Beamforming

Output/interface:

- coherent voltages (timing beams)
- large output data rate
- problem

Beamforming

Beam placement:

- limb (high-frequency)
- all (low-frequency)

Beam size, for 1 km core array: $11' \times (100\mathrm{MHz}/\nu)$

- 4–$11'$ (SKA-LOW)
- $\sim 1'$ (SKA-MID2)

Moon is $30'$. Hence:

- 50 beams (SKA-LOW, full moon)
- 100 beams (SKA-MID2, limb only)

Beamforming

Primary beam:

- $7^\circ \times (100\mathrm{MHz}/\nu)$ (SKA-LOW)
- $1.2^\circ \times (1\mathrm{GHz}/\nu)$ (SKA-MID)

Sufficient for moon (0.5°).

Any commensality?

For SKA-MID, no: moon raises system temperature.

For SKA-LOW, maybe? $T_{\mathrm{moon}} = T_{\mathrm{sky}}$ @ 160 MHz