

LoCo Lab EDGES Memo 178
Residuals of Low1, Low2, Low3, and Mid-Band Antenna S11

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1 Description

Here we show residuals of the antenna S11 for the Low1, Low2, Low3, and Mid-Band instruments. Residuals are shown for 9, 10, 11, and 12 polynomial terms over the frequency range 50-120 MHz.

The purpose is to provide as much information as possible about the structure of the antenna S11 residuals in a single document. This would help identify the origin of structure in the S11 of the antennas.

In general, we tried to integrate as many consecutive measurements as possible in order to reduce noise and show only structure in the S11 that could either be part of the antenna or a measurement artifact.

2 Figures

The figures shown in the rest of this memo correspond to:

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- Figure 1: Low1, 2015-289.
- Figure 2: Low1, 2015-342.
- Figure 3: Low1, 2016-174.
- Figure 4: Low1, 2016-243.
- Figure 5: Low1, 2017-172.
- Figure 6: Mid, 2018-147.
- Figure 7: Alan's Noise Source + 6dB Atten, 2018-223.
- Figure 8: Low3, 2018-225 to 227.
- Figure 9: Mid, 2020-074.
- Figure 10: Mid, 2020-089 to 094.
- Figure 11: Mid, 2020-095 to 098.
- Figure 12: Mid, 2020-102 to 106.

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- Figure 13: Low2 EW, 2017-087.
- Figure 14: Low2 EW, VNA in Pit Box, 2017-152.
- Figure 15: Low2 EW, 2017-153.
- Figure 16: Low2 NS, 2017-180.
- Figure 17: Low2 NS, 2017-291.
- Figure 18: Low2 NS, 2018-046.
- Figure 19: Low2-45, 2020-057.
- Figure 20: Low2-45, 2020-074.
- Figure 21: Low2-45, 2020-085 to 087.
- Figure 22: Low2-45, 2020-088 to 092.
- Figure 23: Low2-45, 2020-096 to 101.

In each figure we show four subplots. UPPER LEFT for 9 terms. UPPER RIGHT for 10 terms. LOWER LEFT for 11 terms. LOWER RIGHT for 12 terms. Each of the four subplots shows residuals in Magnitude (top) and Phase (bottom).

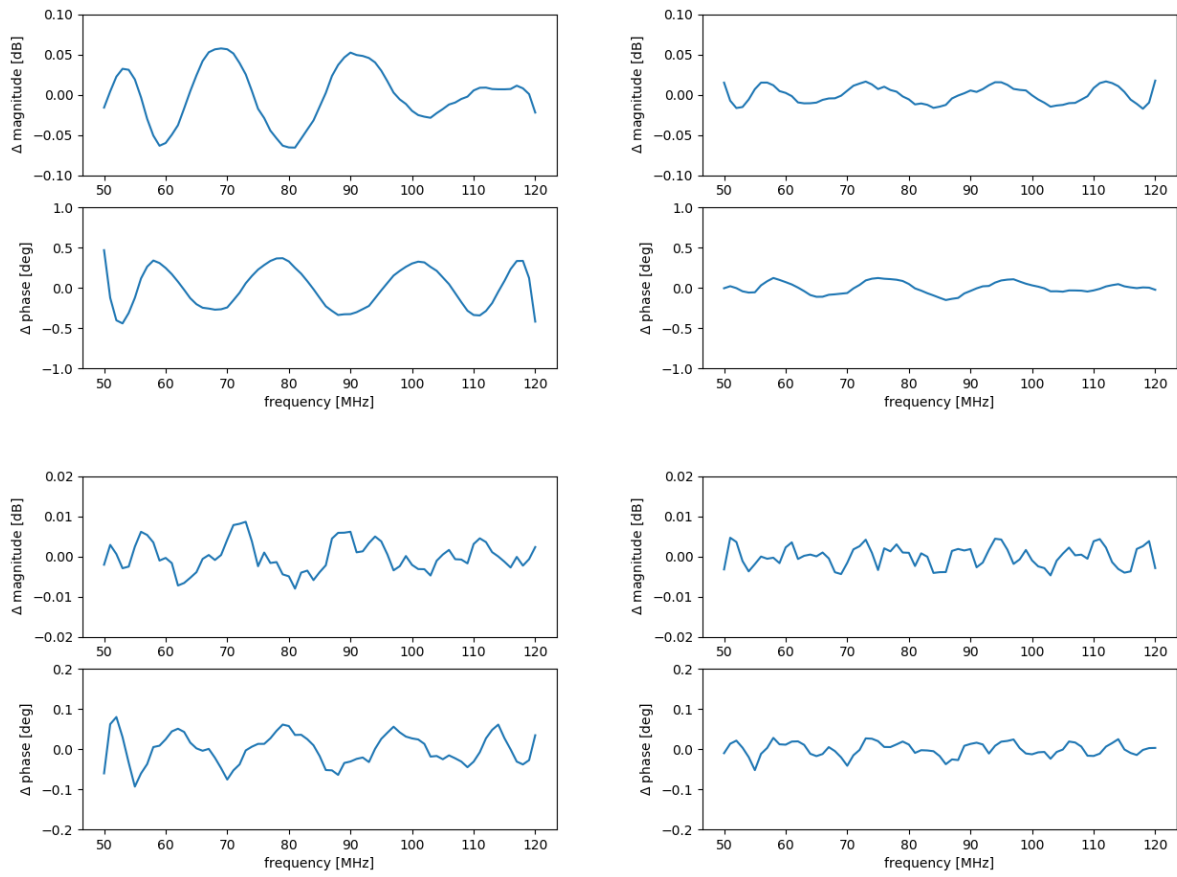


Figure 1: Low1, 2015-289.

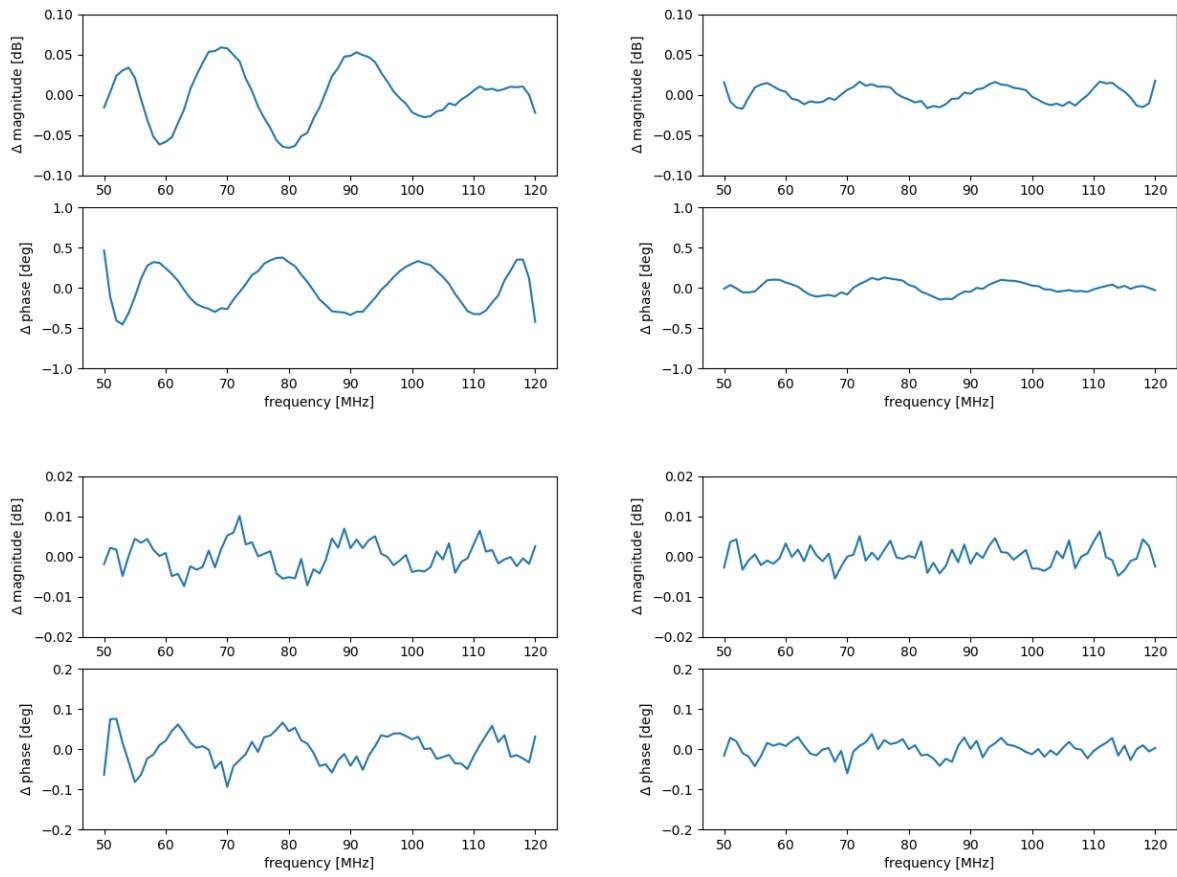


Figure 2: Low1, 2015-342.

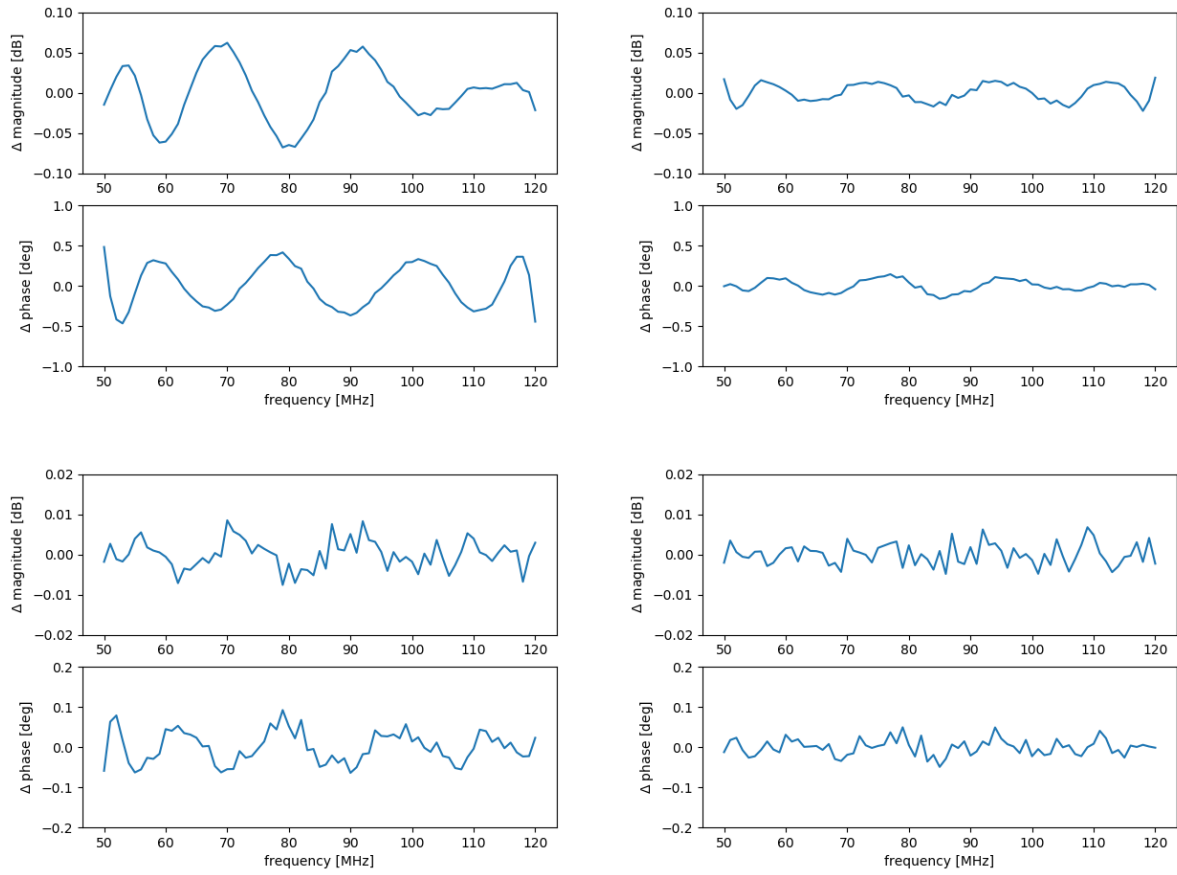


Figure 3: Low1, 2016-174.

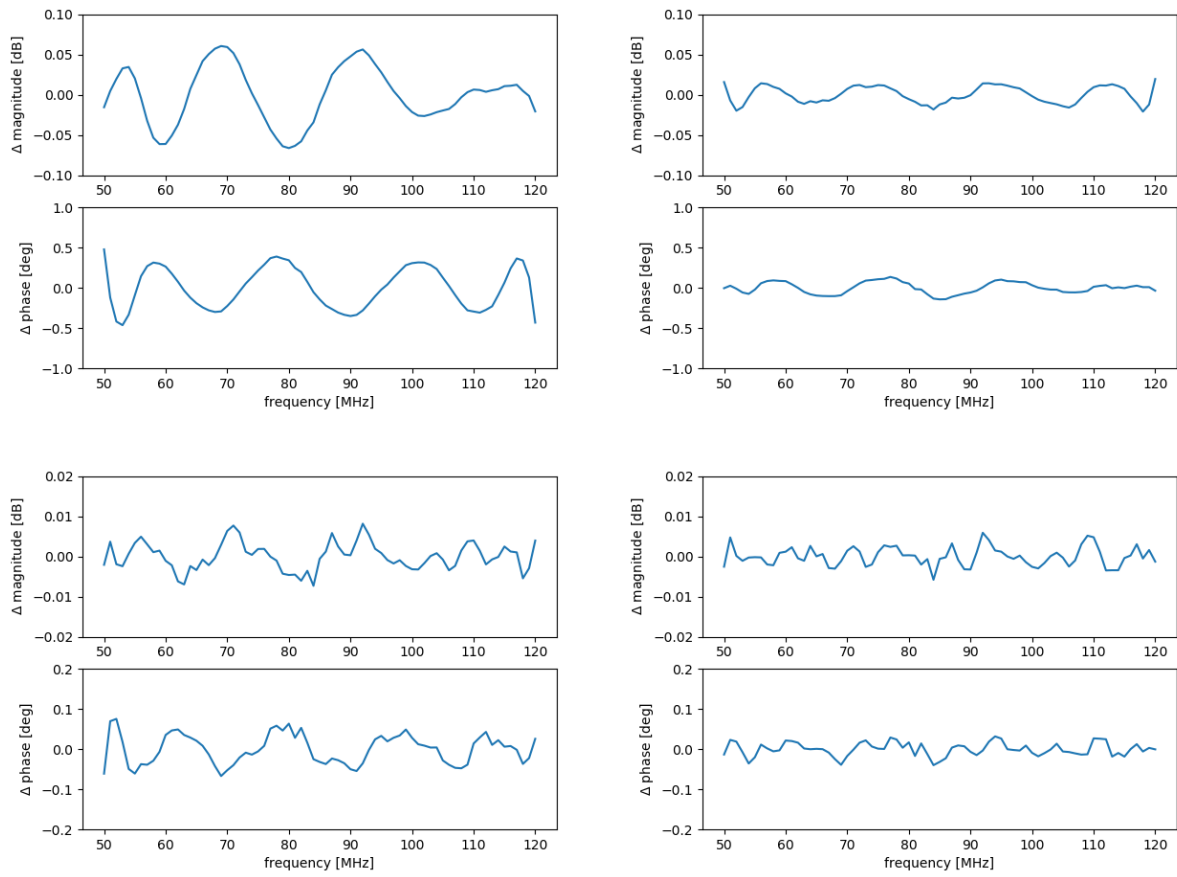


Figure 4: Low1, 2016-243.

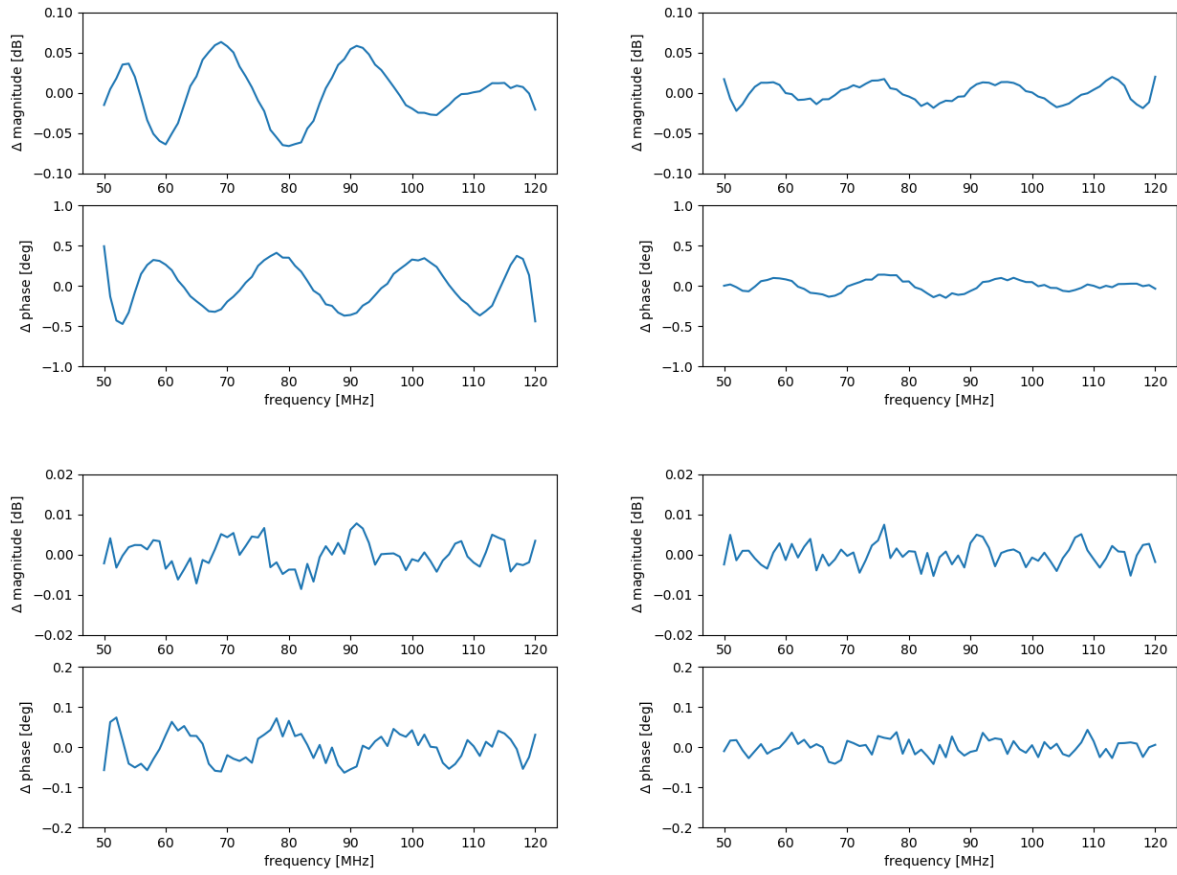


Figure 5: Low1, 2017-172.

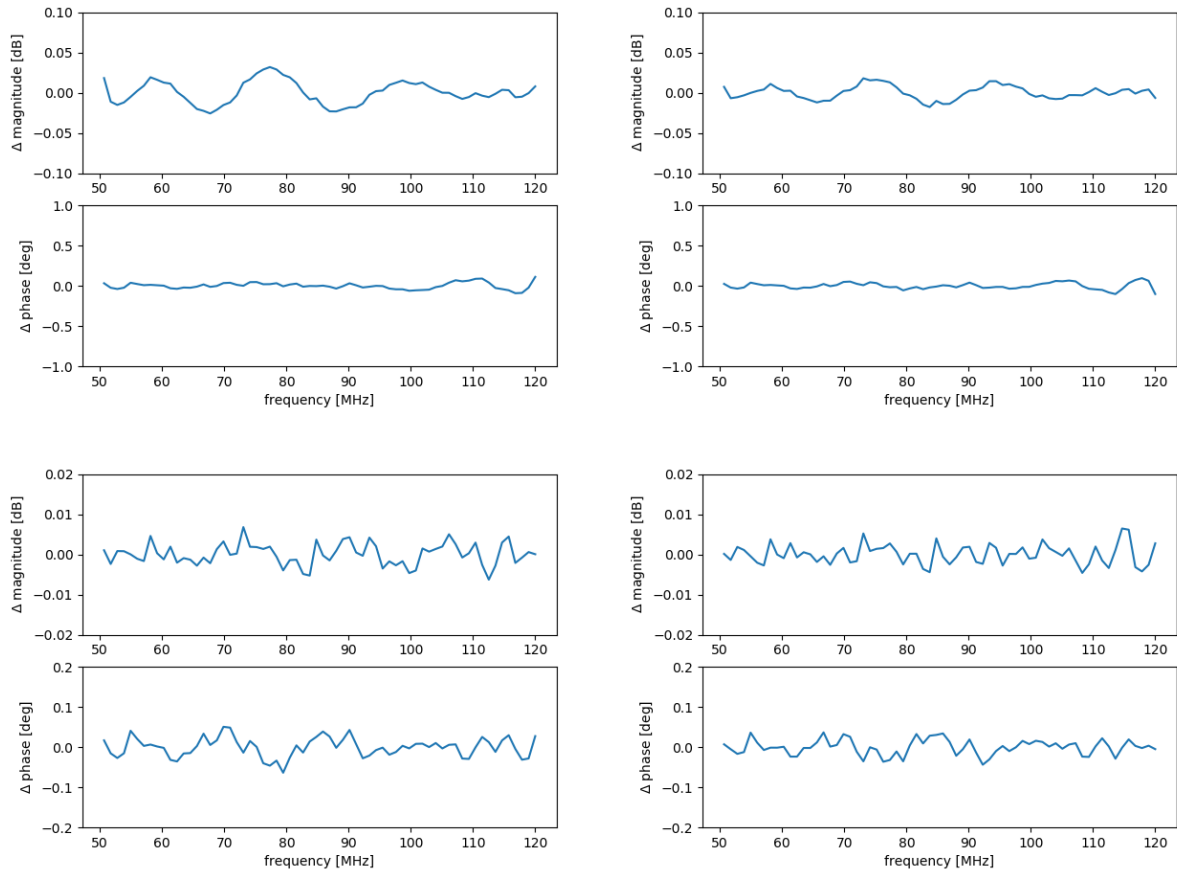


Figure 6: Mid, 2018-147.

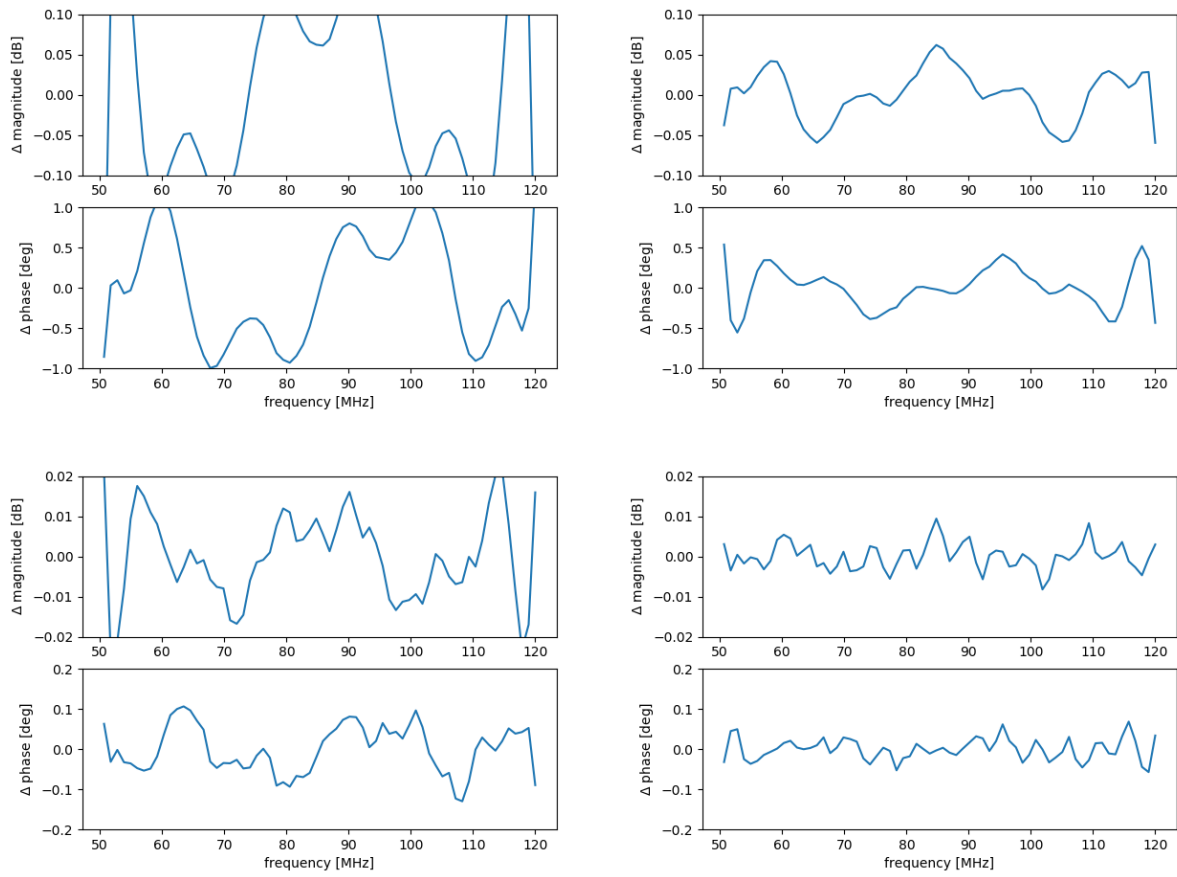


Figure 7: Alan's Noise Source + 6dB Atten, 2018-223.

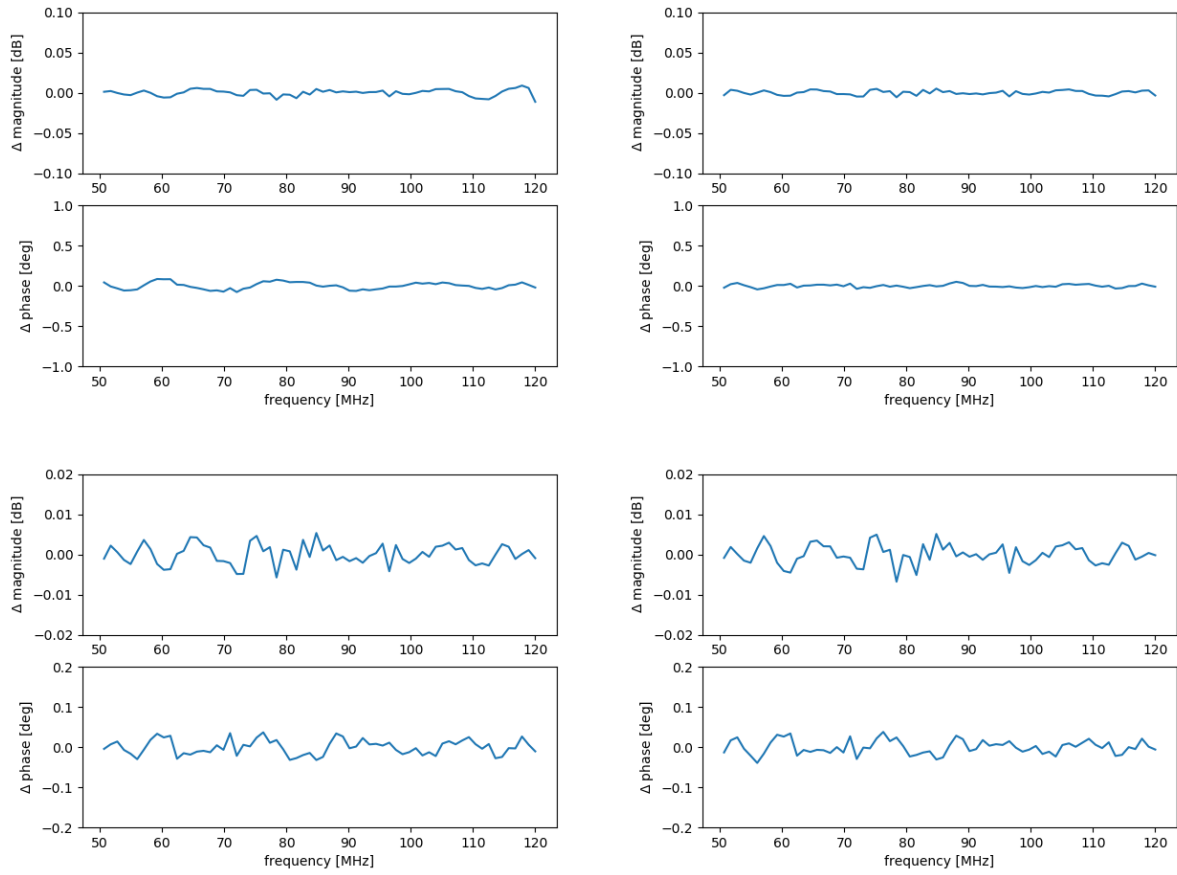


Figure 8: Low3, 2018-225 to 227.

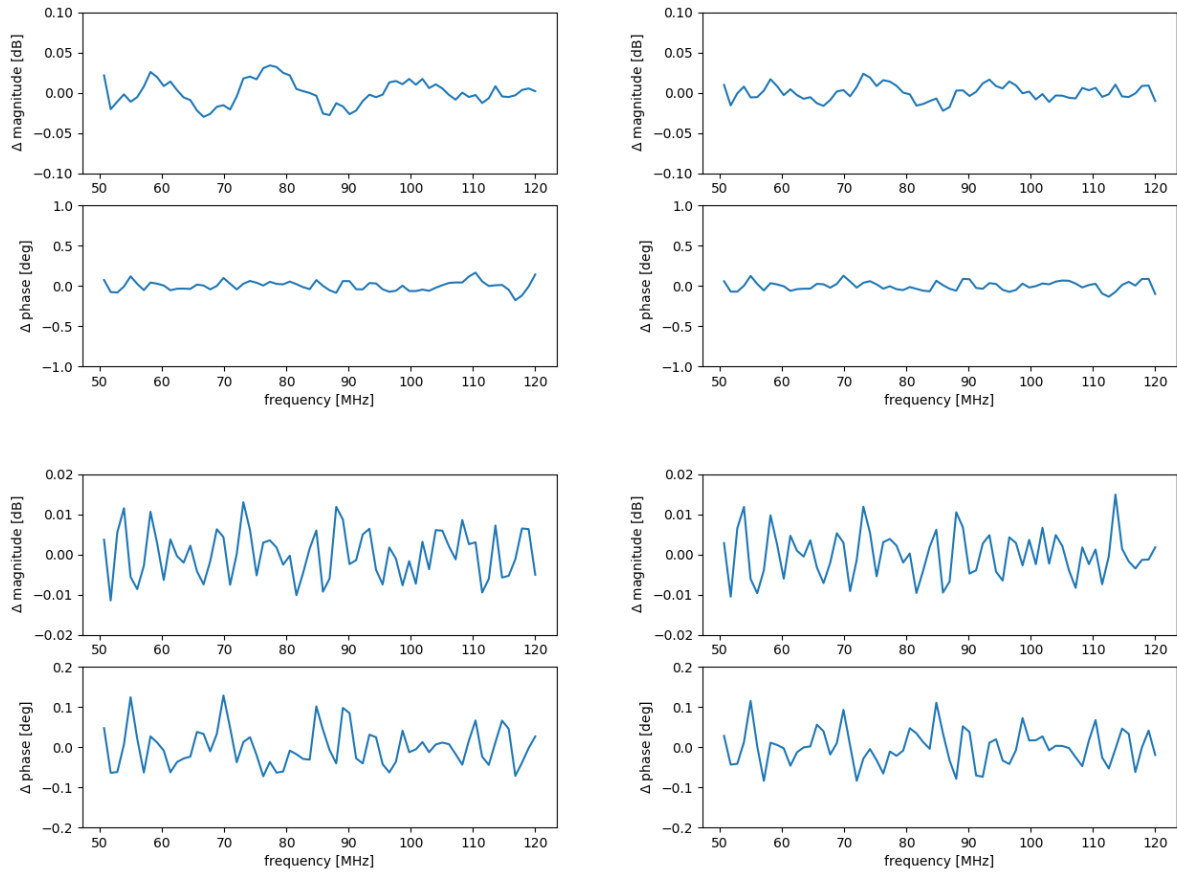


Figure 9: Mid, 2020-074.

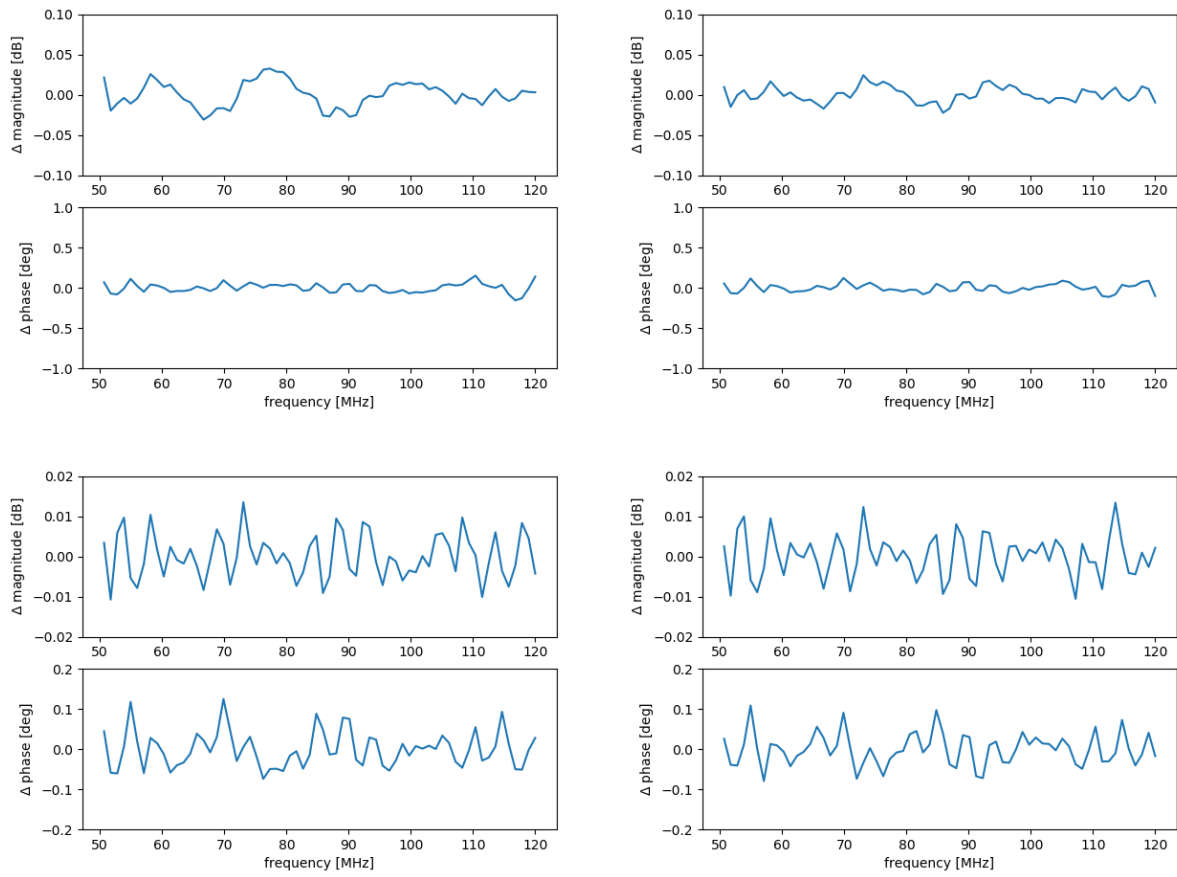


Figure 10: Mid, 2020-089 to 094.

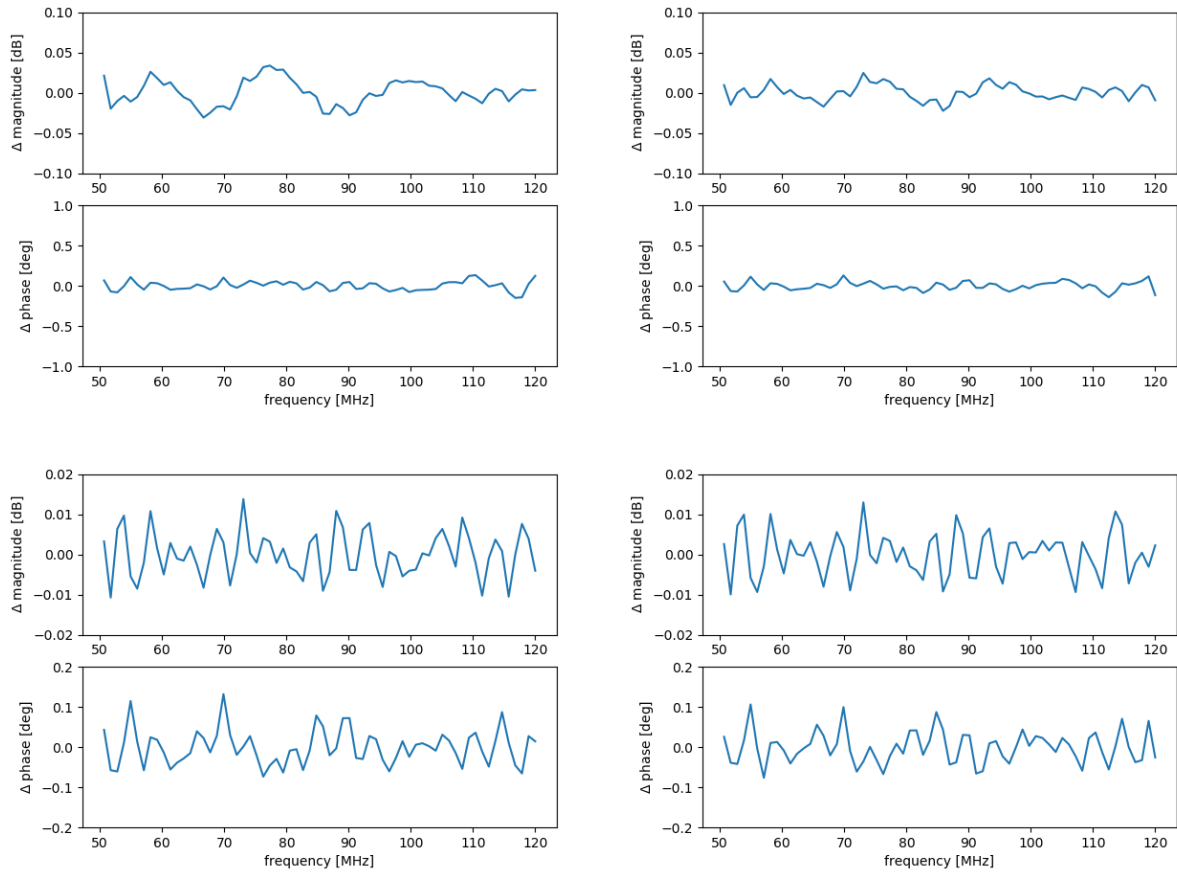


Figure 11: Mid, 2020-095 to 098.

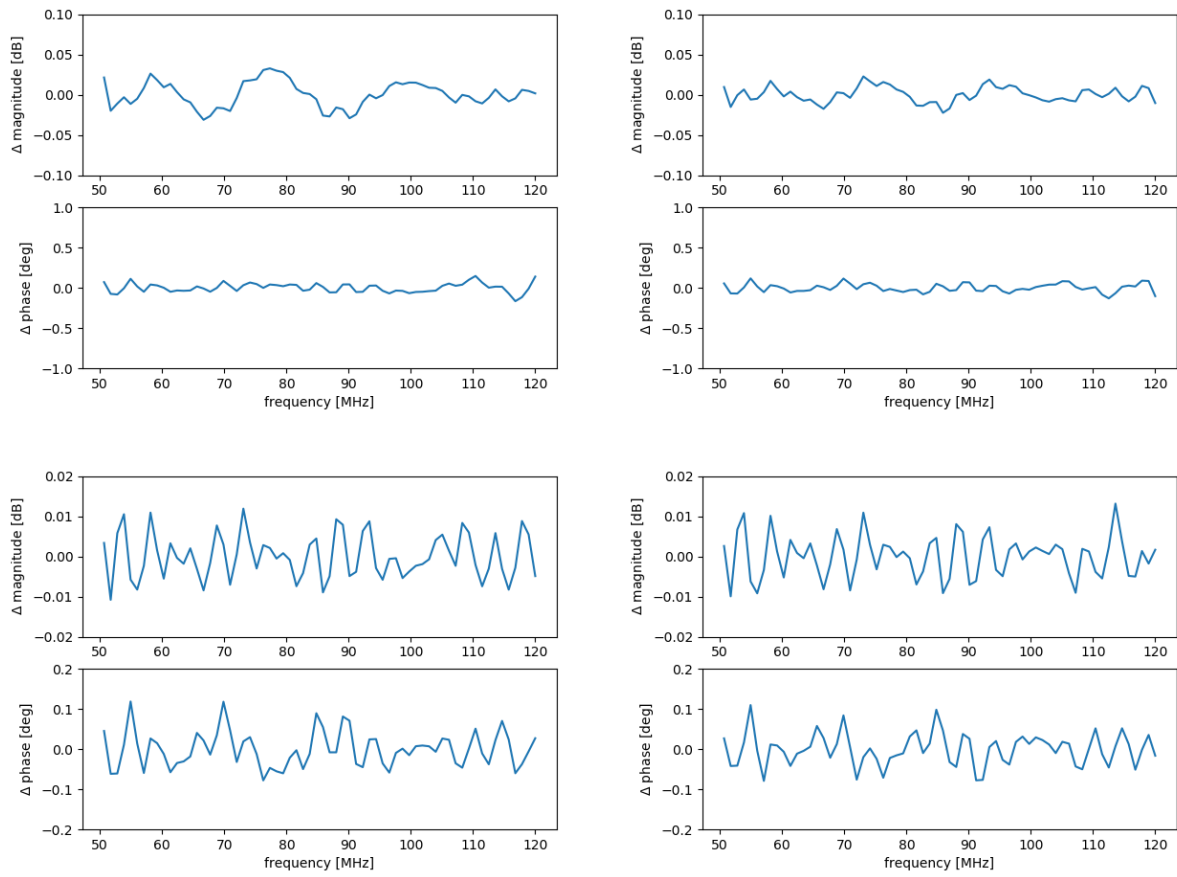


Figure 12: Mid, 2020-102 to 106.

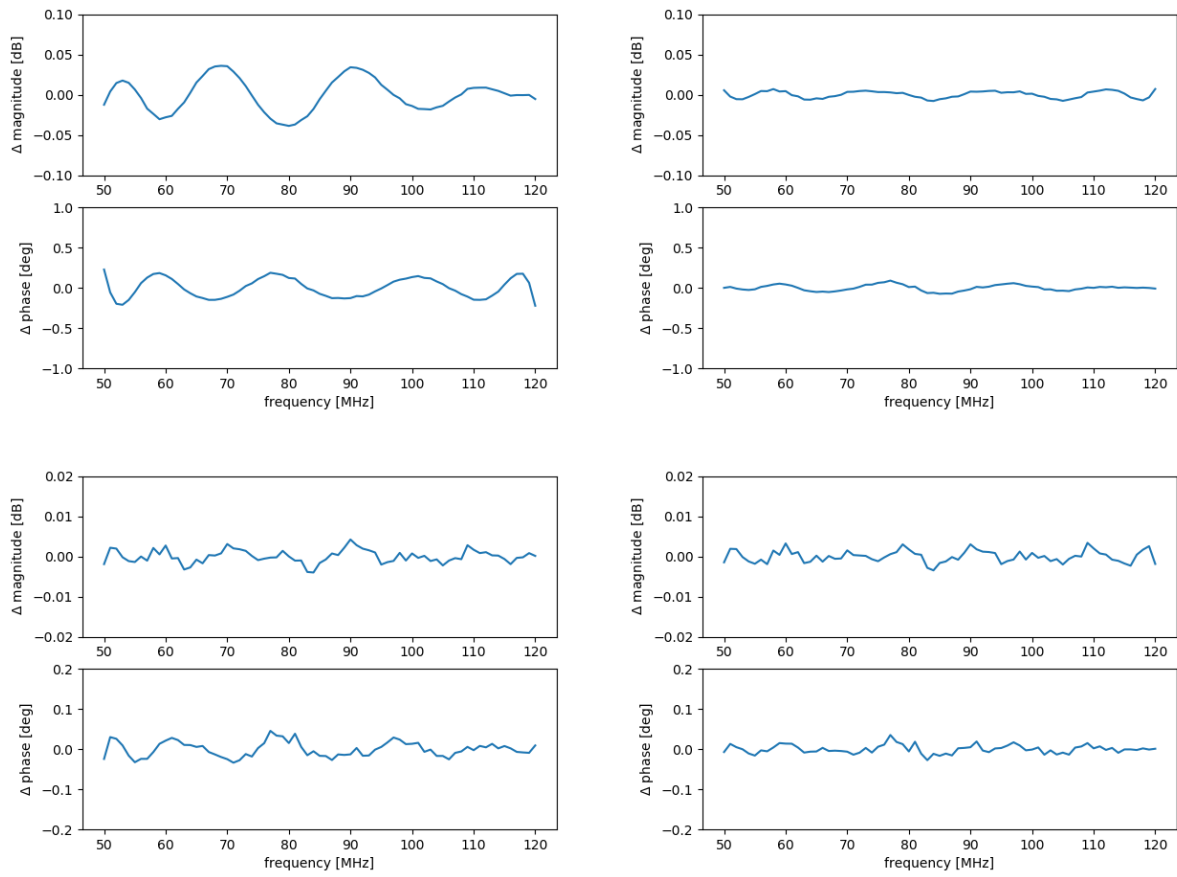


Figure 13: Low2 EW, 2017-087.

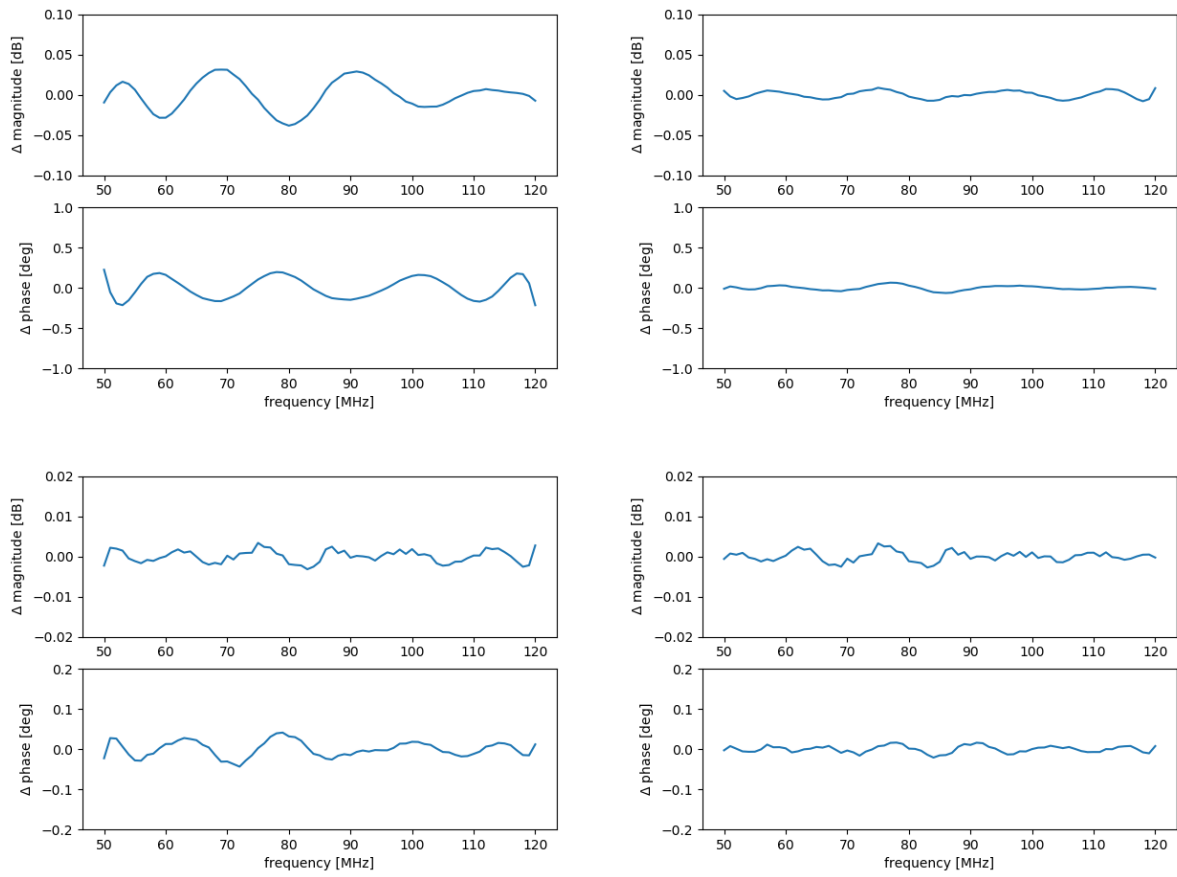


Figure 14: Low2 EW, VNA in Pit Box, 2017-152.

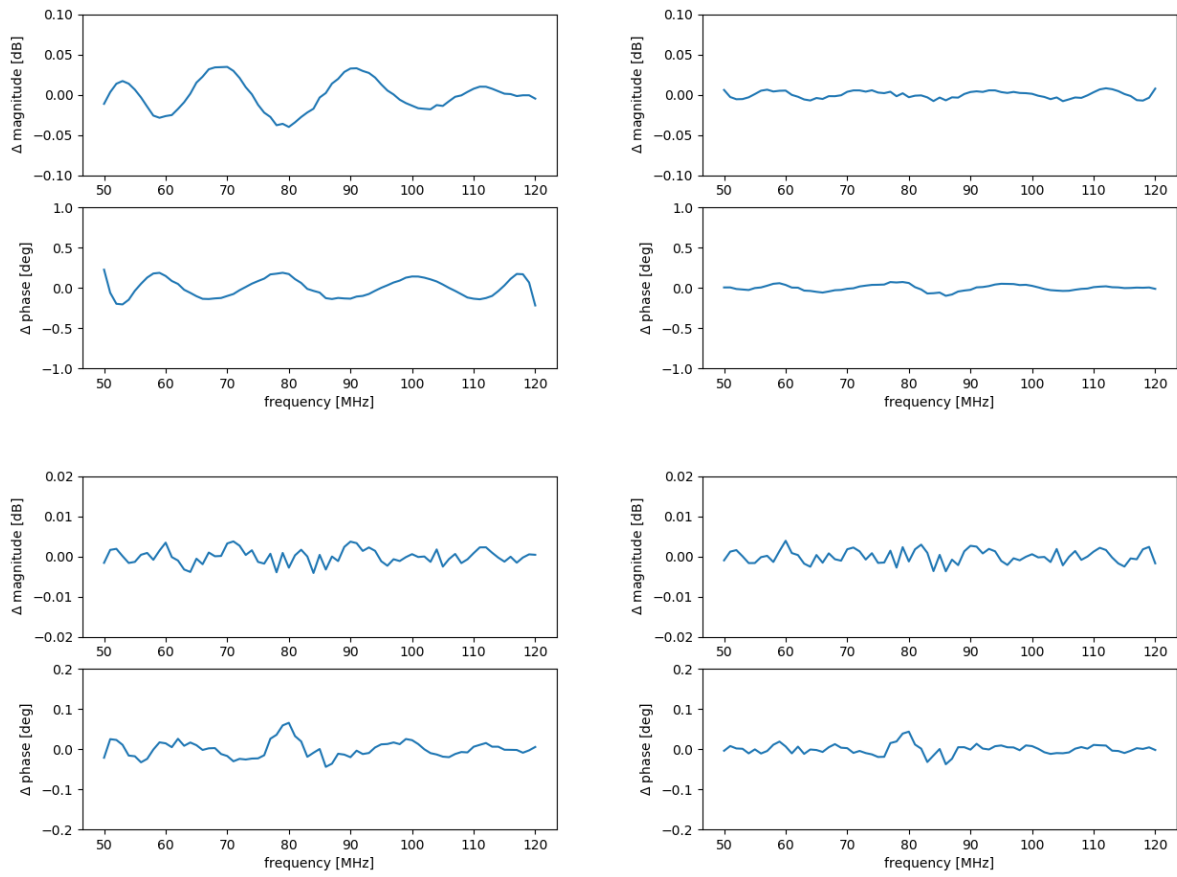


Figure 15: Low2 EW, 2017-153.

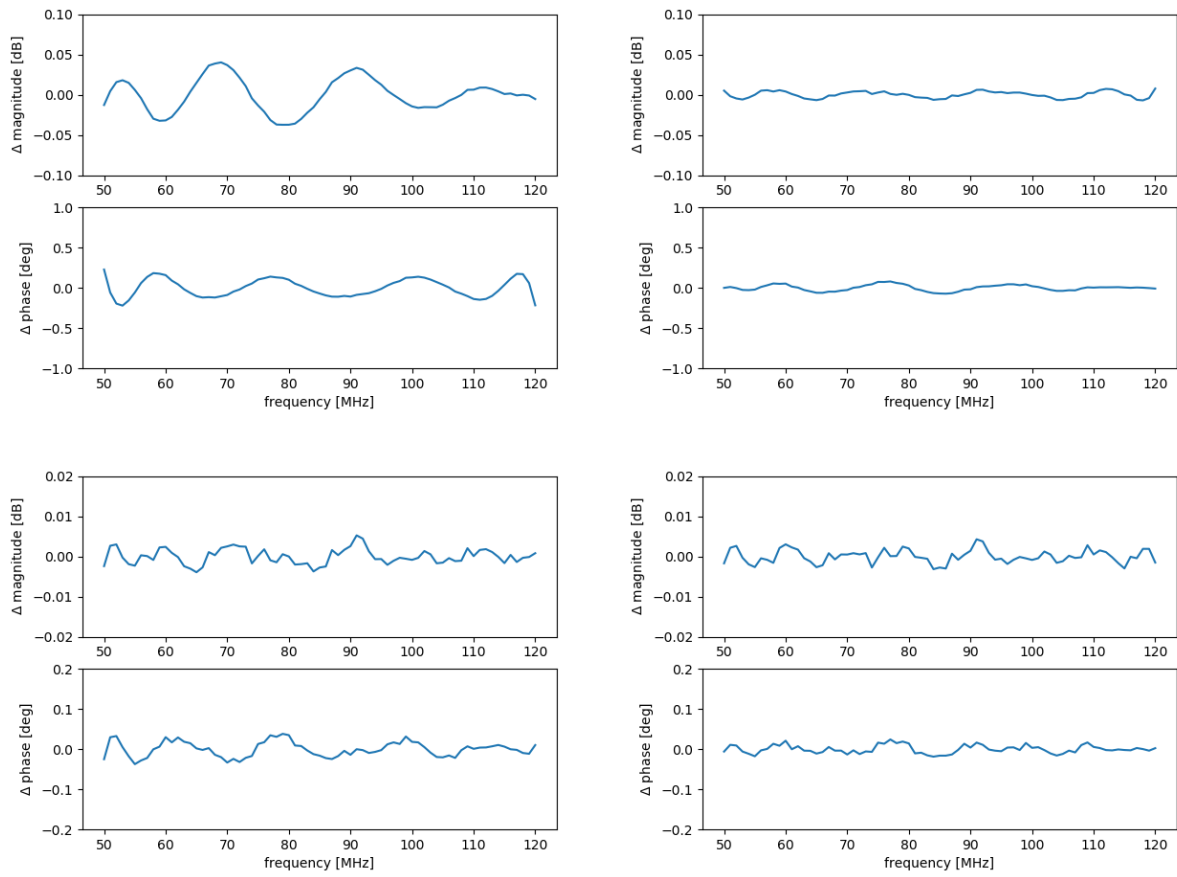


Figure 16: Low2 NS, 2017-180.

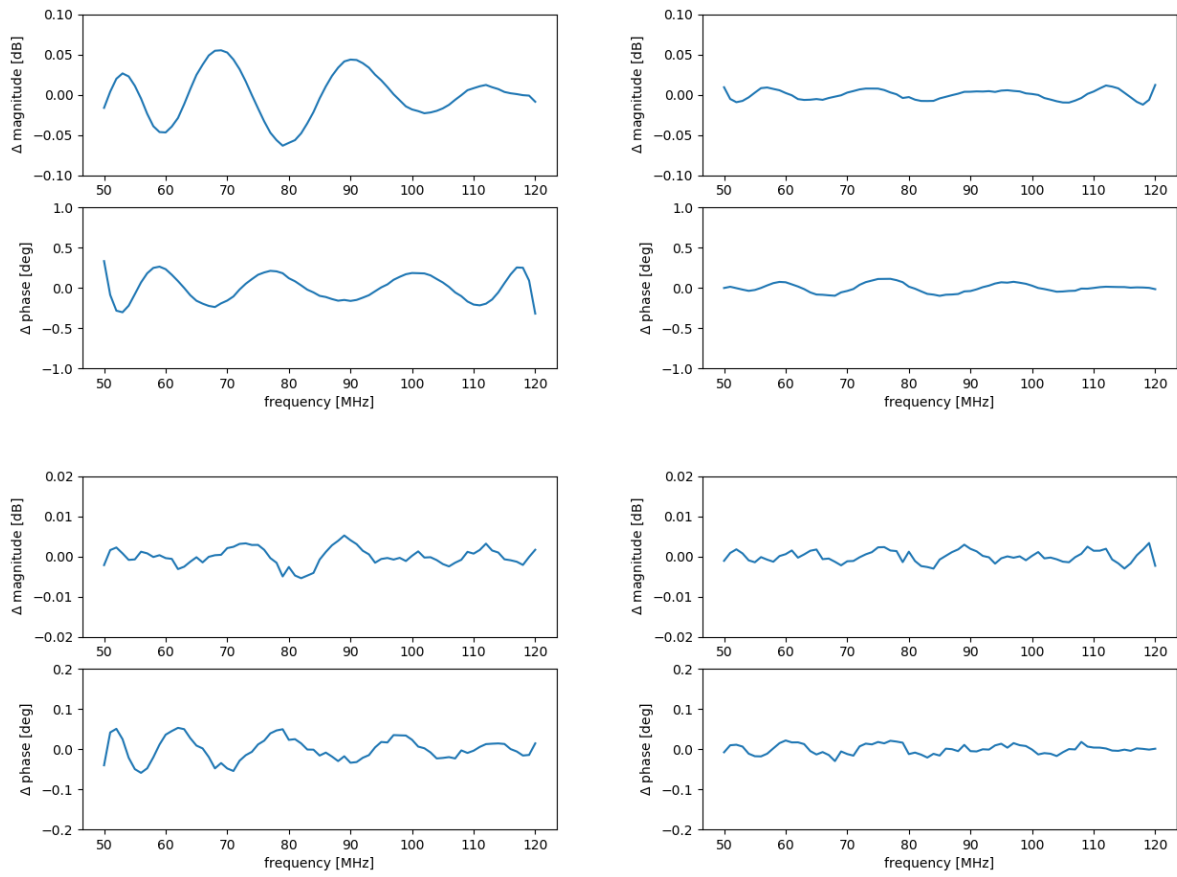


Figure 17: Low2 NS, 2017-291.

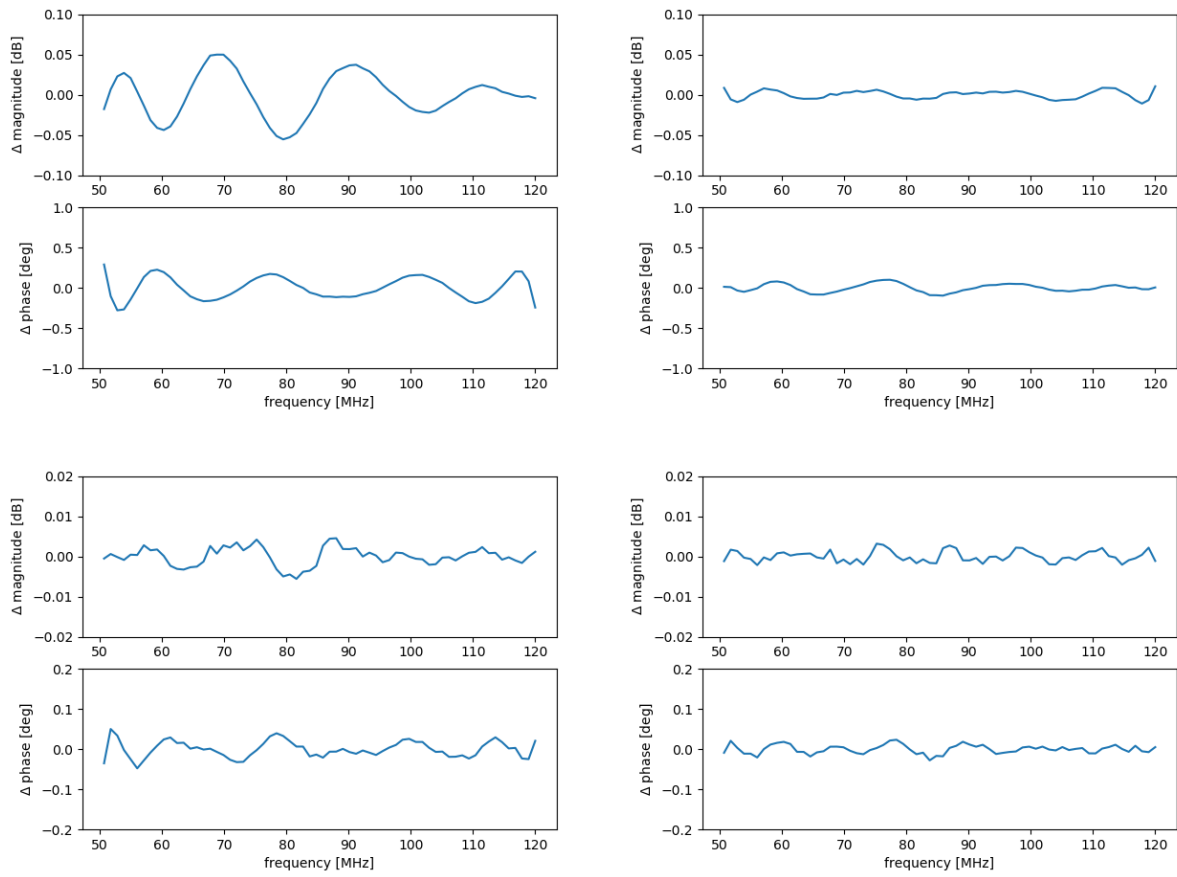


Figure 18: Low2 NS, 2018-046.

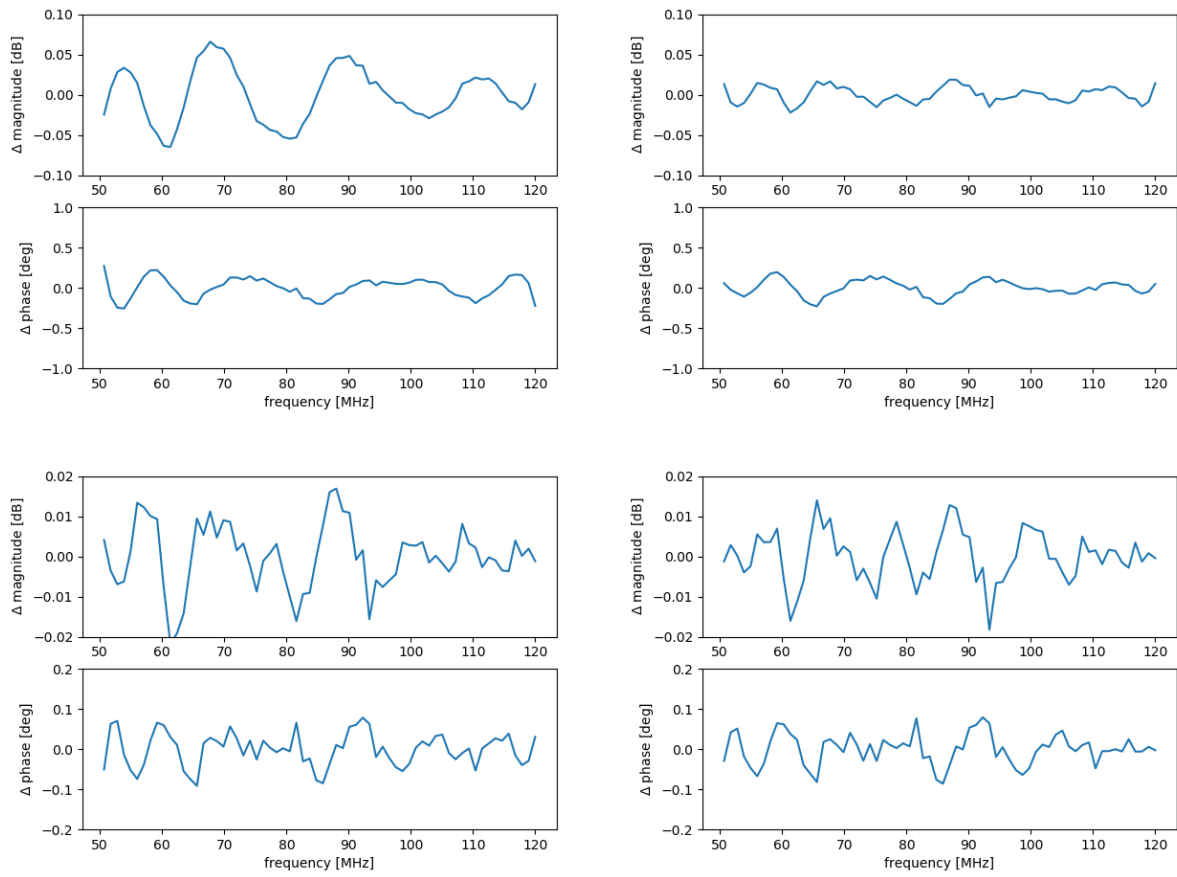


Figure 19: Low2-45, 2020-057.

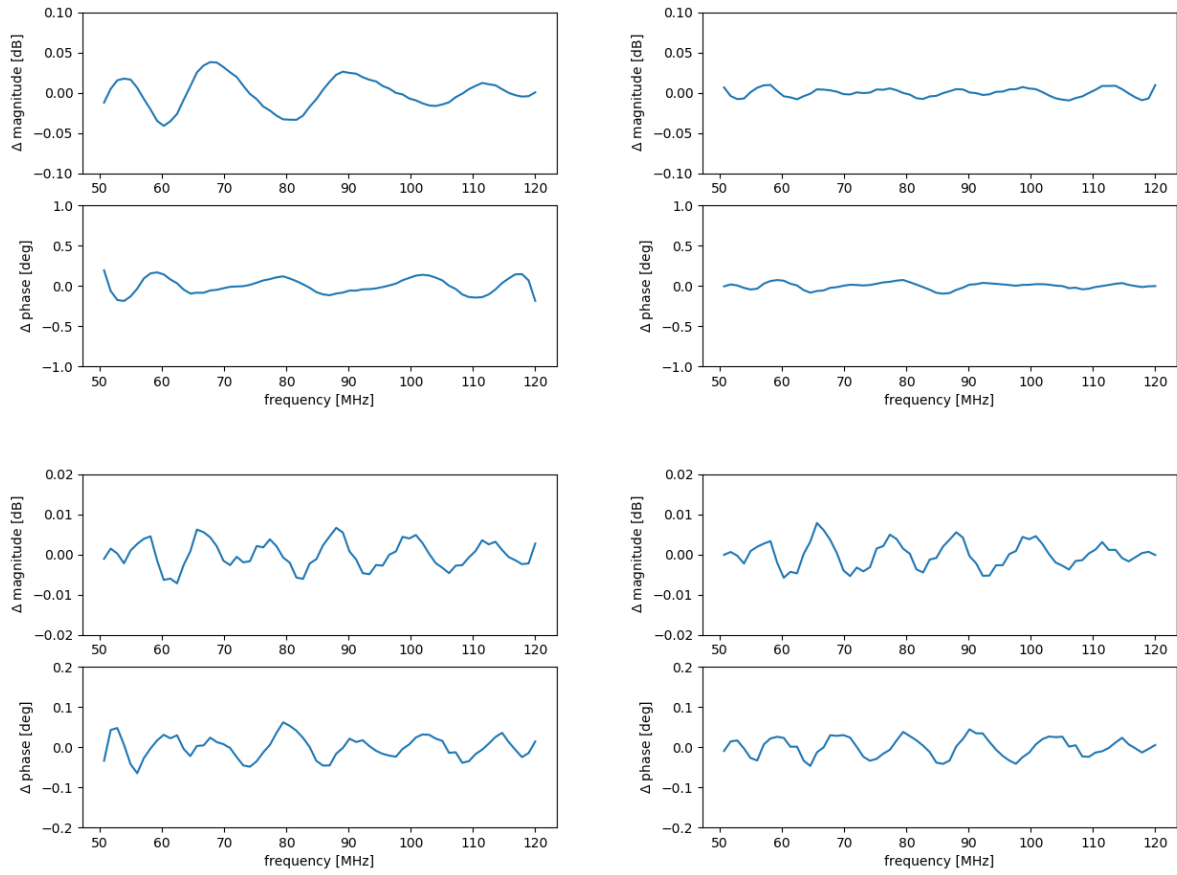


Figure 20: Low2-45, 2020-074.

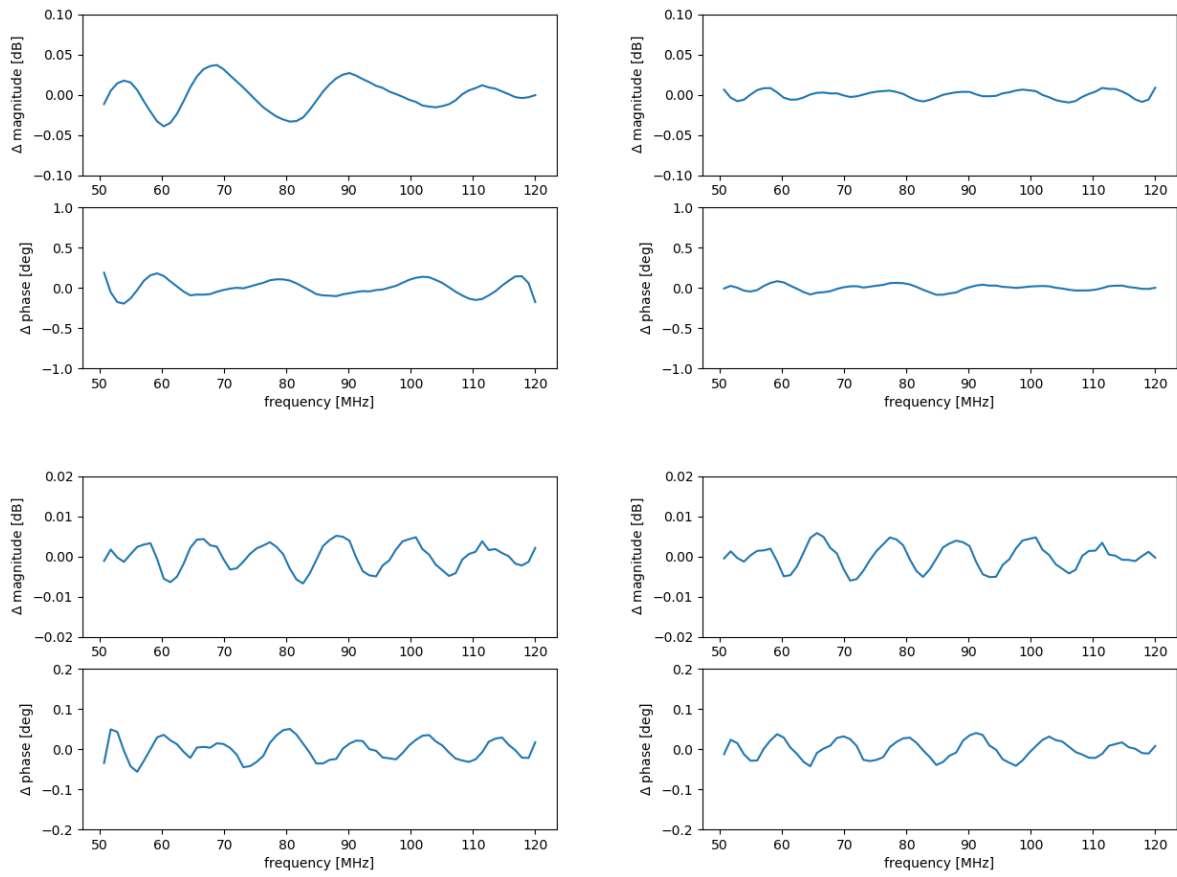


Figure 21: Low2-45, 2020-085 to 087.

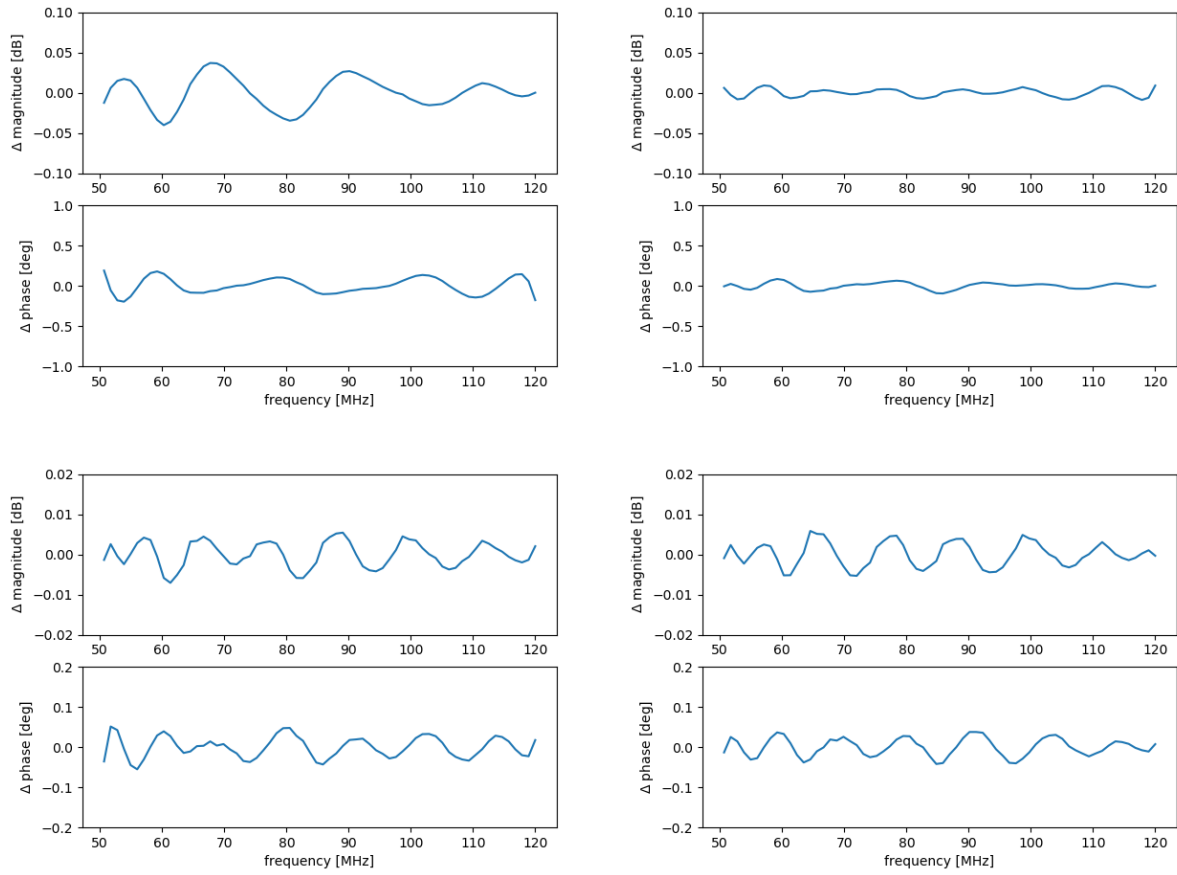


Figure 22: Low2-45, 2020-088 to 092.

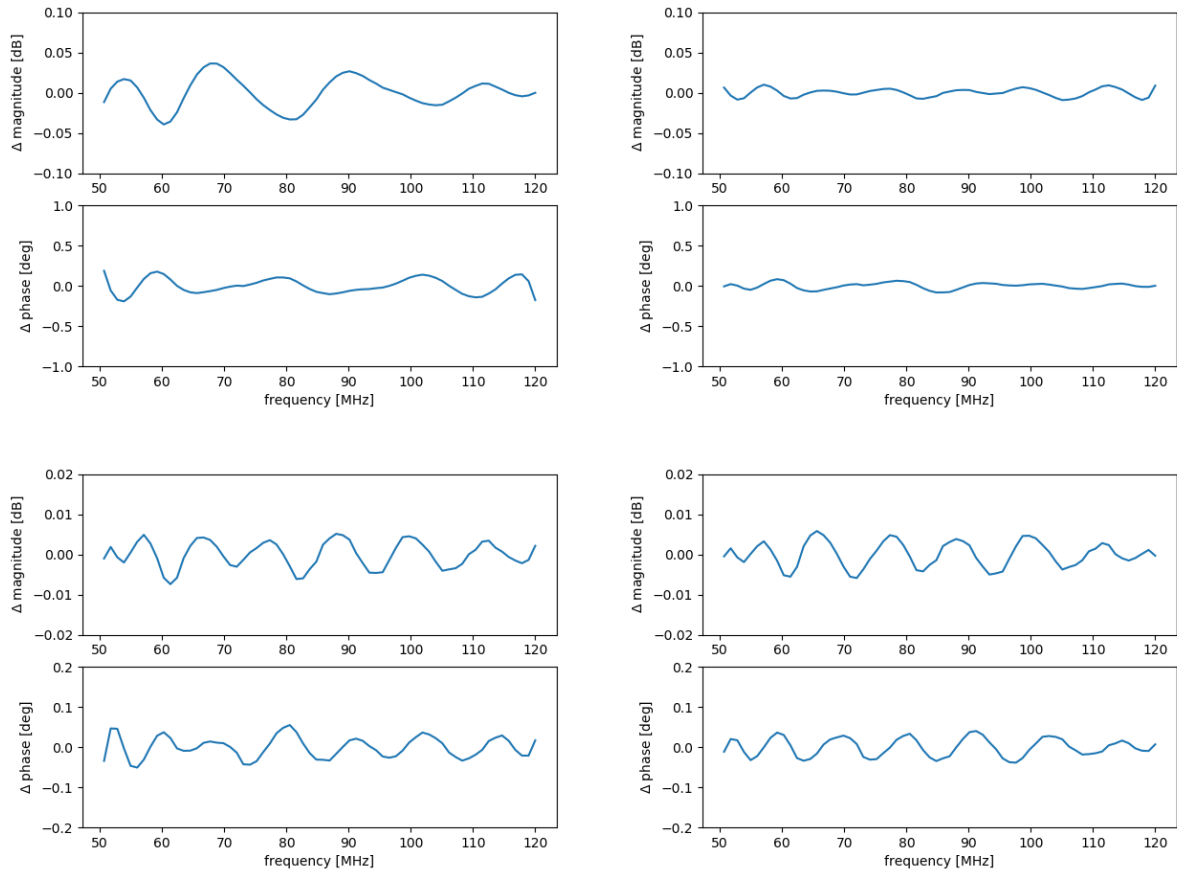


Figure 23: Low2-45, 2020-096 to 101.