

WSPR Analysis

For fans of WSPR, here are a few python routines for performing analyses of received spots.

- `wspr2Rx.py`
- `wsprRx_by_band_and_call.py`
- `wsprRx_by_freq_and_call.py`
- `wsprRx_by_freq_and_grid.py`
- `wsprRx_print_allspots_by_freq.py`
- `wsprRx_snr_by_band_callsignplot.py`
- `wsprRx_snr_by_band_geoplot.py`
- `wsprRx_sort_by_us.py`
- `wsprRx_sort_by_uszone(0-9).py`

Examples of each routine are included below.

My analysis setup consists of a windows machine with Anaconda / Spyder.

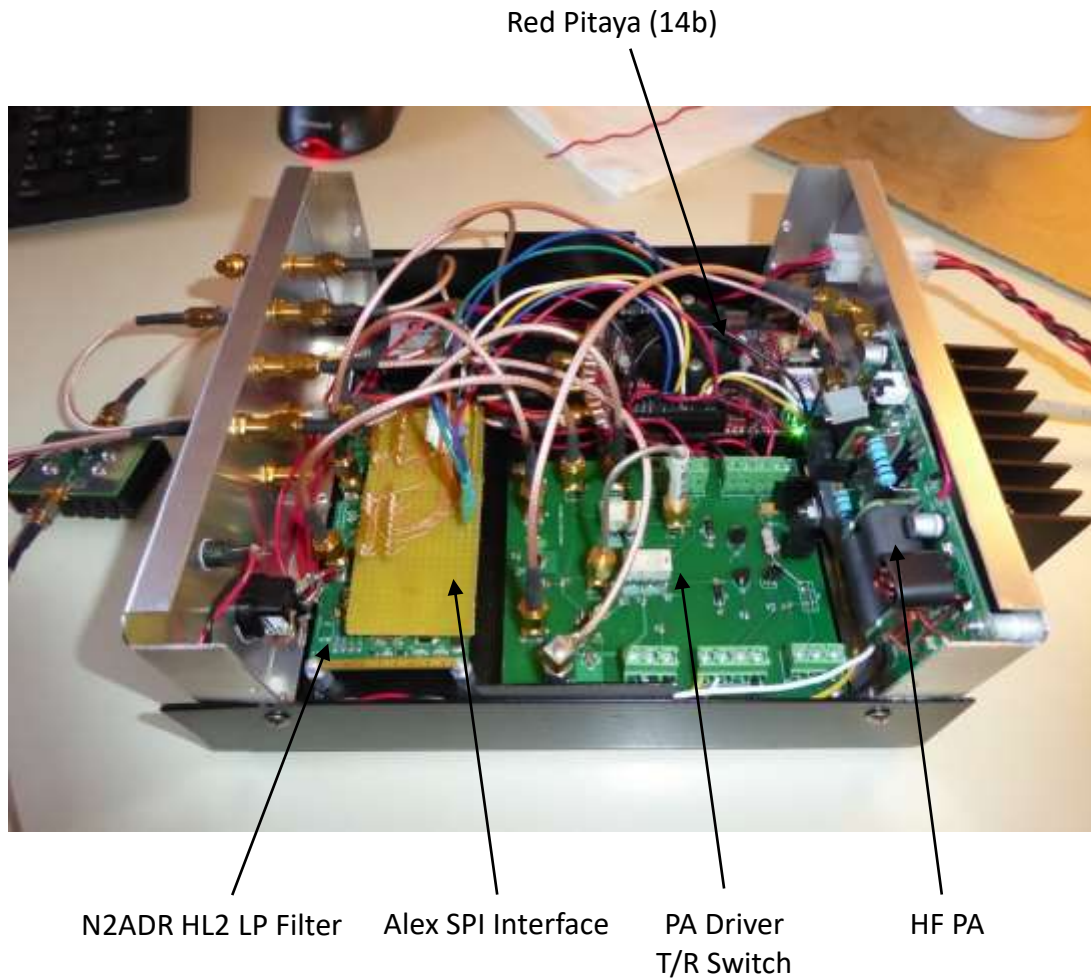
My WSPR transceiver is a homebrew SDR rig based on a 14b Red Pitaya board and WSJT-X / piHPSDR running on a Raspberry Pi.

The file to be examined is copied from the Raspberry Pi to the windows machine. The ALL_WSPR.TXT file format consists of 17 fields (WSJT-X).

Additional packages must first be installed to enable the database and plotting functions.

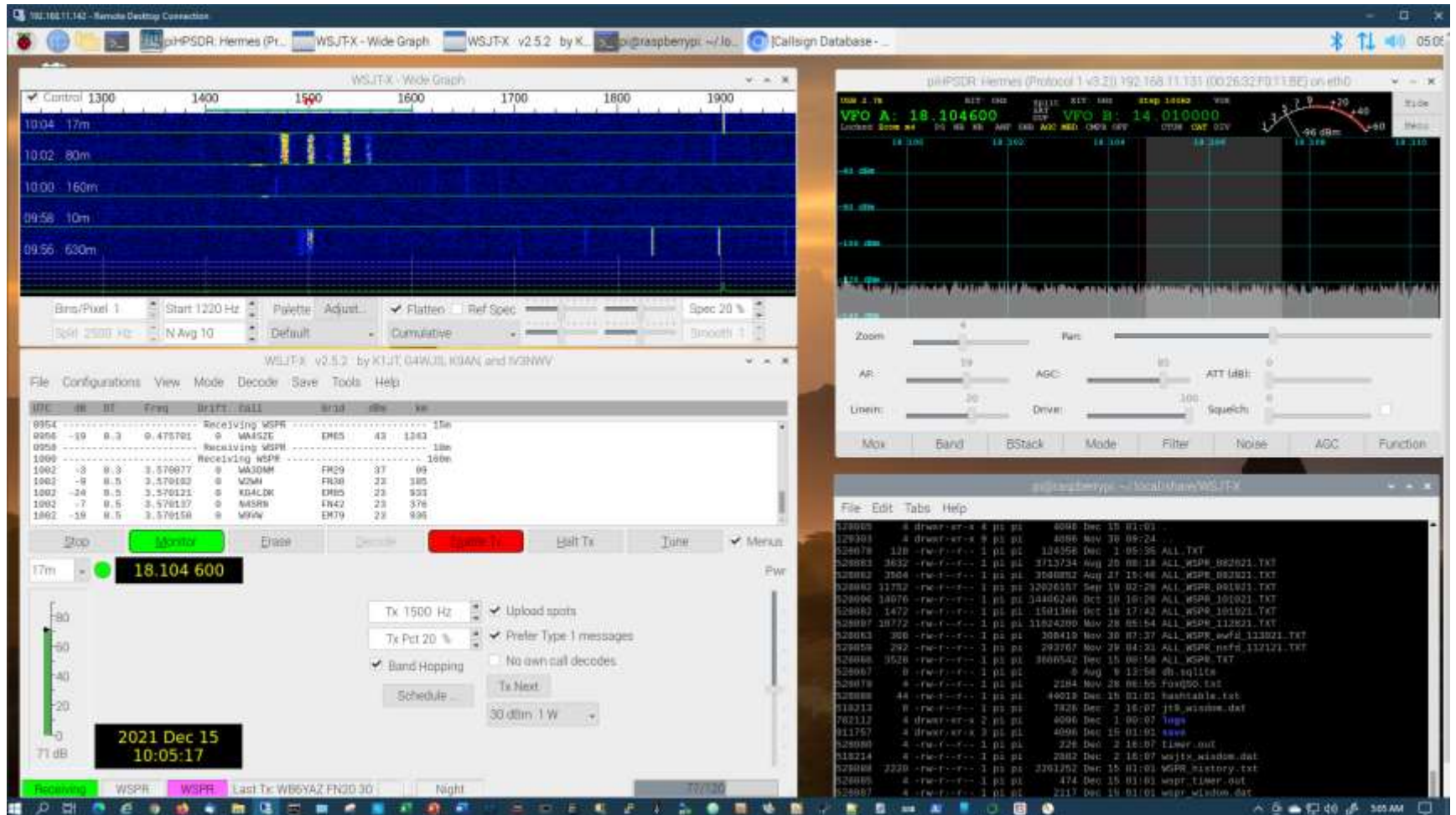
1. `pandas`
2. `geopandas`
3. `matplotlib`
4. `shapely`
5. `pyhamtools`

WSPR Analysis



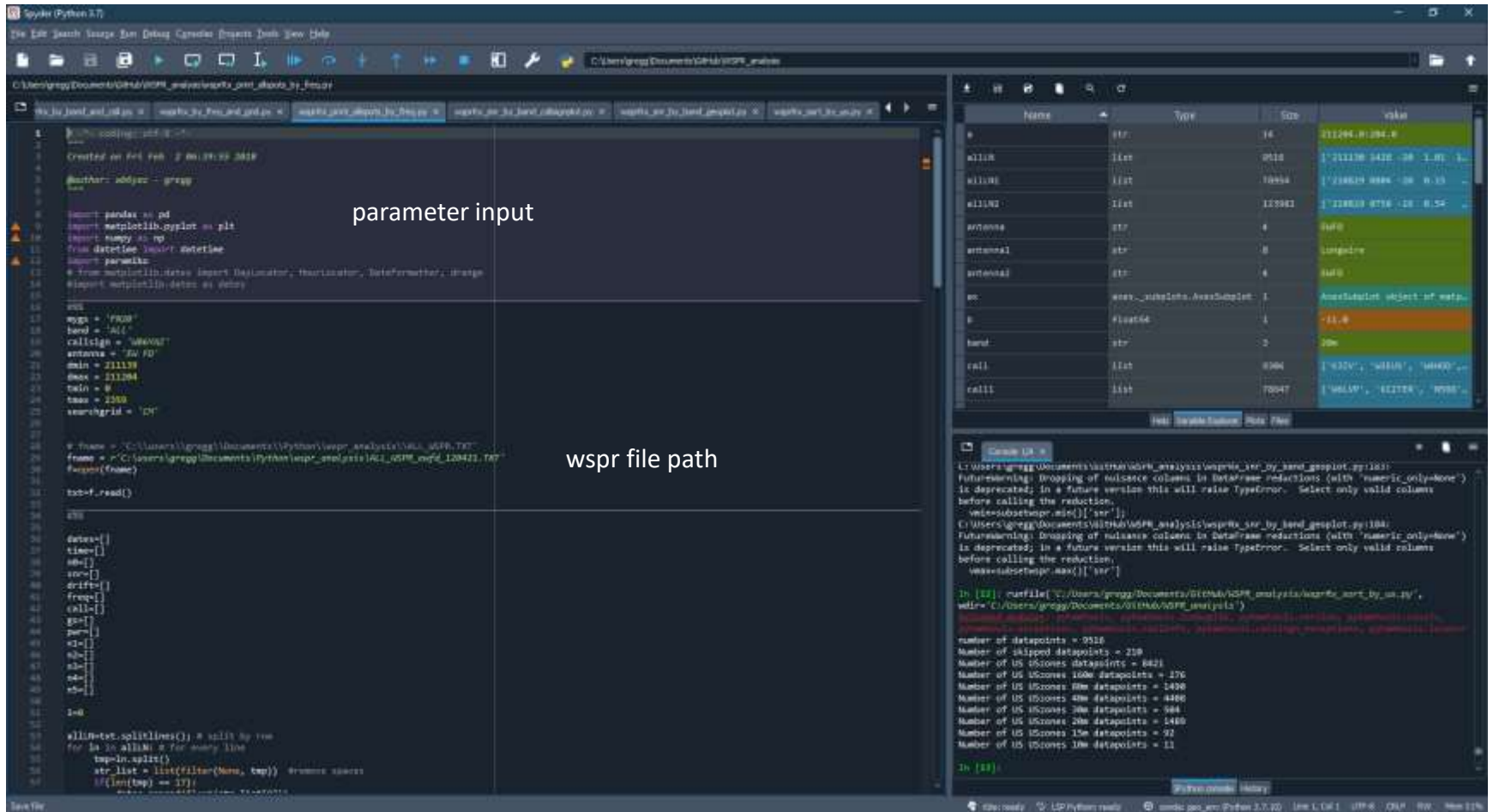
Red-Pitaya SDR QRP Transceiver

WSPR Analysis



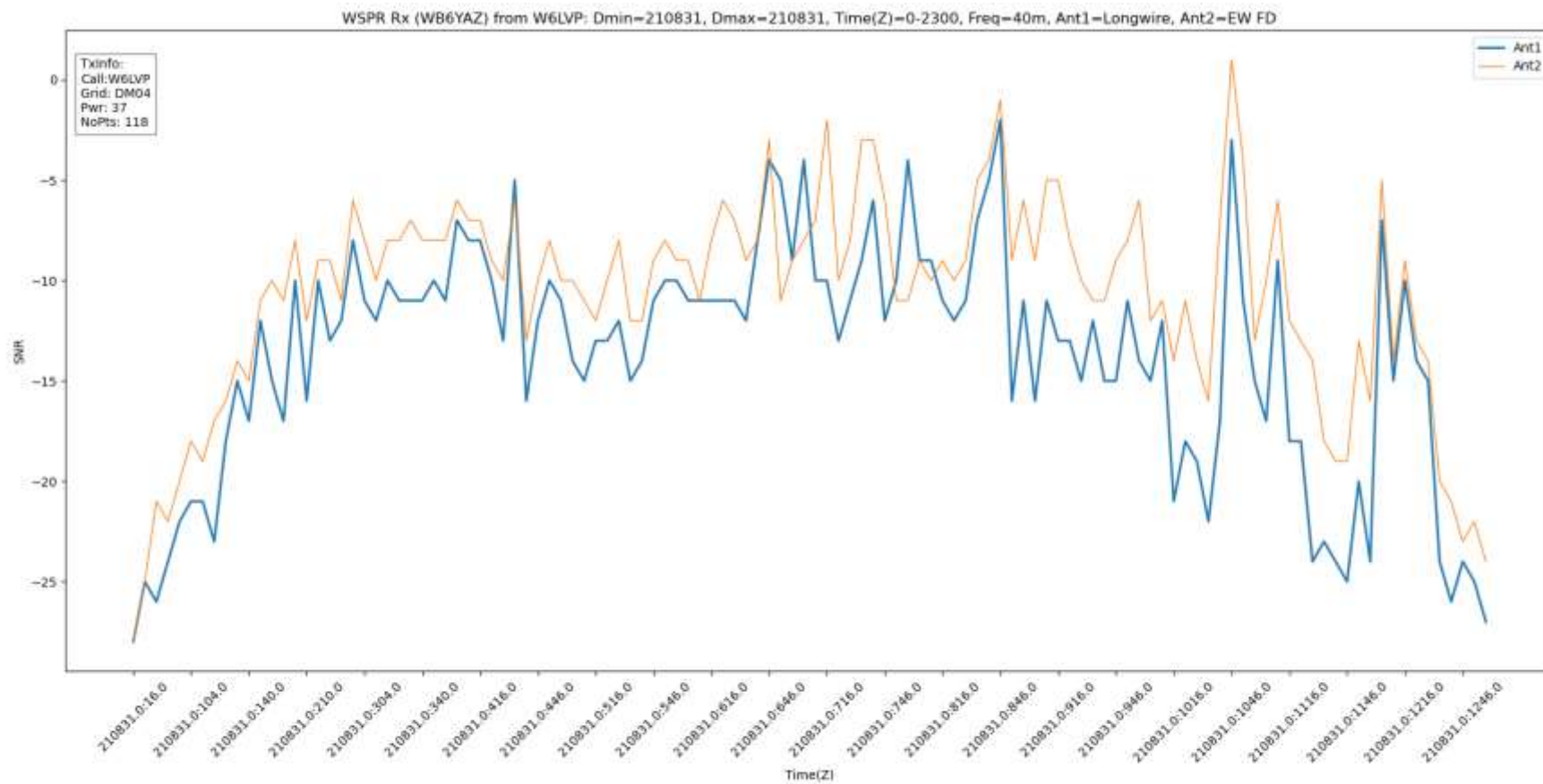
Red-Pitaya SDR QRP Transceiver

WSPR Analysis



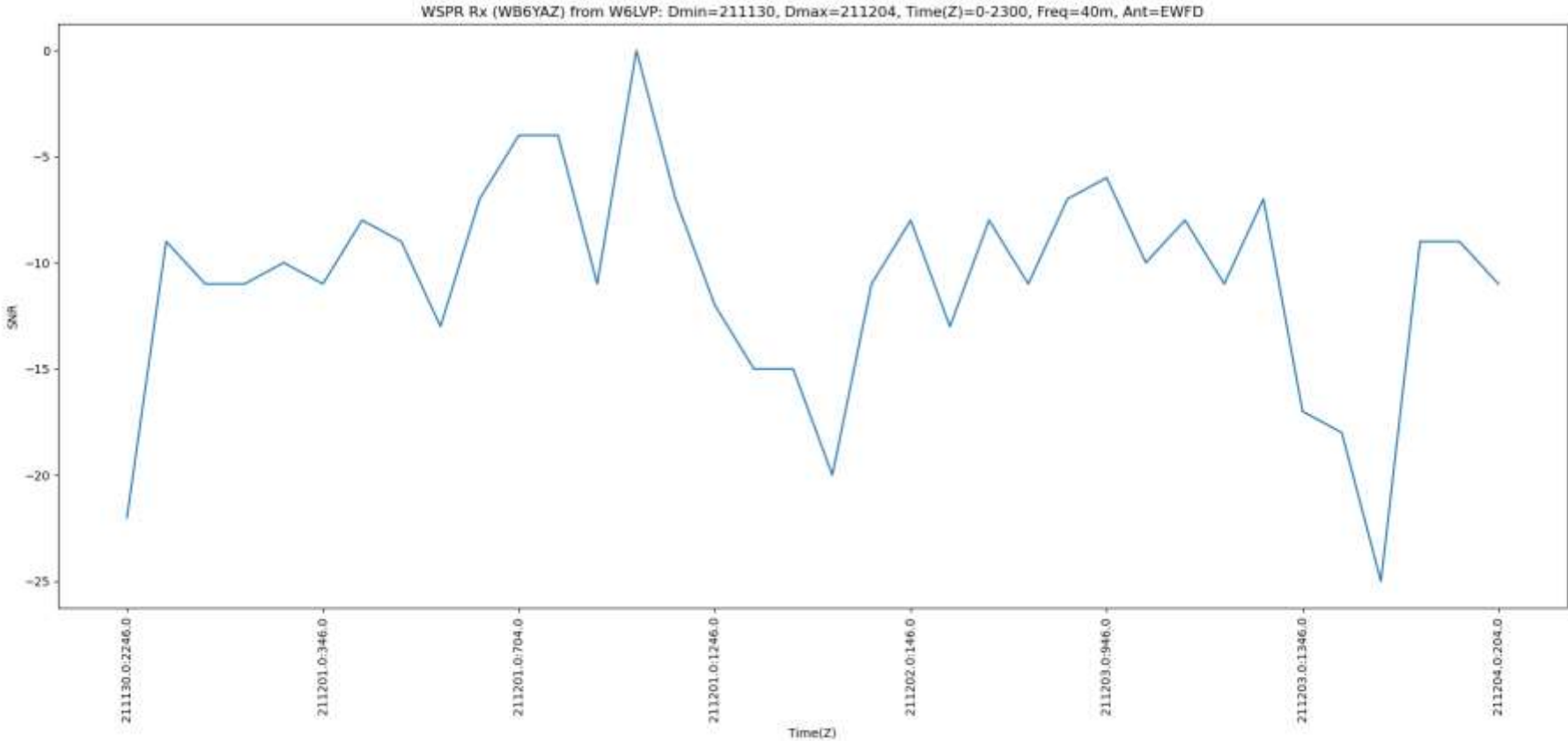
Spyder Console

WSPR Analysis



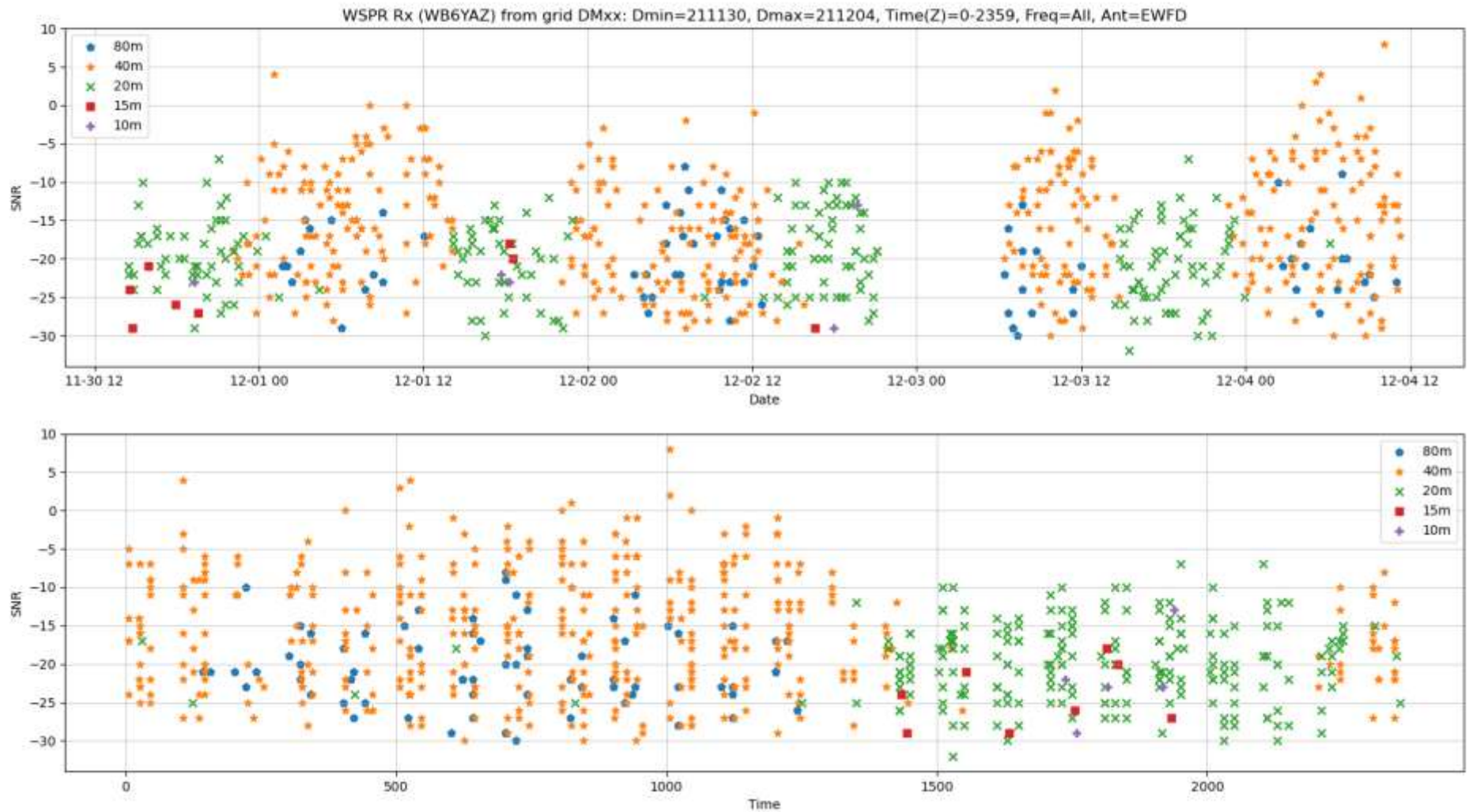
wspr2Rx.py

WSPR Analysis



wsprrx_by_band_and_call.py

WSPR Analysis



wsprRx_by_freq_and_grid.py

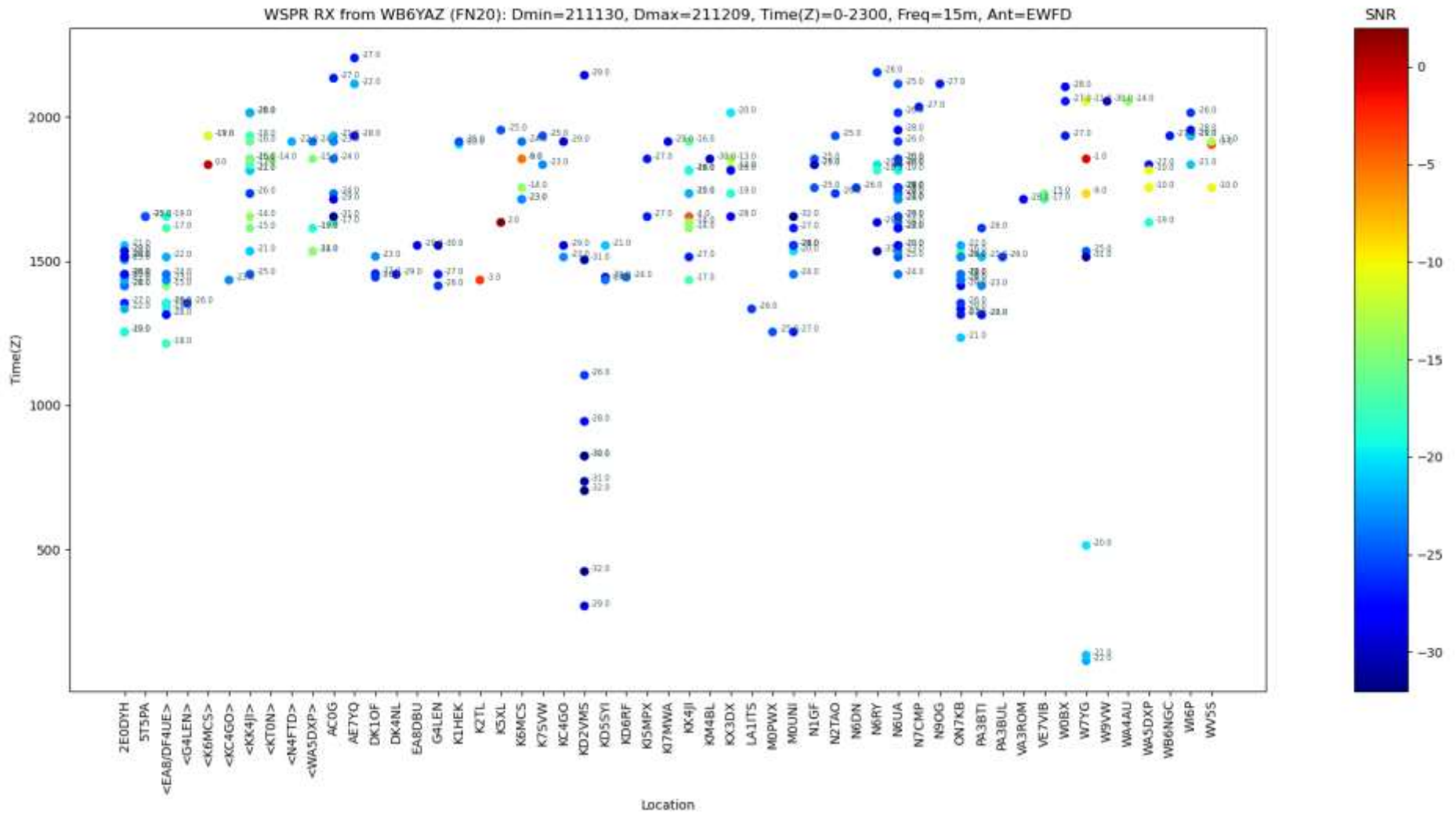
WSPR Analysis

```
mygs = 'FN20'  
band = 'ALL'  
callsign = 'WB6YAZ'  
antenna = 'EWFD'  
dmin = 211139  
dmax = 211204
```

```
number of datapoints = 22145  
Number of skipped datapoints = 495  
Start date: 211130.0  
End date: 211209.0  
No of 160m spots = 565  
No of 80m spots = 3833  
No of 60m spots = 0  
No of 40m spots = 11564  
No of 30m spots = 1237  
No of 20m spots = 3847  
No of 15m spots = 220  
No of 10m spots = 17
```

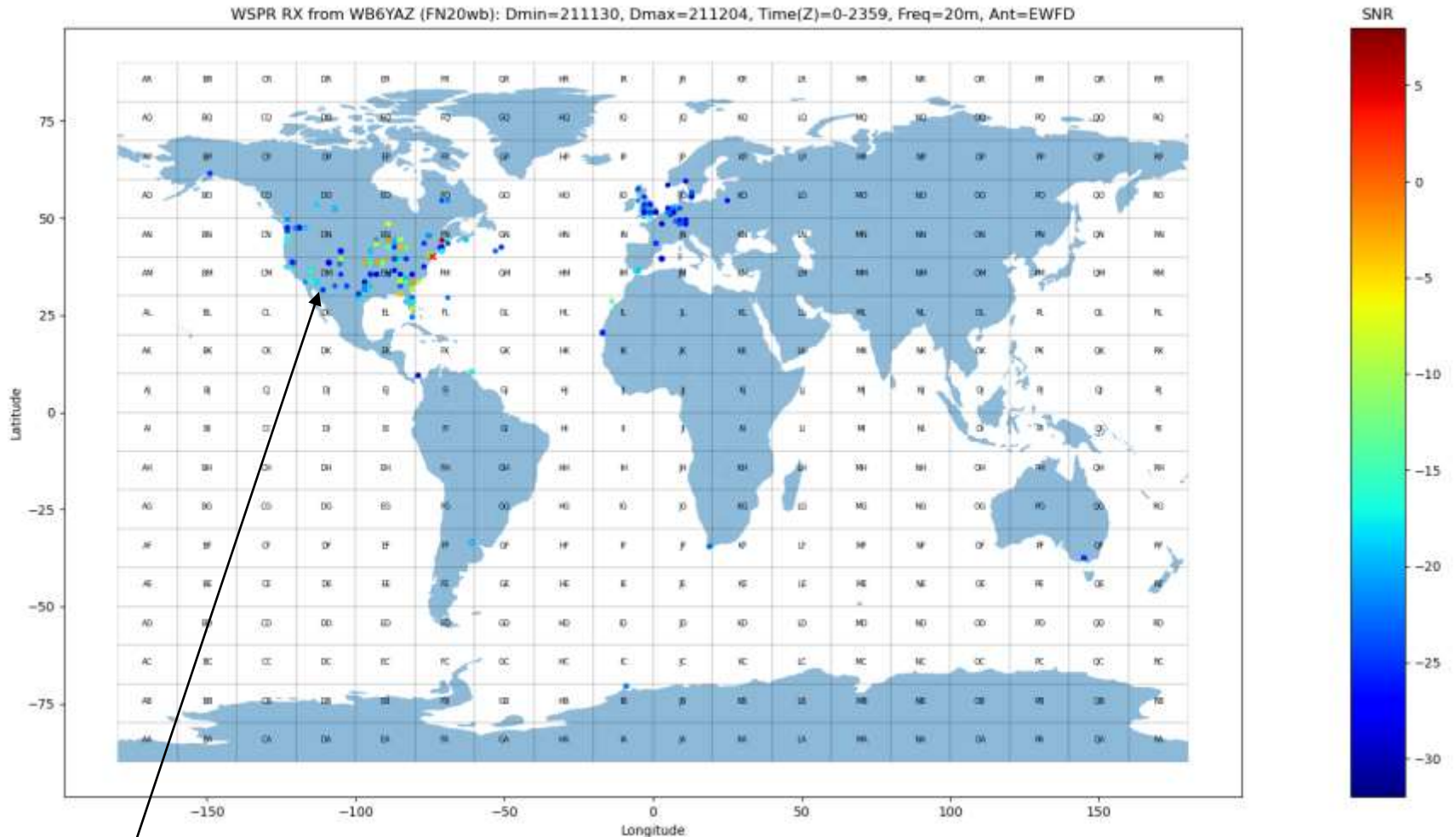
wsprRx_print_allspots_by_freq.py

WSPR Analysis



wsprRx_snr_by_band_callsignplot.py

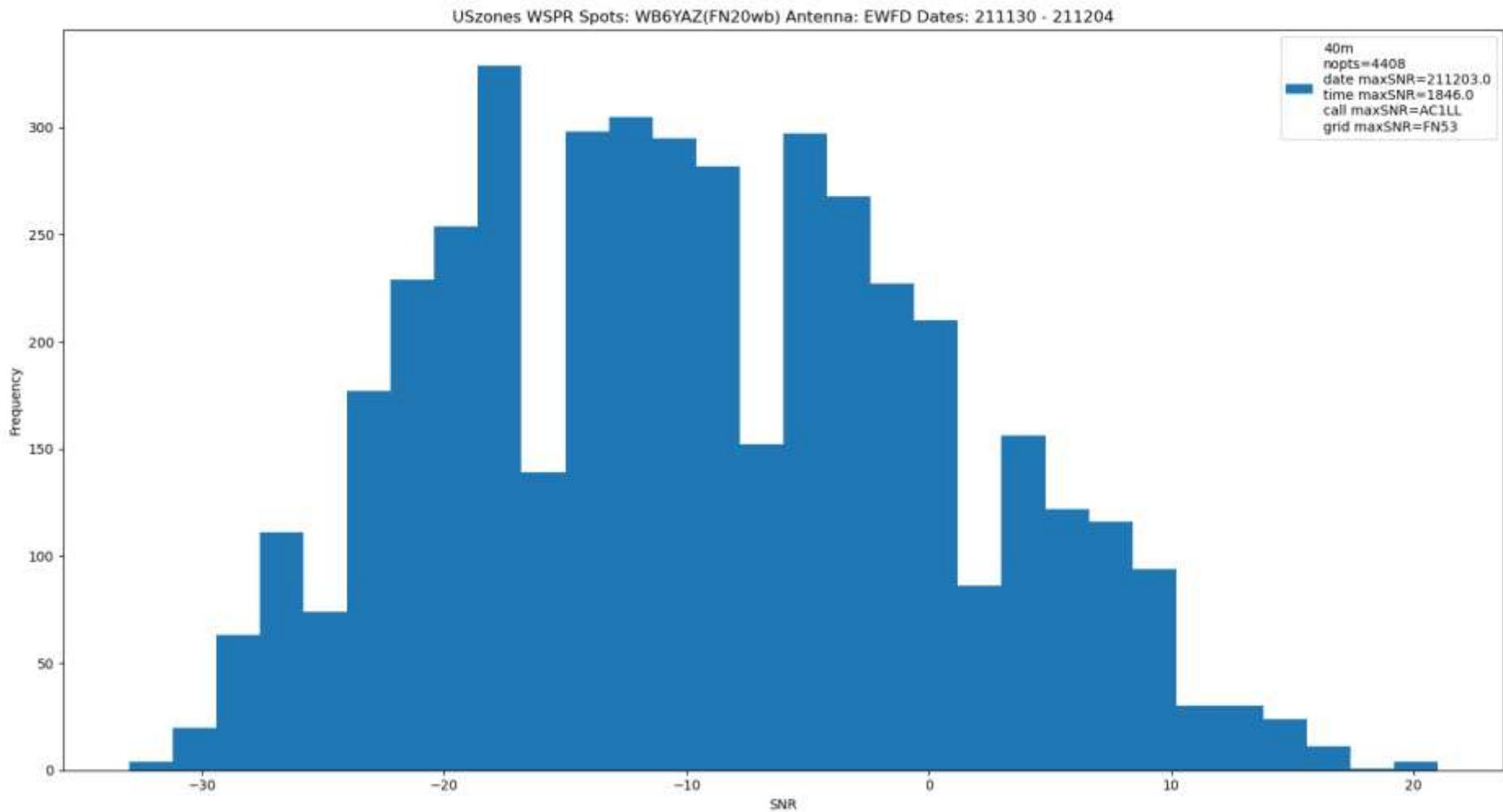
WSPR Analysis



`wsprRx_snr_by_band_geoplot.py`

Clicking on point displays spot data for location in spyder console window

WSPR Analysis



wsprRx_sort_by_us.py