1) There was nothing wrong with the BICEP2 **measurements** per se
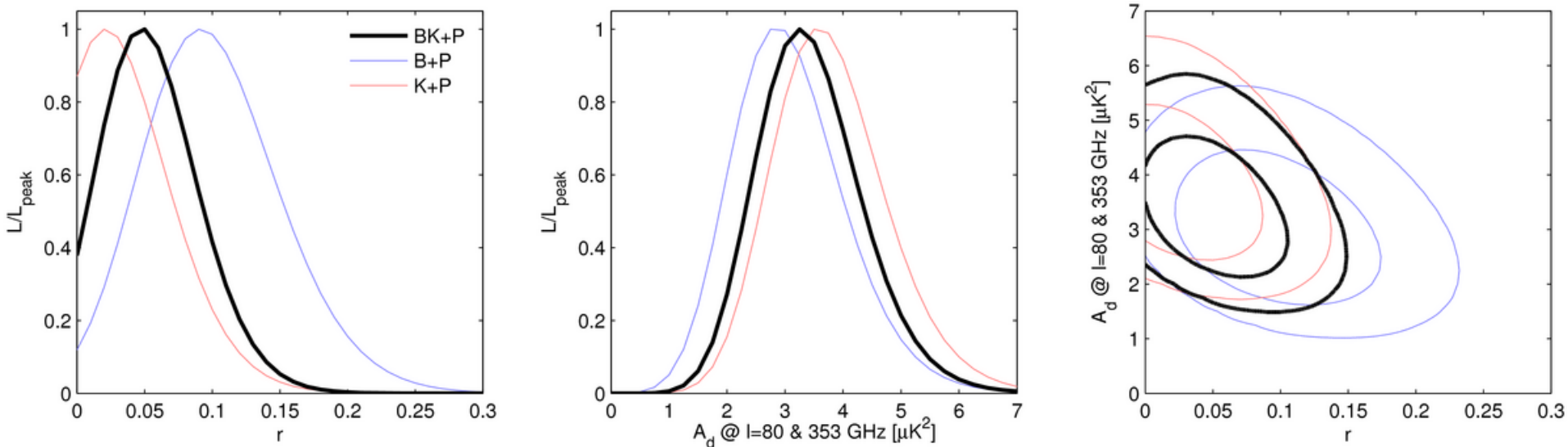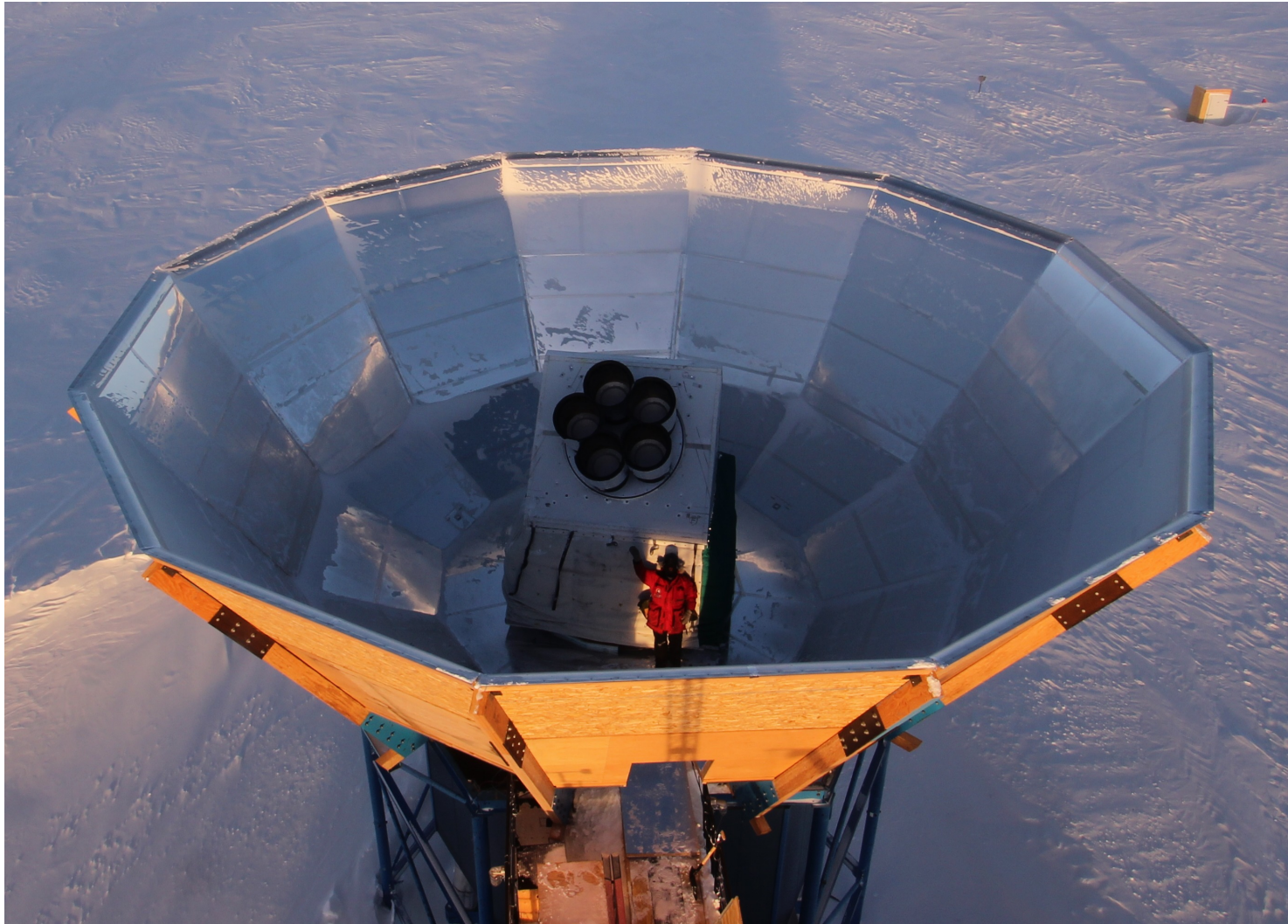

Fig6 of 1502.00612

- What the joint analysis with Planck has revealed is that the interpretation was naïve – the dust contribution is substantially greater than the pre-existing models
- Multi frequency analysis in the pursuit of r is already a reality – $\sigma(r)=0.035$ in joint analysis
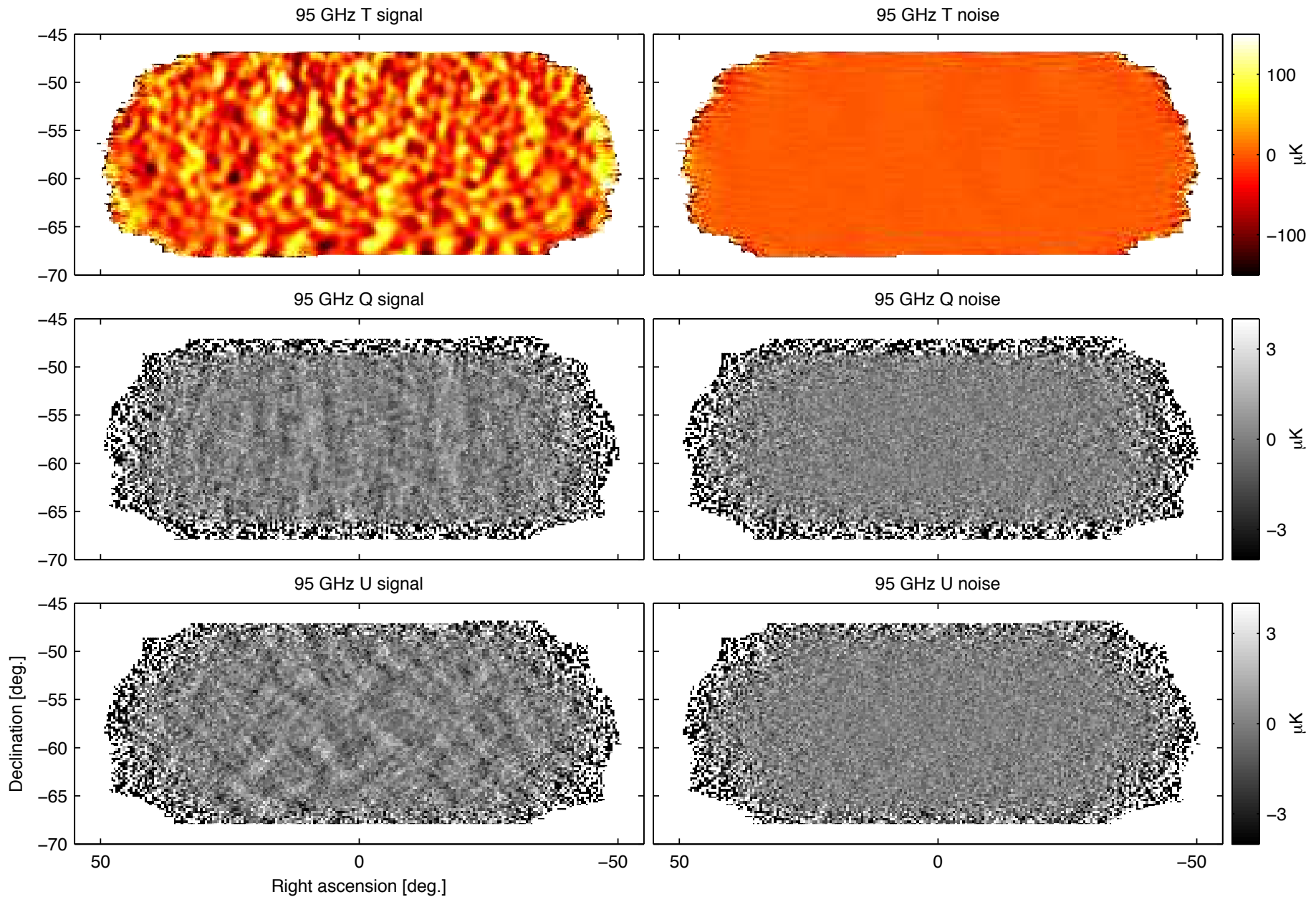
2) Small apertures have advantages

Systematics control through comoving absorbative forebaffles
and line of sight rotation (also cheap and easy to deploy)
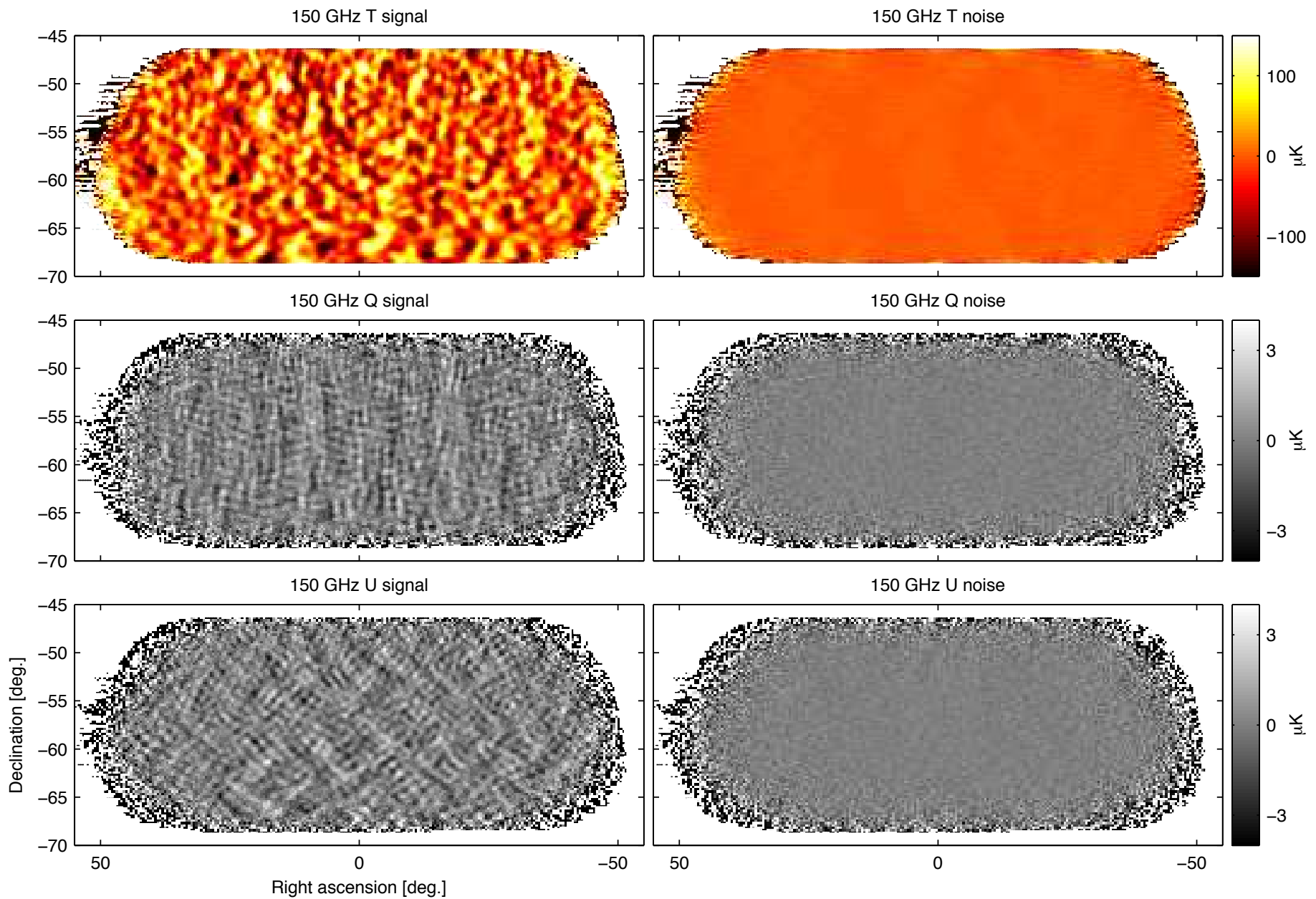
The BICEP2/Keck maps at 150GHz are the deepest ever made

These are new 95 GHz maps from 2x Keck receivers in 2014 –
new paper in prep. which will add these data to the mix

3) Small Apertures have delivered the highest sensitivity to date

	Q,U Map rms noise N [nK-deg] (uK-arcmin)	Survey effective area A [deg^2]	**Total** Q+U **Survey Weight** W=2A/N^2 [uK^{-2}]	
Bicep2 150 GHz	87 (5.2)	380	**101,000**	← BICEP2 paper 3/2014
Bicep2 + Keck12/13 150 GHz	57 (3.4)	400	**248,000**	← Keck paper 2/2015
Keck14 95 GHz	126 (7.6)	375	**47,000**	← Paper coming soon!
Planck 143 GHz (for reference)	1170 (70.2)	41,000	**60,000**	

A quantity which is linear in number of detectors and integration time – i.e. difficulty of achieving – other experiments have yet to publish numbers which get close to these

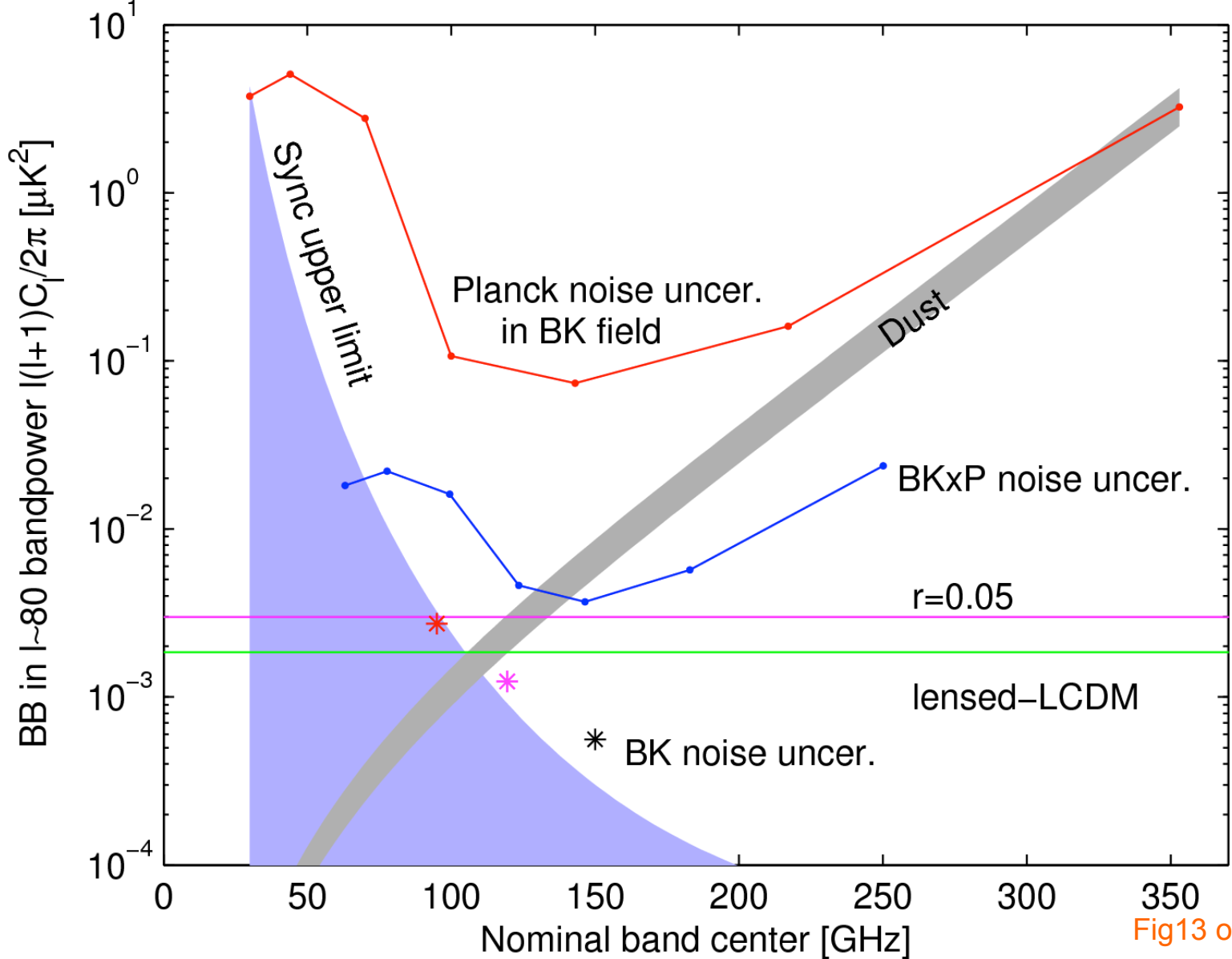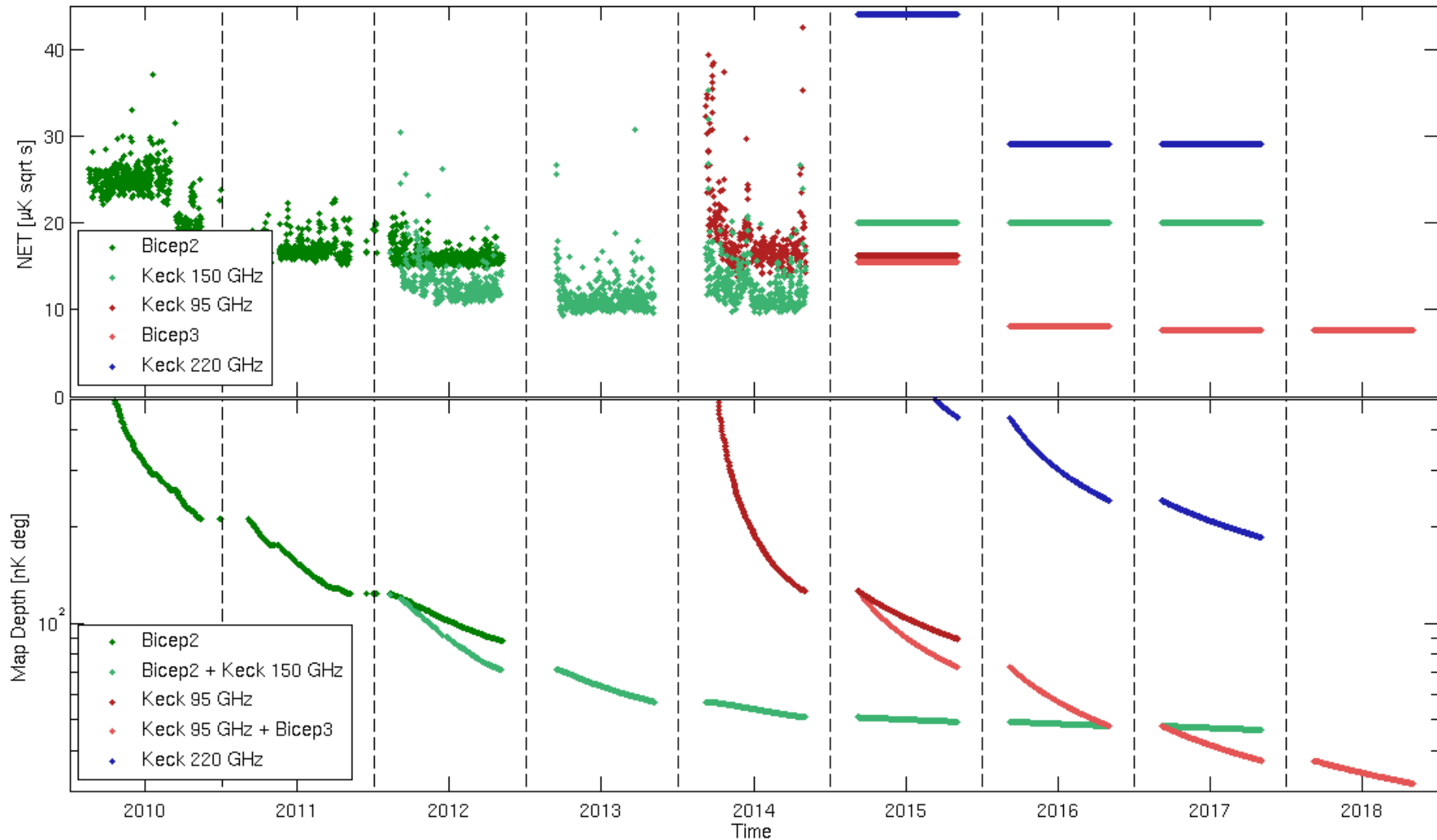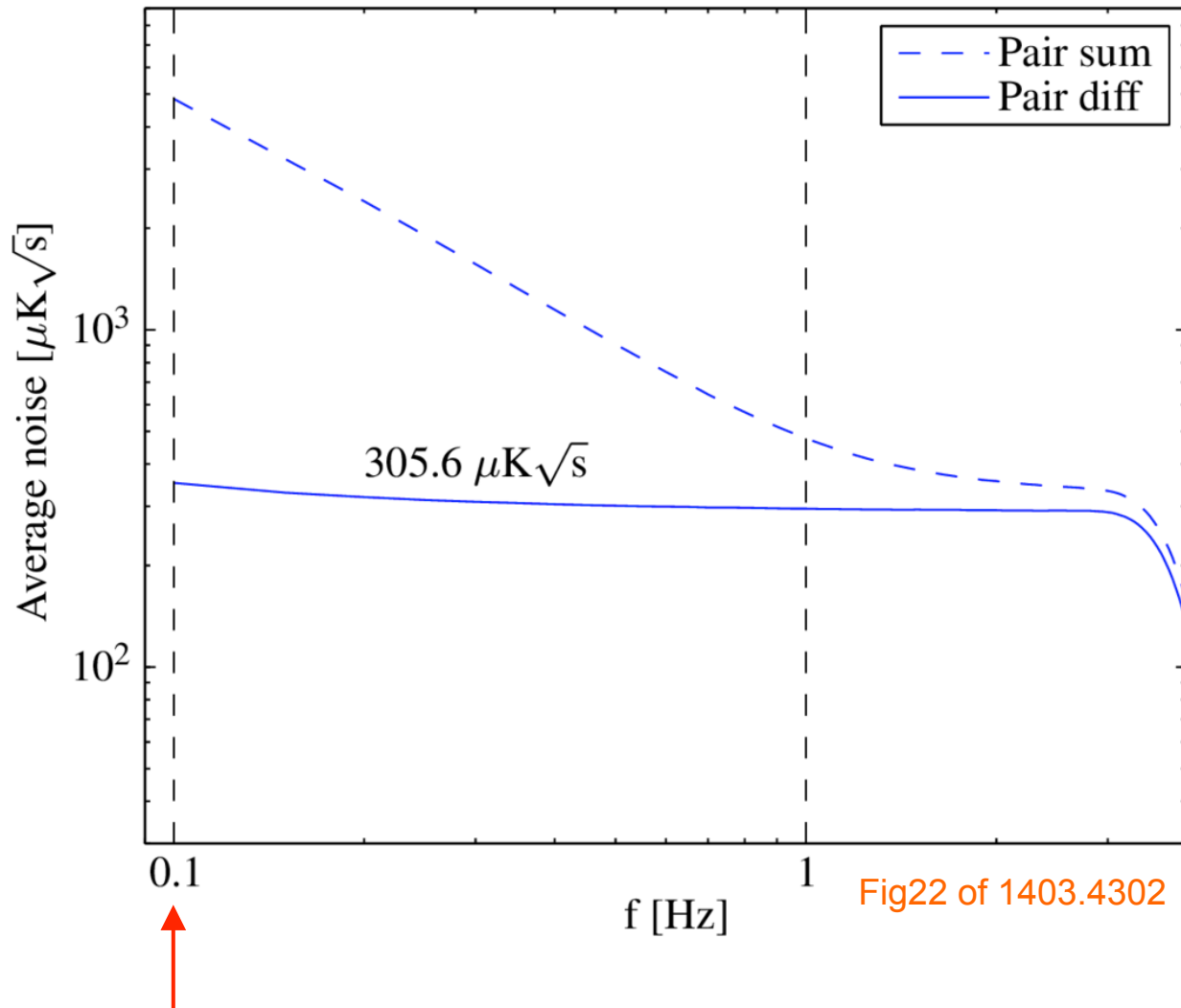# 4) Ability to constrain r is currently driven by Planck 353GHz noise

Fig13 of 1502.00612

If no need to remove dust σ(r) would already be twice as good

5) The BICEP2/Keck/BICEP2 program is on-going – now with 3 frequency bands: 95/150/220 GHz

6) Pair differencing can work very well!

Legend:
- – – Pair sum
- —— Pair diff

305.6 $\mu K \sqrt{s}$

Fig22 of 1403.4302

This is PSD of BICEP2 timestream data with telescope scanning 30deg on the sky at 1.5deg/sec.

This plot shows that the combination of BICEP2 technology plus the South Pole atmosphere can do at least this well in terms of 1/f noise.

(A weighted average of the 2011+12 data as used in the final map)

0.1Hz = multipole 25