CMB Probe Mission Study

May 17, 2017

Overview

- Admin + agenda check
- Probe PI Telecon - additional clarifications?
- Timing for TeamX
- Input on resolution/delensing from Blake (Lloyd)
- Technology Gap Process (see slides from Brendan)

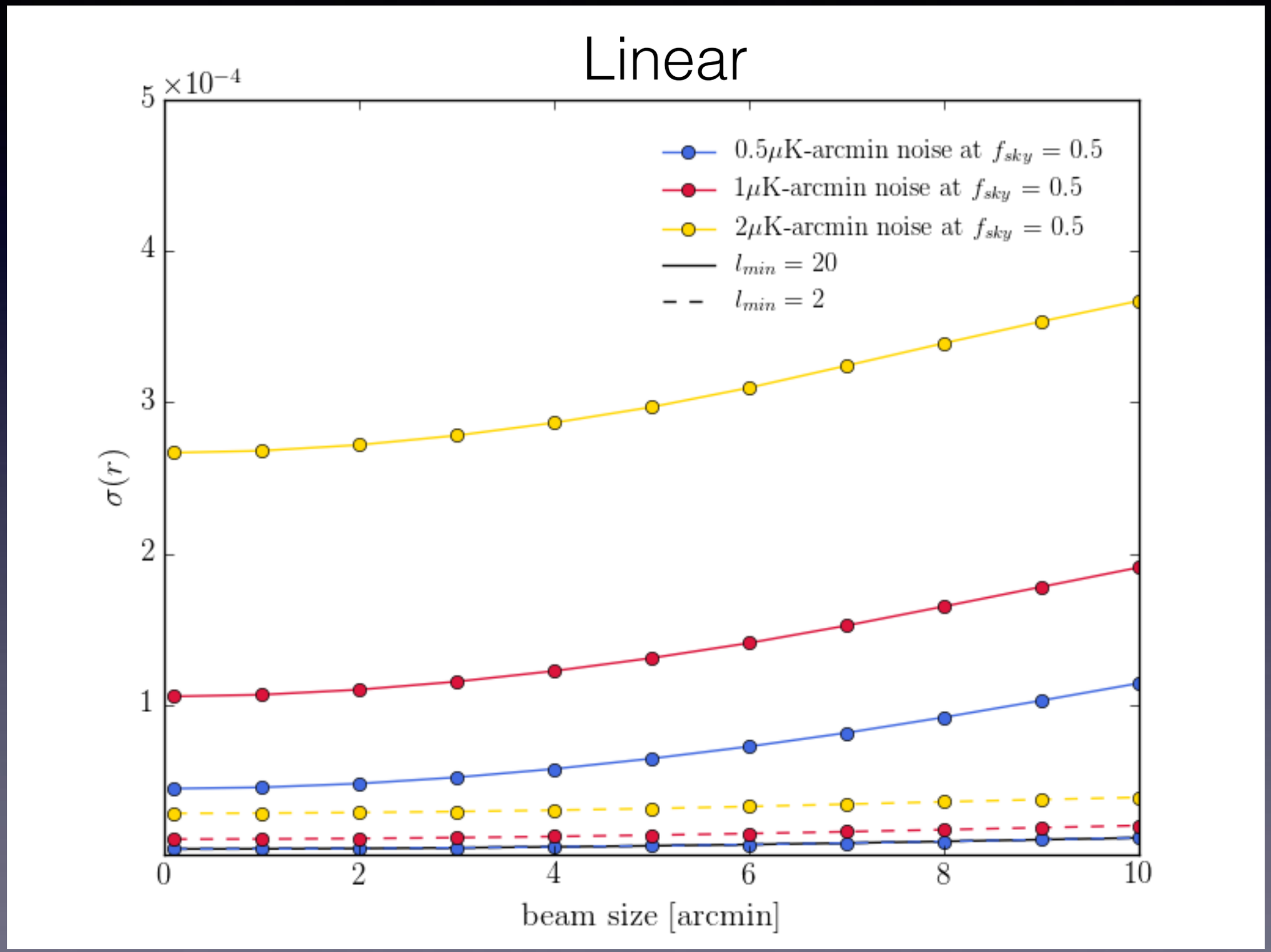
Probe PI Telecon

START TIME	TOPIC	PRESENTER
2:00	**DECADAL STUDIES PROCESS AND MANAGEMENT - HQ PERSPECTIVE** • OVERVIEW: Rationale for the Probe Studies; HQ and Decadal Panel Expectations; the Decadal Process • FUNDING: Start Date, Duration, End Date; No Cost Extensions; Funding for Studies and Design Labs; Cost Phasing • HQ OVERSIGHT: HQ's Oversight Approach and Process; Reporting and Deliverables (Quad Charts); Key Milestones; AAS Presentations • INDEPENDENT COST ESTIMATE: Process; Scope of $1B Cost Limit • TECHNOLOGY: General Approach to New Technologies; Expected / Routine Maturation by Study Teams; Costing Impacts	Rita / Shahid
2:30	**CONCURRENT DESIGN LABS INFORMATION** • TEAM-X PRESENTATION: Process, Products, etc. • IDC PRESENTATION: Process, Products, etc.	Kelley / Jennifer
3:00	**ENGINEERING INFORMATION** • DESIGN GUIDELINES: Contingencies and Margins; Rules of Thumb • FINAL STUDY PRODUCT : Definition of the Contents; Page Limits	Keith / Gabe
3:30	**QUESTIONS AND ANSWERS** • OPEN DISCUSSION	All Participants
4:00	**ADJOURN**	

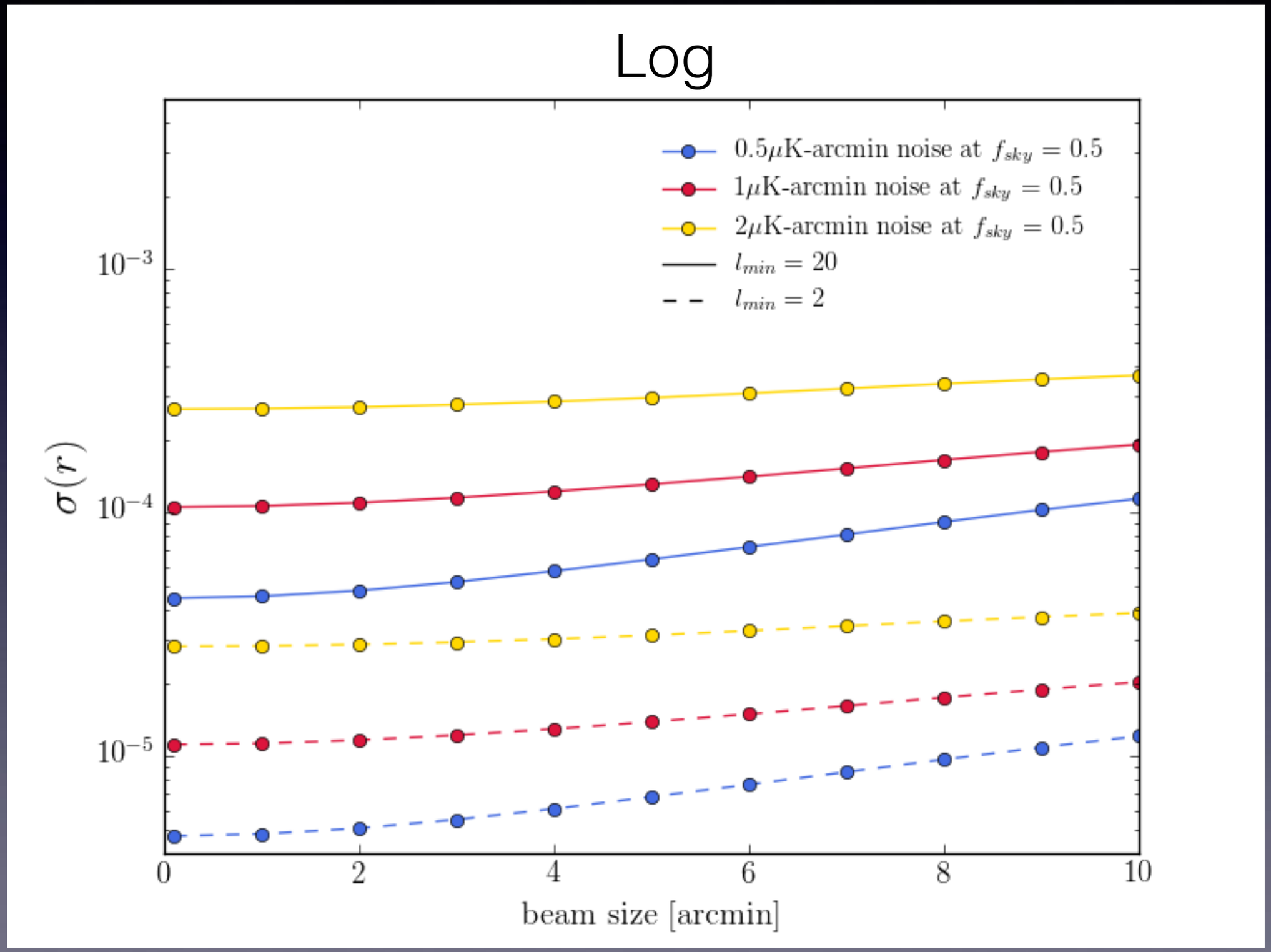
Timing for TeamX + Workshop

- Early in FY18 (10/2017 or 11/2017) vs. 1-3/2018?
  - With one iteration: later allows more time for more precise inputs to TeamX
- What is the advantage of being early?

Input on resolution/delensing



Input on resolution/delensing



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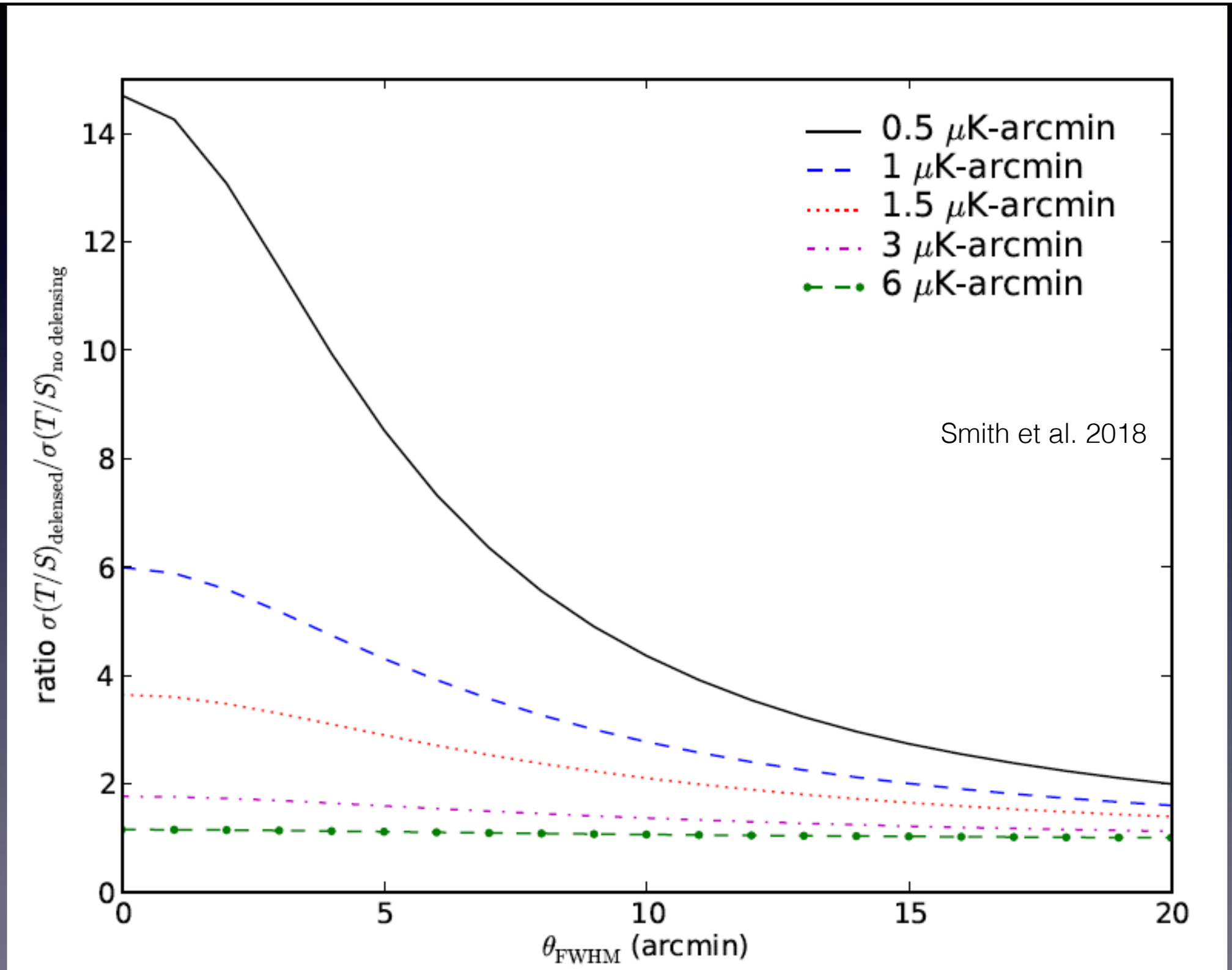
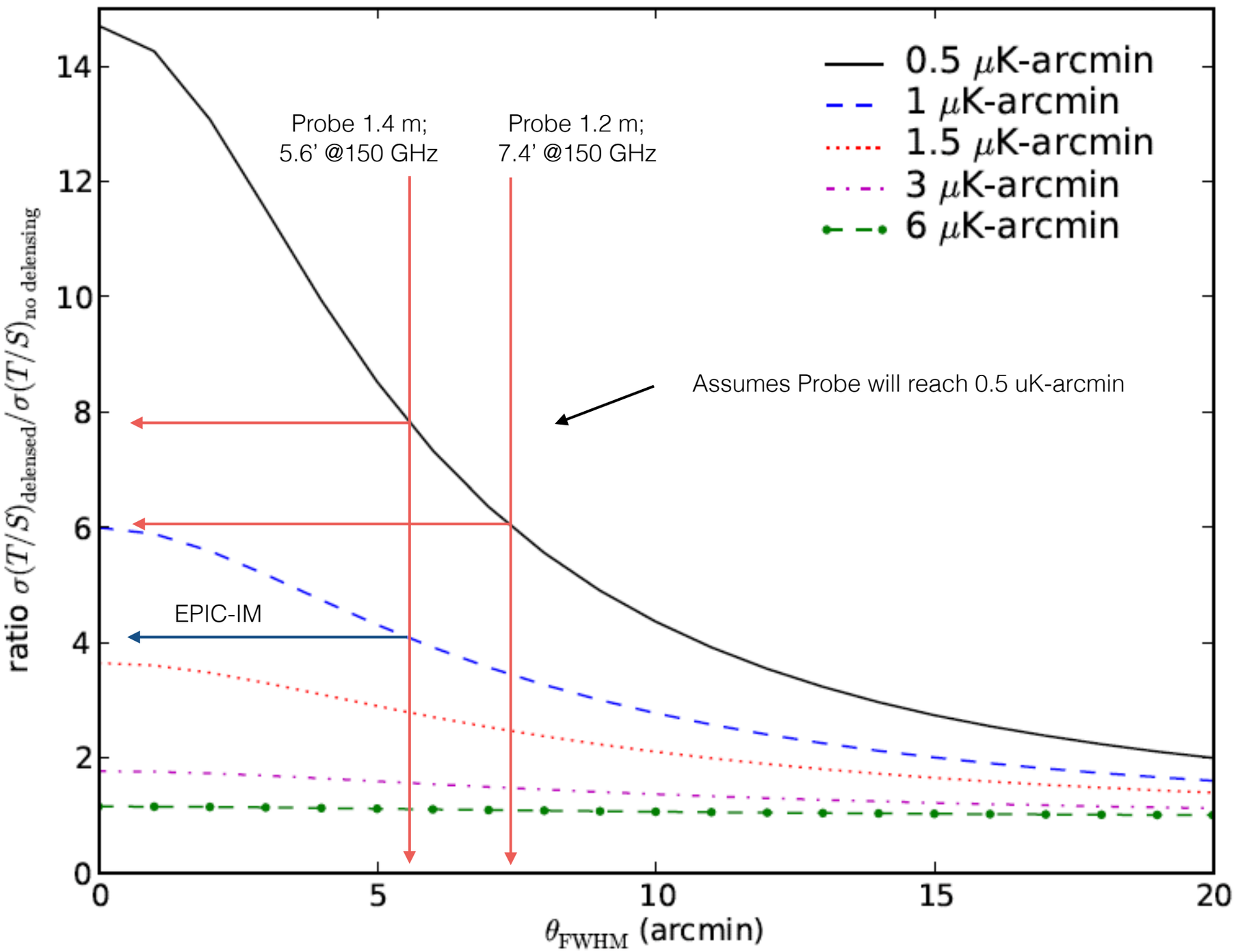


Input on resolution/delensing

From Smith et al. 2008

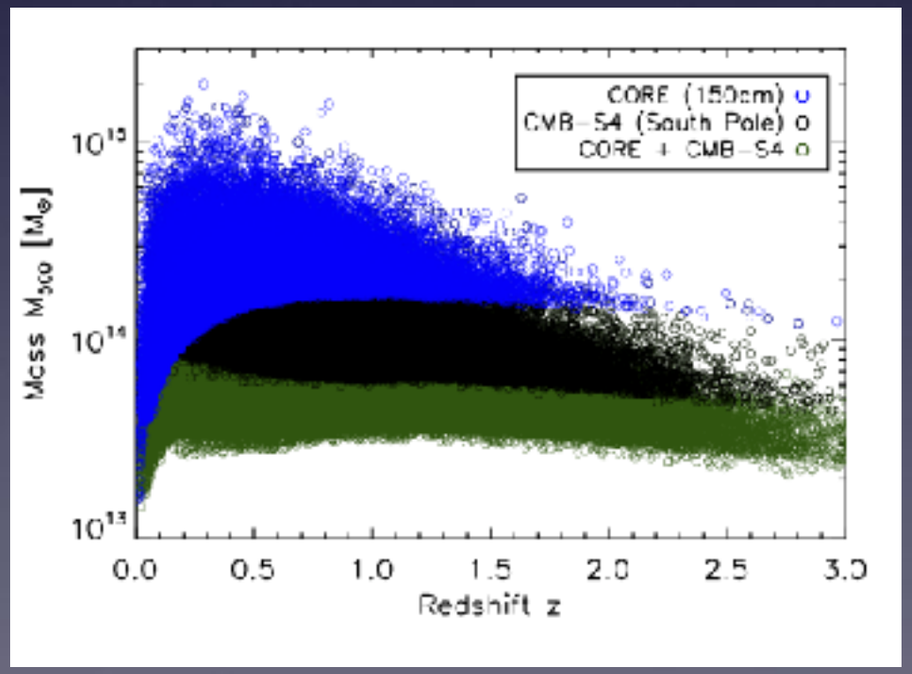


Backup Slides

Cluster Science (arXiv:1703.10456)

- Strong complementarity between a space mission and an S4 experiment
- Adapt the calculations for the Probe specifications?

Experiment	$N_{\rm clus}$	$N_{\rm clus}/{\rm deg}^2$	$N_{\rm clus}(z > 1.5)$
CORE-120	38,000	1.1	200
CORE-150	52,000	1.5	500
CORE-180	65,000	1.85	800
CMB-S4 (Atacama)	10,700	0.47	70
CMB-S4 (South Pole)	71,000	6.9	5,000
CORE-150+CMB-S4 (Atacama)	56,000	2.5	850
CORE-150+CMB-S4 (South Pole)	222,000	21.5	20,000



Melin et al. 2017

Action Items

- Raphael will organize a group of people who will work on a particular target for r
- Lloyd will organize study of delensing
- Lloyd will coordinate the data challenge; Shaul to work on band and noise definitions
    - SH Working on bands
- Shaul will communicate the suggestion of a Foreground workshop to Jamie/Graca
    - Communicated.
- Al will organize a group that will assess the motivation for a super-pixie or develop the case for compspec (complementary spectrometer)
- Shaul will write to Darren Dowell, and Giles Novak regarding galactic magnetic field and galactic dust science; Bill will talk to Aureliene.
    - Sent e-mail to Novak + Dowell; Novak responded