

Sampling logs on Cruise SPIROPA

Station A13 Date 07/4/2019 Water depth 480 m
 Longitude -70.8301 Latitude 39.9447
 Weather condition _____ Sampler Yiphan 2hr

CTD cast	Sampling time	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number				
91	6:30am	1	300	C91-N1	C91-N1	X				
		3	200	C91-N3	C91-N3					
		4	150	C91-N4	C91-N4					
		6	8 100	↓	↓					
		7	78							
		8	51							
		11	35							
		15	30							
		18	22							
		19	16	↓	↓					
		20	8							
		24	0	C91-N24	C91-N24					
				16	27		X	X	C91-N16	X4 X4 X4
				17			X	X	C91-N3	
				8	51		X	X	C91-N22	
				22	0					

Note

DON → Corolani's

Sampling logs on Cruise SPIROPA

Station A12 Date 07/14/2019 Water depth 272

Longitude -70.8299 Latitude 40.0098

Weather condition _____ Sampler Yifan Zhu

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	X2		DON sampling bottle number	
				Ammonium sampling bottle number	Cyanate sampling bottle number		
93	13:42	1	260	C93-N1	C93-N1	X	
		3	200	C93-N3	C93-N3		
		4	150				
		6	100				
		8	80				
		10	60				
		12	40				
		14	30				
		17	20				
		20	10				
		24	0	C93-N24	C93-N24		
		16	30				C93-N16 x4
		19	20				C93-N19 x4
		23	0				C93-N23 x4

Note
 DON → corday's bottles

Sampling logs on Cruise SPIROPA

Station A11 Date 07/14/2019 Water depth 150

Longitude -70.8297 Latitude 40.0753

Weather condition _____ Sampler Yifan Zhu

CTD cast	Sampling time	Niskin bottle number	Depth (m)	X2	X2	DON sampling bottle number	
				Ammonium sampling bottle number	Cyanate sampling bottle number		
94	11:20am	1	140	X	X	X	
		2	120	X	X		
		3	100	X	X		
		4	80 80	C94-N4	C94-M4		
		5	60 60	C94-N5	C94-M5		
		7	42	↓	↓		
		9	29				
		12	24				
		14	19				
		16	12				
		18	9				
		23	0	C94-N23	C94-M23		
		8	42	X	X		C94-N8 X4
		13	24	X	X		C94-M11 X4
24	0			C94-N24 X4			

Note

DOIV → Corday's

Sampling logs on Cruise SPIROPA

Station A10 Date 07/14/2019 Water depth 137
 Longitude -70.8281 Latitude 40.1396
 Weather condition _____ Sampler YIPAN ZHU

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	X2		DON sampling bottle number
				Ammonium sampling bottle number	Cyanate sampling bottle number	
95 	76:07	1	125	C95-N1	C95-N1	X
		2	120	 	 	
		3	100			
		5	80			
		7	60			
		10	40			
		12	28			
		14	20			
		18	10			
		20	0			

Note

Sampling logs on Cruise SPIROPA

Station A9 Date 0716 2019 Water depth 126

Longitude -70.8291 Latitude 39.6646

Weather condition _____ Sampler Yifan Zhu

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	x2		x4		
				Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number		
96	17:04	1	118	C96-N1	C96-N1	XXXXXXXXXX		
		2						
		3	100	C96-N3	C96-N3			
	5	80	↓	↓				
	7	60						
	8	40						
	10	30						
	14	25						
	16	20						
	18	10						
	23	0	C96-N23	C96-N23				
			12	30	XXXXXXXXXX		XXXXXXXXXX	C96-N12 (1-4)
			16	10	XXXXXXXXXX		XXXXXXXXXX	C96-N16 (1-4)
			21	0	XXXXXXXXXX		XXXXXXXXXX	C96-N21 (1-4)

Note
 DON ← Corday's

Sampling logs on Cruise SPIROPA

Station A8 Date 07/6/2019 Water depth 120
 Longitude 40.2882 Latitude -70.8310
 Weather condition _____ Sampler YIFAN ZHANG

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	X2		DON sampling bottle number			
				Ammonium sampling bottle number	Cyanate sampling bottle number				
97	18:00	1	110	C97-N1	C97-N1	X			
		2	100	C97-N2	C97-N2				
		3	80	↓	↓				
		5	60						
		8	40						
		10	25						
		14	20						
		16	10						
		18	0	C97-N18	C97-N18				
				21	0		X	X	C97-N21 (124)
				9	40				C97-N9 (124)
		15	20	C97-N15 (124)					

Note

DON ← Cordery's

Sampling logs on Cruise SPIROPA

Station A6 Date 07142018 Water depth 86

Longitude -70.83042 Latitude ~~40.4014~~ 40.4007

Weather condition _____ Sampler YIFAIV

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	x2	x2	x4
				Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
99	20:14	1	78	C99-N1	C99-N1	_____
		3	60	C99-N3	C99-N3	
		6	40	↓	↓	
		8	34			
		12	30			
		14	19			
		18	10			
		19	0			
		10	35	_____	_____	
16	19	_____	_____	C99-N16 (1~4)		
22	0	_____	_____	C99-N22 (1~4)		

Note DON ← Corolay's

Sampling logs on Cruise SPIROPA

Station SLP Date 0715 2019 Water depth _____
 Longitude -70.0015 Latitude 39.1240
 Weather condition _____ Sampler YIFAN ZH

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
100	21:04	1	300	C100-N1	C100-N1	X
		2				
		3	200	C100-N3	C100-N3	
		4				
		5				
		6	100	C100-N6	C100-N6	
		7	77	C100-N7	↓	
		8	51	C100-N8		
		10	47	C100-N10		
		14	33	↓		
		18	21			
		19	15			
		20	8			
		21	0			
		16	33			↓
		13	33	C100-N13 C100-N13		

Note

Sampling logs on Cruise SPIROPA

Station A13 Date 07152019 Water depth 478
 Longitude -70.8304 Latitude 39.9449
 Weather condition _____ Sampler YIFAN Zhu

CTD cast	Sampling time	Niskin bottle number	Depth (m)	X2	X2	X4
				Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
101	21:04	1	300	C101-N1	C101-N1	X
		2	250			
		3	200	C101-N3	C101-N3	
		4	150			
		5	120			
		6	100	C101-N6	C101-N6	
		7	80			
		9	55			
		12	45			
		16	28			
		18	20			
		20	10			
		24	0	C101-N24	C101-N24	
		22	0	X	X	C101-N22 (124)
		15	28	X	X	C101-N15 (124)
		8	45	X	X	C101-N8 (124)

Note

DON ← Cordell's

Transsect 44-49, Cast 103-122, PP69-83

Sampling logs on Cruise SPIROPA

Station A18 Date 07/16/2019 Water depth 2277

Longitude -70.8303 Latitude 39.6199

Weather condition _____ Sampler YIPAN ZHU

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	X2		X4			
				Ammonium sampling bottle number	Cyanate sampling bottle number	Ammonium sampling bottle number	DON sampling bottle number		
103	01:24	1	300	C103-N1	C103-M1	X			
		3	200	C103-N3	C103-M3				
		5							
		6	100						
		7	80						
		10	52						
		12	40						
		16	30						
		18	20						
		20	10						
		24	0		C103-N24		C103-M24		
				21	0		X	X	C103-N21 (1-4)
				13	40		X	X	C103-M3 (1-4)
		11	52	X	X	C103-M11 (1-4)			

Note

Sampling logs on Cruise SPIROPA

Station A17 Date 07/16/2019 Water depth 2186
 Longitude -70.8304 Latitude 39.6851
 Weather condition _____ Sampler YIFAN ZHU

CTD cast	Sampling time	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
104	02:35	1	300	C104-N ₁	C104-N ₁	X
		3	200	C104-N ₃	C104-N ₃	
		7	100			
		8	80			
		10	53			
		12	40			
		14	30			
		16	20		C104-N ₁₆	
		18	10		X	
		24	0	C104-N ₂₄	X	

Note

Sampling logs on Cruise SPIROPA

Station A16 Date 07/16/2019 Water depth 1829 m
 Longitude -70.8301 Latitude 39.7497
 Weather condition _____ Sampler YIFAN ZH

CTD cast	Sampling time	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
105	00:00	1	300	C105-N1	C105-N1	X
		3	200	C105-N3	C105-N3	
		6	100			
		78	80			
		10	51			
		12	40			
		14	30			
		16	20			
		18	10			
		24	0	C105-N24	C105-N24	

Note

Sampling logs on Cruise SPIROPA

Station A15 Date 07/16/2019 Water depth 1120
 Longitude -70.8300 Latitude 39.8151
 Weather condition _____ Sampler YIFAN ZHANG

$\times 2$

$\times 2$

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number				
106	05:15	1	300	C106-N1	C106-N1	 				
		3	200			X				
		6	100							
		8	80							
		10	60							
		12	49							
		14	40							
		16	30							
		18	20							
		20	10							
		23	0							
								C106-N23	C106-N23	

Note

Sampling logs on Cruise SPIROPA

Station A14 Date 07/16/2019 Water depth 715
 Longitude -70.8312 Latitude 39.8799
 Weather condition _____ Sampler YIFAN ZHANG

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	X2	X2	DON sampling bottle number
				Ammonium sampling bottle number	Cyanate sampling bottle number	
<u>107</u>	<u>06:31</u>	<u>1</u>	<u>300</u>	<u>C107-N1</u>	<u>C107-N1</u>	X
		<u>3</u>	<u>200</u>	<u>C107-N3</u>	<u>C107-N3</u>	
		<u>6</u>	<u>100</u>	↓	↓	
		<u>8</u>	<u>80</u>	↓	↓	
		<u>10</u>	<u>60</u>	↓	↓	
		<u>12</u>	<u>43</u>	↓	↓	
		<u>14</u>	<u>30</u>	↓	↓	
		<u>16</u>	<u>20</u>	↓	↓	
		<u>18</u>	<u>10</u>	↓	↓	
		<u>23</u>	<u>0</u>	<u>C107-N23</u>	<u>C107-N23</u>	

Note

Sampling logs on Cruise SPIROPA

Station AB Date 07162019 Water depth 471

Longitude -70.8315 Latitude 39.9456

Weather condition _____ Sampler YIFAN ZH

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
108	07:52	1	300	^{X2} C108-N1	^{X2} C108-N1	X
		3	200	C108-N3	C108-N3	
		6	100	↓	↓	
		7	80	↓	↓	
		9	68 60	↓	↓	
		10	48 40	↓	↓	
		12	40	↓	↓	
		14	30	↓	↓	
		17	20	↓	↓	
		19	10	↓	↓	
		23	0	C108-N23	C108-N23	

Note

Sampling logs on Cruise SPIROPA

Station A12 Date 07/16/2019 Water depth 272
 Longitude -70.8323 Latitude 40.0102
 Weather condition _____ Sampler _____

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
109	9:06	1	263	X2 C109-N1	X2 C109-N1	X
		3	200			
		6	100			
		8	80			
		10	60			
		12	40			
		14	30			
		16	20			
		18	10			
		23	0	C109-N2	C109-N2	

Note

Sampling logs on Cruise SPIROPA

Station A11 Date 07/16/2019 Water depth 150
 Longitude -70.8317 Latitude 40.0758
 Weather condition _____ Sampler YIP/BR Zhr

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	X2	X2	X4
				Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
110	10:22	1	140			
		3	100	C110-N3	C110-N3	
		4	80			
		5	60	C110-N5	C110-N5	
		6	47	C110-N6	C110-N6	
		7	40			
		9	31			
		13	20	↓		
		17	13	C110-N17	C110-N17	
		18	9			
		19	5			
		✓ 23	0	C110-N23	C110-N23	
		10	31	X	X	C110-N10 (124)
		14	20	X	X	C110-N14 (124)
		22	0	X	X	C110-N22 (124)

Note

Sampling logs on Cruise SPIROPA

Station A10 Date 07/16/2019 Water depth 137
 Longitude -70.8304 Latitude 42.1396
 Weather condition Sunny Sampler YIFAN Zhu

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number
111	11:29	1	127	C111-N1	C111-N1	
		3	100	↓	↓	
		5	80			
		7	60			
		9	40			
		11	30			
		14	20			
		16	10	↓	↓	
		18	0	C111-N18	C111-N18	

Note

interfacial wave !!

Sampling logs on Cruise SPIROPA

Station A9 Date 07/16/2019 Water depth 126
 Longitude -70.18304 Latitude 40.2054
 Weather condition _____ Sampler YIPAN Zhu

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number	
112	12:14	1	119	C112-N1	C112-N1	X	
		2	100	↓	C112-N2		
		4	80				
		6	60				
		8	41				
		10	27				
		13	17				
		15	12				
		17	6				
		19	0		C112-N19		C112-N19

Note
 Strong internal wave here, it may affect the profiles.
 vertical displacement of chlmax from 26m to 34m,
 from downcast to upcast.

Sampling logs on Cruise SPIROPA

Station A9 Date 07/16/2019 Water depth 126
 Longitude -70.8300 Latitude 40.2040
 Weather condition _____ Sampler YIFAN ZH

X2

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number				
113	13:45	1	119	C113-M1	X	X				
		2	100	C113-M2						
		4	88	↓						
		6	64							
		8	43							
		10	28							
		14	18							
		16	13							
		18	6							
		23	0							
		13	22				C113-M13			

Note

this is another cast of A9. the comparison between this and the last cast can shed light on the influence of internal waves on water column properties.

Sampling logs on Cruise SPIROPA

Station 145 Date 07162019 Water depth 82

Longitude -70.8292 Latitude 40.4648

Weather condition _____ Sampler N. F. Alvarez

CTD cast	Sampling time (UTC)	Niskin bottle number	Depth (m)	X2		DON sampling bottle number
				Ammonium sampling bottle number	Cyanate sampling bottle number	
119	01:32	1	72	C119-M1	C119-M1	X
		4	60	}	}	
		6	50			
		8	40			
		10	26			
		14	20			
		16	10	↓	↓	
		18	0	C119-M18	C119-M18	

Note a lot diatoms at this station.

Sampling logs on Cruise SPIROPA

Station A6 Date 07/17/2019 Water depth 86
 Longitude -70.8282 Latitude 40.4001
 Weather condition _____ Sampler YIFAN ZHU

CTD cast	Sampling time	Niskin bottle number	Depth (m)	X2	X2	X4	
				Ammonium sampling bottle number	Cyanate sampling bottle number	DON sampling bottle number	
120	02:34	1	80	C120-N1	C120-N1	X	
		2 3	60	C120-N3	C120-N3		
		6	40	↓	↓		
		8	28				
		10	20				
		14	10				
		16	0 FE	C120-N16	C120-N16		
		18	0	X	X		C120-N18 (1~4)
		12 9	20	X	X		C120-N12 (1~4)
		9	28	X	X		C120-N9 (1~4)

Note
