Hi

Think I figured out using your Java script so I could expand table 1 for HPBW from 1.1 degrees to 2.0 degrees for 0.15/0.85 rim widths interval 0.66 to 1.21.

I have entered 1 GHz as used Sun frequency and Drift scan width between 2-4 degrees to be able to read the X offset with the mouse.

And I think my 90 cm data is wrong calculated.

Tnx for your nice Java Script tool!

Vy 73 de OZ1OY

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20. mar. 2024, 18.07
til mig

hello jan,

   thanks for your interesting email yesterday ... but now: congratulations that you found out how to do it, so i don't need to explain ... BRAVO, very well done! it's quite easy, isn't it?

   you choose the drift scan width so that the software makes the dots on the curve, it will also compute and display the rim widths directly.

   please note that even your large 1.80 m dish has a HPBW of 1.3 deg, which is larger than the sun's angular diameter of 0.5 deg ... so the sun is simply a point source for your antennas, and you can measure the HPBW DIRECTLY as the FWHM (full width at half maximum) of the drift scan curve!

thus, for smallish antennas with wide beams there is absolutely no need to measure the rim width! we do it directly which is simpler. this also is the reason, why my table stops at HPBW of 1 deg :-))

your email was interesting, because there seems something wrong with your measured numbers

90 cm 1.08 degrees
125 cm 1.19 degrees
180 cm 1.022 degrees

in particular, one would expect that the rim width of 180 cm antenna is half of that of the 90 cm antenna!!! if you take a reasonable guess for the HPBW (from https://portia.astrophysik.uni-kiel.de/~koeppen/JS/AntennaCalc.html) you'll get

antenna	HPBW	rim width
90 cm	2.58 deg	1.52 deg
125	1.85	1.09
180	1.29	0.78

so, only your value for the 125 cm antenna seems right. perhaps there is something to be improved about the measurements ... and you'll have the satisfaction of finding out something more ...

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