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Supplement of

Ducting of incoherent scatter radar waves by field-aligned irregularities

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1 This supplement shows the results of the search for WAILES as described in
2 Section 2 of the paper "Ducting of incoherent scatter radar waves by field-aligned
irregularities"

3 by M. T. Rietveld and A. Senior

4
5 This supplement should be useful for further studies of the WAILE phenomena
6 using EISCAT UHF radar data.

7
8 We highlight here two dates where WAILES were observed at the unusually low
9 HF frequency of 4.544 MHz for this phenomenon:

10 2013-02-18 15:30-17:00

11 2012-02-12

12 -----

13
14
15 al_heating_all_annotated.log

16 =====

17 # Line format:

18 # YYYY-mm-dd HH min_f_heat max_foF2 status1 statusO statusX notes

19 # status1 is:

20 # X Experiment unsuitable

21 # Q Radar quick-look plot unavailable/unsuitable

22 # Y WAILES observed

23 # N No WAILES observed

24 # U Unclear

25 #

26 # statusO and statusX are (for O- and X-mode respectively):

27 # Y WAILES observed

28 # N No WAILES observed

29 # U Unclear

30 # - polarisation not used

31 # anything else is meaningless

32 #

33 # max_foF2 = NaN indicates no data in the hour

34 #

35 2001-02-16 16 6.2000 NaN Q Q Q

36

37 2001-02-17 16 5.4230 NaN Q Q Q

38

39 2001-02-20 17 6.2000 7.2 Q Q Q

40

41 2001-11-08 15 6.2000 9.1 U U -

42 2001-11-08 16 6.2000 7.9 U U -

43 2001-11-08 17 5.4230 7.0 U U -

44 2001-11-08 18 5.4230 5.4 U U -

45

46 2001-11-09 15 7.9530 8.8 U U -

47 2001-11-09 16 5.4230 7.2 U U -

48 2001-11-09 17 5.4230 6.4 U U -

49

50 2001-11-10 15 6.7700 8.0 U U -

51 2001-11-10 16 6.7700 7.3 U U -

52 2001-11-10 17 5.4230 6.3 U U -

53

54 2001-11-11 15 5.4230 8.7 Y Y -

55 2001-11-11 16 5.4230 7.8 Y Y -

56 2001-11-11 17 5.4230 6.6 Y Y -

57

58 2001-11-12 15 5.4230 8.9 U U -

59 2001-11-12 16 5.4230 8.4 U U -

60 2001-11-12 17 5.4230 7.5 U U - heater scanning

61 2001-11-12 18 5.4230 6.0 U U -

62

63 2001-11-17 10 5.4230 10.6 X X X D-region

64 2001-11-17 11 5.4230 11.6 X X X

65 2001-11-17 12 5.4230 NaN X X X

66
67 2002-03-05 17 5.4230 5.8 U U - disturbed conditions
68 2002-03-05 20 5.4230 5.7 U U -
69
70 2002-03-06 17 5.4230 5.3 U U - disturbed conditions
71 2002-03-06 18 5.4230 4.9 U U -
72 2002-03-06 19 5.4230 5.9 U U -
73
74 2002-03-07 17 5.4230 9.4 U U -
75 2002-03-07 18 5.2830 9.4 U U -
76 2002-03-07 19 5.2830 5.8 U U -
77
78 2002-03-08 17 5.4230 8.7 U U -
79 2002-03-08 18 6.9600 8.8 Y Y -
80 2002-03-08 19 6.5500 5.8 U U -
81 2002-03-08 20 5.4230 5.7 U U -
82 2002-03-08 21 5.3030 5.1 Y Y -
83
84 2002-03-09 17 5.4230 5.8 U U - disturbed conditions
85 2002-03-09 18 5.4230 5.8 U U -
86 2002-03-09 19 5.4230 5.8 U U -
87 2002-03-09 20 5.4230 4.7 U U -
88 2002-03-09 21 5.4230 5.2 U U -
89
90 2002-03-10 18 5.4230 7.2 Y Y -
91 2002-03-10 19 5.4230 6.3 Y Y -
92
93 2002-07-22 09 5.4230 6.3 X X X PMSE
94 2002-07-22 10 5.4230 6.4 X X X
95 2002-07-22 11 5.4230 6.7 X X X
96 2002-07-22 12 5.4230 6.7 X X X
97 2002-07-22 13 5.4230 6.1 X X X
98 2002-07-22 14 5.4230 5.3 X X X
99 2002-07-22 15 5.4230 5.9 X X X
100 2002-07-22 21 5.4230 0.0 X X X
101 2002-07-22 22 5.4230 0.0 X X X
102 2002-07-22 23 7.9530 0.0 X X X
103 2002-07-24 00 5.4230 0.0 X X X
104 2002-07-24 06 5.4230 6.1 X X X
105 2002-07-24 07 5.4230 6.1 X X X
106 2002-07-24 08 5.4230 6.0 X X X
107 2002-07-24 09 5.4230 5.9 X X X
108 2002-07-24 10 5.4230 6.0 X X X
109 2002-07-24 11 5.4230 6.1 X X X
110 2002-07-24 12 5.4230 6.0 X X X
111 2002-07-24 14 5.4230 5.8 X X X
112 2002-07-24 22 5.4230 5.6 X X X
113 2002-07-25 10 5.4230 6.1 X X X
114 2002-07-25 11 5.4230 6.2 X X X
115 2002-07-25 12 5.4230 6.0 X X X
116 2002-07-25 13 5.4230 6.0 X X X
117 2002-08-01 12 5.4230 5.6 X X X PMSE
118 2002-08-01 13 5.4230 5.5 X X X
119 2002-08-02 12 5.4230 5.1 X X X
120 2002-09-25 11 7.9500 9.5 X X X tune
121
122 2002-09-25 12 7.9500 8.9 U U - radar scanning
123 2002-09-25 13 6.2000 9.3 U U -
124 2002-09-25 14 6.2000 9.5 U U -
125 2002-09-25 16 7.1000 9.3 U U -
126 2002-09-25 17 7.1000 9.0 U U -
127
128 2002-09-26 12 7.1000 9.8 U U - radar scanning
129 2002-09-26 13 7.1000 10.0 U U -
130 2002-09-26 14 7.1000 10.0 U U -
131 2002-09-26 15 7.1000 10.6 Q Q Q

132	2002-09-26	16	7.1000	9.3	U	U	-
133	2002-09-26	17	7.1000	7.7	U	U	-
134							
135	2002-09-28	12	7.9500	10.3	U	U	- radar scanning
136	2002-09-28	13	7.9500	10.3	U	U	-
137	2002-09-28	17	7.9500	8.0	U	U	-
138							
139	2002-11-08	15	5.3030	NaN	U	U	-
140	2002-11-08	16	5.3740	NaN	U	U	-
141							
142	2003-03-06	08	5.4230	6.5	X	X	X D-region
143	2003-03-06	09	5.4230	7.3	X	X	X
144	2003-03-06	10	5.4230	7.7	X	X	X
145	2003-03-06	11	6.7700	7.7	X	X	X
146	2003-03-06	12	5.4230	7.4	X	X	X
147	2003-03-06	13	6.2000	7.5	X	X	X
148	2003-03-06	14	6.2000	5.4	X	X	X
149	2003-03-06	15	6.2000	7.2	X	X	X
150	2003-06-20	12	5.4230	6.2	X	X	X short pulses
151	2003-06-27	08	5.4230	4.9	X	X	X PMSE?
152	2003-06-27	09	5.4230	5.5	X	X	X
153	2003-06-30	07	5.4230	NaN	X	X	X PMSE?
154	2003-06-30	08	5.4230	NaN	X	X	X
155	2003-06-30	09	5.4230	5.2	X	X	X
156	2003-06-30	10	5.4230	5.4	X	X	X
157	2003-07-01	05	5.4230	4.9	X	X	X PMSE
158	2003-07-01	06	5.4230	5.5	X	X	X
159	2003-07-01	07	5.4230	5.3	X	X	X
160	2003-07-01	08	5.4230	5.5	X	X	X
161	2003-07-01	09	5.4230	5.5	X	X	X
162	2003-07-01	10	5.4230	5.6	X	X	X
163	2003-07-01	11	5.4230	5.7	X	X	X
164	2003-07-02	07	5.4230	5.8	X	X	X PMSE
165	2003-07-02	08	5.4230	6.2	X	X	X
166	2003-07-02	09	5.4230	6.3	X	X	X
167	2003-07-02	10	5.4230	6.5	X	X	X
168	2003-08-01	10	5.4230	4.9	X	X	X PMSE?
169	2003-08-04	07	5.4230	5.8	X	X	X PMSE?
170	2003-08-04	08	5.4230	6.4	X	X	X
171	2003-08-04	09	5.4230	6.0	X	X	X
172	2003-08-04	10	5.4230	6.1	X	X	X
173	2003-08-04	11	5.4230	6.3	X	X	X
174	2003-11-06	09	5.4230	6.6	X	X	X short pulses (LT)
175	2003-11-06	11	6.2000	7.9	X	X	X
176	2003-11-06	12	6.2000	6.9	X	X	X
177							
178	2003-11-20	20	5.4230	7.7	U	U	- disturbed conditions
179	2003-11-20	21	5.4230	10.1	U	U	-
180							
181	2003-11-22	19	5.4230	7.8	U	U	- disturbed conditions
182	2003-11-22	20	5.4230	7.9	U	U	-
183							
184	2003-11-24	14	5.4230	5.3	X	X	X D-region
185	2003-11-24	21	5.4230	6.5	X	X	X 3 Hz
186	2003-11-25	14	5.4230	5.2	X	X	X D-region
187	2003-11-27	14	5.4230	6.4	X	X	X no UHF
188	2003-11-27	15	5.4230	5.5	X	X	X
189	2004-02-26	14	5.4230	6.2	X	X	X no UHF
190	2004-05-12	12	5.4230	5.4	X	X	X test
191							
192	2004-06-09	12	5.4230	5.4	U	U	- radar scanning
193							
194	2004-06-10	21	5.4230	0.0	X	X	X MARE
195	2004-06-12	13	5.4230	6.1	X	X	X short pulses
196	2004-06-12	15	5.4230	6.0	X	X	X
197							

198	2004-06-12	16	5.4230	5.6	U	U	- radar scanning
199							
200	2004-06-12	17	5.4230	5.7	X	X	X unsuitable UHF data
201	2004-06-12	18	5.4230	5.5	X	X	X
202	2004-06-30	10	5.4230	5.8	X	X	X PMSE
203	2004-06-30	11	5.4230	5.4	X	X	X
204	2004-06-30	12	5.4230	5.5	X	X	X
205	2004-06-30	13	5.4230	5.4	X	X	X
206	2004-07-02	09	5.4230	5.2	X	X	X PMSE
207	2004-07-02	10	5.4230	5.3	X	X	X
208	2004-07-02	11	5.4230	5.3	X	X	X
209	2004-07-02	12	5.4230	5.3	X	X	X
210	2004-07-05	07	5.4230	5.7	X	X	X PMSE
211	2004-07-05	08	5.4230	NaN	X	X	X
212	2004-07-05	09	5.4230	NaN	X	X	X
213	2004-07-05	10	5.4230	NaN	X	X	X
214	2004-07-06	08	5.4230	5.7	X	X	X PMSE
215	2004-07-06	09	5.4230	NaN	X	X	X
216	2004-07-06	10	5.4230	5.4	X	X	X
217	2004-07-06	11	5.4230	5.6	X	X	X
218	2004-07-07	07	5.4230	5.6	X	X	X PMSE
219	2004-07-07	08	5.4230	5.5	X	X	X
220	2004-07-07	09	5.4230	5.5	X	X	X
221	2004-07-07	10	5.4230	6.7	X	X	X
222	2004-07-07	11	5.4230	5.7	X	X	X
223	2004-07-08	07	5.4230	5.6	X	X	X PMSE
224	2004-07-08	08	5.4230	NaN	X	X	X
225	2004-07-08	09	5.4230	NaN	X	X	X
226	2004-07-08	10	5.4230	NaN	X	X	X
227	2004-07-10	07	5.4230	5.4	X	X	X PMSE
228	2004-07-10	08	5.4230	5.7	X	X	X
229	2004-07-10	09	5.4230	6.4	X	X	X
230	2004-07-10	10	5.4230	6.0	X	X	X
231	2004-07-10	11	5.4230	5.5	X	X	X
232	2004-07-11	07	5.4230	5.4	X	X	X PMSE
233	2004-07-11	08	5.4230	5.7	X	X	X
234	2004-07-11	09	5.4230	6.0	X	X	X
235	2004-07-11	10	5.4230	5.8	X	X	X
236	2004-07-12	07	5.4230	5.0	X	X	X PMSE
237	2004-07-12	08	5.4230	4.8	X	X	X
238	2004-07-12	09	5.4230	4.9	X	X	X
239	2004-07-12	10	5.4230	5.1	X	X	X
240	2004-07-12	11	5.4230	5.3	X	X	X
241	2004-07-13	07	5.4230	5.1	X	X	X PMSE
242	2004-07-13	08	5.4230	5.0	X	X	X
243	2004-07-14	07	6.9600	6.5	X	X	X PMSE
244	2004-07-14	08	5.4230	6.4	X	X	X
245	2004-07-14	09	5.4230	6.4	X	X	X
246	2004-07-14	10	5.4230	6.3	X	X	X
247	2004-07-15	07	5.4230	5.6	X	X	X PMSE
248	2004-07-15	08	5.4230	6.2	X	X	X
249	2004-07-15	09	5.4230	6.7	X	X	X
250	2004-07-15	10	5.4230	6.0	X	X	X
251	2004-07-15	11	5.4230	5.6	X	X	X
252	2004-10-01	14	6.2000	7.2	X	X	X short pulses
253	2004-10-01	15	5.4230	7.1	X	X	X unsuitable UHF data
254	2004-10-01	16	5.4230	7.1	X	X	X
255	2004-10-02	11	6.2000	7.5	X	X	X short pulses
256	2004-10-02	12	6.2000	7.4	X	X	X
257	2004-10-02	13	6.2000	7.5	X	X	X
258	2004-10-05	10	5.4230	5.5	X	X	X short pulses/unsuitable UHF data
259	2004-10-05	11	5.4230	5.8	X	X	X
260	2004-10-05	12	5.4230	5.9	X	X	X
261	2004-10-07	11	5.4230	9.2	X	X	X unsuitable UHF data
262	2004-10-07	12	5.4230	7.7	X	X	X no UHF
263	2004-10-07	13	5.4230	6.7	X	X	X

264	2004-10-07	14	5.4230	6.0	X	X	X	
265	2004-10-07	15	5.4230	6.3	X	X	X	
266	2004-10-07	16	5.4230	10.3	X	X	X	
267	2004-10-08	11	5.4230	5.9	X	X	X	unsuitable UHF data
268	2004-10-08	12	5.4230	6.5	X	X	X	
269	2004-10-08	13	5.4230	6.3	X	X	X	
270	2005-06-01	08	5.4230	0.0	X	X	X	no UHF
271	2005-06-01	09	5.4230	0.0	X	X	X	
272	2005-06-01	10	5.4230	0.0	X	X	X	
273	2005-06-01	11	5.4230	0.0	X	X	X	
274	2005-06-01	12	5.4230	0.0	X	X	X	
275	2005-06-01	13	5.4230	0.0	X	X	X	
276	2005-06-29	08	5.4230	4.9	X	X	X	
277	2005-06-29	09	5.4230	5.3	X	X	X	
278	2005-07-04	07	5.4230	5.5	X	X	X	PMSE
279	2005-07-04	08	5.4230	5.5	X	X	X	
280	2005-07-04	09	5.4230	5.7	X	X	X	
281	2005-07-04	10	5.4230	5.7	X	X	X	
282	2005-07-04	11	5.4230	5.4	X	X	X	
283	2005-07-04	12	5.4230	5.3	X	X	X	
284	2005-07-05	07	5.4230	6.1	X	X	X	
285	2005-07-05	08	5.4230	6.0	X	X	X	
286	2005-07-05	09	5.4230	NaN	X	X	X	
287	2005-07-05	10	5.4230	NaN	X	X	X	
288	2005-07-05	11	5.4230	NaN	X	X	X	
289	2005-07-05	12	5.4230	5.5	X	X	X	
290	2005-07-06	07	5.4230	6.6	X	X	X	
291	2005-07-06	08	5.4230	6.0	X	X	X	
292	2005-07-06	09	5.4230	6.0	X	X	X	
293	2005-07-06	10	5.4230	5.8	X	X	X	
294	2005-07-07	09	5.4230	5.7	X	X	X	
295	2005-07-07	10	5.4230	5.5	X	X	X	
296	2005-07-07	11	5.4230	5.6	X	X	X	
297	2005-07-07	12	5.4230	5.8	X	X	X	
298	2005-07-08	07	5.4230	5.0	X	X	X	
299	2005-07-08	08	5.4230	5.7	X	X	X	
300	2005-07-08	09	5.4230	5.7	X	X	X	
301	2005-07-08	10	5.4230	5.4	X	X	X	
302	2005-07-08	11	5.4230	5.4	X	X	X	
303	2005-07-08	12	5.4230	5.4	X	X	X	
304	2005-07-09	07	5.4230	5.8	X	X	X	
305	2005-07-09	08	5.4230	6.4	X	X	X	
306	2005-07-09	09	5.4230	7.0	X	X	X	
307	2005-07-09	10	5.4230	7.5	X	X	X	
308	2005-07-09	11	5.4230	7.1	X	X	X	
309	2005-07-09	12	5.4230	6.8	X	X	X	
310	2005-07-10	07	5.4230	5.1	X	X	X	
311	2005-10-04	09	5.4230	NaN	X	X	X	D-region
312	2005-10-04	10	5.4230	NaN	X	X	X	
313	2005-10-04	11	5.4230	NaN	X	X	X	
314	2005-10-04	12	5.4230	NaN	X	X	X	
315	2005-10-05	09	5.4230	NaN	X	X	X	No UHF
316	2005-10-05	10	5.4230	NaN	X	X	X	
317	2005-10-05	11	5.4230	NaN	X	X	X	
318	2005-10-05	12	5.4230	NaN	X	X	X	
319	2005-10-05	13	5.4230	NaN	X	X	X	
320	2005-10-05	14	5.4230	NaN	X	X	X	
321	2005-10-07	08	5.4230	NaN	X	X	X	No UHF
322	2005-10-07	09	5.4230	NaN	X	X	X	
323	2005-10-07	10	5.4230	NaN	X	X	X	
324	2005-10-08	08	5.4230	NaN	X	X	X	No UHF
325	2005-10-08	09	5.4230	NaN	X	X	X	
326	2005-10-08	10	5.4230	NaN	X	X	X	
327	2005-10-08	11	5.4230	NaN	X	X	X	
328	2005-10-08	16	5.4230	NaN	X	X	X	
329	2005-10-08	17	5.4230	NaN	X	X	X	

330 2005-10-08 18 5.4230 NaN X X X
331 2005-10-10 08 5.4230 5.4 X X X No UHF
332 2005-10-10 09 5.4230 5.6 X X X
333 2005-10-10 10 5.4230 5.6 X X X
334 2005-10-10 11 5.4230 6.0 X X X
335 2005-10-10 12 5.4230 5.7 X X X
336 2005-10-10 13 5.4230 5.4 X X X
337 2005-10-11 11 5.4230 6.1 X X X unsuitable UHF data
338 2005-10-12 13 5.3400 5.9 X X X unsuitable UHF data
339 2005-10-12 14 5.3500 6.1 X X X
340 2005-10-12 15 5.3400 5.6 X X X
341 2005-10-13 09 5.4230 6.6 X X X unsuitable UHF data
342 2005-10-13 10 5.4230 6.6 X X X
343 2005-10-13 11 5.4230 6.9 X X X
344 2005-10-13 12 6.2000 6.3 X X X
345 2005-10-13 13 6.2000 6.3 X X X
346 2005-12-07 11 5.4230 5.3 X X X test
347
348 2006-01-18 12 5.4230 5.9 U U -
349
350 2006-01-21 13 5.4230 5.4 X X X tune
351 2006-01-21 14 5.4230 5.8 X X X no UHF
352 2006-07-28 16 5.4230 NaN X X X PMSE
353 2006-07-28 17 5.4230 NaN X X X
354 2006-07-28 18 5.4230 NaN X X X
355 2006-07-28 19 5.4230 NaN X X X
356 2006-07-28 20 5.4230 NaN X X X
357 2006-07-28 21 5.4230 NaN X X X
358 2006-07-28 22 5.4230 NaN X X X
359 2006-07-28 23 5.4230 NaN X X X
360 2006-07-29 18 5.4230 NaN X X X PMSE
361 2006-07-29 19 5.4230 NaN X X X
362 2006-07-29 20 5.4230 NaN X X X
363 2006-07-29 21 5.4230 NaN X X X
364 2006-07-29 22 5.4230 NaN X X X
365 2006-07-29 23 5.4230 NaN X X X
366 2006-07-30 00 5.4230 4.9 X X X
367 2006-08-03 18 5.4230 5.7 X X X PMSE
368 2006-08-04 18 5.4230 4.9 X X X PMSE
369 2006-08-04 19 5.4230 4.7 X X X
370 2006-08-04 20 5.4230 5.6 X X X
371 2006-08-04 21 5.4230 5.8 X X X
372 2006-08-04 22 5.4230 5.6 X X X
373 2006-08-04 23 5.4230 5.4 X X X
374 2006-08-12 08 5.4230 NaN X X X PMSE
375 2006-08-12 09 5.4230 NaN X X X
376 2006-08-12 10 5.4230 NaN X X X
377 2006-08-13 07 5.4230 NaN X X X PMSE
378 2006-08-13 08 5.4230 NaN X X X
379 2006-08-13 09 5.4230 NaN X X X
380 2006-08-13 10 5.4230 NaN X X X
381 2006-10-24 10 5.4230 6.0 X X X unsuitable UHF data
382 2006-10-24 11 5.4230 6.4 X X X
383 2006-10-24 12 5.4230 5.9 X X X
384 2006-11-20 19 5.4230 0.0 X X X no UHF
385 2006-11-21 16 5.4230 NaN X X X no UHF
386 2006-11-21 17 5.4230 NaN X X X
387 2006-11-21 18 5.4230 NaN X X X
388 2006-11-24 08 5.4230 NaN X X X no UHF
389 2006-11-24 09 5.4230 NaN X X X
390 2006-11-27 10 5.4230 NaN X X X no UHF
391 2006-12-08 10 5.4230 0.0 X X X PMWE
392 2006-12-08 11 5.4230 0.0 X X X
393 2006-12-08 12 5.4230 0.0 X X X
394
395 2007-02-23 09 5.4230 5.6 U U - radar scanning

396									
397	2007-06-26	12	5.4230	5.6	X	X	X	Test	
398	2007-06-28	06	5.4230	4.8	X	X	X	PMSE	
399	2007-06-28	07	5.4230	4.9	X	X	X		
400	2007-06-28	08	5.4230	5.2	X	X	X		
401	2007-06-28	09	5.4230	5.1	X	X	X		
402	2007-06-28	10	5.4230	5.0	X	X	X		
403	2007-06-28	11	5.4230	5.0	X	X	X		
404	2007-07-10	07	5.4230	5.2	X	X	X	PMSE	
405	2007-07-10	08	5.4230	5.6	X	X	X		
406	2007-07-10	09	5.4230	5.1	X	X	X		
407	2007-07-10	10	5.4230	5.0	X	X	X		
408	2007-07-12	13	5.4230	4.9	X	X	X	PMSE	
409	2007-07-13	07	5.4230	5.0	X	X	X	PMSE	
410	2007-07-13	08	5.4230	4.7	X	X	X		
411	2007-07-13	09	5.4230	4.7	X	X	X		
412	2007-07-13	11	5.4230	4.7	X	X	X		
413	2007-07-13	12	5.4230	5.7	X	X	X		
414	2007-07-17	16	7.9530	8.6	X	X	X	Test	
415	2007-07-18	07	7.9530	7.3	X	X	X	PMSE	
416	2007-07-18	08	7.9530	10.7	X	X	X		
417	2007-07-18	09	7.9530	8.1	X	X	X		
418	2007-07-18	10	5.4230	6.5	X	X	X		
419	2007-07-18	11	5.4230	5.8	X	X	X		
420	2007-07-18	12	5.4230	6.1	X	X	X		
421	2007-07-19	07	5.4230	8.4	X	X	X	PMSE	
422	2007-07-19	08	5.4230	4.8	X	X	X		
423	2007-07-19	09	5.4230	4.9	X	X	X		
424	2007-08-29	12	5.4230	4.8	X	X	X	Test	
425	2007-10-10	09	5.4230	5.5	X	X	X	D-region	
426	2007-10-11	09	5.4230	5.4	X	X	X	D-region	
427	2007-10-11	10	5.4230	5.5	X	X	X		
428	2007-10-11	10	5.4230	5.5	X	X	X		
429	2007-10-11	11	5.4230	5.4	X	X	X		
430	2007-10-11	12	5.4230	5.2	X	X	X		
431	2007-10-13	08	5.4230	5.5	X	X	X	D-region	
432	2007-10-13	09	5.4230	5.6	X	X	X		
433	2007-10-13	10	5.4230	5.7	X	X	X		
434	2007-10-13	11	5.4230	5.7	X	X	X		
435	2007-10-13	12	5.4230	5.7	X	X	X		
436	2007-10-14	08	5.4230	5.4	X	X	X	D-region	
437	2007-10-14	09	5.4230	5.3	X	X	X		
438	2007-10-14	10	5.4230	5.8	X	X	X		
439	2007-10-14	11	5.4230	5.7	X	X	X		
440	2007-10-14	12	5.4230	5.2	X	X	X		
441	2007-10-15	09	5.4230	5.7	X	X	X	D-region	
442	2007-10-15	10	5.4230	5.7	X	X	X		
443	2007-10-15	11	5.4230	5.7	X	X	X		
444	2007-10-16	09	5.4230	5.7	X	X	X	D-region	
445	2007-10-16	10	5.4230	5.4	X	X	X		
446	2007-10-16	11	5.4230	5.4	X	X	X		
447	2007-10-17	09	5.4230	5.0	X	X	X	D-region	
448	2007-10-17	10	5.4230	5.1	X	X	X		
449	2007-10-17	11	5.4230	5.6	X	X	X		
450	2007-10-18	09	5.4230	6.9	X	X	X	D-region	
451	2007-10-18	10	5.4230	6.5	X	X	X		
452	2007-10-18	11	5.4230	6.9	X	X	X		
453	2007-10-19	09	5.4230	4.7	X	X	X	D-region	
454	2007-10-19	10	5.4230	4.9	X	X	X		
455	2007-10-19	11	5.4230	4.7	X	X	X		
456	2008-02-05	09	5.4230	5.2	X	X	X	PMWE	
457	2008-02-05	10	5.4230	5.3	X	X	X		
458	2008-02-05	11	5.4230	NaN	X	X	X		
459	2008-02-06	09	5.4230	4.8	X	X	X	PMWE	
460	2008-02-06	10	5.4230	5.3	X	X	X		
461	2008-02-06	11	5.4230	5.3	X	X	X		

462	2008-02-07	09	5.4230	4.8	X	X	X	PMWE
463	2008-02-07	10	5.4230	4.9	X	X	X	
464	2008-02-07	11	5.4230	4.9	X	X	X	
465	2008-02-08	11	5.4230	4.9	X	X	X	PMWE
466	2008-02-11	12	5.4230	4.9	X	X	X	PMWE
467	2008-02-11	13	5.4230	5.2	X	X	X	
468	2008-02-12	11	5.4230	4.6	X	X	X	PMWE
469	2008-02-12	12	5.4230	4.7	X	X	X	
470	2008-03-12	08	5.4230	0.0	X	X	X	PMWE?
471	2008-03-12	09	5.4230	0.0	X	X	X	
472	2008-03-12	10	5.4230	0.0	X	X	X	
473	2008-05-27	09	5.4230	4.7	X	X	X	PMSE
474	2008-05-27	10	5.4230	4.9	X	X	X	
475	2008-05-27	11	5.4230	4.8	X	X	X	
476	2008-05-27	12	5.4230	4.6	X	X	X	
477	2008-05-27	14	5.4230	NaN	X	X	X	Test
478	2008-05-27	15	7.9530	NaN	X	X	X	
479	2008-05-27	16	5.4230	NaN	X	X	X	
480	2008-05-27	17	5.4230	NaN	X	X	X	
481	2008-05-27	18	5.4230	NaN	X	X	X	
482	2008-05-30	09	5.4230	4.8	X	X	X	PMSE
483	2008-05-30	10	5.4230	4.7	X	X	X	
484	2008-05-30	12	5.4230	4.7	X	X	X	
485	2008-05-30	13	5.4230	4.7	X	X	X	
486	2008-06-16	08	5.4230	NaN	X	X	X	PMSE
487	2008-06-17	07	5.4230	NaN	X	X	X	Tune
488	2008-06-17	08	5.4230	NaN	X	X	X	PMSE
489	2008-06-17	09	5.4230	NaN	X	X	X	
490	2008-06-17	10	5.4230	NaN	X	X	X	
491	2008-06-17	11	5.4230	NaN	X	X	X	
492	2008-06-18	07	5.4230	NaN	X	X	X	Tune
493	2008-06-19	10	5.4230	4.8	X	X	X	PMSE
494	2008-06-19	11	5.4230	4.7	X	X	X	
495	2008-06-26	08	5.4230	NaN	X	X	X	PMSE
496	2008-06-26	09	5.4230	NaN	X	X	X	
497	2008-06-26	10	5.4230	NaN	X	X	X	
498	2008-06-26	11	5.4230	NaN	X	X	X	
499	2008-06-28	09	5.4230	NaN	X	X	X	XMOD
500	2008-06-28	10	5.4230	NaN	X	X	X	
501	2008-06-28	11	5.4230	NaN	X	X	X	
502	2008-07-03	11	6.7700	0.0	X	X	X	PMSE
503	2008-09-29	12	5.4230	4.8	X	X	X	Test
504	2008-09-29	13	5.4230	4.9	X	X	X	
505	2008-09-29	14	5.4230	4.9	X	X	X	
506								
507	2008-10-27	13	5.4230	4.9	U	-	U	
508								
509	2008-10-31	11	5.4230	5.3	Q	X	X	QL plot unsuitable
510	2008-10-31	12	6.2000	5.4	Q	X	X	
511	2008-10-31	13	5.4230	5.0	Q	X	X	
512	2008-10-31	14	5.4230	4.8	Q	X	X	
513								
514	2008-11-03	11	6.2000	5.4	U	U	U	
515	2008-11-03	13	5.4230	5.2	U	U	U	
516								
517	2008-11-04	12	6.2000	6.0	Q	X	X	QL plot unsuitable
518								
519	2008-11-08	18	5.4230	5.9	U	U	U	disturbed conditions
520	2008-11-08	20	5.4230	5.8	U	U	U	
521	2008-11-08	21	5.4230	5.6	U	U	U	
522	2008-11-08	22	5.4230	5.8	U	U	U	
523								
524	2008-11-26	10	5.4230	4.8	X	X	X	D-region
525								
526	2009-01-19	12	5.4230	4.9	X	X	X	Test
527	2009-05-15	17	5.4230	4.9	X	X	X	Test

528	2009-05-16	19	5.4230	5.0	X	X	X	Test
529	2009-05-19	09	5.4230	5.2	X	X	X	Test
530	2009-05-19	12	5.4230	5.5	X	X	X	Test
531	2009-07-22	10	5.4230	0.0	X	X	X	PMSE
532	2009-07-22	11	5.4230	NaN	X	X	X	
533	2009-07-23	08	5.4230	0.0	X	X	X	PMSE
534	2009-07-23	10	5.4230	NaN	X	X	X	
535	2009-07-23	11	5.4230	NaN	X	X	X	
536	2009-07-24	09	5.4230	NaN	X	X	X	PMSE
537	2009-07-24	10	5.4230	NaN	X	X	X	
538	2009-07-24	11	5.4230	NaN	X	X	X	
539	2009-07-27	10	5.4230	NaN	X	X	X	
540	2009-07-27	11	5.4230	NaN	X	X	X	
541	2009-07-28	09	5.4230	NaN	X	X	X	PMSE
542	2009-07-28	10	5.4230	NaN	X	X	X	
543	2009-07-28	11	5.4230	NaN	X	X	X	
544	2009-07-29	09	5.4230	NaN	X	X	X	Partial refl.
545	2009-07-30	09	5.4230	NaN	X	X	X	PMSE
546	2009-07-30	10	5.4230	NaN	X	X	X	
547	2009-07-30	11	5.4230	NaN	X	X	X	
548	2009-07-31	07	5.4230	4.7	X	X	X	Tune
549	2009-07-31	09	5.4230	NaN	X	X	X	PMSE
550	2009-07-31	10	5.4230	NaN	X	X	X	
551	2009-07-31	11	5.4230	NaN	X	X	X	
552	2009-08-01	09	5.4230	NaN	X	X	X	Partial refl.
553	2009-08-01	10	5.4230	NaN	X	X	X	
554	2009-08-09	09	5.4230	4.7	X	X	X	PMSE
555	2009-08-09	10	5.4230	4.7	X	X	X	
556	2009-08-09	11	5.4230	4.8	X	X	X	
557	2009-08-11	12	5.4230	4.6	X	X	X	PMSE
558	2009-08-11	13	5.4230	4.7	X	X	X	
559	2009-08-12	09	5.4230	4.9	X	X	X	PMSE
560	2009-08-12	10	5.4230	4.8	X	X	X	
561	2009-08-12	11	5.4230	4.9	X	X	X	
562	2009-08-12	12	5.4230	4.9	X	X	X	
563	2009-12-13	06	7.9530	0.0	X	X	X	D-region
564								
565	2010-03-02	12	5.4230	6.2	U	U	-	
566	2010-03-02	13	5.4230	6.2	U	U	-	
567	2010-03-02	14	5.4230	5.2	U	U	U	
568								
569	2010-03-12	10	5.4249	5.4	U	U	-	
570	2010-03-12	12	5.4249	5.7	U	U	-	
571								
572	2010-03-14	09	5.4249	6.0	U	U	-	
573	2010-03-14	10	5.4249	5.6	U	U	-	
574	2010-03-14	11	5.4249	5.5	U	U	-	
575	2010-03-14	12	5.4249	5.3	U	U	-	
576	2010-03-14	13	5.4249	5.4	U	U	-	
577								
578	2010-06-01	08	7.9530	0.0	X	X	X	Tune
579	2010-06-01	09	7.9530	0.0	X	X	X	PMSE
580	2010-06-09	08	7.1000	6.8	X	X	X	PMSE
581	2010-06-09	10	7.1000	10.6	X	X	X	
582	2010-06-18	08	7.1000	8.9	X	X	X	PMSE
583	2010-09-13	09	5.4230	5.9	X	X	X	Test
584								
585	2010-09-13	10	5.4230	5.9	U	U	-	radar scanning
586	2010-09-13	11	5.4230	6.0	U	U	-	
587	2010-09-13	12	5.4230	6.0	U	U	-	
588								
589	2010-09-14	10	5.4230	7.9	U	U	-	radar scanning
590	2010-09-14	11	5.4230	7.1	U	U	-	
591	2010-09-14	12	5.4230	6.2	U	U	-	
592								
593	2010-11-27	21	7.9530	0.0	X	X	X	MARE

594	2010-11-28	19	7.9530	8.5	X	X	X	MARE
595	2010-11-28	23	7.9530	0.0	X	X	X	MARE
596	2010-12-06	22	7.9530	8.9	X	X	X	MARE
597	2010-12-06	23	7.9530	8.0	X	X	X	MARE
598	2010-12-07	17	7.9530	0.0	X	X	X	MARE
599	2010-12-07	19	7.9530	0.0	X	X	X	MARE
600	2010-12-16	10	3.9500	5.2	X	X	X	Actually A2
601	2010-12-16	11	3.9500	5.5	X	X	X	
602	2010-12-16	12	3.9500	5.2	X	X	X	
603								
604	2011-03-07	12	6.1988	7.0	Y	Y	-	
605	2011-03-07	13	6.9588	6.8	U	-	U	
606	2011-03-07	14	6.9588	7.2	U	U	-	
607								
608	2011-05-07	10	6.2000	6.9	U	U	-	radar scanning
609	2011-05-07	11	6.2000	6.6	U	U	-	
610	2011-05-07	12	6.2000	6.5	U	U	-	
611								
612	2011-05-09	10	6.2000	6.8	U	U	-	radar scanning
613	2011-05-09	11	6.2000	6.0	U	U	-	
614								
615	2011-05-10	09	6.2000	6.9	X	X	X	test
616	2011-05-10	10	6.2000	7.5	U	U	-	
617	2011-05-10	11	6.2000	7.4	U	U	-	
618	2011-05-10	12	6.2000	6.3	U	U	-	
619								
620	2011-07-04	11	5.3000	5.8	U	U	-	HF initially 6 S
621	2011-07-04	12	5.3000	6.0	U	U	-	
622								
623	2011-10-05	12	5.4230	7.3	U	U	-	disturbed conditions
624	2011-10-05	13	5.4230	0.0	U	U	U	
625								
626	2011-10-06	13	5.4230	7.0	U	U	-	
627	2011-10-06	14	5.4230	5.8	U	U	-	
628								
629	2011-10-07	13	6.1980	6.2	U	U	-	
630	2011-10-07	14	6.1980	6.5	Y	Y	-	
631	2011-10-07	15	6.7651	7.0	Y	Y	-	
632	2011-10-07	16	6.7700	6.4	Y	-	Y	
633	2011-10-07	17	6.2000	5.7	Y	Y	-	
634								
635	2011-10-08	13	7.1000	7.7	Y	Y	-	
636	2011-10-08	14	7.9530	7.2	Y	-	Y	
637	2011-10-08	15	6.2000	6.5	Y	-	Y	
638	2011-10-08	16	5.4230	5.0	U	-	U	
639								
640	2011-10-09	12	6.2000	6.2	X	X	X	tune
641								
642	2011-10-09	14	5.4230	5.6	Y	Y	-	radar scanning
643	2011-10-09	15	5.4230	5.4	Y	Y	U	
644								
645	2011-10-10	13	6.2000	nan	U	U	-	radar scanning
646	2011-10-10	14	6.2000	nan	Y	U	Y	
647	2011-10-10	15	7.1000	nan	Y	-	Y	
648	2011-10-10	16	6.2000	nan	Y	-	Y	
649	2011-10-10	17	5.4230	nan	Y	-	Y	
650	2011-10-10	18	5.4230	nan	Y	-	Y	
651								
652	2011-10-11	12	7.1000	7.5	X	X	X	CW tune-up
653								
654	2011-10-11	13	7.1000	7.7	Y	Y	Y	
655	2011-10-11	14	7.9530	7.5	Y	-	Y	
656	2011-10-11	15	7.1000	7.2	Y	-	Y	
657	2011-10-11	16	5.4230	5.1	U	-	U	
658								
659	2011-10-12	13	7.1000	7.9	Y	Y	-	

660	2011-10-12	14	7.9530	7.6	Y	Y	Y	
661	2011-10-12	15	7.1000	8.2	Y	-	Y	
662	2011-10-12	16	5.4230	6.6	Y	-	Y	
663								
664	2011-11-03	12	7.1001	7.3	Y	Y	-	
665	2011-11-03	13	6.2001	7.2	Y	Y	-	
666	2011-11-03	14	6.2001	6.1	Y	Y	-	
667	2011-11-03	15	5.4251	6.1	Y	Y	-	
668								
669	2011-11-08	10	7.9530	9.8	X	X	X	test
670	2011-11-14	12	6.8800	11.5	X	X	X	test
671	2011-11-14	13	5.5200	10.3	X	X	X	test
672								
673	2011-11-15	10	7.2730	11.7	Y	Y	Y	
674	2011-11-15	11	7.2730	11.5	Y	Y	Y	
675	2011-11-15	12	7.2730	11.4	Y	Y	Y	
676	2011-11-15	13	7.2730	9.8	Y	Y	Y	
677								
678	2011-11-16	11	6.7000	10.3	Y	Y	-	
679	2011-11-16	12	6.7000	10.3	Y	Y	-	
680	2011-11-16	13	6.7000	8.6	Y	Y	-	
681								
682	2011-11-17	13	7.9530	8.6	Y	Y	-	
683	2011-11-17	14	6.2000	7.8	Y	Y	-	
684	2011-11-17	15	6.2000	6.3	Y	Y	-	
685								
686	2011-11-18	10	7.2730	10.3	Q	Q	Q	
687	2011-11-18	11	7.2730	11.5	Q	Q	Q	
688	2011-11-18	12	6.7000	9.1	Y	Y	-	
689	2011-11-18	13	5.3095	8.5	Y	Y	-	
690	2011-11-18	14	6.2000	6.9	Y	Y	-	
691	2011-11-18	15	6.2000	5.7	Y	Y	-	
692								
693	2011-11-19	12	6.0500	8.5	Y	Y	-	
694	2011-11-19	13	6.0500	8.7	Y	Y	-	
695	2011-11-19	14	6.2000	6.5	Y	Y	-	
696								
697	2011-11-20	11	7.5200	9.0	X	X	X	tune
698								
699	2011-11-20	12	7.3700	8.6	Y	Y	-	
700	2011-11-20	13	6.0500	7.8	Y	Y	-	
701	2011-11-20	14	6.2000	6.5	Y	Y	-	
702	2011-11-20	15	5.5200	6.0	Y	Y	-	
703								
704	2011-11-22	11	6.7000	10.9	Y	Y	-	
705	2011-11-22	12	6.0500	10.5	Y	Y	-	
706	2011-11-22	13	6.7700	7.5	U	U	-	
707								
708	2011-11-23	12	6.7000	9.0	Y	Y	-	
709	2011-11-23	13	6.7000	8.4	Y	Y	-	
710	2011-11-23	14	5.4230	6.5	Y	Y	-	
711	2011-11-23	15	3.9500	4.4	Y	Y	-	
712								
713	2011-11-24	10	5.3095	8.7	Y	Y	-	
714	2011-11-24	11	6.7000	8.6	Y	Y	-	
715	2011-11-24	12	6.2000	8.3	Y	Y	Y	
716	2011-11-24	13	5.5200	5.1	U	U	U	
717								
718	2011-11-25	09	6.7700	6.7	X	X	X	tune
719								
720	2011-11-25	10	5.4230	7.9	U	U	-	
721	2011-11-25	11	7.1000	9.1	U	U	-	
722	2011-11-25	12	6.7000	7.8	Y	Y	-	
723	2011-11-25	13	5.3095	6.4	Y	Y	-	
724								
725	2011-11-26	11	7.5200	7.9	X	X	X	tune

726
727 2011-11-26 12 6.7000 7.6 Y Y -
728 2011-11-26 13 5.3095 7.3 Y Y -
729 2011-11-26 14 6.2000 5.8 Y Y -
730
731 2011-11-27 12 6.7000 0.0 Y Y -
732 2011-11-27 13 5.3095 0.0 Y Y -
733 2011-11-27 14 6.2000 0.0 U U -
734
735 2011-12-07 09 5.4230 7.1 X X X API
736 2011-12-07 10 5.4230 7.5 X X X
737 2011-12-07 11 5.4230 7.3 X X X
738 2011-12-07 12 5.4230 7.2 X X X
739 2011-12-07 13 5.4230 6.9 X X X
740 2011-12-07 14 5.4230 4.7 X X X
741 2011-12-08 08 5.4230 5.0 X X X API
742 2011-12-08 09 5.4230 6.4 X X X
743 2011-12-08 10 5.4230 7.7 X X X
744 2011-12-09 08 5.4230 5.0 X X X API
745 2011-12-09 09 5.4230 6.3 X X X
746 2011-12-09 10 5.4230 7.3 X X X
747 2011-12-09 11 5.4230 7.2 X X X
748 2011-12-09 12 5.4230 6.4 X X X
749 2011-12-09 13 5.4230 5.1 X X X
750 2011-12-11 13 5.4230 5.8 X X X
751 2011-12-11 14 5.4230 4.8 X X X
752 2011-12-12 08 5.4230 5.4 X X X API
753 2011-12-12 09 5.4230 6.1 X X X
754 2011-12-12 10 5.4230 7.1 X X X
755 2011-12-12 11 5.4230 7.9 X X X
756 2011-12-12 12 5.4230 7.1 X X X
757 2011-12-12 13 5.4230 6.4 X X X
758 2011-12-13 09 5.4230 6.1 X X X
759 2011-12-13 10 5.4230 6.9 X X X
760 2011-12-13 11 5.4230 7.1 X X X
761 2011-12-13 12 5.4230 7.3 X X X
762 2011-12-13 13 5.4230 6.4 X X X
763 2011-12-13 14 5.4230 5.1 X X X
764 2011-12-14 09 5.3600 5.8 X X X API
765 2011-12-14 10 5.3600 6.7 X X X
766 2011-12-14 11 5.3600 6.9 X X X
767 2011-12-14 12 5.3600 6.2 X X X
768 2011-12-14 13 5.3600 6.1 X X X
769 2011-12-15 09 5.3600 6.3 X X X API
770 2011-12-15 10 5.3600 7.3 X X X
771 2011-12-15 11 5.3600 7.1 X X X
772 2011-12-15 12 5.3600 6.3 X X X
773 2011-12-15 13 5.3600 6.1 X X X
774 2012-01-25 09 5.4230 NaN X X X PMWE
775 2012-01-25 10 5.4230 NaN X X X
776 2012-01-25 11 5.4230 NaN X X X
777 2012-01-25 12 5.4230 NaN X X X
778 2012-01-25 13 7.9530 NaN X X X
779 2012-01-25 14 7.9530 NaN X X X
780 2012-01-26 10 7.9530 NaN X X X PMWE
781 2012-01-26 11 7.1000 NaN X X X
782 2012-01-26 12 7.1000 NaN X X X
783 2012-01-26 13 7.1000 NaN X X X
784 2012-01-30 11 5.4230 NaN X X X PMWE
785 2012-01-30 12 5.4230 NaN X X X
786 2012-01-30 13 5.4230 NaN X X X
787
788 2012-02-12 13 6.2000 7.1 U U - radar scanning
789 2012-02-12 14 6.2000 6.2 U U -
790
791 2012-02-13 11 7.1000 8.2 Y Y -

924 2012-10-12 12 6.2000 6.7 U - U
925 2012-10-12 13 5.4230 5.8 U U U
926
927 2012-10-13 14 4.0400 4.1 X X X array 2!
928 2012-10-13 15 4.0400 4.8 X X X
929 2012-10-13 16 4.0400 5.1 X X X
930 2012-10-13 17 4.0400 5.3 X X X
931 2012-10-14 10 6.2000 7.5 X X X tune/cal
932 2012-10-14 11 6.9600 7.2 X X X
933 2012-10-14 12 6.2000 6.6 X X X
934
935 2012-10-14 14 6.2000 5.9 U - U
936 2012-10-14 15 6.2000 5.8 U - U
937
938 2012-10-15 08 5.4230 6.0 X X X tune
939
940 2012-10-15 12 6.7700 7.1 U - U scanning
941 2012-10-15 13 6.2000 6.0 U U U
942 2012-10-15 14 5.4230 6.0 U - U
943 2012-10-15 15 5.4230 5.8 U - U
944 2012-10-15 16 5.4230 5.4 Y - Y
945
946 2012-10-16 10 6.9600 8.9 X X X cal
947 2012-10-16 11 7.1000 9.2 Q Q Q
948 2012-10-16 12 7.1000 8.9 Q Q Q
949
950 2012-10-16 13 7.1000 8.4 Y Y -
951 2012-10-16 14 6.9600 7.2 Y Y -
952 2012-10-16 15 5.4230 7.1 U U -
953
954 2012-10-17 08 6.7700 7.1 X X X test
955 2012-10-17 09 6.7700 8.1 X X X
956 2012-10-17 11 7.9530 8.3 X X X test
957
958 2012-10-17 12 7.1000 8.0 Q Q Q
959 2012-10-17 13 7.1000 8.0 Q Q Q
960 2012-10-17 14 7.1000 7.8 Q Q Q
961 2012-10-17 15 7.1000 6.8 Q Q Q
962 2012-10-17 16 5.4230 6.7 Q Q Q
963
964 2012-10-18 11 6.7700 10.5 U U -
965 2012-10-18 12 7.9530 10.3 Y - Y radar scanning
966 2012-10-18 13 7.9530 9.4 Y U Y
967 2012-10-18 14 7.9530 9.3 Y U Y
968 2012-10-18 15 7.9530 7.9 Y - Y
969 2012-10-18 16 5.4230 6.5 U U -
970
971 2012-10-19 11 7.9530 10.3 Y - Y radar scanning
972 2012-10-19 12 7.9530 10.3 Y U Y
973 2012-10-19 13 7.9530 9.3 Y Y -
974 2012-10-19 14 7.9530 8.8 U U -
975 2012-10-19 15 7.1000 7.9 Y Y -
976 2012-10-19 16 7.1000 7.3 Y Y -
977 2012-10-19 17 6.2000 6.5 Y - Y
978 2012-10-19 18 5.4230 5.8 U U U
979
980 2012-10-20 13 7.9530 9.3 Y U Y
981 2012-10-20 14 7.9530 9.2 Y U Y
982 2012-10-20 15 7.9530 7.9 Y Y Y
983 2012-10-20 16 7.1000 7.8 Y - Y
984 2012-10-20 17 6.2000 7.0 Y - Y
985 2012-10-20 18 6.2000 6.6 Y - Y
986
987 2012-10-21 13 7.9530 9.3 Y U Y radar scanning
988 2012-10-21 14 7.9530 9.1 Y U Y radar scanning
989 2012-10-21 15 7.9530 9.0 Y U Y radar scanning

990	2012-10-21	16	7.1000	7.9	Y	Y	Y	
991	2012-10-21	17	7.1000	6.5	Y	-	Y	
992								
993	2012-10-22	12	5.4230	10.6	X	X	X	tune
994	2012-10-22	13	7.9530	10.1	Y	U	Y	radar scanning
995	2012-10-22	14	7.9530	9.3	Y	U	Y	radar scanning
996	2012-10-22	15	7.9530	9.2	Y	U	Y	
997	2012-10-22	16	7.1000	8.2	Y	Y	Y	
998	2012-10-22	17	7.1000	7.0	Y	Y	Y	
999								
1000	2012-10-24	09	5.4230	9.6	X	X	X	test
1001								
1002	2012-11-23	09	5.4091	7.7	U	U	-	
1003	2012-11-23	10	6.1861	8.5	Y	Y	-	
1004								
1005	2012-11-24	08	5.4091	0.0	U	U	-	disturbed conditions
1006	2012-11-24	09	5.4091	5.8	U	U	-	
1007	2012-11-24	10	5.4091	7.2	U	U	-	
1008	2012-11-24	11	6.1861	6.9	U	U	-	
1009								
1010	2012-12-03	10	5.6020	5.8	X	X	X	not in handwritten log
1011	2012-12-03	11	5.6020	5.9	Y	-	Y	large data gap
1012	2012-12-03	12	5.6020	5.7	Y	-	Y	
1013	2012-12-03	13	5.6020	5.1	Y	-	Y	
1014								
1015	2012-12-04	11	5.6020	5.7	Y	-	Y	
1016	2012-12-04	12	5.6020	5.5	Y	Y	Y	
1017	2012-12-04	13	5.6020	5.0	Y	Y	U	
1018								
1019	2012-12-05	11	5.4230	5.2	X	X	X	
1020								
1021	2012-12-06	10	5.6020	5.6	Y	-	Y	
1022	2012-12-06	11	5.6020	5.5	Y	Y	Y	
1023	2012-12-06	12	5.6003	5.3	Y	Y	-	
1024								
1025	2012-12-07	10	5.4230	5.7	X	X	X	
1026	2012-12-07	11	5.4230	5.5	X	X	X	
1027	2012-12-07	12	5.4230	5.0	X	X	X	
1028	2012-12-07	13	5.6056	4.9	U	-	U	
1029								
1030	2013-02-16	12	6.2000	6.7	Y	U	Y	
1031	2013-02-16	13	5.3000	6.6	Y	U	Y	
1032	2013-02-16	14	5.3000	5.7	Y	Y	Y	
1033	2013-02-16	15	5.3000	5.2	Y	-	Y	
1034								
1035	2013-02-17	12	5.3000	5.6	U	U	U	
1036	2013-02-17	13	5.3000	5.0	U	U	U	
1037								
1038	2013-02-18	12	5.3000	5.3	U	U	-	
1039	2013-02-18	13	5.3000	5.5	U	U	U	
1040	2013-02-18	14	5.3000	5.4	U	U	U	but Y after 15:30 UT, A2, X-mode
1041								
1042	2013-02-19	12	6.2000	6.9	U	U	U	radar scanning
1043	2013-02-19	13	6.2000	6.7	U	U	U	
1044	2013-02-19	14	5.4230	5.8	U	U	U	disturbed conditions
1045								
1046	2013-02-20	12	5.3500	7.2	U	U	-	
1047	2013-02-20	13	5.3500	7.3	U	U	-	disturbed conditions
1048	2013-02-20	14	5.4230	5.8	U	U	U	X-mode was A2
1049								
1050	2013-02-21	12	7.1000	7.8	Y	Y	Y	
1051	2013-02-21	13	7.1000	7.3	Y	Y	Y	
1052	2013-02-21	14	5.4230	6.8	Y	Y	Y	
1053	2013-02-21	15	5.4230	5.9	Y	U	Y	
1054								
1055	2013-02-23	08	5.4230	5.8	U	U	-	

1056	2013-02-23	09	6.2000	7.0	U	U	-	
1057	2013-02-23	10	6.2000	6.6	U	U	U	
1058	2013-02-23	11	6.2000	7.3	Y	U	Y	
1059	2013-02-23	12	6.2000	7.3	Y	Y	Y	
1060	2013-02-23	13	5.4230	6.6	Y	Y	-	
1061	2013-02-23	14	6.2000	6.9	Y	Y	Y	
1062	2013-02-23	15	5.4230	5.7	Y	-	Y	
1063								
1064	2013-02-24	11	5.4230	5.9	U	U	U	
1065	2013-02-24	12	5.4230	6.2	U	U	-	
1066	2013-02-24	13	5.4230	6.5	U	U	U	
1067	2013-02-24	14	5.4230	5.9	U	U	U	
1068								
1069	2013-02-25	08	5.4230	6.5	U	U	U	
1070	2013-02-25	09	5.4230	6.8	Y	U	Y	
1071	2013-02-25	10	6.2000	7.3	Y	-	Y	
1072	2013-02-25	11	6.7700	7.0	Y	Y	Y	
1073	2013-02-25	12	6.7700	7.2	Y	U	Y	
1074	2013-02-25	13	6.7000	7.1	Y	Y	Y	
1075	2013-02-25	14	5.4230	6.3	Y	Y	Y	
1076	2013-02-25	15	5.4230	6.0	Y	Y	Y	
1077	2013-02-25	16	5.4230	5.7	Y	U	Y	
1078	2013-02-25	17	5.4230	5.7	Y	-	Y	
1079								
1080	2013-02-26	08	5.4230	6.6	U	U	-	
1081	2013-02-26	09	6.2000	7.5	Y	Y	-	
1082	2013-02-26	10	6.2000	7.5	Y	Y	Y	
1083	2013-02-26	11	7.1000	8.1	Y	Y	Y	
1084	2013-02-26	12	7.1000	7.7	Y	Y	Y	
1085	2013-02-26	13	7.1000	7.9	Y	Y	Y	
1086	2013-02-26	14	5.4230	7.1	Y	Y	Y	
1087	2013-02-26	15	5.4230	5.8	U	U	U	
1088								
1089	2013-03-05	12	6.8000	7.9	Y	Y	-	
1090	2013-03-05	13	6.8800	7.8	Y	Y	-	
1091	2013-03-05	14	6.8800	7.9	Y	Y	-	
1092	2013-03-05	15	5.5500	7.2	Y	Y	-	
1093	2013-03-05	16	5.5500	6.7	U	U	-	
1094								
1095	2013-03-06	12	7.9530	9.2	U	U	-	
1096	2013-03-06	13	7.9530	8.1	Y	Y	-	
1097	2013-03-06	14	6.9600	7.7	Y	Y	-	
1098	2013-03-06	15	5.5600	6.9	Y	Y	-	
1099	2013-03-06	16	5.5600	6.0	U	U	-	
1100								
1101	2013-03-19	12	7.9530	7.9	X	X	X	tune
1102								
1103	2013-03-20	09	7.9530	7.9	X	X	X	PMWE
1104	2013-03-20	10	7.9530	7.5	X	X	X	
1105	2013-03-20	11	7.9530	8.1	X	X	X	
1106	2013-03-20	12	7.9530	7.9	X	X	X	
1107	2013-03-21	09	7.9530	0.0	X	X	X	
1108	2013-03-21	10	7.9530	0.0	X	X	X	
1109								
1110	2013-05-15	08	6.7700	6.4	X	X	X	test
1111	2013-05-15	09	6.7700	6.6	X	X	X	
1112	2013-05-21	16	6.7700	6.7	X	X	X	test
1113	2013-05-21	17	6.7700	6.9	X	X	X	
1114	2013-05-22	07	6.7700	7.7	X	X	X	PMSE
1115	2013-05-22	08	6.7700	7.6	X	X	X	
1116	2013-05-22	09	6.7700	7.9	X	X	X	
1117	2013-05-22	10	6.7700	7.8	X	X	X	
1118	2013-05-22	11	6.7700	7.7	X	X	X	
1119	2013-05-22	12	6.7700	7.8	X	X	X	
1120	2013-05-23	07	6.7700	0.0	X	X	X	
1121	2013-05-23	08	6.7700	0.0	X	X	X	

1122	2013-05-23	09	6.7700	0.0	X	X	X	
1123	2013-05-23	10	6.7700	0.0	X	X	X	
1124	2013-05-23	12	6.7700	0.0	X	X	X	
1125								
1126	2013-06-14	15	6.7700	6.2	X	X	X	test
1127	2013-06-14	16	6.7700	6.3	X	X	X	
1128	2013-06-17	09	6.7700	7.6	X	X	X	PMSE
1129	2013-06-17	10	6.7700	7.1	X	X	X	
1130	2013-06-17	11	6.7700	6.7	X	X	X	
1131	2013-06-17	12	6.7700	6.5	X	X	X	
1132	2013-06-18	09	6.7700	7.1	X	X	X	PMSE
1133	2013-06-18	10	6.7700	7.0	X	X	X	
1134	2013-06-18	11	6.7700	6.6	X	X	X	
1135	2013-06-20	09	6.7700	6.1	X	X	X	PMSE
1136	2013-06-22	09	6.7700	6.0	X	X	X	PMSE
1137	2013-06-22	10	6.7700	6.0	X	X	X	
1138	2013-06-23	12	6.7700	6.1	X	X	X	PMSE
1139								
1140	2013-07-24	09	6.7700	6.1	X	X	X	PMSE
1141	2013-07-24	11	6.7700	6.1	X	X	X	
1142	2013-07-25	10	6.7700	6.5	X	X	X	PMSE
1143	2013-07-25	11	6.7700	6.0	X	X	X	
1144	2013-07-25	13	6.7700	6.2	X	X	X	
1145	2013-07-27	12	6.7700	6.1	X	X	X	PMSE
1146	2013-07-29	09	6.7700	6.5	X	X	X	PMSE
1147	2013-07-29	10	6.7700	6.6	X	X	X	
1148	2013-07-29	11	6.7700	6.2	X	X	X	
1149	2013-07-29	12	6.7700	6.1	X	X	X	
1150	2013-07-29	13	6.7700	6.1	X	X	X	
1151								
1152	2013-10-18	12	6.2000	9.3	Y	U	Y	
1153	2013-10-18	13	6.2000	9.1	Y	U	Y	
1154								
1155	2013-10-19	12	6.2000	9.2	Y	U	Y	
1156	2013-10-19	13	6.2000	9.3	Y	U	Y	also A3
1157	2013-10-19	14	6.2000	9.1	Y	U	Y	also A3
1158	2013-10-19	15	6.2000	8.2	Y	Y	Y	also A3
1159								
1160	2013-10-20	12	6.2000	9.2	Y	U	Y	also A3
1161	2013-10-20	13	6.2000	9.2	Y	U	Y	also A3
1162	2013-10-20	14	6.2000	9.2	Y	U	Y	also A3
1163	2013-10-20	15	6.2000	7.7	Y	Y	Y	also A3
1164	2013-10-20	16	6.2000	6.4	Y	Y	Y	
1165								
1166	2013-10-21	10	7.1000	9.5	X	X	X	tune
1167	2013-10-21	12	7.9530	9.4	Q	Q	Q	
1168	2013-10-21	13	7.9530	9.3	Q	Q	Q	
1169	2013-10-21	14	7.9530	9.2	Q	Q	Q	
1170	2013-10-21	15	7.1000	8.5	Q	Q	Q	
1171								
1172	2013-10-22	12	7.9500	10.1	Y	Y	Y	
1173	2013-10-22	13	7.9500	10.3	Y	Y	Y	
1174	2013-10-22	14	6.6000	9.2	Y	Y	-	
1175	2013-10-22	15	6.7000	8.5	Y	Y	Y	
1176	2013-10-22	16	7.1000	8.2	Y	-	Y	
1177	2013-10-22	17	7.1000	7.0	Y	-	Y	
1178								
1179	2013-10-23	12	6.7000	9.2	U	U	-	disturbed conditions
1180	2013-10-23	13	6.7000	9.3	U	U	-	
1181	2013-10-23	14	5.4230	9.0	U	U	U	
1182	2013-10-23	15	5.4230	7.9	Y	U	Y	
1183	2013-10-23	16	6.2000	6.6	Q	Q	Q	
1184	2013-10-23	17	6.2000	6.2	Q	Q	Q	
1185								
1186	2013-10-24	12	5.4230	9.5	Q	Q	Q	
1187	2013-10-24	14	5.4230	9.3	Y	U	Y	also A3

1254	2013-11-25	08	5.4230	5.8	X	X	X	D-region
1255	2013-11-25	09	5.4230	6.9	X	X	X	
1256	2013-11-25	10	7.9530	7.2	X	X	X	
1257	2013-11-25	11	7.9530	7.3	X	X	X	
1258								
1259	2013-11-26	10	7.9530	7.3	X	X	X	
1260	2013-11-26	11	7.9530	7.3	X	X	X	
1261								
1262	2013-12-10	10	6.2000	7.8	X	X	X	tune
1263	2013-12-11	10	6.9600	7.9	X	X	X	tune
1264	2013-12-11	11	6.9600	7.8	X	X	X	rapid cycle
1265								
1266	2014-02-26	15	7.9530	9.7	X	X	X	tune
1267	2014-06-26	08	6.7700	7.4	X	X	X	PMSE
1268	2014-06-26	11	6.7700	6.6	X	X	X	
1269	2014-06-26	12	6.7700	6.4	X	X	X	
1270	2014-06-27	09	6.7700	6.1	X	X	X	PMSE
1271	2014-06-27	10	6.7700	6.1	X	X	X	
1272	2014-06-27	13	5.3000	5.8	X	X	X	
1273	2014-06-30	08	6.7700	6.3	X	X	X	PMSE
1274	2014-06-30	09	6.7700	6.2	X	X	X	
1275	2014-06-30	10	6.7700	6.3	X	X	X	
1276	2014-06-30	11	6.7700	6.3	X	X	X	
1277	2014-06-30	12	6.7700	6.1	X	X	X	
1278	2014-07-01	08	6.7700	6.8	X	X	X	PMSE
1279	2014-07-01	09	6.7700	6.6	X	X	X	
1280	2014-07-01	10	6.7700	7.3	X	X	X	
1281	2014-07-01	11	6.7700	6.4	X	X	X	
1282	2014-07-01	12	6.7700	6.5	X	X	X	
1283	2014-07-02	09	6.7700	7.8	X	X	X	PMSE
1284	2014-07-02	10	6.7700	7.0	X	X	X	
1285	2014-07-02	11	6.7700	6.6	X	X	X	
1286	2014-07-02	12	6.7700	6.8	X	X	X	
1287	2014-07-03	11	6.7700	6.4	X	X	X	PMSE
1288	2014-07-03	12	6.7700	6.8	X	X	X	
1289	2014-07-04	09	6.7700	6.6	X	X	X	PMSE
1290	2014-07-04	10	6.7700	7.2	X	X	X	
1291	2014-07-04	11	6.7700	7.4	X	X	X	
1292	2014-07-04	12	6.7700	6.7	X	X	X	
1293	2014-07-04	13	6.7700	6.4	X	X	X	
1294	2014-07-06	15	5.4230	6.5	X	X	X	tune
1295	2014-07-07	08	5.4230	7.4	X	X	X	tune
1296	2014-07-07	09	5.4230	7.0	Q	Q	Q	
1297	2014-07-07	10	5.4230	6.9	Q	Q	Q	
1298	2014-07-07	11	5.4230	6.7	Q	Q	Q	
1299	2014-07-08	07	7.9530	7.2	X	X	X	?
1300	2014-07-08	08	6.7700	7.5	X	X	X	PMSE
1301	2014-07-08	09	6.7700	7.5	X	X	X	
1302	2014-07-08	10	6.7700	7.0	X	X	X	
1303	2014-07-08	11	6.2000	6.7	Q	Q	Q	
1304	2014-07-08	12	6.2000	6.7	Q	Q	Q	
1305	2014-07-09	08	5.3000	7.4	X	X	X	PMSE
1306	2014-07-09	09	6.7700	7.0	X	X	X	
1307	2014-07-09	10	6.7700	6.8	X	X	X	
1308	2014-07-09	11	6.7700	6.6	X	X	X	
1309	2014-07-09	12	5.4230	6.7	X	X	X	
1310	2014-07-11	07	6.7700	6.3	X	X	X	PMSE
1311	2014-07-11	08	6.7700	6.3	X	X	X	
1312	2014-07-11	09	6.7700	6.5	X	X	X	
1313	2014-07-11	10	6.7700	7.0	X	X	X	
1314								
1315	2014-10-14	10	6.2000	7.2	X	X	X	tune
1316	2014-10-15	09	5.3000	7.0	X	X	X	tune
1317								
1318	2014-10-15	10	6.2000	7.4	U	U	U	
1319	2014-10-15	11	6.2000	7.2	U	U	U	

1320	2014-10-15	12	6.2000	7.2	U	U	U	
1321								
1322	2014-10-16	10	5.5780	9.1	U	U	-	
1323	2014-10-16	11	5.5780	9.0	U	-	U	
1324	2014-10-16	12	5.5780	9.3	U	U	-	
1325	2014-10-16	13	5.4230	10.5	U	-	U	
1326	2014-10-16	14	7.1000	10.7	Y	Y	Y	
1327	2014-10-16	15	7.1000	9.3	Y	Y	Y	
1328								
1329	2014-10-17	10	6.9600	10.2	U	U	-	
1330	2014-10-17	11	6.9750	10.6	Y	-	Y	
1331	2014-10-17	12	6.9750	9.8	U	U	-	
1332	2014-10-17	13	6.9750	9.2	Y	-	Y	
1333	2014-10-17	14	7.9530	9.2	Y	Y	Y	
1334	2014-10-17	15	5.4230	7.9	U	U	U	
1335								
1336	2014-10-18	14	5.4230	7.0	U	U	U	
1337								
1338	2014-10-19	09	5.5780	6.0	U	U	-	
1339	2014-10-19	10	5.5780	6.5	U	U	-	
1340								
1341	2014-10-20	10	6.9750	8.7	U	U	-	
1342	2014-10-20	11	6.9750	8.4	U	U	-	
1343	2014-10-20	12	6.9750	7.4	U	U	-	
1344	2014-10-20	13	7.1000	9.2	X	X	X	tune
1345	2014-10-20	16	7.1000	7.3	X	X	X	tune
1346								
1347	2014-10-21	09	6.2000	7.0	X	X	X	tune
1348	2014-10-21	10	6.2000	6.7	U	U	U	
1349	2014-10-21	11	6.2000	7.4	U	U	U	
1350								
1351	2014-10-23	10	7.1000	9.3	Y	Y	Y	
1352	2014-10-23	11	7.1000	8.2	Y	Y	Y	
1353	2014-10-23	12	7.1000	8.0	U	U	U	
1354								
1355	2014-10-24	09	7.9530	8.3	X	X	X	test
1356	2014-10-24	10	7.9530	9.8	Y	U	Y	
1357	2014-10-24	11	7.9530	10.1	Y	U	Y	
1358	2014-10-24	12	7.9530	9.2	U	U	U	
1359								
1360	2014-10-25	09	5.4230	7.7	X	X	X	tune
1361	2014-10-25	10	5.5780	9.1	U	U	-	
1362	2014-10-25	11	5.5780	9.0	U	U	-	
1363	2014-10-25	12	5.5780	7.9	U	U	-	
1364	2014-10-25	13	5.5780	7.8	U	U	-	
1365	2014-10-25	14	5.4230	7.9	U	U	U	disturbed conditions
1366	2014-10-25	15	5.4230	7.6	U	U	U	
1367	2014-10-25	16	5.4230	5.8	X	X	X	tune
1368	2014-10-25	17	5.4230	5.8	X	X	X	
1369								
1370	2014-10-26	08	6.7700	7.9	U	U	U	
1371	2014-10-26	09	7.1000	8.5	U	U	U	
1372	2014-10-26	10	6.9750	9.4	Y	Y	-	
1373	2014-10-26	11	6.9750	10.3	Y	Y	-	
1374	2014-10-26	12	6.9750	9.5	Y	Y	-	
1375	2014-10-26	13	6.9750	8.8	U	U	-	
1376								
1377	2014-10-27	10	6.9750	12.3	U	U	-	
1378	2014-10-27	11	5.5780	11.5	U	U	-	disturbed conditions
1379	2014-10-27	13	6.9750	10.2	Y	Y	-	
1380								
1381	2014-11-10	16	6.7700	6.3	X	X	X	test
1382	2014-11-10	17	6.7700	7.5	X	X	X	test
1383	2014-11-10	18	5.4230	5.0	X	X	X	test
1384								
1385	2014-11-11	10	7.9530	9.7	X	X	X	test

1386	2014-11-11	13	7.1000	NaN	X X X	test
1387	2014-11-11	14	6.7700	8.4	X X X	test
1388						
1389	2014-11-12	10	7.9530	10.9	U U	- radar scanning
1390	2014-11-12	11	7.9530	10.8	U U	-
1391	2014-11-12	12	7.9530	10.3	U U	-
1392	2014-11-12	13	7.1000	9.7	U U	-
1393	2014-11-12	14	7.9530	9.2	Y -	Y very brief O-mode (5 s)
1394	2014-11-12	15	6.2000	8.9	Y -	Y
1395	2014-11-12	17	5.4231	4.8	X X X	tune
1396						
1397	2014-11-13	12	7.9391	9.7	U U	-
1398	2014-11-13	13	6.7561	9.0	Y Y	-
1399	2014-11-13	14	6.2000	8.3	Y -	Y very brief O-mode (5 s)
1400	2014-11-13	15	5.4230	6.5	Y -	Y
1401	2014-11-13	16	5.4230	5.8	X X X	no radar
1402						
1403	2014-11-14	14	5.4230	7.0	Y -	Y very brief O-mode (5 s)
1404	2014-11-14	15	5.4230	5.7	X X X	no radar
1405						
1406	2014-11-17	08	5.4231	8.3	U U	-
1407	2014-11-17	09	7.0861	8.5	Y Y	-
1408	2014-11-17	10	7.9530	9.5	X X X	
1409	2014-11-17	11	7.9530	10.9	X X X	
1410	2014-11-17	12	7.9530	9.0	X X X	
1411						
1412	2014-11-18	08	6.7700	7.8	U U	-
1413	2014-11-18	09	6.7700	10.2	X X X	PMWE
1414	2014-11-18	10	7.9530	10.2	X X X	
1415	2014-11-18	11	7.9530	9.9	X X X	
1416	2014-11-18	12	7.9530	9.0	X X X	
1417	2014-11-18	13	5.4230	0.0	X X X	
1418						
1419	2014-11-19	08	6.1999	7.2	U U	-
1420	2014-11-19	09	6.1999	8.5	Y Y	-
1421	2014-11-19	10	6.2000	9.0	X X X	short pulses
1422	2014-11-19	11	6.2000	9.7	X X X	
1423	2014-11-19	12	6.2000	9.2	X X X	
1424						
1425	2014-11-20	08	6.7700	7.3	X X X	PMWE
1426	2014-11-20	09	6.7700	8.3	X X X	
1427	2014-11-20	11	7.9530	9.6	X X X	
1428	2014-11-20	12	7.9530	9.2	X X X	
1429	2014-11-20	13	5.3000	9.3	X X X	
1430						
1431	2014-11-21	08	6.7700	7.8	X X X	PMWE
1432	2014-11-21	09	6.7700	8.8	X X X	
1433	2014-11-21	10	7.9530	11.0	X X X	
1434	2014-11-21	14	5.4238	6.1	Q Q Q	
1435						
1436	2014-11-23	10	6.7700	10.6	X X X	PMWE
1437	2014-11-23	11	6.7700	10.8	X X X	
1438						
1439	2014-11-24	09	6.7700	9.0	X X X	PMWE
1440	2014-11-24	10	6.7700	10.5	X X X	
1441	2014-11-24	11	6.2000	11.4	X X X	short pulses
1442	2014-11-24	12	6.2000	9.4	X X X	
1443	2014-11-24	13	6.2000	9.1	X X X	
1444	2014-11-24	14	5.4230	6.2	U U	- disturbed conditions
1445						
1446	2014-11-25	10	5.3000	8.9	X X X	test
1447	2014-11-25	11	6.3000	9.2	U U	- radar scanning
1448	2014-11-25	12	6.3000	9.2	U U U	
1449	2014-11-25	13	6.3000	8.4	U U U	
1450	2014-11-25	14	5.3500	6.7	U U	-
1451						

1452	2014-11-26	10	6.3000	8.5	X X X	short pulses
1453	2014-11-26	11	6.3000	8.9	X X X	
1454	2014-11-26	12	6.3000	8.9	X X X	
1455	2014-11-26	13	5.4230	8.1	X X X	
1456						
1457	2014-11-27	10	6.3000	10.1	Y Y -	
1458	2014-11-27	11	6.3000	10.2	Y Y Y	
1459	2014-11-27	12	6.3000	10.5	Y Y Y	
1460	2014-11-27	13	5.4230	9.1	Y Y Y	
1461	2014-11-27	14	5.4230	7.5	Y Y U	
1462						
1463	2014-11-28	10	6.3000	10.6	X X X	test
1464	2014-11-28	11	6.3000	10.5	Q Q Q	"lace" program
1465	2014-11-28	12	6.3000	9.0	Q Q Q	
1466	2014-11-28	13	6.3000	7.6	Q Q Q	
1467						
1468	2014-11-29	10	6.2999	10.4	X X X	no radar
1469	2014-11-29	11	6.2999	10.6	X X X	
1470	2014-11-29	12	5.3000	9.5	X X X	test?
1471						
1472	2014-12-04	09	6.3000	9.0	X X X	short pulses
1473	2014-12-04	10	7.1000	9.0	X X X	
1474	2014-12-10	10	6.3000	7.4	X X X	short pulses
1475	2014-12-10	11	6.3000	8.4	X X X	
1476	2014-12-10	12	6.3000	8.9	X X X	
1477	2014-12-10	13	6.3000	7.0	X X X	
1478						
1479	2015-03-10	15	7.1000	9.0	Y Y -	
1480	2015-03-10	16	7.1000	9.0	Y Y -	
1481	2015-03-10	17	6.2000	8.4	Y Y -	
1482	2015-03-10	18	5.4230	6.8	U U -	
1483						
1484	2015-03-11	15	5.4230	5.8	U U -	disturbed conditions
1485						
1486	2015-03-12	07	5.4230	6.0	X X X	short pulses
1487	2015-03-12	08	5.4230	6.7	X X X	
1488	2015-03-12	15	6.2000	6.7	U U -	
1489	2015-03-12	16	5.4230	4.8	U U -	
1490						
1491	2015-03-13	15	6.2000	7.3	U U -	
1492	2015-03-13	16	6.2000	7.1	Y Y -	
1493	2015-03-13	17	5.4230	5.9	Y Y -	
1494						
1495	2015-03-14	15	7.1000	8.4	Y Y -	
1496	2015-03-14	16	7.1000	7.9	Y Y -	
1497	2015-03-14	17	5.4230	7.0	Y Y -	
1498						
1499	2015-04-14	09	6.7700	8.8	X X X	tune
1500	2015-04-14	10	7.0000	8.4	Y Y -	
1501	2015-04-14	11	7.0000	8.5	Y Y -	
1502	2015-04-14	12	7.0000	8.4	Y Y -	
1503	2015-04-14	13	7.0000	8.1	Y Y -	
1504						
1505	2015-04-15	09	5.4230	6.7	X X X	tune
1506	2015-04-15	10	5.6000	6.7	U U -	
1507	2015-04-15	11	5.6000	6.8	U U -	
1508						
1509	2015-04-16	12	5.6000	5.8	Q Q Q	
1510	2015-04-16	15	5.5500	7.0	U U -	
1511	2015-04-16	16	5.5500	5.9	U U -	
1512						
1513	2015-04-20	10	5.6000	7.6	U U -	
1514	2015-04-20	11	5.6000	7.5	U U -	
1515	2015-04-20	12	7.0000	7.6	Y Y -	
1516	2015-04-20	13	7.0000	7.2	Y Y -	
1517						

1518 2015-04-22 10 7.0000 8.2 U U -
1519 2015-04-22 11 7.0000 8.2 U U -
1520 2015-04-22 12 7.0000 8.4 Y Y -
1521 2015-04-22 13 5.6000 8.5 Y Y -
1522 2015-04-22 14 5.6000 8.2 X X X expt stopped at 14 UT.
1523
1524 2015-04-23 10 5.6000 8.2 U U -
1525 2015-04-23 11 5.6000 8.6 U U -
1526 2015-04-23 12 7.0000 8.5 U U -
1527 2015-04-23 13 7.0000 8.5 U U -
1528
1529 2015-04-24 10 5.6000 8.2 Y Y -
1530 2015-04-24 11 7.0000 8.1 Y Y -
1531 2015-04-24 12 7.0000 7.6 Y Y -
1532
1533 2015-04-27 11 7.0000 9.2 Y Y -
1534 2015-04-27 12 7.0000 9.5 Y Y -
1535 2015-04-27 13 7.0000 8.8 U U -
1536
1537 2015-07-02 08 5.3000 7.0 X X X tune
1538 2015-07-02 09 6.2000 7.4 U U -
1539
1540 2015-07-03 08 6.7700 7.4 X X X PMSE
1541 2015-07-03 09 6.7700 7.4 X X X
1542 2015-07-03 10 6.7700 7.3 X X X
1543 2015-07-03 11 6.7700 6.8 X X X
1544 2015-07-03 12 6.7700 6.6 X X X
1545
1546 2015-07-06 09 6.7700 6.3 X X X PMSE
1547 2015-07-06 10 6.7700 6.8 X X X
1548 2015-07-06 11 6.7700 6.7 X X X
1549
1550 2015-07-07 08 6.7700 6.7 X X X PMSE
1551 2015-07-07 09 6.7700 7.6 X X X
1552 2015-07-07 10 5.4230 6.7 U U -
1553 2015-07-07 12 6.7700 6.8 X X X PMSE
1554
1555 2015-07-08 07 6.7700 7.4 X X X PMSE
1556 2015-07-08 08 6.2000 7.4 U U -
1557 2015-07-08 09 6.7700 7.5 X X X PMSE
1558 2015-07-08 10 6.7700 7.0 X X X
1559 2015-07-08 11 6.7700 7.0 X X X
1560
1561 2015-07-09 07 6.7700 7.4 X X X PMSE
1562 2015-07-09 08 6.7700 6.9 X X X
1563 2015-07-09 09 6.7700 6.9 X X X
1564 2015-07-09 10 6.7700 6.7 X X X
1565 2015-07-09 11 6.7700 6.4 X X X
1566
1567 2015-07-10 08 6.7700 7.1 X X X PMSE
1568 2015-07-10 09 6.7700 7.1 X X X
1569 2015-07-10 12 6.7700 6.3 X X X
1570
1571 2015-07-13 10 6.7700 6.7 X X X PMSE
1572 2015-07-13 11 6.7700 8.2 X X X
1573
1574 2015-09-23 18 5.4230 10.0 X X X tune
1575 2015-09-23 19 6.7700 8.5 X X X
1576 2015-09-24 09 5.4230 5.5 U U -
1577 2015-09-24 11 5.4230 5.7 U U U
1578 2015-09-24 12 5.4230 5.5 U U U
1579
1580 2015-09-25 08 5.4230 5.4 U U -
1581 2015-09-25 12 5.4230 6.7 U U -
1582
1583 2015-09-28 07 5.4230 7.1 U U -

1584	2015-09-28	08	6.2000	7.5	U	U	-
1585	2015-09-28	09	6.7700	7.4	U	U	-
1586							
1587	2015-10-21	09	6.7700	8.2	X	X	X tune
1588	2015-10-21	10	7.0000	9.1	Y	Y	-
1589	2015-10-21	11	7.0000	9.1	Y	Y	-
1590	2015-10-21	12	7.0000	8.3	Y	Y	-
1591							
1592	2015-10-23	10	7.0000	8.3	Y	Y	-
1593	2015-10-23	11	7.0000	8.5	Y	Y	-
1594	2015-10-23	12	7.0000	9.2	Y	Y	-
1595							
1596	2015-10-24	10	7.0000	9.0	Y	Y	-
1597	2015-10-24	11	7.0000	9.0	Y	Y	-
1598	2015-10-24	12	7.0000	8.8	Y	Y	-
1599	2015-10-24	13	7.0000	8.7	Y	Y	-
1600							
1601	2015-10-25	10	7.0000	10.1	Y	Y	-
1602	2015-10-25	11	7.0000	9.9	Y	Y	-
1603	2015-10-25	12	7.0000	9.4	Y	Y	-
1604	2015-10-25	13	7.0000	8.9	Y	Y	-
1605							
1606	2015-10-26	09	5.4230	8.9	X	X	X tune
1607	2015-10-26	10	5.6000	9.4	Y	Y	- (but not strong)
1608	2015-10-26	11	5.6000	9.0	Y	Y	-
1609	2015-10-26	12	5.6000	9.2	Y	Y	-
1610	2015-10-26	13	5.6000	8.3	Y	Y	-
1611							
1612	2015-10-28	12	6.7700	10.4	X	X	X tune
1613	2015-10-28	13	7.9530	9.2	Y	Y	Y
1614	2015-10-28	14	6.7700	9.0	Y	Y	Y
1615	2015-10-28	15	5.4230	7.1	Y	Y	Y
1616	2015-10-28	16	5.4230	6.0	Y	-	Y
1617							
1618	2015-10-29	11	7.1000	10.0	X	X	X tune
1619	2015-10-29	12	6.2000	10.4	X	X	X
1620	2015-10-29	13	7.9530	9.0	Y	U	Y
1621	2015-10-29	14	5.4230	7.6	Y	-	Y
1622	2015-10-29	15	5.4230	6.7	Y	-	Y
1623	2015-10-29	16	5.4230	6.3	Y	-	Y
1624							
1625	2015-10-30	08	6.2000	7.4	X	X	X tune
1626	2015-10-30	09	6.2000	8.0	Y	Y	-
1627	2015-10-30	10	7.1000	8.5	Y	-	Y
1628	2015-10-30	11	7.1000	9.5	Y	Y	Y
1629	2015-10-30	12	7.9530	9.6	Y	Y	Y
1630							
1631	2015-10-31	11	7.1000	9.3	X	X	X tune
1632	2015-10-31	12	5.4230	8.5	X	X	X
1633	2015-10-31	13	7.1000	7.2	Y	Y	Y
1634	2015-10-31	14	5.3000	7.0	Y	Y	Y
1635							
1636	2015-11-02	11	5.4230	8.2	X	X	X tune
1637	2015-11-02	12	5.4230	8.9	X	X	X
1638	2015-11-02	13	6.7700	7.8	Y	Y	U
1639							
1640	2015-11-03	10	6.7700	9.3	Y	Y	U
1641	2015-11-03	11	6.3000	9.4	U	-	U
1642							
1643	2015-11-05	11	6.7700	8.4	U	U	U disturbed conditions
1644	2015-11-05	12	5.4230	7.6	U	U	-
1645							
1646	2015-11-06	11	5.3000	6.4	U	U	U
1647	2015-11-06	12	5.3000	6.4	U	U	U
1648	2015-11-06	13	5.3000	5.6	U	U	-
1649							

1650	2015-11-09	14	5.4230	11.6	U	U	-	disturbed conditions
1651	2015-11-09	15	5.4230	12.4	U	U	-	
1652								
1653	2015-11-16	10	5.4230	6.4	U	U	-	
1654	2015-11-16	11	5.4230	7.3	U	U	-	
1655	2015-11-16	12	5.4230	7.1	U	U	-	
1656								
1657	2015-11-18	10	6.7700	7.9	U	U	-	
1658	2015-11-18	12	6.7700	9.2	U	U	-	
1659	2015-11-18	13	5.4230	8.4	U	U	-	
1660								
1661	2015-11-26	11	6.2000	7.0	U	U	-	
1662	2015-11-26	12	5.3000	6.7	U	U	-	
1663								
1664	2015-11-27	11	6.2000	7.0	U	U	-	
1665	2015-11-27	12	5.4230	6.6	U	U	-	
1666								
1667	2015-12-04	11	5.4230	6.0	U	-	U	radar scanning
1668	2015-12-04	12	5.4230	5.8	U	U	U	
1669								
1670	2016-03-04	13	6.2000	7.1	X	X	X	tune
1671	2016-03-04	14	6.9600	8.1	Y	U	Y	
1672	2016-03-04	15	6.2000	7.8	Y	U	Y	
1673	2016-03-04	16	6.2000	6.0	Y	Y	Y	
1674								
1675	2016-03-09	10	5.3600	6.6	U	U	-	
1676	2016-03-09	11	5.3600	7.1	U	U	-	
1677	2016-03-09	12	5.3600	7.0	U	U	-	
1678								
1679	2016-03-10	10	5.3000	6.3	U	U	-	
1680	2016-03-10	11	5.3000	6.2	U	U	-	
1681	2016-03-10	12	5.3000	6.3	U	U	-	
1682								
1683	2016-03-11	10	5.3600	6.1	U	U	-	
1684	2016-03-11	11	5.3600	6.1	U	U	-	
1685	2016-03-11	12	5.3600	6.6	U	U	-	
1686								
1687	2016-04-22	08	4.0400	5.5	X	X	X	test
1688	2016-04-22	12	5.3000	5.7	X	X	X	
1689								
1690	2016-09-23	10	5.2000	6.1	X	X	X	tune
1691								
1692	2016-09-24	11	5.9000	6.6	U	U	-	
1693	2016-09-24	12	5.6000	6.2	U	U	-	
1694	2016-09-24	13	5.3000	5.8	U	U	-	
1695	2016-09-24	14	5.3000	5.6	U	U	-	
1696								
1697	2016-10-12	11	5.4230	6.4	X	X	X	tune
1698	2016-10-12	12	5.6000	6.1	X	X	X	short pulses
1699	2016-10-13	10	6.9600	8.9	X	X	X	tune
1700	2016-10-13	11	6.7700	7.0	X	X	X	short pulses
1701	2016-10-20	11	5.4230	6.1	X	X	X	tune
1702	2016-10-20	12	5.4230	6.0	Q	Q	Q	
1703	2016-10-20	13	5.3000	5.7	Q	Q	Q	but WAILES on A2 later
1704								
1705	2017-07-10	18	5.4230	4.8	X	X	X	API
1706	2017-07-10	19	5.4230	4.7	X	X	X	
1707	2017-07-11	06	5.4230	5.4	X	X	X	API
1708	2017-07-11	09	5.4230	0.0	X	X	X	
1709								
1710	2017-10-18	10	4.0400	5.9	Q	Q	Q	
1711	2017-10-18	11	5.4230	6.4	Q	Q	Q	
1712	2017-10-18	12	5.4230	5.6	Q	Q	Q	
1713	2017-10-18	13	5.4230	5.2	Q	Q	Q	
1714	2017-10-18	14	5.4230	4.7	Q	Q	Q	
1715	2017-10-19	10	5.5400	6.8	Q	Q	Q	

