

NO. 43

JAN. 1974

# *CSK NEWSLETTER*



**JAPAN OCEANOGRAPHIC DATA CENTER**

*Hydrographic Department, Maritime Safety Agency*

*Tokyo, Japan*

C O N T E N T S

I. Cruise Reports

1. Republic of Korea

Suro No. 3	( 3 - 5 May 1972)
"	(28 - 30 May 1972)
"	(15 - 16 August 1972)
"	( 9 - 11 September 1972)

2. Japan

Kofu Maru	(10 July - 13 September 1972)
Seifu Maru	(19 July - 18 August 1972)
Ryofu Maru	(14 January - 28 February 1973)

II. Abstracts of the Papers on CSK

III. Publications

Data Report of CSK Nos. 277, 293, 297, 300, 302, 303,  
308, 314

IV. Number of Serial Oceanographic Stations of CSK

V. Data Received

Japan (Oshoro Maru-2 crs., Kofu Maru, Seifu Maru)  
Korea (Suro No. 3)  
Singapore (Changi-3 crs.)

'74

I. CRUISE REPORT

1. Republic of Korea  
1.1 Suro No. 3

(ROSCOP)

SHIP OR PLATFORM Suro No. 3	SCIENTIST IN CHARGE C. P. Hwang
INSTITUTION OR OPERATING AGENCY Hydrographic Office (ROKHO)	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. CSK, ROKHO-1-72	COUNTRY Republic of Korea

DATE OF CRUISE  
FROM: 3 DAY / 5 MONTH / 1972 YEAR TO: 5 DAY / 5 MONTH / 1972 YEAR

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	q	F	D	TYPE OF FORMAT AVAILABLE	q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
<b>DESCRIPTIVE OCEANOGRAPHY</b>							
D 1 SERIAL STATIONS	20	a	a, b		RDC, MT	a.	ROKHO
D 2 STD						b.	
D 3 OXYGEN	20	a	a, b		RDC, MT	c.	
D 4 PHOSPHATES						d.	
D 5 TOTAL-P						e.	
D 6 NITRATES						f.	
D 7 NITRITES							
D 8 TRACE ELEMENTS							
D 9 pH	20	a	a, b		PUB, MT		
D 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY							
D 13 ISOTOPE CHEMISTRY							
D 14 OTHER DISSOLVED GASES							
D 15 BATHY THERMOGRAPH (XBT) (NO. OF DROPS)						F D	<b>FINAL DISPOSITION OF DATA</b> (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
D 16 BATHY THERMOGRAPH (MECH.) (NO. OF DROPS)	20	a	a		PUB	a.	ROKHO
D 17 TRANSPARENCY (NO. OF OBS.)						b.	KDC/JODC (MT)
D 18 SOUND VELOCIMETER DATA						c.	
D 19 INSTRUMENTED WAVE RECORDING (✓)						d.	
D 20 TIDES (✓)						e.	
D 21 SEA (✓)						f.	
D 22 SWELL (✓)							
D 23 ICE (✓)							
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	14	a	a, b		RDC, MT		
D 25 SEA SURFACE TEMPERATURE (✓)		a	a		RDC		
<b>CURRENT MEASUREMENTS</b>							
C 1 CURRENT METERS							
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)							
C 2 GEK							
C 3 DROGUES (✓)							
C 4 SWALLOW FLOATS (✓)							
C 5 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)							
<b>METEOROLOGY</b>							
M 1 UPPER AIR OBSERVATIONS (✓)							
M 2 SURFACE METEOROLOGICAL OBS. (✓)		✓	a	a	RDC		
M 3 INCIDENT RADIATION (✓)							
<b>GEOLOGY AND GEOPHYSICS</b>							
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)							
G 2 CORES (NO. CORES)							
G 3 SEISMIC—REFLECTION PROFILES (Km)							
G 4 SEISMIC—REFRACTION PROFILES							
G 5 HEAT FLOW							
G 6 GRAVITY (Km)							
G 7 MAGNETIC (Km)							
G 8 CHEMICAL ANALYSIS OF SEDIMENT (✓)							
G 9 PHYSICAL ANALYSIS OF SEDIMENT (✓)							
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM							
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)							

Δ ENTER NUMBER OF STATIONS, EXCEPT WHEN ANNOTATED OTHERWISE FOLLOWING PARAMETER. WHEN OBSERVED PARAMETER IS FOLLOWED BY A CHECK MARK (✓) DO NOT ENTER ANY NUMBER BUT ENTER THE CHECK MARK INSTEAD.

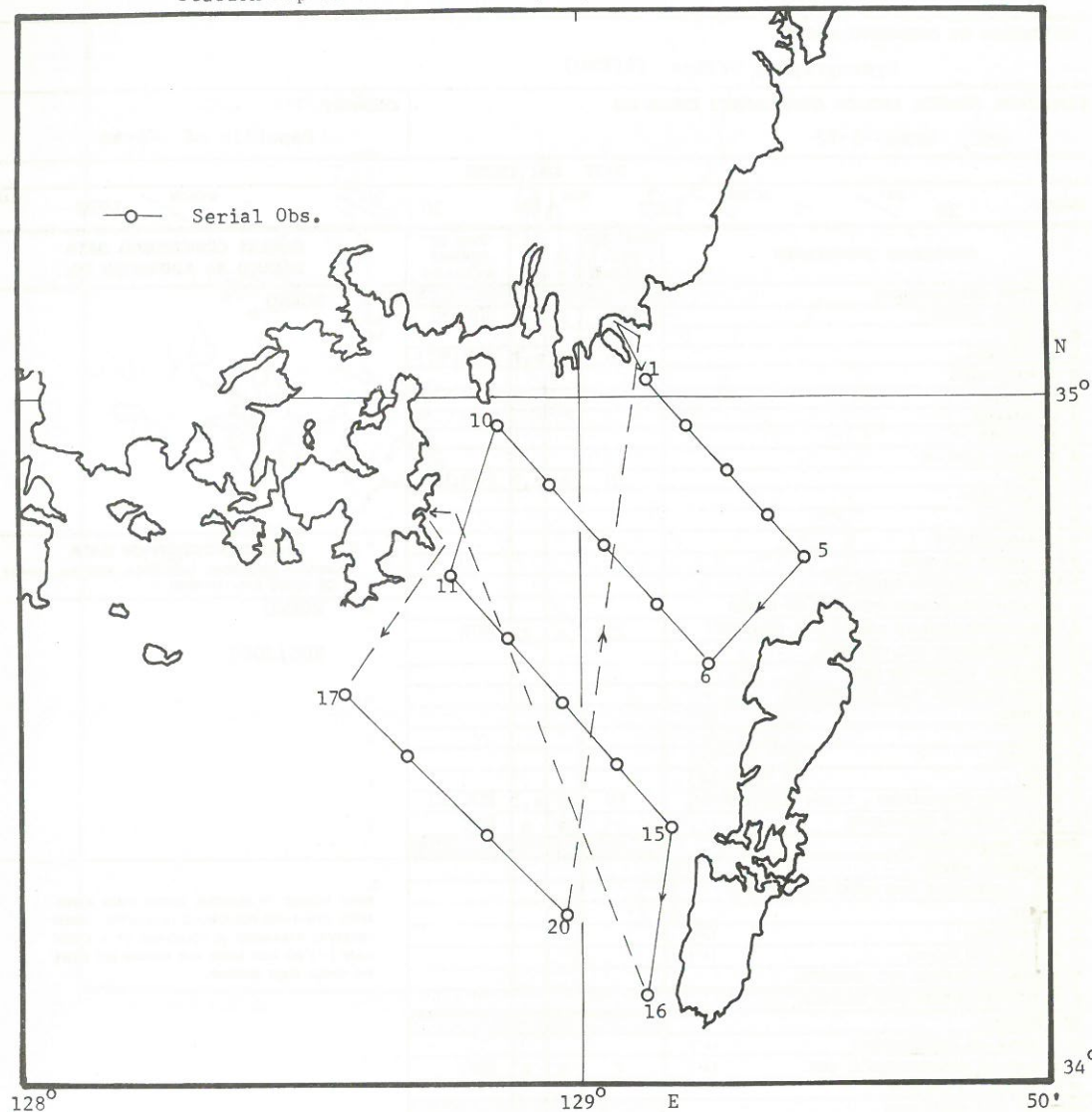
TOTAL KILOMETERS STEAMED:

437 n.m.

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

(✓) YES  
( ) NO  
( ) PART (SPECIFY)

Station Map of the "SURO NO. 3, May 3 - 5, 1972



(ROSCOP)

1.2 Suro No. 3

SHIP OR PLATFORM: Suro No. 3      SCIENTIST IN CHARGE: C. P. Hwang

INSTITUTION OR OPERATING AGENCY: Hydrographic Office (ROKHO)

EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO.: CSK, ROKHO-2-72      COUNTRY: Republic of Korea

DATE OF CRUISE: FROM: 28 DAY / 5 MONTH / 1972 YEAR TO: 30 DAY / 5 MONTH / 1972 YEAR

74

PROGRAMS UNDERTAKEN	TOTAL NO. OF STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
<b>DESCRIPTIVE OCEANOGRAPHY</b>							
D 1 SERIAL STATIONS	20	a	a	b	RDC, MT	a.	ROKHO
D 2 STD						b.	
D 3 OXYGEN	20	a	a	b	PUB, MT	c.	
D 4 PHOSPHATES						d.	
D 5 TOTAL-P						e.	
D 6 NITRATES						f.	
D 7 NITRITES							
D 8 TRACE ELEMENTS	20	a	a	b	PUB, MT		
D 9 pH							
D 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY							
D 13 ISOTOPE CHEMISTRY							
D 14 OTHER DISSOLVED GASES							
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)							
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	20	a	a		PUB	a.	ROKHO
D 17 TRANSPARENCY (NO. OF OBS.)						b.	KDC/JODC
D 18 SOUND VELOCIMETER DATA						c.	
D 19 INSTRUMENTED WAVE RECORDING	(✓)					d.	
D 20 TIDES	(✓)					e.	
D 21 SEA	(✓)					f.	
D 22 SWELL	(✓)						
D 23 ICE	(✓)						
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	19	a	a	b	RDC, MT		
D 25 SEA SURFACE TEMPERATURE	(✓)		a	a	RDC		
<b>CURRENT MEASUREMENTS</b>							
C 1 CURRENT METERS							
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)							
C 2 GEK							
C 3 DROGUES	(✓)						
C 4 SWALLOW FLOATS	(✓)						
C 5 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)							
<b>METEOROLOGY</b>							
M 1 UPPER AIR OBSERVATIONS	(✓)						
M 2 SURFACE METEOROLOGICAL OBS.	(✓)	✓	a	a	RDC		
M 3 INCIDENT RADIATION	(✓)						
<b>GEOLOGY AND GEOPHYSICS</b>							
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)							
G 2 CORES (NO. CORES)							
G 3 SEISMIC—REFLECTION PROFILES (Km)							
G 4 SEISMIC—REFRACTION PROFILES							
G 5 HEAT FLOW							
G 6 GRAVITY (Km)							
G 7 MAGNETIC (Km)							
G 8 CHEMICAL ANALYSIS OF SEDIMENT	(✓)						
G 9 PHYSICAL ANALYSIS OF SEDIMENT	(✓)						
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM							
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)							

Q QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:

a. ROKHO

b.

c.

d.

e.

f.

F D FINAL DISPOSITION OF DATA  
(NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)

a. ROKHO

b. KDC/JODC

c.

d.

e.

f.

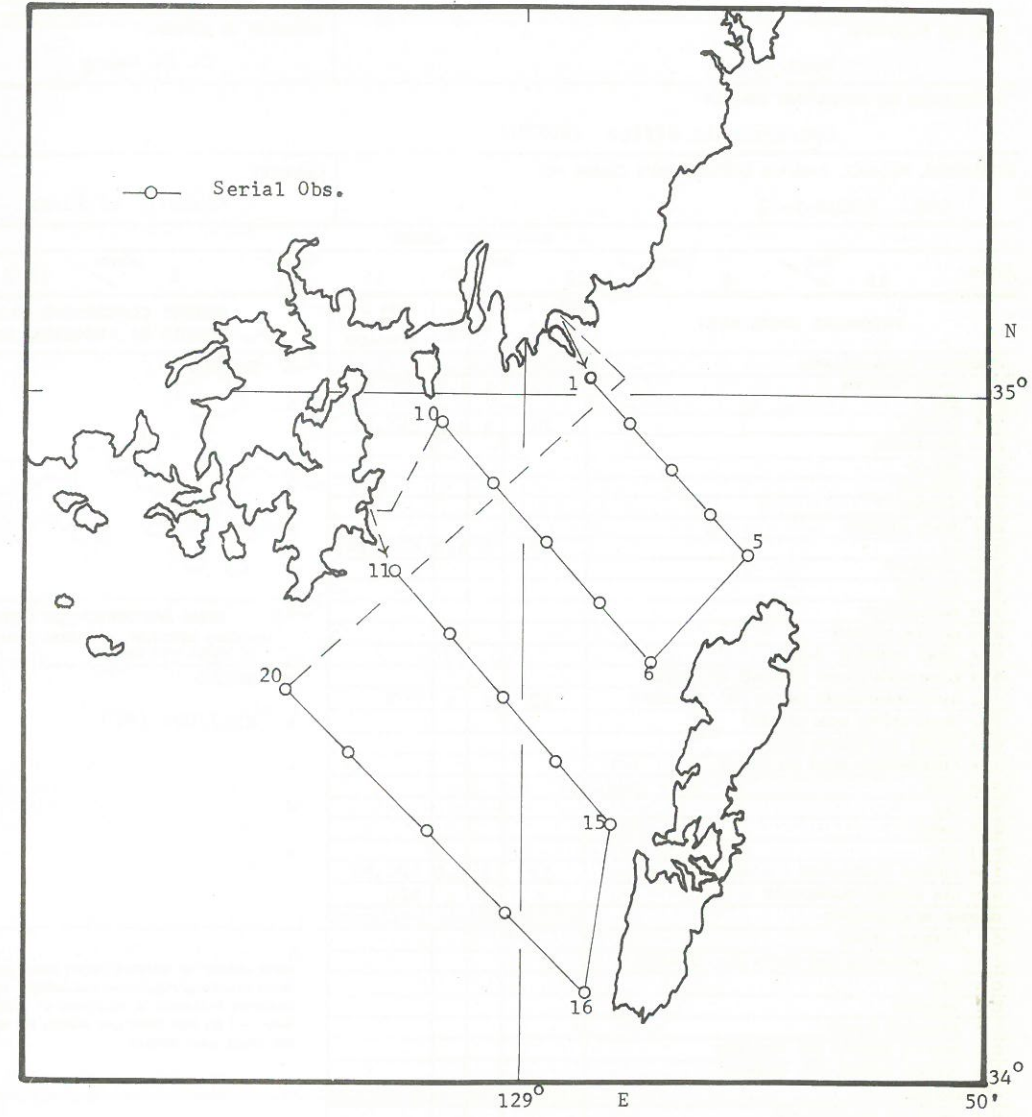
Δ ENTER NUMBER OF STATIONS, EXCEPT WHEN ANNOTATED OTHERWISE FOLLOWING PARAMETER. WHEN OBSERVED PARAMETER IS FOLLOWED BY A CHECK MARK (✓) DO NOT ENTER ANY NUMBER BUT ENTER THE CHECK MARK INSTEAD.

TOTAL KILOMETERS STEAMED:  
326 n.m.

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

(✓) YES  
( ) NO  
( ) PART (SPECIFY)

Station Map of the "SURO NO. 3, May 28 - 30, 1972



(ROSCOP)

1.3 Suro No. 3

SHIP OR PLATFORM: Suro No. 3

SCIENTIST IN CHARGE: C. P. Hwang

INSTITUTION OR OPERATING AGENCY: Hydrographic Office (ROKHO)

EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO.: CSK, ROKHO-3-72

COUNTRY: Republic of Korea

DATE OF CRUISE: FROM: 15 DAY / 8 MONTH / 1972 YEAR TO: 16 DAY / 8 MONTH / 1972 YEAR

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE
<b>DESCRIPTIVE OCEANOGRAPHY</b>					
D 1 SERIAL STATIONS	20	a	a	b	RDC,MT
D 2 STD					
D 3 OXYGEN	20	a	a	b	PUB,MT
D 4 PHOSPHATES					
D 5 TOTAL-P					
D 6 NITRATES					
D 7 NITRITES					
D 8 TRACE ELEMENTS	20	a	a	b	PUB,MT
D 9 pH					
D 10 ALKALINITY					
D 11 SILICATES					
D 12 RADIOACTIVITY					
D 13 ISOTOPE CHEMISTRY					
D 14 OTHER DISSOLVED GASES					
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)					
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	20	a	a		PUB
D 17 TRANSPARENCY (NO. OF OBS.)					
D 18 SOUND VELOCIMETER DATA					
D 19 INSTRUMENTED WAVE RECORDING					(✓)
D 20 TIDES					(✓)
D 21 SEA					(✓)
D 22 SWELL					(✓)
D 23 ICE					(✓)
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	19	a	a	b	RDC,MT
D 25 SEA SURFACE TEMPERATURE		✓	a	a	RDC
<b>CURRENT MEASUREMENTS</b>					
C 1 CURRENT METERS					
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)					
C 2 GEK					
C 3 DROGUES					(✓)
C 4 SWALLOW FLOATS					(✓)
C 5 SURFACE DRIFTERS (NO. RELEASED)					
C 6 BOTTOM DRIFTERS (NO. RELEASED)					
<b>METEOROLOGY</b>					
M 1 UPPER AIR OBSERVATIONS					(✓)
M 2 SURFACE METEOROLOGICAL OBS.		✓	a	a	RDC
M 3 INCIDENT RADIATION					(✓)
<b>GEOLOGY AND GEOPHYSICS</b>					
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)					
G 2 CORES (NO. CORES)					
G 3 SEISMIC—REFLECTION PROFILES (Km)					
G 4 SEISMIC—REFRACTION PROFILES					
G 5 HEAT FLOW					
G 6 GRAVITY (Km)					
G 7 MAGNETIC (Km)					
G 8 CHEMICAL ANALYSIS OF SEDIMENT					(✓)
G 9 PHYSICAL ANALYSIS OF SEDIMENT					(✓)
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM					
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)					

Q QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:

a. ROKHO

b.

c.

d.

e.

f.

F D FINAL DISPOSITION OF DATA  
(NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)

a. ROKHO

b. KDC/JODC (MT)

c.

d.

e.

f.

Δ ENTER NUMBER OF STATIONS, EXCEPT WHEN ANNOTATED OTHERWISE FOLLOWING PARAMETER. WHEN OBSERVED PARAMETER IS FOLLOWED BY A CHECK MARK (✓) DO NOT ENTER ANY NUMBER BUT ENTER THE CHECK MARK INSTEAD.

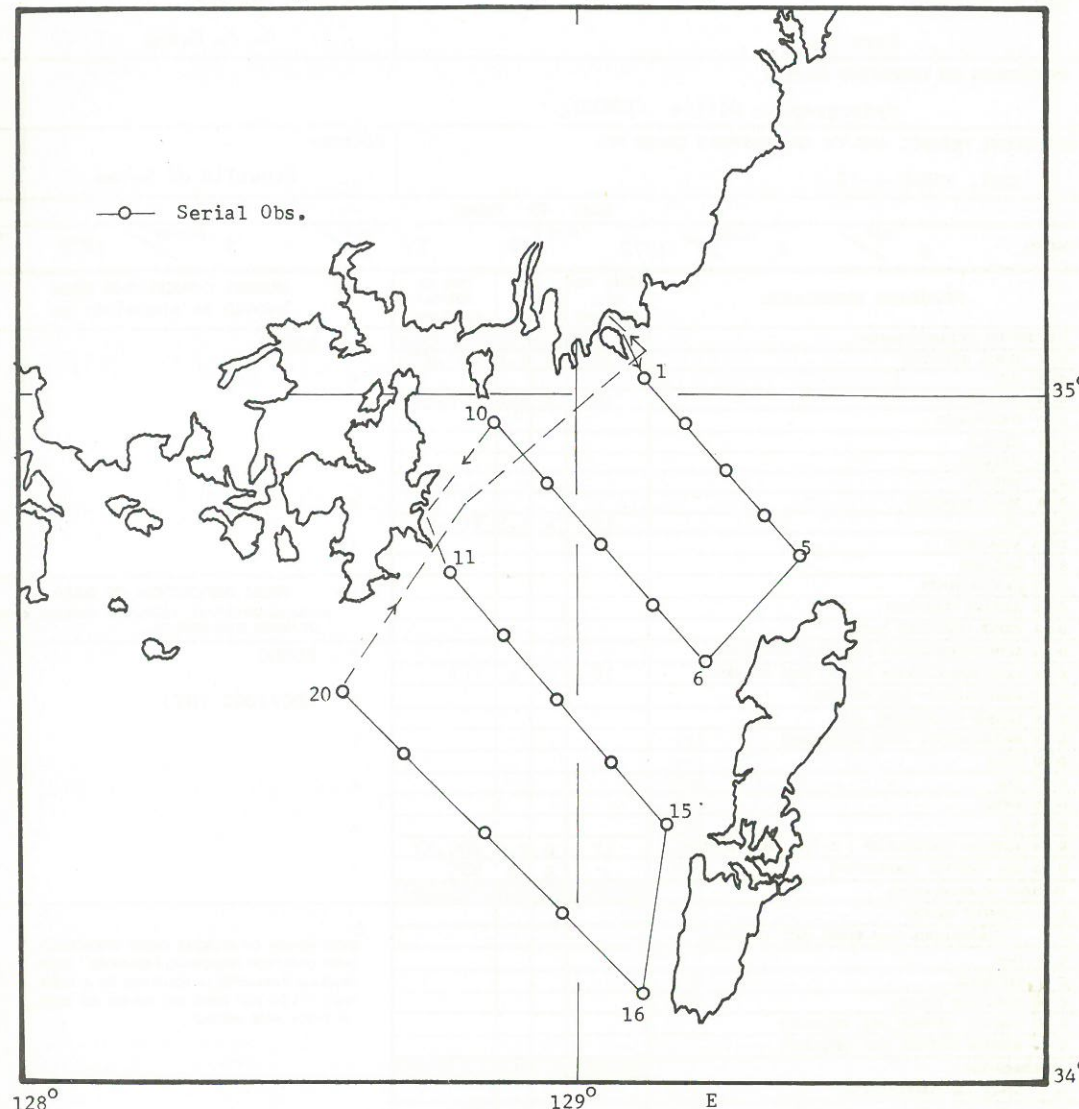
TOTAL KILOMETERS STEAMED:

326 n.m.

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

(✓) YES  
( ) NO  
( ) PART (SPECIFY)

Station Map of the "SURO NO. 3, Aug. 15 - 16, 1972



74

(ROSCOP)

1.4 Suro No. 3

SHIP OR PLATFORM Suro No. 3	SCIENTIST IN CHARGE C. P. Hwang
INSTITUTION OR OPERATING AGENCY Hydrographic Office (ROKHO)	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. CSK, ROKHO-4-72	COUNTRY Republic of Korea
DATE OF CRUISE FROM: 9 DAY / 9 MONTH / 1972 YEAR TO: 11 DAY / 9 MONTH / 1972 YEAR	

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	a	F	D	TYPE OF FORMAT AVAILABLE
<b>DESCRIPTIVE OCEANOGRAPHY</b>					
D 1 SERIAL STATIONS	18	a	a	b	RDC,MT
D 2 STD					
D 3 OXYGEN	18	a	a	b	PUB,MT
D 4 PHOSPHATES					
D 5 TOTAL-P					
D 6 NITRATES					
D 7 NITRITES					
D 8 TRACE ELEMENTS					
D 9 pH	18	a	a	b	PUB,MT
D 10 ALKALINITY					
D 11 SILICATES					
D 12 RADIOACTIVITY					
D 13 ISOTOPE CHEMISTRY					
D 14 OTHER DISSOLVED GASES					
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)					
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	18	a	a		PUB
D 17 TRANSPARENCY (NO. OF OBS.)					
D 18 SOUND VELOCIMETER DATA					
D 19 INSTRUMENTED WAVE RECORDING	(✓)				
D 20 TIDES	(✓)				
D 21 SEA	(✓)				
D 22 SWELL	(✓)				
D 23 ICE	(✓)				
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)	17	a	a	b	RDC,MT
D 25 SEA SURFACE TEMPERATURE	(✓)	a	a		RDC
<b>CURRENT MEASUREMENTS</b>					
C 1 CURRENT METERS					
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)					
C 2 GEK					
C 3 DROGUES	(✓)				
C 4 SWALLOW FLOATS	(✓)				
C 5 SURFACE DRIFTERS (NO. RELEASED)					
C 6 BOTTOM DRIFTERS (NO. RELEASED)					
<b>METEOROLOGY</b>					
M 1 UPPER AIR OBSERVATIONS	(✓)				
M 2 SURFACE METEOROLOGICAL OBS.	(✓)	✓	a	a	RDC
M 3 INCIDENT RADIATION	(✓)				
<b>GEOLOGY AND GEOPHYSICS</b>					
G 1 DREDGE AND GRAB SAMPLES (NO. OF SAMPLES)					
G 2 CORES (NO. CORES)					
G 3 SEISMIC—REFLECTION PROFILES (Km)					
G 4 SEISMIC—REFRACTION PROFILES					
G 5 HEAT FLOW					
G 6 GRAVITY (Km)					
G 7 MAGNETIC (Km)					
G 8 CHEMICAL ANALYSIS OF SEDIMENT	(✓)				
G 9 PHYSICAL ANALYSIS OF SEDIMENT	(✓)				
G 10 ENGINEERING PROPERTIES OF SEA BOTTOM					
G 11 BOTTOM PHOTOGRAPHY (NO. OF CAMERA STATIONS)					

Q QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:

a. ROKHO

b.

c.

d.

e.

f.

F D FINAL DISPOSITION OF DATA  
(NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)

a. ROKHO

b. KDC/JODC (MT)

c.

d.

e.

f.

Δ ENTER NUMBER OF STATIONS, EXCEPT WHEN ANNOTATED OTHERWISE FOLLOWING PARAMETER. WHEN OBSERVED PARAMETER IS FOLLOWED BY A CHECK MARK (✓) DO NOT ENTER ANY NUMBER BUT ENTER THE CHECK MARK INSTEAD.

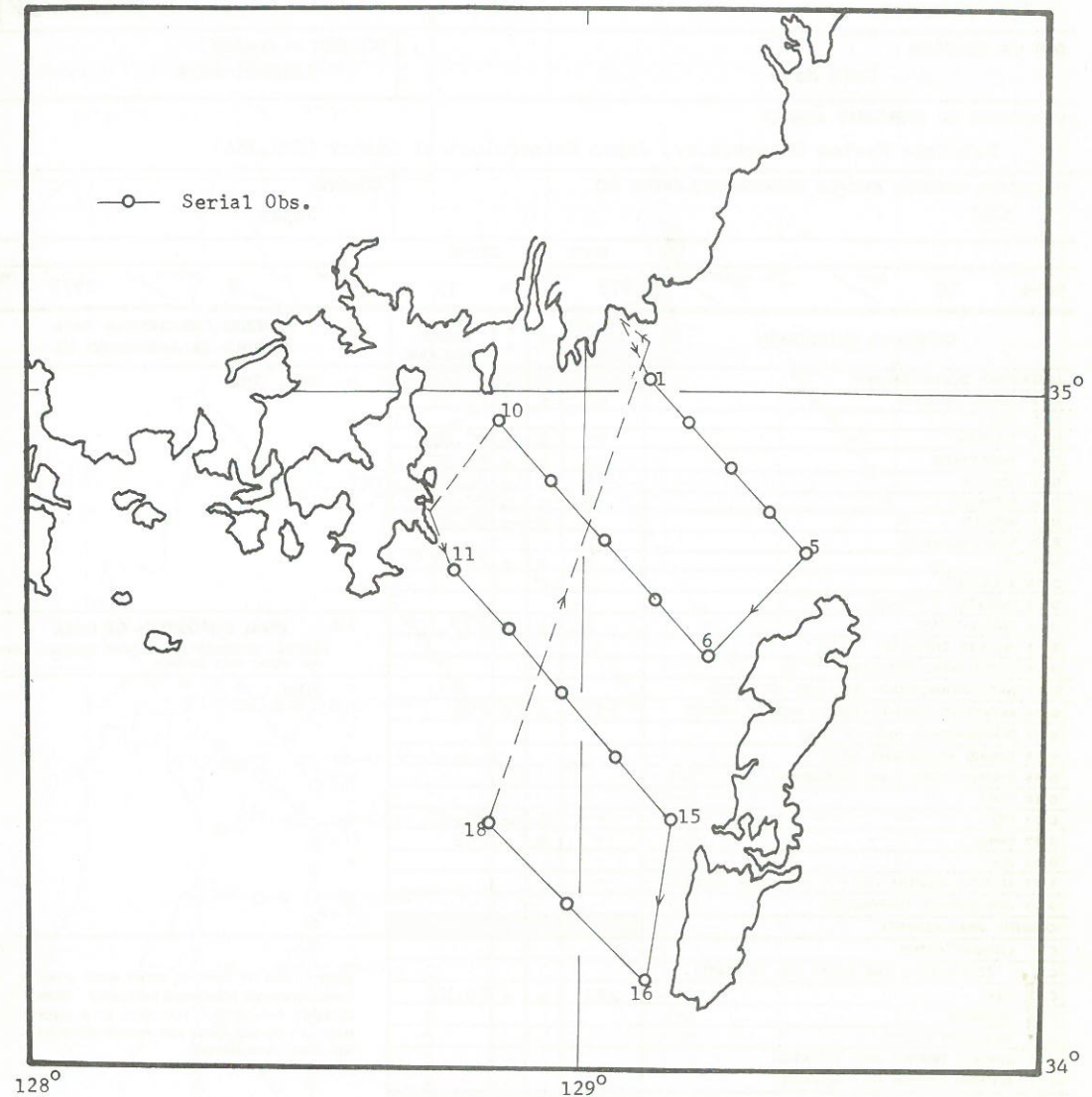
TOTAL KILOMETERS STEAMED:

322 n.m.

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

- (✓) YES
- ( ) NO
- ( ) PART (SPECIFY)

Station Map of the "SURO NO. 3, Sept. 9 - 11, 1972



74

2. Japan

2.1 Kofu Maru

(ROSCOP)

SHIP OR PLATFORM Kofu Maru		SCIENTIST IN CHARGE Katsumi Hata	
INSTITUTION OR OPERATING AGENCY Hakodate Marine Observatory, Japan Meteorological Agency (HMO, JMA)			
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. CSK		COUNTRY Japan	
DATE OF CRUISE			
FROM:	10 DAY / 7 MONTH / 1972 YEAR	TO:	13 DAY / 9 MONTH / 1972 YEAR

PROGRAMS UNDERTAKEN	TOTAL NO. OF STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE
<b>DESCRIPTIVE OCEANOGRAPHY</b>					
D 1 SERIAL STATIONS	98	a	a		PC, MT
D 2 STD					
D 3 OXYGEN	98	a	a		PC, MT
D 4 PHOSPHATES	98	a	a		PC, MT
D 5 TOTAL-P	3	a	a		PC, MT
D 6 NITRATES	3	a	a		PC, MT
D 7 NITRITES	3	a	a		PC, MT
D 8 TRACE ELEMENTS					
D 9 pH	3	a	a		PC, MT
D 10 ALKALINITY					
D 11 SILICATES					
D 12 RADIOACTIVITY	4	a	a		PUB
D 13 ISOTOPE CHEMISTRY					
D 14 OTHER DISSOLVED GASES					
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)					
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	233	a	a		PUB
D 17 TRANSPARENCY (NO. OF OBS.)					
D 18 SOUND VELOCIMETER DATA					
D 19 INSTRUMENTED WAVE RECORDING	(✓)				
D 20 TIDES	(✓)				
D 21 SEA	(✓)	a	a		PC, MT
D 22 SWELL	(✓)	a	a		PUB
D 23 ICE	(✓)				
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)					
D 25 SEA SURFACE TEMPERATURE	(✓)				
<b>CURRENT MEASUREMENTS</b>					
C 1 CURRENT METERS					
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)					
C 2 GEK	232	a	a		PC, MT
C 3 DROGUES	(✓)				
C 4 SWALLOW FLOATS	(✓)				
C 5 SURFACE DRIFTERS (NO. RELEASED)					
C 6 BOTTOM DRIFTERS (NO. RELEASED)					
<b>METEOROLOGY</b>					
M 1 UPPER AIR OBSERVATIONS	(✓)				
M 2 SURFACE METEOROLOGICAL OBS.	(✓)	a	a		PUB
M 3 INCIDENT RADIATION	(✓)				
<b>BIOLOGY</b>					
B 1 PRIMARY ORGANIC PRODUCTION					
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION	35	a	a		PUB
B 3 PARTICULATE ORGANIC MATTER					
B 4 DISSOLVED ORGANIC MATTER					
B 5 NEUSTON AND PLEUSTON					
B 6 BACTERIA AND OTHER MICROORGANISMS					
B 7 PHYTOPLANKTON	35	a	a		PUB
B 8 ZOOPLANKTON	8	a	a		PUB
<b>OTHER OBSERVATIONS</b>					
O 1 Ammonia	3	a	a		
O 2 COD	3	a	a		

Q QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:

a. HMO, JMA

b.

c.

d.

e.

f.

F D FINAL DISPOSITION OF DATA

(NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)

a. JODC

b.

c.

d.

e.

f.

Δ ENTER NUMBER OF STATIONS, EXCEPT WHEN ANNOTATED OTHERWISE FOLLOWING PARAMETER. WHEN OBSERVED PARAMETER IS FOLLOWED BY A CHECK MARK (✓) DO NOT ENTER ANY NUMBER BUT ENTER THE CHECK MARK INSTEAD.

REMARKS

B 8: Norpac net

TOTAL KILOMETERS STEAMED:

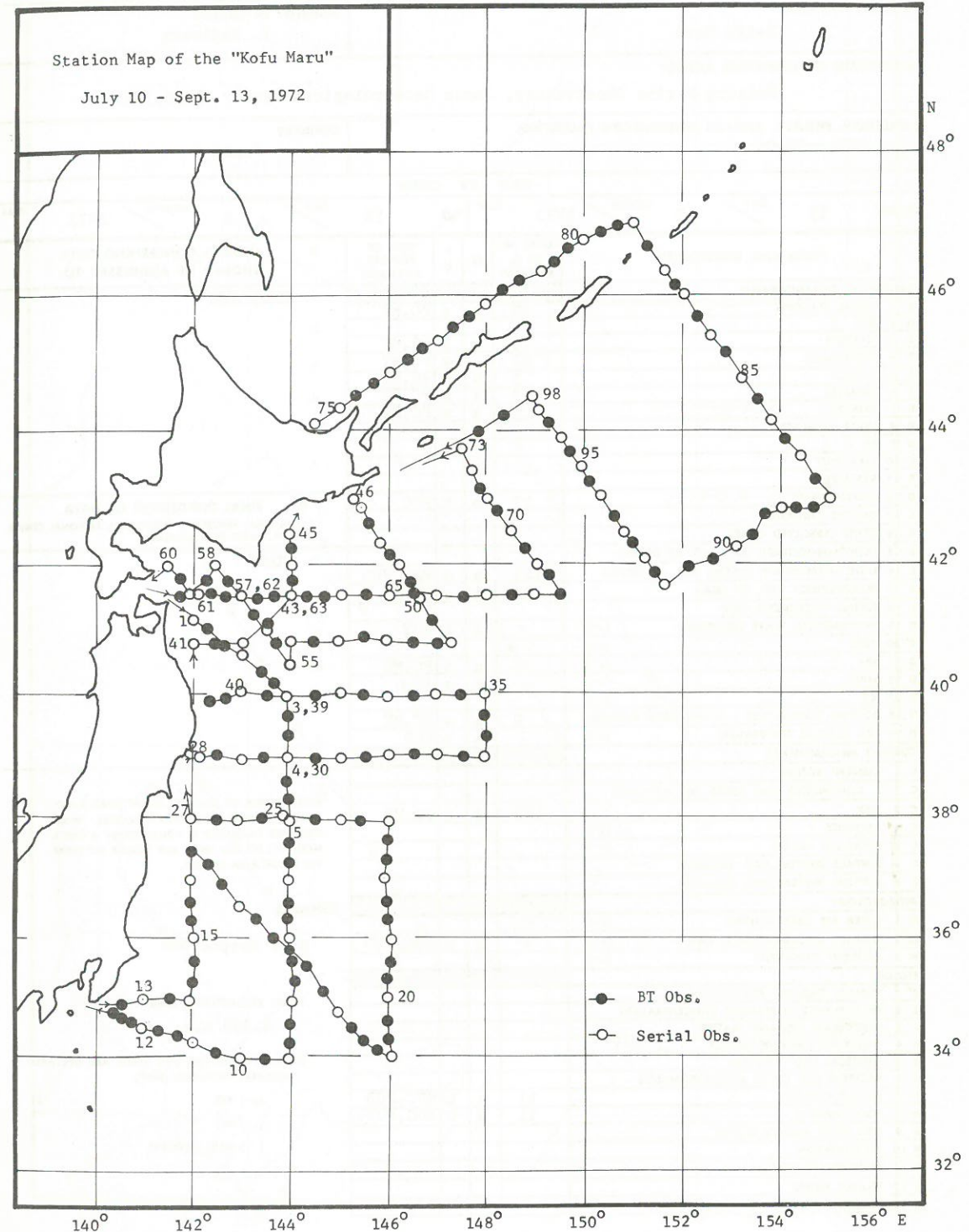
6,115.5 n.m.

DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):

(✓) YES

( ) NO

( ) PART (SPECIFY)



## 2.2 Seifu Maru

(ROSCOP)

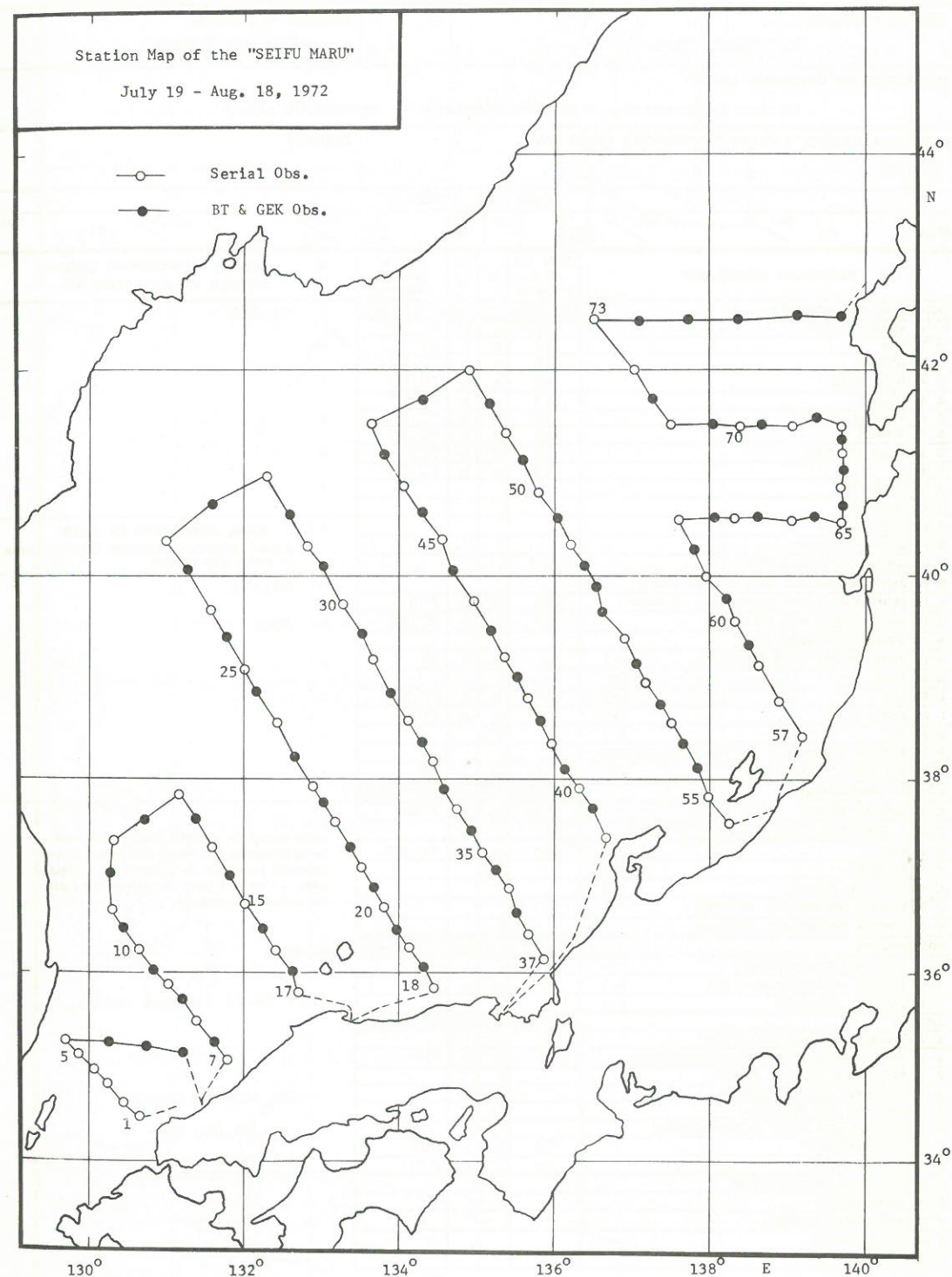
SHIP OR PLATFORM Seifu Maru	SCIENTIST IN CHARGE I. Fujiwara
INSTITUTION OR OPERATING AGENCY Maizuru Marine Observatory, Japan Meteorological Agency (MMO,JMA)	
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. CSK, 72-05	COUNTRY Japan

DATE OF CRUISE  
FROM: 19 DAY / 7 MONTH / 1972 YEAR TO: 18 DAY / 8 MONTH / 1972 YEAR

PROGRAMS UNDERTAKEN	TOTAL NO. OF $\Delta$ STATIONS	Q	F	D	TYPE OF FORMAT AVAILABLE	Q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
<b>DESCRIPTIVE OCEANOGRAPHY</b>							
D 1 SERIAL STATIONS	73	a	a		PC,MT	a.	MMO, JMA
D 2 STD						b.	
D 3 OXYGEN	73	a	a		PC,MT	c.	
D 4 PHOSPHATES	37	a	a		PC,MT	d.	
D 5 TOTAL-P	3	a	a		PC,MT	e.	
D 6 NITRATES	3	a	a		PC,MT	f.	
D 7 NITRITES	3	a	a		PC,MT		
D 8 TRACE ELEMENTS							
D 9 pH							
D 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY	12	a	b		RDC	F D	FINAL DISPOSITION OF DATA (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
D 13 ISOTOPE CHEMISTRY						a.	JODC
D 14 OTHER DISSOLVED GASES						b.	MMO, JMA
D 15 BATHYTHERMOGRAPH (XBT) (NO. OF DROPS)						c.	
D 16 BATHYTHERMOGRAPH (MECH.) (NO. OF DROPS)	141	a	a		RDC,PUB	d.	
D 17 TRANSPARENCY (NO. OF OBS.)	38	a	a		PC,MT	e.	
D 18 SOUND VELOCIMETER DATA						f.	
D 19 INSTRUMENTED WAVE RECORDING (✓)	✓	a	b		RDS		
D 20 TIDES (✓)	✓						
D 21 SEA (✓)	✓	a	a		PC,MT		
D 22 SWELL (✓)	✓	a	a		PUB		
D 23 ICE (✓)	✓						
D 24 BOTTOM TEMPERATURE ( $\leq 10M$ FROM BOTTOM)	9	a	a		PC,MT		
D 25 SEA SURFACE TEMPERATURE (✓)	✓	a	b		RDS		
<b>CURRENT MEASUREMENTS</b>							
C 1 CURRENT METERS							
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)							
C 2 GEK	142	a	a		PC,MT		
C 3 DROGUES (✓)	✓						
C 4 SWALLOW FLOATS (✓)	✓						
C 5 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)							
<b>METEOROLOGY</b>							
M 1 UPPER AIR OBSERVATIONS (✓)	✓						
M 2 SURFACE METEOROLOGICAL OBS. (✓)	✓	a	b		RDC,PUB		
M 3 INCIDENT RADIATION (✓)	✓						
<b>BIOLOGY</b>							
B 1 PRIMARY ORGANIC PRODUCTION							
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION							
B 3 PARTICULATE ORGANIC MATTER							
B 4 DISSOLVED ORGANIC MATTER							
B 5 NEUSTON AND PLEUSTON							
B 6 BACTERIA AND OTHER MICROORGANISMS							
B 7 PHYTOPLANKTON	11	a	b		RDC,PUB		
B 8 ZOOPLANKTON	11	a	b		RDC,PUB		
B 9 FISH EGGS AND/OR LARVAE							
B 10 MICRONEKTON							
B 11 INVERTEBRATE NEKTON							
B 12 PELAGIC FISHES							
B 13 DEMERSAL FISHES							

## REMARKS

B 8: Norpac Net

TOTAL KILOMETERS STEAMED:  
4,200 n.m.DATA REPORTED ON THIS FORM ARE DECLARED  
NATIONAL PROGRAM (DNP):  
(✓) YES  
( ) NO  
( ) PART (SPECIFY)



(ROSCOP)

2.3 Ryofu Maru

SHIP OR PLATFORM R/V Ryofu Maru		SCIENTIST IN CHARGE Tsutomu Sawara	
INSTITUTION OR OPERATING AGENCY Marine Department, Japan Meteorological Agency (MD,JMA)			
EXPEDITION, PROJECT, AND/OR ORIGINATOR'S CRUISE NO. CSK		COUNTRY Japan	
DATE OF CRUISE			
FROM:	14 DAY / 1 MONTH / 1973 YEAR	TO:	28 DAY / 2 MONTH / 1973 YEAR

PROGRAMS UNDERTAKEN	TOTAL NO. OF Δ STATIONS	q	F	D	TYPE OF FORMAT AVAILABLE	q	QUERIES CONCERNING DATA SHOULD BE ADDRESSED TO:
<b>DESCRIPTIVE OCEANOGRAPHY</b>							
D 1 SERIAL STATIONS	78	a	b		PC,MT	a.	MD, JMA
D 2 STD	12	a	a		AT	b.	
D 3 OXYGEN	78	a	b		PC,MT	c.	
D 4 PHOSPHATES	69	a	b		PC,MT	d.	
D 5 TOTAL-P	13	a	b		PC,MT	e.	
D 6 NITRATES	43	a	b		PC,MT	f.	
D 7 NITRITES	13	a	b		PC,MT		
D 8 TRACE ELEMENTS	13	a	b		PUB		
D 9 pH	13	a	b		PC,MT		
D 10 ALKALINITY							
D 11 SILICATES							
D 12 RADIOACTIVITY							
D 13 ISOTOPE CHEMISTRY						F D	<b>FINAL DISPOSITION OF DATA</b> (NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)
D 14 OTHER DISSOLVED GASES						a.	MD, JMA
D 15 BATHY THERMOGRAPH (XBT) (NO. OF DROPS)						b.	JODC
D 16 BATHY THERMOGRAPH (MECH.) (NO. OF DROPS)	193	a	b		PUB	c.	
D 17 TRANSPARENCY (NO. OF OBS.)	37	a	b		PC,MT	d.	
D 18 SOUND VELOCIMETER DATA						e.	
D 19 INSTRUMENTED WAVE RECORDING (✓)	✓	a	a		AT	f.	
D 20 TIDES (✓)	✓						
D 21 SEA (✓)	✓	a	a		PC,MT		
D 22 SWELL (✓)	✓	a	a		PUB		
D 23 ICE (✓)	✓						
D 24 BOTTOM TEMPERATURE (≤ 10M FROM BOTTOM)							
D 25 SEA SURFACE TEMPERATURE (✓)	✓	a	b		AT		
<b>CURRENT MEASUREMENTS</b>							
C 1 CURRENT METERS	14	a	b		PUB		
C 1 CONTINUOUS TIME SERIES (NO. OF DAYS)							
C 2 GEK	144	a	b		PC,MT		
C 3 DROGUES (✓)	✓						
C 4 SWALLOW FLOATS (✓)	✓						
C 5 SURFACE DRIFTERS (NO. RELEASED)							
C 6 BOTTOM DRIFTERS (NO. RELEASED)							
<b>METEOROLOGY</b>							
M 1 UPPER AIR OBSERVATIONS (✓)	✓						
M 2 SURFACE METEOROLOGICAL OBS. (✓)	✓	a	a		PUB		
M 3 INCIDENT RADIATION (✓)	✓						
<b>BIOLOGY</b>							
B 1 PRIMARY ORGANIC PRODUCTION							
B 2 PHYTOPLANKTON PIGMENT CONCENTRATION	59	a	b		PUB		
B 3 PARTICULATE ORGANIC MATTER							
B 4 DISSOLVED ORGANIC MATTER							
B 5 NEUSTON AND PLEUSTON							
B 6 BACTERIA AND OTHER MICROORGANISMS							
B 7 PHYTOPLANKTON	59	a	a		PUB		
B 8 ZOOPLANKTON	70	a	a		PUB		
B 9 FISH EGGS AND/OR LARVAE							
B 10 MICRONEKTON							
B 11 INVERTEBRATE NEKTON							
B 12 PELAGIC FISHES							
B 13 DEMERSAL FISHES							

F D FINAL DISPOSITION OF DATA  
(NATIONAL REPOSITORY, INSTITUTION, REGIONAL CENTER, OR WORLD DATA CENTERS)

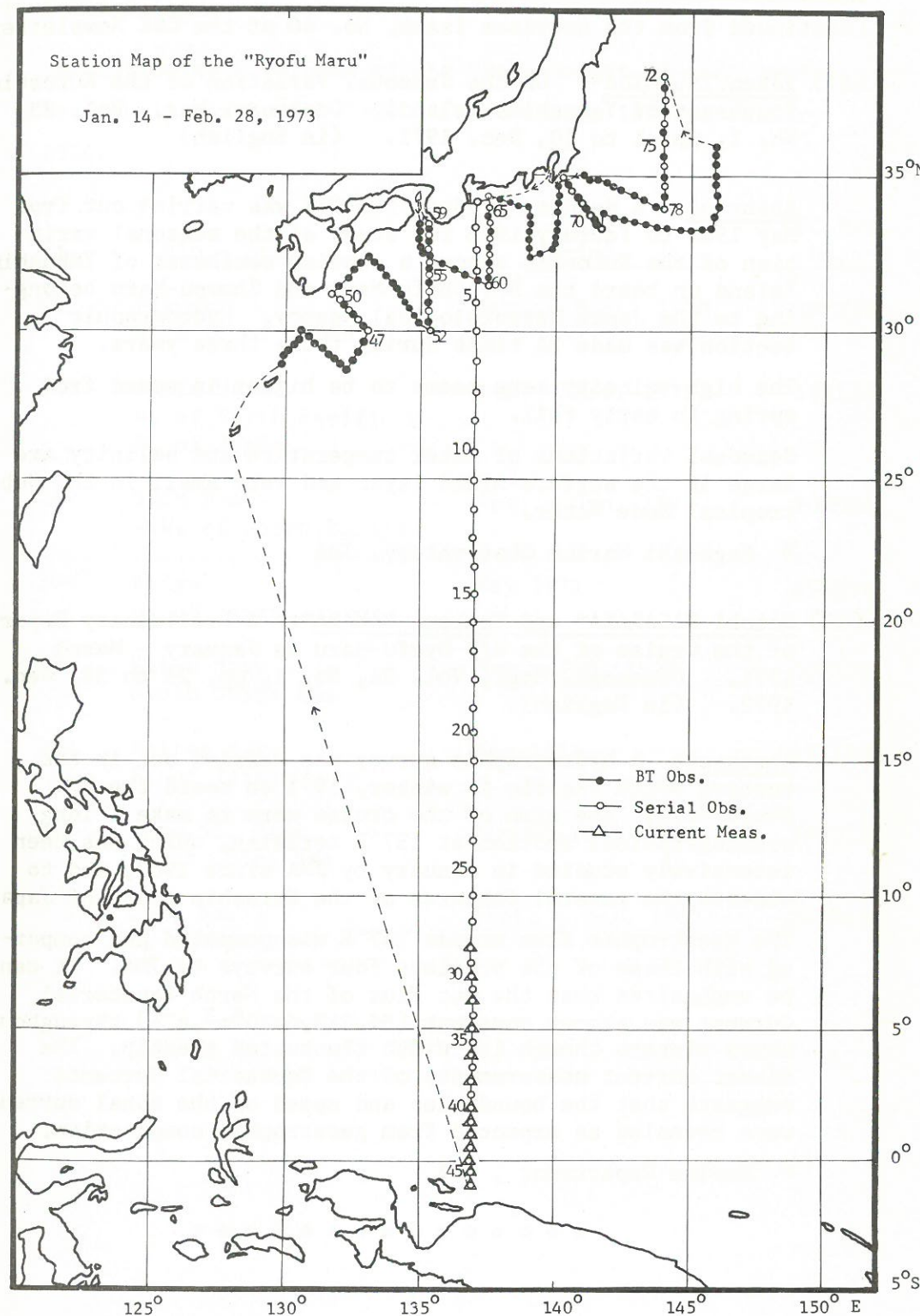
- a. MD, JMA
- b. JODC
- c.
- d.
- e.
- f.

Δ ENTER NUMBER OF STATIONS, EXCEPT WHEN ANNOTATED OTHERWISE FOLLOWING PARAMETER. WHEN OBSERVED PARAMETER IS FOLLOWED BY A CHECK MARK (✓) DO NOT ENTER ANY NUMBER BUT ENTER THE CHECK MARK INSTEAD.

REMARKS  
C1: TS-II Current meter

TOTAL KILOMETERS STEAMED:  
15,000 km  
DATA REPORTED ON THIS FORM ARE DECLARED NATIONAL PROGRAM (DNP):  
(✓) YES  
( ) NO  
( ) PART (SPECIFY)

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II. ABSTRACTS OF THE PAPERS ON CSK

(Continued from the previous issue, No. 40 of the CSK Newsletter)

- (87) Takeo TSUCHIDA\*: On the Seasonal Variation of the Kuroshio Southeast of Yakushima Island. Oceanogr. Mag., Vol. 23, No. 1, pp. 1 to 10, Dec. 1971. (in English)

Abstract: A special project for CSK was carried out from May 1965 to February 1968 for study of the seasonal variation of the Kuroshio across a section southeast of Yakushima Island on board the R/V Chofu-Marui and Shumpu-Marui belonging to the Japan Meteorological Agency. Hydrographic section was made 24 times during those three years.

The high-velocity zone seems to be higher in speed from spring to early fall.

Seasonal variations of water temperature and salinity are large in the surface-mixed layer and very small in the Sub-tropical Mode Water.

\* Nagasaki Marine Observatory, JMA

- (88) Koichi NAGASAKA\* and Tsutomu SAWARA\*: A Preliminary Report of the Cruise of the R/V Ryofu-Marui in January - March 1971. Oceanogr. Mag., Vol. 24, No. 1, pp. 25 to 38, Dec. 1972. (in English)

Abstract: A hydrographic survey was carried out in the western North Pacific in winter, 1971 on board the R/V Ryofu-Marui. The aims of the cruise were to make a long oceanographical section at 137°E meridian, which has been intensively studied in January by JMA since 1967, and to observe the general features of the Kuroshio south of Japan.

The geostrophic flux across 137°E was computed and compared with those of the previous four surveys by JMA. It can be emphasized that the net flux of the North Equatorial Current was almost constant ( $56.3 \pm 5.6 \times 10^6 \text{ m}^3 \cdot \text{s}^{-1}$ ) throughout those winters though its width fluctuated greatly. The direct current measurements of the Equatorial Currents suggests that the boundaries and speed of the zonal currents were revealed as expected from geostrophic computation.

\* Marine Department, JMA

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III. PUBLICATIONS

The following 8 volumes of the "Data Report of CSK" series were published by KDC (JODC) from October 1973 to January 1974.

<u>No.</u>	<u>Ship &amp; Area</u>	<u>Period</u>	<u>KDC Ref. No.</u>
277	Takuyo S. & E. of Japan	Aug. - Sept. 1970	49K128
293	Ryofu Maru W. of North Pacific & S. of Japan	Jan. - Mar. 1971	49K139
297	SRTM 8-459 N.W. of North Pacific	Apr. - Jun. 1971	90K034
300	Kaiyo S. of Japan	May 1971	49K136
302	Kaiyo Maru South China Sea	May - Jun. 1971	49K138
303	Keiten Maru E. of Taiwan	May 1971	49K143
308	Cape St. Mary South China Sea	August 1971	74K018
314	Suro No. 3 S. of Korea	Sept. - Oct. 1971	24K043

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