



Shinsei-maru+ “Cruise Report”
KS-22-J05

Real-time ocean bottom crustal movement observation
&
Maintenance of the DONET

Kumano-nada
Off Kii Channel
Off Izu-Oshima

Jun.3rd, 2022 - Jun.20th, 2022

Ocean Floor Observatory Technology Development Group
R&D Center for Earthquake and Tsunami
Research Institute for Marine Geodynamics
Japan Agency for Marine-Earth Science and Technology

Contents

1. Cruise Information	3
2. Research Proposal and Science Party	3
3. Activity and Results.....	4
4. Dive Log.....	6
5. Notice on Using	13

1. Cruise Information

Cruise ID:	KS-22-J05
Name of vessel:	Shinsei-maru
Title of cruise:	Real time ocean bottom crustal movement observation Maintenance of the DONET
Chief Scientist [Affiliation]:	Shuhei Nishida [JAMSTEC] Jun. 3 rd – Jun. 11 th Yuya Machida [JAMSTEC] Jun. 12 th – Jun. 20 th
Boarding Scientist [Affiliation]:	Takashi Yokobiki [JAMSTEC] Jun. 3 rd – Jun. 11 th Hiroyuki Matsumoto [JAMSTEC] Jun. 12 th – Jun. 20 th Morifumi Takaesu [NME] Jun. 3 rd – Jun. 20 th Wataru Tokunaga [NME] Jun. 3 rd – Jun. 11 th Yousuke Kawamura [NME] Jun. 3 rd – Jun. 20 th Yutaro Nakamura [NME] Jun. 12 th – Jun. 20 th
Cruise period:	June 3rd, 2022 – June 20th, 2022
Ports of departure / arrival:	Wakayama / JAMSTEC Yokosuka HQ
Research area:	Kumano-nada off Kii Channel off Izu-Oshima

2. Research Proposal and Science Party

Title of proposal 1:	Real time ocean bottom crustal movement observation	
Science Party List:	Eiichiro Araki	JAMSTEC
	Takashi Yokobiki	JAMSTEC
	Hiroyuki Matsumoto	JAMSTEC
	Toshinori Kimura	JAMSTEC
	Shuhei Nishida	JAMSTEC
	Yuya Machida	JAMSTEC
	Shuhei Tsuji	JAMSTEC
	Satoru Baba	JAMSTEC
	Toshiya Fujiwara	JAMSTEC
	Takane Hori	JAMSTEC
	Shuichi Kodaira	JAMSTEC
Title of proposal 2:	Maintenance of the DONET	
Science Party List:	Takane Hori	JAMSTEC
	Eiichiro Araki	JAMSTEC
	Takashi Yokobiki	JAMSTEC
	Hiroyuki Matsumoto	JAMSTEC
	Shuhei Nishida	JAMSTEC
	Narumi Takahashi	JAMSTEC
	Kentaro Imai	JAMSTEC
	Takehiro Nishiyama	JAMSTEC
	Kentaro Sueki	JAMSTEC
	Hiroki Horikawa	JAMSTEC
	Shuichi Kodaira	JAMSTEC

3. Activity and Results

Proposal 1: Development of real-time crustal deformation

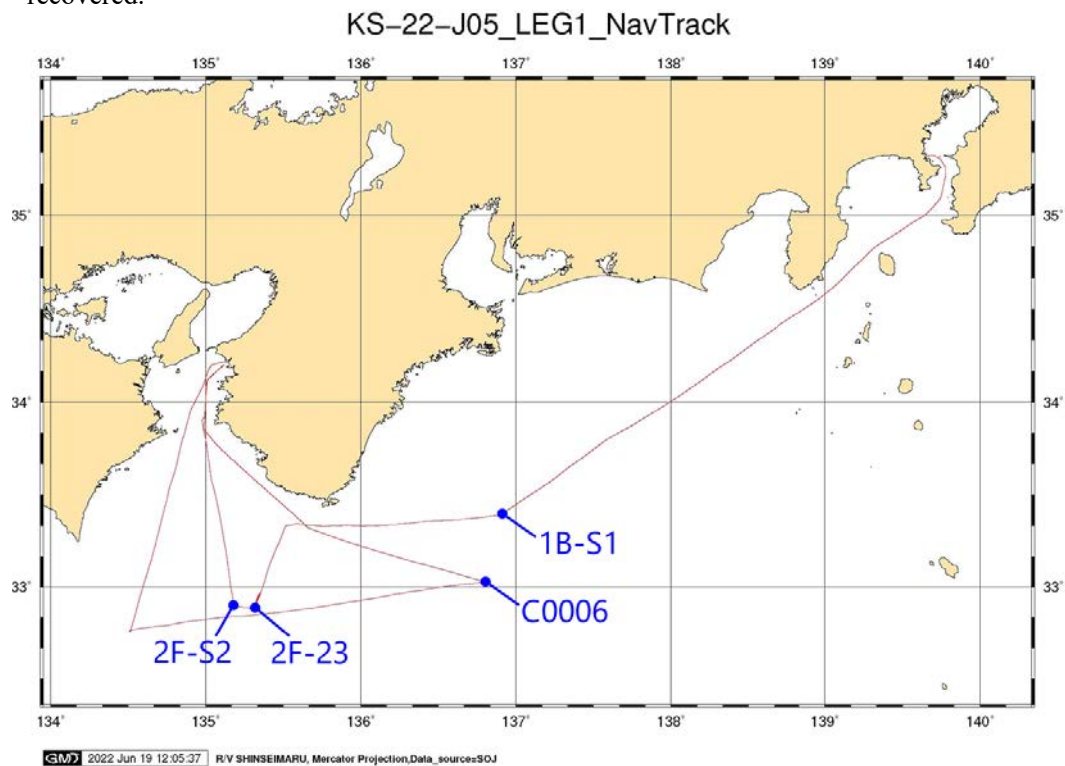
@Kumano-nada and off Kii Channel

- The route of the optical fiber strainmeter was investigated near the long term borehole monitoring system C0006.
- The candidate points near the crustal deformation observation point 2F-S2 were selected where the BMS can be seated and drilled.

Proposal 2: Maintenance of the DONET

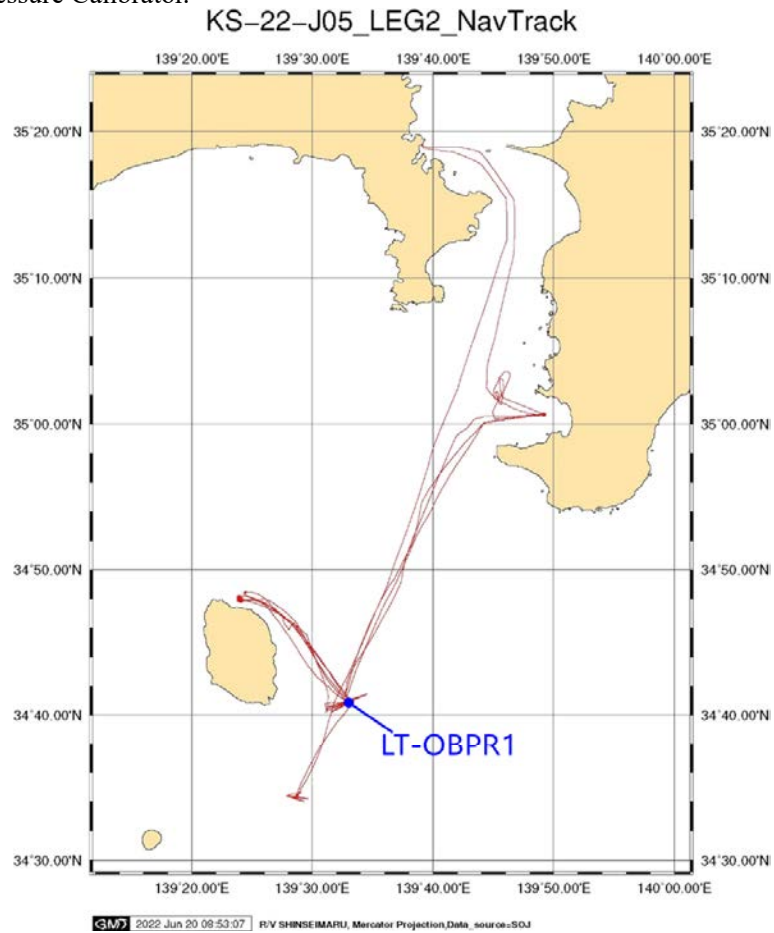
@Kumano-nada and off Kii Channel

- The ground motion sensor system and pressure sensor system installed at DONET2F-23 were recovered.

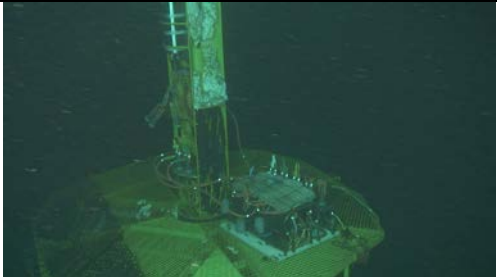
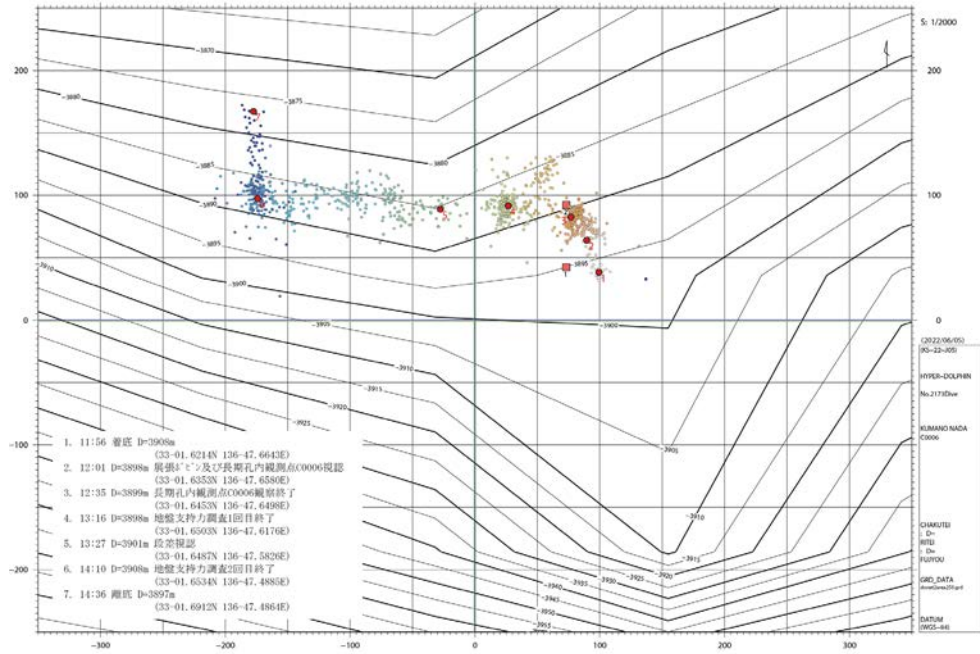


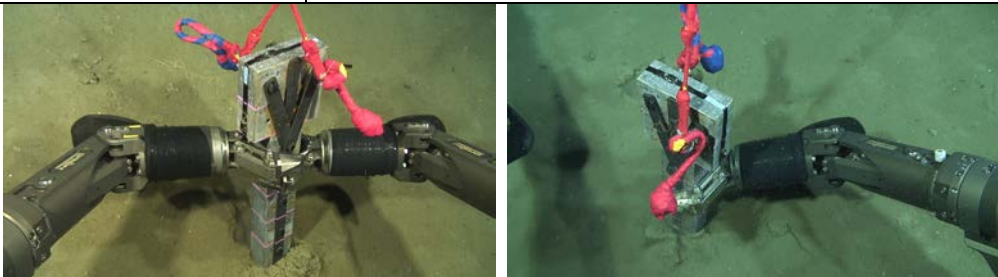
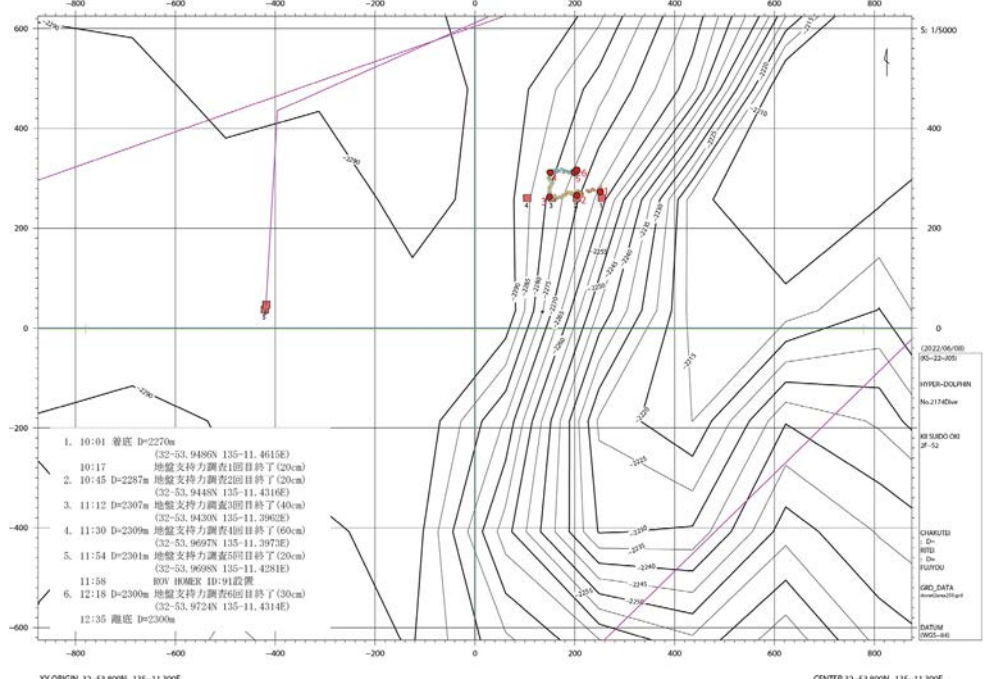
@Off Izu-Oshima

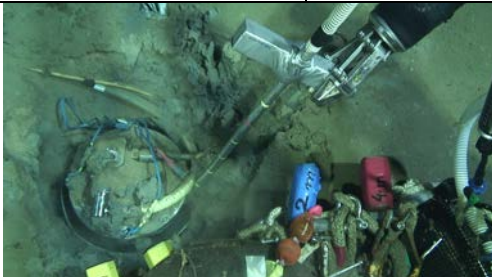
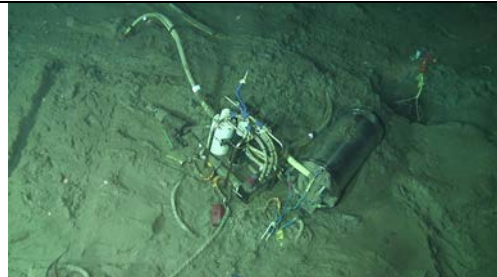
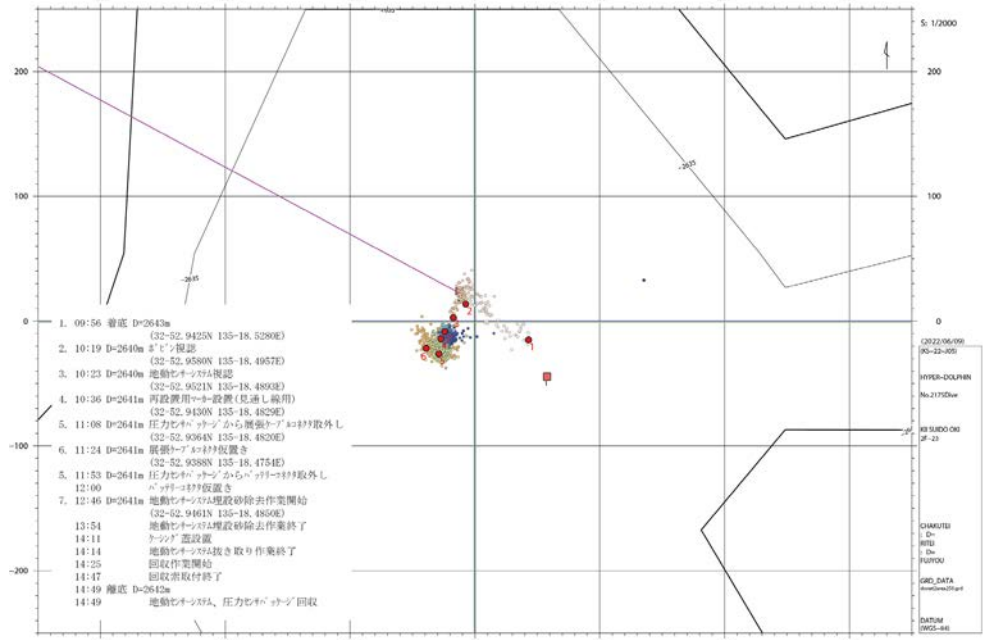
- The Data which recorded by the Long Term Ocean Bottom Pressure Recorder for the past one year was collected.
- In-situ calibration of the Long Term Ocean Bottom Pressure Recorder was conducted using the Mobile Pressure Calibrator.

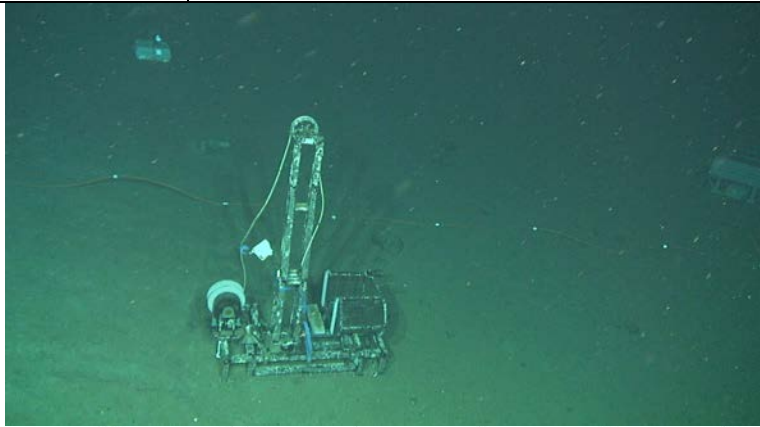
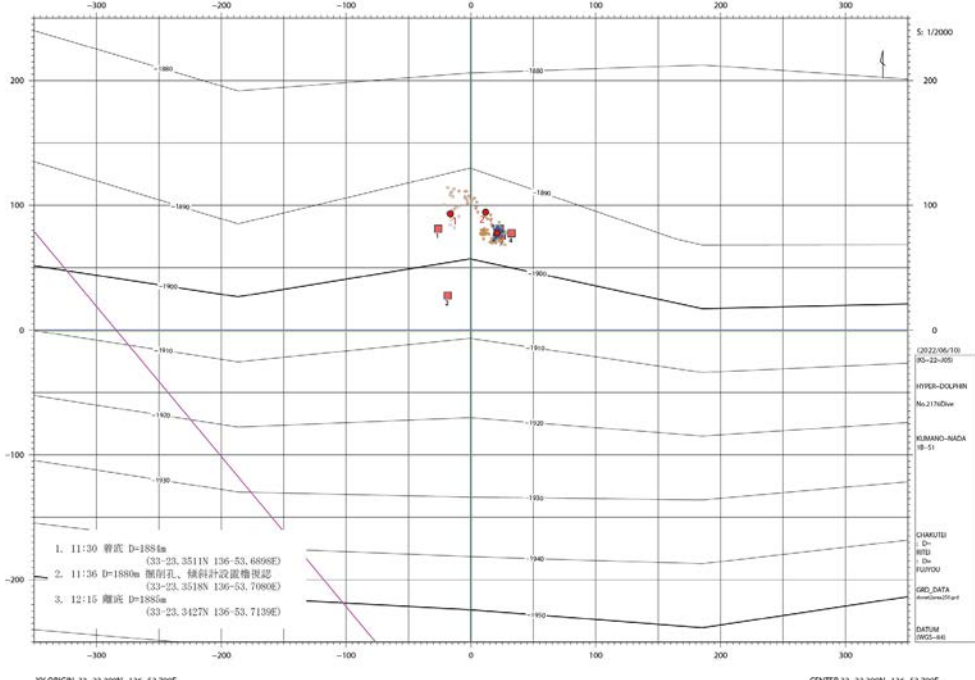


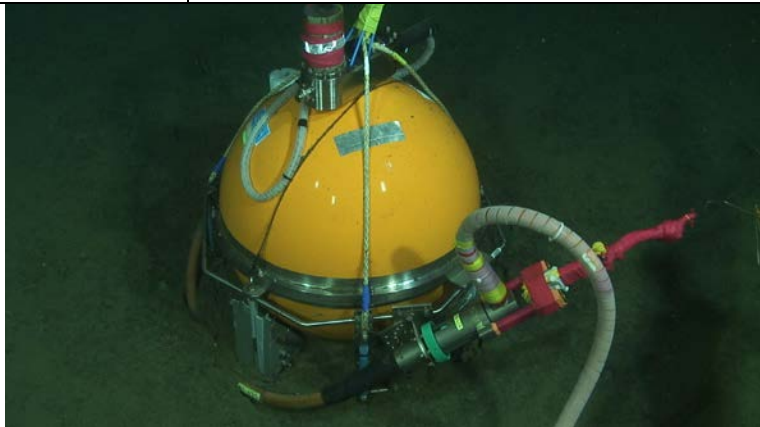
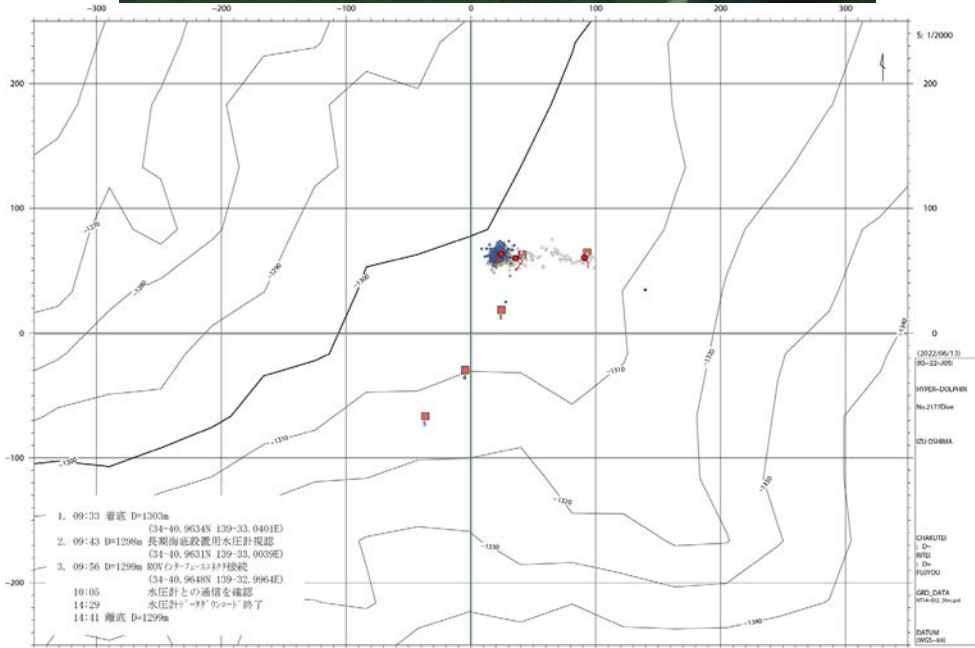
4. Dive Log

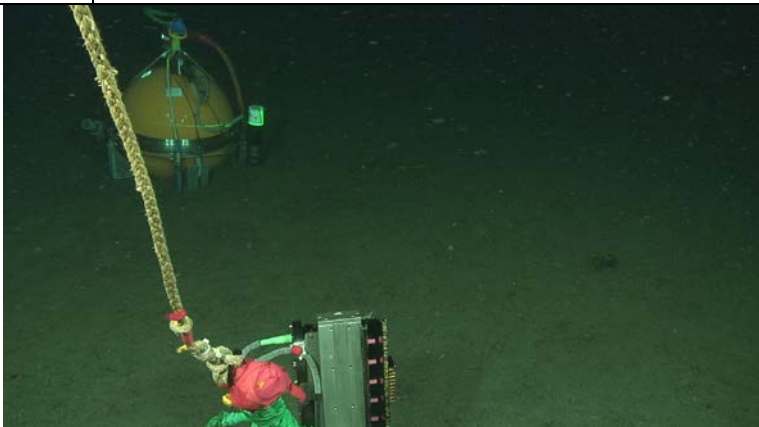
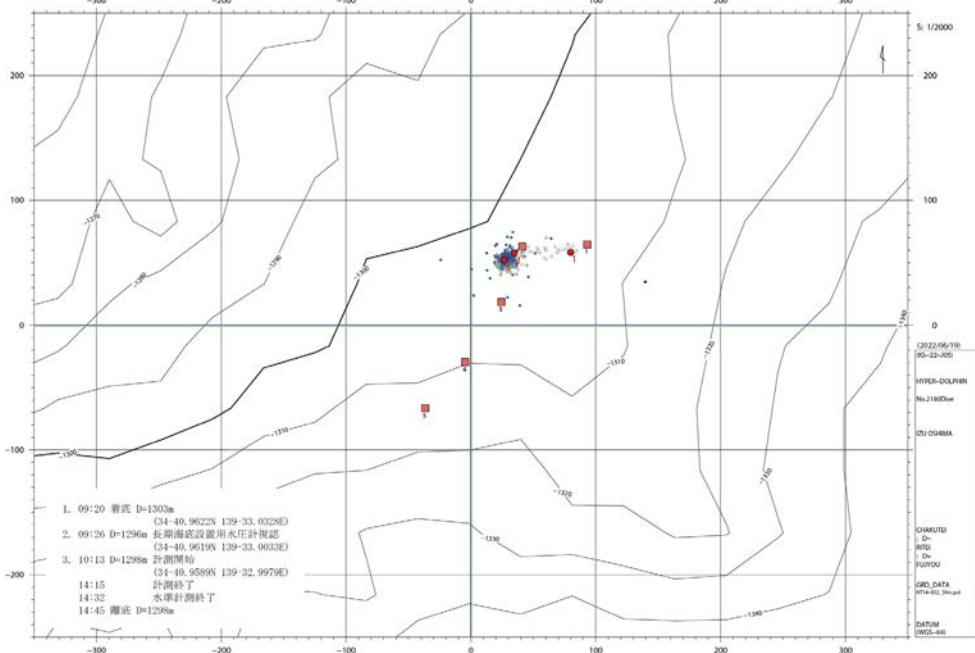
No.	Date Dive Num.	Start Time	Site	Latitude	Longitude	Depth
		End Time				
	2022/06/05	11:56	C0006	33:01.6214	136:47.6643	3,908
	HPD2173	14:36		33:01.6912	136:47.4864	3,897
	Work Summary			Observation of Long Term Borehole Measurement System C0006, observation of surrounding seafloor topography and bottom sediments, and investigation of seafloor bearing capacity were conducted.		
  						

No.	Date Dive Num.	Start Time	Site	Latitude	Longitude	Depth
		End Time		Latitude	Longitude	Depth
	2022/0608	10:01	2F-S2	32:52.9425	135:18.5280	2,643
	HPD2174	12:35		32:52.9461	135:18.4850	2,642
Work Summary			Bearing capacity survey of seafloor sediment and installation of ROV-HOMER: ID91 were carried out around the observation point 2F-S2.			
 						

No.	Date Dive Num.	Start Time	Site	Latitude	Longitude	Depth
		End Time		Latitude	Longitude	Depth
	2022/06/09	09:56	2F-23	32:52.9425	135:18.5280	2643
	HPD2175	14:49		32:52.9461	135:18.4850	2642
Work Summary			The pressure sensor system and the ground motion sensor system were recovered at observation point 2F-23.			
  						

No.	Date Dive Num.	Start Time	Site	Latitude	Longitude	Depth
		End Time		Latitude	Longitude	Depth
	2022/06/10	11:30	1B-S1	33:23.3511	136:53.6898	1,884
	HPD2176	12:15		33:23.3427	136:53.7139	1,885
Work Summary			At observation point 1B-S1, the recovery of the tiltmeter installation device was tried, but it was determined that recovery would be difficult with the prepared recovery hook. Therefore, the recovery of the tiltmeter installation device was cancelled and the surrounding area was observed.			
 						

No.	Date Dive Num.	Start Time	Site	Latitude	Longitude	Depth
		End Time		Latitude	Longitude	Depth
	2022/06/13	09:33	LT-OBPR1	34:40.9634	139:33.0401	1,303
	HPD2177	14:41		34:40.9648	139:32.9964	1,299
Work Summary			After landed on the bottom in front of the LT-OBPR pressure gauge for long-term seafloor installation, the data of the LT-OBPR downloaded via the ROV interface..			
						
5						

No.	Date Dive Num.	Start Time	Site	Latitude	Longitude	Depth
		End Time		Latitude	Longitude	Depth
	2022/06/19	13:21	LT-OBPR1	34:40.9622	139:33.0328	1,303
	HPD2180	15:43		34:40.9589	139:32.9979	1,299
Work Summary			After landing on the bottom in front of the LT-OBPR, the in-situ calibration was carried out with the mobile pressure calibrator			
 						
 1. 09:20 曹底 D=1303m (34-40.9622N 139-33.0328E) 2. 09:26 D=1296m 先端海底設置用水圧計確認 (34-40.9619N 139-33.0633E) 3. 10:13 D=1298m 計測開始 (34-40.9589N 139-32.9979E) 14:15 計測終了 14:32 水圧計測終了 14:45 離底 D=1298m CHARACTER 1. D= 2. D= 3. D= GRID DATA DATUM						

5. Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.

This report is not necessarily corrected even if there is any inaccurate description (i.e. taxonomic classifications). This report is subject to be revised without notice. Some data on this report may be raw or unprocessed. If you are going to use or refer the data on this report, it is recommended to ask the Chief Scientist for latest status.

Users of information on this report are requested to submit Publication Report to JAMSTEC.

<http://www.godac.jamstec.go.jp/darwin/explain/1/e#report>

E-mail: submit-rv-cruise@jamstec.go.jp