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Table S1a. Crystal Data and Experimental Parameters for (a)
Naphth-2-yl-CH₂Co(CO)₃PPh₃

lattice	P	(centric)
space group	P21/c	(No. 14)
cell parameters (Å,°)	9.933(1)	13.752(1) 20.240(2) 97.655(7)
cell volume (Å ³)	2740.12	
cell chemical composition	C ₁₂₈ H ₉₆ O ₁₂ P ₄ Co ₄	
cell weight	2185.79	
calc. density (g/cm ³)	1.32	
F(000) (elec.)	1127.96	
radiation (Å)	0.71069	
scan type	ϕ - 2θ	
data collctn range, deg	5 ≤ 2θ ≤ 54	
data limits	h, k, ±l	
no. of data collected	6478	
no. unique data	5409	
no. of obs unique data (NR)	4034	with F _o ² ≥ 6σ(F _o ²)
number of given atoms	61	
number of parameters (last cycle) (NP)	430	
data/parameter ratio	9.4	
μ (cm ⁻¹)	6.62	
given asymmetric unit (fractional)	layer= X : -0.02 -> 1.00	
	across= Y : -0.02 -> 0.25	
	down= Z : -0.02 -> 1.02	
R ^a	0.040	
R _w ^b	0.041	
G ^b	1.692	
largest shift/esd, final	0.004	
largest peak, e/Å ³	0.497	

$$^a R = \sum ||F_O| - |F_C|| / \sum |F_O|.$$

$$^b R_w = \sum w^{1/2} ||F_O| - |F_C|| / \sum w^{1/2} |F_O| \text{ and}$$

$$G = [\sum w^{1/2} (|F_O| - |F_C|)^2 (NR - NP)]^{1/2}$$

$$\text{where } w = 1.58 / [\sigma^2(|F_O|) + 5 \cdot 10^{-4} |F_O|^2]$$

Table S1b. Crystal Data and Experimental Parameters for (b)
4-ClC₆H₄CH₂Co(CO)₃PPh₃

lattice	C	(centric)
space group	C2/c	(No. 15)
cell parmtrs (Å,°)	17.835(1)	15.304(1) 19.309(1) 91.759(7)
cell volume (Å ³)	5267.8(5)	
cell chemical composition	C ₂₃₂ H ₁₆₈ O ₃₂ P ₈ Cl ₈ Co ₈	
cell weight	4470.74	
calc. density (g/cm ³)	1.41	
F(000) (elec.)	2287.91	
radiation (Å)	0.71069	
scan type	θ - 2θ	
data collctn range, deg	5.3 ≤ 2θ ≤ 56.9	
data limits	±h, k, l	
no. of data collected	5051	
no. unique data	4806	
no. of obs unique data (NR)	4784	with F _o ² ≥ 4σ(F _o ²)
number of given atoms	57	
number of parameters (last cycle) (NP)	409	
data/parameter ratio	11.7	
μ (cm ⁻¹)	7.86	
given asymmetric unit (fractional)	layer= X : -0.02 -> 0.52	
	across= Y : -0.02 -> 0.52	
	down= Z : -0.02 -> 0.50	
R ^a	0.036	
R _w ^b	0.039	
G ^b	2.156	
largest shift/esd, final	0.002	
largest peak, e/Å ³	0.410	

^a
$$R = \sum ||F_o| - |F_c|| / \sum |F_o|.$$

^b
$$R_w = \sum w^{1/2} ||F_o| - |F_c|| / \sum w^{1/2} |F_o| \text{ and}$$

$$G = [\sum w^{1/2} (|F_o| - |F_c|)^2 / (NR - NP)]^{1/2}$$

$$\text{where } w = 1.72 / [\sigma^2(|F_o|) + 3 \cdot 10^{-4} |F_o|^2]$$

Table S2a. Bond lengths (Å) and angles (°) of naphth-2-ylmethylcobalt tricarbonyl triphenylphosphine

P-Co	2.232(1)	C(1)-Co	1.786(3)
C(2)-Co	1.794(3)	C(3)-Co	1.778(3)
C(4)-Co	2.131(3)	C(15)-P	1.828(3)
C(21)-P	1.830(3)	C(27)-P	1.821(3)
C(1)-O(1)	1.134(4)	C(2)-O(2)	1.127(4)
C(3)-O(3)	1.134(4)	C(5)-C(4)	1.475(5)
C(6)-C(5)	1.418(5)	C(14)-C(5)	1.381(4)
C(7)-C(6)	1.358(5)	C(8)-C(7)	1.410(5)
C(9)-C(8)	1.424(5)	C(13)-C(8)	1.417(4)
C(10)-C(9)	1.345(6)	C(11)-C(10)	1.390(6)
C(12)-C(11)	1.360(5)	C(13)-C(12)	1.425(5)
C(14)-C(13)	1.406(5)	C(16)-C(15)	1.387(4)
C(20)-C(15)	1.402(4)	C(17)-C(16)	1.385(4)
C(18)-C(17)	1.377(5)	C(19)-C(18)	1.367(5)
C(20)-C(19)	1.379(5)	C(22)-C(21)	1.379(4)
C(26)-C(21)	1.375(5)	C(23)-C(22)	1.394(5)
C(24)-C(23)	1.371(7)	C(25)-C(24)	1.336(6)
C(26)-C(25)	1.379(5)	C(28)-C(27)	1.392(4)
C(32)-C(27)	1.390(4)	C(29)-C(28)	1.386(5)
C(30)-C(29)	1.381(6)	C(31)-C(30)	1.381(5)
C(32)-C(31)	1.376(5)	H(4a)-C(4)	0.90(4)
H(4b)-C(4)	0.92(4)	H(6)-C(6)	0.94(4)
H(7)-C(7)	0.94(4)	H(9)-C(9)	0.93(4)
H(10)-C(10)	0.90(4)	H(11)-C(11)	1.03(5)
H(12)-C(12)	1.01(4)	H(14)-C(14)	0.89(3)
H(16)-C(16)	0.91(3)	H(17)-C(17)	0.93(4)
H(18)-C(18)	1.12(5)	H(19)-C(19)	1.08(5)
H(20)-C(20)	0.94(3)	H(22)-C(22)	0.95(4)
H(23)-C(23)	0.97(6)	H(24)-C(24)	1.02(4)
H(25)-C(25)	0.86(5)	H(26)-C(26)	0.90(5)
H(28)-C(28)	0.89(4)	H(29)-C(29)	1.05(5)
H(30)-C(30)	0.86(4)	H(31)-C(31)	0.92(5)
H(32)-C(32)	0.88(3)		
C(1)-Co-P	93.2(1)	C(2)-Co-P	92.7(1)
C(2)-Co-C(1)	116.7(2)	C(3)-Co-P	92.7(1)
C(3)-Co-C(1)	122.6(1)	C(3)-Co-C(2)	119.9(1)
C(4)-Co-P	176.6(1)	C(4)-Co-C(1)	86.2(1)
C(4)-Co-C(2)	90.5(1)	C(4)-Co-C(3)	84.9(1)
C(15)-P-Co	114.6(1)	C(21)-P-Co	114.1(1)
C(21)-P-C(15)	102.6(1)	C(27)-P-Co	115.7(1)
C(27)-P-C(15)	106.0(1)	C(27)-P-C(21)	102.2(1)
O(1)-C(1)-Co	179.2(3)	O(2)-C(2)-Co	178.8(3)
O(3)-C(3)-Co	178.5(3)	C(5)-C(4)-Co	114.7(2)
C(6)-C(5)-C(4)	120.9(3)	C(14)-C(5)-C(4)	122.0(3)
C(14)-C(5)-C(6)	117.1(3)	C(7)-C(6)-C(5)	122.2(3)

C(8)-C(7)-C(6)	121.0(3)	C(9)-C(8)-C(7)	123.4(3)
C(13)-C(8)-C(7)	118.1(3)	C(13)-C(8)-C(9)	118.4(3)
C(10)-C(9)-C(8)	121.2(4)	C(11)-C(10)-C(9)	120.7(4)
C(12)-C(11)-C(10)	120.6(4)	C(13)-C(12)-C(11)	120.8(3)
C(12)-C(13)-C(8)	118.3(3)	C(14)-C(13)-C(8)	119.3(3)
C(14)-C(13)-C(12)	122.4(3)	C(13)-C(14)-C(5)	122.3(3)
C(16)-C(15)-P	119.9(2)	C(20)-C(15)-P	121.8(2)
C(20)-C(15)-C(16)	118.3(3)	C(17)-C(16)-C(15)	121.0(3)
C(18)-C(17)-C(16)	120.1(3)	C(19)-C(18)-C(17)	119.5(3)
C(20)-C(19)-C(18)	121.4(3)	C(19)-C(20)-C(15)	119.8(3)
C(22)-C(21)-P	123.1(2)	C(26)-C(21)-P	118.8(2)
C(26)-C(21)-C(22)	118.0(3)	C(23)-C(22)-C(21)	120.1(4)
C(24)-C(23)-C(22)	120.4(4)	C(25)-C(24)-C(23)	119.4(3)
C(26)-C(25)-C(24)	121.2(4)	C(25)-C(26)-C(21)	121.0(4)
C(28)-C(27)-P	122.7(2)	C(32)-C(27)-P	119.0(2)
C(32)-C(27)-C(28)	118.0(3)	C(29)-C(28)-C(27)	120.8(3)
C(30)-C(29)-C(28)	120.0(4)	C(31)-C(30)-C(29)	119.5(3)
C(32)-C(31)-C(30)	120.2(3)	C(31)-C(32)-C(27)	121.2(3)
H(4a)-C(4)-Co	102(2)	H(4a)-C(4)-C(5)	112(2)
H(4b)-C(4)-Co	105(2)	H(4b)-C(4)-C(5)	113(2)
H(4b)-C(4)-H(4a)	110(3)	H(6)-C(6)-C(5)	118(2)
H(6)-C(6)-C(7)	120(2)	H(7)-C(7)-C(6)	116(2)
H(7)-C(7)-C(8)	123(2)	H(9)-C(9)-C(8)	117(2)
H(9)-C(9)-C(10)	122(2)	H(10)-C(10)-C(9)	128(3)
H(10)-C(10)-C(11)	110(3)	H(11)-C(11)-C(10)	122(3)
H(11)-C(11)-C(12)	117(3)	H(12)-C(12)-C(11)	123(2)
H(12)-C(12)-C(13)	116(2)	H(14)-C(14)-C(5)	119(2)
H(14)-C(14)-C(13)	119(2)	H(16)-C(16)-C(15)	122(2)
H(16)-C(16)-C(17)	117(2)	H(17)-C(17)-C(16)	117(2)
H(17)-C(17)-C(18)	123(2)	H(18)-C(18)-C(17)	115(2)
H(18)-C(18)-C(19)	125(2)	H(19)-C(19)-C(18)	127(3)
H(19)-C(19)-C(20)	111(3)	H(20)-C(20)-C(15)	115(2)
H(20)-C(20)-C(19)	125(2)	H(22)-C(22)-C(21)	119(2)
H(22)-C(22)-C(23)	121(2)	H(23)-C(23)-C(22)	121(3)
H(23)-C(23)-C(24)	118(3)	H(24)-C(24)-C(23)	120(2)
H(24)-C(24)-C(25)	120(2)	H(25)-C(25)-C(24)	121(3)
H(25)-C(25)-C(26)	118(3)	H(26)-C(26)-C(21)	117(3)
H(26)-C(26)-C(25)	121(3)	H(28)-C(28)-C(27)	122(2)
H(28)-C(28)-C(29)	115(2)	H(29)-C(29)-C(28)	116(3)
H(29)-C(29)-C(30)	124(3)	H(30)-C(30)-C(29)	117(3)
H(30)-C(30)-C(31)	123(3)	H(31)-C(31)-C(30)	121(3)
H(31)-C(31)-C(32)	119(3)	H(32)-C(32)-C(27)	115(2)
H(32)-C(32)-C(31)	124(2)		

Table S2b. Bond lengths (Å) and angles (°) of (4-chlorophenyl) acetylcobalt tricarbonyl triphenylphosphine.

P-Co	2.256(1)	C(3)-Co	1.788(2)
C(1)-Co	1.768(3)	C(2)-Co	1.772(2)
C(4)-Co	2.009(2)	C(12)-P	1.829(2)
C(18)-P	1.822(2)	C(24)-P	1.825(2)
C(9)-Cl	1.735(2)	C(3)-O(3)	1.135(3)
C(1)-O(1)	1.140(3)	C(2)-O(2)	1.136(3)
C(4)-O(4)	1.168(3)	C(5)-C(4)	1.525(4)
C(6)-C(5)	1.504(3)	C(7)-C(6)	1.390(3)
C(11)-C(6)	1.364(4)	C(8)-C(7)	1.376(4)
C(9)-C(8)	1.364(4)	C(10)-C(9)	1.366(4)
C(11)-C(10)	1.378(4)	C(13)-C(12)	1.382(3)
C(17)-C(12)	1.386(3)	C(14)-C(13)	1.382(4)
C(15)-C(14)	1.362(5)	C(16)-C(15)	1.364(5)
C(17)-C(16)	1.382(4)	C(19)-C(18)	1.382(3)
C(23)-C(18)	1.388(3)	C(20)-C(19)	1.385(4)
C(21)-C(20)	1.356(5)	C(22)-C(21)	1.366(5)
C(23)-C(22)	1.387(4)	C(25)-C(24)	1.386(3)
C(29)-C(24)	1.381(3)	C(26)-C(25)	1.386(3)
C(27)-C(26)	1.368(4)	C(28)-C(27)	1.370(4)
C(29)-C(28)	1.392(3)	H(5a)-C(5)	1.05(3)
H(5b)-C(5)	1.04(4)	H(7)-C(7)	0.91(3)
H(8)-C(8)	1.01(3)	H(10)-C(10)	0.97(3)
H(11)-C(11)	1.00(3)	H(13)-C(13)	0.94(3)
H(14)-C(14)	0.99(3)	H(15)-C(15)	0.95(3)
H(16)-C(16)	0.94(4)	H(17)-C(17)	1.01(3)
H(19)-C(19)	0.87(3)	H(20)-C(20)	1.02(4)
H(21)-C(21)	0.97(3)	H(22)-C(22)	1.00(3)
H(23)-C(23)	0.90(3)	H(25)-C(25)	0.90(2)
H(26)-C(26)	0.98(3)	H(27)-C(27)	0.94(3)
H(28)-C(28)	0.93(3)	H(29)-C(29)	0.90(2)

C(3)-Co-P	93.1(1)	C(1)-Co-P	90.8(1)
C(1)-Co-C(3)	116.6(1)	C(2)-Co-P	95.4(1)
C(2)-Co-C(3)	114.9(1)	C(2)-Co-C(1)	127.7(1)
C(4)-Co-P	175.9(1)	C(4)-Co-C(3)	89.0(1)
C(4)-Co-C(1)	85.1(1)	C(4)-Co-C(2)	87.0(1)
C(12)-P-Co	116.2(1)	C(18)-P-Co	111.7(1)
C(18)-P-C(12)	105.1(1)	C(24)-P-Co	115.6(1)
C(24)-P-C(12)	102.3(1)	C(24)-P-C(18)	104.7(1)
O(3)-C(3)-Co	177.4(2)	O(1)-C(1)-Co	178.0(3)
O(2)-C(2)-Co	177.6(2)	O(4)-C(4)-Co	122.2(2)
C(5)-C(4)-Co	117.2(2)	C(5)-C(4)-O(4)	120.6(2)
C(6)-C(5)-C(4)	114.8(2)	C(7)-C(6)-C(5)	121.0(2)
C(11)-C(6)-C(5)	121.2(2)	C(11)-C(6)-C(7)	117.8(2)

C(8)-C(7)-C(6)	121.1(2)	C(9)-C(8)-C(7)	119.1(2)
C(8)-C(9)-C1	119.2(2)	C(10)-C(9)-C1	119.5(2)
C(10)-C(9)-C(8)	121.2(2)	C(11)-C(10)-C(9)	118.9(2)
C(10)-C(11)-C(6)	121.9(2)	C(13)-C(12)-P	118.7(2)
C(17)-C(12)-P	123.2(2)	C(17)-C(12)-C(13)	118.1(2)
C(14)-C(13)-C(12)	121.0(3)	C(15)-C(14)-C(13)	120.2(3)
C(16)-C(15)-C(14)	119.6(3)	C(17)-C(16)-C(15)	120.9(3)
C(16)-C(17)-C(12)	120.1(3)	C(19)-C(18)-P	122.6(2)
C(23)-C(18)-P	119.0(2)	C(23)-C(18)-C(19)	118.3(2)
C(20)-C(19)-C(18)	120.5(3)	C(21)-C(20)-C(19)	120.5(3)
C(22)-C(21)-C(20)	120.2(3)	C(23)-C(22)-C(21)	120.1(3)
C(22)-C(23)-C(18)	120.4(3)	C(25)-C(24)-P	120.4(2)
C(29)-C(24)-P	120.6(2)	C(29)-C(24)-C(25)	119.0(2)
C(26)-C(25)-C(24)	120.3(2)	C(27)-C(26)-C(25)	120.2(2)
C(28)-C(27)-C(26)	120.3(2)	C(29)-C(28)-C(27)	119.9(2)
C(28)-C(29)-C(24)	120.3(2)	H(5a)-C(5)-C(4)	108(2)
H(5b)-C(5)-C(4)	106(2)	H(5b)-C(5)-H(5a)	108(3)
C(6)-C(5)-H(5a)	111(2)	C(6)-C(5)-H(5b)	108(2)
H(7)-C(7)-C(6)	117(2)	C(8)-C(7)-H(7)	122(2)
H(8)-C(8)-C(7)	119(2)	C(9)-C(8)-H(8)	121(2)
H(10)-C(10)-C(9)	118(2)	C(11)-C(10)-H(10)	123(2)
H(11)-C(11)-C(6)	119(2)	H(11)-C(11)-C(10)	119(2)
H(13)-C(13)-C(12)	118(2)	C(14)-C(13)-H(13)	121(2)
H(14)-C(14)-C(13)	120(2)	C(15)-C(14)-H(14)	120(2)
H(15)-C(15)-C(14)	123(2)	C(16)-C(15)-H(15)	117(2)
H(16)-C(16)-C(15)	120(2)	C(17)-C(16)-H(16)	118(2)
H(17)-C(17)-C(12)	116(2)	H(17)-C(17)-C(16)	123(2)
H(19)-C(19)-C(18)	122(2)	C(20)-C(19)-H(19)	117(2)
H(20)-C(20)-C(19)	116(2)	C(21)-C(20)-H(20)	123(2)
H(21)-C(21)-C(20)	118(2)	C(22)-C(21)-H(21)	122(2)
H(22)-C(22)-C(21)	121(2)	C(23)-C(22)-H(22)	119(2)
H(23)-C(23)-C(18)	119(2)	H(23)-C(23)-C(22)	120(2)
H(25)-C(25)-C(24)	122(1)	C(26)-C(25)-H(25)	118(1)
H(26)-C(26)-C(25)	117(2)	C(27)-C(26)-H(26)	122(2)
H(27)-C(27)-C(26)	119(2)	C(28)-C(27)-H(27)	121(2)
H(28)-C(28)-C(27)	121(2)	C(29)-C(28)-H(28)	119(2)
H(29)-C(29)-C(24)	119(1)	H(29)-C(29)-C(28)	120(1)

Table S3a. Anisotropic thermal parameters of naphth-2-yl-methylcobalt tricarbonyl triphenylphosphine^a

atom	B11	B22	B33	B12	B13	B23
Co	3.31(2)	3.23(2)	2.91(2)	0.13(1)	0.33(1)	0.08(1)
P	2.88(3)	2.75(3)	2.88(3)	0.04(2)	0.43(2)	-0.04(2)
O(1)	5.6(1)	5.5(1)	6.1(1)	-1.8(1)	-0.9(1)	1.0(1)
O(2)	5.3(1)	9.1(2)	7.1(2)	2.8(1)	2.0(1)	1.5(1)
O(3)	6.6(2)	6.0(1)	6.4(1)	-0.3(1)	1.2(1)	-2.7(1)
C(1)	4.4(1)	3.9(1)	3.4(1)	0.0(1)	0.3(1)	0.6(1)
C(2)	4.1(1)	4.4(1)	4.1(1)	0.4(1)	0.4(1)	0.8(1)
C(3)	3.5(1)	4.4(1)	4.0(1)	-0.1(1)	0.6(1)	-0.2(1)
C(4)	5.9(2)	4.7(2)	3.0(1)	0.1(1)	0.4(1)	0.5(1)
C(5)	4.2(1)	4.5(1)	2.8(1)	0.0(1)	0.1(1)	0.9(1)
C(6)	3.6(1)	4.9(2)	4.6(1)	-0.3(1)	-0.4(1)	1.1(1)
C(7)	3.0(1)	5.7(2)	5.0(2)	0.4(1)	0.2(1)	1.1(1)
C(8)	3.9(1)	4.8(1)	3.0(1)	0.5(1)	0.5(1)	1.1(1)
C(9)	5.1(2)	5.1(2)	4.6(2)	1.2(1)	1.2(1)	0.8(1)
C(10)	7.2(2)	4.6(2)	4.5(2)	0.2(2)	1.3(2)	-0.1(1)
C(11)	6.0(2)	5.2(2)	4.7(2)	-0.7(2)	0.5(1)	0.2(1)
C(12)	4.1(1)	5.2(2)	4.5(1)	-0.4(1)	0.4(1)	0.7(1)
C(13)	3.5(1)	4.6(1)	3.0(1)	0.3(1)	0.51(9)	1.0(1)
C(14)	3.5(1)	4.8(2)	3.5(1)	0.5(1)	0.9(1)	1.1(1)
C(15)	3.1(1)	3.1(1)	3.1(1)	-0.08(9)	0.38(9)	-0.16(9)
C(16)	3.5(1)	4.1(1)	3.8(1)	0.6(1)	0.9(1)	0.2(1)
C(17)	3.6(1)	5.4(2)	5.4(2)	1.1(1)	1.4(1)	0.1(1)
C(18)	3.1(1)	6.5(2)	5.9(2)	1.0(1)	0.0(1)	-1.2(2)
C(19)	4.4(2)	7.2(2)	4.0(1)	1.1(2)	-0.9(1)	-1.2(1)
C(20)	3.7(1)	5.7(2)	3.1(1)	0.6(1)	0.3(1)	-0.6(1)
C(21)	3.2(1)	3.5(1)	2.8(1)	0.58(9)	0.55(9)	-0.01(9)
C(22)	6.2(2)	4.9(2)	4.8(2)	-0.5(2)	2.4(1)	-0.2(1)
C(23)	6.9(2)	7.8(3)	4.9(2)	0.2(2)	3.0(2)	0.1(2)
C(24)	5.9(2)	7.2(2)	3.7(1)	2.6(2)	0.4(1)	-1.1(1)
C(25)	7.7(2)	4.6(2)	4.9(2)	0.8(2)	0.6(2)	-1.4(1)
C(26)	6.6(2)	3.8(1)	4.1(1)	-0.4(1)	1.3(1)	-0.7(1)
C(27)	3.3(1)	2.8(1)	3.6(1)	0.05(9)	0.54(9)	-0.20(9)
C(28)	4.9(2)	3.5(1)	5.7(2)	-0.4(1)	-1.1(1)	0.8(1)
C(29)	7.2(2)	3.8(2)	6.6(2)	-1.2(2)	-1.1(2)	1.1(1)
C(30)	6.2(2)	3.9(2)	6.1(2)	-1.5(1)	1.2(2)	-0.1(1)
C(31)	3.5(1)	4.1(2)	7.3(2)	-0.5(1)	0.9(1)	-0.4(1)
C(32)	3.3(1)	3.3(1)	5.6(2)	0.0(1)	0.4(1)	0.0(1)

^a The form of the anisotropic thermal parameter is $\exp[-1/4(B_{11}h^2a^{*2}+B_{22}k^2b^{*2}+B_{33}l^2c^{*2}+2B_{12}hka^*b^*+2B_{13}hla^*c^*+2B_{23}klb^*c^*)]$.

Table S3b. Anisotropic thermal parameters of (4-chlorophenyl) acetylcobalt tricarbonyl triphenylphosphine^a

atom	B11	B22	B33	B12	B13	B23
Co	2.61(1)	2.94(1)	2.88(1)	0.452(8)	0.104(7)	-0.252(9)
P	2.59(2)	2.85(2)	2.83(2)	0.26(2)	0.34(2)	-0.02(2)
Cl	10.34(7)	4.06(3)	10.80(7)	1.41(4)	1.42(5)	-2.22(4)
O(2)	3.40(8)	8.4(1)	5.5(1)	-0.96(8)	0.01(7)	-0.64(9)
C(2)	3.49(9)	4.2(1)	3.32(9)	0.27(8)	0.25(7)	-0.46(8)
O(3)	11.3(2)	8.4(1)	3.7(1)	-0.4(1)	-2.1(1)	-0.73(9)
C(3)	4.8(1)	4.1(1)	3.9(1)	0.29(9)	-0.20(9)	-0.35(9)
O(1)	8.0(1)	5.0(1)	4.9(1)	-0.10(8)	2.78(9)	0.76(8)
C(1)	4.2(1)	3.02(9)	4.0(1)	0.60(8)	0.47(8)	-0.09(8)
O(4)	3.84(9)	4.5(1)	20.9(3)	1.49(8)	-3.0(1)	-3.5(1)
C(4)	3.38(9)	3.6(1)	5.7(1)	0.84(8)	-0.58(9)	-0.82(9)
C(5)	3.8(1)	3.7(1)	6.8(2)	0.35(9)	0.0(1)	-0.8(1)
C(6)	3.41(9)	3.4(1)	4.3(1)	0.12(7)	-0.12(8)	-0.59(8)
C(7)	5.9(1)	4.0(1)	3.9(1)	-0.1(1)	0.0(1)	0.65(9)
C(8)	5.6(1)	5.3(1)	3.8(1)	0.1(1)	0.7(1)	-0.9(1)
C(9)	4.9(1)	3.1(1)	5.0(1)	0.39(9)	0.1(1)	-0.82(9)
C(10)	5.5(1)	3.6(1)	4.9(1)	-0.36(9)	0.4(1)	0.6(1)
C(11)	4.5(1)	4.3(1)	3.8(1)	-0.22(9)	0.75(9)	-0.47(9)
C(12)	2.60(8)	3.42(9)	3.52(9)	0.40(7)	0.03(7)	-0.58(7)
C(13)	4.9(1)	4.1(1)	3.7(1)	0.18(9)	-0.11(9)	-0.30(9)
C(14)	6.5(2)	5.9(2)	3.8(1)	0.7(1)	-0.7(1)	-1.0(1)
C(15)	5.9(2)	6.1(2)	5.5(2)	-0.1(1)	-1.2(1)	-2.2(1)
C(16)	7.9(2)	4.8(2)	7.1(2)	-1.7(1)	-1.1(2)	-1.4(1)
C(17)	6.2(1)	4.0(1)	4.6(1)	-0.9(1)	-0.2(1)	-0.3(1)
C(18)	3.80(9)	3.02(9)	3.35(9)	-0.13(7)	0.82(7)	0.02(7)
C(19)	4.8(1)	6.5(2)	3.7(1)	-0.3(1)	0.0(1)	1.0(1)
C(20)	7.2(2)	7.8(2)	3.8(1)	-0.2(2)	0.2(1)	1.9(1)
C(21)	8.5(2)	5.3(1)	4.1(1)	0.1(1)	2.3(1)	0.9(1)
C(22)	6.0(2)	5.1(1)	6.1(2)	0.0(1)	3.2(1)	0.4(1)
C(23)	4.3(1)	4.6(1)	5.1(1)	0.6(1)	1.5(1)	0.9(1)
C(24)	2.74(8)	3.43(9)	2.79(8)	0.48(6)	0.29(6)	0.23(7)
C(25)	3.5(1)	3.5(1)	4.6(1)	0.63(8)	0.37(8)	0.13(8)
C(26)	3.8(1)	4.9(1)	4.9(1)	1.8(1)	0.32(9)	0.3(1)
C(27)	2.83(9)	6.0(1)	4.6(1)	0.95(9)	0.30(8)	0.6(1)
C(28)	2.96(9)	5.3(1)	4.6(1)	-0.27(9)	0.00(8)	0.6(1)
C(29)	3.08(9)	3.6(1)	3.9(1)	0.42(8)	0.00(7)	0.21(8)

^a The form of the anisotropic thermal parameter is $\exp[-1/4(B_{11}h^2a^{*2}+B_{22}k^2b^{*2}+B_{33}l^2c^{*2}+2B_{12}hka^{*}b^{*}+2B_{13}hla^{*}c^{*}+2B_{23}klb^{*}c^{*})]$.

Table 5a.

Fractional coordinates and equivalent thermal parameters
for naphth-2-ylmethylcobalt tricarbonyl triphenylphosphine

atom	x/a	y/b	z/c	Beq, Å ²
Co	0.80004(4)	0.44887(3)	0.59377(2)	3.16(1)
P	0.85170(7)	0.35822(5)	0.68514(3)	2.83(2)
O(1)	1.0336(3)	0.5773(2)	0.6267(1)	5.9(1)
O(2)	0.5432(3)	0.5120(3)	0.6354(2)	7.0(2)
O(3)	0.8021(3)	0.2823(2)	0.5051(2)	6.3(1)
C(1)	0.9425(4)	0.5268(2)	0.6142(2)	3.9(1)
C(2)	0.6431(4)	0.4883(3)	0.6188(2)	4.2(1)
C(3)	0.8033(3)	0.3472(2)	0.5402(2)	4.0(1)
C(4)	0.7594(5)	0.5306(3)	0.5039(2)	4.6(1)
C(5)	0.7291(3)	0.6343(2)	0.5135(1)	3.9(1)
C(6)	0.5933(3)	0.6666(3)	0.5133(2)	4.5(1)
C(7)	0.5623(3)	0.7612(3)	0.5228(2)	4.6(1)
C(8)	0.6654(3)	0.8327(2)	0.5329(1)	3.9(1)
C(9)	0.6392(4)	0.9320(3)	0.5462(2)	4.9(2)
C(10)	0.7412(5)	0.9972(3)	0.5569(2)	5.4(2)
C(11)	0.8755(5)	0.9687(3)	0.5554(2)	5.3(2)
C(12)	0.9057(4)	0.8745(3)	0.5433(2)	4.6(1)
C(13)	0.8013(3)	0.8029(2)	0.5319(1)	3.7(1)
C(14)	0.8297(3)	0.7044(3)	0.5210(2)	3.9(1)
C(15)	1.0321(3)	0.3326(2)	0.7068(1)	3.1(1)
C(16)	1.1178(3)	0.3350(2)	0.6577(2)	3.8(1)
C(17)	1.2564(4)	0.3186(3)	0.6735(2)	4.7(1)
C(18)	1.3108(4)	0.2996(3)	0.7381(2)	5.2(2)
C(19)	1.2276(4)	0.2957(3)	0.7868(2)	5.3(2)
C(20)	1.0897(3)	0.3123(3)	0.7723(2)	4.2(1)
C(21)	0.8074(3)	0.4144(2)	0.7613(1)	3.2(1)
C(22)	0.7452(4)	0.3641(3)	0.8080(2)	5.2(2)
C(23)	0.7186(5)	0.4108(4)	0.8661(2)	6.3(2)
C(24)	0.7546(4)	0.5067(3)	0.8773(2)	5.6(2)
C(25)	0.8135(5)	0.5554(3)	0.8318(2)	5.8(2)
C(26)	0.8407(4)	0.5104(3)	0.7738(2)	4.8(2)
C(27)	0.7656(3)	0.2414(2)	0.6846(1)	3.2(1)
C(28)	0.8236(4)	0.1606(2)	0.7193(2)	4.9(1)
C(29)	0.7471(5)	0.0775(3)	0.7260(2)	6.0(2)
C(30)	0.6126(5)	0.0742(3)	0.6984(2)	5.4(2)
C(31)	0.5560(4)	0.1516(3)	0.6615(2)	5.0(2)
C(32)	0.6316(3)	0.2343(2)	0.6550(2)	4.1(1)
H(4a)	0.684(4)	0.498(3)	0.480(2)	5.1(8)
H(4b)	0.833(4)	0.523(3)	0.481(2)	4.7(8)
H(6)	0.517(5)	0.619(3)	0.505(2)	7.(1)
H(7)	0.468(4)	0.777(3)	0.522(2)	5.6(9)
H(9)	0.549(5)	0.950(3)	0.550(2)	6.(1)

H(10)	0.737(4)	1.065(3)	0.562(2)	6.(1)
H(11)	0.957(5)	1.018(4)	0.563(2)	8.(1)
H(12)	1.003(5)	0.851(3)	0.543(2)	7.(1)
H(14)	0.918(4)	0.686(3)	0.521(2)	4.6(8)
H(16)	1.088(3)	0.351(2)	0.614(2)	3.5(6)
H(17)	1.304(5)	0.321(3)	0.639(2)	7.(1)
H(18)	1.429(6)	0.290(4)	0.744(3)	9.(1)
H(19)	1.255(6)	0.275(4)	0.842(3)	10.(2)
H(20)	1.033(4)	0.315(2)	0.804(2)	4.2(7)
H(22)	0.719(4)	0.297(3)	0.798(2)	6.(1)
H(23)	0.668(6)	0.380(4)	0.901(3)	10.(2)
H(24)	0.732(5)	0.540(3)	0.921(2)	7.(1)
H(25)	0.839(5)	0.621(3)	0.838(2)	7.(1)
H(26)	0.880(5)	0.542(3)	0.744(2)	7.(1)
H(28)	0.906(4)	0.164(3)	0.749(2)	6.0(9)
H(29)	0.812(5)	0.017(4)	0.752(2)	9.(1)
H(30)	0.566(5)	0.019(3)	0.701(2)	7.(1)
H(31)	0.465(5)	0.150(3)	0.642(2)	7.(1)
H(32)	0.599(4)	0.287(3)	0.632(2)	4.9(8)

Table 5b.

Fractional coordinates and equivalent thermal parameters for (4-chlorophenyl)acetylcobalt tricarbonyl triphenylphosphine.

atom	x/a	y/b	z/c	Beq, Å ²
Co	0.85211(1)	0.37117(2)	0.64956(1)	2.81(1)
P	0.81351(3)	0.51152(3)	0.64970(3)	2.75(2)
Cl	0.93149(6)	-0.17889(5)	0.55560(6)	8.38(5)
O(1)	0.8052(2)	0.3520(2)	0.5048(1)	7.9(1)
O(2)	0.7739(1)	0.3207(1)	0.7734(1)	5.9(1)
O(3)	1.0100(1)	0.4157(2)	0.6746(1)	5.79(9)
O(4)	0.9463(1)	0.2240(1)	0.6482(2)	9.8(2)
C(1)	0.8223(2)	0.3597(2)	0.5619(1)	4.3(1)
C(2)	0.8031(1)	0.3405(1)	0.7242(1)	3.72(9)
C(3)	0.9482(1)	0.4003(2)	0.6654(1)	3.68(9)
C(4)	0.8836(1)	0.2456(2)	0.6424(1)	4.2(1)
C(5)	0.8216(2)	0.1779(2)	0.6314(2)	4.7(1)
C(6)	0.8484(1)	0.0882(2)	0.6122(1)	3.70(9)
C(7)	0.8788(2)	0.0724(2)	0.5479(1)	4.6(1)
C(8)	0.9041(2)	-0.0094(2)	0.5304(1)	4.9(1)
C(9)	0.8997(2)	-0.0756(2)	0.5774(1)	4.3(1)
C(10)	0.8703(2)	-0.0622(2)	0.6410(2)	4.7(1)
C(11)	0.8451(1)	0.0201(2)	0.6576(1)	4.2(1)
C(12)	0.8505(1)	0.5797(1)	0.7207(1)	3.18(8)
C(13)	0.8522(2)	0.5460(2)	0.7871(1)	4.2(1)
C(14)	0.8765(2)	0.5960(2)	0.8430(2)	5.4(1)
C(15)	0.8996(2)	0.6798(2)	0.8332(2)	5.9(1)
C(16)	0.8985(2)	0.7141(2)	0.7680(2)	6.6(2)
C(17)	0.8743(2)	0.6650(2)	0.7116(2)	4.9(1)
C(18)	0.8389(1)	0.5684(1)	0.5709(1)	3.38(8)
C(19)	0.7860(2)	0.5991(2)	0.5231(1)	5.0(1)
C(20)	0.8081(2)	0.6373(2)	0.4619(2)	6.3(2)
C(21)	0.8819(2)	0.6450(2)	0.4481(2)	5.9(1)
C(22)	0.9352(2)	0.6149(2)	0.4944(2)	5.7(1)
C(23)	0.9141(2)	0.5769(2)	0.5560(2)	4.6(1)
C(24)	0.7125(1)	0.5278(1)	0.6551(1)	2.98(7)
C(25)	0.6834(1)	0.6110(2)	0.6634(1)	3.85(9)
C(26)	0.6068(1)	0.6229(2)	0.6694(2)	4.5(1)
C(27)	0.5594(1)	0.5527(2)	0.6664(1)	4.5(1)
C(28)	0.5872(1)	0.4700(2)	0.6581(1)	4.3(1)
C(29)	0.6640(1)	0.4575(2)	0.6516(1)	3.52(9)
H(5a)	0.783(2)	0.202(2)	0.594(2)	6.0(7)
H(5b)	0.795(2)	0.173(2)	0.679(2)	10.(1)
H(7)	0.886(2)	0.120(2)	0.520(2)	5.7(7)
H(8)	0.922(2)	-0.020(2)	0.482(2)	7.7(9)
H(10)	0.869(2)	-0.111(2)	0.673(2)	6.5(7)
H(11)	0.826(2)	0.030(2)	0.705(2)	6.7(7)

H(13)	0.834(2)	0.489(2)	0.794(1)	5.6(7)
H(14)	0.877(2)	0.571(2)	0.890(2)	6.8(8)
H(15)	0.918(2)	0.716(2)	0.870(2)	6.8(8)
H(16)	0.920(2)	0.769(3)	0.760(2)	9.(1)
H(17)	0.878(2)	0.686(2)	0.662(2)	6.4(7)
H(19)	0.738(2)	0.598(2)	0.531(2)	7.1(9)
H(20)	0.767(2)	0.666(2)	0.432(2)	9.(1)
H(21)	0.895(2)	0.674(2)	0.405(2)	6.7(8)
H(22)	0.990(2)	0.622(2)	0.486(2)	5.6(7)
H(23)	0.949(2)	0.558(2)	0.587(1)	5.2(7)
H(25)	0.713(1)	0.659(2)	0.665(1)	3.9(5)
H(26)	0.589(2)	0.683(2)	0.676(1)	5.2(6)
H(27)	0.508(2)	0.562(2)	0.671(1)	5.4(6)
H(28)	0.555(2)	0.422(2)	0.655(1)	5.1(6)
H(29)	0.683(1)	0.404(2)	0.648(1)	4.0(5)
