

SAFIR Mission Architecture Study Report: Passive Thermal Radiator Performance

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We are developing a parametric model of a SAFIR-class architecture which utilizes passive cooling of radiation shields, plus active heat lift from the telescope at 4 K and from the support structure at higher temperatures. Results of the study will include an understanding of the lowest temperature attainable at passive radiation shields, optimization of active heat intercept within the shield support and deployment structure, and the impact upon telescope reflector thermal performance and heat lift requirements as a function of the conductive and radiative environment which is dominated by the thermal shields performance. We will report on early results of an advanced passive thermal shield structure which is consistent with launch and deployment for a SAFIR-class instrument.