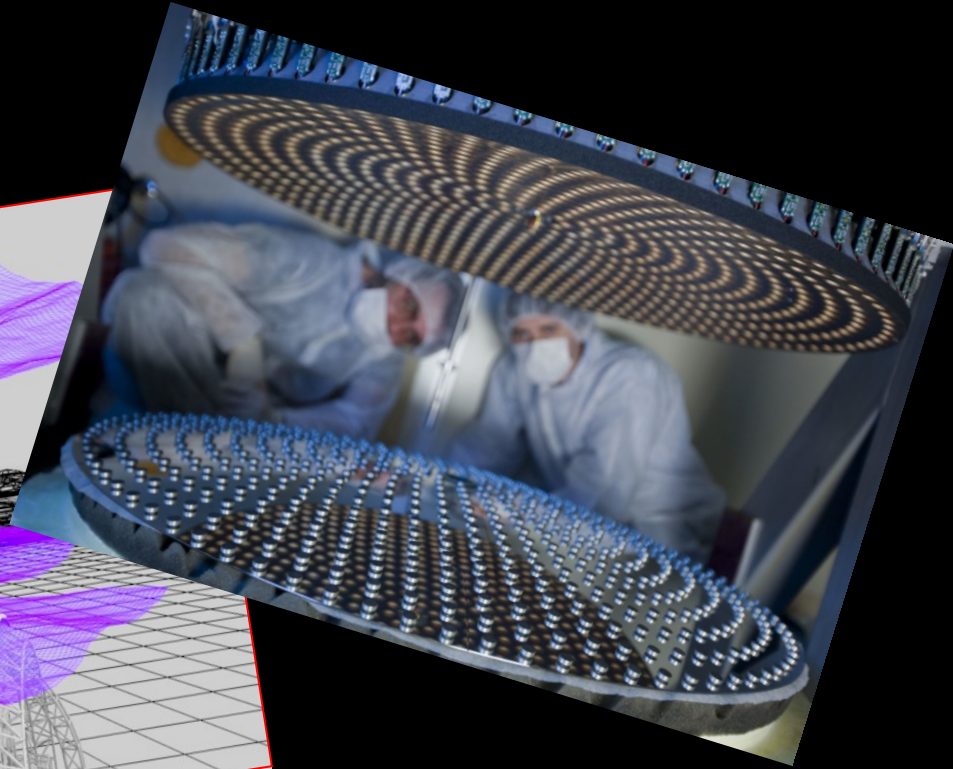
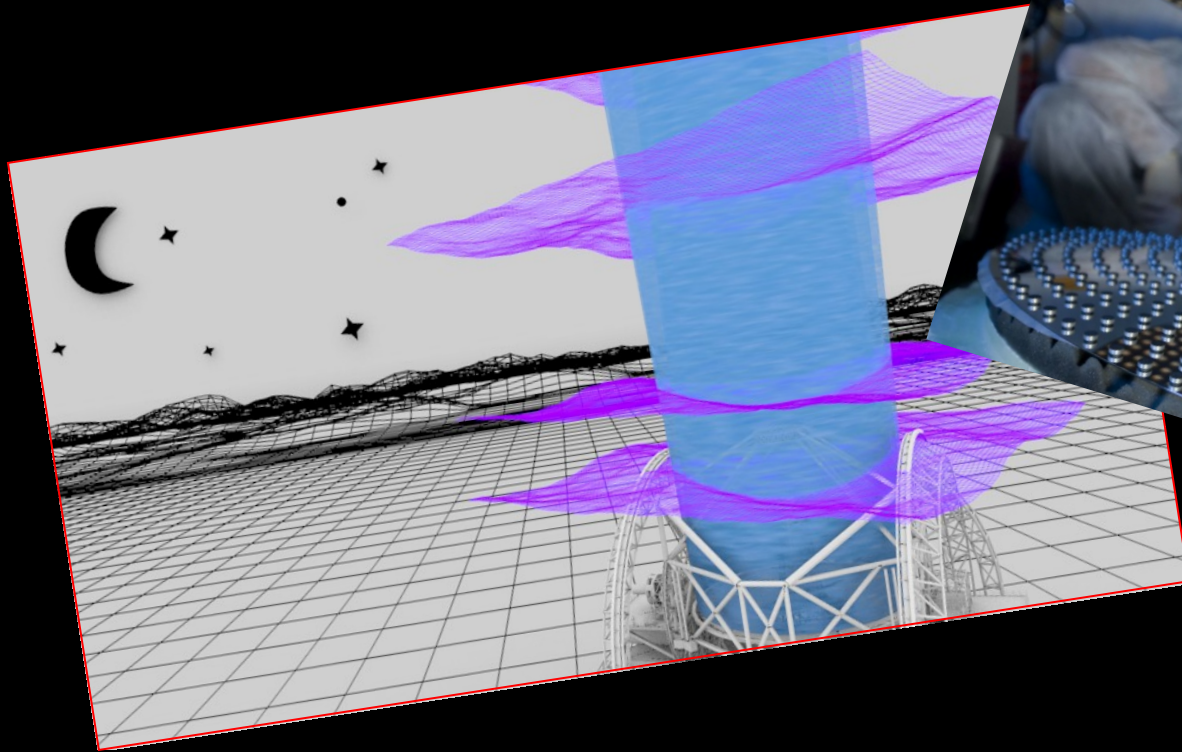




Bologna
Jan 14th 2013

AO on ELT



Roberto Ragazzoni

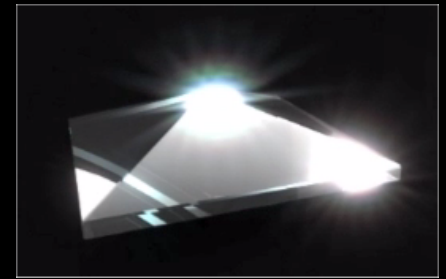
roberto.ragazzoni@inaf.it

Adaptive Optics on ELT

- SCAO... GLAO... MOAO... MCAO... or even GMCAO
- SCAO:
 - Better WFSensing
 - Better achieved Strehl (aliasing rejection)
 - Better sensitivity (sky coverage or photon efficient)
 - Better DM
 - Larger number of actuators
 - Smaller emissivity

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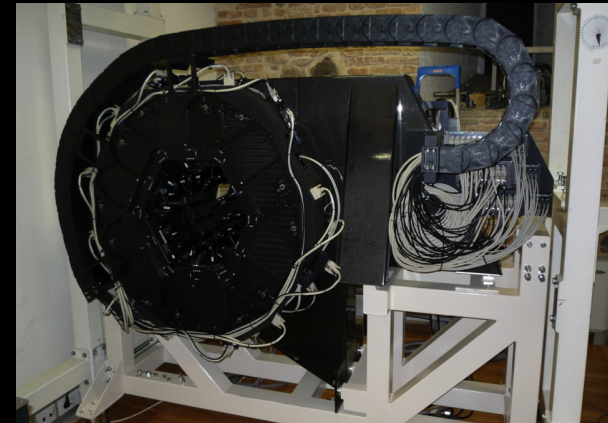
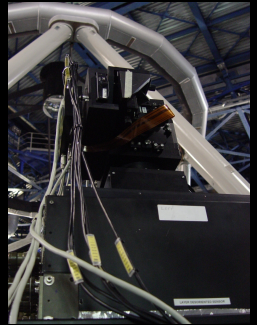
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- GLAO..MOAO...MCAO
 - Better reconstruction algorithm
 - Layer Oriented (asintotically equivalent to Kazmark)
 - Optical, numerical and iterative-numerically solvable
 - Better sky coverage
 - G-MCAO for Global MCAO
 - 10..5 arcmin searchable FoV for NGSs
 - Synergies with LGSs

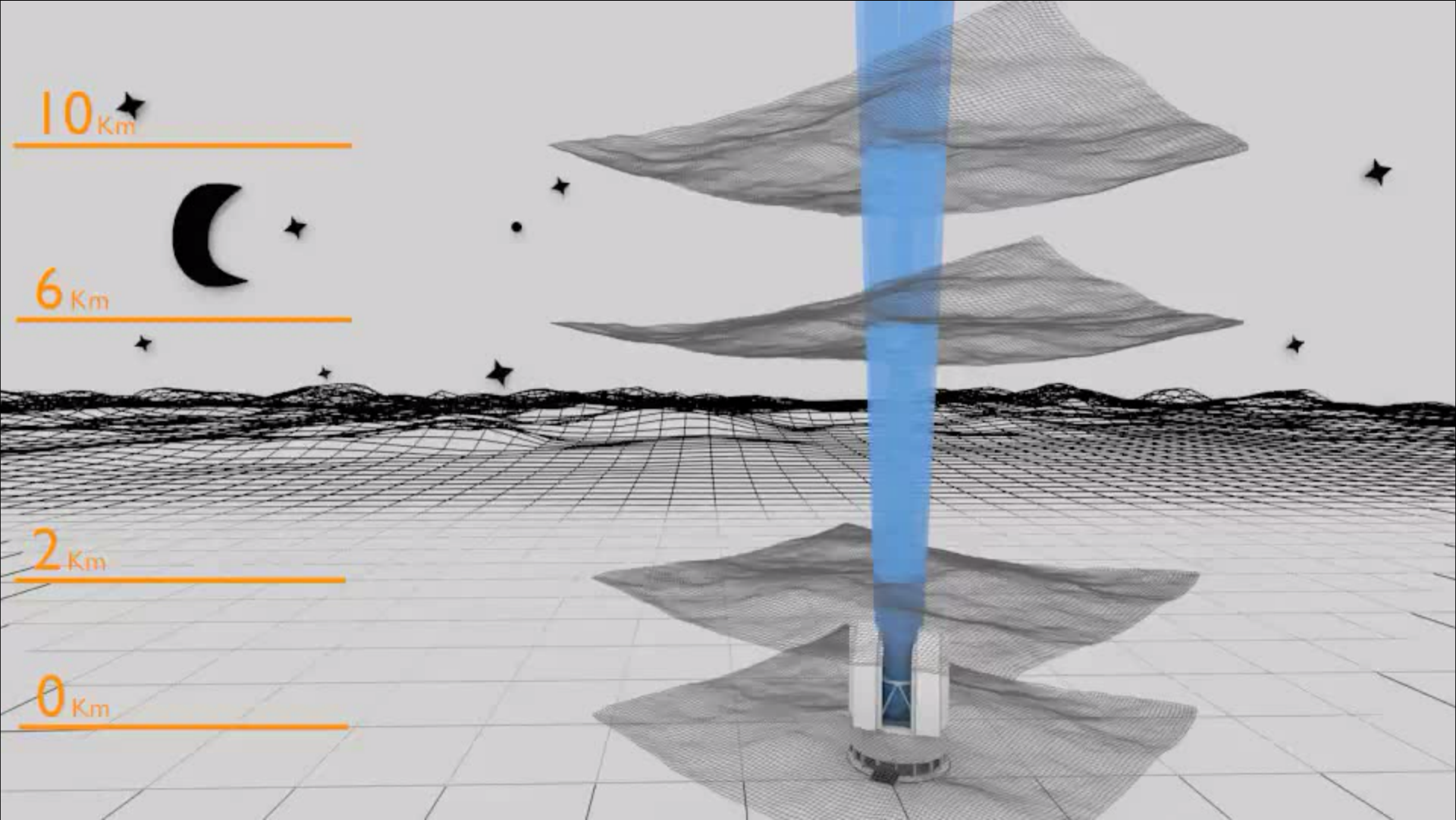
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Tested on the sky with MAD



6 arcmin FoV LO WFS for NIRVANA@LBT



10 Km

6 Km

2 Km

0 Km

Adaptive Optics on ELT

My receipt...

- Difficulties are unprecedented and paramount, let's join all forces
- No single point failures. Rely on different modes and concepts.
- Review top-level requirement in view of reaction from community and from the technical studies
- A single MAORY with SCAO.. MCAO(1DM).. MCAO(2DM) modes with specific science requirement (e.g. extremely constant SR over the FoV rather than to increase the SR)

ADONI

ADaptive Optics National lab in Italy

- An approved (19 Dec 12) proposal to build a thematic national laboratory
- To join coherently the forces of the groups historically involved into high angular resolution achievement from ground based
- New WFS, news DMs, new concepts grown and exploited worldwide
- Initially proposed by Florence, Padova and Rome group. Talks with Bologna team ongoing



give the people what they

want.

... an ELT with a working MCAO...!!!