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Proper motion sky survey of 2.7 million stars with the Bordeaux automated CCD meridian circle

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Abstract. The Bordeaux observatory astrometric group has made significant efforts to produce and exploit large data base surveys. This effort has been undertaken to extend and enrich the ICRS marterialized using Tycho2 catalogue. It includes the systematic re-observation of the Bordeaux Carte du Ciel zone with the Bordeaux automatic CCD meridian circle ; it also contains the digitization of ancient plate archive and the exploitation of large sky surveys such as the AC2000.2 catalogue, the USNO-A2.0 catalogue and the unpublished Yellow Sky (YS3) USNO catalogue. The whole effort led to the construction of three astrometric catalogues (M2000 [Rapaport et al. 2001], PM2000 [Ducourant et al. 2005] and CdC2000 [Rapaport et al. 2005]) of positions and proper motions (sigma 1-6 mas/yr) down to V 16.4 for 1/20 of the celestial sphere. The high precision achieved, allowed us to test the precision of the present day reference catalogues such as 2MASS and UCAC2 and to reveal systematic offsets in them. Due to its accurate proper motions, this catalogue offers a rich database for the cinematic analysis of Galactic stellar populations.

Key words. Astrometry –Catalogues – Galaxy : kinematics and dynamics – Reference systems – surveys

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