his direction, on the Sculptor dwarf system in Ursa Minor. A complete analysis of Baade's 200-inch plates of this object was in progress. Over ninety variables had been found and these were probably all that existed.

The work done at the Burakan Observatory, since 1958, on the colorimetry of galaxies was discussed by *Markarian*. A photographic image of a galaxy, made with a Schmidt telescope, is measured by a fast-acting microphotometer that has a square diaphragm. Each square section of the galaxy image is measured and there is no overlap of squares. A map of the distribution of brightness and colour over the galaxy image is thus produced.

These maps can be used to find the integrated brightness and colour of the galaxy as a whole, and also of its various regions. The change of brightness and colour between centre and outer parts was thus determined, as were these quantities for the disk alone, for the spiral arms, for the bar of barred spirals and for stellar associations. The relative blueness of the outer parts of spirals was noted, in agreement with de Vaucouleurs' results. The effect is due to the change in composition of the disk population and only partially to the increasing amount of radiation from the spiral arms as the outer parts of the spiral are attained. Asymmetry in the distribution of brightness and colour was observed in many galaxies. In the case of M 51 the asymmetry is explained by the assumption that there is a large quantity of dark matter in the region between the two components of the galaxy.

28 a. SOUS-COMMISSION DES NUAGES DE MAGELLAN

Report of Meeting, 23 August 1961

PRESIDENT: S. C. B. Gascoigne.
SECRETARY: M. W. Feast.

The *Draft Report* was approved without a discussion. The President drew attention to the fact that there had been a meeting of the Sub-Commission in Cordoba in December, 1960.

The President initiated a discussion on nomenclature for variable stars in the Magellanic Clouds. At present the majority of variables in the Clouds were discovered at Harvard and have HV numbers. However, there are considerable doubts as to whether many of the variable stars can now be recovered as the positions are not generally very accurate and no maps are available for many. Furthermore, extensive work is already in progress which will produce many more variables (*e.g.* the work of the Greenwich astronomers, Dessy, etc.). Dr Eggen stated that all Greenwich variables would be given a Greenwich number irrespective of whether or not they had already an HV designation. This was necessary since it was difficult to be certain in many cases of the identification with an HV star. Dr Gascoigne spoke of the help he had received from Dr Shapley and the Harvard Observatory in finding HV stars. Much of the unpublished Harvard material is now in Dr Gascoigne's keeping at Mount Stromlo in card-catalogue form. The best way to make use of this material was discussed, but no final decision was reached. An attempt to map all the variables had been begun at Mount Stromlo, but not completed. Dr Tifft offered help in the construction of charts of Harvard variables. Dr Thackeray proposed a motion that all observers be strongly urged to publish finding charts for all new variables. This motion was passed unanimously. It was also agreed that observers should be urged to print both the scale and orientation on each map. The normal practice (North at top, West to the right) should be followed, and Dr Bok suggested

that any plate reproduced should be photo-visual. The President of Commission 27 (Dr Oosterhoff) announced that his commission had set up a small sub-committee to look into the problem of variable star nomenclature in the Magellanic Clouds. This is to consist of Wesselink, Payne-Gaposhkin, Arp and Buscombe.

The meeting then discussed the system of co-ordinates to be adopted in the Magellanic Clouds. Positions of many of the objects in the Clouds are published in the Harvard x, y system. Dr Gascoigne drew attention to the fact that at its Cordoba meeting the Sub-Commission had decided that, where a rectangular co-ordinate system was desired, then the standard co-ordinates ξ, η, as discussed by Wesselink (*M.N.* **119,** 576, 1959) should be used in preference to x, y. The Radcliffe Observatory had prepared tables giving x, y, ξ, η, and α, δ for a considerable number of objects. Dr Stoy stated that the section of the 1950·0 Cape Catalogue covering the Magellanic Clouds had now been finished and could be supplied to interested observatories in microfilm form. This catalogue gives about 10 stars per square degree to $10^m - 11^m$ with an accuracy better than $0''\cdot1$. He also reported on a Cape-Greenwich programme to measure 144 stars per square degree, going down if necessary to $13^m - 14^m$. He felt that these stars will provide a sufficiently fine grid that the position of any object could be measured accurately in α and δ with respect to them. This would probably obviate the need for a rectangular co-ordinate system. Dr Gascoigne said that the Uppsala-Stromlo maps of the Clouds would be ruled in both α, δ and ξ, η. Dr Lindsay noted that whatever system of co-ordinates was used maps were essential in crowded regions.

A number of scientific contributions were then presented. Dr Tifft spoke of his work on NGC 121 and the surrounding field of the SMC, and Dr Walraven of the multi-colour photometry carried out on Cloud B-type stars by himself and his wife. Dr Fehrenbach reported that the telescope to observe radial velocities in the Clouds by his objective prism technique had now been set up in South Africa. Dr Lindsay announced that he and Dr Shapley were preparing a new catalogue of some 900 clusters (mainly open) in the LMC. A Cape-Herstmonceux programme will determine proper motions for foreground stars in the LMC to $15^m - 16^m$ by comparison of new and old (40 to 60 years) astrograph plates. Current work at Mount Stromlo, Sydney (radio), Cordoba and Pretoria (Radcliffe) was reported. There was also a discussion of the frequency of foreground stars to be expected in colour-magnitude diagrams of regions of the Clouds.