

Supplementary file for: Jonassen M.O., Tisler P., Altstädter B., Scholtz A., Vihma T., Lampert A., König-Langlo G. & Lüpkes C. 2015. Application of remotely piloted aircraft systems in observing the atmospheric boundary layer over Antarctic sea ice in winter. Polar Research 34.

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Supplementary Fig. S1 (a) The meteorological mini aerial vehicle in flight above the sea ice, (b) the quadcopter landing procedure and (c) launch of the small unmanned meteorological observer for a mission.

Supplementary Table S1. Summary of small unmanned meteorological observer (SUMO), advanced mission and operation research (AMOR) quadcopter and meteorological mini aerial vehicle (MMAV) flights. Maximum altitudes of profiles per flight are given along with the measurement period of the weather mast during the ice stations.

ICE-STATION		RPAS flights						AWS WEATHER MAST (measurement period)
		SUMO	AMOR	MMAV	DATE	TIME (UTC)	HEIGHT	
1	66.45°S 000.10°E	x			21 June 2013	19:14 - 19:43	1 km + 1 km	21 June, 15:58 - 22:07 UTC
		x			21 June 2013	20:01 - 20:35	1 km + 1 km	
		x			21 June 2013	21:16 - 21:50	1 km + 1 km	
2	67.45°S 000.02°E				24 June 2013	-	-	24 June, 09:04 - 16:49 UTC
3	67.95°S 006.70°W	x			3 July 2013	13:18 - 13:38	1.1 km	3 July, 10:57 UTC - 4 July, 14:12 UTC
		x			3 July 2013	13:57 - 14:14	1.1 km	
		x		x	3 July 2013	14:04 - 14:09	200 m	
		x			3 July 2013	15:55 - 16:15	1.1 km	
		x			3 July 2013	16:49 - 17:19	1.1 km + 1.1 km	
		x			3 July 2013	19:46 - 20:16	1.1 km + 1.1 km	
		x			3 July 2013	20:42 - 21:13	1.1 km + 1.1 km	
		x			3 July 2013	21:50 - 22:22	1.1 km + 1.1 km	
4	67.19°S 013.20°W		x		8 July 2013	17:08	30 m	
			x		8 July 2013	17:54 - 17:57	50 m	
			x		8 July 2013	18:04 - 18:07	50 m	
			x		8 July 2013	20:09 - 20:14	100 m	
			x		8 July 2013	20:36 - 20:40	100 m	
			x		8 July 2013	20:45 - 20:50	100 m	

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ICE-STATION		RPAS flights						AWS WEATHER MAST (measurement period)
		SUMO	AMOR	MMAV	DATE	TIME (UTC)	HEIGHT	
5	67.18°S 023.20°W	x		x	11 July 2013	14:20 - 14:43	1.1 km + 500m	11 July, 11:17 UTC - 15 July, 10:03 UTC
		x			11 July 2013	15:18 - 15:48	440 m	
			x		11 July 2013	18:35 - 19:09	1.1 km + 1.1 km	
		x			11 July 2013	19:55 - 20:00	100 m	
			x		11 July 2013	20:08 - 20:40	1.1 km + 1.1 km	
		x			11 July 2013	21:03 - 21:08	100 m	
				x	11 July 2013	21:19 - 21:50	1.1 km + 1.1 km	
			x		11 July 2013	21:32 - 22:10	750 m	
		x			11 July 2013	22:19 - 22:23	100 m	
			x		11 July 2013	22:37 - 23:05	1.1 km + 1.1 km	
		x			11 July 2013	23:17 - 23:22	100 m	
					11 July 2013	23:36 - 00:03	1.1 km + 1.1 km	
				x	12 July 2013	13:11 - 13:34	Horizontal survey	
				x	13 July 2013	11:51 - 12:39	900 m	
		x			13 July 2013	12:51 - 13:30	1.1 km + 1.1 km	
			x		13 July 2013	13:53 - 13:57	100 m	
		x			13 July 2013	14:48 - 15:18	1.1 km + 1.1 km	
			x		13 July 2013	15:29 - 15:33	100 m	
		x			13 July 2013	15:47 - 16:17	1.1 km + 1.1 km	
				x	13 July 2013	15:59 - 16:53	1.3 km	
			x		13 July 2013	16:29 - 16:33	100 m	
		x			13 July 2013	16:42 - 17:13	1.1 km + 1.1 km	
			x		13 July 2013	17:30 - 17:34	100 m	
		x			13 July 2013	17:43 - 18:14	1.1 km + 1.1 km	
			x		13 July 2013	18:23 - 18:27	100 m	
		x			13 July 2013	18:40 - 19:10	1.1 km + 1.1 km	
			x		13 July 2013	19:18 - 19:23	100 m	
		x			13 July 2013	19:29 - 20:01	1.1 km + 1.1 km	
			x		13 July 2013	20:16 - 20:20	100 m	
		x			13 July 2013	20:31 - 20:58	1.1 km + 1.1 km	
6	63.40°S 051.20°W				26 July 2013	-	-	26 July, 13:29 - 22:50 UTC
7	63.40°S 051.15°W	x			29 July 2013	16:50 - 17:07	1.5 km	29 July, 15:34 UTC - 2 August, 16:37 UTC
			x		29 July 2013	17:30 - 17:35	100m	
		x			29 July 2013	17:45 - 18:09	1.6 km	
			x		29 July 2013	18:29 - 18:34	100m	
		x			29 July 2013	18:44 - 19:05	1.6 km	
			x		29 July 2013	19:16 - 19:21	100 m	
		x			29 July 2013	19:30 - 19:52	1.6 km	
				x	29 July 2013	19:53 - 20:30	200 m	
				x	31 July 2013	11:11 - 12:11	1.4 km	
		x			31 July 2013	12:49 - 13:09	1.6 km	
					31 July 2013	13:27 - 13:50	1.6 km	
		x			31 July 2013	15:33 - 15:58	1.7 km	
					31 July 2013	16:33 - 16:57	1.7 km	
		x			31 July 2013	17:56 - 18:19	1.7 km	
					31 July 2013	18:37 - 19:01	1.7 km	
		x			31 July 2013	19:26 - 19:50	1.7 km	
					31 July 2013	20:12 - 20:35	1.7 km	
		x			31 July 2013	20:56 - 21:02	421 m	
					31 July 2013	21:17 - 21:41	1.7 km	
				x	1 August 2013	02:08 - 02:46	Horizontal survey	
		x			2 August 2013	12:21 - 12:45	1.7 km	
8	62.94°S 053.35°W			x	2 August 2013	13:04 - 13:48	Horizontal survey	4 August, 15:30 - 22:20 UTC
		x			2 August 2013	13:00 - 13:10	750 m	
				x	2 August 2013	13:25 - 13:46	1.7 km	
		x			2 August 2013	19:04 - 19:46	Horizontal survey	
		x			4 August 2013	19:45 - 20:05	1.5 km	
		x			4 August 2013	20:20 - 20:39	1.5 km	
		x			4 August 2013	20:48 - 21:07	1.5 km	
		x			4 August 2013	21:18 - 21:37	1.5 km	
		x			4 August 2013	21:44 - 22:02	1.5 km	
		x			4 August 2013	21:44 - 22:02	1.5 km	