

Table B.1: Variable NAL systems detected in SDSS DR7 quasars with repeat observations. The object identifiers and position coordinates are taken from the **SpecObjA11** table in the SDSS Catalog Archive Server (CAS) while the quasar redshifts (z_{qso}) are from Hewett & Wild (2010). The absorption system redshift (z_{abs}), system grade, and detected lines are outputs of the York et al. (2011) QAL detection pipeline. Significantly variable absorption lines are in bold and some are flagged based on alternate identifications (*a*), proximity of masked pixels (*b*), and/or questionable continuum fits (*c*).

System	SDSS J	RA	DEC	z_{qso}	z_{abs}	β	Δt_{rest}	Common Detected Lines
1	082033.97+432751.8	125.14157	43.46440	2.4094	0.6540	0.6190	149	Fe I $\lambda 2484^a$; Fe II $\lambda 2344^c$, $\lambda 2374^c$, $\lambda 2383^c$, $\lambda 2587$, $\lambda 2600$; Mg I $\lambda 2853$; Mg II $\lambda \lambda 2796$, 2804
2	140323.39-000606.9	210.84747	-0.10192	2.4713	0.8163	0.5701	165	Fe I $\lambda 2524^a$; Fe II $\lambda 2261^c$, $\lambda 2344^a$, $\lambda 2374$, $\lambda 2383$, $\lambda 2587$; Mg II $\lambda \lambda 2796$, 2804 ; Zn I $\lambda 2139^c$
3	151652.69-005834.8	229.21954	-0.97636	1.7273	0.6953	0.4426	421	Fe II $\lambda 2344^a$, $\lambda 2374^a$, $\lambda 2383$, $\lambda 2587^a$, $\lambda 2600^a$; Mg II $\lambda \lambda 2796$, 2804
4	215421.13-074430.0	328.58804	-7.74170	1.6360	0.6521	0.4359	14	Fe II $\lambda 2383$, $\lambda 2587^b$, $\lambda 2600$; Mg I $\lambda 2853^a$; Mg II $\lambda \lambda$ 2796 ^a , 2804 ^c
5	025743.72+011144.5	44.43222	1.19572	1.7112	0.7670	0.4037	203	Fe II $\lambda 2383$, $\lambda 2587$, $\lambda 2600$; Mg I $\lambda 2853$; Mg II $\lambda \lambda 2796$, 2804
6	012403.77+004432.6	21.01572	0.74244	3.8220	2.2614	0.3722	120	Al III $\lambda 1855$; C I $\lambda 1560^{a,c}$, $\lambda 1657^c$; C IV $\lambda \lambda 1548^c$,

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Table B.1 – Continued

System	SDSS J	RA	DEC	z_{qso}	z_{abs}	β	Δt_{rest}	Common Detected Lines
								1551 ^c ; Fe II λ 2383, λ 2587 ^{a,b} , λ 2600 ^{a,b} , λ 1608 ^c , λ 2374 ^b ; Mg II $\lambda\lambda$ 2796 , 2804; Ni II λ 1317 ^c , λ 1370 ^c , λ 1742 ^c ; S II λ 1251 ^{b,c} , λ 1254 ^{a,b,c} ; Si II λ 1260 ^{a,c} , λ 1527 ^{a,c} ; Si IV λ 1394 ^c
7	092655.98+254830.5	141.73328	25.80849	2.5773	1.5153	0.3383	314	Al II λ 1671 ^{a,c} ; Al III λ 1855 ^a ; C IV $\lambda\lambda$ 1548, 1551 ^c ; Fe II λ 1608 ^c , λ 2344 ^{a,b} , λ 2374 ^a , λ 2383, λ 2587 ^a , λ 2600; Mg II $\lambda\lambda$ 2796, 2804 ^a ; Ni II λ 1710 ^{a,c} , λ 1742 ; Si II λ 1527 ^c ; Zn I λ 2139 ^a
8	075105.17+272116.8	117.77157	27.35468	2.1153	1.2012	0.3340	642	Fe II λ 2383, λ 2587 ; Mg II $\lambda\lambda$ 2796 ^{a,b} , 2804 ^b ; Zn I λ 2139 ^{a,c}
9	024603.68-003211.7	41.51535	-0.53662	1.6023	0.8524	0.3274	165	Fe II λ 2344 , λ 2374, λ 2383 ^a , λ 2587 ^a , λ 2600; Mg I λ 2853; Mg II $\lambda\lambda$ 2796, 2804
10	171748.76+275532.5	259.45319	27.92569	1.9399	1.1674	0.2957	1	Fe II λ 2344, λ 2374 ^a , λ 2383, λ 2587 ^a , λ 2600; Mg I λ 2853; Mg II $\lambda\lambda$ 2796 ^a , 2804
11	131347.68+294201.3	198.44869	29.70038	2.0614	1.5157	0.1938	18	Al II λ 1671; C IV $\lambda\lambda$ 1548,

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Table B.1 – Continued

System	SDSS J	RA	DEC	z_{qso}	z_{abs}	β	Δt_{rest}	Common Detected Lines
								1551; Fe II λ 2383 ^a , λ 2600 ^a ; Mg II $\lambda\lambda$ 2796, 2804; Si II λ 1527
12	024534.07+010813.7	41.39191	1.13716	1.5290	1.1125	0.1780	3	Ca II $\lambda\lambda$ 3935 ^{b,c} , 3970 ^{b,c} ; Fe II λ 2344 ^a , λ 2374 ^a , λ 2383 , λ 2587 ^b , λ 2600; Mg I λ 2853 ^a ; Mg II $\lambda\lambda$ 2796 ^{a,b,c} , 2804; Ti II λ 3385
13	004806.05+004623.6	12.02527	0.77318	2.3635	1.8811	0.1536	35	C IV $\lambda\lambda$ 1548, 1551 ; Fe II λ 2344 ^a , λ 2374 ^b , λ 2383 ^{a,b} , λ 2587 ^b , λ 2600 ^b ; Mg II $\lambda\lambda$ 2796 ^{b,c} , 2804 ^b ; Si II λ 1527 ^a ; Si IV λ 1394 ^c
14	152555.81+010835.4	231.48257	1.14319	1.4629	1.1147	0.1513	1365	Fe II λ 2344 , λ 2383, λ 2587 ^a , λ 2600; Mg I λ 2853; Mg II $\lambda\lambda$ 2796 , 2804
15	143826.73+642859.8	219.61137	64.48329	1.2215	0.9114	0.1492	1331	Fe II λ 2344 ^a , λ 2374, λ 2383 ^a , λ 2587, λ 2600; Mg II $\lambda\lambda$ 2796 , 2804
16	143229.24-010616.0	218.12186	-1.10446	2.0871	1.6627	0.1468	19	Al II λ 1671; C IV $\lambda\lambda$ 1548 , 1551; Fe II λ 2344 ^a , λ 2383 ^a , λ 2587, λ 2600; Mg II $\lambda\lambda$ 2796, 2804; Si II λ 1527 ^a ;

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System	SDSS J	RA	DEC	z_{qso}	z_{abs}	β	Δt_{rest}	Common Detected Lines
								Ti II $\lambda 3385^b$
17	022632.51-003841.4	36.63544	-0.64483	2.3532	1.9699	0.1208	129	Al II $\lambda 1671$; C II $\lambda 1335^c$; C IV $\lambda\lambda 1548, 1551$; Mg II $\lambda 2796^b$; Si IV $\lambda\lambda 1394,$ 1403
18	005202.40+010129.2	13.01002	1.02479	2.2777	1.9116	0.1179	34	Al II $\lambda 1671$; C II $\lambda 1335$; C IV $\lambda\lambda 1548, 1551$; Mg II $\lambda\lambda 2796,$ 2804 ^a ; Ni II $\lambda 1317^c, \lambda 1370^a$; Si IV $\lambda\lambda 1394,$ 1403^a
19	004023.76+140807.3	10.09903	14.13540	1.9053	1.6207	0.1027	25	Al II $\lambda 1671^a$; Al III $\lambda 1855$; C IV $\lambda 1548$; Fe II $\lambda 2383,$ $\lambda 2587, \lambda 2600, \lambda 2344, \lambda 2374$; Mg I $\lambda 2853$; Mg II $\lambda\lambda 2796^b,$ 2804 ^b ; Si II $\lambda 1527$
20	023620.79-003342.2	39.08662	-0.56176	1.6712	1.4635	0.0808	0	Fe II $\lambda 2600$; Mg II $\lambda\lambda 2796,$ 2804; Ti II $\lambda 3385^{b,c}$
21	024154.42-004757.6	40.47678	-0.79932	2.3849	2.1259	0.0794	7	Al II $\lambda 1671$; C I $\lambda 1277^c$; C II $\lambda 1335$; C IV $\lambda\lambda 1548^a,$ 1551 ^a ; Fe II $\lambda 2383, \lambda 2600,$ $\lambda 2344^{a,b}$; Mg II $\lambda 2796^c$; N V $\lambda 1239^c$; O I $\lambda 1302^c$; Si II $\lambda 1260^c, \lambda 1304^c, \lambda 1527$;

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System	SDSS J	RA	DEC	z_{qso}	z_{abs}	β	Δt_{rest}	Common Detected Lines
								Si IV $\lambda 1403^a$
22	131712.01+020224.9	199.30007	2.04030	2.1562	1.9274	0.0751	5	Al II $\lambda 1671^a$; Al III $\lambda 1855$; C II $\lambda 1335^a$; C IV $\lambda \lambda 1548$, 1551; Fe II $\lambda 1608$, $\lambda 2261$, $\lambda 2344^b$, $\lambda 2374^{b,c}$, $\lambda 2383^{a,b,c}$, $\lambda 2587^{b,c}$, $\lambda 2600^c$; Mg II $\lambda \lambda 2796$, 2804^b ; Ni II $\lambda 1742^a$; Si II $\lambda 1527$; Si IV $\lambda \lambda 1394$, 1403
23	171244.11+555949.7	258.18382	55.99717	1.3602	1.2092	0.0660	83	Al III $\lambda 1855^a$; Ca II $\lambda 3970^{b,c}$; Fe II $\lambda 2344$, $\lambda 2374$, $\lambda 2383^a$, $\lambda 2587^a$, $\lambda 2600$; Mg I $\lambda 2853^b$; Mg II $\lambda \lambda 2796$, 2804 ; Mn II $\lambda 2595^a$
24	102046.62+282707.1	155.19427	28.45200	3.1248	2.8750	0.0624	3	C I $\lambda 1280^c$; C II $\lambda 1335$; C IV $\lambda \lambda 1548$, 1551 ; N V $\lambda 1239^c$; Si II $\lambda 1260^c$; Si IV $\lambda \lambda 1394$, 1403
25	161540.76+460451.0	243.91981	46.08083	1.5135	1.3705	0.0585	30	Al II $\lambda 1671$; Al III $\lambda 1855$; Fe II $\lambda 2344$, $\lambda 2374$, $\lambda 2383$, $\lambda 2587$, $\lambda 2600^a$; Mg I $\lambda 2853$; Mg II $\lambda \lambda 2796$, 2804
26	015733.87-004824.4	29.39112	-0.80682	1.5513	1.4156	0.0546	127	Al II $\lambda 1671$; Al III $\lambda \lambda 1855$, 1863; Fe II $\lambda 1608$, $\lambda 2344$, $\lambda 2383$,

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Table B.1 – Continued

System	SDSS J	RA	DEC	z_{qso}	z_{abs}	β	Δt_{rest}	Common Detected Lines
								$\lambda 2587$, $\lambda 2600$; Mg II $\lambda \lambda 2796$, 2804
27	114857.22+594153.9	177.23846	59.69837	2.1231	1.9800	0.0469	701	Al II $\lambda 1671$; Al III $\lambda \lambda 1855$, 1863; C II $\lambda 1335$; C IV $\lambda \lambda 1548$, 1551 ^a ; Fe II $\lambda 1608$, $\lambda 2344^b$, $\lambda 2374$, $\lambda 2383$, $\lambda 2587^b$, $\lambda 2600^b$; Mg II $\lambda \lambda 2796^b$, 2804 ^{b,c} ; O I $\lambda 1302$; Si II $\lambda 1304$, $\lambda 1527$; Si IV $\lambda \lambda 1394$, 1403
28	120142.99+004925.0	180.42912	0.82357	1.5265	1.4181	0.0438	110	Al II $\lambda 1671$; Fe II $\lambda 1608^a$, $\lambda 2344$, $\lambda 2383$, $\lambda 2587$, $\lambda 2600^b$; Mg I $\lambda 2853$; Mg II $\lambda \lambda 2796$, 2804
29	124708.42+500320.7	191.78512	50.05579	2.2712	2.1327	0.0432	583	Al II $\lambda 1671$; C I $\lambda 1277$, $\lambda 1657$; C II $\lambda 1335^c$; C IV $\lambda \lambda 1548$, 1551 ^c ; Fe I $\lambda 2484^b$; Fe II $\lambda 1608$, $\lambda 2344^b$, $\lambda 2374^b$, $\lambda 2383^b$, $\lambda 2587$, $\lambda 2600$; Mg I $\lambda 2853^{b,c}$; Mg II $\lambda \lambda 2796^b$, 2804 ^{b,c} ; O I $\lambda 1302^b$; Si II $\lambda 1260^{b,c}$, $\lambda 1527$
30	212812.33-081529.3	322.05140	-8.25816	1.8808	1.8138	0.0235	7	Al II $\lambda 1671^a$; Al III $\lambda 1855^a$; C IV $\lambda \lambda 1548^a$, 1551 ;

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Table B.1 – Continued

System	SDSS J	RA	DEC	z_{qso}	z_{abs}	β	Δt_{rest}	Common Detected Lines
								Fe II λ 1608, λ 2344 ^a , λ 2374 ^a , λ 2383, λ 2587 ^b , λ 2600 ^b ; Mg I λ 2853 ^b ; Mg II $\lambda\lambda$ 2796 ^b , 2804 ^b ; Si II λ 1527; Si IV $\lambda\lambda$ 1394 ^a , 1403
31	084107.24+333921.7	130.28017	33.65605	3.0694	2.9777	0.0228	8	Al II λ 1671; C II λ 1335; C IV $\lambda\lambda$ 1548 , 1551; N V λ 1243; S II λ 1260; Si II λ 1260; Si IV λ 1394 ^c
32	170428.65+242918.0	256.11940	24.48833	1.7989	1.7462	0.0190	73	Al II λ 1671 ^a ; Al III λ 1855; C IV $\lambda\lambda$ 1548 ^{a,c} , 1551 ^a ; Fe II λ 2383 ^a , λ 2587, λ 2600, λ 2344 ^a ; Mg I λ 2853 ^a ; Mg II $\lambda\lambda$ 2796 ^a , 2804 ^a ; Si II λ 1527 ^{a,c} ; Si IV λ 1403
33	231055.32+004817.1	347.73052	0.80478	3.0034	2.9528	0.0127	92	C IV $\lambda\lambda$ 1548, 1551 ; S II λ 1260; Si II λ 1260; Si IV $\lambda\lambda$ 1394 ^c , 1403 ^a