$Clustering\ output, found\ in/home/pauline/Research/m83\_clustering/results/broad\_narrow/U\_OII/clustering/mag05\_336-mag05\_373\_mag05\_373-mag05\_372-mag05\_372-mag05\_372-mag05\_372-mag05\_372-mag05\_372-mag05\_372-mag05\_372$ 

## K-means results

Nclust	inertia	score	TotObj	N1	N2	N3	N4	N5	N6	N7	N8
3	3653.91143998	0.382251674491	8559	4501	3032	1026	0	0	0	0	0
4	2725.3946912	0.450879249313	8559	5161	2378	761	259	0	0	0	0
5	2168.21113339	0.356310201071	8559	3327	3077	1473	459	223	0	0	0
6	1859.03508443	0.321440119227	8559	3080	2350	1701	940	291	197	0	0
7	1671.37690327	0.29954301644	8559	2903	1986	1519	1185	631	173	162	0
8	1502.89731853	0.312070007906	8559	2961	1974	1437	810	591	487	160	139

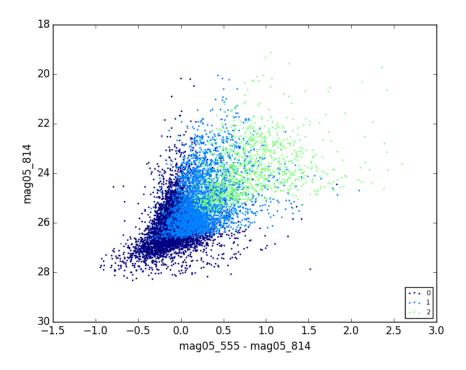
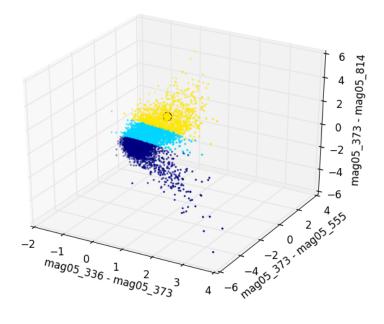
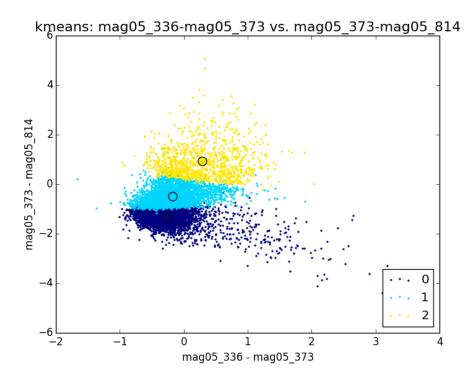


Figure 1: kmeans\_CMD\_3cl\_mag05\_555-mag05\_814vsmag05\_814.png

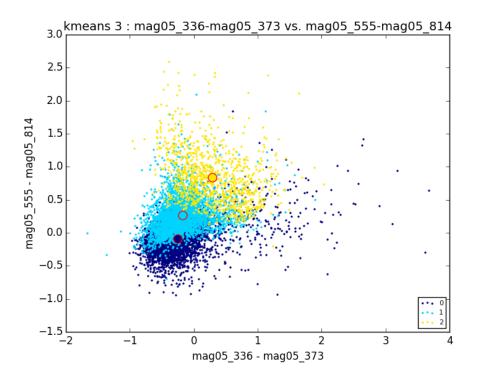
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	4501	0.382251674491	0.412005227523	1.1318	0.6590	7.7018	0.0022	0.62	-0.245089980004	
2	3032	0.382251674491	0.360226269606	0.6066	0.6563	3.9313	0.0030	0.3831	-0.172002308707	-
3	1026	0.382251674491	0.316813356179	0.7978	1.1789	6.3270	0.0046	0.6679	0.292475633528	(



 $\label{eq:figure 2: kmeans_3d_color_3cl_mag05_373-mag05_375-mag05_375-mag05_375-mag05_375-mag0$ 



 $Figure \ 3: \ kmeans\_3d\_3cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 



 $Figure~4:~kmeans\_base\_color\_3cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 

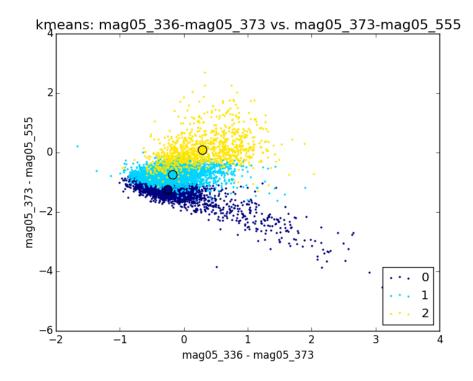
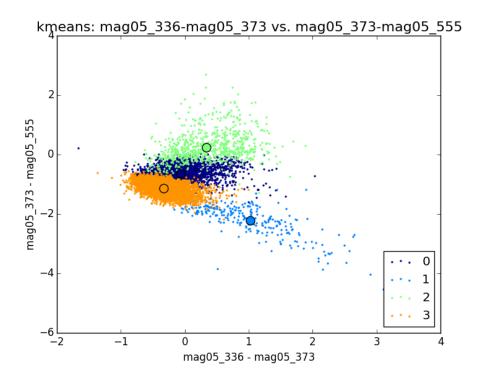
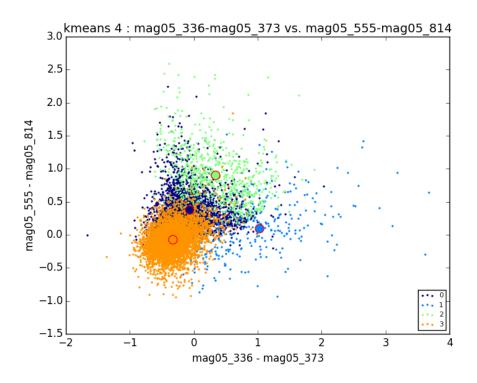


Figure 5: kmeans\_3d\_3cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png



 $Figure \ 6: \ kmeans\_3d\_4cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$ 

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1
1	2378	0.450879249313	0.34411922726	0.5160	0.7059	3.8134	0.0041	0.4013	-0.0648952901598
2	259	0.450879249313	0.334437154937	1.9857	1.2851	6.4395	0.0112	1.6432	1.02905405405
3	761	0.450879249313	0.322628075828	0.8929	1.1735	5.8932	0.0046	0.6878	0.33885282523
4	5161	0.450879249313	0.524824798219	1.0108	0.5410	2.5875	0.0022	0.4718	-0.328357295098



 $Figure~7:~kmeans\_base\_color\_4cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 

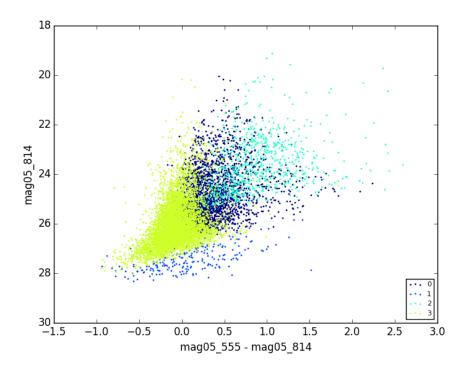


Figure 8: kmeans\_CMD\_4cl\_mag05\_555-mag05\_814vsmag05\_814.png

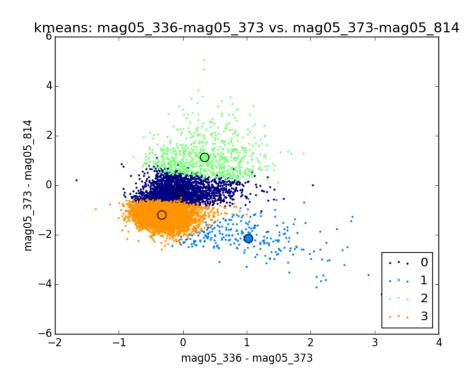
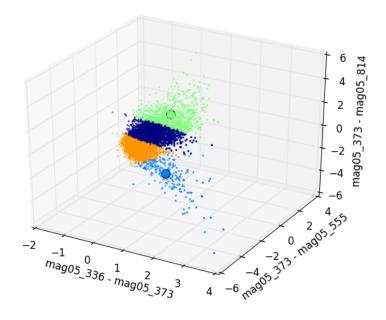
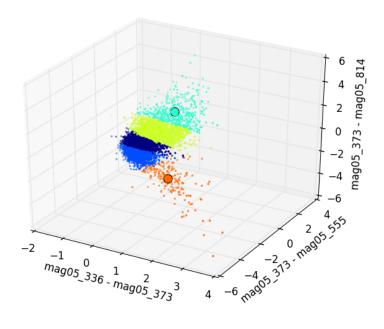


Figure 9: kmeans\_3d\_4cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png

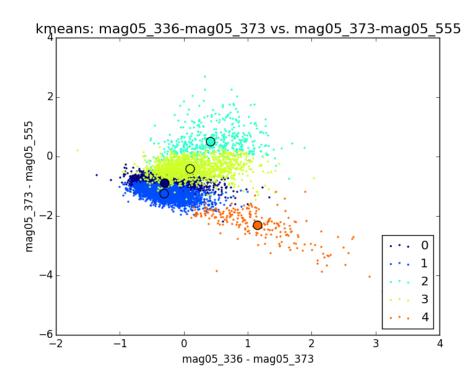


 $\label{lem:figure 10:mag05_373-mag$ 

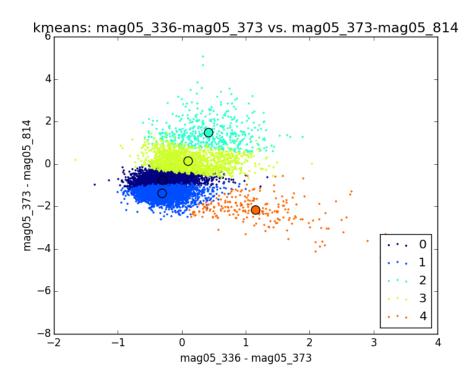


 $\label{lem:figure 11: kmeans_3d_color_5cl_mag05_336-mag05_373-mag05_373-mag05_555vsmag05_373-mag05_373-mag05_814.png$ 

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	Cen1	
1	3077	0.356310201071	0.332099758878	0.7378	0.4998	2.8154	0.0030	0.3438	-0.29631881703	-1
2	3327	0.356310201071	0.407642227133	1.1118	0.4695	2.1664	0.0022	0.5278	-0.303662458671	-
3	459	0.356310201071	0.333248194979	1.0738	1.1403	5.3583	0.0147	0.7231	0.422474945534	(
4	1473	0.356310201071	0.302068997567	0.4365	0.7701	3.8134	0.0041	0.4319	0.0987040054311	-(
5	223	0.356310201071	0.330286135948	2.0499	1.2925	6.4973	0.0112	1.7246	1.15771300448	-



 $Figure~12:~kmeans\_3d\_5cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$ 



 $Figure~13:~kmeans\_3d\_5cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 

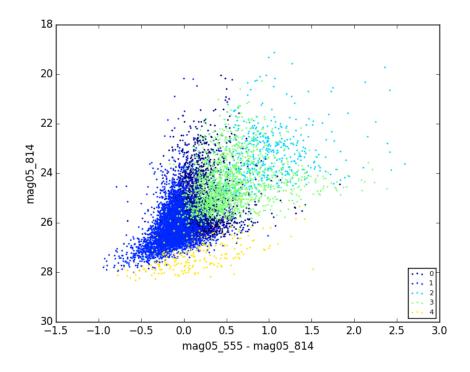
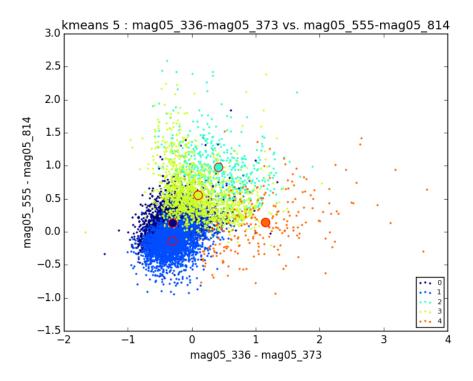
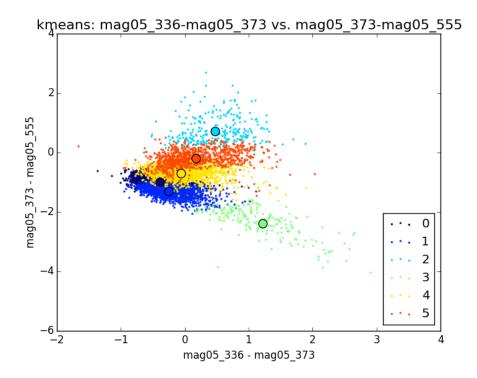


Figure 14: kmeans\_CMD\_5cl\_mag05\_555-mag05\_814vsmag05\_814.png

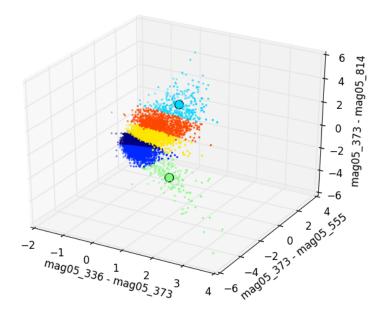


 $Figure~15:~kmeans\_base\_color\_5cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 

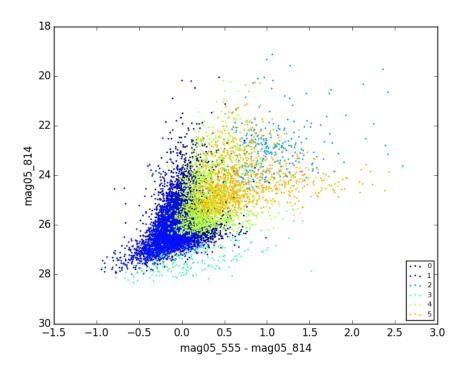


 $Figure~16:~kmeans\_3d\_6cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$ 

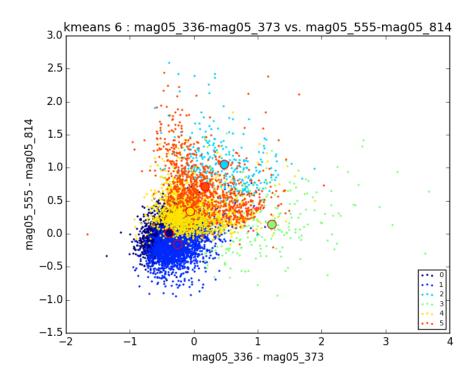
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	Cen1	
1	3080	0.321440119227	0.361396919737	0.8577	0.4062	1.9587	0.0022	0.3372	-0.388199350649	-0
2	2350	0.321440119227	0.324822996584	1.1720	0.4649	2.2352	0.0022	0.5887	-0.245724680851	- 3
3	291	0.321440119227	0.345653004851	1.2461	1.0909	4.8322	0.0255	0.7649	0.47470790378	0
4	197	0.321440119227	0.347215479663	2.1141	1.2521	6.0470	0.0267	1.7811	1.22164467005	-'2
5	1701	0.321440119227	0.268888790076	0.5310	0.5842	2.9932	0.0041	0.3768	-0.055430335097	-0
6	940	0.321440119227	0.264258638167	0.4937	0.8119	3.8134	0.0046	0.4692	0.174477659574	-0



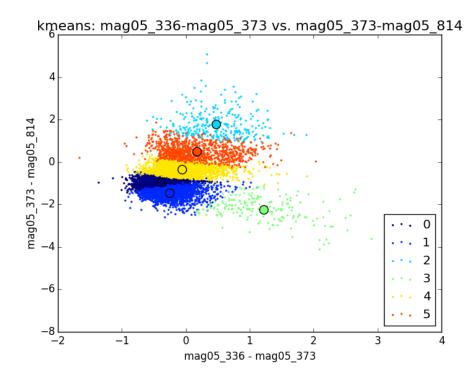
 $\label{eq:figure 17} Figure 17: kmeans\_3d\_color\_6cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555vsmag05\_373-mag05\_814.png$ 



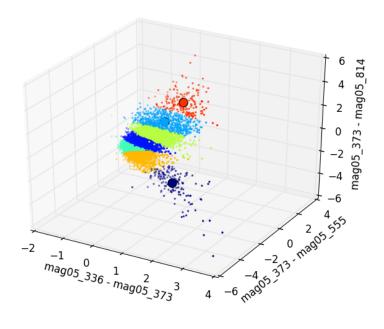
 $Figure~18:~kmeans\_CMD\_6cl\_mag05\_555-mag05\_814vsmag05\_814.png$ 



 $Figure~19:~kmeans\_base\_color\_6cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 



 $Figure~20:~kmeans\_3d\_6cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 



 $\label{lem:color_7cl_mag05_373-mag05_375-mag05_375-mag05_375-mag05_375-mag$ 

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	162	0.29954301644	0.378581809172	2.2108	1.2332	5.8421	0.0328	1.8848	1.3637345679	
2	1986	0.29954301644	0.278258819693	0.6687	0.4614	2.4494	0.0030	0.3273	-0.246540281974	
3	631	0.29954301644	0.252532766799	0.6271	0.8428	2.6576	0.0046	0.5146	0.245264659271	-6
4	2903	0.29954301644	0.373859787619	0.9639	0.3610	1.6660	0.0022	0.3732	-0.41563796073	
5	1185	0.29954301644	0.232702237203	0.4289	0.6616	3.9313	0.0041	0.4011	0.0917426160338	
6	1519	0.29954301644	0.239657141062	1.2374	0.5059	2.6116	0.0022	0.6817	-0.135876892693	
7	173	0.29954301644	0.377930179467	1.4547	1.0525	4.7360	0.0303	0.8241	0.541271676301	

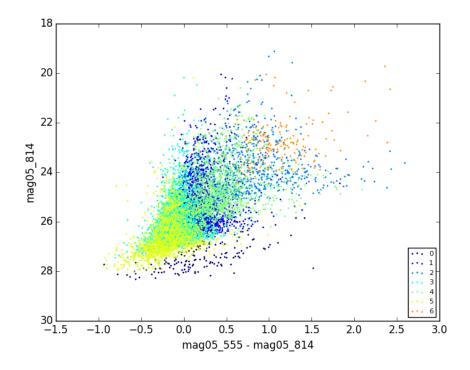
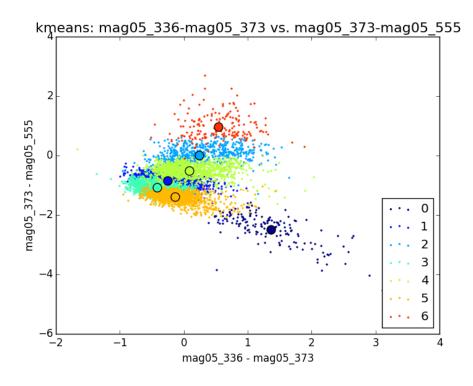
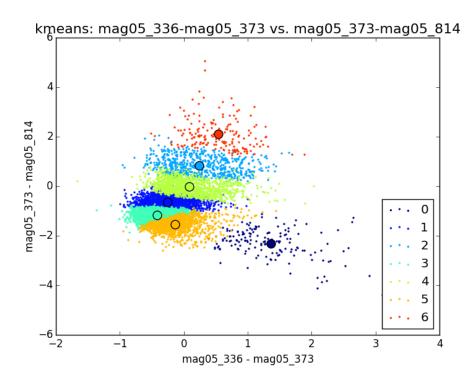


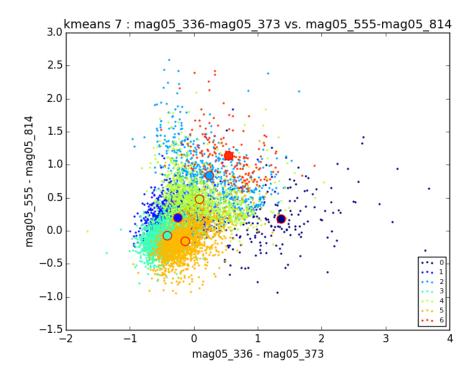
Figure 22: kmeans\_CMD\_7cl\_mag05\_555-mag05\_814vsmag05\_814.png



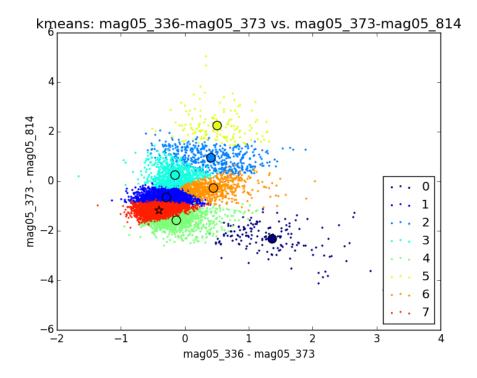
 $Figure~23:~kmeans\_3d\_7cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$ 



 $Figure~24:~kmeans\_3d\_7cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 



 $Figure~25:~kmeans\_base\_color\_7cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 



 $Figure~26:~kmeans\_3d\_8cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 

Cluster	Nobi	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	160	0.312070007906	0.378985671995	2.2176	1.2327	5.7865	0.0328	1.8914	1.37140625	
2	1974	0.312070007906	0.298983386568	0.6596	0.4384	1.7503	0.0030	0.3008	-0.283315096251	-0
3	487	0.312070007906	0.263926397488	0.7034	0.8229	2.5992	0.0046	0.4969	0.413897330595	0
4	810	0.312070007906	0.3317272943	0.3926	0.5687	2.4106	0.0041	0.3756	-0.155403703704	-0
5	1437	0.312070007906	0.248724324306	1.2460	0.5007	2.2534	0.0022	0.6864	-0.134053583855	- 3
6	139	0.312070007906	0.38840659025	1.5401	1.0137	4.1063	0.0303	0.87	0.503899280576	
7	591	0.312070007906	0.217427460485	0.5605	0.6391	2.2531	0.0057	0.5382	0.444118443316	-0
8	2961	0.312070007906	0.365768328905	0.9684	0.3642	1.8221	0.0022	0.3813	-0.40537453563	-

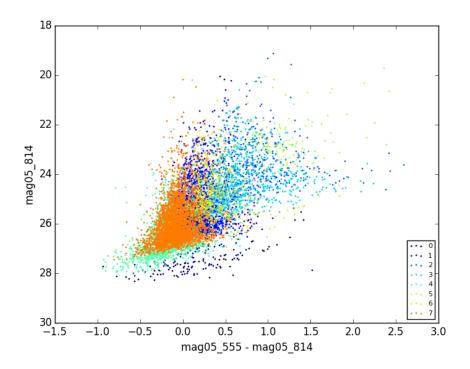
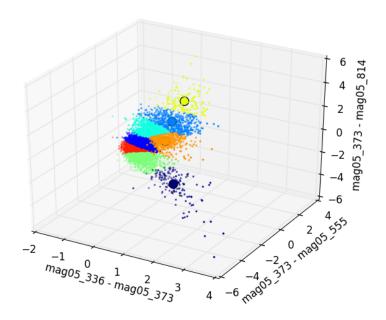
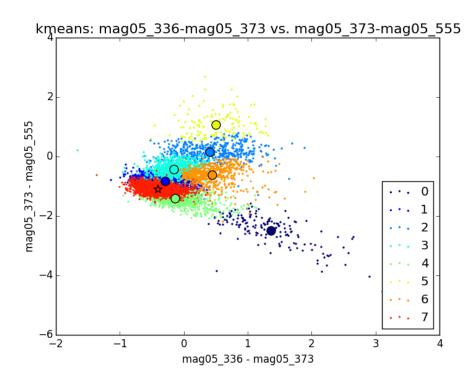


Figure 27: kmeans\_CMD\_8cl\_mag05\_555-mag05\_814vsmag05\_814.png



 $\label{lem:sigma} Figure 28: kmeans\_3d\_color\_8cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555vsmag05\_373-mag05\_814.png$ 



 $Figure~29:~kmeans\_3d\_8cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$ 

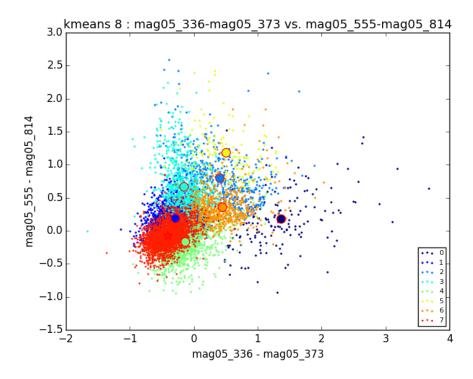
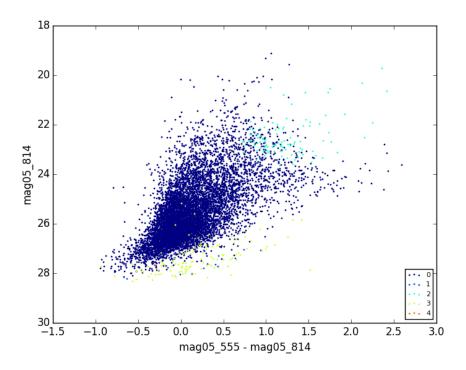


Figure 30: kmeans\_base\_color\_8cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png

# Meanshift results

Bandw	Nclust	score	TotObj	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10
0.7920	8	0.48373977252	8559	7689	681	64	63	57	3	1	1	0	0
0.7500	9	0.48397511792	8559	7679	691	64	63	56	3	1	1	1	0
0.8000	8	0.48373977252	8559	7689	681	64	63	57	3	1	1	0	0
0.8500	6	0.511827509898	8559	7700	670	110	63	15	1	0	0	0	0
1.0500	5	0.553757562296	8559	8328	112	103	15	1	0	0	0	0	0
1.1000	5	0.55329505775	8559	8328	113	102	15	1	0	0	0	0	0



 $Figure~31:~meanshift\_CMD\_5cl\_mag05\_555-mag05\_814vsmag05\_814.png$ 

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	8328	0.553757562296	0.551925756731	0.8870	1.0860	5.1814	0.0022	0.6266	-0.299590775875	-1
2	15	0.553757562296	0.395166410844	3.2957	1.0802	2.3829	0.0686	2.9173	3.2215	
3	103	0.553757562296	0.754085056729	1.6614	0.9801	3.8717	0.0504	0.9289	0.3325	
4	1	0.553757562296	0.0	N/A	N/A	N/A	N/A	4.2116	3.621	
5	112	0.553757562296	0.531919791342	2.1393	0.9183	2.7639	0.0389	1.8039	0.512	
1	8328	0.55329505775	0.551456766891	0.8869	1.0863	5.2119	0.0022	0.6267	-0.293808758903	-1
2	15	0.55329505775	0.39625857385	3.2957	1.0802	2.3829	0.0686	2.9173	3.2215	
3	102	0.55329505775	0.755256986461	1.6652	0.9775	3.8717	0.0504	0.9278	0.3325	
4	113	0.55329505775	0.532215516709	2.1359	0.9181	2.7639	0.0389	1.8011	0.512	
5	1	0.55329505775	0.0	N/A	N/A	N/A	N/A	4.2116	3.621	

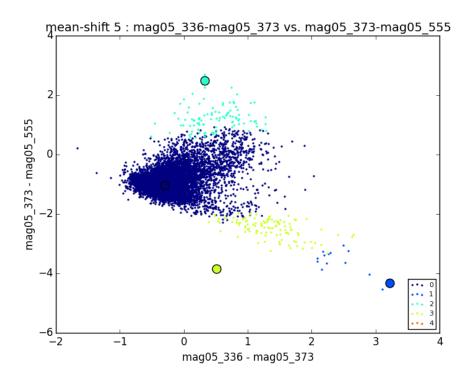
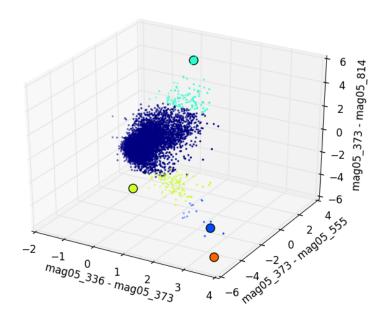
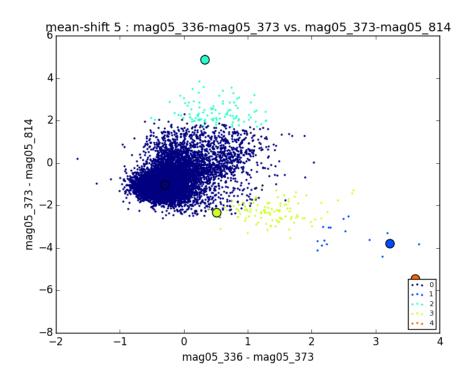


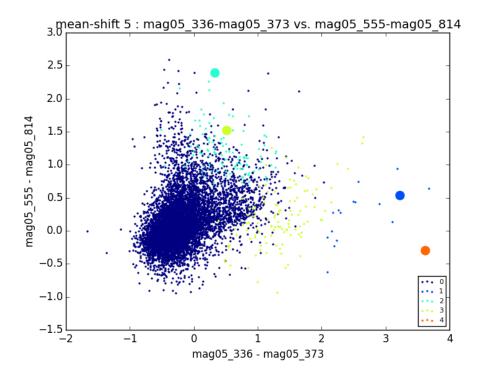
Figure 32: meanshift\_3d\_color\_5cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png



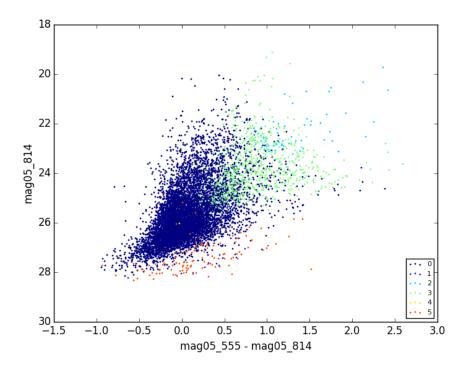
 $\label{eq:figure 33:mag05_373-mag05_375-mag05_375-mag05_375-mag05_375-mag0$ 



 $Figure~34:~meanshift\_3d\_color\_5cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 



 $Figure~35:~meanshift\_base\_color\_5cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 



 $Figure~36:~meanshift\_CMD\_6cl\_mag05\_555-mag05\_814vsmag05\_814.png$ 

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	Cen1	
1	7700	0.511827509898	0.518473296558	0.9025	0.9018	4.8930	0.0022	0.5619	-0.321228619814	-1
2	15	0.511827509898	0.392843215963	3.2957	1.0802	2.3829	0.0686	2.9173	3.2215	
3	63	0.511827509898	0.592014998527	1.8492	0.9515	3.7303	0.0504	0.9875	0.3325	
4	670	0.511827509898	0.429433068522	0.7275	0.9864	3.3496	0.0147	0.6234	-1.659	
5	1	0.511827509898	0.0	N/A	N/A	N/A	N/A	4.2116	3.621	
6	110	0.511827509898	0.523432042359	2.1453	0.9185	2.7639	0.0389	1.8105	0.512	

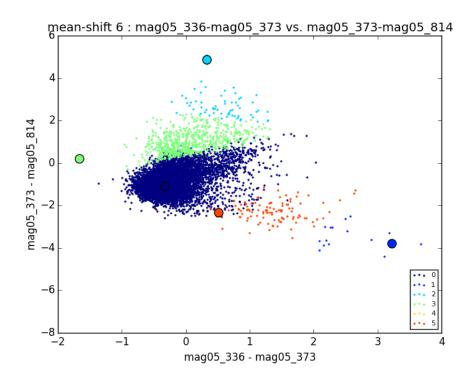
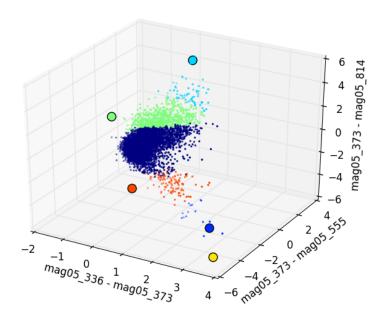
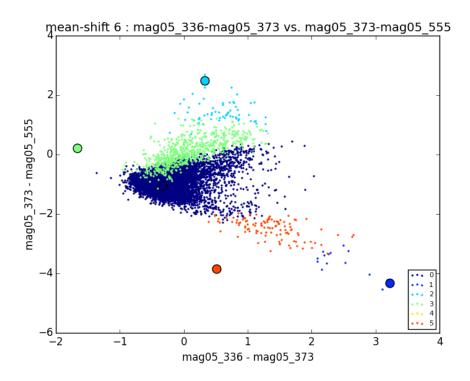


Figure 37: meanshift\_3d\_color\_6cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png



 $\label{eq:figure 38:meanshift_3d_color_6cl_mag05_336-mag05_373-m$ 



 $Figure~39:~meanshift\_3d\_color\_6cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$ 

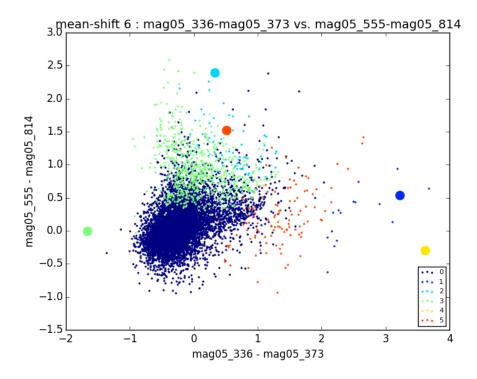
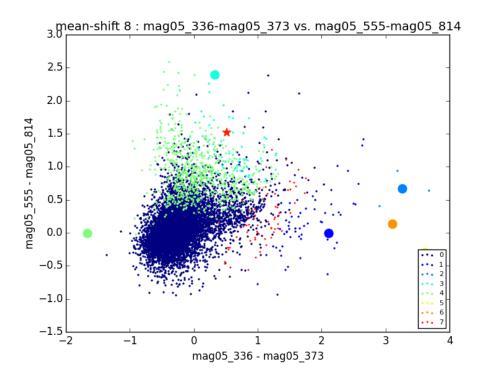
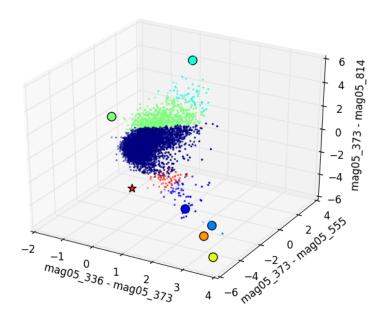


Figure 40: meanshift\_base\_color\_6cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png

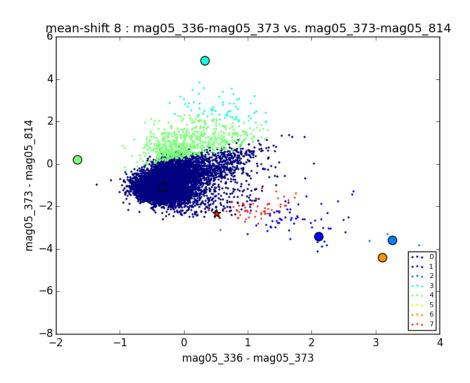
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	Cen1	
1	7689	0.48373977252	0.491512888647	0.9030	0.8991	4.8930	0.0022	0.561	-0.328682154171	-1
2	57	0.48373977252	0.0618694430407	2.5137	1.0449	2.9991	0.0457	2.194	2.114833333333	-3
3	3	0.48373977252	0.221359914154	3.7319	0.7238	0.9154	0.4819	3.405	3.26	-4
4	63	0.48373977252	0.593259380046	1.8492	0.9515	3.7303	0.0504	0.9875	0.3325	
5	681	0.48373977252	0.42956708392	0.7243	0.9868	3.3496	0.0147	0.6213	-1.659	
6	1	0.48373977252	0.0	N/A	N/A	N/A	N/A	4.2116	3.621	
7	1	0.48373977252	0.0	N/A	N/A	N/A	N/A	3.572	3.106	
8	64	0.48373977252	0.421639829723	1.9791	0.7268	2.2793	0.0389	1.6159	0.512	
1	7689	0.48373977252	0.491512888647	0.9030	0.8991	4.8930	0.0022	0.561	-0.328010154062	-1
2	57	0.48373977252	0.0618694430407	2.5137	1.0449	2.9991	0.0457	2.194	2.114833333333	-3
3	3	0.48373977252	0.221359914154	3.7319	0.7238	0.9154	0.4819	3.405	3.26	-4
4	63	0.48373977252	0.593259380046	1.8492	0.9515	3.7303	0.0504	0.9875	0.3325	
5	681	0.48373977252	0.42956708392	0.7243	0.9868	3.3496	0.0147	0.6213	-1.659	
6	1	0.48373977252	0.0	N/A	N/A	N/A	N/A	4.2116	3.621	
7	1	0.48373977252	0.0	N/A	N/A	N/A	N/A	3.572	3.106	
8	64	0.48373977252	0.421639829723	1.9791	0.7268	2.2793	0.0389	1.6159	0.512	



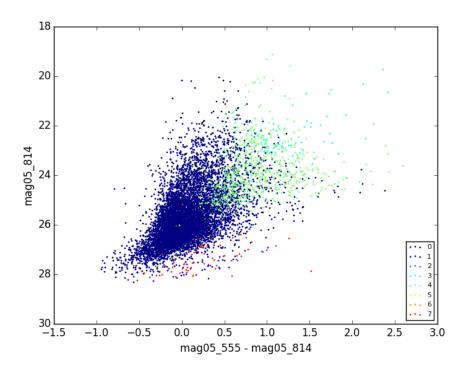
 $Figure~41:~meanshift\_base\_color\_8cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 



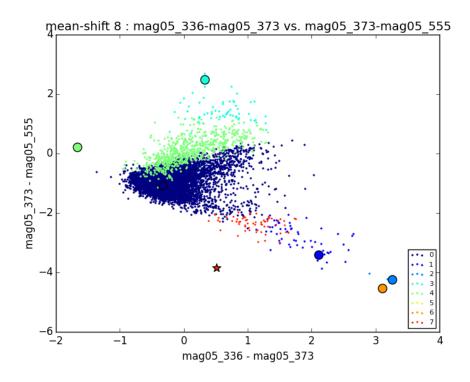
 $\label{eq:figure 42:mag05_373-mag05_375-mag05_375-mag05_375-mag05_375-mag0$ 



 $Figure~43:~meanshift\_3d\_color\_8cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 

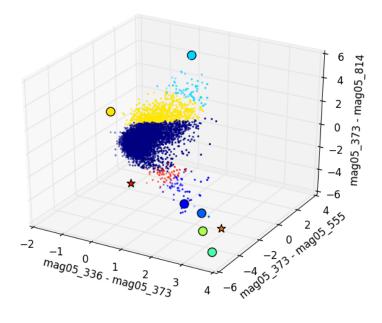


 $Figure~44:~meanshift\_CMD\_8cl\_mag05\_555-mag05\_814vsmag05\_814.png$ 

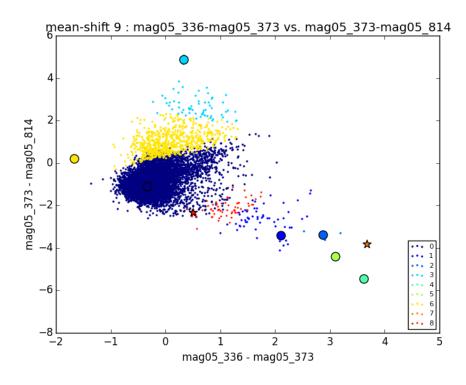


 $Figure~45:~meanshift\_3d\_color\_8cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$ 

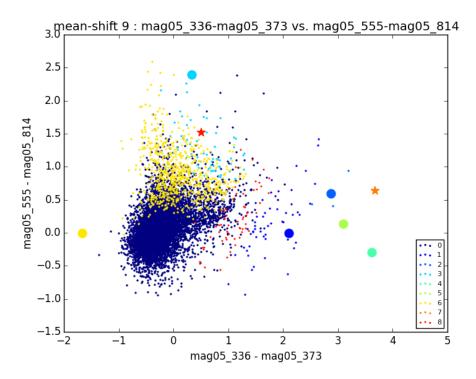
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	Cen1	
1	7679	0.48397511792	0.492127374183	0.9035	0.8968	4.8930	0.0022	0.5604	-0.333862620389	- 1
2	56	0.48397511792	0.0216342629939	2.5006	1.0315	2.9991	0.0457	2.1811	2.114833333333	-;
3	3	0.48397511792	0.306164989453	3.4479	0.6861	0.8894	0.4819	3.1075	2.87466666667	
4	63	0.48397511792	0.59450992163	1.8492	0.9515	3.7303	0.0504	0.9875	0.3325	
5	1	0.48397511792	0.0	N/A	N/A	N/A	N/A	4.2116	3.621	
6	1	0.48397511792	0.0	N/A	N/A	N/A	N/A	3.572	3.106	
7	691	0.48397511792	0.430174772151	0.7207	0.9858	3.3496	0.0147	0.6191	-1.659	
8	1	0.48397511792	0.0	N/A	N/A	N/A	N/A	3.7064	3.682	
9	64	0.48397511792	0.413469087749	1.9791	0.7268	2.2793	0.0389	1.6159	0.512	



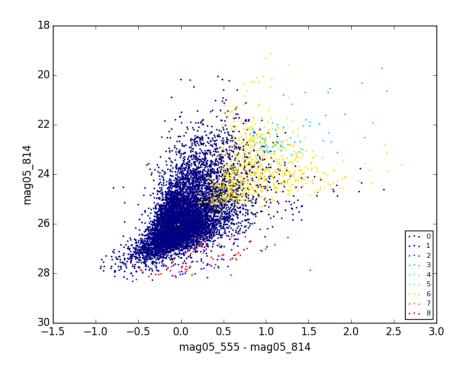
 $\label{eq:figure 46:meanshift_3d_color_9cl_mag05_336-mag05_373-m$ 



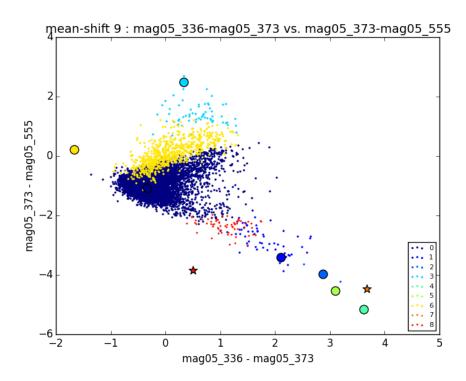
 $Figure~47:~meanshift\_3d\_color\_9cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_814.png$ 



 $Figure~48:~meanshift\_base\_color\_9cl\_mag05\_336-mag05\_373vsmag05\_555-mag05\_814.png$ 



 $Figure~49:~meanshift\_CMD\_9cl\_mag05\_555-mag05\_814vsmag05\_814.png$ 



 $Figure~50:~meanshift\_3d\_color\_9cl\_mag05\_336-mag05\_373vsmag05\_373-mag05\_555.png$