Roche lobes as more evolved stars, the evolution of the core is proceeding more rapidly. The rate of mass loss will also typically be high, however, and can be increased if winds carry significant angular momentum. To incorporate these effects, we could carry out a detailed evolution for each system. The uncertainty would still be large, because the physical effects that determine the binary evolution are not yet well-enough understood. To determine the numbers of transits expected by white dwarfs that are the remnants of Roche-lobe-filling donor stars, we have therefore chosen to average over the three prescriptions described above for the final mass of the core. This averaging process corresponds to considering a range of mass-transfer rates as well as evolutionary states for the donor.

The age of the monitored systems can also influence the results. In particular, the primary needs to have had enough time to evolve and produce at least a modest core. Yet the star that was originally less massive should still be on the main sequence, even after gaining some mass from its companion. To take this into account, in simulations labeled "2", we considered a constant rate of star formation over an interval of 12 billion years. We randomly generated the time at which each stellar system was formed, and considered further only single stars which would not have had time to evolve during the interval from their formation until the present day. We considered only binaries in which the primary star had time to evolve, but the secondary is still on the main sequence. In this case the fraction of transiting systems derived from common envelope evolution (stable mass transfer evolution) was $4.3 \times 10^{-3}$ ($2.0 \times 10^{-3}$).

We conducted additional simulations, not shown in the table, because the results did not change significantly. For example, changing $\tau_{monitor}$ from 1 year to 3.5 years changes the results by only a few percent, since most of the transits occurred in binaries with orbital periods smaller than a year. (Multiple transits of the same monitored star will, however, increase the reliability of the detection.) As another example, monitoring stars in a more limited mass range ($0.9 - 1.9\, M_\odot$, or $1.9 - 2.9\, M_\odot$) changes the results by only $\sim 10\%$.

### 3.2. Results

It is useful to consider the contribution of common-envelope survivors and stable-mass-transfer binaries separately.

$$N_{transit} = N^{ce}_{transit} + N^{mt}_{transit} \tag{4}$$

To estimate the value of each term, we average over the results for the simulations described above. First, we note that simulation 1 is more appropriate for an old population in which the white dwarfs would have long-ago formed from the primary stars in binaries