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Sommario/riassunto

The field of astrometry, the precise measurement of the positions, distances and motions of astronomical objects, has been revolutionized in recent years. As we enter the high-precision era, it will play an increasingly important role in all areas of astronomy, astrophysics and cosmology. This edited text starts by looking at the opportunities and challenges facing astrometry in the twenty-first century, from space and ground. The new formalisms of relativity required to take advantage of micro-arcsecond astrometry are then discussed, before the reader is guided through the basic methods required to transform our observations from detected photons to the celestial sphere. The final section of the text shows how a variety of astronomical problems can be solved using astrometric methods. Bringing together work from a broad range of experts in the field, this is the most complete textbook on observational astrometry and is ideal for graduate students and researchers alike.