Supporting Information

Reactivity Studies of the Silylene [PhC(N*t*Bu)₂](C₅Me₅)Si - Reactions with [M(COD)Cl]₂ (M = Rh(I), Ir(I)), S, Se, Te, and BH₃

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NMR-Spectra
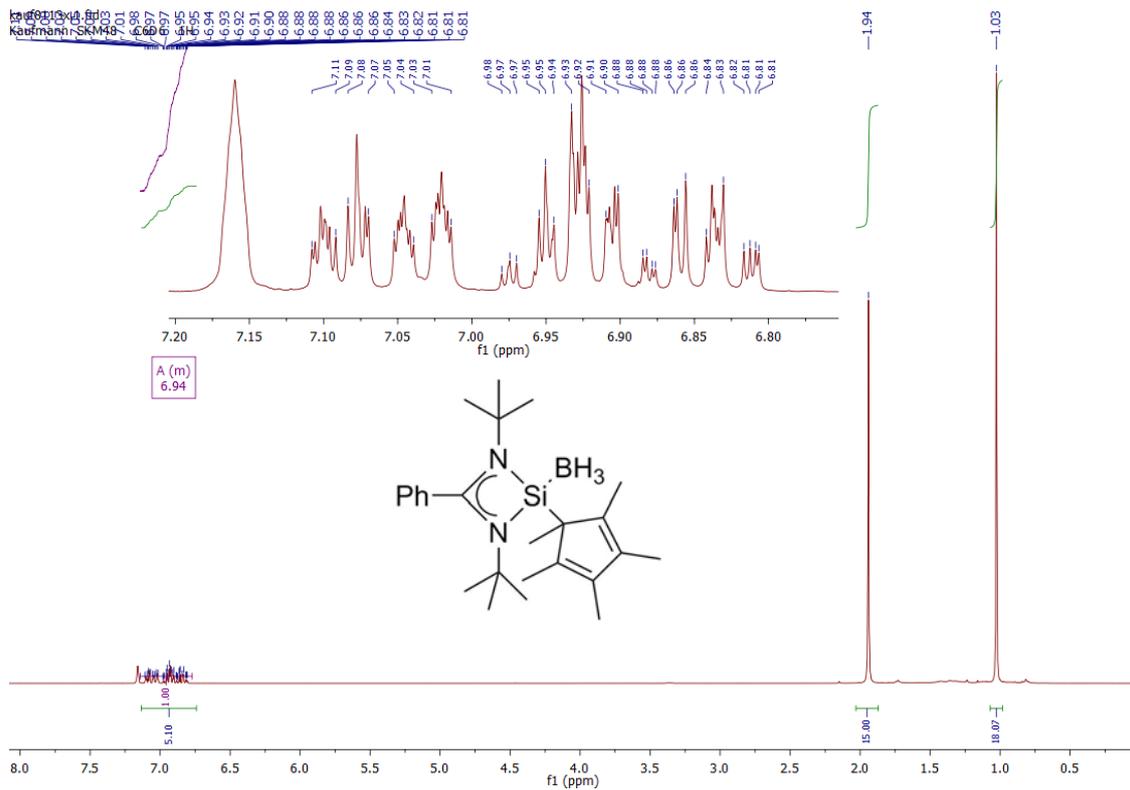
*Figure S1: ^1H NMR spectrum of **1** in C₆D₆.*
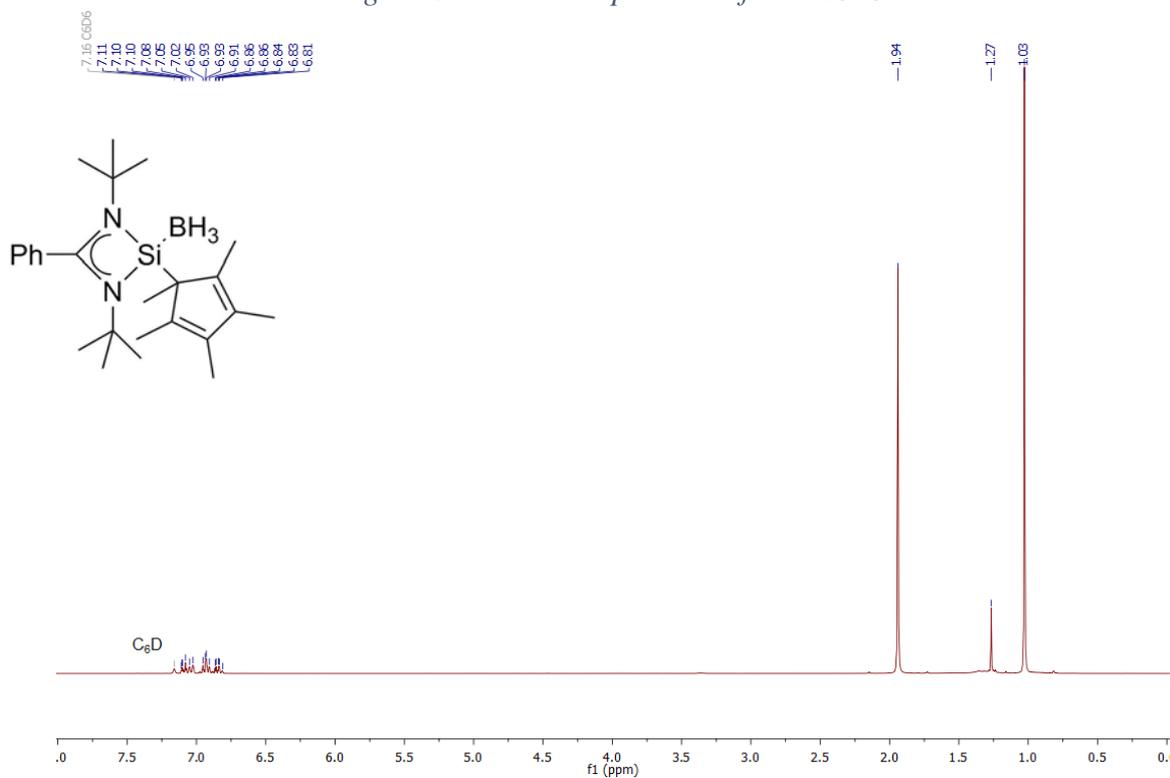
*Figure S2: $^1H\{^{11}B\}$ NMR spectrum of **1** in C₆D₆.*
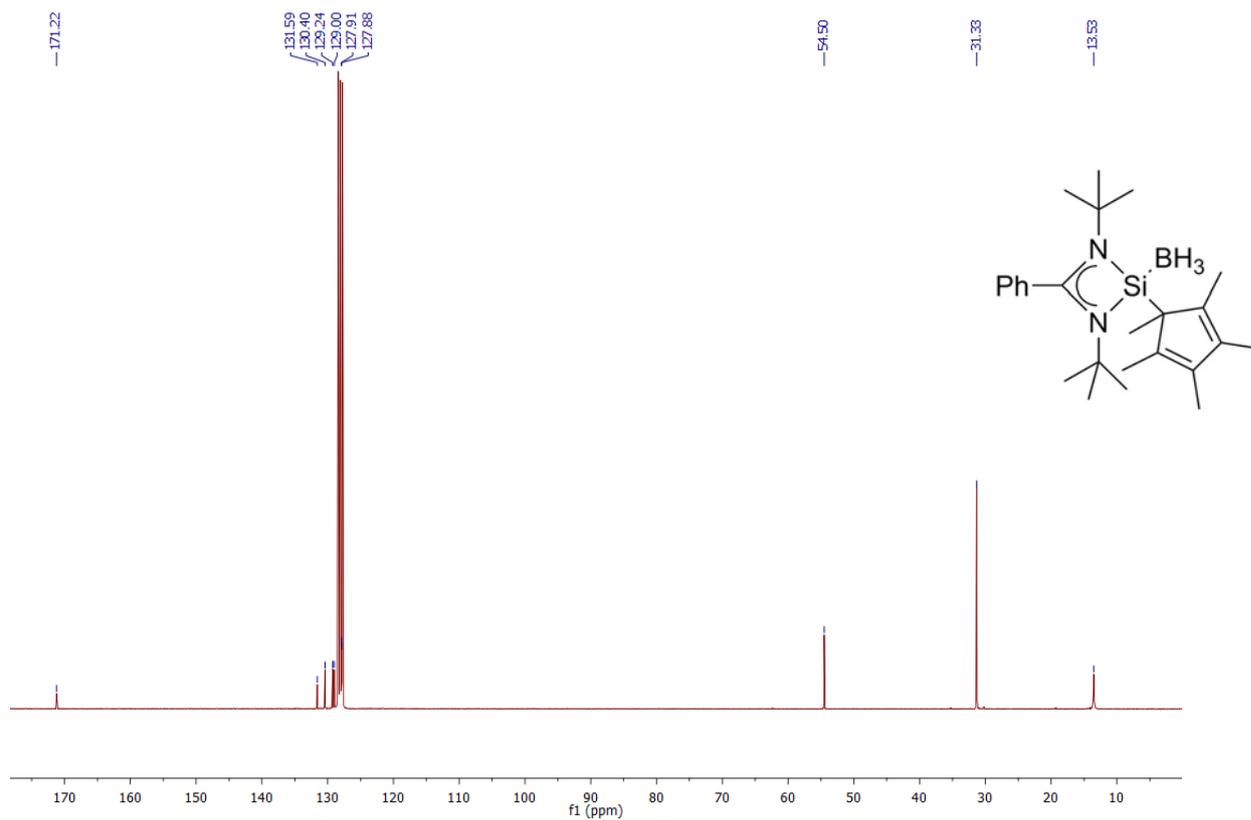
Figure S3:$^{13}C\{^1H\}$ NMR spectrum of **1** in C$_6$D$_6$.
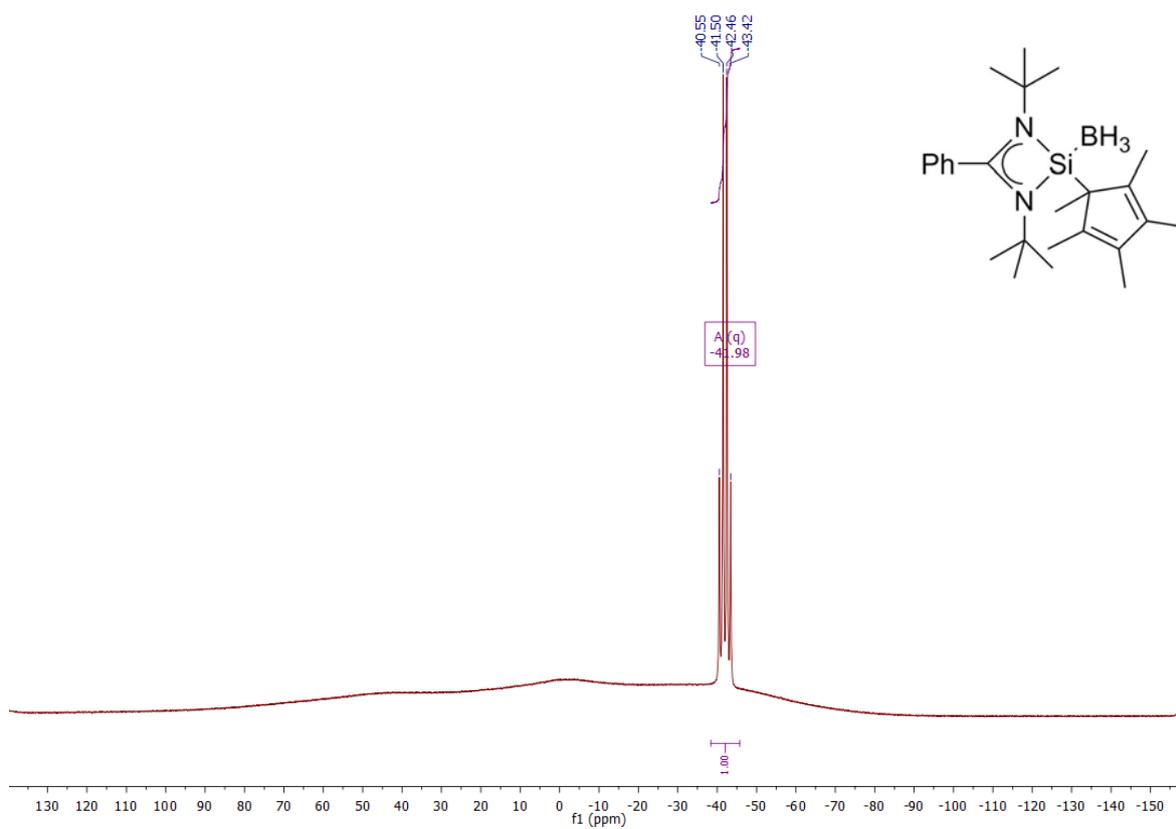
Figure S4: ^{11}B NMR spectrum of **1** in C$_6$D$_6$.
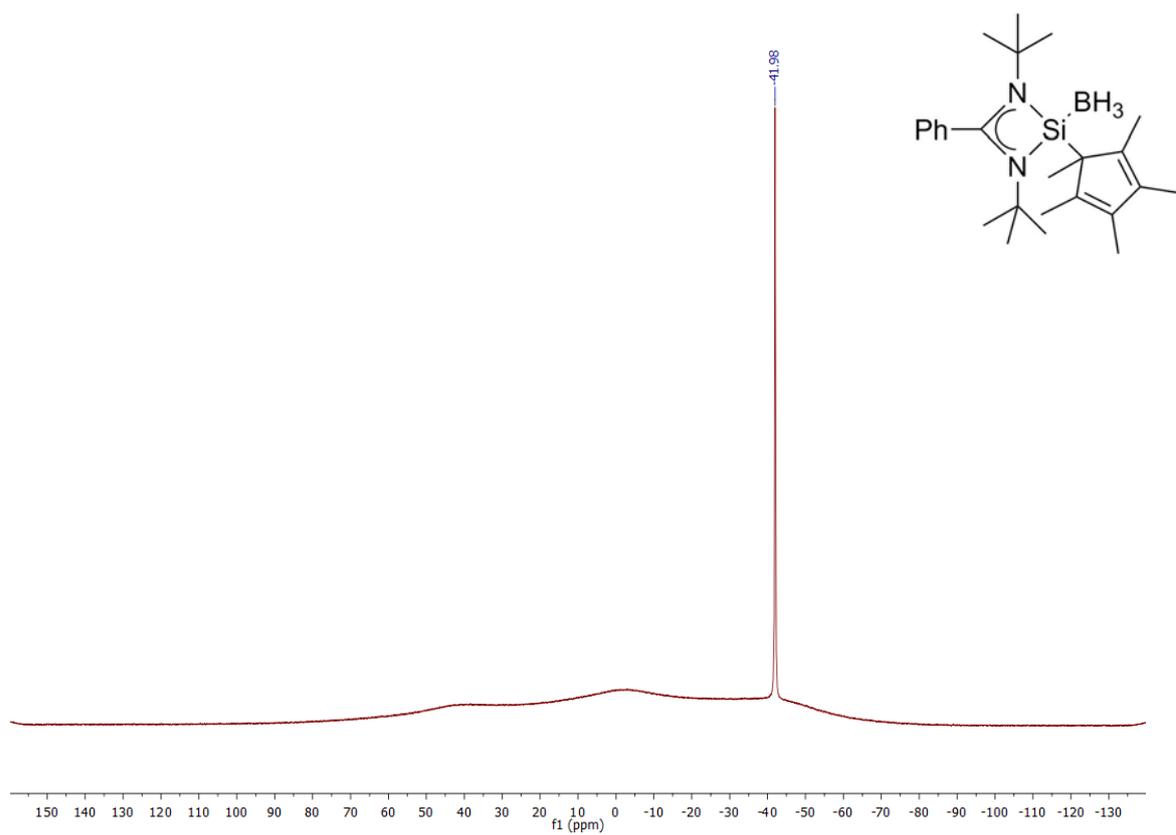
*Figure S5: ¹¹B{¹H} NMR spectrum of **1** in C₆D₆.*
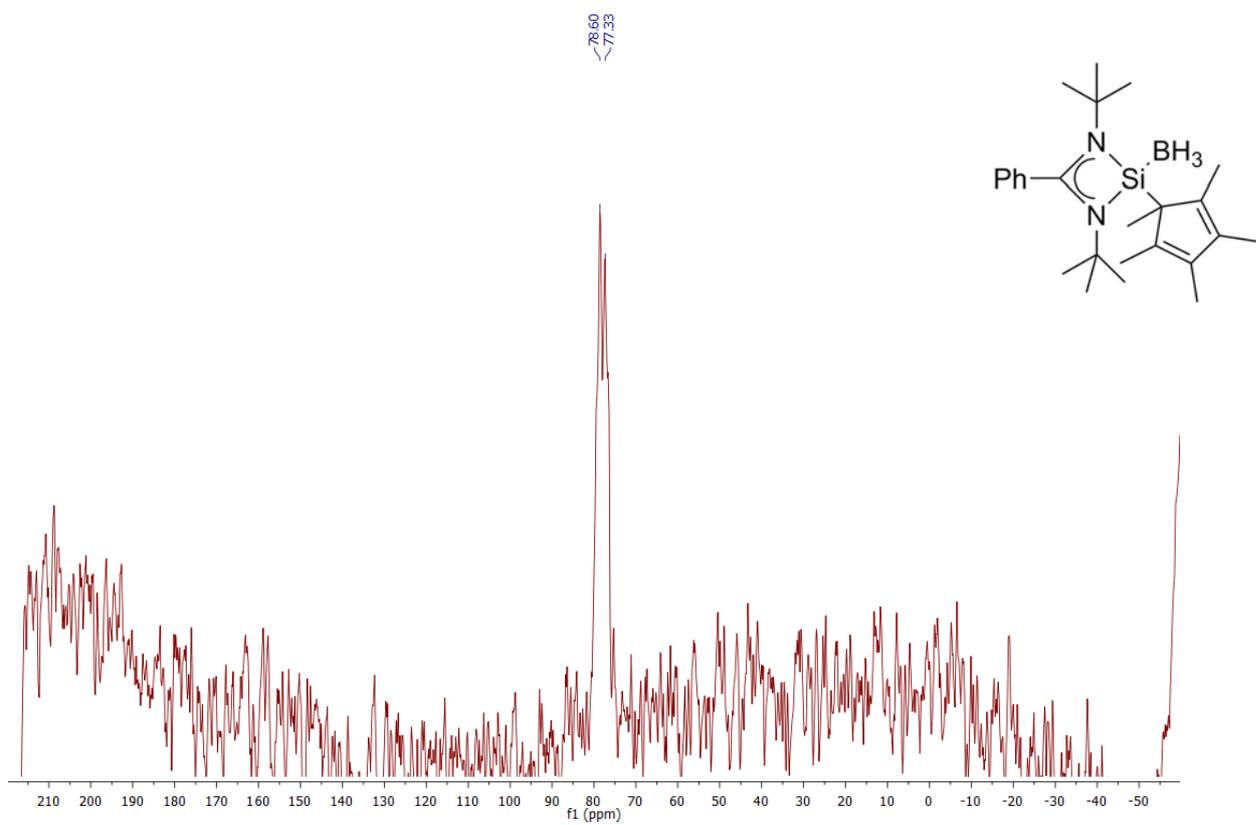
*Figure S6: ²⁹Si NMR spectrum of **1** in C₆D₆.*
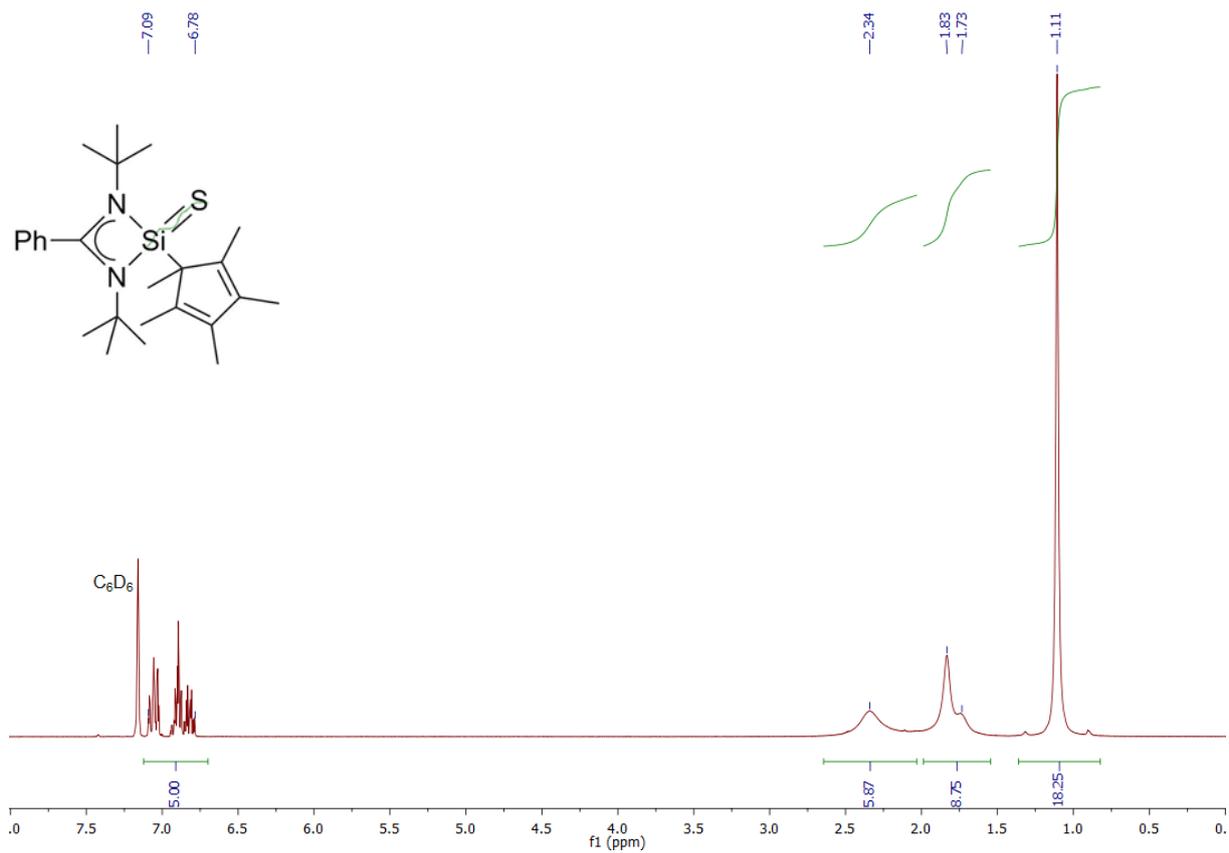
*Figure S7: ^1H NMR spectrum of **2** in C_6D_6.*
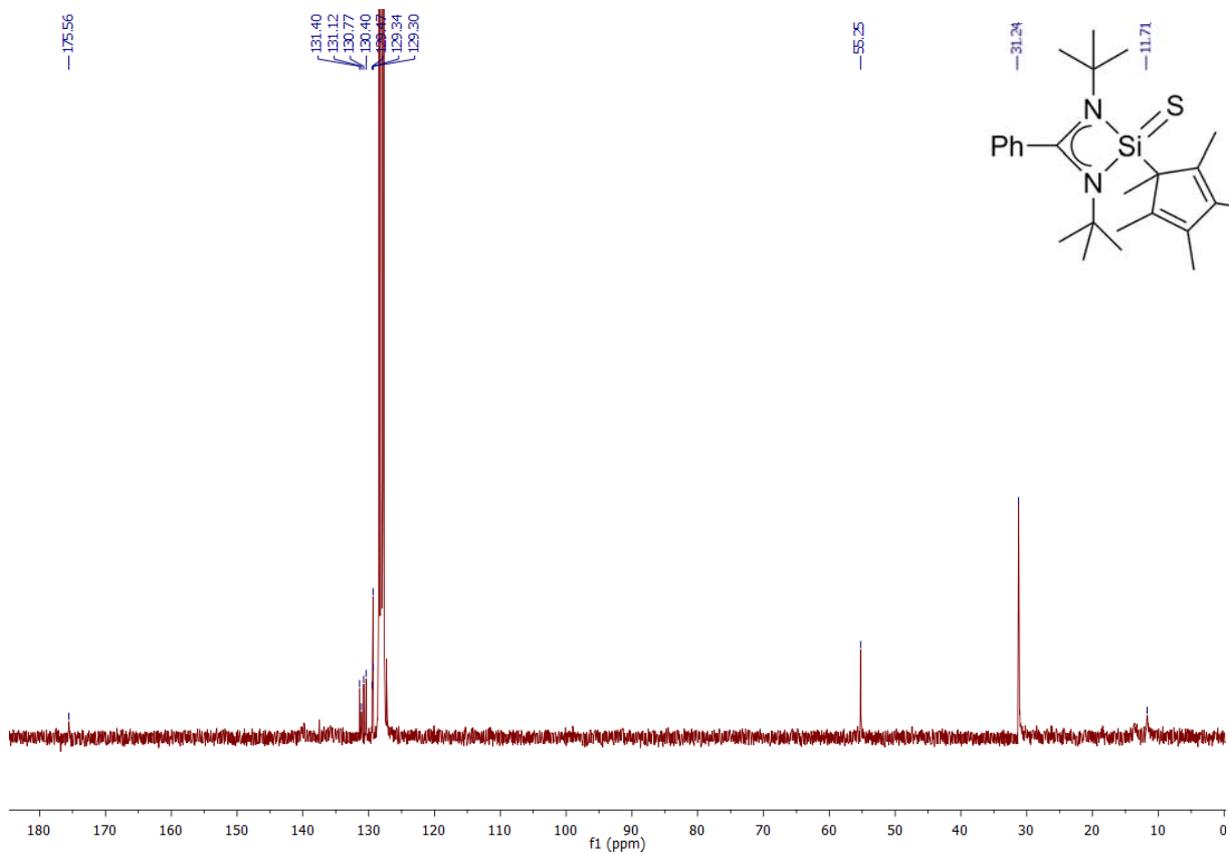
*Figure S8: $^{13}C\{^1H\}$ NMR spectrum of **2** in C_6D_6.*
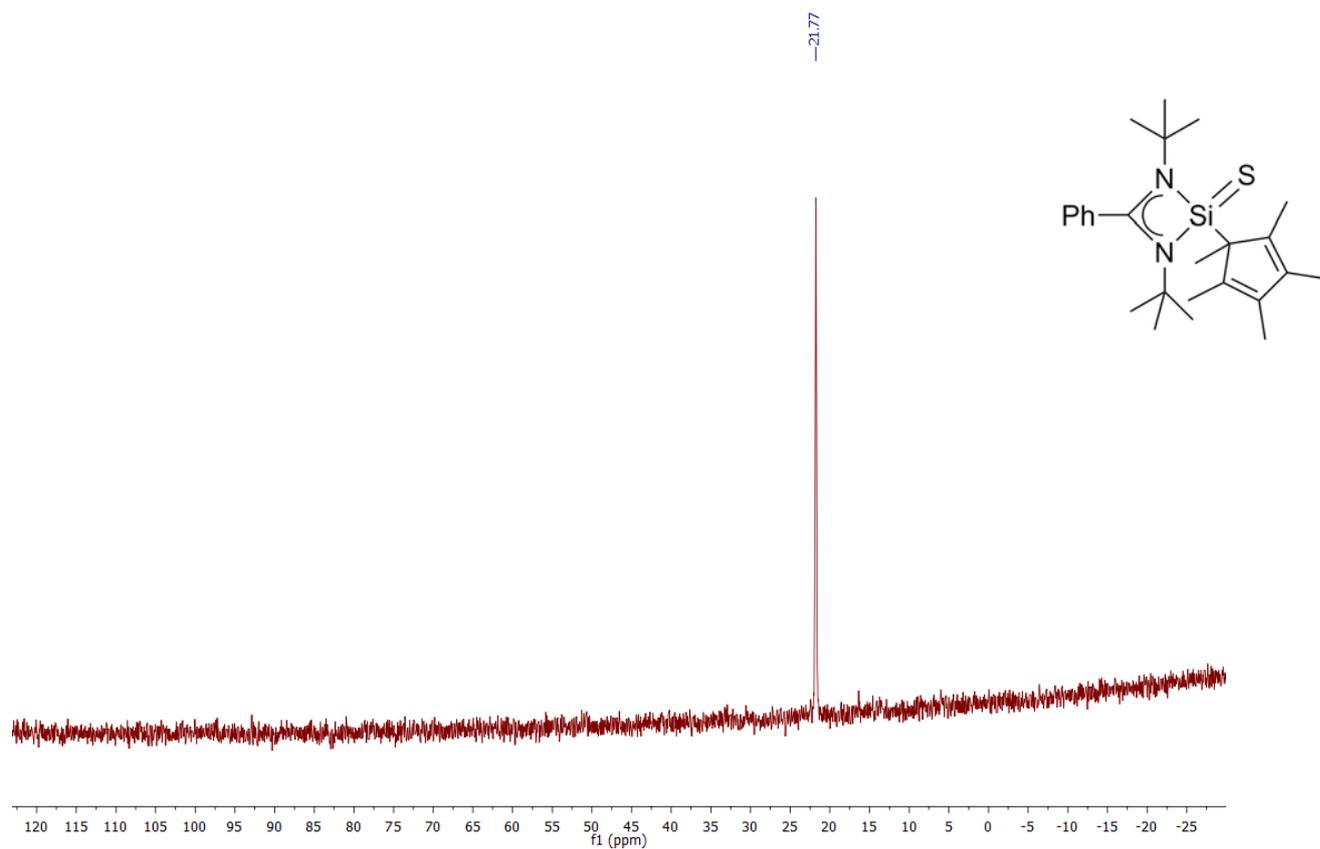
*Figure S9: ^{29}Si NMR spectrum of **2** in C_6D_6.*
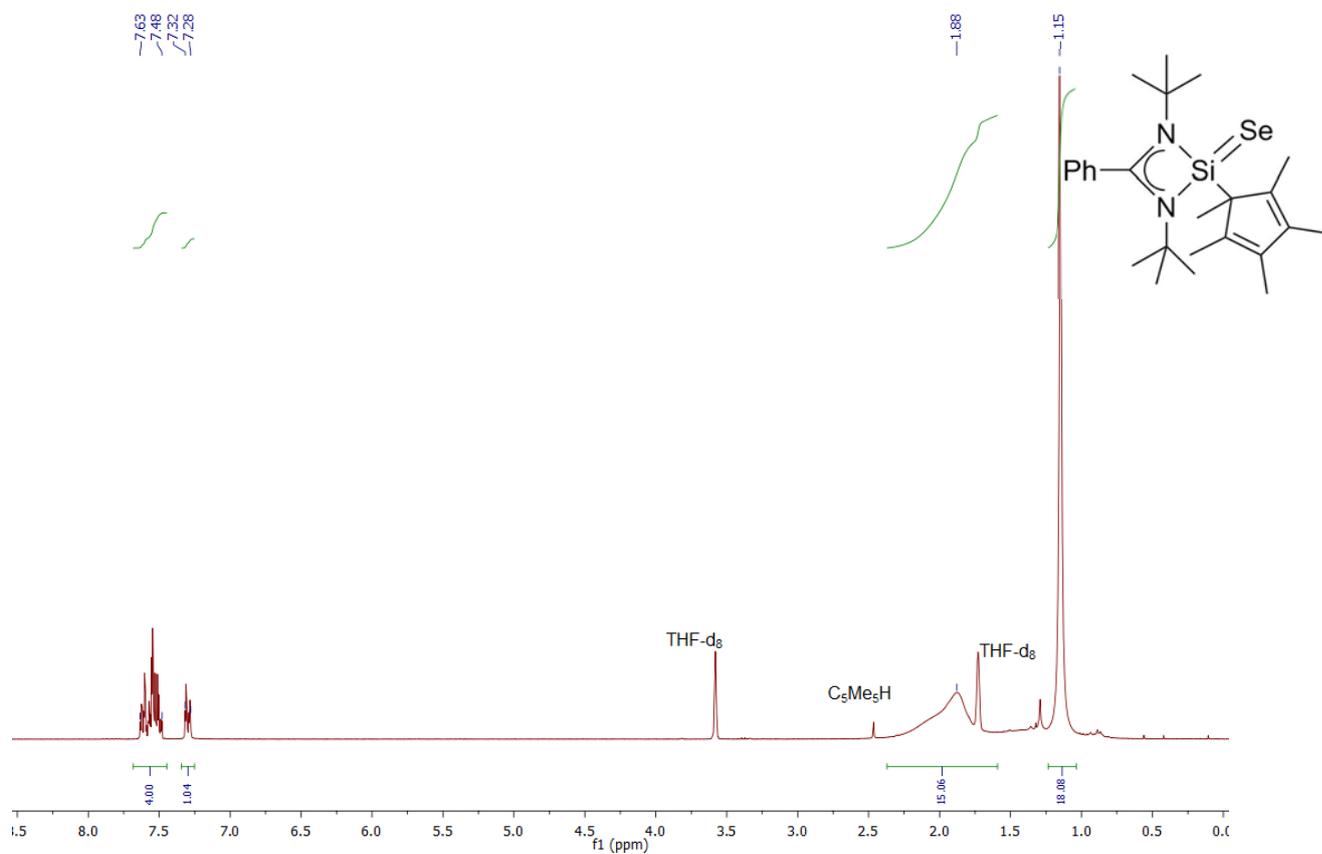
*Figure S10: ^1H NMR spectrum of **3** in THF-d₈.*
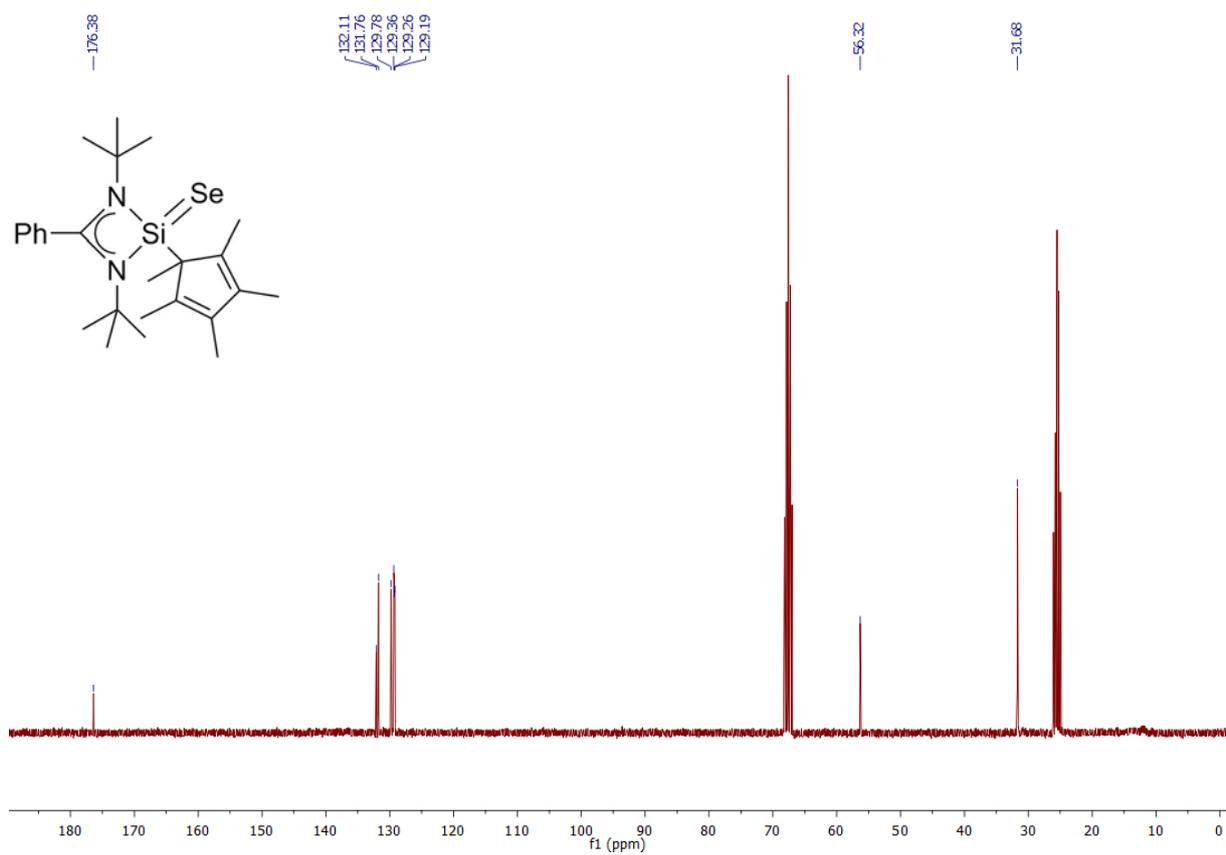
*Figure S11: $^{13}C\{^1H\}$ NMR spectrum of **3** in THF-d8.*
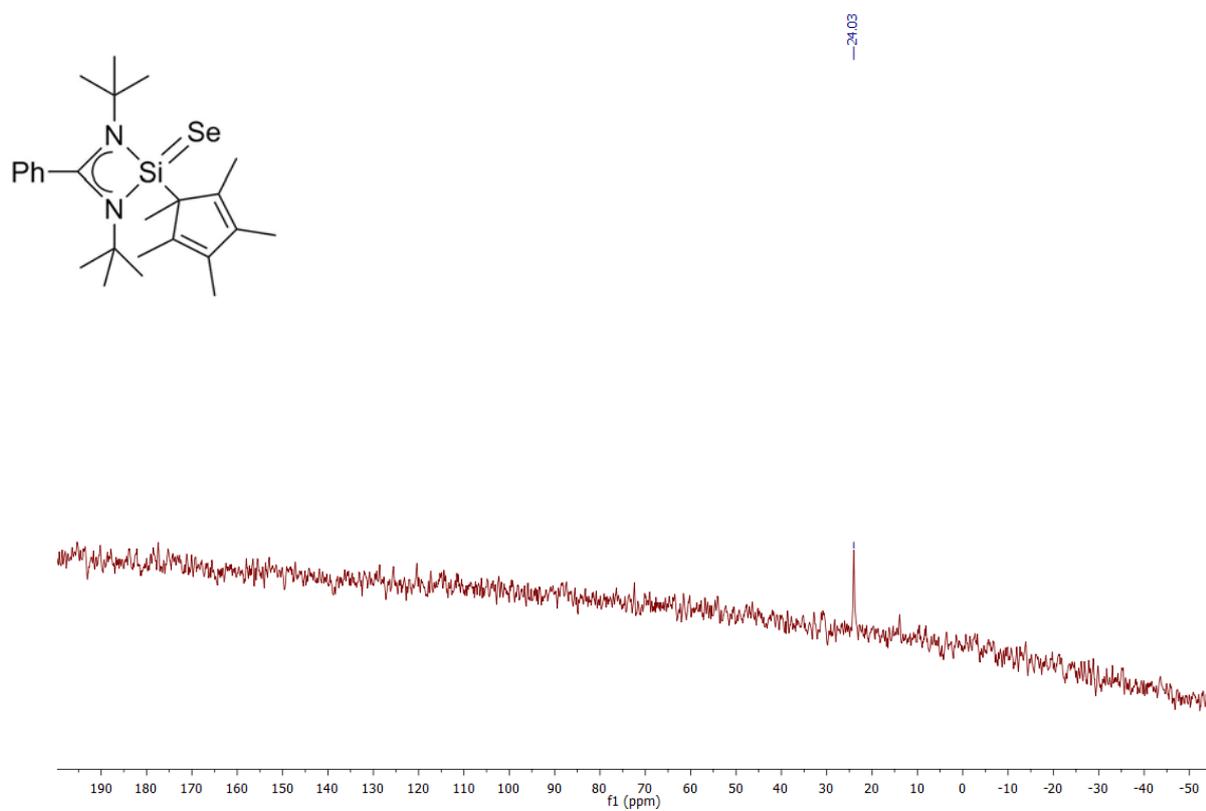
*Figure S12: ^{29}Si NMR spectrum of **3** in THF-d8.*
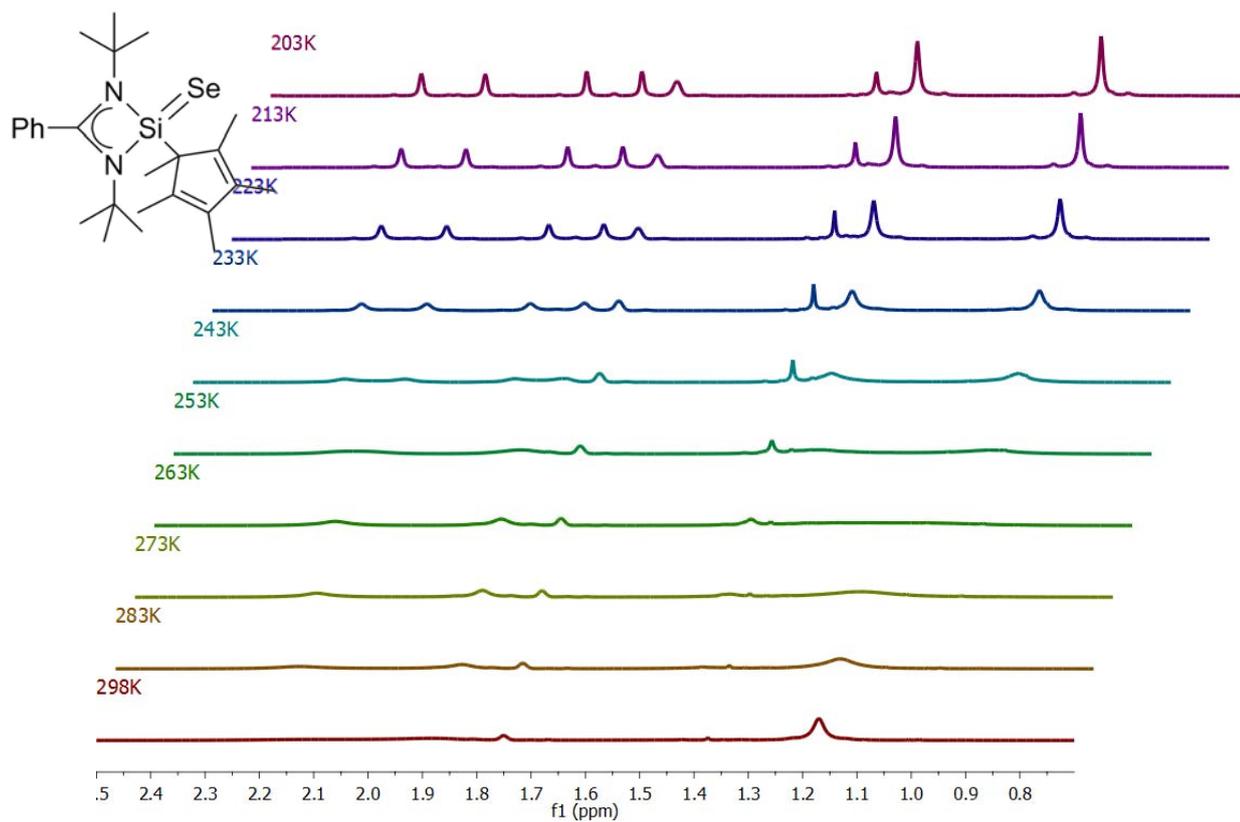
*Figure S13: Low temperature VT 1H NMR spectra of compound **3** in THF-d8.*
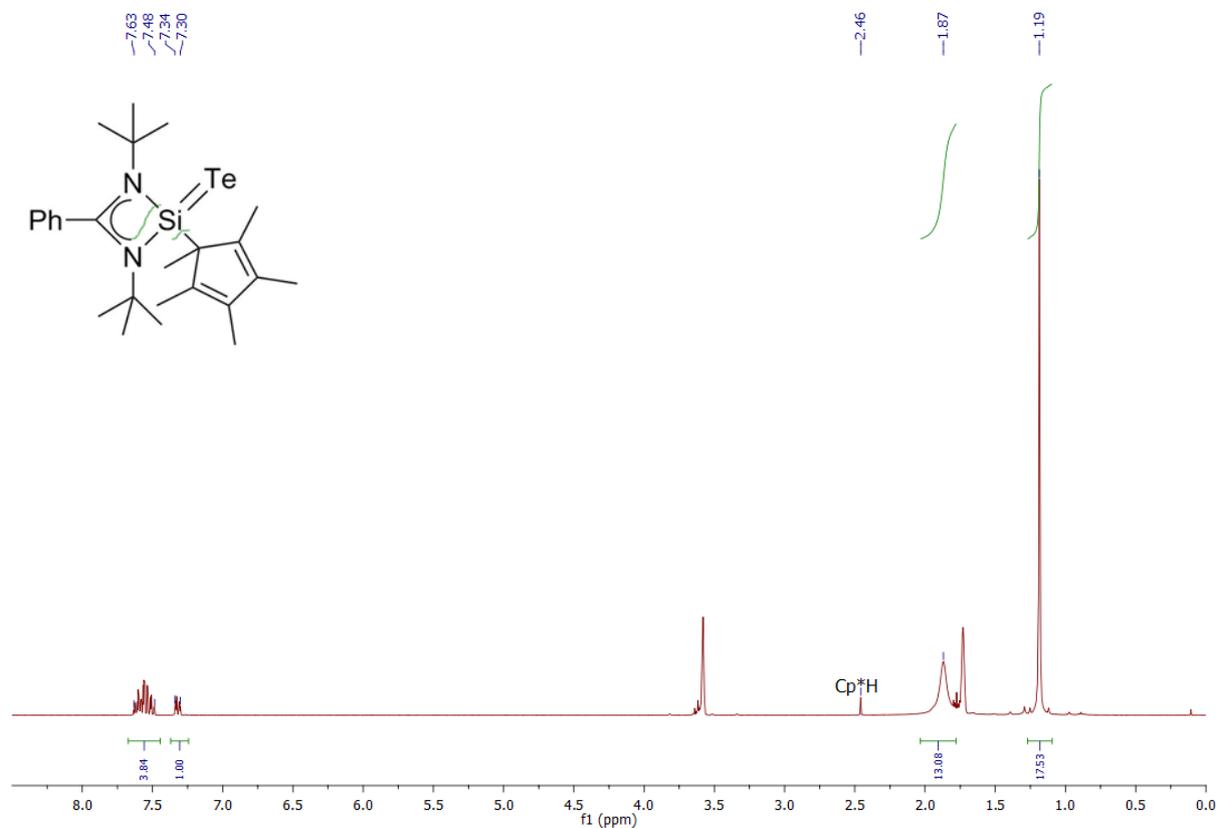
*Figure S14: ¹H NMR spectrum of **4** in THF-d8.*
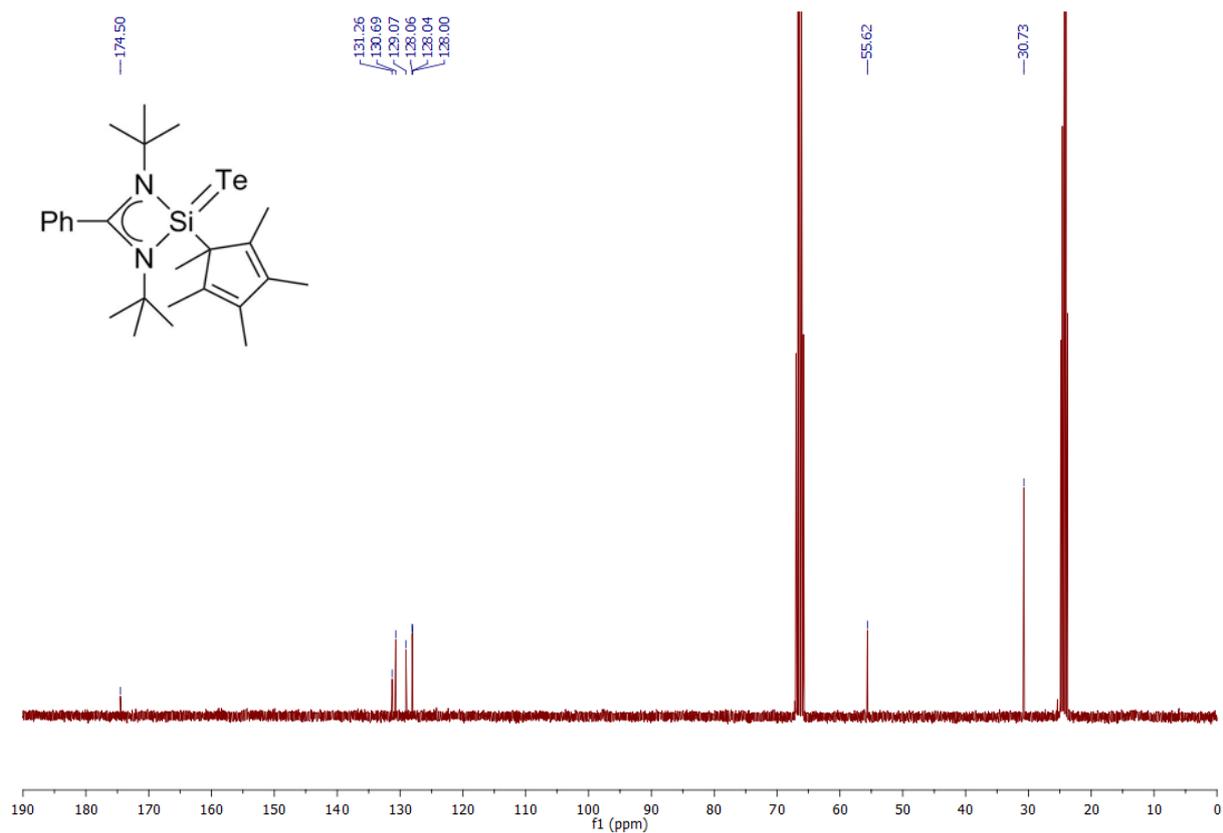
*Figure S15: $^{13}C\{^{1}H\}$ NMR spectrum of **4** in THF-d8.*
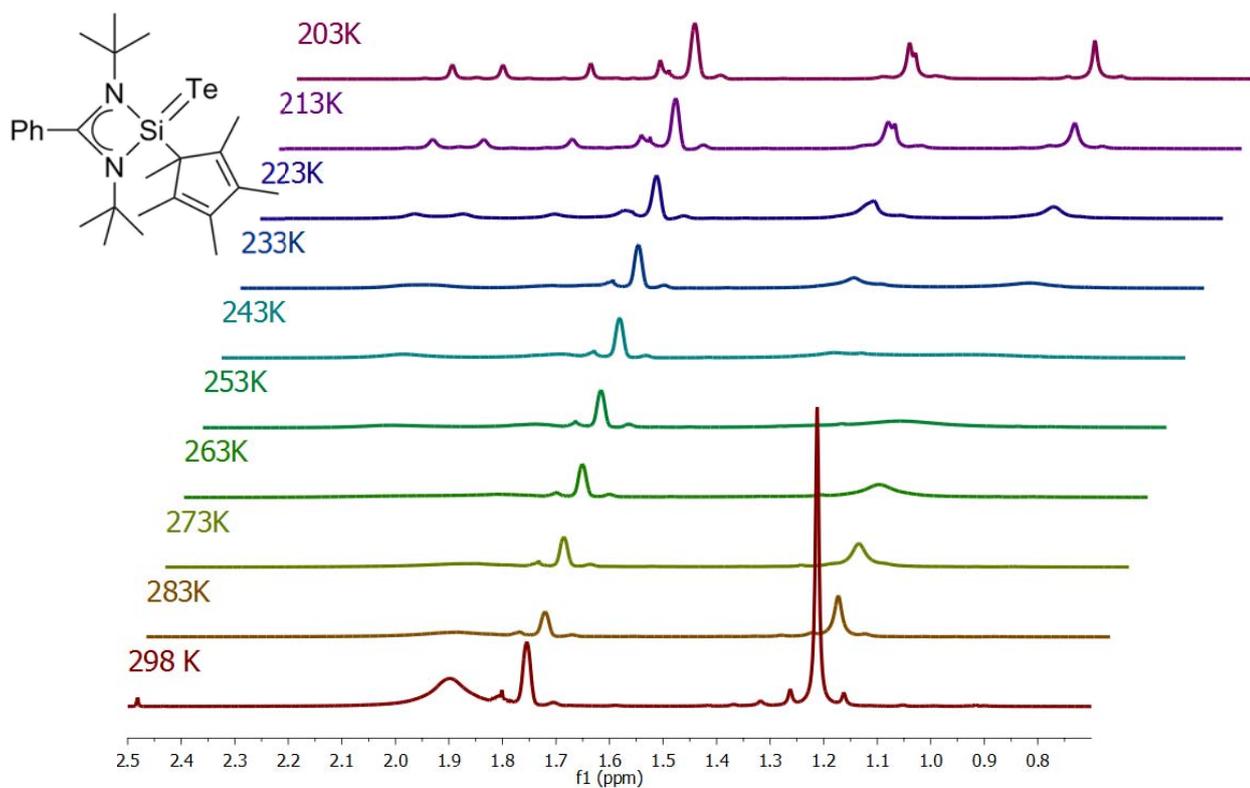
*Figure S16: Low temperature VT ^{1}H NMR spectra of compound **4** in THF-d8.*
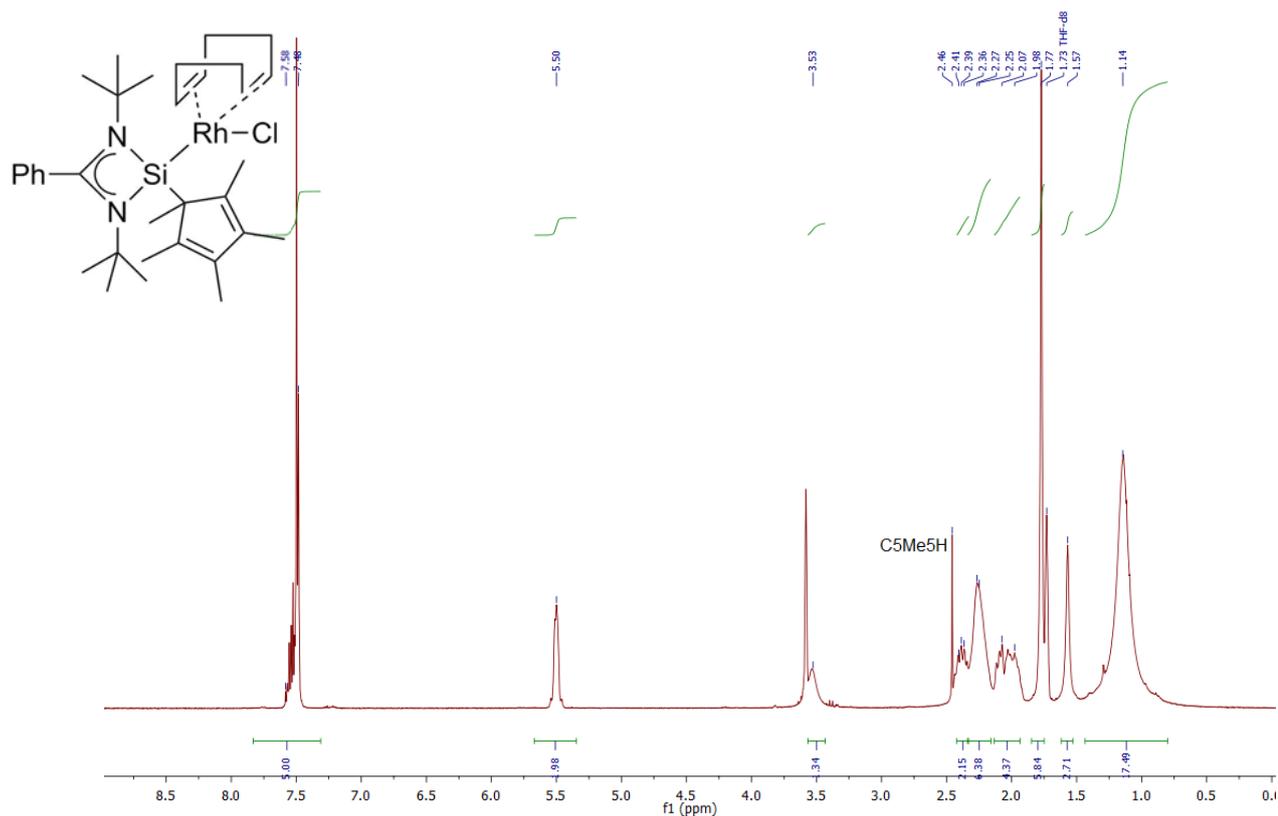
Figure S17: ^1H NMR spectrum of 5 in THF-d8.
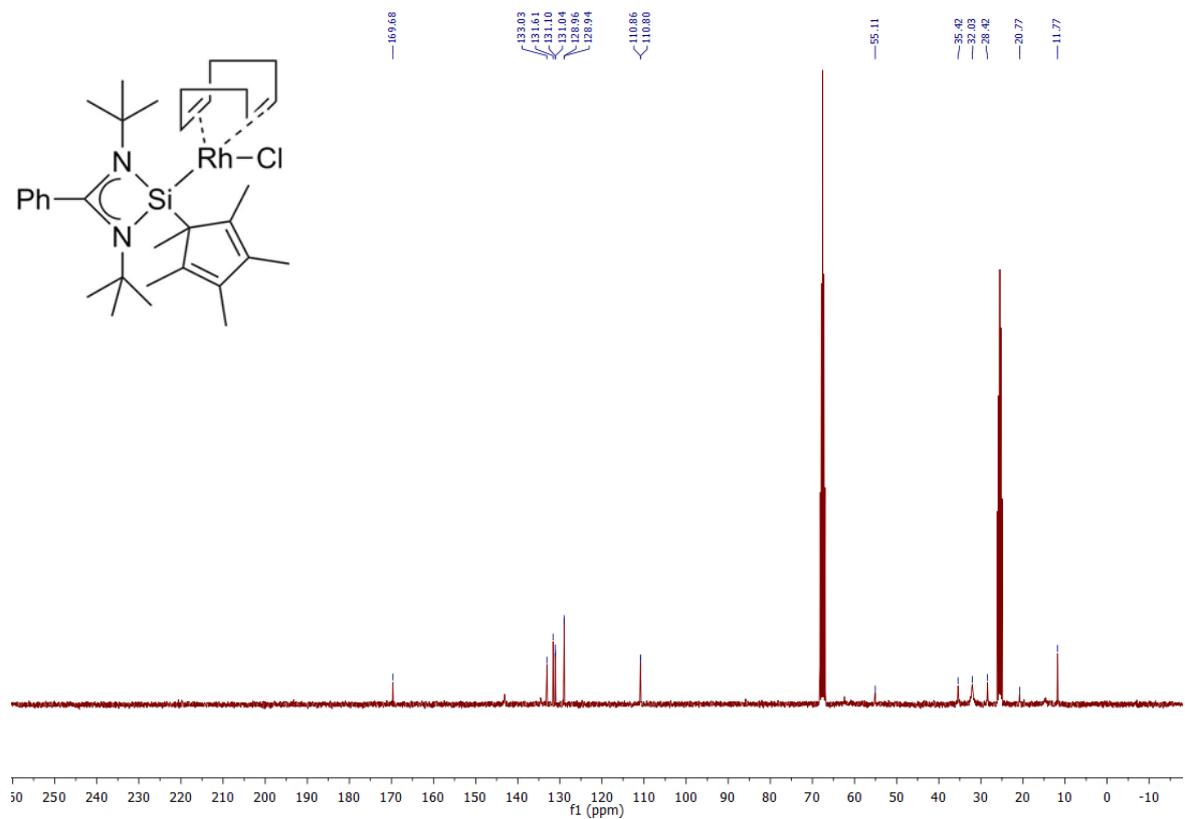
Figure S18: $^{13}C\{^1H\}$ NMR spectrum of 5 in THF-d8.
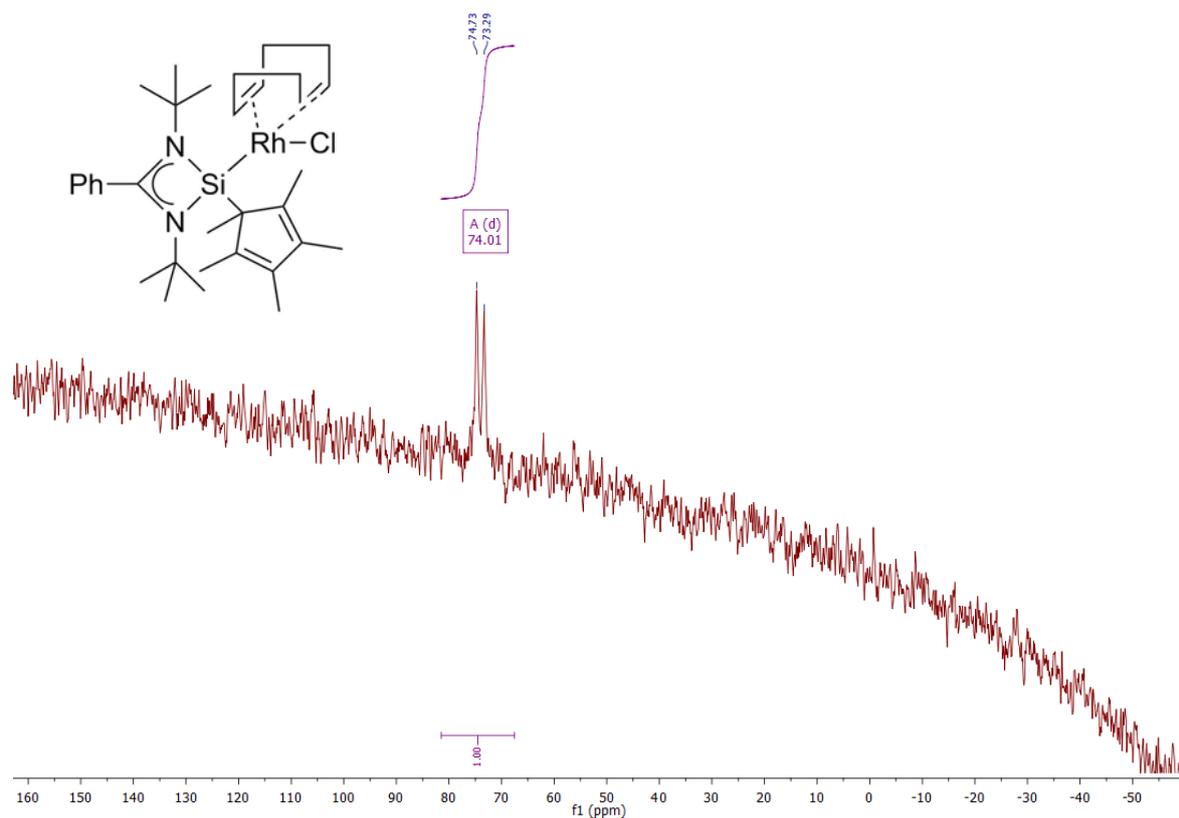
Figure S19: ^{29}Si NMR spectrum of **5** in THF-d$_8$.
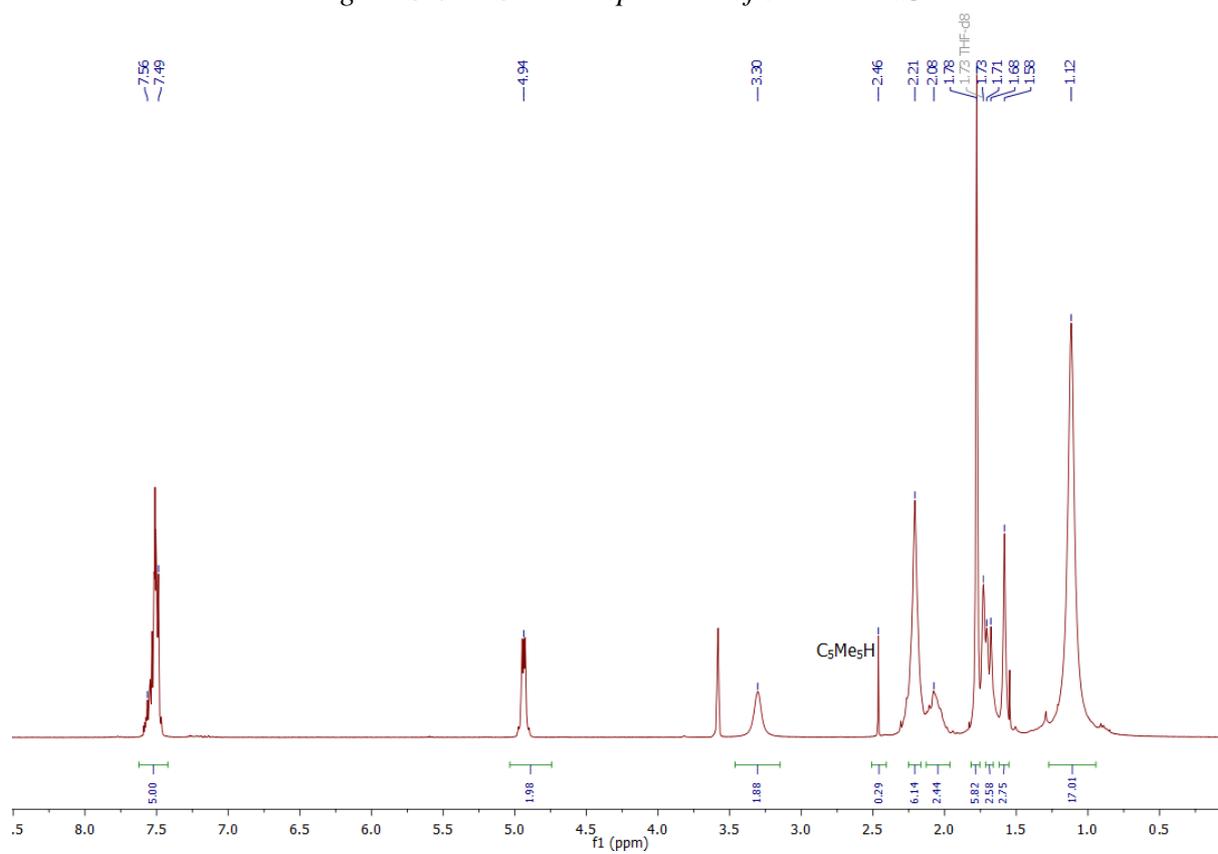
Figure S20: ^{1}H NMR spectrum of **6** in THF-d$_8$.
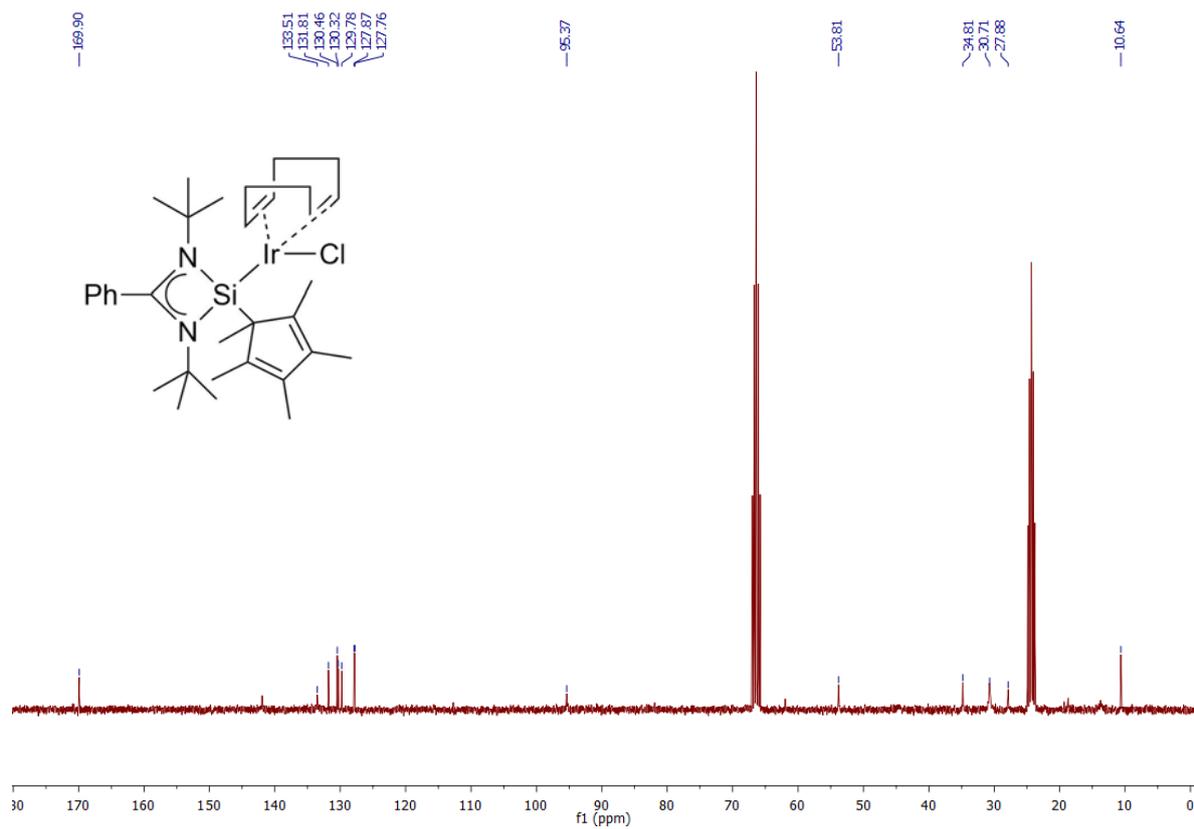
Figure S21: $^{13}C\{^{1}H\}$ NMR spectrum of 6 in THF-d8.
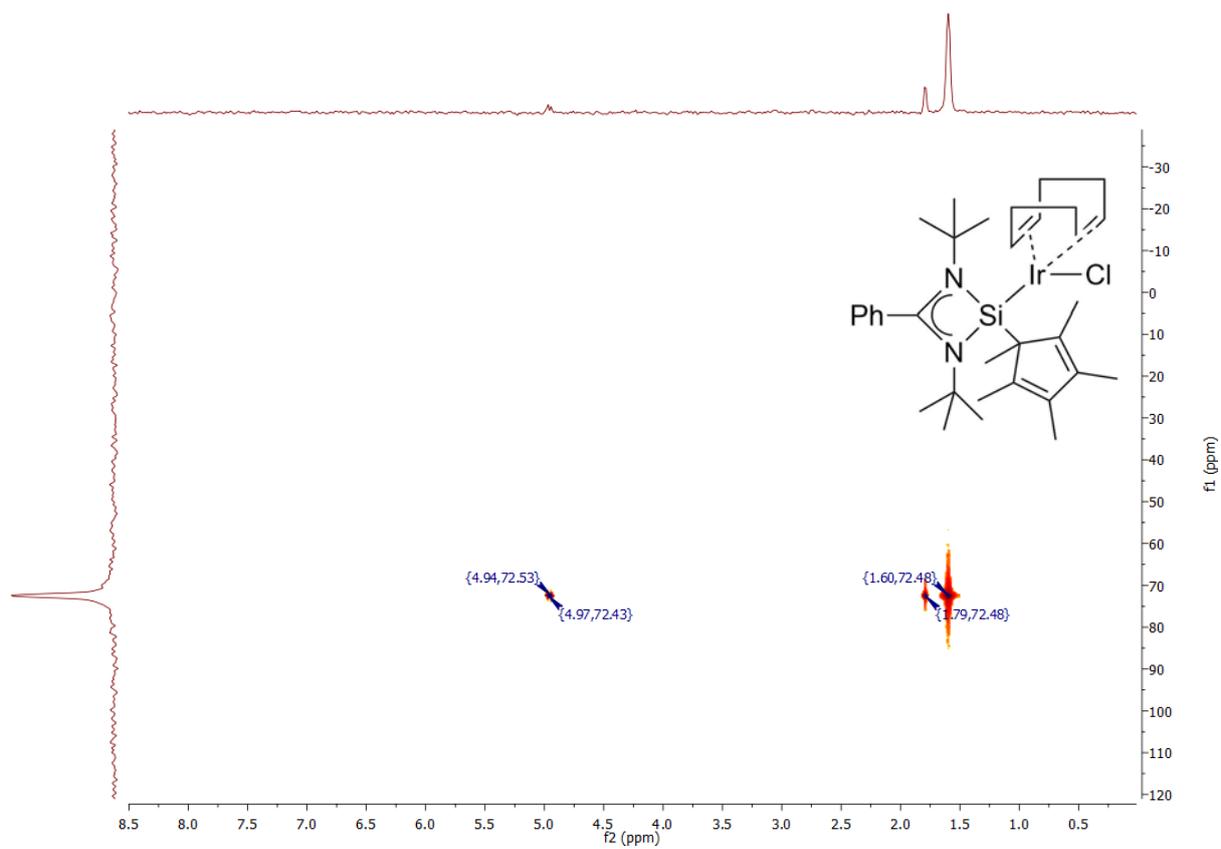
Figure S22: 2D ^{1}H ^{29}Si NMR Spectrum of 6 in THF-d8.

Plots showing thermal ellipsoids of all structures
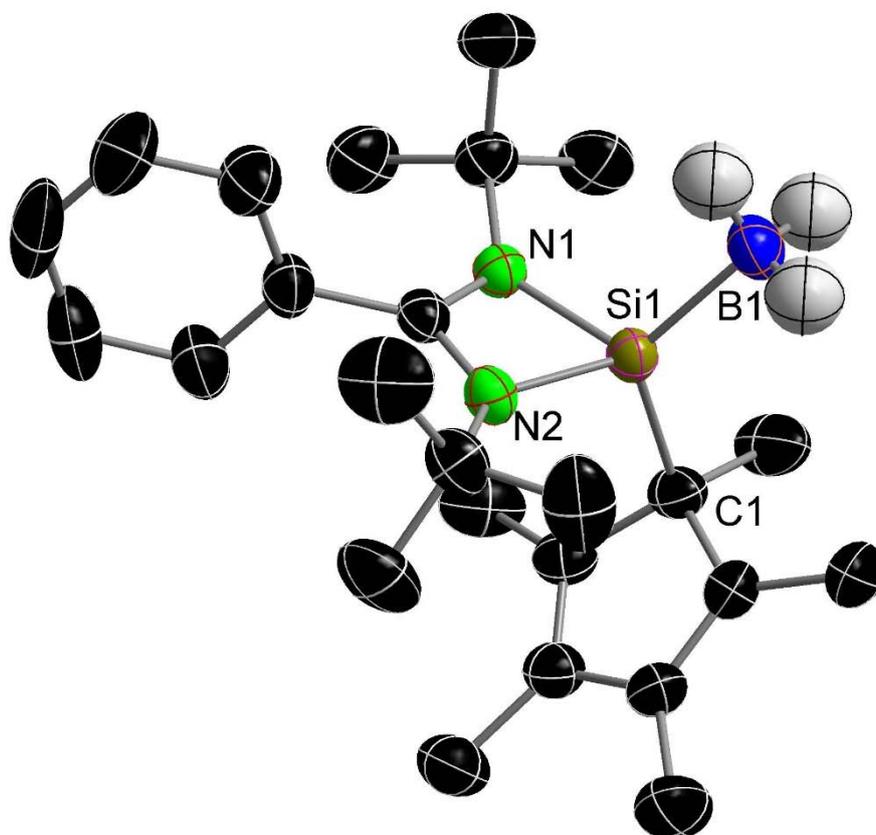
Figure S23: Molecular structure of 1 in the solid-state. Hydrogen atoms (except BH₃) are omitted for clarity. Ellipsoids displayed at 50% probability.
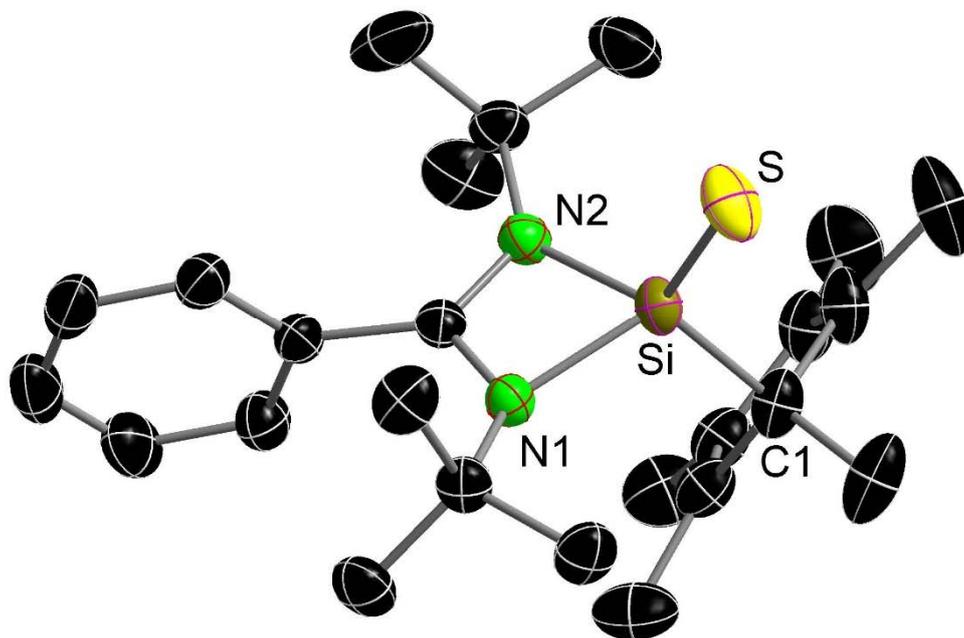
*Figure S24: Molecular structure of **2** in the solid-state. Hydrogen atoms are omitted for clarity. Ellipsoids displayed at 50% probability.*
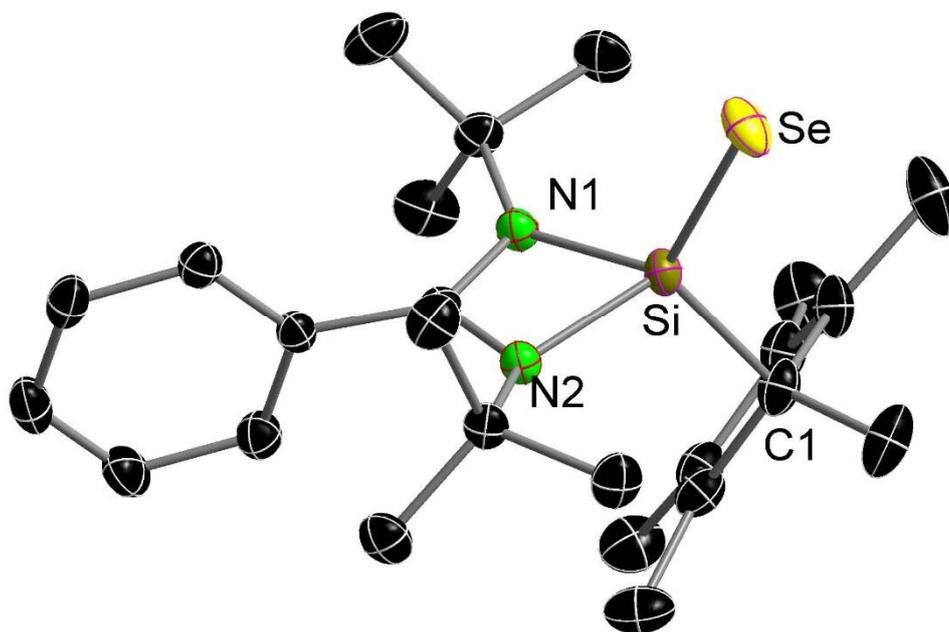
*Figure S25: Molecular structure of **3** in the solid-state. Hydrogen atoms are omitted for clarity. Ellipsoids displayed at 50% probability.*
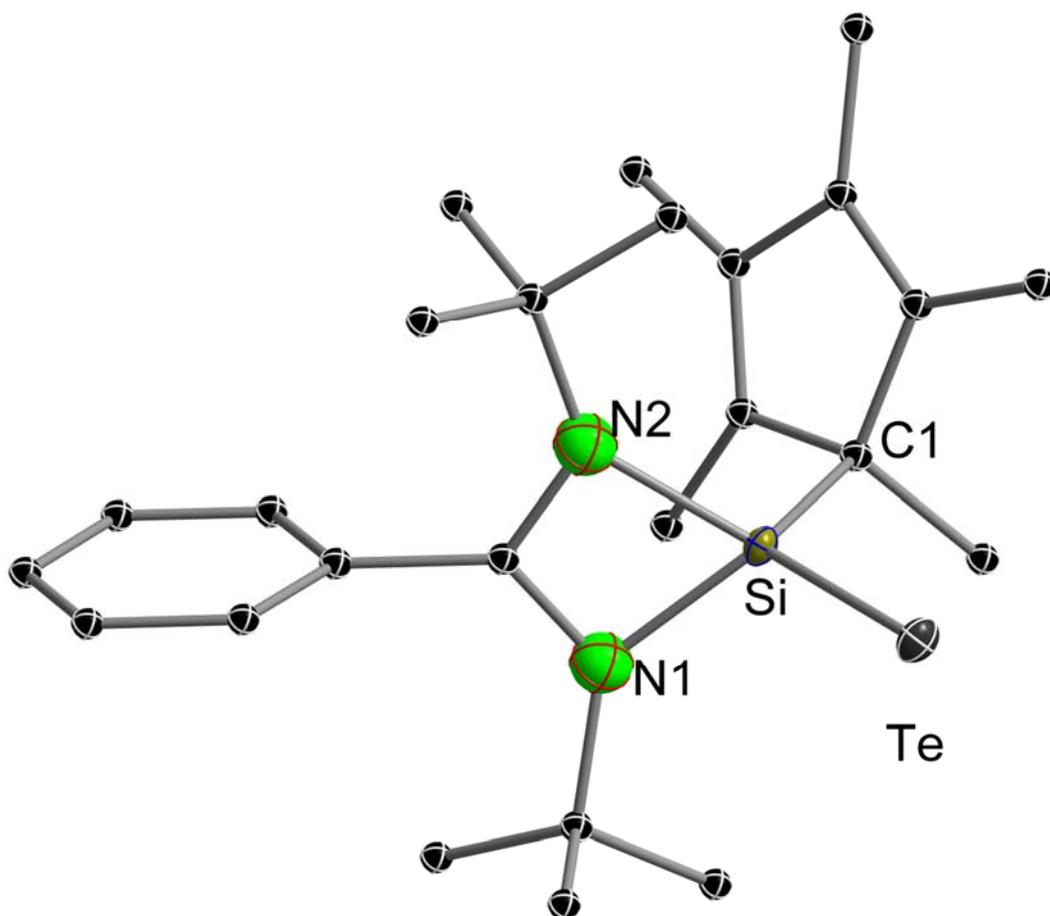
*Figure S26: Molecular structure of **4** in the solid-state. Hydrogen atoms are omitted for clarity. Ellipsoids displayed at 50% probability.*
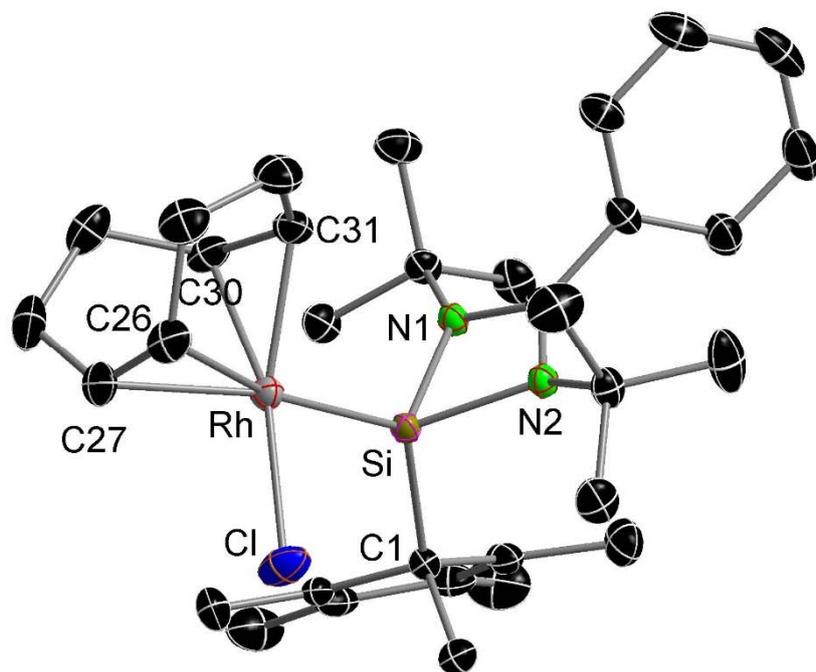
*Figure S27: Molecular structure of **5** in the solid-state. Hydrogen atoms are omitted for clarity. Ellipsoids displayed at 50% probability.*
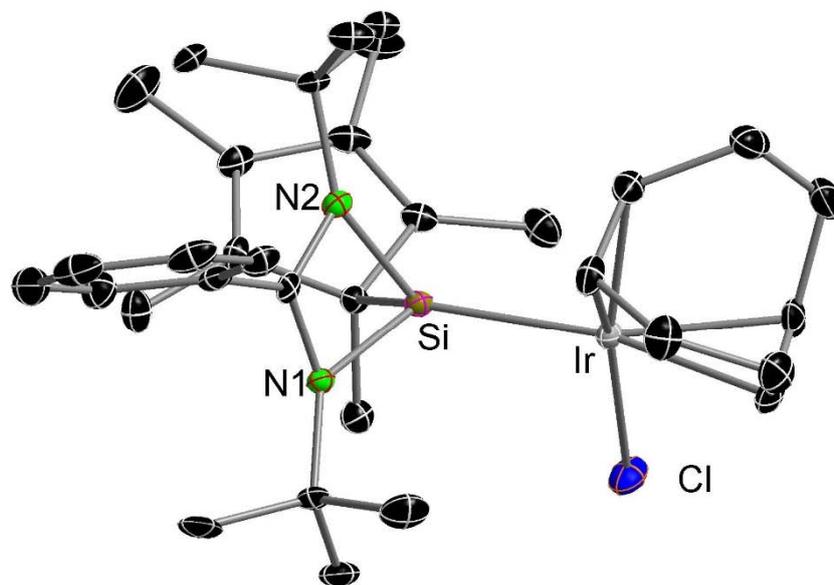
*Figure S28: Molecular structure of **6** in the solid-state. Hydrogen atoms are omitted for clarity. Ellipsoids displayed at 50% probability.*