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7. CONCLUDING NOTE

In this Report Sections 1, 2, 3 and 6 were prepared by M. F. McCarthy; Section 4 contains the Communications received from Commission members; Section 5 gives the Summary on Stellar Polarimetry prepared by G. V. Coyne

ADDENDUM

The following Report on Photometry and Polarimetry has been received from J. Tinbergen (Leiden Obs.).

The Leiden Light Collector and five colour photometer is being moved from Hartebeestpoortdam in S. Africa to La Silla (ESO) in Chile; it will be known as the Dutch National Telescope.

Leiden Observatory is putting into service a 12 channel photometer-polarimeter, optimised for the study of stellar absorption lines, but capable of most other types of photometry or linear polarimetry.

J. Lub and J. W. Pel have given a detailed discussion of the properties of the Walraven 5 colour photometry, which is a very useful companion to that of Stromgren (Astron. and Astrophys. 54, 137, 1977). They have applied their results to large scale studies of classical Cepheids (Pel) and RR Lyrae variables (Lub) in the Galaxy. Van Genderen has used the five colour system to study Cepheids in the Magellanic Clouds and X-ray binaries in the Galaxy.

Tinbergen has nearly completed a polarimetric study of stars in the solar neighborhood (35 pcs.). The local dust content is even lower than earlier studies indicated. A region of regular magnetic field can be seen but it does not extend over the whole volume studied. Byproducts of this investigation are a list of about

180 low-polarization standards (Astron. and Astrophys., in press) by Piirola and Tinbergen and a suspicion that stars of spectral type F0 and later show intrinsic polarization that could be related to magnetically active regions on these stars (Zwann and Tinbergen, in press).

Bastiaansen (Leiden) has started a programme of coordinated measurements of extinction, linear and circular polarization all as a function of wavelength; the aim is to put stricter limits on models of the interstellar dust. The programme comprises 13 southern stars with proven circular polarization.

V. Straizys communicates the following items concerning activities in photometry in observatories of the U.S.S.R. in the past report period.

In the Special Astrophysical Observatory the instrumental complex MANIA (Multichannel Analysis of Nanosecond Intensity Alterations) was constructed. The experiment is carried out for detecting relativistic objects (neutron stars, black holes) due to superfast variability of their optical brightness and polarization (Shvartsman et al., Commun. of SAO Nos. 19 and 20, 1976). The complex was used to observe X-ray stars, fast-variable radio sources, objects with continuous optical spectra etc.

In the Crimean Astrophysical Observatory the photometry of the stars with TV-technique were continued (Petrov, 17.122.044; Prokofjeva et al., 19.142.120). Photoelectric photometry here was concerned mainly on variable stars. The satellite "Kosmos-215" was used for ultraviolet photometry of 36 stars (Dimov et al., 18.032.508; 18.113.028).

Zdanavicius et al. (Bull, Vilnius Obs., 45, 3, 1978) constructed and tested an eight channel stellar photometer with constant rapid rotation of the filter wheel. The photometer ensures quasi-simultaneous photometry in all eight colors and this permits one to make measurements of color indices during "non-photometric" nights. Kalytis, Ralys et al. (Bull. Vilnius Obs., 48, and 49, 1978) suggested a convenient criterion for selection of optimum photomultipliers and other astronomical receivers and investigated different components of photometric equipment of the Vilnius observatory.

The plans to join the Vilnius and Geneva photometric systems are being discussed between both observatories. The preliminary variant of the joint system (VILGEN system) was realised by the Vilnius astronomers (Straizys, in "Multicolor Stellar Photometry", 1977, p. 209). The joint system was investigated theoretically by Straizys, North and Hauck.

The work of the Vilnius Astronomical Observatory was concentrated mainly on the further photometry using intermediate band seven color Vilnius photometric system. The system is described most completely in the monograph by V. Straizys "Multicolor Stellar Photometry" (Mokslas Publishers, Vilnius, 1977).

S.D. Sinvhal of the Uttar Pradesh State Observatory, Naini Tal, India, reports on work done there on infrared photometry; J and H band magnitudes of 50 stars brighter than visual magnitude zero and mainly of spectral types K and M have been reported. (Kulkarni, P.V., Ananth, A.G., Sinvhal, S.D., and Joshi, S.C., 1977, Bull. Astr. Soc. India, 5, 52.

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