Education in astrometry

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Abstract. We discuss education in astrometry.

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The potential for studies of the structure, kinematics and dynamics of our Galaxy, the physical nature of stars and the cosmological distance scale is without equal in the history of astronomy. Cutting-edge areas of research are now accessible due to the dramatic increases in accuracy provided by *Hipparcos*, *HST* and the next generation of astrometric space missions such as *SIM* and *Gaia*. The decadal committee in the US and the multinational ESA continuously place *SIM* and *Gaia* at the top of their scientific priority list and they have committed to spending on the order of a billion dollars on each mission. Major improvements in detector technology, such as the orthogonal-transfer arrays, have significantly improved our measurement precision and large ground-based facilities will enable us to probe more deeply into the universe. These opportunities oblige us to assume responsibilities for ensuring the success astrometric missions and facilities as well as educating astronomers to use them creatively and analyze the data with rigor.

Most countries outside the United States have vital educational programs in astrometry, but in nearly all cases optimism about the future of education in astrometry is low, except in France and Russia where extensive educational programs exist. The only full-term course in astrometry regularly taught in the US during the past decade has been at Yale, while at other institutions only a few lectures in a course on some aspect of observational astronomy are devoted to astrometric techniques.

We face a very troubling future for astronomy. Too few students are being educated with the knowledge and skills in astrometry to support existing and future projects. While outside the US astrometrists are regularly hired into teaching positions, that is not the case in the US. To minimize the impact of this problem, the *SIM* Michelson Science Center held a summer school in 2005 dealing with the detection of extrasolar planets by astrometric methods and Yale held a summer mini-course on basic astrometric methods.

Reference

van Altena, W. F., & Stavinschi, M. G. 2005, in: P. K. Seidelmann & A. K. B. Monet (eds.), *Astrometry in the Age of the Next Generation of Large Telescopes*, ASP-CS 338, 311