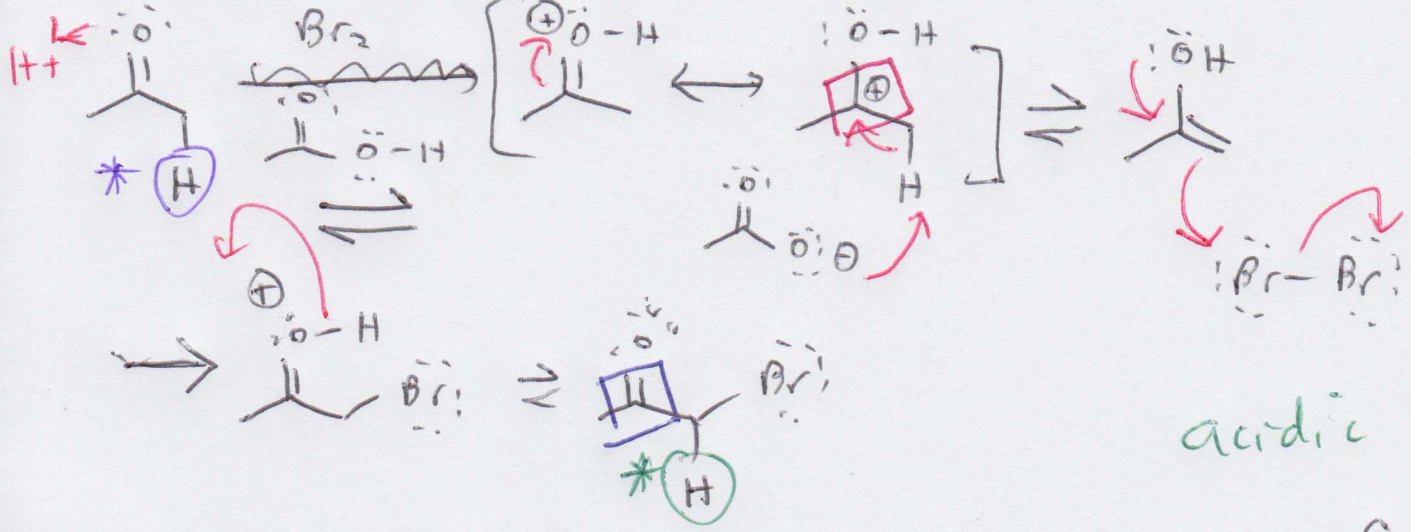
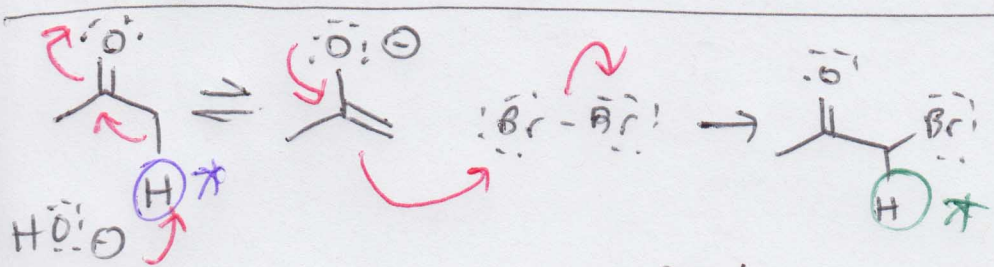
α-halogenation of aldehydes & ketones



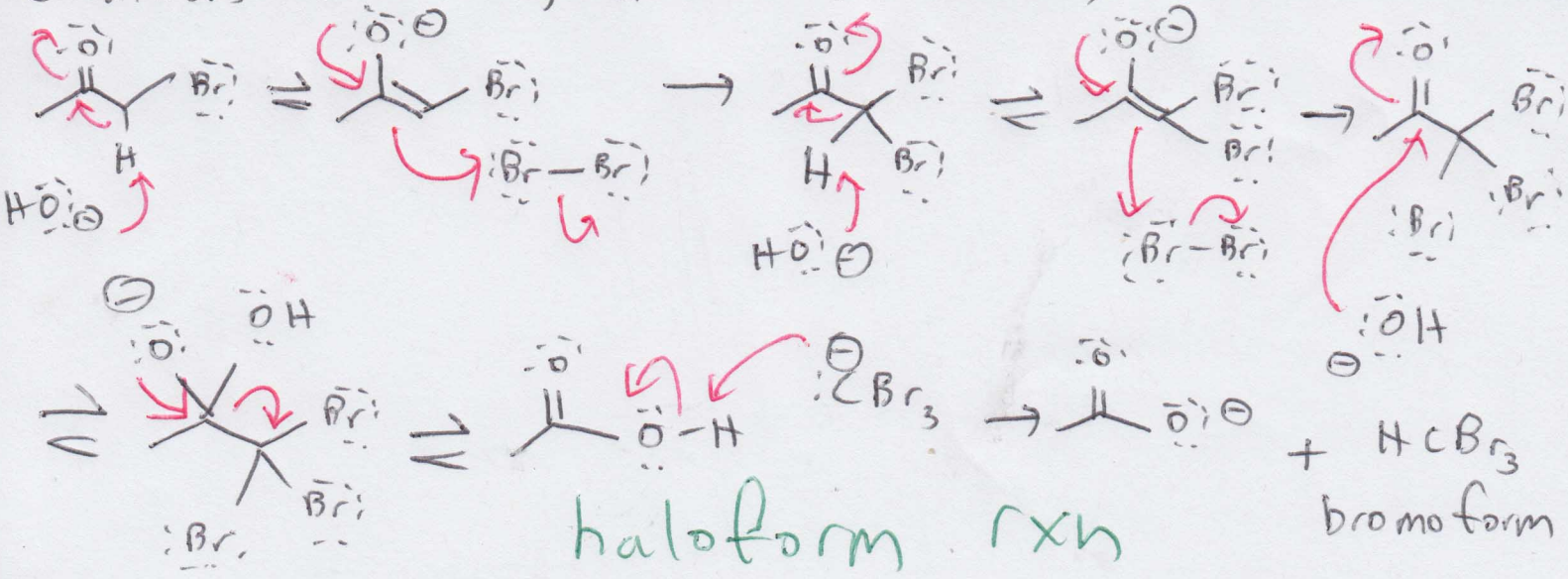
acidic

The product that forms is unlike to react further, since the halogen creates a δ+ center immediately next to the carbonyl (□), making the C=O less likely to open/react.



basic

The circled α-proton of the product (H) has a lower pka (more acidic) than the α-proton of the starting compound (H). Because the product is in the same rxn conditions as the original starting material, it will react further



haloform rxn

+ $HCBr_3$ bromoform