APEX

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APEX team
• APEX is a submillimeter telescope that presently is being commissioned at the best accessible site on Earth - llano de Chajnantor in Chile (5100m altitude)

• Partners:
  MPIfR (50%)
  ESO (27%)
  Sweden (23%)

• Antenna from VERTEX, 12m diameter (a modified copy of one of the ALMA prototype antennas)
APEX INSTRUMENTS

Bolometers:
- LABOCA, 300 pixels at 850 µm (MPIfR)
- 37 elements at 350 µm (MPIfR)
- 300 pixels at 2 mm for SZ (Berkeley, PI)

Heterodyne:
- Facility instr. - 3 receivers from 210 to 500 GHz and a THz channel (1.24–1.40) - Sweden.
- PI instr. (7 pixel arrays) at 650 and 850 GHz (CHAMP) - MPIfR
- 183 GHz water vapour radiometer for calibration purposes.

Spectrometer:
- 2 independent channels, bandwidth 64, 128, 256, 516, 1024 Ghz, 2048 channels
Photogrammetry in December 2003
Surface accuracy about 50 microns (rms)
Holography transmitter on Cerro Chajnantor (5500m)
Holography map: final surface accuracy < 20 micron rms

Average Phase Map 16 May 2004
Surface rms < 20 µm
OPTICAL POINTING TELESCOPE used from January 2004 to verify the pointing characteristics
SIMBA, 37 pixel bolometer at 1.3mm, from SEST, was used to verify the radio pointing (pointing rms about 3")
FLASH
PI instrument for telescope commissioning and first submm light. Two pixels, one at 460 GHz the other at 810 GHz. Installed in June 2004.
Orion Bar [Cl]
• **San Pedro base:** Control Room, 2 Labs., Offices, 12 + 4 dormitories. Meeting room.

• **Staff:** All staff (except one astronomer) now hired
  
  6 astronomers,
  
  4 TIOs,
  
  8 engineers,
  
  6 contractors (including adm, cooking, cleaning).
FUTURE:

- Tertiary optics and LABOCA. Jan-Apr '05.
- Operations. April 2005 (?)