MALINA Leg 2b (July 30 - August 27, 2009)

CCGS Amundsen

Master log for the barge operations, put together by David Antoine from individual logs of each participants

The purpose of this master log is to match all measurements taken from the barge. It is not intended to replace detailed individual logs, which are available from each participant

Pay attention to the comments appearing in some of the cells of this sheet

Hours are given in GMT (local time during the MALINA Leg 2b was GMT - 6 hours. This lag didn't change during the entire cruise)

Lat/lon provided here were taken from the barge GPS (manually in individual log notebooks).

These lat/lon are only indicative. Exact lat/lon from a GPS recorded during the barge operations will be provided later on (Stan Hooker GPS)

Meteo information will be extracted later on from the ship meteo data

						Start		lat N				lon W				Stop		lat N				lon W				water	wat. S
Station	CTD #'s	day	Mo	year	SDY	Hour	Min	Deg	Min	1/1000	decimal	Deg	Min	1/1000	decimal	Hour	Min	Deg	Min	1/1000	decimal	Deg	Min	1/1000	decimal	z (m)	hour
"Test stations", river transect N°6																											
691	29-31	1	8	2009	213	20	21	69	23	157	69.386	137	46	642	-137.777											44	
692	29-31	1	8	2009	213	22	45	69	20	498	69.342	137	35	532	-137.592											39	
Regular stations																											
680-1	32-36	2	8	2009	214	17	15	69	35	532	69.592	138	11	490	-138.192											127	18
680-2	32-36	2	8	2009	214	19	37	69	34	236	69.571	138	11	316	-138.189											127	19
280-1	40-42	4	8	2009	216	15	00	70	52	254	70.871	130	31	575	-130.526	16	40	70	52	254	70.871	130	31	575	-130.526	42	15
260-1	44-45	4	8	2009	216	21	15	71	16	472	71.275	130	36	990	-130.617	23	45	71	15	761	71.263	130	37	498	-130.625	60	22
220-1	50-52	5	8	2009	217	17	10	72	03	531	72.059	130	54	782	-130.913	18	30	72	03	531	72.059	130	54	782	-130.913	910	17
240-1	53-54	5	8	2009	217	22	0	71	40	164	71.669	130	45	300	-130.755	23	45	71	40	526	71.675	130	46	888	-130.781	464	22
110-1	56-58	6	8	2009	218	21	20	71	40	950	71.683	126	29	976	-126.500											435	21
130	60-61	7	8	2009	219	2	7	71	25	410	71.424	127	19	926	-127.332											308	
170-1	65-67	7	8	2009	219	17	0	70	54	306	70.905	128	56	293	-128.938	18	50	70	54	562	70.909	128	56	104	-128.935	30	18
150-1	68-69	7	8	2009	219	22	25	71	9	687	71.161	128	7	385	-128.123	23	25	71	9	310	71.155	128	4	935	-128.082	67	22
380-1	71-73	8	8	2009	220	16	0	70	23	658	70.394	133	35	232	-133.587	17	15									63	16
360-1	75-76	8	8	2009	220	21	40	70	48	558	70.809	133	45	714	-133.762	23	25									74	22
360-2	75-76	8	8	2009	220	22	30	70	48	366	70.806	133	45	348	-133.756	23	15	70	48	504	70.808	133	45	657	-133.761	76	22
320-1	82-84	9	8	2009	221	17	0	71	33	817	71.564	133	57	868	-133.964	18	40	71	33	181	71.553	133	58	66	-133.968	1160	18
340-1	86-87	10	8	2009	222	1	15	71	33	882	71.565	133	57	801	-133.963	2	21	71	10	139	71.169	133	49	421	-133.824	557	1
670-1	89-91	10	8	2009	222	19	23	69	47	802	69.797	138	25	380	-138.423	20	23									174	19
660-1	92-93	11	8	2009	223	0	55	69	58	578	69.976	138	37	896	-138.632	2	0									268	1

620-1	97;99-10	11	8	2009	223	17	15	70	40	872	70.681	139	37	806	-139.630	18	39											1671	17
640	103-104	12	8	2009	224	4	3	70	20	130	70.336	139	6	906	-139.115													562	
760-1	106-108	12	8	2009	224	15	20	70	33	586	70.560	140	47	771	-140.796	17	20	70	32	737	70.546	140	48	50	-140.801	577	15
780-1	110-111	13	8	2009	225	1	17	70	9	450	70.158	140	49	674	-140.828											49	1
540-1	134-136	17	8	2009	229	17	15	70	45	600	70.760	137	52	326	-137.872	19	30									1530	18
430-1	138-140	18	8	2009	230	17	21	71	12	18	71.200	136	44	868	-136.748	18	48									1360	18
460-1	145-148	19	8	2009	231	18	10	70	40	314	70.672	135	51	942	-135.866											463	19
river transect N°6																															
691		13	8	2009	225	23	40	69	23	205	69.387	137	47	373	-137.790	0	40	69	22	831	69.381	137	46	145	-137.769	43	0
694		13	8	2009	225	18	20	69	15	001	69.250	137	11	752	-137.196	18	5	69	14	651	69.244	137	10	519	-137.175	8	17
695		13	8	2009	225	16	35	69	12	384	69.206	137	0	390	-137.007											5	16
696		13	8	2009	225	21	15	69	9	600	69.160	136	48	384	-136.806											3	21
697		13	8	2009	225	20	0	69	7	561	69.126	136	40	900	-136.682	20	45	69	7	868	69.131	136	40	890	-136.682	2	20
river transect N°3																															
394	37-38	3	8	2009	215	19	50	69	50	7	69.833	133	30	400	-133.507											12	20
395		16	8	2009	228	22	15	69	45	345	69.756	133	26	897	-133.448	22	30	69	45	93	69.752	133	26	332	-133.439	9	21
396		16	8	2009	228	20	55	69	40	765	69.679	133	27	409	-133.457											6	20
397		16	8	2009	228	19	56	69	35	799	69.597	133	26	417	-133.440											5	19
398		16	8	2009	228	18	10	69	30	851	69.514	133	25	108	-133.418	18	55									3	18
2-day stations																															
345-1	112-126	14	8	2009	226	17	30	71	19	802	71.330	132	35	888	-132.598	18	50	71	19	896	71.332	132	37	254	-132.621	476	17
345-2	112-126	15	8	2009	227	23	36	71	25	158	71.419	132	38	64	-132.634	1	0									635	0
135-1	149-163	20	8	2009	232	19	57	71	19	380	71.323	127	21	816	-127.364											228	20
135-2	149-163	21	8	2009	233	19	40	71	19	137	71.319	127	31	828	-127.530	21	0	71	20	231	71.337	127	31	143	-127.519	225	20
235-1	164-191	22	8	2009	234	19	35	71	46	275	71.771	130	54	421	-130.907	21	30	71	46	544	71.776	130	56	845	-130.947	681	20
235-2	164-191	23	8	2009	235	18	30	71	44	840	71.747	130	54	453	-130.908	20	55	71	44	988	71.750	130	55	951	-130.933	656	19

Note : when no "stop lat/lon" is given, the "start lat/lon" actually corresponds to the water sampling, which was always performed in between the IOP packages deployments (during C-OPS deploym

Field work:

IOP1 : LOV, David Doxaran's IOP package (visible AC9, near IR AC9, CDOM and Chl fluorescence, visible Eco-BB3, near IR Eco-BB3, temperature & salinity)
IOP1 + LISST : as above, plus the Scripps' LISST (Rick Reynolds)
IOP2 : NASA, Vanessa Wright (vanessa.m.wright@gmail.com) / Stan Hooker's (stanford.b.hooker@nasa.gov) IOP package (a-sphere, hydroscat-6, cosine-collector PAR, CDOM and Chl fluorescence, t
IOP3 : Scripps, Rick Reynolds' (rreynolds@ucsd.edu) IOP package (Hydroscat-6, two a-Beta)
C-OPS : NASA, Stan Hooker's profiler measuring Ed and Lu, with Es recorded at the same time above the surface
Bio-SHADE : NASA, Stan Hooker's reference, measuring the diffuse and direct parts of the incoming irradiation (Es)
CE600 : LOV, David Antoine (antoine@obs-vlfr.fr) radiance camera in floating mode (L(θ) measurements at the 0- level). The number given is the number of spectra collected at the surface
CE600 profiler : LOV, 2 radiance cameras in profiling mode (one looking up, one looking down); the number given is the number of profiles, with variable number of data acquisitions

Lab filtrations:

David Doxaran for SPM / POC (doxaran@obs-vlfr.fr)
Alexandre Mignot for HPLC pigments (mignot@obs-vlfr.fr)
Simon Bélanger (simon_belanger@uqar.qc.ca) for particulate absorption on filters
Atsushi Matsuoka for CDOM measured with the ultrapath (matsuoka@obs-vlfr.fr)
Alexandre Thirouard for VSF measurements (thirouard@obs-vlfr.fr)
Edouard Leymarie for PSICAM measurements (leymarie@obs-vlfr.fr)

: **(see list below this table)**

See notes at the bottom of the table for the meaning of these columns

amplir minu	sky and other conditions	IOP1 #casts	IOP1 refs	IOP1 +LISST #casts	IOP2 #casts	IOP2 depth	IOP2 refs	IOP3 #casts	C-OPS #casts	C-OPS refs	Bio-shade #casts	Bio-shade refs	CE600 surface #casts	CE600 profile #casts	SPM / POC vol(l)	SPM / POC refs	SPM / POC vol (l)
	Overcast	2	136-137		1	30	1-2										
		1	138														
1	Overcast	1	139						4	1-4	4	1-4			1,1,1	unavail.	2.28
37	Overcast								3	5-7	3	5-7					
42	Overcast, very dim light	2	155;158		1	35	5-6		3	11-13	1	11	4		1,1,1	601,611,613	1.09
32	Overcast at the beginning, and evolving slowly toward clear sky at the end	2	159;160		1	39	7-8		4	14-17	4	14-17	7		1,1,1	651, 622, 643	1.09
48	Overcast; fog (near the ice).	2	161;162		1	36	9-10		3	18-20	3	18-20			2,2,2	474,475,512	2.28
43	Overcast, with rain at the end of session	2	163;164		1	36	11-12		3	21-23	3	21-23	4		2,2,2	464,483,484	2.28
20	Overcast	1	166						3	24-26	3	24-26			2,2,2	478,479,503	
	Overcast								3	27-29							
2	Overcast, very dim light, turbid waters	2	168;169		1	30	13-14		3	30-32	3	30-32	5		1,1,1	523,524,525	1.09
56	Overcast, very dim light	2	171;172		1	30	15-16		3	33-35	3	33-35	5		1.5,1.5, 1.5	529,530,531	1.09
26	Overcast	2	174;175		1	37	17-18		3	36-38	3	36-38			2,2,2	514,515,521	2.28
18	Overcast (in the ice zone).				1	37	19-20		3	40-42					2,2,2	538,540,570	2.28
57	Overcast, very dim light, very clear waters, close to ice	2	176;177		1	20	21-22		4	39, 43–45	3	43-45	4				
10	Overcast, fog (even samll rain), very dim light, very clear waters, close to ice	2	178;179		1	36	23-24		3	46-48	3	46-48	4		2.5,2.5, 2.5	457,576,577	2.28
39	Overcast; snowing (near the ice).	2	180;181		1	36	27-28		3	49-51					3,3,3	376,377,378	2.28
50	Overcast	2	182;183		1	36	29-30		3	52-54	2	53-54			1.5,1.5, 1.5	350,351,352	2.28
17	Overcast	2	185;186		1	27	31-32		3	55-57	3	55-57			2,2,2	308,309,310	2.28

50	fog, very dim light, clear waters, in the middle of ice	2	187;188		1	37	33-34		4	58-61	4	58-61			2,2,2	346,347,367	2.28
	Overcast, light rain								4	62-65							
51	fog, then clouds, very dim light, clear waters, in the middle of ice	2	189;190		1	36	35-36		3	66-68	3	66-68		?	3,3,3	354,390,534	2.28
40	Overcast, fog	1	191		1	36	37-38		4	69-72	1	72			2,2,2	345,349,555	2.28
10	Overcast, dim light, clear waters with ice	2	204;205		1	36	63-64		3	121-123	3	121-123		2	3,3,3	384,398,407	2.28
28	Overcast, dim light, clear waters with ice	2	206;207		1	36	65-66		4	124-127	3	125-127		1	4,4,4	12,226,227	2.28
7	Clear sky (!) with some scattered clouds and haze, clear waters, many ice around	1	208		1	36	67-68		4	128-131	2	130-131		2	4,4,3.72	363,382,403	2.28
19	Overcast, fog, slightly turbid		196	1	1	34	49-50	1	3	93-95	1	95	5		2.75,2.75,2.75	397,399,409	0.63
48	Fog, turbid waters		193	1	1	8	42-43	1	6	77-82			12		.5,.5,.5	365,405,575	0.63
11	Overcast, fog, turbid waters		192	1	1	4	39-41	1	4	73-76					.5,.5,.5	408,306,554	0.63
34	Fog, very turbid waters		195	1	1	2.6	46-48	1	5	88-92	1	92	4		.2,.2,.2	411,578,601	0.10
29	Dense fog, very turbid (river)		194	1	1	1.4	44-45	1	5	83-87	1	87	7		.2,.2,.2	361,379,380	0.10
52	Overcast, very dim light		140;141	2	1	9.7	3-4		3	8-10			2		.5,.5,.5	944,942,945	1.09
54	Overcast, dim light, moderately turbid waters		203	1	1	7.8	61-62	1	5	116-120	1	120	2		1.2,1.2,1.2	1,303,15	1.09, 0.
40	Overcast, dim light, moderately turbid waters		202	1	1	5.0	59-60	1	3	113-115	1	115	2		.5,.5,.5	302,307,88	
55	Overcast (small rain), dim light, turbid waters		201	1	1	3.6	57-58		3	110-112	1	112			1,1,1	207,211,210	0.63
27	Overcast (small rain), dim light, turbid waters		200	1	1	2.2	55-56	1	5	105-109	1	109	2		.5,.5,.5	9,33,70	0.25
52	Overcast, dim light, clear waters	2	197;198		1	36	51-52		3	99-101	3	99-101		2	3,3,3	412,430,579	2.28
4	Overcast, dim light, clear waters	1	199		1	36	53-54		3	102-104	1	102		3	2.5,2.5,2.5	208,25,21	2.28
40	overcast	1	209		1	32	69-71	1	3	132-134	3	132-134			3,3,3	205,47,321	2.28
9	Clear sky (after fog dissipated after about 15 min on site), clear waters, ice in the vicinity (0.5 nm)	2	210-211		1	37	72-73		7	135-141	7	135-141		2	3,3,3	319,406,204	2.28
27	Overcast, but with some apparition of the sun (so Es is not totally stable); clear waters, close to ice.	1	212		1	34	74-75		3	142-144			1	1	3,3,3	324,40,323	2.28
32	Clear sky but haze; clear waters, near the ice.		213-214	2	2	35	76-79	2	4	145-148	4	145-148	1	2	4,4,4	312,4,30	2.28
	total	**46**		**13**	**37**			**11**	**145**		**82**		**71**	**15**			

ıents)

:emperature & salinity)

LOV/UQAR filtration							LOV onboard analyses			NASA (V. Wright) filtration/sampling work						
HPLC pigments	Particulate absorption						CDOM	PSICAM	VSF	Pigm.	POM	POC/PN	TSM	eplicate	CDOM	DOC
ref	v1 (l)	v2 (l)	v3 (l)	ref1	ref2	ref3	ultrap.	abso		mL	mL	mL	mL			
										600	na	na	na	2	na	na
MAL-680-BARG							X			600	600	600	600	2	X	X
										600	na	na	na	3	X	X
MAL-280-041-BA	0.4	0.5		BRG280pa	BRG280pb		X			1000	600	600	600	2	X	X
MAL-260-044-Ba2	0.75	1		BRG260pa	BRG260pb		X	X		1500	1000	1000	1000	2	X	X
MAL-220-Ba1	1	1.8		BRG220pa	BRG220pb		X			2400	1500	1500	1500	2	X	X
MAL-240-Ba1	2.7			BRG240pa			X	X		2200	1750	1750	2000	2	X	X
	2.8			BRG110pa						2600	1500	na	na	2	X	X
MAL-170-Ba1, MAL-170-Ba-MAA	0.25	0.5		BRG170pa	BRG170pb		X	X		800	500	na	na	2	X	X
MAL-068-Ba, MAL-068-Ba-MAA	0.6			BRG150pa				X		1500	700	700	1250	2	X	X
MAL-380-Ba1, MAL-380-Ba-MAA	2			BRG380pa			X	X	X	1800	1000	1000	1250	2	X	X
MAL-360-Ba1	2			BRG360pa			X	X		2000	750	750	1000	1	X	X
										2000	1000	na	na	1	X	X
MAL-320-Ba	2.8			BRG320pa			X	X		2200	1250	na	na	1	X	X
MAL-340-Ba1	1.84			BRG340pa			X	X		1200	750	na	na	1	X	X
MAL-670-Ba	2.51			BRG670pa			X	X		1800	750	750	1250	2	X	X
MAL-660-Ba	1			BRG660pa			X	X		2000	950	950	1700	2	X	X

MAL-620-Ba	1.8			BRG620pa			X	X		2000	1000	1000	1750	2	X	X
MAL-760-Ba	1.5			BRG760pa			X	X		1800	1000	1000	1250	2	X	X
MAL-780-Ba	1			BRG780pa			X	X		2200	1250	1250	1750	2	X	X
MAL-540-Ba	2.77			BRG540pa			X			2000	1250	1250	2000	2	X	X
MAL-430-BaB, MAL-430-BaC	2	2	2,2	BRG430pa	BRG430pb	BRG430pc, B	X	X		2000	1000	na	na	na	X	na
MAL-460-Ba	2	2	2	460br00p	460br05p	460br10p	X			2000	1000	1000	1500	2	X	X

MAL-691-Ba, MAL-691-MAA	0.2			BRG691pa			X	X	X	1000	500	na	na	1	X	X
MAL-694-Ba, MAL-694-MAA	0.05	0.03		BRG694pa	BRG694pb		X	X	X	200	100	100	100	2	X	X
MAL-695-Ba, MAL-695-MAA	0.03			BRG695pa			X	X	X	300	250	250	500	2	X	X
MAL-696-Ba, MAL-696-MAA	0.01	0.01		BRG696pa	BRG696pa		X	X	X	100	50	50	100	2	X	X
MAL-697-Ba, Mal-697-MAA	0.01	0.01		BRG697pa	BRG697pb		X	X		100	100	100	100	2	X	X

MAL-394-BA1, MAL-394-BA2	0.05	0.1	0.15	BRG394pa	BRG394pc	BRG394pc	X		X	400	350	350	350	2	X	X
MAL-395-Ba, MAL-395-MAA	0.25	0.15		BRG395pa	BRG395pb		X	X	X	700	400	na	na	1	X	X
							X			600	250	na	na	1	X	X
MAL-397-Ba, MAL-397-MAA	0.05			BRG397pa			X	X	X	400	200	na	na	1	X	X
MAL-398-Ba, MAL-398-MAA	0.06	0.03		BRG398pa	BRG398pb		X	X	X	250	100	na	na	1	X	X

MAL-345-Ba	2.41	2.8		BRG345pa	BRG345pb		X			2000	na	na	na	2	na	na
MAL-345-Ba2	2.76			BRG345pc			X			2000	1000	1000	1750	2	X	X
MAL-135-Ba	1	1.77		BRG135pa	BRG135pb		X			2400	1250	na	na	1	X	X
MAL-135-Ba2 (?), MAL-135-MAA	1			BRG135pc			X	X		2400	1250	1250	1750	2	X	X
MAL-235-Ba	1	2.8		BRG235pa	BRG235pb		X	X	X	2200	1250	na	na	1	X	X
MAL-235-Ba2	2.8	1		BRG235pc	BRG235pd		X			2600	1750	na	na	1	X	X

Extra operations / comments / miscellaneous

SeaHARRE 1 (SH1) 2200 ml filtered on 12 filters, A-L
MAA samples (12 filters 2600 mL)
C-OPS from the Amundsen was the only operation
SeaHARRE 2 (SH2) 800 ml filtered on 12 filters, A-L
SeaHARRE 3 (SH3) 2200 ml filtered on 12 filters, A-L
Storage Experiment 1 (SE1) Replicates for foil, histoprep, and histoprep in foil 1800 mL

SeaHARRE 4 (SH4) 2000 ml filtered on 12 filters, A-L
C-OPS from the Amundsen was the only operation
Dilution Experiment 1 (DE1) Replicates for 1600, 1400, 1200 mL; Storage Experiment 2 (SE2) Replicates for foil, histoprep, and histoprep in foil 1800 mL
Dilution Experiment 2 (DE2) Replicates for 1750, 1500, 1250 mL; Storage Experiment 3 (SE3) Replicates for foil, histoprep, and histoprep in foil 2000 mL
Simon Bélanger came to sample the very surface and a depth of about 1m using a niskin bottle (after he remarked that the ap measurements from the barge were systematically higher than the values obtained from the shallower rosette bottle); SeaHARRE 9 (SH9) 4000 mL filtered on 12 filters, A-L
Jens Ehn did the same thing than Simon, but at depths of 0, 0.5, 1, 1.5, 2 and 3 m

SeaHARRE 5 (SH5) 200 ml filtered on 12 filters, A-L
SeaHARRE 6 (SH6) 100 ml filtered on 12 filters, A-L

SeaHARRE 8 (SH8) 250 ml filtered on 12 filters, A-L (used Josephine Ras filtration rig); MAA samples (triplicates of 25 mm filters in cryovial and foil)

SeaHARRE 7 (SH7) 2000 ml filtered on 12 filters, A-L (used Josephine Ras filtration rig); Dilution Experiment 3 (DE3) Replicates for 3000, 2500, 2000, 1500 mL
SeaHARRE 10 (SH10) 2400 ml filtered on 12 filters, A-L
Dilution Experiment 4 (DE4) Replicates for 2200, 2000, 1800 mL; Storage Experiment 4 (SE4) Replicates for foil, histoprep, and histoprep in foil 2000 mL
20-l water sampling for F. Joux (simultaneous to the station regular water sampling), and 80-l water sampling for Stan Hooker from a pond of melting ice water (nearly fresh water), about 20 meters from the border of an ice sheet (SeaHARRE 11 (SH11) melt water 0.6 PSU; 4000 mL on 12 filters, A-L on Josephine Ras filtration rig)
SeaHARRE 12 (SH12) melt water and seawater 3000 mL on 12 filters, A-L