WIBAR spectra in 800 - 1280 MHz

A. Torrentó, P. Colom

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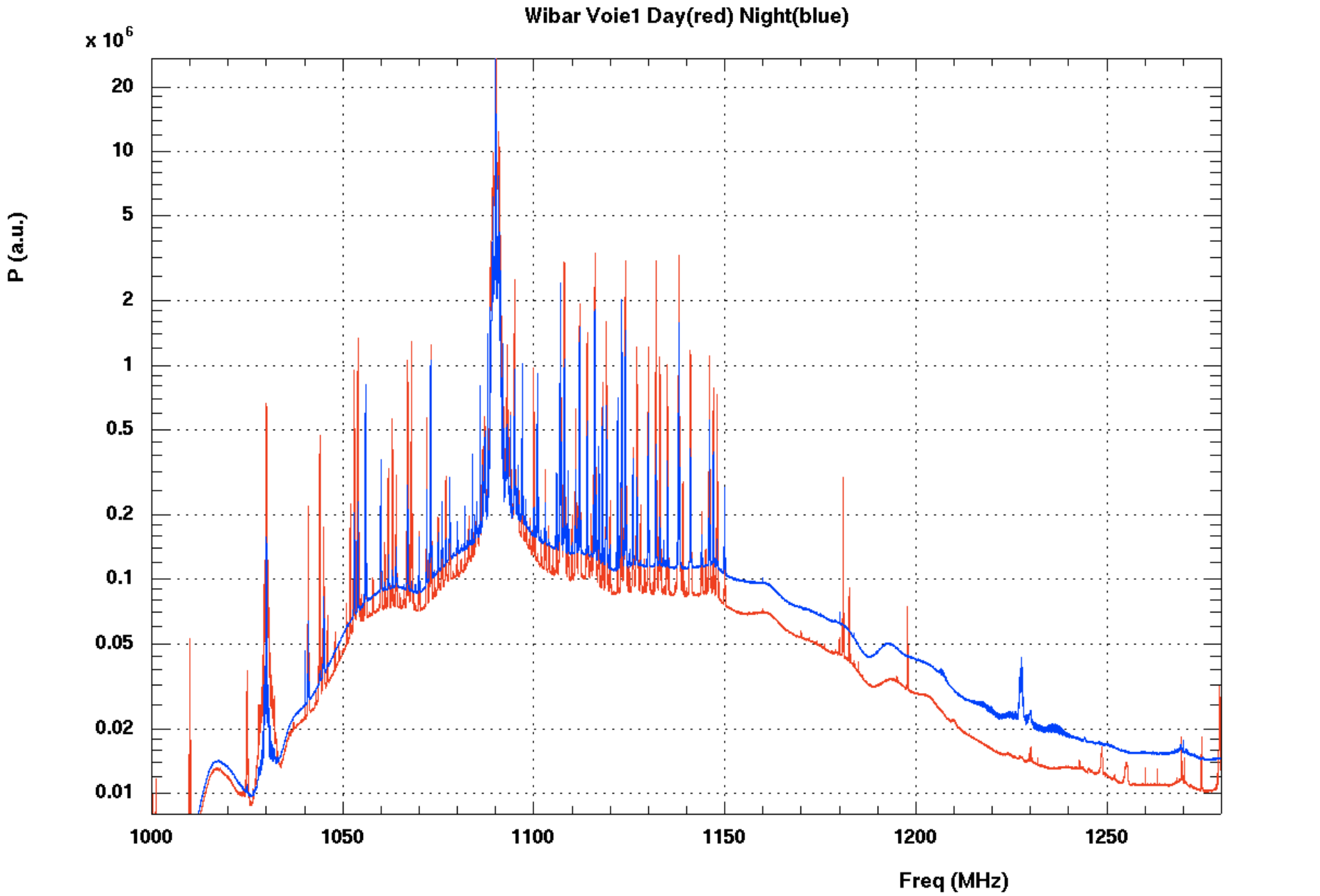
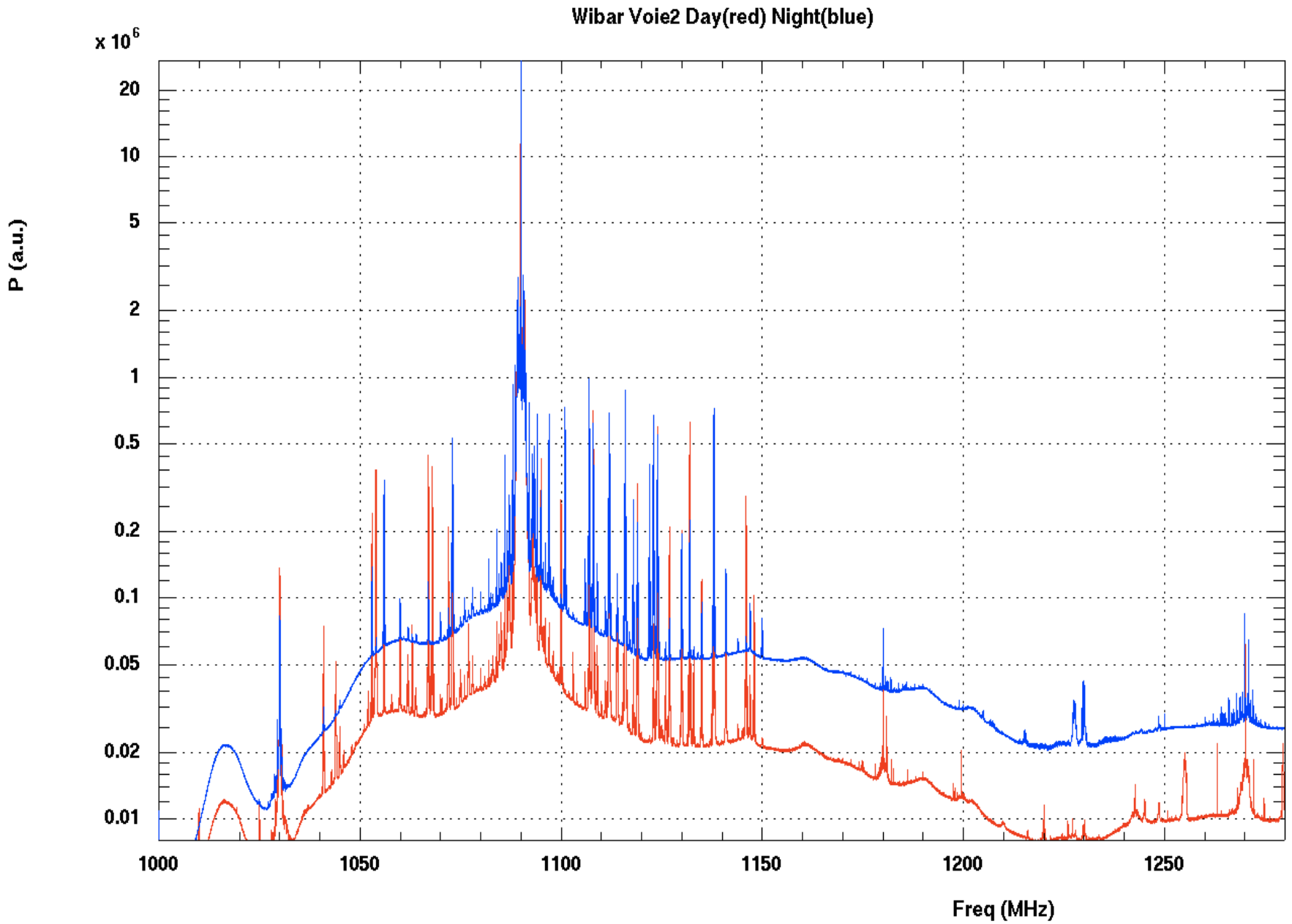
Intro

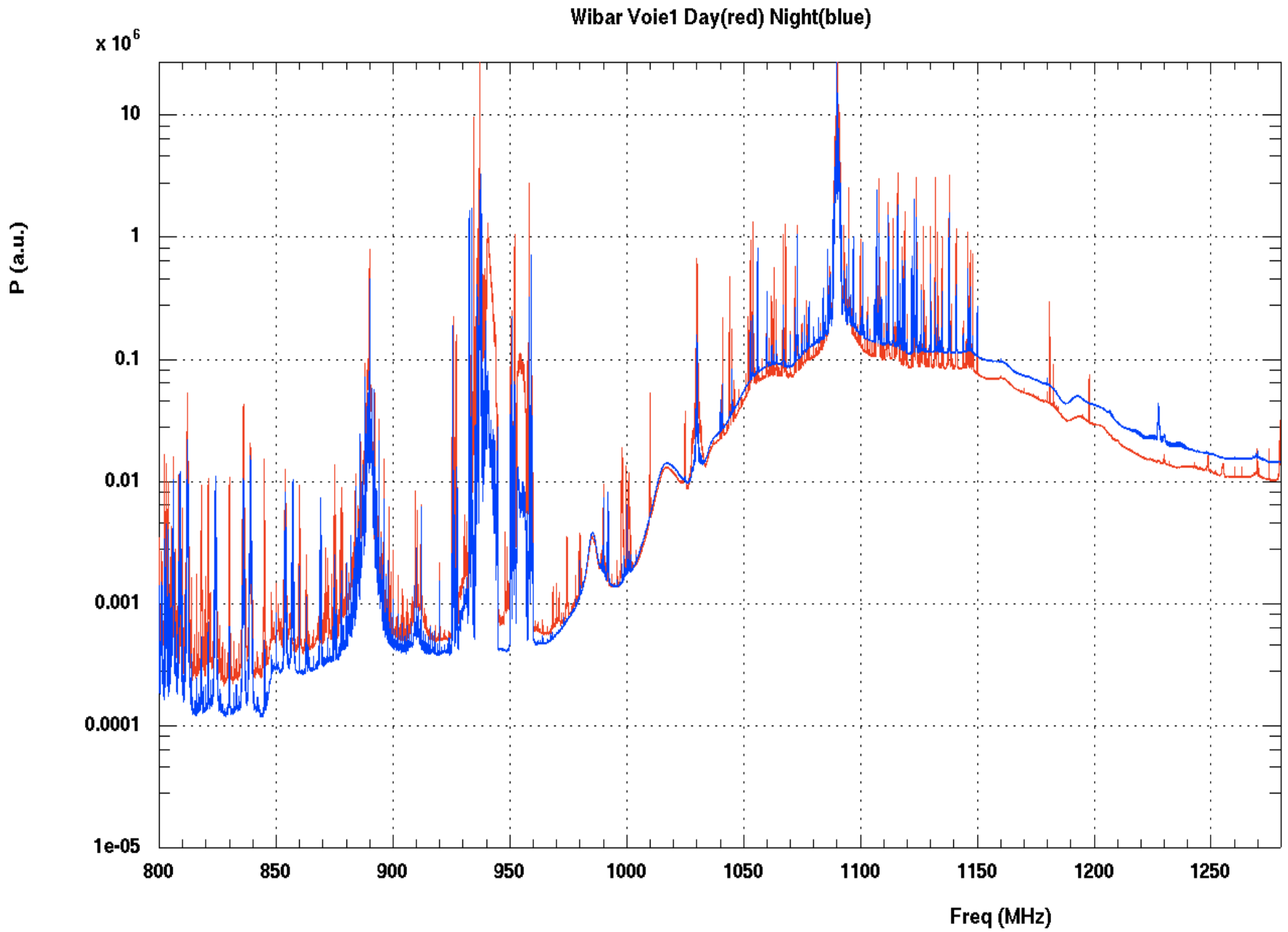
- The goal is to measure with Wibar (i.e. fine frequency sampling) a spectrum below 1250 MHz to work out which band is usable for radio-optical correlation measurements.
- In particular we want to investigate if the band close to the TACAN (centered at 1190 MHz) is fine.
- Two scans have been taken to see the day-night difference between the spectra.
  - Scan no. 167133 taken on 24 Aug 2012 at 06:52:37 (day)
  - Scan no. 172171 taken on 14 Jan 2013 at ~20h (night)
- We will show in the following slides the Wibar spectra in the band [1000, 1280] MHz and the whole spectra [800, 1280] MHz for 2 channels (voie1, vioe2).
- We summarize the results of the group discussion in the next slide.

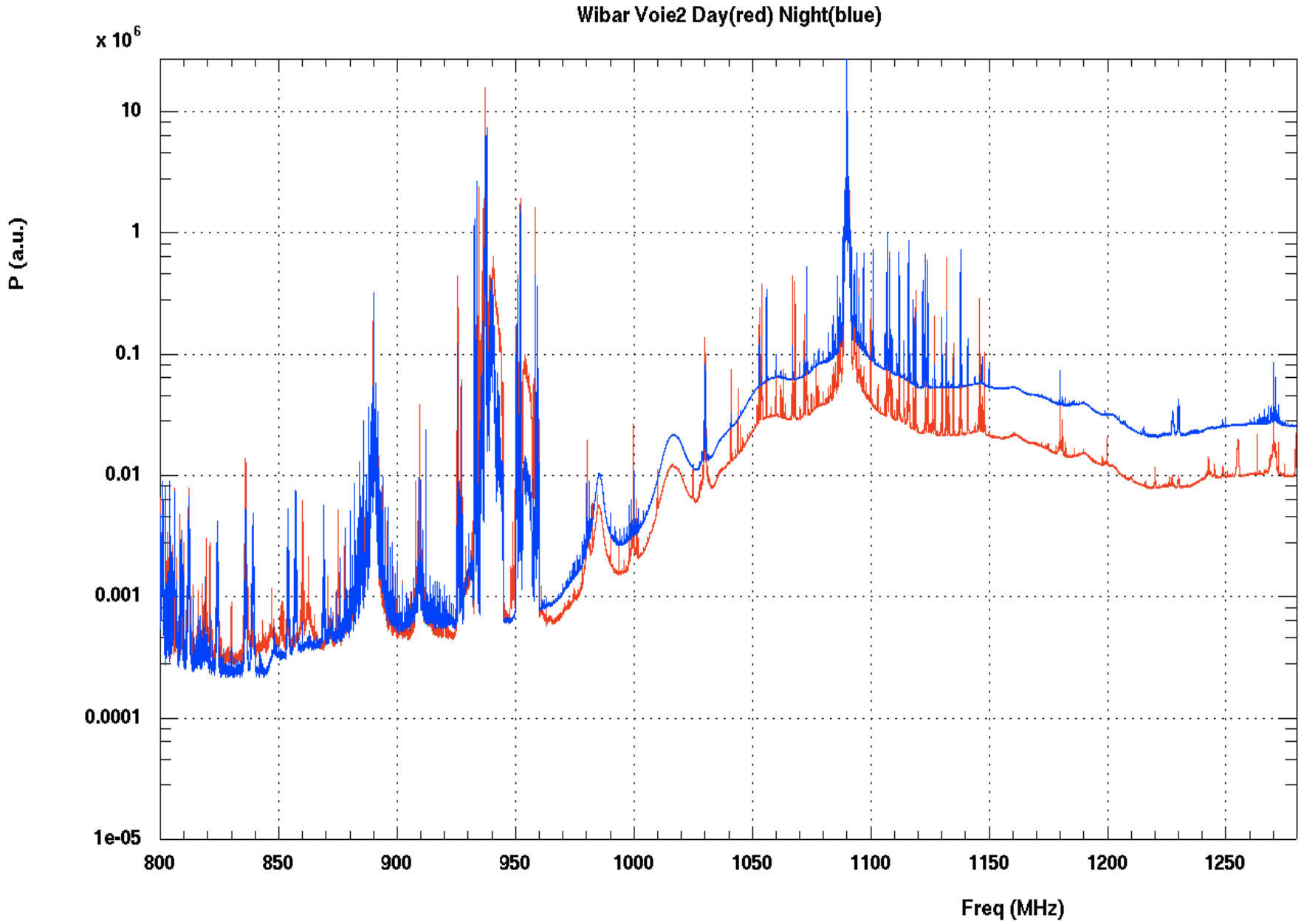
Group discussion/conclusions

1. The night spectra seem slightly less polluted that the day spectra, but the difference is quite small.
2. The TACAN is centered at 1090 MHz, and the associated line “forest” reaches an upper limit of ~1150 MHz.
3. The “forest” zone is not usable: the lines are very close so we cannot extract clean bands greater than 1 MHz.
4. We are not sure about the limit of the TACAN power excess: 1120 MHz?, 1140 MHz?
5. Considering the previous points and that the BAOelec spectra have an initial band of ~20 MHz with a very low gain (not usable), we decide to set the LO/RF-filter cutoff at 1130 MHz.
6. However, we will probably set the LO frequency at 1120 MHz, to avoid a folding of the TACAN 1090 MHz line into the usable part of the spectra which starts at ~1150 MHz)


Wibar Voie1 Day(red) Night(blue)
x 10^6
P (a.u.)
20
10
5
2
1
0.5
0.2
0.1
0.05
0.02
0.01
1000
1050
1100
1150
1200
1250
Freq (MHz)


Wibar Voie2 Day(red) Night(blue)
x 10^6
P (a.u.)
20
10
5
2
1
0.5
0.2
0.1
0.05
0.02
0.01
1000
1050
1100
1150
1200
1250
Freq (MHz)


Wibar Voie1 Day(red) Night(blue)
x 10^6
10
1
0.1
0.01
0.001
0.0001
1e-05
P (a.u.)
800
850
900
950
1000
1050
1100
1150
1200
1250
Freq (MHz)


Wibar Voie2 Day(red) Night(blue)
x 10^6
10
1
0.1
0.01
0.001
0.0001
1e-05
P (a.u.)
800
850
900
950
1000
1050
1100
1150
1200
1250
Freq (MHz)