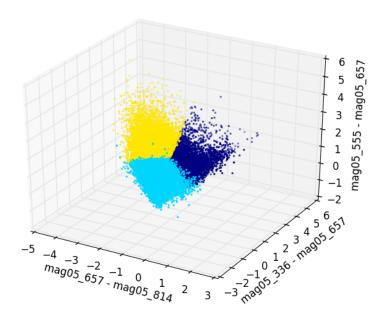
$Clustering\ output, found\ in/home/pauline/Research/m83_clustering/results/broad_narrow/HAlpha_I/clustering/mag05_657_mag05_657_mag05_657_mag05_657$

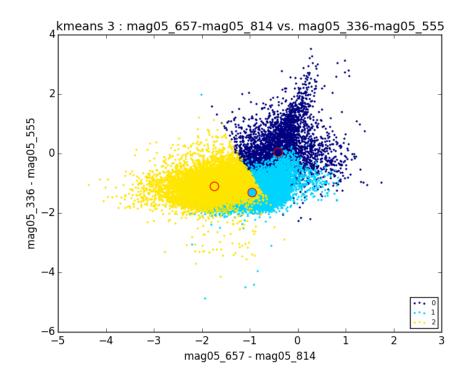
K-means results

Nclust	inertia	score	TotObj	N1	N2	N3	N4	N5	N6	N7	N8
3	18719.0540899	0.396870562134	29060	13272	11767	4021	0	0	0	0	0
4	13979.8885809	0.351557301053	29060	11598	7675	6243	3544	0	0	0	0
5	11840.8096143	0.319638611528	29060	9012	8351	5584	3422	2691	0	0	0
6	10425.3625663	0.32029128317	29060	8828	7199	5112	3612	2582	1727	0	0
7	9209.85058852	0.317606113989	29060	7150	6004	4814	4695	2478	2350	1569	0
8	8235.40626271	0.306920095573	29060	5907	5458	4520	4461	3871	2207	1535	1101

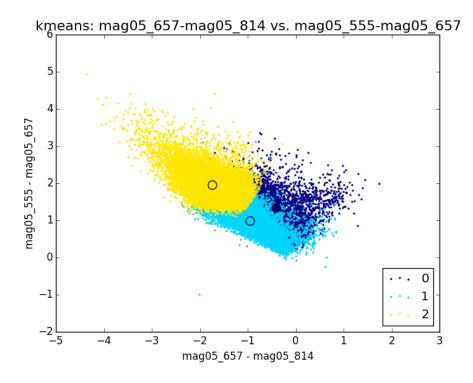


 $\label{eq:figure 1: kmeans_3d_color_3cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$

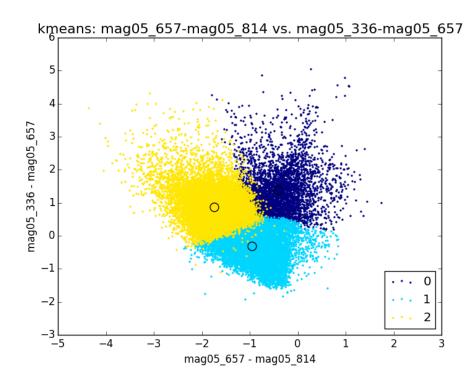
Cluster	Nobj	${ m tScore}$	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	$\operatorname{Cen} 1$
1	4021	0.396870562134	0.264353507583	1.2600	1.2253	5.4836	0.0028	1.0014	-0.403542153693
2	11767	0.396870562134	0.447785502152	0.9137	0.9098	4.9295	0.0014	0.9089	-0.950648933458
3	13272	0.396870562134	0.391877718338	1.6568	0.9798	5.9768	0.0010	1.6177	-1.73702704943



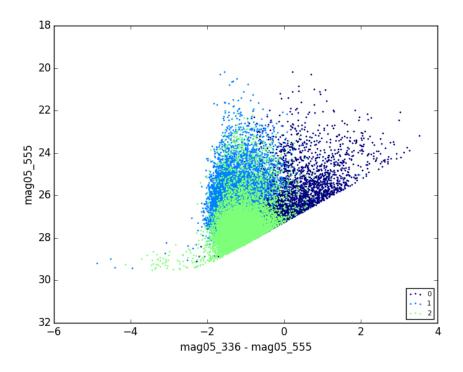
 $Figure~2:~kmeans_base_color_3cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$



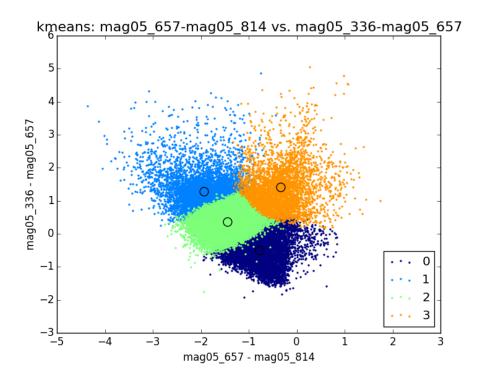
 $Figure \ 3: \ kmeans_3d_3cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$



 $Figure~4:~kmeans_3d_3cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



 $Figure~5:~kmeans_CMD_3cl_mag05_336-mag05_555vsmag05_555.png$



 $Figure \ 6: \ kmeans_3d_4cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1
1	7675	0.351557301053	0.420258082375	0.7968	0.8010	4.6952	0.0020	0.781	-0.768526905537
2	6243	0.351557301053	0.287207499066	1.9267	0.9740	5.2422	0.0028	1.8504	-1.92936072401
3	11598	0.351557301053	0.36882593632	1.2851	0.7226	3.5652	0.0010	1.2755	-1.44393593723
4	3544	0.351557301053	0.259620417679	1.2387	1.1921	4.8876	0.0033	0.9595	-0.33085214447

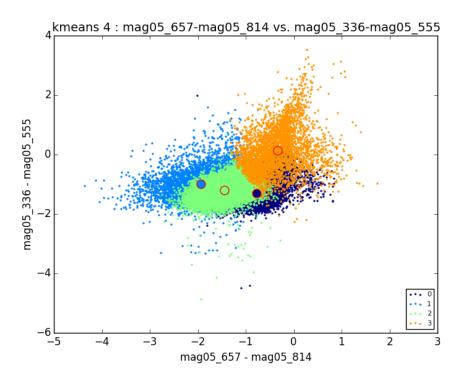
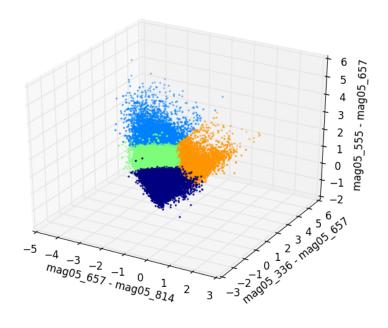
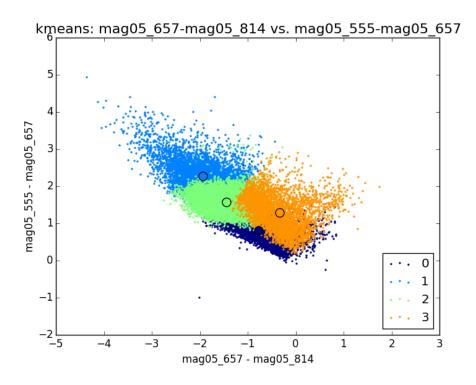


Figure 7: kmeans_base_color_4cl_mag05_657-mag05_814vsmag05_336-mag05_555.png



 $\label{lem:prop:mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png} \\ \text{kmeans_3d_color_4cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png}$



 $Figure~9:~kmeans_3d_4cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$

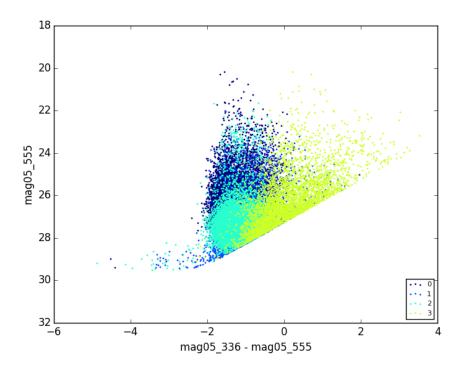
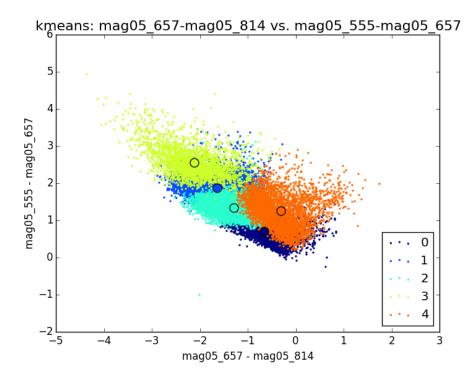
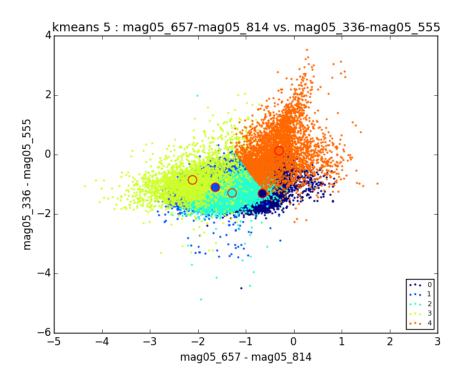


Figure 10: kmeans_CMD_4cl_mag05_336-mag05_555vsmag05_555.png

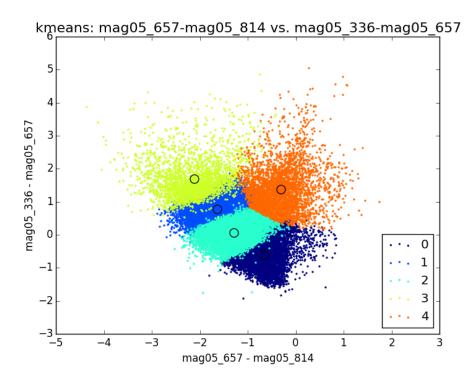


 $Figure~11:~kmeans_3d_5cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$

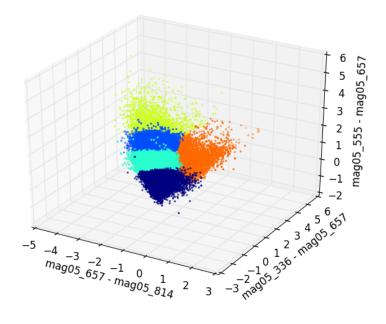
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	5584	0.319638611528	0.393402418052	0.7399	0.7349	3.6513	0.0028	0.7141	-0.654558381089	-
2	9012	0.319638611528	0.323451007169	1.5361	0.6990	2.8489	0.0010	1.499	-1.63752485575	(
3	8351	0.319638611528	0.326132256891	1.1080	0.6553	4.9295	0.0014	1.1076	-1.28552568555	0
4	2691	0.319638611528	0.211446336145	2.2036	1.0938	5.0395	0.0055	2.0884	-2.11432069863	
5	3422	0.319638611528	0.258464612541	1.2086	1.1706	4.8876	0.0033	0.9296	-0.299609000584	



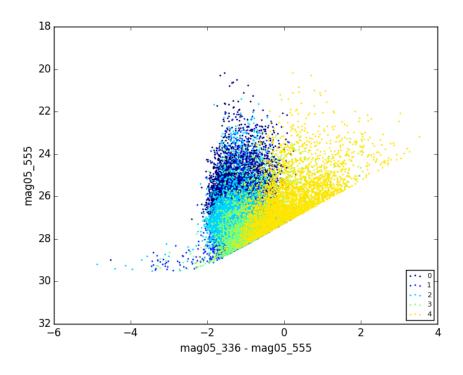
 $Figure~12:~kmeans_base_color_5cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$



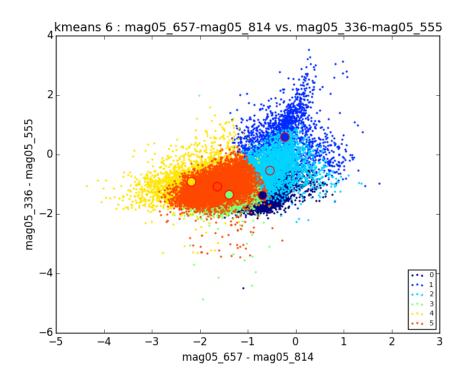
 $Figure~13:~kmeans_3d_5cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



 $\label{lem:figure 14: kmeans_3d_color_5cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$

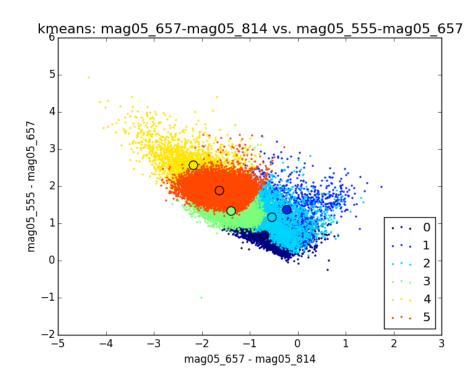


 $Figure~15:~kmeans_CMD_5cl_mag05_336-mag05_555vsmag05_555.png$

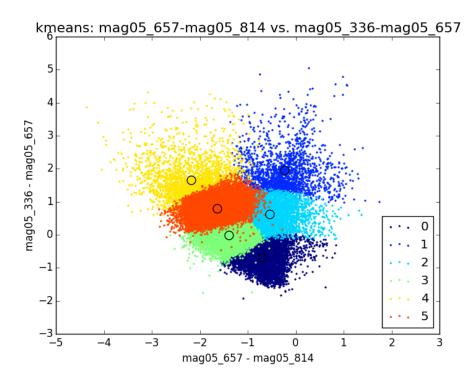


 $Figure~16:~kmeans_base_color_6cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	Cen1	
1	5112	0.32029128317	0.429394983559	0.7545	0.6683	3.3456	0.0032	0.7188	-0.687375	-0.
2	1727	0.32029128317	0.227905260259	1.4786	1.1852	4.7937	0.0067	1.0657	-0.230126809496	1.
3	3612	0.32029128317	0.21666723126	0.9038	0.8306	2.7818	0.0028	0.803	-0.540995293466	0.0
4	7199	0.32029128317	0.357137778992	1.1449	0.5976	4.9295	0.0014	1.1447	-1.38416752327	-0.0
5	2582	0.32029128317	0.229419702102	2.2122	1.0453	4.7505	0.0055	2.106	-2.16902865995	1.
6	8828	0.32029128317	0.314114926077	1.5398	0.6913	2.8489	0.0010	1.5009	-1.63483608971	0.



 $Figure~17:~kmeans_3d_6cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$



 $Figure~18:~kmeans_3d_6cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$

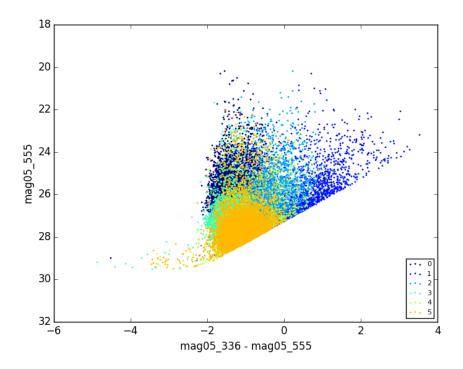
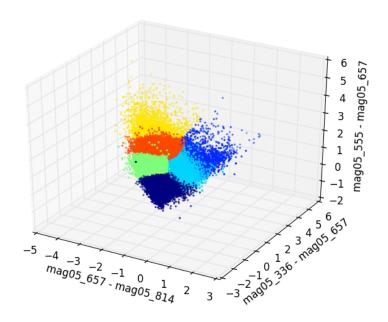
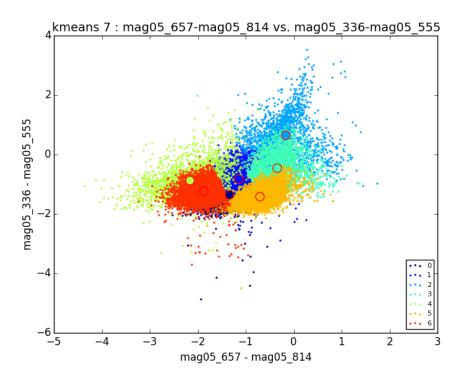


Figure 19: kmeans_CMD_6cl_mag05_336-mag05_555vsmag05_555.png

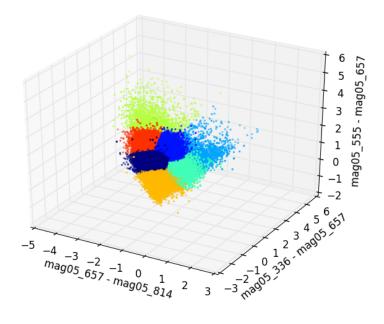


 $\label{lem:color_figure_20:mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$

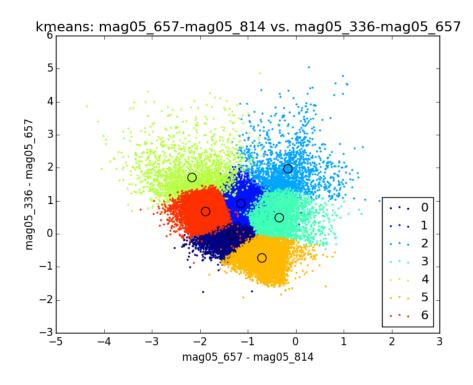


 $Figure~21:~kmeans_base_color_7cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$

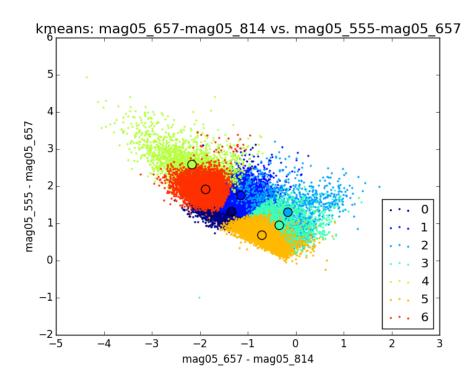
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	7150	0.317606113989	0.346528110262	1.1166	0.5880	3.2562	0.0014	1.1165	-1.34118181818	-
2	4814	0.317606113989	0.261904608332	1.3483	0.6487	2.6003	0.0022	1.2499	-1.14516805152	
3	1569	0.317606113989	0.242867034849	1.4630	1.1534	4.3254	0.0067	1.0319	-0.158335882728	
4	2478	0.317606113989	0.249907975843	0.7354	0.8022	4.2793	0.0028	0.6416	-0.345482647296	
5	2350	0.317606113989	0.206143504456	2.2373	1.0587	5.0395	0.0065	2.1202	-2.15522680851	
6	4695	0.317606113989	0.43859004984	0.7625	0.6317	3.3456	0.0032	0.7194	-0.701243876464	
7	6004	0.317606113989	0.32431729486	1.6213	0.6001	2.6848	0.0010	1.6037	-1.88187958028	



 $\label{lem:color_7cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png} \\ \text{kmeans_3d_color_7cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png}$



 $Figure~23:~kmeans_3d_7cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



 $Figure~24:~kmeans_3d_7cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$

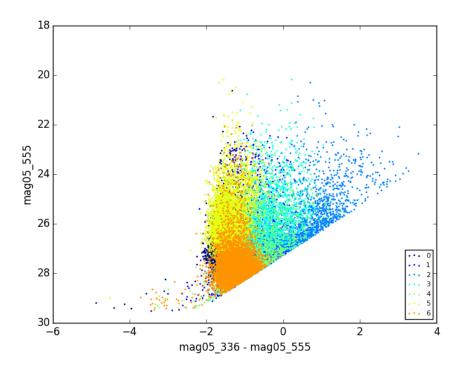


Figure 25: kmeans_CMD_7cl_mag05_336-mag05_555vsmag05_555.png

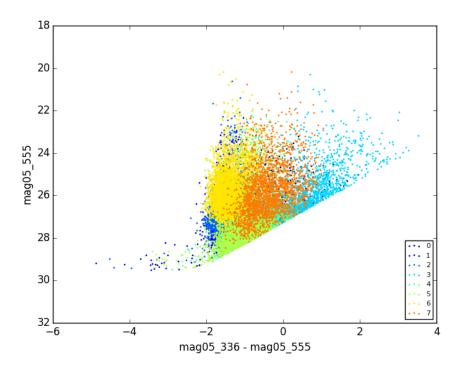
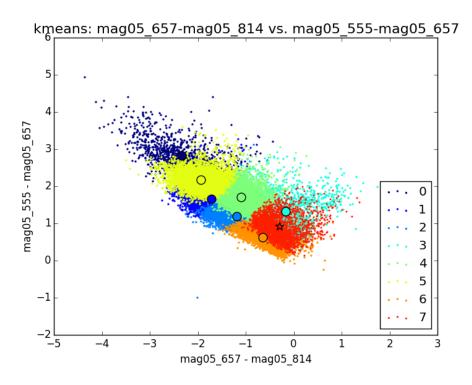
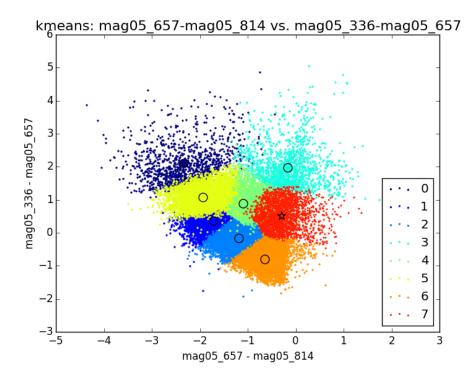


Figure 26: kmeans_CMD_8cl_mag05_336-mag05_555vsmag05_555.png

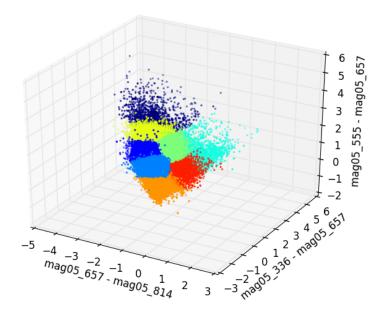
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	$\operatorname{MinDist}$	Stdev	Cen1	
1	1101	0.306920095573	0.186558638384	2.4938	1.1839	4.7594	0.0100	2.339	-2.32399000908	
2	5458	0.306920095573	0.318238662835	1.4084	0.5325	3.2037	0.0010	1.4051	-1.71157493587	(
3	5907	0.306920095573	0.321540623989	1.0056	0.5540	4.6952	0.0014	1.0041	-1.18661418656	-(
4	1535	0.306920095573	0.235967803042	1.4713	1.1484	4.3254	0.0067	1.0384	-0.1662	
5	4461	0.306920095573	0.255383108779	1.3088	0.6369	2.6003	0.0022	1.209	-1.09154292759	(
6	4520	0.306920095573	0.29935993776	1.8066	0.6483	2.7848	0.0028	1.7536	-1.92723561947	
7	3871	0.306920095573	0.430381932204	0.7418	0.5948	2.5035	0.0032	0.6894	-0.642639886334	-(
8	2207	0.306920095573	0.25229715663	0.7207	0.8032	2.5479	0.0028	0.6124	-0.285309922972	



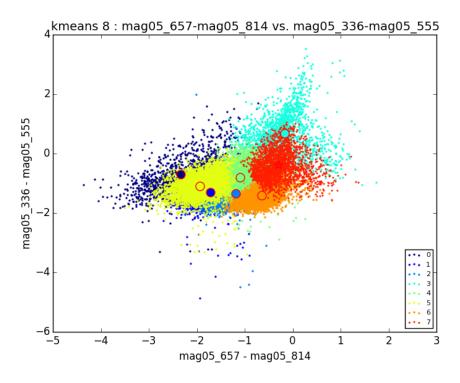
 $Figure~27:~kmeans_3d_8cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$



 $Figure~28:~kmeans_3d_8cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



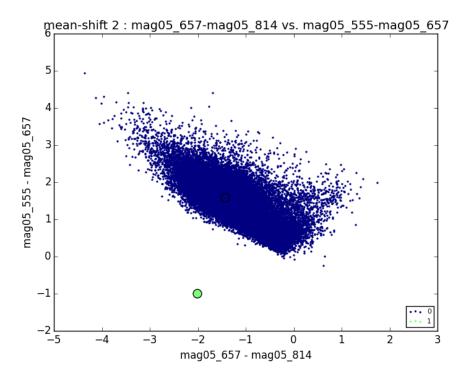
 $\label{lem:sigma} Figure 29: kmeans_3d_color_8cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$



 $Figure~30:~kmeans_base_color_8cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$

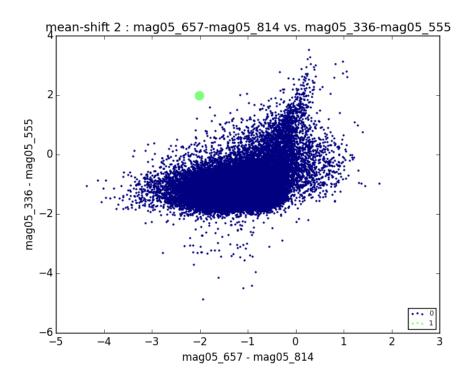
Meanshift results

Bandw	Nclust	score	TotObj	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10
1.0690	2	0.476831604545	29060	29059	1	0	0	0	0	0	0	0	0
0.6000	18	0.0182281345926	29060	23743	1924	1119	614	525	395	332	278	75	30
0.6500	15	0.0277504794735	29060	24098	1942	1149	683	412	310	281	118	50	7
0.7000	11	0.0346009408889	29060	27239	761	358	258	247	135	50	6	3	2
0.7500	7	0.144686262202	29060	28273	318	168	142	125	33	1	0	0	0
0.8000	7	0.143602309857	29060	28287	295	174	142	128	33	1	0	0	0

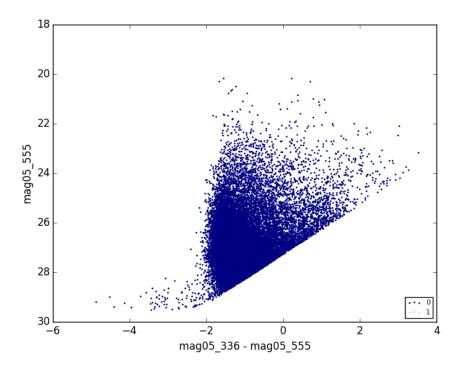


 $Figure~31:~meanshift_3d_color_2cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$

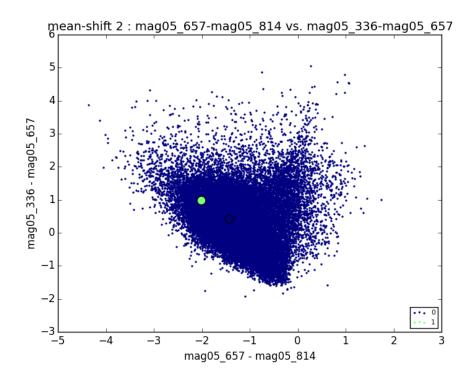
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	29059	0.476831604545	0.47684801363	1.3459	1.5185	9.0209	0.0010	1.3258	-1.42207920143	0.42
2	1	0.476831604545	0.0	N/A	N/A	N/A	N/A	1.2382	-2.005	



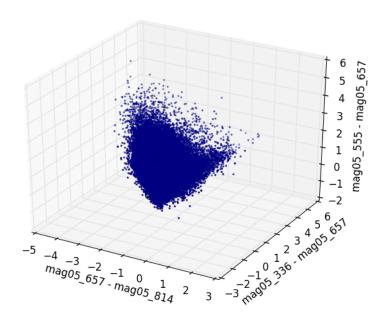
 $Figure~32:~meanshift_base_color_2cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$



 $Figure~33:~meanshift_CMD_2cl_mag05_336-mag05_555vsmag05_555.png$



 $Figure~34:~meanshift_3d_color_2cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



 $\label{eq:figure 35:meanshift_3d_color_2cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$

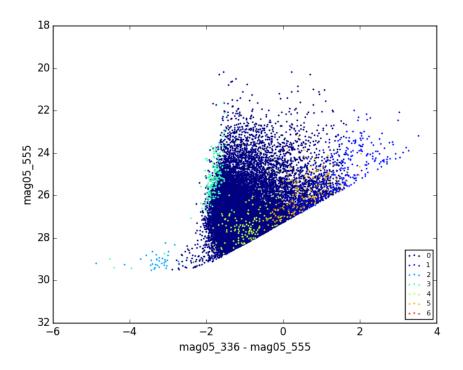
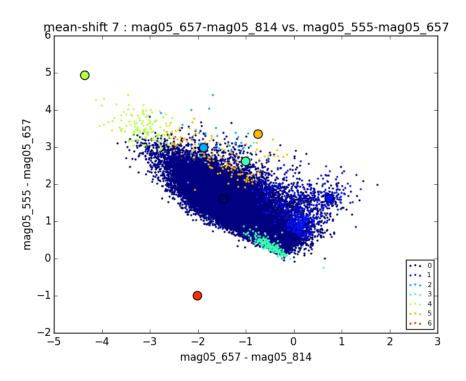
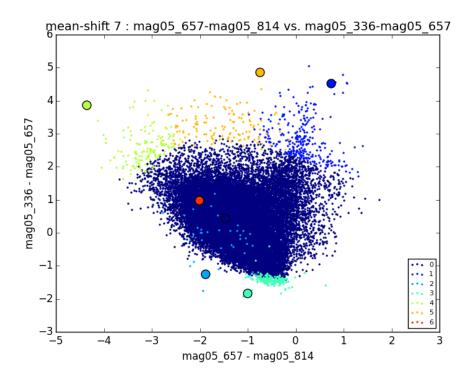


Figure 36: meanshift_CMD_7cl_mag05_336-mag05_555vsmag05_555.png

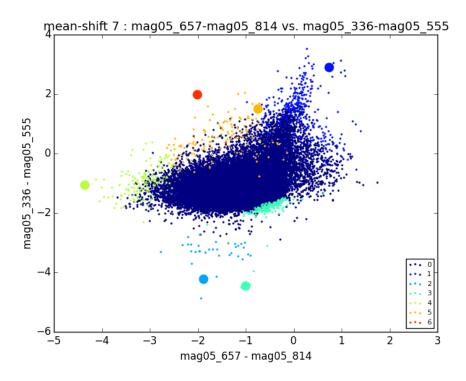
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1	
1	28273	0.144686262202	0.133588629032	1.3157	1.4342	5.7910	0.0010	1.2983	-1.46977992599	0.
2	318	0.144686262202	0.497564225721	1.8685	1.1476	3.5656	0.0067	1.2017	0.6938	
3	33	0.144686262202	0.491404163505	2.1327	1.0982	3.2575	0.1156	2.077	-1.88133333333	-1
4	168	0.144686262202	0.795686817849	0.9497	0.4699	3.7476	0.0090	0.8032	-1.004	
5	1	0.144686262202	0.0	N/A	N/A	N/A	N/A	1.2382	-2.005	
6	125	0.144686262202	0.328772987107	2.6642	1.1035	2.8186	0.0240	2.2108	-0.736	
7	142	0.144686262202	0.552237331024	3.1395	0.8939	2.8563	0.0239	2.9742	-4.351	
1	28287	0.143602309857	0.132583368273	1.3159	1.4355	5.7910	0.0010	1.2984	-1.46535780049	0.
2	295	0.143602309857	0.504718561136	1.8843	1.1348	3.5656	0.0067	1.2073	0.74322222222	4
3	33	0.143602309857	0.491582662094	2.1327	1.0982	3.2575	0.1156	2.077	-1.88133333333	-1
4	174	0.143602309857	0.790123345035	0.9519	0.4808	3.7476	0.0090	0.8061	-1.004	
5	142	0.143602309857	0.557038129471	3.1395	0.8939	2.8563	0.0239	2.9742	-4.351	
6	128	0.143602309857	0.320330518068	2.6538	1.1158	2.8186	0.0240	2.1973	-0.736	
7	1	0.143602309857	0.0	N/A	N/A	N/A	N/A	1.2382	-2.005	



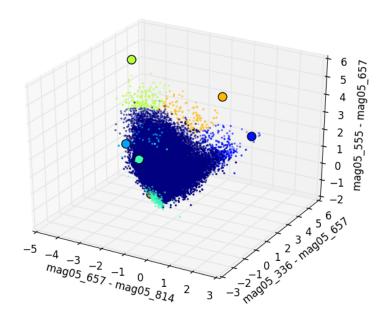
 $Figure~37:~meanshift_3d_color_7cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$



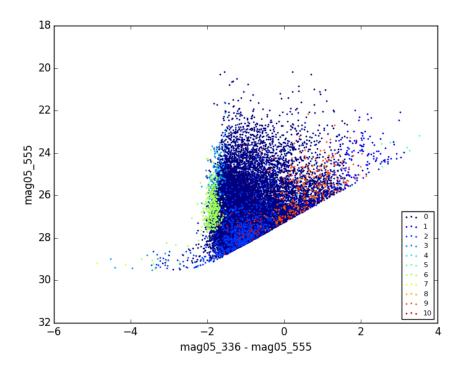
 $Figure~38:~meanshift_3d_color_7cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



 $Figure~39:~meanshift_base_color_7cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$

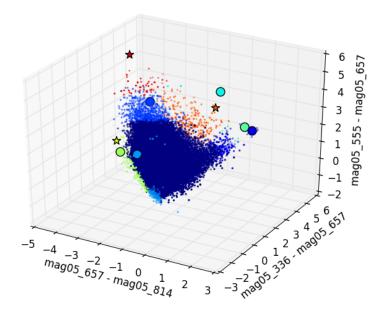


 $\label{eq:figure 40:meanshift_3d_color_7cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$

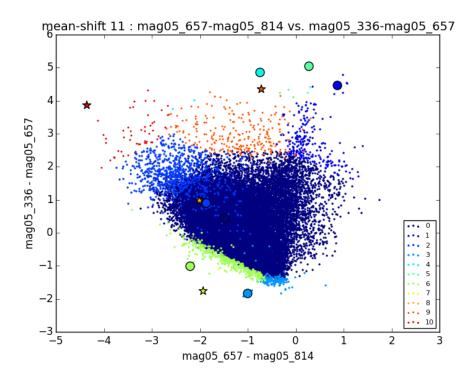


 $Figure~41:~meanshift_CMD_11cl_mag05_336-mag05_555vsmag05_555.png$

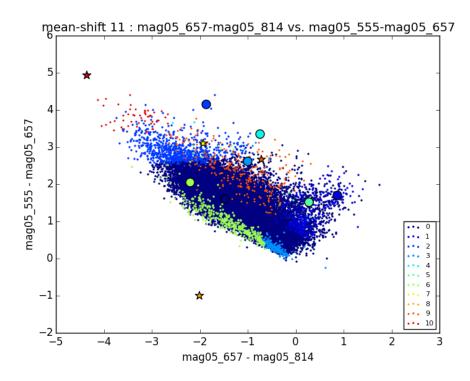
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1
1	27239	0.0346009408889	0.0142051320079	1.2770	1.3746	5.0585	0.0010	1.2604	-1.47522579981
2	247	0.0346009408889	0.37517183134	1.7959	1.0345	3.1617	0.0067	1.0979	0.873
3	761	0.0346009408889	0.391894755961	2.4684	0.9901	3.5033	0.0102	2.3508	-1.85933333333
4	135	0.0346009408889	0.648219471911	0.9657	0.5175	3.8202	0.0090	0.8345	-1.004
5	3	0.0346009408889	0.114270013754	3.3894	1.4450	2.1620	0.5263	2.7456	-0.736
6	6	0.0346009408889	0.639168741536	2.6766	0.6714	1.0137	0.1929	1.8326	0.28
7	358	0.0346009408889	0.200400938587	1.2239	0.8971	4.1412	0.0105	1.1528	-2.2
8	2	0.0346009408889	0.672744131902	2.2144	0.7377	0.7377	0.7377	2.214	-1.924
9	1	0.0346009408889	0.0	N/A	N/A	N/A	N/A	1.2382	-2.005
10	258	0.0346009408889	0.158881286314	2.3678	1.2137	3.3064	0.0272	1.9173	-0.715
11	50	0.0346009408889	0.438051049927	3.4361	0.9229	2.5712	0.0405	3.2282	-4.351



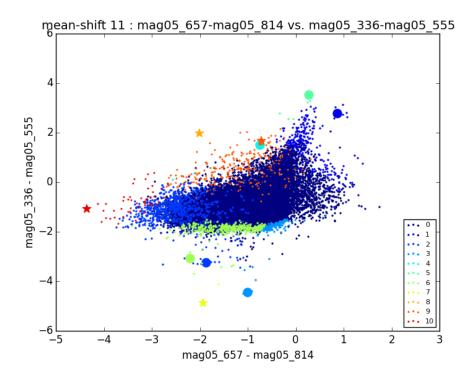
 $Figure~42:~meanshift_3d_color_11cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$



 $Figure~43:~meanshift_3d_color_11cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$

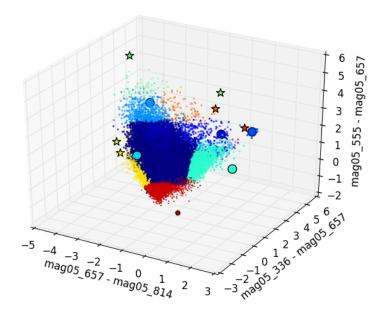


 $Figure~44:~meanshift_3d_color_11cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$

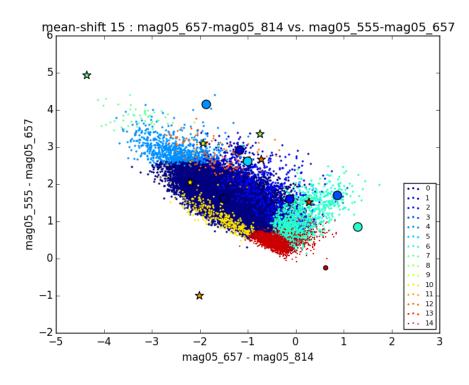


 $Figure~45:~meanshift_base_color_11cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$

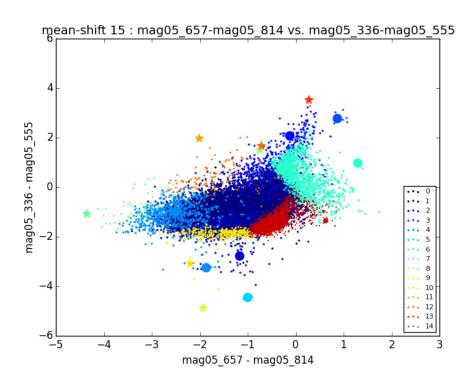
Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1
1	24098	0.0277504794735	-0.0529845804567	1.3110	1.2016	4.1371	0.0010	1.295	-1.4846733913
2	281	0.0277504794735	0.289669151637	1.8475	0.9836	2.9644	0.0143	1.692	-1.17356666667
3	412	0.0277504794735	0.149212640729	1.8986	1.1493	2.9142	0.0179	1.3928	-0.12537037037
4	7	0.0277504794735	0.435412002935	2.8113	0.4906	0.8154	0.1675	1.5486	0.873
5	683	0.0277504794735	0.328940272564	2.5084	0.8960	2.8230	0.0102	2.3931	-1.85933333333
6	2	0.0277504794735	0.724885307348	1.9391	0.2876	0.2876	0.2876	1.9378	-1.004
7	1149	0.0277504794735	0.361641638536	1.1412	1.0119	3.0816	0.0067	0.7252	1.3
8	50	0.0277504794735	0.418631522812	3.4361	0.9229	2.5712	0.0405	3.2282	-4.351
9	3	0.0277504794735	0.073373235658	3.3894	1.4450	2.1620	0.5263	2.7456	-0.736
10	2	0.0277504794735	0.294229493578	2.2144	0.7377	0.7377	0.7377	2.214	-1.924
11	310	0.0277504794735	0.350704159123	1.2366	0.7265	2.9892	0.0105	1.1689	-2.2
12	1	0.0277504794735	0.0	N/A	N/A	N/A	N/A	1.2382	-2.005
13	118	0.0277504794735	0.23846935246	2.6646	1.0252	2.4015	0.0394	2.2467	-0.715
14	2	0.0277504794735	0.162318729645	2.8443	0.7439	0.7439	0.7439	1.9062	0.28
15	1942	0.0277504794735	0.58535846811	0.7008	0.5662	2.3311	0.0041	0.6333	0.63



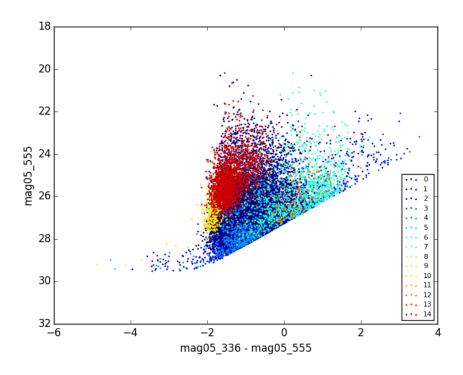
 $Figure~46:~meanshift_3d_color_15cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$



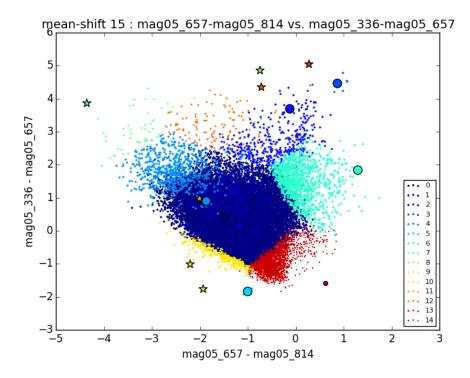
 $Figure~47:~meanshift_3d_color_15cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$



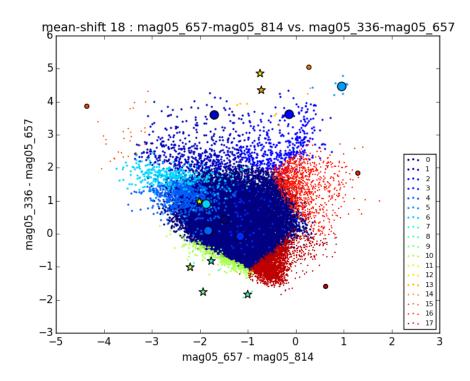
 $Figure~48:~meanshift_base_color_15cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$



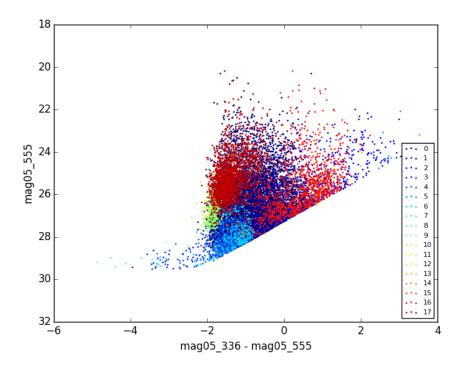
 $Figure~49:~meanshift_CMD_15cl_mag05_336-mag05_555vsmag05_555.png$



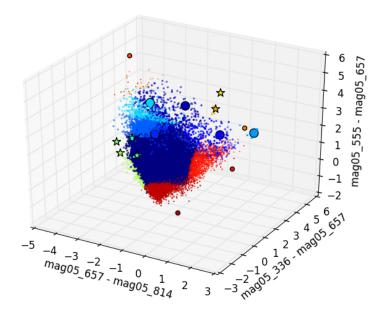
 $Figure~50:~meanshift_3d_color_15cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



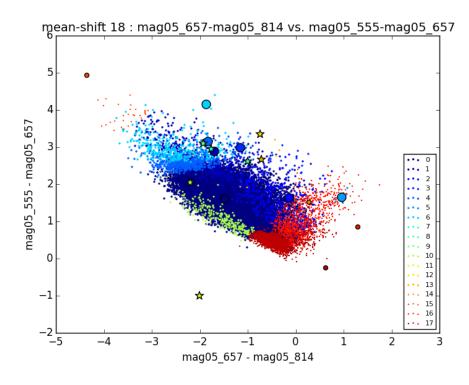
 $Figure~51:~meanshift_3d_color_18cl_mag05_657-mag05_814vsmag05_336-mag05_657.png$



 $Figure~52:~meanshift_CMD_18cl_mag05_336-mag05_555vsmag05_555.png$

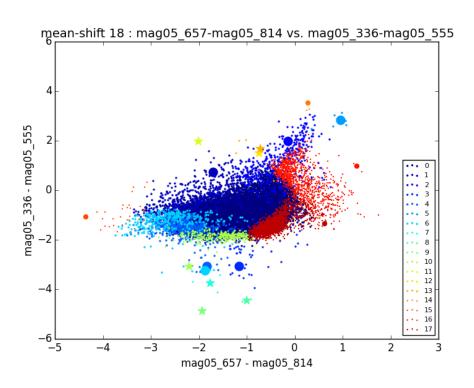


 $Figure~53:~meanshift_3d_color_18cl_mag05_657-mag05_814vsmag05_336-mag05_657vsmag05_555-mag05_657.png$



 $Figure~54:~meanshift_3d_color_18cl_mag05_657-mag05_814vsmag05_555-mag05_657.png$

Cluster	Nobj	tScore	cScore	${ m rms}$	AvgDist	MaxDist	MinDist	Stdev	Cen1
1	23743	0.0182281345926	-0.0608731501277	1.2909	1.1790	4.0435	0.0010	1.2755	-1.4831717185
2	525	0.0182281345926	0.024860418418	2.4951	1.1233	3.0072	0.0102	2.2524	-1.70317391304
3	395	0.0182281345926	0.158216922125	1.8398	1.0846	2.7325	0.0179	1.3171	-0.137818181818
4	75	0.0182281345926	0.21077012396	1.7486	1.0343	2.7770	0.0143	1.5548	-1.15161904762
5	614	0.0182281345926	0.324070724486	2.1311	0.6742	2.3091	0.0071	2.0783	-1.82363636364
6	7	0.0182281345926	0.457273398434	2.8113	0.4906	0.8154	0.1675	1.5486	0.96
7	332	0.0182281345926	0.177920439423	2.5171	0.8263	2.8782	0.0157	2.4094	-1.85933333333
8	3	0.0182281345926	0.327334503183	2.0461	0.6451	0.7005	0.5982	2.0425	-1.76
9	2	0.0182281345926	0.725398460161	1.9391	0.2876	0.2876	0.2876	1.9378	-1.004
10	1	0.0182281345926	0.0	N/A	N/A	N/A	N/A	2.3327	-1.924
11	278	0.0182281345926	0.370978703946	1.2359	0.7030	2.8609	0.0105	1.166	-2.2
12	1	0.0182281345926	0.0	N/A	N/A	N/A	N/A	1.2382	-2.005
13	1	0.0182281345926	0.0	N/A	N/A	N/A	N/A	2.3656	-0.736
14	7	0.0182281345926	0.337429398232	2.7025	0.9141	1.4962	0.1394	1.9579	-0.715
15	3	0.0182281345926	0.323125659259	2.7424	0.6225	0.9307	0.1929	1.8534	0.28
16	30	0.0182281345926	0.499280979516	3.5278	0.9573	2.5712	0.1204	3.3499	-4.351
17	1119	0.0182281345926	0.329319667272	1.1330	1.0069	3.0816	0.0067	0.7169	1.3
18	1924	0.0182281345926	0.587334878936	0.7011	0.5655	2.3311	0.0041	0.6333	0.63



 $Figure~55:~meanshift_base_color_18cl_mag05_657-mag05_814vsmag05_336-mag05_555.png$