MICROWAVE SPECTROSCOPY INFORMATION LETTER

No. XXXI

May 15, 1988

Compiled by:

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MICROWAVE SPECTROSOPY NEWSLETTER XXXI

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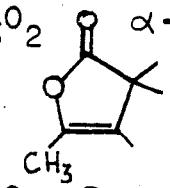
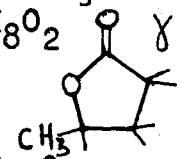
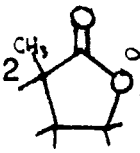
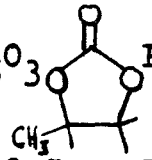
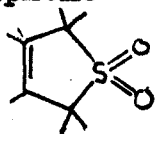
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_6O_2$ 	α-Angelicalactone	J.L.Alonso F.J.Pelaez,[1] D.G.Lister[1] R.Cervellati[1] J.C.Lopez	J.Mol.Spectrosc. 124, 199 (1987)
$C_5H_8O_2$ 	γ-Valerolactone	J.L.Alonso E.Gonzalez, W.Caminati[1] B.Belino[1]	J.Mol.Spectrosc. 122, 247 (1987)
$C_5H_{10}O_2$	2-Methylcyclopentanone	J.L.Alonso J.C.Lopez R.M.Villamañan	J.Mol.Spectrosc. 126, 348 (1987)
$C_5H_8O_2$ 	α-Methyl-γ-Butyrolactone	J.C.Lopez J.L.Alonso F.J.Pelaez	J.Mol.Spectrosc. (in press)
C_6H_8O	3-Methyl-2-Cyclopenten-1-one	F.J.Pelaez J.C.Lopez J.L.Alonso	J.Mol.Struct. 159, 19 (1987)
C_5H_6O	2,5-Dihydrofurane	R.M.Villamañan J.C.Lopez J.L.Alonso	Chem.Phys. 115, 103 (1987)
$C_4H_6O_3$ 	Propylene Carbonate	E.Gonzalez J.L.Alonso, W.Caminati[1]	Spectrum assigned. Work in progress.
$C_4H_8O_2S$ 	Butadiene Sulphone	J.L.Alonso D.G.Lister[1] J.C.Lopez	Ring-Bending potential function. "Ab initio" computations completed
$C_3H_6O_2S$	Trimethylene Sulphone	J.C.Lopez J.L.Alonso	submitted
$C_4H_6O_2$	β-Butyrolactone	J.L.Alonso E.Gonzalez	Paper in preparation
$C_4H_8O_2$	2-Methyl Oxetane	J.C.Lopez J.L.Alonso H.Wieser[2]	Spectrum assigned. Work in progress.
$C_4H_8O_2$	3-Methyl Oxetane	J.L.Alonso J.C.Lopez, H.Wieser[2]	Spectrum assigned. Work in progress.

C_7H_5OF	o-Fluorobenzaldehyde	J.L.Alonso R.M.Villamañan	submitted
C_7H_5OF	m-Fluorobenzaldehyde		
C_7H_5OF	p-Fluorobenzaldehyde	S.R.Gonzalez[3] R.M.Villamañan J.L.Alonso	J.Mol.Struct. (in press)
C_8H_7F	o-Fluorostyrene	J.L.Alonso R.M.Villamañan	Paper in prepa- ration.
C_8H_7F	m-Fluorostyrene	R.M.Villamañan J.L.Alonso	"cis"conformer assigned.
$C_6H_9NO_2$	1-Nitrocyclohexene	J.L.Alonso S.R.Gonzalez[3]	Spectrum assign Work in progres
C_4H_7OF	Butyryl Fluoride	J.L.Alonso S.R.Gonzalez[3] R. Mulas	Syn-Anti confor mer assigned.
$C_5H_4N_2O_2$	p-Nitropyridine	R.Mulas J.L.Alonso F.Mata	Paper in prepa ration.

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[2] University of Calgary.Alberta.Canada.

[3] Conicet. Universidad de La Plata. Argentina.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
Cl_3P	Phosphorus trichloride	Adam Walters	quadrupole h.f.s, paper in press
CF_8S (CF_3SF_5)	Trifluoromethyl sulphur penta fluoride	Adam Walters	ground state spectrum in supersonic beam
C_2H_4O (CH_3CHO)	Acetaldehyde	John G Baker	far i.r. torsion spectrum analysis
$C_2H_4O_2$ ($HCOOCH_3$)	Methyl formate	Wenlie Liang	millimetric wave spectrum of excited torsional states

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_4O_2 (CH_3OOH)	Methyl hydroperoxide	A. Bauder in collab. with C. E. Blom (Giessen)	manuscript in preparation
C_3D_4 ($CD_2=C=CD_2$)	Allene-d_4	B. Vogelsanger	υ_{10} and υ_{11} excited states measured
 C_4H_7N	Pyrroline	J. Dommen W. Caminati R. Meyer	manuscript in preparation
$C_2H_5NO_2$ ($HCONHOCH_3$)	Methoxyformamid	C. Styger	assigned
$C_4H_4D_2$ ($CH_2=CH-CH=CD_2$)	Butadiene-d_2	W. Caminati	manuscript in preparation
$C_4H_6D_2$	Cyclobutane-d_2	B. Vogelsanger W. Caminati	manuscript in preparation
$C_6H_{10}D_2$	Cyclohexane-d_2	J. Dommen	assigned
$C_6H_4D_2$	Benzene-d_2	M. Oldani R. Widmer	ortho and meta: manuscript submitted
C_8H_8 ($C_6H_5-CH=CH_2$)	Styrene	W. Caminati B. Vogelsanger	in press J. Mol. Spectrosc.
C_7H_8	Norbornadiene	B. Vogelsanger	manuscript prepared
C_7H_8	Quadricyclane	B. Vogelsanger	assigned
C_2H_3DO (CH_3CDO)	Acetaldehyde-d_1	L. Martinache	deuterium quadrupole splittings
C_6H_5D	Benzene-d_1	S. Jans-Bürli	deuterium quadrupole splittings remeasur.
C_6H_4DF	Fluorobenzene-d_1	S. Jans-Bürli	deuterium quadrupole splittings of ortho, meta and para isomer
H_4O_2 ($H_2O)_2$	Water dimer	W. Kresa	D and ^{18}O isotopic species
$C_3H_3F_3O_4$ ($HCOOH..CF_3COOH$)	Formic acid - trifluoroacetic acid dimer	W. Kresa	assigned
$C_4H_5F_3O_4$ ($CH_3COOH..$ CF_3COOH)	Acetic acid - trifluoroacetic acid dimer	W. Kresa	assigned

4. Name to whom queries should be addressed Dr. ROBERT BEAUDET

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$Ar\,CO_2$	Argon - Carbon dioxide van der Waals complex	Beaudet Wittig Sharpe	Manuscript in Publication
$Br\,CHO_2$	Hydrogen bromide carbon dioxide complex	Beaudet Wittig Sharpe Zeng	Not Assigned
BO_2	Boron dioxide	Chow Beaudet	Manuscript in Preparation
$C_2B_5H_6F$	5-Fluoro-2,4-Dicarbaheptaborane (7)	Beaudet O'Gorman Durso Sheeks	Manuscript Submitted

5. Name to whom queries should be addressed Robert K. Bohn

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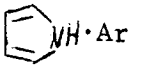
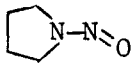
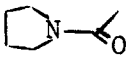
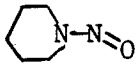
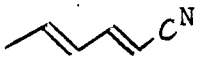
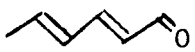
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_5ArN 	Pyrrole.Ar	R. K. Bohn	MS in preparation.
$C_4H_8N_2O$ 	N-Nitrosopyrrolidine	K. W. Hwang	Assigned.
C_5H_9NO 	1-Pyrrolidine Carboxaldehyde	S. G. Lee K. W. Hwang	MS submitted.
$C_5H_{10}N_2O$ 	N-Nitrosopiperidine	X. Z. Liu K. W. Hwang	Assigned.
C_6H_7N 	Hexadienenitrile	K. W. Hwang	Assigned.
C_6H_8O 	Hexadienal	C. Sahi	Assigned.

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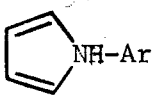
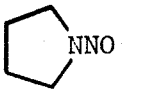
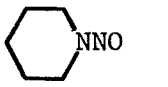
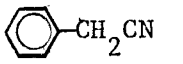
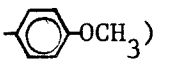
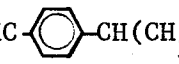
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
ArF_3P (PF_3-Ar)	Argon-PF_3 Complex	U. of Michigan collaboration.	Submitted
F_3KrP (PF_3-Kr)	Krypton-PF_3 Complex		
$C_3H_5NO_2$ (CH_2=$CHCH_2ONO$)	Allyl Nitrite	K. W. Hwang	4 conformers, 2 are assigned.
C_4H_5ArN 	Pyrrole-Ar	U. of Michigan collaboration.	J. Phys. Chem. In press.
$C_4H_8N_2O$ 	Nitrosopyrrolidine	K. W. Hwang	r_o structure, ^{14}N quad. coupling. Also, d_4 species.
$C_5H_{10}N_2O$ 	Nitrosopiperidine	X. Z. Liu K. W. Hwang	r_o structure.
$C_6H_{11}NO$ 	1-Formylpiperidine	C. Sahi	Assigned.
C_8H_7N 	Benzyl Cyanide	U. of Calif.(Davis) collaboration.	Ground state, ^{14}N quad. coupling assigned.
$C_8H_8O_2$ (OHC-  -OCH_3)	p-Anisaldehyde	U. of Calif.(Davis) collaboration.	2 conformers assigned.
$C_{10}H_{12}O$ (OHC-  -$CH(CH_3)_2$)	p-Isopropyl Benzaldehyde	R. Bohn	2 conformers assigned.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2HFO(HFC=C=O)$	FLUROKETENE	K. Wiedenmann	^{13}C, ^{18}O, Vibrational satellites. Manuscript in preparation.
$CH_2N_2(H_2NCN)$	CYANAMIDE	K. Wiedenmann B. Kleibömer M. Head	Vibrational dependence of the electric field gradient. Manuscript in press. J. Mol. Spec.
$C_4H_4N_2O_2$	URACIL	A. Pierlot	Spectrum assigned dipole moment. Manuscript in press. J. Am. Chem. Soc.
$C_5H_6N_2O_2$	THYMINE	A. Pierlot	Spectrum assigned. Deuterated spectrum assigned. Manuscript in preparation.
C_3H_2	CYCLOPROPENYLIDENE	R. Bettens	Dipole moment completed. Mon. Not. R. astr. Soc. 227 19p (1987)
C_2H_5N $(H_2C=CH\text{-}NH_2)$	VINYLAMINE	D. McNaughton	m.m. wave spectrum under investigation.
C_2HClO $(ClHC=C=O)$	CHLOROKETENE	G. Burns	Vibrational satellite analysis in progress.
CH_3NO $(HCONH_2)$	FORMAMIDE	F. Trollope	Vibrational satellite analysis in progress.

7. Name to whom queries should be addressed: Dr J.H. Carpenter

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
Cl_3P	Phosphorus trichloride	J.H.Carpenter J.G.Baker	mm-wave and FT microwave
Cl_3OP	Phosphorous oxychloride	J.H.Carpenter	mm-wave quadrupole structure
ClF_3Si	Chlorotrifluorosilane	J.H.Carpenter	mm-wave spectrum
$CHCl_3$	Chloroform	J.H.Carpenter	Paper in prep.
CH_3Cl_3Si	Methyltrichlorosilane	J.G.Smith	mm-wave spectrum of excited states

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2F_3N	(CF_3NH_2) Trifluoromethylamine	P. Zylka	Deuteriated Species
CBrNO	(BrNCO) Bromoisocyanate	E. Jaudas	^{18}O-Subst. Structure with M. Gerry, UBC, Can.
F_6OS	(SF_5OF) Fluoroxysulphurpentafluoride	E. Jaudas	Struct. with E.D.
H_2F_3P	(H_2PF_3) Trifluorophosphorane	J. Kadel	Struct. with E.D.
C_2F_3NO	(CF_3NCO) Trifluoromethylisocyanate	D. Christen	LAM analysis with J. Koput, Poznan.
$C_2H_6O_2$	(CH_3OOCH_3) Dimethylperoxide	D. Christen	Combination with FIR
FN_3	Fluoroazide	D. Christen	Quadrupole h.f.s.

9. Name to whom queries should be addressed

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_3NO_2	nitromethane	*)G.O.Sørensen	Paper in press.
$C_2H_3N_3$	1H- and 2H-1,2,3-triazole	C.J.Nielsen *)L.Nygaard *)G.O.Sørensen	Paper subm. Acta Chem.Scand.
$C_3H_2O_4$	1,3-dioxolane-4,5-dione (methylene oxalate)	*)N.W.Larsen	Continued measurements.
$C_6H_2F_3NO_2$	2,4,6-trifluoro-nitrobenzene	*)N.W.Larsen	Work continues.
C_6H_5FS	4-fluorothiophenol	*)N.W.Larsen	Manus.in prep.
C_6H_6S	thiophenol		
C_6H_7P	phenylphosphine	*)N.W.Larsen	J.Mol.Spectrosc. 123(1987)405-425.
$C_7H_4F_2O$	3-fluorobenzoyl fluoride	*)N.W.Larsen *)T.Pedersen	J.Mol.Spectrosc. in press.
$C_7H_4F_2O$	4-fluorobenzoyl fluoride	*)N.W.Larsen *)T.Pedersen	J.Mol.Spectrosc. in press.

10. Name to whom queries should be addressed Dr. A.P. Cox

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$CClF_2NO$	chlorodifluoronitrosomethane	A.C. Fettis	In progress.
CF_3NO_2	trifluoronitromethane	P.R.R.Langridge-Smith	In manuscript.
CHF_3S CDF_3S	trifluoromethylmercaptan	R. Stevens/C.A. Rego	Manuscript in preparation.
CH_3NO C_2H_4O	nitrosomethane ethanal	D.W. Knight	D_n- species; J.Mol.Struct.
CH_3ClHg [CH_3HgCl]	methylmercury chloride	C.A. Rego	Chem.Phys.Lett. 1987
C_2H_3HgN	methylmercury cyanide	C.A. Rego	In press, with A.C. Legon.
CH_5BO_2 [$CH_3B(OH)_2$]	methylborondihydroxide	C.A. Rego	In thesis.
C_2H_3ClO [$ClCH_2CHO$]	chloroacetaldehyde	J. Randell	Conformational studies.
C_2HClF_2O	chlorodifluoroacetaldehyde	D.W. Knight	J.Mol.Struct. 1989
C_2H_5NO	nitrosoethane	J.A. Hardy	Extended study. (see Sussex)
$C_3H_2N_2$ [$CH_2(CN)_2$]	malononitrile	J. Randell	Structure/quadrupole complete.
C_3H_6O [C_2H_5CHO]	propanal	J. Randell	Structure; Z. Naturforsch. Potential; Faraday Soc.
$C_4H_9BF_2$	t-butylborondifluoride	S.D. Hubbard	Barrier/dipole complete.
C_4H_9NO	t-butylnitrosomethane	M.J. Corkill	In thesis.
C_4H_9NO	t-butylnitrite	M.J. Corkill	Manuscript in preparation.
$C_5H_{10}O$	pivalaldehyde	A.D. Couch	Isotopes assigned.
ClF_3Si	trifluorosilylchloride	T.R. Gayton/C.A. Rego	In manuscript.
F_3ISi	trifluorosilyliodide		
CF_3NSi	trifluorosilylcyanide	I.M. Hedgecock	Assigned; isotopic work in progress.
N_2O_3	dinitrogentrioxide	J. Randell	Vibrational satellites and Force field.

11. Name to whom queries should be addressed: H. DREIZLER, A. GUARNIERI, H. MÄDER, D.H. SUTTER

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$BClF_2$	chlorodifluoro-boron	K. Vormann	Cl,B-hfs
BF_2HO	difluoro-hydroxoboron	K. Vormann	^{11}B,^{10}B-hfs
CD_2I_2	diiodomethane-D2	W. Stahl	in prog.
CD_5N	methylamine-D5	D. Stryjewski M. Kreglewski	N-hfs,internal motion
CH_2I_2	diiodomethane	W. Stahl	in prog.
CH_3N	methylenimine	H. Krause	Zeeman-effect of in-plane vibration
CH_3NO_3	methylnitrat	J. Spiecker-mann	Zeeman-effect ^{14}N-hfs
CH_4	methane	P. Wolf	linewidth studies in progress
CH_4O	methanol	P. Wolf J. Haekel	linewidth studies in progress
CIN	cyanogen iodide	J. Gripp in coop. J. Demaison	I and N-hfs, spin-rotation inter-action, dipole moment paper submitted
COS	carbonylsulfide	P. Wolf	3-level relaxations studies in progress
C_2BrF	bromofluoro-acetylene	J. Doose	MW- and MMW spectra of isotopomere molec.
C_2D_2O	dideuteroketene	J.Doose W.Neustock H.Zerbe	MMW-spectra of excited vibrational states,ms in prep.
C_2DI	D-iodoacetylene	N. Heineking	D-hfs in progress
C_2HI	iodoacetylene	U. Andresen	r_0-structure
C_2H_3N	methylcyanide	J.Haekel	linewidth studies ms in prep.

C_2H_4FNO	2-fluoroacetamide	N. Heineking	N-hfs complete ^{15}N:spectrum assigned
C_2H_5I	ethyliodide	J. Gripp	I-hfs and spin-rotation interaction, internal rotation
C_2H_5NO	acetamide	N. Heineking	N-hfs complete (groundstate only)
$C_2H_5NO_2$	ethylnitrite	Ch. Keussen	N-hfs
$C_2H_6N_2O$	dimethyl-nitrosamine	N. Heineking	N-hfs complete, methyl internal rotation in progress
C_2H_6O	dimethylether	J. Doose W. Neustock H. Zerbe	MMW-measurements to complete low frequency work
C_3BrN	bromocyano-acetylene	G. Papagianno-poulos	excited vibrational states
C_3D_6O	acetone-D6	F. Oldag	rotational Zeemann-effect
$C_3DH_3N_2$	1-D-pyrazole	O. Böttcher D.H. Sutter	rotational Zeeman-effect
C_3HN	cyanoacetylene	P. Wolf	excited vibrational states ms in prep.
		J. Haekel	linewidth studies, l-type transitions ms in prep.
		P. Wolf	3-level relaxation studies in progress
C_3H_2O	propadienon	H. Krause	Zeemann-effect
C_3H_5Br	cyclopropylbromide	N. Heineking	Br-hfs in progress
C_3H_5I	2-iodopropene	J. Gripp	I-hfs and spin-rotation interaction, internal rotation
C_3H_5N	propen-imine	H. Krause	Zeeman-effect ^{14}N-hfs
C_3H_6O	acetone	F. Oldag	rotational Zeeman-effect
C_3H_7Br	2-bromopropane	M. Meyer	Br-hfs,dipole moment excited torsional states
C_3H_7Cl	2-chloropropane	M. Meyer	Cl-hfs,dipole moment excited states

C_3H_7F	2-fluoropropane	M. Meyer	ground state in press (Z.Naturforsch.) excited states in progress
		B. Kleibömer D.H. Sutter	rotational Zeeman-effect
C_3H_7I	2-iodopropane	J. Gripp	I-hfs and spin-rotation interaction
C_3H_7N	cyclopropylamine	O. Böttcher	rotational Zeeman-effects, N-hfs
C_3H_9N	2-aminopropane	Ch. Keussen	N-hfs
C_4H_5N	cyclopropyl-cyanide	O. Böttcher	rotational Zeeman-effect, N-hfs
C_4H_5NS	4-methylthiazole	W. Jäger	ms in press
	5-methylthiazole	W. Jäger	internal rotation, N-hfs,ms in prep.
	2-methylthiazole	W. Jäger	studies in progress
C_4H_7N	butyronitrile	K. Vormann	^{14}N-hfs and internal rotation, paper submitted
C_4H_7N	n-propylisonitrile	K. Vormann	^{14}N-hfs, paper submitted
C_4H_9NO	morpholine	N. Heineking	N-hfs nearly complete
C_5H_4ClN	3-chloropyridine	N. Heineking	^{35}Cl,^{14}N-hfs complete ms in prep.
C_5H_5NO	2-formylpyrrole	N. Heineking	cis:N-hfs complete trans:assignment in progress
C_5H_5NO	pyridine-N-oxide	N. Heineking	N-hfs complete
$C_6H_4Cl_2$	1,3-dichlorobenzene	Ch. Keussen in coop. with M. Onda,Tokio	Cl-hfs
	1,2-dichlorobenzene	I. Merke in coop. with M. Onda,Tokio	Cl-hfs
$C_6H_5BF_2$	phenyldifluoro-boron	K. Vormann	B-hfs
C_6H_5Cl	chlorobenzene	N. Heineking	Cl-hfs nearly complete
C_6H_5NO	pyridine-3-aldehyde	D. Stryjewski	N-hfs

C_6H_5NO	pyridine-4-aldehyde	D. Stryjewski	N-hfs
C_6H_5NO	nitrosobenzene	Ch. Keussen	N-hfs,paper submitted
$C_6H_5NO_2$	nitrobenzene	N. Heineking	v=0,1,2 N-hfs complete
$C_6H_5NO_3$	o-nitrophenol	N. Heineking	N-hfs nearly complete
C_6H_7N	aniline	B. Kleibömer D.H. Sutter	vibrational dependence of ^{14}N quadrupole coupling tensor msc. submitted
C_6H_7NO	2-picolin-N-oxide	N. Heineking	N-hfs in progress
C_7H_5N	benzonitrile	K. Vormann	^{14}N-hfs, manuscript in press
$C_7H_{13}N$	quinuclidine	K. Vormann	^{14}N-hfs, manuscript in press
Cl_2O_2S $(SO_2{}^{35}Cl{}^{37}Cl)$	sulfurylchloride	I. Merke	Cl-hfs nearly complete
$ClNO_2$	nitrylchloride	J. Spiecker-mann	Zeeman-effect ^{14}N-hfs
D_2O_2	dideutero-peroxide	J. Doose	MMW-measurements
DNO_3	nitric acid-D	L. Albinus	^{14}N-hfs, rotational Zeeman-effect
FH_3Si	silylfluoride	W. Neustock A. Guarnieri	MMW-spectra of excited vib. states
GeH_4	germane	P. Wolf	linewidth studies ms in press
O_2S	sulfurdioxide	P. Wolf	air-broadened line-width studies ms in prep.

12. Name to whom queries should be addressed James R. Durig

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_7P(CH_3CH_2PH_2)$	ethylphosphine	Groner	structure in press (J.Ch Phys.), excited states in progress
$C_2H_5F_2P(CH_3CH_2PF_2)$	ethyldifluorophosphine	Groner	d_1, ^{13}C partially assigne
$C_2H_5F_2PS(CH_3CH_2PSF_2)$	ethylphosphonothioic difluoride	Nanaie	in press, J. Chem. Phys.
$C_2H_5F_2OP(CH_3CH_2POF_2)$	ethylphosphonic difluoride	Johnson	trans assigned
$C_3H_7F_2P((CH_3)_2CHPF_2)$	isopropyldifluorophosphine	Groner	manuscript in preparatio
$C_2H_6F_2NP((CH_3)_2NPF_2)$	dimethylamino difluoro-phosphine	Harlan	d_3 assigned, manuscript preparation
$C_2H_6FPS((CH_3)_2PSF)$	dimethylphosphonothioic fluoride	Chatterjee	4 isotopes assigned, manuscript in preparat
$C_3H_9PS((CH_3)_3PS)$	trimethylphosphine sulfide	Chatterjee	submitted Inorg. Chem.
$C_4H_9F((CH_3)_2CHCH_2F)$	2-methyl-1-fluoropropane	Godbey	submitted, J. Chem. Phys
$C_4H_7F(CH_2=C(CH_3)CH_2F)$	3-fluoro-2-methylpropene	Qiu	submitted, J. Chem. Phys
$C_4H_7F(trans\text{-}CH_3CH=CHCH_2F)$	trans-1-fluoro-2-butene	Groner	gauche assigned, cis in progress
$C_5H_7ClO(\overline{CH_2CH_2CH_2}CHCClO)$	cyclobutylcarbonyl chloride	Badawi	submitted, J. Mol. Struc
$C_5H_8O(\overline{CH_2CH_2CH_2}CHCHO)$	cyclobutylcarboxaldehyde	Badawi	submitted, J. Chem. Phys
$CHF_2N(CF_2=NH)$	difluoromethanimine	Groner	assigned
$CBrF_2N(CF_2=NBr)$	N-bromo-difluoromethanimine	Groner	R transitions assigned
$GeH_3N_3(GeH_3NNN)$	germylazide	Sullivan, Groner	internal rotation analysis in progress
$C_2H_2BrFO(FCH_2CBrO)$	fluoromethylacetylbromide	Little	in progress
$C_4H_8O((CH_3)_2CHCHO)$	2-methylpropanal	Guirgis, Stiefvater	submitted, J. Chem. Phys
$C_4H_{10}Ge(\overline{CH_2CH_2CH_2}CH_2GeH_3)$	cyclobutylgermane	Geyer	axial, equatorial assign
$C_2H_3FO_2(CH_3OCFO)$	methylfluoroformate	Tolley	d_3 assigned, d_1 in progr
$C_3H_9P((CH_3)_2CHPH_2)$	isopropylphosphine	Barron	search for 2nd conformer
$C_3H_7F((CH_3)_2CHF)$	isopropylfluoride	Nanaie	d_3,d_7 assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
FNS(FSN)	Thiazyl fluoride	C.Degli Esposti G.Cazzoli P.G.Favero	Cubic force field. Manuscript in prep.
C_7H_{10}	3-cyclohexene -1 methylene	D.Damiani L.Dore (1) R.Cervallati D.G.Lister (2) H.Wieser (3)	Manuscript in prep.
C_6H_8O	3-cyclohexenone	D.Damiani L.Dore (1) R.Cervellati D.G.Lister (2) H.Wieser (3)	Manuscript in prep.
C_3H_7F	n-propyl fluoride	W.Caminati A.C.Fantoni (4) F.Manescalchi F.Scappini (1)	Torsional interaction Submitted
C_5H_7N	Cyano cyclobutane	W.Caminati B.Velino (5) R.G.Della Valle (5)	Ring puckering potential function. In press. J.Mol.Spectrosc.
$C_4O_2Cl_2$	1,2-dichlorobuten-3,4--dione	W.Caminati A.C.Fantoni (4) B.Lunelli F.Scappini (1)	RFMWDR using a dipole moment component induced by asymmetric substitution. Submitted.
$CDO^+(DCO^+)$	Formyl ion	G.Cazzoli L.Dore (1) P.G.Favero	HFS and line shape analysis
BF	Boron fluoride	G.Cazzoli L.Cludi L.Dore (1) C.Degli Esposti P.G.Favero	Equilibrium structure. Manuscript in prep.

FORMULA	NAME OF COMPOUNDS	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
COS (OCS)	Carbonyl sulfide	P.G.Favero M.C.Righetti L.B.Favero (1)	New results on the N_2 (v = 1) - OCS system.

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(2) Università di Messina (Italy)

(3) University of Calgary (Canada)

(4) Universidad de la Plata (Argentina)

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_6O_2$	β-Butyrolactone	R.R. Filgueira L.L. Fournier A.C. Fantoni	Submitted An. Asoc. Quim. Arg.
$C_3H_4O_2$	β-Propiolactone	A.C. Fantoni L.L. Fournier R.R. Filgueira	Manuscript in preparation

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_3N (CH_3CN)	methyl cyanide	S. Gierszal	Manuscript in preparation
C_5H_9N ($(CH_3)_3CCN$)	tertiary butyl cyanide	J. Galica	in progress

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_3I	vinyl iodide	D. Cramb W. Lewis-Bevan	Paper in press
$C_3H_3Br(CH_2BrCCH)$	propargyl bromide	P. Duffy D. Cramb C. Hwang	Paper in press
$CHClF_2$	chlorodifluoromethane	Y. Bos D. Cramb H. Jemson	Isotopic Substitutions Manuscript in preparation
C_2HBrO (BrHCCO)	bromoketene	N. Hernandez N. Westwood W. Lewis-Bevan	Spectrum assigned Analysis continuing
C_3H_5Br	bromocyclopropane	H. Li	High order quadrupole coupling analysis
C_2F_3Cl	chlorotrifluoroethylene	W. Lewis-Bevan M. Gerry (with Hillig and Kuczkowski, Michigan)	Hyperfine analysis near completion
$C_3H_3N(CH_2CHCN)$	acrylonitrile	E. Tien R. Richards	Isotopic substitutions Ms. in preparation
CH_3NO (CH_2NOH)	formaldoxime	N. Lee H. Jemson D. MacLennan	Isotopic substitutions Spectra analyzed
CHNO (HNCO)	isocyanic acid	S. Howard	^{17}O species
CClNS (ClSCN)	chlorine thiocyanate	R. Richards	Isotopic substitutions

17. Name to whom queries should be addressed Charles W. Gillies

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_2F_4(\overline{CF_2CHFCHF})$	cis-1,2,3,3-Tetrafluoro-cyclopropane	R. Beauchamp J. Zozom	Manuscript submitted J. Mol. Structure
$C_2HF_3O(\overline{CHFCF_2O})$	Trifluoroethylene Oxide	T. Raw	Manuscript in press J. Mol. Spectroscopy
$CH_3F_2O_2P(CH_3OP(O)F_2)$	Methyl Difluorophosphate	L. Rickus H. Justnes J. Zozom R. Suenram* F. Lovas*	Spectrum of trans conformer assigned, electric dipole measured, isotopes in progress
$C_2H_4O_3(\overline{CH_2CH_2OOO})$	1,2,3-Trioxolane	J. Zozom R. Suenram* F. Lovas*	Preliminary results in Chem. Phys. Letters 140 (1987) 64. Full length paper in preparation, JACS
$C_2H_3F_3O(CF_3CH_2OH)$	2,2,2-Trifluoroethanol	J. Zozom F. Lovas* R. Suenram*	Assignment in progress by pulsed-beam FT techniques
H_2O_4	$H_2O \ldots O_3$	J. Zozom F. Lovas* R. Suenram*	Normal and oxygen-18 isotopes assigned; deuterium isotopes in progress

*National Bureau of Standards

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$CF_5NOS(SF_5NCO)$	pentafluorosulfanyl-isocyanate	L.L. Tho, J.S. Wang	Manuscript in preparation
F_7NS_2	pentafluorosulfonyl-iminosulfur difluoride	R.M. White, S.L. Bailey	J. Mol. Sp., in press
$C_2F_6NO((CF_3)_2NO)$	bis-trifluoromethyl-nitroxide radical	R.M. White	Manuscript in preparation
$C_4H_6N((CH_3)_2CCN)$	cyanoisopropyl radical	R.C. Claytor	Spectrum assigned

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FORMULA†	NAME OF COMPOUND*	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_3H_3N_3$ {$(HCN)_3$}	HCN linear trimer	R. Ruoff	Manuscript accepted by JCP
C_5H_5ArN {Ar-pyridine} and C_5H_5KrN {Kr-pyridine}	Ar-pyridine dimer Kr-pyridine dimer	T. Klots	Manuscript submitted to JPC
CHArN {Ar-HCN}	Ar-HCN dimer	T. Klots H. S. Gutowsky	Manuscript in preparation on J-dependent $\chi_a(^{14}N)$
$Ar_4C\ell H$ {Ar_4-HCl}	Ar_4-HCℓ pentamer	T. Klots	Observation and analysis of spectrum in progress
$CHNAr_2$ {Ar_2-HCN}	Ar_2-HCN trimer	T. Klots R. Ruoff	Spectral analysis in progress
CFH_5N_2 {NH_3-HCN-HF}	NH_3-HCN-HF trimer	T. Klots	Spectrum of normal species assigned
C_2FH_2NO {OC-HCN-HF}	OC-HCN-HF trimer	T. Klots R. Ruoff	Analysis of isotopic spectra in progress
ArF_2H_2 {Ar-$(HF)_2$}	Ar-$(HF)_2$ trimer	H. S. Gutowsky	Observation of spectrum in progress
$B_2C\ell H_7$ {B_2H_6-HCl}	bent diborane-HCℓ dimer	Carl Chuang	Observation and analysis of spectra in progress
$CKrO_2$ {Kr-CO_2}	Kr-CO_2 dimer	R. Ruoff T. Klots	Analysis and manuscript in progress
$C_2H_3FN_2$	HCN-HCN-HF(a)	R. Ruoff T. Emilsson	Manuscripts (2) in progress on (a)-(d) and on (e)-(i)
$C_2H_3C\ell N_2$	HCN-HCN-HCℓ(b)		
$C_3H_3F_3N_2$	HCN-HCN-HCF_3(c)		
$C_2H_2N_4$	N_2-HCN-HCN(d)		
$C_3H_2N_2O$	OC-HCN-HCN(e)		
$C_4H_6N_2$	ethylene-HCN-HCN(f)		
$C_5H_8N_2$	cyclopropane-HCN-HCN(g)		
$C_3H_2N_2O_2$	CO_2-HCN-HCN(h)		
$C_2H_5N_3$	H_3N-HCN-HCN(i)		

†Manuscript in preparation by R. Ruoff on cooling of conformers, mainly ethane derivatives upon expansion from supersonic nozzle into Flygare-Balle microwave spectrometer.

*Most of this work is a group effort with multiple authorship. Only one or two of several participants are listed for each compound.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_5BrO(BrCH_2OCH_3)$	bromomethylmethylether	Hayashi	r_s structre in progress
$CH_5GeF(CH_3GeH_2F)$	methylfluorogermane	Hayashi	CH_2D type internal rotation analysis in progress
$CH_5SiI(CH_3SiH_2I)$	methyliodosilane	Hayashi, Fujitake	eqQ, μ and r_s structure nearly completed
$C_3H_7I((CH_3)_2CHI)$	isopropyl iodide	Hayashi, Ikeda	eqQ, μ and r_s structure in progress
$C_3H_7I(CH_3CH_2CH_2I)$	propyl iodide	Hayashi	eqQ, μ and r_s structure in progress
$C_2H_5IO(CH_3OCH_2I)$	iodomethylmethylether	Hayashi	r_s structure in progress
$C_2H_3OI(CH_3COI)$	acetyl iodide	Hayashi	r_s structure in progress
$C_2H_3I(CH_2=CHI)$	vinyl iodide	Hayashi, Inagusa	r_s structure in progress

21. Name to whom queries should be addressed Eizi Hirota

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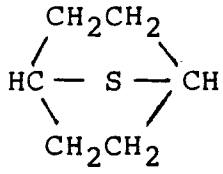
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_5H_8 $[CH_2=CHCH_2CH=CH_2]$	1,4-pentadiene	E. Hirota	One rotamer assigned.
$C_6H_{10}S$ 	7-thiabicyclo [2.2.1]heptane	K. Irie	Work in progress.
HNO	nitroxyl	K. Takagi S. Saito	Manuscript in preparation
ClOS[ClSO]	ClSO radical	S. Saito	Work almost completed.
CD_3O	methoxy raical-d_3	Y. Endo	Manuscript in preparation.
$^{13}CH_3O$	methoxy radical-^{13}C	T. Momose	Paper accepted in J. Chem. Phys.
CH_3CO	acetyl radical	Y. Endo	Work in progress.
$F_3Si[SiF_3]$	silicon trifluoride	M. Tanimoto	Assigned.
C_8H_7D	cubane-d	E. Hirota	Manuscript prepared.
C_2D_3O	vinoxy radical-d_3	Y. Endo	Paper accepted in J. Mol. Spectrosc.
CDO[DCO]	formyl radical-d	Y. Endo	Paper accepted in J. Mol. Spectrosc.
C_2H[CCH] C_2D[CCD]	ethynyl radical	Y. Endo	ν_2=1,2 Work almost completed.
CHO^+[HCO^+] CDO [DCO^+]	formyl ion	E. Hirota	vibrational satellites, paper accepted in J. Mol. Spectrosc.

$C_4H_6D_2$	cyclobutane-1,2-d_2	E. Hirota	trans eq-eq, ax-ax, cis assigned.
NaO	sodium monoxide	C. Yamada	Assigned.
LiO	lithium monoxide	C. Yamada	Assigned.
Cl_2Si $SiCl_2$	silicon dichloride	M. Fujitake	G. S. and vibrational satellites, assigned.
ClFSi SiFCl	silicon chloride fluoride	M. Fujitake	Assigned.

22. Name to whom queries should be addressed Prof. Dr. J. Hoeft

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
IF	Iodine fluoride	J. Hoeft K.P.R. Nair	mm wave spectrum, Z.Phys.D 8, 85(1988)
SrCl	Strontium monochloride	Schröder, Zeller, Ernst	$A^2\Pi$-$X^2\Sigma^+$ and $B^2\Sigma^+$-$X^2\Sigma^+$ deperturbation J.Mol.Spectrosc. 127, 255(1988)
SrF	Strontium monofluoride	Nitsch, Schröder, Ernst	OODR $F^2\Sigma^+$ and $G^2\Pi$, mans. in prep.
SrF	Strontium monofluoride	Kändler, Ernst, Martell	$A^2\Pi$ and $B^2\Sigma^+$ hfs and dipole moments, manus. in prep.
CaF	Calcium monofluoride	Ernst, Kändler	$A^2\Pi$ and $C^2\Pi$ dipole moments, manus. in prep.
CaF	Calcium monofluoride	Ernst, Kändler	$C^2\Pi$-$X^2\Sigma^+$ partly assigned
SrI	Strontium monoiodide	Schröder, Nitsch, Ernst	$B^2\Sigma^+$-$X^2\Sigma^+$ manus. in prep.
SrI	Strontium monoiodide	Ernst, Zeller, Schaal, Schröder	$X^2\Sigma^+$, $B^2\Sigma^+$ hfs work almost complete
I_2	Iodine	Rakowski, Zimmermann, Ernst	hfs of optical lines (700-800nm) work almost complete
LaO	Lauthanum monoxide	Törring, Zimmermann, Hoeft	$X^2\Sigma^+$ hfs mm manus. in prep.

23. Name to whom all queries should be addressed H.W.Kroto

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Formula		Name of Compound	Name of Investigator	Present Stage of Progress
C_2H_5NO	CH_3CH_2NO	Nitrosoethane	M Maier D Milverton	See also* A P Cox
$C_5H_{10}Si$	$(CH_3)_3SiC{\equiv}CH$	Trimethylsilyl -ethyne	A Alexander D R M Walton	ms in prep
C_6H_9NSi	$(CH_3)_3SiC{\equiv}CCN$	Trimethylsilyl -cyanoethyne	"	"
C_8H_9NSi	$(CH_3)_3Si(C{\equiv}C)_2CN$	Trimethylsilylcyano -cyanoethyne	"	"
CF_2HP	$CF_2{=}PH$	2,2-Difluorophospha -ethene	J F Nixon N P C Simmons	ms in prep
$BrCH_2P$	$CH_2{=}PBr$	1-Bromophospha -ethene	J F Nixon O Ohashi	ms in prep*
CFH_2P	$CH_2{=}PF$	1-Fluorophospha -ethene	J F Nixon O Ohashi D R M Walton	ms complete
C_2F_3P	$CF_3C{\equiv}P$	3,3,3-Trifluoro-1-phosphapropyne	J F Nixon N P C Simmons	ms in prep*
C_2NP	$N{\equiv}C{-}C{\equiv}P$	C-Cyanophospha -ethyne	O Ohashi J F Nixon	ms in prep*
BFS	FB=S	Fluorosulphido -boron	T Cooper	ms in prep*
BBrS	BrB=S	Bromosulphido -boron	T Cooper	ms in prep*
BClSe	ClB=S	Chloroselenido -boron	M King	in prog*

Formula		Name of Compound	Name of Investigator	Present Stage of Progress
C_3HNO	HC≡CNCO	Isocyanatoethyne	T Cooper D R M Walton	ms in prep
C_4H_3NO	CH_3C≡CNCO	Isocyanatopropyne	S Aziz M Durrant D R M Walton	
$AlC_3H_{12}N$	$(CH_3)_3NAlH_3$	Trimethylaminoalane	C Kirby J D Smith	Broadband
C_5H_3N	CH_2=CHC≡CCN	1-Cyano-but-3-en-1-yne	K Phillips D R M Walton D McNaughton	ms complete
C_5H_3N	HC≡CCH=CHCN	1-Cyano but-1-en-3-yne	J August D McNaughton	ms complete
C_4H_3N	HC≡CCH_2NC	1-isocyano prop-2-yne	N Romeril M F Lappert D McNaughton	ms complete
C_3H_3N	HC≡CCH=NH	C-ethynyl methanimine	D McNaughton O Osman	ms complete
C_5H_9N	$CH_3CH_2CH_2CH_2CN$	Valeronitrile	J August K Georgiou A C Legon	in prog.

* preliminary data in Chem.Soc.Revs., 11, 435 (1982)

24. Name to whom queries should be addressed Robert L. Kuczkowski, K. W. Hillig, II

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4H_6O_3$	cyclobutene ozonide	Badawi, Lorenčak	In press, J. Mol. Struc.
$C_4H_4O_3$	cyclobutadiene ozonide	Lorenčak	ms. in preparation
$C_3H_6O_4$	methoxyethylene ozonide	LaBarge	In press, JACS
C_3H_6O	allyl alcohol (gauche, gauche)	Badawi, Lorenčak,	J. Mol. Struc. 162 (1987) 247
C_3H_6O	allyl alcohol (second conformer	Badawi, Lorenčak, Hillig	transitions observed in FTMW and conventional
C_4H_8O	1-butene oxide	Badawi, Fish, Groves (Princeton)	2 isotopes mech. study
$C_7H_{12}O$	8-oxabicyclo [3.2.1] octane	Badawi, Lorenčak H. Wieser (Calgary)	assigned ms. in preparation
$C_4H_4O\cdot Ar$	argon-furan complex	Oh	dipole (FTMW)
$C_4H_5N\cdot Ar$	argon-pyrrole complex	Bohn (Connecticut)	assigned (FTMW)
$Ar\cdot F_3P$	argon·PF_3 complex	LaBarge, Bohn	dipole; cent. dist. (FTMW)
F_3KrP	krypton·PF_3 complex	LaBarge, Bittner	In press, J. Mol. Struc.
$(F_3P)_2$	PF_3 dimer	Hillig	transitions (FTMW)
C_2F_3Cl	chlorotrifluoroethylene	Hillig, M. Gerry (Brit. Colum.)	hyperfine (FTMW) ms. in preparation
$C_3H_9NO_2S$	trimethylamine-SO_2 complex	LaBarge Oh	JACS 1987, 109, 7222 more isotopes planned (FTMW)
$C_2H_4O_2S$	ethylene-SO_2 complex	LaBarge	transitions (FTMW)
F_3OP	phosphoryl trifluoride	Matos	^{17}O eqQ, in press
F_3SP	thiophosphoryl trifluoride	Bittner	^{33}S eqQ, Z. Naturforsch.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2O_2 (HCOOH)	Formic Acid	R. Bumgarner	Analysis nearly complete on ν_6 band
FHN_2O (ONN-HF)	(N_2O-HF Complex 2nd structural isomer)	R. Bumgarner D. Pauley	(Lines measured and assigned. Letter published- Chem. Phys. Lett. 141, 12 (1987))
$H_2O_2S_2$ (SO_2-H_2S)	Sulfur dioxide - hydrogen sulfide complex	R. Bumgarner D. Pauley	Published J. Chem. Phys. 87, 3749 (1987)

26. Name to whom queries should be addressed R.M. Lees or K.V.L.N. Sastry

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$CH_4O(CH_3OH)$	Methyl alcohol	R.M. Lees I. Mukhopadhyay M. Mollabashi (with G. Moruzzi, Pisa)	Fourier transform FIR assigned
$^{13}CD_3OH$	"	I. Mukhopadhyay K.V.L.N. Sastry R.M. Lees (w. J.W. Johns, NRC)	Spectrum assigned FTIR in progress FIR laser assignments
$CH_3{}^{17}OH$		R.M. Lees C. Young (w. M. Gerry, UBC)	Spectrum assigned FTIR and FTFIR in progress
$CH_5N(CH_3NH_2)$	Methylamine	R.M. Lees K.V.L.N. Sastry (w. W. Lewis-Bevan, Southern Illinois U.)	Spectrum assigned FTIR in progress FIR laser assignments

27. Name to whom queries should be addressed Professor A.C. Legon

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$ClHO_2S$	$SO_2 \cdots HCl$	A.J. Travis	Further work in progress
$C_3H_3N_2$	$CH_3CN \cdots HCN$	N. Howard	Paper published: *J. Chem. Soc.*, Faraday 2, **83**, 991, (1987)
C_2H_4ClN	$CH_3CN \cdots HCl$	H.M. North	Paper published: *J. Phys. Chem.* **91**, 5210, (1987)
$CHArF_3$	$Ar \cdots HCF_3$	E.J. Goodwin	Spectrum assigned
C_3H_5F	$H_2C{=}C{=}CH_2 \cdots HF$	L.C. Willoughby	Paper published: *Chem. Phys. Letters*, **143**, 214, (1988)
C_3H_5Cl	$H_2C{=}C{=}CH_2 \cdots HCl$	A.J. Travis	Spectrum assigned
ClH_4P	$H_3P \cdots HCl$	L.C. Willoughby	Manuscript in preparation
ClH_3O	$H_2O \cdots HCl$	L.C. Willoughby	Manuscript in preparation
BrH_3O	$H_2O \cdots HBr$	A.P. Suckley	Spectrum assigned
C_2H_3NO	$H_2CO \ldots HCN$	E.J. Goodwin	Paper published: *J. Chem. Phys.*, **87**, 2426, (1987)
ClH_4N	$H_3N \cdots HCl$	N.W. Howard	Full paper on range of isotopic species in press *J. Chem. Phys.*

BrH_4N	$H_3N\cdots Br$	N.W. Howard	Paper published: *J. Chem. Phys.*, **86**, 6722, (1987)
C_2HNOS	$SCO\cdots HCN$	A.I. Jaman	Paper published: *J. Mol. Struct.*, **158**, 205, (1987)
$C_2H_2O_2S$	$(SO_2,HCCH)$	N.W. Howard	Spectrum observed
C_3H_3O	$H_2CO\cdots HCCH$	N.W. Howard	Submitted to *J. Chem. Phys.*,
$C_4H_{10}N_2$	$(CH_3)_3N\cdots HCN$	C.A. Rego	Manuscript in preparation
$C_5H_{11}N$	$(CH_3)_3N\cdots HCCH$	C.A. Rego	Submitted to *J. Mol. Structure*.
C_5H_9N	$(CH_3)_3CNC$	A.L. Wallwork	Heavy atom r_s geometry
C_4H_9NSi	$(CH_3)_3SiCN$	C.S. Cooper	^{14}N-nuclear quadrupole coupling
$C_5H_{10}FN$	$(CH_3)_3CCN\cdots HF$	N. Gerry	Spectrum assigned ^{14}N nuclear quadrupole coupling

28. Name to whom queries should be addressed Ying-Sing Li

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_9H_{14}O$	Bicyclo[3,3,1]nontan 9-one	San Li	assigned
C_3HCl_3O	2,2,2-Trichloroethyl methyl ether	Grata Liu	Trans and gauche assigned
$C_8H_{14}O$	4-Ethylcyclohexanone	Arthur Lee	in progress
$C_9H_{16}O$	4-Isopropyl-cyclohexanone	M. L. Hwang	assigned
$C_7H_{10}O$	3-Methyl-2 cyclohexen-1-one	Y. S. Li	assigned
CH_3F_2P	Difluoromethyl-phoshine	E. Wang R. A. Beaudet Y. S. Li	Gauche and trans assigned
C_2H_7SiI	Dimethyl-silyliodide	P.Groner J. R. Durig Y. S. Li	Quadrupole
$C_3H_5F_3O$	2,2,2-trifluoro-ethylmethyl ether	J. R. Durig Y. S. Li	Trans and gauche assigned

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2ArO (Ar-CH_2O)	Argon-formaldehyde complex	S.E. Novick* R.D. Suenram F.J. Lovas	Spectrum assigned for 2 isotopic forms. Manuscript in prep.
CH_3ArNO	Argon-formamide complex	R.D. Suenram G.T. Fraser F.J. Lovas C.W. Gillies** J. Zozom**	Ground state assigned manuscript in prep.
CH_4ArO (Ar-CH3OH)	Argon-methanol complex	R.D. Suenram F.J. Lovas G.T. Fraser C.W. Gillies** J. Zozom**	a-type spectrum assigned for normal and deuterated forms. Manuscript in prep.
CH_4KrO (Kr••CH_3OH)	Krypton-methanol complex	G.T. Fraser F.J. Lovas R.D. Suenram	Spectrum assigned for 4-Kr-isotopes
CH_4O_4 (CO_2-H_2O-H_2O)	Carbon dioxide-water dimer complex	K.I. Peterson+ R.D. Suenram F.J. Lovas	Spectrum assigned on 7 isotopic forms. Manuscript in prep.
$C_2H_2O_3$ (H_2CO-CO_2)	Formaldehyde-carbon dioxide complex	T.A. Blake* S.E. Novick* R.D. Suenram F.J. Lovas	Spectrum assigned for 3 isotopic species. Manuscript in prep.
$C_2H_2O_5$ (H_2O-$(CO_2)_2$)	Water - carbon dioxide dimer complex	K.I. Peterson+ R.D. Suenram F.J. Lovas	Spectrum assigned for 2 isotopic species.
C_2H_3ArCl (Ar-CH_2CHCl)	Argon-vinylchloride complex	F.J. Lovas G.T. Fraser R.D. Suenram	2-rotamers assigned for ^{35}Cl and ^{37}Cl. Manuscript in prep.

*Wesleyan University, Middletown, CT
**RPI, Troy, NY
+University of Rhode Island, Kingston, RI

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_4O_3$ (CH_2OOOCH_2)	ethylene primary ozonide	J. Zozom C.W. Gillies R.D. Suenram F.J. Lovas	6-isotopes assigned. Manuscript in prep. Preliminary report in Chem. Phys. Lett. 140, 64 (1987).
$C_{12}H_9N$	Carbazole	R.D. Suenram F.J. Lovas G.T. Fraser	Manuscript submitted. J. Mol. Struct.
H_2N_2O (N_2-H_2O)	Nitrogen-water complex	M.D. Marshall* H.O. Leung** R.D. Suenram F. J. Lovas	Spectrum assigned for 7 isotopic species. Manuscript in prep.
H_2O_4 (O_3-H_2O)	Ozone-water complex	J. Zozom C.W. Gillies R.D. Suenram F.J. Lovas	Spectrum assigned for 2 isotopic species. Further work in progress
H_4OS (H_2S-H_2O)	Hydrogen sulfide-water complex	F.J. Lovas R.D. Suenram L. Coudert	Spectrum assigned for 9 isotopic forms.
H_4O_2 (H_2O-H_2O)	Water-dimer	R.D. Suenram F.J. Lovas L. Coudert	Spectrum assigned for $(HDO)_2$, mono-^{17}O, mono-^{18}O, di-^{17}O species
H_4S_2 (H_2S-H_2S)	Hydrogen-sulfide dimer	F.J. Lovas R.D. Suenram	Spectrum assigned for 7 isotopic species.

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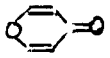
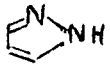
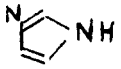
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_2O	water vapor	(A.Bauer (M.Godon (J.Carlier	Lineshape
$C_3H_4(CH_3C{=}CH)$	methyl acetylene	J.Burie J.Demaison J.Gadhi G.Wlodarczak	(Submillimeter wave (spectra of excited (states assigned
$C_2D_3N(CD_3CN)$	methyl cyanide -d_3		
CH_3Br	methyl bromide		
$C_5H_4O_2$ 	4H - pyran - 4 - one		
$C_3H_4N_2$ 	pyrazole	J.Burie J.Demaison J.Gadhi G.Wlodarczak	(Ground state (millimeter wave (spectra (assigned
$C_3H_4N_2$ 	imidazole		
C_7H_5N 	cyanobenzene		
$C_3H_6(H_2C{=}C{<}^{H}_{CH_3}$	propene	J.Burie J.Demaison J.Gadhi G.Wlodarczak	(Internal rotation (analysis ((
C_2H_6O (CH_3OCH_3)	dimethylether		
CHO_2^+ (HCO_2^+)	protonated carbon-dioxide	(JL.Destombes (M.Bogey (C.Demuynck (A.Krupnov	(^{13}C substitution (submm spectrum ((
CH_4	methane	(JL.Destombes,M.Bogey (JC.Hilico,M.Loete, (JP.Champion	mm wave spectrum
ArH_3^+	ionic complex	(JL.Destombes,M.Bogey (C.Demuynck,H.Bolvin (BP.Van Eijck	(submm wave spectrum (tunneling motion
$C_2H_4N_2(NH_2CH_2CN)$	aminoacetonitrile	(M.Bogey (H.Dubus	(mm and submm (wave spectrum
$C_2HNO(HCOCN)$	formyl cyanide	(M.Bogey,JL.Destombes (JL.Ripoll, MC.Lasne	(mm submm wave (spectrum assigned
$CHN(HCN)$	hydrogen cyanide	(D.Derozier (F.Rohart (((	Collisional relaxation in the presence of foreign gases. Temperature dependance
$C_2H_3N(CH_3CN)$	metyl cyanide		
$C_3HN(HC_3N)$	cyanoacetylene		

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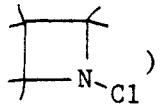
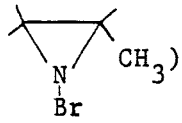
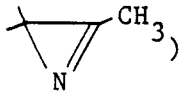
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_2N_2$ ($^{D}\!\!>\!N{=}C<^{H}_{CN}$)	C-cyanomethanimine	S. Takano	deuterated species assigned
C_3H_6NCl ()	N-chloroazetidine	T. Egawa	joint analysis with electron diffraction
C_3H_6BrN ()	N-bromopropylenimine	H. Takeo	spectrum assigned analysis of pyrolysis products
C_3H_5N ($H_3C{-}N{=}C{=}CH_2$)	N-methylketenimine	M. Sugie	analysis of internal rotation
C_3H_5N ()	3-methyl-2H-azirine	M. Sugie	analysis of internal rotation

32. Name to whom queries should be addressed Professor D.J. Millen

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2FN {HCN···HF}	hydrogen-bonded complex of hydrogen cyanide and hydrogen fluoride	L C Willoughby	Further work on vibrational satellites and isotopic species
C_3H_2FN {HCCCN···HF}	hydrogen-bonded dimer of cyanoacetylene and hydrogen fluoride	H M North	Paper on dissociation energy published in *J. Chem. Phys.* 1987, *86*, 2530.
H_3FO {H_2O···HF}	hydrogen-bonded complex of water and hydrogen fluoride	H M North	Paper on dissociation energy published in *Chem. Phys. Letts.* 1987, *135*, 303
$C_2H_2N_2$ {HCN···HCN}	hydrogen-bonded dimer of hydrogen cyanide	K Georgiou	Further work in progress
C_2H_5FO {  O···H-F}	hydrogen-bonded complex of oxirane and hydrogen fluoride	R A Collins	Further work on satellites
C_3H_7FO {  O···HF}	hydrogen-bonded complex of oxetane and hydrogen fluoride	R A Collins	Further work on satellites
C_4H_7FO {  O···HF}	hydrogen-bonded complex of 2,5-dihydrofuran and hydrogen fluoride	R A Collins	Paper published in *J. Mol. Struct.* 1987, *162*, 31
C_2H_7FO {$(CH_3)_2O$···HF}	hydrogen-bonded dimer of dimethyl ether and hydrogen fluoride	H M North Z Kisiel	Spectrum partially assigned
C_2H_4NF {CH_3CN···HF}	hydrogen-bonded complex of methyl cyanide and hydrogen fluoride	H M North	Paper on dissociation energy published in *J. Chem. Phys.* 1987, *86*, 2530
C_4H_4FN {CH_3CCCN···HF}	hydrogen-bonded complex of methylcyanoacetylene and hydrogen fluoride	K Georgiou H M North	Work in progress
$C_5H_{10}FN$ {$(CH_3)_3CCN$···HF}	hydrogen-bonded complex of *t*-butyl cyanide and hydrogen fluoride	S L A Adebayo L C Willoughby	Work in progress

33. Name to whom queries should be addressed Harald Møllendal

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Telephone number 02/455674

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_9N ($H_2NCH_2CH_2CH=CH_2$)	1-amino-3-butene	H. Møllendal	In press, Acta Chem. Scand.
C_3H_8OS ($CH_3SCH_2CH_2OH$)	2-(methylthio)ethanol	H. Møllendal	Writing up
$C_2H_6O_2$ ($HOCH_2CH_2OH$)	Ethylene glycol	H. Møllendal with D. Christen/Tuebingen	New studies

34. Name to whom queries should be addressed Yonezo Morino

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Kanagawa 229, Japan

Telephone number 0427-42-4791

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
O_2S (SO_2)	Sulfur Dioxide	Y. Morino M. Tanimoto (with S. Saito)	r_e-structure manuscript submitted
Cl_2Si	Dichlorosilylene	M. Tanimoto (with C. Matsumura and H. Takeo)	work in progress
F_3Si	Silicon Trifluoride	M. Tanimoto (with S. Saito)	work in progress

35. Name to whom queries should be addressed Dr. R. N. Nandi

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_7H_4FN	2-fluorobenzonitrile	A. Dutta A. I. Jaman R. N. Nandi	J. Mol. Spectr. 124 (1987) 486
CF_3Br	Bromotrifluoromethane	S. Maity A. Dutta A. I. Jaman	Temporarily suspended
C_7H_4BrN	3-bromobenzonitrile	S. Maiti A. Datta A. I. Jaman	Work in progress

36. Name to whom queries should be addressed Teruhiko OGATA

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_2ClF_3$ (CF_2Cl-CH_2F)	1-Chloro-1,1,2-trifluoroethane	M. Yoshikawa	Manuscript in Preparation
C_4H_6O (H_2C=C=$CHOCH_3$)	Methoxyallene	K. Sugimoto	In Press. (J.Mol.Struct.)
C_4H_6 (H_2C=C=$CHCH_3$)	Methylallene	C. Akagi	r_s-structure determined
C_4H_5F (H-C≡C-$CHFCH_3$)	3-Fluoro-1-butyne	N. Yamada	Work almost completed
C_3H_2ClF (H_2C=C=CFCl)	1-Chloro-1-fluoroallene	T. Ogata	Spectrum assigned

37. Name to whom queries should be addressed: H. M. Pickett, E. A. Cohen, R. L. Poynter

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Mail Stop 183-601
Pasadena, CA 91109
Telephone: (818) 354-6861

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
O_3 (17-O isotope) O_2S (SO2, 17-O isotope)		Cohen, Pickett, Hillig	Improved eQq and spin-rot, manuscript prepared
HDO O_2S (SO_2)		Poynter, Toth, Cohen, Pickett	Combined laser sideband, MW and IR fit, SO_2 manuscript in prep.
CH_2N_2 (NH_2CN)	Cyanamide	M. Birk (Giessen) Cohen	Laser sideband, improved constants (see M.Winnewisser)
(HN=C=NH)	Carboddimide	M. Birk (Giessen) McRae, Farhoomand, Cohen	Laser sideband (see M.Winnewisser)
BrHO (HOBr)	Hypobromous acid	McRae, Cohen in collaboration with with Nat. Chem. Lab. for Industry (Japan)	Laser sideband, submm of HOBr DOBr, high res. IR of HOBr (ν_1 and ν_2), papers in prep.
O_2	Oxygen	Read, Hillig, Pickett, Cohen	118 GHz lineshape 60-80GHz absolute absorption, in press
CO	Carbon Monoxide	Read, Hillig, Pickett, Cohen	115 GHz absolute absorption and line-shape parameter, in press
COF_2 (OCF_2)	Carbonyl fluoride	Cohen	Submm, FIR

38. Name to whom queries should be addressed N.Pozdeev

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Telephone number

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_8O	2-butanone		J.Struct.Chemistry, N1, 1988
C_4H_8S	tetrahydrothiophene		Excited vibrational states, revised pseudorotational models
C_4H_8Se	tetrahydroselenophene		
C_5H_8O	cyclopentanone		
C_4H_8O	tetrahydrofurane		
COS	carbonylsulfide		IR-Mw DR in progress
H_3N	ammonia		
CCl_2F_2	freon-12		

39. Name to whom queries should be addressed C. Richard Quade

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_2D_2O (CHD_2OH)	Methyl Alcohol	Chun Fu Su Dept. of Physics Mississippi State and C. R. Quade	gauche to trans transitions identified and assigned

40. Name to whom queries should be addressed Dr. Jim Roberts

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Denton, TX 76301

Telephone number 817-565-3281

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$^{13}CH_3{}^{12}C{}^{12}CH$, $^{12}CH_3{}^{13}C{}^{12}CH$, $^{12}CH_3{}^{12}C{}^{13}CH$	PROPYNE	J. Roberts, I. An, H. Tam	Some Rotational components measured and assigned for ground and $v_{10}=1$ for $J\geq 4$.
$^{13}CH_3{}^{12}CN$, $^{12}CH_3{}^{13}CN$, $^{13}CH_3{}^{13}CN$	ACETONITRILE	J. Roberts, H. Tam	Some rotational components for $J\geq 4$ with quadrupole structure measured and assigned for ground, $v_8=1,2$.

41. Name to whom queries should be addressed Georges ROUSSY

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_7H_{12}O$	1-oxa spiro(2.5) octane	H. BOULEBNANE G. ROUSSY	To be published in J. Mol. Struct.
$C_7H_{12}S$	1-thia spiro(2.5) octane	H. BOULEBNANE R. VILLAMAÑAN* E. ALAMI	Manuscript in preparation
$C_8H_{14}O_2$	1,4-dioxa spiro(4.5) decane	H. BOULEBNANE E. ALAMI R. VILLAMAÑAN*	Partially assigned
$C_8H_{14}S_2$	1,4-dithia spiro(4.5) decane	E. ALAMI G. ROUSSY	Work started

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42. Name to whom queries should be addressed H.D. Rudolph

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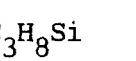
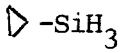
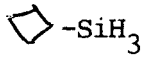
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
ClSS	ClSS-Radical	U. Magg H. Jones	Diode laser spectrum observed
C_2H_7N ($H_3CCH_2NH_2$)	Ethylamine	E. Fischer I. Botskor H.D. Rudolph	work complete
C_3H_3Cl ($HCCCH_2Cl$)	Propargyl-chloride	L. Braun I. Botskor	work complete
C_3H_7N ($H_2CCHCH_2NH_2$)	Allylamine	I. Botskor K.H. Wiedenmann H.D. Rudolph	further structure calculations on NGLT and NGLG1 rotamers, ms on NCLT accepted
C_3H_8Ge 	Cyclopropyl-germane	H.D. Rudolph K. Epple	g.s. spectra of normal and isotopic species dipole moment
C_3H_8Si 	Cyclopropyl-silane	J. Mennicke H.D. Rudolph B. Mir	spectra of several isotopic species structure
$C_4H_{10}Si$(..-SiH_3) 	Cyclobutyl-silane	A. Wurstner-Rück B. Mir H.D. Rudolph	heavy atom structure, additional isotopic species of both conformeres
C_6H_6	Benzene	U. Magg J. Lindenmayer H. Jones	Diode laser ν_4 in press
C_8H_{10}	Orthoxylene	H.D. Rudolph K.H. Wiedenmann B. Mir	d10 and ^{13}C isotopic species
F_4Si (SiF_4)	Silicon-tetrafluoride	L. Jörissen H. Prinz W.A. Kreiner	g.s. rotational spectrum and Stark-effect observed
H_3P (PH_3)	Phosphine	D. Papousek H. Birk, U. Magg H. Jones	Diode laser, A_1, A_2 splittings, ν_2, ν_4 ms in prep.

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_4Si (SiH_4)	Silane	H. Prinz W. Höhe W.A. Kreiner	exc.s. $\Delta J=1$ transitions observed
NH_2OH NHDOD	Hydroxylamine - " -	H. Birk H. Jones	Diode laser spectra ν_4, ν_5, ms accepted
ND_2OD	deuterated Hydroxylamine	J.D. Nürnberger H. Jones	Diode laser spectrum of ν_4 analyzed
NaH	Sodium hydride	U. Magg H. Jones	Diode laser spectrum observed

43. Name to whom queries should be addressed Shuji SAITO

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_2Cl^+	Chloronium ion	S. Saito S. Yamamoto	J. Chem. Phys. in press.
CO	Carbon monoxide $a^3\Pi_r$, $a'^3\Sigma^+$	S. Yamamoto	J. Chem. Phys. submitted.
C_3H C_3D	C_3H radical	S. Yamamoto	Manuscript in preparation.
PO	PO radical	H. Kanata S. Yamamoto S. Saito	J. Mol. Spectrosc. submitted.
CCS	CCS radical	S. Yamamoto S. Saito K. Kawaguchi*	^{34}S, ^{13}C species. Manuscript in preparation.
		M. Tanimoto**	ν_1, ν_2, ν_3 excited
		S. Saito S. Yamamoto K. Kawaguchi*	states. Manuscript in preparation.
C_3H	Cyclic C_3H radical	S. Yamamoto	Astrophys. J. 322, L55 (1987). D, ^{13}C species.
PS	PS radical	M. Ohishi***	Astrophys. J.
		S. Yamamoto S. Saito K. Kawaguchi	in press.
CP	CP radical	S. Saito	Manuscript in preparation.
CH_2CN	CH_2CN radical	S. Saito	Four interstellar rotational lines assigned. Manuscript in preparation.
CH_2N	CH_2N radical	S. Yamamoto	Spectrum assigned.
HS_2	HS_2 radical	S. Yamamoto	Spectrum assigned.
CN	CN radical	H. Itoh****	Vib. excited states.
		S. Yamamoto	Work in progress.

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44. Name to whom queries should be addressed Yoshiaki Sasada

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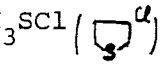
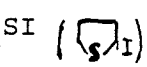
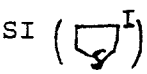
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_3SCl ()	3-chlorothiophene	y. Sasada	Work completed
C_4H_3SI ()	2-iodothiophene	Y. Sasada	Work completed
C_4H_3SI ()	3-iodothiophene	Y. Sasada	Work completed
$C_2H_5OH(CH_3CH_2OH)$	ethyl alcohol	Y. Sasada	trans form excited states isotopic species

45. Name to whom queries should be addressed R. H. Schwendeman

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$CH_3F(^{12}CH_3F)$	Methyl fluoride	S. K. Lee, H. G. Cho	IR-MW sideband laser ν_3 band lineshape/analysis in progress
$CH_3F(^{13}CH_3F)$	Methyl fluoride	S. K. Lee	IR-MW sideband laser IR-IR double resonance
$H_3N(NH_3)$	Ammonia	Y. Matsuo	IR-MW sideband laser IR-IR double resonance
$CBrF_3(CF_3Br)$	Trifluoromethyl bromide	W. Fawzy	IR-RF double resonance in press, J. Mol. Spectrosc.
CH_3I	Methyl iodide	W. Fawzy	IR-RF double resonance lineshape analysis
CD_3I	Methyl iodide	H. G. Cho	IR-MW sideband laser ν_2 band
$CH_4O(CH_3OH)$	Methanol	D. Peterson	IR-MW double resonance ν_8 band
CF_3I	Trifluoromethyl iodide	D. Peterson	IR-MW double resonance ν_1 band
CD_2O	Formaldehyde-d_2	S.-C. Hsu	IR-MW sideband laser ν_2 band in press, J. Mol. Spectrosc.

46. Name to whom queries should be addressed Tadao Shimizu

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Tokyo 113, Japan

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_3N	ammonia	Y.Matsuo	Millimeter wave-optical double resonance
COS(OCS)	carbonyl sulphide	H.Odashima	Pressure broadening parameters
$CH_4O(CH_3OH)$	methyl alcohol	H.Odashima	Pressure broadening parameters

47. Name to whom queries should be addressed O. L. Stiefvater

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Wales, U.K.

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_2H_2F_2$ (CF_2=CH_2)	1,1-difluoroethene / vinylidene fluoride	O.L.S.	Pure rotation spectra of all excited vibration states up to ∿1300 cm^{-1} assigned by DRM. Initiated LMDR and FTIR-work frustrated by lack of funds.
$C_2H_2F_2$ (CFH=CFH)	cis-1,2-difluoroethene / cis-1,2-difluoroethylene		
C_2HF_3 (CF_2=CFH)	trifluoroethene / trifluoroethylene		

48. Name to whom queries should be addressed Chun Fu Su or R. L. Cook

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_4 H_6 O_2$	meso-Bisoxirane		in progress
$C_4 H_{14} Si$	Cyclohexyl Silane		in progress
$C_4 H_6 O_2$	dl-Bisoxirane		in press

49. Name to whom queries should be addressed Dr. Michio Takami

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$H_4Sn(SnH_4)$	Stannane	L.G.Jörissen Y.Ohshima Y.Matsumoto M.Takami	Several MW lines were observed in the ν_3 state by IR-MW D.R.

50. Name to whom queries should be addressed Prof. Mitsuru Takano

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_2H_4ClBr ($ClCH_2CH_2Br$)	1-Bromo-2-chloroethane	M. Takano I. Ohkoshi Y. Niide	In progress
C_2H_4FI (FCH_2CH_2I)	1-Iodo-2-fluoroethane	Y. Niide I. Ohkoshi	In progress
CH_2ClBr	Chlorobromomethane	Y. Niide I. Ohkoshi	Spectrum assigned

51. Name to whom queries should be addressed Takehiko Tanaka
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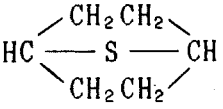
FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_4H_2 ($DC\equiv CC\equiv CH$)	Diacetylene	K. Kato	Manuscript in preparation
$C_6H_{10}S$ 	7-Thiabicyclo-[2.2.1]heptane	T. Etoh	In progress
C_3FN ($FC\equiv CC\equiv N$)	Fluorocyanoacetylene	T. Okabayashi	Ground and excited vibrational states in progress
H_3N (NH_3)	Ammonia	K. Tanaka	$\Delta k=\pm 3$ transitions manuscript in preparation
CHNO (HCNO)	Fulminic acid	R. Takashi	LMDR (Laser-microwave double resonance) in progress
CH_3F (CH_3F, CD_3F)	Methyl fluoride	K. Harada	LMDR manuscript in preparation
CH_3I	Methyl iodide	K. Harada	LMDR in progress
C_2HF ($HC\equiv CF$)	Fluoroacetylene	Y. Nakahara	LMDR in progress
C_2H_3N (CH_3CN)	Methyl Cyanide	T. Oyama	LMDR in progress
C_2H_3N (CH_3NC)	Methyl Isocyanide	T. Oyama	LMDR in progress
C_3HN ($DC\equiv CC\equiv N$)	Cyanoacetylene	K. Tanaka	LMDR in progress
CFN ($FC\equiv N$)	Cyanogen fluoride	S. Matsuba	LMDR in progress

52. Name to whom queries should be addressed Shozo Tsunekawa

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
CH_5N (CH_3NH_2, CH_3NHD)	Methylamine	K. Takagi S. Tsunekawa M. Iziri	Manuscript in Preparation
CH_4SH (CH_3SD, CD_3SH)	Methyl Mercaptan	M. Yamamoto S. Tsunekawa K. Nakagawa(Zyousai Univ.)	Manuscript in preparation
H_4N_2 (ND_2ND_2)	Hydrazine	S. Tsunekawa	Work in progress
HNO	Nitroxyl	K. Takagi S. Saito(Nagoya Univ.)	MODR
C_2H_5O (CH_3CONH_2)	Acetamide	K. Nakagawa S. Tsunekawa	Excited State
CH_4O ($^{13}CH_3OH$)	Methyl alcohol	K. Takagi M. Hayashi M. Ohishi	Work in progress
PS	PS radical	M. Ohishi et al	in press (to appear in Astrophys. J. June 1, 1988 issue.

53. Name to whom queries should be addressed Prof. Gisbert Winnewisser

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
H_2S_2, D_2S_2	Disulfane	D.Mauer, K.M.T.Yamada	mmw spectra measured.
H_2S_3	Trisulfane	D.Mauer, K.M.T.Yamada	measurements in progress

54. Name to whom queries should be addressed: Manfred Winnewisser

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Telephone number: (0641) 702-5790

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STATE OF PROGRESS
C_2H_3NO (CH_3CNO)	Acetonitrile oxide	(J. Galica, Poznan) B. P. Winnewisser, M. Winnewisser	Exc. states MMW work in progress
SrS	Strontium sulfide	M. Winnewisser	Work in progress
C_3OS (OCCCS)	Tricarbon oxide sulfide	F. Holland, M. Winnewisser	Comb. states, MMW work in progress
CD_2N_2 (ND_2NC)	d_2-Isocyanamide	F. Stroh, M. Winnewisser	MMW work in progress
CF_2N_2 (F_2NCN)	Difluorocyanamide	F. Stroh, M. Winnewisser	G. S., first exc. state in MMW: MS in prep.
CH_2N_2 (HNCNH)	Carbodiimide	M. Birk, M. Winnewisser, (E. A. Cohen, JPL)	O^+, O^- states MMW, FIR MS in prep.
$C_2H_2N_2O$ ($NCCONH_2$)	Cyanoformamide	(J. J. Christiansen, Copenhagen)	Ground state and exc. states: MS in prep.
CH_4O_2 (CH_3OOH)	Methyl hydro-peroxide	C. E. Blom (M. Tyblewski, A. Bauder, Zärich)	Manus. in preparation
CH_4O_2 (CH_3OOD)	Methyl deutero-hydroperoxide	C. E. Blom	"
C_3H_4O (CH_2CHCHO)	Acrolein	C. E. Blom	Exc. states of s-cis, s-trans conformers ass.
CHF_2N (F_2CNH)	Difluoro-methanimine	M. Winnewisser, K. Möller, (H. Bärger, Wuppertal)	GS assigned. Manus. in prep.
CHNO (HCNO)	Fulminic acid	G. Wagner, M. Winnewisser, B. P. Winnewisser	^{13}C, ^{15}N species meas. in progress.

55. Name to whom queries should be addressed Ichiro Yamaguchi

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Telephone number 03-238-3358

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_3H_6OS (CH_3CH_2COSH)	Thipropionic acid	I.Yamaguchi	excited states
C_2H_4OS ($HSCH_2CHO$)	Mercaptoacetaldehyde	I.Yamaguchi in collaboration with U.Giessen	assigned
$C_2H_4O_2S$ ($HSCH_2COOH$)	Mercaptoacetic acid	I.Yamaguchi	assigned
$C_3H_6O_2$ (CH_3OCH_2CHO)	Merhoxyacetaldehyde	I.Yamaguchi	J.Mol.Struct.162(1987)
$C_4H_6O_2$ ($CH_3CH=CHCOOH$)	2-Butenoic acid	I.Yamaguchi	to be submitted to J.Mol.Struct.
		H.Hatcho	cis-conformer
$C_4H_6O_2$ ($CH_2=CHCH_2COOH$)	3-Butenoic acid	K.Tanaka	in progress
C_4H_7NO ($CH_3CH=CHCH=NOH$)	Croton aldehyde oxime	M.Hamano	ms in prep
C_4H_7NO ($CH_2=C(CH_3)CH=NOH$)	syn-2-Methylacrylaldehyde oxime	Y.Yanagawa	ms in prep
C_4H_9NO ($CH_3(CH_2)_2CH=NOH$)	Butyraldehyde oxime	O.Ohashi	in progress
C_5H_9NO ($\overbrace{CH_2(CH_2)_3C}=NOH$)	Cyclopentanone oxime	A.Murakami	ms in prep
$C_6H_{11}NO$ ($\overbrace{CH_2(CH_2)_4C}=NOH$)	Cyclohexanone oxime	O.Ohashi	ms in prep
C_4H_7NO ($H\overbrace{NCH_2(CH_2)_2C}=O$)	2-Pyrrolidone	O.Ohashi	ms in prep
C_5H_9NO ($H\overbrace{NCH_2(CH_2)_3C}=O$)	2-Piperidone	O.Ohashi	assigned
C_6H_9NO ($\overbrace{CH_2(CH_2)_2CHCHC}=NOH$)	2-Cyclohexen -1-one oxime	Y.Sato	assigned
C_4H_9NO ($(CH_3)_2CHCH=NOH$)	Isobutyraldehyde oxime	A.Murakami	assigned
C_3H_7ND ($CH_3CH_2CH=NOH$)	E-sp-Propionaldehyde oxime	O.Ohashi	assigned
C_2H_3NO (CH_3OCN)	Methyl cyanate	H.Mure T.Sakaizumi	in progress
C_3H_5NO (CH_3CH_2OCN)	Ethyl cyanate	H.Mure T.Sakaizumi	trans-form N-15 species

FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
$C_5H_4N_2$	($\overbrace{CH=CHCH=CHC=N_2}$) Diazocyclopentadiene	S.Fukuda T.Sakaizumi	assigned d_1-species
$C_5H_4N_2$	($\overbrace{CH=CHNHCH=CCN}$) Pyrrole-3-carbonitrile	T.Sakaizumi	ms in prep
C_6H_4ClN	($\overbrace{CH_2CCl=CHCH=CCN}$) 4-Chloro-1,3-cyclopentadiene-1-carbonitrile	K.Matsui T.Sakaizumi	d_1-species
$C_6H_4N_2S$	1,2,3-Benzothiadiazole	T.Sakaizumi	ms in prep
C_7H_7N	($\overbrace{CH_2CH=CHC(CH_3)=CCN}$) 2-Methyl-1,3-cyclopentadiene-1-carbonitrile	K.Matsui T.Sakaizumi	d_1-species
	($\overbrace{CH_2CH=C(CH_3)CH=CCN}$) 3-Methyl-1,3-cyclopentadiene-1-carbonitrile		
	($\overbrace{CH_2C(CH_3)=CHCH=CCN}$) 4-Methyl-1,3-cyclopentadiene-1-carbonitrile	Y.Sato T.Sakaizumi O.Ohashi	ms in prep
C_5H_5NO	4-Hydroxypyridine	M.Onda	in progress
$C_6H_4Cl_2$	1,3-Dichlorobenzene-d_1	M.Onda	ms in prep
C_7H_4ClN	2-Chlorobenzonitrile	M.Onda	hfs, in progress
C_7H_5NO	Phenyl cyanate	M.Onda	ms in prep
$C_7H_6O_2$	Benzoic acid	M.Onda	isotopic species in progress
$C_7H_6O_3$	Salicylic acid	M.Onda	in progress
C_7H_6OS	Thiobenzoic acid	M.Onda	assigned
C_7H_8O	Anisole	M.Onda	CD_3 species, excited states ms in prep
C_8H_8O	Acetophenone	M.Onda	ms in prep
$C_{12}H_9F$	4-Fluorobiphenyl	M.Onda	assigned

56. Name to whom queries should be addressed **Prof. Marlin D. Harmony**

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Lawrence, KS 66045-0046

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FORMULA	NAME OF COMPOUND	NAME OF INVESTIGATOR	PRESENT STAGE OF PROGRESS
C_5H_5N	1-Cyanobicyclobutane	Taylor, Harmony	Manuscript in preparation
C_3H_3N	Vinyl isocyanide	Chang, Harmony	In press (structure)
C_6H_8	Ethynylcyclobutane (Cyclobutyl acetylene)	Berry, Harmony	Conformational study in press

FORMULA INDEX

ArF_2H_2 - $Ar-(HF)_2$ - 19

ArF_3P - $argon-PF_3$ - 24

ArH_3^+ - $Ar-H_3^+$ - 30

Ar_4ClH - Ar_4-HCl - 19

BBrS - bromosulfido boron - 23

$BClF_2$ - chlorodifluoroboron - 11

BClSe - chloroselenido boron - 23

BF - boron fluoride - 13

BFS - fluorosulfido boron - 23

BF_2HO - difluorohydroxoboron - 11

BO_2 - boron dioxide - 4

B_2ClH_7 - diborane-HCl - 19

BrHO - hypobromous acid - 37

BrH_3O - water-HBr - 27

BrH_4N - ammonia-HBr - 27

$CArO_2$ - argon-carbon dioxide - 4

$CBrF_2N$ - N-bromo-difluoromethanimine - 12

$CBrF_3$ - bromotrifluoromethane - 35,45

CBrNO - bromoisocyanate - 8

$CClF_2NO$ - chlorodifluoronitrosomethane - 10

CClNS - chlorine thiocyanate - 16

CCl_2F_2 - dichlorodifluoromethane - 38

CFN - cyanogen fluoride - 51

CF_2N_2 - difluorocyanamide - 54

CF_2O - carbonyl fluoride - 37

CF_3I - trifluoromethyl iodide - 45

CF_3NO_2 - trifluoronitromethane - 10

CF_3NSi - trifluorosilylcyanide - 10

CF_5NOS - pentafluorosulfanyl isocyanate - 18

CF_8S - trifluoromethyl sulfur pentafluoride - 2

$CHArF_3$ - fluoroform-Ar - 27

CHArN - Ar-HCN - 19

$CHAr_2N$ - Ar_2-HCN - 19

$CHBrO_2$ - carbon dioxide-HBr - 4

$CHClF_2$ - chlorodifluoromethane - 16

$CHCl_3$ - chloroform - 7

CHF_2N - difluoromethanimine - 12,54

CHF_2P - 2,2-difluorophosphaethene - 23

CHF_3S - trifluoromethylmercaptan - 10

CHN - hydrogen cyanide - 30

CHNO - isocyanic acid - 16

CHNO - fulminic acid - 51,54

CHO^+ - formyl ion - 13,21

CHO - formyl radical - 21

CHO_2^+ - protonated carbon dioxide- 30

CH_2ArO - argon-formaldehyde - 29

CH_2BrCl - chlorobromomethane - 50

CH_2BrP - 1-bromophosphaethene - 23

CH_2FN - HCN-HF - 32

CH_2FP - 1-fluorophosphaethene - 23

CH_2F_3N - trifluoromethylamine - 8

CH_2I_2 - diiodomethane - 11

CH_2N - CH_2N radical - 43

CH_2N_2 - cyanamide - 6,37

CH_2N_2 - carbodiimide - 37,54

CH_2N_2 - isocyanamide - 54

CH_2O - formaldehyde - 45

CH_2O_2 - formic acid - 25

CH_3ArNO - argon-formamide - 29

CH_3Br - methyl bromide - 30

CH_3ClHg - methylmercury chloride - 10

CH_3Cl_3Si - methyltrichlorosilane - 7

CH_3F - methyl fluoride - 45,51

$CH_3F_2O_2P$ - methyldifluorophosphate - 17

CH_3F_2P - methyldifluorophosphine - 28

CH_3I - methyl iodide - 45,51

CH_3N - methylenimine - 11

CH_3NO - formamide - 6

CH_3NO - nitrosomethane - 10

CH_3NO - formaldoxime - 16

CH_3NO_2 - nitromethane - 9

CH_3NO_3 - methylnitrate - 11

CH_3O - methoxy radical - 21

CH_4 - methane - 11,30

CH_4ArO - argon-methanol - 29

CH_4KrO - krypton-methanol - 29

CH_4O - methanol - 11,26,39,45,46,52

CH_4O_2 - methyl hydroperoxide - 3,54

CH_4O_4 - CO_2-H_2O-H_2O - 29

CH_4S - methylmercaptan - 52

CH_5BO_2 - methylborondihydroxide - 10

CH_5FGe - methylfluorogermane - 20

CH_5FN_2 - NH_3-HCN-HF - 19

CH_5ISi - methyliodosilane - 20

CH_5N - methylamine - 11,26,52

CIN - cyanogen iodide - 11

$CKrO_2$ - Kr-CO_2 - 19

CN - CN radical - 43

CO - carbon monoxide - 37,43

COS - carbonyl sulfide - 11,13,38,46

CP - CP radical - 43

C_2BrF - bromofluoroacetylene - 11

C_2ClF_3 - chlorotrifluoroethylene - 16,24

C_2F_3NO - trifluoromethylisocyanate - 8

C_2F_3P - 3,3,3-trifluoro-1-phosphapropyne - 23

C_2F_6NO - bis-trifluoromethyl nitroxide radical - 18

C_2H - ethynyl radical - 21

C_2HBrO - bromoketene - 16

C_2HClF_2O - chlorodifluoroacetaldehyde - 10

C_2HClO - chloroketene - 6

C_2HF - fluoroacetylene - 51

C_2HFO - fluoroketene - 6

C_2HF_3 - trifluoroethene - 47

C_2HF_3O - trifluoroethylene oxide - 17

C_2HI - iodoacetylene - 11

C_2HNO - formyl cyanide - 30

C_2HNOS - SCO-HCN - 27

C_2H_2BrFO - fluoromethylacetylbromide - 12

$C_2H_2ClF_3$ - 1-chloro-1,1,2-trifluoroethane - 36

C_2H_2FNO - OC-HCN-HF - 19

$C_2H_2F_2$ - 1,1-difluoroethene - 47

$C_2H_2F_2$ - cis-1,2-difluoroethene - 47

C_2H_2N - CH_2CN radical - 43

$C_2H_2N_2$ - C-cyanomethanimine - 31

$C_2H_2N_2$ - hydrogen cyanide dimer - 32

$C_2H_2N_2O$ - cyanoformamide - 54

$C_2H_2N_4$ - N_2-HCN-HCN - 19

C_2H_2O - ketene - 11

$C_2H_2O_2S$ - acetylene-SO_2 - 27

$C_2H_2O_3$ - formaldehyde-carbon dioxide - 29

$C_2H_2O_5$ - water-$(CO_2)_2$ - 29

C_2H_3ArCl - argon-vinylchloride - 29

$C_2H_3ClN_2$ - HCN-HCN-HCl - 19

C_2H_3ClO - chloroacetaldehyde - 10

$C_2H_3FN_2$ - HCN-HCN-HF - 19

$C_2H_3FO_2$ - methylfluoroformate - 12

$C_2H_3F_3O$ - 2,2,2-trifluoroethanol - 17

C_2H_3HgN - methylmercury cyanide - 10

C_2H_3I - vinyl iodide - 16,20

C_2H_3IO - acetyl iodide - 20

C_2H_3N - acetonitrile - 11,15,30,40,51

C_2H_3N - methyl isocyanide - 51

C_2H_3NO - formaldehyde-HCN - 27

C_2H_3NO - acetonitrile oxide - 54

C_2H_3NO - methyl cyanate - 55

$C_2H_3N_3$ - 1H-1,2,3-triazole - 9

$C_2H_3N_3$ - 2H-1,2,3-triazole - 9

C_2H_3O - acetyl radical - 21

C_2H_3O - vinoxy radical - 21

C_2H_4BrCl - 1-bromo-2-chloroethane - 50

C_2H_4ClN - acetonitrile-HCl - 27

C_2H_4FI - 1-iodo-2-fluoroethane - 50

C_2H_4FN - acetonitrile-HF - 32

C_2H_4FNO - 2-fluoroacetamide - 11

$C_2H_4N_2$ - aminoacetonitrile - 30

C_2H_4O - acetaldehyde - 2,3,10

C_2H_4OS - mercaptoacetaldehyde - 55

$C_2H_4O_2$ - methyl formate - 2

$C_2H_4O_2S$ - ethylene-SO_2 - 24

$C_2H_4O_2S$ - mercaptoacetic acid - 55

$C_2H_4O_3$ - 1,2,3-trioxolane - 17,29

C_2H_5BrO - bromomethylmethylether - 20

C_2H_5FO - oxirane-HF - 32

$C_2H_5F_2OP$ - ethylphosphonic difluoride - 12

$C_2H_5F_2P$ - ethyldifluorophosphine - 12

$C_2H_5F_2PS$ - ethylphosphonothioic difluoride - 12

C_2H_5I - ethyl iodide - 11

C_2H_5IO - iodomethylmethylether - 20

C_2H_5N - vinylamine - 6

C_2H_5NO - nitrosoethane - 10,23

C_2H_5NO - acetamide - 11,52

$C_2H_5NO_2$ - methoxyformamide - 3

$C_2H_5NO_2$ - ethyl nitrite - 11

$C_2H_5N_3$ - H_3N-HCN-HCN - 19

$C_2H_6B_5F$ - 5-fluoro-2,4-dicarbaheptaborane(7) - 4

C_2H_6FPS - dimethylphosphonothioic fluoride - 12

$C_2H_6F_2NP$ - dimethylaminodifluorophosphine - 12

$C_2H_6N_2O$ - dimethylnitrosamine - 11

C_2H_6O - dimethylether - 11,30

C_2H_6O - ethyl alcohol - 44

$C_2H_6O_2$ - dimethylperoxide - 8

$C_2H_6O_2$ - ethylene glycol - 33

C_2H_7FO - dimethylether-HF - 32

C_2H_7ISi - dimethyliodosilane - 28

C_2H_7N - ethylamine - 42

C_2H_7P - ethylphosphine - 12

C_2NP - C-cyanophosphaethyne - 23

C_2S - CCS radical - 43

C_3BrN - bromocyanoacetylene - 11

C_3FN - fluorocyanoacetylene - 51

C_3H - C_3H radical - 43

C_3H - cyclic C_3H radical - 43

C_3HN - cyanoacetylene - 11,30,51

C_3HNO - isocyanatoethyne - 23

C_3H_2 - cyclopropenylidene - 6

C_3H_2ClF - 1-chloro-1-fluoroallene - 36

C_3H_2FN - cyanoacetylene-HF - 32

$C_3H_2F_4$ - cis-1,1,2,3-tetrafluorocyclopropane - 17

$C_3H_2N_2$ - malononitrile - 10

$C_3H_2N_2O$ - OC-HCN-HCN - 19

$C_3H_2N_2O_2$ - CO_2-HCN-HCN - 19

C_3H_2O - propadienone - 11

$C_3H_2O_4$ - 1,3-dioxolane-4,5-dione - 9

C_3H_3Br - propargyl bromide - 16

C_3H_3Cl - propargyl chloride - 42

$C_3H_3F_3N_2$ - HCN-HCN-HCF_3 - 19

$C_3H_3F_3O_4$ - formic acid-trifluoroacetic acid - 3

C_3H_3N - acrylonitrile - 16

C_3H_3N - C-ethynylmethanimine - 23

C_3H_3N - vinyl isocyanide - 56

$C_3H_3N_3$ - HCN linear trimer - 19

C_3H_4 - allene - 3

C_3H_4 - propyne - 30,40

$C_3H_4N_2$ - pyrazole - 11,30

$C_3H_4N_2$ - acetonitrile-HCN - 27

$C_3H_4N_2$ - imidazole - 30

C_3H_4O - formaldehyde-HCCH - 27

C_3H_4O - acrolein - 54

$C_3H_4O_2$ - β-propiolactone - 14

C_3H_5Br - bromocyclopropane - 11,16

C_3H_5Cl - allene-HCl - 27

$C_3H_5Cl_3O$ - 2,2,2-trichloroethylmethyl ether - 28

C_3H_5F - allene-HF - 27

$C_3H_5F_3O$ - 2,2,2-trifluoroethylmethyl ether - 28

C_3H_5I - 2-iodopropene - 11

C_3H_5N - propenimine - 11

C_3H_5N - N-methylketenimine - 31

C_3H_5N - 3-methyl-2H-azirine - 31

C_3H_5NO - ethyl cyanate - 55

C_3H_6 - propene - 30

C_3H_6BrN - N-bromopropylenimine - 31

C_3H_6ClN - N-chloroazetidine - 31

C_3H_6N - allylamine - 42

C_3H_6O - propanal - 10

C_3H_6O - acetone - 11

C_3H_6O - allyl alcohol - 24

C_3H_6OS - thiopropionic acid - 55

$C_3H_6O_2$ - methoxyacetaldehyde - 55

$C_3H_6O_2S$ - trimethylene sulfone - 1

$C_3H_6O_4$ - methoxyethylene ozonide - 24

C_3H_7Br - 2-bromopropane - 11

C_3H_7Cl - 2-chloropropane - 11

C_3H_7F - 2-fluoropropane - 11,12

C_3H_7F - 1-fluoropropane - 13

C_3H_7FO - oxetane-HF - 32

$C_3H_7F_2P$ - isopropyldifluorophosphine - 12

C_3H_7I - 2-iodopropane - 11,20

C_3H_7I - 1-iodopropane - 20

C_3H_7N - allylamine - 42

C_3H_7N - cyclopropylamine - 11

C_3H_7NO - propionaldoxime - 55

C_3H_8Ge - cyclopropylgermane - 42

C_3H_8OS - 2-(methylthio)ethanol - 33

C_3H_8Si - cyclopropylsilane - 42

C_3H_9N - 2-aminopropane - 11

$C_3H_9NO_2S$ - trimethylamine-SO_2 - 24

C_3H_9P - isopropylphosphine - 12

C_3H_9PS - trimethylphosphine sulfide - 12

$C_3H_{12}AlN$ - trimethylaminoalane - 23

C_3OS - tricarbon oxide sulfide - 54

$C_4Cl_2O_2$ - 1,2-dichlorobuten-3,4-dione - 13

C_4H_2 - diacetylene - 51

C_4H_3ClS - 3-chlorothiophene - 44

C_4H_3IS - 2-iodothiophene - 44

C_4H_3IS - 3-iodothiophene - 44

C_4H_3N - 1-isocyano-prop-2-yne - 23

C_4H_3NO - isocyanatopropyne - 23

C_4H_4ArO - argon-furan - 24

C_4H_4FN - methylcyanoacetylene-HF - 32

$C_4H_4N_2O_2$ - uracil - 6

$C_4H_4O_3$ - cyclobutadiene ozonide - 24

C_4H_5ArN - pyrrole-Ar - 5,24

C_4H_5F - 3-fluoro-1-butyne - 36

$C_4H_5F_3O_4$ - acetic acid-trifluoroacetic acid - 3

C_4H_5N - cyclopropyl cyanide - 11

C_4H_5NS - 4-methylthiazole - 11

C_4H_5NS - 5-methylthiazole - 11

C_4H_5NS - 2-methylthiazole - 11

C_4H_6 - 1,3-butadiene - 3

C_4H_6 - 1,2-butadiene - 36

C_4H_6N - cyanoisopropyl radical - 18

$C_4H_6N_2$ - ethylene-HCN-HCN - 19

C_4H_6O - 2,5-dihydrofuran - 1

C_4H_6O - methoxyallene - 36

$C_4H_6O_2$ - β-butyrolactone - 1,14

$C_4H_6O_2$ - meso-bisoxirane - 48

$C_4H_6O_2$ - d,ℓ-bisoxirane - 48

$C_4H_6O_2$ - 2-butenoic acid - 55

$C_4H_6O_2$ - 3-butenoic acid - 55

$C_4H_6O_2S$ - butadiene sulfone - 1

$C_4H_6O_3$ - propylene carbonate - 1

$C_4H_6O_3$ - cyclobutene ozonide - 24

C_4H_7F - 3-fluoro-2-methylpropene - 12

C_4H_7F - trans-1-fluoro-2-butene - 12

C_4H_7FO - butyryl fluoride - 1

C_4H_7FO - 2,5-dihydrofuran-HF - 32

C_4H_7N - pyrroline - 3

C_4H_7N - butyronitrile - 11

C_4H_7N - n-propylisocyanide - 11

C_4H_7NO - crotonaldoxime - 55

C_4H_7NO - syn-2-methylacrylaldoxime - 55

C_4H_7NO - 2-pyrrolidone - 55

C_4H_8 - cyclobutane - 3,21

$C_4H_8N_2O$ - N-nitrosopyrrolidine - 5

C_4H_8O - 2-methylpropanal - 12

C_4H_8O - 1-butene oxide - 24

C_4H_8O - 2-butanone - 38

C_4H_8O - tetrahydrofuran - 38

C_4H_8O - 2-methyloxetane - 1

C_4H_8O - 3-methyloxetane - 1

C_4H_8S - tetrahydrothiophene - 38

C_4H_8Se - tetrahydroselenophene - 38

$C_4H_9BF_2$ - t-butylborondifluoride - 10

C_4H_9F - 2-methyl-1-fluoropropane - 12

C_4H_9N - 1-amino-3-butene - 33

C_4H_9NO - trimethylnitrosomethane - 10

C_4H_9NO - morpholine - 11

C_4H_9NO - butyraldoxime - 55

C_4H_9NO - isobutyraldoxime - 55

$C_4H_9NO_2$ - t-butylnitrite - 10

C_4H_9NSi - trimethylsilylcyanide - 27

$C_4H_{10}Ge$ - cyclobutylgermane - 12

$C_4H_{10}N_2$ - trimethylamine-HCN - 27

$C_4H_{10}Si$ - cyclobutylsilane - 42

C_5H_3N - 1-cyano-but-3-en-1-yne - 23

C_5H_3N - 1-cyano-but-1-en-3-yne - 23

C_5H_4ClN - 3-chloropyridine - 11

$C_5H_4N_2$ - diazocyclopentadiene - 55

$C_5H_4N_2$ - pyrrole-3-carbonitrile - 55

$C_5H_4N_2O_2$ - p-nitropyridine - 1

$C_5H_4O_2$ - 4H-pyran-4-one - 30

C_5H_5ArN - Ar-pyridine - 19

C_5H_5KrN - Kr-pyridine - 19

C_5H_5N - 1-cyanobicyclobutane - 56

C_5H_5NO - pyrrole-2-carboxaldehyde - 11

C_5H_5NO - pyridine-N-oxide - 11

C_5H_5NO - 4-hydroxypyridine - 55

$C_5H_6N_2O_2$ - thymine - 6

$C_5H_6O_2$ - α-angelicalactone - 1

C_5H_7ClO - cyclobutylcarbonyl chloride - 12

C_5H_7N - cyanocyclobutane - 13

C_5H_8 - 1,4-pentadiene - 21

$C_5H_8N_2$ - cyclopropane-HCN-HCN - 19

C_5H_8O - cyclobutylcarboxaldehyde - 12

C_5H_8O - cyclopentanone - 38

$C_5H_8O_2$ - γ-valerolactone - 1

$C_5H_8O_2$ - α-methyl-γ-butyrolactone - 1

C_5H_9N - t-butyl cyanide - 15

C_5H_9N - valeronitrile - 23

C_5H_9N - t-butylisocyanide - 27

C_5H_9NO - 1-pyrrolidine carboxaldehyde - 5

C_5H_9NO - cyclopentanone oxime - 55

C_5H_9NO - 2-piperidone - 55

$C_5H_{10}FN$ - t-butylcyanide-HF - 27,32

$C_5H_{10}N_2O$ - N-nitrosopiperidine - 5

$C_5H_{10}O$ - pivalaldehyde - 10

$C_5H_{10}Si$ - trimethylsilylethyne - 23

$C_5H_{11}N$ - trimethylamine-HCCH - 27

$C_6H_2F_3NO_2$ - 2,4,6-trifluoronitrobenzene - 9

C_6H_4ClN - 4-chloro-1,3-cyclopentadiene-1-carbonitrile - 55

$C_6H_4Cl_2$ - 1,3-dichlorobenzene - 11,55

$C_6H_4Cl_2$ - 1,2-dichlorobenzene - 11

$C_6H_4N_2S$ - 1,2,3-benzothiadiazole - 55

$C_6H_5BF_2$ - phenyldifluoro boron - 11

C_6H_5Cl - chlorobenzene - 11

C_6H_5F - fluorobenzene - 3

C_6H_5FS - 4-fluorothiophenol - 9

C_6H_5NO - pyridine-3-aldehyde - 11

C_6H_5NO - pyridine-4-aldehyde - 11

C_6H_5NO - nitrosobenzene - 11

$C_6H_5NO_2$ - nitrobenzene - 11

$C_6H_5NO_3$ - o-nitrophenol - 11

C_6H_6 - benzene - 3,42

C_6H_6S - thiophenol - 9

C_6H_7N - 2,4-hexadienenitrile - 5

C_6H_7N - aniline - 11

C_6H_7NO - 2-picoline-N-oxide - 11

C_6H_7P - phenylphosphine - 9

C_6H_8 - ethynylcyclobutane - 56

C_6H_8O - 3-methyl-2-cyclopenten-1-one - 1

C_6H_8O - 2,4-hexadienal - 5

C_6H_8O - 3-cyclohexenone - 13

C_6H_9NO - 2-cyclohexen-1-oxime - 55

$C_6H_9NO_2$ - 1-nitrocyclohexene - 1

C_6H_9NSi - trimethylsilylcyanoethyne - 23

$C_6H_{10}O$ - 2-methylcyclopentanone - 1

$C_6H_{10}S$ - 7-thiabicyclo[2.2.1]heptane - 21, 51

$C_6H_{11}NO$ - cyclohexanone oxime - 55

C_6H_{12} - cyclohexane - 3

$C_6H_{14}Si$ - cyclohexylsilane - 48

C_7H_4BrN - 3-bromobenzonitrile - 35

C_7H_4ClN - 2-chlorobenzonitrile - 55

C_7H_4FN - 2-fluorobenzonitrile - 35

$C_7H_4F_2O$ - 3-fluorobenzoyl fluoride - 9

$C_7H_4F_2O$ - 4-fluorobenzoyl fluoride - 9

C_7H_5FO - o-fluorobenzaldehyde - 1

C_7H_5FO - m-fluorobenzaldehyde - 1

C_7H_5FO - p-fluorobenzaldehyde - 1

C_7H_5N - benzonitrile - 11,30

C_7H_5NO - phenyl cyanate - 55

C_7H_6OS - thiobenzoic acid - 55

$C_7H_6O_2$ - benzoic acid - 55

$C_7H_6O_3$ - salicylic acid - 55

C_7H_7N - 2-methyl-1,3-cyclopentadiene-1-carbonitrile - 55

C_7H_7N - 3-methyl-1,3-cyclopentadiene-1-carbonitrile - 55

C_7H_7N - 4-methyl-1,3-cyclopentadiene-1-carbonitrile - 55

C_7H_8 - norbornadiene - 3

C_7H_8 - quadricyclane - 3

C_7H_8O - anisole - 55

C_7H_{10} - 4-methylenecyclohexene - 13

$C_7H_{10}O$ - 3-methyl-2-cyclohexen-1-one - 28

$C_7H_{12}O$ - 8-oxabicyclo[3.2.1]octane - 24

$C_7H_{12}O$ - 1-oxaspiro[2.5]octane - 41

$C_7H_{12}S$ - 1-thiaspiro[2.5]octane - 41

$C_7H_{13}N$ - quinuclidine - 11

C_8H_7F - o-fluorostyrene - 1

C_8H_7F - m-fluorostyrene - 1

C_8H_8 - styrene - 3

C_8H_8 - cubane - 21

C_8H_8O - acetophenone - 55

C_8H_9NSi - trimethylsilylcyanobutadiyne - 23

C_8H_{10} - o-xylene - 42

$C_8H_{14}O$ - 4-ethylcyclohexanone - 28

$C_8H_{14}O_2$ - 1,4-dioxaspiro[4.5]decane - 41

$C_8H_{14}S_2$ - 1,4-dithiaspiro[4.5]decane - 41

$C_9H_{14}O$ - bicyclo[3.3.1]nonan-9-one - 28

$C_9H_{16}O$ - 4-isopropylcyclohexanone - 28

$C_{12}H_9F$ - 4-fluorobiphenyl - 55

$C_{12}H_9N$ - carbazole - 29

CaF - calcium monofluoride - 22

ClFSi - silicon chloride fluoride - 21

ClF_3Si - chlorotrifluorosilane - 7,10

$ClHO_2S$ - sulfur dioxide-HCl - 27

ClH_2^+ - chloronium ion - 43

ClH_3O - water-HCl - 27

ClH_4N - ammonia-HCl - 27

ClH_4P - phosphine-HCl - 27

$ClNO_2$ - nitryl chloride - 11

ClOS - ClSO radical - 21

ClS_2 - ClSS radical - 42

ClSr - strontium monochloride - 22

Cl_2O_2S - sulfuryl chloride - 11

Cl_2Si - silicon dichloride - 21,34

Cl_3OP - phosphorus oxychloride - 7

Cl_3P - phosphorus trichloride - 2,7

FHN_2O - nitrous oxide-HF - 25

FH_3O - water-HF - 32

FH_3Si - silyl fluoride - 11

FI - iodine fluoride - 22

FNS - thiazyl fluoride - 13

FN_3 - fluoroazide - 8

FSr - strontium monofluoride - 22

F_3H_2P - trifluorophosphorane - 8

F_3ISi - trifluorosilyliodide - 10

F_3KrP - krypton-PF_3 - 24

F_3OP - phosphoryl trifluoride - 24

F_3PS - thiophosphoryltrifluoride - 24

F_3Si - silicon trifluoride - 21,34

F_4Si - silicon tetrafluoride - 42

F_6OS - fluoroxysulfur pentafluoride - 8

F_6P_2 - PF_3 dimer - 24

F_7NS_2 - pentafluorosulfonyl iminosulfur difluoride - 18

GeH_3N_3 - germylazide - 12

GeH_4 - germane - 11

HNO - nitroxyl - 21,52

HNO_3 - nitric acid - 11

HNa - sodium hydride - 42

HS_2 - HS_2 radical - 43

H_2N_2O - nitrogen-water - 29

H_2O - water - 30,37

H_2O_2 - hydrogen peroxide - 11

$H_2O_2S_2$ - sulfur dioxide-hydrogen sulfide - 25

H_2O_4 - H_2O-O_3 - 17,29

H_2S_2 - disulfane - 53

H_2S_3 - trisulfane - 53

H_3N - ammonia - 38,45,46,51

H_3NO - hydroxylamine - 42

H_3P - phosphine - 42

H_4N_2 - hydrazine - 52

H_4OS - hydrogen sulfide-water - 29

H_4O_2 - water dimer - 3,29

H_4S_2 - hydrogen sulfide dimer - 29

H_4Si - silane - 42

H_4Sn - stannane - 49

ISr - strontium monoiodide - 22

I_2 - iodine - 22

LaO - lanthanum monoxide - 22

LiO - lithium monoxide - 21

N_2O_3 - dinitrogen trioxide - 10

NaO - sodium monoxide - 21

OP - PO radical - 43

O_2 - oxygen - 37

O_2S - sulfur dioxide - 11,34,37

O_3 - ozone - 37

PS - PS radical - 43,52

SSr - strontium sulfide - 54