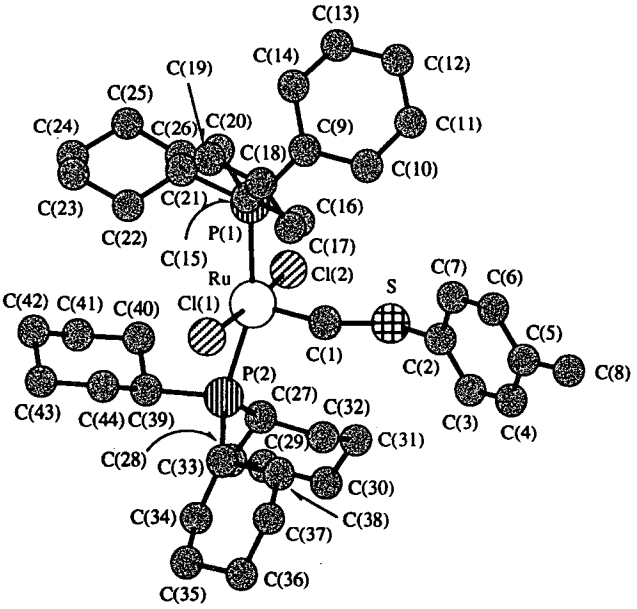

Figure S1. Atomic numbering scheme for $RuCl_2\{=C(H)SC_6H_4Me\text{-}p\}(PCy_3)_2$ (**1b**).

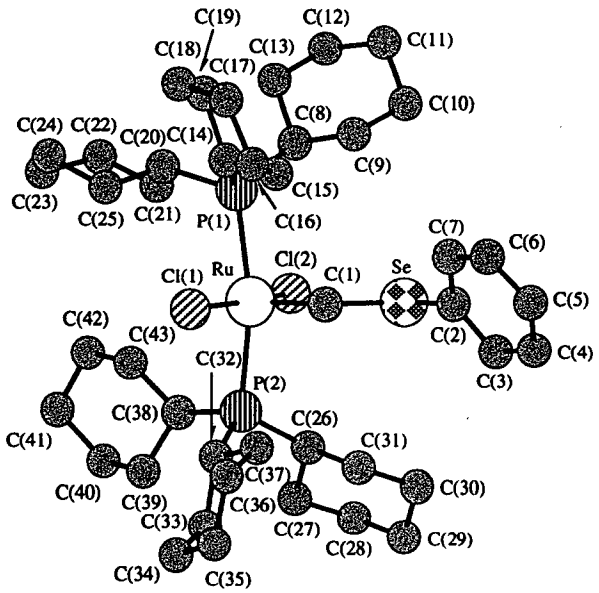

Figure S2. Atomic numbering scheme for $RuCl_2\{=C(H)SePh\}(PCy_3)_2$ (**1e**).

Table S1. Positional Parameters and Equivalent Isotropic Thermal Parameters for $RuCl_2\{=C(H)SC_6H_4Me\text{-}p\}(PCy_3)_2$ (**1b**).

atom	*x*	*y*	*z*	B_{eq}[a]
Ru	–0.00969(5)	0.23143(4)	0.19651(6)	2.66(1)
Cl(1)	–0.0183(2)	0.3233(1)	0.3916(2)	4.19(5)
Cl(2)	0.0160(2)	0.1335(1)	0.0170(2)	3.97(5)
S	–0.2047(2)	0.2738(1)	–0.0878(2)	4.57(5)
P(1)	–0.1111(2)	0.1592(1)	0.2443(2)	2.97(4)
P(2)	0.1464(1)	0.2822(1)	0.2010(2)	2.91(4)
C(1)	–0.1428(5)	0.2869(4)	0.0851(6)	3.3(2)
C(2)	–0.3391(6)	0.3452(4)	–0.1192(7)	4.0(2)
C(3)	–0.3553(9)	0.4037(6)	–0.178(1)	7.8(3)
C(4)	–0.464(1)	0.4567(7)	–0.209(1)	9.2(4)
C(5)	–0.5575(8)	0.4526(6)	–0.1835(8)	6.0(2)
C(6)	–0.5409(8)	0.3949(6)	–0.123(1)	7.1(3)
C(7)	–0.4345(7)	0.3410(5)	–0.092(1)	6.3(3)
C(8)	–0.6756(9)	0.5103(7)	–0.218(1)	9.4(3)
C(9)	–0.2011(5)	0.0974(4)	0.1045(7)	3.3(2)
C(10)	–0.3068(7)	0.1392(5)	0.0005(8)	5.4(2)
C(11)	–0.3717(8)	0.0838(6)	–0.1180(8)	6.2(3)
C(12)	–0.4119(7)	0.0342(5)	–0.0702(8)	5.2(2)
C(13)	–0.3066(7)	–0.0077(5)	0.029(1)	6.3(3)
C(14)	–0.2435(7)	0.0452(5)	0.1480(9)	5.4(2)
C(15)	–0.2027(7)	0.2158(4)	0.3470(7)	4.1(2)
C(16)	–0.3052(6)	0.2765(4)	0.2816(8)	4.2(2)
C(17)	–0.361(1)	0.3309(7)	0.373(1)	9.6(4)
C(18)	–0.3793(8)	0.3048(6)	0.470(1)	6.5(3)
C(19)	–0.2773(8)	0.2446(6)	0.5343(9)	6.0(3)
C(20)	–0.223(1)	0.1874(7)	0.440(1)	8.9(4)
C(21)	0.0042(5)	0.0905(4)	0.3505(7)	3.3(2)
C(22)	0.0940(6)	0.1262(5)	0.4744(7)	4.3(2)
C(23)	0.1795(8)	0.0688(6)	0.5632(9)	6.3(3)
C(24)	0.2430(8)	0.0017(5)	0.489(1)	6.1(3)
C(25)	0.1556(7)	–0.0328(5)	0.3604(9)	5.5(2)
C(26)	0.0719(7)	0.0260(4)	0.2743(8)	4.4(2)
C(27)	0.1802(6)	0.2558(4)	0.0447(7)	3.2(2)

Table S1. (*continued*)

atom	*x*	*y*	*z*	B_{eq}[a]
C(28)	0.3044(6)	0.2577(5)	0.0533(7)	4.8(2)
C(29)	0.3216(7)	0.2255(5)	–0.0808(9)	5.4(2)
C(30)	0.2231(8)	0.2627(5)	–0.1946(8)	5.4(2)
C(31)	0.1010(7)	0.2608(5)	–0.2022(8)	5.2(2)
C(32)	0.0830(6)	0.2968(5)	–0.0679(8)	4.5(2)
C(33)	0.1331(6)	0.3837(4)	0.2621(7)	3.7(2)
C(34)	0.2397(7)	0.4151(5)	0.2836(9)	5.1(2)
C(35)	0.2274(9)	0.4957(5)	0.360(1)	6.7(3)
C(36)	0.112(1)	0.5451(5)	0.289(1)	7.3(3)
C(37)	0.0043(8)	0.5145(5)	0.264(1)	6.7(3)
C(38)	0.0151(7)	0.4341(5)	0.1874(9)	5.3(2)
C(39)	0.2896(5)	0.2402(4)	0.3280(7)	3.3(2)
C(40)	0.3144(6)	0.1551(4)	0.2946(7)	4.1(2)
C(41)	0.4359(8)	0.1199(5)	0.3891(9)	6.1(2)
C(42)	0.4461(7)	0.1454(6)	0.5351(9)	6.1(3)
C(43)	0.4195(7)	0.2293(6)	0.5692(7)	5.3(2)
C(44)	0.2975(6)	0.2667(5)	0.4736(7)	4.5(2)

[a] $B_{eq} = (8\pi^2/3)\Sigma_i\Sigma_j[U_{ij}(a_i^* a_j^*)(\mathbf{a}_i \cdot \mathbf{a}_j)] = (4/3)\Sigma_i\Sigma_j[\beta_{ij}(\mathbf{a}_i \cdot \mathbf{a}_j)]$.

Table S2. Anisotropic Thermal Parameters for $RuCl_2\{=C(H)SC_6H_4Me\text{-}p\}(PCy_3)_2$ (**1b**).

atom	U_{11}	U_{22}	U_{33}	U_{12}	U_{13}	U_{23}
Ru	0.0324(3)	0.0341(4)	0.0366(3)	–0.0043(3)	0.0134(2)	0.0098(3)
Cl(1)	0.059(1)	0.058(1)	0.049(1)	–0.021(1)	0.0277(9)	–0.003(1)
Cl(2)	0.055(1)	0.044(1)	0.057(1)	–0.012(1)	0.0286(9)	–0.001(1)
S	0.053(1)	0.068(2)	0.047(1)	0.001(1)	0.0148(9)	0.020(1)
P(1)	0.036(1)	0.040(1)	0.041(1)	–0.0070(9)	0.0140(8)	0.0135(9)
P(2)	0.037(1)	0.037(1)	0.039(1)	–0.0073(8)	0.0152(8)	0.0092(9)
C(1)	0.039(4)	0.047(5)	0.041(4)	–0.004(3)	0.016(3)	0.013(3)
C(2)	0.052(5)	0.051(5)	0.043(4)	–0.007(4)	0.008(3)	0.020(4)
C(3)	0.102(8)	0.092(8)	0.14(1)	0.016(7)	0.082(7)	0.058(8)
C(4)	0.14(1)	0.091(9)	0.15(1)	0.039(8)	0.098(9)	0.068(8)
C(5)	0.078(7)	0.069(7)	0.047(5)	0.010(5)	0.006(4)	0.011(5)
C(6)	0.048(5)	0.084(8)	0.134(9)	–0.007(5)	0.017(5)	0.040(7)
C(7)	0.052(5)	0.070(7)	0.121(8)	–0.010(5)	0.018(5)	0.039(6)
C(8)	0.089(8)	0.11(1)	0.107(9)	0.042(7)	0.021(6)	0.037(8)
C(9)	0.037(4)	0.037(4)	0.046(4)	–0.004(3)	0.009(3)	0.009(3)
C(10)	0.071(6)	0.069(6)	0.071(6)	–0.029(5)	0.009(4)	0.028(5)
C(11)	0.081(6)	0.105(8)	0.044(5)	–0.043(6)	0.009(4)	–0.004(5)
C(12)	0.047(5)	0.071(6)	0.077(6)	–0.025(5)	0.019(4)	–0.006(5)
C(13)	0.062(6)	0.050(6)	0.125(8)	–0.027(5)	0.020(5)	0.007(6)
C(14)	0.063(5)	0.071(7)	0.083(6)	–0.031(5)	0.010(4)	0.035(5)
C(15)	0.064(5)	0.047(5)	0.052(5)	0.005(4)	0.033(4)	0.017(4)
C(16)	0.053(5)	0.051(5)	0.068(5)	0.003(4)	0.035(4)	0.021(4)
C(17)	0.14(1)	0.099(9)	0.17(1)	0.047(8)	0.116(9)	0.063(9)
C(18)	0.079(6)	0.093(8)	0.081(7)	0.002(6)	0.047(5)	0.016(6)
C(19)	0.076(6)	0.101(8)	0.070(6)	–0.008(6)	0.046(5)	0.023(6)
C(20)	0.127(9)	0.12(1)	0.125(9)	0.051(7)	0.094(8)	0.075(8)
C(21)	0.037(4)	0.040(5)	0.051(5)	0.001(3)	0.013(3)	0.025(4)
C(22)	0.043(4)	0.062(6)	0.049(5)	–0.006(4)	0.006(3)	0.016(4)
C(23)	0.063(6)	0.089(8)	0.069(6)	–0.010(5)	–0.005(4)	0.035(6)
C(24)	0.059(5)	0.065(7)	0.101(8)	0.008(5)	0.016(5)	0.044(6)
C(25)	0.064(5)	0.045(5)	0.103(7)	0.001(4)	0.028(5)	0.028(5)
C(26)	0.058(5)	0.031(5)	0.072(6)	0.002(4)	0.022(4)	0.013(4)
C(27)	0.044(4)	0.045(5)	0.045(4)	–0.012(4)	0.023(3)	0.010(4)
C(28)	0.054(5)	0.082(7)	0.050(5)	–0.016(4)	0.023(4)	0.008(5)

Table S2. (*continued*)

atom	U_{11}	U_{22}	U_{33}	U_{12}	U_{13}	U_{23}
C(29)	0.058(5)	0.085(7)	0.074(6)	–0.015(5)	0.030(4)	0.021(5)
C(30)	0.081(6)	0.084(7)	0.062(6)	–0.020(5)	0.047(5)	0.013(5)
C(31)	0.064(5)	0.090(7)	0.050(5)	–0.009(5)	0.022(4)	0.023(5)
C(32)	0.044(4)	0.077(6)	0.062(5)	–0.004(4)	0.029(4)	0.023(5)
C(33)	0.054(5)	0.037(5)	0.049(5)	–0.012(4)	0.022(3)	0.000(4)
C(34)	0.061(5)	0.059(6)	0.084(6)	–0.025(4)	0.030(4)	0.004(5)
C(35)	0.090(7)	0.055(6)	0.109(8)	–0.025(6)	0.032(6)	0.002(6)
C(36)	0.119(9)	0.041(6)	0.125(9)	–0.034(6)	0.049(7)	–0.007(6)
C(37)	0.084(6)	0.044(6)	0.130(9)	0.004(5)	0.056(6)	0.009(6)
C(38)	0.072(6)	0.046(5)	0.090(7)	–0.019(5)	0.030(5)	0.008(5)
C(39)	0.036(4)	0.049(5)	0.044(4)	–0.011(3)	0.011(3)	0.014(4)
C(40)	0.059(5)	0.046(5)	0.037(4)	–0.007(4)	0.006(3)	0.011(4)
C(41)	0.071(6)	0.071(7)	0.071(6)	0.005(5)	0.009(4)	0.030(5)
C(42)	0.053(5)	0.110(9)	0.064(6)	–0.012(5)	0.002(4)	0.039(6)
C(43)	0.067(6)	0.105(8)	0.032(5)	–0.034(5)	0.010(4)	0.012(5)
C(44)	0.059(5)	0.072(6)	0.043(5)	–0.022(4)	0.012(4)	0.014(4)

Table S3. Hydrogen Atom Positional Parameters for $RuCl_2\{=C(H)SC_6H_4Me\text{-}p\}(PCy_3)_2$ (**1b**).

atom	*x*	*y*	*z*
H(C1)	–0.1842	0.3294	0.1292
H(C3)	–0.2913	0.4089	–0.1965
H(C4)	–0.4727	0.4965	–0.2505
H(C6)	–0.6048	0.3917	–0.1010
H(C7)	–0.4272	0.3010	–0.0511
H(C8a)	–0.6623	0.5583	–0.1713
H(C8b)	–0.7082	0.5108	–0.3120
H(C8c)	–0.7303	0.4981	–0.1927
H(C9)	–0.1494	0.0661	0.0587
H(C10a)	–0.3620	0.1713	0.0412
H(C10b)	–0.2788	0.1681	–0.0326
H(C11a)	–0.4391	0.1111	–0.1797
H(C11b)	–0.3173	0.0534	–0.1616
H(C12a)	–0.4681	0.0640	–0.0287
H(C12b)	–0.4493	0.0000	–0.1440
H(C13a)	–0.2516	–0.0380	–0.0134
H(C13b)	–0.3328	–0.0387	0.0601
H(C14a)	–0.2972	0.0739	0.1926
H(C14b)	–0.1755	0.0165	0.2081
H(C15)	–0.1490	0.2460	0.4084
H(C16a)	–0.2754	0.3025	0.2450
H(C16b)	–0.3650	0.2533	0.2113
H(C17a)	–0.3113	0.3655	0.4209
H(C17b)	–0.4373	0.3558	0.3189
H(C18a)	–0.3905	0.3458	0.5378
H(C18b)	–0.4498	0.2856	0.4266
H(C19a)	–0.3057	0.2194	0.5739
H(C19b)	–0.2161	0.2676	0.6024
H(C20a)	–0.1470	0.1605	0.4934
H(C20b)	–0.2743	0.1541	0.3911
H(C21)	–0.0370	0.0692	0.3813
H(C22a)	0.0518	0.1650	0.5236
H(C22b)	0.1389	0.1467	0.4471

Table S3. (*continued*)

atom	*x*	*y*	*z*
H(C23a)	0.2383	0.0917	0.6358
H(C23b)	0.1353	0.0522	0.5975
H(C24a)	0.2967	0.0170	0.4669
H(C24b)	0.2868	–0.0349	0.5461
H(C25a)	0.2002	–0.0701	0.3116
H(C25b)	0.1100	–0.0552	0.3828
H(C26a)	0.0155	0.0037	0.1980
H(C26b)	0.1178	0.0453	0.2465
H(C27)	0.1762	0.2048	0.0144
H(C28a)	0.3641	0.2289	0.1190
H(C28b)	0.3122	0.3079	0.0789
H(C29a)	0.3960	0.2322	–0.0733
H(C29b)	0.3228	0.1737	–0.1010
H(C30a)	0.2278	0.3132	–0.1806
H(C30b)	0.2340	0.2371	–0.2765
H(C31a)	0.0408	0.2877	–0.2705
H(C31b)	0.0943	0.2104	–0.2233
H(C32a)	0.0064	0.2939	–0.0748
H(C32b)	0.0873	0.3477	–0.0476
H(C33)	0.1315	0.3906	0.3495
H(C34a)	0.2425	0.4144	0.1992
H(C34b)	0.3121	0.3848	0.3347
H(C35a)	0.2309	0.4957	0.4471
H(C35b)	0.2916	0.5146	0.3669
H(C36a)	0.1046	0.5931	0.3437
H(C36b)	0.1116	0.5492	0.2063
H(C37a)	–0.0001	0.5152	0.3477
H(C37b)	–0.0666	0.5456	0.2128
H(C38a)	0.0130	0.4337	0.1002
H(C38b)	–0.0503	0.4158	0.1785
H(C39)	0.3524	0.2544	0.3201
H(C40a)	0.2536	0.1388	0.3023
H(C40b)	0.3129	0.1399	0.2049
H(C41a)	0.4468	0.0669	0.3686

Table S3. (*continued*)

atom	*x*	*y*	*z*
H(C41b)	0.4969	0.1335	0.3767
H(C42a)	0.3903	0.1277	0.5494
H(C42b)	0.5252	0.1255	0.5912
H(C43a)	0.4196	0.2433	0.6582
H(C43b)	0.4810	0.2462	0.5642
H(C44a)	0.2884	0.3194	0.4945
H(C44b)	0.2350	0.2541	0.4850

Table S4. Bond Distances (Å) for $RuCl_2\{=C(H)SC_6H_4Me\text{-}p\}(PCy_3)_2$ (**1b**).

Ru–Cl(1)	2.387(2)	C(16)–C(17)	1.53(1)
Ru–Cl(2)	2.405(2)	C(17)–C(18)	1.52(1)
Ru–P(1)	2.422(2)	C(18)–C(19)	1.49(1)
Ru–P(2)	2.419(2)	C(19)–C(20)	1.54(1)
Ru–C(1)	1.826(6)	C(21)–C(22)	1.52(1)
S–C(1)	1.725(7)	C(21)–C(26)	1.53(1)
S–C(2)	1.779(8)	C(22)–C(23)	1.51(1)
P(1)–C(9)	1.855(7)	C(23)–C(24)	1.52(1)
P(1)–C(15)	1.849(7)	C(24)–C(25)	1.50(1)
P(1)–C(21)	1.865(6)	C(25)–C(26)	1.54(1)
P(2)–C(27)	1.862(6)	C(27)–C(28)	1.52(1)
P(2)–C(33)	1.852(8)	C(27)–C(32)	1.52(1)
P(2)–C(39)	1.856(6)	C(28)–C(29)	1.52(1)
C(2)–C(3)	1.38(1)	C(29)–C(30)	1.49(1)
C(2)–C(7)	1.36(1)	C(30)–C(31)	1.49(1)
C(3)–C(4)	1.38(1)	C(31)–C(32)	1.55(1)
C(4)–C(5)	1.36(1)	C(33)–C(34)	1.43(1)
C(5)–C(6)	1.34(1)	C(33)–C(38)	1.51(1)
C(5)–C(8)	1.52(1)	C(34)–C(35)	1.50(1)
C(6)–C(7)	1.39(1)	C(35)–C(36)	1.50(1)
C(9)–C(10)	1.53(1)	C(36)–C(37)	1.42(1)
C(9)–C(14)	1.534(9)	C(37)–C(38)	1.47(1)
C(10)–C(11)	1.54(1)	C(39)–C(40)	1.523(9)
C(11)–C(12)	1.51(1)	C(39)–C(44)	1.53(1)
C(12)–C(13)	1.51(1)	C(40)–C(41)	1.52(1)
C(13)–C(14)	1.52(1)	C(41)–C(42)	1.51(1)
C(15)–C(16)	1.53(1)	C(42)–C(43)	1.53(1)
C(15)–C(20)	1.54(1)	C(43)–C(44)	1.51(1)

Table S5. Bond Angles (deg) for $RuCl_2\{=C(H)SC_6H_4Me\text{-}p\}(PCy_3)_2$ (**1b**).

Cl(1)–Ru–Cl(2)	174.47(7)	C(10)–C(9)–C(14)	109.5(6)
Cl(1)–Ru–P(1)	91.74(7)	C(9)–C(10)–C(11)	110.2(6)
Cl(1)–Ru–P(2)	88.75(7)	C(10)–C(11)–C(12)	111.0(6)
Cl(1)–Ru–C(1)	93.1(2)	C(11)–C(12)–C(13)	110.9(7)
Cl(2)–Ru–P(1)	87.08(7)	C(12)–C(13)–C(14)	112.7(7)
Cl(2)–Ru–P(2)	90.67(7)	C(9)–C(14)–C(13)	111.4(6)
Cl(2)–Ru–C(1)	92.4(2)	P(1)–C(15)–C(16)	115.5(5)
P(1)– Ru–P(2)	161.61(6)	P(1)–C(15)–C(20)	116.8(5)
P(1)–Ru–C(1)	100.8(2)	C(16)–C(15)–C(20)	110.0(6)
P(2)–Ru–C(1)	97.6(2)	C(15)–C(16)–C(17)	110.4(7)
C(1)–S–C(2)	102.7(3)	C(16)–C(17)–C(18)	111.7(8)
Ru–P(1)–C(9)	115.5(2)	C(17)–C(18)–C(19)	111.9(8)
Ru–P(1)–C(15)	116.1(2)	C(18)–C(19)–C(20)	111.5(7)
Ru–P(1)–C(21)	107.2(2)	C(15)–C(20)–C(19)	110.9(7)
C(9)–P(1)–C(15)	110.1(3)	P(1)–C(21)–C(22)	110.2(4)
C(9)–P(1)–C(21)	103.5(3)	P(1)–C(21)–C(26)	115.1(5)
C(15)–P(1)–C(21)	102.9(3)	C(22)–C(21)–C(26)	110.7(6)
Ru–P(2)–C(27)	119.6(2)	C(21)–C(22)–C(23)	111.0(6)
Ru–P(2)–C(33)	113.2(3)	C(22)–C(23)–C(24)	111.7(8)
Ru–P(2)–C(39)	108.4(2)	C(23)–C(24)–C(25)	110.7(8)
C(27)–P(2)–C(33)	108.4(3)	C(24)–C(25)–C(26)	112.7(6)
C(27)–P(2)–C(39)	101.4(3)	C(21)–C(26)–C(25)	110.5(7)
C(33)–P(2)–C(39)	104.2(3)	P(2)–C(27)–C(28)	115.0(5)
Ru–C(1)–S	130.0(4)	P(2)–C(27)–C(32)	113.7(5)
S–C(2)–C(3)	120.8(6)	C(28)–C(27)–C(32)	109.4(6)
S–C(2)–C(7)	122.0(7)	C(27)–C(28)–C(29)	111.6(7)
C(3)–C(2)–C(7)	117.2(8)	C(28)–C(29)–C(30)	111.2(7)
C(2)–C(3)–C(4)	120.4(9)	C(29)–C(30)–C(31)	109.6(7)
C(3)–C(4)–C(5)	122.2(9)	C(30)–C(31)–C(32)	111.3(7)
C(4)–C(5)–C(6)	117.1(9)	C(27)–C(32)–C(31)	110.8(7)
C(4)–C(5)–C(8)	121(1)	P(2)–C(33)–C(34)	123.7(6)
C(6)–C(5)–C(8)	122(1)	P(2)–C(33)–C(38)	114.8(5)
C(5)–C(6)–C(7)	122(1)	C(34)–C(33)–C(38)	114.3(7)
C(2)–C(7)–C(6)	121.0(9)	C(33)–C(34)–C(35)	115.9(9)
P(1)–C(9)–C(10)	112.6(5)	C(34)–C(35)–C(36)	114.7(8)
P(1)–C(9)–C(14)	118.7(5)	C(35)–C(36)–C(37)	113.9(8)

Table S5. (*continued*)

C(36)–C(37)–C(38)	118.9(9)	C(39)–C(40)–C(41)	110.7(7)
C(33)–C(38)–C(37)	114.3(7)	C(40)–C(41)–C(42)	112.8(8)
P(2)–C(39)–C(40)	113.0(5)	C(41)–C(42)–C(43)	112.3(7)
P(2)–C(39)–C(44)	113.5(5)	C(42)–C(43)–C(44)	110.8(7)
C(40)–C(39)–C(44)	109.3(6)	C(39)–C(44)–C(43)	111.8(7)

Table S6. Positional Parameters and Equivalent Isotropic Thermal Parameters for $RuCl_2\{=C(H)SePh\}(PCy_3)_2$ (**1e**).

atom	*x*	*y*	*z*	B_{eq}[a]
Ru	0.15184(3)	0.27363(2)	0.24752(1)	2.290(5)
Se	–0.15197(4)	0.14973(4)	0.23030(2)	4.06(1)
Cl(1)	0.3677(1)	0.15880(9)	0.28676(4)	3.64(2)
Cl(2)	–0.0356(1)	0.42166(8)	0.20694(4)	3.59(2)
P(1)	0.25624(9)	0.25607(7)	0.14107(4)	2.34(2)
P(2)	0.07967(9)	0.33484(8)	0.35107(4)	2.48(2)
C(1)	0.0430(4)	0.1471(3)	0.2517(2)	2.76(6)
C(2)	–0.1710(4)	–0.0209(4)	0.2461(2)	3.85(9)
C(3)	–0.2798(5)	–0.0577(5)	0.2885(2)	5.1(1)
C(4)	–0.2984(7)	–0.1821(6)	0.2965(3)	6.7(2)
C(5)	–0.2122(8)	–0.2653(5)	0.2631(3)	6.5(2)
C(6)	–0.1044(7)	–0.2271(5)	0.2217(3)	6.4(1)
C(7)	–0.0839(6)	–0.1047(4)	0.2126(2)	5.1(1)
C(8)	0.1252(4)	0.2740(3)	0.0768(2)	2.87(7)
C(9)	0.0573(5)	0.1561(4)	0.0717(2)	4.21(9)
C(10)	–0.0659(5)	0.1756(5)	0.0256(2)	5.2(1)
C(11)	–0.0113(5)	0.2251(4)	–0.0396(2)	4.5(1)
C(12)	0.0609(5)	0.3380(4)	–0.0362(2)	4.6(1)
C(13)	0.1812(4)	0.3191(4)	0.0110(2)	3.49(8)
C(14)	0.3853(4)	0.1176(3)	0.1345(2)	2.62(6)
C(15)	0.3259(4)	–0.0031(3)	0.1541(2)	3.41(8)
C(16)	0.4527(5)	–0.1027(3)	0.1657(2)	3.97(8)
C(17)	0.5564(5)	–0.1107(3)	0.1083(2)	4.11(9)
C(18)	0.6074(4)	0.0100(3)	0.0850(2)	3.72(8)
C(19)	0.4798(4)	0.1086(3)	0.0737(2)	3.04(7)
C(20)	0.3781(4)	0.3745(3)	0.1168(2)	2.54(6)
C(21)	0.3034(4)	0.5039(3)	0.1176(2)	3.31(7)
C(22)	0.4034(5)	0.5952(4)	0.0883(2)	4.5(1)
C(23)	0.5493(5)	0.5786(4)	0.1193(2)	4.5(1)
C(24)	0.6199(4)	0.4502(4)	0.1217(2)	4.30(9)
C(25)	0.5181(4)	0.3613(3)	0.1530(2)	3.49(8)
C(26)	–0.1203(4)	0.3567(3)	0.3684(2)	3.09(7)
C(27)	–0.1786(4)	0.4602(4)	0.4072(2)	4.4(1)

Table S6. (*continued*)

atom	*x*	*y*	*z*	B_{eq}[a]
C(28)	–0.3449(5)	0.4766(5)	0.4103(3)	5.4(1)
C(29)	–0.4075(5)	0.3615(5)	0.4358(3)	5.2(1)
C(30)	–0.3498(5)	0.2593(4)	0.3966(3)	4.9(1)
C(31)	–0.1841(4)	0.2406(4)	0.3945(2)	3.72(8)
C(32)	0.1727(4)	0.2444(3)	0.4175(2)	2.96(7)
C(33)	0.1374(5)	0.2850(4)	0.4841(2)	3.85(8)
C(34)	0.2385(6)	0.2139(5)	0.5312(2)	5.3(1)
C(35)	0.2336(7)	0.0780(4)	0.5315(2)	5.7(1)
C(36)	0.2638(6)	0.0376(4)	0.4659(2)	5.1(1)
C(37)	0.1602(4)	0.1083(3)	0.4191(2)	3.65(8)
C(38)	0.1385(4)	0.4893(3)	0.3441(2)	3.13(7)
C(39)	0.1508(5)	0.5590(4)	0.4012(2)	4.04(9)
C(40)	0.1746(6)	0.6903(4)	0.3802(2)	5.1(1)
C(41)	0.3126(6)	0.6973(5)	0.3378(3)	5.8(1)
C(42)	0.3138(6)	0.6223(5)	0.2838(3)	5.6(1)
C(43)	0.2819(5)	0.4918(4)	0.3038(2)	4.4(1)

[a] $B_{eq} = (8\pi^2/3)\Sigma_i\Sigma_j[U_{ij}(a_i^* a_j^*)(\mathbf{a}_i \cdot \mathbf{a}_j)] = (4/3)\Sigma_i\Sigma_j[\beta_{ij}(\mathbf{a}_i \cdot \mathbf{a}_j)]$.

Table S7. Anisotropic Thermal Parameters for $RuCl_2\{=C(H)SePh\}(PCy_3)_2$ (**1e**).

atom	U_{11}	U_{22}	U_{33}	U_{12}	U_{13}	U_{23}
Ru	0.0304(1)	0.0309(1)	0.0265(1)	–0.0037(1)	–0.00242(9)	–0.00603(9)
Se	0.0425(2)	0.0523(2)	0.0630(3)	–0.0121(2)	–0.0116(2)	–0.0093(2)
Cl(1)	0.0406(4)	0.0606(5)	0.0346(4)	0.0098(4)	–0.0050(4)	–0.0081(4)
Cl(2)	0.0456(5)	0.0472(5)	0.0420(5)	0.0065(4)	–0.0096(4)	–0.0064(4)
P(1)	0.0341(4)	0.0282(4)	0.0278(4)	–0.0054(3)	–0.0015(3)	–0.0056(3)
P(2)	0.0324(4)	0.0347(4)	0.0281(4)	–0.0060(3)	0.0015(3)	–0.0071(3)
C(1)	0.039(2)	0.036(2)	0.032(2)	–0.007(1)	–0.002(1)	–0.007(1)
C(2)	0.048(2)	0.055(2)	0.048(2)	–0.023(2)	–0.009(2)	–0.004(2)
C(3)	0.054(2)	0.092(4)	0.050(2)	–0.023(2)	–0.005(2)	–0.005(2)
C(4)	0.078(4)	0.112(5)	0.071(3)	–0.057(4)	–0.020(3)	0.036(3)
C(5)	0.105(5)	0.070(3)	0.079(4)	–0.038(3)	–0.029(3)	0.014(3)
C(6)	0.107(5)	0.059(3)	0.083(4)	–0.028(3)	–0.013(3)	–0.011(3)
C(7)	0.079(3)	0.060(3)	0.060(3)	–0.023(2)	0.008(2)	–0.017(2)
C(8)	0.037(2)	0.046(2)	0.027(2)	–0.007(1)	–0.004(1)	–0.008(1)
C(9)	0.065(3)	0.062(2)	0.040(2)	–0.035(2)	–0.006(2)	0.000(2)
C(10)	0.049(2)	0.099(4)	0.058(3)	–0.032(2)	–0.008(2)	–0.019(3)
C(11)	0.054(2)	0.070(3)	0.049(2)	–0.004(2)	–0.022(2)	–0.015(2)
C(12)	0.067(3)	0.062(3)	0.048(2)	–0.008(2)	–0.021(2)	0.000(2)
C(13)	0.050(2)	0.050(2)	0.035(2)	–0.016(2)	–0.006(2)	0.000(2)
C(14)	0.039(2)	0.028(1)	0.032(2)	–0.002(1)	–0.001(1)	–0.006(1)
C(15)	0.054(2)	0.031(2)	0.044(2)	–0.006(2)	0.014(2)	–0.006(1)
C(16)	0.071(3)	0.031(2)	0.047(2)	–0.003(2)	0.005(2)	0.000(2)
C(17)	0.058(2)	0.039(2)	0.057(2)	0.003(2)	0.005(2)	–0.009(2)
C(18)	0.044(2)	0.043(2)	0.054(2)	–0.002(2)	0.006(2)	–0.013(2)
C(19)	0.051(2)	0.031(2)	0.034(2)	–0.009(1)	0.004(1)	–0.003(1)
C(20)	0.034(2)	0.030(1)	0.034(2)	–0.007(1)	–0.003(1)	–0.002(1)
C(21)	0.043(2)	0.036(2)	0.048(2)	–0.003(1)	–0.010(2)	–0.003(2)
C(22)	0.064(3)	0.037(2)	0.068(3)	–0.009(2)	–0.007(2)	0.005(2)
C(23)	0.054(2)	0.048(2)	0.075(3)	–0.024(2)	0.000(2)	–0.005(2)
C(24)	0.043(2)	0.052(2)	0.072(3)	–0.015(2)	–0.010(2)	–0.004(2)
C(25)	0.044(2)	0.035(2)	0.056(2)	–0.006(1)	–0.017(2)	–0.001(2)
C(26)	0.033(2)	0.045(2)	0.040(2)	–0.004(1)	0.003(1)	–0.008(2)
C(27)	0.043(2)	0.052(2)	0.075(3)	–0.011(2)	0.010(2)	–0.020(2)
C(28)	0.044(2)	0.065(3)	0.096(4)	–0.004(2)	0.013(2)	–0.021(3)

Table S7. (*continued*)

atom	U_{11}	U_{22}	U_{33}	U_{12}	U_{13}	U_{23}
C(29)	0.033(2)	0.087(3)	0.078(3)	–0.014(2)	0.011(2)	–0.012(3)
C(30)	0.048(2)	0.062(3)	0.080(3)	–0.022(2)	–0.002(2)	–0.007(2)
C(31)	0.043(2)	0.049(2)	0.052(2)	–0.012(2)	0.000(2)	–0.010(2)
C(32)	0.040(2)	0.043(2)	0.029(2)	–0.005(1)	0.001(1)	–0.006(1)
C(33)	0.071(3)	0.045(2)	0.031(2)	–0.013(2)	0.002(2)	–0.004(2)
C(34)	0.096(4)	0.068(3)	0.038(2)	–0.021(3)	–0.018(2)	0.006(2)
C(35)	0.106(4)	0.060(3)	0.049(3)	–0.013(3)	–0.022(3)	0.013(2)
C(36)	0.080(3)	0.050(2)	0.061(3)	0.006(2)	–0.013(2)	0.002(2)
C(37)	0.055(2)	0.039(2)	0.045(2)	–0.007(2)	–0.003(2)	–0.004(2)
C(38)	0.041(2)	0.036(2)	0.043(2)	–0.008(1)	0.004(2)	–0.007(1)
C(39)	0.056(2)	0.054(2)	0.047(2)	–0.014(2)	0.006(2)	–0.016(2)
C(40)	0.073(3)	0.053(2)	0.075(3)	–0.019(2)	0.005(2)	–0.023(2)
C(41)	0.076(3)	0.063(3)	0.086(4)	–0.031(3)	0.023(3)	–0.020(3)
C(42)	0.076(3)	0.069(3)	0.071(3)	–0.029(3)	0.025(3)	–0.010(2)
C(43)	0.056(2)	0.057(2)	0.057(3)	–0.016(2)	0.017(2)	–0.018(2)

Table S8. Hydrogen Atom Positional Parameters for $RuCl_2\{=C(H)SePh\}(PCy_3)_2$ (**1e**).

atom	*x*	*y*	*z*
H(C1)	0.0904	0.0704	0.2665
H(C3)	–0.3402	–0.0008	0.3115
H(C4)	–0.3719	–0.2088	0.3257
H(C5)	–0.2272	–0.3483	0.2685
H(C6)	–0.0434	–0.2843	0.1991
H(C7)	–0.0101	–0.0788	0.1834
H(C8)	0.0479	0.3323	0.0887
H(C9a)	0.1305	0.0968	0.0573
H(C9b)	0.0195	0.1285	0.1122
H(C10a)	–0.1022	0.1006	0.0222
H(C10b)	–0.1417	0.2316	0.0410
H(C11a)	0.0570	0.1653	–0.0569
H(C11b)	–0.0913	0.2434	–0.0661
H(C12a)	0.1019	0.3612	–0.0768
H(C12b)	–0.0104	0.4006	–0.0237
H(C13a)	0.2190	0.3939	0.0133
H(C13b)	0.2564	0.2612	–0.0032
H(C14)	0.4533	0.1225	0.1656
H(C15a)	0.2663	0.0034	0.1917
H(C15b)	0.2699	–0.0230	0.1214
H(C16a)	0.5042	–0.0853	0.2004
H(C16b)	0.4152	–0.1781	0.1753
H(C17a)	0.6387	–0.1664	0.1189
H(C17b)	0.5083	–0.1389	0.0754
H(C18a)	0.6665	0.0335	0.1156
H(C18b)	0.6631	0.0017	0.0465
H(C19a)	0.4236	0.0886	0.0412
H(C19b)	0.5158	0.1840	0.0616
H(C20)	0.4079	0.3646	0.0741
H(C21a)	0.2180	0.5117	0.0942
H(C21b)	0.2777	0.5201	0.1600
H(C22a)	0.4197	0.5849	0.0447
H(C22b)	0.3577	0.6745	0.0934

Table S8. (*continued*)

atom	*x*	*y*	*z*
H(C23a)	0.6124	0.6293	0.0959
H(C23b)	0.5344	0.6015	0.1611
H(C24a)	0.6457	0.4301	0.0799
H(C24b)	0.7051	0.4435	0.1451
H(C25a)	0.4952	0.3784	0.1954
H(C25b)	0.5646	0.2809	0.1522
H(C26)	–0.1611	0.3773	0.3284
H(C27a)	–0.1452	0.4433	0.4488
H(C27b)	–0.1441	0.5327	0.3885
H(C28a)	–0.3783	0.5386	0.4369
H(C28b)	–0.3777	0.4997	0.3690
H(C29a)	–0.3808	0.3410	0.4782
H(C29b)	–0.5105	0.3740	0.4346
H(C30a)	–0.3862	0.1870	0.4146
H(C30b)	–0.3818	0.2779	0.3549
H(C31a)	–0.1509	0.1781	0.3681
H(C31b)	–0.1523	0.2178	0.4359
H(C32)	0.2731	0.2520	0.4093
H(C33a)	0.1481	0.3686	0.4835
H(C33b)	0.0399	0.2724	0.4965
H(C34a)	0.3351	0.2315	0.5205
H(C34b)	0.2103	0.2376	0.5722
H(C35a)	0.3048	0.0366	0.5586
H(C35b)	0.1399	0.0590	0.5467
H(C36a)	0.3608	0.0498	0.4524
H(C36b)	0.2526	–0.0460	0.4670
H(C37a)	0.0632	0.0938	0.4315
H(C37b)	0.1841	0.0824	0.3782
H(C38)	0.0678	0.5379	0.3194
H(C39a)	0.0637	0.5578	0.4269
H(C39b)	0.2306	0.5217	0.4247
H(C40a)	0.0935	0.7279	0.3575
H(C40b)	0.1830	0.7318	0.4164
H(C41a)	0.3180	0.7791	0.3219

Table S8. (*continued*)

atom	*x*	*y*	*z*
H(C41b)	0.3946	0.6693	0.3620
H(C42a)	0.2421	0.6591	0.2557
H(C42b)	0.4070	0.6198	0.2626
H(C43a)	0.3594	0.4513	0.3278
H(C43b)	0.2748	0.4513	0.2671

Table S9. Bond Distances (Å) for $RuCl_2\{=C(H)SePh\}(PCy_3)_2$ (**1e**).

Ru–Cl(1)	2.3942(9)	C(16)–C(17)	1.514(6)
Ru–Cl(2)	2.3923(9)	C(17)–C(18)	1.512(6)
Ru–P(1)	2.4312(8)	C(18)–C(19)	1.531(5)
Ru–P(2)	2.4079(8)	C(20)–C(21)	1.529(5)
Ru–C(1)	1.825(3)	C(20)–C(25)	1.533(5)
Se–C(1)	1.886(3)	C(21)–C(22)	1.525(6)
Se–C(2)	1.932(4)	C(22)–C(23)	1.523(7)
P(1)–C(8)	1.864(3)	C(23)–C(24)	1.503(6)
P(1)–C(14)	1.852(3)	C(24)–C(25)	1.532(6)
P(1)–C(20)	1.858(3)	C(26)–C(27)	1.516(5)
P(2)–C(26)	1.862(4)	C(26)–C(31)	1.533(5)
P(2)–C(32)	1.852(4)	C(27)–C(28)	1.530(6)
P(2)–C(38)	1.862(4)	C(28)–C(29)	1.515(7)
C(2)–C(3)	1.387(6)	C(29)–C(30)	1.508(7)
C(2)–C(7)	1.386(6)	C(30)–C(31)	1.524(6)
C(3)–C(4)	1.414(8)	C(32)–C(33)	1.537(5)
C(4)–C(5)	1.378(9)	C(32)–C(37)	1.536(5)
C(5)–C(6)	1.373(9)	C(33)–C(34)	1.517(7)
C(6)–C(7)	1.398(7)	C(34)–C(35)	1.525(7)
C(8)–C(9)	1.542(5)	C(35)–C(36)	1.512(7)
C(8)–C(13)	1.527(5)	C(36)–C(37)	1.525(6)
C(9)–C(10)	1.533(6)	C(38)–C(39)	1.523(5)
C(11)–C(12)	1.506(6)	C(38)–C(43)	1.542(5)
C(12)–C(13)	1.528(6)	C(39)–C(40)	1.531(6)
C(14)–C(15)	1.529(5)	C(40)–C(41)	1.528(7)
C(14)–C(19)	1.527(5)	C(41)–C(42)	1.487(7)
C(15)–C(16)	1.534(6)	C(42)–C(43)	1.538(6)

Table S10. Bond Angles (deg) for $RuCl_2\{=C(H)SePh\}(PCy_3)_2$ (**1e**).

Cl(1)–Ru–Cl(2)	168.54(4)	C(9)–C(10)–C(11)	110.7(3)
Cl(1)–Ru–P(1)	88.59(3)	C(10)–C(11)–C(12)	111.4(3)
Cl(1)–Ru–P(2)	90.98(3)	C(11)–C(12)–C(13)	112.1(4)
Cl(1)–Ru–C(1)	96.3(1)	C(8)–C(13)–C(12)	111.8(3)
Cl(2)–Ru–P(1)	89.76(3)	P(1)–C(14)–C(19)	117.5(2)
Cl(2)–Ru–P(2)	87.85(3)	C(15)–C(14)–C(19)	109.9(3)
Cl(2)–Ru–C(1)	95.2(1)	C(14)–C(15)–C(16)	109.6(3)
P(1)–Ru–P(2)	165.81(3)	C(15)–C(16)–C(17)	111.3(3)
P(1)–Ru–C(1)	97.7(1)	C(16)–C(17)–C(18)	112.5(3)
P(2)–Ru–C(1)	96.4(1)	C(17)–C(18)–C(19)	111.9(3)
C(1)–Se–C(2)	99.0(2)	C(14)–C(19)–C(18)	109.1(3)
Ru–P(1)–C(8)	116.3(1)	P(1)–C(20)–C(21)	114.1(2)
Ru–P(1)–C(14)	112.8(1)	P(1)–C(20)–C(25)	114.3(2)
Ru–P(1)–C(20)	111.8(1)	C(21)–C(20)–C(25)	109.7(3)
C(8)–P(1)–C(14)	110.5(2)	C(20)–C(21)–C(22)	111.1(3)
C(8)–P(1)–C(20)	103.4(2)	C(21)–C(22)–C(23)	111.7(3)
C(14)–P(1)–C(20)	100.6(1)	C(22)–C(23)–C(24)	112.6(3)
Ru–P(2)–C(26)	114.8(1)	C(23)–C(24)–C(25)	111.7(3)
Ru–P(2)–C(32)	115.8(1)	C(20)–C(25)–C(24)	109.3(3)
Ru–P(2)–C(38)	100.6(1)	P(2)–C(26)–C(27)	117.0(3)
C(26)–P(2)–C(32)	110.6(2)	P(2)–C(26)–C(31)	113.7(3)
C(26)–P(2)–C(38)	105.5(2)	C(27)–C(26)–C(31)	110.3(3)
C(32)–P(2)–C(38)	108.4(2)	C(26)–C(27)–C(28)	110.7(4)
Ru–C(1)–Se	128.1(2)	C(27)–C(28)–C(29)	112.0(4)
Se–C(2)–C(3)	119.0(4)	C(28)–C(29)–C(30)	110.2(4)
Se–C(2)–C(7)	120.6(3)	C(29)–C(30)–C(31)	111.0(4)
C(3)–C(2)–C(7)	120.3(4)	C(26)–C(31)–C(30)	111.0(3)
C(2)–C(3)–C(4)	118.3(5)	P(2)–C(32)–C(33)	117.7(3)
C(3)–C(4)–C(5)	121.3(5)	P(2)–C(32)–C(37)	113.3(2)
C(4)–C(5)–C(6)	119.4(5)	C(33)–C(32)–C(37)	109.0(3)
C(5)–C(6)–C(7)	120.4(6)	C(32)–C(33)–C(34)	111.0(4)
C(2)–C(7)–C(6)	120.2(5)	C(33)–C(34)–C(35)	111.8(4)
P(1)–C(8)–C(9)	111.5(3)	C(34)–C(35)–C(36)	110.9(4)
P(1)–C(8)–C(13)	117.1(2)	C(35)–C(36)–C(37)	111.5(4)
C(9)–C(8)–C(13)	108.3(3)	C(32)–C(37)–C(36)	110.2(3)
C(8)–C(9)–C(10)	111.5(4)	P(2)–C(38)–C(39)	122.6(3)

Table S10. (*continued*)

P(2)–C(38)–C(43)	110.3(2)	C(40)–C(41)–C(42)	111.7(4)
C(39)–C(38)–C(43)	107.9(3)	C(41)–C(42)–C(43)	113.2(4)
C(38)–C(39)–C(40)	110.5(4)	C(38)–C(43)–C(42)	111.3(3)
C(39)–C(40)–C(41)	111.3(4)		