

A Baffle Design for Airglow Photometers on Board KSR-III

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A baffle system for airglow photometers which will be on board KSR-III, a Korea Sounding Rocket, has been designed to suppress the off-axis stray light outside the field of view. Because the KSR-III will be launched during the daytime, stray sun light should be carefully rejected before scattered into the photometer objective lens. A cylindrical baffle, therefore, is added in front of the photometer. In order to optimize dimensions of the baffle, we compute irradiances of singly scattered solar light by the wall of the baffle as function of ratios of diameter to length of the baffle and incidence angles. We then calculate positions and heights of vanes inside the baffle tube to block the singly scattered light. From these calculations, optimum design of the baffle has been chosen for the airglow photometer. Methods for more elaborate suppression of the stray light, such as coating of the wall and structure of the vane will be discussed.