TABLE 8

MASS OF THE GALAXY FOR TWO LMC ROTATIONAL VELOCITIES (VDM02 PARAMETERS)

Parameter	Q0459-6427	Q0557-6713	Q0558-6707	Q0615-6615
For $V_{\rm rot} = 50$ km s^{-1}				
$V_{\rm gc,r}$, LMC galactocentric velocity (km s^{-1})	86 ± 25	138 ± 18	106 ± 22	123 ± 24
$V_{\rm gc,t}$, LMC galactocentric velocity (km s^{-1})	224 ± 32	399 ± 28	246 ± 38	466 ± 31
$M_{\rm G}$, mass of the Galaxy in $10^{11} \times\ M_\odot$	(3.9 ± 1.0)	(12 ± 2)	(4.9 ± 1.3)	(16 ± 2)
For $V_{\rm rot} = 120$ km s^{-1}				
$V_{\rm gc,r}$, LMC galactocentric velocity (km s^{-1})	91 ± 25	146 ± 18	114 ± 22	132 ± 24
$V_{\rm gc,t}$, LMC galactocentric velocity (km s^{-1})	283 ± 32	428 ± 28	256 ± 43	466 ± 33
$M_{\rm G}$, mass of the Galaxy in $10^{11} \times\ M_\odot$	(6.0 ± 1.3)	(14 ± 2)	(5.4 ± 1.5)	(16 ± 2)

TABLE 9

MASS OF THE GALAXY FOR TWO LMC ROTATIONAL VELOCITIES (JKL94 PARAMETERS)

Parameter	Q0459-6427	Q0557-6713	Q0558-6707	Q0615-6615
For $V_{\rm rot} = 50$ km s^{-1}				
$V_{\rm gc,r}$, LMC galactocentric velocity (km s^{-1})	76 ± 27	114 ± 20	81 ± 24	97 ± 25
$V_{\rm gc,t}$, LMC galactocentric velocity (km s^{-1})	239 ± 33	367 ± 27	253 ± 31	481 ± 30
$M_{\rm G}$, mass of the Galaxy in $10^{11} \times\ M_\odot$	(3.9 ± 1.1)	(9.2 ± 1.4)	(4.4 ± 1.1)	(16 ± 2)
For $V_{\rm rot} = 120$ km s^{-1}				
$V_{\rm gc,r}$, LMC galactocentric velocity (km s^{-1})	82 ± 27	103 ± 20	71 ± 24	87 ± 25
$V_{\rm gc,t}$, LMC galactocentric velocity (km s^{-1})	299 ± 34	343 ± 26	265 ± 27	488 ± 29
$M_{\rm G}$, mass of the Galaxy in $10^{11} \times\ M_\odot$	(6.1 ± 1.4)	(8.0 ± 1.2)	(4.8 ± 1.0)	(16 ± 2)

showing greater internal motions (Piatek et al. 2008). We remind the reader that in order to determine the mentioned velocities, we had to correct for perspective effects and assume a constant rotation velocity of the LMC plane for all the QSO fields, which would introduce an error in the center of mass PM and consequently in the derived tangential velocities, should local internal motions departing from the assumed constant rotation velocity be present. Another possible error factor (among several others) affecting the derived velocities and masses, especially in extreme cases as that for the field Q0615-6615, could be optical brightness variability, of the fiducial QSO, with time (observing epoch), which is known to occur in some QSOs (i.e. Geha et al. 2003), that could affect the QSO centering process, contaminating the PM results for that particular field. This variability hypothesis should be tested for this particular QSO.

Although slightly larger (specially those for $V_{\rm rot} = 120$ km s^{-1}), the quoted results are compatible with the theoretical $5.5 \times 10^{11}\ M_\odot$ value for the upper mass limit of the Galaxy (Sakamoto, Chiba, & Beers 2003), and with the assumption that the LMC is bound to the Galaxy.

6. CONCLUSIONS

1. Our results, obtained from re-processing the data directly from the original images in order to measure the PM of each LMC field relative to the QSO for different epochs, confirm the results by PCM06 obtained from the (X, Y) coordinates previously processed by the original authors in ALP00. This supports the idea mentioned in § 6.1 by PCM06, where they state that the "ALP00-PAM02 discrepancy" did not originate