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I. OUTLINE OF RESEARCH CRUISES

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This report on marine geological and geophysical investigations in the southeastern offshore of the Boso Peninsula and in the Kashima-Nada area forms a part of a five-year research program by the Geological Survey of Japan on the geology of the continental shelves and slopes around Japan using the research vessel HAKUREI-MARU. It is mainly concerned with the results on on-board observations by the scientific staff, but some results from analyses performed after the cruises are also included.

GH80–2

The first survey, cruise GH80–2 covered the southeastern offshore of the Boso Peninsula, from the continental shelf to the inner trench slope of the northern margin of the Ogasawara Trench (Fig. I–1).

The scientific staff on-board during cruise GH80–2 consisted of six scientists from the Marine Geology Department of the Geological Survey of Japan and ten technical assistants who were students of University of Tokyo, Chiba University and Ryuku University. Four scientific guests from Earthquake Research Institute of the University of Tokyo and Chiba University, and a technical assistant from a company joined on board for a few days during the cruise (Table I–1).

The ship left Funabashi Port on 18th April, 1980, and surveyed the shelves and slopes off the Boso Peninsula. During the survey, the ship entered Chiba Port on 2nd to 5th May for the supply of water and fuel. Finally, the ship entered Funabashi Port on 17th May (Table I–2).

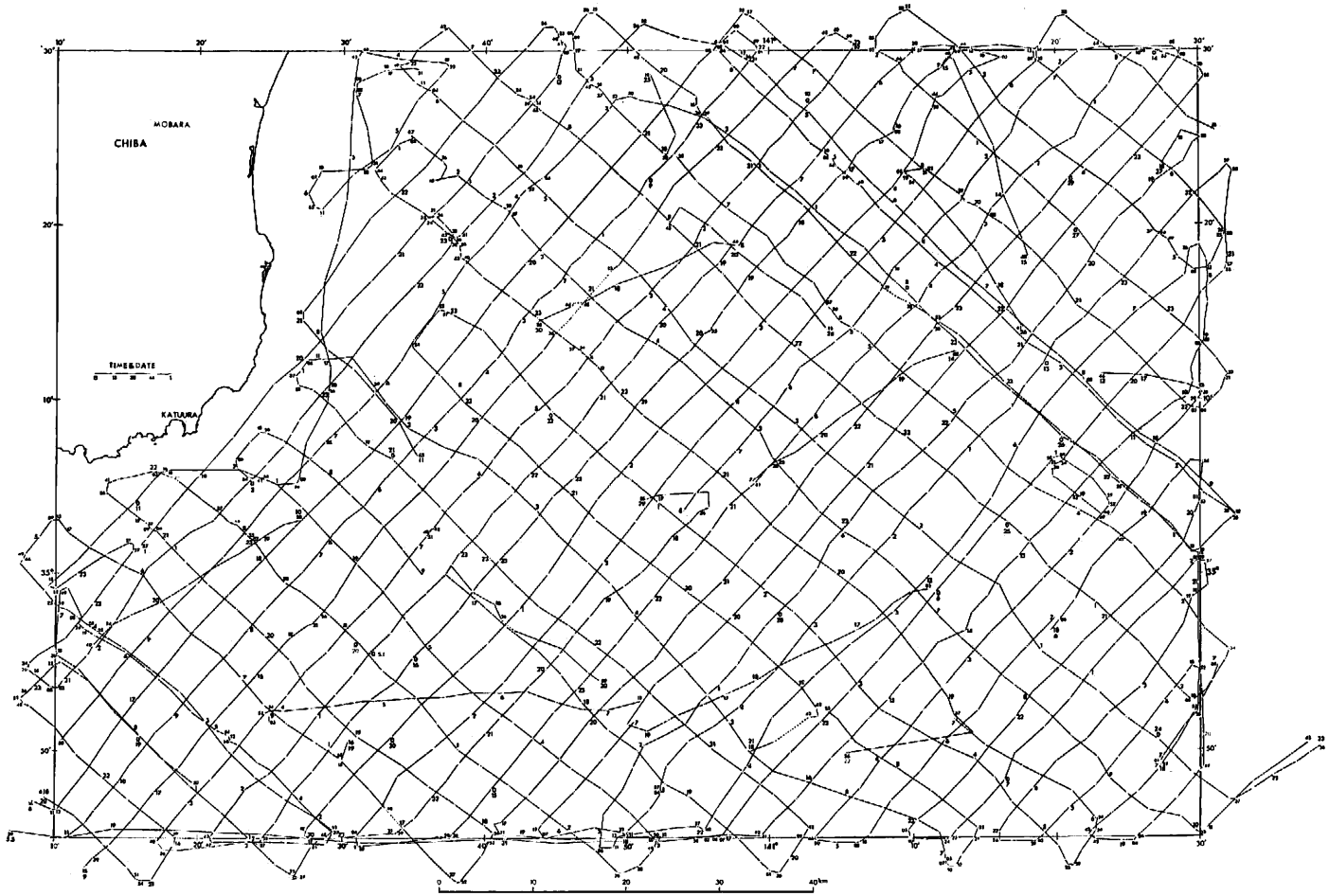
The ship covered a total distance of 4,012.4 nautical miles during the 30-day cruise. The results of stationary observations are summarized in Table I–6, and Table VI–1 and 2 in Chapter VI.

GH80–3

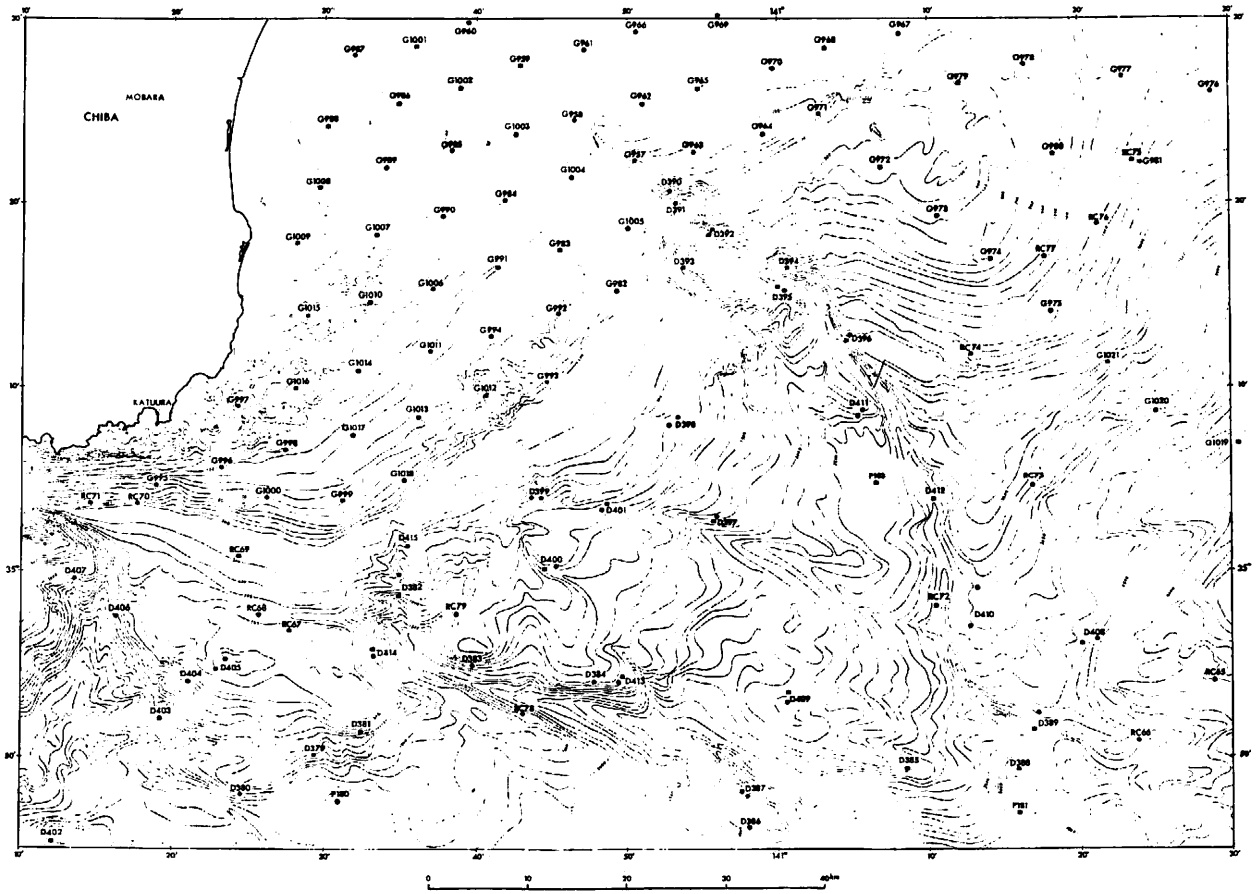
The second survey, cruise GH80–3 covered the Kashima-Nada area (continental shelves and slopes east of Ibaraki, Honshu), and also covered Kashima No. 1 Seamount and the northern margin of the Ogasawara (Bonin) Arc off the Boso and Izu Peninsulas as an extensional survey for the remained area in a current survey of the Ogasawara Arc in 1979 (Fig. I–2, 3 and 4).

Scientific staff aboard during cruise GH80–3 consisted of seven scientists from the Marine Geology Department of the Geological Survey of Japan and ten technical assistants who were undergraduate students at Shizuoka University, Ryukyu University, Tokai University and Nippon University (Table I–3).

The ship left Funabashi Port on 22nd May, and surveyed the Kashima-Nada area for



(a)



(b)

Fig. I-1 (a) Track chart and (b) sampling sites of the geological and geophysical surveys made during GH80-2.

Table I-1 Scientific staff aboard during cruise GH80-2

Name	Organization	Speciality
Eiichi Honza	Marine Geol. Dept., GSJ	chief scientist geology and geophysics
Akira Nishimura	Marine Geol. Dept., GSJ	sedimentology and paleontology
Manabu Tanahashi	Marine Geol. Dept., GSJ	structural geology
Kiyokazu Nishimura	Marine Geol. Dept., GSJ	geophysics
Fumitoshi Murakami	Marine Geol. Dept., GSJ	geophysics
Kaichi Ishibashi	Marine Geol. Dept., GSJ	morphology
***Seiya Uyeda	Earthq. Res. Inst., Univ. of Tokyo	guest, geophysics
***Hajimu Kinoshita	Facult. Sci., Chiba Univ.	guest, geophysics
***Hideyuki Fujisawa	Earthq. Res. Inst., Univ. of Tokyo	guest, geophysics
***Satoru Honda	Earthq. Res. Inst., Univ. of Tokyo	guest, geophysics
***Shinzo Tsuji	Nippon Ushi Co.	technical assistance
Makoto Yamano	Univ. of Tokyo	technical assistance
Shinji Arakawa	Chiba Univ.	technical assistance
*Kazunori Hidaka	Ryukyu Univ.	technical assistance
*Shusaku Asato	Ryukyu Univ.	technical assistance
*Setsu Oishi	Ryukyu Univ.	technical assistance
*Mutsuo Uehara	Ryukyu Univ.	technical assistance
**Katsuya Niizato	Ryukyu Univ.	technical assistance
**Tadashi Nagayama	Ryukyu Univ.	technical assistance
**Mitsuru Momozaki	Ryukyu Univ.	technical assistance
**Kazuhiro Toyama	Ryukyu Univ.	technical assistance

* Funabashi-Chiba
** Chiba-Funabashi
*** Chiba-Tateyama

Table I-2 Schedule of cruise GH80-2

April	18	Lv. Funabashi Port Geological and geophysical surveys on the shelf and slope off the Boso Peninsula
May	2	Ar. at Chiba Port
	5	Lv. Chiba Port Heat flow measurement by Pogo-type heat flow meter and geophysical survey
	8	Touch at Tateyama Port Geological and geophysical surveys
May	17	Ar. at Funabashi Port

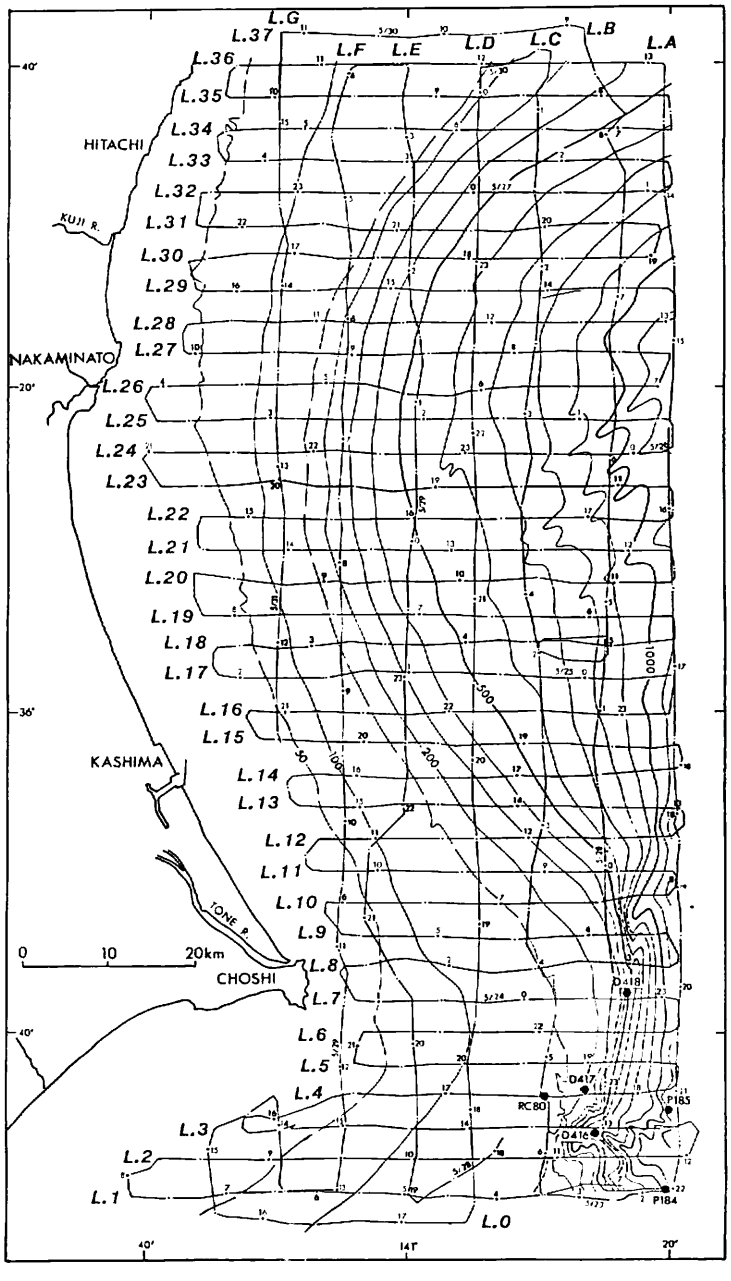


Fig. I–2 Sampling sites and track chart of the geological and geophysical surveys made during GH80–3, Kashima-Nada area.

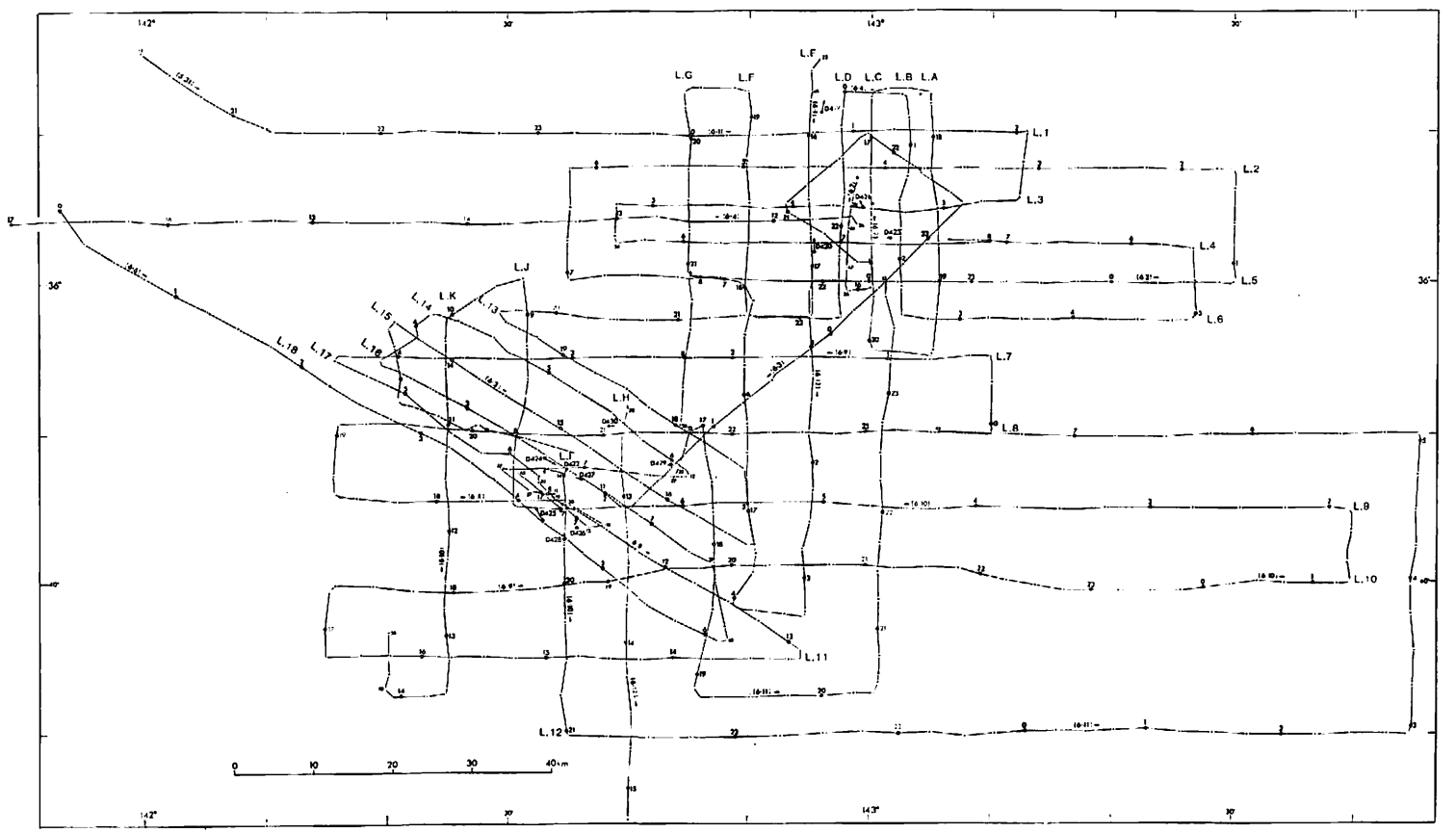


Fig. I–3 Sampling sites and track chart of the geological and geophysical surveys made during GH80–3, Kashima No. 1 and Katori seamounts area.

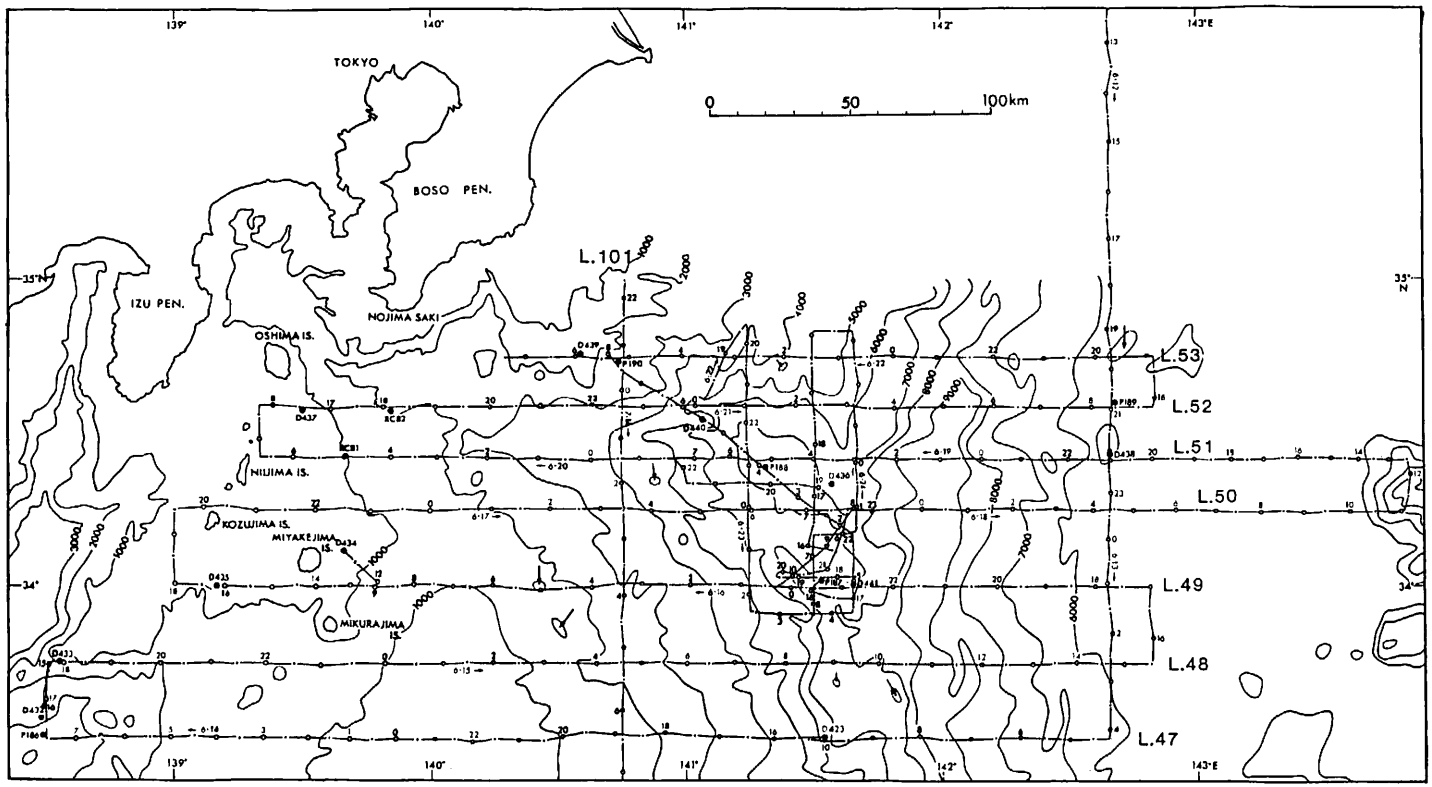


Fig. 1–4 Sampling sites and track chart of the geological and geophysical surveys made during GH80–3, the northern margin of the Ogasawara (Bonin) Arc.

Table I-3 Scientific staff aboard during cruise GH80-3

Name	Organization	Speciality
Teruki Miyazaki	Marine Geol. Dept., GSJ	chief scientist, geophysics
Yoshihisa Okuda	Marine Geol. Dept., GSJ	structural geology
*Akira Nishimura	Marine Geol. Dept., GSJ	sedimentology and paleontology
Manabu Tanahashi	Marine Geol. Dept., GSJ	structural geology
**Koichi Nakamura	Marine Geol. Dept., GSJ	structural geology
**Yukinobu Okamura	Marine Geol. Dept., GSJ	structural geology
Kouji Onodera	Marine Geol. Dept., GSJ	morphology
*Takashi Kikuchi	Shizuoka Univ.	technical assistance
*Takahiro Kamiya	Shizuoka Univ.	technical assistance
*Masakazu Kato	Ryukyu Univ.	technical assistance
*Toshifumi Yoneshiro	Ryukyu Univ.	technical assistance
**Hiroshi Yamada	Nippon Univ.	technical assistance
**Hideo Masuda	Nippon Univ.	technical assistance
**Soichi Maeda	Nippon Univ.	technical assistance
Ken-ichi Saka	Tokai Univ.	technical assistance
Norihiko Zama	Tokai Univ.	technical assistance
Kazuo Sugawara	Tokai Univ.	technical assistance

* Funabashi-Kashima
** Kashima-Funabashi

10 days, and entered Kashima Port on 31st May. On 1st June, the ship left the port and surveyed Kashima No. 1 and Katori seamounts for 12 days intervening with anchoring in Kashima Port for 3 days from 5th to 7th June. From 12th June, the ship turned to survey in the northern margin of the Ogasawara Arc which was remained not surveyed area on account of time over during the survey in the Ogasawara Arc in 1979. Geophysical survey for several transects and sampling at 18 sites were carried out. Finally, on 25th June, the ship entered Funabashi Port (Table I-4).

The ship covered a total distance of 6,024.2 nautical miles over a period of 35 days. The results of stationary observations are summarized in Table I-7, and Table XV-1 and 2 in Chapter XV.

Routine seismic and magnetic profiling surveys were carried out with Bolt type airguns and a proton magnetometer, all of which were towed from the starn. 3.5 kHz and 12 kHz echo sounders and a surface ship gravimeter were used to obtain bottom and subbottom information. Dredge, rock coring and piston coring sites were selected to ascertain the material which constitutes the bottom and to correlate this with seismic profiling results. At some of the sites, simultaneous bottom sampling and one-shot camera observations by a free-fall photograb were carried out especially to study the surficial features of the bottom. NNSS, Loran C and Decca were used to fix the ship's position (Table I-5).

Table I-4 Schedule of cruise GH80-3

May	22	Lv. Funabashi Port Geological and geophysical surveys on the shelf and slope of Kashima-Nada
May	30-31	Touch at Kashima Port Geological and geophysical surveys on Kashima No. 1 and Katori seamounts
June	5	Ar. at Kashima Port
	7	Lv. Kashima Port Geological and geophysical surveys on the above seamounts
	12	Geological and geophysical surveys in the northern margin of the Ogasawara (Bonin) Arc
June	25	Ar. Funabashi Port

Table I-5 Observation methods in cruises GH80-2 and 3

Positioning

Cruising and positioning by NNSS, Loran C and Decca

Geophysical methods

Bathymetric survey by 12 kHz PDR
—Prospecting of bottom topography
Subbottom profiling by 3.5 kHz PDR
—Prospecting of sedimentary surficial layers and structure
Continuous seismic profiling survey by airgun
—Prospecting of sedimentary layers and geological structure
Magnetic survey by proton magnetometer
Gravity measurements by surface ship gravimeter
—Auxiliary consideration of general geological structure

Geological methods

Bottom sampling by chain-bag and cylinder dredges
—Sampling of sediments and rocks
Bottom sampling by rock corer
—Sampling of sediments and rocks
Bottom sampling by piston corer
—Observation of vertical sequence of surficial columns
Bottom sampling and camera observation by free-fall photo grab
—Sampling and observation of surficial features

Table I-6 Location and depth of sampling stations during cruise GH80-2.

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1648	D379	19, April	08:54 ~ 09:15	34°50.20′ ~ 50.23′	140°29.30′ ~ 29.16′	1410 ~ 1240	a small cylinder dredge and a chain-bag dredge	slope of west of the Kamogawa Canyon
1649	D380		10:49 ~ 11:06	34°47.96′ ~ 48.14′	140°24.50′ ~ 24.53′	1650 ~ 1600	ditto	ditto
1650	P180		13:37	34°47.58′	140°30.86′	1930	a piston corer	flat plain west of the Kamogawa Canyon
1651	D381		14:59 ~ 15:16	34°51.43′ ~ 51.38′	140°32.38′ ~ 32.38′	860 ~ 905	a small cylinder dredge and a chain-bag dredge	a slope west of the Kamogawa Canyon
1652	D382	20, April	09:56 ~ 10:18	34°58.68′ ~ 59.89′	140°34.78′ ~ 34.87′	940 ~ 805	ditto	slope of the Katsuura Canyon
1653	D383		12:20 ~ 12:27	34°54.97′ ~ 54.99′	140°39.72′ ~ 39.77′	1230 ~ 1150	ditto	ditto
1654	D384		14:16 ~ 14:30	34°54.09′ ~ 54.22′	140°47.77′ ~ 47.82′	1520 ~ 1510	ditto	ditto
1655	D385	21, April	10:32 ~ 10:44	34°49.41′ ~ 49.67′	141°08.51′ ~ 08.56′	2840 ~ 2810	ditto	wall of the Katsuura Canny-on
1656	D386		13:25 ~ 13:59	34°46.20′ ~ 46.02′	140°58.08′ ~ 57.85′	3070 ~ 3050	ditto	ditto
1657	D387		16:15 ~ 16:44	34°48.44′ ~ 48.23′	140°57.92′ ~ 57.55′	3250 ~ 3150	ditto	ditto
1658	D388	22, April	09:55 ~ 10:17	34°49.30′ ~ 49.64′	141°15.88′ ~ 15.93′	3950 ~ 3500	ditto	slope of the Katakai Canyon

Table I-6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1659	D389	22, April	13:04 〃 13:48	34°51.51′ 〃 52.38′	141°16.83′ 〃 17.19′	3840 〃 3420	a small cylinder dredge and a chain bag dredge	slope of the katakai canyon
1660	P181		16:52	34°46.96′	141°15.92′	4410	a piston corer	bottom of the Katakai Canyon
1661	P182	23, April	15:05	35°06.62′	142°09.37′	8180	piston corer	bottom of the Japan Trench
1662	D390	24, April	09:33 〃 09:56	35°20.70′ 〃(20.65′) 20.90′ (20.75′)	140°52.80′ 〃(52.93′) 53.00′ (53.07′)	630 〃 420	a small cylinder dredge and a chain bag dredge	wall of the Katakai Canyon
1663	D391		10:40 〃 10:58	35°20.00′ 〃 19.80′	140°53.27′ 〃 53.10′	485 〃 385	ditto	ditto
1664	D392		11:42 〃 12:08	35°18.30′ 〃 18.60′	140°55.40′ 〃 55.65′	675 〃 555	ditto	ditto
1665	D393		13:01 〃 13:18	35°16.49′ 〃 16.45′	140°53.59′ 〃 53.40′	990 〃 810	ditto	ditto
1666	D394		14:48 〃 14:55	35°16.50′ 〃 16.70′	141°00.60′ 〃 00.55′	1730 〃 1580	ditto	ditto
1667	D395		16:10 〃 16:16	35°15.42′ 〃(15.50′) 15.50′ (15.70′)	141°00.32′ 〃(00.69′) 00.00′ (00.33′)	1800 〃 1810	ditto	ditto
1668	D396		18:11 〃 18:31	35°12.60′ 〃(12.99′) 12.90′ (13.13′)	141°04.60′ 〃(04.33′) 04.80′ (04.69′)	1910 〃 1820	ditto	ditto
1669	G957	25, April	08:44	35°22.2′	140°50.1′	482	Smith-McIntyre Grab sampler	continental shelf
			09:18	35°22.30′	140°50.5′	215	ditto	ditto

Table I–6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1670	G958	25, April	09:54	35°24.50′	140°46.50′	93	Smith-McIntyre Grab sampler	continental shelf
1671	G959		10:29	35°27.40′	140°42.80′	47	ditto	ditto
1672	G960		11:07	35°29.80′	140°39.40′	32	ditto	ditto
1673	G961	25, April	11:54	35°28.30′	140°47.20′	58	ditto	ditto
1674	G962		13:03	35°25.40′	140°51.00′	107	ditto	ditto
1675	G963		13:42	35°22.75′	140°54.40′	152	ditto	ditto
1676	G964		14:24	35°23.50′	140°58.82′	164	ditto	ditto
			15:23	35°23.75	140°59.02′	163	ditto	ditto
1677	G965		16:11	35°26.20′	140°54.71′	125	ditto	ditto
1678	G966		16:53	35°29.35′	140°50.54′	75	ditto	ditto
1679	G967	26, April	08:54	35°29.00′	141°08.20′	136	ditto	ditto
			09:09	35°29.20′	141°08.10′	136	ditto	no sample
1680	G968		9:45	28.30′	141°04.00′	130	ditto	ditto
			9:57	28.30′	04.00′	130	ditto	ditto
			10:07	28.40′	04.10′	130	ditto	ditto
1681	G969		11:05	30.20′	140°56.00′	100	ditto	ditto
1682	G970		11:51	27.30′	59.60′	128	ditto	ditto
1683	G971		13:11	24.62′	03.31′	196	ditto	continental slope
1684	G972		14:06	21.99′	06.91′	322	ditto	ditto
1685	G973		14:53	19.36′	141°10.84′	482	ditto	ditto
1686	G974		15:47	16.94′	14.33′	800	ditto	ditto
1687	G975		17:05	14.20′	18.10′	1555	Smith-McIntyre Grab sampler	continental slope

Table I–6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1688	G976	27, April	10:03	26.10′	29.22′	1660	ditto	ditto
1689	G977		11:37	35°26.90′	141°22.53′	1310	ditto	ditto
			12:27	26.90′	22.91′	1335	ditto	ditto
1690	G978		13:45	27.49′	16.40′	739	ditto	ditto
1691	G979		14:34	26.55′	12.10′	410	ditto	ditto
1692	G980		15:39	22.73′	18.25′	787	ditto	ditto
1693	G981		17:05	22.12′	24.17′	1736	ditto	ditto
1694	D397	29, April	09:01 〃 09:21	35°02.75′ 〃 03.00′	140°55.70′ 〃 55.90′	1725 〃 1570	a small cylinder dredge and a chain bag dredge	wall of the Onjuku Canyon
1695	D398		10:49 〃 11:18	35°07.95′ 〃 35°08.40′	140°52.75′ 〃 140°53.01′	840 〃 850	ditto	continental slope
1696	D399		13:15 〃 13:31	35°04.05′ 〃 04.01′	140°43.58′ 〃 44.23′	710 〃 605	ditto	wall of the Onjuku Canyon
1697	D400		14:48 〃 13:06	35°00.15′ 〃 00.25′	140°44.49′ 〃 45.33′	1070 〃 1050	ditto	ditto
1698	D401		16:05 〃 16:23	35°03.32′ 〃 03.65′	140°48.28′ 〃 48.62′	970 〃 980	ditto	ditto
1699	G982	30, April	09:20	35°15.25′	140°49.20′	170	Smith-McIntgre Grab Sampler	shelf
1700	G983		10:00	17.45′	45.50′	130	ditto	ditto
1701	G984	30, April	10:34	35°20.15′	140°41.80′	75	Smith-McIntyre Grab sampler	shelf

Table I–6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1702	G985		11:06	22.85′	38.35′	42	ditto	ditto
1703	G986		11:38	25.25′	34.65′	33	ditto	ditto
1704	G987		12:17	28.00′	31.95′	22	ditto	ditto
1705	G988		12:50	24.15′	30.10′	26	ditto	ditto
1706	G989		13:26	21.90′	34.01′	33	ditto	ditto
1707	G990		14:00	19.11′	37.50′	32	ditto	ditto
			14:07	19.18′	37.45′	35	ditto	ditto
			14:11	19.20′	37.60′	38	ditto	ditto
			14:17	19.32′	37.69′	35	ditto	ditto
1708	G991		14:52	16.51′	40.77′	112	ditto	ditto
1709	G992		15:27	14.02′	45.20′	144	ditto	ditto
1710	G993		16:19	35°10.30′	140°44.58′	190	Smith-McIntyre Grab sampler	ditto
1711	G994		16:59	35°12.85′	140°40.81′	125	ditto	ditto
1712	D402	1, May	10:11	34°45.35′	140°12.20′	1860	a small cylinder dredge and a chain bag dredge	wall of the Kamogawa Canyon
			〃	〃	〃	〃		
			24	45.45′	12.50′	1730		
1713	D403		12:06	34°52.09′	140°19.10′	1750	ditto	ditto
			〃	〃	〃	〃		
			22	52.10′	19.40′	1630		
1714	D404		13:22	34°54.13′	140°20.96′	775	ditto	ditto
			〃	〃	〃	〃		
			34	54.37′	21.05′	690		
1715	D405		14:11	34°54.80′	140°22.80′	350	ditto	ditto
			〃	〃	〃	〃		
			35	55.35′	23.08′	303		
1716	D406	1, May	15:52	34°57.62′	140°16.25′	1300	a small cylinder dredge and a chain bag dredge	wall of the Kamogawa Canyon
			〃	〃	〃	〃		
			16:02	57.79′	16.38′	1180		

Table I–6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1717	D407		17:24 〃 :41	34°59.60′ 〃 59.78′	140°13.55′ 〃 13.75′	970 〃 900	ditto	ditto
1719	RC65	6, May	11:35	34°54.10′	141°28.80′	4050	a rock corer	continental slope
1720	RC66		14:11	34°50.93′	141°23.79′	3660	ditto	ditto
1721	D408		16:29 〃 17:04	34°56.37′ 〃 56.30′	141°21.09′ 〃 20.80′	3565 〃 3530	a small cylinder dredge and a chain bag dredge	ditto
1724	RC67	10, May	10:06	34°56.85′	140°27.65′	490	a rock corer	ditto
1725	RC68		11:14	34°57.70′	140°25.65′	525	ditto	ditto
1726	RC69		12:40	35°00.75′	140°24.40′	285	ditto	ditto
1727	RC70		13:40	35°03.49′	140°17.64′	180	ditto	ditto
1728	RC71		14:18	35°03.70′	140°14.55′	180	ditto	ditto
1729	G995		14:56	04.70′	18.83′	130	Smith-McIntyre Grab sampler	ditto
1730	G996		15:30	35°05.70′	140°23.22′	94	ditto	ditto
1731	G997		15:59	09.00′	24.23′	42	ditto	ditto
1732	G998		16:43	06.60′	27.45′	86	ditto	ditto
1733	G999		17:39	03.84′	31.20′	135	ditto	ditto
1734	G1000		18:23	03.13′	26.99′	155	ditto	ditto
1735	G1001	11, May	07:53	35°28.48′	140°36.00′	30	Smith McIntyre Grab Sampler	continental shelf
1736	G1002		08:23	35°26.25′	140°38.90′	39	ditto	ditto

Table I–6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1737	G1003		08:56	35°23.70′	140°42.55′	57	ditto	ditto
1738	G1004		09:27	35°21.40′	140°46.35′	105	ditto	ditto
1739	G1005		10:06	35°18.55′	140°50.00′	150	ditto	ditto
1740	G1006		11:46	35°15.35′	140°37.05′	62	ditto	ditto
1741	G1007		12:20	35°18.25′	140°33.42′	27	ditto	ditto
1742	G1008		12:50	20.85′	29.59′	20	ditto	ditto
1743	G1009		13:19	17.20′	28.10′	18	ditto	ditto
			13:22	17.25′	28.10′	18	ditto	ditto
1744	G1010		14:00	14.60′	33.00′	28	ditto	ditto
1745	G1011		14:38	12.00′	36.90′	105	ditto	ditto
1746	G1012		15:19	09.61′	40.60′	154	ditto	ditto
1747	G1013		16:08	08.40′	36.10′	127	ditto	ditto
1748	G1014		16:49	10.95′	32.20′	65	ditto	ditto
1749	G1015		17:23	35°13.80′	140°28.79′	26	ditto	ditto
			17:27	13.90′	28.77′	26	ditto	ditto
1750	G1016		18:02	10.02′	28.08′	55	ditto	ditto
1751	G1017		18:44	07.43′	31.80′	110	ditto	ditto
1752	G1018		19:22	04.90′	35.20′	170	ditto	ditto
1753	G1019	12, May	11:08	06.90′	141°30.55′	3870	Smith-McIntyre Grab Sampler	ditto
1754	G1020		13:49	08.70′	141°25.20′	3210	Smith McIntyre Grab Sampler	continental shelf
1755	G1021		15:46	11.35′	141°21.80′	2400	ditto	ditto

Table I–6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1756	D409	13, May	08:28 ∫ 08:50	34°53.00′ ∫ 53.55′	141°00.81′ ∫ 01.00′	2040 ∫ 2000	a small cylinder dredge and a chain bag dredge	top of a hill on continental slope
1757	D410		11:48 ∫ 12:27	34°57.05′ ∫ 59.00′	141°13.34′ ∫ 14.30′	2920 ∫ 2920	ditto	ditto
1758	RC72		15:12	34°58.28′	141°10.02′	3020	a rock corer	wall of the Katakai Canyon
1759	D411	14, May	08:46 ∫ 09:02	35°08.50′ ∫ 08.75′	141°05.35′ ∫ 05.60′	2350 ∫ 2270	a small cylinder dredge and a chain bag dredge	ditto
1760	P183		11:20	35°05.10′	141°06.70′	2570	a piston corer	a flat bench on wall of the Katakai Canyon
1761	D412		13:24 ∫ 13:32	35°03.90′ ∫ 04.60′	141°10.36′ ∫ 10.44′	2710 ∫ 2700	a small cylinder dredge and a chain bag dredge	wall of the Katakai Canyon
1762	RC73		15:47	35°04.62′	141°16.80′	3050	a rock corer	continental slope
1763	RC74		17:33	35°11.79′	141°11.77′	1560	ditto	ditto
1764	RC75	15, May	08:58	35°22.30′	141°23.50′	1655	ditto	ditto
1765	RC76		11:10	35°18.90′	141°21.20′	1515	ditto	ditto
1766	RC77		13:12	35°17.05′	141°17.70′	1120	ditto	ditto
1767	D413	16, May	09:11 ∫ 09:49	34°54.10′ ∫ 54.45′	140°49.40′ ∫ 49.65′	1555 ∫ 1520	a small cylinder dredge and a chain bag dredge	wall of the Katsuura Canyon

Table I–6 (continued)

Station No.	Sample No.	Date	Time	Position		Depth (m)	Sampler	Area and topography
				Latitude	Longitude			
1768	RC78		11:53	34°52.40′	140°43.00′	1650	a rock corer	ditto
1769	D414		13:41 〃 14:04	34°55.35′ 〃 55.81′	140°33.18′ 〃 33.20′	1070 〃 1110	a small cylinder dredge and a chain bag dredge	ditto
1770	RC79		15:19	34°58.08′	140°38.39′	1325	a rock corer	ditto
1771	D415	16, May	16:18 〃 30	35°01.40′	140°35.42′	590 〃 570	a small cylinder dredge and a chain bag dredge	ditto

Table 1–7 Location and depth of sampling stations during cruise GH 80–3.

Station No.	Sample No.	Sampling Area	Ship Position				Depth (m)		Date	Time			
			Hit		Lift off		Hit	Lift		Start	Hit	Lift	Finish
			Lat. (N)	Long. (E)	Lat. (N)	Long. (E)							
1772	P184	Off Choshi	35°30.1′	141°19.7′			1150		May 28	07:35	07:58		08:24
1773	P185	ditto	35°35.2′	141°19.8′			1160			09:13	09:33		09:58
1774	D416	ditto	35°34.0′	141°14.5′	35°34.5′	141°13.5′	650	560		10:44	10:57	11:30	11:38
1775	D417	ditto	35°36.4′	141°13.4′	35°36.0′	141°13.3′	275	300		13:12	13:20	13:58	14:06
1776	D418	ditto	35°42.3′	141°16.7′	35°42.2′	141°16.2′	538	460		14:46	14:55	15:36	15:47
1777	RC80	ditto	35°35.8′	141°10.2′			135			16:51	16:55		17:03
1778	D419	Katori Seamount	36°10.2′	142°56.6′	36°12.2′	142°56.0′	6300	7320	Jun. 1	09:28	10:08	12:38	14:41
1779	D420	ditto	36°02.0′	142°55.3′	36°03.0′	142°55.3′	6220	5970	Jun. 2	08:45	10:08	10:36	12:05
1780	D421	ditto	36°04.9′	142°59.3′	36°05.5′	142°59.5′	4740	4700		12:36	13:40	13:50	14:52
1781	D422	Kashima No. 1 Seamount	35°47.2′	142°34.6′	35°47.9′	142°35.0′	4875	4700	Jun. 3	08:08	09:23	10:04	11:05
1782	D423	Katori Seamount	36°02.8′	143°01.6′	36°02.9′	143°01.3′	5210	5210	Jun. 4	08:14	09:42	09:54	11:09
1783	D424	Kashima No. 1 Seamount	35°48.6′	142°35.9′	35°47.9′	142°34.0′	5250	5250	Jun. 8	07:45	08:58	10:30	11:35
1784	D425	ditto	35°44.1′	142°32.9′	35°45.2′	142 32.2′	4980	5275		12:43	14:02	15:11	16:23
1785	D426	ditto	35°43.6′	142°35.8′	35°43.7′	142°35.7′	4100	3990	Jun. 9	08:15	09:25	09:33	10:34
1786	D427	ditto	35°46.9′	142°36.0′	35°47.1′	142°35.6′	4495	4500	Jun. 10	15:46	17:16	18:00	19:05
1787	D428	ditto	35°43.2′	142°34.7′	35°42.7′	142°34.7′	4090	4260	Jun. 11	09:57	10:57	11:37	12:29
1788	D429	ditto	35°48.0′	142°43.6′	35°47.7′	142°43.3′	4500	4280		13:30	14:30	15:14	16:19
1789	D430	ditto	35°50.5′	142°38.4′	35°50.5′	142°38.8′	4660	4550	Jun. 12	09:23	10:33	11:02	12:05
1790	D431	East of Hachijojima Island	33°30.3′	141°32.3′	33°30.1′	141°32.1′	6370	6290	Jun. 13	10:51	12:19	13:13	14:51
1791	P186	Shikoku Basin	33°30.4′	138°29.0′			3490		Jun. 14	08:34	09:26		10:11
1792	D432	Zenisu Ridge	33°33.8′	138°28.2′	33°34.4′	138°28.5′	2700	2600		10:40	11:20	12:13	12:48
1793	D433	ditto	33°45.3′	138°32.8′	33°45.4′	138°32.9′	900	900		13:49	14:05	14:23	14:39
1794	D434	East of Miyakejima Island	34°06.9′	139°39.6′	33°06.9′	139°39.2′	609	576	Jun. 16	10:00	10:11	10:48	11:00
1795	D435	West of Miyakejima Island	34°00.1′	139°09.3′	34°00.2′	139°09.3′	397	400		16:37	16:46	16:53	17:01
1796	P187	Sagami Trough	34°01.4′	141°32.0′			7190		Jun. 17	11:21	13:12		15:06
1797	P188	ditto	34°25.7′	141°22.6′			7070		Jun. 19	09:26	11:21		13:10
1798	D436	ditto	34°20.4′	141°34.8′	34°20.4′	141°34.8′	6770	6670		14:51	16:31	16:56	17:43
1799	D437	South of Oshima Island	34°34.6′	139°30.4′	34°34.4′	139°30.0′	387	330	Jun. 20	09:10	09:19	09:40	09:47
1800	RC81	East of Niijima Island	34°25.2′	139°40.0′			1025			11:03	11:29		11:46
1801	RC82	Southeast of Oshima Island	34°34.3′	139°50.5′			2100			13:41	14:19		14:45
1802	P189	Pacific Ocean floor	34°36.0′	142°41.3′			5690		Jun. 21	08:40	10:02		11:34
1803	D438	ditto	34°25.8′	142°40.3′	34°26.5′	142°41.5′	5250	5050		12:51	14:00	14:54	15:59
1804	D439	Southeast of the Boso Peninsula	34°45.7′	140°35.3′	34°46.2′	140°35.7′	1850	1800	Jun. 22	09:31	10:00	10:34	11:00
1805	D440	Sagami Trough	34°33.0′	141°04.2′	34°33.4′	141°04.4′	5700	5700		14:26	16:38	16:46	18:01
1806	D441	Izu-Ogasawara Trench	34°00.9′	141°38.5′	34°01.5′	141 38.2	6900	6800	Jun. 23	09:09	11:51	12:46	15:09
1807	P190	Southeast of the Boso Peninsula	34°44.2′	140°44.6′			2100		Jun. 24	08:40	09:15		09:46