

The 3.6 m DOT electronics: Maintenance and future upgradation strategies

We describe here the electronics aspects of the 3.6 m Devasthal Optical Telescope (DOT) and discuss the strategic approach adopted by the ARIES electronics engineering team for maintaining and upgrading the telescope. The construction of the 3.6 m DOT was completed at the AMOS Factory in Belgium in the year 2012 and the telescope was partially disassembled into its sub-systems and transported to ARIES Devasthal site and reassembled and commissioned in 2016. The critical electronic parts of the telescope consist of both the customized systems like local realtime control computers running customized software for controlling the active optics enabled primary and secondary mirror support systems, wavefront sensor, azimuth and altitude motors and the standard industrial components like Delta Tau motion controllers, B&R programmable logic controllers, Kollmorgen and LTI drives, Kollmorgen motors and Heidenhain and Renishaw encoders. The control components are programmed and interfaced to implement suitable control law to deliver the stringent performances. Owing to large size of the telescope the control components are distributed over different realtime network. Additionally, these components require constant monitoring, preventive and scheduled maintenance and upgradation for their smooth and reliable functioning.

Session Classification: Image Processing, Antennas and RF & Electrical System, Observatory Control System and Software