CCD Observations of distant comets from Palomar and Steward Observatories

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We are conducting a ground-based observational study of distant cometary nuclei with the aim of increasing the current database of physical parameters of individual objects and to estimate the overall distributions of size, rotation period, axial ratio, and color indices. Additionally, we are obtaining CCD spectroscopy and photometry of established and potential targets of current and future spacecraft missions (Lowry et al. 2001). The majority of results presented here were derived from CCD photometric observations obtained using the 5m Hale telescope at Palomar Observatory (California). Additional Palomar observations are scheduled for November 2001. Also included are observations from the 2.3m Bok telescope of Steward Observatory (Arizona), obtained in May 2001. Comets observed include 6P/d'Arrest, 9P/Tempel 1, 22P/Kopff, 36P/Whipple, 46P/Wirtanen, 55P/Tempel-Tuttle, 107P/Wilson-Harrington, and 128 P/Shoemaker-Holt, among others. We have performed either single R filter or multiple (BVRI) filter measurements on these comets, from which we obtain radius and broad-band color estimates. For selected objects we have performed time-series R filter imaging from which we hope to derive the rotation period and axial ratio lower limits. The radius results obtained are included in the cometary nucleus size distribution estimate presented at this meeting by Weissman & Lowry (2002). This work was supported in part by the NASA Planetary Astronomy Program. Support from the National Research Council is gratefully acknowledged.

References: Lowry, S. C., Weissman, P. R., and Hicks, M. D. 2001. CCD observations of asteroid 1998 SF36 (25143). BAAS 33, in press. Weissman, P. R., and Lowry, S. C. 2002. The size distribution of cometary nuclei. IAU Colloquium 186.