

MW

M31

Center of “unperturbed”
MW Halo

$\mathbf{x}_{\text{travel}}$

$\mathbf{v}_{\text{travel}}$

$$|\mathbf{x}_{\text{M31} \rightarrow \text{MW}_{\text{outer}}} = r$$

$$|\mathbf{x}_{\text{M31} \rightarrow \text{MW}_{\text{disk}}} = D$$

\mathbf{v}_{obs}

