



R/V Kairei Cruise Report

KR09-17

Seismic study in the Northwestern Pacific region

Nov 17, 2009 – Dec 13, 2009

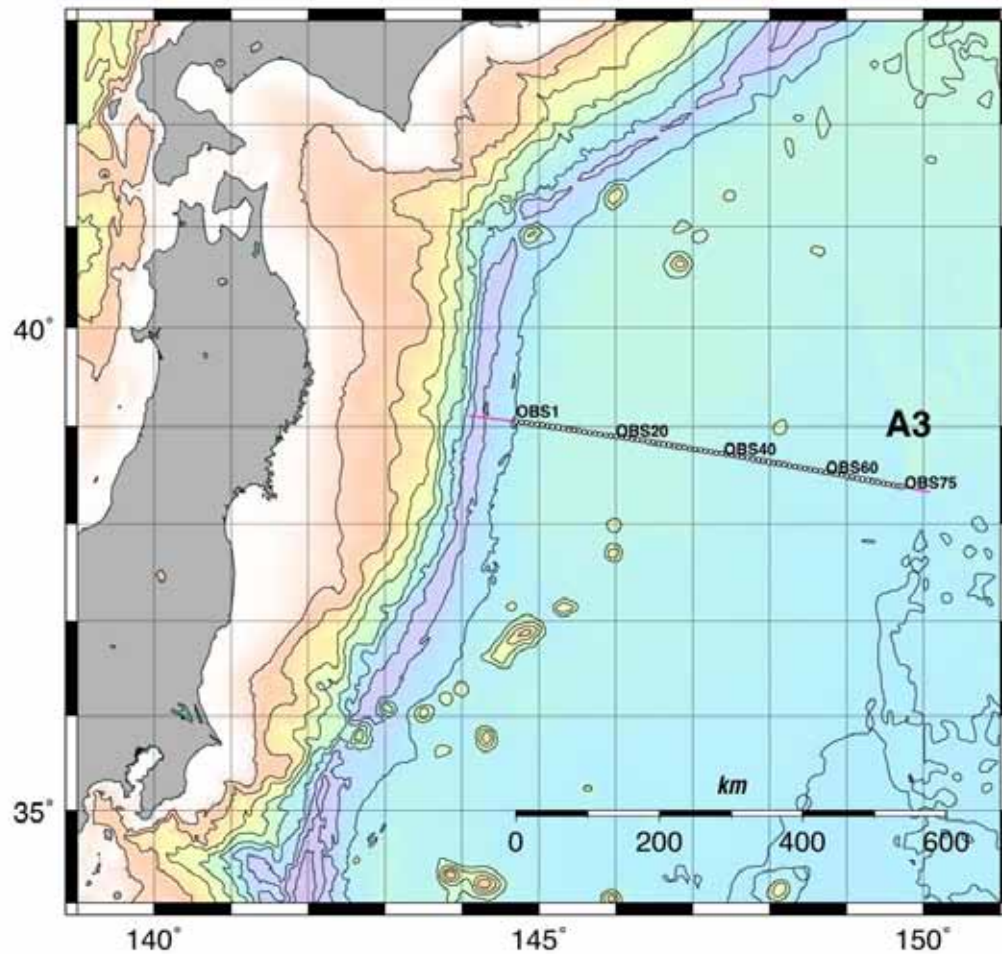
Japan Agency for Marine-Earth Science and Technology
(JAMSTEC)

Contents:

- 1 . Cruise Information :
- 2 . Researchers
- 3 . Overview of Observation :
- 4 . Notice on using:

1 . Cruise Information :

- (1) Cruise number, Ship name: KR09-17, R/V Kairei
- (2) Title of the cruise: 2009FY “Seismic study in the Northwestern Pacific region”
- (3) Cruise period, Port call: 2009/11/17-12/13, JAMSTEC to JAMSTEC
- (5) Research Area: Northwestern Pacific region
- (6) Research Map:



Magenta line shows the A3 airgun line and white circles show OBS location.

2. Researchers

(1) Chief Scientist [Affiliation]: Yuka KAIHO [JAMSTEC]

(2) Representative of Science Party [Affiliation]:

Yoshiyuki TATSUMI [JAMSTEC]

(3) Science party list:

Yoshio FUKAO [JAMSTEC]

Shuichi KODAIRA [JAMSTEC]

Narumi TAKAHASHI [JAMSTEC]

Jin-Oh PARK [JAMSTEC]

Ayako NAKANISHI [JAMSTEC]

Koichiro OBANA [JAMSTEC]

Yuka KAIHO [JAMSTEC]

Gou FUJIE [JAMSTEC]

Seiichi MIURA [JAMSTEC]

Takeshi SATO [JAMSTEC]

Mikiya YAMASHITA [JAMSTEC]

Tetsuo NO [JAMSTEC]

Tsutomu TAKAHASHI [JAMSTEC]

Kaoru TAKIZAWA [JAMSTEC]

Natsue ABE [JAMSTEC]

Toshiya FUJIWARA [JAMSTEC]

Ryota HINO [Tohoku Univ./JAMSTEC]

Masao NAKANISHI [Chiba Univ.]

3. Overview of Observation :

(1) Objectives :

In the northwestern Pacific region, the old oceanic plate (Pacific plate) is subducting in the Japan and Kuril trenches. To advance the IODP proposal “Mohole project”, 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) OBS deployment and recovery

Long survey line(A3) were set from Japan trench to off the outer rise of pacific plate. Seventy-five OBSs were deployed and recovered along the profiles A3.

2) Refraction/Reflection seismic survey

A Refraction/Reflection seismic survey on A3 line using tuned airgun array of 7800 cu. in., a 444-ch hydrophone streamer with 12.5-m group interval and 75 OBSs.

Because of the weather condition, towing of hydrophone streamer was canceled from OBS #61 to eastern end of survey line.

3) Bathymetry, magnetic and gravity observation

During the cruise, bathymetry, magnetic and gravity data have been recorded continuously by SEABEAM2112.004, three component magnetometer and gravity meter, respectively.

4) XBT

We have conducted three XBT to correct the sonic speed for the bathymetry survey.

(3) Cruise log:

Date		Remarks
2009/11/17	Tue	Departure from JAMSTEC, transit to Kamaishi bay.
2009/11/18	Wed	Stay at Kamaishi bay due to bad weather condition
2009/11/19	Thu	Transit to survey area and OBS deployment
2009/11/20	Fri	OBS deployment
2009/11/21	Sat	OBS deployment, transit to western area due to bad weather
2009/11/22	Sun	Airgun and MCS survey
2009/11/23	Mon	Airgun and MCS survey

2009/11/24	Tue	Airgun and MCS survey and OBS deployment
2009/11/25	Wed	OBS deployment, transit to western area due to bad weather
2009/11/26	Thu	OBS recovery, Airgun and MCS survey
2009/11/27	Fri	Transit to western area due to bad weather
2009/11/28	Sat	OBS recovery, standing by the better weather
2009/11/29	Sun	OBS recovery
2009/11/30	Mon	OBS recovery
2009/12/1	Tue	OBS recovery and Airgun shooting
2009/12/2	Wed	Airgun shooting and OBS recovery
2009/12/3	Thu	Transit to Kamaishi bay due to bad weather
2009/12/4	Fri	Stay at Kamaishi, Maintenance of MCS and OBS
2009/12/5	Sat	Stay at Kamaishi, Maintenance of MCS and OBS
2009/12/6	Sun	Stay at Kamaishi, Maintenance of MCS and OBS
2009/12/7	Mon	Stay at Kamaishi, cruise seminar
2009/12/8	Tue	Transit to survey area
2009/12/9	Wed	OBS recovery
2009/12/10	Thu	OBS recovery
2009/12/11	Fri	Transit to off Onahama due to bad weather
2009/12/12	Sat	Transit to Yokosuka
2009/12/13	Sun	Arrival at JAMSTEC(Yokosuka)

(4) Seismic lines

1) OBS list

Site	Estimated landing position			Remarks
	Latitude(N)	Longitude(E)	Depth(m)	
1	39_03.0575	144_42.0267	5696.4	
2	39_02.5268	144_46.1933	5939.1	
3	39_02.0499	144_50.3326	5763.3	
4	39_01.6290	144_54.3907	5454.2	
5	39_01.1828	144_58.4422	5465.5	
6	39_00.7786	145_02.6274	5607.5	
7	39_00.3742	145_06.8158	5428.1	
8	38_59.8160	145_10.8785	5383.3	
9	38_59.3765	145_14.9945	5175.9	
10	38_58.8739	145_19.0873	5207.8	
11	38_58.3355	145_23.1516	5240.7	
12	38_57.8661	145_27.3105	5300.7	

13	38_57. 2309	145_31. 3895	5253. 3	
14	38_56. 7555	145_35. 4911	5326. 1	
15	38_56. 2172	145_39. 5669	4951. 9	
16	38_55. 7693	145_43. 6763	5136. 1	
17	38_55. 2802	145_47. 8500	CF	Depth calculation failure
18	38_54. 7617	145_52. 0682	5170. 0	
19	38_54. 2623	145_56. 1651	5409. 7	
20	38_53. 8352	146_00. 3593	CF	Depth calculation failure
21	38_53. 3613	146_04. 5457	5360. 4	
22	38_52. 7975	146_08. 6950	5455. 1	
23	38_52. 2377	146_12. 6331	5132. 6	
24	38_51. 7448	146_16. 8581	5274. 5	
25	38_51. 2636	146_20. 9866	5168. 9	
26	38_50. 7571	146_25. 1071	5234. 8	
27	38_50. 3132	146_29. 1936	5230. 2	
28	38_49. 7329	146_33. 3011	5360. 1	
29	38_49. 2085	146_37. 2874	5164. 2	
30	38_48. 7488	146_41. 4551	5261. 5	
31	38_48. 1645	146_45. 4547	5197. 7	
32	38_47. 6362	146_49. 5721	5317. 9	
33	38_47. 1022	146_53. 7533	5457. 6	
34	38_46. 6545	146_57. 8038	5440. 1	
35	38_46. 1115	147_01. 8864	CF	Depth calculation failure
36	38_45. 6482	147_05. 9845	5322. 2	
37	38_45. 1426	147_10. 0844	5368. 2	
38	38_44. 5935	147_14. 1832	5437. 8	
39	38_44. 0625	147_18. 3335	5492. 4	
40	38_43. 5768	147_22. 3765	5472. 6	
41	38_43. 0585	147_26. 4984	5551. 3	
42	38_42. 4663	147_30. 5862	5623. 0	
43	38_41. 8556	147_34. 6826	5627. 3	
44	38_41. 3355	147_38. 7310	5632. 9	
45	38_40. 6985	147_42. 7949	5715. 8	
46	38_40. 1487	147_46. 8772	CF	Depth calculation failure
47	38_39. 5286	147_50. 9873	5721. 2	
48	38_39. 0639	147_55. 0453	5651. 1	
49	38_38. 3665	147_59. 0899	5646. 8	

50	38_37.7349	148_03.1058	5705.6	
51	38_37.2296	148_07.2516	5722.3	
52	38_36.6246	148_11.2322	5581.2	
53	38_36.0303	148_15.3593	5725.7	
54	38_35.5179	148_19.5225	5697.9	
55	38_34.9372	148_23.4091	5693.6	
56	38_34.3098	148_27.5204	5766.3	
57	38_33.7569	148_31.5605	5700.2	
58	38_33.2124	148_35.5650	5734.8	
59	38_32.6201	148_39.7254	5651.4	
60	38_32.0147	148_43.8419	5652.4	
61	38_31.4589	148_47.9368	5698.5	
62	38_30.8876	148_51.9795	5672.7	
63	38_30.2612	148_56.1670	5709.6	
64	38_29.6993	149_00.1828	5689.3	
65	38_29.1135	149_04.2028	5616.3	
66	38_28.4648	149_08.3182	5622.8	
67	38_27.9198	149_12.3002	5570.5	
68	38_27.2534	149_16.3157	5607.3	
69	38_26.6194	149_20.3409	5673.8	
70	38_25.9754	149_24.3224	5629.8	
71	38_25.3875	149_28.4663	5607.1	
72	38_24.8070	149_32.5196	5765.3	
73	38_24.1322	149_36.4881	5790.7	
74	38_23.5373	149_40.5584	5765.4	
75	38_23.1518	149_43.2223	5983.8	

2) Airgun Line (end positions)

Line name	Shot point	Latitude (N)	Longitude (E)	Depth (m)	Notes
A3obs_0	972	39_06.76705' N	144_05.06688' E	6340	shot interval (200m)
	2765	38_36.89175' N	148_10.07962' E	5636	OBS#1-50, MCS
A3obs_1	2143	38_48.22048' N	146_45.46043' E	5269	shot interval (200m)
	3046	38_31.44744' N	148_48.15284' E	5718	OBS#2-75, MCS
A3obs_2	3025	38_31.85563' N	148_45.30994' E	5721	shot interval (200m)
	3617	38_19.74815' N	150_05.18640' E	5586	OBS#46, 47, 51-75

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.