



Participation in and Status of the LBT

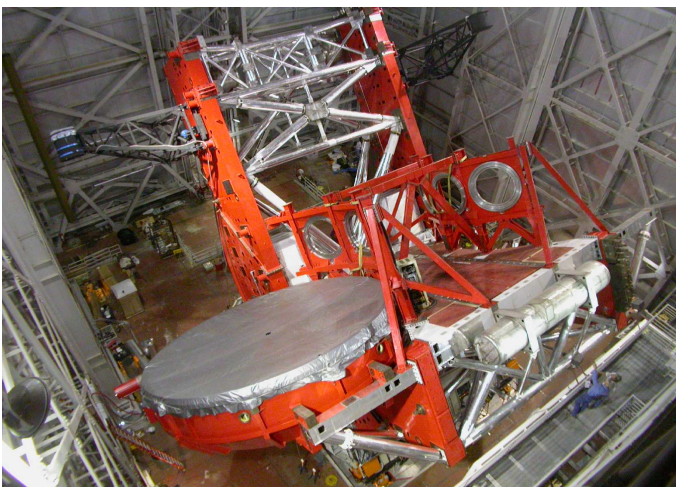


LBT, twin 8.4 meter telescopes being built on Mount Graham, Arizona, is an international collaboration, with partners from the United States, Italy, and Germany. The LBT Beteiligungsgesellschaft (LBTB) or German consortium contributes 25% of the total cost of the project, with MPE contributing 33.6% of this total. The LBTB consists additionally of MPIA, MFI/R, AIP, and the Landessternwarte Heidelberg. Besides supporting the overall infrastructure of the telescope, MPE is providing instrumentation (e.g., mask exchange unit of LUCIFER) and telescope components (e.g., twelve hardpoints – six are used to control the position of each of the LBT primaries).

The LBT is expected to have first light with Mirror #1 in October of this year. An early “science demonstration program” with the Large Binocular Camera-Blue will be executed in the first few months of 2005. The LBC is a pair of wide field (FOV \approx 30') imaging cameras, one optimized for the blue (LBC-B;3200–6000Å) which is currently being integrated and commissioned, and one optimized for the red (LBC-R;5000Å–1 μ m). The LBCs are facility instruments developed by the Observatories of Roma, Arcetri, Padova and Trieste.

At MPE, we are primarily interested as using the LBT to deploy innovative instrumentation to conduct unique scientific programs. We are especially interested in taking advantage of the combined focus which is a unique feature of the LBT and by addressing problems that require significant allocations of 8m time. One of the early science goals of ours with the LBT will be to investigate the rest-frame optical emission and absorption line properties and gas phase metal abundances of a large sample of high redshift ($z>2$) galaxies with LUCIFER MOS.

The hot dry weather and late summer monsoon season often leads to favorable conditions for forest fires in Arizona. The hot weather provides the fuel of dry timber and monsoon provides frequent lightning ground strokes. This year Mt. Graham experienced an almost catastrophic fire season. The “Nuttall and Gibson fires”, ignited by lightning, burned almost 30,000 acres, cost approximately 10 M\$, and 28 injuries to extinguish. The picture on the left taken on July 6th shows how close the fire came to the observatory – within several hundred meters.



The status of the telescope as viewed from the walkway along the back side of the enclosure in late July. As can be seen in the picture, the first primary is in its mirror cell, but not yet aluminized, and the LBC-Blue is mounted on the prime focus swing arm. The LBC-Blue is currently undergoing testing and commissioning. The aluminizing bell jar has arrived in Arizona from Ohio and aluminization of mirror #1 is scheduled for October. First light for mirror 1 is expected in mid-October and first light for mirror 2 (“second light”) is expected mid-2005. The LBT will also have two adaptive secondaries with several hundred actuators each. These are scheduled for integration and commissioning at the end of this year for the first and the end of 2005 for the second.

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