THE EXTRAGALACTIC OPTICAL-RADIO REFERENCE FRAME

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Abstract. The new extragalactic reference frame will be based primarily on the positions of a globally selected number of about 500 compact radio sources, which almost all display optical counterparts, mainly quasars or BL Lac objects. Precise radio positions of these objects on the mas level have been determined by VLBI techniques and will be monitored and updated on a regular basis. In parallel an extensive optical observing program is underway to determine precise optical positions of these objects. The present optical reference frame is based on the FK5 fundamental catalog, containing 4652 brighter stars. The transfer of the VLBI radio frame to the optical domain will be achieved now by the Hipparcos stellar net, containing about 120,000 stars with comparable accuracy. The paper will address details and consequences of the implemenation of the new system for astrometry and general astronomical applications.

E. Høg and P. K. Seidelmann (eds.),
Astronomical and Astrophysical Objectives of Sub-Milliarcsecond Optical Astrometry, 117.