REPORT OF 040701

last update on Thu Jul 1 13:28:01 GMT 2004

1 - Introduction

This report is based on the analysis of wave mode level-1 cross spectra (ASA_WVS_1P), global monitoring products (ASA_GM1_1P), which are the available few hours after the acquisition, on the browse (BP) products and
on the Module Stepping (MS) product.

2 - Summary

2.1 - Instrument Unavailability

No unavailabilities during the reported period.

2.2 - Browse Visual Inspection

No anomalies observed on available browse products

2.3 - Data Analysis

-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

3 - Module Stepping Mode

The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

Polarisation	Start Time

MSM in V/V polarisation

MSM in H/H polarisation

4 - Internal calibration Results

No anomalies observed.

4.1 - Daily statistics

4.1.1 - Evolution for WVS

Evolution of cal pulses for WVS

4.1.2 - Evolution for GM1

Evolution of cal pulses for GM1

4.2 - Cyclic statistics

4.2.1 - Evolution for WVS

Evolution of cal pulses for WVS

P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.501036	0.010600	0.045031
7	P1	-3.329175	0.015540	-0.009376
11	P1	-4.536489	0.039225	-0.035142
15	P1	-5.681993	0.058714	-0.028700
19	P1	-3.434111	0.004998	-0.013294
22	P1	-4.558558	0.011339	0.014689
24	P1	-4.914850	0.015839	0.007196
30	P1	-6.850830	0.023468	-0.035550
3	P1	-16.094753	0.221574	-0.015112
7	P1	-13.995264	0.105072	0.005260
11	P1	-19.881233	0.307024	-0.216053
15	P1	-11.781536	0.045362	0.007344
19	P1	-13.819496	0.034886	-0.034716
22	P1	-16.529732	0.422575	0.221224
24	P1	-14.680172	0.303203	0.130415
30	P1	-17.690298	0.375683	-0.075871

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-22.412010	0.082972	0.056352

7	P2	-22.843826	0.122013	0.085012
11	P2	-15.607674	0.135399	0.126977
15	P2	-7.185181	0.097855	0.068441
19	P2	-9.566875	0.144464	0.048575
22	P2	-17.533274	0.105964	0.134400
24	P2	-20.856575	0.088256	0.094382
30	P2	-19.426989	0.079974	0.069147

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-8.143326	0.001986	-0.001711
7	P3	-8.143324	0.001986	-0.001728
11	P3	-8.143327	0.001987	-0.001738
15	P3	-8.143323	0.001987	-0.001768
19	P3	-8.143317	0.001987	-0.001782
22	P3	-8.143316	0.001987	-0.001779
24	P3	-8.143315	0.001987	-0.001773
30	P3	-8.143274	0.001986	-0.000950

4.2.2 - Evolution for GM1

Evolution of cal pulses for GM1

P1a Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)

P1 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P1	-3.139924	0.133362	0.031924
7	P1	-2.810413	0.070729	-0.026553
11	P1	-3.795836	0.022809	-0.042597
15	P1	-4.255113	1.007943	-0.012418
19	P1	-3.358790	0.049236	-0.016793

22	P1	-5.721496	0.043153	-0.023818
24	P1	-4.049759	0.078965	-0.021575
30	P1	-6.102676	0.063335	-0.021466
3	P1	-11.019065	0.416093	0.029923
7	P1	-9.767303	0.241968	-0.038156
11	P1	-11.770579	0.169110	-0.054274
15	P1	-11.844667	0.272168	-0.046287
19	P1	-14.998559	0.815270	-0.017516
22	P1	-21.502745	8.884972	0.054546
24	P1	-17.385199	0.290180	-0.061450
30	P1	-21.695850	4.180187	-0.046267

P2 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P2	-18.158363	0.043375	0.053410
7	P2	-22.936626	0.029397	0.077658
11	P2	-11.022854	0.221128	0.145057
15	P2	-5.001178	0.044394	0.036675
19	P2	-6.931964	0.042924	0.009906
22	P2	-7.672561	0.024718	0.101894
24	P2	-11.071451	0.073642	0.067802
30	P2	-22.388477	0.092534	0.117302

P3 Cyclic statistics

row	pulse	mean (dB)	stdev (dB)	slope(dB/cycle)
3	P3	-7.984584	0.003328	-0.003948
7	P3	-7.984478	0.003317	-0.003938
11	P3	-7.984467	0.003324	-0.003816
15	P3	-7.984477	0.003321	-0.003523
19	P3	-7.984445	0.003321	-0.003671
22	P3	-7.984625	0.003315	-0.003644
24	P3	-7.984470	0.003345	-0.004098
30	P3	-7.984426	0.003317	-0.003911

4.3 - cal pulses monitoring (all rows)

4.3.1 - Evolution for WVS

4.3.2 - Evolution for GM1

5 - RAW data statistics

No anomalies observed.

5.1 - Input mean I/Q

channel	stat	DSS-B
MEAN I	mean	0.000489215
	stdev	2.11254e-07
MEAN Q	mean	0.000547024
	stdev	2.35945e-07

5.2 - Input stdev I/Q

channel	stat	DSS-B
STDEV I	mean	0.129708
	stdev	0.000973675
STDEV Q	mean	0.129946
	stdev	0.000984969

5.3 - Gain imbalance I/Q

6 - Doppler Analysis

6.1 - Unbiased Doppler Error for WVS

Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

6.2 - Absolute Doppler for WVS

Evolution of Absolute Doppler
☒
Acsending
☒
Descending

6.3 - Doppler evolution versus ANX for WVS

Evolution Doppler error versus ANX
☒

6.4 - Unbiased Doppler Error for GM1

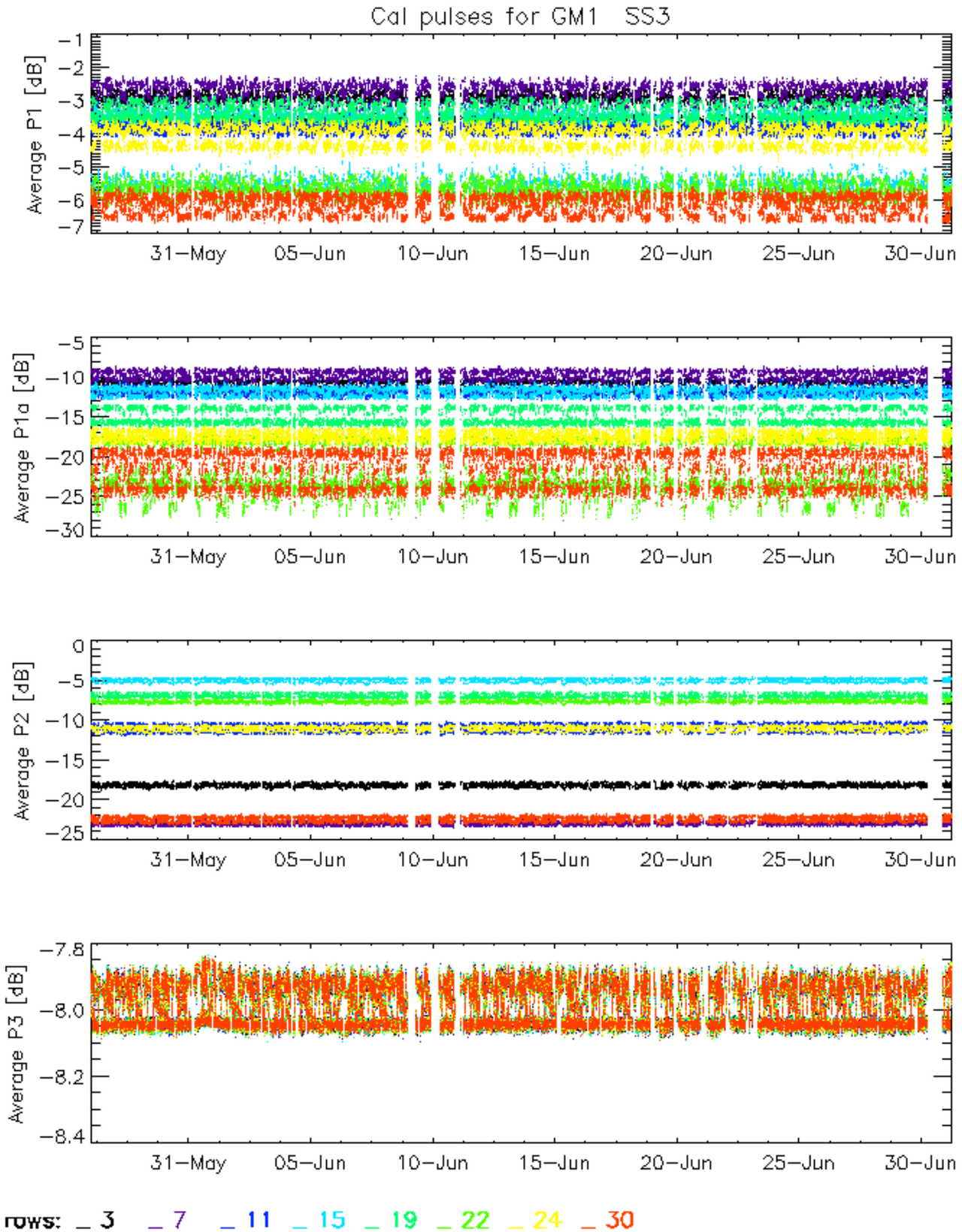
Evolution of unbiased Doppler error (Real - Expected)
☒
Acsending
☒
Descending

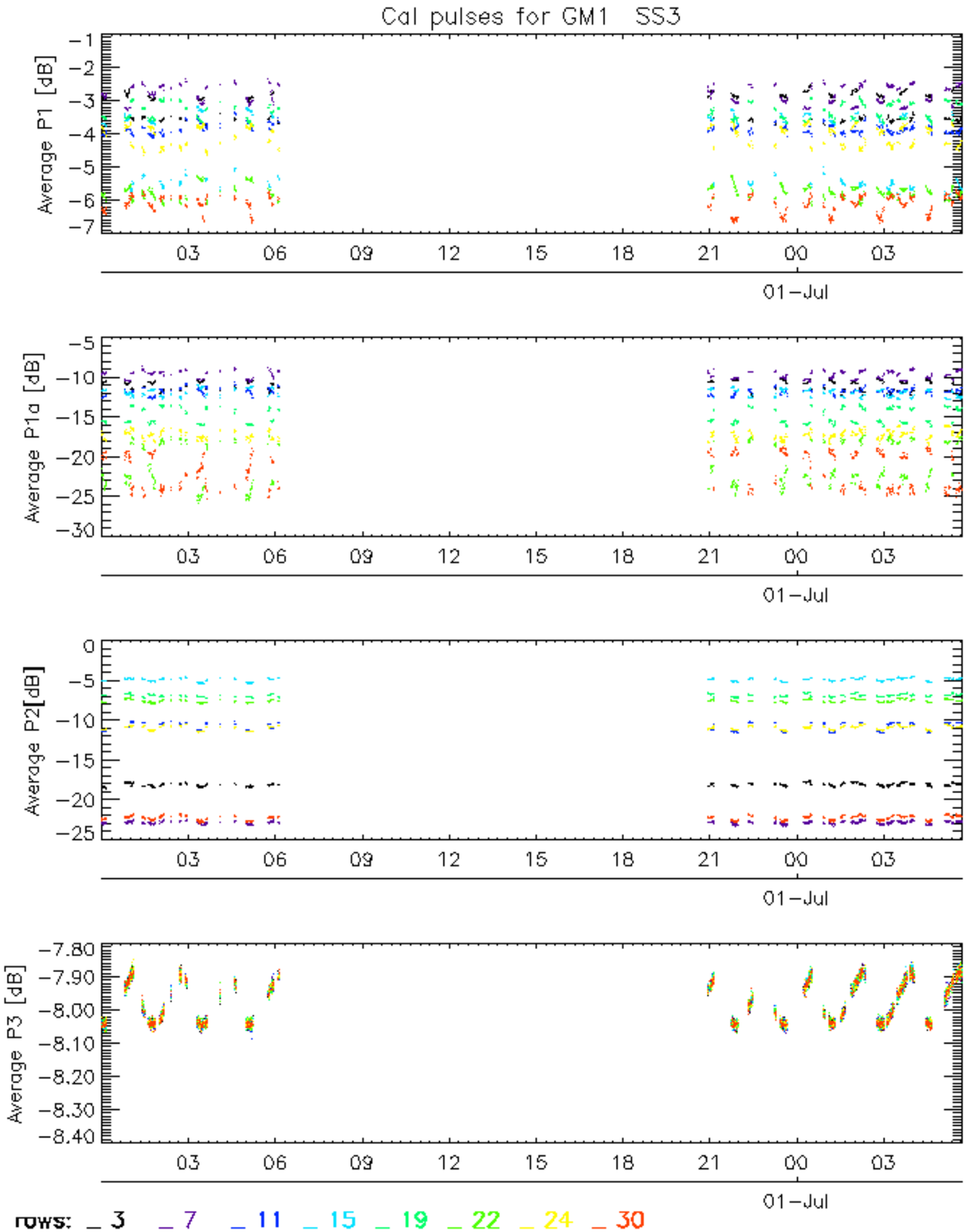
6.5 - Absolute Doppler for GM1

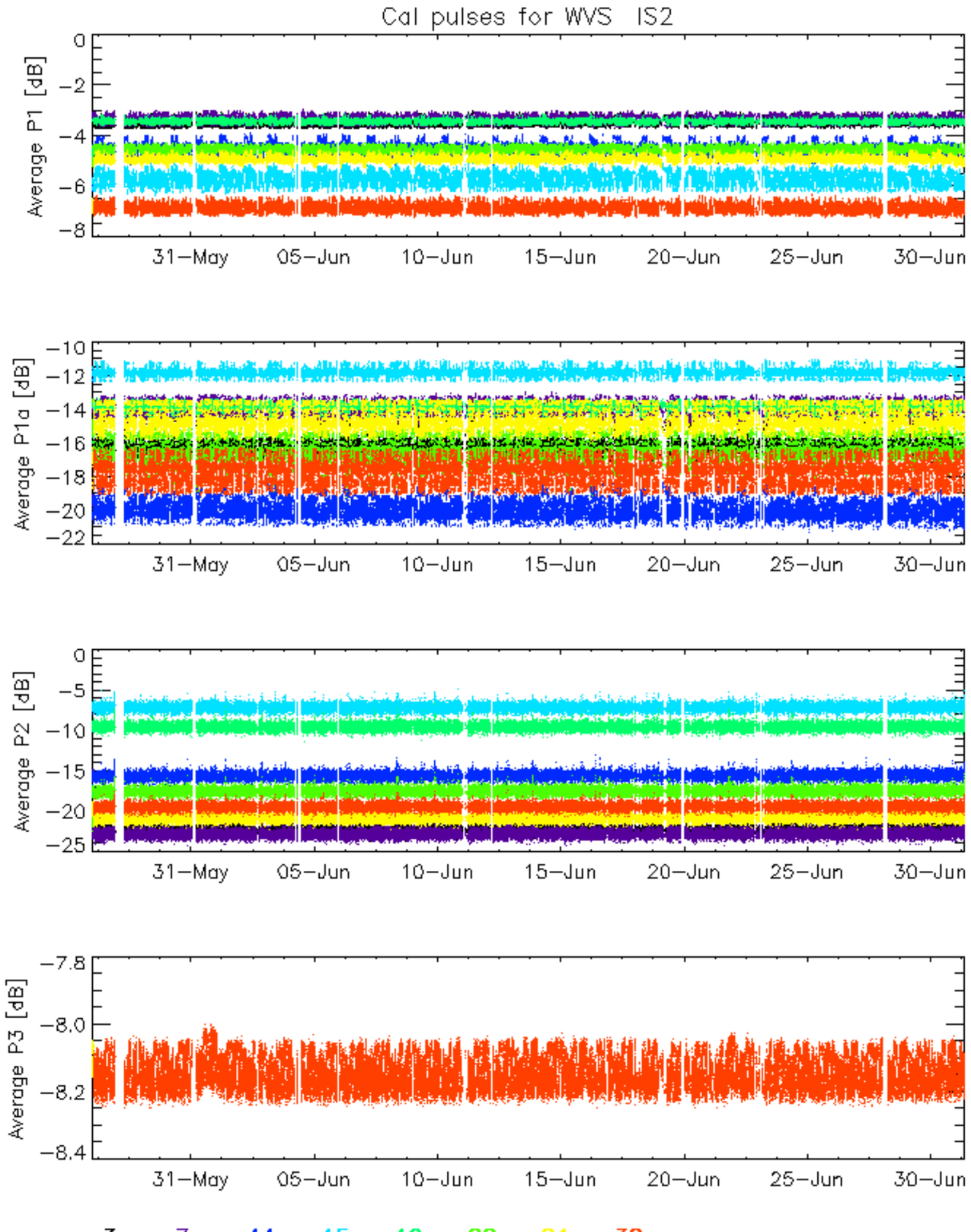
Evolution of Absolute Doppler
☒
Acsending
☒
Descending

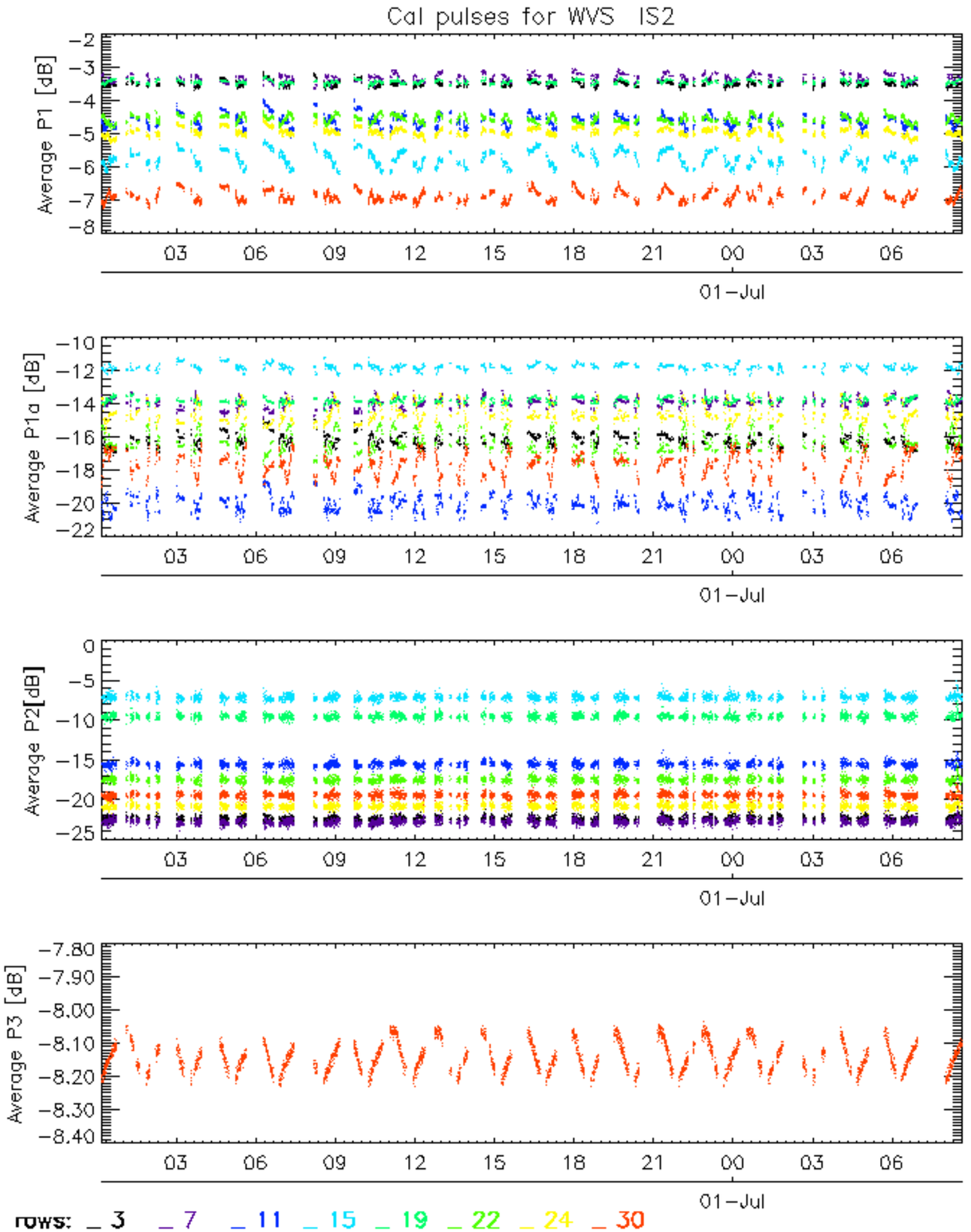
6.6 - Doppler evolution versus ANX for GM1

Evolution Doppler error versus ANX
☒


Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
31−May
05−Jun
10−Jun
15−Jun
20−Jun
25−Jun
30−Jun
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2 [dB]
0
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

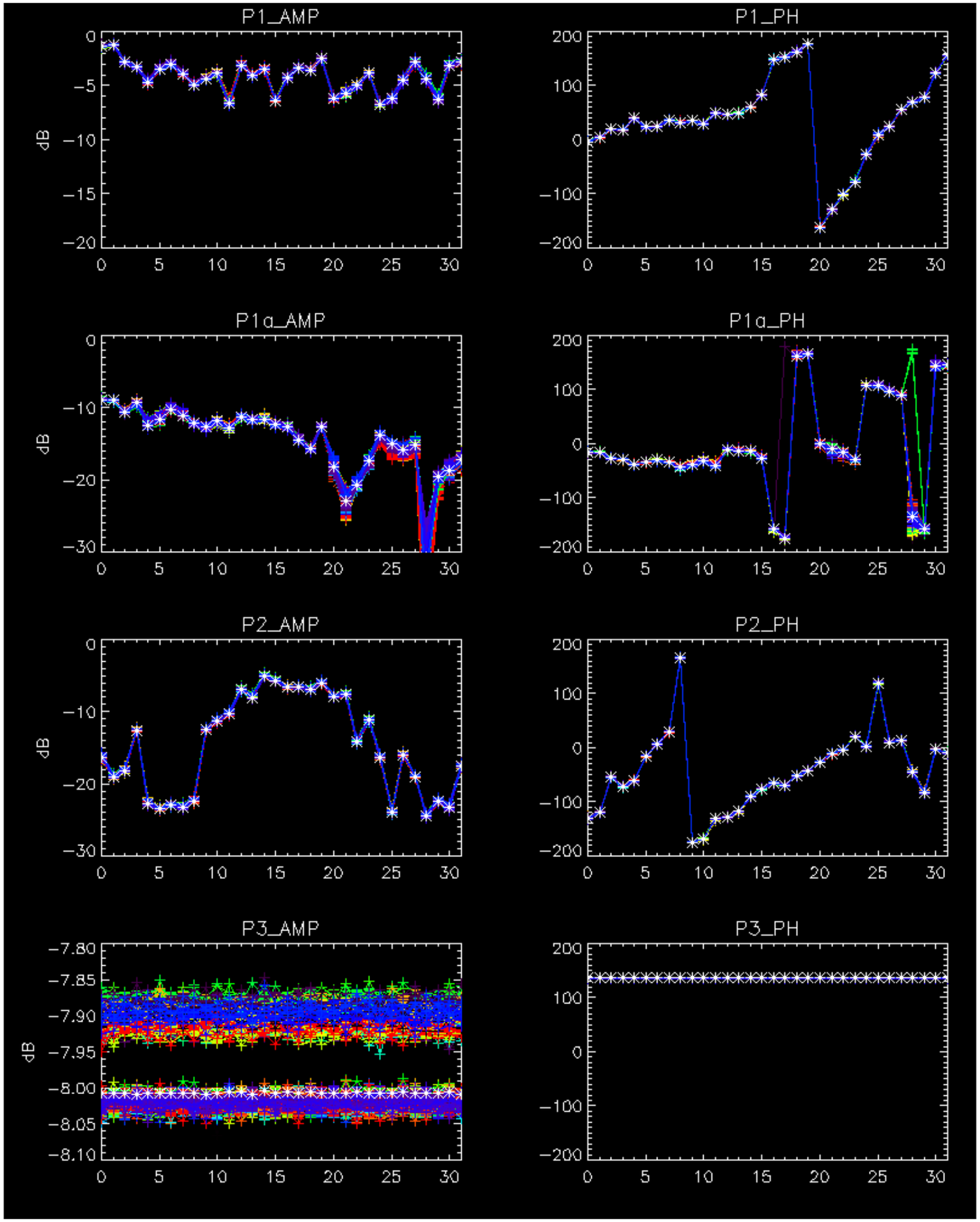

Cal pulses for GM1 SS3
Average P1 [dB]
−1
−2
−3
−4
−5
−6
−7
03
06
09
12
15
18
21
00
03
01−Jul
Average P1a [dB]
−5
−10
−15
−20
−25
−30
Average P2[dB]
0
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
rows: 3 7 11 15 19 22 24 30

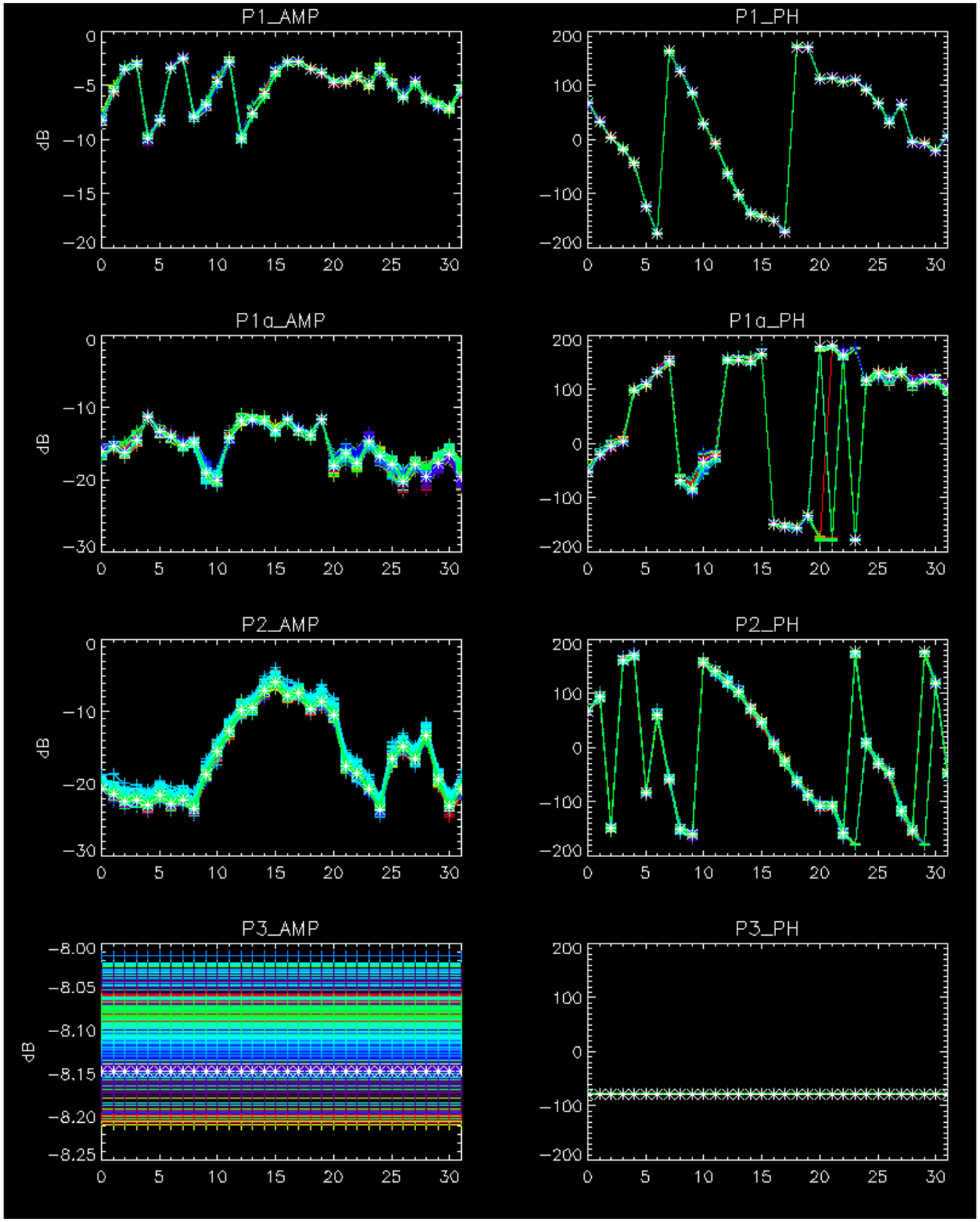

Cal pulses for WVS IS2
Average P1 [dB]
0
−2
−4
−6
−8
31−May
05−Jun
10−Jun
15−Jun
20−Jun
25−Jun
30−Jun
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
Average P2 [dB]
−5
−10
−15
−20
−25
Average P3 [dB]
−7.8
−8.0
−8.2
−8.4
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Cal pulses for WVS IS2
Average P1 [dB]
−2
−3
−4
−5
−6
−7
−8
03
06
09
12
15
18
21
00
03
06
01−Jul
Average P1a [dB]
−10
−12
−14
−16
−18
−20
−22
03
06
09
12
15
18
21
00
03
06
01−Jul
Average P2[dB]
0
−5
−10
−15
−20
−25
03
06
09
12
15
18
21
00
03
06
01−Jul
Average P3 [dB]
−7.80
−7.90
−8.00
−8.10
−8.20
−8.30
−8.40
03
06
09
12
15
18
21
00
03
06
01−Jul
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30

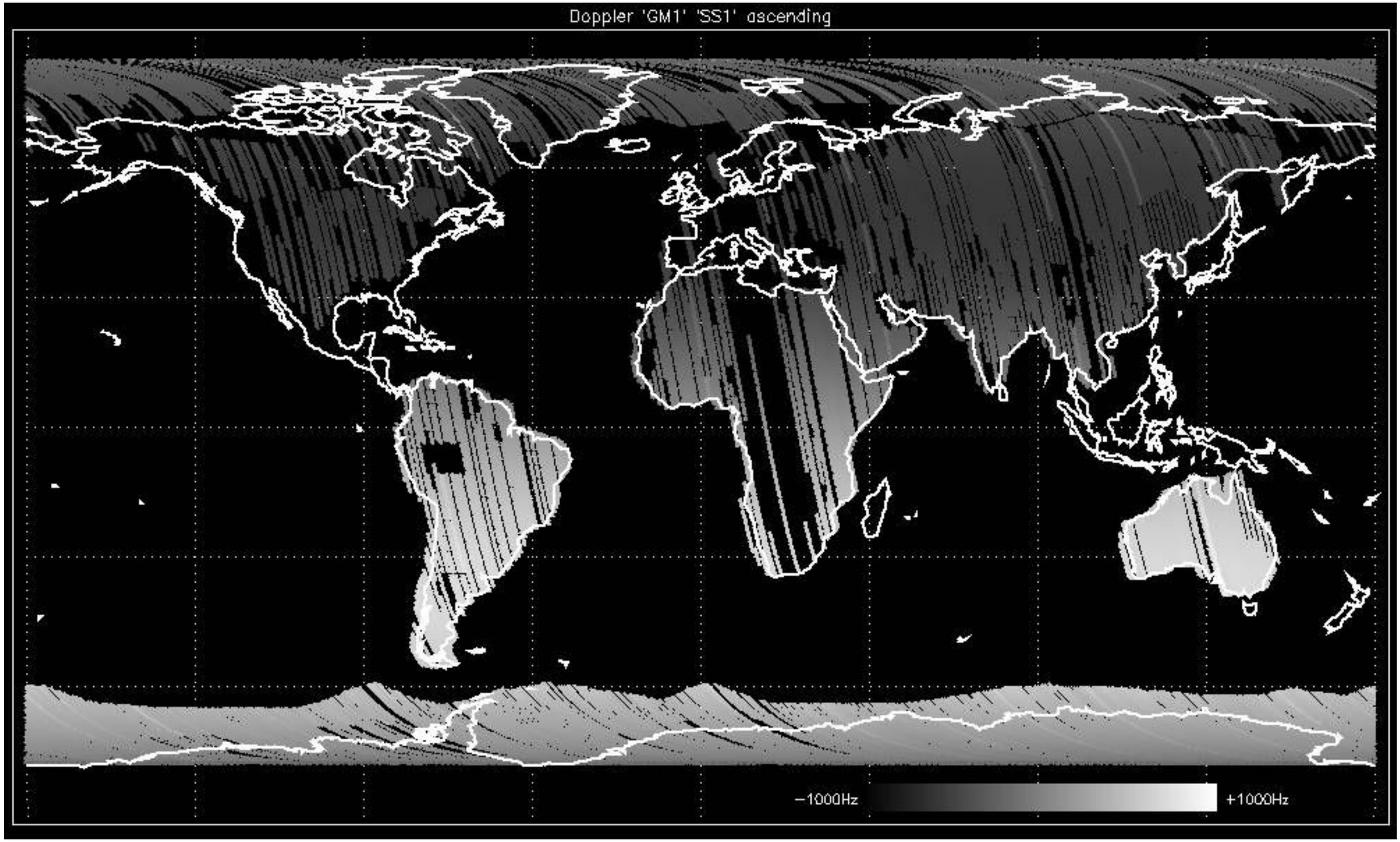
No anomalies observed on available browse products

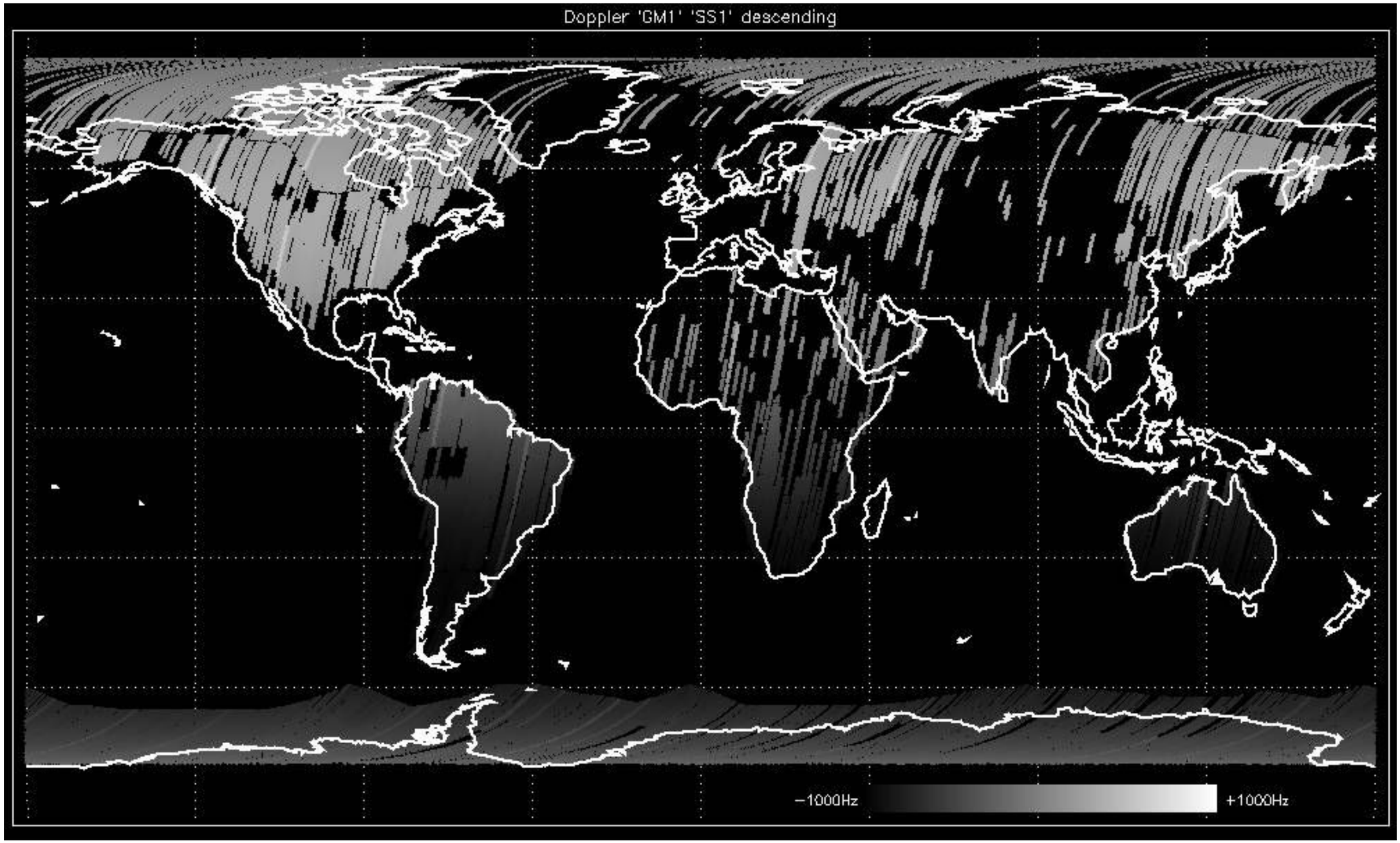
No anomalies observed.

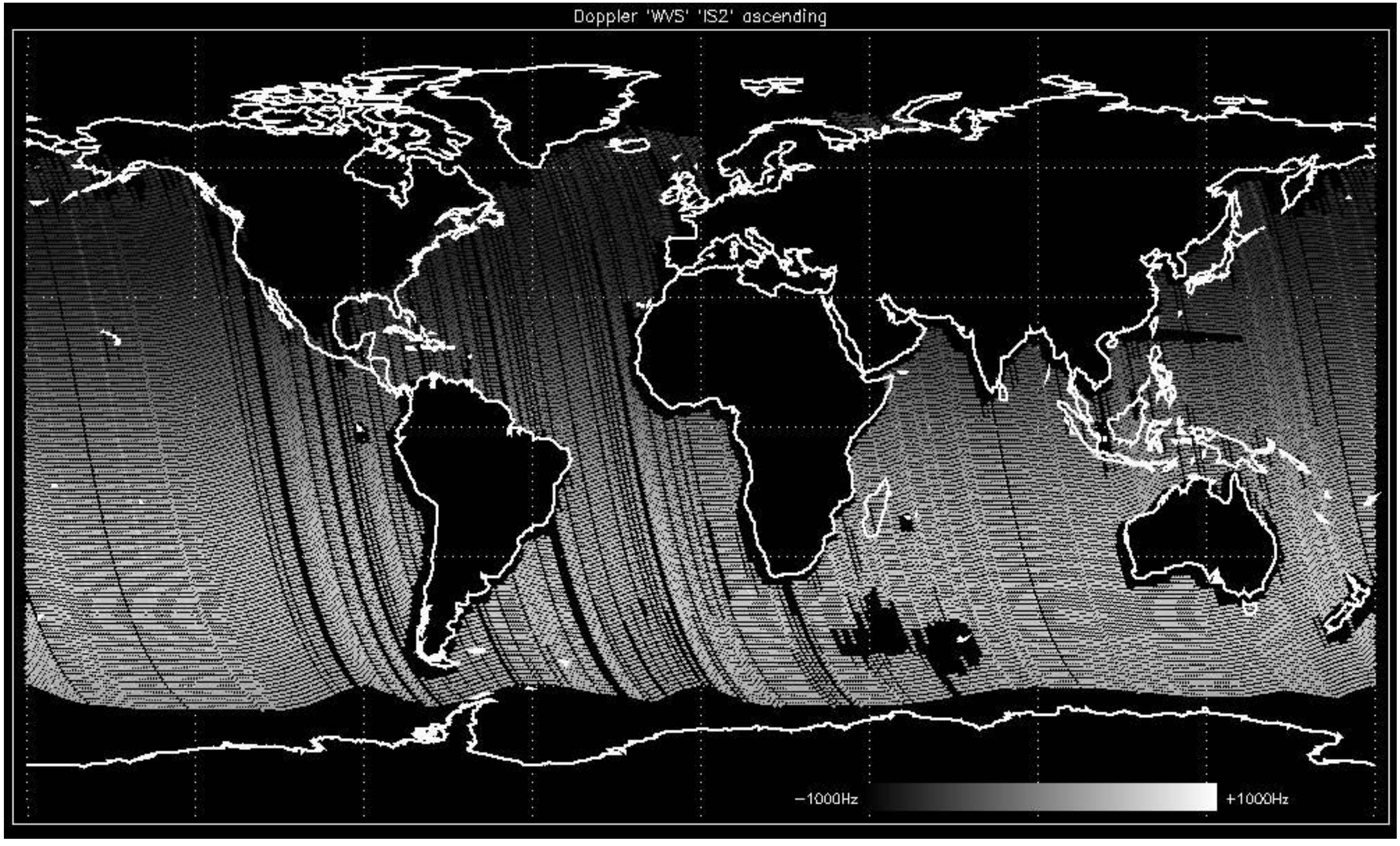

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−7.80
−7.85
−7.90
−7.95
−8.00
−8.05
−8.10
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

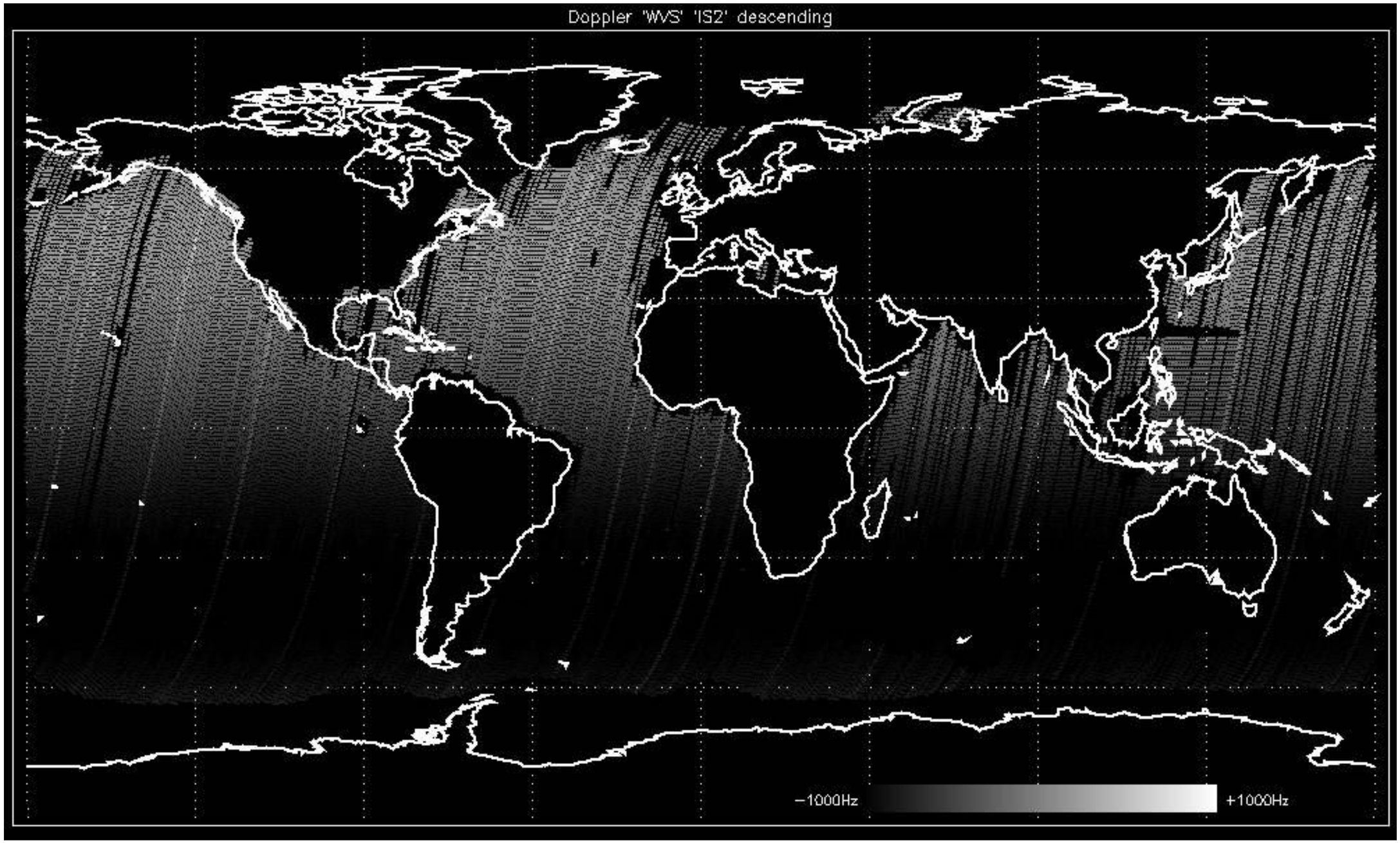

P1_AMP
dB
0
−5
−10
−15
−20
0 5 10 15 20 25 30
P1_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P1a_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P1a_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P2_AMP
dB
0
−10
−20
−30
0 5 10 15 20 25 30
P2_PH
200
100
0
−100
−200
0 5 10 15 20 25 30
P3_AMP
dB
−8.00
−8.05
−8.10
−8.15
−8.20
−8.25
0 5 10 15 20 25 30
P3_PH
200
100
0
−100
−200
0 5 10 15 20 25 30

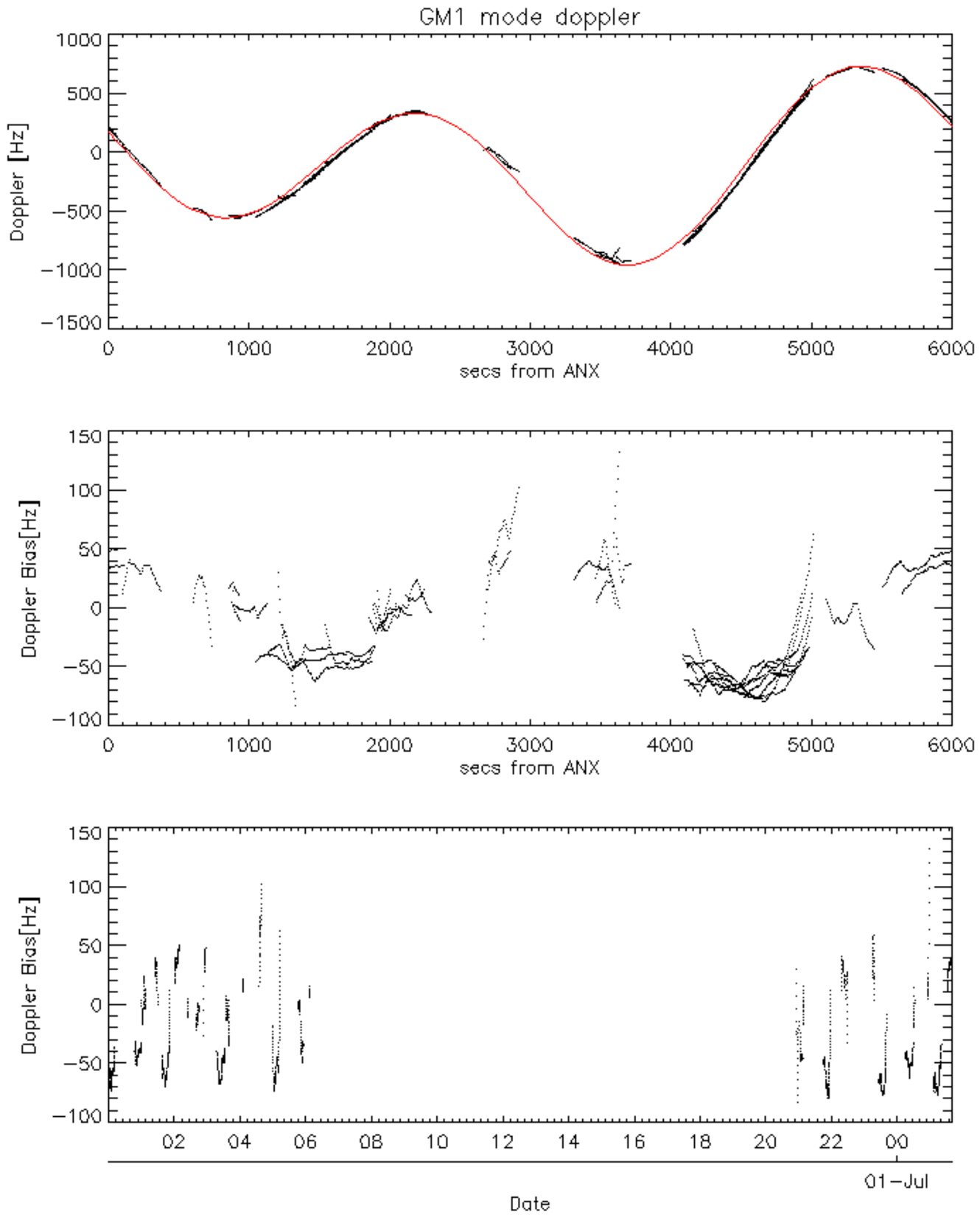
-Stable wave internal calibration pulses gain and phase.
-Stable raw data statistics.
-Nominal Doppler behavior.

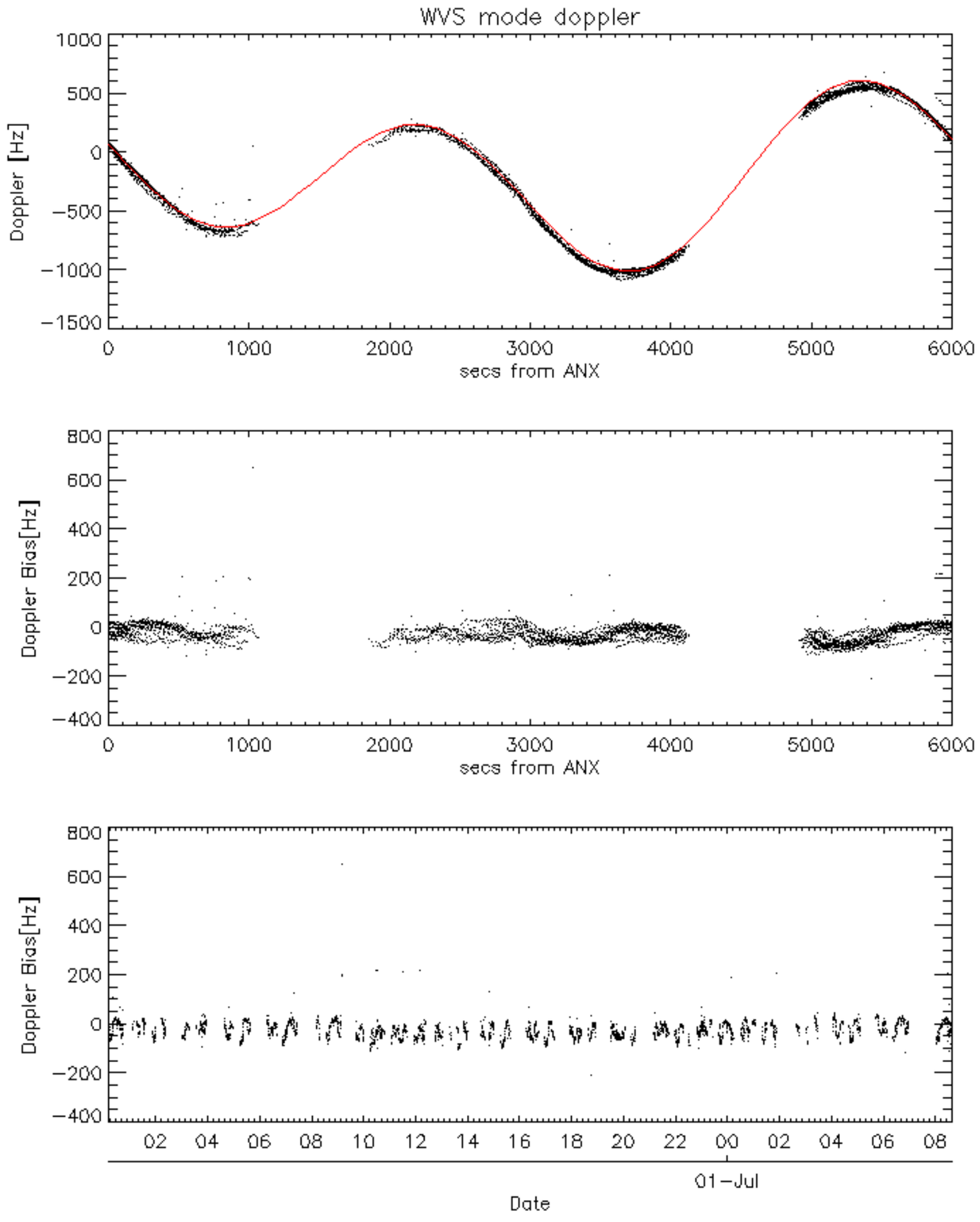

Doppler 'GM1' 'SS1' ascending
−1000Hz
+1000Hz

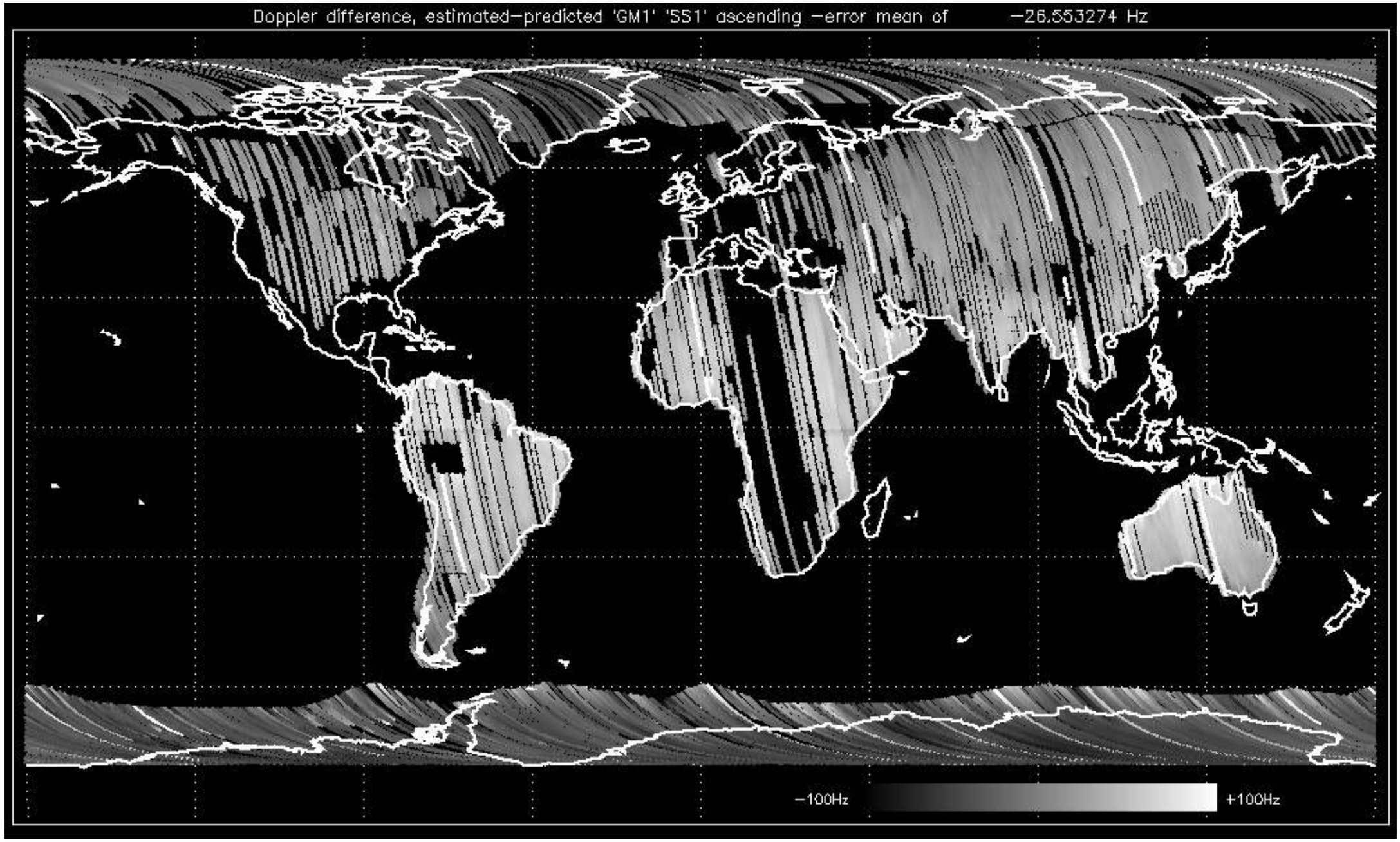

Doppler 'GM1' 'SS1' descending
−1000Hz
+1000Hz

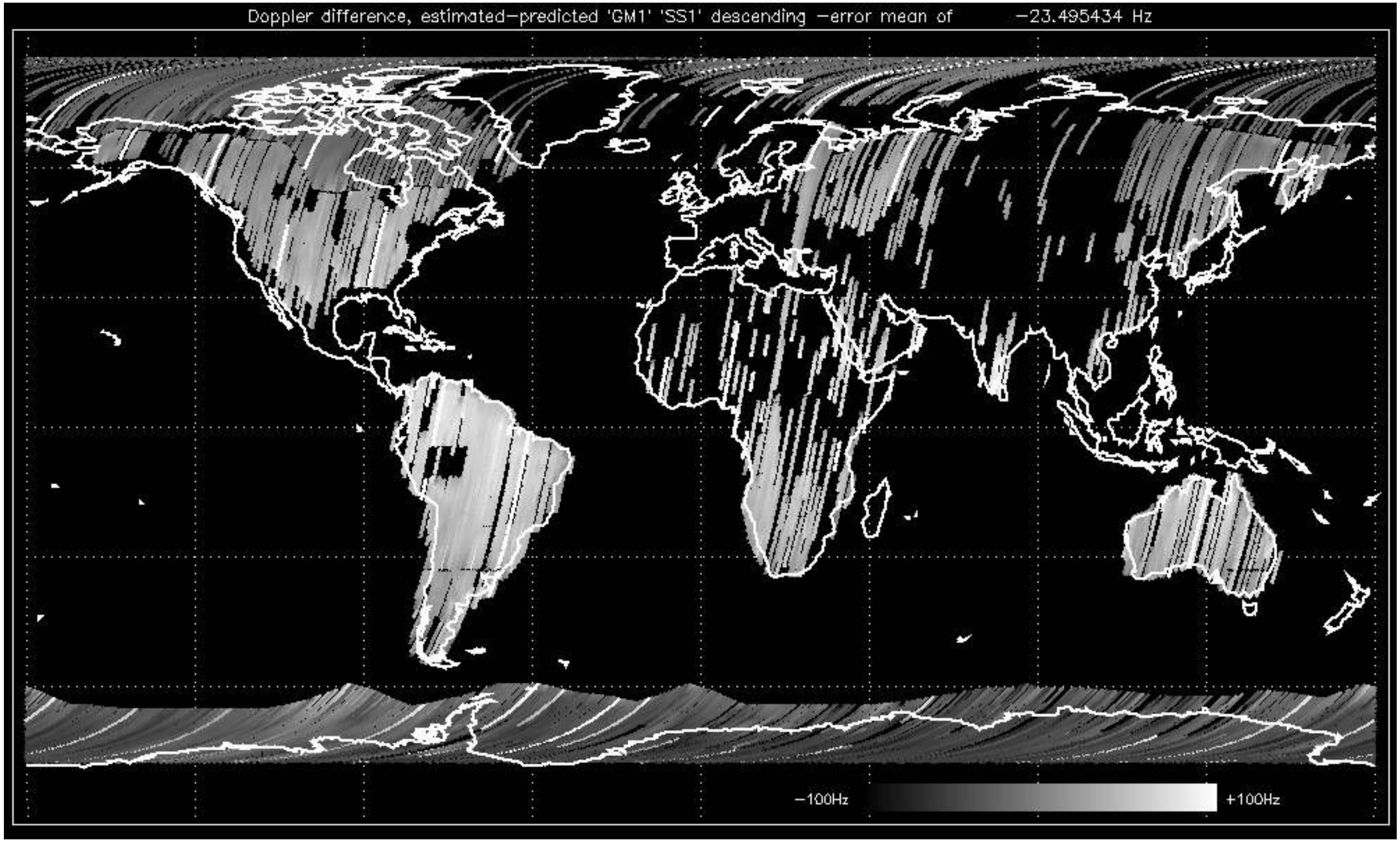

Doppler 'WVS' 'IS2' ascending
−1000Hz
+1000Hz

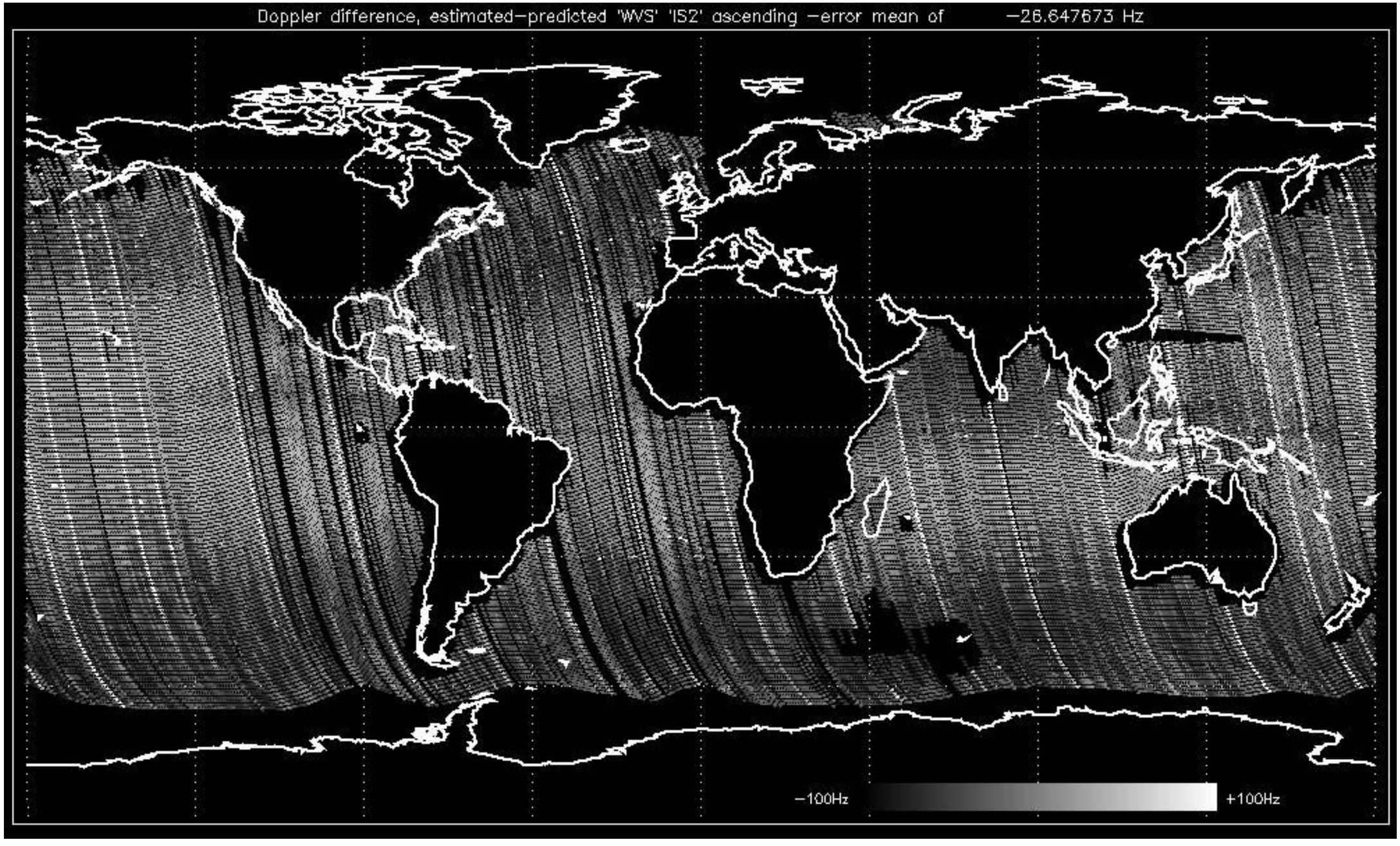

Doppler 'WVS' 'IS2' descending
−1000Hz
+1000Hz

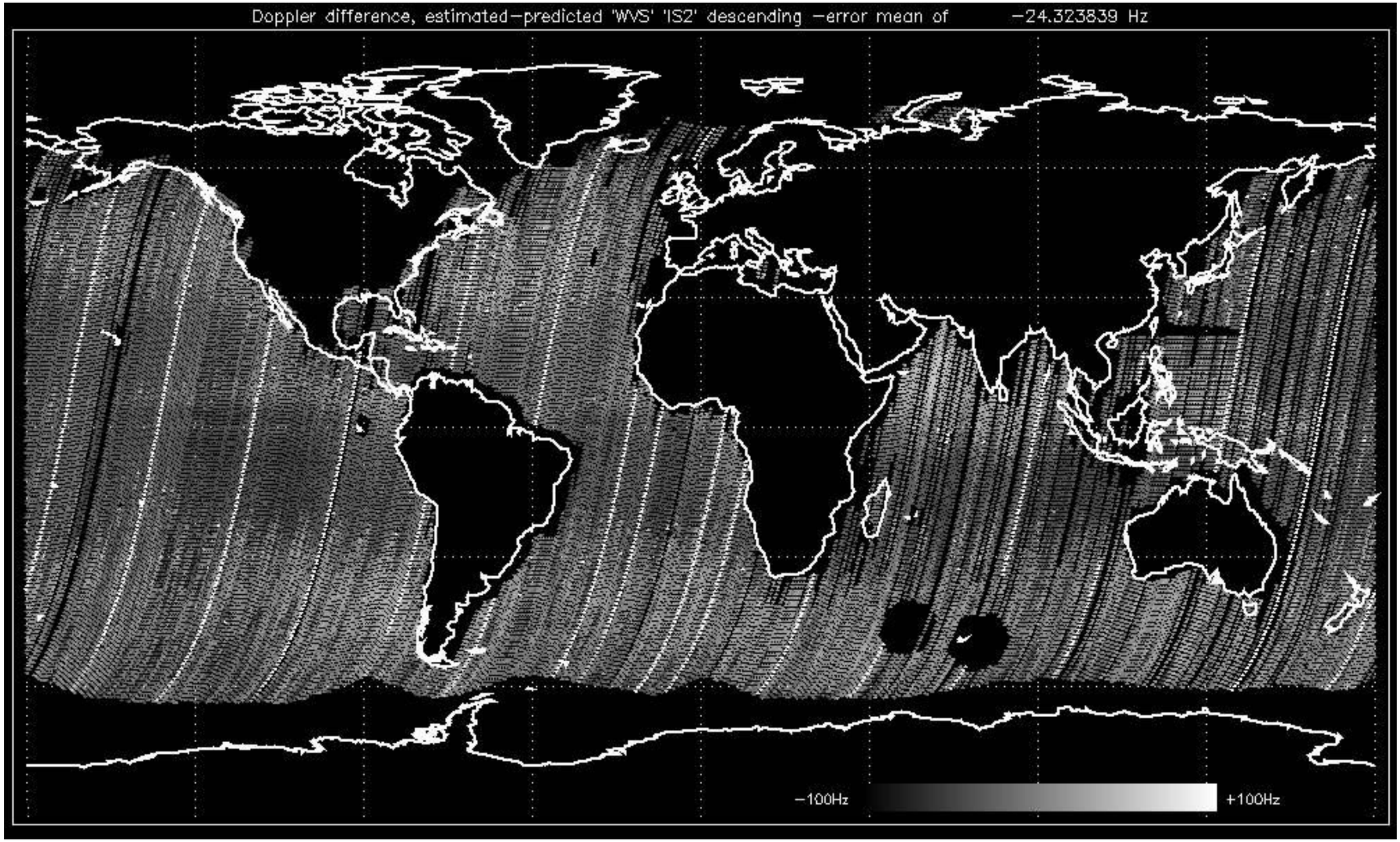

GM1 mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
150
100
50
0
−50
−100
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
150
100
50
0
−50
−100
02
04
06
08
10
12
14
16
18
20
22
00
01−Jul
Date


WVS mode doppler
Doppler [Hz]
1000
500
0
−500
−1000
−1500
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
800
600
400
200
0
−200
−400
0
1000
2000
3000
4000
5000
6000
secs from ANX
Doppler Bias[Hz]
800
600
400
200
0
−200
−400
02
04
06
08
10
12
14
16
18
20
22
00
02
04
06
08
01−Jul
Date


Doppler difference, estimated−predicted 'GM1' 'SS1' ascending −error mean of −26.553274 Hz
−100Hz
+100Hz

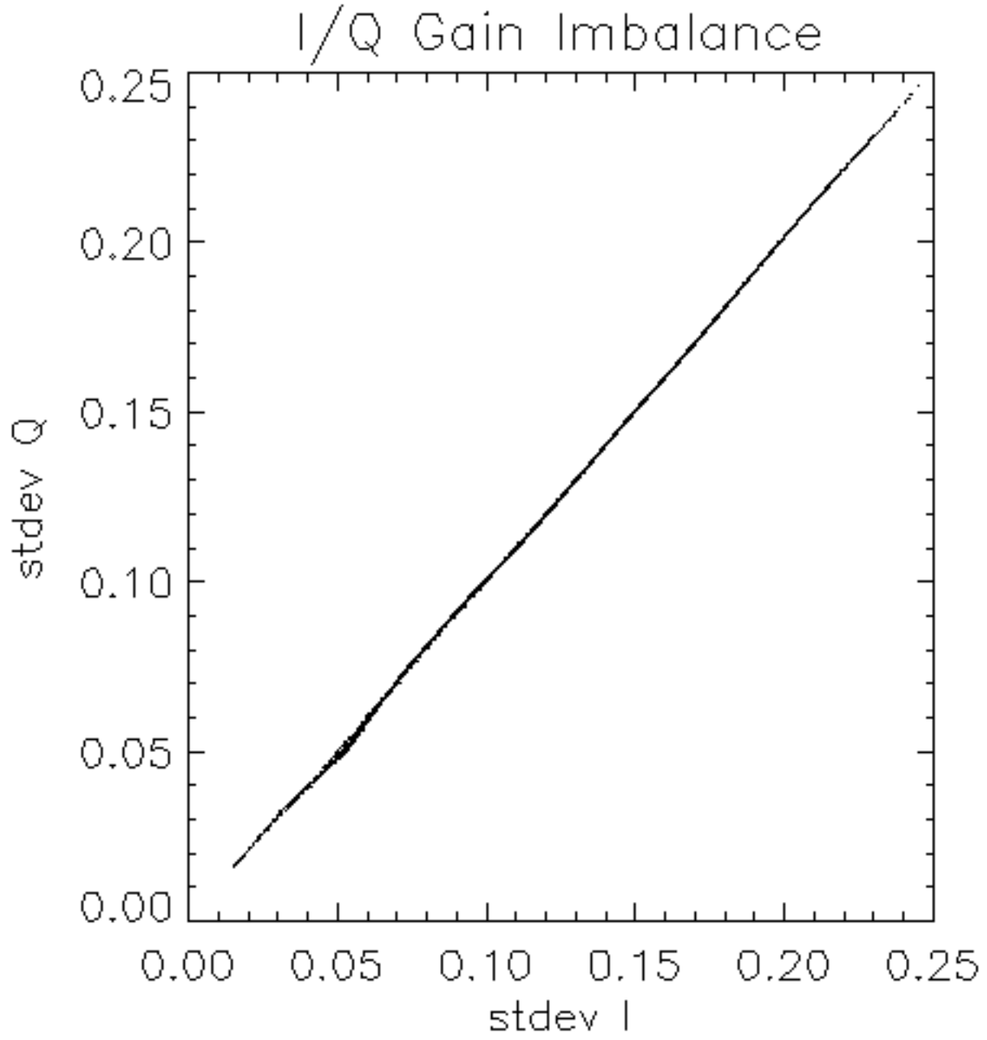

Doppler difference, estimated−predicted 'GM1' 'SS1' descending −error mean of −23.495434 Hz
−100Hz
+100Hz

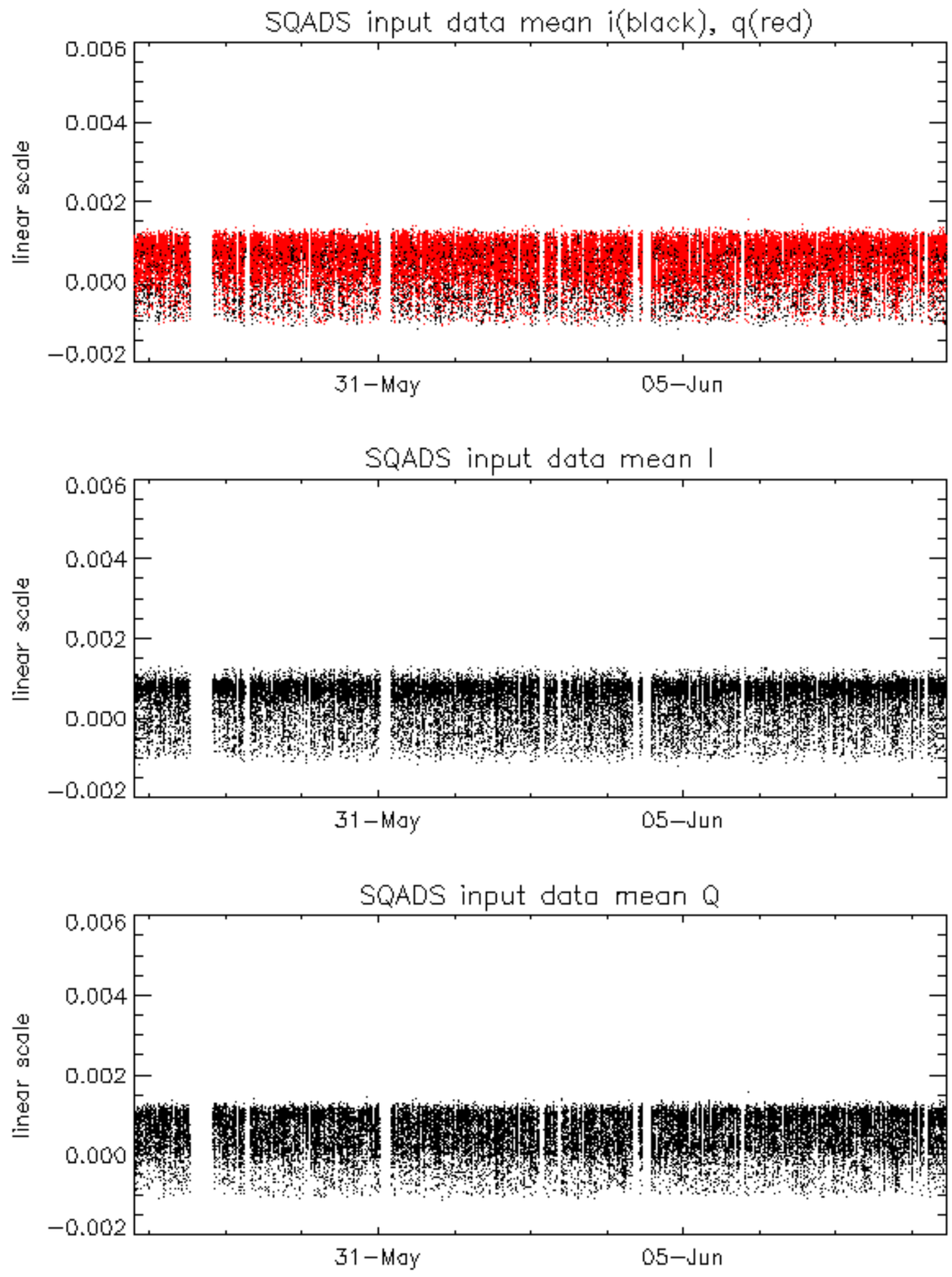

Doppler difference, estimated−predicted 'WVS' 'IS2' ascending −error mean of −26.647673 Hz
−100Hz
+100Hz

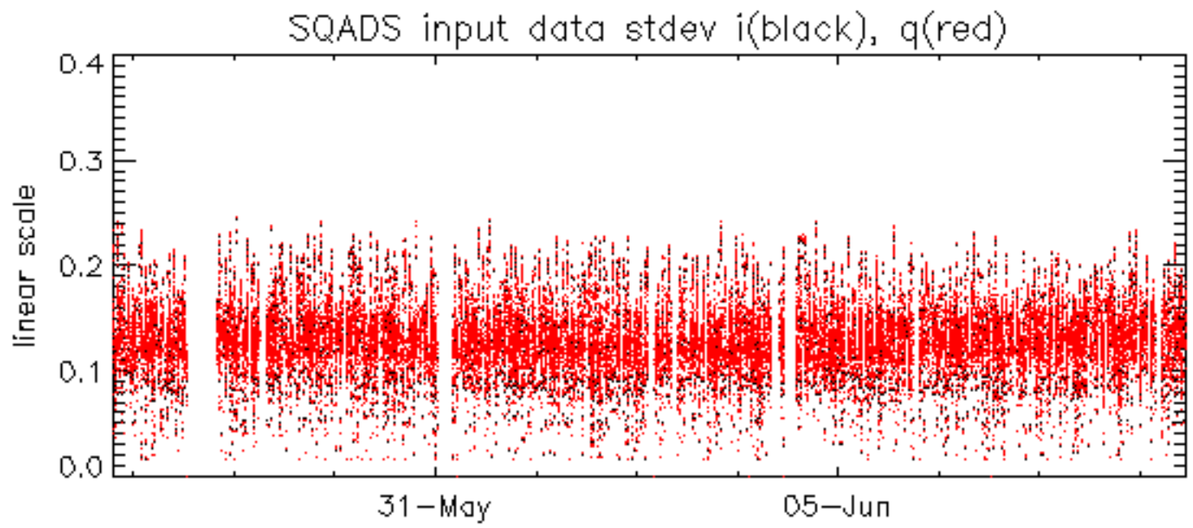

Doppler difference, estimated−predicted 'WVS' 'IS2' descending −error mean of −24.323839 Hz
−100Hz
+100Hz

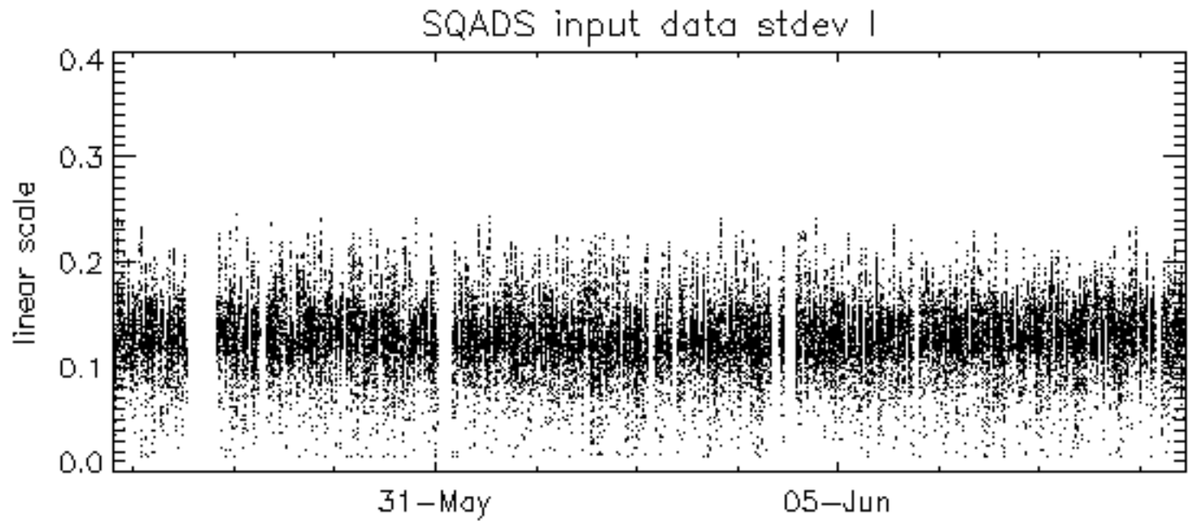
The MS mode provides an internal health check on an individual module basis.
The purpose of this mode is to identify to identify any malfunctionning modules and
to identify modules for which calibration offsets are to be applied.
No anomalies observed on available MS products:

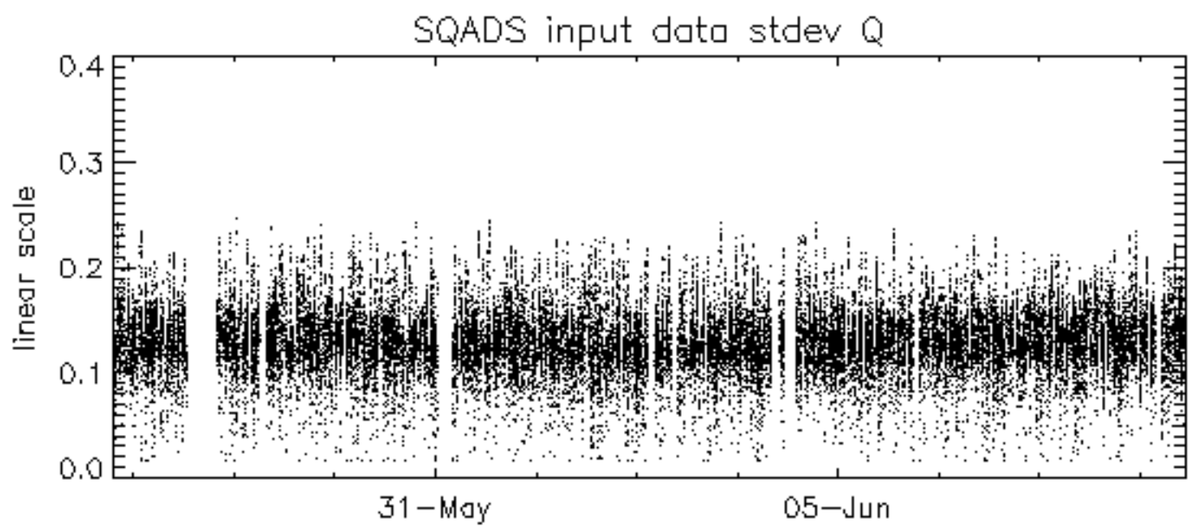
No anomalies observed.

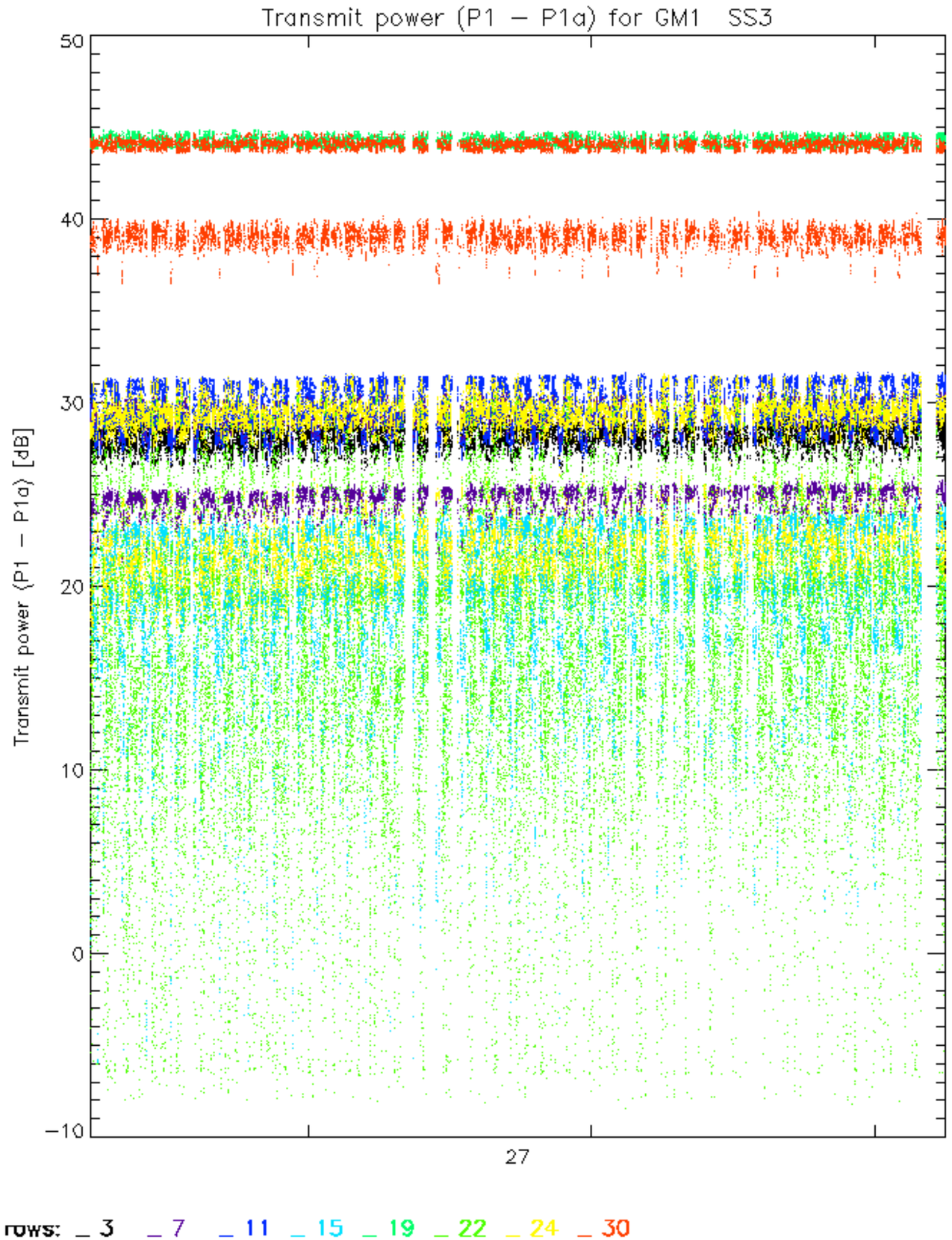

I/Q Gain Imbalance
0.25
0.20
0.15
0.10
0.05
0.00
stdev Q
0.00
0.05
0.10
0.15
0.20
0.25
stdev I

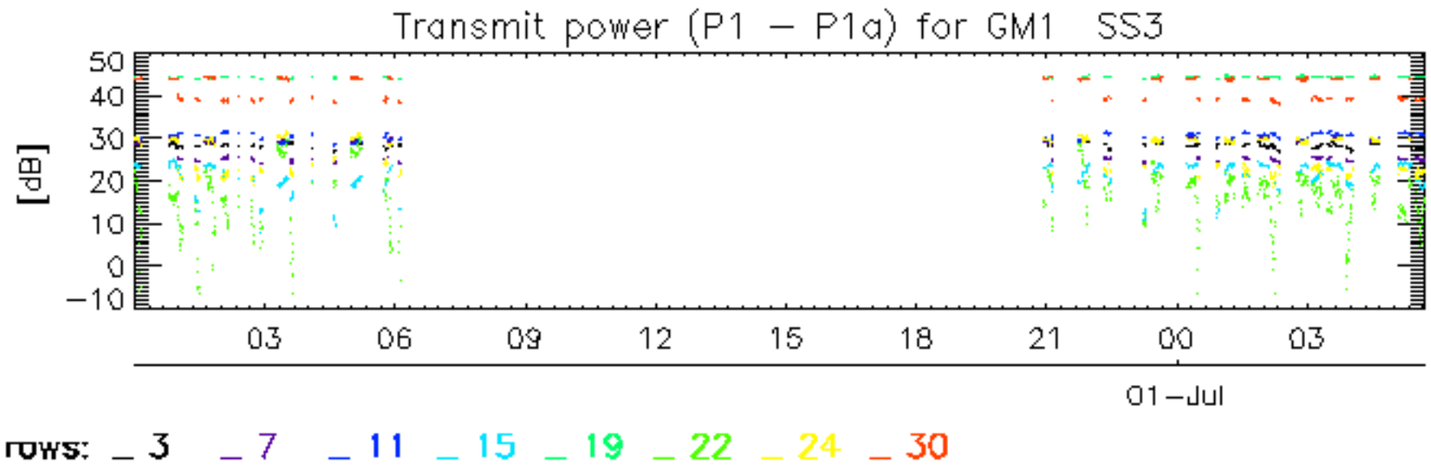

SQADS input data mean i(black), q(red)
linear scale
0.006
0.004
0.002
0.000
−0.002
31−May
05−Jun
SQADS input data mean I
linear scale
0.006
0.004
0.002
0.000
−0.002
31−May
05−Jun
SQADS input data mean Q
linear scale
0.006
0.004
0.002
0.000
−0.002
31−May
05−Jun

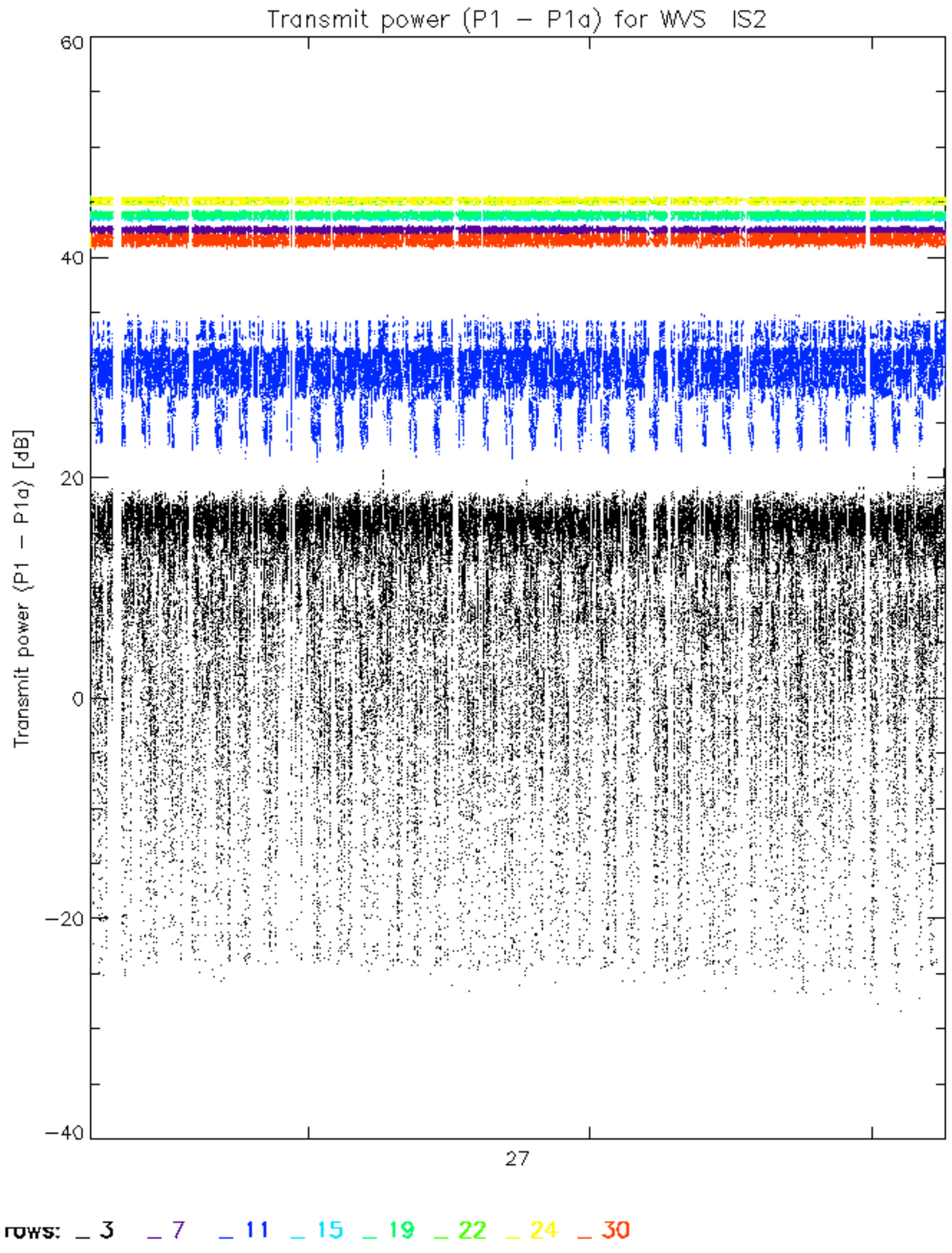

SQADS input data stdev i(black), q(red)
linear scale
0.4
0.3
0.2
0.1
0.0
31−May
05−Jun

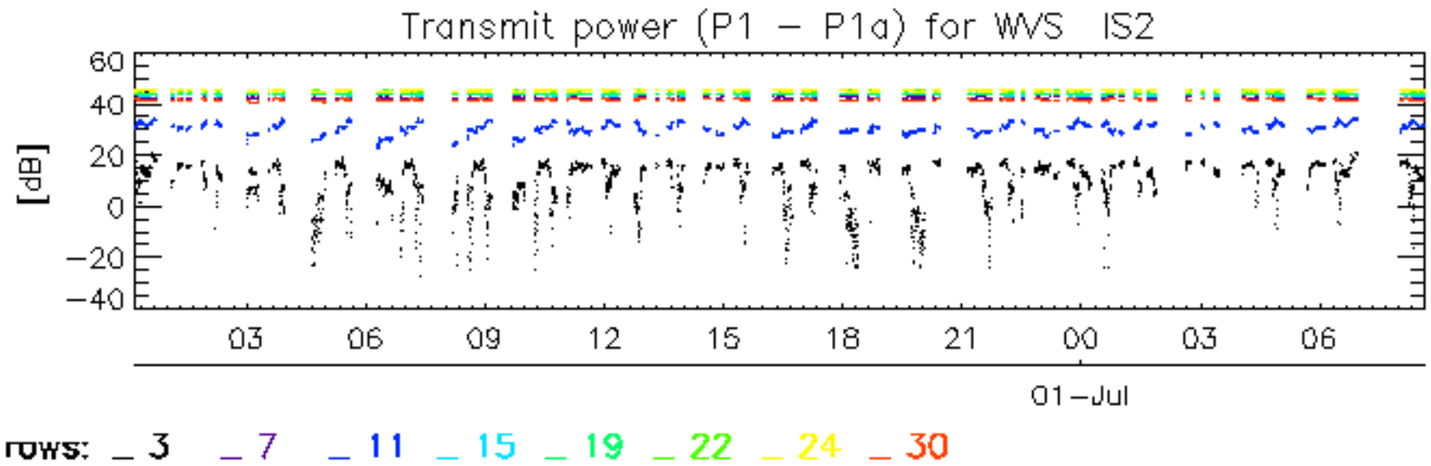

SQADS input data stdev I
linear scale
0.4
0.3
0.2
0.1
0.0
31−May
05−Jun


SQADS input data stdev Q
linear scale
0.4
0.3
0.2
0.1
0.0
31−May
05−Jun


Transmit power (P1 – P1a) for GM1 SS3
Transmit power ⟨P1 – P1a⟩ [dB]
50
40
30
20
10
0
−10
27
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for GM1 SS3
[dB]
50
40
30
20
10
0
−10
03
06
09
12
15
18
21
00
03
01–Jul
rows: _ 3 _ 7 _ 11 _ 15 _ 19 _ 22 _ 24 _ 30


Transmit power (P1 – P1a) for WVS IS2
60
40
20
0
−20
−40
Transmit power (P1 – P1a) [dB]
27
rows: 3 7 11 15 19 22 24 30


Transmit power (P1 – P1a) for WVS IS2
[dB]
60
40
20
0
−20
−40
03
06
09
12
15
18
21
00
03
06
01–Jul
rows: 3
7
11
15
19
22
24
30

No unavailabilities during the reported period.