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Moderate-resolution holographic spectrograph

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Abstract

© 2016, Pleiades Publishing, Ltd. We present a new scheme of a moderate-resolution spectrograph based on a cascade of serial holographic gratings each of which produces an individual spectrum with a resolution of about 6000 and a bandwidth of 80 nm. The gratings ensure centering of each part of the spectrum they produce so as to provide uniform coverage of the broadest possible wavelength interval. In this study we manage to simultaneously cover the 430–680 nm interval without gaps using three gratings. Efficiency of the spectrograph optical system itself from the entrance slit to the CCD detector is typically of about 60% with a maximum of 75%. We discuss the advantages and drawbacks of the new spectrograph scheme as well as the astrophysical tasks for which the instrument can be used.

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Keywords

instruments:spectrographs, methods:observational