## CONTENTS

			Page
Preface			v
Chapter I.	Intr	oductory Remarks	1
	A.	Atomic Emission Standards Presented in Chapter II	1
		Atomic Emission Standards of Argon	2
		Atomic Emission Standards of Neon	4
		Atomic Emission Standards of Krpton	4
		Atomic Emission Standards of Xenon	6
	В.	Molecular Absorption Standards between 1.5 and 16 $\mu$ Presented in Chapter III	7
	c.	Molecular Absorption Standards in the Far Infrared at Wavelengths Longer Than $16\mu$ Presented in Chapter IV	9
	D.	Summary of Available Absorption Standards in the Infrared	10
Chapter II.	Infr	rared Emission Standards	11
		Argon $\lambda$ 9650Å-3.95 $\mu$	12
		Neon $\lambda$ 2.0-2.6 $\mu$	50
		Krypton $\lambda$ 4.0-1 $\mu$	52
		Xenon $\lambda$ 1-4 $\mu$	68
Chapter III.	Mo	lecular Absorption Standards in the Near Infrared	85
Chapter IV.	Abs	sorption Standards in the Far Infrared	143
		Pure Rotational Lines of Water Vapor in the Region 16-200 $\mu$ (600-50 cm <sup>-1</sup> )	144
		Vacuum Wave Numbers (cm <sup>-1</sup> ) for the Pure Rotational Lines of $C^{12}O^{16}$ , $N_2^{14}O^{16}$ , and $HC^{12}N^{14}$ Molecules	148
Chapter V.	Tec	chniques Employed for Wavelength Calibrations in the Infrared	149
	A.	Introductory Comments	149
	в.	Grating Constant Method of Determining Spectral Positions	150
	C.	Modern Gratings and High-Resolution Infrared Spectra	150
	D.	Use of a "Wedge Scanner" with an Infrared Spectrograph	152
		Determination of Dispersion $d\nu/dr$ versus $\nu$	156
	E.	Coarse Echelles	157

x CONTENTS

			Page
	F.	lem:lem:lem:lem:lem:lem:lem:lem:lem:lem:	158
		Use of a Single-Pen Recorder	158
		Use of Double-Pen Recorders	160
		Use of Atomic Lines As Wave Number Markers	162
		Coarse Echelles and Double-Pen Recorders (Use of Absorption Lines As Wave Number Markers)	163
		Grating Drive	165
		Measurement of Records of Infrared and Calibration Spectra	168
	G.	The Use of Computer Programs	173
		Experimental Setup	173
		Basic Observational Data	174
		Computational Procedure	174
		Additional Observational Data on Chart A	176
		Concluding Comments	176
Appendix I.		version of Wavelengths in Air to Wave Numbers in Vacuum Vice Versa	177
Appendix II.		lecular Constants Used in Obtaining "Calculated" Values of the ational Lines of the Bands Listed in Chapter III	181
* *		st Order Wave Numbers of Molecular Absorption Standards	183