



# Week 1 Drilling and Scientific Report for IODP Expedition 386 Japan Trench Palaeoseismology, 2021



24<sup>th</sup> May 00:00 – 1<sup>st</sup> Jun 24:00 JST Japan Standard Time (UTC+9)

## 1. Operations

- May 25<sup>th</sup>: MBES/SBP around Site M0092 continued until 0145 hrs. The 25<sup>th</sup> GPC operation began at 0800 hrs. The 40 m GPC assembly was deployed into the water at 0850 hrs, spudded-in Holes M0091 C and D at 1114 hrs, and recovered to deck at 1415 hrs. Cutting core into 1 m sections and sampling was completed by 1630 hrs. The ship start sailing to Sendai port for medevac after securing the GPC assembly at 1715 hrs.
- May 26<sup>th</sup>: The ship arrived at a stand-by point for medevac off Sendai port by 0600 hrs. A scientist disembarked by a work boat at 0900 hrs. The ship sailed back to location after making up the 30 m GPC assembly.
- May 27<sup>th</sup>: The 26<sup>th</sup> GPC operation was started at 0600 hrs because rough weather was forecast in the evening. The 30 m GPC assembly was run into water at 0650 hrs, spudded-in Holes M0093 A and B at 0904 hrs, and recovered to deck at 1130 hrs. Cutting core into 1 m sections and sampling were completed by 1235 hrs. The ship started sailing to 75 NM northwest to evacuate from a passing low pressure, after completing making up the 40 m GPC assembly by 1600 hrs.
- May 28<sup>st</sup>: The ship sailed to Site M0090 via Site JTPC-01A while monitoring the surface current. The 27<sup>th</sup> GPC operation was conducted at Site M0090 with 40 m barrel string. The 40 m GPC assembly was deployed into water at 0955 hrs, spudded-in Holes M0090 C and D at 1233 hrs, and recovered to deck at 1515 hrs. Cutting core into 1 m sections and sampling were completed by 1915 hrs. The ship began sailing to Site JTPN-01A at 2130 hrs after making up the 30 m GPC assembly.
- May 29<sup>th</sup>: The ship arrived at Site JTPN-01A by 0100 hrs and conducted MBES/SBP survey. The 28<sup>th</sup> GPC was started from 0830 hrs. The 30 m GPC assembly was deployed into water at 0920 hrs, and spudded-in Holes M0094 A and B at 1139 hrs, and recovered on deck by 1430 hrs. Cutting core into 1 m sections and sampling from each bottom end were completed by 1600 hrs. Making up the 30 m GPC assembly was completed by 1830 hrs, and the ship started sailing to the south.
- May 30<sup>th</sup>: The ship arrived at Sites JTPC-01A at 0000 hrs and JTPS-10A at 0230 hrs for 30 m GPC operation, but found the current was too strong to maintain ship's position. Decision was made to move to Site JTPS-05B at 0240 hrs. The ship arrived at Site JTPS-05B at 0730 hrs. MBES/SBP survey was conducted on a short a survey line above the site. The last GPC operation was conducted with 30 m barrel string from 0815 hrs. The GPC assembly was deployed into the water at 0910 hrs, spudded-in Holes M0095 A and B at 1132 hrs, and recovered to deck by 1415 hrs. Cutting core into 1 m sections and sampling was completed by 1645 hrs. The ship left the site at 1730 hrs, after disassembling the GPC.
- May 31<sup>th</sup>: The ship arrived at a stand-by point off Yokosuka Port by 1030 hrs. Preparations for offloading and lab cleaning were undertaken all day.
- Jun 1<sup>st</sup>: The ship arrived at the quay of JAMSTEC Yokosuka HQ at 0930 hrs. All the shipboard science party disembarked before noon. The core samples and most of discrete samples were offloaded and transported to D/V Chikyu. Offshore phase of the expedition was completed.

## 2. Hole summary

Site	M0092		M0093		M0090		M0094		M0095	
Latitude	36° 54.663' N		39° 4.909' N		38° 17.719' N		39° 14.854' N		36° 53.501' N	
Longitude	143° 25.431' E		141° 13.000' E		144° 3.528' E		144° 12.309' E		143° 24.473' E	
Water depth (m)	7700		7454		7450		7469		7697	
Date	May 25		May 27		May 28		May 29		May 30	
Spud-in time	11:14		09:04		12:33		11:39		11:32	
Hole	C	D	A	B	C	D	A	B	A	B
On deck time	13:30	14:15	11:05	11:30	14:40	15:15	13:40	14:30	13:35	14:15
Barrel length (m)	1.5	40	1.5	30	1.5	40	1.5	30	1.5	30
Cored length (m)	0.785	36.205	0.775	26.135	1.075	33.935	0.805	18.28	0.895	28.345
Number of sections	2	36	2	27	2	34	2	19	2	29

### 3. Science

Hydroacoustic surveys conducted on 19 May were reviewed. The survey was carried out along three N-S and one NE-SW lines at JTS15 basin described by Kioka et al. (2019).

The basin is divided into three sub-basins by two topographic highs. The northern basin is a small basin forming the central part of a NE-SW trending depression. Sediments of the northern basin are well-stratified, especially in the uppermost ~20 m. The amplitude of reflectance of each layer is higher than those in the central and southern basins. Sediments in the central basin are well-stratified with a few thin acoustically transparent layers which become thicker southward in accordance with the tilt of the sedimentary strata. Acoustic penetration is high (>40 m) in the central basin. The central basin floor is deeper than those of the northern and southern basins. Site JTPS-07A is located in the southern part of central basin. Sediments of the southern basin are stratified with thicknesses of ~10 m. An acoustically chaotic layer is found below the stratified layer.

### 4. HSE Activity

Toolbox meeting before each GPC operation

Medevac at Sendai on May 26

### 5. Outreach Activity

N/A

### 6. Figures

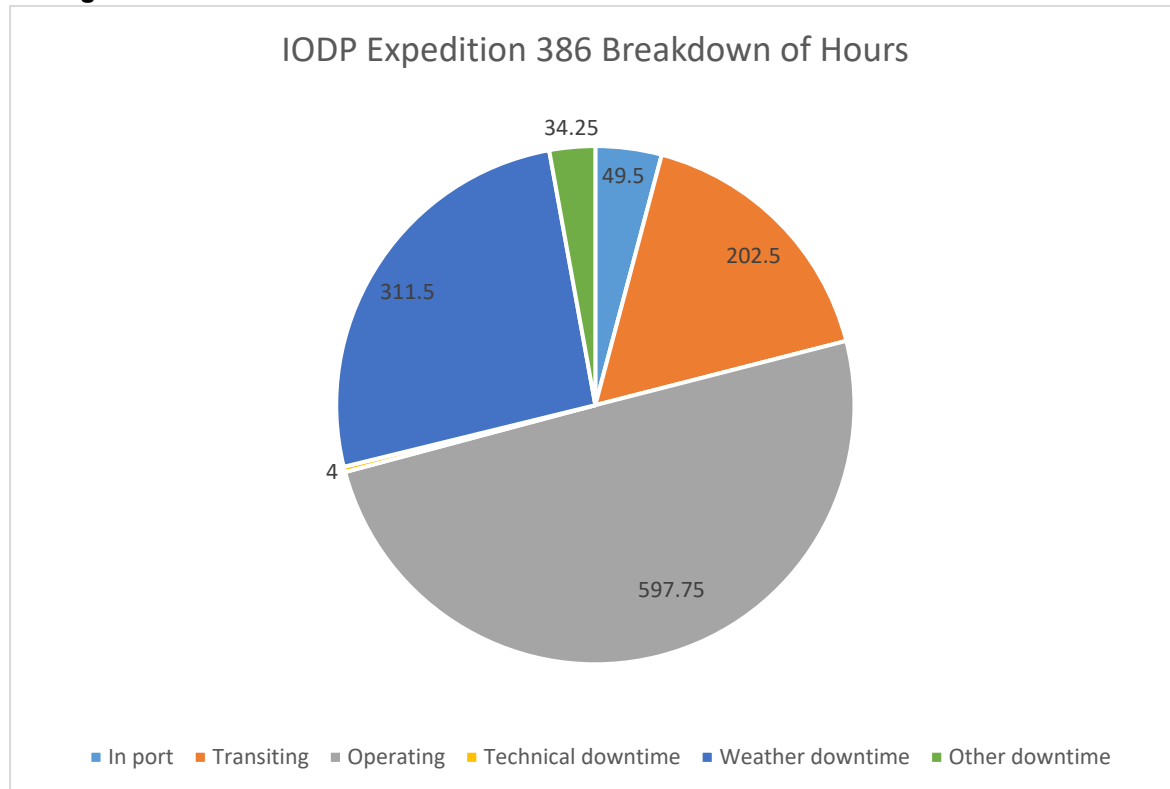


Figure 1: Breakdown of hours from 00:00 1<sup>st</sup> May to 24<sup>th</sup> May 2021.

		20 m & 30 m GPC			1st 40 m GPC			2nd 40 m GPC			% Recovered vs planned
Proposal Site	Site	Trigger core (Hole A)	GPC main (Hole B)	Date collected	Trigger core (Hole C)	GPC main (Hole D)	Date collected	Trigger core (Hole E)	GPC main (Hole F)	Date collected	
JTPS-01A	M0081	1.21	19.89	20/04/2021	1.07	35.57	22/04/2021	1.07	37.74	14/05/2021	93.2
JTPS-02A	M0082	1.455	18.71	21/04/2021	0.97	36.67	15/05/2021				92.3
JTPS-05B	M0095	0.895	28.345	30/05/2021							47.2
JTPS-06B	M0092	1.1	30.07	23/05/2021	0.785	36.205	25/05/2021				110.5
JTPS-07A	M0091	0.835	19.22	19/05/2021	0.765	31.12	20/05/2021				83.9
JTPS-09A											0.0
JTPS-10A											0.0
JTPC-01A											0.0
JTPC-02A											0.0
JTPC-03B	M0090	1.154	19.6	18/05/2021	1.075	33.935	28/05/2021				89.2
JTPC-04B	M0089	1.43	18.1	09/05/2021	0.705	36.9	10/05/2021				91.7
JTPC-05A	M0083	1.615	19.52	24/04/2021	1.4	36.89	01/05/2021	0.92	36.61	11/05/2021	93.0
JTPC-08A											0.0
JTPC-09A	M0093	0.775	26.135	27/05/2021							43.6
JTPN-01A	M0094	0.805	18.28	29/05/2021							60.9
JTPN-02A	M0087	1.475	18.975	03/05/2021	0.835	26.345	22/05/2021				75.5
JTPN-05A	M0086	1.4	18.24	02/05/2021							30.4
JTPN-07A	M0088	1.09	17.69	05/05/2021	0.96	36.48	06/05/2021				90.3
JTPN-09A	M0084	0.95	19.94	26/04/2021	0.46	35.44	28/04/2021	0.5	37.82	12/05/2021	93.2
JTPN-10A	M0085	0.72	18.31	27/04/2021	0.33	33.69	29/04/2021				86.7

PLANNED	UNDERWAY	COMPLETE	SOUTHERN
PLANNED	UNDERWAY	COMPLETE	CENTRAL
PLANNED	UNDERWAY	COMPLETE	NORTHERN
NOT PLANNED			

(not inc. Trigger Cores)  
(Inc. Trigger Cores)  
(GPC only)

TOTAL CORES RECOVERED	29
% OF EXP.386 PLANNED CORES	70.7
TOTAL LENGTH RECOVERED (m)	802.44
TOTAL LENGTH RECOVERED (m)	831.19
TOTAL % REC LENGTH vs PLANNED	63.7

Figure 2: Cores recovered for Week 6 (18<sup>th</sup> May to 24<sup>th</sup> May 2021).

## 7. Photographs



1) Group photo of the offshore science party  
(photo by NOKutsu@ECORD/IODP/JAMSTEC)



2) Fingers crossed for the last GPC operation (photo by NOKutsu@ECORD/IODP/JAMSTEC)





3) GPC weighthead splashing seawater when recovered (photo by Kikehara@ECORD/IODP/JAMSTEC)



4) The Expedition 386 Offshore Team (photo by LMaeda@ECORD/IODP/JAMSTEC)