

ANNEX F TO THE CASE FOR HIGHER THAN ADVERTISED MARTIAN AIR PRESSURE
 (Based on data from http://www-k12.atmos.washington.edu/k12/resources/mars_data-information/data.html)

Percent Difference Flow Chart for Viking-1 Sols 1 to 113, and 134 to 350

Annex F sums up the percent differences between Viking-1 measured pressures, for its Sols 1 to 113 and 134 to 350, and its predicted pressures as found in Appendices 1 and 2 to Annex D. Annex F only shows whether each pressure predicted had less than a 2% percent difference from what was measured. Where this was the case, the cell appears in red and the temperature (Kelvin) is indicated with white font in the red cell. Where the percent difference was greater than 2%, the cell is left uncolored. From Annex F it is readily apparent that when the heater had to come, the pressure at the transducer was forced up and into line with the pressure predicted for a gas being heated in a confined (dust clot,

sealed space). For example, there was less than a 2% difference at the 0.3 time-bins every day between VL-1 sols 211 and 287. This corresponds to about 7:23 AM Local True Solar Time, a good time to warm up equipment for morning operations. There was also a consistent series of good agreements with the predictions for afternoon operations and late night operations when it was necessary to prevent damage to the lander equipment. The time of the best agreement shifted as the year progressed from summer to winter. Figure 1 shows the overall success rate for predicting pressures in each cell (336 sols * 25 time-bins per cell = 8,400 predictions).

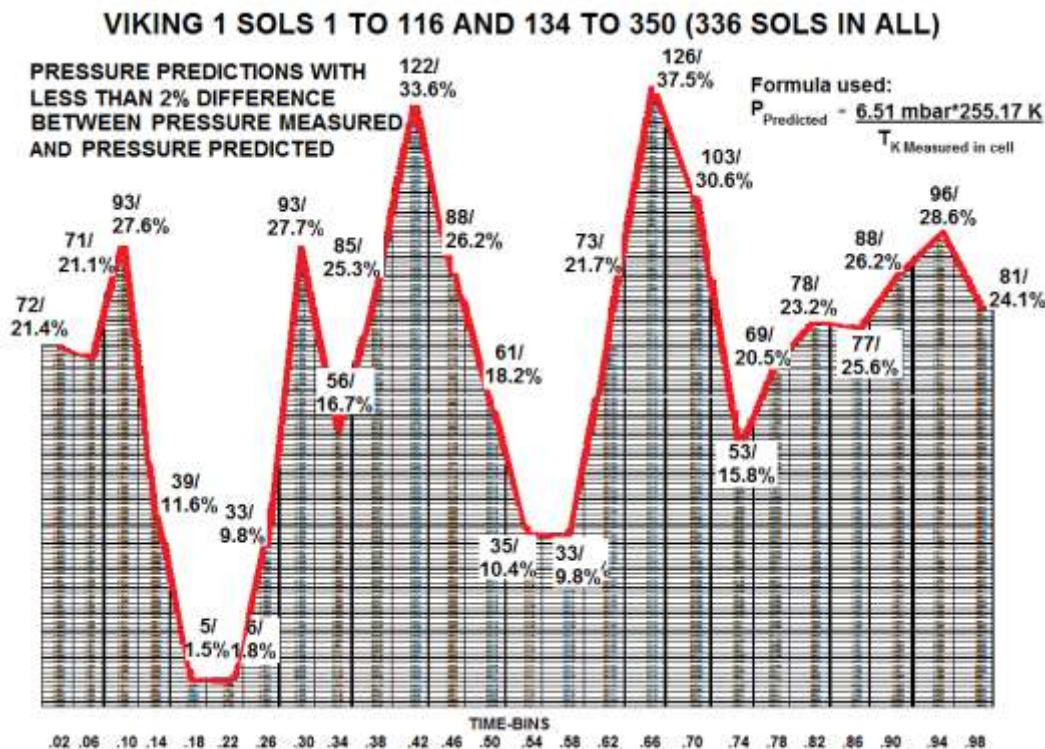
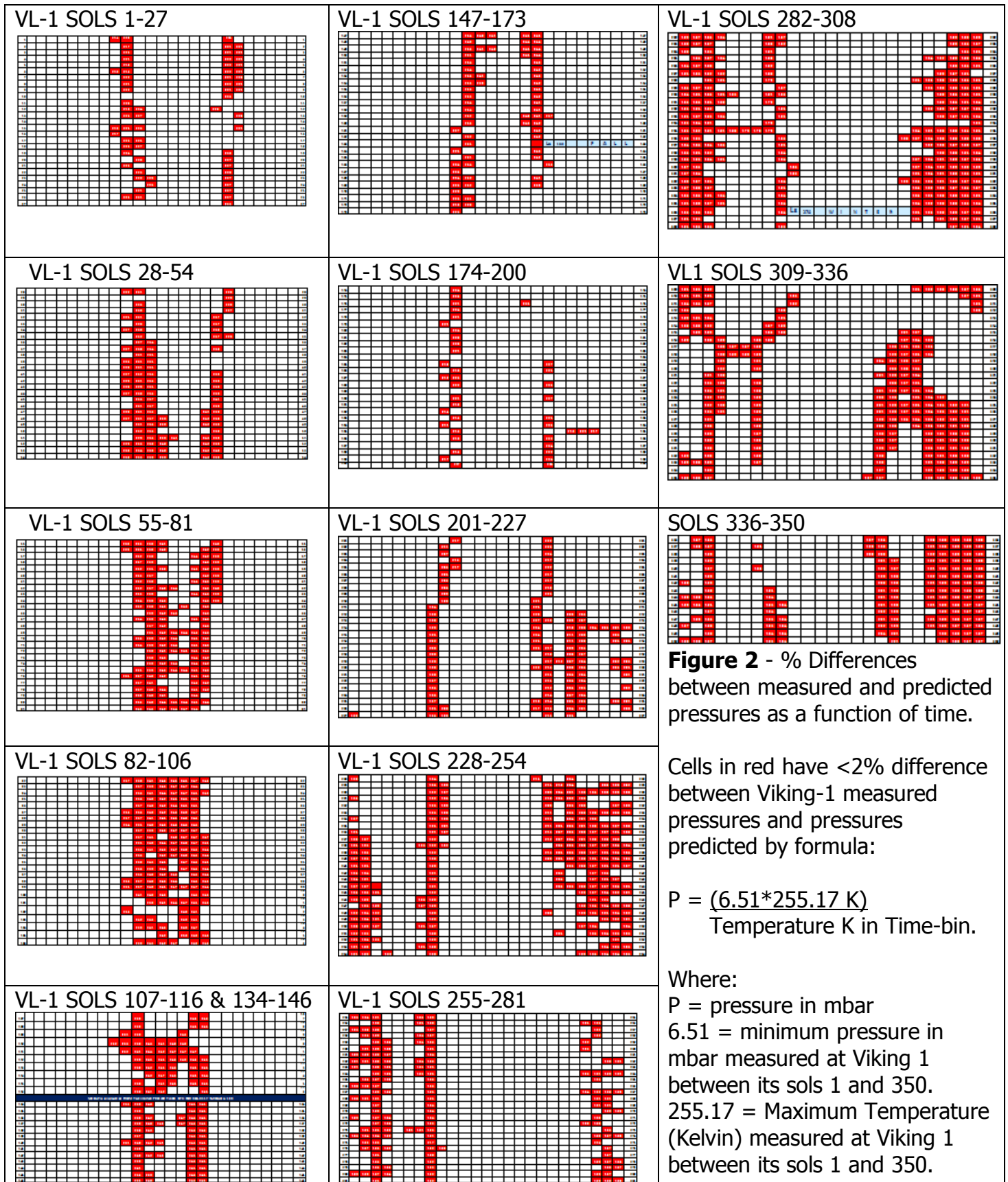


Figure 1 – Prediction success totals per time-bin and corresponding % of successful predictions.



It can be seen from Figure 2 that there was a first degree of moderate success in accurately predicting pressures in the mornings around the .38 and .42 time bins from the Viking-1 landing until its Sol 116 when data suddenly stopped until sol 134. There was also a good degree of success in making predictions in the afternoons for the 0.7 to the 0.78 time-bins, gradually shifting to the 0.62 to 0.66 time-bins, then merging with the morning success just before data stopped. So the predictions became accurate for the time-bins from about 0.42 to 0.66. This was all in the summer.

After the data break, predictions were generally better than 2% off for the 0.42, 0.62 and 0.66 time-bins for the rest of the summer. As fall ensued, the morning accuracy shifted earlier into the 0.38, then 0.34 and finally the 0.3 time-bin that first caught my attention.

In line with the expectation that the heater would have to come on and increase pressures the most as it got colder outside, the predictions grew better over more night time-bins as the fall came to an end and winter ensued. As the study came to an end on sol 350, there were often very accurate predictions for the hours centering around midnight and for several hours on either side of that time.

Professor James Tillman has been helpful a number of times in this study, which could never have occurred without his Viking Project's efforts in posting the data that my father and I to reformat and manipulate. However, the one question that Professor Tillman has not answered pertains to the thermostat or timer employed for the RTGs. Just

what caused the heaters to come on when they did? At best, without a definitive answer from him, his team, or other competent authority, the only solution is to let the data speak for itself. That data seems to indicate that if there was a timer, its settings were gradually shifted as the summer drifted into fall, and finally winter arrived.

The size of the errors, at least initially, was also particularly telling. For example, as one flips through Appendices 1 and 2 to Annex D, it is apparent that often in early hours of the sols, rows are shaded in yellow or blue. This means that there was no recorded pressure change for at least four hours, often at times when it was most cold. The blue shading means that the temperature was colder than -75°C (198.15 K), and often it was colder than -85°C (188.15 K) then. This would be a time that my formula would predict the highest temperatures, but something was not working right when it came to recording and transmitting the pressures felt at the transducer.

Did the formula work for warm and cold temperatures seen across the 336 sols studied? Yes. To see this it is necessary to look at the temperatures shown in white fonts in the red cells of Appendix 1 to this Annex and in Appendix 2 to this Annex which is a histogram of the temperatures that produced under a 2% difference between measured and predicted pressures.

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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1									214	220										224							1	
2										217											221	221						2
3										223											221	221						3
4										221											222	221						4
5										218											222	221						5
6									218	216											222	221						6
7										222											221	220						7
8										221											222	221						8
9										222											221	221						9
10																					226							10
11										220																		11
12										219	224								228									12
13										223	227												220					13
14																												14
15									219	225	226												221					15
16									217																			16
17										223	225																	17
18										223	227																	18
19										224													230					19
20												228											227					20
21										223													227					21
22											223												228					22
23											222	229											227					23
24												226											227					24
25											221												227					25
26										223	231												227					26
27																							233					27

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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28										222	231									228							28	
29																					229							29
30											226										228							30
31											230										227							31
32										225	231									237								32
33											228									237								33
34										227	230									238								34
35											232									237	229							35
36											227	234																36
37										227	230	234								238								37
38											231	235																38
39										226	231	235																39
40										228	231	235																40
41										227	232	236								239								41
42										229	231	236								239								42
43										228	229	235								239								43
44										227	230	236								239								44
45											233	237								241								45
46											231	237								239								46
47										228	231	236							241	239								47
48										227	231	237	239						242	238								48
49											231	236	239						242	239								49
50											232	236								238								50
51											229	236	239	241					243	239								51
52										229	233	238	240						242	239								52
53										230	234	238	240						242	240								53
54										230	233	239	239						242	239								54

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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55										230	233	238	241					240									55
56										229	235	238	240				242	239									56
57											232	238				244	242	239									57
58											237	239					243	239									58
59											232	235	238				243	242	239								59
60											233	237					242	239									60
61											232	238				244	243	239									61
62											232	237	240	244				243	240								62
63											233	239				244	243	239									63
64											234	238	243					243	239								64
65											232	238	243		243			243									65
66												239	242	243				243									66
67											234	239	243				245	243									67
68												237	242					243									68
69												235	242	244	244	246	243										69
70											236	239	242	244			245	243									70
71											234	239	242	244			245	243									71
72												238	241	244	245	245	243										72
73												238	243				244	242									73
74												239	242	244			244	242									74
75											235	239	243	244	244	245	243										75
76										235	237	240	242				245	243									76
77											237	241					246	242									77
78											237	240	244				245	242									78
79											238	240	241				244										79
80											236	240	244	245	244	245	244										80
81											243	246	242	244	247	244											81

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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82										237	238	241	246	245	245	247	246										82	
83											237	239	243	247	247	244												83
84											236	241	244	247	247	245	243											84
85											236	240	242	245	245	245												85
86											237	240	242	244	245	245												86
87											236	236	240	242	246	249	247											87
88											237	237	241	245	245	248	246											88
89											234	235	240	243	246	246	246											89
90											237	239	243	247	247	247												90
91											237	245		248	247	247	247											91
92											235	240	244	247	248	247	245											92
93											236	241	243	247	248	246	244											93
94											236		242	247	248	246	244											94
95											238	243	245		247	246	245											95
96											236	239	244		247	246	244											96
97											236	240	242	246		246	244											97
98											236	237	240	243	244		246	243										98
99											235	237	240	245	247	247	247	244										99
100											241	240	243			246	243											100
101												238	241	244	247	245	243											101
102											236				248	241												102
103											242	246			249	245												103
104											239	241	246		249	247												104
105													242		250	248	246											105
106											239	243	242	247		248	246											106

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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107											239					246	246										107	
108											239					245	245											108
109											231	239			246													109
110										232	233	238	243	241	248	248												110
111											232	241	244	242	247	247	247											111
112											239	245	245	246	249	246	245											112
113											238	242	245	246		245	245											113
114												242	247	246		245	244											114
115											238		241	245		245	245											115
116											238	241	242				245											116

NO DATA AVAILABLE FROM THE VIKING PROJECT WEB SITE FOR SOLS 117 THROUGH 133

134											233	239	240			245	245											134	
135												239				246	245												135
136												239	242		247	246	245												136
137												239	240	243	247	246	245												137
138												238	243			246	246												138
139												237				246	245												139
140												231	240	242	241		246	245											140
141												239				245	245												141
142												240	242	243		245	245												142
143												239				246	245												143
144												241				245	245												144
145												236	239			246	245												145
146												235	240			246	245												146

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL		
147											234	240	241			245	245										147	
148											240					244	244											148
149											236	241	240			245	244											149
150											235					245	244											150
151											234						243											151
152											234						242											152
153											236	241					243											153
154											233	239					242											154
155											233						243											155
156											233						242											156
157											234						241											157
158											234						241											158
159											232					240	241	237										159
160											236					243	242											160
161										227							242											161
162											232						242											162
163											235							LS	180				F	A	L	L		163
164										225							243											164
165											231						242											165
166										224	234							236										166
167										226																		167
168										224	232						241											168
169										223	232						239											169
170										229																		170
171										223	231																	171
172										219	228																	172
173										223																		173

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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174										224																	174	
175										226																		175
176										221						235												176
177										224																		177
178										221																		178
179									221																			179
180										224																		180
181										220																		181
182										220																		182
183										221																		183
184																												184
185									218												227							185
186										218											225							186
187									212	223																		187
188										222											226							188
189																												189
190										221											227							190
191										218																		191
192									214																			192
193										216											225							193
194									211												226							194
195										216												218	221	217				195
196										219											222							196
197																					224							197
198										216											222							198
199									217												224							199
200										217											224							200

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL	
201									217									222								201	
202									211										223								202
203									207										224								203
204										213									217								204
205									206	217									222								205
206									205										217								206
207									206										217								207
208									206										218								208
209									209										223								209
210									199								221										210
211								194									225										211
212								198									229			209	206						212
213								198									227	219		209	207						213
214								199									224			210	208	204	203	201	199		214
215								195									224			211	208			203			215
216								202									225			211	208			205	205		216
217								200									223	217		209	206						217
218								200										218		208	207						218
219								199										217	212	207	204			202	203		219
220								198									222	216		208	206			203	205		220
221								198										215		206	204				201		221
222								197										215		206	204						222
223								196										212		206	203				202		223
224								196										214		207	204						224
225								197									219	214		205	203			200	201		225
226								195	200								217	213		204	201				200		226
227	199							196	199									213		205							227

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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228	198							194									215			204							228	
229								196	199									215	210	204			200	199	202		229	
230								192	197										209	204	201	198	196	198	199	198	230	
231	196							192	196										210	206	202	200					231	
232								193	199										209		203	200			197	199	232	
233								193	199										211		203	200	198	198	200	198	233	
234	197							193	199										211		304	201	200				234	
235								195	201										211	205	203	201	198	196	197	198	235	
236	195							191	197										213	207	203	200	197	197	195	198	236	
237	198	197						192											212	207	204	201	198	198	200		237	
238	195	193					193	192	192											206	203	200	197	197	196	194	238	
239	195	196						192											213	205	203	200	197	195	196	196	239	
240	197	193						190											209	205	202	198	195	194	194	193	240	
241	195	195						189													203	200	197	195	195	197	241	
242	196	194						191												206			197	196			242	
243	194	191						190												206			197	195	197		243	
244	197	197						191												206	203	200	197	197	196	195	244	
245	196	196	195					192														199	197	194	192	191	245	
246	190	189					186	189															195	193			246	
247		193	189				187	189															198	196	194	192	190	247
248	192	194	192					189											208				199	196	195	194	192	248
249	193	194	191					189																	193	192	191	249
250	190	189	187				185	187															197	194		194	250	
251	192	193						188												205			196	194	193	193	251	
252	195	194	193					189																		191	252	
253	191	188					185	188																	194	193	193	253
254	191	189		192				190															199	196	194	194	193	254

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL	
255	193	194	191				186	189																			255
256			190				185	188															195	193			256
257	193	190	188					187																192			257
258		193	189				184	187																192			258
259			188	186			184	186															192				259
260		191	189	188				185															193				260
261	189	189	189	187				184																			261
262	191	191	188	186			184	186																	190	191	262
263	191		188	185			183	185																			263
264			189	185			183	185															193	191	189	191	264
265		186	187	190				186																193			265
266	190	190	187					186																			266
267			189	186				185															194	192	190	189	267
268	190	191	191					185																191	191		268
269			187					184																191	191		269
270			189					184																	189	189	270
271	189		187	184				184																190			271
272			187	186				183															190	188			272
273		185	183	182		181	181	183																	186		273
274	186	184	184	182				181																188	187	188	274
275		183	183					217																224			275
276		187	183	182				182	188																187		276
277			185					188																	187		277
278			186					182																189	187	186	278
279			186	186				183																	188	187	279
280	189	189	187	184				182																189	187		280
281			185					182																189	188	188	281

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL				
282	189	187	186	184				181	187															189	188	189	282			
283	188	187	187					180	182															189	186	187	283			
284	188		183					181																	186	185	284			
285		186	187	184				180														194	192	189	188	186	285			
286	184	187	188					182																188	186	185	286			
287	185	183	182	182				180																189	187	185	287			
288			185	185				179														195	193	190	188	186	185	288		
289	186	187	182						187															193	190	188	186	185	289	
290	184	185	186	185	183			181	186															188	186	185	185	290		
291	186	186	185	180				179																188	186	185	184	291		
292	183	185	182						185															192	189	187	187	185	292	
293	185	187	183	184					185															190	187	185	184	293		
294	183	184	181					178																			183	294		
295	183	182	181	181	180	179	178	179															194	191	190	188	186	185	295	
296	188	183							186													198	197	194	190	188	188	188	296	
297	184	186	184	186					185															192	190	187	188	187	297	
298	186	185	182						184															190	188	185	184	298		
299	186	183	184	185					184														197	194	191	189	187	186	299	
300	187	186								186													197	194	192	189	188	189	300	
301	187	184								183														195	194	191	188	186	185	301
302	188	187	185						184													199	196	193	191	188	187	186	302	
303	187	188	187						185														196	192	190	187	186	187	303	
304	186	186	185	184					184														196	193	190	188	186	185	304	
305	185	188	187	185					184														194	192	190	188	186	184	305	
306	186	186	186						184	LS	270		W	I	N	T	E	R					195	193	190	189	187	186	306	
307	185	183																					195		191	189	187	185	307	
308	185	186	186						183																	187	185	184	308	

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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309	185	183	182																		195	192	190	188	187	186	309
310	185	185	185							193															187	185	310
311	184	186	187							192																185	311
312	186									188																188	312
313	189	185	184							185																	313
314	190	188	192					187	189																		314
315		189	189					186	188										201	197							315
316	189		190	189			188	188												197	194	193					316
317				188	187	187	188												198	195	193	193					317
318				190	189	189	189												199	197	195	194					318
319				191			191											204	201	199	197						319
320				192			192												200	198	196						320
321			191	190														201	199	197	194						321
322			193	190			190												200	197	195						322
323			193	191			190											201	199	197	195	194					323
324			192	191			189										200	198		195	194	192					324
325			192	190			189										201	199	197	195	194	193	192	191			325
326			193	191			189										201	199	197	195	194	193	192	191			326
327			191				189										199	198	196	194	193	192	191	191			327
328			190				188										200	198		194	193	192	191	190			328
329			189				187										198	197			192	191	190	190			329
330			188				188										198	197			192	191	190	190			330
331			190				188										199	197			193	192	191	190			331
332	189		190				188										198				192	191	190	190			332
333	189	190	189				187										198				191	190	189	189			333
334			188														197				191	189	188	188			334
335	188	188	187													197	197				190	189	188	188	188		335

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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336		187	186													197	196					190	188	188	188	188	336
337		188	187				185									199	198					191	190	189	189	189	337
338			189													200	200					192	191	189	189	189	338
339			189														201	197				192	191	189	189	188	339
340			187				186										199	197				191	190	189	188	188	340
341			189														199	198				192	190	189	188	188	341
342	188		189														200	198				191	189	189	188	188	342
343			188					185									201	198				191	190	188	188	188	343
344	188	188	186					184									201	198				191	189	188	187	187	344
345	189	186	185					183	184								201	198				191	189	188	187	187	345
346			187					184									202	199					189	188	187	187	346
347		189	186					183	184								201	198				191	189	188	187	187	347
348	187		188					183	184								202	199				191	189	187	187	186	348
349			188					184	184								204	201					190	188	187	187	349
350	188	190	187					183	184									201					190	188	187	187	350

VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL
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0.02 time	0.06 time	0.1 time	0.14 time	0.18 time	0.22 time	0.26 time	0.3 time	0.34 time	0.38 time	0.42 time	0.46 time	0.5 time	0.54 time	0.58 time	0.62 time	0.66 time	0.7 time	0.74 time	0.78 time	0.82 time	0.86 time	0.9 time	0.94 time	0.98 time
199	197	195	192	246	246	193	194	214	220	224	229	239	241	243	244	241	228	224	221	221	217	203	201	199
198	193	189	186	183	181	186	198	218	217	227	226	239	244	244	243	242	237	221	221	206	204	200	203	205
196	196	192	188	180	179	187	198	219	223	226	234	239	243	245	244	242	237	221	221	207	196	198	205	203
197	193	191	187	187	187	185	199	217	221	225	234	240	244	244	244	243	238	222	221	208	198	198	202	205
195	195	187	186	189	189	185	195	232	218	227	235	240	244	244	245	242	237	222	221	208	200	196	203	201
198	194	193	185			186	202	221	216	228	235	239	244	247	246	242	238	222	220	208	198	197	200	202
195	191	191	185			185	200	218	222	223	235	241	244	245	245	242	239	221	221	206	197	198	199	201
195	197	190	190			184	200	212	221	222	236	240	244	247	245	242	239	222	221	207	198	197	199	200
197	196	188	186			184	199	214	222	221	236	238	244	247	245	242	239	221	220	204	197	195	197	202
195	189	189	184			184	198	211	220	231	235	240	245	245	244	243	239	226	221	206	197	194	200	198
196	193	188	186			183	198	217	219	231	236	243	244	245	244	242	241	230	218	204	195	195	197	199
194	194	189	182			183	197	211	223	226	237	243	245	249	245	242	239	227	209	204	197	196	195	198
197	194	189	182			181	196	207	225	230	237	242	247	248	245	243	239	227	209	203	197	195	200	198
196	189	188	182			178	196	206	223	231	236	243	247	246	246	243	238	228	210	204	197	197	196	198
190	193	188	186			188	197	205	223	228	237	242	245	247	245	243	239	227	211	203	197	194	196	194
192	194	189	184			188	195	206	224	230	236	242	244	247	244	243	238	227	211	201	197	193	194	196
193	188	187	184			189	196	206	223	232	236	242	246	248	245	243	239	227	209	198	195	194	195	193
190	189	187	184			191	194	209	223	227	236	242	245	248	244	243	239	227	208	200	196	195	197	197
192	194	189	182			192	196	199	222	230	238	241	246	248	247	243	240	233	207	200	196	193	196	195
195	190	191	185			190	192	200	225	231	238	243	247	247	244	243	239	228	208	200	194	194	192	191
191	193	187	185			190	192	199	227	231	239	242	248	247	245	243	240	229	206	201	196	194	192	190
191	191	189	180			189	193	199	227	231	238	243	247	247	245	243	239	228	206	201	196	194	194	192
193	189	187	184			189	193	197	226	232	238	242	247	247	245	243	239	227	206	200	195	193	192	191
193	191	187	181			189	193	196	228	231	238	244	247	248	247	243	239	229	207	201	192	192	193	194
189	186	183	186			189	195	199	227	229	239	241	246	249	246	242	239	229	205	200	193	192	191	193
191	190	184	185			188	191	199	229	230	235	244	244	249	246	242	239	212	204	200	193	191	193	193
191	191	183	184			187	192	199	228	233	237	242	247	250	247	243	239	210	205	198	194	193	194	193
190	185	183	185			188	192	201	227	231	238	246	244	246	247	243	240	204	204	200	190	192	190	191
190	184	185	189			188	192	197	228	231	237	243	247	248	247	242	239	206	204	200	192	191	189	191
189	183	186	188			188	190	192	227	231	239	244	248	247	246	242	239	205	201	199	189	191	190	189
186	187	186	190			187	189	188	229	231	238	242	247	249	246	244	237	207	202	198	190	190	191	189
189	189	187	191			185	191	187	230	232	238	242	246	247	246	246	236	207	203	199	190	188	191	188
189	187	185	192			186	190	182	230	229	239	242	246	247	246	243	227	206	203	197	188	188	189	186
188	187	186	190			191	187	230	233	239	245	246	246	246	247	225	205	304	199	188	189	186	187	187
188	186	187	190			192	186	229	234	237	243	245	246	245	245	226	205	203	194	189	189	187	188	188
184	187	183	191			189	185	235	233	235	243	243	247	244	227	206	203	193	190	189	224	189	189	189
185	183	187	191			189	185	237	233	239	244	244	246	244	225	206	204	193	190	189	187	187	187	187
186	187	188	190			189	186	236	235	239	243	243	245	245	226	206	203	192	190	189	187	187	185	185
184	185	182	191			189	185	237	232	238	242	241	244	222	205	203	191	190	189	187	187	186	186	186
186	186	185				187	184	234	237	238	245	245	244	224	198	202	194	190	188	188	188	185	185	185
183	185	182				188	184	236	232	239	244	244	247	243	222	199	203	192	191	187	187	187	185	185
185	187	186				189	184	235	233	239	242	242	248	244	224	201	203	194	192	188	188	188	185	185
183	184	185				188	185	236	232	240	243	243	248	243	224	197	195	194	191	188	188	188	185	185
183	182	182				190	184	231	232	241	245	245	245	243	222	195	194	194	191	186	186	186	184	184
188	183	183				189	184	233	233	240	243	243	247	246	223	197	197	193	190	186	186	186	185	185
184	186	181				188	184	232	234	240	241	241	246	246	224	199	197	192	190	187	188	188	184	184
186	185	181				187	183	233	232	240	246	246	245	245	217	198	197	193	190	187	186	186	183	183
186	183	184				187	188	231	234	246	242	242	245	245	222	197	195	192	190	188	185	185	185	185
187	186	182				186	185	227	236	241	242	242	245	245	217	197	196	193	191	188	186	186	188	188
187	184	184				185	189	225	234	239	241	241	245	244	217	197	196	192	190	187	186	186	187	187
188	187	185				184	188	224	235	241	242	242	246	245	218	197	196	193	192	188	185	185	184	184
187	188	187				186	184	226	237	240	245	245	246	245	223	197	194	193	193	189	185	185	186	186
186	186	185				185	184	224	237	240	245	245	246	245	219	196	195	194	193	189	187	187	189	189
185	188	187				185	184	223	237	240	247	247	246	245	217	195	194	192	188	185	185	185	185	185
186	186	186				186	184	229	238	241	241	241	246	245	218	195	194	192	188	186	186	186	186	186
185	183	186				186	184	223	236	240	242	242	246	245	217	197	194	191	187	188	188	187	187	187
185	186	182				185	219	243	239	243	243	243	245	246	216	194	194	191	188	188	188	185	185	185
185	183	185				185	223	238	245	241	241	241	245	245	215	193	193	192	188	185	185	184	184	184
185	185	187				184	224	237	240	243	243	243	246	245	215	195	193	191	189	187	186	186	186	186
184	186	184				184	226	236	241	241	241	241	245	245	212	197	192	190	189	188	188	185	185	185
186	185	192				184	221	236	243	240	240	240	246	245	214	196	192	189	187	186	186	184	184	184
189	188	189				183</																		

0.02 time	0.06 time	0.1 time	0.14 time	0.18 time	0.22 time	0.26 time	0.3 time	0.34 time	0.38 time	0.42 time	0.46 time	0.5 time	0.54 time	0.58 time	0.62 time	0.66 time	0.7 time	0.74 time	0.78 time	0.82 time	0.86 time	0.9 time	0.94 time	0.98 time
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HISTOGRAM FOR TIME-BINS WITH TEMPERATURES SHOWING WHERE THERE WAS <2% DIFFERENCE BETWEEN PRESSURES PREDICTED AND MEASURED

189	190	191					181		224	237	240				244	245	213		195	191	190	192	186	185
189	188	193					217		220	235	240				245	245	215		195	191	191	191	186	188
189	187	193					182		220	237	240				245	245	209		195	190	191	191	187	188
188	188	192					188		221	237	238				240	244	210		195	190	190	190	187	188
188	188	192					182		218	235	246				243	244	209		194	191	190	190	185	189
188	186	193					183		223	236	241				235	244	211		194	192	189	191	187	189
189	189	191					182		222	236	243				197	243	211			192	190	190	187	188
187	190	190					182		221	238	243				197	242	211			191	189	189	191	188
188		189					181		218	236	244				199	243	213			192	189	188	191	188
		188					180		216	236	245				200	242	212			191	189	188	191	188
		190					181		216	237	242					243	213			191	189	188	190	188
		190					180		219	237	242					242	209			191	189	189	190	187
		189					182		224	241	241					241	208			191	190	189	190	187
		188					180		216	242	240					241	198			191	190	189	190	187
		187					179		217	239	242					241	199			191		189	190	187
		186					181		217	239	240					242	201					189	189	186
		187					179		213	239	243					242	200					189	188	187
		189					178		217	239	242					242	199					188	188	187
		189					179		186	238	242					243	200					188	188	
		187					187		183	241	239					242	199					188	189	
		189					186		193	239	240					241	198					188	189	
		189					188		192	238	240					239	199					188	189	
		188					185			238	241					221	199					187	188	
		186					184			238	241					225	198					188	188	
		185					183			239	239					229	198					188	188	
		187					184			239						227	197						188	
		186					183			239						224	197						187	
		188					183			239						224	197						187	
		188					184			238						225	197						187	
		187					183			237						223	197						187	
										240						222	198						187	
										239						219	198						187	
										240						217	198						187	
										239						215	198							
										241						204	198							
										236						201	199							
										235						201	198							
										234						200	199							
										240						201	201							
										236						201	201							
										235						199								
										234						200								
										234						198								
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										233						199								
										233						198								
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										232						196								
										236						198								
										232						200								
										235						201								
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										231						201								
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