

CBI pol to Apr'05 @Chile

Bicep1..2 @SP

Quiet1

Quiet2

1K HEMTs@Chile

Acbar to Jan'06, 07f @SP

QUaD @SP

CBI2 to early'08

ABS

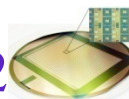
keck@SP

Spider

2312
bolometer
@LDB

Clover
@Chile

SCUBA2



(12000 bolometers)

JCMT @Hawaii

ACT

(3000 bolometers)

3 frequencies @Chile

EBEX@LDB

LMT@Mexico

2017

2004

2006

2008

2005

2007

SPT

LHC 2009

Bpol

WMAP @L2 to 2009-2013?

(1000 bolometers)

@South Pole

SPTpol @L2

ALMA

Polarbear

(Interferometer)

(300 bolometers)@Cal/Chile

@Chile

Planck09.3

SZA

(Interferometer)

@Cal

APEX
(~400 bolometers)

@Chile



Boom03@LDB

DASI @SP

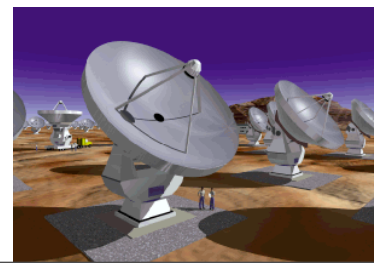
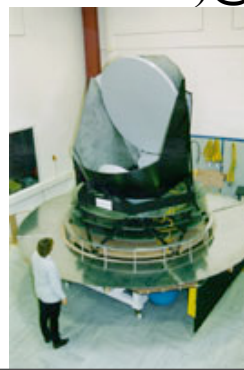
CAPMAP

AMI



GBT

52 bolometers
+ HEMTs @L2
9 frequencies



ACBAR08

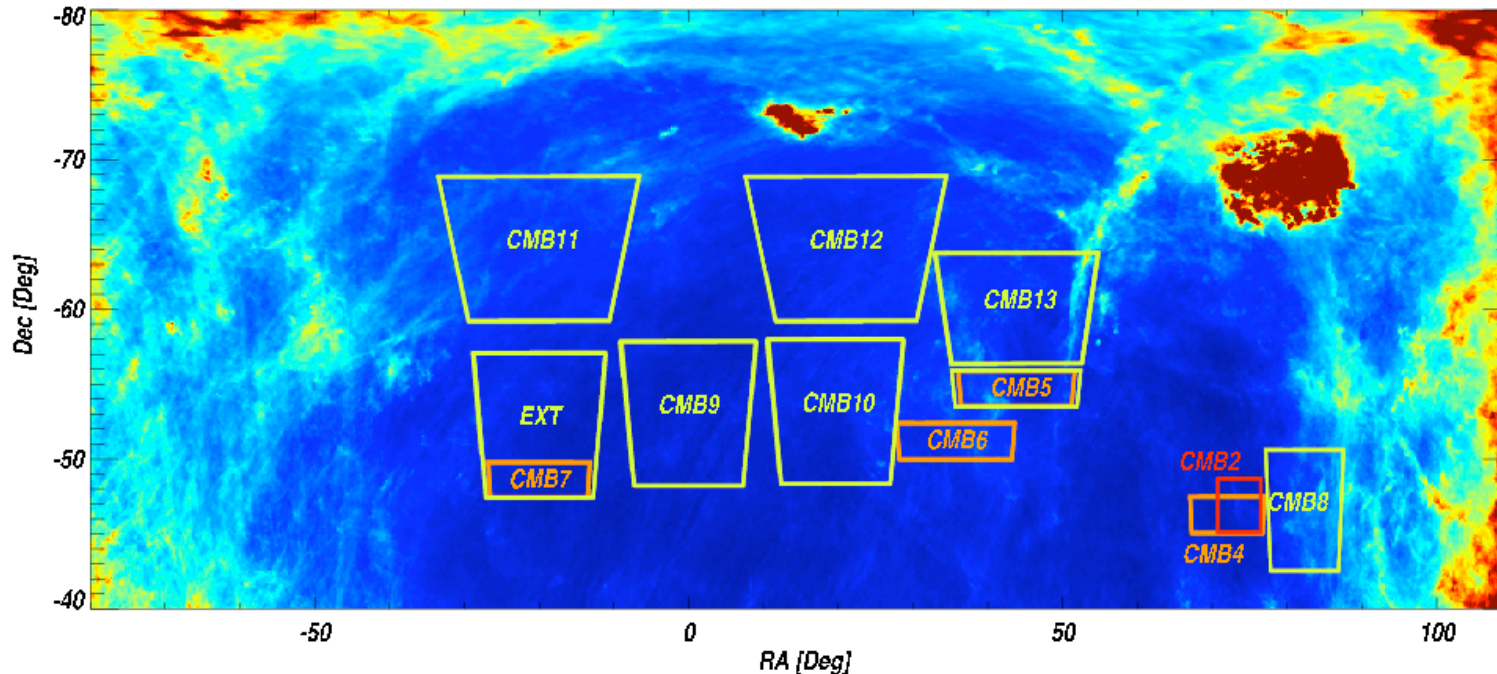
1.7% of sky

Reichardt et.al. astro-ph Jan08, revised Oct08 for wmap5

2.1 x detector-hours & 4.9 x sky coverage of ACBAR07 (new wide & shallow fields)

Calibration uncertainty: 2.1% from 6% via WMAP5 - improved from WMAP3

ACBAR fields on the IRAS 100 micron map
0.00 0 2 4 6 8 10 10 MJy/sr

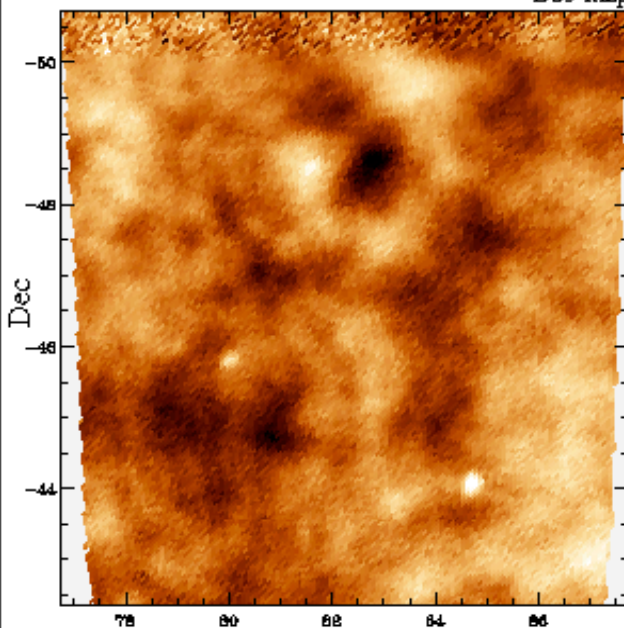


3rd & 4th & 5th peaks, brilliant damping tail

ACBAR excess > 2000, 1.1sigma consistent with CBI excess (tSZ), but could be sub-mm sources @ 150 GHz qsrc=29+12-28 cf. <~17-29

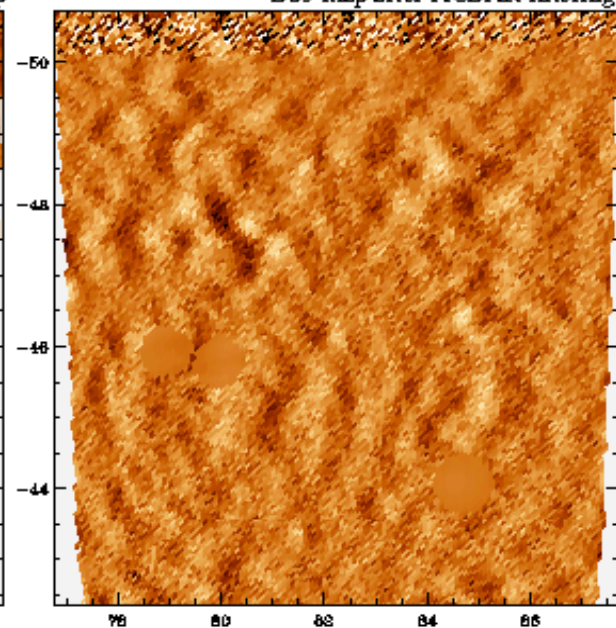
-350 350 μK
-300 -200 -100 0 100 200 300

B03 map

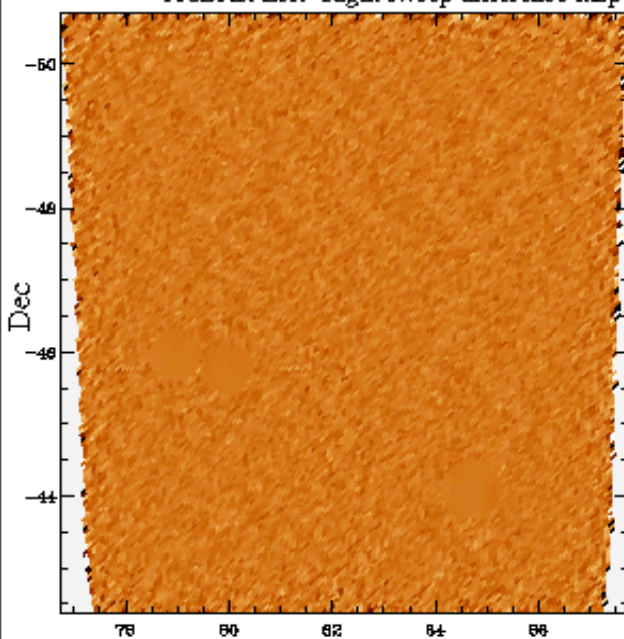


-150 150 μK
-150 -100 -50 0 50 100 150

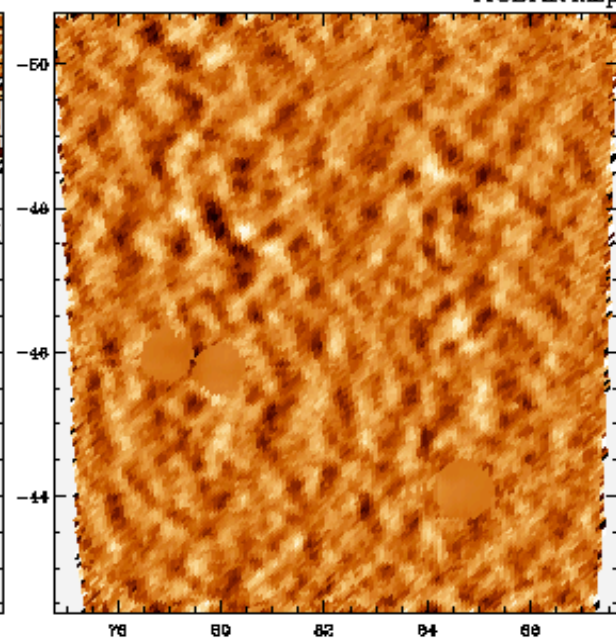
B03 map after ACBAR filtering

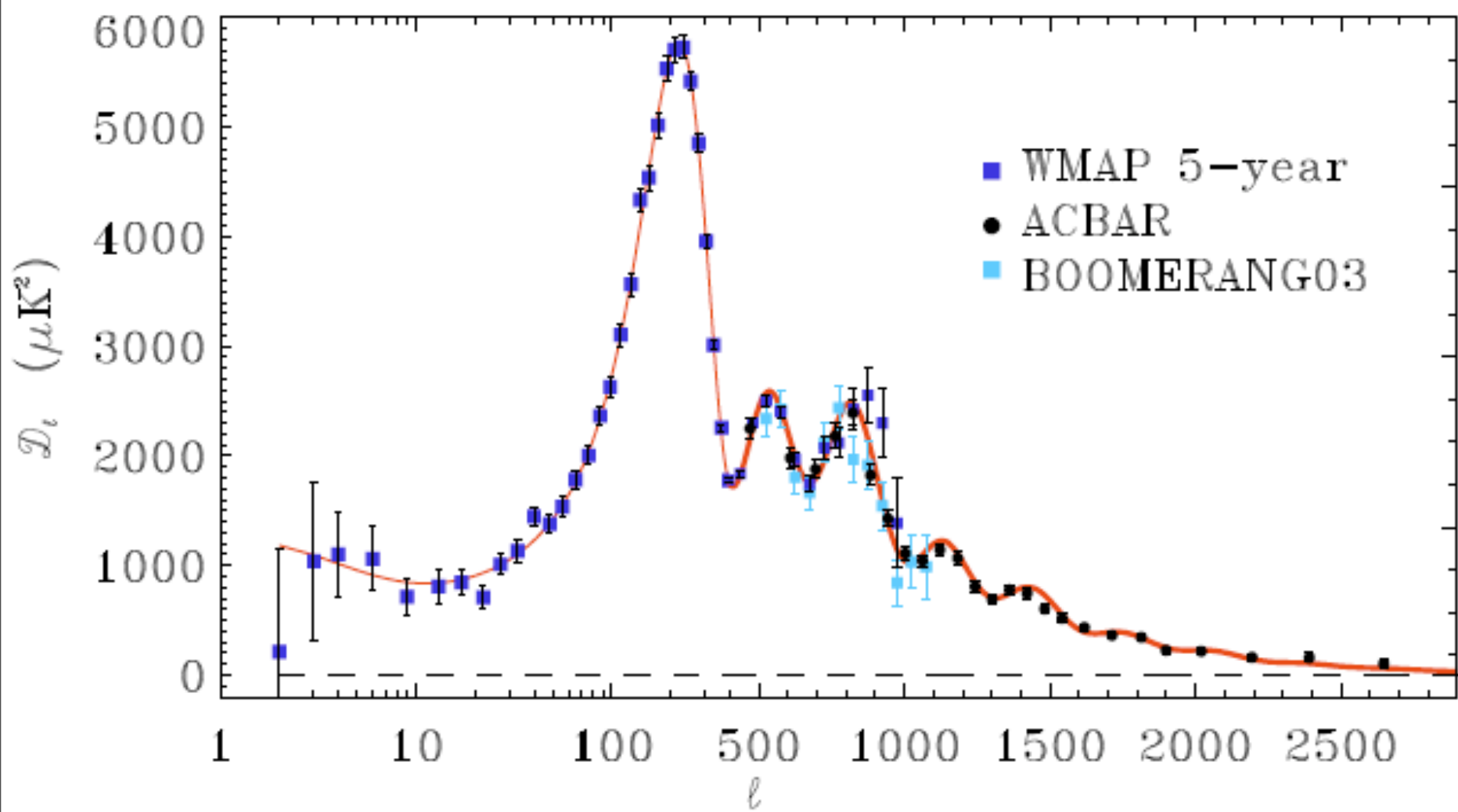


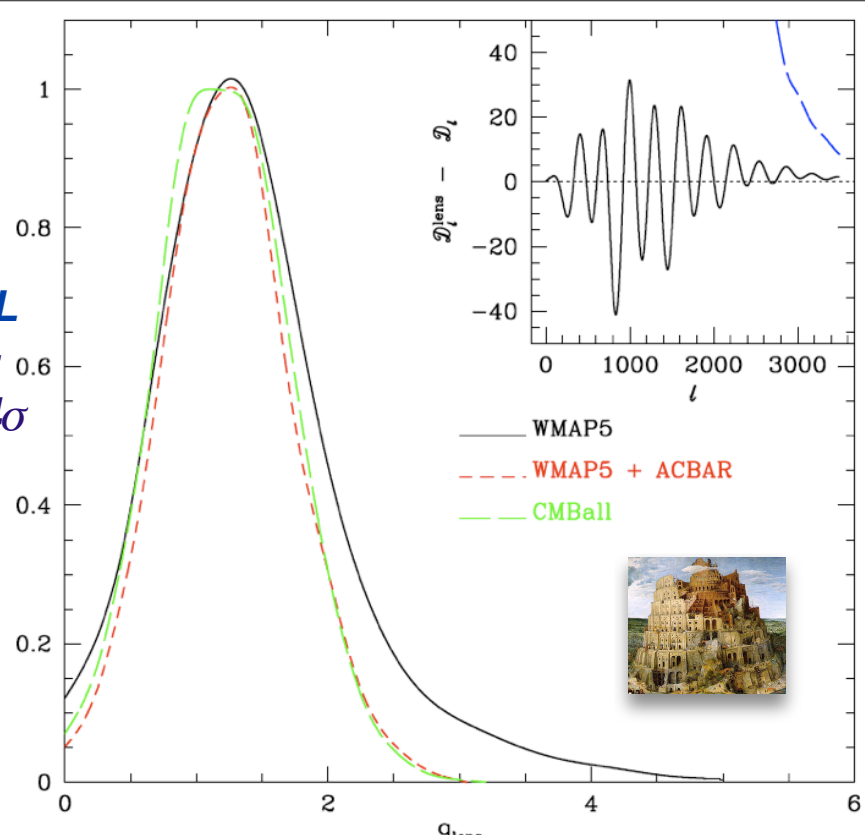
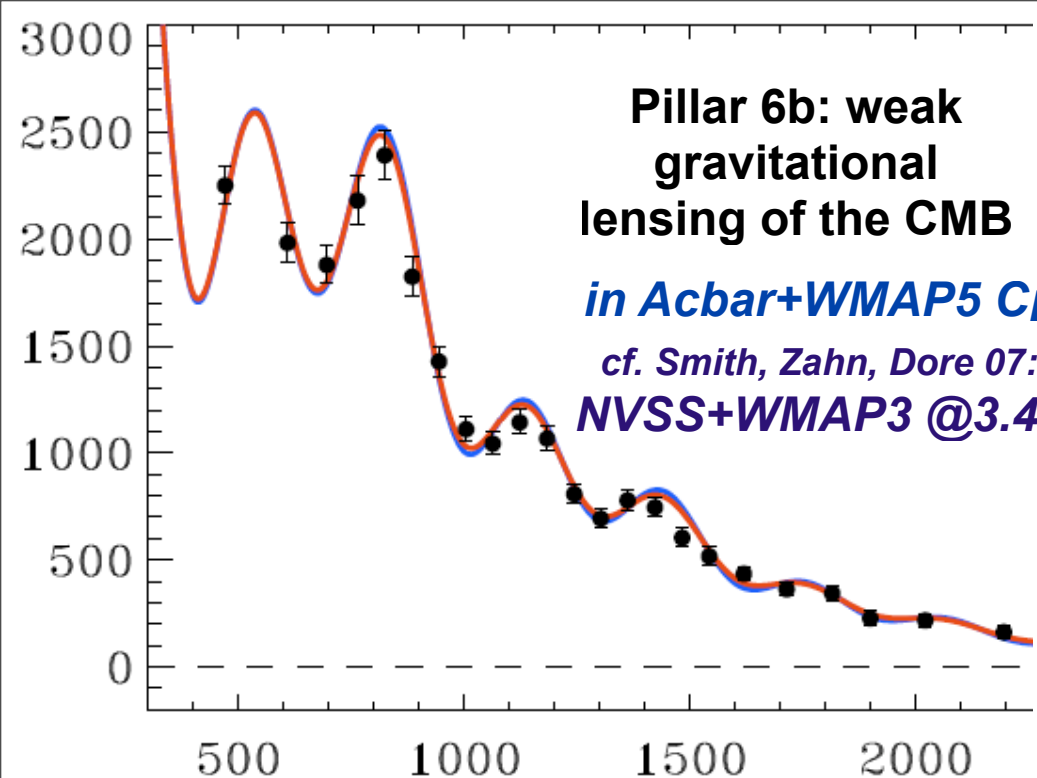
ACBAR Left-Right sweep difference map



ACBAR map







$$C_{\ell}^{\text{lens}} = C_{\ell}^{\text{no-lens}} + q_{\text{lens}} \Delta C_{\ell}^{\text{lens}}$$

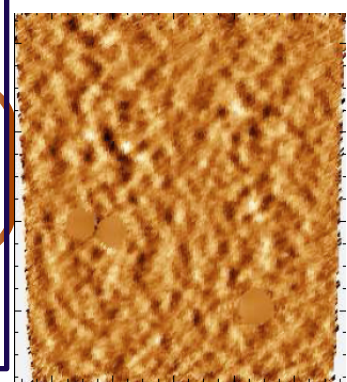
$$\Delta \ln \mathcal{E} = \ln [P(\text{lens} | \text{data}, \text{theory}) / P(\text{no-lens} | \text{data}, \text{theory})]$$

wmap5 $q_{\text{lens}} = 1.34^{+0.27(+1.51)}_{-0.26(-0.85)}$

wmap5+acbar $q_{\text{lens}} = 1.23^{+0.21(+0.83)}_{-0.23(-0.76)}$

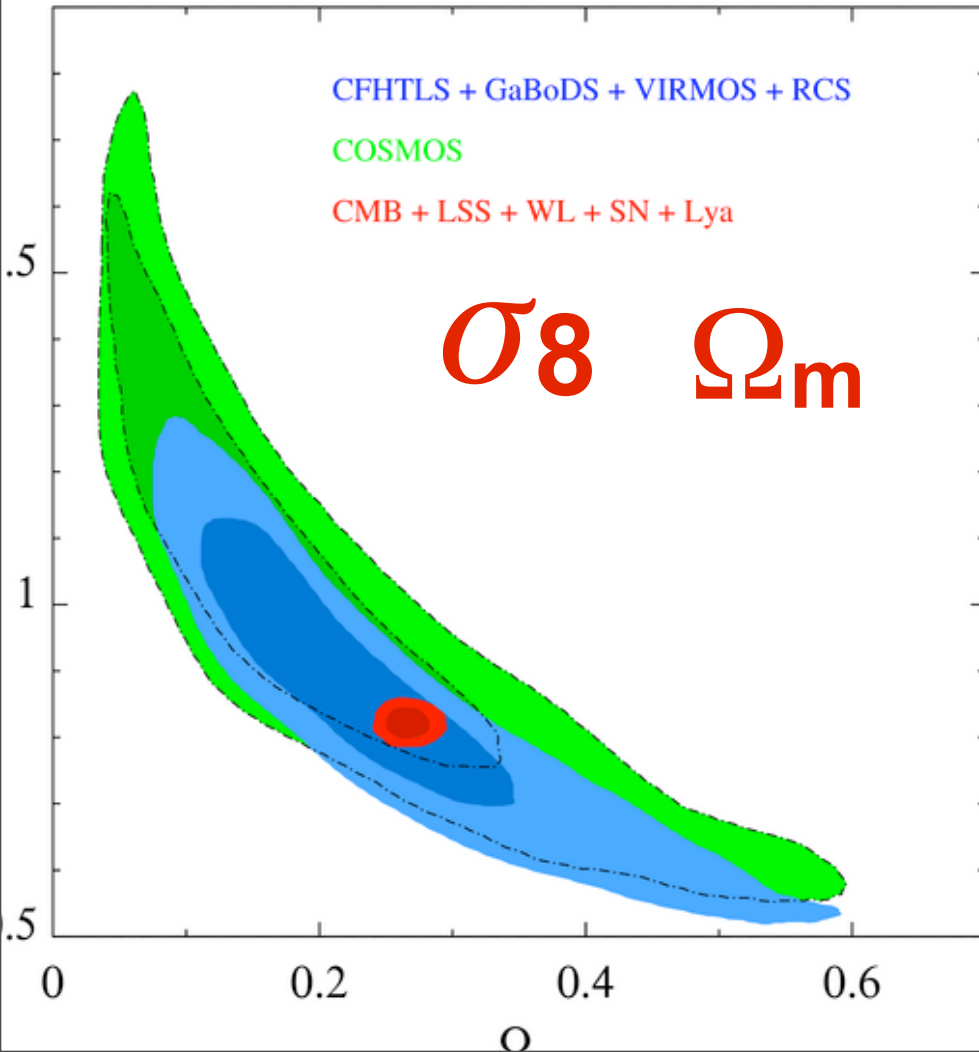
CMBall $q_{\text{lens}} = 1.21^{+0.24(+0.82)}_{-0.24(-0.76)}$

Bayesian evidence
$\Delta \ln \mathcal{E} = 2.04$
$\Delta \ln \mathcal{E} = 2.89$
$\Delta \ln \mathcal{E} = 2.63$



Weak Lens now: CFHTLS-wide(22sq deg)+GaBoDS (13) +Virgos-Descart(8)+RCS1(53) Apr07+ & COSMOS07

acbar+wmap5 lens? σ_8 .89+.07-.09 (+.26-.34)



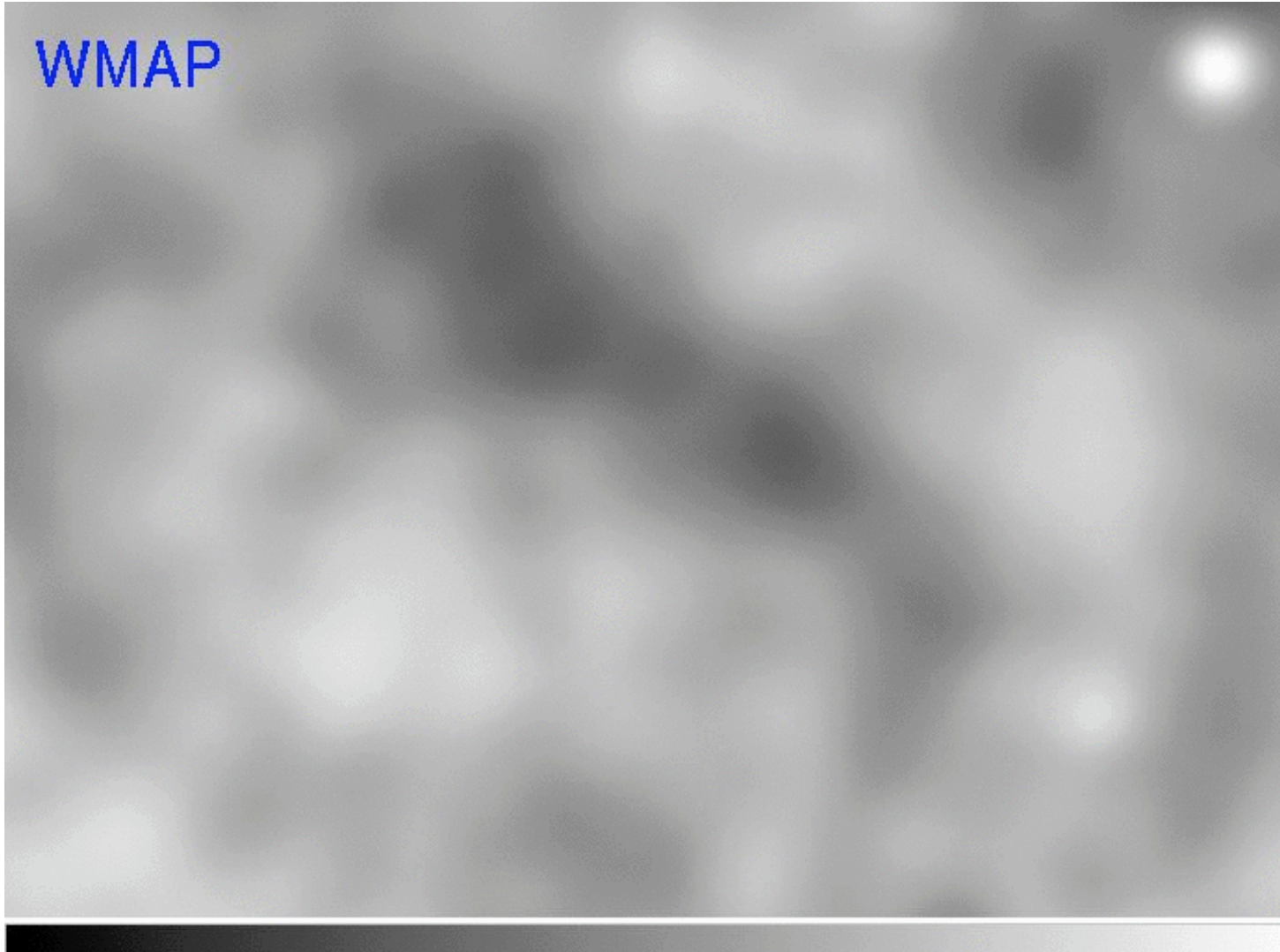
case	Ω_m	σ_8
LCDM	0.265+-.011	0.828+-.015
w0	0.265+-.013	0.829+-.025
w0-wa	0.265+-.014	0.831+-.027
ϵ_s	0.265+-.013	0.829+-.024
$\epsilon_s - a_s - \zeta_s$	0.265+-.013	0.832+-.025

recent weak lensing "alone"		
CFHTLS	0.26+	0.83+.04-.05
cf.		0.80+.05-.05
COSMOS	0.26+	0.88+-.07-.08
cf.		0.87+-.074

recent SZ CBlexcess "cmb-alone"	
CBI+Acbar+Bima	σ_8 SZ ~.93 +.04-.05

planck1+jdem+dune	.260+-.004	.850+-.005
$\epsilon_s - a_s - \zeta_s$ case	$\epsilon_s = .02+.07-.06$	

WMAP-BOOM-ACBAR-ACT: the high resolution frontier



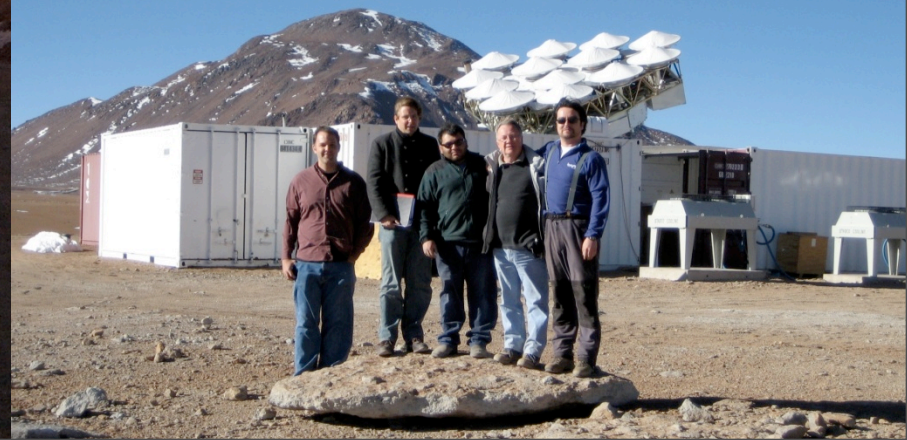
Toby
Marriage
01.08 for the
ACT
collaboration

ACT@5170m



why Atacama? driest desert in the world. thus: cbi, toco, apex, asti, act, alma, quiet, clover

CBI2@5040m



end