

Call for LABOCA Science Verification

Summary

The Large Bolometer Camera for APEX (LABOCA), a 295-element bolometer array operating at $870\ \mu\text{m}$, has successfully passed its pre-shipment review, and will be installed on the APEX 12m telescope on Chajnantor in September 2006. ESO now invites proposals for science verification from the ESO community. Pending successful on-sky commissioning, ESO also proposes to schedule its share of LABOCA observing time on the telescope in October and December 2006 as further Science Verification. All observations will be performed in service mode by the local APEX staff. All proposals should be sent to cdebreuc@eso.org by noon CEST on Monday 4 September 2006.

Telescope and Instrument

APEX is a novel 12m submillimetre telescope at an altitude of 5107m on the Llano de Chajnantor in Chile, and is a collaboration between the MPIfR Bonn at 50%, the European Southern Observatory at 27% and the Onsala Space Observatory at 23%. The ESO share of the APEX observations will be performed during night-time and morning (till 11am local time), in service mode, by APEX and ESO staff. More details on APEX can be found at <http://www.apex-telescope.org>.

LABOCA is a bolometer array operating in the atmospheric window at $870\ \mu\text{m}$ (345 GHz). It has 295 channels arranged in a hexagonal layout consisting of a center channel and 9 concentric hexagons. The APEX beam size at this wavelength is $18''$, and the total field of view for LABOCA is $11.4'$. The array is undersampled on the sky; the separation between channels is twice the beam size ($36''$). To obtain fully sampled maps it is necessary to move the array on the sky during observations by scanning in one direction and then stepping in the other, or by moving in a circular or spiral pattern in the telescope or astronomical coordinate system. More details on LABOCA can be found at <http://www.apex-telescope.org/bolometer/>.

Proposals are invited from the community for two observing modes: “Mapping large areas” (for areas larger than the $11'$ field of view) and “Mapping small areas”. **No wobbling secondary will be available**, hence “on-off” photometry of single sources will **not** be offered yet. A detailed discussion of these observing modes is given on the following web page: <http://www.astro.uni-bonn.de/~abeelen/labocawiki/Laboca/ObsTime>

Exposure time estimates should assume a noise equivalent flux density $\text{NEFD} = 125\ \text{mJy s}^{1/2}$, 240 working bolometers and a 50% overhead for slewing, pointing, focus and calibrations.

Science Verification Proposals

The purpose of Science Verification is to demonstrate the capabilities of the facility and its instruments to the wider community and to gather feedback from users to improve its performance. The proposals can be informal (PDF or plain text preferred), but should contain at least the following information:

- Principle and co-Investigators (+ institute and PI email)
- Abstract
- Scientific Justification (guideline: up to 1 page plus figures)
- Source list (RA, DEC, **only in J2000**). Recommended range is $20 < \text{RA} < 10$ for night-time/morning observing in October.
- Exposure time estimate, following <http://www.astro.uni-bonn.de/~abeelen/labocawiki/Laboca/ObsTime> and **including a 50% overhead** for on-the-fly maps at turn-around as well as for pointing, focus, and calibration observations.

Proposals will be assessed on grounds of scientific merit, potential to demonstrate the range of telescope and instrument capabilities and feasibility with the current configuration. The certified, calibrated data will be made publicly available through the ESO archive, but proposers may request a proprietary period. Successful proposers are required to work closely with the APEX team and to provide rapid feedback on the data.

Deadline for submission of Science Verification proposals

All proposals should be sent to cdebreuc@eso.org by noon CEST on Monday 4 September 2006.

Regular LABOCA proposals

Pending successful on-sky commissioning of LABOCA, ESO will issue a Delta Call for regular Period 79 LABOCA proposals for observations between April and September 2007.