R/V ASTERIAS

SEPTEMBER, 1978

DO NOT THROW OVERBOARD!

D. ESKENASY

#100493 ASTR 78
ASTERIAS (#78027)
Jeffrey's Ledge
Sept 11-21, 1978
D. Eskenasy
Sparker Log

100493

OPS

12 KHz | 3.5 KHz | CSP | MAG | GRAV | SONO | STA

COMMENTS AND OBSERVATIONS

R/V ASTERIAS — SEPTEMBER 11, 1978

DICK COBURN, CAPTAIN
DIANE ESKENASY, CHIEF SCIENTIST
ROBERT OLDALE
WALLACE BOTHNER
ROBERT SIMPSON — 234-5504 FTS, Mailstop 964, Denver Fed Ctr.
KENNETH PAROLSKI
DAVID MASON

DEPART 0930 SEPT. 11, 1978, MONDAY, WOODS HOLE

LOCATION of CRUISE: JEFFREY'S LEDGE AREA, E. of Gloucester, Mass.

PURPOSE of CRUISE: TO RUN SEISMIC LINES ON AND AROUND JEFFREY'S LEDGE IN ORDER TO DETERMINE THE ORIGIN and STRUCTURE OF same sediment surrounding JEFFREY'S LEDGE AND THE STRUCTURE AND ORIGIN OF THE UNDERLYING SEDIMENTS, AND TO LOCATE THE OFFSHORE EXTENSION OF THE CLINTON-NEWBURY AND THE BLOODY BLUFF FAULTS.

EQUIPMENT:

2 RECORDERS (EPC) 4100 + 3200
1 NORTHSTAR 6000 LORANC + REPEATER
1 EPSCO LORANC + REPEATER
DEL NORTE SPARKER ARRAY
Del Norte Streamer, E. Int. Streamer

Final: Records in 2 files: 27 pieces total, 1/2 has 15, 2/2 has 12

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							0950 - TEST SPARKER & Hydrophones, etc.
							some trouble - sparker firing by itself.
							1000 USCGuard says winds 20-25 kts
							Small craft warnings
							~~Date~~
							~~Rest~~ remember: (3.5 - warm up radio)
							1055 retrieve Sparker.
							1100 equipment working, but lots of noise, either from water or equipment.
							1500 Coming into a storm, thunder + lightening
							1530 Full house. All well.
							Setting up tape recorder. Storm behind us, wind has died down.
							1930 Arrive Gloucester, all OK
							EPSCO: 37445.4
							69581 (bad)
							Northst: 37445.0
							69568.5
							(Light Buoy: Gloucester Sea Buoy
							should be: 37471
							69574
							Northstar: 69584.1
							37470.7
							EPSCO: 69581 (bad) 10 μs off
							37445.4

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION		
12	09	78	1155	EST	203	Line 1	37470.2	49269.5	
			1205				37466.4	49269.7	
			1215				49270.0	37473.6	
			1224		335	Begin 2 c/c	37489.9	49270.2	begin 2
			1230				49271.6	37489.7	
			1245				49276.0	37490.1	
must be 1257 →			1247		203	Begin 3 c/c	49279.7	37490.0	begin 3
			1300		203		49280.0	37492.1	
			1315		203		49280.0	37502.8	
			1330						
			1333		~335	Begin 4 c/c	49280.1	37515.4	begin 4
			1345				49283.4	37515.2	
			1400				49288.6	37515.2	
			1405		~203	Begin 5 c/c	49290.0	37515.1	begin 5
			1415				49289.8	37521.9	
			1430				49290.0	37533.7	
			1443			End	49290.2	37541.6	
			1600		ARRIVE		49268.9	37449.2	69569.7

Loran must have jumped 10 μ seconds on 37000

(A) Put seams of belt on flat spots of pulley.

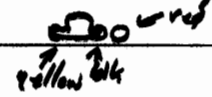
(B) REMEMBER TO CLIP TIPS ON SPARKER EVERY 6 HOURS

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							Sept. 12, 1978
							Wind 10-15 kts
							~~0820~~
							0900 leave Gloucester
							0920 arrive R2 buoy
							streamer sparker + hydrophone
							Loran is working
							following 49270.0 line
							looking for fault S. of Gloucester
							to test gear. Still some firing problems
							~~1150~~ Getting ready to run a line
							1156 begin line 1; want to start at 37470 + 49270
							wind has picked up, weather getting bad (Front coming in)
							~~1 swp / sec~~
							1 sweep, 1 sec fire rate
							400 - 6000 Hz filter
							1224 BEGIN LINE 2
							follows 37470.0 Loran line
							1247 Begin Line 3, return to 203°
							follow Loran 49280.0
							1333 BEGIN LINE 4, return to ~335
							Allow 37515 lots of rolling here
							1405 BEGIN LINE 5 49290
							(time to clip tips)
							1443 end line 5
							1600 arrive Gloucester 49268.9 / 37449.2 / 69569.7
							end of Day

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	

ALWAYS REMEMBER: High Voltage off 1st

then Key off, then press button, (sev. times)
then lift + short it off w/ some
non-conducting material, then, all off
then unplug it.



37 = purple
69 = green

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION	
~~13~~								
14	9	78	0720	E.S.T.			37449.2	69570.1
			0915				37348.0	69590.0
			0951		Begin 6		37348.0	69589.7
			1000				37347.8	69586.6
			1015				37350.4	69581.3
			1020				37351.0	69579.3
			1030				37352.3	69576.5
			1036	Fix NG Rno			37353.5	69573.8
			1040	Fix NG Rno			37354.1	69573.4
			1050				37355.7	69569.6
			1100				37356.9	69565.9
			1110		325 m. North		37358.4	69562.6
			1120		~4kts		37359.4	69559.2
			1130				37361.4	69555.5
			1131		C/C		37361.8	69554.8
							end line 6	

OPS								COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA		
								0730 Leave Gloucester
								Wind NE, maybe 10-15 kts
								on board: D. Ebzenasy
								R. Oldale
								Heading for line 6, W. Bothner
								which is a rerun R. Simpson
								of line 14 from H. Colburn
								the Fay 023 in 1976.
								Beginning Coordinates should be: 37348.0, 69590.0
								BLOWN OUT, have to go home.
								0920 Arrive Gloucester 37444.1; 695-69.8 +9268.8
								SEPT. 14, 1978 Leave Gloucester 0720 Looks Calm!
								heads for line 6, rerun of Fay 023, line 14; 37348.0, 69590.0
								0915 arrive on Station (Northstar worked!)
								0951 begin line 6
								looks good!
								[redacted]
								1036 69573.8, 37353.5
								we appear to have come off the ledge.
								1120 & down other side of moat
								At 69555.0 c/c, follow this line (Loran)
								to 37364.0 +69555.0
								1131 end line 6

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
14	9	78	1134		begin Line 7		37364.1	695555
			1140				37363.9	695578
			1150				37364.0	695620
			1200				37364.0	695663
			1210				37364.1	695707
			1220				37363.7	695746
			1230				37364.0	695781
			1241	Bad Fix			37364.1	695875
			1256		C/C		37363.5	695856
			~~1300~~					
			1259		C/C	begin 8	37370.4	695863
			1300				37370.3	695861
			1310				37370.1	695825
			1326				37369.9	695787
			1330				37370.0	695746
			1340				37370.1	695716
			1358				37370.0	695660
			1400				37370.2	695628
			1411				37370.0	695582
			1419		C/C		37370.1	695549
			1434				37372.6	695605
			1453				37374.8	695666
			1500				37376.0	695692
			1503		C/C	Begin 9	37376.0	695703
			1510				37376.0	695726
			1520				37376.3	695763
			1530				37376.2	695801
			1540				37376.0	695837
			1545		C/C		37376.9	695863

MV

OPS: 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							1134 Begin line 7
							1150 Come upon south again
							~ 1210 – note interesting little blip in sediments, not on surface.
							Good clam chowder (+ cup, good, warm) (Dawn)
							~ 1205 Very slight offset in beds ~ 3" below bottom – none in beds above.
							± 1225 back up on ledge, nose !
							1250 come upon end of line 7. have come to end of ledge
							1251 C/C follow 6.5 turn at 37 37 0
							1259 C/C begin line 8 (prev. line 3)
							1419 C/C
							Change belt, recorder off
							1428 resume record
							1420 - Stopping to cut tips
							1453 - restarted (Chowder up)
							1502 - starting line #9
							1545 C/C
							try ½ sec sweep

GMT				TIME ZONE	SHIPS		NAVIGATION	
DAY	MO	YR	TIME	±	COURSE	SPD		
14	9	78	1555	ES T			37384.8	695862
			1558		C/C Begin ID		37387.4	695860
			1600				37387.4	695856
			1612				37387.7	695808
			1620				37387.6	695777
			1630				37387.6	695735
			1639				37387.6	695698
					end line ID			
							end of day	
15	9	78					blown out	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							1558 c/c, begin /0 (end 9)
							1639 end line 10
							full gear
							1805 arrive Gloucester
							the end of a day
							SEPTEMBER 15, 1978
							Blowing maybe 15–20 kts
							0730 Leave Gloucester
							0800 turn around, blown out
							0815 refuel
							0845 ARRIVE GLOUCESTER, TIEUP, etc. END OF DAY.
16	9	78					0600 Leave Gloucester Bottner, Simpson, A. Shride, R Colburn

LINE 11

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION		
start			830					-37438.4	69534.6
LINE 11			840					-37434.4	69530.8
			850					-37431.2	69526.0
			900					-37417.2	69521.7
			905					-37416.8	69519.8
			0910					-37416.6	69517.4
			0920					-37421.3	69514.0
			0926					-37408.8	69511.5
			0930				this column is unreliable too	-37406.4	49306.3
			0942					-37400.3	49308.5
			0953				49308.7	*37393.5	*69511.5
			1000				49308.8	*37388.6	*69498.7
			1010				49310.0	*37381.7	*69444.5
			1021				49311.6	*37376.8	*69489.9
			1030				49312.9	*37371.8	*69486.1
			1038		N. bound		49314.1	*37367.8	*69482.5
e/c LINE 12			1045				49310.9	*37361.7	*69483.6
			1050		→		493189	? *37367.1	μs *69494.4 μs off
			1100		→		493134	? 37356.0	69495.9 μs off
e/c LINE 13			1110		→		493130	? 37362.1	μs 69499.0
			1120		→		493033	? 37357.8	μs 69491.3
			1130				493030	? 37364.8	μs 69495.0
			1140		code		493027	??? 37369.2	μs *69499.0
			1150				493011	? 37373.9	μs *69500.9
7.05 min off mouth of Merrimack →			1200				492995	37377.3	" *69504.2
			1210				492985	37382.6	" 69507.7
			1220				492980	37387.8	" 69511.1
			1236				492967	37392.8	" 69515.1
			1240				492953	37397.6	μs 69518.6

Stick w/ 37000 + 69000 for reasonable lcn

Inaccurate Loran C jumped to microseconds.

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	

SATURDAY - Sept 16, 1978

On board - W Bothner, Andy Shride (USGS Denver), R Simpson

Left Gloucester harbor 600 AM heading around Cape Ann to North side to run line parallel to coast N of Ipswich toward NH border

Sunrise 620 AM

710 - off 2 granite lighthouses

820 At bouy R2 at Sand of course.

830 Starting line 11

0926 C/C 008 1.39 mi offshore using radar

948 Abeam of Merrimak river seabouy and 0.44 miles off from it

37394.5 (2.2) 49308.7

← bad SNR

37382.0 ← 2 minutes later

~915 started having trouble with SNR of LORAN.

1038 Northern bouy on line

Course change. - headed due E - line 12

1045 New belt

1100 C/C Heading S along shore keeping a constant 3 miles distance using radar

START LINE 13

1155 - 3.05 miles off mouth of Merrimac River

1220-30 Firing a bit erratic - belt slows + nearly stops several times.

1250 - Stopped to look at belt - looks OK

GMT				TIME ZONE	SHIPS		NAVIGATION		
DAY	MO	YR	TIME	±	COURSE	SPD			
			1250				37398.9	1μs	69522.2
			1310				37404.5	"	69528.6
			1320				37409.3	"	69533.4
			1330				37411.9	1μs	69536.6
			1335		c/c begin 14		37413.3	1μs	69538.7
			1352		c/c line 16		37375.9	1μs	69541.0
			1400				37394.8	"	69538.3
			1414				37391.9	"	69535.5

end - Bad stuff

all 37000 so marked are
10 microseconds off

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							→ 1310 machine firing irregularly, belt drive stopping periodically
							Replaced belt
							1320 Working better
							1335 Turn to E – going out to 4.5 miles
							Begin line 14
							shut down / change chip trigger box
							1352 begin line 15 Course 356
							1412 Restarted after clipping leads & changing batteries in trigger box
							1430 Gave up – going back
							MONDAY, SEPT. 18
							NoGo.

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION		
19	9	78	0715	EST	leave Gloucester				
			0830		arr on station		37380.0	69580.0	
			0845		Line 16		37375.6	69580.4	
			0850		Begin Line 16		37376.3	695799	
			0900				37367.8	695802	
			0905				37362.9	695801	
			0915				37354.0	695800	
			0918		c/c begin 17		37351.4	695800	
			0925				37351.5	695767	
			0930				37351.6	695743	
			0935.5				37351.6	695722	
			0940				37351.6	695701	
			0945				37351.2	695679	
			1000				37351.5	695616	
			1010		c/c		37351.5	695571	
			1015				37347.3	695571	
			1022				37342.1	695570	
			1025		c/c begin 18		37340.0	695570	
			1030				37340.1	695587	
			1041				37339.8	695626	
			1045				37340.1	695638	
			1055				37340.0	695672	
			1100				37340.1	695693	
			1115				37340.0	695746	
			1120				37340.0	695763	
			1125				37340.1	695781	
			1130				37339.8	695797	
			1140		Trigger is pretty ratty		37340.0	695839	

OPS 12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	COMMENTS AND OBSERVATIONS
							TUESDAY SEPT. 19, 1978
							0715 Leave Gloucester. Looks like a good day.
							New EPC Recorder (G-297669)
							0830 Arrive on station & setting up gear.
							0845 Ready to go. Follow 69580.0 to 37351.5
							0850 37376.3 69579.9 They are still messing with the recorder. Changing filter.
							½ sec. sweep. Change filter to Z80 - 1600
							Line 16 2 swp/Rec Occasionally missing a spark.
							Still touching up gain at 0900 Starting up on J. Ledge
							Synchronize clock w/ ships clock - 0905
							Line 17 0918 turn, follow 37351.5 to 69557.0 begin line 17
							0930 - topog goes down here.
							0940 - topog begin to come up.
							0945 - prob. setting up around bedrock
							1000 c/c still line 17 until 37340.0
							then stay on 37340 to 69590.8
							~~1015~~ 1025 c/c, begin line 18
							1041 we are on bedrock here.
							1120 still mostly bedrock
							Spoken is missing quite a bit -- 20n, 1 off, 50n, 1 off ("RATTY" TRIGGER)
							Change belt at end of line

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION	
19	9	78	~~[illegible]~~	EST	continue 18		~~37339.7~~	~~[illegible]~~
			1145				37339.7	69585.3
			1150				37340.1	69587.5
			1158		C/C	changed belt	37339.7	69589.9
			1210				37330.0	69590.4
			1213		C/C	begin line 19	37327.7	69590.3
			1222				37328.2	69586.7
			1225				37328.1	69585.8
			1240				37327.9	69580.3
			1245				37328.2	69579.1
			1300				37327.9	69573.5
			1310				37328.0	69569.5
			1320				37328.0	69565.8
			1330				37328.4	69562.5
			~~1336~~					
			1338		C/C	move on to next starting point	37327.4	69559.9
				diagonal steam	trim spanker			
			1400	steaming fast			37318.6	69564.3
			1410	begin	line 20		37316.9	69569.8
			1420				37315.9	69575.8
			1435 - change belt, 5 min. lost					
			1438				37316.0	69583.4
			1445				37316.1	69586.0
			1448	C/C slow	~~[illegible]~~		37316.3	69587.2
			1455				37310.3	69587.1
			1500				37305.4	69587.5
			1502	C/C			37303.7	69587.0
			1510				37304.2	69584.5
			1515				37303.9	69582.6

fast to get on to next point while trimming spanker

C/C slow again, enroute to line 21 →

begin 21

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	

69590.0 is end of line; then change belt
for line 19, follow 37328.0 to 69560.0
1158 belt Δ - taking a while - not triggering well
1210 all OK.
1213 c/c beg in line 19 69560.0
at end of this line, trim sparker. Move on w/no
record, to next starting point
37316.0 + 69560.0 follow 37316.0
69575.0 3736 ← steam to next point
which will be the begining of line 20
(1355 strange noise - like a whistle blast --?)
~~1406~~ 1403 stop recorder --tweaking prongs
1404 resume sparker Sparker is still erratic
1418 sparker missing again
1420 Enroute to line 21
~1425 Messing with recorder bec of erratic sparker
add trigger box, no difference
Remove trigger box + change it back to orig
configuration, change belt again
1433 - try turning machine on again
1448 c/c, enroute to 21
1502 c/c Begin 21
1510 starting to come upon the ledge again

GMT DAY	GMT MO	GMT YR	GMT TIME	TIME ZONE ±	SHIPS COURSE	SHIPS SPD	NAVIGATION
19	09	78	1535	EST			37304.2 69578.4
			1530				37304.4 69577.2
			1545				37304.1 69572.1
			1555				37303.5 69568.7
			1605				37303.9 69565.7
			1607		end line 21		37304.3 69564.8
					END of DAY - HEAD for home		

OPS								COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG		GRAV.	SONO	STA	
								1525 – 1526 Shut down sparker for a bit to spray it. Bad trigger again. Better now. But delay in record
								1540 Messing around again, add trigger mechanism
								Still double keying, misfiring etc.
								1556 Recorder off for a quick check + on again
								1558 Change sweep for a bit
								1608 Sparker off, pull gear
								1825 Arrive Gloucester, all ashore, end of day.

Wed, Sept 20, 1978

37388

• indicates point plotted.
6000 not used here

GMT DAY	MO	YR	TIME	TIME ZONE ±	SHIPS COURSE	SPD	NAVIGATION	
20	09	78			begin line 22			
			1018		374034		695383	492777
			1030		373976			492797
			1040		373936		*695298	492811
			1050		373890			492827
			1100		373850			492844
			1110		373802		695179	492859
			1120		373759			492876
			1130		373711		695099	492893
			1140		373665		695060	492909
			1150		373616		*695016	492928
			1215		373469			492866
begin 24			1221	c/c	373431			492840
			1230		373470		695074	492827
			1240		373516		695110	492812
			1250		373565		695152	492795
			1300		373608		695188	492780
			1310		373656		695226	492764
			1320		373708		695262	492751
			1330		373754		695304	492735
			1340		373782		695329	492724
			1350		373830		695373	492707
begin 25			1401	c/c	373879		695415	492688
			1410		373812		695429	492650
			1420		373740		695444	492610
begin 26 →			1429	c/c				
			1430		373680		695451	492583
			1440		373634		695406	492605
			1450		373584		695362	492624
			1500		373538		695320	492640
			1510		373492		695277	492662

c/c Begin 23 1156 · 373585 · 694994 · 492936

OPS								COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA		

Leave Gloucester ~7AM Sept. 20, 1978

[SNR on Loran 52 (69's) low - change to manual cycle, step twice. Use 51 (37's) and 53 (49's) for computing course.

Buoy ~~492649~~ 53 492653

~~373941~~ 373941

~~695487~~ 695487

LINE 22 — end cond 69492

begin cond 69542.5

[37406.0 [37348

[49276.2 [49297.5

1018 restart line 22 at 374034

492777

1156 - c/c due east start line 23.

cut tips on sparks

change belt

1206 running again (East on line 23)

1221 begin line 24 to [37395 / 49267] buoy N of Halibut Pt

1401 begin line 25

1429 begin line 26

GMT				TIME ZONE	SHIPS		NAVIGATION		
DAY	MO	YR	TIME	±	COURSE	SPD			
			1520		373	4.8	695236	492679	
begin 27			1632	C/C	273	3.2	695194	492692	
			1550		373	2.2	695215	492619	
begin 28			1552	C/C	373	2.3	695222	492614	
			1600		373	2.5	695252	492601	
end of day									
			1640		373	1.3	695710.2	49266.1	

OPS							COMMENTS AND OBSERVATIONS
12 KHz	3.5 KHz	CSP	MAG	GRAV	SONO	STA	
							1532 begin line 27
							end line 27
							1552 line 28 373223/675222/492614
							1610 recorder making whistling noises
							bizzare sounds
							1625 pull gear
							1865 am. gloucester
							the End