Table 1. Evaluation of theoretical data sources, 1990-

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N=1$						
H-like	94C1	Callaway	review	many	Ω,Υ	A-C
He II	93B6	Bray	CC	$1s-2s$	Q	A
He II	91A5	Aggarwal	RM	$n=1-5$	Υ	A
He II	92A4	Aggarwal	RM	$n=1-3$	Υ	A
He II	91U1	Unnikrishnan	CC	$n=1-3$	Ω	A
He II	94F1	Fon	RM	$1s-2s$	Ω	A
Be IV	92B1	Berrington	Fits	$n=1-3\ell$	Ω,Υ	A,B
Be IV	96C2	Clark	DW fits	many	Q	C
B V	92B1	Berrington	Fits	$n=1-3\ell$	Ω,Υ	A,B
B V	96C2	Clark	DW fits	many	Q	C
C VI	91A6	Aggarwal	RM	$n=1-5$	Υ	A
O VIII	94C4	Cornille	DW	$1s-2p$	Υ,f	B
Ne X	92S3	Shevelko	Approx.	$1s-2p$	Q	B
Ne X	91A6	Aggarwal	RM	$n=1-5$	Υ	A
Si XIV	92A2	Aggarwal	RM	$n=1-5$	Ω,Υ	A
Ca XX	92A3	Aggarwal	RM	$n=1-5$	Ω,Υ	A
Fe XXVI	96K2	Kisielius	BPRM	$n\leq 4,\ell\leq 3$	Ω,Υ	A
Z=3,10,26	90C2	Clark	DW	$n=3-n'=9$	Ω	C
Z=26,54,67,79,92	92M1	Moores	RDW	$1s-2s,2p$	Ω	C
Fe XXVI	93A2	Aggarwal	RM	n = 1-5	Υ	A
Fe XXVI,U XCII	91M3	Moores	RDW	$1s-2s,2p$	Ω	C
$8\leq Z\leq 92$	90Z1	Zhang	RDW	$^2S_{1/2},^2P_{1/2},^2P_{3/2}$	Ω,f	C
H-like	93C2	Chidichimo	CB scaling	many	Q	U
H-like	93F1	Fontes	RDW	n = 1-3	Ω	U
H-like	93J1	Jung	semi-class	many	Q	U
H-like, Z=13,18,22,42,56,79,92	93R1	Reed	RDW	$n=1,2$ mag. levels	Pol.	U
H-like, Z=2,26,92	95K1	Kisielius	BPRM	$n=1-2$	Ω	A
H-like	97F1	Fisher	CCC,CB	$1s-2s,2p;n-n' fits$	Q	A
$N=2$						
He-like	95I1	Itikawa	review	many	Υ	A-C
He-like	94D1	Dubau	review	many	Ω,Υ	A-C
Li II	90G2	Griffin	CC/DW	$1s^2-1s2\ell$	Q,DCS	A-C
Li II	91B2	Berrington	RM	$1^1S-n=2,3$	Q	A
Li II	91N1	Nakazaki	RM	$1^1S-2(^1P,^1S,^3P,^3S)$	DCS	A

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N = 2$						
Be III	92B1	Berrington	Fits	$n = 1 - 3\ell$	Ω,Υ	A,B
Be III	96C2	Clark	DW fits	many	Q	C
B IV	92B1	Berrington	Fits	$n = 1 - 3\ell$	Ω,Υ	A,B
B IV	96C2	Clark	DW fits	many	Q	C
Ne IX	95Z5	Zhang	RDW	mag. levels	Ω	C
S XV	93N1	Nakazaki	RM	$1^1S - n = 2, 3$	q	A
Ti XXI	95G2	Gorczyca	BPRM	$1s^2 - 1s2s, 2p$	Q	A
Ti XXI	95Z4	Zhang	BPRM	$1^1S_0 - 2^1P^o_1, 2^3P^o_{1,2}$	Ω,Q	A
Fe XXV	90Z3	Zhang	RDW	mag. levels	Q	C
Fe XXV	92I1	Inal	RDW	$1s^2, 1s2\ell, 3\ell$	Pol.	B
Fe XXV	93I1	Inal	RDW	mag. levels	Pol.	B
Fe XXV	95Z2	Zhang	BPRM	$1^1S_0 - 2^3P^o_1$	Ω	A
Fe XXV	95Z5	Zhang	RDW	mag. levels	Ω	C
Fe XXV	99F1	Fontes	RDW	mag. levels	Q	B
Xe XLIII	99F1	Fontes	RDW	mag. levels	Q	B
Ni XXVII	95H1	Harra-Murnion	Rel.RM	$1s^2 - 1s2\ell, 1s3\ell$	Υ	A
He-like, Z=6(2)46						
	92V1	Vainshtein	CB	$1s^2 - 1s2\ell, 1s3\ell$	Q,q	C,D
He-like, Z=13,18,22,42,56,79,92						
	93R1	Reed	RDW	$n = 1, 2$ mag. levels	Pol.	U
$N = 3$						
Li-like	94M4	McWhirter	Review	many	Ω,Υ	A-C
Be II	92B1	Berrington	Fits	$n = 1 - 3\ell$	Ω,Υ	A,B
Be II	90G1	Gedeon	CC/CB	2s-2p,3s,3p,3d; 3s-3p	Q,q	B
Be II	91P1	Pan	RM,QDT	2s-2p	Q,DCS	B
Be II	96C2	Clark	DW fits	many	Q	C
Be II	97B1	Bartschat	CCC,RM	$2s - 3\ell, 4\ell$	Q	A
B III	92B1	Berrington	Fits	$n = 1 - 3\ell$	Ω,Υ	A,B
B III	96C2	Clark	DW fits	many	Q	C
B III	97M1	Marchalant	CCC	$2s - 2p, 3\ell, 4\ell'$	Q	C
C IV	92B4	Burke	RM	$2s - 2p, 3\ell$	Ω	A
C IV,O VI						
	91B1	Badnell	DW/RM	2s-2p	Q	A,B
Be II,B III,C IV,N V						
	92S3	Shevelko	Approx.	$1s^22s - 1s2s2p$	Q	C
Fe XXIV	90Z3	Zhang	RDW	mag. levels	Q	C
Fe XXIV	97B3	Berrington	BPRM	n = 2,3,4	Ω,u	A
Li-like	93F1	Fontes	RDW	n = 1-3	Ω	U

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N = 4$						
Li-like, $6 < Z < 42$						
	95S1	Safronova	CB	$\Delta n = 1$	Q,q	C,D
Li-like, $6 < Z < 42$						
	96S1	Safronova	CB	$1s^2 2s - 1s2s2p, 1s2s^2, 1s2p^2$	Q,q	C,D
Be-like	94B4	Berrington	review	many	Ω,Υ	A-C
B II	92B1	Berrington	Fits	$n = 1 - 3\ell$	Ω,Υ	A,B
B II	96C2	Clark	DW fits	many	Q	C
C III	92K1	Keenan	RM	$2s^2 - 2s2p\ ^3P_J$	Υ	A
N IV	94R1	Ramsbottam	RM	$2s^2, 2s2p, 2s3\ell, 2p^2$	Υ	A
O V	90K1	Kato	Review	$n = 2, 3$	q	A,B
Ne VII	94R2	Ramsbottam	RM	$2s^2, 2s2p, 2s3\ell, 2p^2$	Υ	A
Ne VII	95R1	Ramsbottam	RM	n=2,3	Υ	A
O V,Si XI,Fe XXIII,Mo XXXIX						
	90S1	Safronova	CBR	$2s^2, 2s2p, 2p^2$	Ω	C,D
O V,Si XI,Fe XXIII,Mo XXXIX						
	91K1	Kato	CBR	$2s^2, 2s2p, 2p^2$	Ω,q	C,D
O V,Si XI,Fe XXIII,Mo XXXIX						
	92S1	Safronova	CBR	$2s^2, 2s2p, 2p^2$	Q,q	C,D
Fe XXIII	93K1	Keenan	RM	$2s^2, 2s2p, 2p^2$	Υ	A
Fe XXIII	98C6	Chen	RDW	n = 2,3	Q	C
Mo XXXIX	94C3	Chen	RM	$1s^2 2s^2 - 1s2s^2 2p$	Q	B
Z=8-92						
	92Z1	Zhang	RDW	$2s^2, 2s2p, 2p^2$	Ω,f	C
Be-like, Z=8,10,26,54						
	93Z1	Zhang	RDW	$2s^2, 2s2p, 2p^2$	Ω	C
Be-like,Z=21-30						
	94O1	O'Mahoney	fits	$2s^2, 2s2p, 2p^2$	Υ	C
Be-like, $6 \leq Z \leq 54$						
	95S2	Safronova	CB	$2s^2, 2s2p, 2p^2$	Q,q	C,D
$N = 5$						
C II	91B4	Blum	RM	$^2P^o_{1/2-3/2};^2P^o -^2D$	Ω	A
C II	96S3	Smith	RM,Exp	$2s^2 2p, 2s2p^2$	Q,DCS	A
C II,N III,O IV						
	90L1	Luo	RM	n = 2	Ω	A
C II,N III,O IV						
	92B3	Blum	RM	$2s^2 2p, 2s2p2, 2p^3$	Υ	A
N III	92S4	Stafford	RM	n = 2,3	Ω,Υ	A
N III	94S3	Stafford	fits	n=2,3	Ω,Υ	A,B
Ne VI	92H1	Hayes	CC	n=2,3	Υ	A
Fe XXII	95Z2	Zhang	BPRM	$^2P^o_{1/2} -^4 P_{5/2}$	Ω	A
Fe XXII	96A1	Ait-Tahar	Rel.RM	$2s^2 2p, 2sp2^2, 2p^3$	Ω	A

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N=5$						
Fe XXII	97Z1	Zhang	BPRM	n=2,3;J-levels	Ω,Υ	A
B-like,Z=8-14,18,20,26						
	94Z1	Zhang	RM	$2s^2p, 2s2p^2, 2p^3$	Ω	A,B
B-like	94S1	Sampson	review	many	Ω,Υ	A-C
B-like, $8 \leq Z \leq 92$						
	94Z2	Zhang	RDW	$2s^2p, 2s2p^2, 2p^3$	Ω,f	C
B-like,Z=8-14,18,20,26						
	94Z4	Zhang	RM	$2s^2p, 2s2p^2, 2p^3$	Υ	A,B
B-like	94Z3	Zhang	RDW	n=2,3;J-levels	Ω,f	C
$N=6$						
C-like	94F2	Fossi	review	many	Ω,Υ	A-C
N II	94S4	Stafford	RM	$2p^2, 2s2p^3, 2p3p$	Ω,Υ	A
F IV,Na VI,Al VIII,P X,S XI,Cl XII,Ar XIII,K XIV						
	92C2	Conlon	RM	$2s^22p^2, 2s2p^3$	Υ	B
O III	91A1	Aggarwal	RM	$2s^22p^2, 2s2p^3, 2p^4$	q,f	A
O III	93A1	Aggarwal	RM	$2s^22p^2, 2s2p^3, 2p^4$	Υ	A
O III	93B1	Bhatia	DW	n = 2,3	Ω,f	C
Ne V	91L1	Lennon	RM	$2s^22p^2\ {}^3P_J, {}^1D, {}^1S$	Υ	A
Ne V	93B4	Bhatia	DW	n= 2,3	Ω,f	C
Mg VII	91B5	Burgess	RM,DW	$2s^22p^2, 2s2p^3$	Ω	A,B
Mg VII	95B4	Bhatia	DW	$2p^2, 2s2p^3, 2p^4, 2p3\ell$	Ω,f	C,D
Si IX	93B3	Bhatia	DW	n= 2,3	Ω,f	C
Ca XV	91A2	Aggarwal	RM	$2s^22p^2, 2s2p^3, 2p^4$	Υ	A
Ca XV	91A3	Aggarwal	Rel. RM/DW	$2s^22p^2, 2s2p^3, 2p^4$	Ω	A
Ca XV	92A1	Aggarwal	Rel. RM/DW	$2s^22p^2, 2s2p^3, 2p^4$	Υ	A
Ca XV	93B5	Bhatia	DW	n= 2,3	Ω,f	C
Fe XXI	91A4	Aggarwal	RM	$2s^22p^2, 2s2p^3, 2p^4$	q	A
C-like,Z= 7-16						
	94L2	Lennon	RM	$2p^2\ {}^3P_J, {}^1D_2, {}^1S_0$	Υ	A
C-like,Z=21-28						
	94W1	Warren	fits	$2p^2, 2s2p^3$	Υ	B,C
C-like,Z=9-54						
	96Z2	Zhang	RDW	$2p^2, 2s2p^3, 2p^4$	Ω,f	C
C-like,Z=9-54						
	97Z2	Zhang	RDW	$n=2-n=3$	Ω,f	C
$N=7$						
N-like	94K1	Kato	review	many	Ω,Υ	A-C
O II	93M1	McLaughlin	RM	$2p^3, 2s2p^4, 2p^23s$	Ω,Υ	A
O II	93M2	McLaughlin	RM	$2p^3, 2s2p^4$	Υ	A
O II	93M3	McLaughlin	RM	$2p^3, 2s2p^4$	Ω,Υ	A
O II	94M2	McLaughlin	RM	$2p^3, 2s2p^4, 2p^23s$	Υ	A

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N = 7$						
Mg VII	98B4	Bhatia	DW	$2p^3, 2s2p^4, 2p^5, 2p^2 3s$	Ω	C
O II	94M3	McLaughlin	RM	", $fits$	Υ	A
O II	95Z6	Zuo	RM,Exp	$2p^3, 2s2p^4$	Q	A
$N = 8$						
O-like	94L1	Lang	review	many	Ω,Υ	A-C
F II	92N1	Nasser	DW	$2p^4, 2s2p^5$	Q	C
Ca XIII	94B3	Baliyan	RM	n=2,3	Ω	A,B
Kr XXIX	91W2	Wijesundera	Rel.RM	$2s^2 2p^4, 2s2p^5, 2p^6$	Ω	A
O-like	94B6	Butler	BPRM	$gd.stateJ's$	Ω,Υ	A
$N = 9$						
F-like	98B1	Berrington	BPRM	$^2P_3/2 - - >^2 P_1/2$	Ω,Υ	A
F-like	94B5	Bhatia	review	many	Ω,Υ	A-E
Si VI	90M1	Mohan	RM	$2p^5\ ^2P^o -\ 2p^4 3s, 3p$	Υ	A
Si VI	90M2	Mohan	RM	$2p^5\ ^2P^o_{3/2} -\ ^2P^o_{1/2}$	Υ	A
Cl IX	91M2	Mohan	RM	$2p^5, 2sp^6, 2p^4 3s$	Υ	B
Fe XVIII	93H1	Hummer	BPRM	$^2P^o_{3/2} -^2 P^o_{1/2}$	Ω	A
Se XXVI	98C1	Chen	RDWB	$2s^2p^5, 2s2p^6,$ J-levels	Q	D
Ni XX	90M3	Mohan	RM	$2p^5\ ^2P^o_{3/2} -\ ^2P^o_{1/2}$	Υ	B
Ni XX	90M5	Mohan	RM	$2s^2 2p5 - 2s2p^6, 2p^4 3s$	Υ	B
F-like,$22 \leq Z \leq 92$						
	91S1	Sampson	RDW	many	Ω,f	C-E
F-like,Z=26,34,42,47,54,63						
	94C2	Chen	RDW	$^2P^o_{1/2} -^2 P^o_{3/2}$	Υ,f	C
F-like,Z=10-26						
	94S2	Saraph	RM	$2p^5\ ^2P^o_{1/2} -^2 P^o_{3/2}$	Υ	A
$N = 10$						
Ar IX	91M1	Mohan	RM	$2p^6\ ^1S - 2p^5 3\ell$	Υ	C
Sc XXV	90C1	Chen	RDW	n = 3	Υ	C
S VII	90M4	Mohan	RM	$2p^6 - 2p^5 3\ell$	Υ	C
Cl VIII	94M5	Mohan	RM	$2p^6\ ^1S - 2p^5 3\ell$	Υ	C
Ca xi	95M2	Mohan	RM	$2p6 - 2p^5 3\ell$	Υ	C
Ti xiii	97M2	Mohan	RM	$2p6 - 2p^5 3\ell$	Υ	C
Fe XVII	94B2	Badnell	review	many	Ω,Υ	A-E
Fe XVII	90Z3	Zhang	RDW	mag. levels	Q	C
Fe XVII	92B2	Bhatia	DW	$2p^6 - 2p^5 3\ell$	Ω,f	C,D
Fe XVII	94C5	Cornille	DW	$2p^6 - 2p^5 3\ell, 2s2p^6 3\ell$	Υ,f	C
Fe XVII	97M3	Mohan	RM	$2p6 - 2p^5 3\ell$	Υ	C
Ar IX,Fe XVII						

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N=10$						
	93I2	Ivanov	QED	$2p^6-2p^53\ell,2s2p^63\ell$	Q,q	C
Se XXV	91W1	Wijesundera	Rel.RM	$2p^6-2p^53\ell$	Ω	A
Cu xx	95M1	Mohan	RM	$2p6-2p^53\ell$	Ω,Υ	B
Mo XXXIII	90Z3	Zhang	RDW	mag. levels	Q	C
Fe XVII,Cu xx,Ge xxiii,Se xxv,Sr xxix,Mo xxxiii,Ag xxxviii						
	94C4	Cornille	DW	$2p^6-2p^53\ell,4\ell$	Υ,f	C
$N=11$						
Mg II	91P1	Pan	RM,QDT	3s-3p	Q,DCS	B
Mg II	93S1	Smith	CC	ns^2S-np^2P	Q	A
Mg II	95S5	Sigut	RM	$3\ell,4\ell,5\ell$	Ω,Υ	A,B
Mg II,Si IV						
Si IV	94D2	Dufton	review	many	Ω,Υ	A-C
	92S3	Shevelko	Approx.	$3s-3p$	Q	B
Si IV,Ar VIII,Ti XII						
	91B1	Badnell	DW/RM	3s-3p,3d	Q	A,B
Ar VIII	93P1	Pindzola	DW	3s-3p	Q,DCS	B
Ar VIII	96N1	Nakazaki	RM	3s-3p,3d,4s,4p,4d	Q,DCS	A
Fe XVI	94B2	Badnell	review	many	Ω,Υ	A-E
Fe XVI	94C5	Cornille	DW	$3s\ ^2S_{1/2}-3p\ ^2P_J$	Υ,f	C
Fe XVI	94T1	Tayal	RM	3s-4d;J-levels	Ω,Υ	B
Ni XVIII	96M1	Mohan	RM	$3s,3p,3d,4s,4p,4d,4f$	Υ	B,C
Cu XIX	96Y1	Ying	RM	$3s-3p,3d;3p-3d$	q	A
Na-like, $22\leq Z\leq 92$						
	90S2	Sampson	RDW	$3s,3p,3d-n=4,5$	Ω	C-E
Na-like, Z = 15,17,18,19,20,21,23,24,25,27						
	97E1	Eissner	BPRM	$n\leq 4$	Ω,Υ	A
	96K1	Keenan	Fits	$3s,3p,4s,4p$	Υ	C
Fe XVI,Gd XXXVI						
	92S2	Sampson	DW	many	Ω	U
$N=12$						
Al II	92D1	Doyle	RM	$3s^2,3s3p,3p^2$	Υ	A
Al II	92K2	Keenan	RM	$3s^2-3s3p\ ^3P_J$	Υ	A
Al II	94A2	Aggarwal	RM	$3s^2,3p^2,3s(3d,4s,4p)$	Ω	A
Al II	94A1	Aggarwal	RM	$3s^2,3p^2,3s(3d,4s,4p)$	Υ	A
Si IIII,Ar VII						
Si IIII	94D2	Dufton	review	many	Ω,Υ	A-C
	93G1	Griffin	RM	$3s^2-3s3p$	Q,DCS	A,B
Ar VII,Ti XI,Fe XV,Se XXIII						
	94B1	Badnell	RM	$3s^2\ ^1S-3s3p\ ^3P$	Ω	B

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N = 13$						
Fe XV	94B2	Badnell	review	many	Ω,Υ	A-E
Fe XV	97B2	Bhatia	DW	$3s^2, 3s3p, 3p^2, 3s4\ell, 3p4\ell$	Ω,f	C
S III	94D2	Dufton	review	many	Ω,Υ	A-C
S III	91D1	Dufton	RM	$3s^23p\ ^2P, 3s3p^2, ^4P, ^2D$	Υ	A
Ar VI,K VII,caviii						
	96S2	Saraph	BPRM	$3s^23p\ ^2P^o_{1/2} -^2 P^o_{3/2}$	Ω,Υ	A
P III,S IV,Cl V						
	98S1	Saraph	BPRM	$3s^23p\ ^2P^o_{1/2} -^2 P^o_{3/2}$	Ω,Υ	A
S IV	94D2	Dufton	review	many	Ω,Υ	A-C
Fe IX	94M1	Mason	Review	many	Ω,Υ	C,D
Fe XIV	91D2	Dufton	RM	$3s^23p, 3s3p^2, 3s^23d$	Υ	A
Fe XIV	93B2	Bhatia	DW	n = 3	Ω,f	C
Fe XIV	96B2	Bhatia	DW	n = 3	Ω,f	C
Fe XIV	96S4	Storey	BPRM	$3s^23p\ ^2P^o_{1/2} -^2 P^o_{3/2}$	Ω,Υ	A
$N = 14$						
S III	94D2	Dufton	review	many	Ω,Υ	A-C
S III	97T1	Tayal	RM	n=3,4	Υ	A,B
Fe XIII	94M1	Mason	Review	many	Ω,Υ	C,D
Fe XIII	95T1	Tayal	RM	n=3;J-levels	Υ	B
Si-like,Z=16-20						
	95G4	Galavis	BPRM	$3s^23p^2, J - levels$	Υ	A
$N = 15$						
S II	94D2	Dufton	review	many	Ω,Υ	A-C
S II	90H1	Ho	RM	$3p^3, 3s3p^4, 3p^23d, 4s$	Ω,Υ	B,C
S II	93C1	Cai	RM	n = 3,4	Υ	A-D
S II	96R1	Ramsbottom	RM	$3p^3, 3s3p^4, 3p^23d$	Υ	A,B
S II	96R2	Ramsbottom	RM	$3p^3, 3s3p^4, 3p^23d, 3p^24\ell$	Υ	A,B
S II	97L1	Liao	RM,Exp	$3p^3, 3s3p^4$	Q	A
S II	97T2	Tayal	RM	n=3,4	Υ	A,B
Ar IV	97R1	Ramsbottom	RM	$3p^3, 3s3p^4, 3p^23d$	Υ	A,B
Fe XII	94M1	Mason	Review	many	Ω,Υ	C,D
Fe XII	98B2	Binello	BPRM	$3s^23p^3$	Ω,Υ	A
Fe XII	98B3	Binello	BPRM	E1 Trans.	Ω,Υ	A
$N = 16$						
Ar III	90J1	Johnson	RM	$3s^23p^4$	Υ	A
Ti VII	91C2	Clark	DW	$3p^4-$	Ω	D
Fe XI	94M1	Mason	Review	many	Ω,Υ	C,D
S-like,Z=18-20						
	95G4	Galavis	BPRM	$3s^23p^4, J - levels$	Υ	A
Ar III	98G1	Galavis	BPRM	E2 Trans.	Ω,Υ	A

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N=17$						
Ar II	96T1	Tayal	RM	$3p^5, 3s3p^6, 3p^4 3d$	Ω,Υ	B
Ar II	97G1	Griffin	RM	$3p^5, 3p^4 4s, 4p$	Q	B
Fe X	94M1	Mason	Review	many	Ω,Υ	C,D
Fe X	94M6	Mohan	RM	$3p^5, 3s3p^6, 3p^4 3d$	Υ	B
Fe X	95B3	Bhatia	DW	n = 3	Ω,f	C,D
Cl-like,Z=18-28,Ar II-Ni XII	95P1	Pelan	BPRM	${}^2P^o_{3/2} - {}^2P^o_{1/2}$	Υ	A
Fe IX	94M1	Mason	Review	many	Ω,Υ	C,D
Fe IX	91F1	Fawcett	DW	$3s^2 3p6, 3s^2 3p^5 3d, 3s^2 3p^5 4s$	Ω,f	C,D
Mo xxv,Xe xxxvii,Eu xlvi	91C1	Chen	DW	3p-3d	q	C
$N=18$						
Fe XI	99G1	Gupta	RM	$3s3p^4, 3s3p^5$, J-levels	Υ	B,C
$N=19$						
Ca II	91P1	Pan	RM,QDT	4s-4p	Q,DCS	A
Ca II	91Z1	Zatsarinny	CC	4s-4p	Q	A
Ca II	92C1	Chidichimo	CDW	$4s-5f, 5s-4f$	Ω	B
Ca II	95B5	Burgess	DW	$3d, 4s, 4p, 4d, 5s$	Ω,Υ	C
Ti IV	91G1	Griffin	RM	$3d, 4s, 4p$	Ω	B
$N=21$						
Fe VI	99C1	Chen	BPRM	$3d^3, 3d^4 s, 4p$	Ω,Υ	A,B
Fe VI	99C2	Chen	BPRM	$3d^3, 3d^4 s, 4p$	Ω	A
$N=22$						
V II,Cr III,Mn IV,Fe V,Co VI,Ni VII						
Ti-like	95B1	Berrington	RM	$3d^4\ {}^5D_J, {}^5D'_J$	Ω,Υ	B,C
$N=23$						
Mn III,Fe IV,Co V,Ni VI						
V-like	95B2	Berrington	RM	$3d^5\ {}^4G_J, {}^4P_J, {}^4D_J$	Υ	B,C
Fe IV	97Z2	Zhang	RM	$3d^5, 3d^4 4s, 3d^4 4p$	Υ	B,C
$N=24$						
Fe III	91B3	Berrington	RM	$3d^6\ {}^5D_J$	Ω	B,C
Fe III	95Z3	Zhang	RM	$3d^6\ {}^5D_J$	Ω,Υ	A,B
Fe III	96Z1	Zhang	RM	$3d^6, 3d^5 4s, 3d^5 4p$	Υ	B,C
$N=25$						
Fe II	93P2	Pradhan	RM	*many*	Ω	C,D
Fe II	93P3	Pradhan	RM	${}^6D_J, {}^4F_J, {}^4D_J, {}^4P_J$	Ω	A,B
Fe II	95Z1	Zhang	RM	$3d^6 4s, 3d^7, 3d^6 4p$	Υ	B,C
Fe II	96B1	Bautista	RM	$3d^6 4s$	Υ	C,D
$N=27$						
Ni II	96B1	Bautista	RM	$3d^9 - 3d^8 4s$	Ω,Υ	U
Ni II	96W1	Watts	RM	$3d^9 - 3d^8 4s$	Ω,Υ	U

Table 1. (Continued)

Ion	Ref.	Author	Method	Transitions	Data	Rating
$N = 28$						
Cu II	95G3	Griffin	RM	$3d^{10} - 3d^9 4s, 4p$	Q	C
$N = 29$						
Zr XIII,Mo XV						
	96F1	Fournier	reson.	$3d^{10} - 3d^9 4s, 4p$	Q	C
Ta XLVI	95C1	Chen	RDW	$3d^{10} - 3d^9 4\ell$	q	C,D
Gd XXXVII, U LXV						
	96C1	Chen	RDW	$3d^{10} - 3d^9 4\ell$	q	C,D
$60 \leq Z \leq 92$						
	91Z2	Zhang	RDW	up to $n = 4, 5$	Ω,f	C,D
Zn II	91P2	Pindzola	CC	$4s - 4p, 4d, 5s$	Q,DCS	B
$N = 30$						
Kr XVII	95G1	Gorczyca	BPRM	$4s^2\ ^1S - 4s4p\ ^3P$	Ω	B
$60 \leq Z \leq 92$						
	90Z2	Zhang	RDW	$4\ell, n \to 4, 5$	Ω,f	D,E
$N = 32$						
Kr V	97S1	Schöning	RM	$4p^2$;J-levels	Υ	C
$N = 33$						
Kr IV	95S4	Schöning	RM	$4p^3$;J-levels	Ω,Υ	C
Kr IV	97S1	Schöning	RM	$4p^3$;J-levels	Υ	C
$N = 31$						
Kr III	97S1	Schöning	RM	$4p^4$;J-levels	Υ	C
$N = 37$						
Sr II	92C1	Chidichimo	CDW	$4s - 5f, 5s - 4f$	Ω	B
$N = 51$						
Xe IV	95S3	Schoning	CC	$5s^2 5p^3$;J-levels	Ω,Υ	C