Harvard Forest Data Archive HF113−04

Data File:

Name = hf113−04−hf−hfp.csv
Description = HF heat flux plate data
Rows = 55446 Columns = 55
MD5 checksum = dcb3edb8768d41909ceeed6284916fa9

Variables:

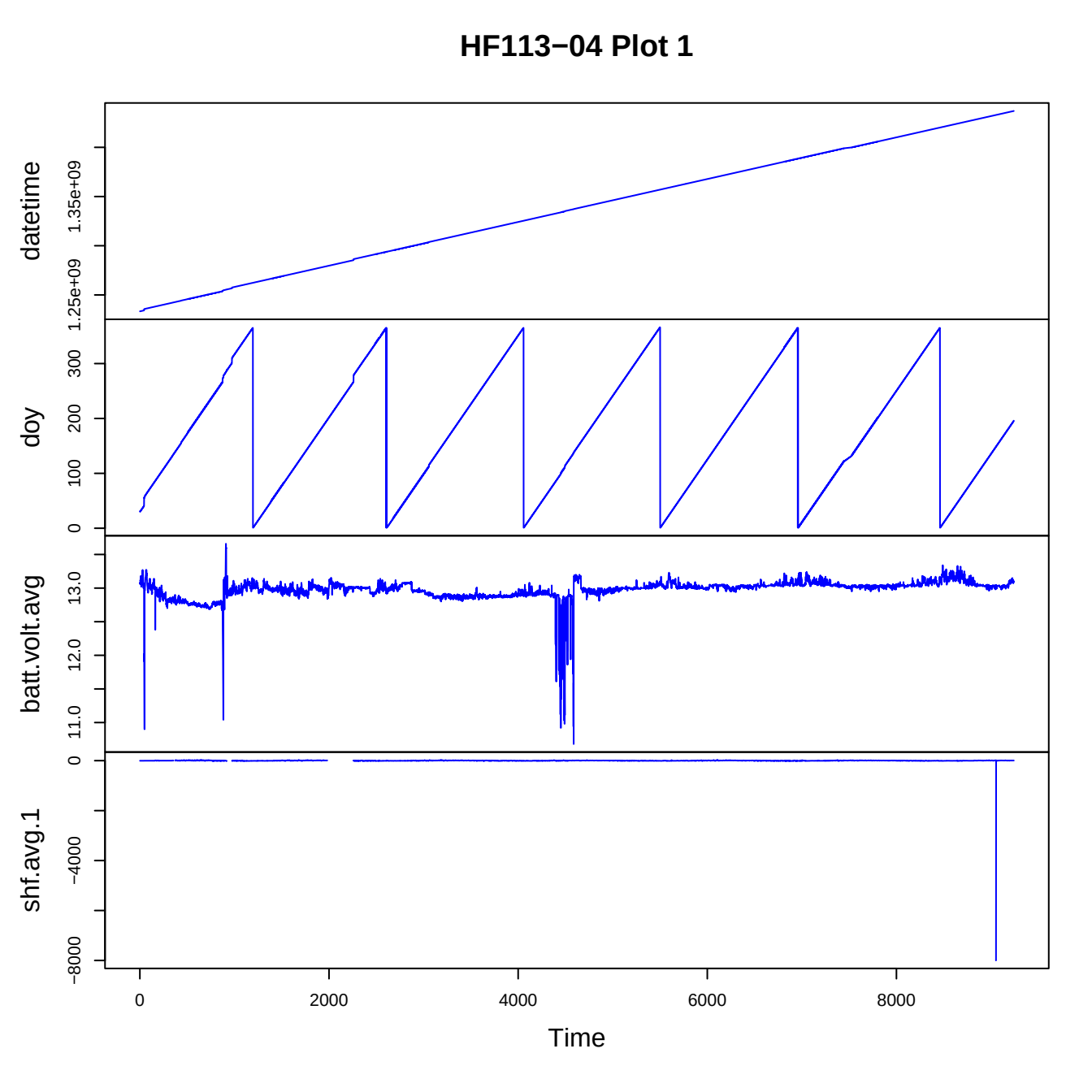
datetime = time stamp
doy = Julian Day (nominalDay)
batt.volt.avg = battery voltage − average (volt)
shf.avg.1 = chamber 2 heat flux plate 1 − average
   (wattPerMeterSquared)
shf.avg.2 = chamber 2 heat flux plate 2 − average
   (wattPerMeterSquared)
shf.cal.1 = chamber 2 soil heat flux calibration for plate 1
   (W/(m^2mV)) (number)
shf.cal.2 = chamber 2 soil heat flux calibration for plate 2
   (W/(m^2mV)) (number)
t109.avg.1 = chamber 2 soil temperature at 2cm − set 1 − average
   (celsius)
t109.avg.2 = chamber 2 soil temperature at 6cm − set 1 − average
   (celsius)
t109.avg.3 = chamber 2 soil temperature at 2cm − set 2 − average
   (celsius)
t109.avg.4 = chamber 2 soil temperature at 6cm − set 2 − average
   (celsius)
vw.avg.1 = chamber 2 volumetric water content − average
   (dimensionless)
pa.us.avg.1 = chamber 2 voltage for volumetric water content −
   average (microsecond)
shf.max.1 = chamber 2 heat flux plate 1 − maximum
   (wattPerMeterSquared)
shf.max.2 = chamber 2 heat flux plate 2 − maximum
   (wattPerMeterSquared)
t109.max.1 = chamber 2 soil temperature at 2cm − set 1 − maximum
   (celsius)
t109.max.2 = chamber 2 soil temperature at 6cm − set 1 − maximum
   (celsius)
t109.max.3 = chamber 2 soil temperature at 2cm − set 2 − maximum
   (celsius)
t109.max.4 = chamber 2 soil temperature at 6cm − set 2 − maximum
   (celsius)
vw.max.1 = chamber 2 volumetric water content − maximum
   (dimensionless)
pa.us.max.1 = chamber 2 voltage for volumetric water content −
   maximum (microsecond)
shf.min.1 = chamber 2 heat flux plate 1 − minimum
   (wattPerMeterSquared)

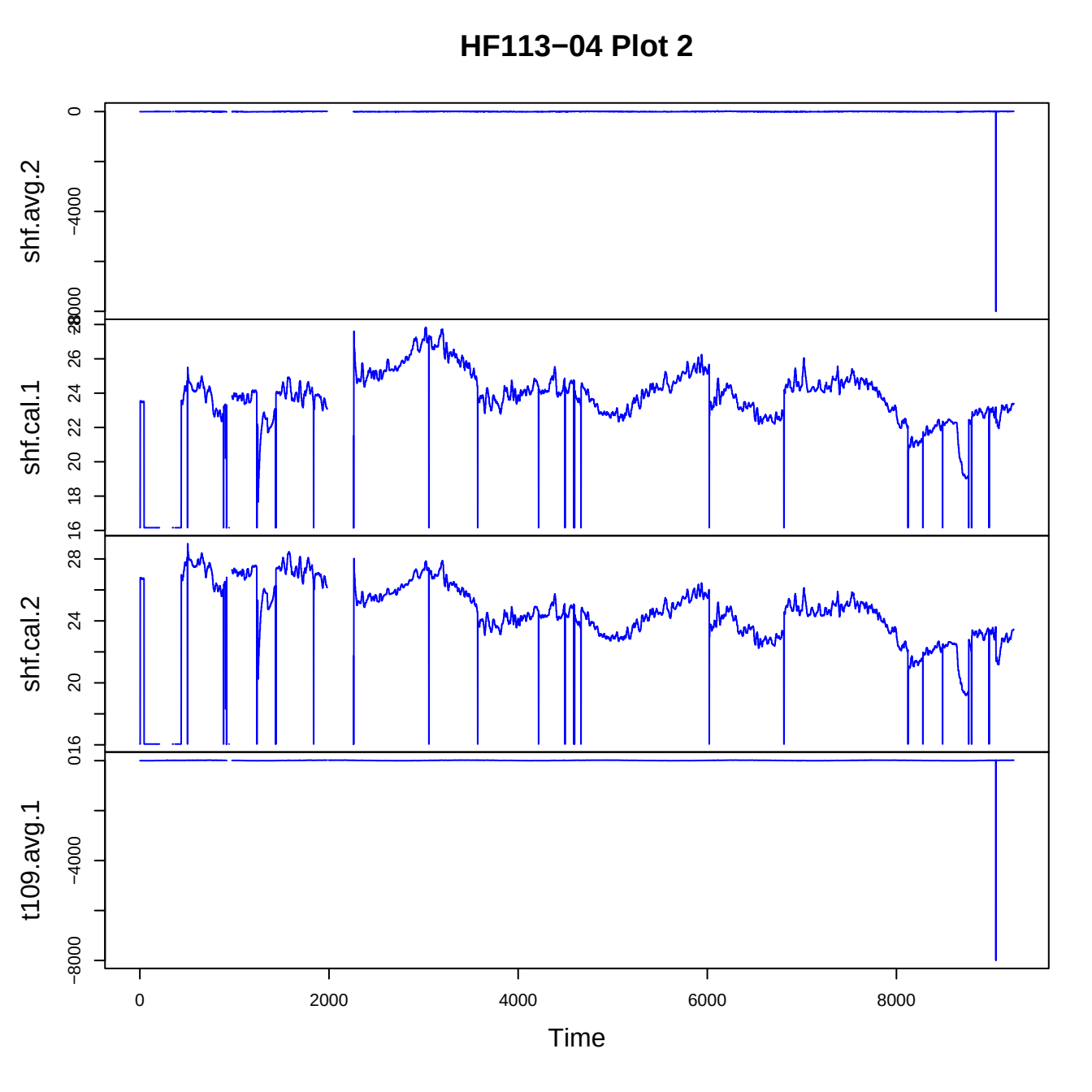
```
shf.min.2 = chamber 2 heat flux plate 2 − minimum
   (wattPerMeterSquared)
t109.min.1 = chamber 2 soil temperature at 2cm − set 1 − minimum
   (celsius)
t109.min.2 = chamber 2 soil temperature at 6cm − set 1 − minimum
   (celsius)
t109.min.3 = chamber 2 soil temperature at 2cm − set 2 − minimum
   (celsius)
t109.min.4 = chamber 2 soil temperature at 6cm − set 2 − minimum
   (celsius)
vw.min.1 = chamber 2 volumetric water content − minimum
   (dimensionless)
pa.us.min.1 = chamber 2 voltage for volumetric water content −
   minimum (microsecond)
shf.avg.3 = chamber 4 heat flux plate 1 − average
   (wattPerMeterSquared)
shf.avg.4 = chamber 4 heat flux plate 2 − average
   (wattPerMeterSquared)
shf.cal.3 = chamber 4 soil heat flux calibration for plate 1
   (W/(m^2mV)) (number)
shf.cal.4 = chamber 4 soil heat flux calibration for plate 2
   (W/(m^2mV)) (number)
t109.avg.5 = chamber 4 soil temperature at 2cm − set 1 − average
   (celsius)
t109.avg.6 = chamber 4 soil temperature at 6cm − set 1 − average
   (celsius)
t109.avg.7 = chamber 4 soil temperature at 2cm − set 2 − average
   (celsius)
t109.avg.8 = chamber 4 soil temperature at 6cm − set 2 − average
   (celsius)
vw.avg.2 = chamber 4 volumetric water content − average
   (dimensionless)
pa.us.avg.2 = chamber 4 voltage for volumetric water content −
   average (microsecond)
shf.max.3 = chamber 4 heat flux plate 1 − maximum
   (wattPerMeterSquared)
shf.max.4 = chamber 4 heat flux plate 2 − maximum
   (wattPerMeterSquared)
t109.max.5 = chamber 4 soil temperature at 2cm − set 1 − maximum
   (celsius)
t109.max.6 = chamber 4 soil temperature at 6cm − set 1 − maximum
   (celsius)
t109.max.7 = chamber 4 soil temperature at 2cm − set 2 − maximum
   (celsius)
t109.max.8 = chamber 4 soil temperature at 6cm − set 2 − maximum
   (celsius)
vw.max.2 = chamber 4 volumetric water content − maximum
   (dimensionless)
pa.us.max.2 = chamber 4 voltage for volumetric water content −
   maximum (microsecond)
shf.min.3 = chamber 4 heat flux plate 1 − minimum (celsius)
```

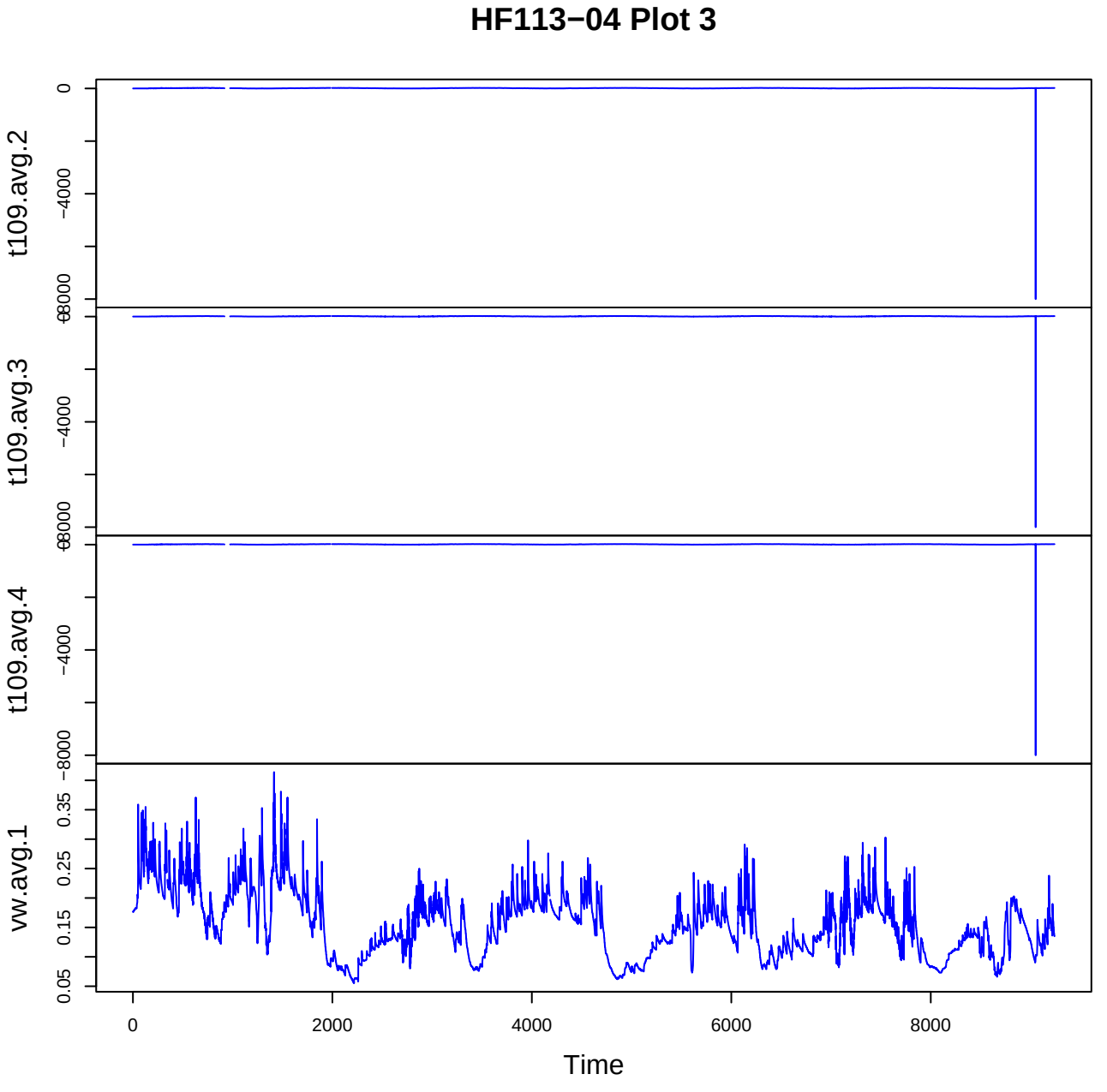
shf.min.4 = chamber 4 heat flux plate 2 − minimum (celsius)
t109.min.5 = chamber 4 soil temperature at 2cm − set 1 − minimum (celsius)
t109.min.6 = chamber 4 soil temperature at 6cm − set 1 − minimum (celsius)
t109.min.7 = chamber 4 soil temperature at 2cm − set 2 − minimum (celsius)
t109.min.8 = chamber 4 soil temperature at 6cm − set 2 − minimum (celsius)
vw.min.2 = chamber 4 volumetric water content − minimum (dimensionless)
pa.us.min.2 = chamber 4 voltage for volumetric water content − minimum (microsecond)

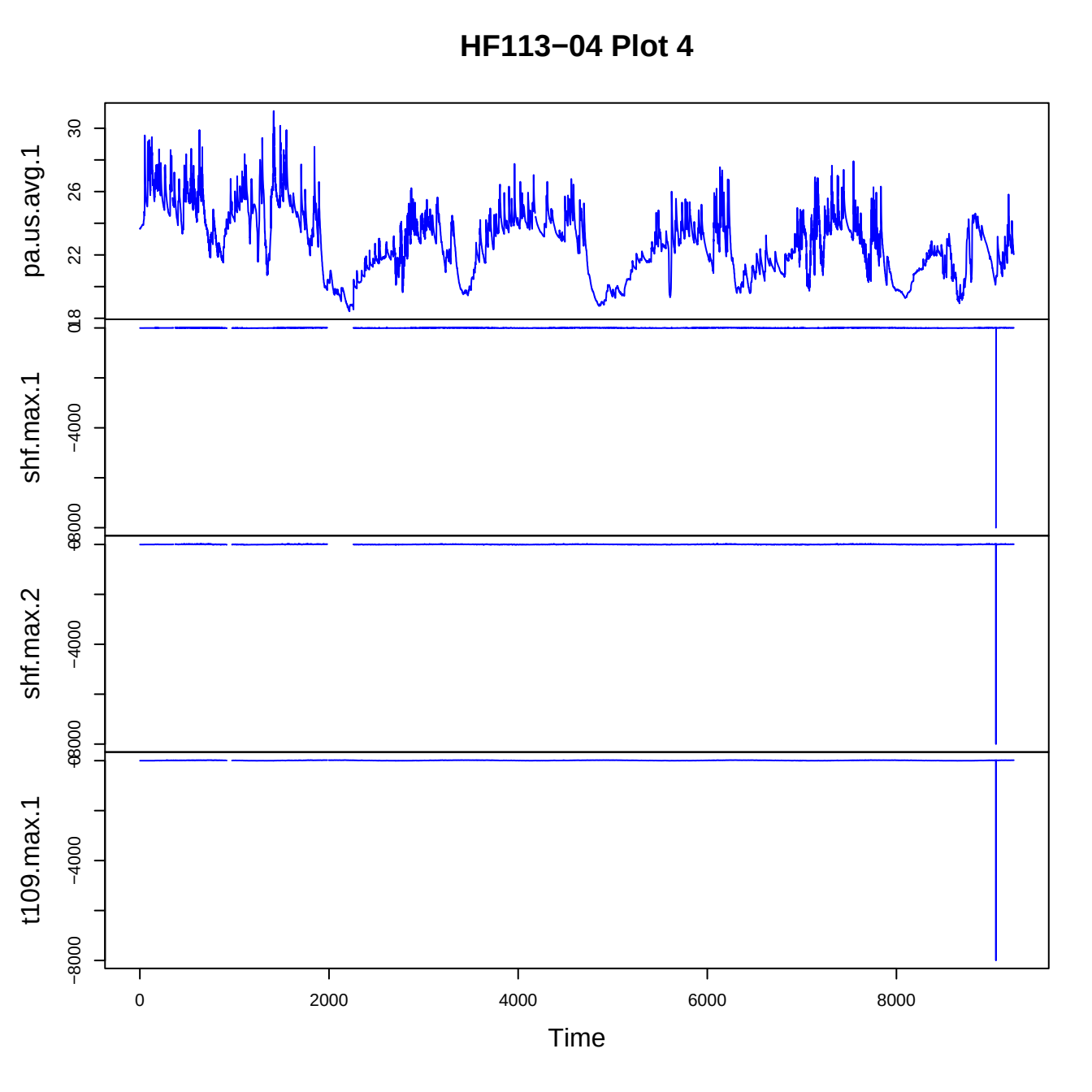
Variable	Min	Median	Mean	Max	NAs
datetime	2009-01-30T10:00			2015-07-15T09:00	1
doy	1.000	172.000	177.665	366.000	0
batt.volt.av	9.150	13.000	12.977	13.660	24
shf.avg.1	-7999.000	0.000	-1.470	23.551	2354
shf.avg.2	-7999.000	0.000	-1.357	24.690	2333
shf.cal.1	0.000	23.966	23.667	27.833	2977
shf.cal.2	0.000	24.576	24.419	28.983	2975
t109.avg.1	-7999.000	10.070	7.478	23.700	542
t109.avg.2	-7999.000	9.920	7.376	23.210	542
t109.avg.3	-7999.000	9.980	7.344	23.870	545
t109.avg.4	-7999.000	9.950	7.347	22.610	540
vw.avg.1	0.055	0.153	0.156	0.414	45
pa.us.avg.1	18.440	22.760	22.760	31.090	45
shf.max.1	-7999.000	0.000	-1.070	32.170	2334
shf.max.2	-7999.000	0.000	-0.810	43.700	2231
t109.max.1	-7999.000	10.150	7.840	23.730	535
t109.max.2	-7999.000	9.960	7.706	23.350	537
t109.max.3	-7999.000	10.070	7.709	23.920	541
t109.max.4	-7999.000	10.010	7.688	22.620	533
vw.max.1	0.056	0.153	0.156	0.415	44
pa.us.max.1	18.450	22.770	22.776	31.110	44
shf.min.1	-7999.000	0.000	-1.558	23.260	2338
shf.min.2	-7999.000	0.000	-1.287	24.690	2229
t109.min.1	-7999.000	9.990	7.699	23.670	536
t109.min.2	-7999.000	9.880	7.629	23.000	537
t109.min.3	-7999.000	9.900	7.563	23.860	542
t109.min.4	-7999.000	9.890	7.590	22.610	533
vw.min.1	0.055	0.153	0.156	0.413	44
pa.us.min.1	18.420	22.750	22.745	31.060	44
shf.avg.3	-7999.000	-0.401	-3.296	45.943	3080
shf.avg.4	-7999.000	-1.370	-2.484	49.872	2688
shf.cal.3	0.000	17.325	17.378	50.403	3307
shf.cal.4	0.000	22.381	22.268	26.761	3307
t109.avg.5	-7999.000	8.060	5.684	23.550	1292
t109.avg.6	-7999.000	8.360	5.841	26.090	542
t109.avg.7	-7999.000	8.060	5.833	34.410	1139
t109.avg.8	-7999.000	8.250	5.929	21.600	547
vw.avg.2	0.040	0.127	0.124	0.327	44
pa.us.avg.2	17.590	21.700	21.481	28.630	44
shf.max.3	-7999.000	0.000	-2.828	3514.000	3031
shf.max.4	-7999.000	-0.824	-1.810	50.370	2641
t109.max.5	-7999.000	8.170	6.054	23.580	1281
t109.max.6	-7999.000	8.430	6.187	29.170	534
t109.max.7	-7999.000	8.260	6.275	35.590	1129
t109.max.8	-7999.000	8.320	6.262	21.650	540
vw.max.2	0.040	0.127	0.124	0.329	44
pa.us.max.2	17.610	21.710	21.498	28.690	44
shf.min.3	-7999.000	-0.593	-3.306	3514.000	3026
shf.min.4	-7999.000	-1.473	-2.532	48.950	2636

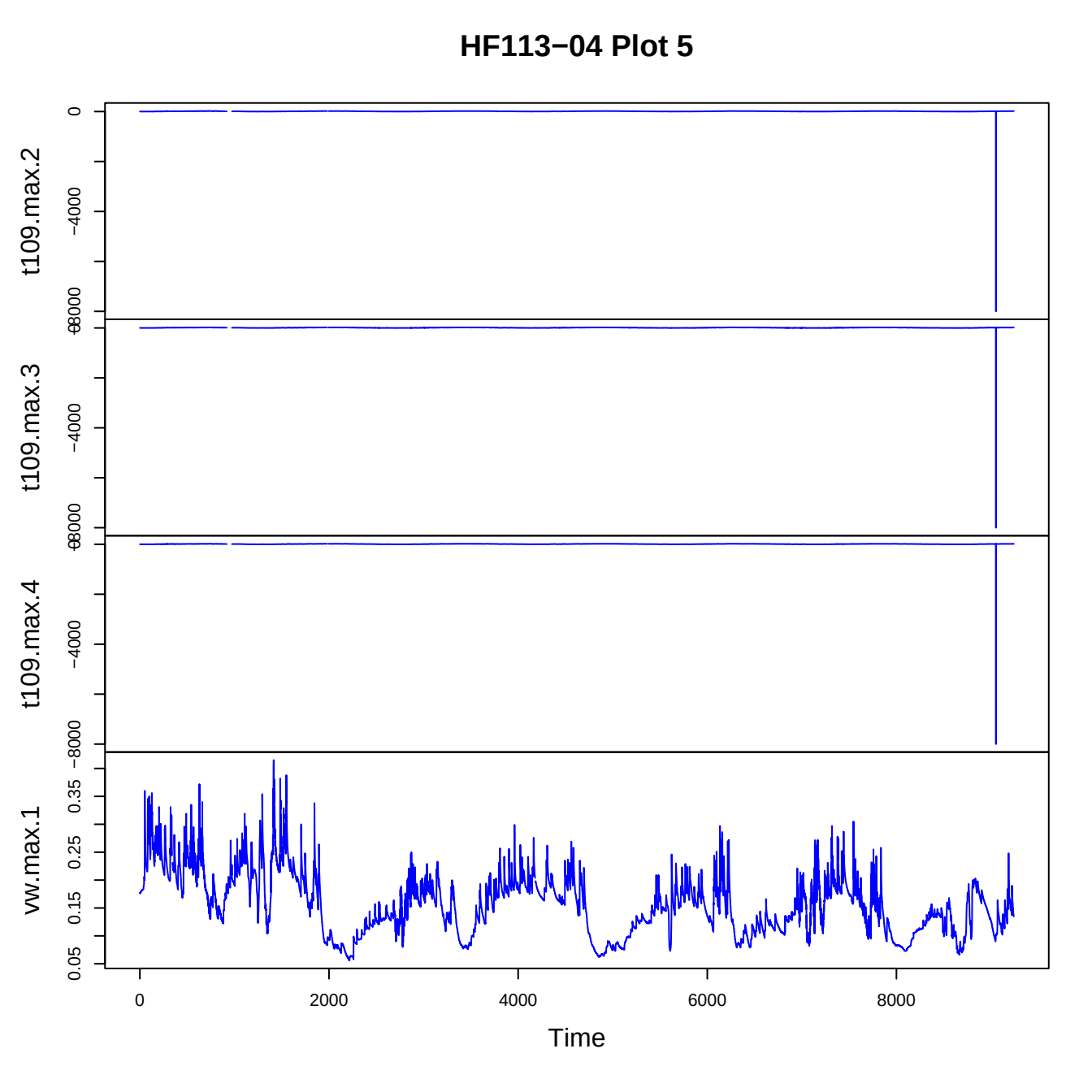
Variable	Min	Median	Mean	Max	NAs
t109.min.5	−7999.000	7.942	5.909	23.520	1281
t109.min.6	−7999.000	8.300	6.082	25.130	534
t109.min.7	−7999.000	7.870	5.967	33.040	1130
t109.min.8	−7999.000	8.180	6.170	21.590	540
vw.min.2	0.039	0.126	0.123	0.324	44
pa.us.min.2	17.590	21.690	21.465	28.540	44

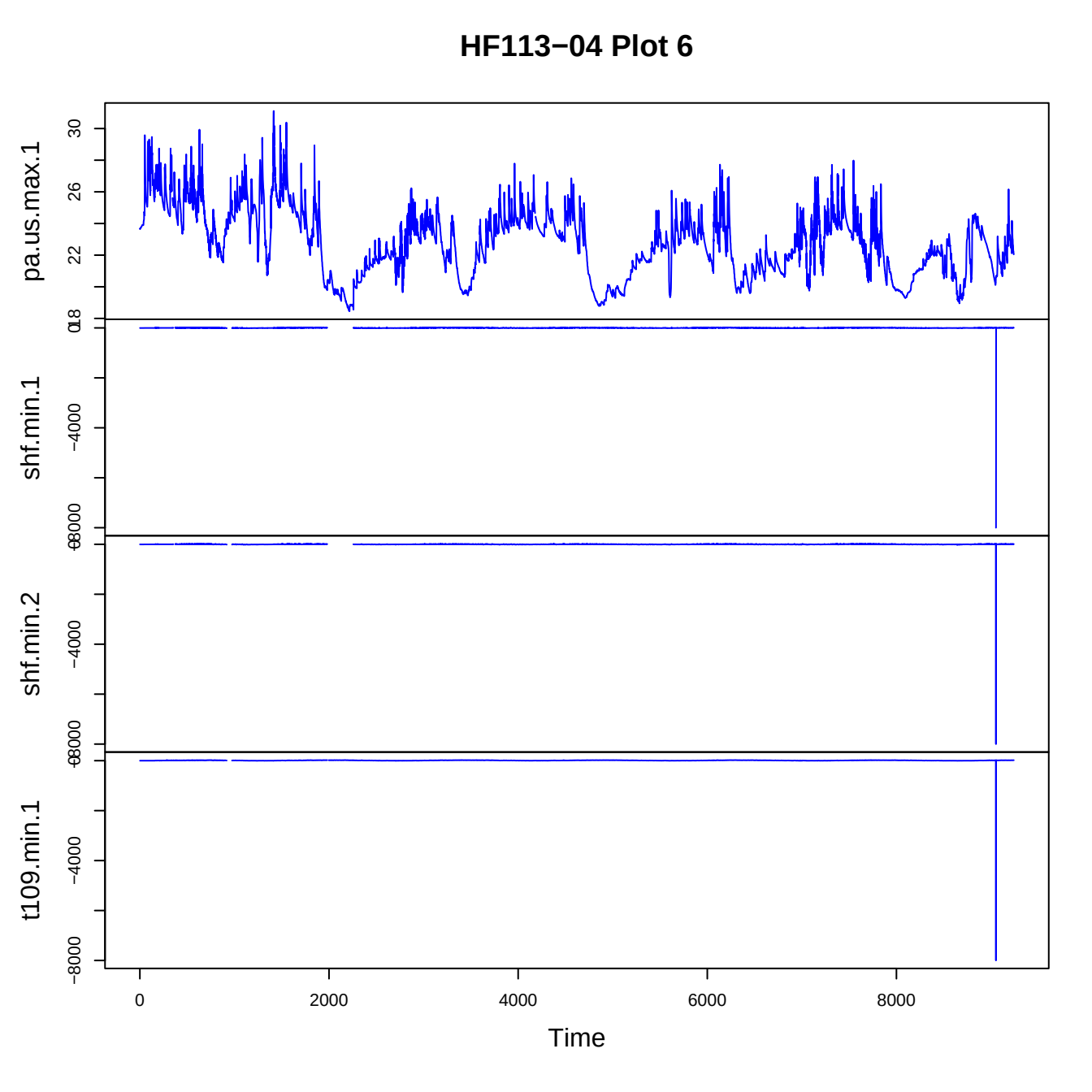

HF113−04 Plot 1
datetime
1.25e+09
1.35e+09
doy
0
100
200
300
batt.volt.avg
11.0
12.0
13.0
shf.avg.1
0
−4000
−8000
0
2000
4000
6000
8000
Time

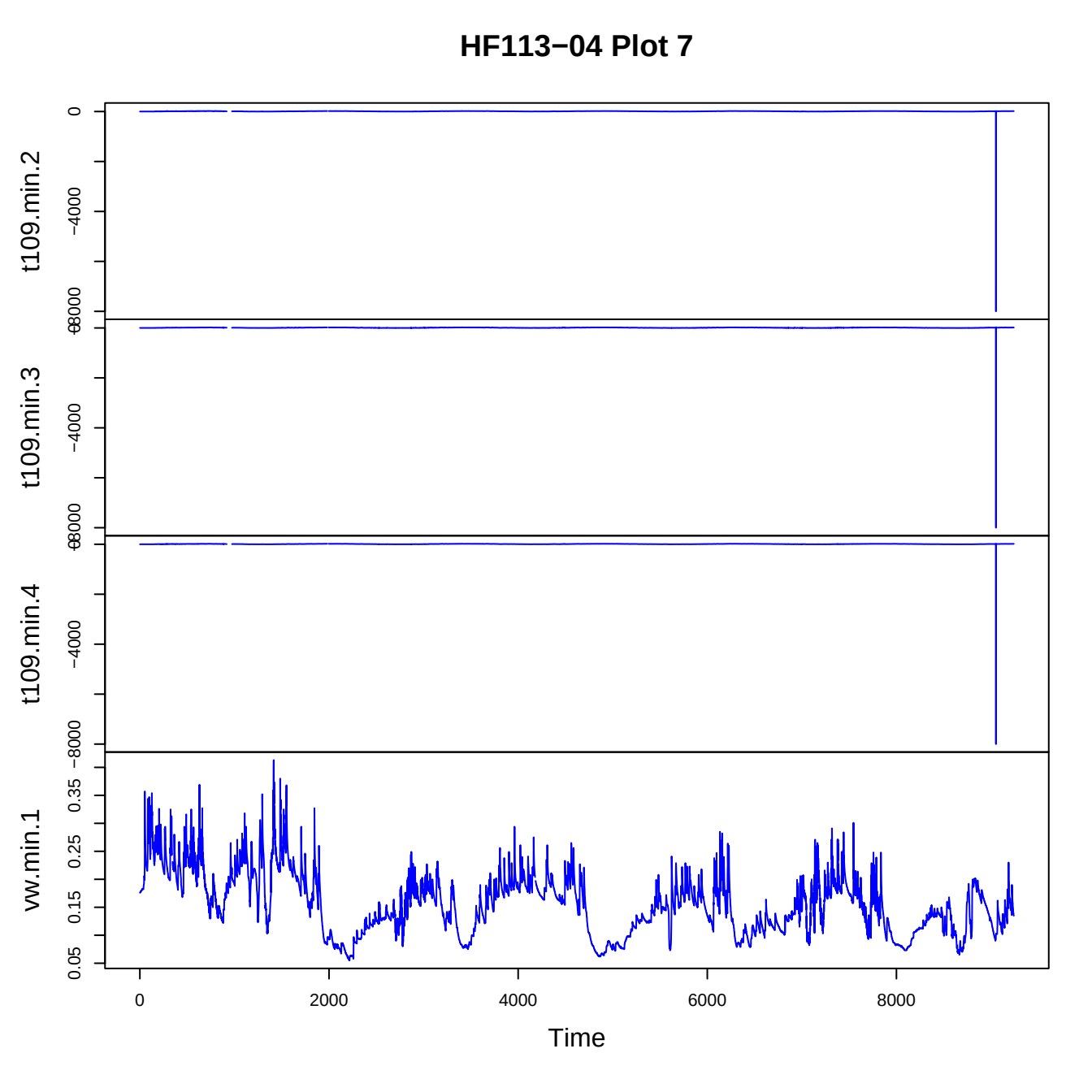

HF113−04 Plot 2
shf.avg.2
shf.cal.1
shf.cal.2
t109.avg.1
Time
0
2000
4000
6000
8000

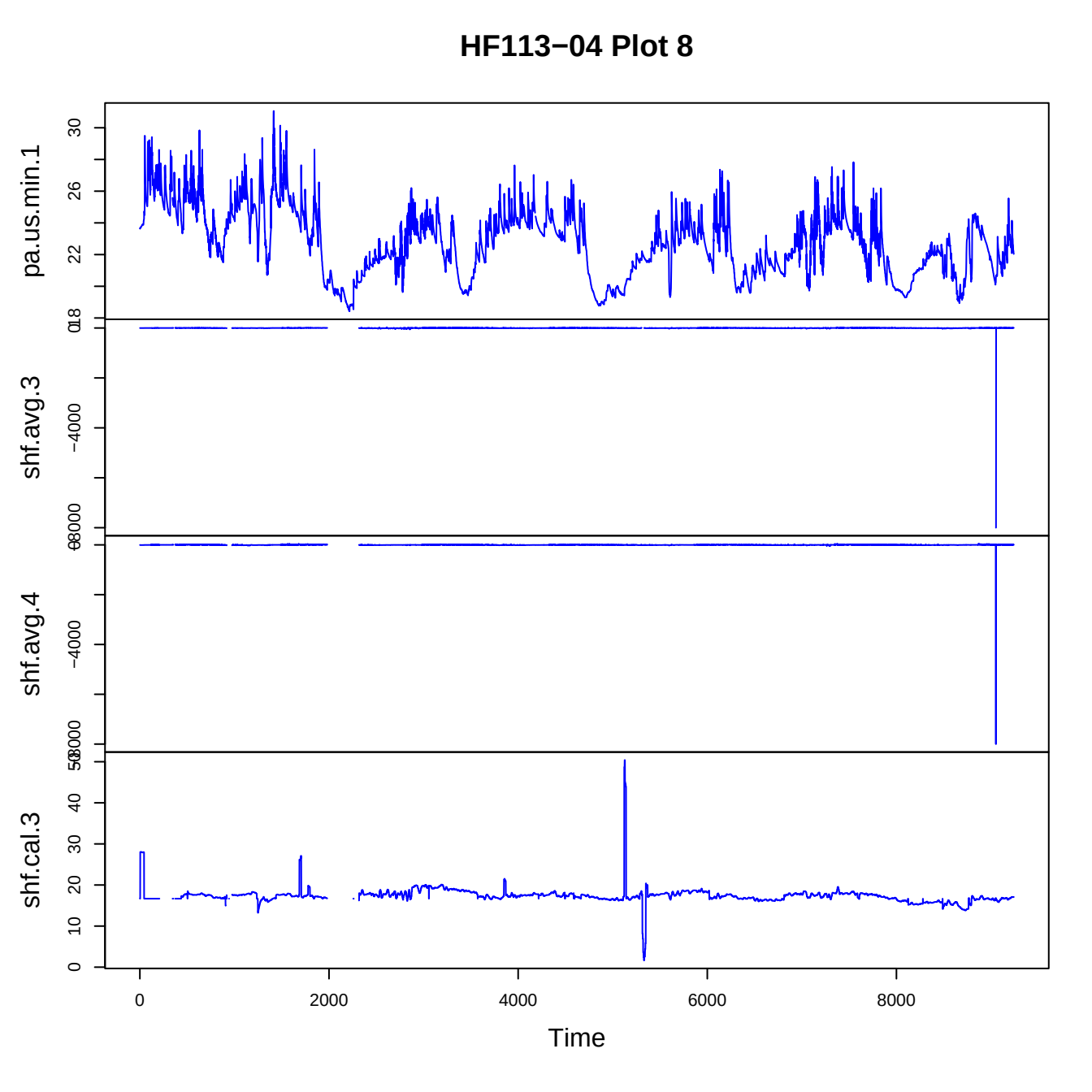

HF113−04 Plot 3
t109.avg.2
t109.avg.3
t109.avg.4
vw.avg.1
0
−4000
−8000
0.05
0.15
0.25
0.35
0
2000
4000
6000
8000
Time

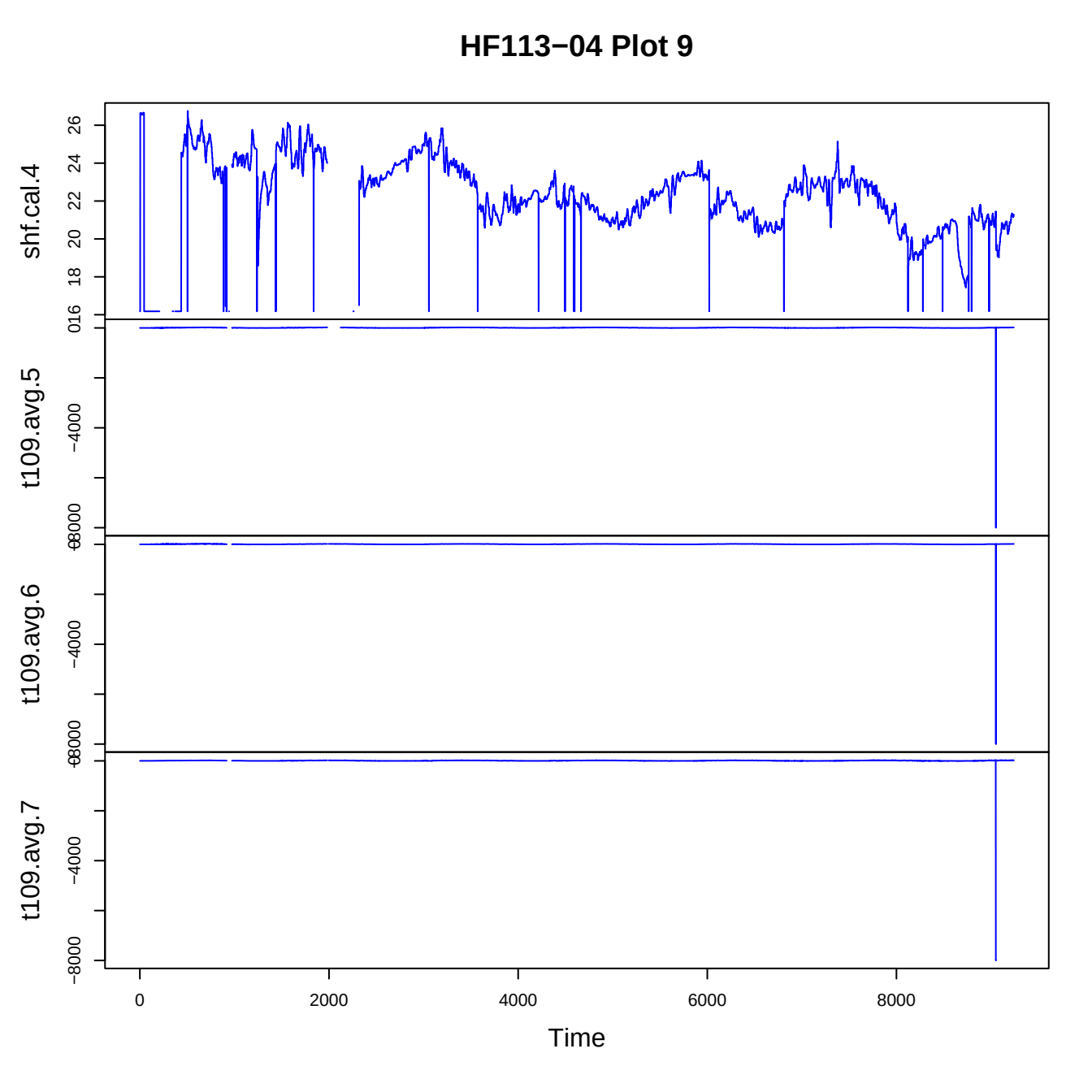

HF113−04 Plot 4
pa.us.avg.1
18
22
26
30
shf.max.1
−8000
−4000
0
shf.max.2
−8000
−4000
0
t109.max.1
−8000
−4000
0
0
2000
4000
6000
8000
Time

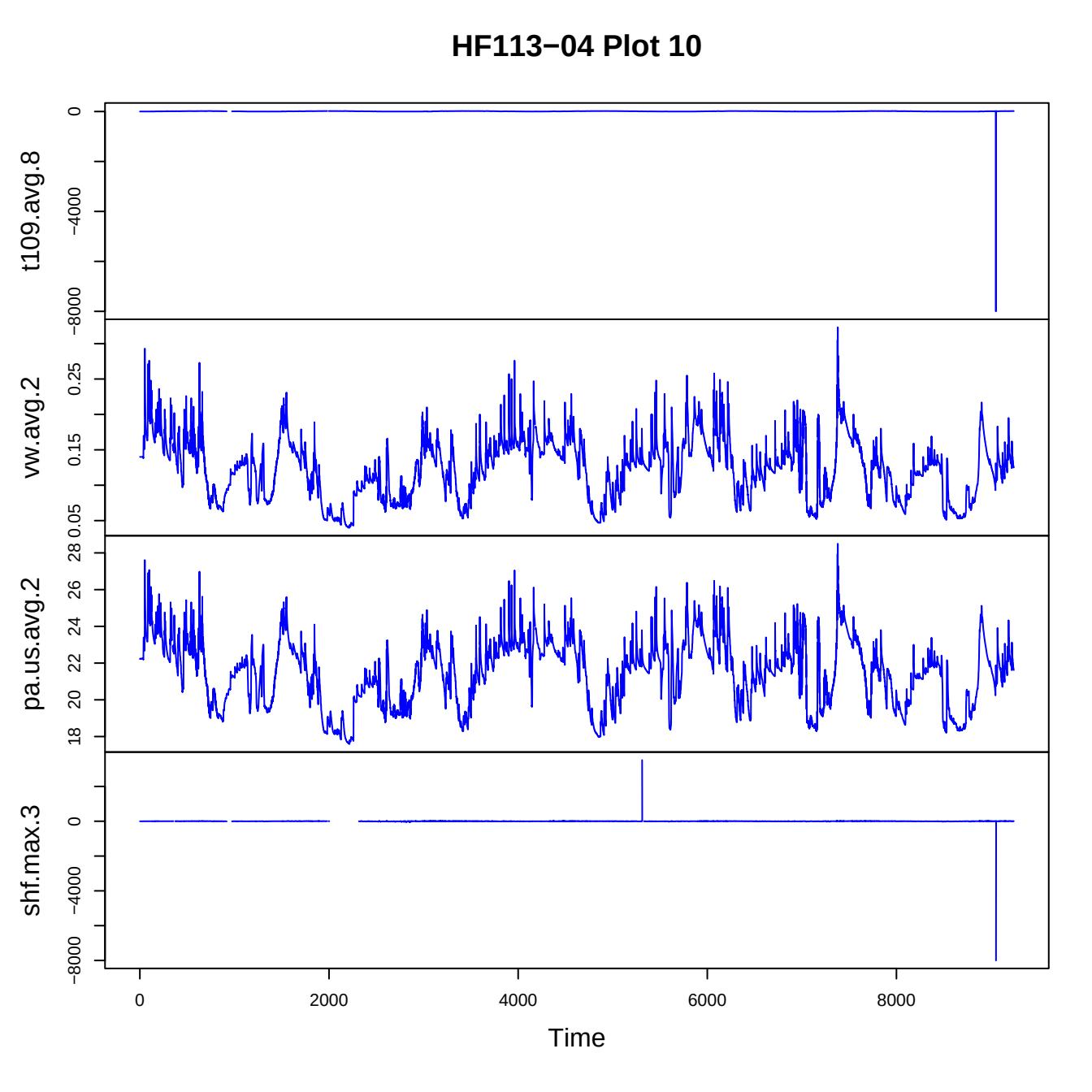

HF113−04 Plot 5
t109.max.2
t109.max.3
t109.max.4
vw.max.1
0
−4000
−8000
0.05
0.15
0.25
0.35
0
2000
4000
6000
8000
Time

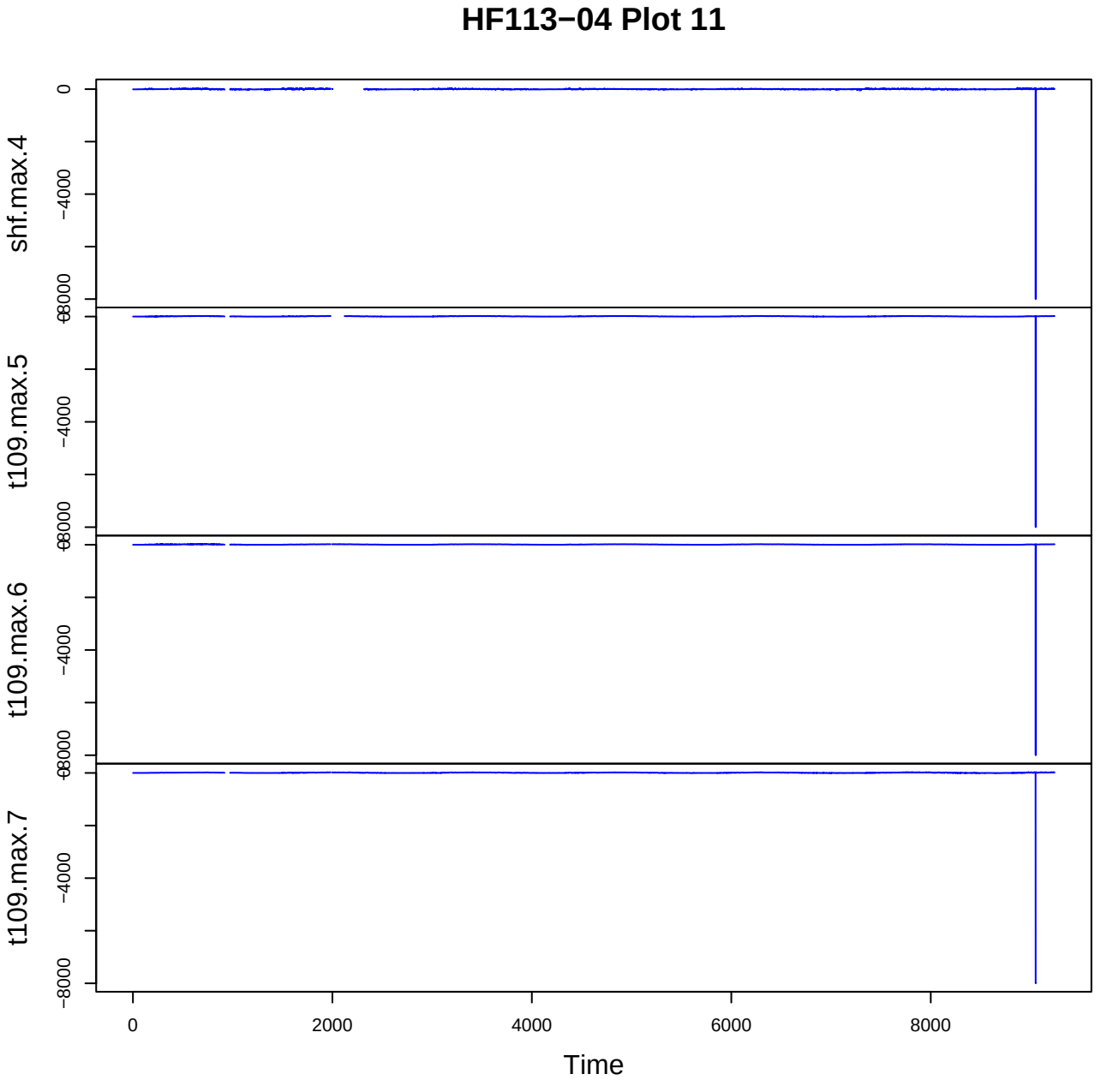

HF113−04 Plot 6
pa.us.max.1
shf.min.1
shf.min.2
t109.min.1
Time
0
2000
4000
6000
8000
−8000
−4000
18
22
26
30

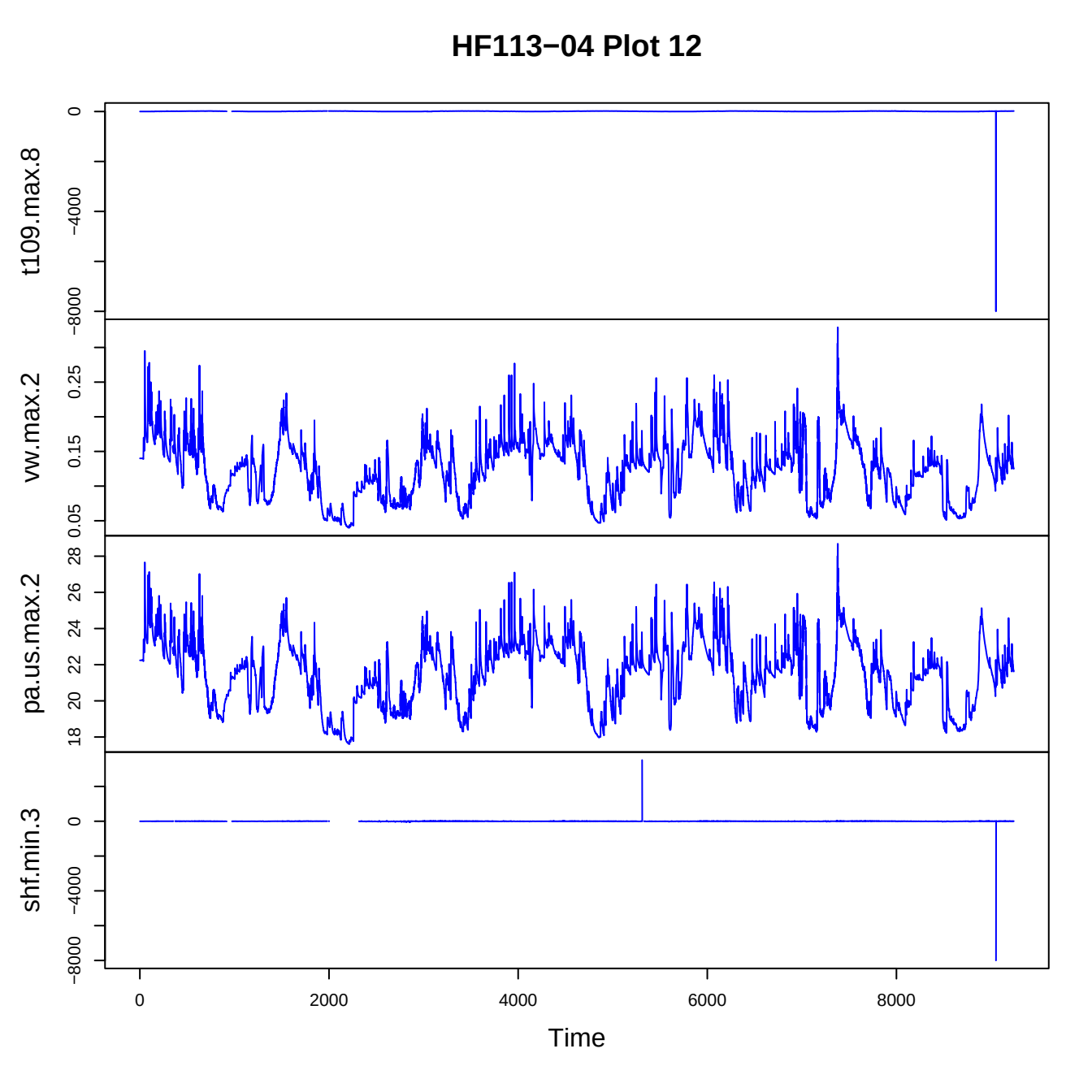

HF113−04 Plot 7
t109.min.2
t109.min.3
t109.min.4
vw.min.1
0
−4000
−8000
0.05
0.15
0.25
0.35
0
2000
4000
6000
8000
Time

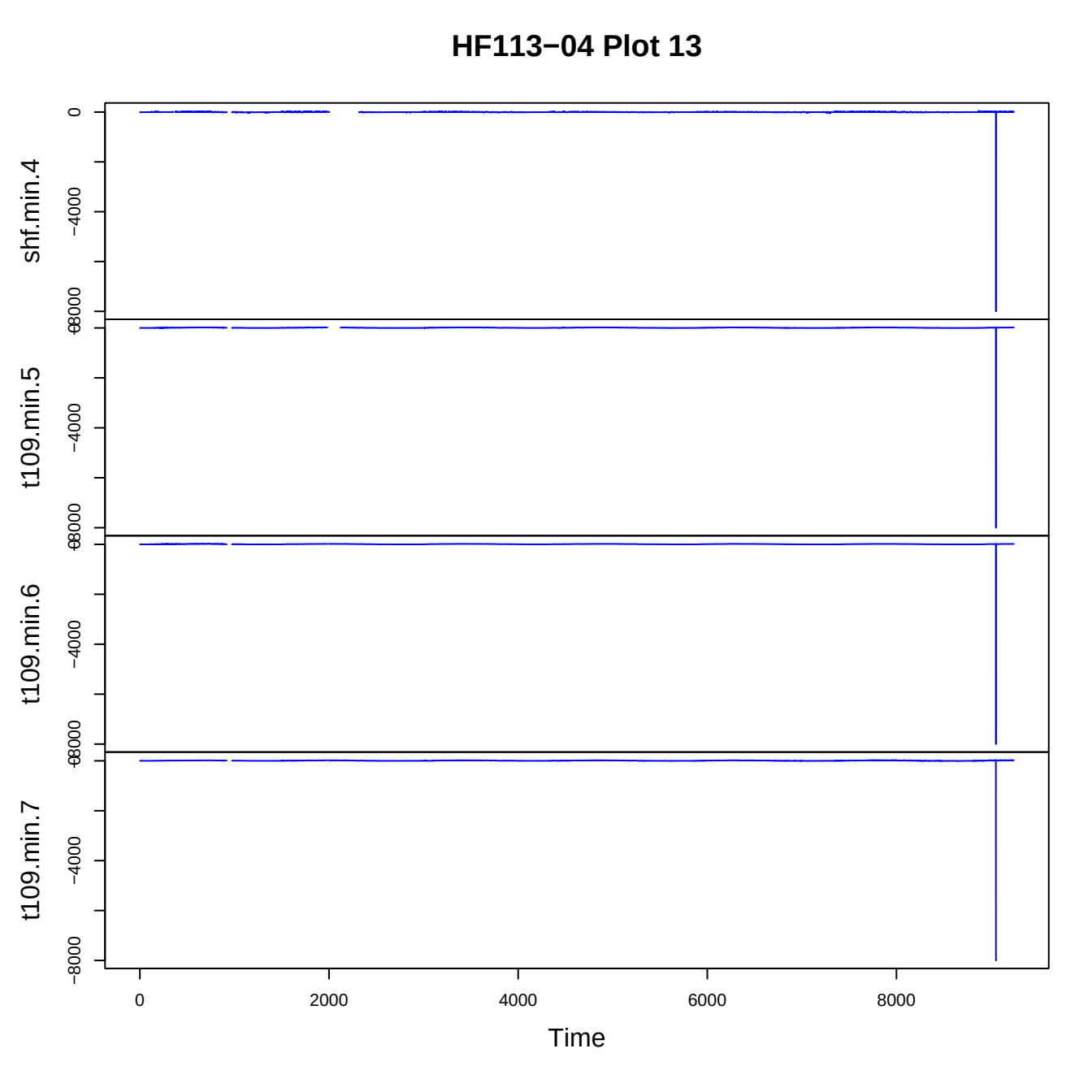

HF113−04 Plot 8
pa.us.min.1
shf.avg.3
shf.avg.4
shf.cal.3
Time
0
2000
4000
6000
8000

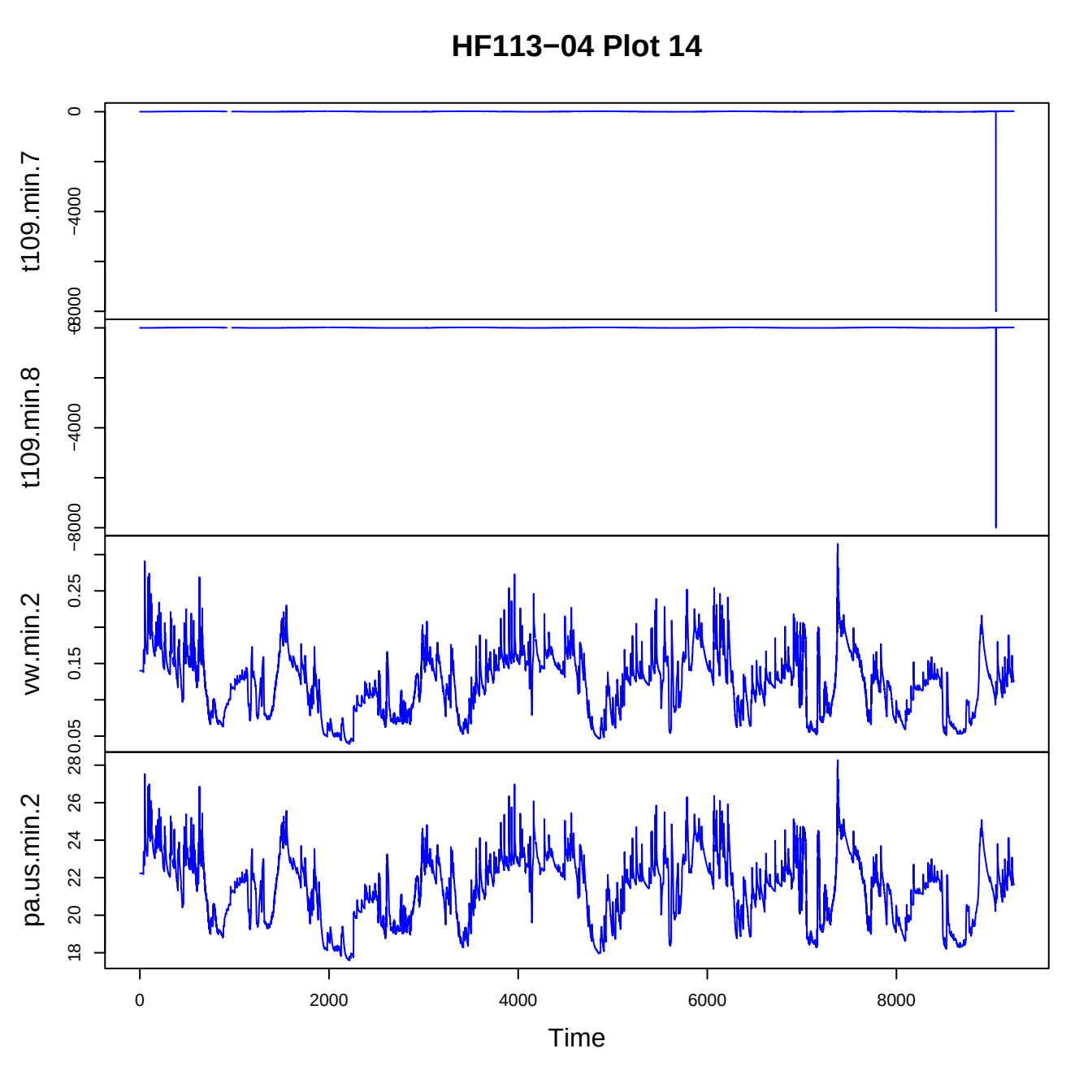

HF113−04 Plot 9
shf.cal.4
16
18
20
22
24
26
t109.avg.5
−8000
−4000
0
t109.avg.6
−8000
−4000
0
t109.avg.7
−8000
−4000
0
0
2000
4000
6000
8000
Time


HF113−04 Plot 10
t109.avg.8
0
−4000
−8000
vw.avg.2
0.25
0.15
0.05
pa.us.avg.2
28
26
24
22
20
18
shf.max.3
0
−4000
−8000
0
2000
4000
6000
8000
Time


HF113−04 Plot 11
shf.max.4
t109.max.5
t109.max.6
t109.max.7
0
−4000
−8000
0
2000
4000
6000
8000
Time


HF113−04 Plot 12
t109.max.8
0
−4000
−8000
vw.max.2
0.25
0.15
0.05
pa.us.max.2
28
26
24
22
20
18
shf.min.3
0
−4000
−8000
0
2000
4000
6000
8000
Time


HF113−04 Plot 13
shf.min.4
t109.min.5
t109.min.6
t109.min.7
0
−4000
−8000
0
2000
4000
6000
8000
Time


HF113−04 Plot 14
t109.min.7
t109.min.8
vw.min.2
pa.us.min.2
0
−4000
−8000
0.25
0.15
0.05
28
26
24
22
20
18
0
2000
4000
6000
8000
Time