

Boomerang 2002

Instrument Crew

Caltech: Brendan Crill, Bill Jones, Andrew Lange

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Case Western (UCSB) : Ted Kisner, Tom Montroy, John Ruhl, Eric Torbet

IROE: Andrea Boscaleri, Enzo Pascale

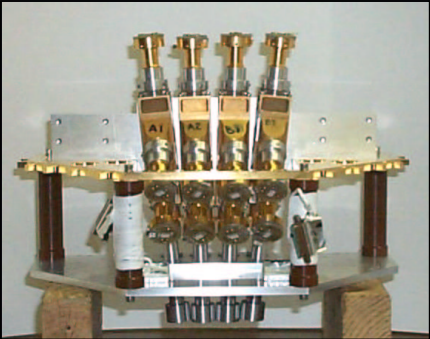

JPL: Jamie Bock

U. Rome: Paolo deBernardis, Silvia Masi, Francesco Piacentini, Giuseppe diStefano, Armando Iacoangelli

U. Toronto: Carrie MacTavish, Barth Netterfield, James Watt

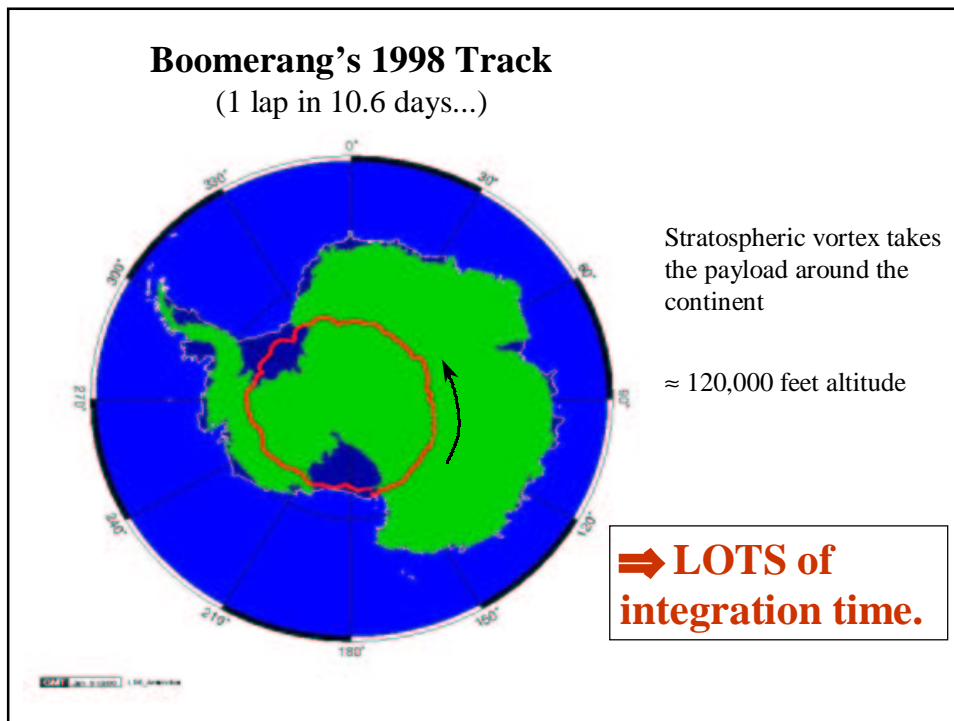
ITP, 19 August 2002: John Ruhl, Case Western Reserve University.

Boomerang Basics...



1.2m diameter telescope
⇒ 10.5' fwhm at 2mm

3-color, 12 bolometer, 285mK,
polarization sensitive focal plane



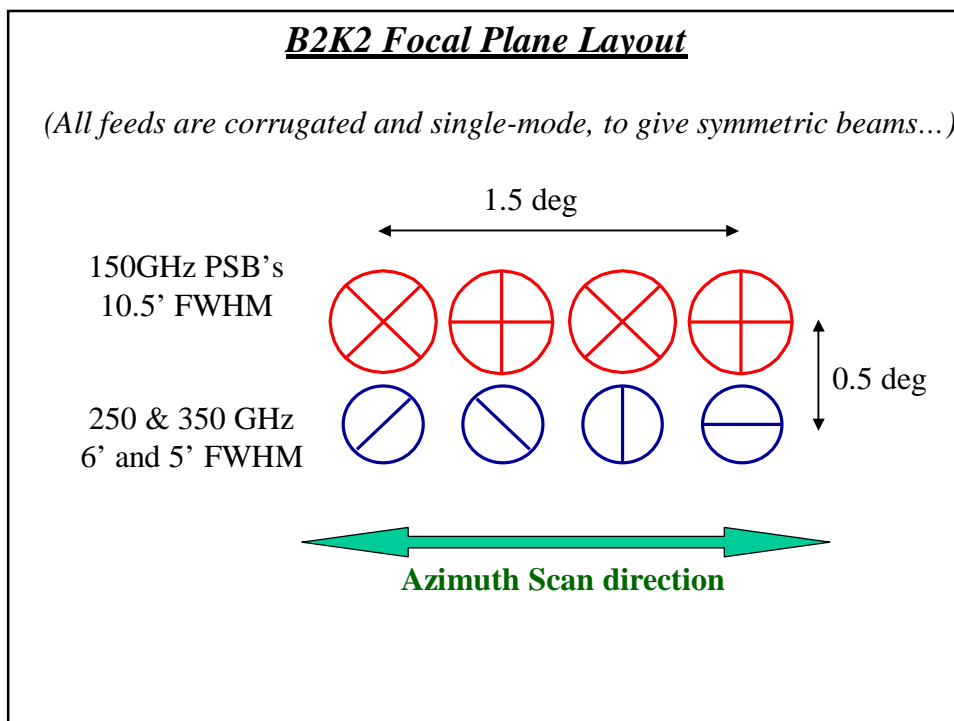
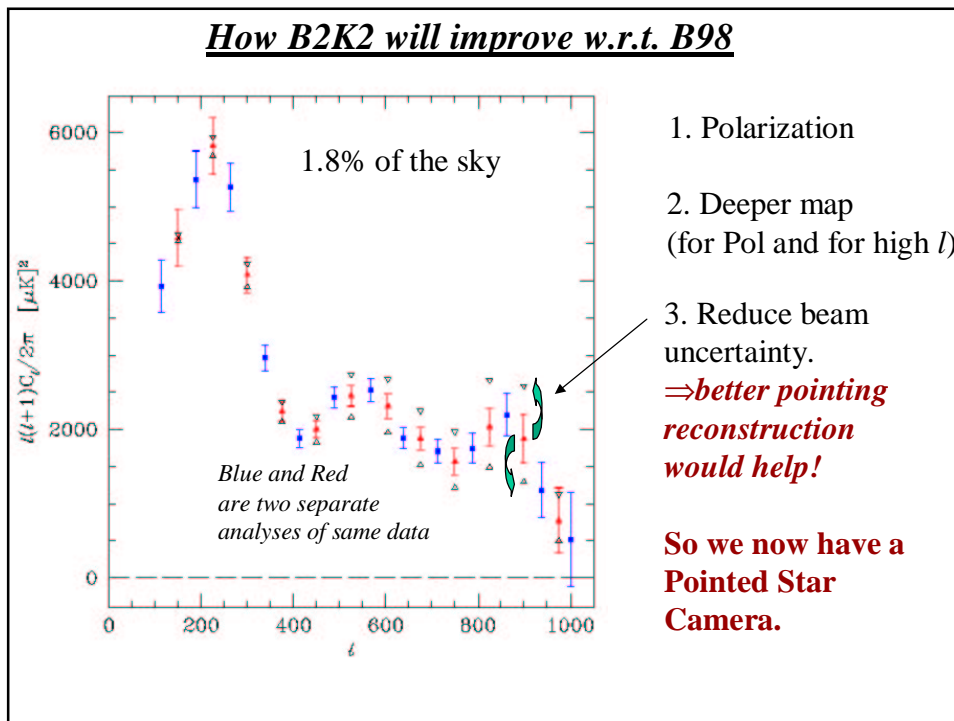
B2K2 Science Goals

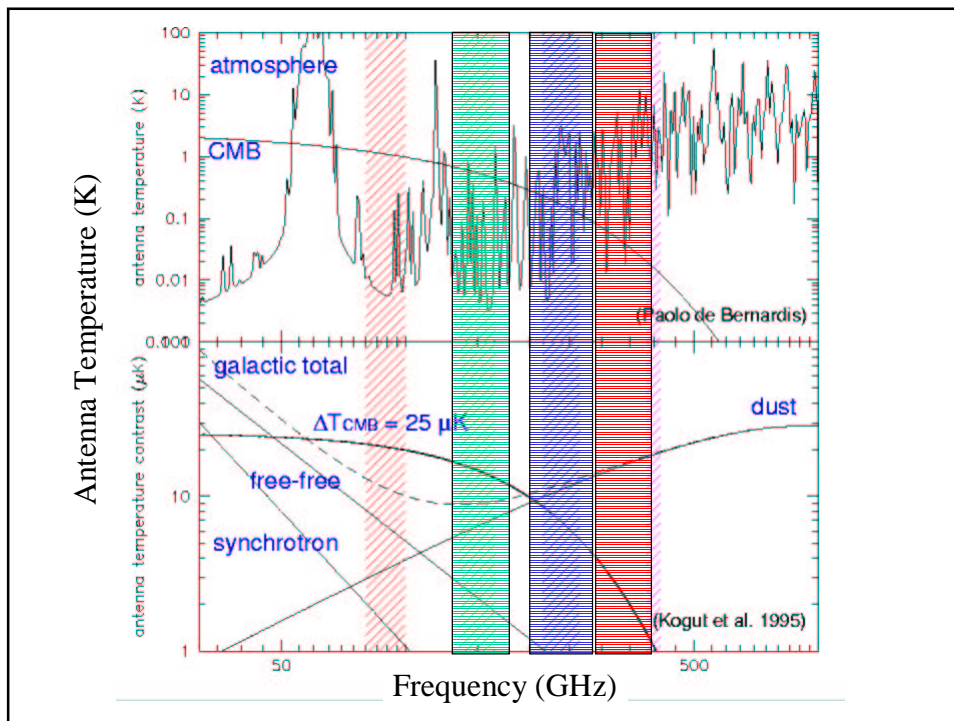
CMB Polarization

- **Pure Polarization:** Make an ~80 sq. deg. map of polarization with ~7 uK/pixel sensitivity (Q and U), to measure raw CMB polarization signal. (5 days)
- **Polarization-Temperature cross correlation:** ~800 sq. deg. map of polarization and temperature with ~22 uK/pixel (Q and U) sensitivity. (5 days)
- **Characterize polarized Galactic foreground emission.**

Temperature Anisotropies

Smaller scales: Use better pointing and deeper coverage to make better measurements of 3rd, 4th, ?... peaks in power spectrum.





Polarization Sensitive Bolometers

- The absorber metallization is in one direction only, eg vertical.
- Two of these devices are mounted orthogonally in the same waveguide, in front of 1/4 wave backshort.

Developed at Caltech/JPL
(Jones, Bock, Bhatia & Lange, SPIE in preparation)

