SLR telescope upgrade at Riga station

K.Lapushka, M.Abele, K.Salminsh

Institute of Astronomy, University of Latvia

The purpose of the upgrade is to separate transmitting and receiving channels to enable use of the high repetation rate lasers and to improve receiver channel efficiency. Another expected gain is an improved visual tracking capabilities and better calibration stability and accuracy by replacing internal calibration system with external target.

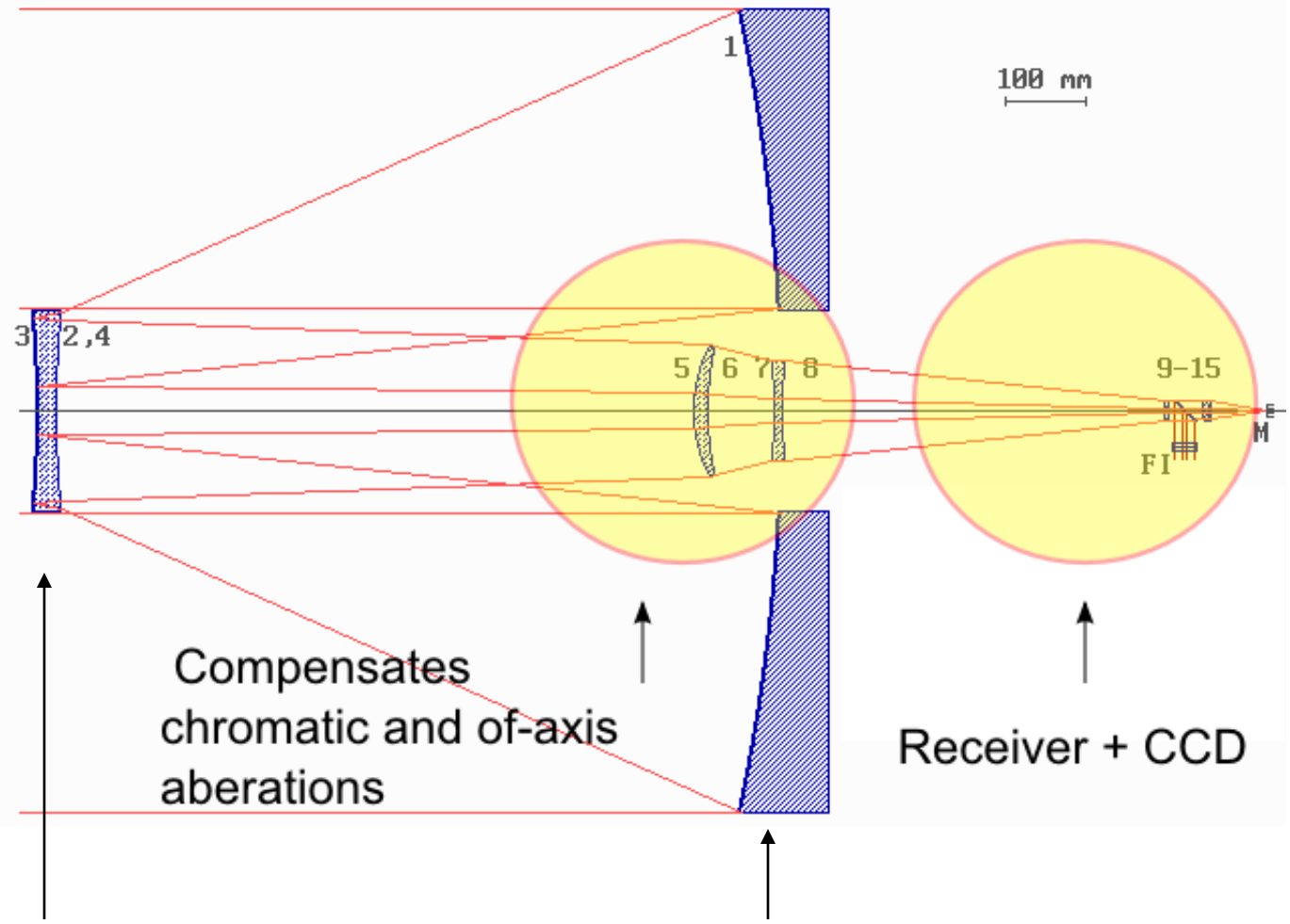
Transmitter

The former guide telescope rebuilded as a laser transmitter. Outgoing laser beam diameter 120mm.

Receiver channel

Current path of incoming signal to receiver. Detector is placed in operators room.

Receiver path modification



Secondary mirror

Primary mirror

Receiver and CCD unit

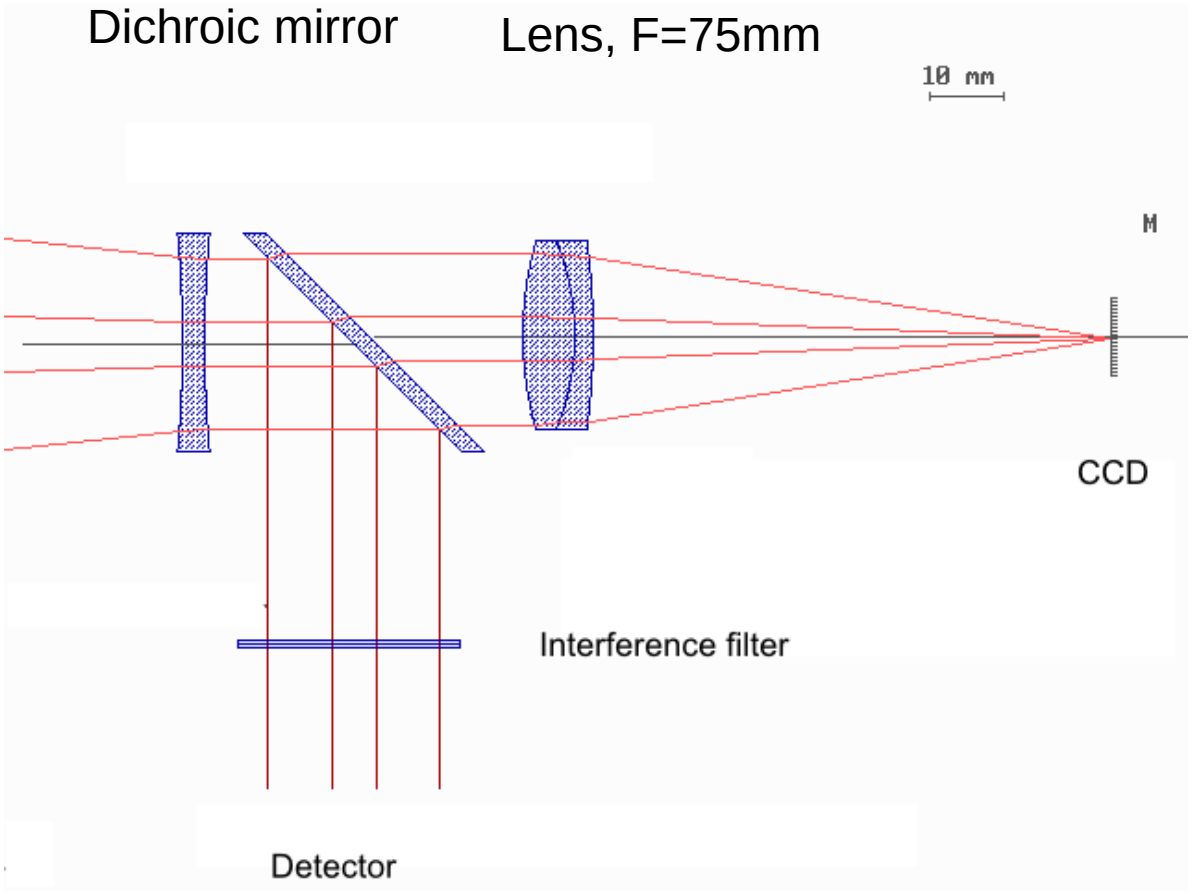
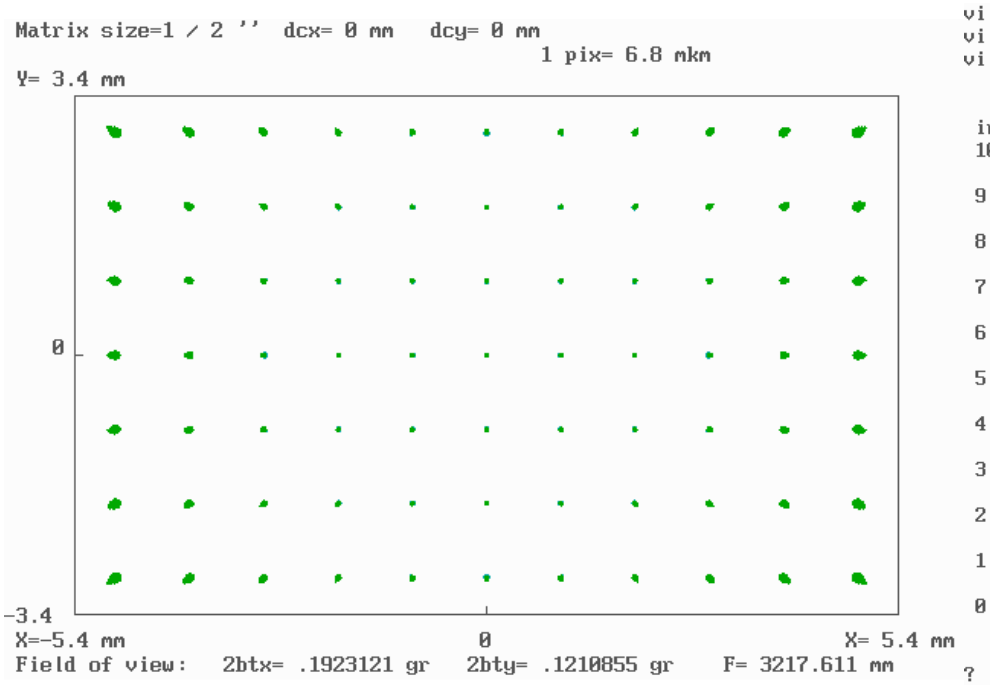
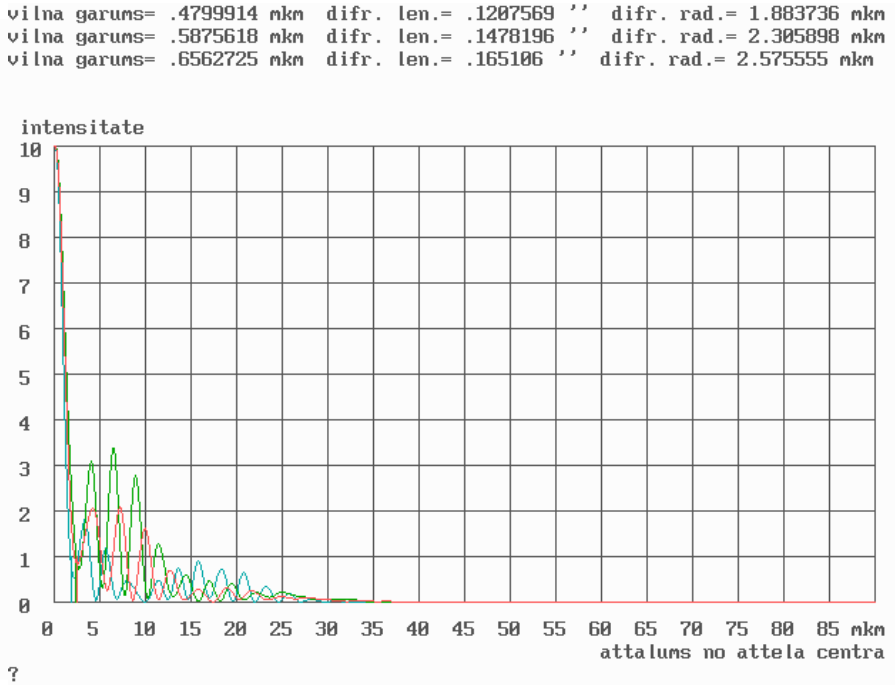


Image quality on CCD sensor



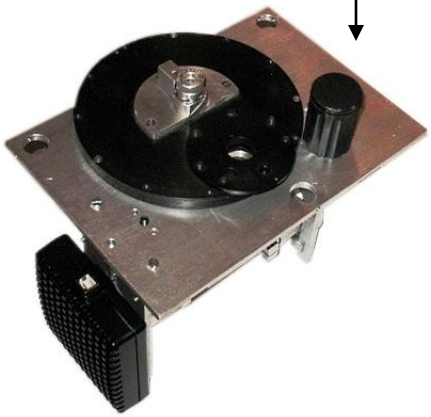


Place for the new receiver+CCD unit

Receiver and CCD unit

Filter wheel

Focusing knob



CCD

FOV 11’x7’, linear image size 6.8mm*10.8mm, CCD image sensor ICX285AL

Current status

- Transmiting telescope - ready
- Receiver/CCD unit – under construction
- External calibration target – under construction

Acknowledgments
Presentation supported by ERAF project No. 2010/0202/2DP/2.1.1.2.0/10/APIA/VIAA/013