

Construction of an Automatic Digitization System for the Hawaii Night Sky Photo-polarimetric Data

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In order to establish a database archive of the Hawaii night sky observations, we are constructing an automatic chart digitization system. The night sky photo-polarimetric data which were obtained by Weinberg(1968) for more than 10 years from 1961 to 1974 at Mt. Haleakala Observatory will be digitized by using this system. Since the output of the photo-polarimeter was recorded on thermal chart papers, it is a time consuming job for one to extract numeric values from the original charts. The fundamental aim of the automatic digitization system is to convert analogue chart deflections of four channels into machine readable forms. One of the four channels is for total brightness and the rest three are for polarization. The automatic digitization system consists of a large format image scanner, control software and a data acquisition computer. The system will enable us to study distributions of the brightness and degree of polarization of the zodiacal light with a high spatial resolution. This report will present a basic structure of the system and a preliminary result.