Received 6/18/86
In NEWORD

United States Department of the Interior

GEOLOGICAL SURVEY

OFFICE OF ENERGY AND MARINE GEOLOGY
BRANCH OF ATLANTIC MARINE GEOLOGY
WOODS HOLE, MA 02543

86008

June 17, 1986

MEMORANDUM

TO: Cruise Distribution

FROM: Brad Butman BAB

SUBJECT: GYRE cruise

Dates: June 19-27 Woods Hole to Woods Hole

Vessel: R.V. GYRE

Personnel: D. Brooks (Chief Scientist) TAMU
B. Strahle
J. Moody
P. Shoukimas
R. Rendigs

Purpose:
1. Recover current mooring in Rodgers Pass.
2. Deploy current moorings in Rodgers Pass and on Truxton Swell to map flow of slope water between major basins in Gulf of Maine.

Cruise Report
R/V GYRE
June 19-27, 1986

Vessel: R/V GYRE 86-G-8

Date of Operation: June 19-27, 1986

Personnel: USGS participants (D. Brooks (TAMU) - chief scientist)
John Moody
Bill Strahle
Rick Rendigs

Narrative:

DATE	EDT	
June 19	0800	Depart Woods Hole
	1230	Gt Rd Shoals Channel
	~1700	1st CTD station
	2100	Tested T10 XBT, ~ 2-10 m offset from CTD data
June 20	0530	Finished line A station 8 from Gt Rd Shoal to Parker Ridge
	0614	At mooring site 301, fired release, NO SHOW
	0730	Begin 1st drag for mooring 301
	0930	Start hauling back, pass was probably too close to the east and trawl wire went over mooring
	1130	Start hauling 2nd try. NO LUCK
	1445	Start launch of mooring # 310, 1 mile to the east of mooring 301
	1533	Mooring # 310 deployed
	1600	Start B-line and XBT survey across Rodgers Pass
	2330	End B-line
June 21	0800	Continue CTD stations Line C
	2000	Start Line E on Georges Bank, heavy, steep seas - several break across CTD launch area
June 22	0800	Finish Line E, heading for D. Brooks mooring site
	0900	Start Line F back to D. Brooks mooring site

DATE	EDT	
	1600	Start launch of D. Brooks mooring
June 23	0330	Start Line H on Truxton Swell
	1330	Finish Line H
	1400	Start launch of Mooring # 311
	1503	Mooring # 311 deployed in 195 m
	2000	Line I across sill of NE Channel
June 24	0800	Steaming to Line J
	0940	Start Line J at mouth of NE Channel
June 25	1200	Finish Lines K, L, M around mouth of NE Channel
	1210	Start steaming to Gt South Channel
June 26	0100	Arrive Gt South Channel area and start Line N (12 stations) for R. Schlitz
June 27	0800	Arrive WHOI dock

Tabulated information:

Days at sea:	9.0
Subsurface moorings deployed:	2
DSGS XBT stations	28
USGS CTD stations:	14

Rodgers Pass Section - Line B
20 June 1986 1600-2300 EDT

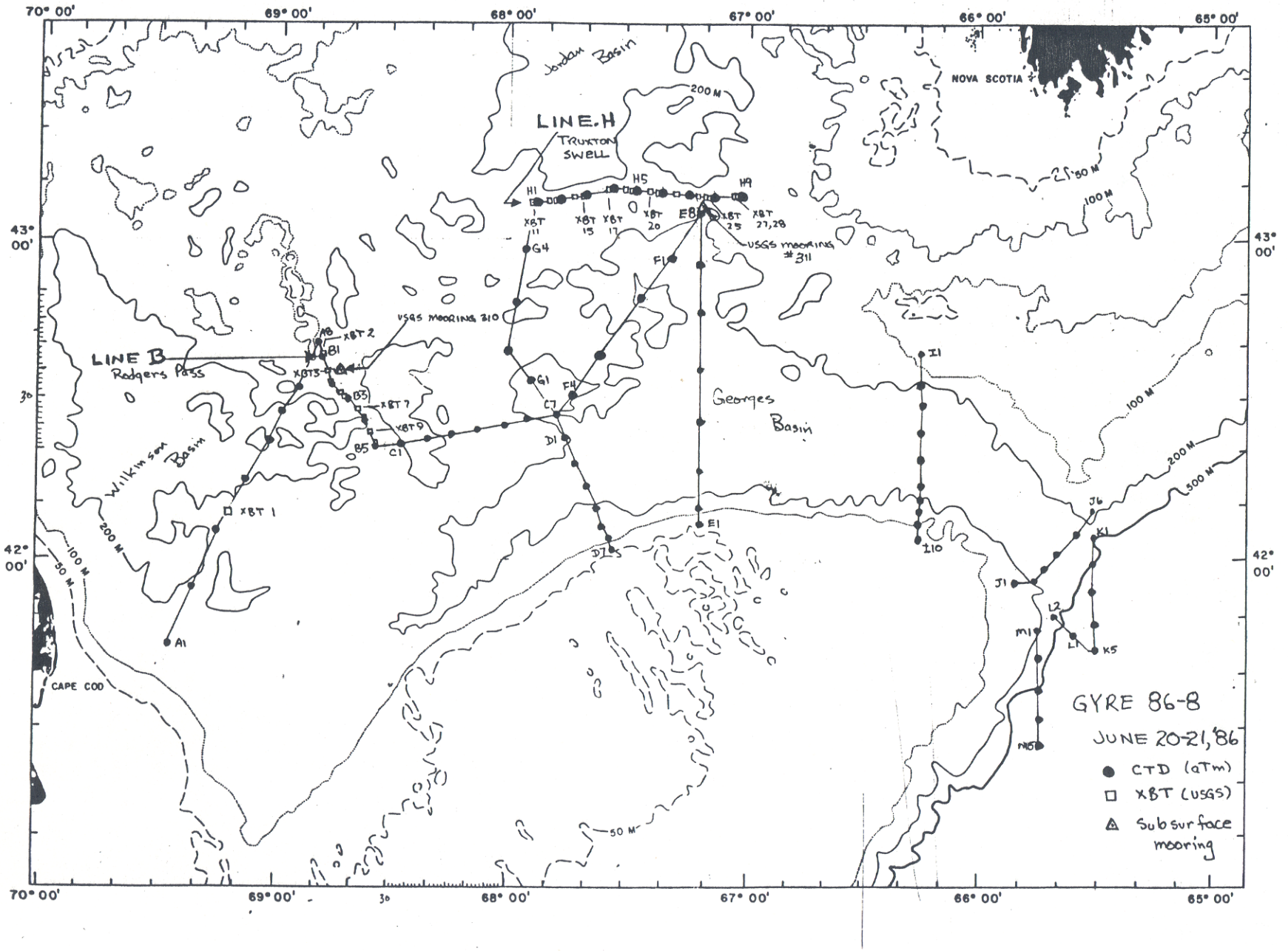
Mooring Site: 301 and 310

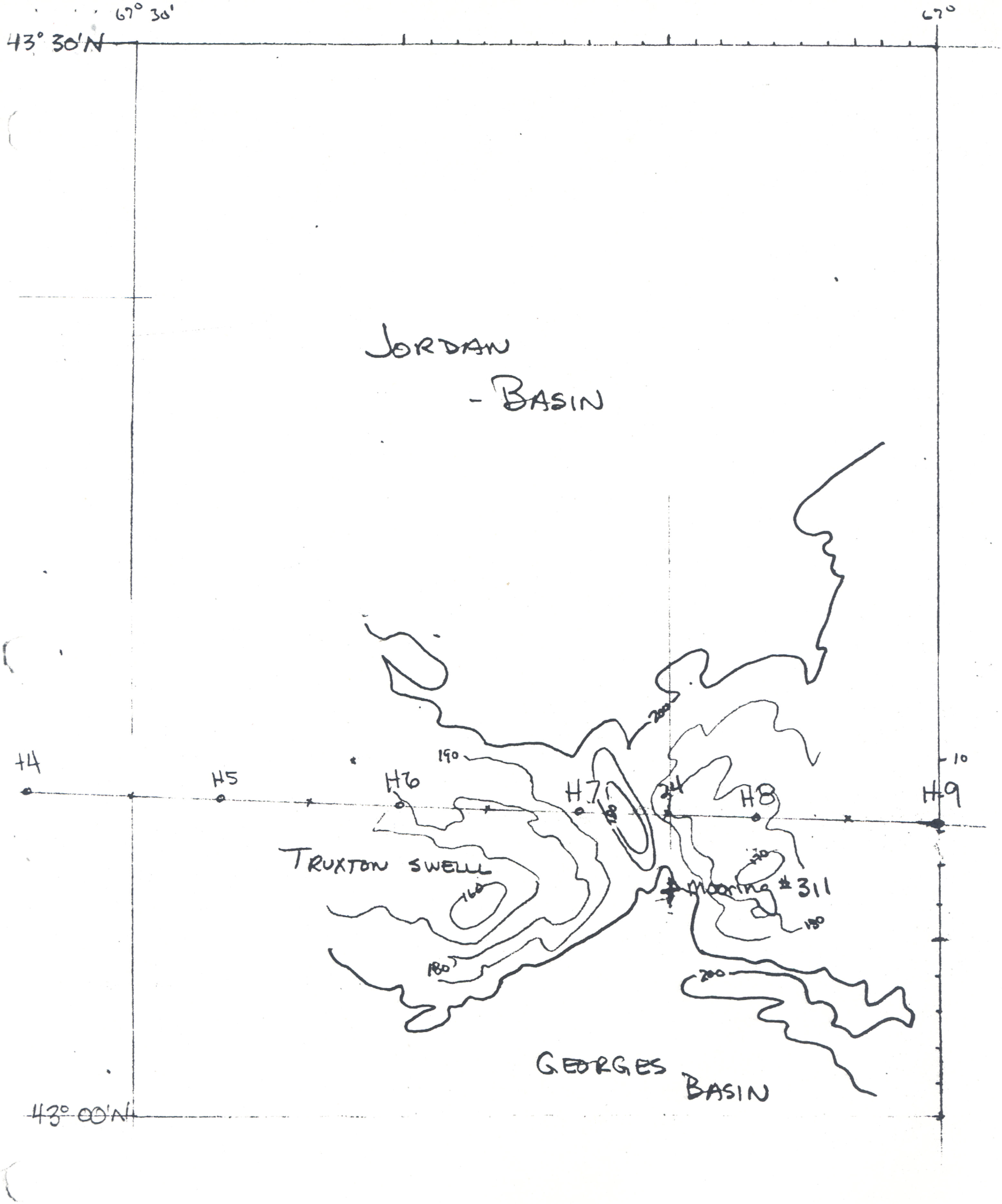
CTD station	XBT station	Latitude	Longitude	Depth (m)
	2	42°37.9	68°47.3	170
B1		42°38.1	68°47.9	160
	3	42°36.4	68°46.2	-
	4	42°34.5	68°44.8	188
B2 (~ mooring site)		42°34.2	68°44.9	188
	5	42°32.0	68°42.6	186
	6	42°30.1	68°41.2	174
B3		42°30.1	68°41.1	172
	7	42°27.8	68°39.1	188
	8	42°25.6	68°37.1	190
B4		42°25.5	68°37.0	190
	9	42°23.3	68°35.0	183
	10	42°21.1	68°33.6	166
B5		42°20.9	68°33.5	166

Trexton Swell Section - Line H
23 June 1986 0330-1330
mooring site: 311

CTD station	XBT* station	Latitude	Longitude	Depth (m)
	11	43°06.9	67°53.5	186
H1		43°07.2	67°53.4	188
	12	43°06.9	67°50.1	187
	13	43°07.4	67°47.4	185
H2		43°07.4	67°47.3	185
	14	43°07.8	67°43.8	174
	15	43°08.4	67°41.1	185
H3		43°08.4	67°40.9	186
	-			
	17	43°09.3	67°34.1	200
H4		43°09.3	67°34.0	206
	18	43°09.1	67°30.1	177
	19	43°08.9	67°26.8	177
H5		43°08.9	67°26.7	178
	20	43°09.2	67°23.3	170
	21	43°08.7	67°20.1	166
H6		43°08.7	67°20.1	170
	22	43°08.7	67°16.4	183
	23	43°08.5	67°12.5	187
H7		43°08.6	67°13.6	185
	24	43°08.3	67°10.2	177
	25	43°08.3	67°07.2	177
H8		43°08.3	67°06.9	175
	27	43°08.3	67°01.9	181
	28	43°08.2	67°00.0	174
H9		43°08.3	66°59.2	168

* XBT's 16 and 26 malfunctioned


70° 00'
69° 00'
68° 00'
67° 00'
66° 00'
65° 00'
43° 00'
42° 00'
30
Jordan Basin
NOVA SCOTIA
200 M
100 M
50 M
LINE H
TRUXTON SWELL
H1
H5
H9
XBT 11
XBT 15
XBT 17
XBT 20
XBT 25
XBT 27,28
EB
USGS mooring #311
G4
F1
USGS MOORING 310
A8
XBT 2
B1
LINE B
Rodgers Pass
XBT 3
B3
XBT 7
XBT 9
B5
C1
G1
F4
C7
D1
Georges Basin
I1
I10
E1
D7
J6
K1
J1
L2
M1
L1
K5
M6
Wilkinson Basin
XBT 1
A1
CAPE COD
GYRE 86-8
JUNE 20-21, '86
CTD (aTm)
XBT (USGS)
Subsurface mooring


67° 30'
67°
43° 30'N
JORDAN
BASIN
200
190
H4
H5
H6
H7
24
H8
H9
10
TRUXTON SWELL
160
180
mooring #311
200
GEORGES
BASIN
43° 00'N

Summary:

1. Slope water (salinity ~ 34 o/oo, temperature 65°C, and oxygen ~ 5.6 ml/l) was about 10 m thick on the north side of Rodgers Pass (see fig. 1, Line B). The lower current meter (180 m) on moorings 301 and 310 was in slope water and the upper current meter (160 m) was about 10-20 m above the 34 o/oo isoline. The TDR at 120 m was in a temperature minimum (Maine Intermediate Water) of 5.5°C.

2. Slope water (salinity 34.0 34.4 o/oo, and temperature 4.8-5.2°C) was about 70 m thick along the east end of Truxton Swell (see fig. 1, Line H). All instruments on moorinng 311 (see fig. 2) were in the slope water.

3. NE Channel Sill (section I, fig. 1) had more slope water than in 1984 (D. Brooks). It was on the north side with maximum salinity of 35.2 o/oo and temperature of 10-11°C.

4. Offshore of NE Channel (41°55'N, 65°30'W) an "old" warm core ring (35.7 o/oo, 14°C) covered by shelf water (32.7 o/oo, 10°C) was found and mapped with sections K, L, M (fig. 1). A possible source of deep slope or Western North Atlantic water.