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Preparation and Characterization of Simple Dihalomethylidene Platinum Dihalide Complexes in Reactions of Laser-Ablated Pt Atoms with Tetrahalomethanes

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Table S1: Observed and Calculated Fundamental Frequencies for the $CFCl{=}PtCl_2$ and $CF_2{=}PtCl_2$ Methylidene Complexes in the Singlet Ground Electronic States[a]

Approximate Description	$CFCl{=}PtCl_2$			$CF_2{=}PtCl_2$		
	obs	calc	int	obs	calc	int
C-F str	1242.7	1252	356	1327.3	1333	684
C-Cl, C-F str,[b]	1006.2	994	331	1293.9	1276	216
C-Cl str, CF_2 bend		540	3	730.1	731[b]	5
C-F def		504	2		573	7
Pt-Cl str		367	69		385	2
C-F def		357	7		368	70
Pt-Cl, str,		344	0		352	1
CFX rock		266	0		321	0
F-C-X def		107	1		110	1

[a]Frequencies and intensities are in cm^{-1} and km/mol. Observed in an argon matrix. Frequencies and intensities computed with B3LYP/6-311++G(3df,3pd) in the harmonic approximation using the SDD core potential and basis set for Pt. Three real lower frequencies are not listed. [b]Mode has some antisymmetric X-C=Pt stretching character.