

Supplementary Table: Objects and PC1 Scores

plate	mjd	fiberID	ra	dec	z	bin	survey	instrument	resolution	snr_median	pc1_score	rest_wave_min_A	rest_wave_max_A
266	51630	125	145.89838	-0.722806	0.2712803	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	9.6	1.4743	2831.8	8180.7
266	51630	133	145.93986	-0.790114	0.367843	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	5.52	3.5675	2631.9	7603.2
266	51630	161	146.2918	-0.259474	0.3253868	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	7.45	6.8595	2716.2	7846.8
266	51630	200	145.9253	0.048792	0.2884945	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	7.72	-1.7523	2794.0	8071.4
266	51630	227	145.62226	0.034593	0.06315506	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	18.49	-9.6009	3386.1	9782.2
266	51630	252	145.46519	-1.064475	0.3395857	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	10.71	7.1758	2687.4	7763.6
266	51630	494	146.06576	0.183659	0.1269755	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	16.53	-3.4466	3194.4	9228.2
266	51630	580	146.6342	1.157262	0.2980519	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	5.81	-7.3376	2773.4	8012.0
267	51608	227	147.87927	-0.508826	0.1378086	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	7.33	-9.1415	3164.0	9140.4
267	51608	249	147.31391	-0.989294	0.3555079	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	7.45	10.7924	2655.8	7672.4
267	51608	281	147.03099	-1.145606	0.2415861	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	6.35	-0.4388	2899.5	8376.4
267	51608	300	147.22198	-0.865453	0.06720914	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	15.16	-7.5708	3373.3	9745.0
267	51608	593	148.88333	0.685761	0.1631241	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	13.71	-5.0785	3095.1	8941.4
267	51608	630	149.03443	0.47027	0.3097312	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	9.39	11.9592	2748.7	7940.6
268	51633	2	150.29383	-0.680299	0.1337005	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	8.95	2.561	3175.4	9173.5
268	51633	83	149.63833	-0.855171	0.08596467	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	25.93	-11.5671	3315.0	9576.7
268	51633	85	149.65	-0.99516	0.1667602	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	7.8	-2.7083	3085.5	8913.6
268	51633	146	149.95966	-0.22749	0.09078296	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	23.42	-6.9567	3300.4	9534.4
268	51633	208	149.12819	-0.577262	0.269597	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	5.04	30.4893	2835.5	8191.6
268	51633	423	149.34127	0.298858	0.1699317	0.0-0.4	SDSS DR16	BOSS spectrograph	2000	8.62	-9.2798	3077.1	8889.4
266	51630	3	146.90229	-0.984913	0.6524171	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	5.88	21.6332	2178.6	6293.8
266	51630	126	145.92005	-0.783539	0.5176755	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	12.46	-3.6699	2372.0	6852.6
266	51630	313	145.19933	-0.286225	0.6515839	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	8.71	4.5437	2179.7	6297.0
266	51630	332	145.33887	1.196601	0.4448358	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	15.01	-0.1921	2491.6	7198.0
266	51630	353	145.38704	0.125285	0.488738	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	6.6	-0.8353	2418.2	6985.8
266	51630	405	146.05906	1.048511	0.6928394	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	11.29	-1.0891	2126.6	6143.5
266	51630	515	146.50879	0.588518	0.6494742	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	17.0	-0.2738	2182.5	6305.0
266	51630	628	147.23886	0.373756	0.5838438	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	15.56	-0.5704	2273.0	6566.3
267	51608	78	149.10806	-0.064752	0.5121477	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	11.13	-0.8515	2380.7	6877.6
267	51608	313	147.43057	0.09339	0.4218703	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	9.16	-1.6399	2531.9	7314.3

plate	mjd	fiberID	ra	dec	z	bin	survey	instrument	resolution	snr_median	pc1_score	rest_wave_min_A	rest_wave_max_A
267	51608	368	147.53349	1.23634	0.6920985	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	8.87	-1.1641	2127.5	6146.2
267	51608	423	147.81092	0.681236	0.5017995	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	10.98	-1.3218	2397.1	6925.0
268	51633	235	149.49356	-0.398352	0.595322	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	38.69	-1.7785	2256.6	6519.1
268	51633	299	148.71099	-1.161625	0.6575148	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	17.94	-1.6879	2171.9	6274.5
268	51633	316	148.59067	-0.031089	0.740679	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	10.35	-2.595	2068.2	5974.7
268	51633	589	150.28957	0.377179	0.7417179	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	8.94	-1.733	2066.9	5971.1
269	51910	280	150.70803	-0.414865	0.7945952	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	21.39	-1.4787	2006.0	5795.2
269	51910	299	149.87765	-1.258331	0.7056323	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	13.87	-1.5782	2110.7	6097.4
269	51910	410	150.62088	1.149573	0.6833993	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	7.33	-1.8327	2138.5	6178.0
269	51910	604	151.62429	0.679897	0.772505	0.4-0.8	SDSS DR16	BOSS spectrograph	2000	11.68	-1.8851	2031.0	5867.4
266	51630	294	145.24564	-0.640774	1.163653	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	11.1	2.3481	1663.9	4806.7
266	51630	329	145.39104	1.171197	1.045241	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	5.03	0.4354	1760.2	5085.0
266	51630	611	146.82659	1.00994	0.8608898	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	7.62	-3.5458	1934.6	5588.7
267	51608	151	148.56975	0.13592	0.8849242	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	10.61	0.2465	1909.9	5517.5
267	51608	168	148.18988	0.004309	1.062692	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	9.82	0.8933	1745.3	5042.0
267	51608	191	147.77177	0.013688	0.8751809	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	14.27	2.0519	1919.8	5546.1
267	51608	207	147.75059	-1.019886	1.14837	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	9.57	-1.6539	1675.7	4840.9
268	51633	160	150.07363	0.08992	0.905516	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	9.6	14.18	1889.3	5457.8
268	51633	259	149.08388	-0.994076	0.918184	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	8.45	-1.0154	1876.8	5421.8
268	51633	605	150.12147	1.029155	1.059423	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	15.41	-1.0674	1748.1	5050.0
269	51910	518	151.67523	0.263775	0.878103	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	6.32	-0.8064	1916.8	5537.5
269	51910	567	151.31152	0.894803	0.9466721	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	8.49	-0.7025	1849.3	5342.5
271	51883	62	155.11626	-0.602735	0.9508851	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	9.38	0.0572	1845.3	5330.9
271	51883	77	155.12197	-0.10081	0.8089192	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	7.95	-2.1222	1990.1	5749.3
271	51883	413	154.03325	0.883418	0.8786469	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	15.62	-0.9569	1916.3	5535.9
271	51883	428	154.03949	0.469629	1.010561	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	6.88	-7.0331	1790.5	5172.7
272	51941	77	156.83349	0.014337	0.9501231	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	8.75	-1.7284	1846.0	5333.0
272	51941	111	156.61919	-0.373448	0.8542504	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	12.68	-0.6133	1941.5	5608.7
272	51941	136	155.763	-0.657892	1.088142	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	7.4	1.0392	1724.0	4980.5
272	51941	167	156.26717	-0.108473	0.9878923	0.8-1.2	SDSS DR16	BOSS spectrograph	2000	10.3	-0.0063	1811.0	5231.7
266	51630	58	146.438	-0.65601	1.473592	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	6.93	1.595	1455.4	4204.4
266	51630	208	145.74093	-0.784787	1.36213	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	12.02	0.2763	1524.0	4402.8

plate	mjd	fiberID	ra	dec	z	bin	survey	instrument	resolution	snr_median	pc1_score	rest_wave_min_A	rest_wave_max_A
266	51630	238	145.76225	-0.219649	1.584228	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	9.82	-2.3295	1393.1	4024.4
266	51630	351	145.3386	0.140315	1.475546	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	7.52	-0.7595	1454.2	4201.1
266	51630	396	145.59384	0.27826	1.4047	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	10.25	-2.7318	1497.1	4324.9
267	51608	5	148.70752	-0.73062	1.287415	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	7.42	-14.729	1573.8	4546.6
267	51608	51	148.42886	-0.863258	1.301314	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	9.03	1.8027	1564.3	4519.2
267	51608	53	148.41438	-0.720759	1.385627	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	6.45	-0.3718	1509.0	4359.4
267	51608	169	148.34861	-0.634101	1.384028	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	13.85	2.3222	1510.0	4362.4
267	51608	287	146.93358	-1.245374	1.369275	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	8.16	-2.4055	1519.5	4389.5
267	51608	349	147.14063	0.416251	1.487651	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	10.2	-3.588	1447.1	4180.7
268	51633	25	150.42554	-0.419316	1.306056	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	9.04	-1.2664	1561.1	4509.9
268	51633	50	149.75901	-1.180317	1.420516	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	8.34	2.1857	1487.3	4296.6
268	51633	193	149.66694	-0.155373	1.585598	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	10.96	-0.1899	1392.3	4022.3
269	51910	34	152.05662	-0.038473	1.472574	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	6.43	3.0254	1456.0	4206.1
269	51910	42	151.27729	-1.218695	1.462372	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	9.89	2.7207	1462.0	4223.6
269	51910	308	150.43031	-0.602926	1.470221	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	8.34	5.074	1457.4	4210.1
269	51910	379	150.47733	0.757187	1.356151	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	16.03	3.7455	1527.9	4414.0
270	51909	238	152.36013	-0.272435	1.562696	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	8.3	3.4042	1404.8	4058.2
270	51909	312	152.15567	-0.309777	1.353014	1.2-1.6	SDSS DR16	BOSS spectrograph	2000	11.69	2.2195	1530.0	4419.9
266	51630	80	146.76383	0.041421	1.772007	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	8.14	-5.0748	1298.7	3751.8
266	51630	225	145.74414	-0.043567	1.615831	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	8.68	1.0746	1376.2	3975.8
266	51630	282	145.19927	-1.232732	1.878727	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	9.98	-0.5595	1250.6	3612.7
266	51630	321	145.21389	1.151702	1.961112	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	8.16	-2.4231	1215.8	3512.2
266	51630	508	146.39794	0.145165	1.903545	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	7.12	-2.5865	1239.9	3581.8
266	51630	566	146.64496	0.937431	1.998794	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	7.59	-2.55	1200.5	3468.1
267	51608	264	147.55427	-0.477538	1.891315	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	7.05	-2.7799	1245.1	3597.0
267	51608	275	147.52062	-0.336742	1.775525	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	19.35	-0.0948	1297.1	3747.0
267	51608	294	147.13939	-0.850967	1.609856	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	15.57	-0.7307	1379.4	3984.9
267	51608	330	147.16954	1.096252	1.813826	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	7.54	-1.0814	1279.4	3696.0
268	51633	59	149.90953	-0.583584	1.878327	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	13.81	0.2526	1250.7	3613.2
269	51910	30	151.92844	-0.592369	1.629847	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	8.03	0.3479	1368.9	3954.6
269	51910	60	151.43094	-0.933329	1.709406	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	6.63	6.6761	1328.7	3838.5
269	51910	91	151.13167	-0.821981	1.636068	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	14.37	1.5009	1365.7	3945.3

plate	mjd	fiberID	ra	dec	z	bin	survey	instrument	resolution	snr_median	pc1_score	rest_wave_min_ A	rest_wave_max_ A
269	51910	297	150.09098	-1.008865	1.658752	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	8.23	0.2386	1354.0	3911.6
269	51910	613	151.81473	0.716218	1.680108	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	7.88	-0.0793	1343.2	3880.4
270	51909	144	152.83313	-0.695967	1.890817	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	6.59	7.6937	1245.3	3597.6
270	51909	213	152.63938	-0.790152	1.669927	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	15.84	0.6934	1348.4	3895.2
270	51909	491	152.75386	0.344287	1.744749	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	12.16	0.351	1311.6	3789.1
271	51883	152	154.61189	-0.16418	1.812651	1.6-2.0	SDSS DR16	BOSS spectrograph	2000	12.42	-0.8688	1279.9	3697.6