

# Preliminary design of optical and opto-mechanical part for receiving telescope of Satellite Laser Ranging system

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To detect weak laser signals reflected from a target satellite, the receiving telescope of a bi-static Satellite Laser Ranging (SLR) system should have small obstruction ratio. The telescope has a 1-m primary mirror and a 0.16 m secondary mirror in a Ritchey-Chretien configuration. The camera for observing satellites and the detector for receiving laser beam returned from the satellites are situated in two Nasmyth foci of the telescope. The SLR tube including optical parts should be supported by opto-mechanical parts to be considered the precise and fast movement. In order to reduce the moment of inertia of the tube, the fast focal ratio of primary mirror was considered. The tube having truss structure has almost same aspect ratio like a regular hexahedron. The first preliminary design in Korea of optical and opto-mechanical part for receiving telescope of the SLR system are presented.