

Table 1: Parameters of groups and clusters

Cluster	$z_h$	$\sigma_c$ km s <sup>-1</sup>	$\log M_{200c}/M_\odot$	$\log L_{K,200c}/L_\odot$	$\log L_x$ erg s <sup>-1</sup>	$R_{200c}$ Mpc	$R_{sp}$ Mpc	$R_c$ Mpc	$R_{sp}/R_{200c}$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
HCG42	0.012588	228	13.30	11.79	42.28	0.56	0.75	0.30	1.34
AWM3	0.014878	269	13.52	11.68	42.00	0.66	1.04	0.44	1.58
NGC2563	0.015701	369	13.93	12.15	42.23	0.91	1.00	0.39	1.10
AWM7	0.017344	698	14.77	12.62	43.98	1.71	1.97	1.08	1.15
NGC0533	0.018411	404	14.05	12.25	42.87	0.99	1.40	0.57	1.41
NGC0741	0.018416	368	13.93	12.10	42.61	0.90	0.98	0.39	1.09
NGC0080	0.019098	296	13.64	12.29	42.87	0.73	0.79	0.37	1.08
MKW04	0.020208	515	14.37	12.41	43.15	1.26	1.53	0.78	1.21
NGC3022	0.020959	276	13.56	11.97	42.30	0.68	1.14	0.50	1.68
A1367	0.021743	749	14.86	12.89	43.91	1.84	2.74	1.38	1.49
NGC2783	0.022151	346	13.85	12.04	42.00	0.85	1.02	0.59	1.20
UGC07115	0.022199	334	13.81	12.12	42.61	0.82	1.06	0.66	1.29
UGC02005	0.022342	352	13.88	12.05	42.65	0.86	1.12	0.59	1.30
IC5357	0.022436	381	13.98	12.08	42.72	0.93	1.02	0.57	1.10
NGC1016	0.022581	322	13.76	12.28	42.30	0.79	1.10	0.40	1.39
NGC3158	0.022630	375	13.95	12.25	42.46	0.92	1.24	0.32	1.35
NGC0070	0.022645	415	14.09	12.30	42.97	1.02	1.15	0.62	1.13
AWM2	0.022761	293	13.63	11.97	*	0.72	0.78	0.42	1.08
NGC5171	0.023000	371	13.94	12.18	42.98	0.91	1.47	0.58	1.62
NGc2832	0.023044	331	13.79	12.25	43.00	0.81	1.25	0.63	1.54
A1656	0.023250	921	15.13	13.22	44.57	2.26	4.17	2.00	1.84
NGC5129	0.023402	290	13.62	12.11	42.94	0.71	1.36	0.55	1.92
MCG-0129015	0.023813	334	13.81	12.02	42.64	0.82	1.56	0.60	1.90
NGC7436B	0.024720	383	13.98	12.24	42.00	0.94	1.08	0.48	1.15
NGC5306	0.024732	305	13.68	12.06	42.69	0.75	1.30	0.58	1.73
NGC5223	0.024834	271	13.53	12.19	42.75	0.66	0.97	0.36	1.47
MKW05	0.024858	288	13.61	11.84	*	0.70	0.88	0.26	1.26
NGC4325	0.025386	271	13.53	11.79	42.71	0.66	0.84	0.41	1.27
IC0186	0.026023	318	13.74	12.10	42.30	0.78	1.16	0.58	1.49
NGC7237	0.026102	376	13.96	12.20	42.75	0.92	1.58	0.60	1.72
IC2476	0.026198	243	13.38	11.88	42.30	0.59	0.96	0.32	1.63
NGC5627	0.026682	314	13.72	12.14	42.36	0.77	1.10	0.53	1.43
MKW08	0.026906	450	14.19	12.50	43.48	1.10	1.73	0.85	1.57
UGC05088	0.027622	247	13.41	11.72	42.30	0.60	0.90	0.41	1.50
MKW04s	0.027928	423	14.11	12.27	43.04	1.03	1.53	0.78	1.48
AWM1	0.028652	402	14.05	12.37	42.30	0.98	1.15	0.62	1.17
NGC2795	0.028992	431	14.14	12.38	42.70	1.04	1.32	0.62	1.27
NGC6338	0.029342	552	14.46	12.45	43.40	1.35	2.12	0.50	1.57
NGC3119	0.029657	355	13.88	12.19	42.65	0.87	1.20	0.60	1.38
NGC5758	0.029923	291	13.62	12.09	42.82	0.71	1.09	0.50	1.54
A2199	0.030458	746	14.85	13.01	44.31	1.82	3.56	1.42	1.96
A2197	0.030477	547	14.45	12.85	43.08	1.34	1.80	0.92	1.34
NGC6107	0.031093	546	14.44	12.55	43.23	1.33	1.90	1.03	1.43
NGC6159	0.031320	266	13.51	11.81	42.78	0.65	0.89	0.45	1.37

Table 1: (Table continuation)

Cluster	$z_h$	$\sigma_c$ km s <sup>-1</sup>	$\log M_{200c}/M_\odot$	$\log L_{K,200c}/L_\odot$	$\log L_x$ erg s <sup>-1</sup>	$R_{200c}$ Mpc	$R_{sp}$ Mpc	$R_c$ Mpc	$R_{sp}/R_{200c}$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
AWM4	0.031827	380	13.97	12.04	43.36	0.93	1.34	0.57	1.44
A0999	0.031866	248	13.41	12.05	42.48	0.60	1.11	0.53	1.85
UGC04991	0.031958	515	14.37	12.37	42.60	1.26	1.72	0.65	1.36
A2162	0.032147	346	13.85	12.17	42.60	0.84	1.12	0.63	1.33
A1177	0.032159	337	13.81	12.09	43.04	0.82	1.14	0.55	1.39
A1016	0.032178	267	13.51	12.09	*	0.65	1.02	0.35	1.57
A1314	0.032443	494	14.31	12.49	43.11	1.18	1.90	0.55	1.61
A1185	0.032734	676	14.72	12.84	43.18	1.69	2.19	0.84	1.30
A1257	0.034588	242	13.38	11.91	*	0.58	0.99	0.40	1.71
A2063	0.034664	753	14.86	12.79	44.01	1.83	2.61	1.10	1.43
A2052	0.034726	623	14.61	12.70	44.11	1.52	2.12	0.87	1.39
AWM5	0.035043	517	14.37	12.67	43.45	1.24	1.70	0.89	1.37
A1228A	0.035055	216	13.23	12.18	*	0.57	1.00	0.47	1.75
RXCJ1057	0.035208	297	13.65	11.93	42.48	0.72	0.97	0.46	1.35
VV196	0.035289	412	14.08	12.12	42.85	1.00	1.17	0.71	1.17
A2147	0.036179	853	15.02	13.11	44.20	2.08	3.47	1.49	1.67
A2151	0.036378	734	14.83	13.08	43.65	1.79	2.10	0.55	1.17
NGC5098	0.036812	445	14.18	12.46	43.11	1.08	1.73	0.71	1.60
RXCJ1511	0.038990	374	13.95	12.10	42.95	0.91	1.12	0.63	1.23
A1139	0.039327	459	14.21	12.57	43.18	1.12	1.64	0.71	1.46
RBS858	0.039586	445	14.18	12.39	43.11	1.08	1.64	0.84	1.52
A2107	0.041335	581	14.52	12.69	43.77	1.41	2.17	0.63	1.54
A1228B	0.042892	347	13.85	12.25	42.78	0.84	1.28	0.50	1.52
A1983	0.044803	460	14.22	12.70	43.41	1.12	1.34	0.78	1.20
MKW03s	0.044953	608	14.58	12.67	44.15	1.47	1.95	0.76	1.33
A0957	0.045026	689	14.74	12.70	43.61	1.67	1.79	0.99	1.07
A2040	0.045242	589	14.54	12.82	43.26	1.43	2.20	0.84	1.54
X1010	0.045877	384	13.98	12.36	42.30	0.93	1.20	0.81	1.29
A1100	0.046463	402	14.04	12.31	42.78	0.97	1.22	0.55	1.26
RXCJ1722	0.046580	524	14.39	12.56	42.70	1.27	1.64	0.67	1.29
RXCJ0748	0.046602	454	14.20	12.60	43.15	1.09	1.28	0.71	1.17
SHK352	0.049521	532	14.41	12.60	43.43	1.29	2.17	0.74	1.68
A0671	0.049802	805	14.95	12.89	43.66	1.95	1.97	0.84	1.01
Sh166	0.050043	323	13.76	12.17	*	0.78	1.38	0.56	1.77
Zw2844	0.050489	401	14.04	12.39	43.46	0.97	1.48	0.63	1.52
A0757	0.051319	368	13.92	12.43	43.66	0.89	1.79	0.77	2.01
A1291A	0.051349	391	14.00	12.17	43.34	0.94	1.48	0.55	1.57
A1377	0.051807	632	14.63	12.77	43.45	1.53	2.05	0.63	1.34
A1461	0.053962	317	13.73	11.92	*	0.76	1.13	0.49	1.49
RXCJ1022	0.054163	551	14.45	12.65	43.26	1.33	1.57	0.84	1.18
RXCJ0844	0.054858	320	13.74	12.16	42.90	0.77	1.30	0.63	1.69
RXCJ1122	0.055119	237	13.34	11.79	42.78	0.57	1.07	0.42	1.88
A1318	0.056419	394	14.01	12.48	42.60	0.95	1.26	0.68	1.33
RXCJ1654	0.057075	383	13.98	12.27	43.26	0.92	1.26	0.77	1.37

Table 1: (Table continuation)

Cluster	$z_h$	$\sigma_c$ km s <sup>-1</sup>	$\log M_{200c}/M_\odot$	$\log L_{K,200c}/L_\odot$	$\log L_x$ erg s <sup>-1</sup>	$R_{200c}$ Mpc	$R_{sp}$ Mpc	$R_c$ Mpc	$R_{sp}/R_{200c}$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A1291B	0.057161	396	14.02	12.07	*	0.95	1.05	0.50	1.11
A2169	0.057656	502	14.33	12.46	43.36	1.21	1.45	0.63	1.20
A1991	0.058463	554	14.46	12.81	43.85	1.33	1.49	0.95	1.12
RXCJ0746	0.058482	317	13.73	12.21	43.20	0.76	0.90	0.56	1.18
A1383	0.059583	464	14.23	12.58	43.11	1.12	1.67	0.95	1.49
A1507	0.059967	432	14.13	12.42	42.85	1.02	1.53	0.63	1.50
A0602	0.060551	560	14.47	12.64	43.76	1.35	1.90	0.92	1.41
RXCJ1224	0.060664	454	14.20	12.40	43.18	1.09	1.73	0.95	1.59
Anon4	0.061053	397	14.02	12.39	*	0.96	1.52	0.64	1.58
A1452	0.061649	408	14.06	12.28	*	0.98	1.10	0.59	1.12
A1781	0.062264	362	13.90	12.44	*	0.87	1.56	0.65	1.79
A1795	0.062444	775	14.89	12.95	44.76	1.86	3.06	1.34	1.64
A1275	0.062750	348	13.85	12.29	43.34	0.84	1.20	0.67	1.43
A1003	0.062763	575	14.50	12.49	43.00	1.38	1.66	0.77	1.20
RXCJ1351	0.062915	528	14.40	12.60	43.08	1.29	1.70	0.92	1.32
A1831A	0.062942	480	14.27	12.48	*	1.15	1.43	0.69	1.24
A1825	0.063274	633	14.63	12.56	43.04	1.52	1.38	0.55	0.91
A1668	0.063699	635	14.63	12.72	43.91	1.52	1.82	0.95	1.20
A1436	0.064960	700	14.76	12.83	43.72	1.68	1.82	1.41	1.08
A2149	0.065253	361	13.90	12.46	43.62	0.87	1.28	0.63	1.47
A1775A	0.065591	324	13.76	12.31	*	0.78	1.64	0.45	2.10
A2124	0.065722	736	14.83	12.83	43.84	1.77	2.21	0.92	1.25
A2079	0.065746	618	14.60	12.95	43.57	1.48	2.12	0.95	1.43
RXCJ1206	0.065786	269	13.52	12.08	43.15	0.65	1.22	0.60	1.88
A2092	0.066564	486	14.29	12.52	43.60	1.17	2.05	0.76	1.75
Anon3	0.067960	380	13.96	12.29	*	0.91	1.26	0.50	1.38
A1035A	0.067997	563	14.48	12.63	42.85	1.35	1.79	0.90	1.33
A1569A	0.068759	484	14.26	12.44	43.30	1.16	1.50	0.60	1.29
A1371	0.068891	552	14.45	12.67	43.53	1.32	2.12	0.90	1.61
A1066	0.068917	768	14.88	12.98	43.82	1.84	3.03	1.26	1.65
A1270	0.068939	524	14.38	12.68	42.78	1.26	1.41	0.95	1.12
A1534	0.069848	322	13.75	12.41	*	0.77	1.40	0.57	1.82
Anon1	0.069884	608	14.58	12.70	43.54	1.47	1.76	1.14	1.20
A1767	0.070326	816	14.96	13.03	44.10	1.95	2.55	1.10	1.31
Zw6718	0.071374	550	14.45	12.54	43.80	1.32	2.00	0.87	1.52
A1904	0.071708	771	14.89	13.07	43.67	1.84	2.02	1.12	1.10
RXCJ1053A	0.071886	507	14.34	12.68	43.72	1.21	1.52	0.93	1.26
A1589	0.071955	778	14.90	13.06	44.23	1.86	3.11	1.55	1.67
A2065	0.072211	1104	15.35	13.31	44.40	2.64	3.36	1.67	1.27
A1024	0.073296	578	14.51	12.60	43.40	1.38	1.83	0.59	1.33
A2089	0.073546	531	14.40	12.66	43.15	1.27	1.48	0.91	1.16
A2064	0.073689	633	14.63	12.66	43.86	1.51	1.67	1.00	1.11
J1053B	0.073762	420	14.09	12.49	*	1.00	1.22	0.71	1.22
A1238	0.074111	541	14.42	12.78	43.41	1.29	2.12	0.90	1.64

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Cluster	$z_h$	$\sigma_c$ km s <sup>-1</sup>	$\log M_{200c}/M_\odot$	$\log L_{K,200c}/L_\odot$	$\log L_x$ erg s <sup>-1</sup>	$R_{200c}$ Mpc	$R_{sp}$ Mpc	$R_c$ Mpc	$R_{sp}/R_{200c}$
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A1775B	0.075138	581	14.52	12.78	44.20	1.39	1.78	0.81	1.28
A1203	0.075307	416	14.08	12.64	*	0.99	1.45	0.67	1.46
A1800	0.075321	705	14.77	12.91	44.19	1.68	2.28	1.24	1.36
A1190	0.075334	670	14.70	12.91	43.88	1.60	1.95	0.89	1.22
A1831B	0.075481	952	15.16	12.97	44.18	2.27	2.85	1.64	1.26
A1424	0.075900	632	14.63	12.82	43.71	1.51	1.82	1.12	1.20
A1205	0.076103	787	14.91	12.98	44.02	1.88	2.26	1.34	1.20
A1516	0.076166	660	14.68	12.87	*	1.58	1.82	1.34	1.15
A1173	0.076193	516	14.36	12.61	43.70	1.23	1.97	0.67	1.60
J1350	0.076439	359	13.89	12.40	*	0.86	1.30	0.41	1.51
Zw4905	0.076817	568	14.49	12.67	43.79	1.36	2.00	1.00	1.47
Zw5029	0.077360	912	15.10	13.15	44.43	2.18	2.55	1.48	1.17
A1773	0.077425	832	14.98	12.98	43.89	1.98	2.43	1.10	1.23
A2061	0.077746	712	14.78	13.12	44.31	1.70	1.95	0.97	1.15
A2029	0.077812	1046	15.28	13.37	44.89	2.50	4.24	1.53	1.70
A1780	0.077855	474	14.25	12.70	*	1.13	1.82	0.78	1.61
A1035B	0.078276	613	14.59	12.58	43.30	1.46	1.61	0.84	1.10
A1898	0.078525	434	14.13	12.47	43.04	1.04	1.90	0.81	1.83
A1809	0.079290	729	14.81	12.99	43.91	1.74	2.47	1.10	1.42
A1569B	0.079331	493	14.30	12.46	*	1.18	1.69	0.67	1.43
A2019	0.081176	345	13.83	12.27	43.18	0.82	1.22	0.59	1.49
A1750	0.085934	747	14.84	13.15	44.32	1.78	2.30	1.23	1.29
A2245	0.087950	1037	15.27	13.25	43.67	2.46	2.93	1.10	1.19
A2142	0.090135	963	15.17	13.42	45.02	2.28	4.12	1.52	1.81
A2244	0.098993	1049	15.28	13.18	44.68	2.48	3.19	1.48	1.28

Description of table columns: (1) group/cluster name; (2) the heliocentric redshift; (3) the  $\sigma_c$ , the dispersion of line-of-sight velocities with cosmological correction  $(1+z)^{-1}$ ; (4) the  $M_{200c}$ , mass within  $R_{200c}$  measured by  $\sigma_c$ ; (5) the  $L_{K,200c}$  ( $M_K < -21^m$ ), IR luminosity within  $R_{200c}$ ; (6) the X-ray luminosity (0.1–2.4 keV) from the X-ray catalogs of galaxy clusters compiled from ROSAT observations; (7) the virial radius  $R_{200c}$  in Mpc; (8) the ‘splashback’ radius  $R_{sp}$  in Mpc; (9) the core radius  $R_c$ ; (10) the ratio of the radii  $R_{sp}/R_{200c}$ .