

Contents

	Page
Preface	II
1. Introduction	VII
2. Scope of the Present Tables	VII
3. Nomenclature (atomic energy levels, spectroscopic terms, multiplets)	VIII
4. Arrangement	VIII
4.1. Headings, remarks	VIII
4.2. References	IX
4.3. Reference symbols	IX
5. Spectroscopic Notation	IX
5.1. Series spectra	X
5.2. Inert gases	XI
5.3. Complex spectra	XII
6. Columns of the Table	XII
6.1. Author	XII
6.2. Configuration	XII
6.3. Designation	XII
6.4. Inner quantum number J	XIII
6.5. Atomic energy level	XIII
6.6. Interval	XIII
6.7. Observed g -value (tables 1 to 4, Landé g -values)	XIV
7. Tables of Predicted and Observed Arrays of Terms	XV
7.1. Shells	XV
7.2. Arrays of predicted terms of the sequences Be _I through Ne _I (tables 5 to 11)	XV
7. Tables of Predicted and Observed Arrays of Terms—Continued	XVI
7.3. Arrays of predicted terms of the sequences Mg _I through Al _I (tables 12 to 18)	XVI
7.4. Arrays of predicted levels of the Ne _I and Al _I sequences (tables 11 and 18)	XVI
7.5. Arrays of predicted terms of the sequences Ca _I through V _I (tables 19 to 22)	XVI
8. The Periodic Table	XVII
8.1. The chemical elements by atomic number, ionization potentials (table 23)	XVII
8.2. The chemical elements by chemical symbol (table 24)	XVII
8.3. The periodic system (table 25)	XVII
8.4. Index—isoelectronic sequences (table 26)	XVII
9. Future Investigations	XVII
9.1. Need for further analysis	XVII
9.2. Term intervals	XVIII
9.3. Series spectra—Rydberg denominators	XVIII
9.4. Observed Zeeman patterns	XVIII
9.5. Energy or Grotrian diagrams	XVIII
10. Acknowledgments	XIX

List of Tables

Table	Subject	Page	Table	Subject	Page
1 to 4	Landé g -values	XX to XXVII			
PREDICTED TERMS					
5	Be _I	XXVIII	16	S _I	XXXIV
6	B _I	XXVIII	17	Cl _I	XXXIV
7	C _I	XXIX	18	A _I	XXXV
8	N _I	XXIX	19	Ca _I	XXXV
9	O _I	XXX	20	Se _I	XXXVI
10	F _I	XXXI	21	Ti _I	XXXVII
11	Ne _I	XXXI	22	V _I	XXXVIII
12	Mg _I	XXXII	23	Ionization Potentials	XL
13	Al _I	XXXII	24	Chemical Symbols	XLI
14	Si _I	XXXIII	25	The Periodic System	XLII
15	P _I	XXXIII	26	Index—Isoelectronic Sequences	XLIII

Index to Spectra

Element	Z	Spectrum	Page	Element	Z	Spectrum	Page
Hydrogen	1	H	1	Neon	10	Ne I	76
		D	3			Ne II	81
		T	3			Ne III	83
Helium	2	He I	4			Ne IV	84
		He II	6			Ne V	86
Lithium	3	Li I	8			Ne VI	88
		Li II	10	Sodium	11	Na I	89
		Li III	11			Na II	91
Beryllium	4	Be I	12			Na III	93
		Be II	14			Na IV	95
		Be III	14			Na V	96
		Be IV	15			Na VI	98
Boron	5	B I	16			Na VII	100
		B II	17			Na VIII	103
		B III	19			Na IX	105
		B IV	19	Magnesium	12	Mg I	106
		B V	20			Mg II	108
Carbon	6	C I	21			Mg III	109
		C II	24			Mg IV	111
		C III	26			Mg V	113
		C IV	29			Mg VI	114
		C V	30			Mg VII	117
		C VI	31			Mg VIII	119
Nitrogen	7	N I	32			Mg IX	121
		N II	35			Mg X	122
		N III	38			Mg XI	123
		N IV	40	Aluminum	13	Al I	124
		N V	42			Al II	126
		N VI	43			Al III	129
		N VII	44			Al IV	130
Oxygen	8	O I	45			Al V	131
		O II	47			Al VI	133
		O III	50			Al VII	135
		O IV	53			Al VIII	136
		O V	56			Al IX	138
		O VI	58			Al X	140
		O VII	59			Al XI	142
		O VIII	59			Al XII	143
Fluorine	9	F I	60	Silicon	14	Si I	144
		F II	62			Si II	147
		F III	64			Si III	148
		F IV	66			Si IV	150
		F V	69			Si V	151
		F VI	71			Si VI	152
		F VII	74			Si VII	154
		F VIII	75			Si VIII	156
						Si IX	157

Index to Spectra—Continued

v

Element	Z	Spectrum	Page	Element	Z	Spectrum	Page
Phosphorus	15	P I.....	163	Potassium— (Continued)	19	K IX.....	239
		P II.....	164			K X.....	239
		P III.....	166			K XI.....	241
		P IV.....	168	Calcium	20	Ca I.....	242
		P V.....	169			Ca II.....	245
		P VI.....	170			Ca III.....	247
		P VII.....	171			Ca IV.....	248
		P VIII.....	173			Ca V.....	249
		P IX.....	174			Ca VI.....	251
		P X.....	176			Ca VII.....	252
		P XI.....	177			Ca VIII.....	253
		P XII.....	179			Ca IX.....	254
		P XIII.....	180			Ca X.....	255
Sulfur	16	S I.....	181			Ca XI.....	255
		S II.....	183			Ca XII.....	257
		S III.....	185			Ca XIII.....	258
		S IV.....	187			Ca XV.....	258
		S V.....	188	Scandium	21	Sc I.....	259
		S VI.....	189			Sc II.....	262
		S VII.....	190			Sc III.....	263
		S VIII.....	191			Sc IV.....	264
		S IX.....	193			Sc V.....	265
		S X.....	194			Sc VI.....	266
		S XII.....	194			Sc VII.....	267
		Cl I.....	195			Sc VIII.....	268
		Cl II.....	197			Sc IX.....	269
		Cl III.....	199			Sc X.....	270
		Cl IV.....	201			Sc XI.....	271
Chlorine	17	Cl V.....	202			Sc XII.....	272
		Cl VI.....	204	Titanium	22	Ti I.....	273
		Cl VII.....	205			Ti II.....	279
		Cl VIII.....	206			Ti III.....	281
		Cl IX.....	207			Ti IV.....	283
		Cl X.....	209			Ti V.....	284
		Cl XI.....	210			Ti VI.....	285
		A I.....	211			Ti VII.....	286
Argon	18	A II.....	216			Ti VIII.....	287
		A III.....	218			Ti IX.....	288
		A IV.....	220			Ti X.....	288
		A V.....	222			Ti XI.....	289
		A VI.....	223			Ti XII.....	289
		A VII.....	224			Ti XIII.....	290
		A VIII.....	224	Vanadium	23	V I.....	291
		A IX.....	225			V II.....	298
		A X.....	226			V III.....	301
		A XI.....	226			V IV.....	303
		A XIV.....	226			V V.....	304
Potassium	19	K I.....	227			V VI.....	304
		K II.....	230			V VII.....	305
		K III.....	231			V VIII.....	306
		K IV.....	233			V IX.....	306
		K V.....	234			V XI.....	307
		K VI.....	236			V XII.....	307
		K VII.....	237			V XIII.....	308
		K VIII.....	238			V XIV.....	309