

THE SIMPLEST POSSIBLE ERROR MODEL:

$$f^{obs} = f^{true} + b(s, D) + n(s, D, f)$$

"BIAS" "NOISE"

ISOLATED
POINT
SOURCE
FLUX

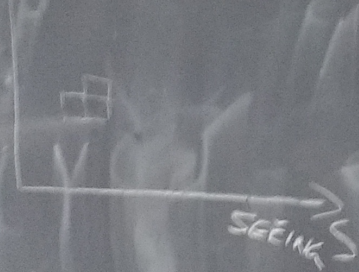
$$f^{obs} \sim P(\mu, V)$$

ASSUME $P = \text{Gaussian}$

$$\text{Mean } \mu = f^{true} + b(s, D)$$

$$\text{Variance } V = \sigma_n^2(s, D)$$

DEPTH D



MAPS

$$1) \langle f^{obs} - f^{true} \rangle \rightarrow b$$

$$2) \langle (f^{obs} - f^{true})^2 \rangle = \langle (b + n)^2 \rangle$$

$$= \langle b^2 \rangle + 2\langle bn \rangle + \langle n^2 \rangle$$

$$\rightarrow b^2 + 0 + \sigma_n^2$$