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PHILOSOPHY AND UPDATING OF THE ASTEROID PHOTOMETRIC CATALOGUE

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The Asteroid Photometric Catalogue (Lagerkvist et al. 1987, 1989, 1992) now contains photometric lightcurves for 584 asteroids. We discuss some of the guiding principles behind it. This concerns both observers who offer input to it and users of the product.

Any systematic work on asteroid lightcurve properties and lightcurve inversion for pole, shape and albedo variegation will involve analysis of data from a very large number of publications. For example, the lightcurves of a single interesting object like 4 Vesta are spread out in more than 20 papers.

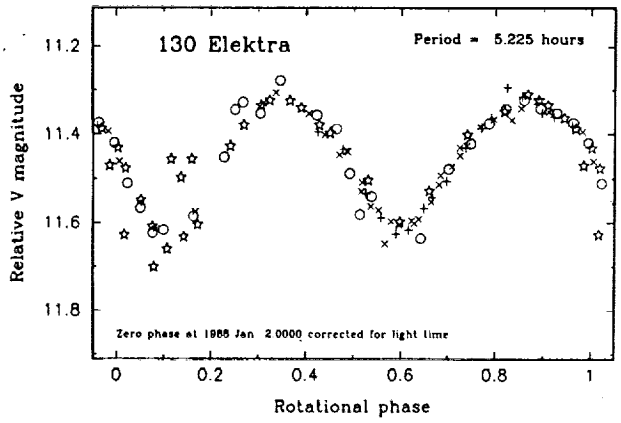
A biennial printed catalogue (Lagerkvist *et al.* 1987, 1989, 1992) tabulates all observations with uniform aspect data and complete references. In addition, the new observations not included before are displayed in lightcurve diagrams (Fig. 1). These have been transformed to a standard format to make comparisons easier. In particular, the axis scales are kept constant for all observations of the same object.

A database containing both new and old observations in digital form is also maintained. It is available free of charge except for media costs. In contrast to the printed version, we try to keep the contents of the digital one as close to the original publications as possible, thus making checking of the data against the original feasible. This means that the data are given in a multitude of units, some as composite lightcurves, and with various reductions applied to them. All this information is stored with the data, and we have software to extract a uniform data set for a particular application. We are happy to assist users with software and/or uniform data for specific projects. An IBM-PC database presentation system is also available on request.

The second update of the catalogue, containing observations published before the end of 1990, is now in press. Contact Claes-Ingvar Lagerkvist for further information. An increasing proportion of observers have kindly submitted their published data to us in

digital form. This has greatly increased the reliability of the catalogue and made our job easier. Observers are encouraged to continue this trend. Such data need not at all be close to the form of presentation in the observers own publication.

It is important to identify which steps in the data reduction observers are best equipped to do, and what is best left undone in a database for future use. Clearly, weather and equipment-dependent reductions such as extinction correction and transformation to a standard magnitude system must be done by the observing group. Harris and Lupishko (1989) have summarized and stressed good principles to follow. The resulting table of magnitudes as a function of observing time (UT) is ideal for the digital database. Frequently it will include data points which "stand out" from the rest and which can be rejected with varying degree of confidence. It is natural for observers to remove the ugliest ones from their published diagrams, but we believe these points, suitably marked as rejected, have a mission in the database. Knowledge that the pruning has been done with prudence increases confidence in the data, and there is a possibility that future re-analysis will promote a rejected point. Further reduction of the data, especially model-dependent ones like composite construction or transformation to a particular solar phase angle, are best left out of the database.



+○☆× Debehogne et al. (1990)
+○☆× European Southern Observatory, La Silla, Chile
+○☆× Photoelectric
+○☆× No accurate transformation to standard system

	Date	r	Δ	α	λ	β	Magnitude shift
+	1988 Jan 1	2.931	2.012	8.28	114.6	-20.5	V rel. 0.016
○	1988 Jan 2	2.933	2.010	8.04	114.4	-20.4	V rel. -0.024
☆	1988 Jan 3	2.935	2.009	7.82	114.1	-20.3	V rel. -0.018
×	1988 Jan 4	2.937	2.008	7.60	113.9	-20.3	V rel. 0.006

Fig. 1. *Example of lightcurve presentation in the Asteroid Photometric Catalogue*

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