

SPECTROSCOPIC BINARIES IN THE LMC

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Preliminary results are presented of an observing programme aimed to obtain estimates of the stellar masses from studies of spectroscopic binary systems in the Large Magellanic Cloud. These are the first steps with the final purpose to determine an empirical mass-luminosity relation in a galaxy other than our own.

The observations have been carried out at CTIO, Chile, with the image tube spectrograph attached to the 1 m reflector. The spectrograms have a reciprocal dispersion of 45 Å/mm, and were obtained on III aJ emulsion, baked in forming gas. Three double lined systems have been observed, namely HV2543, HV2241 and NS105-67[. The preliminary orbital elements of these systems are listed in Table 1, and their radial velocity variations are shown in Figure 1.

Table 1. Orbital parameters for 3 double-lined binaries.

Parameter	HV2543	HV2241	NS105-67[
Period(days)	4.829	4.343	3.301
Vo(km/s)	+ 290	+ 285	+ 270
K1(km/s)	160	157	224
K2(km/s)	273	261	355
M1 sin ³ i(M ₀)	26	21	41
M2 sin ³ i(M ₀)	15	12	26

Notes to Table 1: the orbits were assumed to be circular. Data for NS105-67[are from Niemela and Morrell (1986, in preparation).

The approximate spectral types of the components are O9I:+08V; O7V:+08V and O4f+06V, for HV2543, HV2241 and NS105-67, respectively.

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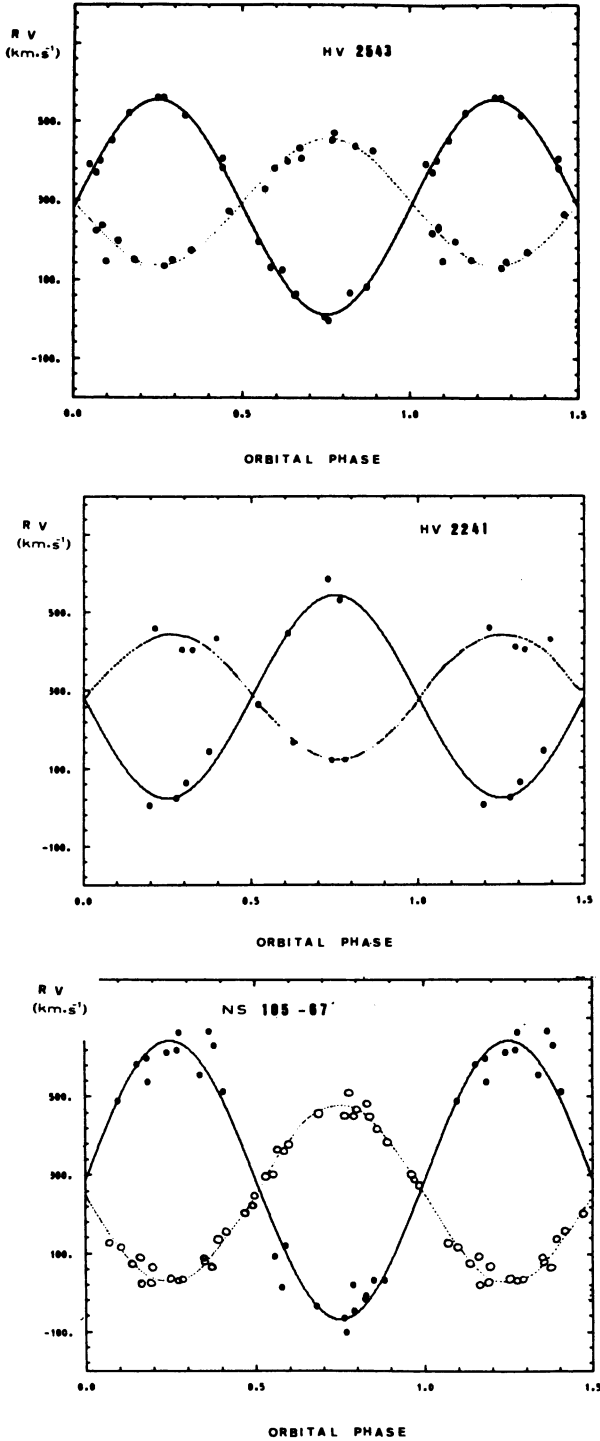


Fig. 1. Radial-velocity curves derived from the computed orbits of the three binaries, with the observed velocities plotted.