

Suborbital Experiments

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 **Outlook for the Next 5 Years** 

 <p>SPIDER</p>	 <p>EBEX</p>	 <p>POLARBEAR</p>	 <p>PIPER</p>
 <p>BICEP2 -> KECK</p>	 <p>QUIET</p>	 <p>SPT POL</p>	 <p>MBI -> QUBIC</p>
	 <p>ABS</p>	 <p>ACT-POL</p>	 <p>QUIJOTE</p>

Bock



Future Experiments

Eric Hivon/CMBPol

adapted from Astro2010 CMBPol Project Papers (2009)

Experiment	Location	Date	Technology	FWHM (arcmin)	Freq [GHz]	Detector pairs	Modulator
Satellites							
Planck-LFI	L2	2009-2012	HEMT	33/24/14	30/44/70	2/3/6	Scan
Planck-HFI	L2	2009-2012	PSB	10/7/5/5	100/143/217/353	4/4/4/4	Scan
US-led Balloon borne							
Spider	Antarctica	Dec 2011 ?	TES	60/40/30	96/145/225	288/512/512	HWP/Scan
PIPER I	TX; NM	mid 2013	TES	21/15	200/270	2,560/2,560	VPM
EBEX	Antarctica	Dec 2011	TES	8	150/250/410	398/199/141	HWP
US-led Ground based							
Poincare	?	?	TES	84/30/24	40/90/150	36/300/60	VPM
Keck Array	South Pole	2010-2012	TES	55/37/26	100/150/220	288/512/512	HWP/Scan
BICEP 2	South Pole	2009-2011	TES	37	150/250/410	256	HWP/Scan
ABS	Chile	2010?	TES	30	150	200	HWP
QUIET I	Chile	2009-	MMIC	20/10	44/90	~100/1,000	ϕ -switch
PolarBear/HTT	Chile	2011?	TES	7/3.5/2.4	90/150/220	637	HWP
POLAR I	South Pole	2012	TES	6	150	2,304	Scan
ACTPol	Chile	soon	TES	2.2/1.4/1.1	90/145/217	~1,000	Scan
SPTPol	South Pole	2013?	TES	1.5/1.2/1.1	90/150/225	~1,000	Scan
European-led Ground based							
QUBIC BRAIN	Dome C	?	TES	60	90/150	256/512	Interferom
QUIJOTE	Tenerife	2010?	HEMT	54/24	10/30	34	HWP



- We've also seen
 - S-PASS – Low Frequency
 - CBASS – Low Frequency
 - PILOT – High Frequency
- The US CMBPol effort asserted that technology development was required.
 - If this is so, the European effort seems small



BICEP / Keck : map depth & sensitivity to r

