



R/V Kaiyo Cruise Report

KY09-03

Seismic study in the northwestern Pacific region

Jul. 5, 2009 – Jul. 21, 2009

Japan Agency for Marine-Earth Science and Technology

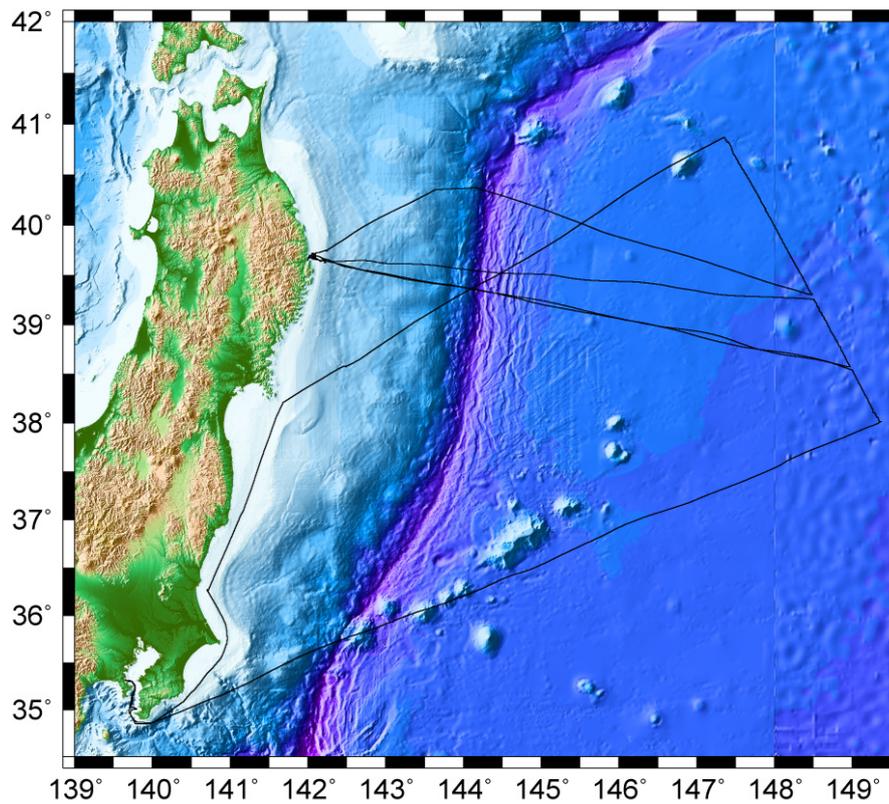
(JAMSTEC)

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1. Cruise Information :

- (1) Cruise number, Ship name: KY09-03, R/V Kaiyo
- (2) Title of the cruise: 2009FY “Seismic study in the northwestern Pacific region”
- (3) Title of proposal:
High-resolution structure study in the northwestern Pacific region
- (4) Cruise period, Port call:
2009/7/5-7/21, JAMSTEC (Yokosuka) to JAMSTEC (Yokosuka)
- (5) Research Area: Northwestern Pacific
- (6) Research Map:



2. Researchers

(1) Chief Scientist [Affiliation]: Takeshi SATO [JAMSTEC]

(2) Representative of Science Party [Affiliation]:

Yoshio FUKAO [JAMSTEC]

(3) Science part list:

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3. Overview of Observation :

(1) Objectives :

In the northwestern Pacific region, the old oceanic plate (Pacific plate) formed in the eastern Pacific ridge is subducting in the Japan and Kuril trenches. To advance the “Mohole project” being one of an IODP proposal, it is important to clarify the detailed crust and uppermost mantle structure of the old oceanic plate and the transitional process of the structure in the plate. The objectives of this cruise are to reveal the detailed crust and uppermost mantle structure of the old oceanic plate (Pacific plate) in the northwestern Pacific region and transition of this structure in the outer rise.

(2) List of observation instruments :

1) Recovery of ocean bottom seismometers (OBSs)

OBSs deployed by KR09-06 cruise were recovered.

2) Refraction/Reflection seismic survey

A Refraction/Reflection seismic survey on S1 line using air-gun array of 12,000 cubic inch, OBSs and a 16-ch. hydrophone streamer was canceled by reason that the recovery of OBSs has a top priority and it kept up the bad weather during this cruise.

3) Bathymetry observation

During this cruise, bathymetry data have been recorded continuously by SEABEAM2112.

4) Temperature and Conductivity observation for the correction of sonic speed

Expendable-Bathy Thermograph (XBT) has been conducted to correct the sonic speed for the bathymetry survey.

(3) Cruise log:

Date		Remarks
2009/7/5	Sun	Departure from JAMSTEC (Yokosuka), and transit to survey area
2009/7/6	Mon	Transit to survey area
2009/7/7	Tue	Recovery of OBSs, and transit to Miyako Bay due to bad weather
2009/7/8	Wed	Transit to Miyako Bay due to bad weather
2009/7/9	Thu	Stay at Miyako Bay due to bad weather
2009/7/10	Fri	Stay at Miyako Bay due to bad weather, and transit to survey area
2009/7/11	Sat	Transit to survey area, and recovery of OBSs
2009/7/12	Sun	Recovery of OBSs, and transit to Miyako Bay due to bad weather
2009/7/13	Mon	Transit to Miyako Bay and stay at this Bay due to bad weather
2009/7/14	Tue	Stay at Miyako Bay due to bad weather
2009/7/15	Wed	Stay at Miyako Bay due to bad weather

2009/7/16	Thu	Transit to survey area
2009/7/17	Fri	Recovery of OBSs
2009/7/18	Sat	Recovery of OBSs, and transit to off Kinka-zan due to bad weather
2009/7/19	Sun	Transit to JAMSTEC (Yokosuka)
2009/7/20	Mon	Transit to JAMSTEC (Yokosuka)
2009/7/21	Tue	Arrive at JAMSTEC (Yokosuka)

(4) Seismic lines

1) OBSs locations

Red circles show OBS locations. Black line is a seismic refraction/reflection seismic survey conducted in KR09-06 cruise using airgun and OBSs.

(1) OBS list

Site	OBS Calibration position					Remarks
	Latitude(N)	Longitude(E)	Depth(m)	x	y	
1	41-46.0138	146-43.0683	6205	-	-	1, 2
2	41-43.1558	146-45.1356	6035	-	-	1, 2
3	41-40.3357	146-47.2218	5734	-	-	1, 2
4	41-37.5009	146-49.3231	5637	-	-	1, 2
5	41-34.6535	146-51.4216	5526	-	-	1, 2
6	41-31.8437	146-53.5131	5453	-	-	1, 2
7	41-29.0015	146-55.5949	5394	-	-	1, 2
8	41-26.1779	146-57.6931	5352	-	-	1, 2
9	41-23.3412	146-59.7729	5337	-	-	1, 2
10	41-20.5061	147-01.8598	5290	-	-	1, 2
11	41-17.6643	147-03.9473	5282	-	-	1, 2
12	41-14.8359	147-06.0155	5257	-	-	1, 2
13	41-12.0009	147-08.0880	5226	-	-	1, 2
14	41-09.1632	147-10.1609	5181	-	-	1, 2
15	41-06.3210	147-12.2282	5116	-	-	1, 2
16	41-03.4868	147-14.3010	5064	-	-	1, 2
17	41-00.6478	147-16.3668	5105	-	-	1, 2
18	40-57.7951	147-18.4108	5185	-	-	1, 2
19	40-54.9682	147-20.4721	5286	-	-	1, 2
20	40-52.1235	147-22.5212	5301	-	-	2
21	40-49.2721	147-24.5824	5329	-	-	2
22	40-46.4352	147-26.6206	5304	-	-	1, 2

23	40-43.5961	147-28.6753	5302	-	-	2
24	40-40.7502	147-30.7103	5293	-	-	2
25	40-37.9111	147-32.7502	5296	-	-	2
26	40-35.0592	147-34.7845	5298	-	-	2
27	40-32.2328	147-36.8133	5294	-	-	2
28	40-29.3856	147-38.8395	5297	-	-	2
29	40-26.5283	147-40.8568	5295	-	-	2
30	40-23.6734	147-42.8941	5297	-	-	2
31	40-20.8243	147-44.9227	5293	-	-	2
32	40-17.9838	147-46.9451	5305	-	-	2
33	40-15.1405	147-48.9475	5306	-	-	2
34	40-12.2887	147-50.9709	5305	-	-	2
35	40-09.4349	147-52.9713	5307	-	-	2
36	40-06.5952	147-54.9896	5311	-	-	2
37	40-03.7393	147-56.9986	5305	17.0	38.6	
38	40-00.8237	147-58.9987	5373	-113.9	-7.1	
39	39-57.9615	148-00.9962	5309	-91.9	18.6	
40	39-55.0383	148-02.9165	5332	-251.0	-96.2	
41	39-52.2926	148-04.9680	5342	-	-	2
42	39-49.4410	148-06.9653	5368	-	-	2
43	39-46.6068	148-08.9549	5397	-	-	2
44	39-43.7439	148-10.9497	5429	-	-	2
45	39-40.8966	148-12.9216	5463	-	-	2
46	39-38.0409	148-14.9047	5498	-	-	2
47	39-35.1814	148-16.8700	5503	-	-	2
48	39-32.3309	148-18.8564	5510	-	-	2
49	39-29.4721	148-20.8239	5527	-	-	2
50	39-26.6029	148-22.7830	5551	-	-	2
51	39-23.7587	148-24.7552	5589	-	-	2
52	39-20.9031	148-26.7099	5613	-	-	2
53	39-18.0475	148-28.6682	5664	-	-	2
54	39-15.1689	148-30.6216	5668	-	-	2
55	39-12.3167	148-32.5867	5679	-	-	2
56	39-09.4417	148-34.5469	5671	-	-	2
57	39-06.5709	148-36.4945	5660	-	-	2
58	39-03.7228	148-38.4417	5675	-	-	2
59	39-00.8554	148-40.3973	5735	-	-	2

60	38-57.9919	148-42.3248	5727	-	-	2
61	38-55.1342	148-44.2770	5713	-	-	2
62	38-52.2692	148-46.2078	5777	-	-	2
63	38-49.4006	148-48.1413	5790	-	-	2
64	38-46.5457	148-50.0754	5814	-	-	2
65	38-43.6740	148-51.9917	5647	-	-	2
66	38-40.8111	148-53.9361	5712	-	-	2
67	38-37.9407	148-55.8546	5711	-	-	2
68	38-35.0550	148-57.7768	5680	-	-	2
69	38-32.1954	148-59.6963	5685	-	-	2
70	38-29.3233	149-01.6094	5695	-	-	2
71	38-26.4517	149-03.5234	5671	-	-	2
72	38-23.5802	149-05.4381	5602	-	-	2
73	38-20.7099	149-07.3462	5651	-	-	2
74	38-17.7225	149-09.2827	5666	-216.7	43.3	
75	38-14.9552	149-11.1689	5637	-	-	2
76	38-12.0310	149-12.9368	5710	-123.6	-175.1	
77	38-09.1601	149-14.9108	5827	-116.6	-61.4	
78	38-06.2845	149-16.8590	5845	-123.4	13.4	
79	38-03.4299	149-18.8320	5844	-135.2	195.7	
80	38-00.5904	149-20.7710	5839	-22.6	205.1	
101	40-03.2458	147-17.2803	5318	-	-	1, 2
102	40-05.6204	147-23.6135	5313	-	-	1, 2
103	40-08.0090	147-29.9364	5290	-	-	1, 2
104	40-10.3854	147-36.2653	5283	-	-	1, 2
105	40-12.7649	147-42.6253	5304	-	-	1, 2
107	40-17.4911	147-55.3180	5322	-	-	1, 2
108	40-19.8459	148-01.6770	5345	-	-	1, 2
109	40-22.2050	148-08.0523	5372	-	-	1, 2
110	40-24.5487	148-14.4187	5409	-	-	1, 2
111	40-26.8811	148-20.8053	5432	-	-	1, 2

Remarks:

1: No conducted the recovery OBS in this cruise

2: OBS deployment location because of no OBS calibration

4. Notice on using:

This cruise report is a preliminary documentation as of the end of the cruise. It may not

be corrected even if changes on content (i.e. taxonomic classifications) are found after publication. It may also be changed without notice. Data on the cruise report may be raw or not processed. Please ask the PI(s) for the latest information before using. Users of data or results of this cruise are requested to submit their results to Data Integration and Analysis Group (DIAG), JAMSTEC.