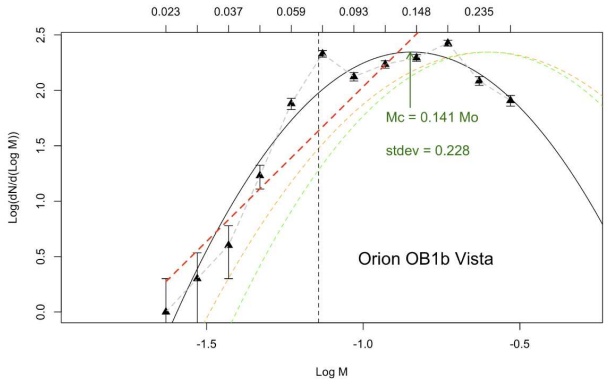

Fig. 3. Initial mass function computed from the photometric candidates found in Orion OB1b. Curves indicate the Pleiades MF from Lodieu et al. (2007), and the fit of the sample to a Kroupa MF and a log-normal MF.

We identified $\sim 10^4$ photometric candidates to very low-mass stars and brown dwarfs from $\sim 9\times10^6$ point sources detected. Assuming the main distances to the Orion sub-region obtained by Briceño et al. (2005) and the models of Baraffe et al. (1998), the candidates cover the main mass interval within $0.3 < M/M_\odot < 0.02$, with main completeness down to $\sim$0.04 $M_\odot$

3. PHOTOMETRIC CANDIDATES AND SPECTROSCOPICALLY CONFIRMED MEMBERS OF ORION

The photometric survey is being complemented with follow up low-resolution optical spectroscopy of photometric candidates on the Hectospec instrument on the 6.5 m MMT, which has provided spectroscopic confirmation of pre-main sequence very low mass stars and young brown dwarfs down to $\sim$0.05 $M_\odot$ over 6 deg^2 (e.g., Briceño et al. 2005; Downes et al. 2008).

The confirmation of memberships to Orion was performed in terms of spectral features that are good youth indicators such as Hα line in emission, NaII in absorption and LiI in absorption (Downes et al. 2008). The substellar nature of the new members was defined in terms of the spectral types. Objects with spectral types M6 or later have been considered as brown dwarfs. The spectral classification was performed by fitting the equivalent width of several spectral features such as TiO and VO bands with a library of standards, following the scheme of Hernández et al. (2004).

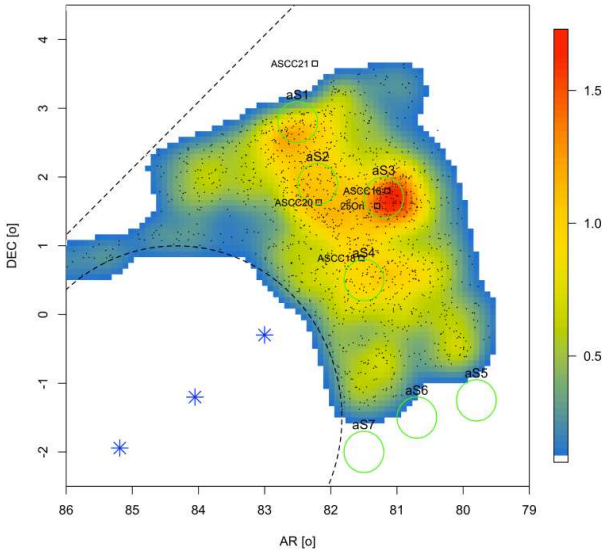

Fig. 4. Spatial distribution of photometric candidates in the OB1a subregion near the 25Ori cluster (Briceño et al. 2007b). These candidates came from the selection using photometry from our optic survey and J, H and K-band photometry from VISTA. The limiting magnitude and color from these sample allow the detection of brown dwarf candidates down to 0.02 $M_\odot$.

4. RESULTS FROM THE PRELIMINARY ANALYSIS

The sample of stellar and substellar objects spectroscopically confirmed as members of Orion and those that still remain as photometric candidates were studied in terms of the initial mass function, their spatial distribution, the near infrared excesses and the fraction of objects with Classical or Weak T Tauri-like characteristics. These results are summarized as follows:

4.1. *The initial mass function*

From the sample of photometric candidates and computing the contamination of the sample by field stars following the procedure explained in Downes et al. (2011, in prep.) we obtain the initial mass function in several subregions of Orion. Figure 3 shows the resulting initial mass function for the Orion OB1b sub-region. We found no essential differences between the IMF for this dispersed populations and the IMF found in relatively old clusters such as the Pleiades (Lodieu et al. 2007).

4.2. *Spatial distribution*

Figure 4 shows the spatial distribution of brown dwarfs and very low mass star candidates nearby the 25Ori cluster in the Orion OB1a sub-region (Briceño