

## Instrumental design of the Solar-C\_EUVST telescope

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The Solar-C\_EUVST: the EUV High-Throughput Spectroscopic Telescope, is a revolutionary spectrometer that is designed to provide high-quality and high cadence spectroscopic data covering a wide temperature range of the chromosphere to flaring corona. To achieve high spatial and temporal resolution than ever, the optics of Solar-C\_EUVST is designed to have only two imaging systems; a 28-cm aperture off-axis parabolic primary mirror and a two-split toroidal grating both which have high reflective coatings in EUV-UV range (17-21 nm, 47-125 nm), without a blocking filter for visible light before the primary mirror. For this reason, about 53 W of sunlight is absorbed by the multilayer coating of a solar absorbance 0.6 put on the primary mirror. The primary mirror has bipod pads support using an adhesive, and movable mechanisms such as tip-tilt and image scanning and refocusing are placed just under the primary mirror, in which a high temperature needs to be avoided. We successfully designed the thermal model of EUVST telescope in which the temperature of the primary mirror bonding part and the mechanisms is well lower than 60 degC and the thermal deformation of the primary mirror is small. The instrumental design of EUVST telescope to achieve high spatial resolution is presented.

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