

## TMC CTD LOG RR 1813

Aug 10 – Sept 12, 2018

Shart   Act   Ac		DAY	d	1			Many													
EXPENSITE						nski	ChI_a			×	×	×	×	×	×	×	×	×	×	
EXPENSITE		НОСН	$\forall$		ERATOR	125221	15N/13C uptake POC			×	×	×	×	×	×	×	×	×	×	
Start		Ë			Q	8	spiration								×				×	(C)
Start			± ¢	9	# 5		615NO <sub>3</sub> re			×		×		×		×		×		ixation
Start		###	CTD cas	3	Record	M	[NH <sub>4</sub> <sup>+</sup> ]			×		×		×		X	4	×		bon f
Start					ation ID		Vitrification rate					And the Control of th		×			And the second s	×		i) or carl
Start 20/8   1/6   14   00   20/8    End		vent	400	50	CESS SI	9	[Fe]			×		×		×		×		×	A A	ke (S
Start 20/8   1/6   14   00   20/8    End		12R e	و	02	PRO	1	Bio			×		×		×		×		X		upta
Start   301S   OS   16   14   DO   End   Start   301S   OS   16   14   DO   End   Start   301S   OS   16   14   DO   End   Start   SO   14   Depth   End   Start   SO   14   Depth   End   Start   SO   14   SO   So   So   So   So   So   So   So	U		1808				RNA /DNA			×		×		×		×		×		er Si u
Start AOIS OS IIO  Start AOIS OS IIO  LAT DD MM.MMM LON  12  13  14  15  16  17  18  18  18  19  10  10  10  10  10  10  10  10  10	1		CIL	Z.	1MM		Fe, Si limit					Si <sup>1</sup>	$C_1$			Si <sup>1</sup>	$\mathbf{G}^1$			eithe
Start AOIS OS IIO  Start AOIS OS IIO  LAT DD MM.MMM LON  12  13  14  15  16  17  18  18  18  19  10  10  10  10  10  10  10  10  10		E	0	8 -	MM.N	0870	Si uptak			×		×		×		×		×		ion
Start AOIS OS IIO  Start AOIS OS IIO  LAT DD MM.MMM LON  12  13  14  15  16  17  18  18  18  19  10  10  10  10  10  10  10  10  10		壬	7				BSi			×		×		×		×		X		and S
Star G G G G G G G G G G G G G G G G G G G		0	$\parallel$		LON	=	nut			×		×		×		×		×		of Fe
Star G G G G G G G G G G G G G G G G G G G	RTS	from Remote Sensing	3			2	Depth Target			m	3	∞	$\infty$	20	20	32	32	20	20	ffect c
Star G G G G G G G G G G G G G G G G G G G	(P	ocesses in the Ocean	8		MMM	15	%10			<b>65%</b>	<b>65%</b>	40%	40%	20%	20%	10%	10%	1%	1%	ion e
Star G G G G G G G G G G G G G G G G G G G	û	Elbon he			MM	भू	Go-Flo													limitat
Star G G G G G G G G G G G G G G G G G G G		3		p	QQ.	Q	Fired?				/		1	>	>	7/2	>		>	notes
Ph.			\$ 1	ភ	LAT		Pylon Position	12	H		1160	90	28	19	99	45	3,	2	Н	1der

8							7,							<u></u>	
		nski	Chl_a	×	×	×	×	×	×	×	×	×	×	,6,4,2	
	OPERATOR	Brzezins	<sup>15</sup> N/ <sup>13</sup> C uptake POC	×	×	×	×	×	×	×	×	×	×	-Flo 10	100
	O		resp			×	5 4		×				×	n(C)Go	100
ti C	#		615NO3	×		×		X		×		×	,	ixatio	600
TMOOT	Record #		[NH <sub>4</sub> +]	×		×		X		×		×	1	oon f	7
100.0	PROCESS Station ID	80	Nitrification [NH <sub>4</sub> +] §15NO <sub>3</sub>					×				×		<sup>1</sup> denotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2	CTD software glitch. Tripped by wire out
TWOO 3	CESS S	EPOCH 08	[Fe]	×		×		×		×		×		ke (S	ore (
CCS-	PRC	当	Bio	×		×	Section 1	×		×	^	×		upta	Sto
20180822 RR1813-TN			RNA /DNA	×		×		×		×	3	×		er Si	10 s
1 1 1	AMM	3	Fe, Si limit			Si <sup>1</sup>	$C^1$	8		Si <sup>1</sup>	Ci <sub>1</sub>			eith	P
8	MM.MMM	सिछि	Si uptak e	×		×		×		×		×		i on	
CH.			BSi	×		×	,	×		×		×		and S	
	LON DD	-146	nut	×		×		×		×		×		f Fe	cheth
73			Depth Target	ন	3	(W)	$\infty$	06	20	33	33	4	P	ffect o	13C Le Marcheth
	MMM	82	ol%	<b>65%</b>	<b>%</b> 29	40%	40%	20%	20%	10%	10%	1%	1%	ion e	150 + 999 250-50
80 8	MM.MMM	.3885	Go-Flo			7	7	· V	. 7		. 1	. 1	, 1	limitat	1000
Start 2018 End	LAT DD	C	Fired?	>	>	>/>	>	>	>	//	>	/	>	notes	540
Star! End	LAT	Start 50 End	Pylon Position	12	11	9/10	8	7	9	4/5	3	2	1	<sup>1</sup> deı	0 130 USED FOR NOR + 15/1 13/13/13/13/13/13/13/13/13/13/13/13/13/1

EXPERITS
EXOUT PROCESSES IN the Ocean from Remote Sensing

TMOOG aborted due to comm emos

	DAY	OX	0															1
	_ [				insk.	Chl_a		X					X			S)		
	ЕРОСН	~	{	OPERATOR	Brzezinisk	<sup>15</sup> N/ <sup>13</sup> C uptake POC												
	ш			0		resp												0101
	#	ast	90	rd#		] 815NO <sub>3</sub>												
	###	CTD cast	141008	Record #	8	NHV.				, /2								
				PROCESS Station ID	EPOCH! OS	[Fe] Nitrification [NH <sub>4</sub> +] &15NO <sub>3</sub>		A 1								de		
	ent	5/2	200	CESS S	SCEN	[Fe]		77.										100
	R2R event	Ċ	3	PRO	44	Bio Fe		ad :	1,0									
	8	2018/0822, 1915.00	1813.			RNA /DNA	·	×	×	×	×	X	×	×	×	×	×	;
		8	5	MMI	a					¥/1								-
1	E	2		MM.MMM	13503	Si Fe, Si uptak limit		×		j. Par		*						
	I	ō			\sqrt{2}	BSi		×		Ho.		2.5	×			340		-
,	0	d		TON DD	7	į		×		2°			7					1
EXPONENTS Boort Processes in the Grean Form Remails Sensing		22				Depth Target		Ø	8	W	\%	W	33	33	32	33	3	,
	N N N N N N N N N N N N N N N N N N N	C		MMM	38409	%lo		40	40	40	40	40	10	10	10	10	10	
X H	<b>X</b>	OR		MM.MMM	38	Go-Flo												
1	X	d		DD	0	Fired?		1	/	1	>	>	/	1	>	>	>	
		Start	End	LAT DD	Start 50	Pylon Position		12	11	9/10	∞	2	9	4/5	3	2	Н	1

<sup>1</sup>denotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2

}	DAY	1															
	<b>]</b>			Brzezinda	chl_a												
	ЕРОСН	ત	OPERATOR	Brzez	<sup>15</sup> N/ <sup>13</sup> C uptake POC					2 77							
•	ш_		0		resp												
		o d	# •		615NO <sub>3</sub>												
	###	Tmojoiq	Record #	10	[NH <sub>4</sub> <sup>†</sup>				<u> </u>							ま	
		00)	PROCESS Station ID	EPOCHADI 35	[Fe] Nitrification [NH <sub>4</sub> <sup>+</sup> ] &15NO <sub>3</sub>										a Risa flea fine button	S MAN	
,	vent	AUROSAS. 1303 RRR13_TMO09	CESS S	BCH.	[Fe]					8 3					2	10	
	R2R event	35	PRO	H											200	8	
	9	83			RNA /DNA										163	3	
		S S	MΜ	36	Fe, Si limit										Cr	N. S.	
	E	3	MM.MMM	963901.	Si Fe, Si uptak limit e										arm button	green fire	
	王	07	LON DD	-145	BSi										Orn	3	
	۵.	60	Ō	7	nut	-											
EXPORTED SENSING DEPORT SENSING	2	23			Depth Target		20	S	80	98	HO	145/	195	240	330	500 4	
Cesses in the Ocea	Ξ	66	MM.MMM	33	%lo				,					×			
Export Proc	<u> </u>	80 8	MM	CFFIH.	Go-Flo												
7	_	Start 2018 End	LAT DD	0	Fired?		>	>	1	>	>	>.	1	>	>	>	
		У Б	LAI	Start 50	Pylon Position		12	11	9/10	8	7	9	4/5	<b>M</b>	7	<b>H</b>	

Pete Morton trace modals 85232 comms failure at bottom of cast

														- Allendary	
DAY	6														
			Brzezinski	chl_a		×	×	×	×	×	×	×	×	×	×
ЕРОСН	6	OPERATOR	35202	<sup>15</sup> N/ <sup>13</sup> C uptake POC	٠	×	×	×	×	×	×	×	×	×	×
ш		ō		resp				×	į	4	×				×
	# <b>(</b> )	# 5		615NO <sub>3</sub>		×		×		×		×		×	
#	CTD cast	Record #	6	[NH <sub>4</sub> +]		×	,	×		×		×		×	
	<u>8</u>	PROCESS Station ID	EPOCH 202	Nitrification [NH <sub>4</sub> +] §15NO <sub>3</sub> rate						×	d			×	94
vent	1152 (MO10	CESS S	ROCH	[Fe]	70	×	1	×		×		×		×	
R2R event	H. 1	PRO	اللا	Bio		×		×		×		×		×	
	1813			RNA /DNA		×		×		×	, , , , , , , , , , , , , , , , , , ,	×		×	
	288	MM	d	Fe, Si limit				Si	$C^1$			Si <sup>1</sup>	Ci <sup>1</sup>		
mm	23	MM.MMM	111333	Si uptak e		×		×		×		×		×	
I	<del>ر</del> ه	LON DD	. 541	BSi		×		×		×		×		×	
۵		P	7	nut		×		×		×		×		×	
EXport Processes in the Ocean from Remote Sensing	75			Depth Target		િ	<u>ര</u>	œ	60	9	9	6	32	30	P
cesses in the Ocean	Ø	MM.MMM	B	%10		%59	<b>65%</b>	40%	40%	20%	20%	10%	10%	1%	1%
Export Pr	80	Σ	41300	Go-Flo											
à À	Start 2019. End	00	0	Fired?		>	>.	>/>	7	>	>	/>	>	^	>
	Stari	LAT DD	tart 50	Pylon Position		12	11	9/10	∞	1	9	4/5	3	2	1

denotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2
RSA3A excor at 50m on way UR. 85232 cros at 50m on way up. Manual fire 32, 20,8,3 m

overAlow er or lishs on constantly

DAY	7													
			insk	Chl_a	×	×	×	×	×	×	×	×	×	×
EPOCH	7	OPERATOR	Brzezinsky	<sup>15</sup> N/ <sup>13</sup> C uptake POC	×	×	×	×	×	×	×	×	×	×
ш_		0		resp			×			×		2	×	×
5		# P	_	815NO <sub>3</sub>	×		×		×		×		×	7 2
### CTD cast	110W1	Record #	8	[NH <sub>4</sub> <sup>+</sup> ]	×		×		×		×		×	
	3	PROCESS Station ID	h0	Nitrification [NH <sub>4</sub> +] 615NO <sub>3</sub> rate					×			5.	×	
R2R event	20	CESS S	EPOCHA OY	[Fe]	×		×		×		×		×	
R2R event	Two	PRC	日	Bio	×		×		×		×		×	
	RR1813			RNA /DNA	×		×		×		×		×	
	88	MMM	783	Fe, Si limit			Si <sub>1</sub>	C			Si <sup>1</sup>	Ci <sub>1</sub>		
E Z	0	MM.MMM	636483	Si Fe, Si uptak limit	×		×		×		×		×	
王	6	DD		BSi	×		×		×		×		×	
	0	TON DD	사-	nut	×		×		×		×		×	
Export Processes in the Ocean from Remoîte Sensing	6			Depth Target	(1)	3	6	σ	30	20	33	33	40	50
ocesses in the Ocean fro	0	MM.MMM	.535655	ol%	<b>65%</b>	<b>65%</b>	40%	40%	20%	20%	10%	10%	1%	1%
		Μ̈́	.53	Go-Flo										
-00	End End	LAT DD	0	Fired?	>	>-	1/2	>	>	Ś	2/2	>	>	>
ż	Stan	LAT	Start 50 End	Pylon Position	12	11	9/10	<sub>∞</sub>	7	9	4/5	3	2	1

Idenotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2

Marchelli, Gn. S.

Rod'Aled TML.

Romer TML

	DAY	10						.0.	4.0	3		1	7			17	
	Δ	47	]	13ki	Chl.a								76-22				
)	ЕРОСН	d	OPERATOR	Brzezinski	<sup>15</sup> N/ <sup>13</sup> C uptake POC						j de la companya de l						
	Ш		] 0		resp	 at the same	e productive de la constante d		2.0			÷,	7 2 7 7				
		ts —	#		615NO <sub>3</sub>										***		ciPied
	###	CTD cast	Record #	5	[NH4 <sup>†</sup> ]				147		4.						uspe
			PROCESS Station ID	8	[Fe] Nitrification [NH4+] 615NO <sub>3</sub>	1						, , , ,					Adrian's Fe addition experiment, parameters unspecified
	vent	30180837, 1058,00 RAIRIA TIMIH	CESS S	FPOCHA OS	[Fe]												ncom
	R2R event	4	PRC	出	Bio Br						T						od '
		10180837, 105'RRIGIA TIMENTA			RNA /DNA				*	5.45 1.45 1.55 1.55 1.55 1.55 1.55 1.55				•	14 1		( Sa)
		90 gg	MMM	60	Fe, Si limit	<i>x</i>											<b>EKIN</b>
1 2 2 2 2 3	E E	S S	MW WW	993589	Si uptak e		5								<i>*</i>		8
	Ŧ	9	NO NO		BSi								٠,٠				HOW
	0		C	丰	nd		Sp.E		.eg								1/00
EXP®RTS	from Remote Sensing	Ex			Depth Target		2	瓦	5	2	5	15	15	15	15	15	Fe O
(P®	cesses in the Ocean	80		567331	%lo												34.5
亩	Export Pro		N	10	Go-Flo												drive
A	X	IT 2018	ا و	30	Fired?		>	>	1	>	>	> -	2	2	>	>	0
	2/1	Start	OU TAI	start 30	Pylon Position		12	11	9/10	8	1	9	4/5	3	2	-	

	DAY	10	2											,			us.		1
	_ [				9	Chl_a						<i>j</i>				* D. A.			
	ЕРОСН	1	1	OPERATOR	SANTORD	<sup>15</sup> N/ <sup>13</sup> C uptake POC		ř	- 4		- ju								-
	_			U	V	resp						V							0101
		)	0	#		15NO3													
	###	CTD cast		Record #	ж.	[NH <sub>4</sub> <sup>+</sup> ]8													١
		20/80838,0010,001 cm cast		PROCESS Station ID	5	[Fe] Nitrification [NH4 <sup>+</sup> ] &15NO <sub>3</sub>													
	R2R event	,OO	J/02	CESS S	EBOCH TOH	[Fe]				100									0,
	12R e	808	7	PRO	出	Bio		i i			1								
T.	<b>L</b>	1804	1813			RNA /DNA							*						;
				MM.MMM	ભુ	Fe, Si limit							)				ż		=
	mm	1	$\bar{\rho}$	M M J	. જવેત્રકાઝ	Si uptak e													
	I	00	$\bar{o}$	TON DD	7	BSi													-
	<b>Q</b>	w	2	P	14-	nut	æ	9											1
EXPORTS		78	4			Depth Target			0	K	80	95	0 :	145	195	240	330	500	
XP 🕙		90	00	MMM.MMM	47683	01%				1 23 X		j							
	W		_	M M	14.	Go-Flo			9	5	80	4	9	S	H	8	7	<u>-</u>	:
	3	8102 Ju	9 9 P	DD		Fired?			/	1	11x	/	/	,	2×1	\	>	\	
,	47	Start	End	LAT DD	Start 50 End	Pylon Position			12	11	9/10	8	7	9	4/5	3	2	Į	-

<sup>1</sup>denotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2

DAY	و					Т										
			nski	Chl_a		×	×	×	×	×	×	×	×	×	×	
EPOCH	4	OPERATOR	Brzezinski	<sup>15</sup> N/ <sup>13</sup> C uptake POC		×	×	×	×	×	×	×	×	×	×	•
ш		0		resp		×	×		×						×	
	# 0	#		615NO <sub>3</sub>		×	*.	×		×		×		×		
#	CTD cast	Record #	20	[NH <sub>4</sub> <sup>+</sup> ]		×		X		X	Physical Property of	×		×		
	18,	PROCESS Station ID	EPOCH 2 D6	Nitrification [NH <sub>4</sub> +] §15NO <sub>3</sub>				×			The second	×		×		
event	367	CESS S	BOCH?	[Fe]		×	5.	×		×		×		×		
28 P	-	PRC	FI	Bio		×		×		×		×		×		
	80838			RNA /DNA		×		×		×	•	×		×		
	RRI	JMM	900	Fe, Si limit		Si <sup>1</sup>	$C^1$			Si <sup>1</sup>	Ci <sub>1</sub>		×			•
E	23	MM.MMM	୬୦୯୩ ନଃ	Si uptak e		×		×		×		×	,	×		
	90	4	4	BSi		×		×		×	×	×		×		
		LON DD	74.	nut		×		×		×				×		L
RTS from Remote Sensing				Depth Target		4	(	8)	18	28	38	50	50	89	6%	. ,,
EXPORTS  Blood Pocesses in the Ocean from Remails Sensing	p	MM.MMM	भन् ७३मह	%lo		40%	40%	20%	20%	10%	10%	2%	2%	1%	1%	
Expoort by	9	Σ Σ	4	Go-Flo		10	6	8	7	9	5	4	3	7	-	
	1 3018	90		Fired?	4	>	1	1	>	<i>&gt;</i>	>,	1	>	>	>	••••••
	Start End	LAT DD	Start 50 End	Pylon Position		12	11	9/10	8	7	9	4/5	3	7	Н	1.

<sup>1</sup>denotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2

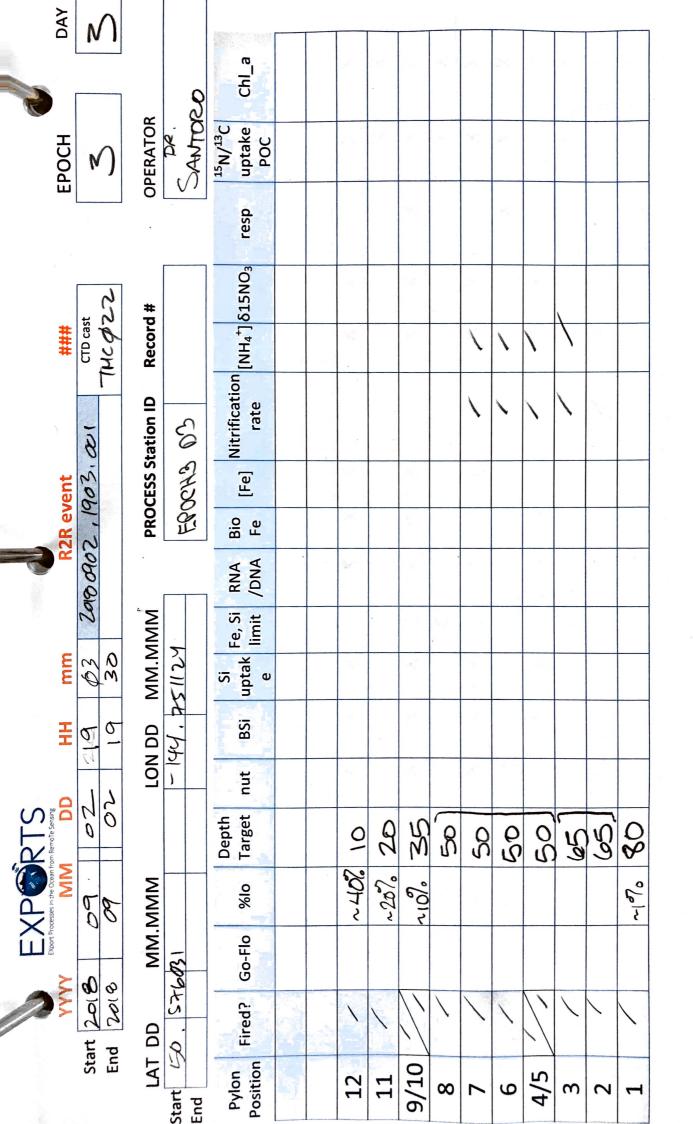
DAY	$\infty$			المراجعة والمراجعة													1
			zinski	Chl_a			×	×	×	×	×	×	×	×	×	×	
ЕРОСН	d	OPERATOR	Brzezinsk	<sup>15</sup> N/ <sup>13</sup> C uptake POC			×	×	×	×	×	×	×	×	×	×	ī
ш		0		resp					×	X		×				×	()()
	#5 <b>~</b> 0	#		615NO <sub>3</sub>			×		×		×		×		×		
##	TMONS.	Record #	0	[NH <sub>4</sub> <sup>†</sup> ]			×		×		×		×		×		_
	18,	PROCESS Station ID	88	Nitrification [NH4 <sup>+</sup> ] 615NO <sub>3</sub> rate							×		***		×		
vent	80830, 1300 812, TMO18	CESS S	EPOCHA	[Fe]			×		×		×	-	×		×		-
R2R event	300	PRO	الگا	Bio			×	1	×		×		×		×		•
	201808 RR1812			RNA /DNA			×		×		×		×		×		;
	2018 RR16	MMM	989	Fe, Si limit					×	×			❈	¥			
,	8	MM.MMM	.48089	Si uptak e	e e		×		×		×		×		×		
王	94	TON DD	3	BSi			×		×		×		×		×		
Δ		O	-144	nut		×	×		×		×		×		×		,
RTS from Remoite Sensing	30			Depth Target			4	13	18	18	38	28	20	8	89	89	0.0
EXPORTES EXPORTED TO THE PROPERTY OF THE PROPE	03	MM.MMM	.483563	0 %			40%	40%	20%	20%	10%	10%	2%	2%	1%	1%	
Event Pr		M M	<u>4.</u>	Go-Flo												(0)	
A PARTIES AND A	1 X X IS	DD		Fired?			>	>.	1	>	>	٧/	>>	>	<b>^</b>	>	
	Start End	LAT	Start 50 End	Pylon Position			12	11	9/10	8	7	9	4/5	n	2	1	-

MORLO LEDWIDE & Topicalette

DAY	6														
			inski	Chl_a		×	×	×	×	×	×	×	×	×	×
EPOCH	$\sim$	OPERATOR	Brzezinski	<sup>15</sup> N/ <sup>13</sup> C uptake POC		×	×	×	×	×	×	×	×	×	×
		0	-	resp				×			×				×
	# Q	# 0		815NO <sub>3</sub>		×		×		×		×		×	
###	TMO30	Record #	<b>W</b>	[NH <sub>4</sub> <sup>†</sup> ]		×		×		×		×		×	
	8	PROCESS Station ID	200	Nitrification [NH <sub>4</sub> +] <b>515NO<sub>3</sub></b> rate						×				×	
ent	030	CESS SI	EPOCHS 02	[Fe]		×		×		×		×		×	
32R event	1.10 1.10	PRO	田	Bio	-	×		×		×		×		×	
	20180901, 1259 RR1813-TMQ30			RNA /DNA		×		×		×		×		×	
	88	MM	67	Fe, Si limit				Si <sup>1</sup>	$C_1$			Si <sup>1</sup>	Ci <sub>1</sub>		
E	5	MM.MMM	611848	Si uptak e		×		×		×		×		×	
壬	8	TON DD		BSi		×		×		×		×		×	
		LON	-14	nut		×		×		×		×		×	
Non RemoTe Sensing	0			<b>Depth</b> <b>Target</b>		Q	σ	2	0%	स्	ऋ	20	50	63	60)
Export Processes in the Ocean from Remails Sensing	00	MM.MMM	,582789	ol%		40%	40%	20%	20%	10%	10%	2%	2%	1%	1%
Export Pr	7	Μ	,58	Go-Flo											
DE	\$100° 11° 15°	DD		Fired?				1	>	<u> </u>	>	5	>	>	>
	Start End	LAT DD	Start 50 End	Pylon Position		12	11	9/10	<sub>∞</sub>	7	9	4/5	3	2	1

denotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2

Go Fle position 4+9 empty



	DAY	7		Š		T	1.9									1
				inski	Chl_a	×	×	×	×	×	×	×	×	×	×	,6,4,2
	ЕРОСН	3	OPERATOR	Brzezinski	<sup>15</sup> N/ <sup>13</sup> C uptake POC	×	×	×	×	×	×	×	×	×	×	-Flo 10
			0		resp			×			×				×	n(C)Go
		# <b>(2</b> )	# 0		815NO <sub>3</sub>	×		×		×		×	Control of the Contro	<del>×</del>		ixatio
	###	TMO33	Record #	0	[NH <sub>4</sub> †]	×	_	×		×	ge reproduced	×	Kajiffininga	×		oon f
		100	PROCESS Station ID		Nitrification [NH <sub>4</sub> *] &15NO <sub>3</sub>					×		4		×		her Si uptake (Si) or carbon fixation(C)Go-Flo 10,6,4,2
	vent	SC	CESS S	EROCH3 OH	[Fe]	×		×		×		×		×		ke (5
	R2R event	03	PRO	出	Bio Fe	×		×		×		×		×		upta
-8		0180903,12			RNA /DNA	×	27 7 2	×		×		×		×		er Si
		2	MMM	9	Fe, Si limit			Si <sup>1</sup>	$C^1$			Si <sup>1</sup>	Ci <sub>1</sub>			eithe
	E	5	MM.MMM	128161	Si uptak e	×		×		×		×		×		ion
	I	10	LON DD	177	BSi	×		×		×		×		×		and S
	0		Ö	7	nut	×		×		×		×		×		of Fe
EXP®RTS	A from Kemole Sensing	03			Depth Target	n	O	σ	σ	5	5	G	33	(B)	G	ffect o
	N	60	MMM	(C) HX	%lo	<b>65%</b>	<b>65%</b>	40%	40%	20%	20%	10%	10%	1%	1%	ion e
Ш	Export Proc		MM.MMM	. ५५० ३५/६३	Go-Flo			•	7					•		limitat
	X	Start 20/8 End	LAT DD		Fired?			3/3	>	1	>	1	^	/	>	<sup>1</sup> denotes limitation effect of Fe and Si on eit
		Stard End	LAT	Start 50 End	Pylon Position	12	11	9/10	8	7	9	4/5	3	2	H	¹de

DAY	-+				T		I		<u> </u>						
			ngk.	Chl_a	.7%.	56 <sup>4</sup> **		- 14							
EPOCH	3	OPERATOR	Brzezinsk.	15N/13C uptake POC											
		0		espiration						-					(C)
**	# C	<b>#</b>		615NO3r	SSV										fixatio
##	CTD cast	Record #	R	INH4 <sup>+</sup>	James 05V	,	A				1				фен
	100.	PROCESS Station ID	8	[Fe] Nitrification [NH <sub>4</sub> +] 615NO <sub>3</sub> respiration uptake rate POC	1										denotes limitation effect of Fe and Si on either Si uptake (Si) or carbon fixation(C)
/ent	SAS SEE	CESS S1	EROCHS OF	[Fe]	CONS										ke (S
R2R ev	RZR event 80906, 1344 813, TMO35	PRO	ES	Bio	Jason				. W.						upta
-	1809			RNA /DNA	1								·		er Si
	08%	AMM	10	Fe, Si limit	0										eith
a m	14	MM.MMM	19143I	Si uptak e	04		i.				10				Hori
Ŧ	61	۵	产	BSi	O								• 1,5		and §
		ľ	-	nut	24.				g** grs						of Fe
EXPERITS  BOOT Processes in the Ocean from Remail is Sensing	90			Depth Target	8	Ø	p	Ø	S	55	58	55	28	55	effect (
The Occasion in the Occasion i	60	MM.MMM	.469328	%lo								72 - 7			ion e
		M M Z	.469 1	Go-Flo											limital
A. A	1 20/8 d	00		Fired?						>	1	>	>	>	notes
	Start End	LAT DD	Start 50 End	Pylon Position	12	11	9/10	∞	7	9	4/5	3	2	Н	1 de

Dav Span		nški	Chl_a		×	×	×	×	×	×	×	×	×	×
ЕРОСН 3	OPERATOR	Brzezinski	<sup>15</sup> N/ <sup>13</sup> C uptake POC		×	×	×	×	×	×	×	×	×	×
	O		resp				×	; ;		×				×
# O	# 7		615NO <sub>3</sub>	-	×		×		×	piero (SCO Photos (A)	×		<del>~</del> /	-
### CTD cast	Record #	70	[NH <sub>4</sub> <sup>+</sup> ]	-	×		×	,	×		×		×	_
100,	PROCESS Station ID	EPOCH 3 08	Nitrification [NH <sub>4</sub> +] §15NO <sub>3</sub>						×	,			×	
RZR event OA, RS6	TMORE PROCESS S	POCH	[Fe]		×		×		×		×		×	
17. P. J.	PR	III	Bio		×		×		×		×		×	
R2R event 20180907,1256 RR1813_TM036			RNA /DNA	á	×		×		×		×		×	j
22	MM MM	10	Fe, Si limit				Si <sub>1</sub>	$C^1$			Si <sup>1</sup>	$\operatorname{Ci}^1$		
mm 86	MM.MMM	.69103S	Si uptak e	7	×		×		×		×		×	1
Ħ (8	LON DD		BSi		×		×		×		×		×	
	LON	11-	nut		×		×		×		×		×	
EXPERIFE Export Processes in the Ocean from Remote Sensing MIM DISPLANCE OF SENSING SE			Depth Target		0	0	90	90	31	18	T	43	63	G
XP Senter It Processes in the Ocean from MM	MM.MMM	432,289	01%		40%	40%	20%	20%	10%	10%	2%	2%	1%	1%
	M M M	. H35	Go-Flo					•		•		•		-
1 2018	00		Fired?				3	\ \ \	7	^	13	>	>	>
Start	LAT DD	Start 50 End	Pylon Position		12	11	9/10	8	7	9	4/5	3	2	- T

dellotes illilitation effect of realing of on either of aprake (of) of calbon livation (c) do-rio 10,0,4,2

EPOCH DAY	7	OPERATOR	Brzezinski														
vent ###	1119,001 CTD cast	PROCESS Station ID Record #	10	Meatrans Genome			/ x	×	×	X	×	×					
R2R event	20180816, 1119,001 RR1813_Tm002	PROCES	TWI	Cphyto/ IFCB FCM/ IFCB								in X	×	×	×	×	
STC mm	30	MM.MMM	,0840 ,	HPLC POC I		2	-					in in	×	×	×	×	ite water
. —	₹( •(	TON DD	5, 241-	Depth Target NPP H			3	3	3	3 /x/	3 (/,	3 (🕱	)×	20 *	32 × 1	70 (2) × (2	*in = inline sample due to inadequate water
	)		· .	% %	,		%59	%59	%59	<b>65%</b>	%59	%59	40%	20% 2	10% 3	1% 7	ole due to
	3/00	D MM.MMM	ं । । । १५१६	Fired? Go-Flo			21	12/2	8	t	7 6	7 5	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7	1 2	- >	line samp
	Start	LAT DD	Start 50 End	Pylon Position	12	11	12 180 P	11001	68	8 %	£9	98	4,5	3	2	1	*in = in

\*in = inline sample due to inadequate water