

Brush arrangement for dome of 3.6m Devasthal optical telescope at ARIES

ARIES 3.6 m optical telescope at Devasthal is enclosed in steel building with rotating dome. Dome comprises of upper rotating cylindrical steel structure and lower fixed dome support structure. Rotating dome being a fabricated structure of about 16.5m mean diameter involved lot of welding and a clearance of about 150 mm was kept between fixed dome structure outer wall and rotating dome outer plate. Flexible sheets were fixed between fixed and rotating structure to avoid entry of rain water and dust etc. Requirement for better arrangement to solve the problems posed by rain water, dust, insects and fog etc. was felt at ARIES. Arrangement of brushes with polyethylene terephthalate (PET) bristles has been prepared for the purpose of filling the gap between fixed and rotating structure. A sliding mechanism has been developed for changing of bristles during their wear and tear. Material for the bristles was selected using various economical, ecological, physical and chemical parameters. Certain necessary tests on prototype were also performed to check that bristles meet the required conditions. ARIES is planning to put the brush arrangement for dome of 3.6m Devasthal optical telescope.