

## Hydrogen Elimination Reactivity of Ruthenium Pincer Hydride Complexes: A DFT Study

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1. Table S1. Bonding parameters of the pincer complexes and their water complexes (Å)

catalyst	Pincer complex			Water coordinated complex		
	d(Ru-N)/(Ru-C)	d(Ru-H)	d(Ru-CO)	d(Ru-N)/(Ru-C)	d(Ru-H)	d(Ru-CO)
PNN	2.094	1.558	1.860	2.142	1.634	1.803
NNN	2.037	1.560	1.861	2.075	1.645	1.794
PNP	2.151	1.558	1.860	2.221	1.618	1.812
SNS	2.099	1.559	1.866	2.168	1.618	1.819
SNN	2.066	1.559	1.865	2.121	1.630	1.807
SNP	2.119	1.560	1.865	2.191	1.618	1.819
ONP	2.077	1.567	1.867	2.154	1.624	1.814
ONS	2.057	1.565	1.867	2.129	1.624	1.814
ONN	2.030	1.563	1.864	2.086	1.638	1.799
ONO	2.029	1.562	1.868	2.093	1.630	1.805
PNS	2.127	1.557	1.862	2.194	1.623	1.812
NNP	2.082	1.561	1.865	2.143	1.630	1.807
NNS	2.063	1.560	1.869	2.126	1.632	1.807
PCP	2.135	1.561	1.910	2.162	1.681	1.815
PCN	2.078	1.561	1.917	2.085	1.739	1.804
NCN	2.026	1.562	1.919	2.023	1.773	1.796
SCN	2.057	1.559	1.923	2.069	1.736	1.800
OCN	2.022	1.559	1.922	2.023	1.762	1.799
SCS	2.091	1.558	1.922	2.111	1.713	1.810
OCS	2.049	1.558	1.927	2.069	1.728	1.807
OCP	2.071	1.563	1.920	2.095	1.702	1.813
SCP	2.113	1.560	1.915	2.142	1.686	1.811
PCS	2.110	1.561	1.916	2.129	1.719	1.812
NCS	2.054	1.562	1.924	2.067	1.747	1.805
NCP	2.078	1.562	1.916	2.086	1.739	1.805

2. Table S2. Bonding parameters of the transition states(Å)

catalyst	d(Ru-O)	d(O-H)	d(H-H)
PNN	2.219	1.442	0.970
NNN	2.245	1.419	0.974
PNP	2.219	1.496	0.954
SNS	2.218	1.452	0.967
SNN	2.225	1.431	0.972
SNP	2.221	1.473	0.958
ONP	2.189	1.518	0.939
ONS	2.223	1.438	0.968
ONN	2.217	1.442	0.968
ONO	2.204	1.456	0.961
PNS	2.212	1.461	0.968
NNP	2.235	1.463	0.957
NNS	2.232	1.447	0.964
PCP	2.271	1.358	0.994
PCN	2.270	1.311	1.021
NCN	2.293	1.272	1.047
SCN	2.255	1.323	1.013
OCN	2.254	1.291	1.035
SCS	2.234	1.361	0.991
OCS	2.221	1.384	0.972
OCP	2.236	1.359	0.988
SCP	2.255	1.370	0.986
PCS	2.264	1.339	1.339
NCS	2.278	1.311	1.018
NCP	2.280	1.319	1.012

3. SCF Energies (in au) and Cartesian Coordinates (in Å) for the optimized pincer catalysts, reactants, transition states, products and non-pincer complexes at BP86/BS1 level.

Pincer complexes							
PNN E(RB-P86) = -1089.06938976				NNN E(RB-P86) = -802.380722700			
15	-1.784409000	-1.272727000	0.007673000	8	-3.832501000	0.375385000	-0.061608000
8	-2.877624000	2.542177000	-0.084068000	6	-2.659529000	0.254734000	-0.032581000
6	-1.950800000	1.818177000	-0.070256000	44	-0.807901000	0.069387000	-0.005023000
44	-0.514487000	0.636871000	-0.047101000	7	-0.144884000	2.183932000	0.038562000
7	1.314063000	1.974333000	0.059148000	1	-0.957715000	0.075646000	1.547452000
1	-0.695184000	0.635793000	1.500284000	7	1.215479000	-0.141709000	-0.103689000
7	1.049658000	-0.754320000	-0.109123000	6	1.719243000	-1.438670000	0.079559000
6	0.789152000	-2.126835000	0.070576000	6	2.018392000	0.945324000	-0.236834000
6	2.322570000	-0.290201000	-0.251454000	6	0.781475000	-2.439796000	0.171768000

6	-0.537602000	-2.538405000	0.167746000	6	1.229555000	2.186001000	-0.597556000
6	2.395269000	1.177819000	-0.612413000	6	3.161370000	-1.563987000	0.150303000
6	1.936705000	-3.001987000	0.135647000	6	3.396211000	0.859307000	-0.157433000
6	3.437345000	-1.108313000	-0.177408000	1	3.601542000	-2.553568000	0.293523000
1	1.764354000	-4.070994000	0.279838000	1	4.029515000	1.740295000	-0.269114000
1	4.442347000	-0.699807000	-0.292757000	6	3.956321000	-0.447254000	0.045034000
6	3.214173000	-2.503337000	0.025539000	1	1.767354000	3.115341000	-0.330861000
1	3.391128000	1.602368000	-0.378297000	1	1.069066000	2.192707000	-1.690050000
1	2.238016000	1.282909000	-1.700975000	1	1.020264000	-3.498069000	0.296388000
1	-0.789447000	-3.593417000	0.295487000	6	-1.448786000	-2.760702000	1.070720000
6	-3.006759000	-1.488584000	1.381641000	1	-1.115341000	-2.375468000	2.041690000
1	-2.495639000	-1.323773000	2.339986000	1	-2.514735000	-2.532179000	0.930820000
1	-3.822949000	-0.757012000	1.279650000	1	-1.298322000	-3.857100000	1.038313000
1	-3.426609000	-2.507219000	1.365108000	6	-1.118157000	-2.615226000	-1.335186000
6	-2.834336000	-1.671057000	-1.475216000	1	-2.189040000	-2.401845000	-1.465172000
1	-3.657054000	-0.944967000	-1.565696000	1	-0.541469000	-2.119478000	-2.129320000
1	-2.210521000	-1.620415000	-2.379072000	1	-0.948592000	-3.706202000	-1.402861000
1	-3.252167000	-2.687176000	-1.387646000	6	-0.015853000	2.640544000	1.452479000
6	1.678872000	2.191475000	1.485008000	1	0.681880000	1.979411000	1.982137000
1	1.835347000	1.219930000	1.971312000	1	0.361936000	3.682199000	1.486794000
1	2.606902000	2.794299000	1.559969000	1	-0.997722000	2.585524000	1.938947000
1	0.858203000	2.714742000	1.992461000	6	-1.022155000	3.131218000	-0.697663000
6	1.165486000	3.286606000	-0.616605000	1	-2.003960000	3.162647000	-0.207645000
1	0.386225000	3.867476000	-0.105564000	1	-0.585415000	4.150023000	-0.709516000
1	2.116322000	3.857128000	-0.597229000	1	-1.155232000	2.778965000	-1.730058000
1	0.859608000	3.131987000	-1.661325000	1	5.043078000	-0.555074000	0.108386000
1	4.069181000	-3.182915000	0.087341000	7	-0.648875000	-2.103488000	-0.005103000
PNP				SNS			
E(RB-P86) = -1375.73725939				E(RB-P86) = -1409.53006664			
15	2.374513000	0.079010000	0.026974000	8	3.799509000	-1.046704000	-0.410428000
8	0.959418000	-3.721732000	-0.082158000	6	2.669950000	-0.744652000	-0.333662000
6	0.659787000	-2.587243000	-0.091347000	44	0.872631000	-0.257607000	-0.216435000
44	0.192095000	-0.786759000	-0.090964000	1	1.085193000	-0.230397000	1.328178000
1	0.250131000	-0.887566000	1.462804000	7	-1.148406000	0.307197000	-0.198911000
7	-0.301493000	1.305593000	-0.147646000	6	-1.465068000	1.668402000	-0.011005000
6	0.737202000	2.246959000	0.051761000	6	-2.152634000	-0.622737000	-0.281631000
6	-1.598321000	1.746053000	-0.272873000	6	-0.442928000	2.602543000	0.044246000
6	2.058816000	1.815887000	0.160375000	6	-1.722819000	-2.014691000	-0.672570000
6	-2.641431000	0.699111000	-0.608040000	6	-2.860161000	2.026326000	0.114720000
6	0.375260000	3.641820000	0.141635000	6	-3.490344000	-0.306206000	-0.125711000
6	-1.959034000	3.080644000	-0.168070000	1	-3.112160000	3.079717000	0.255314000
1	1.176095000	4.367234000	0.301106000	1	-4.256000000	-1.079637000	-0.201549000
1	-3.002757000	3.377599000	-0.279690000	6	-3.837498000	1.064496000	0.077507000
6	-0.933721000	4.043578000	0.046748000	1	-2.439736000	-2.782139000	-0.343681000
1	-3.643229000	1.007874000	-0.267036000	1	-1.616673000	-2.090458000	-1.768201000
1	-2.692675000	0.573167000	-1.705901000	1	-0.632055000	3.675566000	0.065388000
1	2.860361000	2.546163000	0.293999000	6	2.174005000	2.635249000	1.149355000
6	3.444223000	-0.441930000	1.446753000	1	3.199963000	2.263275000	1.022439000
1	2.892787000	-0.279991000	2.382994000	1	2.171232000	3.734016000	1.160471000
1	3.696785000	-1.509916000	1.359544000	1	1.720596000	2.231411000	2.061502000
1	4.372781000	0.151130000	1.466409000	6	-0.427531000	-2.701500000	1.735512000
6	3.517686000	-0.209855000	-1.412749000	1	0.531694000	-2.809850000	2.257427000
1	3.784888000	-1.275763000	-1.482033000	1	-0.967087000	-1.828710000	2.124692000
1	3.010901000	0.093719000	-2.339934000	1	-1.020723000	-3.621159000	1.844441000
1	4.435915000	0.388812000	-1.297857000	1	-4.887961000	1.346413000	0.190490000
6	-2.864108000	-1.011136000	1.762088000	16	1.204596000	2.077682000	-0.327352000
1	-2.429854000	-0.193118000	2.354564000	16	-0.029540000	-2.451024000	-0.046307000
1	-3.960441000	-0.904377000	1.732785000				
1	-2.601642000	-1.963706000	2.245526000				
6	-3.196333000	-2.161088000	-0.865440000				
1	-3.024065000	-3.174329000	-0.472591000				
1	-4.266095000	-1.914001000	-0.769588000				
1	-2.913978000	-2.154439000	-1.928506000				
1	-1.190377000	5.103856000	0.128710000				
15	-2.132697000	-0.964147000	0.063882000				

SNN E(RB-P86) = -1105.96001585				ONP E(RB-P86) = -1069.60067269			
8	3.872013000	-0.207008000	-0.270824000	8	3.355002000	1.930667000	-0.207294000
6	2.699407000	-0.143451000	-0.219854000	6	2.288638000	1.441049000	-0.142895000
44	0.839899000	-0.029607000	-0.138176000	44	0.613920000	0.623301000	-0.040223000
1	1.033993000	0.188967000	1.392829000	1	0.818443000	0.655062000	1.512878000
7	-1.222339000	0.091393000	-0.140801000	7	-1.237909000	-0.313634000	-0.115918000
6	-1.860695000	1.341284000	-0.071193000	6	-2.366247000	0.537326000	-0.050368000
6	-1.937049000	-1.070055000	-0.152524000	6	-1.412109000	-1.679258000	-0.127660000
6	-1.074639000	2.481799000	-0.095253000	6	-2.138413000	1.890247000	-0.044664000
6	-1.080958000	-2.283863000	-0.434789000	6	-0.147075000	-2.490473000	-0.325568000
6	-3.304538000	1.334672000	0.013512000	6	-3.682104000	-0.061487000	0.012823000
6	-3.314455000	-1.104613000	-0.042548000	6	-2.657956000	-2.268378000	-0.045971000
1	-3.828036000	2.292018000	0.063509000	1	-4.553569000	0.595470000	0.063468000
1	-3.856584000	-2.051198000	-0.056521000	1	-2.756621000	-3.354575000	-0.073794000
6	-3.998915000	0.149031000	0.043782000	6	-3.815620000	-1.423574000	0.027945000
1	-1.563293000	-3.216863000	-0.085711000	1	-0.167344000	-3.425428000	0.258202000
1	-0.940147000	-2.366915000	-1.527162000	1	-0.064638000	-2.774752000	-1.390627000
1	-1.488840000	3.487395000	-0.162530000	1	-2.885691000	2.680177000	-0.066689000
6	1.442346000	3.178950000	1.013363000	6	-0.530657000	3.635893000	0.320115000
1	2.529227000	3.046093000	0.922182000	1	0.509051000	3.871680000	0.065567000
1	1.185682000	4.244762000	0.936545000	1	-1.211658000	4.348852000	-0.174529000
1	1.073041000	2.751930000	1.952728000	1	-0.678917000	3.661167000	1.411429000
6	0.216252000	-2.451424000	1.625264000	6	1.990499000	-2.116102000	1.684614000
1	1.203203000	-2.294617000	2.078410000	1	2.893589000	-1.559589000	1.976265000
1	-0.503974000	-1.768697000	2.093853000	1	1.216968000	-1.941703000	2.445874000
1	-0.107213000	-3.499129000	1.786948000	1	2.224005000	-3.191685000	1.631621000
1	-5.089607000	0.162040000	0.123037000	1	-4.809632000	-1.875056000	0.088277000
16	0.663845000	2.297463000	-0.419544000	8	-0.790354000	2.306351000	-0.185269000
7	0.295505000	-2.154752000	0.166591000	6	2.655419000	-2.126579000	-1.115007000
6	1.207101000	-3.133708000	-0.481025000	1	2.362946000	-1.874257000	-2.144485000
1	1.301809000	-2.895306000	-1.549512000	1	3.620929000	-1.643409000	-0.903046000
1	2.198696000	-3.062022000	-0.015546000	1	2.768608000	-3.218912000	-1.020506000
1	0.823547000	-4.167304000	-0.366971000	15	1.382866000	-1.474065000	0.058778000
ONS E(RB-P86) = -1086.48926484				ONN E(RB-P86) = -782.913834019			
8	3.946374000	-0.161735000	-0.436133000	8	3.848262000	0.565337000	-0.285858000
6	2.784077000	-0.078423000	-0.295249000	6	2.679989000	0.450153000	-0.184745000
44	0.929866000	0.039308000	-0.110659000	44	0.831877000	0.247545000	-0.053748000
1	1.195998000	-0.083262000	1.426652000	1	1.065411000	0.342757000	1.488625000
7	-1.120637000	0.190954000	-0.167377000	7	-1.181998000	0.000486000	-0.125423000
6	-1.656128000	1.480923000	0.038860000	6	-1.998094000	1.141746000	-0.037383000
6	-1.951478000	-0.890003000	-0.313867000	6	-1.702057000	-1.256332000	-0.194728000
6	-0.759990000	2.514411000	0.128826000	6	-1.341690000	2.345735000	-0.021425000
6	-1.254046000	-2.159142000	-0.735502000	6	-0.633356000	-2.280341000	-0.502932000
6	-3.094228000	1.612860000	0.137157000	6	-3.429007000	0.920702000	0.017260000
6	-3.323494000	-0.793323000	-0.198680000	6	-3.058107000	-1.500326000	-0.123714000
1	-3.521000000	2.605152000	0.300477000	1	-4.097019000	1.782398000	0.086445000
1	-3.957709000	-1.671048000	-0.330731000	1	-3.457433000	-2.513233000	-0.190119000
6	-3.893484000	0.504873000	0.037326000	6	-3.927292000	-0.358008000	-0.010287000
1	-1.778121000	-3.068550000	-0.404609000	1	-0.920185000	-3.299582000	-0.184095000
1	-1.158519000	-2.192689000	-1.833995000	1	-0.472902000	-2.296887000	-1.595091000
1	-0.980037000	3.574982000	0.222007000	1	-1.777103000	3.342084000	-0.028614000
6	1.535323000	3.123164000	0.506565000	6	0.771204000	3.418109000	0.384396000
1	2.537467000	2.829227000	0.174586000	1	1.821531000	3.332032000	0.082737000
1	1.299275000	4.137914000	0.145396000	1	0.339941000	4.354783000	-0.007390000
1	1.459504000	3.079243000	1.604296000	1	0.676913000	3.382884000	1.481167000
6	0.210017000	-2.766900000	1.597615000	6	0.687177000	-2.316297000	1.554763000
1	1.176127000	-2.709552000	2.114681000	1	1.627036000	-2.003629000	2.025750000
1	-0.510326000	-2.089899000	2.074133000	1	-0.150304000	-1.818370000	2.059486000
1	-0.154798000	-3.804727000	1.592839000	1	0.571830000	-3.415013000	1.636304000
1	-4.978650000	0.606801000	0.122701000	1	-5.008244000	-0.514950000	0.041090000
16	0.517732000	-2.235395000	-0.146653000	6	1.780027000	-2.661375000	-0.583268000
8	0.608377000	2.186218000	-0.093822000	1	2.741084000	-2.437749000	-0.102945000

	1	1.589197000	-3.751547000	-0.535777000
	1	1.825425000	-2.339366000	-1.632303000
	8	0.076675000	2.296506000	-0.212788000
	7	0.703425000	-1.908476000	0.117020000
ONO E(RB-P86) = -763.443246294				
8	3.930559000	-0.477507000	-0.391686000	
6	2.771504000	-0.329196000	-0.266311000	
44	0.923227000	-0.108852000	-0.106749000	
1	1.158850000	-0.158446000	1.436551000	
7	-1.092623000	0.123221000	-0.130623000	
6	-1.591203000	1.426092000	0.031195000	
6	-1.911617000	-0.958429000	-0.233070000	
6	-0.649122000	2.421118000	0.089648000	
6	-1.145709000	-2.208233000	-0.613098000	
6	-3.030683000	1.570719000	0.107576000	
6	-3.284413000	-0.857542000	-0.133939000	
1	-3.459142000	2.568748000	0.223809000	
1	-3.926714000	-1.734978000	-0.220582000	
6	-3.835548000	0.460503000	0.039989000	
1	-1.648825000	-3.134173000	-0.291004000	
1	-1.003980000	-2.239226000	-1.706390000	
1	-0.807841000	3.494795000	0.143671000	
6	1.678888000	2.895992000	0.485879000	
1	2.667255000	2.574591000	0.138494000	
1	1.480594000	3.931784000	0.164607000	
1	1.600366000	2.809793000	1.580430000	
6	0.312500000	-2.841185000	1.224809000	
1	1.364213000	-2.784054000	1.526092000	
1	-0.318876000	-2.317599000	1.960167000	
1	0.000669000	-3.894621000	1.122210000	
1	-4.920415000	0.578565000	0.108531000	
8	0.711878000	2.022636000	-0.153467000	
8	0.226645000	-2.201036000	-0.076265000	
PNS E(RB-P86) = -1392.63542334				
15	1.727509000	-1.360171000	0.092343000	
8	3.002544000	2.385253000	-0.137187000	
6	2.042404000	1.711154000	-0.111833000	
44	0.540907000	0.610844000	-0.072560000	
16	-1.217021000	2.217794000	-0.493156000	
1	0.751896000	0.459151000	-1.607722000	
7	-1.119001000	-0.713726000	0.054379000	
6	-0.876809000	-2.105569000	0.005062000	
6	-2.406533000	-0.246788000	0.061647000	
6	0.436017000	-2.571966000	0.015566000	
6	-2.588225000	1.231330000	0.298956000	
6	-2.022334000	-2.981447000	-0.059783000	
6	-3.516264000	-1.072042000	-0.037815000	
1	-1.842204000	-4.058082000	-0.096457000	
1	-4.522399000	-0.650883000	-0.036341000	
6	-3.299683000	-2.477962000	-0.095821000	
1	-3.558032000	1.582459000	-0.082084000	
1	-2.530883000	1.450628000	1.378871000	
1	0.641036000	-3.644449000	-0.006553000	
6	2.981937000	-1.743330000	-1.213245000	
1	2.501892000	-1.664604000	-2.198156000	
1	3.813919000	-1.024454000	-1.161094000	
1	3.374370000	-2.764532000	-1.081434000	
6	2.718227000	-1.623750000	1.643948000	
1	3.558982000	-0.914162000	1.686047000	
1	2.067877000	-1.462193000	2.515441000	
1	3.108985000	-2.653712000	1.678355000	
6	-1.169030000	3.652502000	0.657569000	
1	-0.332928000	4.284149000	0.329522000	
1	-2.108087000	4.219620000	0.583805000	
1	-0.995378000	3.319652000	1.690058000	
1	-4.154835000	-3.156604000	-0.162918000	
PCP E(RB-P86) = -1359.67996029				
15	2.298185000	-0.383827000	-0.007010000	
8	0.122200000	-3.935438000	-0.104878000	
6	0.086108000	-2.763801000	-0.115745000	
44	0.025635000	-0.855025000	-0.075003000	
1	0.055608000	-0.948012000	1.483303000	
6	1.107135000	2.057435000	0.302475000	
6	-1.242056000	1.992995000	-0.326659000	
6	2.368783000	1.329592000	0.725737000	
6	-2.493919000	1.199751000	-0.660380000	
6	1.075038000	3.461697000	0.264816000	
6	-1.271432000	3.398737000	-0.339253000	
1	1.975743000	4.038311000	0.501649000	
1	-2.200635000	3.925924000	-0.581442000	
6	-0.113100000	4.132936000	-0.054510000	
1	-3.417839000	1.689124000	-0.304625000	
1	-2.599763000	1.065634000	-1.753138000	
1	3.293361000	1.866024000	0.449919000	
6	3.507281000	-1.372770000	0.982870000	
1	3.121805000	-1.491501000	2.005879000	
1	3.608142000	-2.373520000	0.537072000	
1	4.496855000	-0.888887000	1.016483000	
6	3.179352000	-0.189195000	-1.630069000	
1	3.192595000	-1.152118000	-2.161890000	
1	2.632823000	0.541444000	-2.244660000	
1	4.214678000	0.160622000	-1.486248000	
NCN E(RB-P86) = -786.322105030				
7	0.360175000	2.163553000	-0.064986000	
8	3.927222000	0.049461000	0.060182000	
6	2.751010000	0.037340000	-0.003136000	
44	0.831903000	0.014925000	-0.012422000	
1	0.885268000	0.056129000	1.548155000	
6	-1.901829000	1.181493000	0.276029000	
6	-1.887968000	-1.209193000	-0.213868000	
6	-1.001073000	2.354968000	0.589862000	
6	-0.987763000	-2.375255000	-0.565125000	
6	-3.304478000	1.187583000	0.247754000	
6	-3.292214000	-1.220193000	-0.220378000	
1	-3.874421000	2.108303000	0.415726000	
1	-3.853293000	-2.141655000	-0.412927000	
6	-3.990740000	-0.019779000	0.010794000	
1	-1.380302000	-3.357944000	-0.235751000	
1	-0.863219000	-2.429594000	-1.661381000	
1	-1.419060000	3.335658000	0.286492000	
6	1.347959000	3.049644000	0.603428000	
1	1.467290000	2.729792000	1.646696000	
1	2.316276000	2.955379000	0.094893000	
1	1.015790000	4.107138000	0.571616000	
6	0.262629000	2.539533000	-1.503090000	
1	1.226762000	2.343682000	-1.993325000	
1	-0.521310000	1.935825000	-1.981480000	
1	0.009017000	3.613035000	-1.614310000	

6	-2.987908000	-0.347936000	1.767249000	6	0.399005000	-2.652075000	1.427776000
1	-2.406933000	0.406243000	2.317003000	1	-0.368125000	-2.103224000	1.988019000
1	-4.047744000	-0.047916000	1.733532000	1	0.181552000	-3.739335000	1.463761000
1	-2.894776000	-1.308915000	2.294051000	1	1.379213000	-2.454430000	1.879575000
6	-3.552233000	-1.537154000	-0.797538000	6	1.373645000	-2.987683000	-0.761402000
1	-3.565980000	-2.543560000	-0.352994000	1	2.367172000	-2.896769000	-0.303509000
1	-4.557069000	-1.091492000	-0.715622000	1	1.072582000	-4.055081000	-0.778453000
1	-3.284805000	-1.637020000	-1.859993000	1	1.425962000	-2.609966000	-1.792630000
1	-0.137487000	5.226196000	-0.074095000	1	-5.084152000	-0.023710000	0.000713000
15	-2.276000000	-0.507367000	0.066485000	6	-1.193129000	-0.013260000	0.046346000
6	-0.046246000	1.278158000	-0.015701000	1	-0.809792000	2.394569000	1.675893000
1	2.382303000	1.193276000	1.823098000	7	0.404821000	-2.171967000	0.016042000
PCN E(RB-P86) = -1073.00761758				OCP E(RB-P86) = -1053.55017079			
15	1.686482000	-1.324191000	0.041034000	8	-0.816317000	2.306214000	-0.257575000
8	3.019845000	2.502197000	-0.010911000	8	3.445014000	1.883276000	0.015363000
6	2.059871000	1.827241000	0.033798000	6	2.355217000	1.449508000	-0.009882000
44	0.557519000	0.637026000	0.031464000	44	0.625171000	0.619131000	0.034330000
1	0.695880000	0.561434000	-1.521574000	1	0.794453000	0.479457000	1.582052000
6	-0.927452000	-2.081386000	-0.277433000	6	-2.371999000	0.469938000	0.003668000
6	-2.323567000	-0.155986000	0.251890000	6	-1.377696000	-1.744430000	0.180498000
6	0.461404000	-2.597526000	-0.602613000	6	-2.200172000	1.966147000	0.060478000
6	-2.363667000	1.314324000	0.610360000	6	-0.124053000	-2.569451000	0.400794000
6	-2.065637000	-2.905472000	-0.247209000	6	-3.649202000	-0.106681000	-0.100666000
6	-3.463822000	-0.974179000	0.258536000	6	-2.654469000	-2.320333000	0.081352000
1	-1.978198000	-3.980630000	-0.438073000	1	-4.539966000	0.522659000	-0.206666000
1	-4.454823000	-0.553453000	0.462935000	1	-2.777142000	-3.408059000	0.120559000
6	-3.329198000	-2.350612000	0.013317000	6	-3.786097000	-1.501705000	-0.065776000
1	-3.322406000	1.799349000	0.334577000	1	-0.022256000	-2.834619000	1.469581000
1	-2.245338000	1.436401000	1.702162000	1	-0.112124000	-3.515138000	-0.168532000
1	0.664612000	-3.604918000	-0.198966000	1	-2.857243000	2.498914000	-0.652944000
6	3.213091000	-1.610986000	-0.963761000	6	-0.523471000	3.695871000	-0.018112000
1	3.020144000	-1.312668000	-2.004397000	1	-0.610755000	3.930186000	1.057523000
1	4.027182000	-0.983059000	-0.572171000	1	0.506634000	3.863588000	-0.352875000
1	3.523013000	-2.668191000	-0.934619000	1	-1.217635000	4.330292000	-0.597302000
6	2.179656000	-2.014679000	1.694355000	6	2.712472000	-2.103216000	1.057279000
1	2.915184000	-1.346793000	2.166793000	1	2.473043000	-1.855690000	2.101330000
1	1.289437000	-2.065745000	2.338689000	1	2.849080000	-3.192129000	0.957749000
1	2.614034000	-3.022912000	1.594950000	1	3.649538000	-1.593372000	0.788419000
6	-1.556356000	2.337704000	-1.451844000	6	1.879389000	-2.118690000	-1.700601000
1	-1.787521000	1.393759000	-1.961144000	1	2.759138000	-1.553524000	-2.042053000
1	-2.433504000	3.014806000	-1.511442000	1	2.126316000	-3.192498000	-1.665191000
1	-0.695035000	2.806884000	-1.945078000	1	1.061790000	-1.957841000	-2.418830000
6	-0.995129000	3.338112000	0.679468000	1	-4.778107000	-1.953309000	-0.152294000
1	-0.188650000	3.892513000	0.181316000	6	-1.211526000	-0.334771000	0.118290000
1	-1.915317000	3.957857000	0.682177000	1	-2.412612000	2.349010000	1.079004000
1	-0.694907000	3.139044000	1.718659000	15	1.352027000	-1.491249000	-0.034419000
1	-4.213663000	-2.993712000	0.022501000				
6	-1.040044000	-0.690650000	-0.018006000				
1	0.609316000	-2.648515000	-1.697399000				
7	-1.215879000	2.054181000	-0.031095000				
SCN E(RB-P86) = -1089.89965156				OCN E(RB-P86) = -766.858050957			
16	0.699993000	2.199621000	-0.512381000	8	0.029458000	2.298174000	-0.286309000
8	3.909677000	-0.388110000	-0.022799000	8	3.906442000	0.571579000	-0.051779000
6	2.742248000	-0.301430000	-0.107930000	6	2.737686000	0.445375000	-0.098366000
44	0.831744000	-0.085287000	-0.135372000	44	0.828505000	0.226319000	-0.081634000
1	0.897948000	0.154325000	1.403786000	1	0.898876000	0.326266000	1.472950000
6	-1.857048000	1.394481000	0.101874000	6	-2.033959000	1.091907000	0.092276000
6	-2.000672000	-1.020441000	-0.177698000	6	-1.716115000	-1.310715000	-0.174068000
6	-0.967419000	2.597687000	0.274943000	6	-1.336967000	2.418651000	0.252689000
6	-1.225708000	-2.290699000	-0.449133000	6	-0.674319000	-2.370102000	-0.457520000
6	-3.261190000	1.474439000	0.095719000	6	-3.426791000	0.914254000	0.060779000
6	-3.401000000	-0.949713000	-0.148210000	6	-3.105670000	-1.503193000	-0.180331000
1	-3.766717000	2.441371000	0.191350000	1	-4.110459000	1.767668000	0.130211000

1	-4.012717000	-1.853686000	-0.244070000	1	-3.542068000	-2.501383000	-0.297465000
6	-4.026437000	0.302348000	-0.014161000	6	-3.952929000	-0.385414000	-0.055818000
1	-1.725727000	-3.200987000	-0.061575000	1	-0.922831000	-3.369857000	-0.051049000
1	-1.107333000	-2.426041000	-1.539031000	1	-0.556080000	-2.484378000	-1.549508000
1	-1.363739000	3.517822000	-0.183472000	1	-1.837836000	3.244062000	-0.286350000
6	1.793509000	3.220135000	0.560678000	6	0.835097000	3.447703000	0.041439000
1	1.705847000	2.895533000	1.606019000	1	0.991730000	3.513786000	1.132303000
1	2.819421000	3.054094000	0.206812000	1	1.797835000	3.308310000	-0.463209000
1	1.529628000	4.282145000	0.450349000	1	0.341091000	4.364777000	-0.326117000
6	0.115783000	-2.528111000	1.577824000	6	0.777234000	-2.356254000	1.511982000
1	-0.586323000	-1.846332000	2.073537000	1	-0.048368000	-1.893016000	2.065817000
1	-0.218661000	-3.575755000	1.721002000	1	0.711627000	-3.459801000	1.595465000
1	1.112326000	-2.395426000	2.018098000	1	1.729236000	-2.006726000	1.930057000
6	1.046571000	-3.186366000	-0.557957000	6	1.744358000	-2.666428000	-0.685742000
1	2.045648000	-3.157277000	-0.103656000	1	2.725019000	-2.436292000	-0.250253000
1	0.633090000	-4.211243000	-0.468308000	1	1.573493000	-3.760978000	-0.651366000
1	1.136013000	-2.923747000	-1.621775000	1	1.732864000	-2.328121000	-1.731402000
1	-5.117897000	0.365038000	0.000906000	1	-5.036893000	-0.527644000	-0.065149000
6	-1.210229000	0.144102000	-0.044195000	6	-1.177721000	-0.019853000	-0.012208000
1	-0.749591000	2.793032000	1.338624000	1	-1.245859000	2.698629000	1.320984000
7	0.172039000	-2.198271000	0.125389000	7	0.691111000	-1.943849000	0.078576000
SCS				OCS			
E(RB-P86) = -1393.47168064				E(RB-P86) = -1070.43648602			
16	-0.569509000	-2.214772000	-0.597155000	8	0.134315000	2.251425000	-0.391694000
8	-3.938254000	0.101884000	0.094801000	8	3.925762000	0.549894000	0.135091000
6	-2.769857000	0.087665000	0.020207000	6	2.761338000	0.436023000	0.065875000
44	-0.849467000	0.034816000	-0.019777000	44	0.849071000	0.202357000	0.039410000
1	-0.882106000	-0.301465000	1.501129000	1	0.874385000	0.369689000	1.588607000
6	1.933444000	-1.281718000	0.033125000	6	-1.981948000	1.136877000	-0.029287000
6	2.024226000	1.144748000	-0.000395000	6	-1.832630000	-1.290266000	0.066326000
6	1.118374000	-2.544142000	0.136950000	6	-1.254791000	2.454010000	0.031890000
6	1.318802000	2.476493000	-0.074296000	6	-0.968226000	-2.526091000	0.102498000
6	3.337140000	-1.336217000	-0.000284000	6	-3.380906000	1.058072000	-0.099273000
6	3.428967000	1.089561000	0.013776000	6	-3.236287000	-1.371209000	0.028144000
1	3.854579000	-2.301406000	-0.005194000	1	-3.992428000	1.964153000	-0.171784000
1	4.019159000	2.012200000	0.017896000	1	-3.740219000	-2.343354000	0.055208000
6	4.083592000	-0.149723000	0.001628000	6	-4.003985000	-0.199651000	-0.059780000
1	1.815112000	3.261414000	0.518316000	1	-1.274047000	-3.248533000	0.876392000
1	1.232759000	2.831283000	-1.115520000	1	-0.956324000	-3.049232000	-0.867953000
1	1.572539000	-3.403968000	-0.380784000	1	-1.700289000	3.224512000	-0.624422000
6	-1.587358000	-3.377591000	0.399418000	6	0.950136000	3.412043000	-0.130921000
1	-1.493261000	-3.143764000	1.467840000	1	1.035338000	3.589339000	0.955207000
1	-2.627679000	-3.234297000	0.079631000	1	1.939858000	3.203002000	-0.552358000
1	-1.274677000	-4.410852000	0.189780000	1	0.506359000	4.293880000	-0.625450000
6	-1.285409000	3.461193000	-0.584325000	6	1.644044000	-2.995155000	-0.900870000
1	-0.908375000	4.478815000	-0.405279000	1	1.465888000	-4.071171000	-0.756914000
1	-1.134910000	3.169998000	-1.633187000	1	1.269348000	-2.664242000	-1.879526000
1	-2.354444000	3.416966000	-0.338229000	1	2.718861000	-2.785048000	-0.823478000
1	5.176057000	-0.190857000	-0.003202000	1	-5.094271000	-0.267599000	-0.102067000
6	1.240336000	-0.040390000	0.013683000	6	-1.186624000	-0.030728000	0.047186000
1	0.934611000	-2.818116000	1.189514000	1	-1.230897000	2.845668000	1.068259000
16	-0.436762000	2.284010000	0.551665000	16	0.829873000	-2.054929000	0.465521000
PCS				OCO			
E(RB-P86) = -1376.57814410				E(RB-P86) = -747.390625625			
15	-1.684807000	1.320487000	-0.036657000	8	-0.423347000	-2.098716000	-0.324913000
8	-3.141310000	-2.467449000	0.194174000	8	-3.984925000	0.035602000	0.014401000
6	-2.171358000	-1.810800000	0.190060000	6	-2.811097000	0.021793000	-0.029087000
44	-0.622271000	-0.685560000	0.129897000	44	-0.885661000	0.004181000	-0.012532000
1	-0.694617000	-0.752610000	-1.427976000	1	-0.965348000	-0.097400000	1.538926000
6	0.953765000	1.960531000	-0.343562000	6	1.813943000	-1.242679000	0.040168000
6	2.346833000	0.109618000	0.390270000	6	1.857326000	1.193803000	0.008322000
6	-0.408733000	2.466823000	-0.778404000	6	0.930634000	-2.457157000	0.146947000
6	2.488463000	-1.325004000	0.848929000	6	1.036510000	2.458896000	-0.048630000
6	2.080399000	2.800257000	-0.356744000	6	3.215310000	-1.277699000	-0.015454000

6	3.476382000	0.945848000	0.350547000	6	3.261342000	1.169725000	-0.024499000
1	1.981758000	3.850714000	-0.651009000	1	3.760265000	-2.227780000	-0.033451000
1	4.464550000	0.553927000	0.615685000	1	3.844146000	2.097186000	-0.048656000
6	3.341454000	2.292673000	-0.014323000	6	3.930781000	-0.066537000	-0.037614000
1	3.453620000	-1.780629000	0.572674000	1	1.339555000	3.206166000	0.709148000
1	2.382073000	-1.418701000	1.943297000	1	1.098641000	2.935714000	-1.047584000
1	-0.590359000	3.521906000	-0.509143000	1	1.275462000	-3.311725000	-0.463271000
6	-3.197180000	1.557464000	-1.071273000	6	-1.383412000	-3.132761000	-0.016732000
1	-3.010977000	1.155132000	-2.077452000	1	-1.530603000	-3.209819000	1.074045000
1	-4.032247000	0.996078000	-0.626642000	1	-2.322465000	-2.842177000	-0.500788000
1	-3.472922000	2.621787000	-1.145371000	1	-1.026208000	-4.094860000	-0.423625000
6	-2.148778000	2.161146000	1.551929000	6	-1.258860000	3.220392000	-0.084956000
1	-2.901918000	1.559152000	2.081453000	1	-0.917312000	4.124021000	0.450140000
1	-1.254054000	2.239129000	2.187174000	1	-1.296693000	3.420558000	-1.171235000
1	-2.552462000	3.170269000	1.368438000	1	-2.250101000	2.923593000	0.275656000
6	1.696311000	-2.562695000	-1.550990000	1	5.023154000	-0.086529000	-0.071673000
1	1.902651000	-1.568467000	-1.967779000	6	1.130341000	-0.010878000	0.048733000
1	2.591555000	-3.201152000	-1.572639000	1	0.832609000	-2.787316000	1.199623000
1	0.882377000	-3.039620000	-2.111590000	8	-0.370842000	2.126239000	0.203130000
1	4.219706000	2.943726000	-0.038083000				
6	1.054260000	0.592980000	0.043898000				
1	-0.518017000	2.385006000	-1.875777000				
16	1.116304000	-2.391986000	0.184607000				

### Water coordinated reactants

PNN-R E(RB-P86) = -1165.52860041				NNN-R E(RB-P86) = -878.832154123			
15	-2.227093000	0.206852000	-0.128274000	7	-2.240642000	-0.026959000	-0.192435000
8	-0.803493000	-1.989841000	2.536670000	8	-0.605634000	-1.919681000	2.667876000
	-0.561372000	-1.538421000	1.475609000	6	-0.449533000	-1.495611000	1.576627000
44	-0.200016000	-0.893312000	-0.171570000	44	-0.202044000	-0.866413000	-0.082278000
7	2.068096000	-1.226802000	-0.083072000	7	2.035321000	-0.861901000	0.014172000
1	-0.719143000	-2.376003000	-0.631443000	1	-0.531934000	-2.455334000	-0.482811000
7	0.548750000	1.097213000	0.040957000	7	0.204591000	1.143263000	-0.011437000
6	-0.342757000	2.150495000	0.274821000	6	-0.883343000	1.991299000	0.215881000
6	1.889385000	1.288030000	-0.010841000	6	1.479644000	1.584612000	-0.123911000
6	-1.717064000	1.879515000	0.221691000	6	-2.126066000	1.392616000	0.219823000
6	2.663042000	0.083519000	-0.516457000	6	2.421084000	0.483392000	-0.568779000
6	0.243044000	3.442422000	0.539329000	6	-0.568546000	3.390254000	0.418175000
6	2.482357000	2.518071000	0.247612000	6	1.813669000	2.916920000	0.055659000
1	-0.419764000	4.286295000	0.744876000	1	-1.377916000	4.095321000	0.622128000
1	3.565648000	2.642828000	0.209874000	1	2.843357000	3.265462000	-0.033459000
6	1.612724000	3.607519000	0.538108000	6	0.737890000	3.818960000	0.346514000
1	2.037438000	4.592745000	0.753109000	1	0.961423000	4.878546000	0.502582000
1	2.630656000	0.092247000	-1.619133000	1	2.341262000	0.377347000	-1.663327000
1	3.727946000	0.136257000	-0.216999000	1	3.474472000	0.709520000	-0.317379000
1	-2.442848000	2.677456000	0.398479000	1	-3.065386000	1.927079000	0.375693000
8	0.173520000	-0.402166000	-2.422470000	8	0.269916000	-1.088261000	-2.590847000
1	-0.045239000	0.544604000	-2.512762000	1	-0.460114000	-0.767625000	-3.148130000
1	-0.546629000	-0.890923000	-2.859847000	1	-0.085401000	-1.899155000	-2.134482000
6	2.549999000	-2.311615000	-0.971967000	6	2.726004000	-1.938704000	-0.742979000
1	3.657600000	-2.378921000	-0.959857000	1	3.826209000	-1.814249000	-0.686159000
1	2.208638000	-2.118086000	-1.997963000	1	2.409644000	-1.905492000	-1.793304000
6	2.495404000	-1.506864000	1.313048000	6	2.492099000	-0.903844000	1.432390000
1	2.169016000	-0.686561000	1.965836000	1	2.020211000	-0.085763000	1.991564000
1	2.034072000	-2.441263000	1.657846000	1	2.202265000	-1.861885000	1.882111000
6	-3.263142000	0.229523000	-1.683934000	6	-2.725844000	-0.087466000	-1.608684000
6	-3.528981000	-0.273314000	1.097507000	6	-3.247204000	-0.722058000	0.662148000
1	-4.349762000	0.461679000	1.080919000	1	-4.233320000	-0.230285000	0.556006000
1	-3.088297000	-0.298062000	2.103050000	1	-2.929036000	-0.664960000	1.709327000
1	-3.926649000	-1.271296000	0.857183000	1	-3.324860000	-1.775178000	0.356526000
1	-2.662427000	0.577477000	-2.538333000	1	-2.029062000	0.478635000	-2.243017000
1	-4.109208000	0.926101000	-1.564141000	1	-3.720944000	0.388621000	-1.686707000
1	-3.651830000	-0.778189000	-1.899581000	1	-2.799688000	-1.135096000	-1.940715000
1	2.124949000	-3.264999000	-0.631508000	1	2.447156000	-2.908644000	-0.310406000



1	3.598940000	-1.600521000	1.367632000	1	3.593324000	-0.794184000	1.478678000
PNP-R				SNS-R			
E(RB-P86) = -1452.19956629				E(RB-P86) = -1485.98725837			
15	-2.376400000	-0.392042000	-0.113113000	16	-2.022539000	-1.453929000	0.085288000
8	-0.204212000	-2.084117000	2.556032000	8	0.431797000	-1.769634000	2.955043000
6	-0.152142000	-1.604715000	1.483816000	6	0.380310000	-1.431043000	1.834624000
44	-0.067850000	-0.907121000	-0.186806000	44	0.321214000	-0.940739000	0.088351000
15	2.267045000	-0.738844000	-0.101940000	16	2.418386000	0.121879000	0.286846000
1	-0.211451000	-2.459578000	-0.637353000	1	0.842099000	-2.462232000	-0.160816000
7	0.098670000	1.288081000	0.016769000	7	-0.401564000	1.093626000	-0.006634000
6	-1.088043000	2.013645000	0.217419000	6	-1.781776000	1.296204000	0.120917000
6	1.309582000	1.920704000	0.033843000	6	0.466085000	2.146459000	-0.006016000
6	-2.329234000	1.362806000	0.131597000	6	-2.646073000	0.202225000	0.105748000
6	2.516326000	1.097468000	-0.384237000	6	1.908089000	1.822465000	-0.327801000
6	-0.968693000	3.423074000	0.498661000	6	-2.242009000	2.657272000	0.277828000
6	1.446547000	3.274812000	0.322868000	6	0.053660000	3.459671000	0.174127000
1	-1.882537000	3.995714000	0.672983000	1	-3.314259000	2.837518000	0.382478000
1	2.431956000	3.743062000	0.330912000	1	0.774272000	4.278414000	0.180781000
6	0.266792000	4.026678000	0.566138000	6	-1.344241000	3.698213000	0.317101000
1	0.340733000	5.093609000	0.797559000	1	-1.705284000	4.721553000	0.454794000
1	2.659404000	1.210651000	-1.475142000	1	2.051638000	1.794180000	-1.421189000
1	3.437925000	1.464479000	0.096953000	1	2.594436000	2.569704000	0.096462000
1	-3.244468000	1.942070000	0.283127000	1	-3.710289000	0.314783000	0.313587000
8	0.019269000	-0.239124000	-2.413907000	8	0.392217000	-0.511748000	-2.200480000
1	-0.381491000	0.650945000	-2.360425000	1	-0.282136000	0.193258000	-2.266502000
1	-0.614173000	-0.795557000	-2.900199000	1	0.038338000	-1.282012000	-2.678766000
6	3.423909000	-1.502288000	-1.330553000	6	3.557471000	-0.339818000	-1.080284000
1	4.444730000	-1.095774000	-1.241528000	1	4.403883000	0.361923000	-1.107345000
1	3.042174000	-1.317441000	-2.345244000	1	3.920337000	-1.349140000	-0.846396000
6	3.119524000	-1.059640000	1.505797000	6	-2.517203000	-2.110477000	-1.589745000
1	2.618870000	-0.485447000	2.298602000	1	-2.239678000	-1.412542000	-2.392801000
1	3.042701000	-2.127903000	1.756465000	1	-3.609133000	-2.234246000	-1.589004000
6	-3.444785000	-0.746193000	-1.603356000	1	-2.033693000	-3.089561000	-1.720972000
6	-3.431091000	-1.151365000	1.209288000	1	3.015462000	-0.347612000	-2.034959000
1	-4.428261000	-0.682372000	1.216021000				
1	-2.953065000	-0.991998000	2.185281000				
1	-3.537684000	-2.233683000	1.037273000				
1	-2.998552000	-0.304362000	-2.507746000				
1	-4.442821000	-0.297344000	-1.469814000				
1	-3.553655000	-1.832574000	-1.747384000				
1	3.450564000	-2.589626000	-1.165174000				
1	4.181528000	-0.770822000	1.457995000				
SNN-R				ONP-R			
E(RB-P86) = -1182.41620005				E(RB-P86) = -1146.06512757			
16	-2.286133000	-0.905463000	0.291997000	8	-1.592499000	-1.933040000	-0.402603000
8	0.338727000	-2.120832000	2.679896000	8	1.612258000	-2.112524000	2.174032000
6	0.232191000	-1.647557000	1.607862000	6	1.146612000	-1.623163000	1.210890000
44	0.064763000	-0.969414000	-0.057479000	44	0.443637000	-0.909572000	-0.306290000
7	2.193344000	-0.317714000	-0.231648000	15	1.896507000	0.790225000	-0.189668000
1	0.205835000	-2.550494000	-0.459276000	1	1.371833000	-2.000437000	-1.077424000
7	-0.140216000	1.133636000	0.029899000	7	-0.920656000	0.639257000	0.342538000
6	-1.374350000	1.695537000	0.363807000	6	-2.243164000	0.394733000	0.020247000
6	0.968684000	1.888198000	-0.171432000	6	-0.494591000	1.862123000	0.748734000
6	-2.479604000	0.854350000	0.473645000	6	-2.522863000	-0.835495000	-0.634663000
6	2.128065000	1.099873000	-0.751558000	6	0.999489000	1.963982000	0.985141000
6	-1.395644000	3.125817000	0.572933000	6	-3.188977000	1.455304000	0.206576000
6	0.982270000	3.262095000	0.021039000	6	-1.379208000	2.927591000	0.912169000
1	-2.335904000	3.603195000	0.858364000	1	-4.244916000	1.274805000	-0.007872000
1	1.887829000	3.849621000	-0.137004000	1	-1.023981000	3.904281000	1.243721000
6	-0.247373000	3.871279000	0.415216000	6	-2.751985000	2.692223000	0.645651000
1	-0.280514000	4.951566000	0.584903000	1	-3.475341000	3.499710000	0.792889000
1	1.984928000	1.023847000	-1.842313000	1	1.358938000	3.002564000	0.902620000
1	3.095027000	1.607748000	-0.576227000	1	1.243120000	1.602575000	2.001205000
1	-3.441446000	1.199865000	0.852496000	1	-3.553770000	-1.179978000	-0.758656000
8	-0.062185000	-0.472858000	-2.346275000	8	-0.445443000	-0.285046000	-2.306886000

1	-0.663064000	0.295042000	-2.390607000	1	-1.436710000	-0.384024000	-2.004464000
1	-0.551054000	-1.227322000	-2.720460000	1	-0.277275000	-1.042067000	-2.895017000
6	2.993608000	-1.149576000	-1.167464000	6	2.113719000	1.760685000	-1.744089000
1	4.013994000	-0.734238000	-1.292925000	1	2.712679000	1.170743000	-2.453272000
1	2.488895000	-1.183043000	-2.141900000	1	2.617396000	2.720349000	-1.546036000
6	2.862732000	-0.298316000	1.099106000	6	3.600472000	0.672547000	0.500756000
1	2.294631000	0.346450000	1.782192000	1	3.567507000	0.164222000	1.474961000
1	2.893002000	-1.315725000	1.508563000	1	4.218191000	0.070218000	-0.181457000
6	-3.205779000	-1.286484000	-1.285157000	6	-1.975349000	-2.782235000	0.709028000
1	-2.872045000	-0.645544000	-2.113931000	1	-2.971728000	-3.210300000	0.507098000
1	-4.273729000	-1.103307000	-1.100933000	1	-1.998272000	-2.205644000	1.648443000
1	-3.045950000	-2.350458000	-1.513362000	1	-1.228884000	-3.585986000	0.771105000
1	3.059563000	-2.168768000	-0.765682000	1	1.125946000	1.937030000	-2.192039000
1	3.895545000	0.089969000	1.000522000	1	4.052742000	1.670054000	0.619216000
ONS-R E(RB-P86) = -1162.94795987				ONN-R E(RB-P86) = -859.371281304			
8	-0.580890000	-2.125710000	-0.682660000	8	-0.479811000	-2.217440000	-0.493867000
8	1.418385000	-1.592594000	2.644973000	8	1.905375000	-1.307564000	2.434751000
6	1.188017000	-1.170953000	1.573042000	6	1.481777000	-0.952960000	1.391176000
44	0.834819000	-0.550104000	-0.089916000	44	0.831890000	-0.463009000	-0.214243000
16	1.702681000	1.511404000	0.463086000	7	1.313336000	1.652980000	-0.011906000
1	2.239201000	-1.301207000	-0.464923000	1	2.290893000	-1.036490000	-0.733099000
7	-1.018742000	0.459337000	-0.026520000	7	-1.063320000	0.324380000	0.021804000
6	-2.146072000	-0.376651000	-0.112038000	6	-2.124275000	-0.576687000	0.155137000
6	-1.130462000	1.782290000	0.280225000	6	-1.221308000	1.666923000	0.069754000
6	-1.932259000	-1.704691000	-0.401941000	6	-1.819498000	-1.906610000	-0.032939000
6	0.154004000	2.575813000	0.186272000	6	0.032077000	2.393598000	-0.380431000
6	-3.443001000	0.232942000	0.110231000	6	-3.419912000	0.000937000	0.457706000
6	-2.350971000	2.379647000	0.549262000	6	-2.441733000	2.255496000	0.358360000
1	-4.341086000	-0.384317000	0.032175000	1	-4.281641000	-0.656183000	0.597177000
1	-2.420206000	3.440825000	0.791016000	1	-2.563191000	3.338629000	0.397740000
6	-3.524976000	1.561514000	0.444723000	6	-3.550701000	1.366478000	0.567139000
1	-4.505061000	2.009750000	0.631528000	1	-4.531554000	1.789253000	0.803672000
1	0.265660000	2.996991000	-0.826622000	1	0.016901000	2.446015000	-1.481892000
1	0.182449000	3.400214000	0.913814000	1	0.083631000	3.426864000	0.008612000
1	-2.690279000	-2.465611000	-0.572895000	1	-2.503417000	-2.751834000	-0.028007000
8	0.529697000	0.041400000	-2.344083000	8	0.286892000	-0.107635000	-2.500836000
1	-0.433072000	0.215229000	-2.297283000	1	-0.647730000	-0.389955000	-2.526025000
1	0.620065000	-0.804653000	-2.820532000	1	0.792346000	-0.851692000	-2.877779000
6	2.736295000	2.179966000	-0.906723000	6	2.406877000	2.099274000	-0.917658000
1	2.897719000	3.256383000	-0.747169000	1	2.541070000	3.197968000	-0.858390000
1	3.694428000	1.647108000	-0.851117000	1	2.159293000	1.811904000	-1.947704000
6	-0.338104000	-3.503574000	-0.301979000	6	1.668375000	2.012904000	1.391553000
1	-0.478525000	-3.626629000	0.783463000	1	0.841725000	1.732015000	2.056580000
1	0.696977000	-3.727509000	-0.586590000	1	2.572728000	1.468075000	1.688945000
1	-1.038577000	-4.154950000	-0.851752000	6	-0.045677000	-3.536515000	-0.082296000
1	2.254231000	1.982555000	-1.872825000	1	-0.751395000	-4.286977000	-0.478357000
ONO-R E(RB-P86) = -839.903274927				PNS-R E(RB-P86) = -1469.09781894			
8	0.790740000	-1.965606000	-0.573944000	15	-2.227396000	0.119129000	-0.266813000
8	2.131451000	-0.135739000	2.599881000	8	-0.911329000	-1.658751000	2.790841000
6	1.682691000	-0.030088000	1.516315000	6	-0.620031000	-1.357743000	1.694223000
44	0.995279000	0.127517000	-0.142286000	44	-0.172503000	-0.933446000	-0.010482000
8	0.268406000	2.164932000	0.194092000	16	2.164908000	-1.389879000	0.418598000
1	2.571438000	0.353470000	-0.578489000	1	-0.686445000	-2.443175000	-0.330920000
7	-1.046677000	-0.127972000	0.029061000	7	0.544441000	1.129273000	0.021415000
6	-1.497731000	-1.451650000	0.021578000	6	-0.415415000	2.153559000	0.037435000
6	-1.864911000	0.928494000	0.216450000	6	1.870180000	1.413294000	0.146169000
6	-0.544231000	-2.419041000	-0.213958000	6	-1.769362000	1.828944000	-0.134060000
6	-1.185036000	2.270547000	0.017240000	6	2.838984000	0.276829000	-0.099822000
6	-2.913922000	-1.651314000	0.254405000	6	0.059449000	3.502273000	0.226381000
6	-3.220566000	0.777738000	0.468284000	6	2.348971000	2.700601000	0.366452000

1	-3.321240000	-2.664879000	0.257159000	1	-0.672491000	4.312967000	0.246350000
1	-3.873590000	1.635366000	0.634241000	1	3.417977000	2.888775000	0.474996000
6	-3.726498000	-0.563568000	0.481129000	6	1.400819000	3.758696000	0.403934000
1	-4.791615000	-0.725562000	0.670403000	1	1.741811000	4.785094000	0.568712000
1	-1.371005000	2.630778000	-1.013531000	1	3.036864000	0.190081000	-1.181719000
1	-1.557708000	3.027288000	0.729602000	1	3.795233000	0.449734000	0.415300000
1	-0.686411000	-3.493419000	-0.292456000	1	-2.519593000	2.624090000	-0.129394000
8	0.416250000	0.373034000	-2.418227000	8	0.353774000	-0.608325000	-2.253435000
1	-0.251715000	-0.323856000	-2.563483000	1	0.216184000	0.354748000	-2.346401000
1	1.231292000	0.046559000	-2.841344000	1	-0.346988000	-1.036912000	-2.775720000
6	0.963110000	3.345949000	-0.256478000	6	2.931913000	-2.426313000	-0.890596000
1	0.849359000	3.470473000	-1.347568000	1	4.027804000	-2.384118000	-0.808411000
1	0.565154000	4.230917000	0.270328000	1	2.596401000	-2.092746000	-1.881758000
6	1.821044000	-2.907389000	-0.174335000	6	-3.145959000	-0.128664000	-1.873262000
1	1.612998000	-3.879365000	-0.652458000	6	-3.595576000	-0.227885000	0.931489000
1	1.829080000	-3.013778000	0.921464000	1	-4.436042000	0.462424000	0.754752000
1	2.771655000	-2.495318000	-0.532156000	1	-3.223238000	-0.086468000	1.954927000
1	2.018312000	3.195350000	-0.002745000	1	-3.945004000	-1.265728000	0.818736000
				1	-2.496235000	0.116585000	-2.727565000
				1	-4.019588000	0.542293000	-1.915352000
				1	-3.486883000	-1.171927000	-1.962784000
				1	2.588290000	-3.452829000	-0.707133000
PCP-R				NCN-R			
E(RB-P86) = -1436.13738330				E(RB-P86) = -862.777983345			
15	-2.285171000	-0.540184000	-0.178116000	7	-2.149300000	-0.561816000	-0.256565000
8	-0.187611000	-1.877780000	2.686883000	8	-0.257152000	-1.859331000	2.695358000
6	-0.106328000	-1.502265000	1.573907000	6	-0.127436000	-1.476208000	1.583986000
44	0.012619000	-0.948161000	-0.147899000	44	0.050187000	-0.915838000	-0.114082000
15	2.317153000	-0.519190000	-0.013122000	7	2.218147000	-0.363710000	0.032526000
1	0.044891000	-2.585495000	-0.638610000	1	0.160408000	-2.581806000	-0.715409000
6	-0.008994000	1.187855000	0.094059000	6	-0.056888000	1.085036000	0.150540000
6	-1.194275000	1.879544000	0.470260000	6	-1.303179000	1.689655000	0.387951000
6	1.149857000	1.967382000	-0.172246000	6	1.088470000	1.864102000	-0.082528000
6	-2.427088000	1.052003000	0.788479000	6	-2.416751000	0.685509000	0.584420000
6	2.415091000	1.249756000	-0.611248000	6	2.304091000	1.061123000	-0.500212000
6	-1.220546000	3.282244000	0.561850000	6	-1.406269000	3.088869000	0.428255000
6	1.122276000	3.369679000	-0.059027000	6	0.999461000	3.264797000	-0.019771000
1	-2.142740000	3.799650000	0.848368000	1	-2.366393000	3.585670000	0.607358000
1	2.025357000	3.955723000	-0.262512000	1	1.878590000	3.897932000	-0.184869000
6	-0.060876000	4.026596000	0.303742000	6	-0.246195000	3.866299000	0.243151000
1	-0.079572000	5.117028000	0.386262000	1	-0.316776000	4.956426000	0.290107000
1	2.466861000	1.191086000	-1.714105000	1	2.322506000	0.972380000	-1.599318000
1	3.337293000	1.749999000	-0.266634000	1	3.266075000	1.509753000	-0.182630000
1	-3.373725000	1.584244000	0.589756000	1	-3.423487000	1.079662000	0.342552000
8	0.302712000	-0.787988000	-2.505777000	8	0.549401000	-0.904759000	-2.496766000
1	-0.516334000	-0.444191000	-2.903229000	1	-0.230859000	-0.758983000	-3.058645000
1	0.152821000	-1.755535000	-2.365843000	1	0.422671000	-1.826355000	-2.076748000
6	3.607758000	-1.400843000	-1.005559000	6	3.146159000	-1.230362000	-0.741409000
1	4.589712000	-0.905682000	-0.927506000	1	4.187392000	-0.857792000	-0.659704000
1	3.295233000	-1.425020000	-2.059821000	1	2.842905000	-1.237877000	-1.795909000
6	3.066151000	-0.460411000	1.673700000	6	2.657798000	-0.354279000	1.456793000
1	2.467109000	0.215187000	2.300948000	1	2.016142000	0.327065000	2.029347000
1	3.044717000	-1.462876000	2.125499000	1	2.572551000	-1.366460000	1.872447000
6	-3.058215000	-0.092631000	-1.808336000	6	-2.517209000	-0.265343000	-1.665436000
6	-3.551492000	-1.663081000	0.564080000	6	-3.000091000	-1.681102000	0.227366000
1	-4.543032000	-1.184417000	0.611777000	1	-4.074584000	-1.419392000	0.149954000
1	-3.230917000	-1.942570000	1.578305000	1	-2.752388000	-1.902380000	1.273207000
1	-3.615664000	-2.581891000	-0.037434000	1	-2.788844000	-2.573089000	-0.376820000
1	-2.504639000	0.750567000	-2.251030000	1	-1.925080000	0.588289000	-2.024376000
1	-4.107429000	0.216863000	-1.675372000	1	-3.592490000	-0.010250000	-1.741140000
1	-3.032817000	-0.952861000	-2.495279000	1	-2.326630000	-1.155077000	-2.283279000
1	3.692219000	-2.436952000	-0.645613000	1	3.089003000	-2.252062000	-0.343671000
1	4.106156000	-0.099553000	1.632453000	1	3.710871000	-0.017012000	1.525690000
1	-2.431177000	0.757560000	1.854937000	1	-2.431477000	0.341069000	1.632368000
PCN-R				OCP-R			

E(RB-P86) = -1149.46510515				E(RB-P86) = -1130.00983118			
15	-2.170920000	-0.115747000	-0.211063000	8	-1.976498000	-1.468656000	-0.406506000
8	-0.617800000	-1.711851000	2.726727000	8	0.823928000	-1.749503000	2.701349000
6	-0.386221000	-1.400692000	1.613247000	6	0.597256000	-1.426127000	1.591759000
44	-0.050758000	-0.942454000	-0.101871000	44	0.242478000	-0.941820000	-0.119471000
7	2.233420000	-0.903022000	0.009648000	15	2.052136000	0.380461000	-0.158945000
1	-0.210057000	-2.609431000	-0.560843000	1	0.868792000	-2.449555000	-0.679927000
6	0.328917000	1.097623000	0.103970000	6	-0.716150000	0.884400000	0.197427000
6	-0.653127000	2.069080000	0.414312000	6	-2.129503000	0.891742000	0.161535000
6	1.654083000	1.516467000	-0.146717000	6	-0.036830000	2.122676000	0.312893000
6	-2.056508000	1.546584000	0.664820000	6	-2.832535000	-0.442206000	0.205979000
6	2.615232000	0.431344000	-0.585057000	6	1.474161000	2.064858000	0.458341000
6	-0.306591000	3.430588000	0.475152000	6	-2.850300000	2.098628000	0.172274000
6	2.004866000	2.873696000	-0.065790000	6	-0.757106000	3.329812000	0.335582000
1	-1.062115000	4.188103000	0.710882000	1	-3.945301000	2.098743000	0.126633000
1	3.034780000	3.198555000	-0.251933000	1	-0.232881000	4.288218000	0.418193000
6	1.021079000	3.827054000	0.245125000	6	-2.158947000	3.316489000	0.255880000
1	1.290101000	4.885182000	0.307594000	1	-2.714062000	4.258440000	0.260832000
1	2.555970000	0.305765000	-1.679289000	1	2.000766000	2.882749000	-0.063566000
1	3.669985000	0.662604000	-0.331871000	1	1.756573000	2.128226000	1.526026000
1	-2.853883000	2.240715000	0.346698000	1	-3.801655000	-0.439960000	-0.327341000
8	0.368251000	-1.020283000	-2.461088000	8	-0.134680000	-0.701558000	-2.422998000
1	-0.370157000	-0.613246000	-2.946140000	1	-1.107974000	-0.794061000	-2.385870000
1	0.033069000	-1.910066000	-2.145085000	1	0.204918000	-1.619449000	-2.496056000
6	2.916751000	-1.991370000	-0.732447000	6	2.701923000	0.728889000	-1.854331000
1	4.018420000	-1.871700000	-0.681550000	1	3.476219000	1.512309000	-1.821471000
1	2.600165000	-1.970599000	-1.783709000	1	1.870060000	1.052711000	-2.495081000
6	2.671749000	-0.939913000	1.430644000	6	3.579196000	0.023182000	0.810564000
1	2.208068000	-0.107364000	1.974778000	1	3.312799000	-0.146274000	1.863668000
1	2.357560000	-1.888437000	1.886040000	1	4.043727000	-0.894010000	0.419973000
6	-2.788440000	0.361066000	-1.897276000	6	-2.466007000	-2.805285000	-0.162096000
6	-3.647906000	-0.937382000	0.533853000	1	-3.480504000	-2.918775000	-0.584126000
1	-4.530433000	-0.277595000	0.514123000	1	-2.485154000	-3.012544000	0.921541000
1	-3.419314000	-1.212677000	1.573638000	1	-1.763143000	-3.489213000	-0.652162000
1	-3.865323000	-1.860318000	-0.023829000	1	3.129880000	-0.192200000	-2.275965000
1	-2.068205000	1.050013000	-2.365408000	1	4.295629000	0.857646000	0.742169000
1	-3.761920000	0.872504000	-1.826530000	1	-3.012711000	-0.754444000	1.253829000
1	-2.908368000	-0.534074000	-2.526883000				
1	2.633707000	-2.956747000	-0.292534000				
1	3.775116000	-0.852259000	1.494095000				
1	-2.210887000	1.338626000	1.740332000				
SCN-R				OCN-R			
E(RB-P86) = -1166.36120178				E(RB-P86) = -843.318065652			
16	-2.233831000	0.153086000	-0.722941000	8	-1.212329000	-1.897338000	-0.521927000
8	-1.164807000	-1.531640000	2.591116000	8	1.191067000	-1.798707000	2.513542000
6	-0.779473000	-1.290402000	1.502381000	6	0.984114000	-1.337258000	1.445596000
44	-0.247545000	-0.909220000	-0.178610000	44	0.639057000	-0.680902000	-0.198778000
7	1.963245000	-1.119444000	0.144436000	7	1.781556000	1.169503000	0.042661000
1	-0.524470000	-2.563164000	-0.587962000	1	1.851875000	-1.746889000	-0.892422000
6	0.320530000	1.073130000	0.041237000	6	-0.856893000	0.633079000	0.161038000
6	-0.595365000	2.136601000	0.205882000	6	-2.181908000	0.177823000	0.269949000
6	1.698443000	1.355701000	-0.054753000	6	-0.584249000	2.006462000	0.042258000
6	-2.053295000	1.757432000	0.268487000	6	-2.327696000	-1.322093000	0.273069000
6	2.572647000	0.164254000	-0.383894000	6	0.844446000	2.310542000	-0.357451000
6	-0.131946000	3.462912000	0.285265000	6	-3.238670000	1.101414000	0.336673000
6	2.167356000	2.673830000	0.056081000	6	-1.629417000	2.939137000	0.138585000
1	-0.832796000	4.296422000	0.403224000	1	-4.280182000	0.770510000	0.416661000
1	3.238146000	2.898487000	-0.005130000	1	-1.440838000	4.016041000	0.063950000
6	1.247116000	3.722849000	0.229559000	6	-2.949620000	2.478272000	0.304522000
1	1.607162000	4.751970000	0.311966000	1	-3.766666000	3.200955000	0.377888000
1	2.632052000	0.045883000	-1.478975000	1	0.900369000	2.375462000	-1.457189000
1	3.608681000	0.262016000	-0.002506000	1	1.239865000	3.259448000	0.053612000
1	-2.735549000	2.514690000	-0.149655000	1	-3.273426000	-1.674518000	-0.176846000
8	0.274861000	-0.872867000	-2.488401000	8	0.515435000	-0.239303000	-2.520492000
1	-0.338175000	-0.237623000	-2.903586000	1	-0.362248000	-0.589197000	-2.761253000
1	-0.201552000	-1.733279000	-2.473982000	1	1.110599000	-1.032366000	-2.432999000

6	2.568147000	-2.278511000	-0.561125000	6	2.998024000	1.220569000	-0.813282000
1	3.667689000	-2.293971000	-0.418139000	1	3.501378000	2.203448000	-0.715594000
1	2.342894000	-2.208147000	-1.633397000	1	2.709236000	1.059458000	-1.859855000
6	2.272459000	-1.227179000	1.597242000	6	2.186402000	1.382723000	1.462590000
1	1.876741000	-0.345617000	2.117207000	1	1.288602000	1.399531000	2.092946000
1	1.800140000	-2.130305000	2.004768000	1	2.839604000	0.561368000	1.782342000
6	-3.787124000	-0.502974000	0.003291000	6	-1.173019000	-3.338757000	-0.421926000
1	-4.612616000	0.194793000	-0.200010000	1	-2.121315000	-3.762938000	-0.797306000
1	-3.663046000	-0.661546000	1.082628000	1	-1.007791000	-3.648539000	0.623930000
1	-3.976913000	-1.464995000	-0.489811000	1	-0.329056000	-3.669270000	-1.038323000
1	2.130506000	-3.203775000	-0.165200000	1	3.679694000	0.418301000	-0.504183000
1	3.368486000	-1.284635000	1.750038000	1	2.727203000	2.344101000	1.559100000
1	-2.374221000	1.505395000	1.293722000	1	-2.238772000	-1.740408000	1.294428000
SCS-R				OCS-R			
E(RB-P86) = -1469.93283049				E(RB-P86) = -1146.89930621			
16	-2.148101000	0.817787000	-0.589828000	8	-1.355799000	-1.908745000	-0.219281000
8	-1.357020000	-1.419426000	2.523236000	8	1.529024000	-1.119341000	2.620480000
6	-1.020153000	-1.199984000	1.415691000	6	1.156658000	-0.991689000	1.510048000
44	-0.544096000	-0.843250000	-0.292624000	44	0.587910000	-0.782151000	-0.194627000
16	1.595152000	-1.954376000	-0.224813000	16	1.929371000	0.993865000	-0.684881000
1	-1.418886000	-2.228968000	-0.759583000	1	1.565307000	-2.125842000	-0.665439000
6	0.651290000	0.874958000	0.006120000	6	-0.802413000	0.719392000	0.115724000
6	0.066457000	2.122799000	0.340537000	6	-2.158401000	0.344945000	0.226012000
6	2.056440000	0.820777000	-0.156318000	6	-0.470361000	2.094391000	0.115365000
6	-1.432152000	2.161478000	0.514813000	6	-2.443923000	-1.126619000	0.394408000
6	2.670405000	-0.477919000	-0.630070000	6	0.997810000	2.438934000	0.115072000
6	0.857038000	3.273462000	0.512080000	6	-3.173660000	1.315525000	0.267615000
6	2.851510000	1.962698000	0.049328000	6	-1.483496000	3.068793000	0.156843000
1	0.396915000	4.235536000	0.762169000	1	-4.227907000	1.025675000	0.340661000
1	3.940053000	1.911204000	-0.064745000	1	-1.234928000	4.135371000	0.143549000
6	2.250628000	3.186138000	0.382956000	6	-2.830001000	2.676233000	0.227455000
1	2.869741000	4.074405000	0.534955000	1	-3.615980000	3.435608000	0.252428000
1	2.732089000	-0.511626000	-1.730583000	1	1.246714000	3.357066000	-0.440782000
1	3.680140000	-0.670139000	-0.231364000	1	1.391485000	2.524185000	1.142445000
1	-1.885861000	3.129328000	0.247844000	1	-3.394565000	-1.446357000	-0.071364000
8	-0.125576000	-0.690824000	-2.590918000	8	0.041189000	-0.795922000	-2.477028000
1	-0.528362000	0.142062000	-2.900637000	1	-0.857743000	-1.173657000	-2.421621000
1	-0.772204000	-1.393664000	-2.797057000	1	0.632939000	-1.561651000	-2.618604000
6	2.041250000	-2.156221000	1.543019000	6	3.509474000	1.095921000	0.240888000
1	1.913159000	-1.201593000	2.069517000	1	3.333521000	0.983726000	1.318642000
1	3.079707000	-2.510961000	1.609616000	1	3.995019000	2.057853000	0.019700000
6	-3.777028000	0.555169000	0.212485000	6	-1.416216000	-3.306438000	0.145566000
1	-4.376955000	1.474042000	0.140421000	1	-2.380325000	-3.735338000	-0.180072000
1	-3.638066000	0.257203000	1.260071000	1	-1.301722000	-3.421270000	1.236886000
1	-4.265543000	-0.258420000	-0.338692000	1	-0.578675000	-3.795787000	-0.364544000
1	1.362767000	-2.908818000	1.964348000	1	4.132581000	0.268245000	-0.121456000
1	-1.734655000	1.890701000	1.541019000	1	-2.471845000	-1.399266000	1.467926000
PCS-R				OCO-R			
E(RB-P86) = -1453.03556690				E(RB-P86) = -823.853777110			
15	-2.142457000	-0.288934000	-0.342463000	8	-0.506587000	2.101495000	-0.368370000
8	-0.731021000	-1.559831000	2.856932000	8	-2.035062000	-0.041793000	2.600765000
6	-0.432721000	-1.317530000	1.746077000	6	-1.614368000	-0.038578000	1.498239000
44	0.018504000	-0.961390000	0.027359000	44	-0.967756000	-0.024880000	-0.187529000
16	2.383993000	-0.867093000	0.522500000	8	-0.452386000	-2.114342000	-0.364754000
1	-0.101459000	-2.634412000	-0.352435000	1	-2.601641000	-0.037745000	-0.827461000
6	0.260387000	1.146714000	0.133852000	6	1.018205000	0.005923000	0.174869000
6	-0.844054000	2.026287000	0.292965000	6	1.693712000	1.237425000	0.207923000
6	1.550615000	1.720767000	0.005395000	6	1.734837000	-1.201838000	0.173517000
6	-2.216884000	1.398794000	0.459618000	6	0.794750000	2.446477000	0.264233000
6	2.729915000	0.808107000	-0.236106000	6	0.881575000	-2.445833000	0.183575000
6	-0.662934000	3.419851000	0.311427000	6	3.098057000	1.268354000	0.230899000
6	1.732016000	3.115243000	0.056442000	6	3.138630000	-1.182017000	0.200078000
1	-1.522794000	4.088375000	0.428483000	1	3.647985000	2.215744000	0.252615000
1	2.735560000	3.546196000	-0.028398000	1	3.721690000	-2.109581000	0.196166000
6	0.625562000	3.962783000	0.201423000	6	3.809627000	0.054699000	0.234689000
1	0.767645000	5.046505000	0.233598000	1	4.902448000	0.072582000	0.249385000

1	2.872916000	0.618201000	-1.313391000	1	1.289278000	-3.267333000	-0.432569000
1	3.670702000	1.199880000	0.182114000	1	0.729442000	-2.817501000	1.216223000
1	-3.036283000	2.019550000	0.057325000	1	1.192888000	3.328565000	-0.268935000
8	0.666838000	-1.086355000	-2.270713000	8	-0.572307000	0.020682000	-2.511181000
1	-0.023786000	-0.702746000	-2.838633000	1	-0.270166000	0.934408000	-2.667892000
1	0.347153000	-1.994735000	-2.026100000	1	-1.557189000	0.067767000	-2.520540000
6	3.405847000	-1.913499000	-0.587612000	6	-1.412707000	-3.170735000	-0.154526000
1	4.468288000	-1.657882000	-0.461234000	1	-1.598746000	-3.315159000	0.923875000
1	3.093315000	-1.779076000	-1.631944000	1	-1.031807000	-4.104576000	-0.603765000
6	-2.618431000	0.066686000	-2.101691000	6	-1.516156000	3.106729000	-0.113921000
6	-3.616340000	-1.198480000	0.296134000	1	-1.167154000	4.082411000	-0.495220000
1	-4.543084000	-0.619774000	0.152732000	1	-1.725259000	3.172554000	0.966937000
1	-3.474540000	-1.404159000	1.366994000	1	-2.416288000	2.776663000	-0.644674000
1	-3.698794000	-2.161973000	-0.228101000	1	-2.333921000	-2.848661000	-0.652634000
1	-1.911898000	0.796773000	-2.526490000	1	0.573471000	2.732606000	1.310662000
1	-3.632103000	0.495453000	-2.153823000				
1	-2.599581000	-0.858561000	-2.698073000				
1	3.236806000	-2.952596000	-0.276164000				
1	-2.433686000	1.218805000	1.529363000				

### Transition States

PNN-TS E(RB-P86) = -1165.50934134				NNN-TS E(RB-P86) = -878.817078597			
15	-2.247039000	0.071234000	-0.176872000	7	-2.224040000	-0.285648000	-0.221600000
8	-0.582222000	-1.206570000	2.893451000	8	-0.413376000	-1.242756000	2.911538000
6	-0.396562000	-1.039177000	1.747780000	6	-0.298528000	-1.063324000	1.755742000
44	-0.131930000	-0.884156000	-0.064963000	44	-0.108265000	-0.890016000	-0.055556000
7	2.138191000	-1.088158000	-0.001542000	7	2.112311000	-0.706296000	0.005102000
1	-0.577528000	-2.573426000	-0.353991000	1	-0.286896000	-2.648224000	-0.334225000
7	0.441592000	1.100064000	-0.037524000	7	0.094592000	1.109922000	-0.072972000
6	-0.503273000	2.113386000	0.158434000	6	-1.066630000	1.857762000	0.132309000
6	1.756160000	1.368601000	-0.253050000	6	1.318957000	1.654659000	-0.266103000
6	-1.855891000	1.757882000	0.209118000	6	-2.244580000	1.140104000	0.187366000
6	2.557197000	0.168548000	-0.706785000	6	2.338912000	0.620180000	-0.690817000
6	0.013400000	3.453548000	0.272553000	6	-0.876910000	3.285989000	0.258960000
6	2.271061000	2.654382000	-0.170239000	6	1.524702000	3.022165000	-0.173152000
1	-0.691134000	4.265647000	0.465118000	1	-1.743777000	3.920658000	0.456469000
1	3.331690000	2.842527000	-0.341876000	1	2.510881000	3.459439000	-0.332449000
6	1.360070000	3.707596000	0.121666000	6	0.380185000	3.831684000	0.116945000
1	1.730453000	4.733058000	0.210055000	1	0.505633000	4.914235000	0.211952000
1	2.341727000	-0.000558000	-1.774972000	1	2.202481000	0.420115000	-1.766194000
1	3.644210000	0.337727000	-0.582749000	1	3.376394000	0.961591000	-0.518338000
1	-2.626995000	2.517759000	0.351857000	1	-3.231158000	1.592273000	0.307261000
8	0.192469000	-1.328526000	-2.214673000	8	0.297682000	-1.358688000	-2.212907000
1	-0.548932000	-1.008036000	-2.756046000	1	-0.464827000	-1.199045000	-2.794015000
1	-0.347069000	-2.238173000	-1.234150000	1	-0.085400000	-2.296851000	-1.219516000
6	2.665664000	-2.267485000	-0.732743000	6	2.846541000	-1.773426000	-0.727370000
1	3.770956000	-2.224737000	-0.801913000	1	3.925477000	-1.530095000	-0.784609000
1	2.224417000	-2.287024000	-1.738220000	1	2.419930000	-1.867644000	-1.734337000
6	2.668802000	-1.080833000	1.385599000	6	2.641085000	-0.614083000	1.393770000
1	2.317420000	-0.182135000	1.909638000	1	2.151725000	0.216580000	1.918939000
1	2.309338000	-1.970423000	1.920141000	1	2.434779000	-1.551193000	1.926846000
6	-3.104648000	-0.002357000	-1.828162000	6	-2.688883000	-0.394040000	-1.642190000
6	-3.600273000	-0.506485000	0.942081000	6	-3.164074000	-1.075517000	0.625671000
1	-4.462524000	0.175993000	0.870487000	1	-4.193890000	-0.689313000	0.502234000
1	-3.237587000	-0.518184000	1.978690000	1	-2.871272000	-0.980027000	1.677291000
1	-3.919868000	-1.521390000	0.659770000	1	-3.134090000	-2.133017000	0.325509000
1	-2.443236000	0.420801000	-2.598358000	1	-2.029574000	0.212121000	-2.277398000
1	-4.026050000	0.601559000	-1.797886000	1	-3.718223000	-0.000857000	-1.727932000
1	-3.363292000	-1.040167000	-2.092021000	1	-2.677683000	-1.446998000	-1.967455000
1	2.377064000	-3.179364000	-0.190971000	1	2.719985000	-2.721783000	-0.186844000
1	3.776749000	-1.085298000	1.374555000	1	3.733990000	-0.438498000	1.371745000
PNP-TS E(RB-P86) = -1452.17423911				SNS-TS E(RB-P86) = -1485.96472472			
15	-2.382006000	-0.424397000	-0.162299000	16	-1.656178000	-1.888974000	-0.031656000

8	-0.295379000	-1.045619000	2.978165000	8	0.156064000	-0.980399000	3.171730000
6	-0.209172000	-0.944897000	1.815430000	6	0.255137000	-0.885893000	2.013133000
44	-0.054044000	-0.882383000	-0.025220000	44	0.490543000	-0.810625000	0.179258000
15	2.293993000	-0.689232000	-0.004157000	16	2.288797000	0.755479000	0.413680000
1	-0.160522000	-2.633713000	-0.175687000	1	1.450443000	-2.293847000	0.152910000
7	0.050345000	1.236758000	-0.113510000	7	-0.642680000	0.914255000	-0.081933000
6	-1.132400000	1.974131000	0.071950000	6	-2.033186000	0.823274000	0.043256000
6	1.243958000	1.878827000	-0.309121000	6	-0.031474000	2.117341000	-0.289546000
6	-2.365949000	1.314996000	0.131078000	6	-2.627582000	-0.431661000	0.140693000
6	2.416938000	1.019917000	-0.729411000	6	1.435370000	2.054347000	-0.621888000
6	-1.009355000	3.405001000	0.189136000	6	-2.774914000	2.059239000	0.077155000
6	1.372990000	3.258922000	-0.214498000	6	-0.728186000	3.316797000	-0.280782000
1	-1.917449000	3.982229000	0.376037000	1	-3.857185000	2.008967000	0.214371000
1	2.342197000	3.730650000	-0.381527000	1	-0.207834000	4.260610000	-0.447050000
6	0.211211000	4.025844000	0.062112000	6	-2.135135000	3.267549000	-0.073071000
1	0.285305000	5.113212000	0.155906000	1	-2.711654000	4.196427000	-0.047455000
1	2.359096000	0.857095000	-1.821152000	1	1.568525000	1.712461000	-1.661171000
1	3.378847000	1.508673000	-0.506882000	1	1.933996000	3.022880000	-0.474385000
1	-3.284227000	1.895185000	0.247363000	1	-3.694827000	-0.565409000	0.310802000
8	0.277887000	-1.359611000	-2.166396000	8	1.253821000	-1.091274000	-1.884780000
1	-0.543322000	-1.167570000	-2.651450000	1	0.580137000	-1.477461000	-2.469852000
1	-0.038667000	-2.327447000	-1.070603000	1	1.462423000	-1.993280000	-0.766086000
6	3.331280000	-1.730469000	-1.113492000	6	3.659021000	0.324760000	-0.729103000
1	4.327367000	-1.288690000	-1.276204000	1	4.254996000	1.227568000	-0.925257000
1	2.793443000	-1.825603000	-2.068659000	1	4.277945000	-0.416041000	-0.205208000
6	3.232452000	-0.607228000	1.582402000	6	-1.859620000	-2.353701000	-1.826525000
1	2.757384000	0.134571000	2.241023000	1	-1.640677000	-1.486908000	-2.464349000
1	3.199798000	-1.585566000	2.084409000	1	-2.903877000	-2.665883000	-1.966173000
6	-3.247474000	-0.780520000	-1.773736000	1	-1.191018000	-3.200224000	-2.045067000
6	-3.537657000	-1.233533000	1.035497000	1	3.235883000	-0.105163000	-1.647762000
1	-4.538026000	-0.776694000	0.963748000				
1	-3.156028000	-1.098517000	2.056723000				
1	-3.618038000	-2.310396000	0.820634000				
1	-2.717435000	-0.266854000	-2.589570000				
1	-4.279675000	-0.395567000	-1.740467000				
1	-3.273771000	-1.862987000	-1.977548000				
1	3.446177000	-2.731461000	-0.671246000				
1	4.282272000	-0.322674000	1.408002000				
SNN-TS				ONP-TS			
E(RB-P86) = -1182.39770344				E(RB-P86) = -1146.03243430			
16	-2.148755000	-1.282979000	0.206823000	8	-1.887342000	-1.577175000	-0.465000000
8	0.276498000	-1.173712000	3.050445000	8	0.534824000	-1.620678000	2.764965000
6	0.243115000	-1.032358000	1.888589000	6	0.401932000	-1.326530000	1.638712000
44	0.220801000	-0.926973000	0.051068000	44	0.226242000	-0.924974000	-0.160169000
7	2.210769000	0.043429000	-0.139850000	15	2.048552000	0.419649000	-0.132281000
1	0.707240000	-2.624930000	-0.120595000	1	0.997751000	-2.443613000	-0.696836000
7	-0.345972000	1.034682000	-0.072600000	7	-0.760782000	0.860878000	0.117060000
6	-1.655686000	1.412127000	0.225581000	6	-2.156316000	0.785296000	-0.053583000
6	0.605931000	1.932925000	-0.439652000	6	-0.139433000	2.049091000	0.384800000
6	-2.594239000	0.410190000	0.455538000	6	-2.739257000	-0.439039000	-0.271719000
6	1.873036000	1.277271000	-0.939724000	6	1.343629000	1.948662000	0.677215000
6	-1.917166000	2.829648000	0.274366000	6	-2.896428000	2.030909000	0.001595000
6	0.370526000	3.298614000	-0.432974000	6	-0.829613000	3.248142000	0.433042000
1	-2.919324000	3.166160000	0.548646000	1	-3.978089000	1.999028000	-0.147383000
1	1.148933000	4.003397000	-0.727966000	1	-0.304577000	4.181524000	0.637828000
6	-0.928394000	3.736336000	-0.040944000	6	-2.246694000	3.215196000	0.231406000
1	-1.147411000	4.807317000	-0.005588000	1	-2.816833000	4.147890000	0.265325000
1	1.699630000	0.926874000	-1.970427000	1	1.885148000	2.862055000	0.384088000
1	2.728885000	1.977635000	-0.935373000	1	1.492849000	1.806571000	1.763802000
1	-3.614506000	0.610405000	0.778840000	1	-3.791057000	-0.616630000	-0.488204000
8	0.558451000	-1.359318000	-2.105674000	8	0.264695000	-0.853731000	-2.347560000
1	-0.275046000	-1.533073000	-2.575066000	1	-0.663230000	-1.015481000	-2.602343000
1	0.660287000	-2.304943000	-1.037000000	1	0.749308000	-2.009539000	-1.491831000
6	3.219527000	-0.760709000	-0.881471000	6	2.653319000	0.933826000	-1.789109000
1	4.129058000	-0.158150000	-1.070764000	1	3.161339000	0.084232000	-2.267895000

1	2.778702000	-1.092648000	-1.830246000	1	3.346617000	1.785729000	-1.706479000
6	2.777286000	0.452582000	1.173975000	6	3.576677000	0.035065000	0.820620000
1	2.059729000	1.096263000	1.699037000	1	3.311636000	-0.232203000	1.853584000
1	2.973146000	-0.440993000	1.780639000	1	4.083054000	-0.824531000	0.357096000
6	-2.754299000	-1.653602000	-1.517335000	6	-2.400653000	-2.778289000	0.160764000
1	-2.383455000	-0.894899000	-2.219863000	1	-3.408237000	-2.984812000	-0.237304000
1	-3.852680000	-1.632913000	-1.491724000	1	-2.448503000	-2.650920000	1.254406000
1	-2.410943000	-2.662548000	-1.791917000	1	-1.719378000	-3.596033000	-0.107638000
1	3.488653000	-1.636996000	-0.275660000	1	1.781425000	1.186454000	-2.407614000
1	3.722925000	1.007823000	1.022161000	1	4.262912000	0.896958000	0.827913000
ONS-TS E(RB-P86) = -1162.91836650				ONN-TS E(RB-P86) = -859.349767636			
8	-0.970703000	-2.121186000	-0.201996000	8	-1.195032000	-1.916419000	-0.586377000
8	0.390256000	-1.110470000	3.085818000	8	0.628447000	-1.554726000	2.729486000
6	0.474419000	-0.915866000	1.937458000	6	0.598440000	-1.191640000	1.613160000
44	0.670504000	-0.678921000	0.117570000	44	0.590107000	-0.712466000	-0.161544000
16	1.870720000	1.286722000	0.457570000	7	1.807654000	1.070891000	0.088603000
1	2.037921000	-1.821901000	-0.003774000	1	1.871080000	-1.889288000	-0.601957000
7	-0.914126000	0.580452000	-0.132224000	7	-0.864366000	0.660478000	-0.053299000
6	-2.175981000	-0.037720000	-0.126623000	6	-2.182968000	0.196491000	-0.015224000
6	-0.777630000	1.936744000	-0.169973000	6	-0.533086000	1.973885000	-0.090011000
6	-2.219208000	-1.408237000	-0.194327000	6	-2.359582000	-1.157509000	-0.173703000
6	0.630712000	2.420344000	-0.393365000	6	0.917852000	2.172655000	-0.467643000
6	-3.331095000	0.833275000	-0.034508000	6	-3.200598000	1.210472000	0.172952000
6	-1.867407000	2.787969000	-0.113325000	6	-1.486509000	2.966003000	0.058273000
1	-4.323719000	0.382229000	0.031246000	1	-4.245056000	0.904144000	0.263881000
1	-1.736465000	3.868987000	-0.167885000	1	-1.218759000	4.022220000	0.018519000
6	-3.169632000	2.195202000	-0.025477000	6	-2.847522000	2.539068000	0.218877000
1	-4.048322000	2.842332000	0.044865000	1	-3.627663000	3.292845000	0.357951000
1	0.883211000	2.355045000	-1.464175000	1	0.994671000	2.088371000	-1.563968000
1	0.788250000	3.446686000	-0.032351000	1	1.309252000	3.156867000	-0.153148000
1	-3.100292000	-2.039749000	-0.099972000	1	-3.301039000	-1.693901000	-0.262447000
8	1.414677000	-0.687563000	-1.977297000	8	1.044408000	-0.492482000	-2.320054000
1	0.792662000	-1.166578000	-2.552305000	1	0.307665000	-0.895025000	-2.814655000
1	1.909797000	-1.522022000	-0.915333000	1	1.628321000	-1.477467000	-1.443240000
6	3.241454000	1.404542000	-0.758466000	6	3.077365000	1.036961000	-0.691069000
1	3.537969000	2.459425000	-0.849431000	1	3.575670000	2.024431000	-0.653221000
1	4.074931000	0.821831000	-0.343898000	1	2.844907000	0.763975000	-1.728631000
6	-0.922294000	-3.169058000	-1.197402000	6	2.113404000	1.377901000	1.514711000
1	-1.746384000	-3.876129000	-1.006773000	1	1.175034000	1.478327000	2.075304000
1	0.041018000	-3.681891000	-1.078544000	1	2.709371000	0.562540000	1.943944000
1	-1.028693000	-2.750851000	-2.212975000	6	-1.264001000	-3.303042000	-0.177383000
1	2.909465000	0.974992000	-1.713467000	1	-2.172973000	-3.755395000	-0.608481000
ONO-TS E(RB-P86) = -839.879567057				PNS-TS E(RB-P86) = -1469.07496482			
8	0.600580000	-1.998402000	-0.699627000	15	-2.224571000	-0.120215000	-0.323879000
8	1.387055000	-0.671312000	2.829433000	8	-0.718795000	-0.904233000	3.026052000
6	1.195869000	-0.414747000	1.703036000	6	-0.463170000	-0.862006000	1.886280000
44	0.958601000	0.019494000	-0.073260000	44	-0.061618000	-0.891946000	0.083282000
8	0.493595000	2.099582000	0.387068000	16	2.354630000	-1.043026000	0.537952000
1	2.718759000	0.116708000	-0.433365000	1	-0.402548000	-2.615792000	-0.067425000
7	-1.038041000	-0.026844000	-0.033356000	7	0.371695000	1.158524000	-0.040237000
6	-1.631093000	-1.286534000	-0.153732000	6	-0.683947000	2.081482000	-0.012388000
6	-1.738659000	1.123072000	0.091538000	6	1.666881000	1.577960000	-0.130487000
6	-0.776973000	-2.340727000	-0.381082000	6	-2.001479000	1.612606000	-0.066756000
6	-0.888080000	2.362700000	-0.057189000	6	2.693841000	0.515881000	-0.422899000
6	-3.072605000	-1.321227000	-0.028360000	6	-0.333622000	3.476809000	0.062399000
6	-3.118168000	1.121601000	0.214521000	6	2.022789000	2.919003000	-0.069852000
1	-3.588938000	-2.281343000	-0.091317000	1	-1.143141000	4.207334000	0.123663000
1	-3.680185000	2.049861000	0.319833000	1	3.070172000	3.215776000	-0.135851000
6	-3.772826000	-0.152236000	0.161652000	6	0.982634000	3.878883000	0.047175000
1	-4.861246000	-0.193158000	0.259198000	1	1.229804000	4.942532000	0.108588000



1	-0.839450000	2.641276000	-1.125905000	1	2.610467000	0.211545000	-1.479121000
1	-1.274631000	3.209966000	0.533487000	1	3.713467000	0.866327000	-0.209134000
1	-1.034394000	-3.377315000	-0.580079000	1	-2.837183000	2.315362000	-0.064047000
8	1.200897000	0.762049000	-2.134180000	8	0.482459000	-1.494814000	-1.974762000
1	0.989074000	0.045403000	-2.758881000	1	-0.222756000	-1.256484000	-2.600520000
1	2.292152000	0.351753000	-1.262315000	1	-0.105560000	-2.355358000	-0.950879000
6	1.401371000	3.131410000	-0.077398000	6	3.122467000	-2.258831000	-0.601067000
1	1.493701000	3.081579000	-1.173847000	1	4.193280000	-2.033640000	-0.706922000
1	1.022406000	4.114649000	0.248377000	1	2.595348000	-2.226771000	-1.564763000
6	1.528167000	-3.052443000	-0.333926000	6	-2.916545000	-0.425209000	-2.025320000
1	1.236357000	-3.971818000	-0.867686000	6	-3.614859000	-0.724761000	0.733195000
1	1.506310000	-3.218753000	0.754416000	1	-4.526949000	-0.144144000	0.520213000
1	2.522146000	-2.724589000	-0.661205000	1	-3.349650000	-0.598679000	1.791557000
1	2.366771000	2.925376000	0.400322000	1	-3.810874000	-1.789539000	0.534240000
				1	-2.221539000	-0.020628000	-2.775887000
				1	-3.881092000	0.096797000	-2.133314000
				1	-3.068349000	-1.501635000	-2.203770000
				1	3.001664000	-3.243943000	-0.130422000
PCP-TS E(RB-P86) = -1436.12624140				NCN-TS E(RB-P86) = -862.773609706			
15	-2.282960000	-0.617713000	-0.211860000	7	-2.133244000	-0.631347000	-0.271931000
8	-0.199217000	-1.318068000	2.909361000	8	-0.238176000	-1.614681000	2.790392000
6	-0.111737000	-1.151977000	1.749940000	6	-0.108233000	-1.314393000	1.656681000
44	0.038681000	-0.930255000	-0.064860000	44	0.078390000	-0.908110000	-0.103646000
15	2.347379000	-0.474771000	-0.000748000	7	2.228890000	-0.330548000	0.023728000
1	0.128167000	-2.689742000	-0.598467000	1	0.238756000	-2.631559000	-0.824320000
6	-0.051840000	1.164708000	0.060051000	6	-0.083085000	1.064370000	0.142632000
6	-1.265299000	1.838284000	0.370825000	6	-1.345782000	1.638145000	0.364843000
6	1.084972000	1.955722000	-0.257348000	6	1.043092000	1.861164000	-0.120319000
6	-2.489565000	1.000234000	0.691333000	6	-2.436441000	0.611130000	0.562685000
6	2.364554000	1.258711000	-0.681364000	6	2.264812000	1.077969000	-0.551990000
6	-1.332290000	3.241934000	0.370308000	6	-1.481188000	3.035149000	0.371079000
6	1.010542000	3.360425000	-0.232457000	6	0.916545000	3.259544000	-0.089497000
1	-2.276970000	3.744546000	0.603937000	1	-2.454757000	3.509811000	0.535471000
1	1.897376000	3.956413000	-0.473538000	1	1.778770000	3.908103000	-0.280190000
6	-0.192482000	4.004128000	0.081944000	6	-0.341677000	3.836799000	0.167135000
1	-0.244192000	5.096272000	0.095551000	1	-0.439152000	4.925480000	0.188653000
1	2.382506000	1.135997000	-1.779136000	1	2.239567000	0.950370000	-1.646583000
1	3.274138000	1.811256000	-0.388942000	1	3.224462000	1.559165000	-0.279919000
1	-3.436274000	1.505591000	0.435158000	1	-3.448563000	0.982777000	0.309891000
8	0.479086000	-1.146434000	-2.281968000	8	0.575346000	-0.966993000	-2.341772000
1	-0.327546000	-0.950283000	-2.788786000	1	-0.189301000	-0.834769000	-2.927076000
1	0.253174000	-2.198281000	-1.453901000	1	0.392100000	-2.030162000	-1.667894000
6	3.521525000	-1.413259000	-1.067397000	6	3.148643000	-1.199214000	-0.759531000
1	4.494387000	-0.902199000	-1.150090000	1	4.178194000	-0.789821000	-0.738745000
1	3.059058000	-1.510919000	-2.060642000	1	2.786220000	-1.258556000	-1.793489000
6	3.207407000	-0.345953000	1.627243000	6	2.703827000	-0.275191000	1.434497000
1	2.646770000	0.348398000	2.269856000	1	2.070087000	0.415822000	2.004845000
1	3.230272000	-1.330390000	2.117281000	1	2.642112000	-1.275867000	1.881542000
6	-2.996344000	-0.271209000	-1.885341000	6	-2.505373000	-0.352905000	-1.684233000
6	-3.526079000	-1.762650000	0.536289000	6	-2.948403000	-1.773409000	0.217868000
1	-4.540317000	-1.332328000	0.512316000	1	-4.030415000	-1.546986000	0.137708000
1	-3.242473000	-1.972990000	1.577824000	1	-2.695929000	-1.981443000	1.265477000
1	-3.521532000	-2.712849000	-0.018461000	1	-2.713202000	-2.661982000	-0.383200000
1	-2.433098000	0.552680000	-2.348798000	1	-1.929775000	0.508912000	-2.048886000
1	-4.056570000	0.018874000	-1.808978000	1	-3.586367000	-0.124890000	-1.760666000
1	-2.917294000	-1.164117000	-2.524147000	1	-2.288438000	-1.238931000	-2.297585000
1	3.672105000	-2.419065000	-0.647690000	1	3.148035000	-2.204522000	-0.316599000
1	4.237568000	0.023383000	1.501134000	1	3.753759000	0.075793000	1.466933000
1	-2.526660000	0.749669000	1.768175000	1	-2.452646000	0.271804000	1.612416000
PCN-TS E(RB-P86) = -1149.45773569				OCP-TS E(RB-P86) = -1129.99741683			
15	-2.179648000	-0.2110774000	-0.227863000	8	-2.001963000	-1.427302000	-0.433278000
8	-0.498210000	-1.369117000	2.856255000	8	0.379843000	-1.395504000	2.865663000
6	-0.295392000	-1.179579000	1.713136000	6	0.300183000	-1.203005000	1.709625000

44	-0.011393000	-0.933147000	-0.074888000	44	0.187225000	-0.926616000	-0.103778000
7	2.264564000	-0.837758000	0.012879000	15	2.089339000	0.292160000	-0.102324000
1	-0.139101000	-2.691972000	-0.645242000	1	0.829387000	-2.552542000	-0.778485000
6	0.282036000	1.087705000	0.090396000	6	-0.689628000	0.901463000	0.123680000
6	-0.739436000	2.025109000	0.369356000	6	-2.099948000	0.945253000	0.049698000
6	1.583917000	1.543691000	-0.208414000	6	0.033166000	2.115264000	0.198036000
6	-2.123907000	1.459494000	0.628105000	6	-2.848539000	-0.361797000	0.105326000
6	2.567916000	0.482936000	-0.649528000	6	1.540180000	2.028507000	0.360033000
6	-0.446447000	3.400266000	0.369024000	6	-2.775881000	2.174883000	-0.005499000
6	1.875907000	2.916469000	-0.187685000	6	-0.650180000	3.343163000	0.155489000
1	-1.232770000	4.133427000	0.578387000	1	-3.868230000	2.205139000	-0.082932000
1	2.886988000	3.273047000	-0.413023000	1	-0.092714000	4.284604000	0.204714000
6	0.860253000	3.841036000	0.105913000	6	-2.048413000	3.372839000	0.047818000
1	1.086093000	4.910717000	0.121465000	1	-2.572113000	4.331286000	0.002716000
1	2.449641000	0.308091000	-1.731589000	1	2.083520000	2.777141000	-0.241399000
1	3.622418000	0.764913000	-0.456125000	1	1.825271000	2.193987000	1.415700000
1	-2.939930000	2.122943000	0.294337000	1	-3.788032000	-0.341146000	-0.477302000
8	0.423679000	-1.199252000	-2.286776000	8	0.256003000	-0.960548000	-2.338759000
1	-0.336368000	-0.953052000	-2.840462000	1	-0.683458000	-1.022021000	-2.592650000
1	0.064869000	-2.195501000	-1.513995000	1	0.596779000	-2.044365000	-1.593133000
6	2.952883000	-1.929213000	-0.722304000	6	2.888773000	0.455809000	-1.752103000
1	4.047620000	-1.756179000	-0.741280000	1	3.657208000	1.245111000	-1.738918000
1	2.562828000	-1.969116000	-1.747686000	1	2.106668000	0.673386000	-2.492589000
6	2.755258000	-0.805959000	1.415626000	6	3.494659000	-0.076976000	1.032893000
1	2.291267000	0.036012000	1.945493000	1	3.128002000	-0.134305000	2.067840000
1	2.484707000	-1.743352000	1.920096000	1	3.929289000	-1.050851000	0.763369000
6	-2.790503000	0.197340000	-1.927351000	6	-2.535449000	-2.739146000	-0.168755000
6	-3.617103000	-1.089876000	0.527907000	1	-3.545338000	-2.828066000	-0.606502000
1	-4.533325000	-0.479603000	0.477884000	1	-2.579852000	-2.928322000	0.918297000
1	-3.388065000	-1.320761000	1.578357000	1	-1.855560000	-3.457541000	-0.642378000
1	-3.780840000	-2.038533000	-0.004676000	1	3.348327000	-0.505110000	-2.026285000
1	-2.071575000	0.874913000	-2.411732000	1	4.272027000	0.700713000	0.961214000
1	-3.774717000	0.690548000	-1.882969000	1	-3.093736000	-0.629122000	1.153384000
1	-2.880193000	-0.721577000	-2.526425000				
1	2.748316000	-2.884376000	-0.219002000				
1	3.856981000	-0.687874000	1.434415000				
1	-2.276823000	1.262091000	1.705728000				
SCN-TS				OCN-TS			
E(RB-P86) = -1166.35161764				E(RB-P86) = -843.311183881			
16	-2.264119000	-0.103379000	-0.772592000	8	-1.658113000	-1.523659000	-0.574338000
8	-1.003137000	-1.238794000	2.698092000	8	0.331695000	-1.762002000	2.674448000
6	-0.640701000	-1.100367000	1.586965000	6	0.374928000	-1.367875000	1.564877000
44	-0.142224000	-0.910686000	-0.159222000	44	0.425793000	-0.820021000	-0.175457000
7	2.064505000	-0.913214000	0.184867000	7	2.033847000	0.629113000	0.093456000
1	-0.297277000	-2.674325000	-0.749391000	1	1.374412000	-2.234666000	-0.983080000
6	0.198064000	1.081702000	0.027138000	6	-0.657593000	0.823393000	0.110600000
6	-0.830993000	2.041026000	0.135063000	6	-2.057732000	0.739268000	0.173254000
6	1.536173000	1.499421000	-0.112560000	6	-0.013081000	2.063821000	-0.025024000
6	-2.240415000	1.510257000	0.203126000	6	-2.603524000	-0.664288000	0.177523000
6	2.519983000	0.395362000	-0.425806000	6	1.450122000	1.954072000	-0.392722000
6	-0.512736000	3.410954000	0.137025000	6	-2.822763000	1.917107000	0.181806000
6	1.855305000	2.865180000	-0.077453000	6	-0.771481000	3.244244000	0.013786000
1	-1.302945000	4.165776000	0.207571000	1	-3.916751000	1.879626000	0.221947000
1	2.894218000	3.198740000	-0.174208000	1	-0.293693000	4.225649000	-0.079144000
6	0.828960000	3.816123000	0.056488000	6	-2.171300000	3.163073000	0.137995000
1	1.075026000	4.880986000	0.079158000	1	-2.763772000	4.081197000	0.165999000
1	2.534764000	0.227408000	-1.515272000	1	1.533783000	1.927187000	-1.491535000
1	3.552750000	0.617689000	-0.092903000	1	2.077737000	2.784142000	-0.016232000
1	-2.993127000	2.191585000	-0.222538000	1	-3.591551000	-0.750569000	-0.308574000
8	0.468505000	-1.184503000	-2.312894000	8	0.799120000	-0.527558000	-2.379190000
1	-0.236496000	-0.865474000	-2.903828000	1	-0.039723000	-0.692266000	-2.846006000
1	-0.002367000	-2.184358000	-1.585160000	1	1.171014000	-1.609622000	-1.781996000
6	2.774775000	-2.037098000	-0.481844000	6	3.245864000	0.312366000	-0.713081000
1	3.870942000	-1.915814000	-0.378086000	1	3.984185000	1.133944000	-0.633090000
1	2.497236000	-2.051811000	-1.543552000	1	2.947459000	0.172768000	-1.759762000
6	2.403976000	-0.911798000	1.634270000	6	2.429547000	0.785667000	1.522313000

1	1.932323000	-0.046372000	2.117476000	1	1.552997000	1.087872000	2.109232000
1	2.031654000	-1.834510000	2.098591000	1	2.810178000	-0.170740000	1.902564000
6	-3.690562000	-0.945120000	0.017482000	6	-2.002728000	-2.921286000	-0.471024000
1	-4.609286000	-0.376790000	-0.188175000	1	-3.021871000	-3.081195000	-0.864862000
1	-3.526838000	-1.048201000	1.098324000	1	-1.945248000	-3.260211000	0.577767000
1	-3.758588000	-1.939609000	-0.442782000	1	-1.271284000	-3.469056000	-1.077072000
1	2.468756000	-2.981659000	-0.011878000	1	3.689005000	-0.617911000	-0.333350000
1	3.501926000	-0.852927000	1.767380000	1	3.218034000	1.557282000	1.610961000
1	-2.534347000	1.238929000	1.231509000	1	-2.669881000	-1.077940000	1.202990000
SCS-TS				OCS-TS			
E(RB-P86) = -1469.91868836				E(RB-P86) = -1146.88364267			
16	-2.218947000	0.668224000	-0.662547000	8	-1.523340000	-1.778479000	-0.239266000
8	-1.162578000	-1.094207000	2.661426000	8	1.056788000	-1.016227000	2.755552000
6	-0.873861000	-1.003194000	1.525792000	6	0.824231000	-0.938907000	1.606396000
44	-0.469141000	-0.871293000	-0.258024000	44	0.479288000	-0.823308000	-0.195068000
16	1.733228000	-1.856960000	-0.112986000	16	2.078898000	0.784415000	-0.646380000
1	-1.288748000	-2.402417000	-0.921875000	1	1.397458000	-2.332632000	-0.859663000
6	0.568445000	0.887190000	-0.007877000	6	-0.719445000	0.781050000	0.075985000
6	-0.101363000	2.102548000	0.273207000	6	-2.106764000	0.540356000	0.153082000
6	1.962295000	0.921616000	-0.249867000	6	-0.245361000	2.110350000	0.042241000
6	-1.596662000	2.039088000	0.455961000	6	-2.543265000	-0.890324000	0.333163000
6	2.630082000	-0.344385000	-0.728047000	6	1.247983000	2.313965000	0.076569000
6	0.608733000	3.312879000	0.348832000	6	-3.015965000	1.609746000	0.135095000
6	2.673946000	2.128864000	-0.135792000	6	-1.157875000	3.179621000	0.022826000
1	0.083372000	4.251356000	0.554378000	1	-4.094751000	1.425454000	0.179482000
1	3.755338000	2.148335000	-0.308929000	1	-0.799141000	4.213185000	-0.021089000
6	1.999410000	3.319937000	0.169719000	6	-2.537641000	2.927385000	0.066272000
1	2.555687000	4.257518000	0.248799000	1	-3.243500000	3.761443000	0.042962000
1	2.537301000	-0.448707000	-1.821234000	1	1.590234000	3.185972000	-0.502057000
1	3.693395000	-0.427503000	-0.451480000	1	1.616103000	2.407200000	1.112807000
1	-2.111186000	2.977131000	0.196936000	1	-3.504755000	-1.117506000	-0.161832000
8	-0.083330000	-1.155954000	-2.440419000	8	0.351327000	-0.974808000	-2.407097000
1	-0.651421000	-0.546879000	-2.945422000	1	-0.571508000	-1.236495000	-2.581999000
1	-0.868102000	-2.009628000	-1.728572000	1	0.993925000	-1.941577000	-1.653040000
6	2.242110000	-1.809731000	1.647740000	6	3.560931000	0.702634000	0.431401000
1	2.057251000	-0.810327000	2.062233000	1	3.273505000	0.634719000	1.488855000
1	3.306525000	-2.076010000	1.716357000	1	4.183215000	1.591289000	0.249798000
6	-3.799921000	0.245837000	0.166468000	6	-1.718476000	-3.155841000	0.144164000
1	-4.488655000	1.100101000	0.094421000	1	-2.731426000	-3.480798000	-0.149954000
1	-3.622926000	-0.028687000	1.214726000	1	-1.583690000	-3.276485000	1.233154000
1	-4.217443000	-0.612969000	-0.375364000	1	-0.964153000	-3.742561000	-0.393453000
1	1.638972000	-2.554788000	2.182292000	1	4.111672000	-0.199751000	0.134975000
1	-1.877660000	1.737543000	1.479427000	1	-2.632547000	-1.140655000	1.409448000
PCS-TS				OCO-TS			
E(RB-P86) = -1453.02572133				E(RB-P86) = -823.842874246			
15	-2.127109000	-0.416989000	-0.367017000	8	-0.624080000	1.991139000	-0.658330000
8	-0.631924000	-1.160810000	2.983264000	8	-1.503140000	0.541582000	2.816506000
6	-0.352638000	-1.056872000	1.849035000	6	-1.279965000	0.306006000	1.687237000
44	0.074150000	-0.938690000	0.068445000	44	-0.960311000	-0.075775000	-0.073459000
16	2.464160000	-0.727320000	0.541059000	8	-0.423179000	-2.142304000	0.346097000
1	0.074104000	-2.730125000	-0.376372000	1	-2.714215000	-0.283736000	-0.761363000
6	0.187212000	1.137973000	0.106784000	6	1.006577000	0.068557000	0.109121000
6	-0.960839000	1.961075000	0.240440000	6	1.611822000	1.331000000	0.000205000
6	1.444141000	1.763933000	-0.083119000	6	1.774688000	-1.104571000	0.138739000
6	-2.300809000	1.269570000	0.412918000	6	0.646529000	2.484325000	-0.065298000
6	2.650383000	0.899674000	-0.354394000	6	1.004293000	-2.398995000	0.055807000
6	-0.848009000	3.361084000	0.199259000	6	3.011134000	1.429830000	-0.039088000
6	1.552619000	3.166053000	-0.090227000	6	3.176017000	-1.007274000	0.133765000
1	-1.741395000	3.987168000	0.295563000	1	3.508173000	2.401086000	-0.133728000
1	2.531559000	3.639252000	-0.221251000	1	3.803361000	-1.904421000	0.170117000
6	0.409017000	3.963299000	0.049324000	6	3.784238000	0.258305000	0.053874000
1	0.496686000	5.052949000	0.037522000	1	4.874634000	0.330622000	0.042975000
1	2.699399000	0.627048000	-1.421421000	1	1.060287000	-2.812266000	-0.968544000
1	3.597957000	1.370960000	-0.050633000	1	1.347390000	-3.166956000	0.772571000
1	-3.143474000	1.842146000	-0.010489000	1	0.997602000	3.321426000	-0.693775000

8	0.751210000	-1.313571000	-2.059238000	8	-1.014163000	-0.756685000	-2.206685000
1	0.043215000	-1.132781000	-2.700378000	1	-0.779084000	-0.009772000	-2.785733000
1	0.349358000	-2.291375000	-1.237603000	1	-2.122898000	-0.488805000	-1.568335000
6	3.429300000	-1.803034000	-0.588009000	6	-1.269263000	-3.205942000	-0.150890000
1	4.471626000	-1.453983000	-0.618912000	1	-2.278146000	-2.997494000	0.224539000
1	2.962833000	-1.790574000	-1.582676000	1	-0.907638000	-4.169619000	0.247293000
6	-2.581034000	-0.136375000	-2.138530000	6	-1.683560000	2.968671000	-0.553214000
6	-3.543066000	-1.411119000	0.276070000	1	-1.373086000	3.897774000	-1.061606000
1	-4.504646000	-0.903795000	0.096541000	1	-1.917881000	3.172350000	0.505415000
1	-3.410355000	-1.572968000	1.355581000	1	-2.557967000	2.533649000	-1.050916000
1	-3.550765000	-2.392992000	-0.220096000	1	-1.265508000	-3.207152000	-1.252853000
1	-1.879856000	0.590113000	-2.575460000	1	0.400087000	2.868099000	0.943865000
1	-3.606353000	0.257768000	-2.223383000				
1	-2.516936000	-1.081374000	-2.699103000				
1	3.393634000	-2.815126000	-0.163078000				
1	-2.521056000	1.095499000	1.482855000				

### Hydrogen eliminated products

<b>PNN-P</b>				<b>NNN-P</b>			
E(RB-P86) = -1165.52522591				E(RB-P86) = -878.834011233			
15	-2.266867000	0.046208000	-0.194816000	7	-2.241901000	-0.281716000	-0.236573000
8	-0.467516000	-1.136076000	2.922793000	8	-0.335361000	-1.213733000	2.910973000
6	-0.333364000	-1.047586000	1.762139000	6	-0.270594000	-1.093833000	1.745328000
44	-0.139611000	-0.903575000	-0.091246000	44	-0.123943000	-0.906932000	-0.106018000
7	2.141843000	-1.120411000	-0.073578000	7	2.104439000	-0.786821000	-0.075518000
1	-0.234079000	-2.645616000	-0.254886000	1	0.082509000	-2.650549000	-0.287008000
7	0.438432000	1.073591000	-0.033377000	7	0.127285000	1.081395000	-0.040290000
6	-0.513229000	2.083669000	0.146829000	6	-1.032726000	1.842702000	0.126522000
6	1.761428000	1.349411000	-0.188998000	6	1.367759000	1.613160000	-0.155024000
6	-1.867787000	1.737365000	0.143026000	6	-2.228236000	1.160564000	0.098418000
6	2.584614000	0.179795000	-0.671937000	6	2.392019000	0.600165000	-0.610315000
6	-0.003011000	3.421448000	0.310455000	6	-0.824793000	3.264211000	0.308542000
6	2.269827000	2.632406000	-0.044527000	6	1.590417000	2.971538000	0.006656000
1	-0.718145000	4.227023000	0.489823000	1	-1.692725000	3.904989000	0.478737000
1	3.337164000	2.822361000	-0.164018000	1	2.591299000	3.394017000	-0.085335000
6	1.348069000	3.679366000	0.230670000	6	0.445259000	3.792009000	0.260681000
1	1.713569000	4.701830000	0.362415000	1	0.582441000	4.867769000	0.403577000
1	2.413954000	0.080692000	-1.756418000	1	2.323375000	0.517003000	-1.706569000
1	3.664661000	0.339415000	-0.492011000	1	3.422653000	0.896177000	-0.342766000
1	-2.637556000	2.501419000	0.268596000	1	-3.203810000	1.641597000	0.192018000
8	0.139139000	-0.864091000	-2.157711000	8	0.137514000	-0.803837000	-2.170244000
1	0.017398000	0.042551000	-2.488445000	1	0.055493000	0.123507000	-2.454642000
1	-1.041586000	-2.354523000	-0.414344000	1	-0.757083000	-2.521250000	-0.424072000
6	2.594918000	-2.233113000	-0.946851000	6	2.731957000	-1.786691000	-0.984002000
1	3.690678000	-2.188802000	-1.105397000	1	3.807818000	-1.564247000	-1.120414000
1	2.061465000	-2.145535000	-1.904735000	1	2.194045000	-1.745889000	-1.942443000
6	2.712163000	-1.264897000	1.288285000	6	2.687841000	-0.906911000	1.288088000
1	2.415910000	-0.405430000	1.904846000	1	2.282325000	-0.115737000	1.932433000
1	2.330057000	-2.184292000	1.752063000	1	2.429162000	-1.884862000	1.714346000
6	-3.154696000	-0.121619000	-1.812109000	6	-2.801924000	-0.487775000	-1.614363000
6	-3.565377000	-0.510195000	0.997620000	6	-3.141436000	-0.998078000	0.718814000
1	-4.445614000	0.148366000	0.920425000	1	-4.170584000	-0.604533000	0.622019000
1	-3.169366000	-0.460043000	2.020764000	1	-2.791459000	-0.833875000	1.743799000
1	-3.873195000	-1.544074000	0.776995000	1	-3.147016000	-2.074785000	0.491684000
1	-2.453851000	0.100583000	-2.627295000	1	-2.141809000	-0.019649000	-2.349955000
1	-4.006061000	0.576836000	-1.847694000	1	-3.812017000	-0.042458000	-1.662334000
1	-3.519829000	-1.152725000	-1.939563000	1	-2.858953000	-1.563843000	-1.835944000
1	2.345987000	-3.190188000	-0.465970000	1	2.629394000	-2.785881000	-0.536836000
1	3.818071000	-1.312882000	1.242344000	1	3.789175000	-0.808289000	1.239272000
<b>PNP-P</b>				<b>SNS-P</b>			
E(RB-P86) = -1452.18874098				E(RB-P86) = -1485.97892114			
15	-2.385110000	-0.457610000	-0.218775000	16	-2.012931000	-1.535171000	-0.005217000
8	-0.290273000	-1.004129000	3.012890000	8	-0.002143000	-0.859649000	3.211481000
6	-0.212535000	-0.970301000	1.846079000	6	0.116214000	-0.882816000	2.051673000
44	-0.055584000	-0.900189000	-0.016926000	44	0.323092000	-0.907802000	0.181069000

15	2.303413000	-0.712146000	-0.062419000	16	2.459866000	0.206107000	0.335162000
1	0.270203000	-2.601385000	-0.116704000	1	1.307998000	-2.365541000	0.272904000
7	0.048006000	1.214510000	-0.063687000	7	-0.402762000	1.009219000	-0.081862000
6	-1.148296000	1.943219000	0.071424000	6	-1.790435000	1.203193000	-0.022424000
6	1.242754000	1.872003000	-0.202513000	6	0.448358000	2.072507000	-0.210309000
6	-2.381033000	1.284578000	0.046487000	6	-2.643181000	0.109218000	0.001488000
6	2.441367000	1.051301000	-0.624524000	6	1.881746000	1.748054000	-0.533754000
6	-1.041337000	3.372216000	0.227199000	6	-2.264332000	2.566863000	0.029550000
6	1.354795000	3.250121000	-0.067299000	6	0.010035000	3.386617000	-0.166532000
1	-1.962878000	3.937060000	0.382620000	1	-3.340202000	2.732106000	0.116070000
1	2.326757000	3.731119000	-0.183643000	1	0.720381000	4.207566000	-0.268786000
6	0.177962000	4.004093000	0.176443000	6	-1.387621000	3.621989000	-0.027718000
1	0.240111000	5.088838000	0.302384000	1	-1.763029000	4.647842000	0.019471000
1	2.446568000	0.988175000	-1.727310000	1	1.973874000	1.510879000	-1.606008000
1	3.385363000	1.520604000	-0.305019000	1	2.556867000	2.577220000	-0.279196000
1	-3.304637000	1.863324000	0.119351000	1	-3.721029000	0.217320000	0.116058000
8	0.258736000	-0.882932000	-2.106448000	8	0.628890000	-0.972473000	-1.884660000
1	-0.093094000	-0.041840000	-2.446220000	1	0.159673000	-0.208085000	-2.264368000
1	-0.603111000	-2.526137000	-0.238441000	1	0.513261000	-2.654555000	0.126324000
6	3.213314000	-1.680394000	-1.331085000	6	3.509574000	-0.496597000	-0.997044000
1	4.198175000	-1.240223000	-1.553598000	1	4.280247000	0.237197000	-1.272568000
1	2.572965000	-1.678474000	-2.226981000	1	3.990120000	-1.391921000	-0.579374000
6	3.330406000	-0.817319000	1.468354000	6	-2.246827000	-2.171163000	-1.741247000
1	2.916652000	-0.138043000	2.228033000	1	-1.409906000	-1.823957000	-2.363173000
1	3.294815000	-1.842047000	1.867379000	1	-3.219906000	-1.806709000	-2.095532000
6	-3.177224000	-0.888739000	-1.837855000	1	-2.251744000	-3.269355000	-1.678003000
6	-3.548589000	-1.242115000	0.987693000	1	2.840562000	-0.756441000	-1.833626000
1	-4.555322000	-0.807862000	0.875987000				
1	-3.191291000	-1.056267000	2.009749000				
1	-3.607755000	-2.328233000	0.816227000				
1	-2.506612000	-0.581839000	-2.651766000				
1	-4.146017000	-0.373703000	-1.936916000				
1	-3.331370000	-1.977048000	-1.907719000				
1	3.349930000	-2.714193000	-0.979577000				
1	4.378460000	-0.544243000	1.266697000				
SNN-P				ONP-P			
E(RB-P86) = -1182.41337214				E(RB-P86) = -1146.04218271			
16	-2.329339000	-0.959894000	0.215375000	8	-1.927571000	-1.548291000	-0.531133000
8	0.145381000	-1.071119000	3.072275000	8	0.415235000	-1.758149000	2.675470000
6	0.125826000	-1.025679000	1.903745000	6	0.343222000	-1.459161000	1.545435000
44	0.077527000	-0.964094000	0.030376000	44	0.221940000	-0.936160000	-0.255463000
7	2.203353000	-0.346245000	-0.214722000	15	2.078763000	0.379308000	-0.121910000
1	0.676349000	-2.620073000	-0.036407000	1	1.377601000	-2.139420000	-0.826054000
7	-0.158631000	1.055868000	-0.068022000	7	-0.743019000	0.834048000	0.163861000
6	-1.406769000	1.626708000	0.195137000	6	-2.139175000	0.798266000	-0.025543000
6	0.937631000	1.807767000	-0.360248000	6	-0.098546000	2.000926000	0.465372000
6	-2.505581000	0.793652000	0.354651000	6	-2.746236000	-0.398192000	-0.311068000
6	2.096412000	0.998065000	-0.887503000	6	1.382147000	1.873162000	0.748582000
6	-1.442491000	3.067228000	0.290498000	6	-2.851740000	2.058269000	0.073017000
6	0.920030000	3.191418000	-0.294561000	6	-0.764085000	3.211039000	0.561791000
1	-2.392193000	3.545865000	0.538274000	1	-3.931293000	2.054465000	-0.093292000
1	1.812111000	3.772433000	-0.531036000	1	-0.218795000	4.122118000	0.808969000
6	-0.311157000	3.816495000	0.061435000	6	-2.180717000	3.218014000	0.354800000
1	-0.360296000	4.906321000	0.137835000	1	-2.730789000	4.160868000	0.421169000
1	1.906972000	0.784341000	-1.951618000	1	1.930779000	2.792628000	0.490464000
1	3.054966000	1.541410000	-0.799649000	1	1.534476000	1.684773000	1.827572000
1	-3.488506000	1.163603000	0.643082000	1	-3.801587000	-0.535874000	-0.540258000
8	0.082260000	-0.985314000	-2.053386000	8	0.121916000	-0.404560000	-2.250663000
1	-0.276217000	-0.135698000	-2.365560000	1	-0.717715000	0.073589000	-2.376825000
1	-0.175055000	-2.695443000	-0.132354000	1	0.635231000	-2.559141000	-0.837756000
6	2.948033000	-1.272528000	-1.112044000	6	2.773297000	0.937754000	-1.725349000
1	3.924769000	-0.835105000	-1.394756000	1	3.353514000	0.115566000	-2.170223000
1	2.323207000	-1.447580000	-2.000032000	1	3.421259000	1.817671000	-1.589526000
6	2.927190000	-0.193196000	1.075617000	6	3.543012000	-0.108542000	0.882256000
1	2.412089000	0.548426000	1.700420000	1	3.218008000	-0.422532000	1.884418000
1	2.945603000	-1.155913000	1.602761000	1	4.052586000	-0.954869000	0.397901000

6	-3.007520000	-1.400545000	-1.460850000	6	-2.455050000	-2.736460000	0.105428000
1	-2.279403000	-1.134714000	-2.236834000	1	-3.484429000	-2.902834000	-0.253084000
1	-3.961364000	-0.868813000	-1.576403000	1	-2.453904000	-2.625014000	1.202142000
1	-3.177044000	-2.487479000	-1.457863000	1	-1.817999000	-3.576388000	-0.201764000
1	3.123159000	-2.219099000	-0.581065000	1	1.922889000	1.144191000	-2.390735000
1	3.965306000	0.143734000	0.891487000	1	4.251097000	0.730822000	0.971167000
ONS-P E(RB-P86) = -1162.93443336				ONN-P E(RB-P86) = -859.363167301			
8	-0.984839000	-2.135880000	-0.217455000	8	-1.620990000	-1.571657000	-0.644007000
8	0.247243000	-1.002174000	3.132648000	8	0.089637000	-1.578014000	2.744744000
6	0.413842000	-0.891294000	1.983457000	6	0.217246000	-1.286652000	1.616633000
44	0.679262000	-0.718344000	0.126680000	44	0.414171000	-0.856926000	-0.197531000
16	1.958758000	1.233670000	0.405445000	7	2.037461000	0.566566000	0.070584000
1	2.261759000	-1.527656000	0.218785000	1	1.695017000	-2.091854000	-0.320569000
7	-0.861501000	0.577785000	-0.134641000	7	-0.652911000	0.828906000	-0.062859000
6	-2.136064000	-0.018585000	-0.131774000	6	-2.044081000	0.703514000	-0.015527000
6	-0.698713000	1.931831000	-0.142064000	6	-0.006170000	2.018913000	-0.061490000
6	-2.206697000	-1.384125000	-0.215042000	6	-2.555112000	-0.560205000	-0.188065000
6	0.711488000	2.400457000	-0.376900000	6	1.446639000	1.872220000	-0.438870000
6	-3.272732000	0.876397000	-0.019937000	6	-2.777618000	1.933814000	0.201127000
6	-1.771129000	2.801993000	-0.056755000	6	-0.683660000	3.210311000	0.135515000
1	-4.272977000	0.442169000	0.041410000	1	-3.865694000	1.891035000	0.284301000
1	-1.616930000	3.880737000	-0.087289000	1	-0.157706000	4.165157000	0.140057000
6	-3.085462000	2.233318000	0.020305000	6	-2.107442000	3.131375000	0.286870000
1	-3.950842000	2.895730000	0.109242000	1	-2.677018000	4.050349000	0.451654000
1	0.943789000	2.370140000	-1.453672000	1	1.495620000	1.799817000	-1.536860000
1	0.889900000	3.412301000	0.013467000	1	2.067597000	2.716172000	-0.089606000
1	-3.110171000	-1.989632000	-0.183607000	1	-3.601655000	-0.829994000	-0.308687000
8	0.996620000	-0.605750000	-1.920347000	8	0.731016000	-0.441741000	-2.203253000
1	0.225850000	-0.145672000	-2.299461000	1	-0.119843000	-0.218672000	-2.619229000
1	1.721791000	-2.163801000	0.075885000	1	1.017506000	-2.467566000	-0.662087000
6	3.226533000	1.237451000	-0.925423000	6	3.223947000	0.231130000	-0.768167000
1	3.529400000	2.275546000	-1.122818000	1	3.935428000	1.078176000	-0.776824000
1	4.086045000	0.671374000	-0.541037000	1	2.864213000	0.011165000	-1.783149000
6	-0.882165000	-3.057623000	-1.344101000	6	2.451903000	0.740791000	1.490295000
1	-1.837729000	-3.596870000	-1.432350000	1	1.589702000	1.070239000	2.084365000
1	-0.073515000	-3.760739000	-1.102004000	1	2.820471000	-0.214922000	1.884648000
1	-0.641533000	-2.506022000	-2.263711000	6	-2.027631000	-2.902662000	-0.255229000
1	2.782415000	0.737863000	-1.800779000	1	-3.039919000	-3.092766000	-0.649445000
ONO-P E(RB-P86) = -839.892394869				PNS-P E(RB-P86) = -1469.08953697			
8	0.765301000	-1.936142000	-0.752671000	15	-2.238101000	-0.062715000	-0.348573000
8	1.352505000	-0.620339000	2.829834000	8	-0.649609000	-0.780967000	3.074664000
6	1.214931000	-0.365010000	1.697311000	6	-0.444585000	-0.833949000	1.925556000
44	0.982301000	0.104766000	-0.109293000	44	-0.104666000	-0.912139000	0.083396000
8	0.360934000	2.148310000	0.396427000	16	2.341988000	-1.203295000	0.484423000
1	2.682233000	0.681753000	-0.119808000	1	-0.144477000	-2.661974000	0.103019000
7	-0.997701000	-0.100195000	-0.029267000	7	0.419780000	1.106981000	-0.039974000
6	-1.492191000	-1.401818000	-0.136599000	6	-0.599225000	2.071837000	-0.052285000
6	-1.781562000	0.992429000	0.111177000	6	1.733525000	1.478939000	-0.075856000
6	-0.565212000	-2.388221000	-0.377785000	6	-1.931625000	1.663852000	-0.161052000
6	-1.037396000	2.291313000	-0.056223000	6	2.738763000	0.398591000	-0.369506000
6	-2.923947000	-1.546538000	0.016043000	6	-0.198738000	3.452542000	0.044329000
6	-3.152817000	0.881605000	0.275289000	6	2.134882000	2.805046000	0.019062000
1	-3.363878000	-2.543781000	-0.047466000	1	-0.983585000	4.211210000	0.073130000
1	-3.778212000	1.764076000	0.410359000	1	3.195022000	3.059813000	0.001554000
6	-3.708775000	-0.437270000	0.229859000	6	1.129706000	3.804799000	0.096475000
1	-4.788284000	-0.563269000	0.350483000	1	1.414191000	4.857442000	0.179916000
1	-1.001909000	2.541612000	-1.131080000	1	2.684894000	0.147425000	-1.441688000
1	-1.489346000	3.115362000	0.520217000	1	3.758663000	0.711209000	-0.104968000
1	-0.755373000	-3.434949000	-0.599408000	1	-2.733849000	2.403876000	-0.190597000

8	0.785870000	0.826569000	-2.031611000	8	0.369411000	-1.098483000	-1.946706000
1	0.144143000	0.291947000	-2.530687000	1	0.258390000	-0.234428000	-2.379403000
1	2.704164000	-0.021226000	-0.580884000	1	-0.949627000	-2.417876000	-0.125256000
6	1.177849000	3.215347000	-0.158240000	6	2.912258000	-2.357032000	-0.822276000
1	1.278831000	3.064081000	-1.244652000	1	3.977038000	-2.179721000	-1.029382000
1	0.704522000	4.183662000	0.074652000	1	2.273352000	-2.186680000	-1.704753000
6	1.780880000	-2.913812000	-0.418879000	6	-2.945282000	-0.454179000	-2.014554000
1	1.520648000	-3.864679000	-0.911814000	6	-3.623695000	-0.556779000	0.770798000
1	1.837376000	-3.052218000	0.672488000	1	-4.520323000	0.039974000	0.537281000
1	2.729225000	-2.535870000	-0.820825000	1	-3.333660000	-0.373540000	1.814138000
1	2.151095000	3.149820000	0.344631000	1	-3.862429000	-1.623815000	0.641553000
				1	-2.173161000	-0.289319000	-2.777171000
				1	-3.815061000	0.192026000	-2.214128000
				1	-3.255060000	-1.510028000	-2.057145000
				1	2.781892000	-3.373310000	-0.425706000
PCP-P				NCN-P			
E(RB-P86) = -1436.14497663				E(RB-P86) = -1149.47680453			
15	-2.281782000	-0.637693000	-0.276537000	7	-2.184704000	-0.995620000	-0.308093000
8	-0.195258000	-1.224395000	2.973730000	8	0.005770000	-1.358005000	2.913976000
6	-0.112464000	-1.137075000	1.806214000	6	0.019533000	-1.214850000	1.747058000
44	0.042706000	-0.948420000	-0.042586000	44	0.098427000	-0.933067000	-0.092456000
15	2.357044000	-0.495380000	-0.073302000	15	2.242870000	-0.098007000	-0.074777000
1	0.550087000	-2.697671000	-0.321467000	1	0.905021000	-2.564073000	-0.456328000
6	-0.061679000	1.139356000	0.079698000	6	-0.375236000	1.041120000	0.091811000
6	-1.285605000	1.800078000	0.380467000	6	-1.734058000	1.350215000	0.326392000
6	1.078211000	1.946259000	-0.184960000	6	0.553281000	2.091203000	-0.091500000
6	-2.519594000	0.958289000	0.646385000	6	-2.646972000	0.165509000	0.532845000
6	2.378450000	1.286960000	-0.603976000	6	1.989092000	1.727127000	-0.422847000
6	-1.356804000	3.203119000	0.426223000	6	-2.163068000	2.683878000	0.389195000
6	0.996057000	3.349211000	-0.111744000	6	0.118501000	3.427618000	-0.002879000
1	-2.310015000	3.691792000	0.653716000	1	-3.218633000	2.919228000	0.562582000
1	1.887544000	3.953950000	-0.309265000	1	0.835368000	4.245353000	-0.133591000
6	-0.214969000	3.979477000	0.194670000	6	-1.230462000	3.722653000	0.238118000
1	-0.270951000	5.070219000	0.245241000	1	-1.558269000	4.763891000	0.297533000
1	2.457552000	1.266490000	-1.705133000	1	2.188326000	1.870484000	-1.499885000
1	3.267142000	1.814232000	-0.216677000	1	2.726044000	2.337240000	0.127726000
1	-3.455569000	1.472735000	0.369855000	1	-3.706836000	0.397748000	0.305602000
8	0.370726000	-0.772308000	-2.132406000	8	0.322697000	-0.650451000	-2.166568000
1	0.095644000	0.118520000	-2.409081000	1	0.048804000	0.255982000	-2.390760000
1	-0.278938000	-2.720606000	-0.421238000	1	0.103256000	-2.753821000	-0.519262000
6	3.384965000	-1.378724000	-1.317319000	6	3.410641000	-0.677002000	-1.373849000
1	4.338410000	-0.858222000	-1.501150000	1	4.266028000	0.008678000	-1.483658000
1	2.780967000	-1.419655000	-2.236647000	1	2.831484000	-0.737774000	-2.307330000
6	3.360145000	-0.532878000	1.478925000	6	3.240396000	-0.130568000	1.479494000
1	2.879668000	0.109626000	2.231381000	1	2.667568000	0.346585000	2.287848000
1	3.393837000	-1.559111000	1.874077000	1	3.441112000	-1.172823000	1.768694000
6	-2.896375000	-0.295130000	-1.980807000	6	-2.594383000	-0.778215000	-1.720469000
6	-3.542608000	-1.796290000	0.418322000	6	-2.801735000	-2.250126000	0.186790000
1	-4.554228000	-1.361474000	0.375670000	1	-3.908092000	-2.180838000	0.167276000
1	-3.287846000	-2.026564000	1.463108000	1	-2.467577000	-2.446599000	1.214510000
1	-3.531627000	-2.734780000	-0.156212000	1	-2.490113000	-3.085036000	-0.456560000
1	-2.397019000	0.608129000	-2.359532000	1	-2.293844000	0.229419000	-2.033592000
1	-3.987009000	-0.140246000	-1.985411000	1	-3.694008000	-0.875875000	-1.812887000
1	-2.626678000	-1.131349000	-2.640974000	1	-2.080630000	-1.498953000	-2.368556000
1	3.592603000	-2.401858000	-0.969000000	1	3.781976000	-1.679791000	-1.113070000
1	4.388114000	-0.179188000	1.299948000	1	4.196664000	0.399996000	1.345720000
1	-2.589807000	0.689323000	1.716981000	1	-2.595450000	-0.168351000	1.584130000
PCN-P				OCP-P			
E(RB-P86) = -1149.47750543				E(RB-P86) = -1130.01461333			
15	-2.199161000	-0.202916000	-0.245988000	8	-2.050751000	-1.322309000	-0.590847000
8	-0.395290000	-1.227466000	2.909240000	8	-0.041215000	-1.471764000	2.822593000
6	-0.238376000	-1.136244000	1.747799000	6	0.037116000	-1.296392000	1.663868000
44	-0.028887000	-0.949634000	-0.095206000	44	0.182419000	-0.951467000	-0.167454000
7	2.261752000	-0.897617000	-0.067694000	15	2.120275000	0.221360000	-0.002673000

1	0.109694000	-2.806986000	-0.377795000	1	1.296152000	-2.419859000	-0.494207000
6	0.296546000	1.057056000	0.061478000	6	-0.652341000	0.897606000	0.021596000
6	-0.713337000	2.001001000	0.359861000	6	-2.059596000	0.966897000	0.116232000
6	1.612633000	1.501113000	-0.190524000	6	0.092448000	2.097347000	-0.044124000
6	-2.112106000	1.464673000	0.600705000	6	-2.810258000	-0.336821000	0.171011000
6	2.590860000	0.448891000	-0.656465000	6	1.589124000	1.997414000	-0.266752000
6	-0.394615000	3.369871000	0.418535000	6	-2.713194000	2.207486000	0.172172000
6	1.927622000	2.866303000	-0.104177000	6	-0.567457000	3.336926000	0.041621000
1	-1.173922000	4.105873000	0.642762000	1	-3.805725000	2.254313000	0.233653000
1	2.951136000	3.209968000	-0.288965000	1	0.009537000	4.266970000	0.003016000
6	0.923173000	3.798269000	0.201063000	6	-1.963270000	3.392551000	0.155737000
1	1.167095000	4.862125000	0.264226000	1	-2.468737000	4.360056000	0.212608000
1	2.491488000	0.328256000	-1.747032000	1	1.838943000	2.244349000	-1.313876000
1	3.644553000	0.707381000	-0.430510000	1	2.170077000	2.678313000	0.379200000
1	-2.907392000	2.145118000	0.251455000	1	-3.822229000	-0.258462000	-0.267406000
8	0.265275000	-0.844982000	-2.163429000	8	0.426846000	-0.589704000	-2.204889000
1	0.134522000	0.062829000	-2.485471000	1	-0.206261000	0.104079000	-2.460668000
1	-0.687765000	-2.647680000	-0.498370000	1	0.557176000	-2.746585000	-0.623845000
6	2.844766000	-1.956302000	-0.930291000	6	3.392923000	-0.104783000	-1.288033000
1	3.932033000	-1.794905000	-1.072569000	1	4.139337000	0.704651000	-1.326748000
1	2.319369000	-1.925854000	-1.896326000	1	2.850595000	-0.190376000	-2.241829000
6	2.822267000	-0.985197000	1.303699000	6	3.053525000	0.236649000	1.588254000
1	2.429674000	-0.158770000	1.911183000	1	2.386855000	0.568272000	2.397262000
1	2.525792000	-1.937700000	1.763572000	1	3.402597000	-0.779836000	1.822564000
6	-2.825318000	0.169306000	-1.940852000	6	-2.637810000	-2.632494000	-0.531796000
6	-3.617382000	-1.072547000	0.554865000	1	-3.681193000	-2.591162000	-0.891804000
1	-4.528878000	-0.453828000	0.530016000	1	-2.614770000	-3.032015000	0.498441000
1	-3.360477000	-1.304044000	1.598652000	1	-2.046460000	-3.272833000	-1.198124000
1	-3.810756000	-2.017976000	0.025982000	1	3.901060000	-1.056984000	-1.072759000
1	-2.183497000	0.936964000	-2.396077000	1	3.920556000	0.913582000	1.526119000
1	-3.863714000	0.535528000	-1.902737000	1	-2.904385000	-0.706418000	1.212931000
1	-2.761690000	-0.735296000	-2.561243000				
1	2.693259000	-2.935234000	-0.452025000				
1	3.928317000	-0.922771000	1.275480000				
1	-2.282941000	1.280376000	1.677871000				
SCN-P				OCN-P			
E(RB-P86) = -1166.36907936				E(RB-P86) = -843.330975915			
16	-2.277271000	-0.142943000	-0.814675000	8	-1.832382000	-1.313933000	-0.607679000
8	-0.945918000	-1.157599000	2.730467000	8	-0.012929000	-1.580929000	2.760046000
6	-0.603390000	-1.087895000	1.606884000	6	0.143756000	-1.315704000	1.624002000
44	-0.128352000	-0.929040000	-0.185457000	44	0.336191000	-0.893785000	-0.182501000
7	2.085949000	-0.913041000	0.125924000	7	2.116031000	0.352050000	0.046076000
1	0.043518000	-2.821200000	-0.410644000	1	1.533833000	-2.348194000	-0.472759000
6	0.182214000	1.056053000	0.000564000	6	-0.537625000	0.875051000	0.028913000
6	-0.861913000	1.993975000	0.131520000	6	-1.933115000	0.969368000	0.128789000
6	1.516755000	1.497423000	-0.088787000	6	0.262420000	2.024435000	-0.063464000
6	-2.265968000	1.449288000	0.182353000	6	-2.660877000	-0.348299000	0.135995000
6	2.523638000	0.426466000	-0.425430000	6	1.698113000	1.740585000	-0.430061000
6	-0.563395000	3.367386000	0.196958000	6	-2.536535000	2.236292000	0.198532000
6	1.813288000	2.864633000	0.013591000	6	-0.335217000	3.290108000	0.036475000
1	-1.368356000	4.104385000	0.285178000	1	-3.624827000	2.336040000	0.269807000
1	2.850063000	3.213197000	-0.042422000	1	0.268519000	4.202062000	-0.021622000
6	0.771579000	3.796185000	0.160645000	6	-1.731571000	3.388222000	0.180406000
1	1.001049000	4.862511000	0.231955000	1	-2.198977000	4.373528000	0.253090000
1	2.540390000	0.299296000	-1.519346000	1	1.774520000	1.705603000	-1.528157000
1	3.547845000	0.652911000	-0.070808000	1	2.421803000	2.483353000	-0.044539000
1	-3.020641000	2.133213000	-0.235775000	1	-3.648916000	-0.301628000	-0.356279000
8	0.455037000	-0.849528000	-2.184393000	8	0.612207000	-0.507502000	-2.200798000
1	0.046377000	-0.107828000	-2.661773000	1	-0.160673000	-0.031167000	-2.550085000
1	-0.721141000	-2.681145000	-0.640341000	1	0.815821000	-2.676116000	-0.664532000
6	2.759696000	-1.987848000	-0.651199000	6	3.232321000	-0.119840000	-0.822192000
1	3.857390000	-1.840949000	-0.644260000	1	4.046325000	0.630118000	-0.839472000
1	2.371247000	-1.951799000	-1.679131000	1	2.824252000	-0.279056000	-1.830512000
6	2.471833000	-1.002528000	1.558687000	6	2.584230000	0.452524000	1.456413000
1	2.025162000	-0.163762000	2.108488000	1	1.783082000	0.876925000	2.075004000
1	2.102087000	-1.946210000	1.981500000	1	2.837356000	-0.547470000	1.831347000



6	-3.673259000	-1.009152000	0.002777000	6	-2.382465000	-2.644116000	-0.568409000
1	-4.598294000	-0.436090000	-0.156701000	1	-3.420975000	-2.625085000	-0.943010000
1	-3.472561000	-1.139297000	1.074540000	1	-2.360192000	-3.049767000	0.458533000
1	-3.764076000	-1.990285000	-0.482176000	1	-1.762374000	-3.258828000	-1.232163000
1	2.530029000	-2.961186000	-0.193349000	1	3.624882000	-1.063688000	-0.417282000
1	3.573727000	-0.962352000	1.661325000	1	3.477317000	1.103979000	1.511030000
1	-2.561040000	1.165816000	1.207198000	1	-2.791154000	-0.741244000	1.164166000
SCS-P E(RB-P86) = -1469.93515226				OCS-P E(RB-P86) = -1146.90109483			
16	-2.267137000	0.574602000	-0.694991000	8	-2.245522000	0.497710000	-0.453275000
8	-1.053501000	-1.168139000	2.661965000	8	-0.901316000	-1.320822000	2.698754000
6	-0.815364000	-1.088232000	1.513572000	6	-0.752972000	-1.171720000	1.542366000
44	-0.434821000	-0.900432000	-0.302767000	44	-0.487941000	-0.890100000	-0.287425000
16	1.824317000	-1.778166000	-0.216794000	16	1.749364000	-1.610971000	-0.371735000
1	-0.869139000	-2.695319000	-0.743552000	1	-0.860215000	-2.693040000	-0.768563000
6	0.509175000	0.891469000	-0.011939000	6	0.330101000	0.924608000	0.006143000
6	-0.222804000	2.058854000	0.310605000	6	-0.536402000	1.995074000	0.302731000
6	1.905341000	1.003508000	-0.216421000	6	1.704587000	1.174982000	-0.192810000
6	-1.714519000	1.923790000	0.474596000	6	-1.995804000	1.648343000	0.422597000
6	2.653044000	-0.199343000	-0.731801000	6	2.551536000	0.043677000	-0.717139000
6	0.426464000	3.297334000	0.455398000	6	-0.033134000	3.295787000	0.458523000
6	2.553364000	2.236762000	-0.028161000	6	2.211035000	2.472762000	0.000948000
1	-0.151855000	4.197034000	0.689520000	1	-0.707062000	4.130538000	0.678198000
1	3.636520000	2.312021000	-0.171002000	1	3.279076000	2.673213000	-0.134504000
6	1.817083000	3.381012000	0.309715000	6	1.345746000	3.525765000	0.334843000
1	2.325157000	4.339607000	0.442144000	1	1.744589000	4.533705000	0.474263000
1	2.592091000	-0.255466000	-1.829380000	1	2.603136000	0.064690000	-1.816722000
1	3.709660000	-0.239713000	-0.421804000	1	3.576974000	0.013294000	-0.314606000
1	-2.264005000	2.849112000	0.242859000	1	-2.658594000	2.472615000	0.103292000
8	0.056213000	-0.789528000	-2.326414000	8	-0.178110000	-0.658692000	-2.321444000
1	-0.021552000	0.125872000	-2.646722000	1	-0.170798000	0.293210000	-2.525487000
1	-1.580671000	-2.314593000	-0.833161000	1	-1.595933000	-2.357332000	-0.805577000
6	2.346101000	-1.826623000	1.541812000	6	2.360350000	-1.859548000	1.342842000
1	2.129394000	-0.864771000	2.024164000	1	2.145071000	-0.975733000	1.956873000
1	3.420045000	-2.057207000	1.589118000	1	3.441230000	-2.058346000	1.302946000
6	-3.815980000	0.049437000	0.136354000	6	-3.599033000	0.016627000	-0.354859000
1	-4.539709000	0.877025000	0.108631000	1	-4.299806000	0.841592000	-0.571559000
1	-3.614651000	-0.259913000	1.170766000	1	-3.799348000	-0.393802000	0.650735000
1	-4.212034000	-0.799230000	-0.437099000	1	-3.708301000	-0.767311000	-1.114180000
1	1.774451000	-2.624784000	2.032734000	1	1.838374000	-2.733165000	1.753642000
1	-1.989592000	1.579899000	1.486318000	1	-2.265278000	1.352074000	1.456291000
PCS-P E(RB-P86) = -1453.04448153				OCO-P E(RB-P86) = -823.861760477			
15	-2.147795000	-0.335144000	-0.395505000	8	0.689117000	-1.961256000	-0.706287000
8	-0.598974000	-0.991914000	3.048464000	8	1.359231000	-0.526614000	2.865148000
6	-0.354038000	-0.996430000	1.902197000	6	1.230528000	-0.290528000	1.722529000
44	0.025497000	-0.962043000	0.072169000	44	0.984915000	0.116808000	-0.087380000
16	2.468543000	-0.910139000	0.474316000	8	0.373147000	2.181227000	0.344550000
1	0.255204000	-2.815908000	-0.050167000	1	2.786257000	0.748318000	-0.267575000
6	0.250092000	1.092489000	0.085028000	6	-0.974161000	-0.090893000	0.048397000
6	-0.856009000	1.972413000	0.216127000	6	-1.538873000	-1.372966000	-0.012949000
6	1.542315000	1.656696000	-0.059663000	6	-1.776782000	1.056793000	0.100494000
6	-2.236713000	1.361789000	0.365250000	6	-0.541355000	-2.496393000	-0.084612000
6	2.717987000	0.751971000	-0.329295000	6	-1.048493000	2.367770000	-0.025606000
6	-0.668193000	3.365543000	0.211221000	6	-2.935384000	-1.516194000	0.010053000
6	1.721767000	3.051355000	-0.025951000	6	-3.172490000	0.913765000	0.159782000
1	-1.531406000	4.032705000	0.304885000	1	-3.400588000	-2.505834000	-0.045574000
1	2.728070000	3.473226000	-0.118085000	1	-3.823641000	1.792326000	0.217439000
6	0.619722000	3.905501000	0.104733000	6	-3.742927000	-0.370848000	0.118107000
1	0.764450000	4.988872000	0.122234000	1	-4.829701000	-0.479044000	0.155124000
1	2.789395000	0.526013000	-1.405651000	1	-1.067404000	2.706138000	-1.077070000
1	3.673005000	1.174459000	0.019267000	1	-1.447003000	3.165403000	0.626487000
1	-3.033692000	1.979480000	-0.082437000	1	-0.879436000	-3.348511000	-0.700307000
8	0.538924000	-1.007390000	-1.965356000	8	0.787122000	0.738073000	-2.044502000
1	0.418593000	-0.126417000	-2.358358000	1	0.045978000	0.279605000	-2.476765000
1	-0.539589000	-2.705754000	-0.239330000	1	2.846473000	-0.018818000	-0.518159000

6	3.205260000	-1.966687000	-0.830897000	6	1.190530000	3.218673000	-0.256254000
1	4.244924000	-1.657572000	-1.010064000	1	2.178128000	3.148321000	0.217796000
1	2.569509000	-1.860250000	-1.725841000	1	0.743149000	4.202229000	-0.033383000
6	-2.569091000	-0.084430000	-2.172442000	6	1.766516000	-2.919635000	-0.684702000
6	-3.601887000	-1.254738000	0.272838000	1	1.424873000	-3.860402000	-1.149613000
1	-4.537206000	-0.698249000	0.100523000	1	2.102843000	-3.106005000	0.349959000
1	-3.466309000	-1.417625000	1.351785000	1	2.580832000	-2.487803000	-1.278681000
1	-3.672316000	-2.235387000	-0.221396000	1	1.258800000	3.040356000	-1.341632000
1	-1.924967000	0.707628000	-2.580325000	1	-0.267432000	-2.864523000	0.923947000
1	-3.625210000	0.207375000	-2.287006000				
1	-2.364036000	-1.008277000	-2.730695000				
1	3.191587000	-2.998434000	-0.453200000				
1	-2.488484000	1.215004000	1.432194000				

### Non Pincer Complexes

PNN-non				NNN-non			
E(RB-P86) = -1091.43716500				E(RB-P86) = -804.780715001			
15	0.509446000	2.222290000	0.213539000	8	-3.879817000	-0.900279000	-0.141960000
8	3.924801000	0.497144000	-0.248956000	6	-2.748648000	-0.571363000	-0.077217000
6	2.777067000	0.264395000	-0.140819000	44	-0.952835000	-0.156767000	0.037578000
44	0.950354000	-0.013631000	0.034194000	7	-1.254545000	2.042054000	-0.021280000
7	1.098951000	-2.304779000	-0.039459000	1	-1.166002000	-0.170046000	1.581017000
1	1.207692000	0.027102000	1.570851000	7	1.167089000	0.144281000	0.087774000
7	-1.176931000	-0.229827000	0.126559000	6	1.874294000	0.098342000	-1.105209000
6	-1.888918000	-0.215434000	-1.062684000	6	1.960420000	0.157818000	1.227230000
6	-1.956078000	-0.137533000	1.269928000	6	-0.415783000	2.723121000	1.007128000
6	-3.254314000	-0.158236000	-1.156036000	6	3.240250000	0.081492000	-1.207391000
6	-3.324013000	-0.079063000	1.268685000	6	3.329946000	0.144504000	1.217299000
1	-3.717101000	-0.167592000	-2.147106000	1	3.695775000	0.054296000	-2.201506000
1	-3.847577000	-0.025098000	2.227572000	1	3.861765000	0.165415000	2.173030000
6	-4.100842000	-0.097184000	0.032162000	6	4.097796000	0.108703000	-0.025213000
6	1.860209000	3.390666000	0.688505000	1	-0.537605000	3.821135000	0.931111000
1	2.308271000	3.059892000	1.636423000	1	0.635561000	2.451518000	0.856464000
1	2.644187000	3.378879000	-0.082584000	6	-0.942217000	-3.079364000	1.142886000
1	1.475324000	4.415128000	0.803823000	1	-0.745013000	-2.605065000	2.112323000
6	-0.290873000	3.045577000	-1.239756000	1	-2.029262000	-3.153153000	1.001914000
1	0.389499000	3.012293000	-2.103903000	1	-0.502590000	-4.093576000	1.128177000
1	-1.213300000	2.500261000	-1.489245000	6	-0.508792000	-2.891260000	-1.262659000
1	-0.539064000	4.093852000	-1.012118000	1	-1.576211000	-2.972225000	-1.511876000
6	0.248714000	-2.910432000	1.020395000	1	-0.004175000	-2.282447000	-2.026435000
1	-0.783402000	-2.558530000	0.903972000	1	-0.059108000	-3.901223000	-1.260669000
1	0.279669000	-4.016052000	0.953219000	6	-2.671541000	2.446828000	0.192299000
1	0.624209000	-2.597824000	2.004529000	1	-3.007750000	2.084505000	1.172330000
6	2.492648000	-2.790647000	0.132497000	1	-2.764461000	3.549895000	0.154819000
1	2.882012000	-2.447381000	1.100101000	1	-3.304551000	2.001290000	-0.585729000
1	2.523395000	-3.897894000	0.096993000	6	-0.823537000	2.500260000	-1.370211000
1	3.128655000	-2.386468000	-0.666196000	1	-1.426857000	1.990242000	-2.136668000
1	-1.398634000	-0.125204000	2.210924000	1	-0.963110000	3.593952000	-1.477454000
1	-0.459604000	2.503991000	1.224282000	1	0.238977000	2.259837000	-1.511291000
6	0.595820000	-2.734658000	-1.369021000	7	-0.367755000	-2.235035000	0.063154000
1	-0.453241000	-2.427346000	-1.477732000	1	1.410830000	0.186447000	2.172923000
1	1.203947000	-2.268266000	-2.159763000	1	-0.734025000	2.390296000	2.004189000
1	0.659083000	-3.835723000	-1.479106000	1	0.638532000	-2.115999000	0.249538000
1	-1.283176000	-0.253970000	-1.978013000	1	1.262345000	0.082848000	-2.017648000
6	-5.470642000	-0.056426000	-0.011255000	6	5.467655000	0.099266000	-0.078007000
1	-6.008239000	-0.069621000	-0.961928000	1	6.069666000	0.119174000	0.833041000
1	-6.065115000	-0.010059000	0.903743000	1	5.997954000	0.073664000	-1.032507000
PNP-non				SNS-non			
E(RB-P86) = -1378.11131750				E(RB-P86) = -1411.90152806			
15	-1.047325000	-2.409443000	0.127810000	8	3.788845000	0.289756000	-0.572992000
8	-3.858841000	0.297467000	-0.360986000	6	2.627077000	0.270602000	-0.376615000
6	-2.701448000	0.144125000	-0.224010000	44	0.798923000	0.199168000	-0.083985000
44	-0.865586000	-0.072307000	-0.014217000	1	1.137624000	0.405444000	1.438068000
1	-1.118799000	-0.002116000	1.531179000	7	-1.321528000	0.075276000	-0.039278000
7	1.253821000	-0.337559000	0.024021000	6	-1.996875000	-0.947315000	-0.688662000

6	2.022639000	0.185781000	-1.001639000	6	-2.143551000	0.953686000	0.652412000
6	1.978042000	-0.912641000	1.054195000	6	1.806003000	-2.987949000	-0.996157000
6	0.953120000	2.827524000	0.999040000	6	-3.356322000	-1.099937000	-0.702949000
6	3.391585000	0.148332000	-1.048319000	6	-3.508511000	0.873605000	0.690033000
6	3.344805000	-0.997047000	1.086515000	1	-3.786211000	-1.938199000	-1.258387000
1	3.901764000	0.580386000	-1.914111000	1	-4.062475000	1.618909000	1.267819000
1	3.820974000	-1.472657000	1.948699000	6	-4.237110000	-0.173399000	-0.009317000
6	4.176860000	-0.472225000	0.011033000	1	1.877873000	-4.061437000	-0.766983000
1	1.025225000	3.926552000	1.027670000	1	2.804758000	-2.540191000	-1.086464000
1	1.849062000	2.407052000	0.519719000	6	1.843095000	3.464224000	0.539992000
6	-2.538131000	-3.153730000	0.930360000	1	2.831081000	3.059126000	0.292487000
1	-2.622312000	-2.769522000	1.957041000	1	1.777047000	4.533240000	0.296182000
1	-3.437708000	-2.848017000	0.376359000	1	1.637547000	3.311876000	1.606695000
1	-2.478586000	-4.252241000	0.954057000	6	1.979442000	-2.458943000	1.729777000
6	-0.912492000	-3.336554000	-1.472913000	1	2.958673000	-2.001717000	1.535741000
1	-1.738033000	-3.037748000	-2.135916000	1	1.520180000	-1.994932000	2.611456000
1	0.038804000	-3.071931000	-1.956919000	1	2.071881000	-3.544043000	1.883710000
1	-0.947964000	-4.425364000	-1.313860000	16	0.516180000	2.556407000	-0.367239000
1	-1.904878000	3.207929000	0.941318000	16	0.837179000	-2.153689000	0.326352000
6	-2.017983000	2.807896000	1.959388000	1	1.252566000	-2.851196000	-1.934667000
1	-1.681419000	4.285375000	0.994270000	1	-1.626289000	1.743053000	1.202434000
1	-2.854812000	3.057712000	0.408014000	1	1.007158000	2.829331000	-1.614086000
6	-0.417054000	3.230853000	-1.517759000	1	-1.366829000	-1.650622000	-1.241763000
1	-1.319357000	3.057921000	-2.123081000	6	-5.606485000	-0.280856000	-0.007517000
1	-0.306568000	4.311835000	-1.332559000	1	-6.112707000	-1.077900000	-0.556258000
1	0.456637000	2.875908000	-2.083670000	1	-6.228868000	0.425099000	0.546445000
15	-0.552802000	2.289245000	0.076933000				
1	0.902013000	2.436337000	2.025491000				
1	1.380268000	-1.294256000	1.886243000				
1	-0.000030000	-3.039555000	0.866297000				
1	1.458786000	0.627845000	-1.831479000				
6	5.547799000	-0.546207000	-0.003182000				
1	6.098715000	-1.002890000	0.821782000				
1	6.127926000	-0.147693000	-0.838276000				
SNN-non				ONP-non			
E(RB-P86) = -1108.33487645				E(RB-P86) = -1072.00971502			
8	-3.867811000	-1.331067000	-0.108603000	8	3.975116000	0.589225000	-0.180128000
6	-2.782968000	-0.877103000	-0.100155000	6	2.801598000	0.557270000	-0.150138000
44	-1.023174000	-0.288743000	-0.034946000	44	0.945375000	0.491557000	-0.059668000
1	-1.143817000	-0.513566000	1.501021000	1	1.110504000	0.453261000	1.488733000
7	1.042615000	0.266030000	0.001628000	7	-1.188865000	0.621729000	0.016693000
6	1.761951000	0.195815000	-1.183073000	6	-1.879382000	0.359749000	-1.164431000
6	1.818528000	0.426637000	1.138933000	6	-1.954057000	0.504481000	1.174370000
6	-0.805618000	2.575792000	1.145787000	6	-0.589806000	-2.584450000	0.496357000
6	3.123568000	0.308499000	-1.278187000	6	-3.203717000	0.028844000	-1.234123000
6	3.182511000	0.552974000	1.134951000	6	-3.283582000	0.189727000	1.190561000
1	3.589748000	0.248216000	-2.265749000	1	-3.657055000	-0.136901000	-2.215631000
1	3.699588000	0.687406000	2.089557000	1	-3.803227000	0.147601000	2.152208000
6	3.961012000	0.520466000	-0.100639000	6	-4.031758000	-0.076362000	-0.035380000
1	-1.051817000	3.655136000	1.128881000	1	-0.479923000	-3.680600000	0.492366000
1	0.271299000	2.439869000	0.994588000	1	-1.360933000	-2.285228000	-0.229279000
6	1.099028000	-2.916817000	0.845013000	6	1.118278000	3.781443000	0.355527000
1	0.762392000	-2.726871000	1.870669000	1	2.182657000	3.791589000	0.090895000
1	1.380165000	-3.968895000	0.702678000	1	0.653345000	4.730530000	0.044506000
1	1.943989000	-2.260234000	0.603168000	1	1.013313000	3.643099000	1.443364000
6	-3.006036000	2.109116000	0.270154000	6	2.189631000	-2.501319000	1.294091000
1	-3.576403000	1.641573000	-0.542587000	1	3.210870000	-2.161852000	1.068178000
1	-3.319187000	1.665670000	1.224283000	1	1.925859000	-2.154181000	2.303582000
1	-3.212085000	3.196908000	0.284394000	1	2.154535000	-3.601875000	1.266382000
16	-0.237323000	-2.500941000	-0.356754000	8	0.520020000	2.682084000	-0.371836000
7	-1.550858000	1.866063000	0.068046000	6	1.494508000	-2.611325000	-1.505261000
6	-1.144312000	2.427635000	-1.250026000	1	0.786674000	-2.332156000	-2.299972000
1	-0.061547000	2.295418000	-1.378599000	1	2.501013000	-2.282729000	-1.802834000
1	-1.682683000	1.898555000	-2.051636000	1	1.487926000	-3.707289000	-1.389174000
1	-1.390535000	3.505699000	-1.309304000	15	1.009640000	-1.771226000	0.073919000

1	-1.093578000	2.153354000	2.117874000	1	-0.922206000	-2.251638000	1.489894000
1	1.263674000	0.443449000	2.081553000	1	-1.411776000	0.696683000	2.104563000
1	-1.184766000	-3.329557000	0.170940000	1	-0.430896000	2.567835000	-0.130244000
1	1.163796000	0.040772000	-2.090384000	1	-1.285994000	0.453140000	-2.083047000
6	5.323342000	0.664210000	-0.150054000	6	-5.365113000	-0.388208000	-0.060912000
1	5.862359000	0.633106000	-1.099429000	1	-5.949117000	-0.454564000	0.859605000
1	5.910366000	0.814275000	0.758653000	1	-5.885310000	-0.576497000	-1.002614000
ONS-non				ONN-non			
E(RB-P86) = -1088.89215062				E(RB-P86) = -785.322828770			
8	-4.153594000	0.214284000	0.209076000	8	-4.047358000	0.255944000	0.257977000
6	-2.990182000	0.077182000	0.170156000	6	-2.872327000	0.220211000	0.184645000
44	-1.146162000	-0.170205000	0.161505000	44	-1.031575000	0.248241000	0.052264000
1	-1.264397000	-0.103394000	1.709347000	1	-1.238852000	0.366538000	-1.487238000
7	0.931908000	-0.705903000	0.119547000	7	1.101425000	0.618512000	-0.006752000
6	1.586726000	-0.510429000	-1.093725000	6	1.794762000	0.341657000	1.170417000
6	1.769519000	-0.731156000	1.233160000	6	1.887439000	0.602411000	-1.156904000
6	-0.521682000	2.633004000	-1.578955000	6	0.429595000	-2.321187000	-0.710406000
6	2.937493000	-0.354179000	-1.235366000	6	3.131764000	0.067316000	1.242801000
6	3.128045000	-0.597921000	1.177457000	6	3.229781000	0.348914000	-1.171435000
1	3.355302000	-0.225281000	-2.238066000	1	3.583819000	-0.116680000	2.221759000
1	3.701690000	-0.656560000	2.106823000	1	3.763197000	0.383908000	-2.125847000
6	3.836319000	-0.393597000	-0.084233000	6	3.976320000	0.055690000	0.050454000
1	-0.322881000	3.714351000	-1.611389000	1	0.477404000	-3.424592000	-0.774735000
1	-1.443031000	2.412604000	-2.134163000	1	1.249687000	-1.953850000	-0.080961000
6	-1.801085000	-3.178056000	-0.820360000	6	-1.484315000	3.408517000	-0.394413000
1	-1.495381000	-2.842749000	-1.825721000	1	-2.558525000	3.327332000	-0.189143000
1	-1.538326000	-4.238756000	-0.683420000	1	-1.122644000	4.403296000	-0.089703000
1	-2.884423000	-3.051343000	-0.704721000	1	-1.301336000	3.243885000	-1.467674000
6	0.867383000	2.491735000	0.823605000	6	-1.965766000	-2.496207000	-0.973139000
1	0.861834000	2.212688000	1.884579000	1	-2.944458000	-2.261461000	-0.537017000
1	1.631205000	1.908494000	0.292031000	1	-1.910841000	-2.061481000	-1.979127000
1	1.049069000	3.571879000	0.725182000	1	-1.841380000	-3.594102000	-1.036044000
16	-0.812523000	2.134679000	0.171543000	8	-0.827743000	2.395523000	0.408609000
8	-1.175776000	-2.388002000	0.220424000	6	-0.987555000	-2.471563000	1.247687000
1	0.325752000	2.073278000	-1.999141000	1	-0.177002000	-2.061619000	1.867715000
1	1.257425000	-0.877245000	2.188359000	1	-1.959516000	-2.200518000	1.681317000
1	-0.188490000	-2.418631000	0.136711000	1	-0.891051000	-3.574267000	1.224645000
1	0.937953000	-0.503017000	-1.980143000	7	-0.884461000	-1.908010000	-0.129226000
6	5.194948000	-0.255259000	-0.182384000	1	0.534061000	-1.890727000	-1.714022000
1	5.833430000	-0.291728000	0.702843000	1	1.347821000	0.817004000	-2.084183000
1	5.681479000	-0.107332000	-1.148984000	1	0.143279000	2.347113000	0.199415000
ONO-non				PNS-non			
E(RB-P86) = -765.851691753				E(RB-P86) = -1395.00533080			
8	4.011482000	0.671636000	-0.516988000	15	-1.497066000	1.988625000	-0.033788000
6	2.870699000	0.466251000	-0.295046000	8	-3.848883000	-1.106872000	0.092626000
44	1.053979000	0.244334000	-0.002261000	6	-2.726579000	-0.770733000	0.032801000
1	1.410312000	0.414935000	1.514614000	44	-0.942904000	-0.232096000	-0.073939000
7	-1.033021000	0.025219000	-0.004764000	16	-0.254654000	-2.607096000	-0.319126000
6	-1.702762000	-0.959527000	0.710214000	1	-1.161572000	-0.182783000	-1.622434000
6	-1.854233000	0.871738000	-0.740201000	7	1.088758000	0.384301000	-0.078049000
6	0.972858000	-2.564171000	-1.139621000	6	1.877833000	0.040592000	1.005599000
6	-3.060256000	-1.124512000	0.709321000	6	1.751914000	1.048252000	-1.095441000
6	-3.217494000	0.771420000	-0.793899000	6	3.219136000	0.301631000	1.107525000
1	-3.492435000	-1.928583000	1.312216000	6	3.086607000	1.355155000	-1.073481000
1	-3.772723000	1.479300000	-1.416087000	1	3.750064000	-0.005555000	2.013168000
6	-3.943432000	-0.257787000	-0.060451000	1	3.518507000	1.880085000	-1.930269000
1	0.816979000	-3.641633000	-0.963865000	6	3.943821000	1.001904000	0.052814000
1	1.861288000	-2.400647000	-1.772840000	6	-3.064616000	2.549977000	-0.834096000
6	0.112722000	3.065247000	0.963658000	1	-3.061355000	2.237567000	-1.888080000
1	0.779981000	2.999076000	1.835423000	1	-3.919937000	2.069875000	-0.336841000
1	-0.083544000	4.113164000	0.689242000	1	-3.172887000	3.643567000	-0.776053000
1	-0.827631000	2.542821000	1.169226000	6	-1.550127000	2.785738000	1.638082000

6	2.203543000	-2.485676000	0.923526000	1	-2.336125000	2.310469000	2.243455000
1	3.175685000	-2.340901000	0.423449000	1	-0.581391000	2.634806000	2.135936000
1	2.198219000	-1.970000000	1.890047000	1	-1.752136000	3.865289000	1.559650000
1	1.994977000	-3.560313000	1.057295000	6	0.188231000	-3.338830000	1.308753000
8	0.706394000	2.383971000	-0.186639000	1	-0.714820000	-3.306536000	1.933053000
8	1.138187000	-1.900352000	0.138065000	1	0.492043000	-4.385629000	1.162288000
1	0.079990000	-2.127248000	-1.603327000	1	0.998665000	-2.771043000	1.785685000
1	-1.332081000	1.643030000	-1.313942000	1	1.135564000	1.306798000	-1.960961000
1	1.560115000	2.806640000	-0.384530000	1	-0.536881000	2.820512000	-0.685419000
1	-1.060725000	-1.614500000	1.303338000	6	1.391991000	-2.645225000	-1.123547000
6	-5.307955000	-0.396061000	-0.090511000	1	1.260527000	-2.214093000	-2.124053000
1	-5.932590000	0.273997000	-0.685268000	1	2.119893000	-2.047810000	-0.558799000
1	-5.810375000	-1.179941000	0.480406000	1	1.715082000	-3.692572000	-1.210949000
				1	1.352331000	-0.453567000	1.832659000
				6	5.283393000	1.292763000	0.116660000
				1	5.881900000	1.017836000	0.987846000
				1	5.790895000	1.806664000	-0.702424000
PCP-non E(RB-P86) = -1362.07995056				NCN-non E(RB-P86) = -788.712908272			
15	2.349457000	-0.556195000	0.078911000	7	-0.644088000	2.239696000	-0.038471000
8	-0.001624000	-3.768897000	-0.381111000	8	-3.768235000	0.000155000	0.261825000
6	-0.001026000	-2.601992000	-0.259218000	6	-2.596672000	0.000105000	0.119681000
44	-0.000303000	-0.709918000	-0.061666000	44	-0.713209000	0.000008000	-0.049611000
1	-0.000414000	-0.920589000	1.485903000	7	-0.644295000	-2.239639000	-0.038468000
6	0.000979000	2.269574000	1.163850000	1	-0.901139000	0.000058000	-1.600727000
6	0.000872000	2.096378000	-1.229156000	6	2.282057000	-0.000093000	-1.203397000
6	0.001591000	3.671743000	1.065587000	6	2.095198000	-0.000064000	1.184083000
6	0.001478000	3.496840000	-1.343942000	6	3.682224000	-0.000117000	-1.100096000
1	0.001864000	4.281356000	1.975641000	6	3.496603000	-0.000091000	1.308252000
1	0.001655000	3.964720000	-2.334224000	1	4.296858000	-0.000133000	-2.006977000
6	0.001848000	4.294763000	-0.190555000	1	3.959320000	-0.000088000	2.301177000
6	3.311091000	-2.137427000	0.172028000	6	4.300107000	-0.000118000	0.160254000
1	2.975772000	-2.713663000	1.047012000	6	-1.966981000	2.849269000	-0.352598000
1	3.113599000	-2.741006000	-0.726052000	1	-2.297186000	2.506528000	-1.341658000
1	4.393481000	-1.947021000	0.253568000	1	-2.707455000	2.538933000	0.394553000
6	3.188233000	0.315747000	-1.327449000	1	-1.886482000	3.954481000	-0.351519000
1	2.994432000	-0.226646000	-2.265362000	6	-0.244192000	2.666490000	1.329551000
1	2.770865000	1.329272000	-1.417940000	1	-0.965822000	2.266819000	2.057910000
1	4.276815000	0.377533000	-1.166392000	1	0.758395000	2.276340000	1.550253000
6	-3.312801000	-2.134758000	0.172841000	1	-0.231189000	3.772147000	1.408405000
1	-2.977858000	-2.710867000	1.048052000	6	0.338430000	-2.787736000	-1.016622000
1	-4.395027000	-1.943432000	0.254409000	1	1.339498000	-2.406678000	-0.787403000
1	-3.115894000	-2.738907000	-0.724985000	1	0.334866000	-3.895158000	-0.976076000
6	-3.188082000	0.317593000	-1.327846000	1	0.057643000	-2.457908000	-2.025762000
1	-2.994664000	-0.225341000	-2.265522000	6	-1.967260000	-2.849138000	-0.352425000
1	-4.276621000	0.380231000	-1.166811000	1	-2.297560000	-2.506405000	-1.341457000
1	-2.770002000	1.330793000	-1.418758000	1	-1.886839000	-3.954353000	-0.351324000
1	0.002322000	5.385465000	-0.270537000	1	-2.707628000	-2.538730000	0.394804000
1	0.000604000	1.509601000	-2.160064000	1	5.390515000	-0.000143000	0.245501000
6	-3.003395000	0.368547000	1.542593000	1	1.510303000	-0.000032000	2.116778000
1	-2.681420000	-0.140270000	2.463188000	6	-0.244265000	-2.666452000	1.329512000
1	-2.580964000	1.383350000	1.541932000	1	0.758375000	-2.276367000	1.550091000
1	-4.103832000	0.421261000	1.519913000	1	-0.965784000	-2.266737000	2.057957000
6	3.003692000	0.365461000	1.543009000	1	-0.231323000	-3.772107000	1.408373000
1	2.681209000	-0.143424000	2.463387000	6	0.338789000	2.787693000	-1.016521000
1	4.104178000	0.417160000	1.520378000	1	0.058108000	2.457843000	-2.025683000
1	2.582231000	1.380672000	1.542730000	1	0.335291000	3.895117000	-0.976012000
6	0.000605000	1.430317000	0.023737000	1	1.339803000	2.406575000	-0.787169000
15	-2.349941000	-0.554325000	0.078914000	6	1.427036000	-0.000067000	-0.069817000
1	0.000759000	1.818424000	2.162484000	1	1.838743000	-0.000091000	-2.206325000
PCN-non E(RB-P86) = -1075.40173977				OCP-non E(RB-P86) = -1055.94056032			
15	0.931745000	-1.991725000	-0.028839000	8	0.378340000	2.534158000	-0.175231000
8	3.709401000	0.666636000	0.214429000	8	-3.464122000	1.495582000	0.360129000
6	2.541323000	0.565668000	0.126166000	6	-2.361128000	1.123565000	0.204248000

44	0.667823000	0.283012000	-0.012935000	44	-0.589502000	0.447160000	-0.005278000
7	0.184328000	2.540584000	-0.048079000	1	-0.835648000	0.393350000	-1.544905000
1	0.851014000	0.206427000	-1.561788000	6	2.221138000	-0.291800000	-1.247097000
6	-2.250731000	-0.287933000	-1.203690000	6	2.054050000	-0.593679000	-1.130736000
6	-2.099495000	-0.218839000	1.188534000	6	1.212499000	2.989798000	0.904560000
6	-3.636138000	-0.501165000	-1.114514000	6	-0.531943000	-2.756886000	-1.377262000
6	-3.485617000	-0.428966000	1.295725000	6	3.588571000	-0.605425000	-1.192989000
1	-4.230473000	-0.613792000	-2.027737000	6	3.423627000	-0.904651000	1.200608000
1	-3.956359000	-0.486078000	2.283068000	1	4.183917000	-0.608161000	-2.112389000
6	-4.263631000	-0.570921000	0.138393000	1	3.882970000	-1.144662000	2.165484000
6	2.657400000	-2.652770000	-0.168480000	6	4.198297000	-0.914361000	0.032596000
1	3.115546000	-2.280861000	-1.096757000	1	-0.897071000	-3.794343000	-1.308677000
1	3.263199000	-2.293079000	0.675769000	1	0.563408000	-2.735405000	-1.294987000
1	2.659469000	-3.754593000	-0.177119000	1	0.598399000	3.329606000	1.759641000
6	0.315939000	-2.883665000	1.478397000	6	-0.418973000	3.596140000	-0.727021000
1	0.850560000	-2.515601000	2.367288000	1	-0.970208000	3.171448000	-1.573927000
1	-0.756949000	-2.678029000	1.603450000	1	-1.131349000	3.986020000	0.022596000
1	0.474739000	-3.970632000	1.388115000	1	0.241133000	4.411141000	-1.074287000
6	-0.858180000	2.879728000	-1.051252000	6	-3.068040000	-2.030884000	-0.248334000
1	-1.769777000	2.306855000	-0.844105000	1	-3.409782000	-1.567639000	-1.185536000
1	-1.080599000	3.965929000	-1.023356000	1	-3.276982000	-3.112361000	-0.278015000
1	-0.493910000	2.610169000	-2.052114000	1	-3.626167000	-1.572600000	0.580847000
6	1.390079000	3.358589000	-0.339937000	6	-0.870624000	-2.704082000	1.481887000
1	1.793649000	3.074488000	-1.320829000	1	-1.350329000	-2.242610000	2.358180000
1	1.133929000	4.437776000	-0.346274000	1	-1.233854000	-3.739231000	1.375702000
1	2.157656000	3.174042000	0.422606000	1	0.217550000	-2.714849000	1.638982000
1	-5.342142000	-0.737055000	0.211719000	1	5.262881000	-1.161547000	0.076086000
1	-1.528360000	-0.125898000	2.124363000	6	1.406862000	-0.266017000	-0.088527000
6	-0.314395000	2.886468000	1.306367000	1	1.850159000	3.821040000	0.555227000
1	-1.232433000	2.318211000	1.510846000	15	-1.257456000	-1.709286000	-0.036095000
1	0.451941000	2.629177000	2.054044000	1	-0.811981000	-2.335089000	-2.353715000
1	-0.534548000	3.970779000	1.384081000	1	1.842783000	2.140128000	1.196804000
6	0.083698000	-2.919625000	-1.388137000	1	1.778913000	-0.047467000	-2.218762000
1	0.464466000	-2.565595000	-2.357571000	1	1.481419000	-0.600728000	2.069681000
1	0.266916000	-4.002469000	-1.297886000				
1	-0.995540000	-2.718064000	-1.345450000				
6	-1.428716000	-0.128164000	-0.059490000				
1	-1.797111000	-0.236360000	-2.200060000				
SCN-non				OCN-non			
E(RB-P86) = -1092.28884940				E(RB-P86) = -769.249092240			
16	-0.467132000	-2.243759000	0.391413000	8	-0.165318000	2.294288000	-0.110729000
8	-3.729204000	-0.089225000	-0.340300000	8	-3.663969000	0.846776000	0.271493000
6	-2.573447000	0.025453000	-0.147389000	6	-2.538797000	0.523614000	0.130290000
44	-0.690827000	0.077786000	0.079511000	44	-0.687536000	0.127183000	-0.052376000
1	-0.919079000	0.165940000	1.621254000	1	-0.883789000	0.123564000	-1.601190000
6	2.257766000	-0.190616000	1.273893000	6	2.248506000	-0.023187000	-1.257348000
6	2.138676000	0.027179000	-1.113552000	6	2.103530000	-0.188141000	1.131360000
6	0.156660000	-3.011489000	-1.162229000	6	-0.022122000	2.892040000	1.190218000
6	0.467618000	2.871639000	0.878194000	6	-0.052585000	-2.733913000	-0.971939000
6	3.657064000	-0.278865000	1.199394000	6	3.649786000	-0.041758000	-1.176994000
6	3.538982000	-0.061778000	-1.205196000	6	3.506601000	-0.206057000	1.230176000
1	4.244838000	-0.405536000	2.114886000	1	4.249878000	0.019382000	-2.091480000
1	4.028777000	-0.016751000	-2.183886000	1	3.987370000	-0.276760000	2.211932000
6	4.307178000	-0.210961000	-0.042162000	6	4.288243000	-0.135904000	0.069385000
1	0.491306000	3.976778000	0.799778000	1	-0.204761000	-3.828931000	-0.904660000
1	1.443285000	2.453798000	0.606614000	1	0.987280000	-2.477412000	-0.742472000
1	-0.515745000	-2.786578000	-2.002742000	1	-0.999801000	2.955777000	1.701567000
6	-2.099074000	-3.084952000	0.454551000	6	-0.926759000	3.126141000	-1.008580000
1	-2.622112000	-2.695122000	1.337359000	1	-0.923433000	2.620829000	-1.980965000
1	-2.691104000	-2.868232000	-0.444849000	1	-1.964620000	3.242259000	-0.650668000
1	-1.939209000	-4.167545000	0.566128000	1	-0.437486000	4.112738000	-1.088392000
6	-1.878562000	2.950354000	0.344465000	6	-2.357271000	-2.442152000	-0.335863000
1	-2.151773000	2.648400000	1.363812000	1	-2.616932000	-2.064836000	-1.332888000
1	-1.793612000	4.054463000	0.295600000	1	-2.444168000	-3.546142000	-0.319552000
1	-2.662683000	2.614438000	-0.345511000	1	-3.047327000	-2.007962000	0.397888000
6	-0.253618000	2.681979000	-1.425853000	6	-0.639304000	-2.496263000	1.368091000

1	-1.022967000	2.271433000	-2.096745000	1	-1.297365000	-1.978966000	2.082110000
1	-0.219180000	3.782980000	-1.549861000	1	-0.795604000	-3.588992000	1.461921000
1	0.727405000	2.262375000	-1.687013000	1	0.410333000	-2.261301000	1.590717000
1	5.397041000	-0.279945000	-0.103093000	1	5.380010000	-0.151698000	0.134532000
6	1.446319000	-0.021013000	0.124863000	6	1.420548000	-0.098095000	-0.109533000
1	0.240859000	-4.098559000	-1.016464000	1	0.416313000	3.900022000	1.085907000
7	-0.581986000	2.317434000	-0.023096000	7	-0.959584000	-2.035252000	-0.011531000
1	0.239732000	2.582692000	1.912716000	1	-0.282913000	-2.392280000	-1.989241000
1	1.149110000	-2.579025000	-1.343552000	1	0.668596000	2.251672000	1.754420000
1	1.783098000	-0.258330000	2.258777000	1	1.786119000	0.055475000	-2.247659000
1	1.576669000	0.130048000	-2.054081000	1	1.533017000	-0.242198000	2.071751000
SCS-non				OCS-non			
E(RB-P86) = -1395.86392149				E(RB-P86) = -1072.82714491			
16	0.339559000	2.313316000	0.446803000	8	0.020043000	2.353022000	0.190982000
8	3.762632000	0.178990000	-0.212388000	8	3.673638000	0.897942000	-0.318186000
6	2.592811000	0.111895000	-0.141417000	6	2.528340000	0.661408000	-0.207625000
44	0.695211000	0.010380000	-0.013081000	44	0.674235000	0.229414000	-0.051327000
1	0.873397000	-0.226019000	1.517318000	1	0.899481000	0.082035000	1.484634000
6	-2.249431000	0.235128000	1.178223000	6	-2.247126000	0.268319000	1.067910000
6	-2.137113000	-0.366667000	-1.147521000	6	-2.061012000	-0.802881000	-1.078268000
6	-0.472457000	3.065556000	-1.022349000	6	-0.619098000	2.948952000	-0.956339000
6	-0.407127000	-3.126733000	0.934326000	6	0.151136000	-2.940012000	1.083874000
6	-3.652428000	0.229239000	1.115110000	6	-3.642116000	0.122460000	1.023744000
6	-3.540503000	-0.366719000	-1.225540000	6	-3.458799000	-0.943644000	-1.139314000
1	-4.238958000	0.461460000	2.010408000	1	-4.255165000	0.481442000	1.857494000
1	-4.035216000	-0.606305000	-2.172726000	1	-3.922609000	-1.420989000	-2.009036000
6	-4.306325000	-0.070265000	-0.089361000	6	-4.256637000	-0.483235000	-0.083627000
1	-0.477499000	-4.204067000	0.724636000	1	0.279019000	-4.021296000	0.927708000
1	-1.402107000	-2.665968000	0.917793000	1	-0.910406000	-2.667945000	1.055929000
1	0.140509000	2.913977000	-1.922350000	1	0.126360000	3.202014000	-1.732425000
6	1.907353000	3.268893000	0.409534000	6	0.911453000	3.269538000	0.853885000
1	2.529450000	2.890561000	1.230802000	1	1.293589000	2.750392000	1.740061000
1	2.432814000	3.124925000	-0.544320000	1	1.751810000	3.548128000	0.193480000
1	1.683628000	4.333166000	0.574328000	1	0.349479000	4.172301000	1.151160000
6	2.165978000	-3.154998000	-0.122446000	6	2.678182000	-2.574852000	0.001647000
1	2.543972000	-2.925497000	0.882914000	1	3.007127000	-2.231812000	0.991688000
1	2.038046000	-4.239380000	-0.254358000	1	2.732391000	-3.670986000	-0.071523000
1	2.865863000	-2.769967000	-0.874801000	1	3.304497000	-2.117994000	-0.774658000
1	-5.398878000	-0.074811000	-0.141070000	1	-5.343908000	-0.597433000	-0.120253000
6	-1.442891000	-0.061233000	0.051821000	6	-1.407882000	-0.181840000	0.017737000
1	-0.629052000	4.138592000	-0.838184000	1	-1.156127000	3.861234000	-0.643601000
16	0.557178000	-2.319564000	-0.404618000	16	0.948597000	-2.042755000	-0.312686000
1	0.071964000	-2.943644000	1.905471000	1	0.595211000	-2.622243000	2.036569000
1	-1.438437000	2.556643000	-1.133598000	1	-1.334664000	2.207681000	-1.333907000
1	-1.770497000	0.481724000	2.131713000	1	-1.798955000	0.753139000	1.941606000
1	-1.574368000	-0.618620000	-2.056556000	1	-1.469104000	-1.190826000	-1.917691000
PCS-non				OCO-non			
E(RB-P86) = -1378.97433775				E(RB-P86) = -749.784170955			
15	-0.965986000	-2.028142000	0.101464000	8	0.463298000	2.163653000	0.030720000
8	-3.693159000	0.809861000	-0.208188000	8	3.796691000	0.139093000	-0.114989000
6	-2.537814000	0.605451000	-0.184630000	6	2.621074000	0.082472000	-0.081314000
44	-0.669425000	0.250464000	-0.089912000	44	0.714989000	0.006280000	0.012414000
16	-0.025853000	2.580127000	-0.373957000	1	0.854790000	0.018143000	1.564909000
1	-0.797462000	0.323680000	1.463599000	6	-2.189362000	0.815407000	0.871438000
6	2.232738000	-0.337190000	1.138104000	6	-2.098340000	-0.900553000	-0.812038000
6	2.109449000	-0.213218000	-1.256700000	6	0.127203000	2.704300000	-1.265959000
6	3.618418000	-0.556426000	1.059502000	6	0.124144000	-2.797326000	1.167214000
6	3.494407000	-0.432871000	-1.350991000	6	-3.590535000	0.819778000	0.798654000
1	4.202665000	-0.686891000	1.976790000	6	-3.500767000	-0.893017000	-0.907497000
1	3.977450000	-0.463284000	-2.333344000	1	-4.170036000	1.489612000	1.443265000
6	4.257828000	-0.607484000	-0.187943000	1	-4.005593000	-1.563817000	-1.611136000
6	-2.704890000	-2.658364000	0.200833000	6	-4.254577000	-0.033440000	-0.096755000
1	-3.201756000	-2.218848000	1.078245000	1	-0.125902000	-3.849058000	0.945589000
1	-3.261567000	-2.348035000	-0.695433000	1	-0.770561000	-2.240640000	1.464543000
1	-2.726292000	-3.757058000	0.282294000	1	0.991974000	2.633318000	-1.949698000

6	-0.280363000	-3.019375000	-1.308012000	6	1.464733000	2.954662000	0.706171000
1	-0.772620000	-2.715556000	-2.244332000	1	1.606143000	2.501872000	1.693704000
1	0.796174000	-2.813840000	-1.397290000	1	2.415949000	2.938524000	0.147235000
1	-0.440457000	-4.098524000	-1.150948000	1	1.094396000	3.989551000	0.805021000
6	-1.365907000	3.712593000	0.158347000	6	1.732081000	-2.888904000	-0.600318000
1	-1.652040000	3.502535000	1.197883000	1	2.594904000	-2.852605000	0.086305000
1	-1.029865000	4.754012000	0.048560000	1	1.430635000	-3.935007000	-0.781660000
1	-2.223500000	3.528608000	-0.501085000	1	1.991660000	-2.401536000	-1.547312000
1	5.336186000	-0.778059000	-0.252939000	1	-5.346761000	-0.029695000	-0.158796000
1	1.550588000	-0.071852000	-2.192862000	6	-1.393083000	-0.041730000	0.070301000
6	1.261838000	3.074596000	0.832754000	1	-0.179437000	3.757977000	-1.150390000
1	0.895232000	2.928215000	1.857965000	8	0.610582000	-2.168744000	-0.045730000
1	2.125322000	2.422275000	0.655020000	1	0.893307000	-2.742296000	1.956147000
1	1.532646000	4.125930000	0.658008000	1	-0.715616000	2.109065000	-1.639365000
6	-0.192560000	-2.854208000	1.564859000	1	-1.698808000	1.499637000	1.572194000
1	-0.617408000	-2.429051000	2.486126000	1	-1.540546000	-1.601274000	-1.446162000
1	-0.376282000	-3.940513000	1.545311000				
1	0.888942000	-2.659778000	1.558031000				
6	1.428470000	-0.158308000	-0.013786000				
1	1.767786000	-0.294346000	2.129354000				