Supplementary Data

S1.

The gap has been shown to provide a cue to observers about when a saccade will be required so that they can prepare movement before the target appears, and thereby reduce saccade latency, and some latency reduction has been observed as a result of cuing (Pratt et al., 2000). In a control experiment, we used a similar paradigm to determine if the gap could serve as a cue in our identification task. Conditions were basically the same as in our main dot-dimming task, except that observers used saccades as a readout of their selection of the target and the saccade target brightened and enlarged instead of dimming, and the target appeared during steady state (600~1000 ms after motion onset). In addition, the central target changed its color from green to white (cue) or disappeared (gap) 200 msec before the saccade target onset. We found significantly shorter saccade latency in the gap condition (cue 231 msec, gap 207 msec; t(3) = 5.907, p < .01)(see Figure S1). The results suggest that the difference of the detection rate was not merely due to a warning effect.

Figure S1. Cumulative probability saccade latencies for a cue and gap. Notice that saccade latency was earlier for the gap (green curve) than for the cue (red curve) for all observers.
S2.

To test whether the background was attracting attention outward because of its peripheral spatial extent, we performed a control experiment on two observers in which the background motion was directed orthogonal to the motion of the 5-dot stimulus (see Figure S2). Performance was poorer in this condition than when the background moved with the 5-dot stimulus (with, 79.8%; orthogonal, 60.3%; t(2) = 4.22, p = .05). A minimum of three blocks in each condition (90 trials/block) was run for each observer.

Figure S2. Percent correct for background motion consistent and orthogonal to that of the task stimulus. Note that performance suffered with orthogonal motion for both observers.