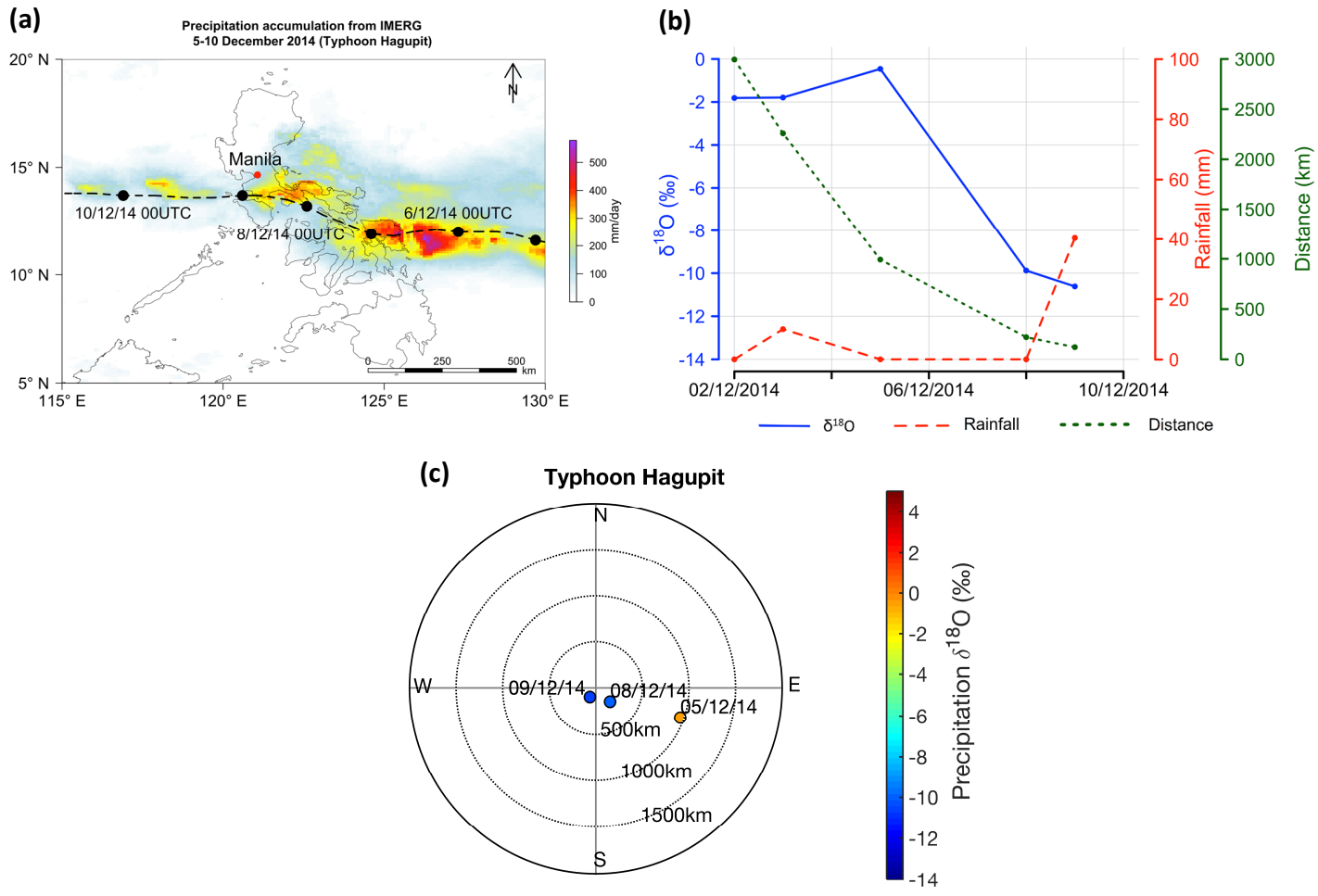
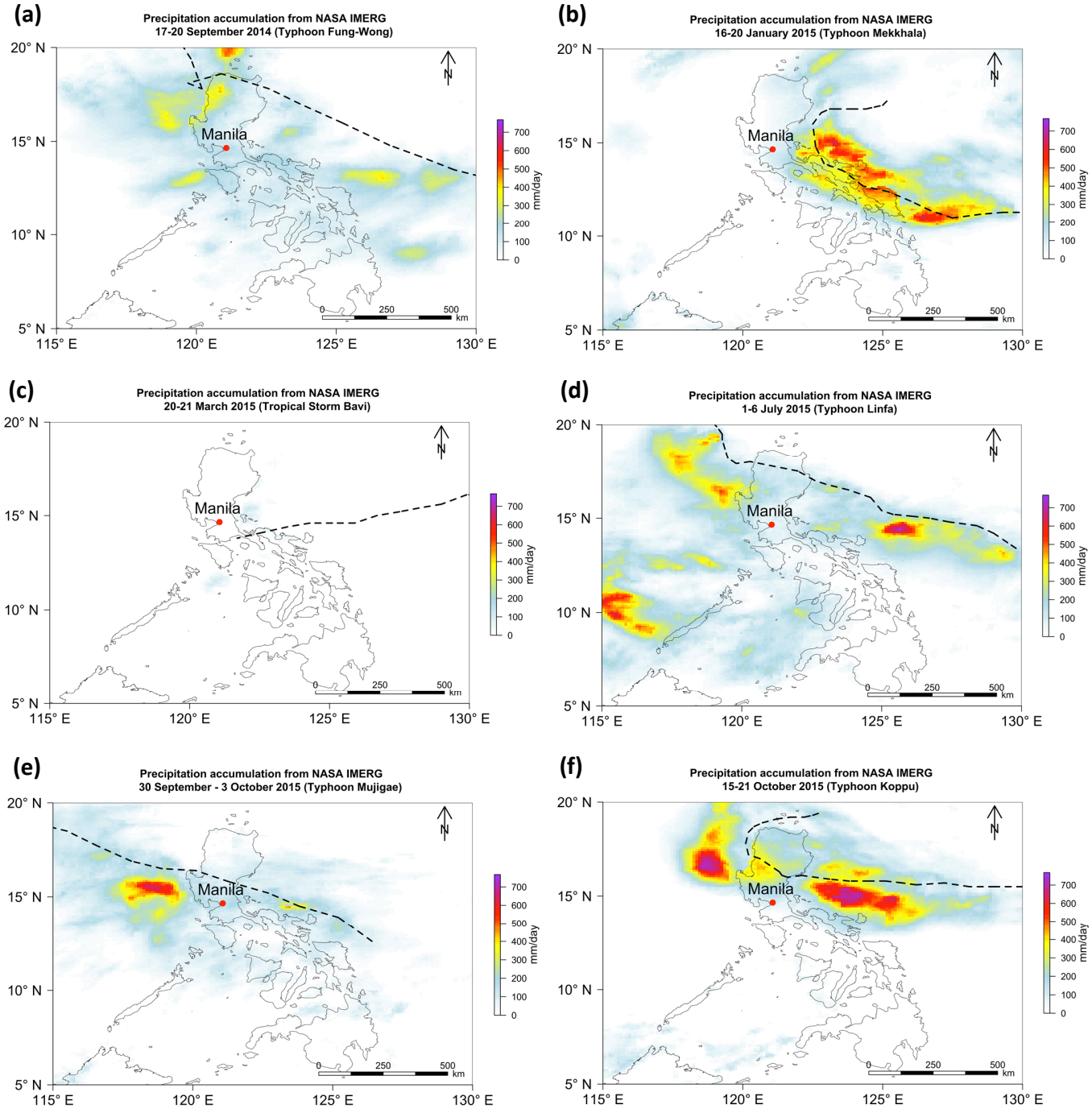


S 1 Typhoon Hagupit. a) TC track and rainfall intensities, made with base layers from Natural Earth, b) $\delta^{18}O$, distance and rainfall amount, c) Spatio-temporal evolution of $\delta^{18}O$.



S 2 TC track and rainfall intensities. a) Fung-Wong, b) Mekkhala, c) Bavi, d) Linfa, e) Mujigae, f) Koppu. Made with base layers from Natural Earth.

Table S 1. Stable isotopes of precipitation from sampling location at University of the Philippines Diliman, rainfall amount from PAGASA and IBTrACKS data

Date	$\delta^{18}O$	$\delta^{2}H$	rain (mm)	IBTrACS name	IBTrACS wind (kn)	IBTrACS pressure (mb)	IBTrACS lat	IBTrACS lon	IBTrACS distance (km)
11/03/2014	1.83	12.82	0.2						
12/03/2014	0.44	5.86	1						
25/03/2014	-2.63	-14.62	9.3						
26/03/2014	-1.37	-6.54	8.7						
07/04/2014	-0.96	0.98	9.8	PEIPAH	0	1004	6.87	133.17	1579
09/04/2014	4.00	16.85	0.3	PEIPAH	-999	-999	8.55	130.25	1208
27/04/2014	-4.62	-31.45	4						
05/05/2014	-2.10	-8.17	11.9						
09/05/2014	-2.77	-15.06	13.4						
26/05/2014	-2.89	-11.37	27.5						
27/05/2014	-2.61	-14.50	14.5						
30/05/2014	-3.59	-19.51	3.4						
31/05/2014	-3.38	-12.40	28.4						
01/06/2014	-4.29	-24.97	5.8						
05/06/2014	-5.16	-30.70	71.2						
10/06/2014	-8.59	-53.31	49.8	MITAG	0	998	21.35	121.9	750
11/06/2014	-7.59	-44.44	16.1	MITAG	35	996	23.3	125.85	1085
12/06/2014	-7.64	-49.78	7.1	MITAG	0	994	28.85	135.85	2192
13/06/2014	-8.99	-60.32	16.5	HAGIBIS	0	998	18.8	116	710
16/06/2014	-6.04	-41.17	0	HAGIBIS	0	1000	24.43	116.75	1177
18/06/2014	-6.55	-43.91	1	HAGIBIS	0	996	30.86	137.82	2483
19/06/2014	-10.44	-71.47	6.1	HAGIBIS	0	990	32.75	147.95	3379
21/06/2014	-9.02	-64.73	6.4	HAGIBIS	0	1004	36.7	163.2	4827
23/06/2014	-6.41	-39.06	1						
24/06/2014	-4.08	-30.78	21.8						
26/06/2014	-4.37	-26.93	10.5						
27/06/2014	-7.42	-47.09	22.9						
02/07/2014	-4.48	-28.22	6.4						
03/07/2014	-4.58	-25.40	15.8	NEOGURI	0	1004	9.23	145.63	2737
04/07/2014	-6.44	-37.57	16	NEOGURI	40	996	12.12	142.35	2318
05/07/2014	-4.64	-25.62	6.7	NEOGURI	75	965	15.25	138.18	1839
06/07/2014	-5.50	-32.24	11.7	NEOGURI	95	935	17.98	132.95	1320
07/07/2014	-6.31	-38.47	33.6	NEOGURI	100	930	20.42	128.3	999
08/07/2014	-4.37	-26.40	3.9	NEOGURI	90	940	24.98	126.05	1261
09/07/2014	-5.75	-35.36	2.4	NEOGURI	70	965	30.35	126.15	1821
10/07/2014	-7.35	-50.53	7.4	NEOGURI	50	985	32.28	131.32	2218
12/07/2014	-8.26	-54.77	5.4	RAMMASUN	0	1006	13.62	144.5	2528
15/07/2014	-3.74	-22.08	1.2	RAMMASUN	70	960	12.73	125.65	539
16/07/2014	-13.84	-99.10	82.6	RAMMASUN	70	960	14.3	120.55	68
17/07/2014	-9.12	-61.88	59.4	RAMMASUN	65	960	16.33	115.75	600
18/07/2014	-6.26	-39.05	17.9	RAMMASUN	85	940	19.08	112.32	1053
20/07/2014	-5.27	-32.19	13.2	MATMO	60	980	12.82	129.7	954
21/07/2014	-6.14	-36.72	5	MATMO	70	965	16.5	127.32	700
22/07/2014	-7.24	-50.19	2.9	MATMO	70	965	20.5	123.7	707
23/07/2014	-8.44	-56.17	37.2	MATMO	50	985	24.38	120.1	1086
24/07/2014	-6.07	-38.29	18.4	MATMO	35	992	27.83	117.83	1503

25/07/2014	-3.95	-24.30	28.8	MATMO	35	992	33.72	119.38	2127
27/07/2014	-7.27	-49.52	21.8						
29/07/2014	-6.72	-46.58	0	HALONG	35	1002	12.39	148.24	2947
30/07/2014	-6.67	-44.02	6.7	HALONG	45	992	13.85	145.47	2630
31/07/2014	-6.75	-45.56	49.4	HALONG	45	990	14.98	141.97	2246
01/08/2014	-3.89	-22.37	22.6	HALONG	55	975	14.32	139.18	1950
02/08/2014	-4.58	-26.20	24.7	HALONG	80	945	14.92	136.45	1654
03/08/2014	-4.61	-26.25	23	HALONG	105	920	15.23	133.9	1380
04/08/2014	-5.86	-38.17	23.6	HALONG	95	930	16.5	130.75	1057
05/08/2014	-5.73	-34.58	40.6	HALONG	75	955	19.18	129.8	1056
06/08/2014	-5.69	-36.97	12	HALONG	80	945	22.4	130.35	1303
07/08/2014	-1.86	-16.09	2.6	HALONG	80	945	24.98	131.72	1598
15/08/2014	-3.89	-25.14	15.8	HALONG	0	1008	47	151.9	4589
16/08/2014	-3.79	-23.68	5.2						
17/08/2014	-6.32	-39.67	27.4						
18/08/2014	-8.33	-58.88	0.5						
20/08/2014	-9.52	-64.04	22.8						
21/08/2014	-6.99	-47.84	40.2						
22/08/2014	-5.50	-36.32	9.2						
26/08/2014	-9.15	-61.21	60.6						
27/08/2014	-12.50	-86.45	21.1						
28/08/2014	-6.69	-48.00	1						
29/08/2014	-7.50	-56.52	6.6						
30/08/2014	-9.05	-61.60	42.2						
14/09/2014	-8.88	-61.10	29.7	KALMAEGI	65	970	16.43	124.55	422
15/09/2014	-11.39	-79.69	85.1	KALMAEGI	65	970	18.02	118.05	494
16/09/2014	-7.25	-52.41	1.6	KALMAEGI	75	960	19.8	111.45	1170
19/09/2014	-7.77	-51.05	268	FUNG-WONG	45	990	17.88	122.6	394
20/09/2014	-12.16	-86.08	175.2	FUNG-WONG	45	985	19.3	119.78	534
22/09/2014	-4.66	-26.16	3.2	FUNG-WONG	40	990	27.25	121.97	1404
24/09/2014	-5.96	-36.84	8.7	FUNG-WONG	0	1002	33.16	125.06	2097
25/09/2014	-4.64	-33.90	18.3	FUNG-WONG	0	1002	37.5	138.5	3068
26/09/2014	-5.45	-30.29	23						
30/09/2014	-4.75	-28.21	10	PHANFONE	45	990	15.3	148.03	2895
02/10/2014	-5.61	-31.62	29	PHANFONE	90	940	19.5	139	1979
03/10/2014	-5.76	-33.51	18	PHANFONE	95	935	22.27	135.47	1737
05/10/2014	-5.17	-26.81	0.1	PHANFONE	85	945	29	131.3	1911
07/10/2014	-5.11	-24.97	12	VONGFONG	80	950	16.95	136.47	1667
08/10/2014	-3.98	-18.37	46.8	VONGFONG	115	900	17.9	132.2	1241
12/10/2014	-6.50	-38.63	0	VONGFONG	70	965	27.72	127.25	1587
13/10/2014	-6.40	-38.33	44.5	VONGFONG	60	975	31.38	130.35	2086
15/10/2014	-7.91	-52.34	70	VONGFONG	0	980	46.75	156.1	4821
17/10/2014	-0.96	-8.57	0						
18/10/2014	-9.44	-67.40	10.1						
20/10/2014	-4.32	-25.28	0						
22/10/2014	-4.36	-25.66	25.5						
28/10/2014	-5.63	-43.19	0						
29/10/2014	-2.88	-13.48	4.4						
30/10/2014	-4.56	-27.74	9	NURI	0	1004	12.77	140.87	2149
02/11/2014	-3.62	-19.87	17.6	NURI	85	940	15.45	132.75	1257
04/11/2014	-1.15	-4.28	2.4	NURI	100	925	21.3	134.97	1644
09/11/2014	-0.83	3.81	2.4						

15/11/2014	-10.58	-79.48	3						
18/11/2014	-5.40	-36.60	0						
19/11/2014	-5.42	-36.69	0						
20/11/2014	-5.43	-36.68	3						
23/11/2014	-7.44	-51.69	8.4						
28/11/2014	-2.58	-14.15	11.2	SINLAKU	35	1000	10.98	117.25	582
30/11/2014	-1.45	-0.71	11.8	SINLAKU	35	998	13.56	108.47	1364
02/12/2014	-1.81	-4.75	0	HAGUPIT	50	985	5.92	147	2995
03/12/2014	-1.79	-4.55	10	HAGUPIT	75	955	7.53	140.47	2259
05/12/2014	-0.46	3.13	0	HAGUPIT	110	910	11.65	129.7	992
08/12/2014	-9.88	-69.39	0	HAGUPIT	60	980	13.27	122.53	220
09/12/2014	-10.62	-74.93	40.3	HAGUPIT	35	994	13.73	120.47	121
14/12/2014	-3.27	-15.10	50.5						
17/12/2014	-5.24	-30.42	3.3						
14/01/2015	-2.57	-9.97	0	MEKKHALA	35	1002	10.01	139.74	2092
19/01/2015	-10.77	-78.84	21.6	MEKKHALA	0	1010	16.5	122.83	279
16/02/2015	-0.66	-19.70	0.3						
20/03/2015	0.01	9.81	0	BAVI	0	1008	15	126.65	601
24/03/2015	-1.41	-1.92	3						
16/06/2015	1.71	8.35							
18/06/2015	-3.91	-22.19	50.6						
19/06/2015	-6.81	-40.63	38						
22/06/2015	-11.52	-77.79	2.4	KUJIRA	45	985	17.95	111.18	1117
23/06/2015	-10.76	-72.58	3.8	KUJIRA	35	990	19.65	109.28	1370
25/06/2015	-6.01	-35.46	1.2	KUJIRA	0	998	22.4	105.9	1815
29/06/2015	-3.40	-20.03	20						
30/06/2015	-3.47	-15.45	22.2	CHAN-HOM	0	1002	9.49	160.86	4359
01/07/2015	-3.69	-16.06	0.8	CHAN-HOM	40	994	10.61	158.09	4038
03/07/2015	-6.74	-40.74		LINFA	35	998	15.15	126.68	606
04/07/2015	-6.74	-40.84	8.4	LINFA	40	990	16.15	124.47	401
05/07/2015	-6.73	-40.82	6.6	LINFA	40	990	17.62	121.85	340
06/07/2015	-6.77	-40.70	51	LINFA	40	992	18.68	119.4	482
07/07/2015	-8.47	-53.13	62.8	LINFA	40	990	20.23	118.95	659
08/07/2015	-3.07	-13.94	92	LINFA	50	980	21.45	118.7	796
09/07/2015	-6.56	-43.71	76.5	LINFA	50	980	22.72	116.88	999
10/07/2015	-6.94	-49.04	80.5	LINFA	0	1000	21.4	111.2	1284
11/07/2015	-7.28	-33.95	19.6	CHAN-HOM	80	950	28.62	122.82	1563
16/07/2015	-2.37	-13.75	0						
21/07/2015	-3.27	-15.35	22.8						
23/07/2015	-7.71	-54.60	67.4	TWELVE	-999	-999	16.98	123.24	348
24/07/2015	-4.46	-23.07	0	TWELVE	-999	-999	18	123.6	460
26/07/2015	-6.83	-45.10	18.2						
27/07/2015	-7.46	-46.54	0.4						
29/07/2015	-7.17	-46.47	2.8						
30/07/2015	-6.42	-42.61	3	SOUDELOR	0	1004	13.68	160.72	4271
02/08/2015	-4.78	-27.44	44.7	SOUDELOR	60	980	14.6	148.18	2915
03/08/2015	-4.75	-27.44	1	SOUDELOR	90	940	16.2	144	2463
04/08/2015	-2.34	-11.09	10.6	SOUDELOR	115	900	18.27	139.6	2016
05/08/2015	-3.42	-18.69	21.7	SOUDELOR	95	930	19.52	134.88	1564
06/08/2015	-3.14	-17.34	5.2	SOUDELOR	90	935	20.45	130.2	1163
07/08/2015	-3.81	-17.30	5.2	SOUDELOR	90	935	21.88	125.8	946
10/08/2015	-6.83	-43.91	23.7	SOUDELOR	0	1000	29.9	116.8	1751

12/08/2015	-2.58	-20.29	1.6	SOUDELOR	0	1000	33.5	126.7	2171
13/08/2015	-9.96	-69.46	79.7						
14/08/2015	-5.21	-30.54	52	GONI	0	1004	12.24	150.38	3179
18/08/2015	-9.26	-62.23	13.2	GONI	95	935	18.2	136.05	1645
19/08/2015	-5.87	-41.81	24.7	GONI	85	945	18.85	129.82	1042
21/08/2015	-4.47	-23.57	13.6	GONI	85	945	19.23	122.93	546
22/08/2015	-5.12	-29.76	48	GONI	80	955	20.1	122.6	627
24/08/2015	-6.20	-36.86	31.4	GONI	100	930	26.22	125.9	1381
25/08/2015	-5.79	-36.36	10.2	GONI	70	965	33.9	130.47	2340
26/08/2015	-5.08	-30.30	4	GONI	0	984	39.14	133.49	2981
28/08/2015	-4.22	-24.03	5.6	GONI	0	1004	44	126.4	3302
30/08/2015	-6.98	-44.94	1.2	GONI	0	1010	45.5	125.8	3459
01/09/2015	-5.25	-29.80	0						
03/09/2015	-5.34	-35.36	2.4						
06/09/2015	-6.08	-37.63	18						
07/09/2015	-6.06	-37.59	4.8						
08/09/2015	-4.99	-28.38	6						
09/09/2015	-6.83	-40.71	79.2						
10/09/2015	-7.51	-46.79	40.8						
11/09/2015	-8.17	-53.23	33.2						
12/09/2015	-7.08	-44.60	4.3						
14/09/2015	-7.12	-44.13	24.6						
16/09/2015	-8.28	-55.01	46.5						
20/09/2015	-2.82	-13.55	16.4	DUJUAN	0	1002	13.8	148	2903
21/09/2015	-3.56	-14.85	48.4	DUJUAN	0	1000	15.13	144.53	2521
23/09/2015	-6.62	-37.88	34.9	DUJUAN	35	1000	17.67	136.27	1657
28/09/2015	-4.67	-23.69	27.1	DUJUAN	110	925	23.33	123.9	1010
30/09/2015	-7.47	-49.89		MUJIGAE	-999	-999	11.9	130.3	1045
01/10/2015	-7.47	-49.75	27.1	MUJIGAE	0	1008	14.02	125.4	472
02/10/2015	-7.49	-49.90	51	MUJIGAE	40	998	16.25	119.97	213
05/10/2015	-6.06	-37.43	43.2	MUJIGAE	0	1008	23.48	108.28	1662
06/10/2015	-4.10	-19.67							
14/10/2015	-3.91	-21.06	0.5	KOPPU	35	1000	15.75	136.12	1619
19/10/2015	-8.70	-65.43	38.2	KOPPU	50	980	17.45	120.03	330
20/10/2015	-9.72	-68.00	26.2	KOPPU	35	994	18.77	120.54	461
27/10/2015	-2.67	-15.14	0.4						