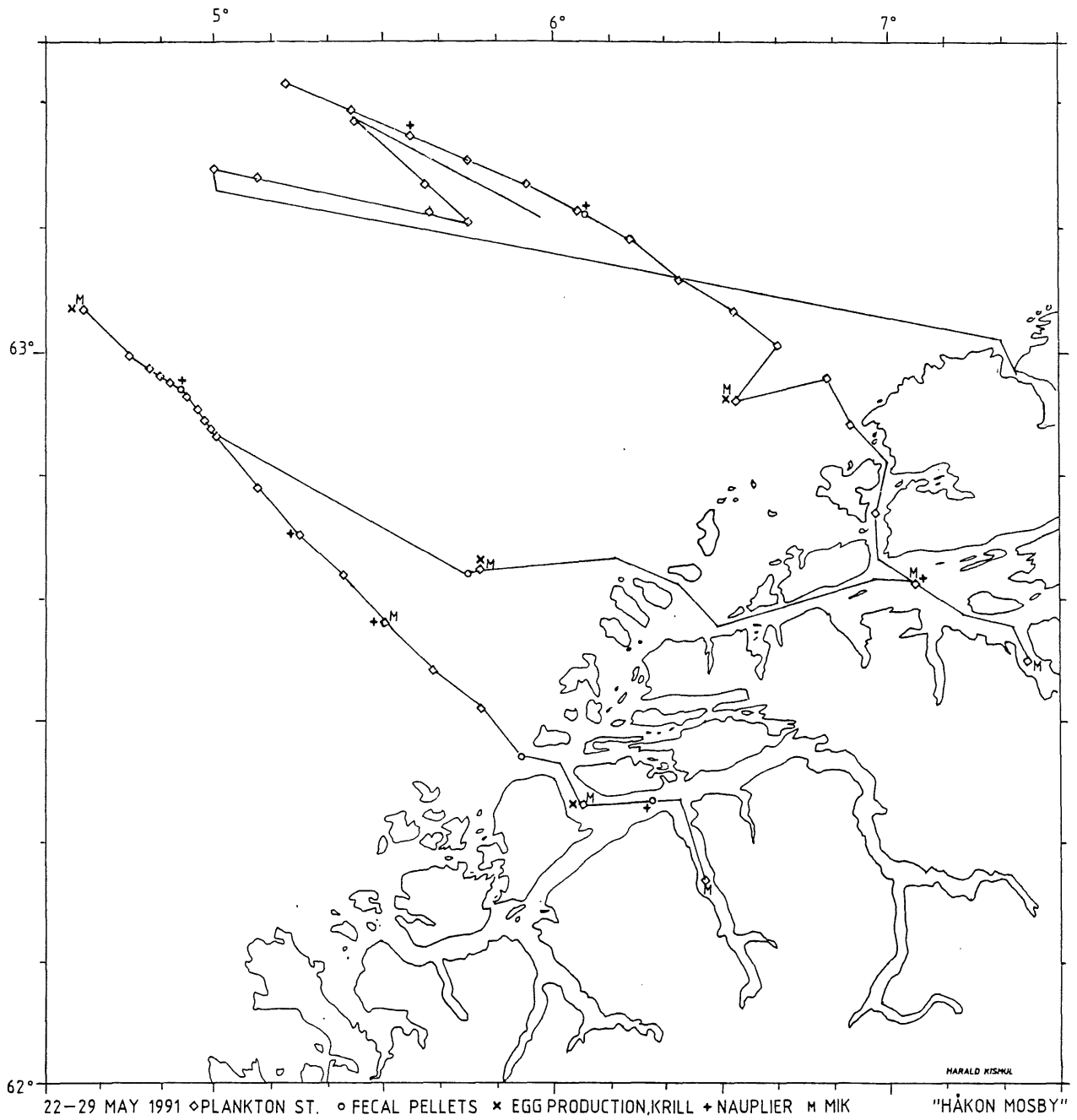


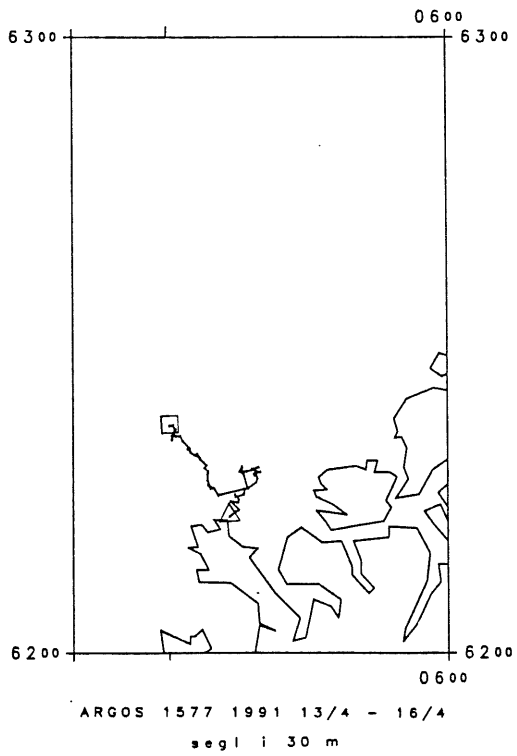
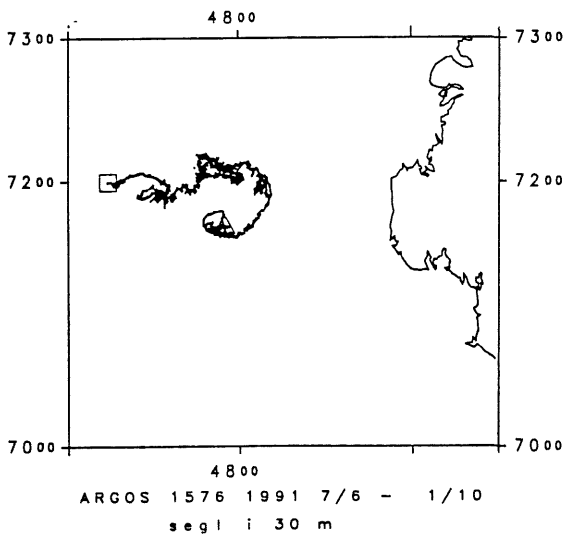
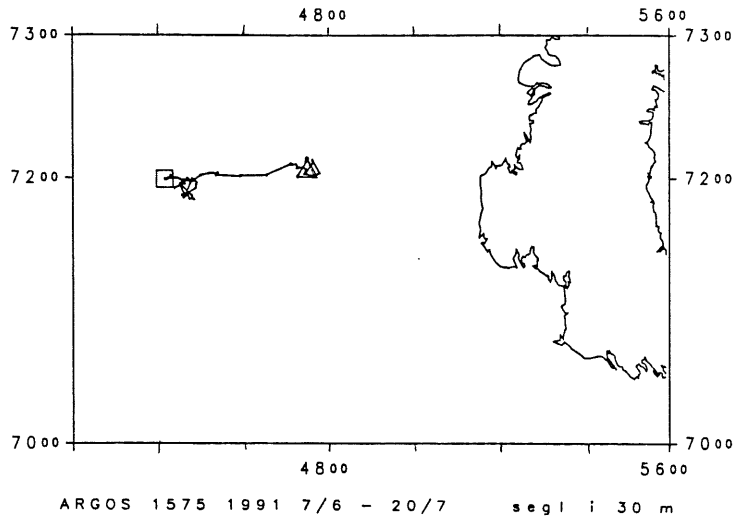
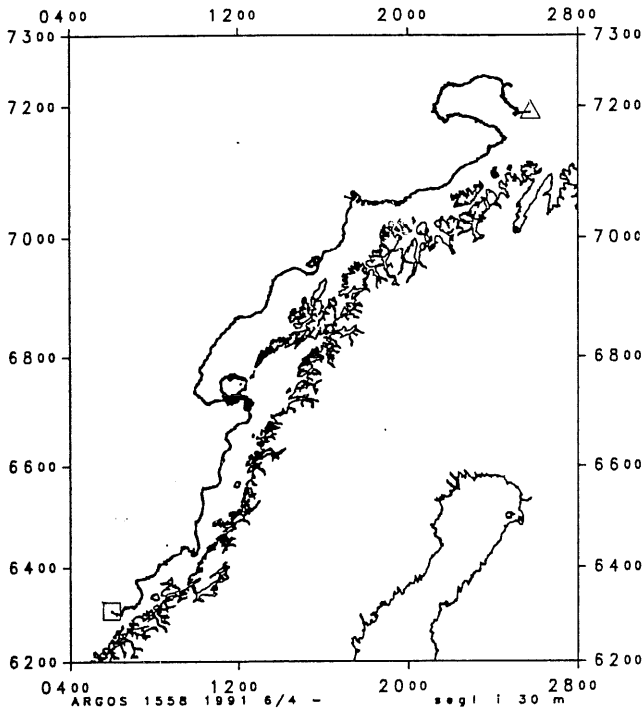
29 APR.-11 MAY 1991 CTD ST. NO. 239-315 "HÅKON MOSBY"

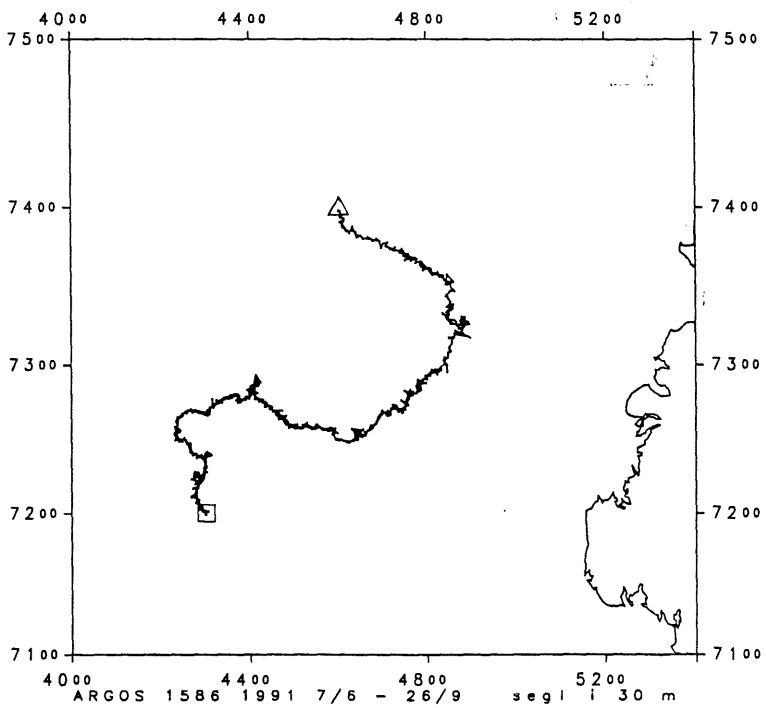
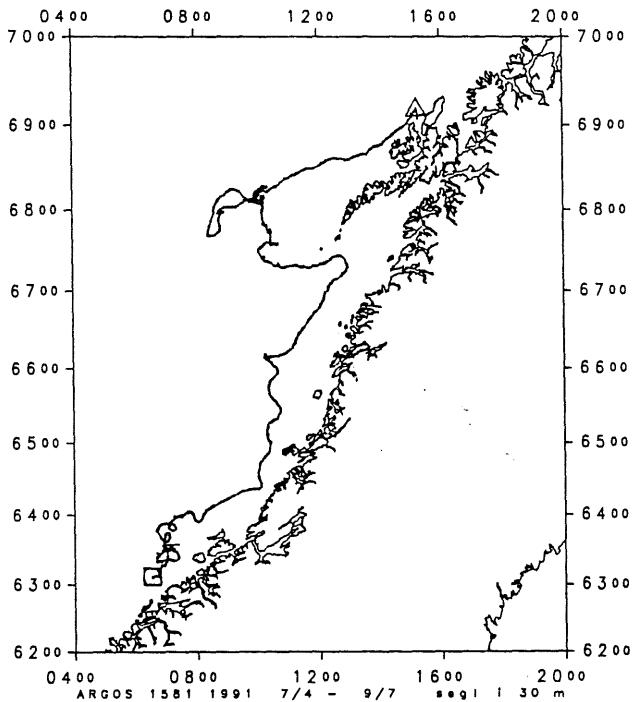
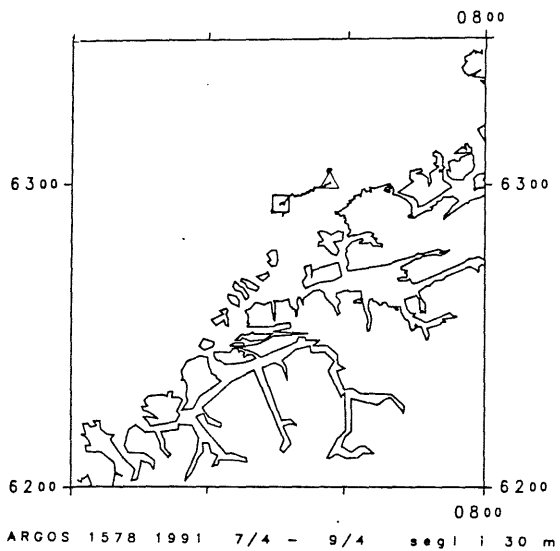


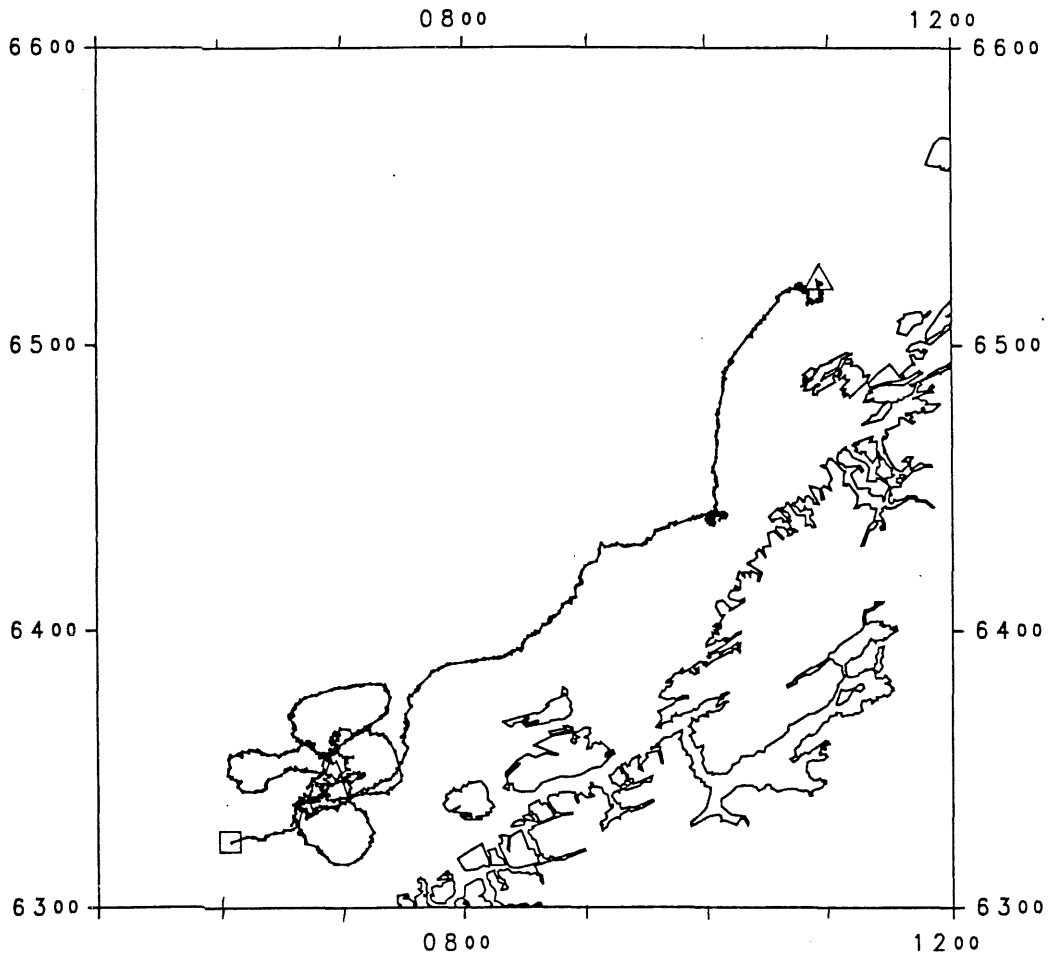
29 APR - 11 MAY 1991 Δ 77 TRAWL ST. "HÅKON MOSBY"



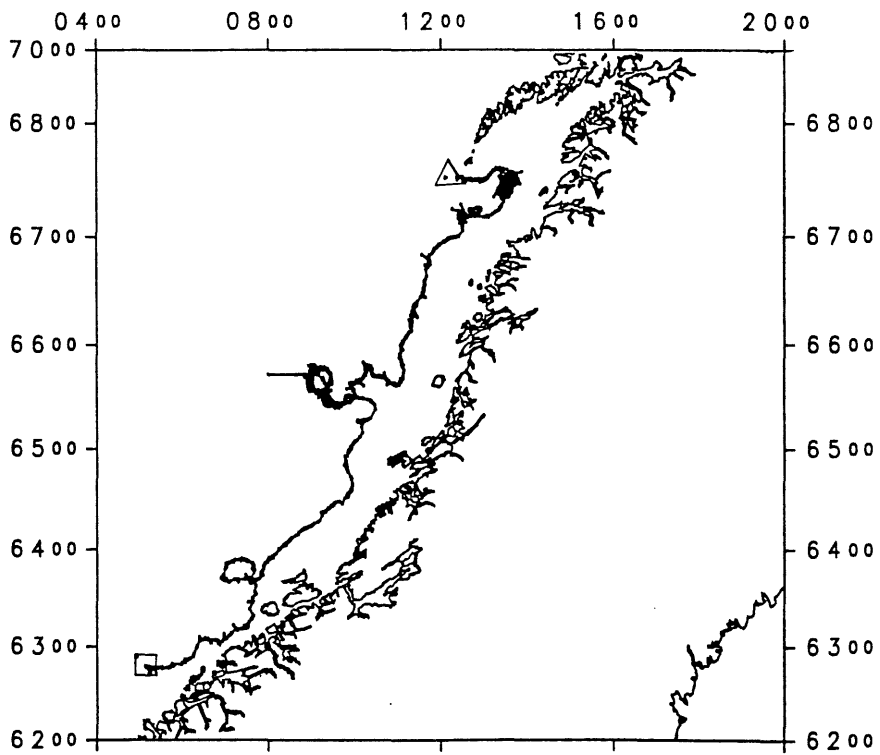








ARGOS 1587 1991 7/4 - 4/7 segl i 30 m



ARGOS 1583 1991 5/4 - 4/8 segl i 30 m