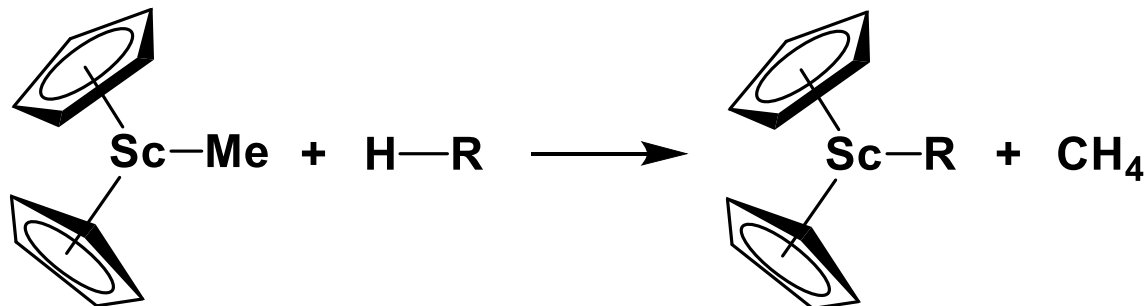
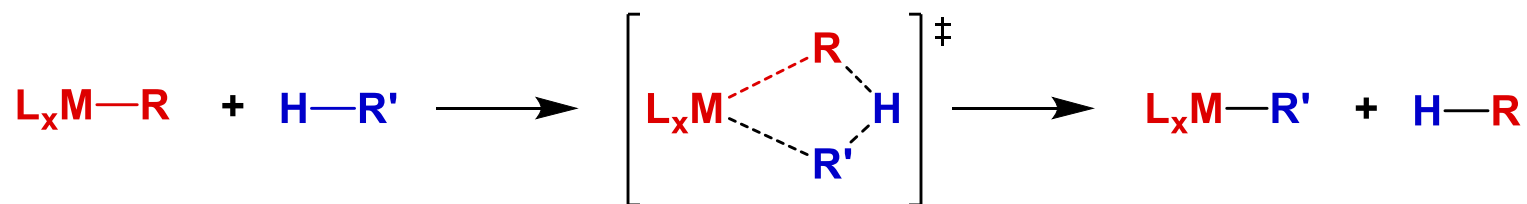


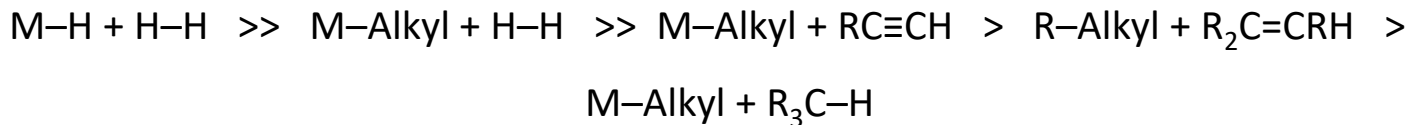
# $\sigma$ -Bond Metathesis



- $d^0$  metal, so such a reaction cannot occur by OA, then RE
- $\sigma$ -Bond Metathesis discovered in 1987 by John Bercaw at Caltech



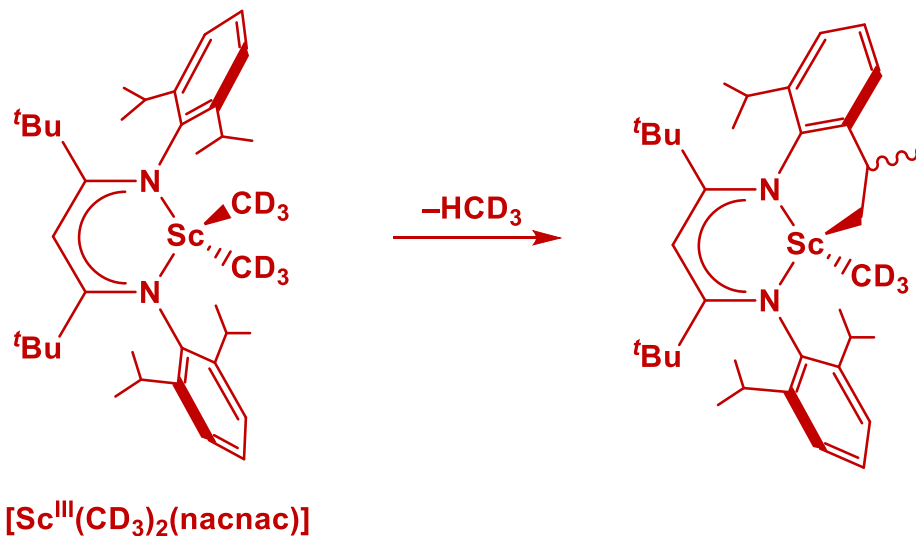
- Very common for metals without an accessible oxidation state 2 units higher
- Order of reactivity (greater reactivity with higher  $\sigma$ -character in R-H bond):



# $\sigma$ -Bond Metathesis

- $\sigma$ -bond metathesis often occurs intramolecularly  $\rightarrow$  (cyclo)metalation

$\sigma$ -Bond Metathesis



OA followed by RE

