TABLE 1

JOURNAL OF THE VVV VARIABILITY CAMPAIGN

	1st year (2010)	2nd year (2011)	3rd year (2012)	4th year (2013)	5th year (2014)	Total Phase Points
Bulge	05	12	60	—	12	89
Disk	05	08	—	70	05	88

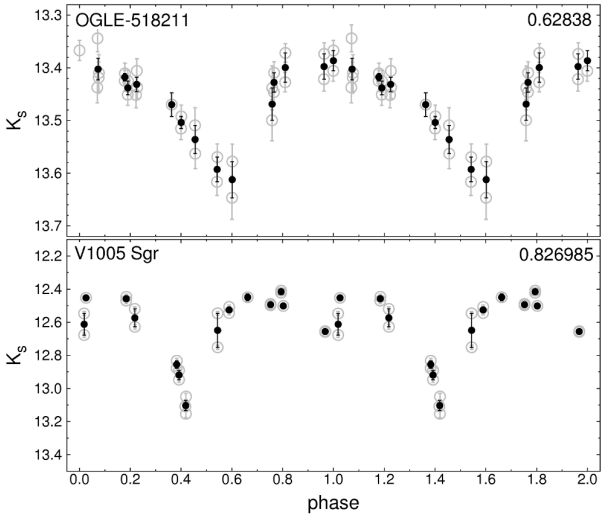

Fig. 1. Examples of VVV light curves obtained from the Science Verification data. In the top we show the light curve of OGLE-518211, a fundamental-mode RR Lyrae with a period of $P = 0.62838$ days. The bottom panel shows the light curve of V1005 Sgr, an Algol-type eclipsing binary with an orbital period of $P_{\rm orb} = 0.826985$ days. The data points are shown twice in phase for better visualization.

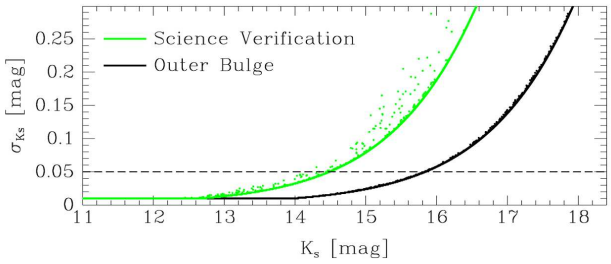

Fig. 2. Photometric accuracy as a function of magnitude for the Science Verification area and for an outer Bulge field observed during the first year of the VVV variability campaign.

3. VARIABILITY CAMPAIGN

The VVV variability campaign is being conducted in K_s-band and will cover a total of five years, with a total of 89 phase epochs for the Bulge area and 88 points for the disk. Table 1 shows the observational strategy of the variability campaign. Extra observations of a few selected fields over a short timescale (i.e., 10–40 times per night) will also be taken during the fifth year. These observations will allow us to find short period variables, planetary transits and microlensing events. Our survey will give the most complete catalogue of variable objects in the inner Milky Way, with $\sim 10^6$ variables.

Figure 1 shows light curves made from the VVV data. The data used were obtained during the VISTA Science Verification, in a total of 14 K_s-band phase points. In the top panel we show the light curve of OGLE-518211, a fundamental-mode RR Lyrae with a period of $P = 0.62838$ days. The object shows a minimum magnitude of $K_s \sim 13.6$ mag, with an amplitude of $A_{K_s} \sim 0.24$ mag. The bottom panel shows the light curve of V1005 Sgr, an Algol-type eclipsing binary with $K_s \sim 12.4$ and an orbital period of $P_{\rm orb} = 0.826985$ days.

In order to properly classify the variable stars an automated classification scheme is currently being developed (Catelan et al. 2011). This requires high-quality, well-sampled template light curves for the many different types of variable stars that are present in the surveyed fields. Unfortunately, since the VVV Survey is the first of its type to be carried out in the near-IR, light curve templates in this wavelength range are, for the most part, not available. Thus, in parallel with the main survey, we are also building a large database of high-quality light curves for different variability classes in the K_s-band, using a variety of other telescopes.

4. PERSPECTIVES ON EXTRASOLAR PLANETS STUDIES

The VVV observations will also allow us the detection of a large number of extrasolar planets, transits and microlensing events. Our simulations show that $\gtrsim 10^2$ microlensing events and $\gtrsim 10^3$ planetary transits should be detected using the five years vari-