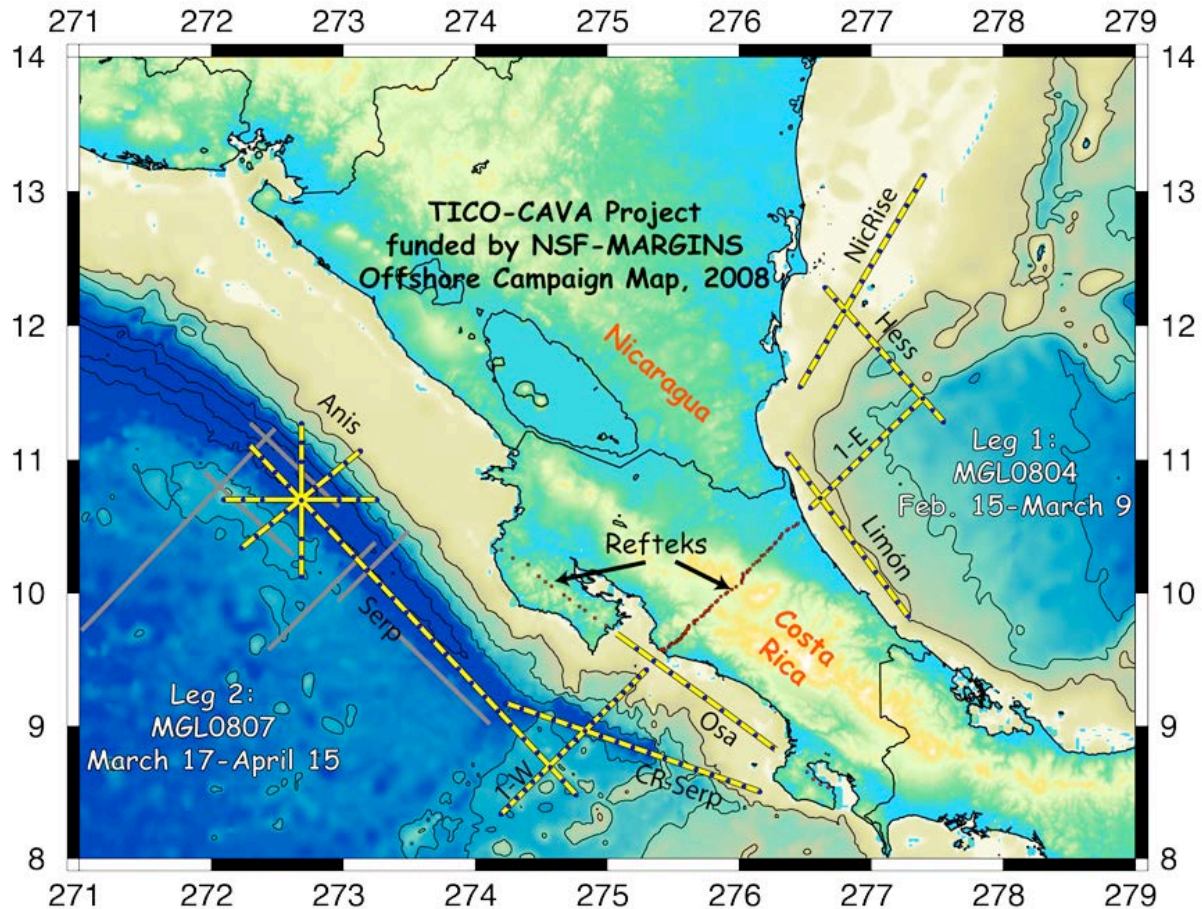


2008 OBSIP Field Programs

Middle America Trench, Costa Rica (Holbrook et al.). Proposal title: "Collaborative Research: Seismic measurements of magma flux, arc composition, and lower-plate serpentinization in the Central American subduction factory ." This was an onshore-offshore seismic investigation of structure of the Costa Rica arc and backarc, and the seismic structure of the Cocos Plate outer rise just outboard of the Middle American Trench.



The logistics involved two cruise legs: The first leg on *R/V Langseth* required 50 OBSIP deployments of SIO and WHOI short-period units (one deployment each); port calls here were Limon-Limon from Feb 15 – Mar 09. SIO deployed a total of 38 instruments on this leg. Significant concerns during this cruise leg were: 1) shallow water Karst topography – based on previous cruises this is thought to potentially produce a more corrosive near-bottom environment, 2) fishing pressures in the shallow deployment sites near-shore Costa Rica and Nicaragua.

As a precautionary measure, SIO added anodes to our steel anchors, and used a stainless steel rod for capturing the steel anchor. We did not experience premature releases during the first leg of the Holbrook cruise, but we did note mild corrosion on several of the stainless steel float retaining pins for the SIO OBS located in waters shallower than 100 meters. The corrosion was significant enough to warrant removal of these pins.

SIO had two OBSs trawled in an area where fishing traffic activity is now known to be high. The two OBSs (X-2 & X-3) were in approximately 40 meters of water. X-2 was found floating 0.8 nautical miles to the NNE of the original drop site, X-3 was snagged and recovered by a Nicaraguan shrimp located on a small island called El Bluff. Due to the remote location it took a significant effort to retrieve the OBS captured by the Nicaraguan fishing vessel. An initial attempt was made by the Captain of the *Langseth* to retrieve at sea with a ship-to-ship transfer. However, a concrete plan for transfer of equipment in exchange for a small monetary reward could not be arranged. Laborious negotiations ensued between Nicaraguan fishermen and collaborators in Costa Rica in an effort to retrieve the OBS and return to the fleet before the final port call of the project. In the end it cost \$2,870 and a “fly-by-night” trip by our Costa Rican colleague Carlos José Ramírez Umaña to reacquire the instrument. A report on the OBS retrieval is included in the file “Nicaragua-Lost-OBS-report.pdf”.

Site	LAT	LOX	Date (UTC)	SN	CF#	Depth (m)	Synch	TAG	Drift (ms)	FILE NAME	Comment
LIMON-09	10.71446	-83.38360	2008:048	1	07-004	880	2008:048:14:48:00	2008:064:01:27:00.0015781			SP4X4 4CH/200Hz
LIMON-06	10.38113	-83.13338	2008:048	2	08-025	908	2008:048:10:42:00	2008:068:18:35:59.9981559			SP4X4 4CH/200Hz
LIMON-04	10.27985	-82.96731	2008:048	3	08-033	837	2008:048:07:44:00	2008:068:22:33:00.0109752			SP4X4 4CH/200Hz
LIMON-05	10.26953	-83.05006	2008:048	7	08-016	898	2008:048:09:26:00	2008:068:20:21:00.0341174			SP4X4 4CH/200Hz
LIMON-07	10.49193	-83.21655	2008:048	10	08-005	915	2008:048:12:09:00	2008:064:05:13:00.0004057			SP4X4 4CH/200Hz
LIMON-08	10.60305	-83.29956	2008:048	11	07-036	795	2008:048:13:53:00	2008:064:07:24:59.9815226			SP4X4 4CH/200Hz
LIMON-12	11.04703	-83.63250	2008:048	13	07-017	40	2008:048:19:03:00	2008:064:13:04:59.9878133			SP4X4 4CH/200Hz
LIMON-10	10.82515	-83.46611	2008:048	14	07-048	560	2008:048:15:59:00	2008:064:10:01:59.9685996			SP4X4 4CH/200Hz
LIMON-11	10.93605	-83.54936	2008:048	17	07-025	70	2008:048:17:16:00	2008:064:11:29:59.9954687			SP4X4 4CH/200Hz
LIMON-01	9.82538	-82.71863	2008:048	40	08-018	787	2008:048:01:44:00	2008:069:02:38:59.9872586			SP4X4 4CH/200Hz
LIMON-02	9.93645	-82.80168	2008:048	46	08-037	578	2008:048:04:01:00	2008:069:01:16:59.9613210			SP4X4 4CH/200Hz
LIMON-03	10.04808	-82.88486	2008:048	47	08-002	680	2008:048:06:44:00	2008:069:00:01:59.9661780			SP4X4 4CH/200Hz
											WHOI
1E-1	10.64096	-83.45908	2008:048	23	07-069	63	2008:048:20:34:00	2008:064:02:46:00.0055945			SP4X4 4CH/200Hz
1E-3	10.78733	-83.30790	2008:048	24	07-016	1133	2008:048:23:56:00	2008:063:23:56:00.0134573			SP4X4 4CH/200Hz
1E-4	10.86081	-83.23200	2008:049	31	08-003	1322	2008:049:02:03:00	2008:063:22:22:00.0063359			SP4X4 4CH/200Hz
1E-5	10.93407	-83.15697	2008:049	D62		1572					WHOI
1E-6	11.00765	-83.08122	2008:049	D39		1693					WHOI
1E-7	11.08067	-83.00528	2008:049	D40		1888					WHOI
1E-8	11.15342	-82.92980	2008:049	29	08-041	2037	2008:049:13:02:00	2008:063:15:20:59.9218073			SP4X4 4CH/200Hz
1E-9	11.22655	-82.85373	2008:049	32	08-012	2132	2008:049:14:20:00	2008:063:13:38:59.9201265			SP4X4 4CH/200Hz
1E-10	11.29967	-82.77788	2008:049	66	08-006	2243	2008:049:14:39:00	2008:063:11:40:00.0090592			SP4X4 4CH/200Hz
1E-11	11.38238	-82.69228	2008:049	67	08-039	2328	2008:049:15:48:00	2008:063:09:52:00.0048256			SP4X4 4CH/200Hz
1E-12	11.46108	-82.61027	2008:049	65	08-040	2281	2008:049:16:54:00	2008:068:06:48:00.0311102			SP4X4 4CH/200Hz
											WHOI
H-12	11.28197	-82.45058	2008:049	D11		2413					WHOI
H-11	11.37342	-82.53243	2008:049	D47		2412					WHOI
H-9	11.55625	-82.69520	2008:049	D50		1692					WHOI
H-8	11.64800	-82.77642	2008:050	27	08-029	1329	2008:050:03:43:00	2008:068:03:00:00.0031801			SP4X4 4CH/200Hz
H-7	11.73927	-82.85848	2008:050	D55		1480					WHOI
H-6	11.83068	-82.93617	2008:050	25	08-007	1324	2008:050:05:52:00	2008:067:20:48:59.9728095			SP4X4 4CH/200Hz
H-5	11.92227	-83.02143	2008:050	28	08-001	59	2008:050:06:22:00	2008:067:19:01:59.9569578			SP4X4 4CH/200Hz
H-4	12.01332	-83.10332	2008:050	38	08-027	54	2008:050:07:21:00	2008:067:06:57:59.9953056			SP4X4 4CH/200Hz
H-2	12.19570	-83.26690	2008:050	33	08-021	26	2008:050:08:21:00	2008:067:04:46:59.9924673			SP4X4 4CH/200Hz
H-1	12.28683	-83.34897	2008:050	39	2007-41	21	2008:050:09:15:00	2008:067:03:30:59.9972962			SP4X4 4CH/200Hz
											WHOI
N-1	11.88543	-83.33777	2008:050	58	08-024	41	2008:050:11:03:00	2008:067:09:57:00.0147706			SP4X4 4CH/200Hz
N-2	11.99798	-83.27035	2008:050	60	08-035	72	2008:050:12:06:00	2008:067:08:34:59.9788956			SP4X4 4CH/200Hz
N-3	12.11043	-83.20298	2008:050	57	08-031	33	2008:050:14:54:00	2008:067:05:49:00.0058866			SP4X4 4CH/200Hz
N-4	12.22273	-83.13548	2008:050	43	08-019	31	2008:050:15:58:00	2008:067:01:25:59.9950257			SP4X4 4CH/200Hz
N-5	12.33523	-83.06807	2008:050	41	08-032	35	2008:050:17:04:00	2008:067:00:17:59.9921590			WHOI
N-6	12.44778	-83.00082	2008:050	D51		34					WHOI
N-7	12.56045	-82.93340	2008:050	D32		45					WHOI
N-8	12.67255	-82.86532	2008:050	44	08-026	54	2008:050:19:16:00	2008:066:20:29:59.9980213			SP4X4 4CH/200Hz
N-9	12.78532	-82.79773	2008:051	56	08-009	55	2008:051:01:23:00	2008:066:19:20:00.0023925			SP4X4 4CH/200Hz
N-10	12.89783	-82.72992	2008:051	50	08-008	50	2008:051:02:30:00	2008:066:17:59:59.9907392			SP4X4 4CH/200Hz
N-11	13.01028	-82.66205	2008:051	61	08-038	50	2008:051:05:15:00	2008:066:16:06:59.9976719			SP4X4 4CH/200Hz
N-12	13.12273	-82.59425	2008:051	55	08-028	41	2008:051:06:13:00	2008:066:14:51:59.9995535			SP4X4 4CH/200Hz
X-1	11.77280	-83.40490	2008:051	63	08-018	23	2008:051:11:00:00	2008:067:11:18:00.0012679			SP4X4 4CH/200Hz
X-2	11.66013	-83.47221	2008:051	64	08-042	41	2008:051:17:33:00	2008:067:15:09:59.9825485			SP4X4 4CH/200Hz
X-3	11.54748	-83.53938	2008:051	20	07-005	40	2008:051:19:05:00	LOST in Nicaragua	February 28	Dredged by shrimp boat	SP4X4 4CH/200Hz

The second Holbrook cruise was a 32-day leg in the Pacific Ocean on a dedicated OBS vessel (*R/V New Horizon*), involving 50 OBSIP instruments and 90 deployments, with ports Puerto Caldera – Puerto Caldera, Costa Rica from Mar 19 – Apr 16. The *Langseth* transited between the two legs from Limon to Puerto Caldera through the Panama Canal, taking about one week, with all the OBSIP instruments then loaded on *New Horizon* in Puerto Caldera. SIO provided 42

OBS units and WHOI provided ~13 SP units as a combined fleet to meet the required number of requested drops. Work aboard the New Horizon included 75 LC2000 deployments split into two separate deployment phases that accommodated a large array intended as part of a refraction survey of the Central American Forearc.

In order to fulfill a desire by PI's to record source shot signatures a special 2-kHz tethered OBH unit was constructed and deployed in the water column 400 meters off the bottom at site ANE-05 located SW to center of the Anis array. The OBH unit was prepared by using two LC2000 frames, an anchor unit and the tethered unit. The anchor unit was stripped of seismometer, logger, and cables, including only anchor, mechanical and acoustic releases. The OBH unit frame contained the logger, seismometer and hydrophone and was tethered to the anchor unit using 400 meters of polypropylene line.