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Satellite Quenching Near Isolated MW-Sized Galaxies: Simulations

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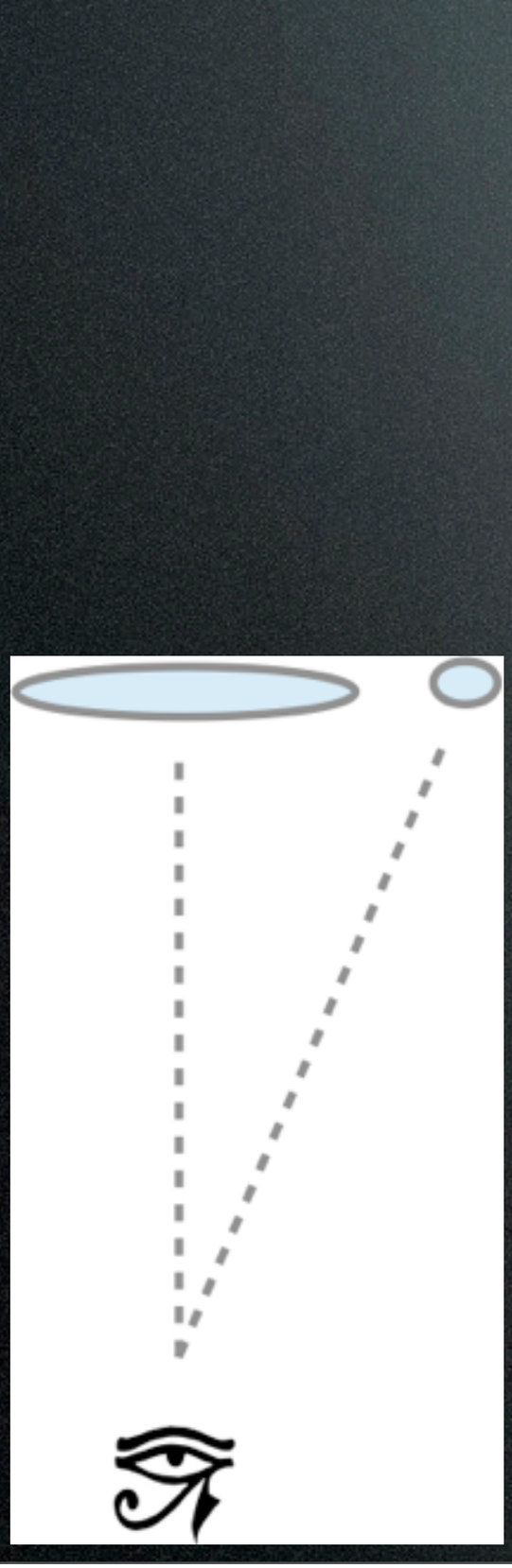
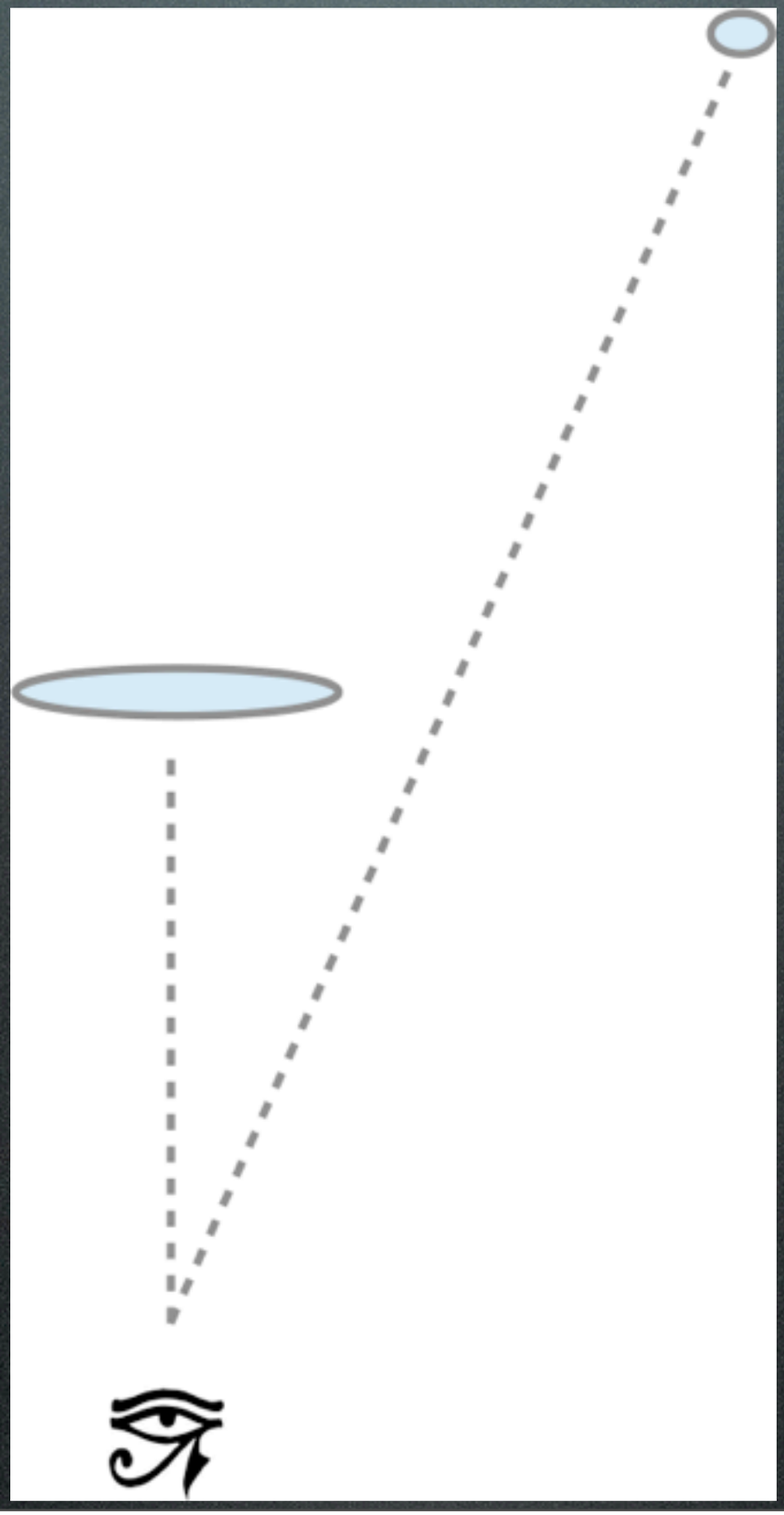
Goals

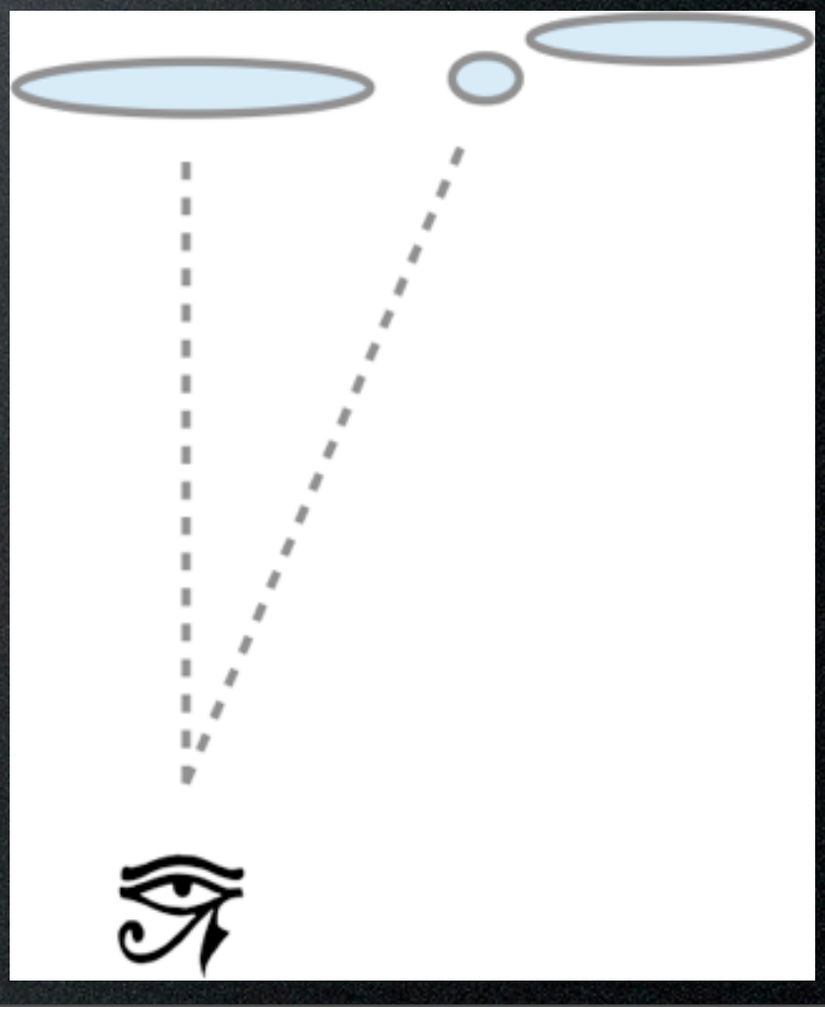
- Can we find evidence that LMC-like satellites become quenched upon falling into virial radius of a MW-size host (and if so, why and how strong is the effect?)
- Investigate quenching of ~0.1 L* satellites around isolated L* galaxies using SDSS data [See John Phillips' talk next]

- Hard part: if you randomly select pairs of galaxies you'll probably end up in a cluster
- Use N-body simulations to derive a method to pick isolated MW's with satellites that we then apply to real data: Δv, projected separation, number of big neighbors

Purity vs Contamination

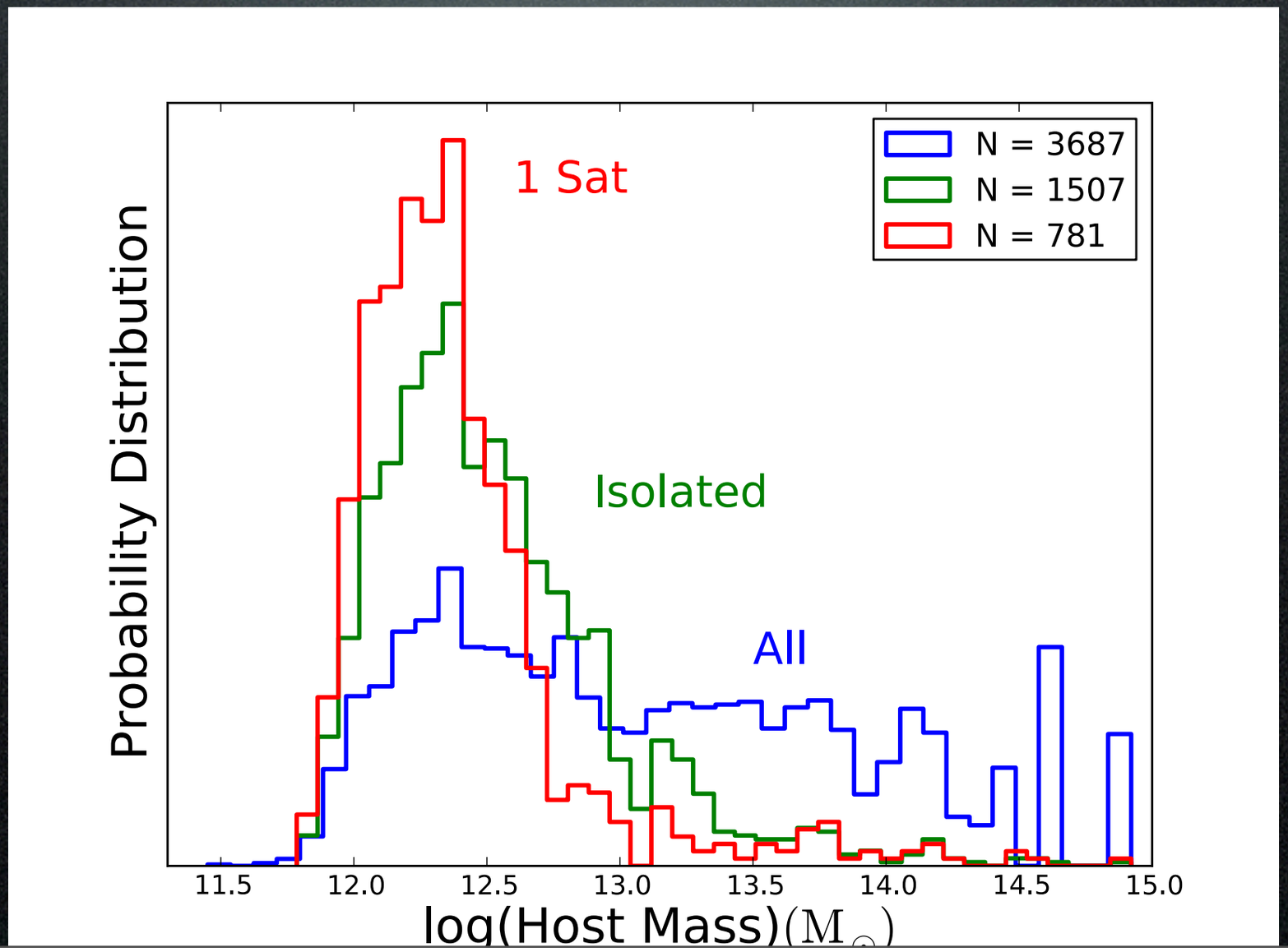






Obtaining a Sample of Isolated MW-Sized Objects with Satellites

- Choose Vmax cuts that correspond to abundance matching estimates in SDSS
- All halos with Vmax > 165 km/s <--> log(M*) > 10.5 $M_\odot$ and at least 1 dwarf companion (95-165 km/s) within 355 kpc and Δv < 500 km/s
- At most 1 other large object within 1 Mpc and Δv < 1000 km/s
- Exactly one dwarf companion within 355 kpc and Δv < 500 km/s



Purity of Host/Satellite Pairs vs Number of Allowed Nearby Large Halos