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5.5 REMOTE SENSING OF THE ATMOSPHERIC AEROSOLS AND NOCTILUCENT CLOUDS FROM SPACE

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The method for the determination of the optical density of tropospheric and mesospheric aerosols and for the estimation of the scattering phase function in the forward directions ($0 - 30^\circ$) is proposed. The method is based on measurements of the brightness of the twilight horizon with the high-resolution limb-camera having five separated fields of view. In some detail the features of the camera are described and the mathematical aspects of remote sensing data-inversion are discussed.

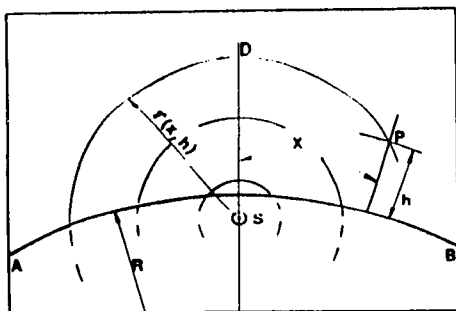


Figure 1. The coordinate system in the twilight horizon scanning equipment. AB - the limb of the Earth; S - the center of the Sun; P - the perigee point of the line-of-sight (line-of-sight is approximately perpendicular to the plane of figure).

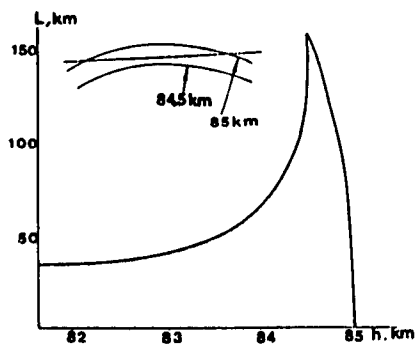


Figure 2. The optical path through the homogeneous layer as a function of height.