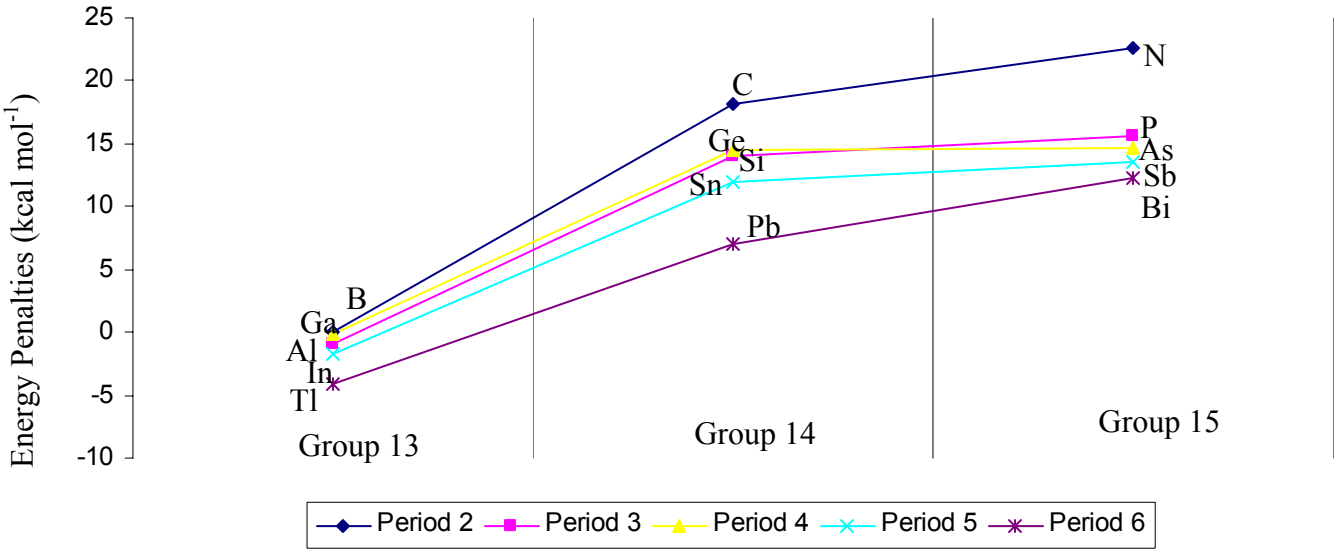
Appendix I: $HetC_o$ energy penalties for 12-vertex *closo*-clusters generally decrease down the group and increase along the period.



Appendix II: The relative stability of 11-vertex *nido*- and 12-vertex *closo*-stannaborane isomers based on a common set of increments.

		Sn–B	Sn–Sn	Sn_m				
	Name	64	121	–4	$\sum E_{inc}$	E_{inc}^{rel}	E_{calc}	ΔE[b]
nido	7-$SnB_{10}H_{11}^{3-}$	4			256	0	0[a]	0
	2-$SnB_{10}H_{11}^{3-}$	5			320	64	64	0
	7,9-$Sn_2B_9H_{11}^{2-}$	8		1	508	0	0[a]	0
	7,8-$Sn_2B_9H_{11}^{2-}$	6	1		505	–3	3[a]	–6
closo	1,12-$Sn_2B_{10}H_{12}$	10			640	0	0	0
	1,7-$Sn_2B_{10}H_{12}$	10		1	636	–4	–6	2
	1,2-$Sn_2B_{10}H_{12}$	8	1		633	–7	–13	6

[a] Computed relative energies for 11-vertex *nido*-stannaboranes and -borates are taken from ref. 10. [b] ΔE is the energy difference of E_{inc}^{rel} and E_{calc}. [c] 2,7-, 2,8- and 2,9-isomers don't show additive nature due to significant cluster distortion.

Appendix III: The relative stability of 11-vertex *nido*- and 12-vertex *closo*-phosphaborane isomers based on a common set of increments.

	Name	P–B	P–P	PP_m				
		27	65	2	$\sum E_{inc}$	E_{inc}^{rel}	E_{calc}[a]	ΔE[b]
nido	7-$PB_{10}H_{10}^{3-}$	4			108	0	0	0
	2-$PB_{10}H_{10}^{3-}$	5			135	27	28	–1
	7,9-$P_2B_9H_9^{2-}$	8		1	218	0	0	0
	7,8-$P_2B_9H_9^{2-}$	6	1		227	9	12	–3
	2,9-$P_2B_9H_9^{2-}$	9			243	25	27	–2
	2,8-$P_2B_9H_9^{2-}$	9		1	245	27	29	–2
	2,7-$P_2B_9H_9^{2-}$	7	1		254	36	38	–2
	7,8,10-$P_3B_8H_8^{-}$	10	1	2	339	0	0	0
	7,8,9-$P_3B_8H_8^{-}$	8	2	1	348	9	11	–2
closo	1,12-$P_2B_{10}H_{10}$	10			270	0	0	0
	1,7-$P_2B_{10}H_{10}$	10		1	272	2	2	0
	1,2-$P_2B_{10}H_{10}$	8	1		281	11	7	4

[a] Computed relative energies for 11-vertex *nido*-phosphaboranes and -borates are taken from ref. 8. [b] ΔE is the energy difference of E_{inc}^{rel} and E_{calc}.

Appendix IV: The relative stability of 11-vertex *nido*- and 12-vertex *closo*-arsaborane isomers based on a common set of increments.

	Name	As–B	As–As	$AsAs_m$				
		29	62	1	$\sum E_{inc}$	E_{inc}^{rel}	E_{calc}[a]	ΔE[b]
nido	7-$AsB_{10}H_{10}^{3-}$	4			116	0	0	0
	2-$AsB_{10}H_{10}^{3-}$	5			145	29	29	0
	7,9-$As_2B_9H_9^{2-}$	8		1	233	0	0	0
	7,8-$As_2B_9H_9^{2-}$	6	1		236	3	7	-4
closo	1,12-$As_2B_{10}H_{10}$	10			290	0	0	0
	1,7-$As_2B_{10}H_{10}$	10		1	291	1	2	-1
	1,2-$As_2B_{10}H_{10}$	8	1		294	4	1	3

[a] Computed relative energies for 11-vertex *nido*-arsaboranes and -borates are taken from ref. 5. [b] ΔE is the energy difference of E_{inc}^{rel} and E_{calc}.

Appendix V: The relative stability of 11-vertex *nido*- and 12-vertex *closo*-stibaborane isomers based on a common set of increments.

	Name	Sb–B	Sb–Sb	$SbSb_m$				
		32	62	-3	$\sum E_{inc}$	E_{inc}^{rel}	E_{calc}[a]	ΔE[b]
nido	7-$SbB_{10}H_{10}^{3-}$	4			128	0	0	0
	2-$SbB_{10}H_{10}^{3-}$	5			160	32	29	3
	7,9-$Sb_2B_9H_9^{2-}$	8		1	253	0	0	0
	7,8-$Sb_2B_9H_9^{2-}$	6	1		254	1	4	-3
closo	1,12-$Sb_2B_{10}H_{10}$	10			320	0	0	0
	1,7-$Sb_2B_{10}H_{10}$	10		1	317	-3	-1	-2
	1,2-$Sb_2B_{10}H_{10}$	8	1		318	-2	-6	4

[a] Computed relative energies for 11-vertex *nido*-phosphaboranes and -borates are taken from ref. 5. [b] ΔE is the energy difference of E_{inc}^{rel} and E_{calc}.

Appendix VI: Cartesian coordinates of the optimized geometries of the 12-vertex *closo*-diheterododecaboranes.

1,2-$Al_2B_{10}H_{12}$

B	-1.306941	-0.001776	1.463095
B	-1.840162	-0.900887	0.001387
B	-0.415654	-1.461012	0.935691
B	0.492856	0.000726	1.612831
B	-0.420046	1.460091	0.936088
B	-1.843842	0.896166	0.001503
Al	1.518917	1.249434	-0.001031
B	-0.421917	1.460327	-0.936340
B	-1.309982	-0.001871	-1.461811
B	-0.417235	-1.461180	-0.935618
Al	1.522478	-1.245671	-0.000473
B	0.489719	0.000772	-1.613034
H	-0.514227	-2.489038	1.562431
H	0.917551	0.001470	2.744208
H	-0.521941	2.487642	1.563021
H	-2.867514	1.527637	0.002956
H	-0.525240	2.487321	-1.563883
H	-1.977141	-0.002755	-2.463939
H	2.680771	-2.383169	-0.005009
H	-1.971439	-0.002414	2.467052
H	0.911866	0.001371	-2.745487
H	-0.517031	-2.488701	-1.562948
H	-2.862441	-1.534991	0.002782
H	2.674668	2.389925	-0.000587

1,7-$Al_2B_{10}H_{12}$

B	0.000357	1.699418	0.902651
B	-1.464212	1.189976	0.000436
B	-0.897897	0.261684	1.510851
B	0.897904	0.261270	1.510668
B	1.464589	1.189229	0.000554
B	0.000365	1.700353	-0.901079
Al	1.892354	-0.929258	-0.000419
B	0.897933	0.262635	-1.510717
B	-0.897911	0.263104	-1.510932
Al	-1.892741	-0.928753	-0.000280
B	-0.000349	-1.267305	0.972144
B	-0.000196	-1.266270	-0.973271
H	-1.458333	0.343669	2.578843
H	1.458459	0.342633	2.578657
H	2.420787	1.926980	0.000883
H	0.000810	2.732136	-1.522293
H	1.458448	0.345386	-2.578604
H	-1.458393	0.346449	-2.578765
H	-0.000561	-2.266671	1.662306
H	0.000760	2.730586	1.524889
H	-0.000533	-2.265330	-1.663949
H	-3.291400	-1.740865	-0.000572
H	-2.420113	1.928187	0.000805
H	3.292177	-1.739487	0.000364

1,12-$Al_2B_{10}H_{12}$

B	0.747197	-1.455498	-0.643430
Al	2.210456	-0.001310	-0.000627
B	0.747769	-1.062886	1.184359
B	-0.749701	-1.555169	0.334698
B	-0.749663	-0.798756	-1.375153
B	0.747429	0.161265	-1.582816
Al	-2.209282	0.002469	0.001209
B	-0.748319	1.062445	-1.185254
B	0.748774	1.555684	-0.335912
B	0.748620	0.798274	1.376375
B	-0.747962	-0.162172	1.583182
B	-0.746651	1.456963	0.643978
H	1.199466	-1.811131	2.019619
H	-1.204146	-2.650430	0.570070
H	-1.203621	-1.361813	-2.343860
H	1.199354	0.274997	-2.698371
H	-1.199808	1.811673	-2.019749
H	1.201945	2.651309	-0.571915
H	-1.199551	-0.274868	2.698978

H	1.198134	-2.481378	-1.097212
H	-1.197007	2.482911	1.098084
H	1.201432	1.361492	2.345511
H	3.825103	-0.000376	-0.000303
H	-3.824029	-0.018212	-0.008556
H	0.000009	-1.999298	-1.681926
H	-3.267261	-1.457107	-0.000307
H	-2.419634	2.203717	0.000309
H	3.268111	-1.455320	0.001054

1,2-$Ga_2B_{10}H_{12}$

B	1.754047	0.000637	1.461872
B	2.280542	0.900511	0.000095
B	0.863230	1.463317	0.941409
B	-0.033038	0.000112	1.628905
B	0.863581	-1.462431	0.941993
B	2.281163	-0.899950	0.000818
Ga	-1.084682	-1.230614	-0.000115
B	0.864272	-1.463086	-0.941652
B	1.755440	-0.000136	-1.461267
B	0.863829	1.462739	-0.942472
Ga	-1.084935	1.230455	0.000005
B	-0.032176	-0.000792	-1.628883
H	0.966995	2.490696	1.565097
H	-0.480320	0.000090	2.749308
H	0.967566	-2.489497	1.566199
H	3.304274	-1.531433	0.001871
H	0.968357	-2.490481	-1.565234
H	2.425976	-0.000373	-2.460570
H	-2.207768	2.368094	-0.004321
H	2.423280	0.000933	2.462052
H	-0.478838	-0.001190	-2.749577
H	0.967701	2.489663	-1.566776
H	3.303659	1.532128	0.000738
H	-2.207194	-2.368319	0.000514

1,12-$Ga_2B_{10}H_{12}$

B	-0.745587	-0.860100	-1.349522
Ga	-2.205825	0.000400	0.000250
B	-0.743502	1.017347	-1.235034
B	0.743726	0.096839	-1.596437
B	0.743606	-1.487957	-0.586765
B	-0.744095	-1.550338	0.399363
Ga	2.205057	0.000628	0.001048
B	0.744426	-1.019451	1.233328
B	-0.742413	-0.099633	1.597404
B	-0.742084	1.490043	0.585024
B	0.744979	1.549616	-0.401680
B	0.744762	0.860578	1.350742
H	-1.195249	1.729972	-2.098417
H	1.195925	0.164160	-2.713725
H	1.196298	-2.528915	-0.997820
H	-1.195752	-2.634110	0.679754
H	1.196070	-1.730960	2.097749
H	-1.192988	-0.168074	2.715127
H	1.196317	2.633942	-0.680659
H	-1.197380	-1.461294	-2.293793
H	1.195507	1.462208	2.295194
H	-1.193331	2.531646	0.995653
H	-3.793021	0.001664	0.003909
H	3.792329	-0.016834	-0.025324

1,7-$Ga_2B_{10}H_{12}$

B	-0.000002	1.965404	0.902245
B	-1.465261	1.466151	0.000136
B	-0.895708	0.533276	1.518374
B	0.895653	0.533007	1.518270
B	1.465241	1.465982	0.000394
B	0.000019	1.965837	-0.901372
Ga	1.891791	-0.659200	-0.000146
B	0.895759	0.533681	-1.518251
B	-0.895651	0.533968	-1.518489
Ga	-1.891832	-0.659206	-0.000050
B	-0.000017	-1.007804	0.986214
B	0.000006	-1.007135	-0.986789
H	-1.455692	0.616622	2.584597
H	1.455553	0.615879	2.584589
H	2.419595	2.203567	0.000610
H	0.000188	2.998003	-1.520604
H	1.455767	0.617432	-2.584431
H	-1.455640	0.618158	-2.584611
H	0.000101	-2.000108	1.681090
H	-0.000005	2.997221	1.522054

1,2-$In_2B_{10}H_{12}$

B	-2.187229	-0.005424	1.467151
B	-2.652807	-0.914110	-0.000911
B	-1.232470	-1.433965	0.960583
B	-0.421956	-0.001218	1.701200
B	-1.239100	1.428105	0.961761
B	-2.656688	0.902326	0.000000
In	0.934964	1.353659	0.000000
B	-1.238914	1.429045	-0.960445
B	-2.185969	-0.003942	-1.467830
B	-1.231967	-1.433013	-0.961883
In	0.941129	-1.349747	0.000000
B	-0.420932	0.000255	-1.700484
H	-1.325554	-2.489969	1.537767
H	0.033293	-0.001094	2.816789
H	-1.336789	2.483412	1.539428
H	-3.665400	1.556747	0.000000

H	-1.335549	2.484994	-1.537123
H	-2.884818	-0.005342	-2.447795
H	1.886908	-2.841109	-0.002306
H	-2.887105	-0.007661	2.446365
H	0.034453	0.001592	-2.816057
H	-1.323901	-2.488656	-1.539937
H	-3.658566	-1.573065	-0.001558
H	1.874655	2.848172	0.001925

H	1.165571	1.167006	-2.480891
H	-1.166797	2.404936	-1.318614
H	-1.166672	2.003024	1.873082
H	1.166733	0.515498	2.693064
H	-1.166893	-1.164348	2.482818
H	1.162617	-2.401081	1.321378
H	-1.167606	-0.512484	-2.694105
H	1.168349	2.721346	0.342449
H	-1.166795	-2.722287	-0.342676
H	1.162524	-1.998899	-1.874241
H	4.162576	-0.009656	-0.001669
H	-4.162181	0.032365	0.005634

1,7-$In_2B_{10}H_{12}$

B	0.000006	2.184554	0.902926
B	-1.465610	1.694153	0.000133
B	-0.894123	0.757811	1.528640
B	0.894315	0.757743	1.528315
B	1.465532	1.693771	-0.000184
B	-0.000136	2.184490	-0.903156
In	2.087208	-0.554909	-0.000017
B	0.894117	0.757615	-1.528479
B	-0.894383	0.757529	-1.528351
In	-2.087223	-0.554864	-0.000013
B	0.000009	-0.796204	0.997481
B	0.000007	-0.796280	-0.997020
H	-1.430519	0.859000	2.606394
H	1.431069	0.859185	2.605890
H	2.400114	2.457296	-0.000315
H	-0.000151	3.218537	-1.519648
H	1.430756	0.858874	-2.606110
H	-1.431110	0.858702	-2.605938
H	-0.000143	-1.779499	1.709579
H	0.000185	3.218708	1.519255
H	-0.000412	-1.779761	-1.708874
H	-3.603148	-1.414662	-0.000022
H	-2.400103	2.457867	0.000024
H	3.605529	-1.411254	-0.000271

1,2-$Tl_2B_{10}H_{12}$

B	0.057686	2.644364	1.479886
B	-0.837620	3.064719	-0.006362
B	-1.369499	1.668816	0.983040
B	0.011687	0.904174	1.770305
B	1.440545	1.596416	1.003259
B	0.994959	3.017149	0.006756
Tl	1.413577	-0.759661	0.000307
B	1.454182	1.598464	-0.984603
B	0.077654	2.643750	-1.479857
B	-1.355920	1.666552	-1.001198
Tl	-1.450953	-0.696545	-0.000443
B	0.033640	0.904390	-1.770345
H	-2.458608	1.761913	1.493890
H	-0.008358	0.393468	2.860632
H	2.526277	1.633507	1.528157
H	1.698841	3.992454	0.011699
H	2.546588	1.634850	-1.495488
H	0.103974	3.393654	-2.422050
H	-3.207408	-1.422823	-0.015824
H	0.070776	3.394833	2.421883
H	0.029381	0.393058	-2.860565
H	-2.438177	1.759034	-1.526679
H	-1.490299	4.074974	-0.011482
H	3.117895	-1.600245	0.022464

1,12-$In_2B_{10}H_{12}$

B	0.739128	1.601480	0.201243
In	2.424220	-0.000966	-0.000259
B	0.736896	0.687613	-1.458749
B	-0.736302	1.415019	-0.776717
B	-0.736006	1.178827	1.102295
B	0.737387	0.305004	1.584213
In	-2.423137	-0.001449	-0.000185
B	-0.738659	-0.683339	1.461238
B	0.734036	-1.411066	0.778460
B	0.733749	-1.174812	-1.102586
B	-0.739011	-0.300539	-1.585230
B	-0.740120	-1.601607	-0.201056

1,7-$Tl_2B_{10}H_{12}$

B	0.002215	2.755436	0.872042
B	-1.435549	2.138084	0.000061
B	-0.923091	1.351542	1.554593
B	0.924438	1.349600	1.554925
B	1.438863	2.134929	0.000359
B	0.002344	2.755892	-0.871161
Tl	1.804648	-0.556714	-0.000086

B	0.924490	1.350767	-1.554902
B	-0.922630	1.352239	-1.554693
Tl	-1.805388	-0.555819	-0.000095
B	-0.000801	-0.147708	1.711028
B	-0.000511	-0.147318	-1.710696
H	-1.597282	1.509607	2.545987
H	1.598470	1.506418	2.546621
H	2.445388	2.798488	0.000633
H	0.003383	3.786359	-1.494761
H	1.598830	1.507711	-2.546335
H	-1.596929	1.510457	-2.545966
H	-0.001176	-0.991598	2.562337
H	0.003154	3.785569	1.496181
H	-0.000762	-0.990832	-2.562381
H	-3.680890	-0.787990	0.001625
H	-2.440795	2.803746	0.000097
H	3.679708	-0.790075	0.002818

1,12-$Tl_2B_{10}H_{12}$

B	-0.741176	0.187030	1.625619
Tl	-2.572933	-0.000622	-0.003199
B	-0.732660	-1.481950	0.683775
B	0.720185	-0.796258	1.429919
B	0.720412	1.100170	1.212564
B	-0.732574	1.599022	0.330728
Tl	2.572629	-0.000743	-0.004321
B	0.732237	1.490526	-0.659979
B	-0.715782	0.804754	-1.412479
B	-0.715752	-1.101804	-1.194665
B	0.731630	-1.600313	-0.306447
B	0.738394	-0.184142	-1.614854
H	-1.157632	-2.510891	1.147224
H	1.140688	-1.348496	2.416500
H	1.141413	1.860797	2.048846
H	-1.157767	2.706010	0.549696
H	1.155705	2.518125	-1.127456
H	-1.132813	1.357198	-2.400108
H	1.154714	-2.707146	-0.529292
H	-1.169348	0.315094	2.745497
H	1.161061	-0.312955	-2.736228
H	-1.132601	-1.863228	-2.031879
H	-4.380915	-0.003713	-0.061064
H	4.377574	0.014599	0.116442

1,2-$C_2B_{10}H_{12}$

B	0.786921	-1.534565	0.000000
B	-0.736225	-1.251152	0.899051
B	-0.736225	-1.251152	-0.899051
B	0.780558	-0.478165	-1.465225
B	1.725944	-0.003895	0.000000
B	0.780558	-0.478165	1.465225
B	0.780558	1.224021	-0.899560
B	0.780558	1.224021	0.899560
B	-0.735747	0.450414	1.461566
C	-1.513993	-0.030883	0.000000
B	-0.735747	0.450414	-1.461566
C	-0.660216	1.362751	0.000000
H	-1.244594	2.277579	0.000000
H	1.299164	-2.603688	0.000000
H	-1.416291	-2.022333	-1.485873
H	1.284421	-0.787560	-2.492374
H	2.911021	0.024474	0.000000
H	1.284421	-0.787560	2.492374
H	1.157925	2.180386	-1.486567
H	1.157925	2.180386	1.486567
H	-1.416864	0.868037	2.333496
H	-2.594491	0.074480	0.000000
H	-1.416864	0.868037	-2.333496
H	-1.416291	-2.022333	1.485873

1,7-$C_2B_{10}H_{12}$

B	-1.704439	0.012624	0.000000
C	-0.685013	-1.371389	0.000000
B	-0.766759	-0.457777	1.455130
B	-0.777289	1.249403	0.903483
B	-0.777289	1.249403	-0.903483
B	-0.766759	-0.457777	-1.455130
B	0.744036	1.533520	0.000000
B	0.748775	0.485787	-1.456612
B	0.748775	-1.203510	-0.899139
B	0.748775	-1.203510	0.899139
B	0.748775	0.485787	1.456612
C	1.532708	0.008423	0.000000
H	2.618550	-0.006176	0.000000
H	-2.878179	-0.142541	0.000000
H	-1.308688	-0.918682	2.401077
H	-1.305021	2.099047	1.538918
H	-1.305021	2.099047	-1.538918
H	-1.308688	-0.918682	-2.401077
H	1.403403	2.516894	0.000000
H	1.401359	0.767880	-2.402912
H	1.307217	-2.102586	-1.425500
H	1.307217	-2.102586	1.425500
H	1.401359	0.767880	2.402912
H	-1.152691	-2.351453	0.000000

1,12-$C_2B_{10}H_{12}$

C	0.000000	0.000000	1.528081

B	0.000000	1.528642	0.754137
B	-1.453825	0.472376	0.754137
B	-0.898513	-1.236697	0.754137
B	0.898513	-1.236697	0.754137
B	1.453825	0.472376	0.754137
B	0.000000	-1.528642	-0.754137
B	1.453825	-0.472376	-0.754137
B	0.898513	1.236697	-0.754137
B	-0.898513	1.236697	-0.754137
B	-1.453825	-0.472376	-0.754137
C	0.000000	0.000000	-1.528081
H	0.000000	0.000000	-2.614168
H	0.000000	0.000000	2.614168
H	-2.402563	0.780640	1.390127
H	-1.484866	-2.043742	1.390127
H	1.484866	-2.043742	1.390127
H	2.402563	0.780640	1.390127
H	0.000000	-2.526204	-1.390127
H	2.402563	-0.780640	-1.390127
H	1.484866	2.043742	-1.390127
H	-1.484866	2.043742	-1.390127
H	-2.402563	-0.780640	-1.390127
H	0.000000	2.526204	1.390127

1,7-$Si_2B_{10}H_{12}$

B	0.610559	1.781973	0.000000
B	0.620578	0.688608	1.534598
Si	1.881720	0.191807	0.000000
B	0.620578	0.688608	-1.534598
B	-0.891901	1.433241	-0.906223
B	-0.891901	1.433241	0.906223
B	-0.891901	-0.252569	-1.534627
B	-1.868419	0.239371	0.000000
B	-0.891901	-0.252569	1.534627
B	0.684278	-1.099641	1.022065
B	0.684278	-1.099641	-1.022065
Si	-1.003279	-1.603427	0.000000
H	-1.649546	-2.919339	0.000000
H	1.118772	2.855840	0.000000
H	3.347727	0.190323	0.000000
H	1.137018	1.021893	-2.551608
H	-1.425861	2.291318	-1.527186
H	-1.425861	2.291318	1.527186
H	-1.419044	-0.568632	-2.551643
H	-3.056327	0.257794	0.000000
H	-1.419044	-0.568632	2.551643
H	1.217867	-1.957102	1.652038
H	1.217867	-1.957102	-1.652038
H	1.137018	1.021893	2.551608

1,2-$Si_2B_{10}H_{12}$

B	1.055156	-1.722693	0.000000
B	1.069996	-0.673400	1.465938
B	-0.442114	-1.482237	0.951635
B	-0.442114	-1.482237	-0.951635
B	1.069996	-0.673400	-1.465938
B	2.008498	-0.205683	0.000000
B	-0.442114	0.278449	-1.601060
B	1.145374	1.040224	-0.951726
B	1.145374	1.040224	0.951726
B	-0.442114	0.278449	1.601060
Si	-1.749493	-0.261460	0.000000
Si	-0.521449	1.690138	0.000000
H	-1.127037	3.027457	0.000000
H	1.570486	-2.790902	0.000000
H	-0.971119	-2.343069	1.578358
H	-0.971119	-2.343069	-1.578358
H	1.592564	-1.001312	-2.479366
H	3.194591	-0.205909	0.000000
H	-0.941732	0.592241	-2.632871
H	1.691573	1.890175	-1.578499
H	1.691573	1.890175	1.578499
H	-0.941732	0.592241	2.632871
H	-3.217123	-0.296691	0.000000
H	1.592564	-1.001312	2.479366

1,12-$Si_2B_{10}H_{12}$

Si	0.000000	0.000000	1.980256
B	0.000000	1.614985	0.737434
B	-1.535942	0.499058	0.737434
B	-0.949264	-1.306550	0.737434
B	0.949264	-1.306550	0.737434
B	1.535942	0.499058	0.737434
B	0.000000	-1.614985	-0.737434
B	1.535942	-0.499058	-0.737434
B	0.949264	1.306550	-0.737434
B	-0.949264	1.306550	-0.737434
B	-1.535942	-0.499058	-0.737434
Si	0.000000	0.000000	-1.980256
H	0.000000	0.000000	-3.444831
H	0.000000	0.000000	3.444831
H	-2.553325	0.829626	1.253656
H	-1.578042	-2.171988	1.253656
H	1.578042	-2.171988	1.253656
H	2.553325	0.829626	1.253656
H	0.000000	-2.684725	-1.253656
H	2.553325	-0.829626	-1.253656
H	1.578042	2.171988	-1.253656
H	-1.578042	2.171988	-1.253656
H	-2.553325	-0.829626	-1.253656
H	0.000000	2.684725	1.253656

H	1.502682	0.565771	2.570841
H	-3.076578	-1.403173	0.000000

1,2-$Ge_2B_{10}H_{10}$

B	-2.229504	-0.901237	0.000478
B	-0.844736	-1.491210	0.963880
B	-1.695220	-0.001903	1.465943
B	-2.232134	0.894321	-0.000340
B	-1.695378	-0.003348	-1.465747
B	-0.845222	-1.492259	-0.963075
B	-0.849950	1.488771	-0.964386
B	0.074667	-0.000281	-1.650736
Ge	1.007511	-1.214795	-0.000092
B	0.074845	0.000245	1.650701
B	-0.850076	1.489807	0.963602
Ge	1.003255	1.217900	0.000045
H	2.225946	2.134122	-0.004179
H	-3.233514	-1.532996	0.000854
H	-2.324645	-0.002961	2.472316
H	-3.238364	1.522575	-0.000787
H	-2.324870	-0.004616	-2.472081
H	-0.875983	-2.507386	-1.581270
H	-0.883186	2.503341	-1.583361
H	0.649267	0.000463	-2.690455
H	2.233648	-2.127294	0.003864
H	0.649595	0.001624	2.690338
H	-0.883433	2.504791	1.581874
H	-0.875415	-2.505571	1.582779

1,12-$Ge_2B_{10}H_{10}$

Ge	2.073159	-0.000747	-0.000012
B	0.727917	1.634833	0.034869
B	0.728299	0.473377	1.564950
B	0.729235	-1.343566	0.933122
B	0.729239	-1.302520	-0.989558
B	0.728326	0.539725	-1.543346
B	-0.726596	-1.633040	-0.034829
B	-0.727555	-0.471475	-1.564159
B	-0.729006	1.343497	-0.931701
B	-0.729007	1.302514	0.988137
B	-0.727583	-0.537790	1.542636
Ge	-2.073550	-0.000215	-0.000009
H	-3.595922	-0.014004	-0.000309
H	3.594186	0.013973	0.000308
H	1.233935	0.782729	2.594902
H	1.235421	-2.226286	1.546815
H	1.235419	-2.158272	-1.640335
H	1.233972	0.892704	-2.559170
H	-1.234299	-2.707316	-0.057749
H	-1.234560	-0.781427	-2.593333
H	-1.236219	2.225741	-1.545351
H	-1.236215	2.157792	1.638850
H	-1.234599	-0.891338	2.557656
H	1.235058	2.708733	0.057781

1,7-$Ge_2B_{10}H_{10}$

B	-1.461050	1.467190	0.000000
Ge	-1.763384	-0.629033	0.000000
B	-0.888238	0.538116	1.553934
B	-0.000002	1.956488	0.903911
B	-0.000002	1.956488	-0.903911
B	-0.888238	0.538116	-1.553934
B	1.461042	1.467192	0.000000
B	0.888241	0.538121	-1.553931
B	0.000004	-1.032371	-1.097586
B	0.000004	-1.032371	1.097586
B	0.888241	0.538121	1.553931
Ge	1.763383	-0.629036	0.000000
H	3.076621	-1.403098	0.000000
H	-2.449656	2.125562	0.000000
H	-1.502678	0.565763	2.570846
H	-0.000005	2.973059	1.515988
H	-0.000005	2.973058	-1.515988
H	-1.502677	0.565763	-2.570846
H	2.449642	2.125573	0.000000
H	1.502682	0.565770	-2.570841
H	-0.000004	-2.035646	-1.737549
H	-0.000004	-2.035646	1.737549

1,2-$Sn_2B_{10}H_{10}$

B	1.403096	2.347931	-0.004237
B	1.675184	0.881410	-0.987664
B	0.416020	2.056685	-1.469547
B	-0.367149	2.708444	0.002946
B	0.426757	2.055289	1.468549
B	1.681433	0.880716	0.977033
B	-1.191995	1.465570	0.986863
B	0.078717	0.347231	1.740175
Sn	1.138085	-1.125263	0.000248
B	0.069464	0.347431	-1.738217
B	-1.198203	1.468010	-0.977119
Sn	-1.490944	-0.590386	0.000033
H	-2.950241	-1.455671	0.010709
H	2.235553	3.194446	-0.005859
H	0.542250	2.699055	-2.461076
H	-0.802095	3.813117	0.005848
H	0.560117	2.696510	2.459901

H	2.712475	0.731754	1.555150
H	-2.195148	1.731060	1.572215
H	-0.028651	-0.198908	2.790153
H	2.150136	-2.488051	-0.018683
H	-0.045693	-0.194908	-2.789415
H	-2.205326	1.733653	-1.555610
H	2.702955	0.726809	-1.571316

1,7-$Sn_2B_{10}H_{10}$

B	-1.451605	1.718959	0.000000
Sn	-1.763344	-0.604167	0.000000
B	-0.903027	0.881693	1.584810
B	-0.000039	2.274256	0.884161
B	-0.000039	2.274256	-0.884161
B	-0.903027	0.881694	-1.584810
B	1.451537	1.718989	0.000000
B	0.902982	0.881725	-1.584823
B	0.000005	-0.677167	-1.532849
B	0.000005	-0.677167	1.532849
B	0.902982	0.881725	1.584823
Sn	1.763371	-0.604143	0.000000
H	3.355622	-1.184145	0.000000
H	-2.447046	2.368777	0.000000
H	-1.574826	0.971073	2.564425
H	-0.000051	3.293569	1.493822
H	-0.000051	3.293569	-1.493822
H	-1.574826	0.971074	-2.564425
H	2.446952	2.368848	0.000000
H	1.574783	0.971138	-2.564433
H	-0.000001	-1.610022	-2.270024
H	-0.000001	-1.610022	2.270024
H	1.574783	0.971138	2.564433
H	-3.355546	-1.184278	0.000000

1,12-$Sn_2B_{10}H_{10}$

Sn	2.297804	0.000015	0.000408
B	0.716819	-0.078940	-1.647768
B	0.718279	1.544797	-0.585731
B	0.720814	1.035402	1.289855
B	0.720728	-0.907153	1.382958
B	0.718293	-1.593900	-0.435368
B	-0.717155	0.079057	1.650392
B	-0.718987	-1.546684	0.585776
B	-0.722924	-1.036503	-1.289479
B	-0.722847	0.908307	-1.382689
B	-0.719014	1.595787	0.435221
Sn	-2.297095	-0.000022	-0.000551
H	-3.979549	0.001253	0.026736
H	3.978268	-0.001797	-0.036279
H	1.193989	2.564015	-0.975105
H	1.194836	1.718628	2.141233
H	1.194628	-1.505738	2.295910
H	1.193991	-2.645780	-0.725237
H	-1.193115	0.131245	2.740099
H	-1.195358	-2.565716	0.974526
H	-1.196975	-1.717969	-2.142160
H	-1.196774	1.505023	-2.296764
H	-1.195381	2.647410	0.724519
H	1.195961	-0.131080	-2.736188

1,2-$Pb_2B_{10}H_{10}$

B	0.906108	2.867909	-0.001606
B	1.454061	1.489558	-0.994141
B	-0.003196	2.411958	-1.469953
B	-0.908482	2.866947	0.001598
B	0.001519	2.411943	1.469945
B	1.457547	1.490681	0.990029
B	-1.455100	1.488396	0.994524
B	0.002207	0.687326	1.777375
Pb	1.377472	-0.647950	0.000000
B	-0.002187	0.687315	-1.777360
B	-1.458557	1.489520	-0.990438
Pb	-1.377050	-0.648608	0.000000
H	-2.745422	-1.702591	0.007630
H	1.563701	3.857446	-0.002904
H	-0.005070	3.080782	-2.452872
H	-1.567064	3.855832	0.002941
H	0.002631	3.080762	2.452870
H	2.509362	1.543992	1.546678
H	-2.505260	1.540703	1.554420
H	0.004222	0.108223	2.814316
H	2.748865	-1.698009	-0.007940
H	-0.003854	0.108218	-2.814307
H	-2.510472	1.541810	-1.546985
H	2.504150	1.542869	-1.554083

1,7-$Pb_2B_{10}H_{10}$

B	-1.441956	1.981620	0.000000
Pb	-1.758265	-0.484649	0.000000
B	-0.906925	1.188373	1.568159
B	-0.000012	2.579528	0.876878
B	-0.000012	2.579528	-0.876878
B	-0.906925	1.188373	-1.568159
B	1.441926	1.981608	0.000000
B	0.906888	1.188397	-1.568190
B	-0.000012	-0.353315	-1.654739
B	-0.000012	-0.353315	1.654739

B	0.906888	1.188397	1.568190
Pb	1.758276	-0.484642	0.000000
H	3.481300	-0.627593	0.000000
H	-2.461447	2.594087	0.000000
H	-1.587298	1.258727	2.545939
H	-0.000014	3.589287	1.503811
H	-0.000014	3.589287	-1.503811
H	-1.587298	1.258727	-2.545939
H	2.461405	2.594101	0.000000
H	1.587261	1.258763	-2.545968
H	-0.000020	-1.255390	-2.425764
H	-0.000020	-1.255390	2.425764
H	1.587261	1.258763	2.545968
H	-3.481289	-0.627482	0.000000

1,12-$Pb_2B_{10}H_{10}$

Pb	-2.348179	-0.000053	-0.000136
B	-0.710426	-0.576697	-1.557831
B	-0.713437	-1.661099	0.066561
B	-0.717237	-0.449392	1.601645
B	-0.717310	1.384148	0.923004
B	-0.713417	1.304048	-1.030755
B	0.709471	0.576975	1.558526
B	0.711822	1.662009	-0.063311
B	0.717462	0.452377	-1.600501
B	0.717548	-1.385652	-0.920227
B	0.711792	-1.302637	1.033825
Pb	2.348409	-0.000274	-0.000745
H	4.041272	0.015956	0.043299
H	-4.039851	-0.012015	-0.032455
H	-1.186368	-2.751768	0.107159
H	-1.192553	-0.746040	2.650788
H	-1.192646	2.292412	1.526077
H	-1.186245	2.158262	-1.710168
H	1.182287	0.955851	2.582250
H	1.185892	2.752113	-0.105476
H	1.192147	0.748192	-2.650078
H	1.192259	-2.293558	-1.524184
H	1.185755	-2.157456	1.711668
H	-1.182100	-0.955479	-2.581347

1,2-$N_2B_{10}H_{10}$

B	0.888287	-0.002237	1.479456
B	1.449945	0.882436	0.026269
B	0.000547	1.462533	0.869214
B	-0.890985	-0.000648	1.478121
B	-0.001804	-1.464469	0.866269
B	1.448517	-0.884989	0.024448
B	-1.450160	-0.882677	0.022185
B	-0.000249	-1.340929	-0.977243
N	0.888586	0.000653	-1.249357
B	0.001759	1.343345	-0.974444
B	-1.448407	0.884727	0.023689
N	-0.886413	0.001867	-1.250420
H	1.529210	-0.003737	2.476545
H	0.000725	2.507921	1.426332
H	-1.533502	-0.000928	2.474172
H	-0.002827	-2.510952	1.421319
H	2.410178	-1.521381	-0.240365
H	-2.412421	-1.517435	-0.244354
H	-0.000281	-2.219615	-1.765373
H	0.003654	2.223520	-1.760883
H	-2.409725	1.521475	-0.241575
H	2.412516	1.518021	-0.237203

1,7-$N_2B_{10}H_{10}$

B	-0.000005	0.888830	-1.433501
N	0.000005	-0.807403	-1.280437
B	-1.437245	-0.001386	-0.896039
B	-0.903246	1.460849	0.002771
B	0.903230	1.460858	0.002771
B	1.437245	-0.001370	-0.896039
B	-0.000005	0.882717	1.436880
B	1.437797	-0.004509	0.895700
B	0.874139	-1.402058	-0.002375
B	-0.874125	-1.402068	-0.002375
B	-1.437797	-0.004525	0.895700
N	0.000005	-0.812116	1.277394
H	-0.000007	1.316736	-2.535540
H	-2.356237	-0.150194	-1.623720
H	-1.547765	2.454753	0.004748
H	1.547740	2.454769	0.004748
H	2.356239	-0.150169	-1.623720
H	-0.000007	1.306767	2.540422
H	2.356561	-0.156128	1.623068
H	1.339887	-2.485208	-0.004612
H	-1.339859	-2.485221	-0.004612
H	-2.356559	-0.156153	1.623068

1,12-$N_2B_{10}H_{10}$

N	0.000000	-0.004428	-1.488017
B	-0.000125	-1.511537	-0.756403

B	-1.440106	-0.470018	-0.755634
B	-0.889523	1.220013	-0.762906
B	0.889724	1.219867	-0.762906
B	1.440029	-0.470255	-0.755635
B	0.000125	1.515478	0.753188
B	1.437553	0.469359	0.758532
B	0.888187	-1.221257	0.761282
B	-0.888388	-1.221111	0.761282
B	-1.437475	0.469596	0.758533
N	0.000000	0.004292	1.488652
H	-2.354190	-0.771072	-1.441370
H	-1.453483	1.999716	-1.448973
H	1.453811	1.999477	-1.448973
H	2.354062	-0.771458	-1.441371
H	0.000204	2.481282	1.434163
H	2.353487	0.770006	1.442068
H	1.453222	-1.999541	1.448086
H	-1.453549	-1.999302	1.448086
H	-2.353359	0.770393	1.442069
H	-0.000204	-2.479220	-1.434890

1,2-$P_2B_{10}H_{10}$

B	1.816351	-0.894315	0.000548
B	0.401037	-1.479259	-0.929241
B	1.254580	0.000742	-1.461143
B	1.813775	0.898130	-0.000103
B	1.254216	0.001704	1.461343
B	0.400005	-1.478562	0.929950
B	0.396713	1.479839	0.929617
B	-0.520368	0.000018	1.547310
P	-1.396009	-1.180793	0.000260
B	-0.520180	-0.002006	-1.547234
B	0.396650	1.479040	-0.930281
P	-1.397987	1.178476	-0.000540
H	1.852646	0.001858	-2.485250
H	2.812186	1.537792	-0.000737
H	1.852201	0.002664	2.485502
H	0.367082	-2.481568	1.563850
H	0.361734	2.483840	1.561832
H	-1.173215	-0.001134	2.537220
H	-1.172359	-0.002588	-2.537593
H	0.362072	2.482169	-1.563900
H	0.367469	-2.483269	-1.561656
H	2.816231	-1.531661	0.001093

1,7-$P_2B_{10}H_{10}$

B	-0.616876	1.763719	0.000000
P	-1.961482	0.189371	0.000000
B	-0.626122	0.678544	1.505249
B	0.886510	1.431286	0.904368
B	0.886510	1.431286	-0.904368
B	-0.626122	0.678544	-1.505249
B	1.853950	0.233452	0.000000
B	0.886510	-0.258284	-1.505082
B	-0.665879	-1.075111	-0.969394
B	-0.665879	-1.075111	0.969394
B	0.886510	-0.258284	1.505082
P	1.043119	-1.671882	0.000000
H	-1.167726	0.990461	2.513210
H	1.415420	2.284890	1.534776
H	1.415420	2.284890	-1.534776
H	-1.167726	0.990461	-2.513210
H	3.039932	0.213042	0.000000
H	1.406842	-0.604138	-2.513184
H	-1.202790	-1.942196	-1.576158
H	-1.202790	-1.942196	1.576158
H	1.406842	-0.604138	2.513184
H	-1.163542	2.816385	0.000000

1,12-$P_2B_{10}H_{10}$

P	-2.061710	-0.000060	-0.000727
B	-0.741162	-0.141519	-1.576295
B	-0.740432	-1.544987	-0.352626
B	-0.740856	-0.812626	1.360041
B	-0.740851	1.041889	1.193552
B	-0.740418	1.457471	-0.622168
B	0.740702	0.141532	1.576443
B	0.740473	1.544698	0.352865
B	0.740321	0.812481	-1.359502
B	0.740317	-1.041651	-1.193046
B	0.740458	-1.457145	0.622352
P	2.062487	-0.000025	-0.000230
H	-1.276967	-2.575674	-0.588852
H	-1.275512	-1.353924	2.269517
H	-1.275506	1.736531	1.992066
H	-1.276946	2.429600	-1.038208
H	1.273383	0.236256	2.631560
H	1.275420	2.575790	0.591035
H	1.275594	1.353233	-2.268856
H	1.275588	-1.735734	-1.991538
H	1.275399	-2.429325	1.040377
H	-1.274867	-0.236190	-2.630824

1,2-$As_2B_{10}H_{10}$

B	-2.262345	0.895395	-0.000538
B	-0.857972	1.482662	-0.942533
B	-1.707530	-0.002025	-1.462666
B	-2.262785	-0.898501	0.001027
B	-1.707330	-0.000136	1.463058
B	-0.858203	1.483928	0.939855
B	-0.856264	-1.483630	0.941153
B	0.060599	0.001552	1.585911
As	1.051595	1.268214	-0.000243
B	0.060401	-0.002285	-1.585714
B	-0.857104	-1.485334	-0.939340
As	1.054049	-1.266720	0.000189
H	-2.315998	-0.002124	-2.481285
H	-3.264454	-1.533488	0.001768
H	-2.315490	0.000469	2.481851
H	-0.862237	2.490214	1.571160
H	-0.859565	-2.488474	1.574763
H	0.681358	0.002779	2.597322
H	0.681398	-0.000823	-2.596991
H	-0.859727	-2.491439	-1.570957
H	-0.863635	2.486895	-1.575820
H	-3.265237	1.528571	-0.001096

1,12-$As_2B_{10}H_{10}$

As	-2.185998	0.000077	-0.000036
B	-0.734977	-0.933118	-1.300180
B	-0.734869	-1.525382	0.484841
B	-0.734618	-0.010341	1.599952
B	-0.734642	1.519121	0.503990
B	-0.734579	0.949092	-1.288379
B	0.734765	0.932990	1.299969
B	0.734821	1.525259	-0.484698
B	0.734622	0.010305	-1.599641
B	0.734572	-1.518929	-0.503895
B	0.734584	-0.949009	1.288268
As	2.186051	-0.000077	-0.000009
H	-1.250064	-2.544242	0.808859
H	-1.249694	-0.017155	2.669147
H	-1.250106	2.533655	0.841042
H	-1.249559	1.582893	-2.149574
H	1.249250	1.555574	2.169562
H	1.250027	2.544121	-0.808704
H	1.250104	-2.533400	-0.841084
H	1.249510	-1.582657	2.149614
H	-1.249291	-1.555641	-2.169641
H	1.249673	0.016909	-2.668872

1,7-$As_2B_{10}H_{10}$

B	1.455288	1.468703	-0.000027
As	1.876634	-0.657388	-0.000020
B	0.887495	0.535432	-1.519061
B	-0.000022	1.964589	-0.904469
B	-0.000022	1.964555	0.904440
B	0.887550	0.535442	1.519044
B	-1.455290	1.468373	-0.000028
B	-0.887425	0.535464	1.519101
B	0.000011	-0.993826	0.996791
B	0.000015	-0.993949	-0.996411
B	-0.887369	0.535454	-1.519118
As	-1.876660	-0.657342	-0.000021
H	1.495988	0.536018	-2.538330
H	-0.000168	2.972049	-1.530718
H	-0.000169	2.971979	1.530746
H	1.495924	0.536156	2.538382
H	-2.459204	2.101704	0.000087
H	-1.495868	0.536161	2.538397
H	0.000110	-2.003714	-1.623030
H	-1.495931	0.536021	-2.538345
H	2.458905	2.102511	0.000089
H	0.000101	-2.003992	1.622766

1,2-$Sb_2B_{10}H_{10}$

B	0.901900	2.609735	-0.000319
B	1.483208	1.214837	0.954720
B	1.482866	1.215258	-0.956235
B	0.001268	2.072080	-1.464120
B	-0.897451	2.609363	0.000331
B	0.001851	2.072356	1.463982
B	-1.480059	1.216163	-0.955600
B	-1.479410	1.215809	0.956485
B	0.002977	0.316774	1.648384
Sb	1.425645	-0.898890	-0.000068
B	0.001007	0.316212	-1.647639
Sb	-1.427758	-0.895470	0.000060
H	2.493980	1.277025	-1.580340
H	0.000764	2.695478	-2.474740
H	-1.529780	3.613385	0.000462
H	0.002878	2.695578	2.474712
H	-2.491315	1.278199	-1.579554
H	-2.490266	1.278391	1.581048
H	-0.000715	-0.254565	-2.690023
H	2.494453	1.275882	1.578520
H	0.002036	-0.253104	2.691232
H	1.534972	3.613199	-0.000829

1,7-$Sb_2B_{10}H_{10}$

B	1.457922	1.700595	-0.000033
Sb	2.080349	-0.558817	-0.000006
B	0.885748	0.761362	-1.533628
B	-0.000137	2.185181	-0.906408
B	-0.000137	2.185210	0.906305
B	0.885737	0.761447	1.533660
B	-1.458094	1.700321	-0.000033
B	-0.885717	0.761263	1.533745
B	0.000099	-0.786810	1.027810
B	0.000101	-0.786783	-1.027584
B	-0.885727	0.761176	-1.533713
Sb	-2.080326	-0.558845	-0.000007
H	1.463929	0.794560	-2.572529
H	-0.000150	3.197343	-1.526656
H	-0.000150	3.197429	1.526462
H	1.463961	0.794899	2.572528
H	-2.431459	2.383266	-0.000032
H	-1.464035	0.794643	2.572560
H	0.000144	-1.776910	-1.691843
H	-1.464000	0.794303	-2.572561
H	0.000148	-1.776866	1.692150
H	2.431447	2.383291	-0.000030

1,2-$Bi_2B_{10}H_{10}$

B	0.898625	2.908925	-0.001517
B	1.477937	1.520238	0.958657
B	1.476181	1.519948	-0.961899
B	-0.003146	2.379731	-1.465470
B	-0.903140	2.908061	0.000476
B	-0.000046	2.380695	1.464676
B	-1.479883	1.516683	-0.958444
B	-1.477952	1.517037	0.961383
B	0.002061	0.629532	1.665879
Bi	1.474724	-0.661330	-0.000067
B	-0.001771	0.628021	-1.664634
Bi	-1.473888	-0.662521	0.000140
H	2.490663	1.590974	-1.581158
H	-0.004897	3.005136	-2.475624
H	-1.538866	3.910580	0.000862
H	-0.000140	3.006906	2.474341
H	-2.495520	1.587198	-1.575972
H	-2.492348	1.588209	1.580818
H	-0.002253	0.069738	-2.714601
H	2.493423	1.593010	1.576004
H	0.003533	0.070993	2.715673
H	1.532746	3.912526	-0.001890

1,12-$Sb_2B_{10}H_{10}$

Sb	2.417721	-0.000118	-0.000126
B	0.728177	-0.321938	-1.582919
B	0.728591	1.408041	-0.795677
B	0.728331	1.194061	1.092092
B	0.728409	-0.670890	1.471282
B	0.728726	-1.607636	-0.182733
B	-0.728433	0.322434	1.584248
B	-0.728296	-1.408497	0.796778
B	-0.728511	-1.194703	-1.092345
B	-0.728143	0.672538	-1.471983
B	-0.728837	1.608826	0.182927
Sb	-2.417725	-0.000143	-0.000087
H	1.205807	2.354637	-1.334426
H	1.203293	1.997644	1.828691
H	1.203442	-1.120162	2.464545
H	1.206496	-2.689624	-0.305886
H	-1.203490	0.541001	2.652199
H	-1.205160	-2.355105	1.335697
H	-1.203836	1.120708	-2.465355
H	-1.206105	2.690906	0.306688
H	1.203548	-0.540224	-2.650300
H	-1.203886	-1.997632	-1.829317

1,7-$Bi_2B_{10}H_{10}$

B	-1.456609	1.890144	0.000000
Bi	-2.153378	-0.411368	0.000000
B	-0.884720	0.949507	1.534875
B	0.000058	2.371505	0.907249
B	0.000058	2.371505	-0.907248
B	-0.884720	0.949508	-1.534875
B	1.456723	1.890054	0.000000
B	0.884718	0.949427	-1.534836
B	-0.000077	-0.602756	-1.021532
B	-0.000077	-0.602756	1.021532
B	0.884718	0.949427	1.534836
Bi	2.153370	-0.411381	0.000000
H	-1.454253	0.988263	2.579484
H	0.000121	3.385312	1.526218
H	0.000121	3.385312	-1.526218
H	-1.454253	0.988264	-2.579484
H	2.424799	2.582233	0.000000
H	1.454221	0.988161	-2.579466
H	1.454221	0.988161	2.579466
H	-0.000012	-1.588839	-1.694909
H	-2.424657	2.582372	0.000000
H	-0.000012	-1.588839	1.694909

H	-1.541129	0.827704	-2.478833
H	0.955398	-1.006243	2.430049
H	0.989904	2.138066	1.619909
H	-1.485742	2.635108	0.010258
H	0.736581	-2.445739	-0.009180

1,12-$Bi_2B_{10}H_{10}$

Bi	2.497081	-0.000345	-0.000242
B	0.725073	-1.436507	-0.749726
B	0.726037	0.270087	-1.597458
B	0.726647	1.604394	-0.236525
B	0.726944	0.722142	1.451773
B	0.726446	-1.157387	1.134448
B	-0.725528	1.437480	0.750169
B	-0.725534	-0.268229	1.598343
B	-0.727057	-1.602867	0.238037
B	-0.727184	-0.720018	-1.451475
B	-0.726047	1.159069	-1.133404
Bi	-2.497055	-0.000229	-0.000051
H	1.195910	0.451411	-2.675951
H	1.196868	2.685909	-0.397835
H	1.197706	1.208259	2.430923
H	1.196592	-1.938390	1.899589
H	-1.195621	2.406928	1.255902
H	-1.196032	-0.450225	2.676440
H	-1.196909	1.939368	-1.898813
H	1.195442	-2.405245	-1.255219
H	-1.197246	-2.684493	0.398745
H	-1.197858	-1.206695	-2.430410

1,7-$AlCB_{10}H_{12}$

B	0.504456	1.503786	0.486517
B	0.508724	-0.003397	1.577834
Al	1.992472	0.000274	0.010707
B	0.491067	0.924472	-1.263591
B	-1.008620	1.453832	-0.442901
B	-1.004773	0.901712	1.258066
C	-0.939327	0.002972	-1.359092
B	-1.937305	0.000349	0.029643
B	-1.004876	-0.907483	1.253788
B	0.503894	-1.505794	0.480389
B	0.490679	-0.919247	-1.267309
B	-1.009311	-1.452020	-0.449050
H	3.582273	-0.004126	-0.070723
H	0.793474	1.539930	-2.244559
H	-1.603368	2.384901	-0.890019
H	-1.568185	1.528892	2.103175
H	-3.119656	0.001678	-0.114424
H	-1.567879	-1.538436	2.096382
H	0.793259	-1.530541	-2.250830
H	0.929987	2.579010	0.802615
H	-1.604577	-2.380263	-0.901325
H	0.930310	-2.581980	0.791905
H	0.950171	-0.005724	2.693210
H	-1.451666	0.004215	-2.316986

1,2-$AlCB_{10}H_{12}$

B	-1.010245	0.504688	-1.459493
B	-0.972819	1.556338	0.005803
B	0.528481	1.269832	-0.933950
B	0.475106	-0.483817	-1.462330
B	-1.063523	-1.194659	-0.901770
B	-1.965585	0.056536	0.000002
C	0.380038	-1.415293	-0.005495
B	-1.063974	-1.201636	0.892429
B	-1.010769	0.493388	1.463161
B	0.528204	1.262067	0.943711
Al	1.980899	0.004820	0.000415
B	0.474759	-0.495086	1.458700
H	0.990339	2.151533	-1.602537
H	0.955064	-0.987279	-2.437991
H	-1.530855	-2.121653	-1.488092
H	-3.158435	0.071747	-0.000134
H	-1.531059	-2.133411	1.471309
H	-1.541413	0.809053	2.484915
H	3.531262	-0.348037	-0.003398

1,12-$AlCB_{10}H_{12}$

B	-0.504931	1.303288	-0.903562
Al	-1.989099	-0.000274	-0.001609
B	-0.506981	1.262780	0.959143
B	0.992384	1.526015	0.033700
B	0.995173	0.503040	-1.438928
B	-0.503235	-0.456501	-1.518084
C	1.767758	-0.000340	0.002714
B	0.995170	-1.212375	-0.921118
B	-0.505869	-1.585471	-0.036456
B	-0.508184	-0.523573	1.495208
B	0.990776	0.438899	1.460088
B	0.989882	-1.255064	0.870490
H	-0.912224	2.159464	1.643476
H	1.671961	2.505570	0.057027
H	1.675750	0.823703	-2.363893

H	-0.905623	-0.783431	-2.598722
H	1.672918	-1.994808	-1.512968
H	-0.910661	-2.713294	-0.063250
H	1.666997	0.719744	2.401253
H	-0.909548	2.229674	-1.547524
H	1.674453	-2.056609	1.427850
H	-0.913866	-0.891109	2.561506
H	-3.582770	-0.000651	-0.005203
H	2.853422	0.002162	0.002676

B	-1.370357	-1.453141	-0.443553
H	3.191023	-0.007099	-0.080828
H	0.422781	1.536689	-2.258205
H	-1.967120	2.380987	-0.892716
H	-1.922194	1.533994	2.101315
H	-3.479055	0.002010	-0.106305
H	-1.922963	-1.530842	2.103398
H	0.421840	-1.539498	-2.256338
H	0.567042	2.589599	0.795005
H	-1.969009	-2.381471	-0.890826
H	0.566285	-2.588707	0.797183
H	0.592627	0.001615	2.698690
H	-1.816785	-0.001471	-2.314001

1,2-$GaCB_{10}H_{12}$

B	1.359934	0.509200	1.462330
B	1.298673	1.571146	0.002625
B	-0.188500	1.256721	0.950850
B	-0.101021	-0.513566	1.460489
B	1.455807	-1.182541	0.893082
B	2.326219	0.097393	0.000037
C	0.022554	-1.434652	-0.002354
B	1.455607	-1.179598	-0.896996
B	1.359635	0.514079	-1.460649
B	-0.188653	1.260204	-0.946564
Ga	-1.631460	-0.004016	-0.000049
B	-0.101272	-0.508699	-1.462169
H	-0.662456	2.125056	1.625753
H	-0.561976	-1.030981	2.436426
H	1.944616	-2.099019	1.478285
H	3.518107	0.145130	-0.000084
H	1.944370	-2.093993	-1.485484
H	1.882781	0.849509	-2.479808
H	-3.137542	-0.424791	0.001071
H	1.883090	0.841362	2.482546
H	-0.561868	-1.023036	-2.439907
H	-0.662572	2.130750	-1.618607
H	1.788020	2.660579	0.004403
H	-0.316781	-2.469859	-0.004108

1,12-$GaCB_{10}H_{12}$

B	-0.144393	1.490614	-0.564775
Ga	-1.625085	-0.000227	0.000064
B	-0.143836	0.998309	1.242503
B	1.350726	1.472566	0.400646
B	1.350721	0.836709	-1.275803
B	-0.143383	-0.076461	-1.591644
C	2.125138	-0.000399	0.000601
B	1.352239	-0.953957	-1.188473
B	-0.143709	-1.537785	-0.419813
B	-0.144190	-0.874014	1.332835
B	1.351397	0.073707	1.522338
B	1.350147	-1.428003	0.541293
H	-0.546407	1.702426	2.123175
H	2.031742	2.416380	0.659415
H	2.031624	1.371390	-2.095579
H	-0.544802	-0.132784	-2.718212
H	2.030648	-1.569462	-1.951656
H	-0.546507	-2.625341	-0.717221
H	2.029423	0.118145	2.502048
H	-0.547717	2.544531	-0.964824
H	2.038257	-2.338476	0.886203
H	-0.546434	-1.488356	2.278499
H	-3.192309	-0.001115	-0.002378
H	3.210678	0.003680	-0.000610

1,7-$GaCB_{10}H_{12}$

B	0.142972	1.514114	0.483614
B	0.150795	0.000409	1.584938
Ga	1.628699	0.000073	0.003399
B	0.124134	0.927007	-1.273870
B	-1.368864	1.452574	-0.445033
B	-1.359825	0.905106	1.257019
C	-1.301369	-0.000476	-1.357287
B	-2.296439	0.000627	0.034711
B	-1.360385	-0.903719	1.257914
B	0.141568	-1.513567	0.485480
B	0.123217	-0.928454	-1.272823

1,2-$InCB_{10}H_{12}$

B	-1.702175	0.534828	-1.456668
B	-1.618998	1.582764	0.019053
B	-0.147884	1.261985	-0.944970
B	-0.260333	-0.514230	-1.457980
B	-1.835863	-1.159808	-0.907197
B	-2.676749	0.130078	0.001463

C	-0.407923	-1.445874	-0.016982
B	-1.836773	-1.180154	0.880237
B	-1.702212	0.500266	1.468653
B	-0.147096	1.236355	0.974355
In	1.519942	-0.002109	-0.000119
B	-0.260698	-0.548695	1.444721
H	0.307425	2.143107	-1.618089
H	0.169519	-1.033399	-2.449527
H	-2.345667	-2.054543	-1.508918
H	-3.867075	0.210737	0.002152
H	-2.346236	-2.089046	1.460664
H	-2.218432	0.835776	2.491838
H	3.145295	-0.542831	-0.002174
H	-2.219790	0.892931	-2.471467
H	0.170086	-1.091978	2.422886
H	0.307597	2.101319	1.668732
H	-2.088705	2.681276	0.032457
H	-0.099737	-2.491714	-0.029147

$1,7\text{-InCB}_{10}\text{H}_{12}$

B	-0.203857	1.529970	0.459726
B	-0.189083	0.020682	1.590659
In	1.507181	0.000005	0.002283
B	-0.233882	0.914033	-1.296982
B	-1.717522	1.447751	-0.459801
B	-1.695509	0.922473	1.249788
C	-1.654759	-0.017439	-1.354039
B	-2.640095	0.001021	0.044953
B	-1.695859	-0.889102	1.273172
B	-0.204327	-1.517512	0.498929
B	-0.234527	-0.948422	-1.272038
B	-1.718092	-1.459147	-0.421609
H	3.213896	-0.001797	-0.134138
H	0.035826	1.516080	-2.296079
H	-2.323211	2.368763	-0.913604
H	-2.255781	1.560180	2.089451
H	-3.823854	-0.000782	-0.086416
H	-2.256125	-1.504448	2.129400
H	0.035399	-1.576863	-2.254703
H	0.195216	2.619840	0.759102
H	-2.324375	-2.391429	-0.850932
H	0.194602	-2.599244	0.826865
H	0.228877	0.035172	2.714418
H	-2.180011	-0.029837	-2.304964

$1,12\text{-InCB}_{10}\text{H}_{12}$

B	0.205861	1.602560	-0.116318
In	-1.503021	-0.000075	-0.000180
B	0.204668	0.606381	1.486829
B	1.693244	1.297119	0.806213
B	1.694285	1.166968	-0.983997
B	0.206199	0.385032	-1.559103
C	2.464856	0.000227	0.000995
B	1.694562	-0.575603	-1.411650
B	0.204367	-1.364329	-0.847535
B	0.203039	-1.227942	1.034340
B	1.692006	-0.366397	1.481105
B	1.692670	-1.523448	0.110611
H	-0.168755	1.034841	2.541939
H	2.384949	2.121694	1.320316
H	2.386472	1.908503	-1.611326
H	-0.165562	0.657572	-2.665378
H	2.382839	-0.940240	-2.314935
H	-0.170897	-2.328567	-1.452309
H	2.379067	-0.598147	2.428201
H	-0.167269	2.738412	-0.199435
H	2.382472	-2.493872	0.181278
H	-0.172824	-2.094834	1.771583
H	-3.216441	0.006486	-0.001904
H	3.550319	-0.011222	0.002338

$1,2\text{-TlCB}_{10}\text{H}_{12}$

B	2.126142	0.505991	1.487750
B	1.916883	1.620628	0.047128
B	0.515147	1.143305	1.040456
B	0.771350	-0.648414	1.415060
B	2.409045	-1.127924	0.859591
B	3.121911	0.280180	0.011537
C	0.997314	-1.463600	-0.043219
B	2.412193	-1.076216	-0.920633
B	2.133171	0.591273	-1.453623
B	0.520639	1.201366	-0.977398
Tl	-1.308553	-0.004466	-0.000063
B	0.776441	-0.563205	-1.452435
H	0.021076	1.980831	1.739016
H	0.372727	-1.242743	2.378029
H	2.999470	-1.997347	1.424547
H	4.293050	0.508340	0.021381
H	3.003783	-1.912670	-1.532193
H	2.611957	1.040254	-2.451213
H	-2.835571	-0.975455	-0.046350
H	2.600151	0.896716	2.511766
H	0.380530	-1.102113	-2.448587
H	0.025022	2.077201	-1.626122
H	2.276849	2.759744	0.082144
H	0.745240	-2.524312	-0.075198

1,7-$TlCB_{10}H_{12}$

B	-0.610006	1.541736	0.443690
B	-0.534292	-0.030229	1.578230
Tl	1.266215	-0.000035	0.002364
B	-0.721219	0.940757	-1.302402
B	-2.169524	1.455999	-0.392279
B	-2.035229	0.893688	1.301838
C	-2.159333	0.023957	-1.319159
B	-3.055183	-0.000389	0.141424
B	-2.038478	-0.938801	1.268626
B	-0.613032	-1.556027	0.389480
B	-0.722736	-0.896206	-1.333593
B	-2.172609	-1.439766	-0.443303
H	2.946553	0.002309	-0.600514
H	-0.498411	1.570686	-2.296989
H	-2.801543	2.393421	-0.770660
H	-2.539668	1.493207	2.202813
H	-4.245592	0.002371	0.104235
H	-2.544422	-1.568804	2.147699
H	-0.501348	-1.490936	-2.349964
H	-0.209645	2.624253	0.763240
H	-2.806633	-2.361599	-0.855258
H	-0.214358	-2.650260	0.669049
H	-0.094797	-0.050612	2.691318
H	-2.735983	0.041257	-2.240044

1,2-$SiCB_{10}H_{12}$

B	-0.951016	1.564906	0.000560
B	0.543655	1.289795	0.956711
B	0.543656	1.290480	-0.955787
B	-0.988812	0.505211	-1.467291
B	-1.936960	0.066682	0.000024
B	-0.988812	0.504160	1.467653
B	-1.047995	-1.198986	-0.898992
B	-1.047994	-1.199630	0.898133
B	0.478867	-0.499094	1.507330
Si	1.759918	-0.006695	-0.000002
B	0.478867	-0.498014	-1.507687
C	0.384421	-1.441460	-0.000516
H	0.789134	-2.451562	-0.000878
H	-1.437434	2.646797	0.000948
H	1.090664	2.125353	-1.600199
H	-1.501102	0.831092	-2.485904
H	-3.122411	0.088922	0.000031
H	-1.501102	0.829311	2.486498
H	-1.495189	-2.126544	-1.484487
H	-1.495188	-2.127606	1.482964
H	1.016912	-0.990468	2.445131
H	3.185478	-0.345838	-0.000124
H	1.016913	-0.988717	-2.445839
H	1.090663	2.124207	1.601721

1,12-$TlCB_{10}H_{12}$

B	0.617100	-0.542950	-1.524283
Tl	-1.248907	0.000029	-0.000011
B	0.616347	1.281147	-0.988114
B	2.098753	0.431358	-1.464506
B	2.099235	-1.259572	-0.862559
B	0.616797	-1.617595	0.043807
C	2.868657	0.000853	0.001540
B	2.097963	-1.209593	0.931943
B	0.615334	-0.457851	1.551568
B	0.614724	1.335022	0.913594
B	2.097307	1.526436	-0.042055
B	2.096237	0.512754	1.439683
H	0.250213	2.184940	-1.683932
H	2.787526	0.708385	-2.398359
H	2.788352	-2.063654	-1.411798
H	0.251658	-2.758078	0.075338
H	2.784677	-1.981628	1.528203
H	0.248600	-0.781165	2.645187
H	2.783481	2.502001	-0.067769
H	0.251029	-0.925682	-2.598815
H	2.784767	0.839647	2.357452
H	0.247938	2.276988	1.556349
H	-3.031997	-0.005006	-0.003543
H	3.954328	0.000000	-0.002053

1,7-$SiCB_{10}H_{12}$

B	-1.666355	0.270024	0.000000
Si	-0.811310	-1.577264	0.000000
B	-0.673314	-0.232460	1.530421
B	-0.673314	1.451448	0.906818
B	-0.673314	1.451448	-0.906818
B	-0.673314	-0.232460	-1.530421
B	0.843904	1.720978	0.000000
B	0.852431	0.681941	-1.457488
B	0.916061	-1.023644	-0.942480
B	0.916061	-1.023644	0.942480
B	0.852431	0.681941	1.457488
C	1.630399	0.194541	0.000000
H	2.716344	0.208070	0.000000
H	-2.854366	0.289441	0.000000
H	-1.169013	-0.548109	2.562620
H	-1.182000	2.317409	1.536890
H	-1.182000	2.317409	-1.536890
H	-1.169013	-0.548109	-2.562620
H	1.504762	2.703206	0.000000
H	1.513659	0.990544	-2.390063
H	1.587959	-1.806968	-1.526399
H	1.587959	-1.806968	1.526399
H	1.513659	0.990544	2.390063

H	-1.398385	-2.919885	0.000000

$1,12\text{-}SiCB_{10}H_{12}$

Si	0.000000	0.000000	1.767860
B	0.000000	1.612070	0.514132
B	-1.533170	0.498157	0.514132
B	-0.947551	-1.304192	0.514132
B	0.947551	-1.304192	0.514132
B	1.533170	0.498157	0.514132
B	0.000000	-1.530379	-0.976304
B	1.455477	-0.472913	-0.976304
B	0.899534	1.238103	-0.976304
B	-0.899534	1.238103	-0.976304
B	-1.455477	-0.472913	-0.976304
C	0.000000	0.000000	-1.738655
H	0.000000	0.000000	-2.824117
H	0.000000	0.000000	3.233633
H	-2.562643	0.832653	1.001466
H	-1.583800	-2.179914	1.001466
H	1.583800	-2.179914	1.001466
H	2.562643	0.832653	1.001466
H	0.000000	-2.513575	-1.636134
H	2.390552	-0.776737	-1.636134
H	1.477442	2.033525	-1.636134
H	-1.477442	2.033525	-1.636134
H	-2.390552	-0.776737	-1.636134
H	0.000000	2.694522	1.001466

$1,2\text{-}GeCB_{10}H_{12}$

B	1.575278	1.270257	0.000000
B	1.294669	-0.202802	0.977679
B	1.294669	-0.202802	-0.977679
B	0.511386	1.329150	-1.467978
B	0.099561	2.287180	0.000000
B	0.511386	1.329150	1.467978
B	-1.188111	1.424743	-0.896392
B	-1.188111	1.424743	0.896392
B	-0.521171	-0.116938	1.505982
Ge	-0.005198	-1.523046	0.000000
B	-0.521171	-0.116938	-1.505982
C	-1.459493	0.002507	0.000000
H	-2.479444	-0.375257	0.000000
H	2.664072	1.742134	0.000000
H	2.129515	-0.738898	-1.630478
H	0.848174	1.838904	-2.484570
H	0.151950	3.471679	0.000000
H	0.848174	1.838904	2.484570
H	-2.101572	1.892096	-1.488622
H	-2.101572	1.892096	1.488622
H	-1.023244	-0.625492	2.454653
H	-0.460962	-2.978049	0.000000
H	-1.023244	-0.625492	-2.454653
H	2.129515	-0.738898	1.630478

$1,7\text{-}GeCB_{10}H_{12}$

B	1.623467	0.165731	0.000000
Ge	0.003112	1.521583	0.000000
B	0.494628	0.157974	1.548715
B	1.259912	-1.330695	0.907318
B	1.259912	-1.330695	-0.907318
B	0.494628	0.157974	-1.548715
B	0.033179	-2.261439	0.000000
B	-0.447780	-1.344122	-1.458452
B	-1.294799	0.134742	-0.953286
B	-1.294799	0.134742	0.953286
B	-0.447780	-1.344122	1.458452
C	-1.363087	-1.263946	0.000000
H	-2.321336	-1.775290	0.000000
H	2.700271	0.667280	0.000000
H	0.796882	0.644706	2.588932
H	2.106591	-1.875777	1.533688
H	2.106591	-1.875777	-1.533688
H	0.796882	0.644706	-2.588932
H	-0.105168	-3.437305	0.000000
H	-0.893593	-1.928353	-2.387276
H	-2.257894	0.508195	-1.535717
H	-2.257894	0.508195	1.535717
H	-0.893593	-1.928353	2.387276
H	-0.101659	3.040346	0.000000

$1,12\text{-}GeCB_{10}H_{12}$

Ge	0.000000	0.000000	1.516188
B	0.000000	1.630577	0.159291
B	-1.550771	0.503876	0.159291
B	-0.958429	-1.319164	0.159291
B	0.958429	-1.319164	0.159291
B	1.550771	0.503876	0.159291
B	0.000000	-1.530985	-1.322730
B	1.456053	-0.473100	-1.322730
B	0.899890	1.238593	-1.322730
B	-0.899890	1.238593	-1.322730
B	-1.456053	-0.473100	-1.322730
C	0.000000	0.000000	-2.083634
H	0.000000	0.000000	-3.168977
H	0.000000	0.000000	3.039515

H	-2.587903	0.840861	0.627784
H	-1.599412	-2.201402	0.627784
H	1.599412	-2.201402	0.627784
H	2.587903	0.840861	0.627784
H	0.000000	-2.510862	-1.987939
H	2.387972	-0.775899	-1.987939
H	1.475848	2.031330	-1.987939
H	-1.475848	2.031330	-1.987939
H	-2.387972	-0.775899	-1.987939
H	0.000000	2.721082	0.627784

1,2-$SnCB_{10}H_{12}$

B	-2.063260	-0.865937	0.000000
B	-1.246048	0.368748	0.998002
B	-1.246048	0.368748	-0.998002
B	-1.098977	-1.345203	-1.471024
B	-1.106606	-2.380805	0.000000
B	-1.098977	-1.345203	1.471024
B	0.418366	-2.102723	-0.893840
B	0.418366	-2.102723	0.893840
B	0.418366	-0.419486	1.492699
Sn	0.541492	1.331692	0.000000
B	0.418366	-0.419486	-1.492699
C	1.220128	-0.894643	0.000000
H	2.305800	-0.973081	0.000000
H	-3.250432	-0.875946	0.000000
H	-1.844923	1.148673	-1.665719
H	-1.612662	-1.681909	-2.486205
H	-1.631436	-3.444627	0.000000
H	-1.612662	-1.681909	2.486205
H	1.069986	-2.893659	-1.489126
H	1.069986	-2.893659	1.489126
H	1.073349	-0.184372	2.457624
H	1.741451	2.519810	0.000000
H	1.073349	-0.184372	-2.457624
H	-1.844923	1.148673	1.665719

1,7-$SnCB_{10}H_{12}$

B	-1.475306	0.731119	0.000000
B	-0.513117	0.113845	1.565244
Sn	0.754324	1.205323	0.000000
B	-0.513117	0.113845	-1.565244
B	-1.948378	-0.728871	-0.908498
B	-1.948378	-0.728871	0.908498
B	-0.513117	-1.655617	-1.459345
B	-1.409213	-2.169823	0.000000
B	-0.513117	-1.655617	1.459345
B	0.998948	-0.869886	0.961289
B	0.998948	-0.869886	-0.961289
C	0.303208	-2.075793	0.000000
H	0.833057	-3.024007	0.000000
H	-2.159297	1.703691	0.000000
H	1.797064	2.526436	0.000000
H	-0.537409	0.652693	-2.624658
H	-2.957433	-0.740789	-1.532313
H	-2.957433	-0.740789	1.532313
H	-0.455698	-2.393015	-2.384877
H	-1.925656	-3.235554	0.000000
H	-0.455698	-2.393015	2.384877
H	1.999845	-1.110471	1.552933
H	1.999845	-1.110471	-1.552933
H	-0.537409	0.652693	2.624658

1,12-$SnCB_{10}H_{12}$

Sn	0.000000	0.000000	1.415275
B	0.000000	1.648636	-0.174715
B	-1.567946	0.509457	-0.174715
B	-0.969044	-1.333775	-0.174715
B	0.969044	-1.333775	-0.174715
B	1.567946	0.509457	-0.174715
B	0.000000	-1.531065	-1.648456
B	1.456129	-0.473125	-1.648456
B	0.899937	1.238658	-1.648456
B	-0.899937	1.238658	-1.648456
B	-1.456129	-0.473125	-1.648456
C	0.000000	0.000000	-2.406493
H	0.000000	0.000000	-3.492039
H	0.000000	0.000000	3.098387
H	-2.623761	0.852512	0.248774
H	-1.621574	-2.231905	0.248774
H	1.621574	-2.231905	0.248774
H	2.623761	0.852512	0.248774
H	0.000000	-2.507901	-2.319142
H	2.385156	-0.774984	-2.319142
H	1.474107	2.028934	-2.319142
H	-1.474107	2.028934	-2.319142
H	-2.385156	-0.774984	-2.319142
H	0.000000	2.758786	0.248774

1,2-$PbCB_{10}H_{12}$

B	-2.132790	-1.212147	0.000000
B	-1.337543	-0.007302	1.042357
B	-1.337543	-0.007302	-1.042357
B	-1.163440	-1.722798	-1.476049
B	-1.190314	-2.741740	0.000000
B	-1.163440	-1.722798	1.476049
B	0.342313	-2.471116	-0.889981
B	0.342313	-2.471116	0.889981

B	0.342313	-0.782036	1.476634
Pb	0.395813	1.114441	0.000000
B	0.342313	-0.782036	-1.476634
C	1.115187	-1.239306	0.000000
H	2.202603	-1.292012	0.000000
H	-3.320917	-1.218148	0.000000
H	-1.952465	0.771521	-1.694447
H	-1.696199	-2.046345	-2.486181
H	-1.741248	-3.792608	0.000000
H	-1.696199	-2.046345	2.486181
H	0.996169	-3.260425	-1.485401
H	0.996169	-3.260425	1.485401
H	0.996779	-0.536522	2.439278
H	1.802282	2.099918	0.000000
H	0.996779	-0.536522	-2.439278
H	-1.952465	0.771521	1.694447

1,7-$PbCB_{10}H_{12}$

B	1.646981	-0.473907	0.000000
Pb	0.003075	1.148057	0.000000
B	0.461457	-0.510709	1.584267
B	1.270191	-1.953302	0.914880
B	1.270191	-1.953302	-0.914880
B	0.461457	-0.510709	-1.584267
B	0.082187	-2.922468	0.000000
B	-0.440041	-2.027552	-1.455204
B	-1.320715	-0.571367	-0.951278
B	-1.320715	-0.571367	0.951278
B	-0.440041	-2.027552	1.455204
C	-1.347495	-1.971685	0.000000
H	-2.289212	-2.513041	0.000000
H	2.735046	0.001298	0.000000
H	0.763926	-0.064481	2.642755
H	2.138098	-2.477324	1.531680
H	2.138098	-2.477324	-1.531680
H	0.763926	-0.064481	-2.642755
H	-0.004145	-4.103706	0.000000
H	-0.859398	-2.633741	-2.382884
H	-2.303538	-0.259326	-1.540211
H	-2.303538	-0.259326	1.540211
H	-0.859398	-2.633741	2.382884
H	-0.441806	2.785770	0.000000

1,12-$PbCB_{10}H_{12}$

Pb	0.000000	0.000000	1.136939
B	1.575646	0.511958	-0.509182
B	0.000000	1.656732	-0.509182
B	-1.575646	0.511959	-0.509182
B	-0.973803	-1.340324	-0.509182
B	0.973802	-1.340325	-0.509182
B	-1.455822	-0.473025	-1.976955
B	0.000000	-1.530742	-1.976955
B	1.455822	-0.473025	-1.976955
B	0.899748	1.238396	-1.976955
B	-0.899747	1.238396	-1.976955
C	0.000000	0.000000	-2.735847
H	0.000000	0.000000	-3.821494
H	0.000000	0.000000	2.836272
H	0.000000	2.766663	-0.087407
H	-2.631253	0.854946	-0.087407
H	-1.626204	-2.238277	-0.087407
H	1.626204	-2.238277	-0.087407
H	-2.385102	-0.774967	-2.647653
H	0.000000	-2.507845	-2.647653
H	2.385102	-0.774966	-2.647653
H	1.474074	2.028889	-2.647653
H	-1.474074	2.028889	-2.647653
H	2.631253	0.854946	-0.087407

1,2-$NCB_{10}H_{11}$

B	0.001277	1.337328	1.090055
B	0.888366	1.370633	-0.463541
B	-0.885748	1.372327	-0.463540
B	-1.465250	0.304675	0.843828
B	-0.000335	-0.352367	1.682338
B	1.465830	0.301878	0.843826
B	-0.900437	-1.359449	0.502296
B	0.897841	-1.361166	0.502296
B	1.427006	-0.283771	-0.849842
N	0.000344	0.360643	-1.484456
B	-1.427547	-0.281046	-0.849841
C	-0.001149	-1.202336	-0.913852
H	-0.001832	-1.917146	-1.730984
H	0.002180	2.282686	1.804943
H	-1.463681	2.237734	-1.024348
H	-2.503048	0.504930	1.379629
H	-0.000600	-0.629999	2.834822
H	2.504009	0.500148	1.379626
H	-1.512194	-2.361998	0.652571
H	1.507682	-2.364881	0.652569
H	2.290019	-0.523238	-1.619778
H	-2.291015	-0.518864	-1.619775
H	1.467951	2.234935	-1.024350

1,7-$NCB_{10}H_{11}$

B	1.459148	0.859836	0.000000
N	-0.114274	1.510744	0.000000
B	0.427543	0.795509	1.441984
B	1.301206	-0.675222	0.903835
B	1.301206	-0.675222	-0.903835
B	0.427543	0.795509	-1.441984
B	0.132357	-1.687844	0.000000
B	-0.404818	-0.785010	-1.454635
B	-1.234050	0.682518	-0.887796
B	-1.234050	0.682518	0.887796
B	-0.404818	-0.785010	1.454635
C	-1.318751	-0.769956	0.000000
H	-2.266494	-1.300911	0.000000
H	2.346298	1.640871	0.000000
H	0.650955	1.517666	2.350385
H	2.190946	-1.128318	1.541578
H	2.190946	-1.128318	-1.541578
H	0.650955	1.517666	-2.350385
H	0.065047	-2.869886	0.000000
H	-0.829044	-1.346266	-2.406193
H	-2.157236	1.225188	-1.385380
H	-2.157236	1.225188	1.385380
H	-0.829044	-1.346266	2.406193

1,2-$PCB_{10}H_{11}$

B	-1.819604	-0.224143	0.000000
B	-0.930547	1.022368	0.928876
B	-0.930547	1.022368	-0.928876
B	-0.864139	-0.686299	-1.463645
B	-0.869599	-1.741201	0.000000
B	-0.864139	-0.686299	1.463645
B	0.657315	-1.450700	-0.896378
B	0.657315	-1.450700	0.896378
B	0.657315	0.239296	1.483249
P	0.772670	1.662900	0.000000
B	0.657315	0.239296	-1.483249
C	1.462135	-0.250581	0.000000
H	2.549138	-0.262760	0.000000
H	-3.005347	-0.212846	0.000000
H	-1.417939	1.895081	-1.568211
H	-1.364465	-1.000933	-2.491326
H	-1.374204	-2.814045	0.000000
H	-1.364465	-1.000933	2.491326
H	1.325182	-2.224123	-1.495068
H	1.325182	-2.224123	1.495068
H	1.314278	0.544822	2.420829
H	1.314278	0.544822	-2.420829
H	-1.417939	1.895081	1.568211

1,12-$NCB_{10}H_{11}$

N	0.000000	0.000000	1.505786
B	0.000000	-1.509640	0.770043
B	1.435753	-0.466504	0.770043
B	0.887344	1.221324	0.770043
B	-0.887344	1.221324	0.770043
B	-1.435753	-0.466504	0.770043
B	0.000000	1.530327	-0.742319
B	-1.455427	0.472897	-0.742319
B	-0.899504	-1.238060	-0.742319
B	0.899504	-1.238060	-0.742319
B	1.455427	0.472897	-0.742319
C	0.000000	0.000000	-1.511579
H	0.000000	0.000000	-2.597516
H	2.348837	-0.763183	1.457938
H	1.451661	1.998040	1.457938
H	-1.451661	1.998040	1.457938
H	-2.348837	-0.763184	1.457938
H	0.000000	2.532218	-1.371257
H	-2.408282	0.782498	-1.371257
H	-1.488400	-2.048607	-1.371257
H	1.488400	-2.048607	-1.371257
H	2.408282	0.782498	-1.371257
H	0.000000	-2.469713	1.457938

1,7-$PCB_{10}H_{11}$

B	-1.643801	0.253470	0.000000
P	-0.832413	-1.645629	0.000000
B	-0.672391	-0.238409	1.507084
B	-0.672391	1.451348	0.904655
B	-0.672391	1.451348	-0.904655
B	-0.672391	-0.238409	-1.507084
B	0.845211	1.725952	0.000000
B	0.852238	0.680417	-1.455392
B	0.891698	-1.016788	-0.932345
B	0.891698	-1.016788	0.932345
B	0.852238	0.680417	1.455392
C	1.625680	0.194853	0.000000
H	2.712438	0.190752	0.000000
H	-2.829526	0.229398	0.000000
H	-1.184771	-0.585426	2.518302
H	-1.192887	2.307168	1.538281
H	-1.192887	2.307168	-1.538281
H	-1.184771	-0.585426	-2.518302
H	1.508260	2.706868	0.000000
H	1.509994	0.974069	-2.394876
H	1.538839	-1.833060	-1.495167
H	1.538839	-1.833060	1.495167
H	1.509994	0.974069	2.394876

1,12-$PCB_{10}H_{11}$

P	0.000000	0.000000	1.842489
B	0.000000	1.585127	0.517748
B	-1.507545	0.489831	0.517748
B	-0.931714	-1.282395	0.517748
B	0.931714	-1.282395	0.517748
B	1.507545	0.489831	0.517748
B	0.000000	-1.528363	-0.975884
B	1.453560	-0.472290	-0.975884
B	0.898349	1.236472	-0.975884
B	-0.898349	1.236472	-0.975884
B	-1.453560	-0.472290	-0.975884
C	0.000000	0.000000	-1.742074
H	0.000000	0.000000	-2.827873
H	-2.518108	0.818183	1.042125
H	-1.556276	-2.142031	1.042125
H	1.556276	-2.142031	1.042125
H	2.518108	0.818183	1.042125
H	0.000000	-2.519582	-1.622846
H	2.396265	-0.778594	-1.622846
H	1.480973	2.038385	-1.622846
H	-1.480973	2.038385	-1.622846
H	-2.396265	-0.778594	-1.622846
H	0.000000	2.647695	1.042125

1,7-$AsCB_{10}H_{11}$

B	1.596701	0.138665	0.000000
As	0.000874	1.601248	0.000000
B	0.495164	0.140171	1.520111
B	1.254860	-1.362067	0.904887
B	1.254860	-1.362067	-0.904887
B	0.495164	0.140171	-1.520111
B	0.024339	-2.291324	0.000000
B	-0.452952	-1.362234	-1.456690
B	-1.266860	0.127264	-0.940639
B	-1.266860	0.127264	0.940639
B	-0.452952	-1.362234	1.456690
C	-1.364527	-1.277711	0.000000
H	-2.334101	-1.768824	0.000000
H	2.659298	0.667126	0.000000
H	0.798795	0.652269	2.546254
H	2.102670	-1.898019	1.536955
H	2.102670	-1.898019	-1.536955
H	0.798795	0.652269	-2.546254
H	-0.124612	-3.465949	0.000000
H	-0.905563	-1.928358	-2.393070
H	-2.220697	0.536455	-1.511953
H	-2.220697	0.536455	1.511953
H	-0.905563	-1.928358	2.393070

1,2-$AsCB_{10}H_{11}$

B	1.575287	1.312273	0.000000
B	1.282121	-0.181343	0.937948
B	1.282121	-0.181343	-0.937948
B	0.513857	1.347230	-1.463455
B	0.093981	2.314432	0.000000
B	0.513857	1.347230	1.463455
B	-1.188230	1.433169	-0.896114
B	-1.188230	1.433169	0.896114
B	-0.505386	-0.111225	1.485927
As	-0.021264	-1.596605	0.000000
B	-0.505386	-0.111225	-1.485927
C	-1.447720	0.015866	0.000000
H	-2.456505	-0.389235	0.000000
H	2.661781	1.788229	0.000000
H	2.097075	-0.747858	-1.589800
H	0.843914	1.842133	-2.489246
H	0.123897	3.499754	0.000000
H	0.843914	1.842133	2.489246
H	-2.107080	1.875218	-1.499128
H	-2.107080	1.875218	1.499128
H	-0.989466	-0.628398	2.437003
H	-0.989466	-0.628398	-2.437003
H	2.097075	-0.747858	1.589800

1,12-$AsCB_{10}H_{11}$

As	0.000000	0.000000	1.597831
B	0.000000	1.600721	0.142140
B	-1.522376	0.494650	0.142140
B	-0.940880	-1.295011	0.142140
B	0.940880	-1.295011	0.142140
B	1.522376	0.494650	0.142140
B	0.000000	-1.528635	-1.345443
B	1.453818	-0.472374	-1.345443
B	0.898509	1.236692	-1.345443
B	-0.898509	1.236692	-1.345443
B	-1.453818	-0.472374	-1.345443
C	0.000000	0.000000	-2.109210
H	0.000000	0.000000	-3.194999
H	-2.545884	0.827208	0.639666
H	-1.573443	-2.165658	0.639666
H	1.573443	-2.165658	0.639666
H	2.545884	0.827208	0.639666
H	0.000000	-2.516028	-1.998785
H	2.392885	-0.777495	-1.998785
H	1.478884	2.035509	-1.998785
H	-1.478884	2.035509	-1.998785
H	-2.392885	-0.777495	-1.998785
H	0.000000	2.676901	0.639666

1,2-$SbCB_{10}H_{11}$

B	-2.108555	-0.885609	0.000000
B	-1.250495	0.363621	0.946771
B	-1.250495	0.363621	-0.946771
B	-1.144141	-1.343843	-1.464879
B	-1.152353	-2.394800	0.000000
B	-1.144141	-1.343843	1.464879
B	0.378142	-2.111200	-0.895490
B	0.378142	-2.111200	0.895490
B	0.378142	-0.422406	1.482215
Sb	0.608216	1.364548	0.000000
B	0.378142	-0.422406	-1.482215
C	1.192206	-0.922695	0.000000
H	2.277268	-0.998536	0.000000
H	-3.295109	-0.893479	0.000000
H	-1.812837	1.169814	-1.616735
H	-1.645707	-1.670225	-2.489173
H	-1.656435	-3.468587	0.000000
H	-1.645707	-1.670225	2.489173
H	1.032760	-2.891618	-1.501169
H	1.032760	-2.891618	1.501169
H	1.020818	-0.185387	2.452879
H	1.020818	-0.185387	-2.452879
H	-1.812837	1.169814	1.616735

1,12-$SbCB_{10}H_{11}$

Sb	0.000000	0.000000	1.488772
B	0.000000	1.618148	-0.203574
B	-1.538950	0.500035	-0.203574
B	-0.951124	-1.309109	-0.203574
B	0.951124	-1.309109	-0.203574
B	1.538950	0.500035	-0.203574
B	0.000000	-1.529536	-1.685232
B	1.454675	-0.472653	-1.685232
B	0.899039	1.237421	-1.685232
B	-0.899039	1.237421	-1.685232
B	-1.454675	-0.472653	-1.685232
C	0.000000	0.000000	-2.446879
H	0.000000	0.000000	-3.532892
H	-2.583679	0.839488	0.247141
H	-1.596801	-2.197809	0.247141
H	1.596801	-2.197809	0.247141
H	2.583679	0.839488	0.247141
H	0.000000	-2.512804	-2.345753
H	2.389819	-0.776499	-2.345753
H	1.476989	2.032901	-2.345753
H	-1.476989	2.032901	-2.345753
H	-2.389819	-0.776499	-2.345753
H	0.000000	2.716641	0.247141

1,7-$SbCB_{10}H_{11}$

B	1.611132	-0.206502	0.000000
Sb	0.000197	1.493639	0.000000
B	0.497738	-0.206939	1.534560
B	1.256666	-1.702245	0.905646
B	1.256666	-1.702245	-0.905646
B	0.497738	-0.206939	-1.534560
B	0.026667	-2.630496	0.000000
B	-0.451610	-1.704945	-1.458185
B	-1.280652	-0.222745	-0.950887
B	-1.280652	-0.222745	0.950887
B	-0.451610	-1.704945	1.458185
C	-1.364559	-1.619433	0.000000
H	-2.330403	-2.117554	0.000000
H	2.697934	0.274859	0.000000
H	0.807913	0.257357	2.583416
H	2.102984	-2.243818	1.535862
H	2.102984	-2.243818	-1.535862
H	0.807913	0.257357	-2.583416
H	-0.121599	-3.805485	0.000000
H	-0.902229	-2.280663	-2.390221
H	-2.248179	0.138594	-1.534975
H	-2.248179	0.138594	1.534975
H	-0.902229	-2.280663	2.390221

1,2-$BiCB_{10}H_{11}$

B	-2.251603	-1.223347	0.000000
B	-1.398907	0.026842	0.947872
B	-1.398907	0.026842	-0.947872
B	-1.284993	-1.679762	-1.464620
B	-1.294770	-2.731227	0.000000
B	-1.284993	-1.679762	1.464620
B	0.237296	-2.447729	-0.894876
B	0.237296	-2.447729	0.894876
B	0.237296	-0.757513	1.476717
Bi	0.489228	1.110527	0.000000
B	0.237296	-0.757513	-1.476717
C	1.049545	-1.260049	0.000000
H	2.134326	-1.341915	0.000000
H	-3.438514	-1.233506	0.000000
H	-1.969176	0.824111	-1.623008
H	-1.784216	-2.006358	-2.490362
H	-1.798591	-3.805314	0.000000
H	-1.784216	-2.006358	2.490362
H	0.888383	-3.229075	-1.503727
H	0.888383	-3.229075	1.503727

H	0.877267	-0.527802	2.451778
H	0.877267	-0.527802	-2.451778
H	-1.969176	0.824111	1.623008
H	1.601169	-2.203821	-0.126220
H	-2.389060	-0.776253	-2.709603
H	0.000000	-2.512006	-2.709603
H	2.389060	-0.776252	-2.709603
H	1.476520	2.032256	-2.709603
H	-1.476521	2.032256	-2.709603
H	2.590746	0.841785	-0.126220

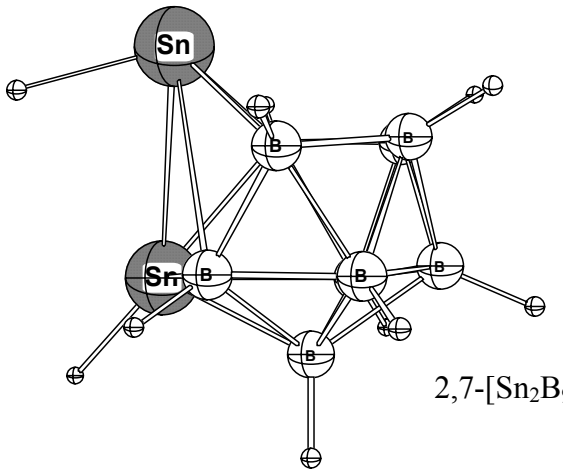
1,7-$BiCB_{10}H_{11}$

B	1.613316	-0.570860	0.000000
Bi	0.000069	1.211829	0.000000
B	0.497173	-0.571246	1.536474
B	1.257131	-2.064215	0.906130
B	1.257131	-2.064215	-0.906130
B	0.497173	-0.571246	-1.536474
B	0.027958	-2.992401	0.000000
B	-0.451705	-2.067834	-1.458523
B	-1.281950	-0.587623	-0.952038
B	-1.281950	-0.587623	0.952038
B	-0.451705	-2.067834	1.458523
C	-1.364773	-1.982433	0.000000
H	-2.329749	-2.482669	0.000000
H	2.704551	-0.097689	0.000000
H	0.808646	-0.116049	2.589856
H	2.103158	-2.607679	1.535866
H	2.103158	-2.607679	-1.535866
H	0.808646	-0.116049	-2.589856
H	-0.119547	-4.167744	0.000000
H	-0.901636	-2.646745	-2.389372
H	-2.252755	-0.236345	-1.538515
H	-2.252755	-0.236345	1.538515
H	-0.901636	-2.646745	2.389372

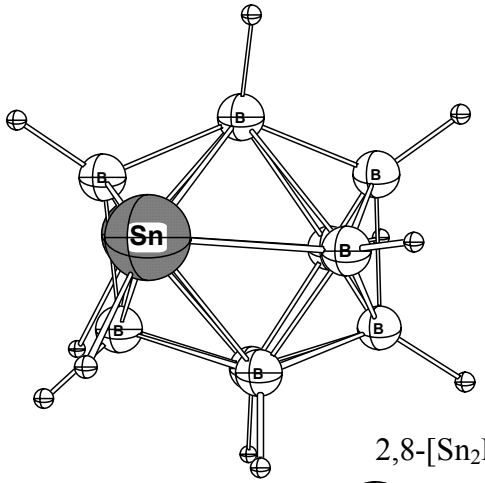
1,12-$BiCB_{10}H_{11}$

Bi	0.000000	0.000000	1.207951
B	1.540614	0.500576	-0.566857
B	0.000000	1.619897	-0.566857
B	-1.540614	0.500576	-0.566857
B	-0.952152	-1.310525	-0.566857
B	0.952152	-1.310524	-0.566857
B	-1.454943	-0.472740	-2.046734
B	0.000000	-1.529818	-2.046734
B	1.454943	-0.472739	-2.046734
B	0.899204	1.237649	-2.046734
B	-0.899205	1.237648	-2.046734
C	0.000000	0.000000	-2.807840
H	0.000000	0.000000	-3.893939
H	0.000000	2.724072	-0.126220
H	-2.590746	0.841785	-0.126220
H	-1.601169	-2.203821	-0.126220

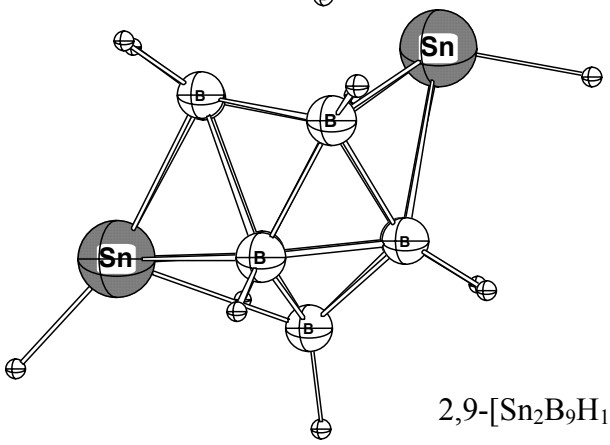
Appendix VII: Distorted geometries of the optimized structures of 2,7-, 2,8- and 2,9-$[Sn_2B_9H_{11}]^{2-}$.



2,7-$[Sn_2B_9H_{11}]^{2-}$



2,8-$[Sn_2B_9H_{11}]^{2-}$



2,9-$[Sn_2B_9H_{11}]^{2-}$