CTA200 2021 Mini Project

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After running the notebooks(Part 1). I downloaded the FITS files for 9 Temperature maps from the PLANCK satellite website. I then used the healpy package to read the maps for given frequencies. Afterwards, I visualised the read maps using hp.mollview. Below are the 9 maps. For frequencies 217 Hz, 100 Hz, 857 Hz, 545 Hz, 030 Hz, 044 Hz, 143 Hz, 353 Hz and 070 Hz respectively.

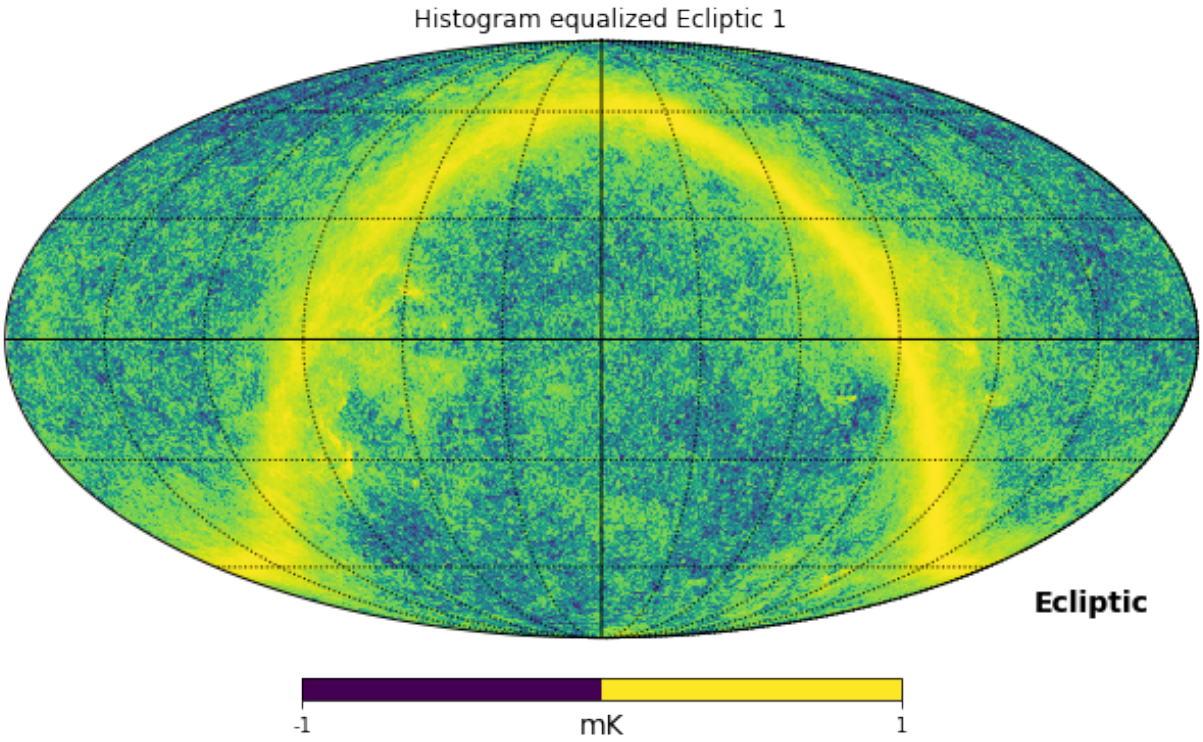

Figure 1: Fig:217 Hz

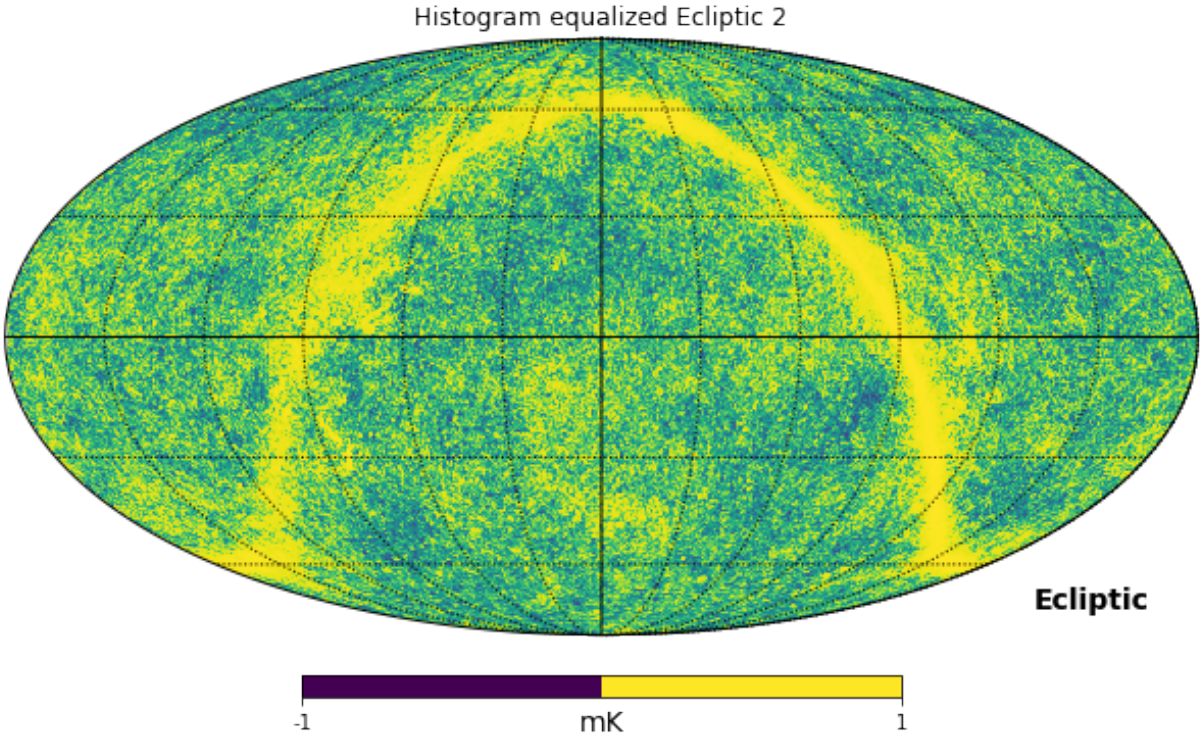

Figure 2: Fig:100 Hz

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For each of the frequency maps, I downloaded a BEAMS file which could be extracted and plotted. Furthermore, a gaussian approximation had to be applied for the LFI beams using the given FWHM for the low frequency maps (070,030 and 044 Hz). Below are the visual representations of the extracted data.

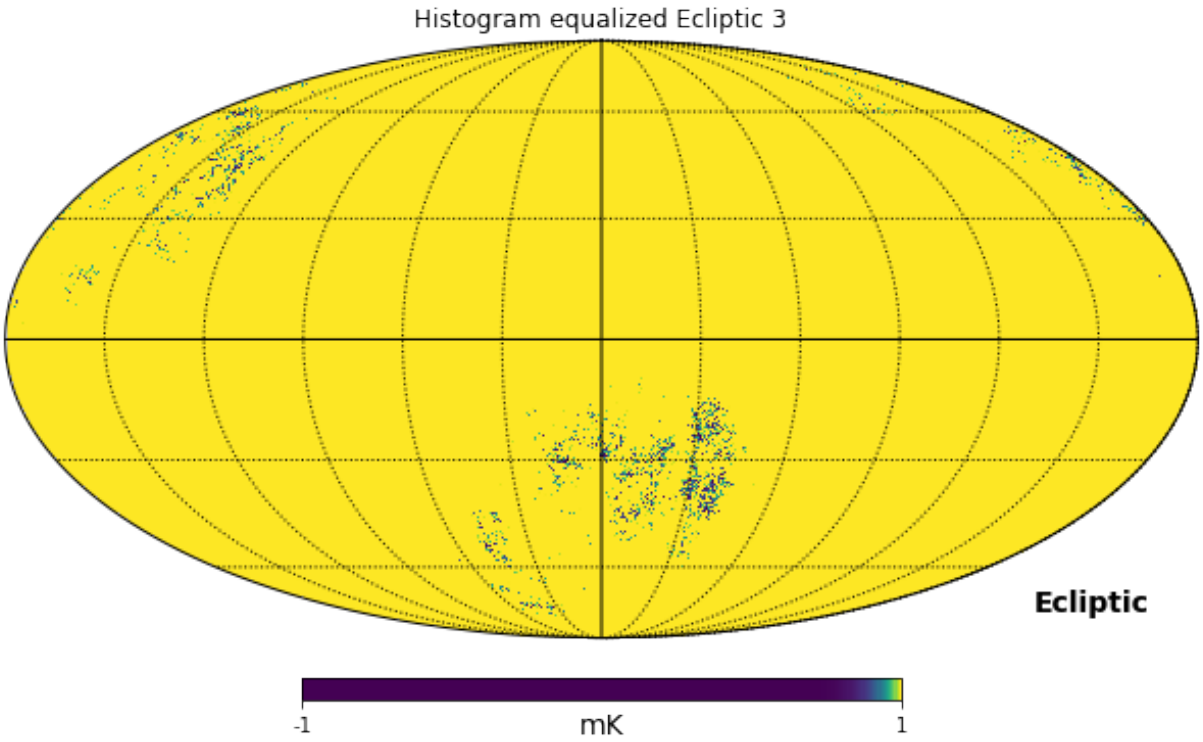


Figure 3: Fig:857 Hz

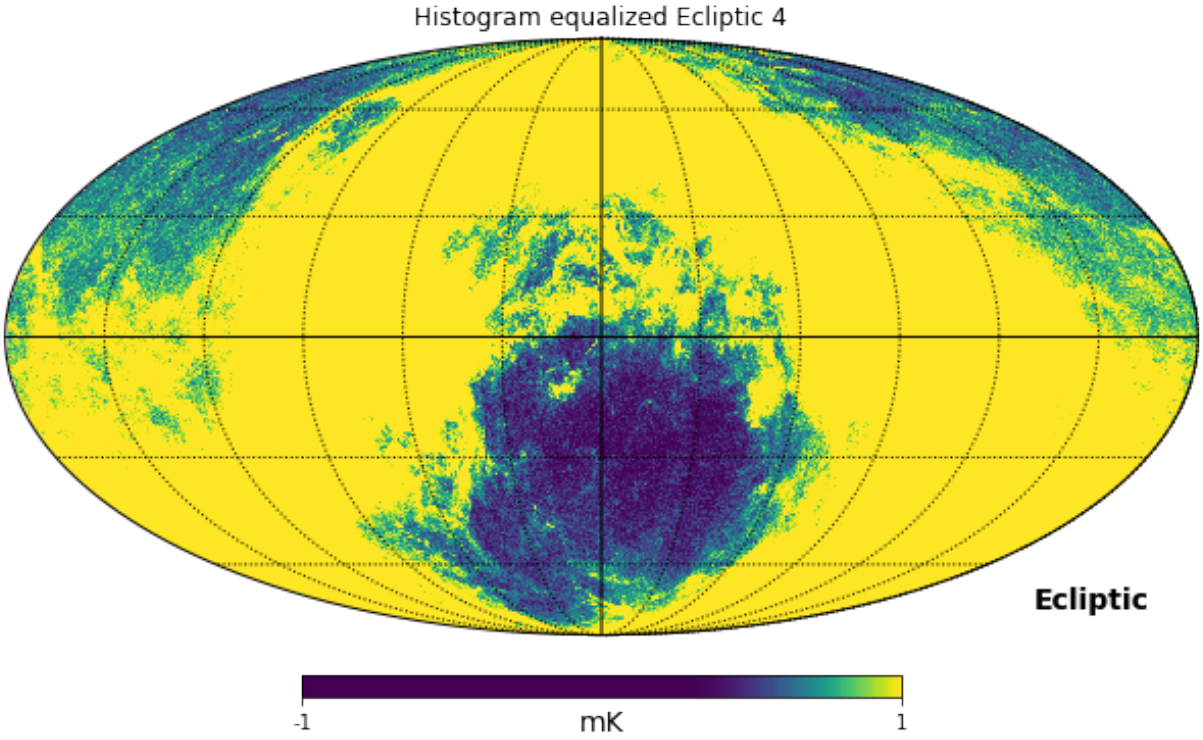


Figure 4: Fig:545 Hz

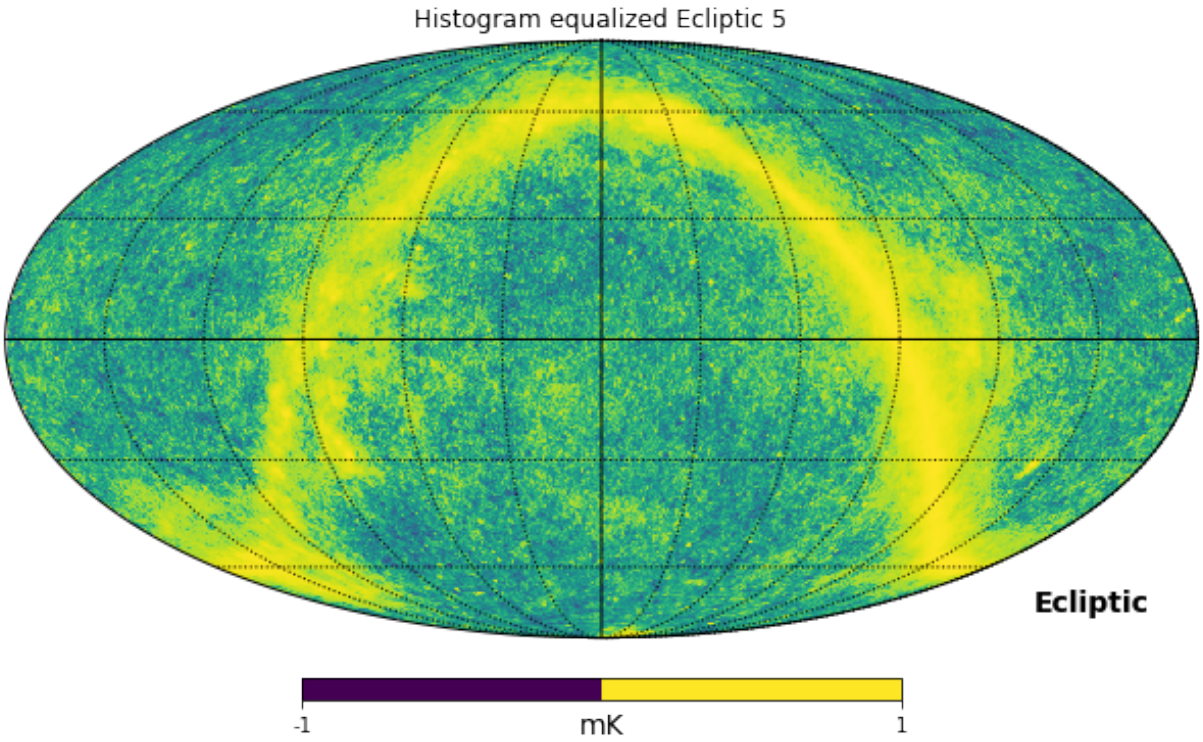


Figure 5: Fig:030 Hz

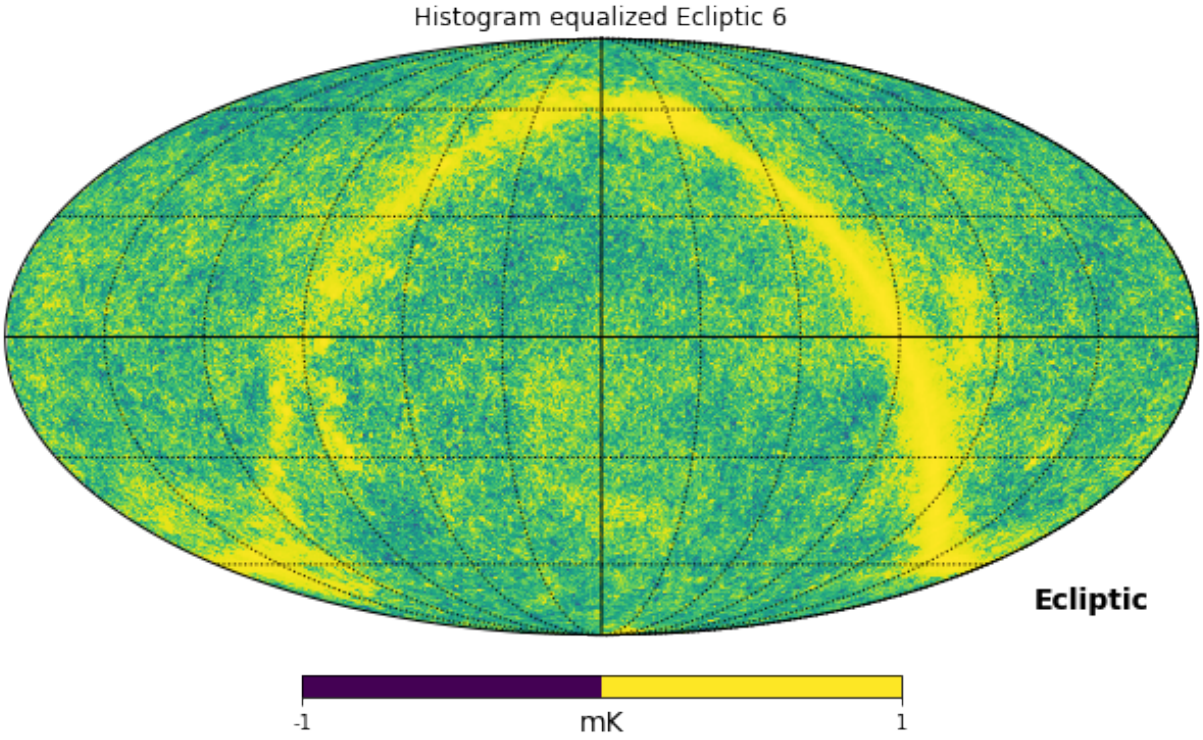


Figure 6: Fig:044 Hz

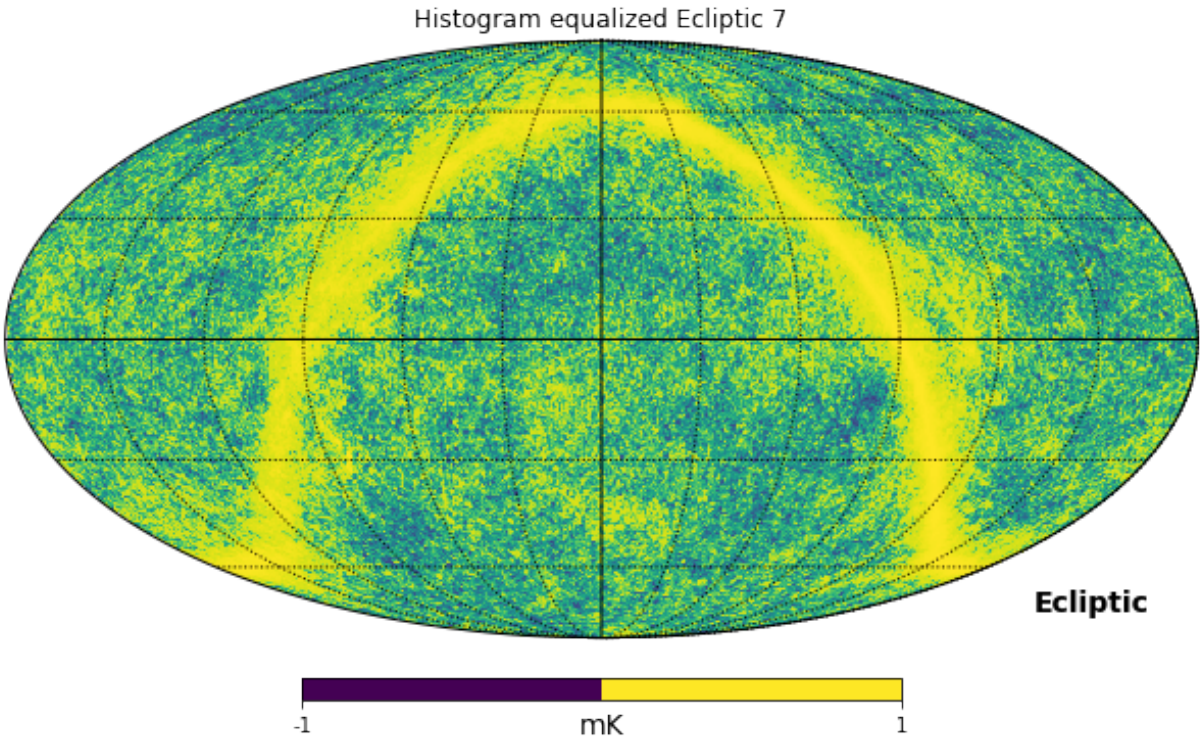


Figure 7: Fig:143 Hz

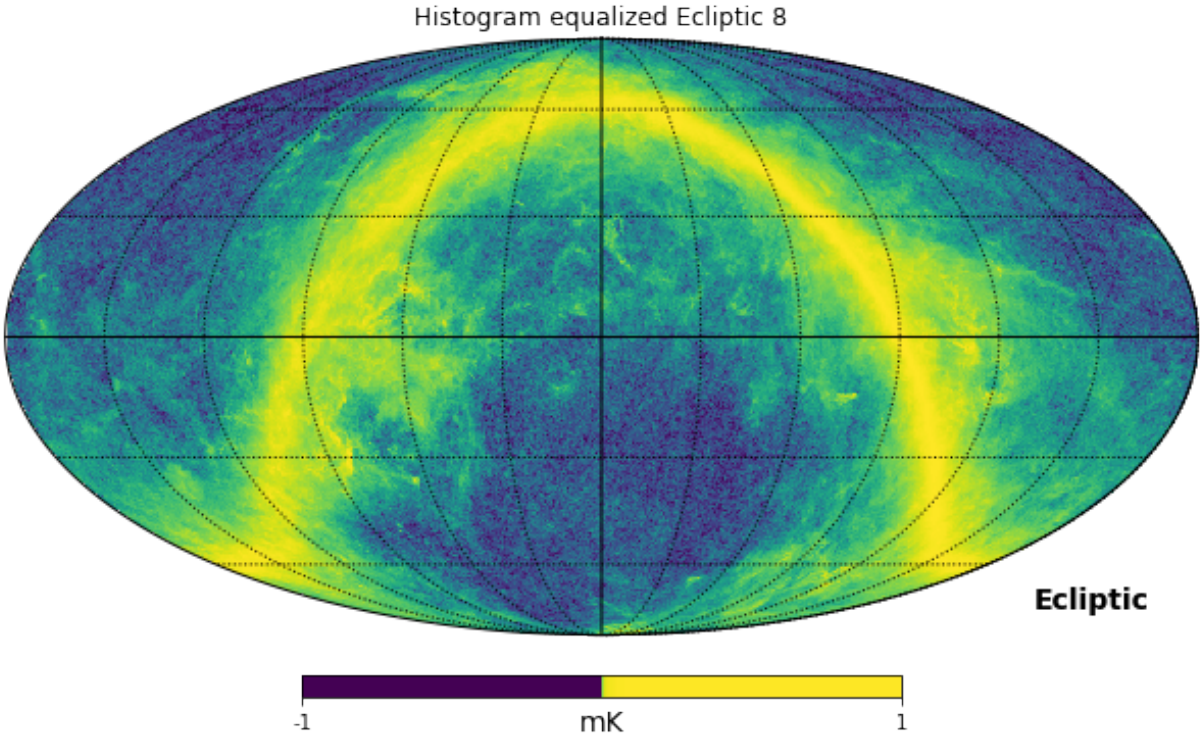
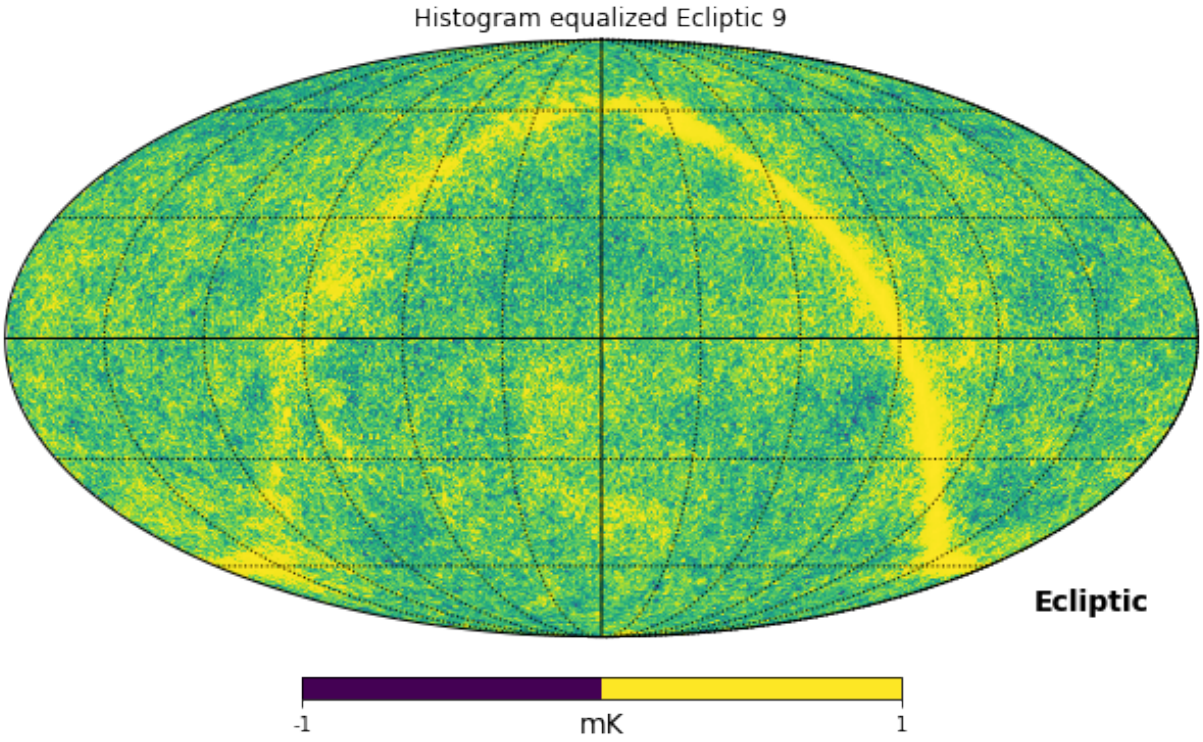


Figure 8: Fig:353 Hz



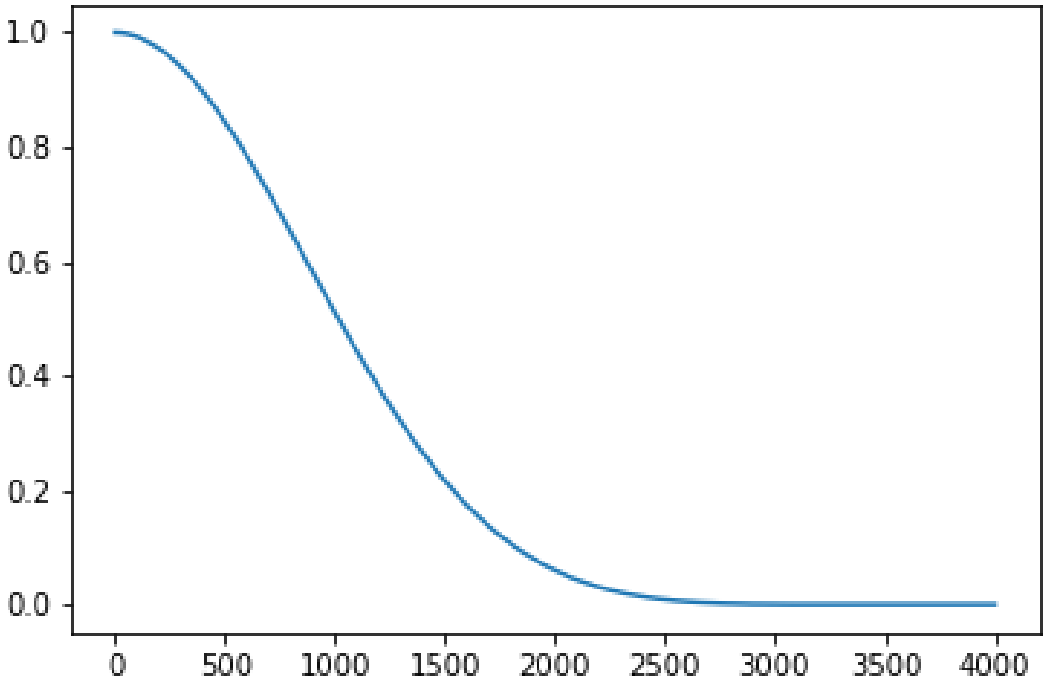


Figure 9: Fig:HFI Beam 100 Hz

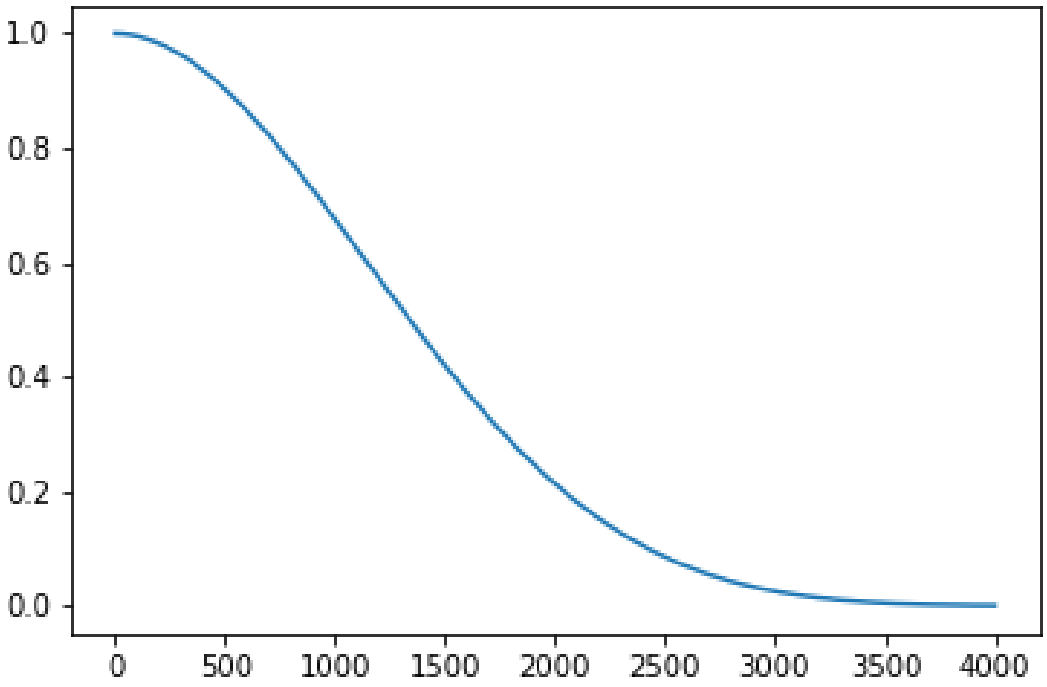


Figure 10: Fig:HFI Beam 143 Hz

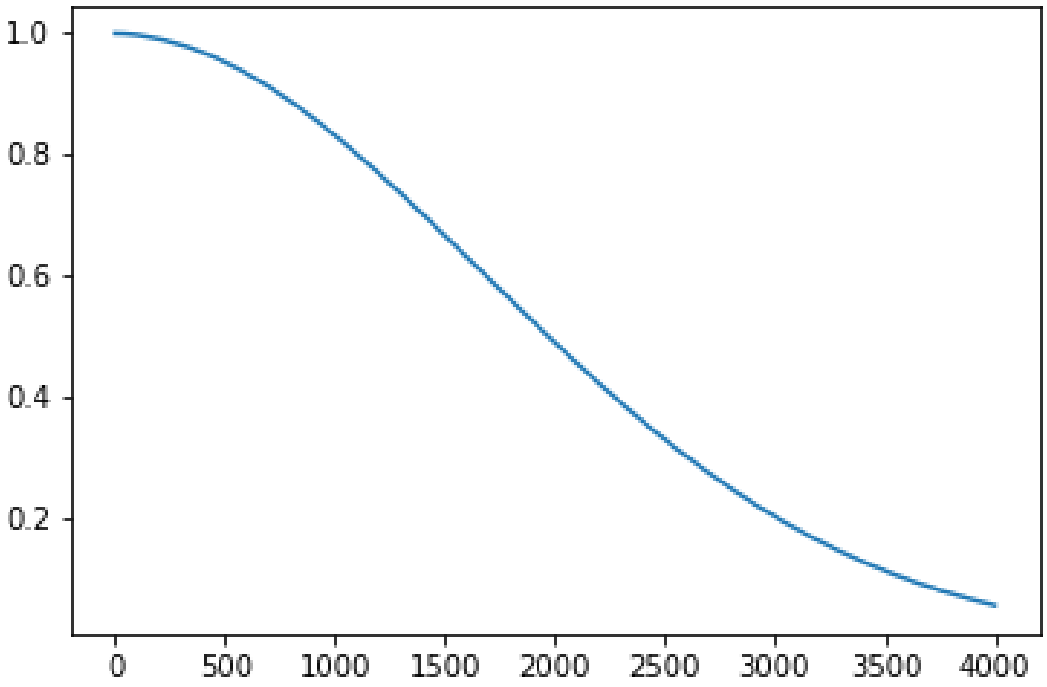


Figure 11: Fig:HFI Beam 217 Hz

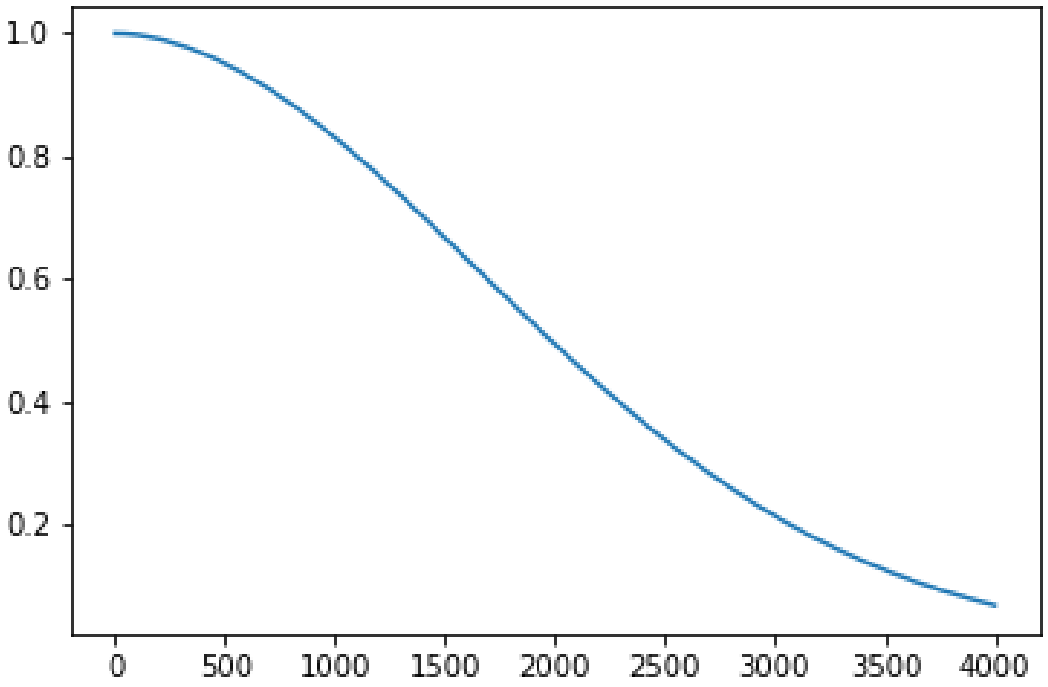


Figure 12: Fig:HFI Beam 353 Hz

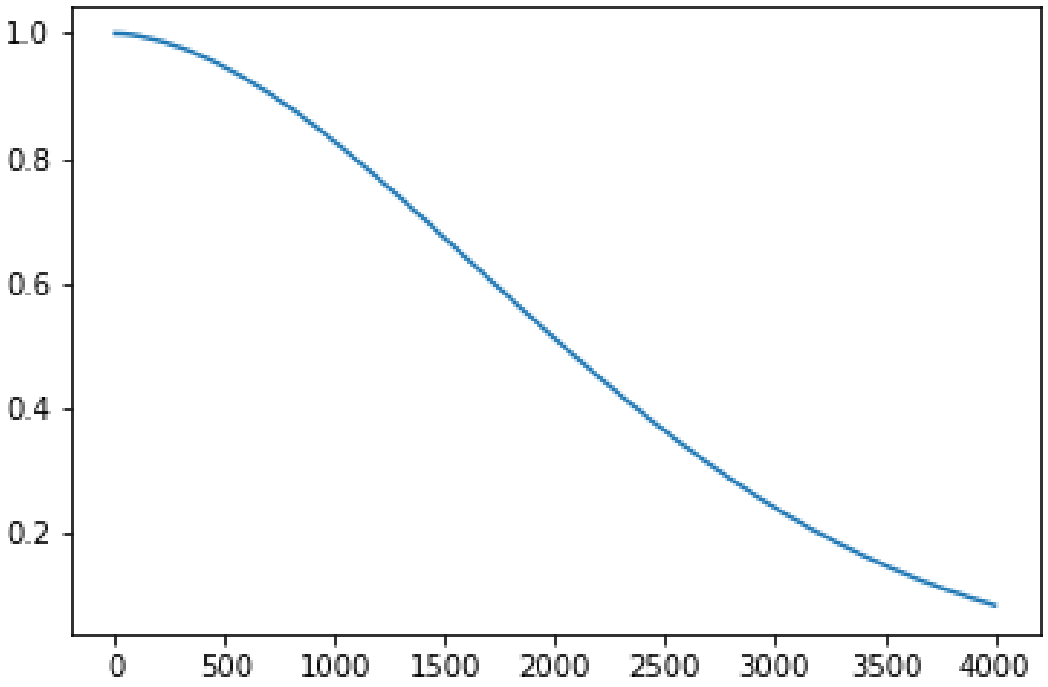


Figure 13: Fig:HFI Beam 545 Hz

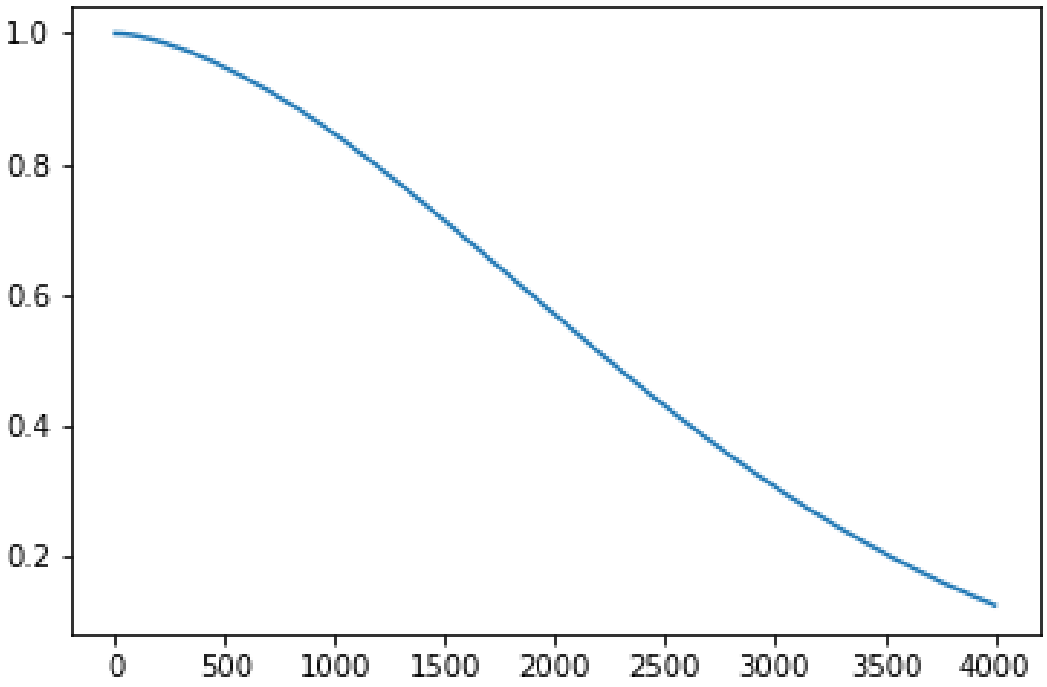


Figure 14: Fig:HFI Beam 857 Hz

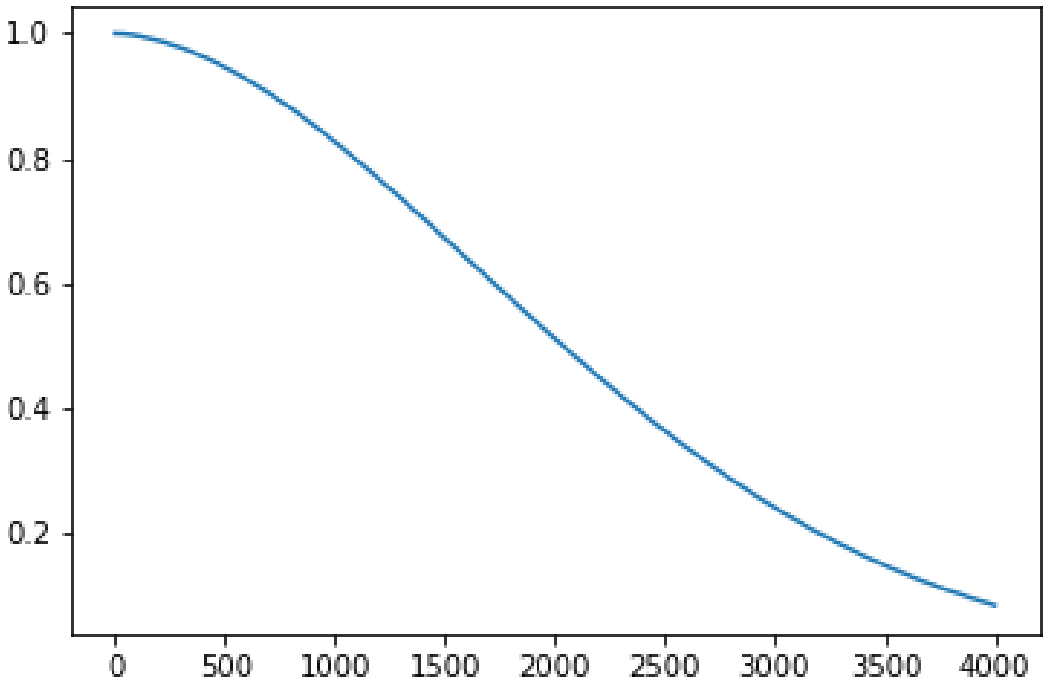


Figure 15: Fig :LFI Beam 030 Hz

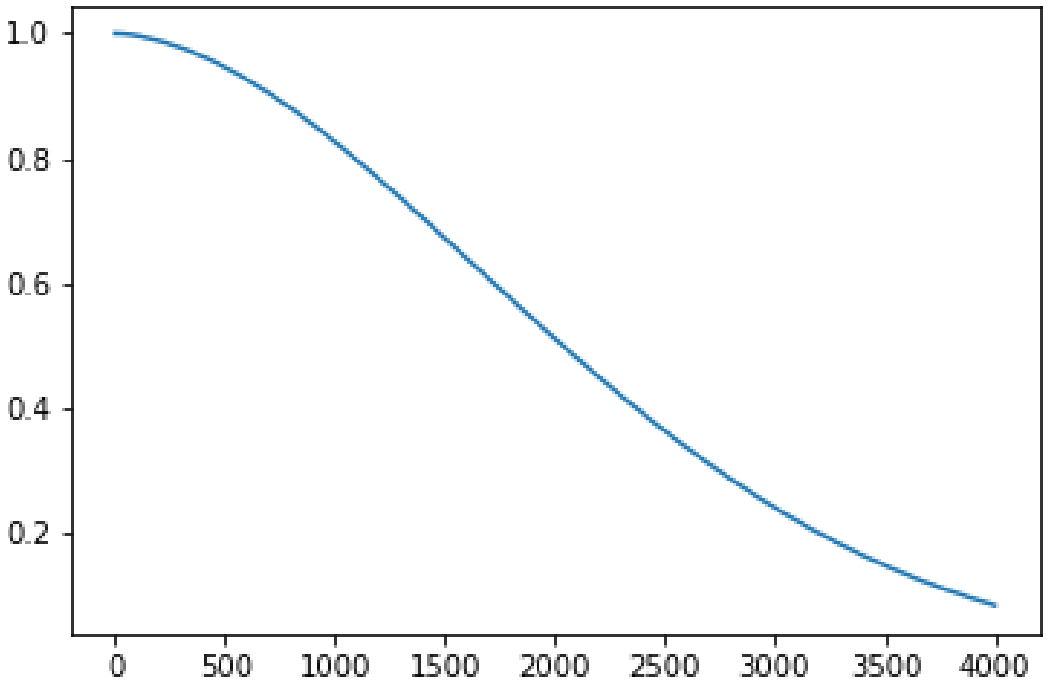


Figure 16: Fig:LFI Beam 044 Hz

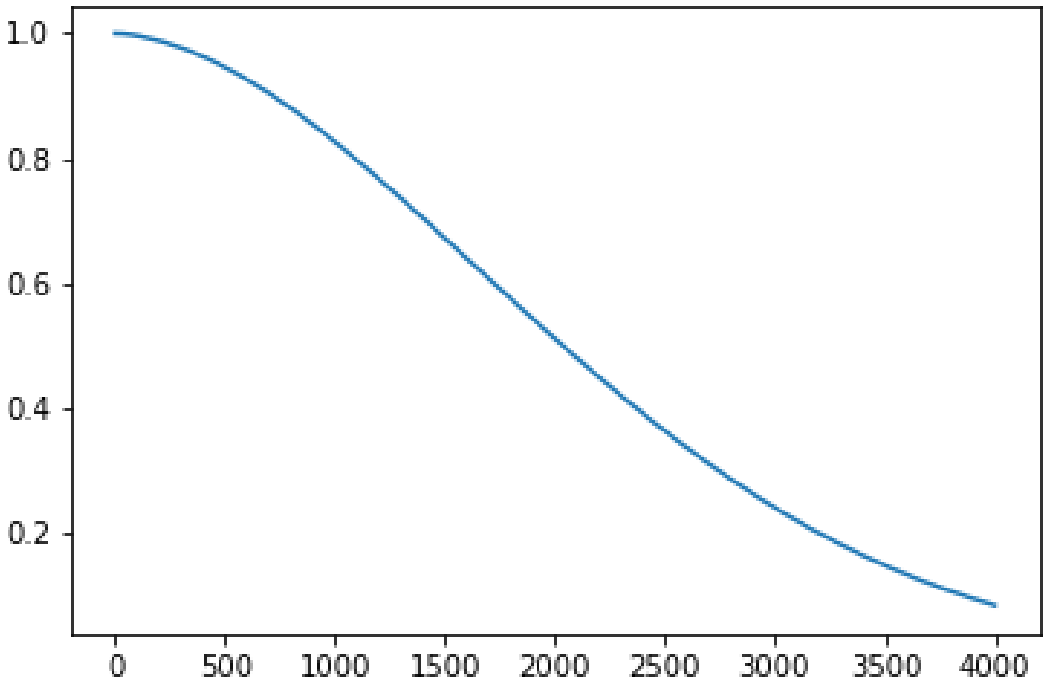


Figure 17: Fig:LFI Beam 070 Hz