such velocity has been sufficiently measured, yet the tangential component have been much harder to obtain given the large distances (about 50 and 60 kpc) to the Clouds. Substantial effort has been put into measuring the proper motion of the Clouds, using old photographic plates, or CCD imaging over a baseline of 10 to 15 years, finally using HST to measure their displacement in a few years. The apparent contradiction between ground and space-based results is indeed a matter of current debate.

## 2. THIS WORK

This investigation is part of the Southern Proper Motion (SPM) program, a joint venture of Yale University and Universidad Nacional de San Juan in Argentina. The goal of SPM is to provide absolute proper motions, positions, and $BV$ photometry for the Southern sky to a limiting magnitude of $V \sim 18$. The SPM program makes use of the 51 cm Double Astrograph of the Yale Southern Observatory, located in El Leoncito, Argentina. The first-epoch survey was taken with photographic plates between 1965 and 1974, and second-epoch plates observations were begun in 1988, but only a third of the survey was completed. In 2000 a CCD camera system was installed to complete the second-epoch coverage. This material, carefully processed to obtain the best possible astrometric and photometric information, was complemented with 2000.0 CCD-based positions from the UCAC2 catalogue (Zacharias et al. 2004) to obtain proper motions over an area of about 450 deg$^2$ for all objects down to $V \sim 17.5$.

First, relative proper motions with respect to a photometrically selected sample of Galactic Disk stars were measured within the CCD fields of view. Then, we combined those reference systems into a global one, taking advantage of the substantial overlap between frames, that provides linkage of the reference system across the whole region of the Clouds, limited only by measurement errors. Confirmed extragalactic objects were later used to fit a smooth function, a quadratic polynomial in $(\alpha, \delta)$, that describes the mean motion of the global relative reference frame, that was later used to convert the relative proper motion into absolute ones. An additional zero-point correction was needed to put our proper motions into the ICRS, although theoretically, the external galaxies define an external absolute inertial system. Such difference is consequence of a known problem in the SPM photographic plates, a magnitude equation, whose effect seems to be different in extended objects (galaxies) than in stars, the latter being used to characterize and correct for this systematic problem of the plates.

Bona fide red giants in the LMC and SMC were chosen to measure the mean absolute proper motion of each Cloud. Differently from previous works, that only sampled a few very small scattered fields over each Cloud, our samples cover the LMC and SMC homogeneously and extensively, making any perspective or rotation correction unnecessary. Our measurement of each individual Cloud proper motion unfortunately includes a somewhat large error bar of about 0.3 mas yr$^{-1}$ per coordinate, most of it from Hipparcos' zero point inaccuracy of 0.25 mas yr$^{-1}$. Our results are consistent with the Clouds being marginally bound to the Milky Way but cannot definitely rule out other scenarios. Conversely, our measurement of the relative proper motion of the SMC with respect to the LMC has a much smaller uncertainty of 0.15 mas yr$^{-1}$ given the high precision achieved in the characterization of the global relative reference frame. Our results in this case suggest that the SMC is close to the binding energy limit, and despite the smaller error bar no definitive conclusion can be made about the binarity of the Clouds.

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