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Scientific Report for Cruise CK09-01 Expedition 903: Coring in Suruga Bay

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1. Introduction

Deep-sea subsurface sediments are potential sources to discover 'weird life' on earth. So far, we have isolated a variety of microbes from deep-sea surface sediments. They are characterized by viability under extreme environmental conditions, e.g. high hydrostatic pressure, high/low temperature, the presence of toxic chemicals, and have potential values for industrial applications. In this expedition, we will investigate the following issues using sediment samples from the Chikyu coring: (1) elucidation of biodiversity of aerobic and anaerobic microorganisms; (2) isolation of microorganisms capable of applying for industrial uses, e.g. production of useful enzymes; (3) isolation of microorganisms capable of growth under high pressure; (4) measurement of enzymatic activities in the core samples; (5) evaluation of tolerance of microorganisms to harmful materials and environments, e.g. organic solvents, oxidative materials, heavy metals, alkaline pH, acidic pH, high salinity; (6) estimation of the number of microorganisms in each core sample under fluorescence microscopy on board; (7) observation of ultrastructure of microorganisms and the sediments under electron scanning microscopy.

2. Core and section summaries

During the CK09-01 Expedition 903 in Suruga Bay, we cored at Holes C9006A, C9007A, C9008A and C9009A (Fig. 1; Table 1). At each hole, we

obtained 7, 5, 6 and 2 cores respectively by Hydraulic Piston Coring System (HPCS). And we cut these cores into 56, 42, 43 and 13 sections, including core catchers (CC). The total length of cores recovered is 184.93 m (Table 2).

3. Sampling plan and summary

The total 148 samples were taken. From the top and the bottom of each hole, we took 20 cm long whole round samples (sample code, 903ST; quantity, 7). In the middle of every section of Hole C9006A and third sections of all cores at Holes C9007A, C9008A, and C9009A, we took 10 cm and 23 cm long whole round samples (sample codes, 903SA and 903SC, respectively; quantities, 61 and 61, respectively). A sample was taken from Section C9006A-7H-7, 0--40 cm (sample code: 903SABE). For safety gas monitoring, a ship sample was taken from the bottom of first section of every core excepting Section C9009A-2H-1 (sample code: HS; quantity, 18) (Tables 3 and 4).

All the residues from HS samples will be shipped to Kochi Core Center (KCC). The other personal samples were handed over to the sample requesters onboard.

4. Operation summary

Upon completion the science party and the crew boarding at Shimizu port area on March 18, 2009, Chikyu left at 18:00 to the first site of coring in Expedition 903 of Cruise CK09-01 in Suruga Bay. After sailing 10 nautical mile (nm), Chikyu arrived the site at 20:00 and prepared for positioning and ran the drillpipes down. From midnight of March 19, 11-7/16” core assembly was ran to the 625 m and flushed the string with sea water and launched Remotely Operating Vessel (ROV) to the bottom of the string to check the water depth. Upon running the core assembly to the seabed, tagged the seabed at 755.9 m. After preparing for sinker bar in the string, picked up and set up HPCS inner core barrel on sinker bar for coring at 0500

hr. Bit position was confirmed with ROV and began HPCS coring at Site C9006A at 07:00. Coring continued to the deeper and finished at 19:15 after taken 7th core (up to 65.64 meter below sea floor, mbsf) without any difficulty.

After pulling out of the hole to the 672 m and conducted kick drill, Chikyu moved to the second coring site C9007A at 21:00 on March 19, 2009 while hanging bit under water for 0.8 nm. Upon arriving to the site, running to the seabed and tagged at 767.41 mMSL (meter mean sea level). After positioned the drillpipe 1 m above seabed and confirmed from ROV, began HPCS coring at C9007A from 01:30 on March 20. At the fifth core to the 46.6 m, mud bucket hose parted at fitting and decided to stop coring at this site. Upon securing mud bucket hose and retrieved and racked sinker bar, drill string was pulled up to the 672 m. Then ship was transited to Site C9008 at 12:00 for about 0.6 nm and arrived at 14:15.

At Hole C9007A, seabed was tagged at 730.76 m and confirmed the bit position with ROV. Coring at site began at 16:00 from 1 m above seabed and then continued coring to the deeper. After observing broken core liner and taken longer time to move core out of barrel from sixth core, decision was made to move to next site. Pulled out of hole to 480 m and made transit while hanging pipes.

Chikyu arrived to the fourth coring site (C9009) on March 21 at 09:30 after making transit of 1.1 nm. Seabed was tagged at 10:15 and confirmed hole position with ROV. Then coring at Hole C9009A began at 13:00 from 1 m above seabed. Refusal was observed at second core as 6.1 m of core was recovered in the liner and decided to stop coring. After pulled out of the hole and laid out coring Bottom Hole Assembly (BHA), coring for the Expeditiion 903 ended at 2230 and ship moved to the location A1 for the Blow-Out-Preventer (BOP) test training in the remaining days before making port-call at Shimizu port on March 25.

5. Measurement and initial results onboard

5.1. Microbiology

A 33-cm long whole round core was cut out from the middle of each 1.5-m section (Hole C9006A), and from that of the third section in each 9-m core (Hole C9007A; Hole C9008A). The 33-cm core was divided into two pieces. One (10 cm) was stored in a deep-freezer. The other (23 cm) was stored in liquid nitrogen and utilized by researchers for their own purposes. The rest of the core samples were stored in a refrigerator for future works. The followings are procedures employed by the onboard researchers.

(1) To initiate microbial growth, small aliquots of the core samples were placed on Marine Agar 2216, and YPD agar containing some antibiotics to isolate bacteria and fungi, respectively. They were incubated at 10°C.

(2) To isolate microorganisms, small aliquots of the core samples were placed on nutrient agar. They were incubated at 20 °C. So far, 18 colonies appeared on the plates by March 22, 2009. A small aliquot of gap water extracted from Section C9009A-4H-2 was placed on nutrient agar.

(3) DNA was extracted from the core samples (C9006A-top, C9006A-bottom, C9007A-top and C9007A-bottom) in a common procedure. As far as visually checked, DNA was successfully obtained from these cores. The order of yield was C9006A-top > C9006A-bottom> C9007A-top > C9007A-bottom. Whether the extract contains RNA should await further experiments in JAMSTEC lab. Isolation of rare archaea will be examined in a future study.

(4) Small aliquots of the core samples were subjected to counting of microorganisms under a fluorescence microscope. After fixation with paraformaldehyde and a subsequent staining with DAPI, the samples were observed under the microscope. So far, non-specific fluorescence from numerous suspended solids disturbed the identification of microorganisms in the samples, and thereby the number of microbes has not been determined. To isolate anaerobic microorganisms, small aliquots of the core samples were placed in media in an anaerobic hood.

(5) Total carbon, nitrogen and sulfur, and inorganic carbon in sediment samples (the middle of the third section of each core) were quantified. Approximately 3 g of the sediments were freeze-dried for 12 h. After pounding in a mortar, 20 mg of the dried sediments were analyzed for quantification of total carbon, nitrogen and sulfur using a FLASH EA 1112 series (Thermo Electron Corp.), and for inorganic carbon using a CM5012 CO2 Coulometer (UIC Inc. Coulometrics).

5.2. Safety gas monitoring

In order to monitor gases for safety, we took samples from the bottoms of the first section of each core (Table 5). The 5 cc of sediment samples were taken by putting a syringe into cored sediments twice (to 4 cm deep from the bottom of the section) at Core Cutting Area immediately after core was cut into sections. The samples were put into 20 cc vials and sealed. After heating in a 70°C oven, 5 cc of headspace gases were taken. We employed a gas chromatographer which has a flame ionization detecter (FID) in order to measure concentrations of methane, ethane, propane, iso-butane, n-butane, ethylene, and propylene in the headspace gases quantitatively.

Only methane was detected and the other six species of gases were not detected at all from any samples. The methane concentrations showed a stratigraphic pattern similar among the four holes (Fig. 2). The concentrations were very low (less than 20 ppm) at the first and second cores (depths were down to 10.3 m below sea floor). At the third through fifth cores (depths were from 19.5 to 38.8 m below sea floor), the concentrations were 1.7 to 2.6 %. The seventh and eighth cores were recovered only from Hole 903-C9006A (47.9 to 57.6 m below sea floor). The concentration dropped to 1.3 % in these cores.

5.3. X-ray CT scanning

X-ray computed tomography (CT) scanning was carried out for all the 154 sections. Once in every 24 hours, we measured a check piece which consists of aluminum, water and air. Axial images were taken once in every 0.625 mm, and sections with typical lengths 1.5 m had 2,400 axial images each (Table 6). Each axial image covered 96×96 mm area by 512×512 pixels. Each pixel height and width were 0.1875 mm (Axial image files are available at http://sio7.jamstec.go.jp).

5.4. Physical properties

For all the core sections, excepting core catcher section, physical properties of P-wave velocity, gamma ray attenuation density, magnetic susceptibility, electrical resistivity and natural gamma radiation were measured by using Multi Sensor Core Logger (MSCL) (Fig. 3; Numerical data of the results are available at http://sio7.jamstec.go.jp). The measurements were carried out from March 28 to April 4, 2009, after the onboard scientific party. As mentioned already, the onboard scientific party had taken numerous whole-round samples. Consequently the physical properties measurements could not be done for such intervals.

At all the holes, electrical resistivity was constantly low (approximately 1 Ω-m) above approximately 18 mbsf. Below the horizons, the resistivity values showed some fluctuations. At Holes 903-C9006A and C9007A, P-wave velocity had similar stratigraphic changes; They were constant (approximately 1,500 m/s) at the intervals above 18 mbsf and fluctuated below the horizons. Near the surface (3 to 5 m), gamma ray attenuation density decreased along the depths at all the holes.

6. Surface water sampling

Ten liters of seawater collected from surface of the ocean on March 19, 2009. A 4 liter plastic bucket tied with a 20-m long rope and a 10-liter polybottle were

prepared. A researcher, two lab technicians, and one deck crew went to the starboard side on the upper deck near the moon pool around 11:30. The end of the rope was tied with handrail on the ship. One lab technician lowered the plastic bucket into the sea and retrieved the bucket. The bucket was washed twice with seawater. Another tech supported the rope work. The seawater sample was transferred into the 10-liter polybottle after rinsing the inside three times.

Shipboard Scientific Party

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Fig. 1 Hole locations and bathymetry. Bathymetry data set J–EGG500 is provided by Japan Oceanographic Data Center (JODC) [http://www.jodc.go.jp].

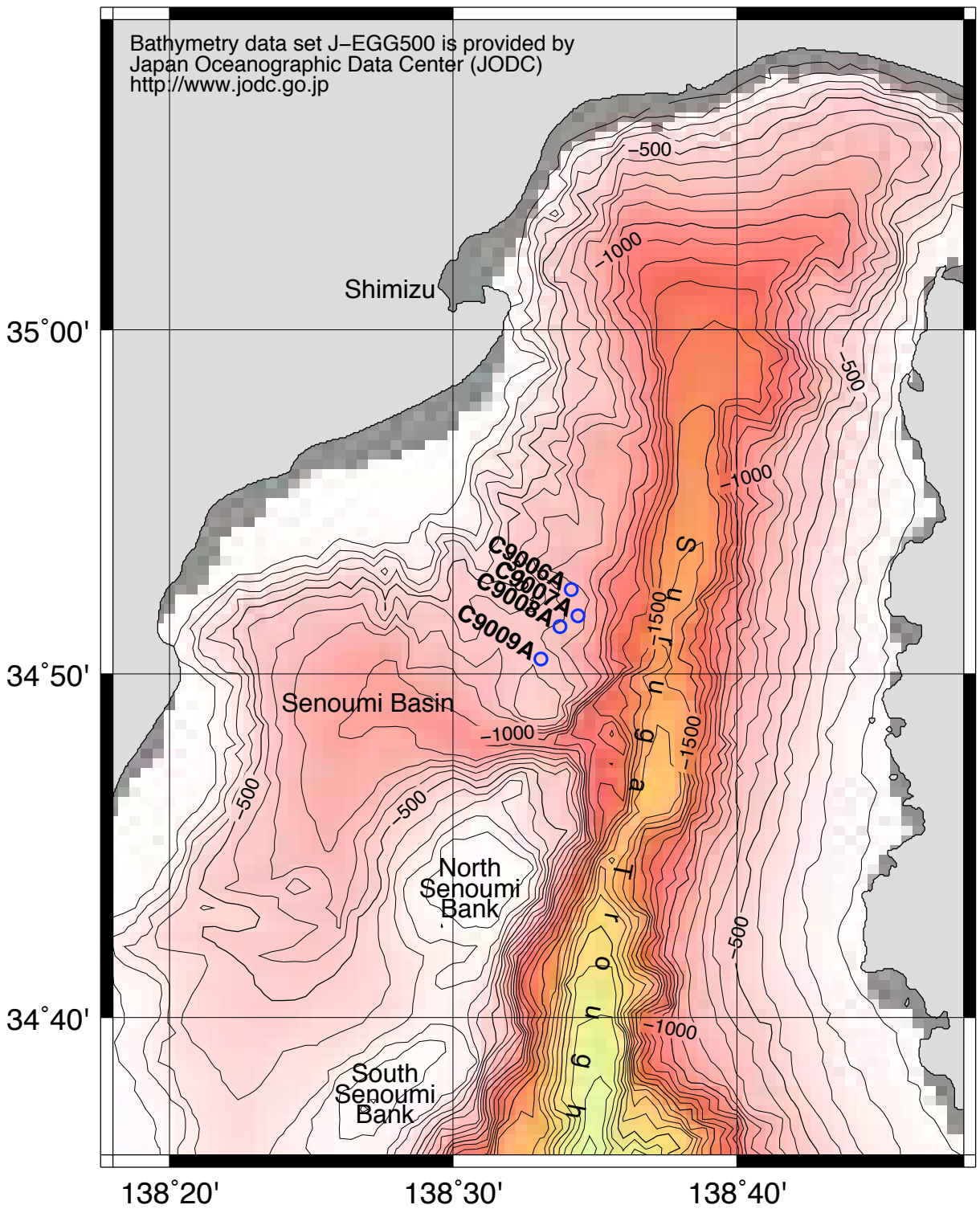
Bathymetry data set J–EGG500 is provided by
Japan Oceanographic Data Center (JODC)
http://www.jodc.go.jp
Shimizu
Senoumi Basin
North
Senoumi
Bank
South
Senoumi
Bank
Suruga Trough
C9006A
C9007A
C9008A
C9009A
–500
–1000
–1500
35˚00'
34˚50'
34˚40'
138˚20'
138˚30'
138˚40'

Fig. 2 Stratigraphic changes in methane concentration at Holes 903-C9006A, C9007A, C9008A and C9009A.

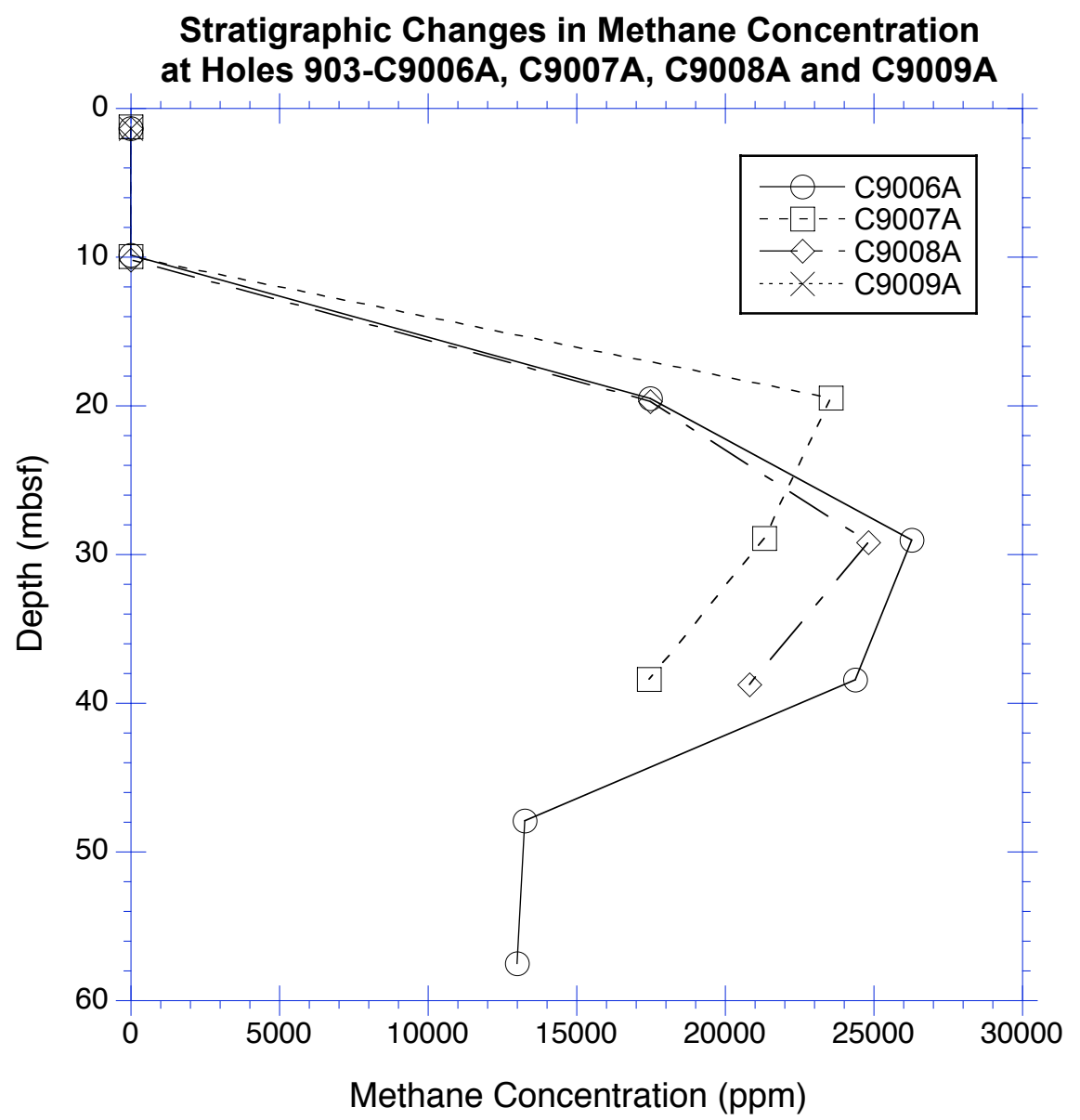
Stratigraphic Changes in Methane Concentration
at Holes 903-C9006A, C9007A, C9008A and C9009A
C9006A
C9007A
C9008A
C9009A
Depth (mbsf)
0
10
20
30
40
50
60
0
5000
10000
15000
20000
25000
30000
Methane Concentration (ppm)

Fig. 3 Physical properties of P-wave velocity, gamma ray attenuation density, magnetic susceptibility, electrical resistivity and natural gamma radiation at Holes 903-C9006A, C9007A, C9008A and C9009A.

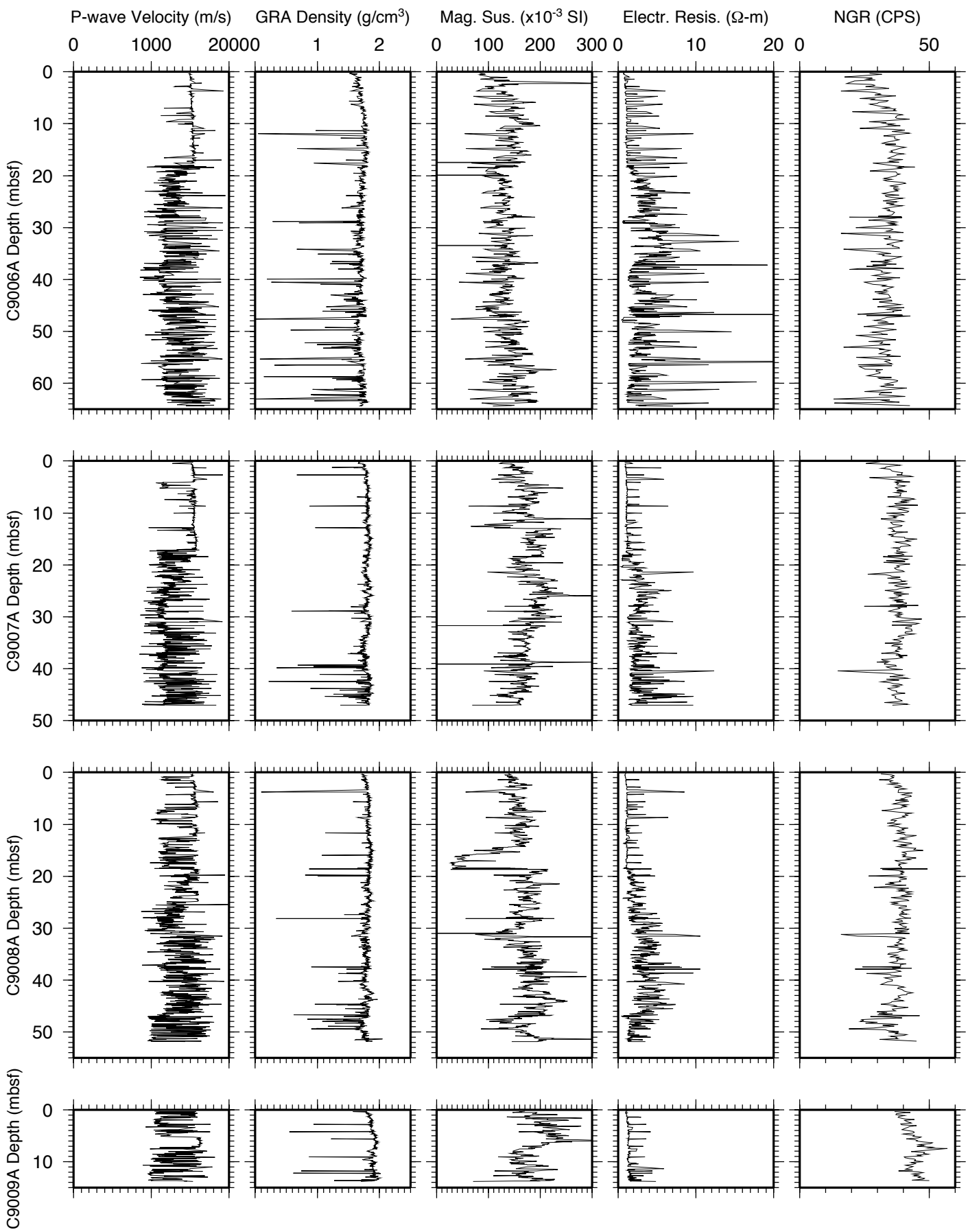
P-wave Velocity (m/s)
0
1000
20000
GRA Density (g/cm3)
1
2
Mag. Sus. (x10-3 SI)
0
100
200
300
Electr. Resis. (Ω-m)
0
10
20
NGR (CPS)
0
50
C9006A Depth (mbsf)
0
10
20
30
40
50
60
C9007A Depth (mbsf)
0
10
20
30
40
50
C9008A Depth (mbsf)
0
10
20
30
40
50
C9009A Depth (mbsf)
0
10

Table 1 Holes drilled during Cruise CK09-01 Expedition 903 in Suruga Bay.

Hole	Latitude (N)		Longitude (E)		Water Depth (meter below mean sea level)
	(degree)	(arc minute)	(degree)	(arc minute)	
903-C9006A	34	52.4646	138	34.1639	755.86
903-C9007A	34	51.7039	138	34.4013	767.41
903-C9008A	34	51.3846	138	33.7650	730.76
903-C9009A	34	50.4455	138	33.1005	625.07

Table 2 Section summary of Cruise CK09-01 Expedition 903 in Suruga Bay.

Expedition	903	Site	C9006A
Expedition name	CK09-01		

Section Summary

Section	Section curated length (m)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9006A-1H-1	1.42	0	0	1.42	1.391
C9006A-1H-2	1.42	1.42	1.391	2.84	2.782
C9006A-1H-3	1.41	2.84	2.782	4.25	4.163
C9006A-1H-4	1.42	4.25	4.163	5.67	5.554
C9006A-1H-5	1.41	5.67	5.554	7.08	6.936
C9006A-1H-6	1.43	7.08	6.936	8.51	8.336
C9006A-1H-CC	0.31	8.51	8.336	8.82	8.64
C9006A-2H-1	1.3	8.64	8.64	9.94	9.85
C9006A-2H-2	1.415	9.94	9.85	11.355	11.166
C9006A-2H-3	1.43	11.355	11.166	12.785	12.497
C9006A-2H-4	1.41	12.785	12.497	14.195	13.809
C9006A-2H-5	1.42	14.195	13.809	15.615	15.13
C9006A-2H-6	1.415	15.615	15.13	17.03	16.447
C9006A-2H-7	1.445	17.03	16.447	18.475	17.791
C9006A-2H-CC	0.38	18.475	17.791	18.855	18.145
C9006A-3H-1	1.405	18.14	18.14	19.545	19.432
C9006A-3H-2	1.425	19.545	19.432	20.97	20.743
C9006A-3H-3	1.42	20.97	20.743	22.39	22.049
C9006A-3H-4	1.455	22.39	22.049	23.845	23.387
C9006A-3H-5	1.46	23.845	23.387	25.305	24.729
C9006A-3H-6	1.44	25.305	24.729	26.745	26.054
C9006A-3H-7	1.32	26.745	26.054	28.065	27.267
C9006A-3H-CC	0.405	28.065	27.267	28.47	27.64
C9006A-4H-1	1.44	27.64	27.64	29.08	28.916
C9006A-4H-2	1.47	29.08	28.916	30.55	30.219
C9006A-4H-3	1.51	30.55	30.219	32.06	31.557
C9006A-4H-4	1.52	32.06	31.557	33.58	32.904
C9006A-4H-5	1.535	33.58	32.904	35.115	34.264
C9006A-4H-6	1.489	35.115	34.264	36.604	35.584
C9006A-4H-7	1.445	36.604	35.584	38.049	36.864
C9006A-4H-CC	0.31	38.049	36.864	38.359	37.139
C9006A-5H-1	1.345	37.14	37.14	38.485	38.384
C9006A-5H-2	1.41	38.485	38.384	39.895	39.688
C9006A-5H-3	1.41	39.895	39.688	41.305	40.993
C9006A-5H-4	1.495	41.305	40.993	42.8	42.376
C9006A-5H-5	1.52	42.8	42.376	44.32	43.782
C9006A-5H-6	1.47	44.32	43.782	45.79	45.141
C9006A-5H-7	1.37	45.79	45.141	47.16	46.409
C9006A-5H-CC	0.25	47.16	46.409	47.41	46.64
C9006A-6H-1	1.34	46.64	46.64	47.98	47.926
C9006A-6H-2	1.31	47.98	47.926	49.29	49.183
C9006A-6H-3	1.34	49.29	49.183	50.63	50.469
C9006A-6H-4	1.36	50.63	50.469	51.99	51.774
C9006A-6H-5	1.325	51.99	51.774	53.315	53.045
C9006A-6H-6	1.31	53.315	53.045	54.625	54.302
C9006A-6H-7	0.965	54.625	54.302	55.59	55.228
C9006A-6H-8	0.56	55.59	55.228	56.15	55.766
C9006A-6H-CC	0.39	56.15	55.766	56.54	56.14
C9006A-7H-1	1.42	56.14	56.14	57.56	57.553
C9006A-7H-2	1.5	57.56	57.553	59.06	59.045
C9006A-7H-3	1.44	59.06	59.045	60.5	60.477
C9006A-7H-4	1.47	60.5	60.477	61.97	61.939
C9006A-7H-5	1.41	61.97	61.939	63.38	63.342
C9006A-7H-6	1.03	63.38	63.342	64.41	64.367
C9006A-7H-7	0.98	64.41	64.367	65.39	65.342
C9006A-7H-CC	0.3	65.39	65.342	65.69	65.64

Note: [mbsf, CMP] means a depth below sea floor by composite depth. In general, soft-sediment cores expand after retrieving, so that a depth of core-bottom often becomes deeper than that of the next core-top, defined by Operation group. So, the length of the former cores is recalculated to fit to the depth of next core-top.]

Expedition	903	Site	C9007A
Expedition name	CK09-01		

Section Summary

Section	Section curated length (m)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9007A-1H-1	1.27	0	0	1.27	1.214
C9007A-1H-2	1.4	1.27	1.214	2.67	2.551
C9007A-1H-3	1.41	2.67	2.551	4.08	3.899
C9007A-1H-4	1.42	4.08	3.899	5.5	5.256
C9007A-1H-5	1.42	5.5	5.256	6.92	6.612
C9007A-1H-6	1.41	6.92	6.612	8.33	7.96
C9007A-1H-7	0.36	8.33	7.96	8.69	8.304
C9007A-1H-CC	0.31	8.69	8.304	9	8.6
C9007A-2H-1	1.41	8.6	8.6	10.01	9.909
C9007A-2H-2	1.41	10.01	9.909	11.42	11.219
C9007A-2H-3	1.42	11.42	11.219	12.84	12.537
C9007A-2H-4	1.42	12.84	12.537	14.26	13.856
C9007A-2H-5	1.44	14.26	13.856	15.7	15.193
C9007A-2H-6	1.41	15.7	15.193	17.11	16.503
C9007A-2H-7	1.32	17.11	16.503	18.43	17.729
C9007A-2H-CC	0.4	18.43	17.729	18.83	18.1
C9007A-3H-1	1.41	18.1	18.1	19.51	19.413
C9007A-3H-2	1.4	19.51	19.413	20.91	20.717
C9007A-3H-3	1.43	20.91	20.717	22.34	22.049
C9007A-3H-4	1.42	22.34	22.049	23.76	23.372
C9007A-3H-5	1.43	23.76	23.372	25.19	24.703
C9007A-3H-6	1.42	25.19	24.703	26.61	26.026
C9007A-3H-7	1.35	26.61	26.026	27.96	27.283
C9007A-3H-CC	0.34	27.96	27.283	28.3	27.6
C9007A-4H-1	1.375	27.6	27.6	28.975	28.857
C9007A-4H-2	1.305	28.975	28.857	30.28	30.05
C9007A-4H-3	1.325	30.28	30.05	31.605	31.262
C9007A-4H-4	1.325	31.605	31.262	32.93	32.473
C9007A-4H-5	1.345	32.93	32.473	34.275	33.703
C9007A-4H-6	1.36	34.275	33.703	35.635	34.947
C9007A-4H-7	1.355	35.635	34.947	36.99	36.186
C9007A-4H-8	0.715	36.99	36.186	37.705	36.839
C9007A-4H-CC	0.285	37.705	36.839	37.99	37.1
C9007A-5H-1	1.337	37.1	37.1	38.437	38.312
C9007A-5H-2	1.38	38.437	38.312	39.817	39.563
C9007A-5H-3	1.32	39.817	39.563	41.137	40.759
C9007A-5H-4	1.35	41.137	40.759	42.487	41.983
C9007A-5H-5	1.35	42.487	41.983	43.837	43.207
C9007A-5H-6	1.36	43.837	43.207	45.197	44.44
C9007A-5H-7	1.31	45.197	44.44	46.507	45.627
C9007A-5H-8	0.735	46.507	45.627	47.242	46.294
C9007A-5H-CC	0.34	47.242	46.294	47.582	46.602

Note: [mbsf, CMP] means a depth below sea floor by composite depth. In general, soft-sediment cores expand after retrieving, so that a depth of core-bottom often becomes deeper than that of the next core-top, defined by Operation group. So, the length of the former cores is recalculated to fit to the depth of next core-top.]

Expedition	903	Site	C9008A
Expedition name	CK09-01		

Section Summary

Section	Section curated length (m)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9008A-1H-1	1.41	0	0	1.41	1.391
C9008A-1H-2	1.4	1.41	1.391	2.81	2.772
C9008A-1H-3	1.42	2.81	2.772	4.23	4.173
C9008A-1H-4	1.43	4.23	4.173	5.66	5.584
C9008A-1H-5	1.42	5.66	5.584	7.08	6.985
C9008A-1H-6	1.01	7.08	6.985	8.09	7.982
C9008A-1H-7	0.58	8.09	7.982	8.67	8.554
C9008A-1H-CC	0.29	8.67	8.554	8.96	8.84
C9008A-2H-1	1.41	8.84	8.84	10.25	10.153
C9008A-2H-2	1.42	10.25	10.153	11.67	11.476
C9008A-2H-3	1.43	11.67	11.476	13.1	12.808
C9008A-2H-4	1.42	13.1	12.808	14.52	14.13
C9008A-2H-5	1.43	14.52	14.13	15.95	15.462
C9008A-2H-6	1.42	15.95	15.462	17.37	16.785
C9008A-2H-7	1.32	17.37	16.785	18.69	18.014
C9008A-2H-CC	0.35	18.69	18.014	19.04	18.34
C9008A-3H-1	1.44	18.34	18.34	19.78	19.726
C9008A-3H-2	1.43	19.78	19.726	21.21	21.102
C9008A-3H-3	1.42	21.21	21.102	22.63	22.469
C9008A-3H-4	1.43	22.63	22.469	24.06	23.846
C9008A-3H-5	1.42	24.06	23.846	25.48	25.212
C9008A-3H-6	1.42	25.48	25.212	26.9	26.579
C9008A-3H-7	1.31	26.9	26.579	28.21	27.84
C9008A-4H-1	1.42	27.84	27.84	29.26	29.147
C9008A-4H-2	1.43	29.26	29.147	30.69	30.463
C9008A-4H-3	1.44	30.69	30.463	32.13	31.789
C9008A-4H-4	1.44	32.13	31.789	33.57	33.115
C9008A-4H-5	1.45	33.57	33.115	35.02	34.45
C9008A-4H-6	1.46	35.02	34.45	36.48	35.793
C9008A-4H-7	1.34	36.48	35.793	37.82	37.027
C9008A-4H-CC	0.34	37.82	37.027	38.16	37.34
C9008A-5H-1	1.46	37.34	37.34	38.8	38.688
C9008A-5H-2	1.45	38.8	38.688	40.25	40.027
C9008A-5H-3	1.46	40.25	40.027	41.71	41.375
C9008A-5H-4	1.46	41.71	41.375	43.17	42.722
C9008A-5H-5	1.48	43.17	42.722	44.65	44.089
C9008A-5H-6	1.46	44.65	44.089	46.11	45.437
C9008A-5H-7	1.16	46.11	45.437	47.27	46.508
C9008A-5H-CC	0.36	47.27	46.508	47.63	46.84
C9008A-6H-1	1.51	46.84	46.84	48.35	48.35
C9008A-6H-2	0.91	48.35	48.35	49.26	49.26
C9008A-6H-3	1.52	49.26	49.26	50.78	50.78
C9008A-6H-4	1.11	50.78	50.78	51.89	51.89

Note: [mbsf, CMP] means a depth below sea floor by composite depth. In general, soft-sediment cores expand after retrieving, so that a depth of core-bottom often becomes deeper than that of the next core-top, defined by Operation group. So, the length of the former cores is recalculated to fit to the depth of next core-top.]

Expedition	903	Site	C9009A
Expedition name	CK09-01		

Section Summary

Section	Section curated length (m)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9009A-1H-1	1.42	0	0	1.42	1.404
C9009A-1H-2	1.405	1.42	1.404	2.825	2.793
C9009A-1H-3	1.405	2.825	2.793	4.23	4.182
C9009A-1H-4	1.4	4.23	4.182	5.63	5.567
C9009A-1H-5	1.415	5.63	5.567	7.045	6.966
C9009A-1H-6	0.57	7.045	6.966	7.615	7.53
C9009A-1H-CC	0.41	7.615	7.53	8.025	7.935
C9009A-2H-1	1.16	7.93	7.93	9.09	8.93
C9009A-2H-2	1.34	9.09	8.93	10.43	10.085
C9009A-2H-3	1.39	10.43	10.085	11.82	11.283
C9009A-2H-4	0.88	11.82	11.283	12.7	12.041
C9009A-2H-5	1.11	12.7	12.041	13.81	12.998
C9009A-2H-CC	0.13	13.81	12.998	13.94	13.11

Note: [mbsf, CMP] means a depth below sea floor by composite depth. In general, soft-sediment cores expand after retrieving, so that a depth of core-bottom often becomes deeper than that of the next core-top, defined by Operation group. So, the length of the former cores is recalculated to fit to the depth of next core-top.]

Table 3 Sample summary of Cruise CK09-01 Expedition 903 in Suruga Bay.

Sample Summary

Sample source	Sample code	Sample volume (cm3)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9006A-1H-1 WR, 136.0--140.0 cm	HS	5	1.36	1.332	1.4	1.371
C9006A-2H-1 WR, 125.0--129.0 cm	HS	5	9.89	9.803	9.93	9.84
C9006A-3H-1 WR, 136.5--140.5 cm	HS	5	19.505	19.395	19.545	19.432
C9006A-4H-1 WR, 140.0--144.0 cm	HS	5	29.04	28.881	29.08	28.916
C9006A-5H-1 WR, 130.5--134.5 cm	HS	5	38.445	38.347	38.485	38.384
C9006A-6H-1 WR, 127.0--131.0 cm	HS	5	47.91	47.859	47.95	47.897
C9006A-7H-1 WR, 138.0--142.0 cm	HS	5	57.52	57.513	57.56	57.553
C9007A-1H-1 WR, 123.0--127.0 cm	HS	5	1.23	1.175	1.27	1.214
C9007A-2H-1 WR, 137.0--141.0 cm	HS	5	9.97	9.872	10.01	9.909
C9007A-3H-1 WR, 137.0--141.0 cm	HS	5	19.47	19.376	19.51	19.413
C9007A-4H-1 WR, 133.5--137.5 cm	HS	5	28.935	28.821	28.975	28.857
C9007A-5H-1 WR, 129.7--133.7 cm	HS	5	38.397	38.276	38.437	38.312
C9008A-1H-1 WR, 137.0--141.0 cm	HS	5	1.37	1.352	1.41	1.391
C9008A-2H-1 WR, 137.0--141.0 cm	HS	5	10.21	10.116	10.25	10.153
C9008A-3H-1 WR, 140.0--144.0 cm	HS	5	19.74	19.688	19.78	19.726
C9008A-4H-1 WR, 138.0--142.0 cm	HS	5	29.22	29.11	29.26	29.147
C9008A-5H-1 WR, 142.0--146.0 cm	HS	5	38.76	38.651	38.8	38.688
C9009A-1H-1 WR, 138.0--142.0 cm	HS	5	1.38	1.365	1.42	1.404

□
that a depth of core-bottom often becomes deeper than that of the next core-top, defined by Operation group. So, the length of the former cores is recalculated to fit to the depth of next core-top.]

Sample Summary

Sample source	Sample code	Sample volume (cm3)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9006A-1H-1 WR, 83.0--93.0 cm	903SA	350	0.83	0.813	0.93	0.911
C9006A-1H-2 WR, 60.0--70.0 cm	903SA	350	2.02	1.979	2.12	2.077
C9006A-1H-3 WR, 73.0--83.0 cm	903SA	350	3.57	3.497	3.67	3.595
C9006A-1H-4 WR, 73.0--83.0 cm	903SA	350	4.98	4.878	5.08	4.976
C9006A-1H-5 WR, 83.0--93.0 cm	903SA	350	6.5	6.367	6.6	6.465
C9006A-1H-6 WR, 83.0--93.0 cm	903SA	350	7.91	7.749	8.01	7.846
C9006A-2H-1 WR, 83.0--93.0 cm	903SA	350	9.47	9.412	9.57	9.505
C9006A-2H-2 WR, 83.0--93.0 cm	903SA	350	10.77	10.622	10.87	10.715
C9006A-2H-3 WR, 83.0--93.0 cm	903SA	350	12.185	11.939	12.285	12.031
C9006A-2H-4 WR, 63.0--73.0 cm	903SA	350	13.415	13.083	13.515	13.176
C9006A-2H-5 WR, 83.0--93.0 cm	903SA	350	15.025	14.581	15.125	14.674
C9006A-2H-6 WR, 83.0--93.0 cm	903SA	350	16.445	15.902	16.545	15.995
C9006A-2H-7 WR, 83.0--93.0 cm	903SA	350	17.86	17.219	17.96	17.312
C9006A-3H-1 WR, 83.0--93.0 cm	903SA	350	18.97	18.903	19.07	18.995
C9006A-3H-2 WR, 83.0--93.0 cm	903SA	350	20.375	20.195	20.475	20.287
C9006A-3H-3 WR, 83.0--93.0 cm	903SA	350	21.8	21.506	21.9	21.598
C9006A-3H-4 WR, 83.0--93.0 cm	903SA	350	23.22	22.812	23.32	22.904
C9006A-3H-5 WR, 83.0--93.0 cm	903SA	350	24.675	24.15	24.775	24.242
C9006A-3H-6 WR, 83.0--93.0 cm	903SA	350	26.135	25.493	26.235	25.585
C9006A-3H-7 WR, 63.0--73.0 cm	903SA	350	27.375	26.633	27.475	26.725
C9006A-4H-1 WR, 83.0--93.0 cm	903SA	350	28.47	28.375	28.57	28.464
C9006A-4H-2 WR, 85.0--95.0 cm	903SA	350	29.93	29.669	30.03	29.758
C9006A-4H-3 WR, 84.5--94.5 cm	903SA	350	31.395	30.968	31.495	31.056
C9006A-4H-4 WR, 84.5--94.5 cm	903SA	350	32.905	32.306	33.005	32.394
C9006A-4H-5 WR, 87.0--97.0 cm	903SA	350	34.45	33.675	34.55	33.764
C9006A-4H-6 WR, 83.0--93.0 cm	903SA	350	35.945	35	36.045	35.089
C9006A-4H-7 WR, 90.0--100.0 cm	903SA	350	37.504	36.381	37.604	36.47
C9006A-5H-1 WR, 58.0--68.0 cm	903SA	350	37.72	37.676	37.82	37.769
C9006A-5H-2 WR, 58.0--68.0 cm	903SA	350	39.065	38.921	39.165	39.013
C9006A-5H-3 WR, 87.0--97.0 cm	903SA	350	40.765	40.493	40.865	40.586
C9006A-5H-4 WR, 53.0--63.0 cm	903SA	350	41.835	41.483	41.935	41.576
C9006A-5H-5 WR, 48.0--58.0 cm	903SA	350	43.28	42.82	43.38	42.912
C9006A-5H-6 WR, 83.0--93.0 cm	903SA	350	45.15	44.549	45.25	44.642
C9006A-5H-7 WR, 83.0--93.0 cm	903SA	350	46.62	45.909	46.72	46.002
C9006A-6H-1 WR, 93.0--103.0 cm	903SA	350	47.57	47.532	47.67	47.628
C9006A-6H-2 WR, 93.0--103.0 cm	903SA	350	48.91	48.818	49.01	48.914
C9006A-6H-3 WR, 73.0--83.0 cm	903SA	350	50.02	49.883	50.12	49.979
C9006A-6H-4 WR, 43.0--53.0 cm	903SA	350	51.06	50.881	51.16	50.977
C9006A-6H-5 WR, 95.0--105.0 cm	903SA	350	52.94	52.686	53.04	52.781
C9006A-6H-6 WR, 68.0--78.0 cm	903SA	350	53.995	53.698	54.095	53.794
C9006A-6H-7 WR, 60.0--70.0 cm	903SA	350	55.225	54.878	55.325	54.974
C9006A-6H-8 WR, 46.0--56.0 cm	903SA	350	56.05	55.67	56.15	55.766
C9006A-7H-1 WR, 98.0--108.0 cm	903SA	350	57.12	57.115	57.22	57.214
C9006A-7H-2 WR, 83.0--93.0 cm	903SA	350	58.39	58.378	58.49	58.478
C9006A-7H-3 WR, 93.0--103.0 cm	903SA	805	59.99	59.97	60.09	60.069
C9006A-7H-4 WR, 96.0--106.0 cm	903SA	350	61.46	61.432	61.56	61.532
C9006A-7H-5 WR, 96.0--106.0 cm	903SA	350	62.93	62.895	63.03	62.994
C9006A-7H-6 WR, 68.0--78.0 cm	903SA	350	64.06	64.019	64.16	64.118
C9006A-7H-7 WR, 63.0--73.0 cm	903SA	350	65.04	64.993	65.14	65.093
C9007A-1H-3 WR, 78.0--88.0 cm	903SA	350	3.45	3.297	3.55	3.392
C9007A-2H-3 WR, 68.0--78.0 cm	903SA	350	12.1	11.85	12.2	11.943
C9007A-3H-3 WR, 73.0--83.0 cm	903SA	350	21.64	21.397	21.74	21.49
C9007A-4H-3 WR, 53.0--63.0 cm	903SA	350	30.81	30.535	30.91	30.626
C9007A-5H-3 WR, 88.0--98.0 cm	903SA	350	40.697	40.361	40.797	40.451
C9008A-1H-3 WR, 83.0--93.0 cm	903SA	350	3.64	3.591	3.74	3.69
C9008A-2H-3 WR, 83.0--93.0 cm	903SA	350	12.5	12.249	12.6	12.342
C9008A-3H-3 WR, 83.0--93.0 cm	903SA	350	22.04	21.901	22.14	21.997
C9008A-4H-3 WR, 70.0--78.0 cm	903SA	280	31.39	31.108	31.47	31.182
C9008A-5H-3 WR, 43.0--53.0 cm	903SA	350	40.68	40.424	40.78	40.516
C9009A-1H-3 WR, 83.0--93.0 cm	903SA	350	3.655	3.614	3.755	3.713
C9009A-2H-3 WR, 83.0--93.0 cm	903SA	350	11.26	10.8	11.36	10.886

□
that a depth of core-bottom often becomes deeper than that of the next core-top, defined by Operation group. So, the length of the former cores is recalculated to fit to the depth of next core-top.]

Sample Summary

Sample source	Sample code	Sample volume (cm3)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9006A-1H-1 WR, 60.0--83.0 cm	903SC	805	0.6	0.588	0.83	0.813
C9006A-1H-2 WR, 37.0--60.0 cm	903SC	805	1.79	1.753	2.02	1.979
C9006A-1H-3 WR, 50.0--73.0 cm	903SC	805	3.34	3.272	3.57	3.497
C9006A-1H-4 WR, 50.0--73.0 cm	903SC	805	4.75	4.653	4.98	4.878
C9006A-1H-5 WR, 60.0--83.0 cm	903SC	805	6.27	6.142	6.5	6.367
C9006A-1H-6 WR, 60.0--83.0 cm	903SC	805	7.68	7.523	7.91	7.749
C9006A-2H-1 WR, 60.0--83.0 cm	903SC	805	9.24	9.198	9.47	9.412
C9006A-2H-2 WR, 60.0--83.0 cm	903SC	805	10.54	10.408	10.77	10.622
C9006A-2H-3 WR, 60.0--83.0 cm	903SC	805	11.955	11.724	12.185	11.939
C9006A-2H-4 WR, 40.0--63.0 cm	903SC	805	13.185	12.869	13.415	13.083
C9006A-2H-5 WR, 60.0--83.0 cm	903SC	805	14.795	14.367	15.025	14.581
C9006A-2H-6 WR, 60.0--83.0 cm	903SC	805	16.215	15.688	16.445	15.902
C9006A-2H-7 WR, 60.0--83.0 cm	903SC	805	17.63	17.005	17.86	17.219
C9006A-3H-1 WR, 60.0--83.0 cm	903SC	805	18.74	18.692	18.97	18.903
C9006A-3H-2 WR, 60.0--83.0 cm	903SC	805	20.145	19.984	20.375	20.195
C9006A-3H-3 WR, 60.0--83.0 cm	903SC	805	21.57	21.294	21.8	21.506
C9006A-3H-4 WR, 60.0--83.0 cm	903SC	805	22.99	22.6	23.22	22.812
C9006A-3H-5 WR, 60.0--83.0 cm	903SC	805	24.445	23.938	24.675	24.15
C9006A-3H-6 WR, 60.0--83.0 cm	903SC	805	25.905	25.281	26.135	25.493
C9006A-3H-7 WR, 40.0--63.0 cm	903SC	805	27.145	26.421	27.375	26.633
C9006A-4H-1 WR, 60.0--83.0 cm	903SC	805	28.24	28.172	28.47	28.375
C9006A-4H-2 WR, 62.0--85.0 cm	903SC	805	29.7	29.466	29.93	29.669
C9006A-4H-3 WR, 61.5--84.5 cm	903SC	805	31.165	30.764	31.395	30.968
C9006A-4H-4 WR, 61.5--84.5 cm	903SC	805	32.675	32.102	32.905	32.306
C9006A-4H-5 WR, 64.0--87.0 cm	903SC	805	34.22	33.471	34.45	33.675
C9006A-4H-6 WR, 60.0--83.0 cm	903SC	805	35.715	34.796	35.945	35
C9006A-4H-7 WR, 67.0--90.0 cm	903SC	805	37.274	36.178	37.504	36.381
C9006A-5H-1 WR, 35.0--58.0 cm	903SC	805	37.49	37.464	37.72	37.676
C9006A-5H-2 WR, 35.0--58.0 cm	903SC	805	38.835	38.708	39.065	38.921
C9006A-5H-3 WR, 64.0--87.0 cm	903SC	805	40.535	40.28	40.765	40.493
C9006A-5H-4 WR, 30.0--53.0 cm	903SC	805	41.605	41.27	41.835	41.483
C9006A-5H-5 WR, 25.0--48.0 cm	903SC	805	43.05	42.607	43.28	42.82
C9006A-5H-6 WR, 60.0--83.0 cm	903SC	805	44.92	44.337	45.15	44.549
C9006A-5H-7 WR, 60.0--83.0 cm	903SC	805	46.39	45.696	46.62	45.909
C9006A-6H-1 WR, 70.0--93.0 cm	903SC	805	47.34	47.312	47.57	47.532
C9006A-6H-2 WR, 70.0--93.0 cm	903SC	805	48.68	48.598	48.91	48.818
C9006A-6H-3 WR, 50.0--73.0 cm	903SC	805	49.79	49.663	50.02	49.883
C9006A-6H-4 WR, 20.0--43.0 cm	903SC	805	50.83	50.661	51.06	50.881
C9006A-6H-5 WR, 72.0--95.0 cm	903SC	805	52.71	52.465	52.94	52.686
C9006A-6H-6 WR, 45.0--68.0 cm	903SC	805	53.765	53.477	53.995	53.698
C9006A-6H-7 WR, 37.0--60.0 cm	903SC	805	54.995	54.657	55.225	54.878
C9006A-6H-8 WR, 23.0--46.0 cm	903SC	805	55.82	55.449	56.05	55.67
C9006A-7H-1 WR, 75.0--98.0 cm	903SC	805	56.89	56.886	57.12	57.115
C9006A-7H-2 WR, 60.0--83.0 cm	903SC	805	58.16	58.149	58.39	58.378
C9006A-7H-3 WR, 70.0--93.0 cm	903SC	805	59.76	59.741	59.99	59.97
C9006A-7H-4 WR, 73.0--96.0 cm	903SC	805	61.23	61.203	61.46	61.432
C9006A-7H-5 WR, 73.0--96.0 cm	903SC	805	62.7	62.666	62.93	62.895
C9006A-7H-6 WR, 45.0--68.0 cm	903SC	805	63.83	63.79	64.06	64.019
C9006A-7H-7 WR, 40.0--63.0 cm	903SC	805	64.81	64.765	65.04	64.993
C9007A-1H-3 WR, 55.0--78.0 cm	903SC	805	3.22	3.077	3.45	3.297
C9007A-2H-3 WR, 45.0--68.0 cm	903SC	805	11.87	11.637	12.1	11.85
C9007A-3H-3 WR, 50.0--73.0 cm	903SC	805	21.41	21.183	21.64	21.397
C9007A-4H-3 WR, 30.0--53.0 cm	903SC	805	30.58	30.325	30.81	30.535
C9007A-5H-3 WR, 65.0--88.0 cm	903SC	805	40.467	40.152	40.697	40.361
C9008A-1H-3 WR, 60.0--83.0 cm	903SC	805	3.41	3.364	3.64	3.591
C9008A-2H-3 WR, 60.0--83.0 cm	903SC	805	12.27	12.035	12.5	12.249
C9008A-3H-3 WR, 60.0--83.0 cm	903SC	805	21.81	21.68	22.04	21.901
C9008A-4H-3 WR, 48.5--70.0 cm	903SC	752.5	31.175	30.91	31.39	31.108
C9008A-5H-3 WR, 20.0--43.0 cm	903SC	805	40.45	40.211	40.68	40.424
C9009A-1H-3 WR, 60.0--83.0 cm	903SC	805	3.425	3.387	3.655	3.614
C9009A-2H-3 WR, 60.0--83.0 cm	903SC	805	11.03	10.602	11.26	10.8

Note: [□
depth of □
is recalculated to fit to the depth of next core-top.]

Sample Summary

Sample source	Sample code	Sample volume (cm3)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9006A-1H-1 WR, 0.0--20.0 cm	903ST	700	0	0	0.2	0.196
C9006A-7H-7 WR, 73.0--98.0 cm	903ST	700	65.14	65.093	65.39	65.342
C9007A-1H-1 WR, 28.0--45.0 cm	903ST	595	0.28	0.268	0.45	0.43
C9007A-5H-8 WR, 54.0--73.5 cm	903ST	700	47.047	46.117	47.242	46.294
C9008A-1H-1 WR, 0.0--20.0 cm	903ST	700	0	0	0.2	0.197
C9008A-5H-7 WR, 96.0--116.0 cm	903ST	700	47.07	46.323	47.27	46.508
C9009A-1H-1 WR, 0.0--20.0 cm	903ST	700	0	0	0.2	0.198

Note: [mbsf, □
of cor□
recalculated to fit to the depth of next core-top.]

Sample Summary

Sample source	Sample code	Sample volume (cm3)	Top Depth [mbsf]	Top Depth [mbsf, CMP]	Bottom Depth [mbsf]	Bottom Depth [mbsf, CMP]
C9006A-7H-7 WR, 0.0--40.0 cm	903SABE	1400	64.41	64.367	64.81	64.765

Note: [mbsf, CMP] means a depth below sea floor by composite depth. In general, soft-sediment cores expand after retrieving, so that a depth of core-bottom often becomes deeper than that of the next core-top, defined by Operation group. So, the length of the former cores is recalculated to fit to the depth of next core-top.]

Table 4 Final Cruise Sampling Plan (FCSP) of Cruise CK09-01 Expedition 903 in Suruga Bay.

Req #	Requesters' Name	Sample Code	Material	Sample Size/ Data Type	Frequency	Est. # of samples requested*	# of samples taken**	Purpose	Comments; Special equipment, procedures, handling	Sample transportation handcarry or ship
903-5	Fumiyoshi Abe	903SA	sediment	10 cm long whole-round core, 350 cc	・1/sec From the middle of each section at C9006A ・1/core From the middle of section 3 at C9007A, C9008A and C9009A	100/1.5 = 67	61	The research plans we will accomplish are: (1) to elucidate biodiversity of aerobic and anaerobic microorganisms; (2) to isolate microorganisms capable of applying for industrial uses, e.g. production of useful enzymes; (3) to isolate microorganisms capable of growth under high pressure; (4) to measure enzymatic activities in core samples; (5) to evaluate tolerance of microorganisms to harmful materials and environments, e.g. organic solvents, oxidative materials, heavy metals, alkaline pH, acidic pH, high salinity; (6) to estimate the number of microorganisms in each core sample under fluorescence microscopy on board.	Capped on tightly, kept in deep freezer (-80 degC)	Handed over to the requester onboard
		903SC	sediment	23 cm long whole-round core, 805 cc	・ 1/sec From the middle of each section at C9006A ・ 1/core From the middle of section 3 at C9007A, C9008A and C9009A	100/1.5 = 67	61		Sample is stored in refrigerator (4 degC). From each sample, remainder in plastic tubes (50 ml ×8) and a whole-round core (8 cm) were subsampled.	Handed over to the requester onboard
		903ST	sediment	20 cm long whole-round core,700 cc	Top and bottom (not from core catcher) of each hole	2x1=2	7		Capped on tightly, kept in deep freezer (-80 degC).	Handed over to the requester onboard
903-6	Fumiyoshi Abe	903SABE	sediment	40 cm long whole-round core, 1400 cc	From 903-C9006A-7H-7, 0-40 cm	1	1	The research plan we will accomplish is to elucidate biodiverdity of aerobic and anaearobic microorganism.	The core sample is subjected to extraction of DNA to construct a metagenomic library. The core sample will be stored -80 degC.	Handed over to the requester onboard
-	-	HS	sediment	4 cm long, 5 cc by cylinder	From bottom of section 1.	-	18	Safety Gas Monitoring		Sample will be shipped to KCC on May, 2009

*Assumption: 100 m cores from one (1) hole.
**The total length of cores recovered is 184.93 m.

Table 5 Results of gas chromatography analysis for headspace gases at Holes 903-C9006A, C9007A, C9008A and C9009A.

Sample	Depth (mbsf)	Gas Concentrations (ppm)						
		Methane	Ethane	Propane	iso-Butane	n-Butane	Ethylene	Propylene
Hole 903-C9006A								
1H-1, 136.0--140.0 cm	1.36--1.40	3.5	0.0	0.0	0.0	0.0	0.0	0.0
2H-1, 125.0--129.0 cm	9.89--9.93	5.1	0.0	0.0	0.0	0.0	0.0	0.0
3H-1, 136.5--140.5 cm	19.51--19.55	1.7E+04	0.0	0.0	0.0	0.0	0.0	0.0
4H-1, 140.0--144.0 cm	29.04--29.08	2.6E+04	0.0	0.0	0.0	0.0	0.0	0.0
5H-1, 130.5--134.5 cm	38.45--38.49	2.4E+04	0.0	0.0	0.0	0.0	0.0	0.0
6H-1, 127.0--131.0 cm	47.91--47.95	1.3E+04	0.0	0.0	0.0	0.0	0.0	0.0
7H-1, 138.0--142.0 cm	57.52--57.56	1.3E+04	0.0	0.0	0.0	0.0	0.0	0.0
Hole 903-C9007A								
1H-1, 123.0--127.0 cm	1.23--1.27	3.3	0.0	0.0	0.0	0.0	0.0	0.0
2H-1, 137.0--141.0 cm	9.97--10.01	5.6	0.0	0.0	0.0	0.0	0.0	0.0
3H-1, 137.0--141.0 cm	19.47--19.51	2.4E+04	0.0	0.0	0.0	0.0	0.0	0.0
4H-1, 133.5--137.5 cm	28.94--28.98	2.1E+04	0.0	0.0	0.0	0.0	0.0	0.0
5H-1, 129.7--133.7 cm	38.40--38.44	1.7E+04	0.0	0.0	0.0	0.0	0.0	0.0
Hole 903-C9008A								
7H-1, 138.0--142.0 cm	1.37--1.41	2.6	0.0	0.0	0.0	0.0	0.0	0.0
7H-1, 138.0--142.0 cm	10.21--10.25	12	0.0	0.0	0.0	0.0	0.0	0.0
7H-1, 138.0--142.0 cm	19.74--19.78	1.7E+04	0.0	0.0	0.0	0.0	0.0	0.0
7H-1, 138.0--142.0 cm	29.22--29.26	2.5E+04	0.0	0.0	0.0	0.0	0.0	0.0
7H-1, 138.0--142.0 cm	38.76--38.80	2.1E+04	0.0	0.0	0.0	0.0	0.0	0.0
Hole 903-C9009A								
7H-1, 138.0--142.0 cm	1.38--1.42	2.4	0.0	0.0	0.0	0.0	0.0	0.0

Table 6 Numbers of axial images of X-ray CT scanning for sections at Holes 903-C9006A, C9007A, C9008A and C9009A.

Section	Date Acquired (JST +09:00)	Number of Axial Images
C9006A-1H-1	2009-03-19 08:15:24	2246
C9006A-1H-2	2009-03-19 08:25:36	2270
C9006A-1H-3	2009-03-19 08:36:16	2267
C9006A-1H-4	2009-03-19 08:45:14	2268
C9006A-1H-5	2009-03-19 08:54:17	2265
C9006A-1H-6	2009-03-19 09:07:02	2291
C9006A-1H-CC	2009-03-19 09:15:13	507
C9006A-2H-1	2009-03-19 10:08:54	2083
C9006A-2H-2	2009-03-19 10:17:21	2263
C9006A-2H-3	2009-03-19 10:26:58	2289
C9006A-2H-4	2009-03-19 10:36:01	2262
C9006A-2H-5	2009-03-19 10:51:28	2278
C9006A-2H-6	2009-03-19 11:00:56	2267
C9006A-2H-7	2009-03-19 11:10:28	2311
C9006A-2H-CC	2009-03-19 11:18:58	614
C9006A-3H-1	2009-03-19 12:06:04	2251
C9006A-3H-2	2009-03-19 12:15:25	2289
C9006A-3H-3	2009-03-19 12:29:43	2278
C9006A-3H-4	2009-03-19 12:48:19	2305
C9006A-3H-5	2009-03-19 12:58:04	2305
C9006A-3H-6	2009-03-19 13:07:02	2287
C9006A-3H-7	2009-03-19 13:18:06	2126
C9006A-3H-CC	2009-03-19 13:26:53	649
C9006A-4H-1	2009-03-19 13:37:26	2307
C9006A-4H-2	2009-03-19 13:47:02	2318
C9006A-4H-3	2009-03-19 13:55:11	2369
C9006A-4H-4	2009-03-19 14:05:57	2395
C9006A-4H-5	2009-03-19 14:16:48	2393
C9006A-4H-6	2009-03-19 14:27:07	2382
C9006A-4H-7	2009-03-19 14:36:36	2318
C9006A-4H-CC	2009-03-19 14:45:34	502
C9006A-5H-1	2009-03-19 17:03:10	2161
C9006A-5H-2	2009-03-19 17:19:35	2257
C9006A-5H-3	2009-03-19 17:30:07	2260
C9006A-5H-4	2009-03-19 17:39:31	2395
C9006A-5H-5	2009-03-19 17:52:22	2435
C9006A-5H-6	2009-03-19 18:03:00	2356
C9006A-5H-7	2009-03-19 18:31:55	2196
C9006A-5H-CC	2009-03-19 18:53:56	396
C9006A-6H-1	2009-03-19 19:24:40	2089
C9006A-6H-2	2009-03-19 19:31:54	2097
C9006A-6H-3	2009-03-19 19:39:49	2151
C9006A-6H-4	2009-03-19 19:49:10	2174
C9006A-6H-5	2009-03-19 19:59:49	2129
C9006A-6H-6	2009-03-19 20:12:23	2105
C9006A-6H-7	2009-03-19 20:23:14	1545
C9006A-6H-8	2009-03-19 20:30:47	903
C9006A-6H-CC	2009-03-19 20:39:08	625
C9006A-7H-1	2009-03-19 20:52:30	2279
C9006A-7H-2	2009-03-19 21:02:43	2401
C9006A-7H-3	2009-03-19 21:15:22	2299
C9006A-7H-4	2009-03-19 21:23:34	2351
C9006A-7H-5	2009-03-19 21:31:31	2257
C9006A-7H-6	2009-03-19 21:39:27	1655
C9006A-7H-7	2009-03-19 22:11:19	1571
C9006A-7H-CC	2009-03-19 22:21:55	484
C9007A-1H-1	2009-03-20 03:00:27	2041
C9007A-1H-2	2009-03-20 03:09:41	2257
C9007A-1H-3	2009-03-20 03:20:24	2260
C9007A-1H-4	2009-03-20 03:42:05	2273
C9007A-1H-5	2009-03-20 03:53:23	2276
C9007A-1H-6	2009-03-20 04:02:43	2263
C9007A-1H-7	2009-03-20 04:13:20	583
C9007A-1H-CC	2009-03-20 04:19:15	505
C9007A-2H-1	2009-03-20 04:46:24	2257
C9007A-2H-2	2009-03-20 04:57:57	2257
C9007A-2H-3	2009-03-20 05:07:30	2273
C9007A-2H-4	2009-03-20 05:16:58	2273
C9007A-2H-5	2009-03-20 05:29:53	2303
C9007A-2H-6	2009-03-20 05:40:05	2257
C9007A-2H-7	2009-03-20 05:47:51	2113
C9007A-2H-CC	2009-03-20 05:56:09	649
C9007A-3H-1	2009-03-20 06:14:51	2260
C9007A-3H-2	2009-03-20 06:25:21	2244
C9007A-3H-3	2009-03-20 06:34:39	2297
C9007A-3H-4	2009-03-20 06:43:11	2281
C9007A-3H-5	2009-03-20 06:51:20	2305
C9007A-3H-6	2009-03-20 06:59:44	2289
C9007A-3H-7	2009-03-20 07:09:52	2171
C9007A-3H-CC	2009-03-20 07:20:07	540

Section	Date Acquired (JST +09:00)	Number of Axial Images
C9007A-4H-1	2009-03-20 09:14:11	2199
C9007A-4H-2	2009-03-20 09:22:15	2089
C9007A-4H-3	2009-03-20 09:07:04	2124
C9007A-4H-4	2009-03-20 09:29:51	2126
C9007A-4H-5	2009-03-20 09:38:48	2156
C9007A-4H-6	2009-03-20 09:49:34	2188
C9007A-4H-7	2009-03-20 10:06:32	2169
C9007A-4H-8	2009-03-20 10:15:40	1148
C9007A-4H-CC	2009-03-20 10:22:07	463
C9007A-5H-1	2009-03-20 11:56:48	2140
C9007A-5H-2	2009-03-20 12:04:20	2209
C9007A-5H-3	2009-03-20 11:42:06	2113
C9007A-5H-4	2009-03-20 12:11:45	2167
C9007A-5H-5	2009-03-20 12:25:47	2161
C9007A-5H-6	2009-03-20 12:52:01	2177
C9007A-5H-7	2009-03-20 12:59:48	2097
C9007A-5H-8	2009-03-20 11:50:21	1179
C9007A-5H-CC	2009-03-20 13:09:03	548
C9008A-1H-1	2009-03-20 17:43:02	2263
C9008A-1H-2	2009-03-20 17:54:45	2257
C9008A-1H-3	2009-03-20 17:35:17	2265
C9008A-1H-4	2009-03-20 18:06:15	2281
C9008A-1H-5	2009-03-20 18:22:30	2278
C9008A-1H-6	2009-03-20 18:31:41	1615
C9008A-1H-7	2009-03-20 18:40:14	943
C9008A-1H-CC	2009-03-20 18:48:23	457
C9008A-2H-1	2009-03-20 20:00:46	2251
C9008A-2H-2	2009-03-20 20:09:03	2268
C9008A-2H-3	2009-03-20 19:52:49	2289
C9008A-2H-4	2009-03-20 20:17:26	2281
C9008A-2H-5	2009-03-20 20:25:41	2286
C9008A-2H-6	2009-03-20 20:34:59	2281
C9008A-2H-7	2009-03-20 20:43:29	2116
C9008A-2H-CC	2009-03-20 20:51:44	564
C9008A-3H-1	2009-03-20 23:18:52	2300
C9008A-3H-2	2009-03-20 23:28:41	2292
C9008A-3H-3	2009-03-20 23:10:54	2276
C9008A-3H-4	2009-03-20 23:37:45	2302
C9008A-3H-5	2009-03-20 23:45:15	2281
C9008A-3H-6	2009-03-20 23:53:33	2273
C9008A-3H-7	2009-03-21 00:09:17	2100
C9008A-4H-1	2009-03-21 01:26:03	2284
C9008A-4H-2	2009-03-21 01:32:47	2305
C9008A-4H-3	2009-03-21 01:14:07	2315
C9008A-4H-4	2009-03-21 01:46:44	2345
C9008A-4H-5	2009-03-21 01:57:18	2329
C9008A-4H-6	2009-03-21 02:08:06	2353
C9008A-4H-7	2009-03-21 02:17:29	2153
C9008A-4H-CC	2009-03-21 02:25:58	550
C9008A-5H-1	2009-03-21 04:20:59	2350
C9008A-5H-2	2009-03-21 04:33:11	2324
C9008A-5H-3	2009-03-21 04:01:06	2345
C9008A-5H-4	2009-03-21 04:42:56	2353
C9008A-5H-5	2009-03-21 04:52:43	2369
C9008A-5H-6	2009-03-21 05:01:22	2337
C9008A-5H-7	2009-03-21 05:10:32	1857
C9008A-5H-CC	2009-03-21 05:19:08	577
C9008A-6H-1	2009-03-21 09:35:29	2409
C9008A-6H-2	2009-03-21 09:45:33	1457
C9008A-6H-3	2009-03-21 09:51:42	2439
C9008A-6H-4	2009-03-21 09:59:52	1782
C9009A-1H-1	2009-03-21 14:35:06	2276
C9009A-1H-2	2009-03-21 14:52:30	2254
C9009A-1H-3	2009-03-21 14:44:30	2257
C9009A-1H-4	2009-03-21 15:01:38	2241
C9009A-1H-5	2009-03-21 15:09:38	2267
C9009A-1H-6	2009-03-21 15:17:33	919
C9009A-1H-CC	2009-03-21 15:21:52	663
C9009A-2H-1	2009-03-21 19:52:56	1852
C9009A-2H-2	2009-03-21 20:14:40	2145
C9009A-2H-3	2009-03-21 19:42:20	2228
C9009A-2H-4	2009-03-21 20:26:29	1409
C9009A-2H-5	2009-03-21 20:05:13	1785
C9009A-2H-CC	2009-03-21 20:35:36	211