**Cascadia Initiative Recovery Cruise OC1305C; 03 June – 14 June 2013**

The objective of cruise OC1305C aboard the R/V Oceanus was to recover sections of an array of ocean bottom seismometers (OBSs) deployed in 2012 as part of the National Science Foundation funded Cascadia Initiative. The cruise took place during 03-14 June 2013 and recovered twenty three instruments built by the Woods Hole Oceanographic Institution (WHOI). The OBS design includes three-component seismometers and dynamic pressure gauges designed to detect vertical seafloor ground motion, and primarily occupy deep ocean sites.

This was the first of six recovery/deployment legs scheduled for 2013 and was focused on recovering twenty five instruments deployed across the southern accretionary prism onto the Juan de Fuca (JdF) and Gorda plates, extending as far north as Vancouver Island, Canada while spanning the region offshore of southern Oregon and northern California. Two instruments, J11B and G36B were both known to have malfunctioning acoustic releases and had a low probability of recovery. The cruise plan was to recover the stations off Newport while transiting to the northernmost site, and then recover more remote stations near the JdF and Blanco Fracture Zone (BFZ) during the transit south. The Focused Sites and the remainder of southern sites located on the Gorda plate would then be recovered before we worked our way back north. Both the science party and OBS personnel worked a 24 hour schedule to get all instruments recovered as efficiently as possible. The weather was marginal for much of the cruise, and required the modification of our cruise track to avoid weather delays. Overall recoveries went very smoothly, despite less than ideal conditions. 23 OBS instrument packages were recovered; All recorded DPG and 3 component seismic data. Of the 25 OBS deployed, 10 were KECK OBS (Figure 2), and carry a Guralp CMG---3T broadband seismometer, a Kinemetrics Episensor strong--- motion accelerometer, and a DPG. Timing on the Keck OBS is provided by a Seascan timebase. All the OBS sampled at 50 Hz; the low pass anti---alias filters passband edge is set to a 20 Hz And stopband edge to 24 Hz. The remaining 15 were of a new WHOI ARRA design. The WHOI designed ARRA OBS (Figure 3) carry a Trillium Compact intermediate---period seismometer and a Cox---Deaton---Webb Differential Pressure Gauge (DPG). The Quanterra Q330 datalogger and Quanterra Baler---44 storage device are housed in a short aluminum (7075) pressure housing, while a smaller diameter but longer aluminum cylinder holds the lithium battery pack. The ARRA OBS carry a new chip---scale atomic clock (CSAC) manufactured by Symmetricom that provides significantly more accurate timing than the Seascan timebase used the other WHOI OBS. Floatation is provided by a syntactic foam pack

The attached Table shows the deployment and surveyed sites (names are labelled with "B" to represent second year recovery). The complete cruise report is available from the cruise chief scientist Matt Fowler (Oregon State University/NOAA).

Additional information about the community experiment and details of the ongoing 2013 cruises is available of the Cascadia Initiative Expedition Team website:
http://pages.uoregon.edu/drt/CIET/

*Prepared by the Cascadia Initiative Expedition Team.*

## Table 1: OBS Locations (Surveyed in 2013)

| Surveyed Locations | | | | | | | Deployed Location | | | | | | | Descent Drift Estimate | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Latitude | | | Longitude | | | Latitude | | | Longitude | | | | Depth | Distance | Bearing |
| Site | deg | min | N/S | deg | min | E/W | deg | min | N/S | deg | min | E/W | Type | (m) | (m) | (deg) |
| J27B | 44 | 50.8542 | N | 126 | 18.4165 | W | 44 | 50.8370 | N | 126 | 18.4450 | W | ARRA | 2843 | 49 | 49 |
| J28B | 45 | 3.7868 | N | 127 | 9.3140 | W | 45 | 3.8360 | N | 127 | 9.3750 | W | KECK | 2885 | 121 | 138 |
| J63B | 48 | 12.3250 | N | 130 | 0.1153 | W | 48 | 12.3840 | N | 130 | 0.1980 | W | KECK | 2878 | 149 | 136 |
| J48B | 47 | 7.6895 | N | 130 | 38.3089 | W | 47 | 7.6670 | N | 130 | 38.3720 | W | KECK | 2913 | 89 | 62 |
| J23B | 44 | 50.7561 | N | 129 | 40.9234 | W | 44 | 50.6500 | N | 129 | 40.9750 | W | KECK | 2699 | 208 | 19 |
| J06B | 43 | 15.9106 | N | 128 | 47.9803 | W | 43 | 15.0880 | N | 128 | 48.0660 | W | KECK | 3248 | 1529 | 4 |
| G30B | 41 | 57.3928 | N | 128 | 19.1890 | W | 41 | 57.3080 | N | 128 | 19.1230 | W | KECK | 3133 | 181 | 329 |
| G22B | 41 | 18.5548 | N | 128 | 16.4412 | W | 41 | 18.4510 | N | 128 | 16.5050 | W | ARRA | 3053 | 212 | 24 |
| G13B | 40 | 41.0421 | N | 128 | 1.6993 | W | 40 | 40.9560 | N | 128 | 1.7350 | W | ARRA | 3232 | 167 | 17 |
| G05B | 40 | 4.2360 | N | 127 | 44.8700 | W | 40 | 4.1760 | N | 127 | 44.8780 | W | ARRA | 4483 | 111 | 5 |
| G11B | 40 | 41.2474 | N | 126 | 22.5847 | W | 40 | 41.1560 | N | 126 | 22.6830 | W | ARRA | 3138 | 218 | 39 |
| J19B | 44 | 10.6598 | N | 126 | 16.2997 | W | 44 | 10.7110 | N | 126 | 16.2320 | W | ARRA | 2981 | 130 | 223 |
| G35B | 42 | 33.8981 | N | 126 | 3.6751 | W | 42 | 34.0590 | N | 126 | 3.2050 | W | ARRA | 2385 | 707 | 245 |
| G36B-2 | 42 | 35.9537 | N | 126 | 54.2368 | W | 42 | 35.9590 | N | 126 | 54.2010 | W | ARRA | 2459 | 49 | 258 |
| G21 | 41 | 18.9620 | N | 127 | 27.2227 | W | 41 | 19.0020 | N | 127 | 27.3150 | W | ARRA | 3178 | 148 | 119 |
| G20 | 41 | 17.9210 | N | 126 | 36.8000 | W | 41 | 17.9590 | N | 126 | 36.8240 | W | ARRA | 3164 | 78 | 154 |
| G03B | 40 | 3.4774 | N | 126 | 9.8063 | W | 40 | 3.5520 | N | 126 | 9.7640 | W | KECK | 4071 | 150 | 203 |
| FS09B | 40 | 26.3200 | N | 124 | 48.5093 | W | 40 | 26.2160 | N | 124 | 48.4490 | W | KECK | 2143 | 210 | 336 |
| FS06B | 40 | 22.8728 | N | 124 | 47.1152 | W | 40 | 22.8200 | N | 124 | 47.1910 | W | KECK | 2211 | 145 | 47 |
| FS05B | 40 | 23.1989 | N | 124 | 53.9787 | W | 40 | 23.1870 | N | 124 | 54.0080 | W | KECK | 2325 | 46 | 61 |