

CURRICULUM VITA James M. Stewart

II. Personal Data: Name: James McDonald Stewart Title: Professor Emeritus of Chemistry

Prof. Address: Department of Chemistry and Biochemistry University of Maryland, College Park, MD 20742

Home Address: P.O. Box 472 480 Valley View Drive McConnellsburg, PA 17233-0472

Date of Birth: February 3, 1931

Place of Birth: Port Angeles, Washington Citizenship: U.S.

Marital Status: Married, Bernice C. Dorren, June 20, 1953

Children: Three: Glenn McDonald Stewart, McDonald Reid Stewart, Janet Elizabeth Stewart Black

Grand Children: Nine: Eric McDonald Stewart, Cyril James Black, Duncan McDonald Gannon Stewart, Scott McDonald Black, Alexander Randolph Tatum Stewart, Patrick Grant Black, James William Tavener Stewart, Caroline Nicole Stewart, and James Walter Turnbull Stewart

Education: B.A. Western Washington College, Bellingham, WA, 1953, Major: Physical Science

Ph.D. University of Washington, 1958, Major: Physical Chemistry

Postdoctoral Research Associate, The Ohio State University, 1958-60, Research Director: Dr. P. M. Harris III.

III. Academic Activities:

A. Professional Experience: Stewart has been associated with the University of Maryland since 1961. During this time he has actively pursued the creation of the XRAY and XTAL systems of crystallographic programs. In addition he has been active in the teaching programs of the Chemistry Department. Instructor, University of Washington 1960-61

Assistant Professor, University of Maryland 1961-64

Associate Professor, University of Maryland 1964-67

Professor, University of Maryland 1967-1994

Professor Emeritus, University of Maryland 1994 to date

Consultant, Computer Science Center, University of Maryland 1962-80

Coordinator, Lower Division Chemistry, University of Maryland 1969-72

Sabbatical Year, Atlas Computer Laboratory, Science Research Council of the United Kingdom 1972-73

Coordinator, Chemistry 103, University of Maryland 1973-74

Fellow, Computer Science Center, University of Maryland 1978-80

Sabbatical Year, Laboratory for the Structure of Matter, Naval Research Laboratory, Washington, D. C. 1986-87

Coordinator, Chemistry 103, University of Maryland Fall 1991

Internet Course in Electrochemistry Winters 2002/3, 2003/4, 2004/5, 2005/6, 2006/7, 2007/8, 2009/10

Analytical Chemistry Module, Juniata College, Fall 2001, 2002, 2003, 2005

C. Courses Taught at University of Maryland:

CHEM 1,3 - General Chemistry, Freshman Level

CHEM 182, 184 - Physical Chemistry Lab for Chemistry Majors, Senior Level

CHEM 188, 190 - Physical Chemistry Lab, Senior Level
CHEM 311 - Physicochemical Calculations, Graduate Level
CHEM 317, 686 - Chemical Crystallography, Graduate Level
CHEM 104 - 1st Semester Chemistry Laboratory, Freshman Level Organic
CHEM 103 - General Chemistry, Freshman Level
CHEM 203, 204 - 4th Semester Chemistry, Sophomore Level Analytical
CHEM 689B - Equilibrium and Kinetics, Graduate Level
CHEM 213, 214 - 4th Semester Chemistry, Sophomore Level Analytical (honors) CHEM
430-431 - Chemical Measurements Laboratory, Senior Level
CHEM 481 - Physical Chemistry, Senior Level (first semester)
CHEM 482 - Physical Chemistry, Senior Level (second semester)
CHEM 898E - Physical Chemistry Seminar
CHEM 898F - Physical Chemistry Seminar
CMSC 110 - Introduction to Computer Programming, Freshman Level
CHEM 321 - Quantitative Chemical Analysis, Junior Level
CHEM 287 - Computer Programs for the Biological and Chemical Sciences
CHEM 103-113 - Freshman Chemistry
CHEM 227 - Quantitative analysis, Sophomore level

LFSC 655 Internet Course in Electrochemistry for Teachers Masters Program under the aegis of the University of Maryland, College Park

Courses Taught at Juniata College in Huntingdon, PA - Chem-Bio 133 Analytical Chemistry Laboratory Unit

D. Graduate Students:

Helen Sing, M.S. ; Charles Dickinson, M.S., Ph.D. ; Linda Plastas, Ph.D. ; Harold Plastas, Ph.D. with Prof. S.O. Grim ; James Glanville, Ph.D. with Prof. S.O. Grim ; Plato Watts, Ph.D. ; Harold Marr, Ph.D. ; Wilson DeCamp, Ph.D. ; William Keefe, Ph.D. ; Christine Kerr, Ph.D. ; Katherine Pagoaga, M.S. with Prof. I. Adler ; Ruth Doherty, Ph.D. ; Katherine Pagoaga, Ph.D. ; Yuming Zhang, Ph.D.

Postdoctoral Students:

Roger Chastain (USA) ; Gert Kruger (Union of South Africa) ;
Hugh Preston (Australia) ; Elco Boonstra (Union of South Africa) ;
Mike Schneider (England) ; Fred Kundell (USA) ;
John Baldwin (Atlas Computer Laboratory, United Kingdom) ;
Ruth Dohery (USA)

E. Honors Received: Sigma Xi; Outstanding Graduate, Western Washington College 75th Commencement; Fankuchen Award 2001 of The American Crystallographic Association

F. Professional Activities: Member of American Crystallographic Association, American

Association for the Advancement of Science. Elected to the Computing Committee of the American Crystallographic Association, three years. Elected to the Data Committee of the American Crystallographic Association. Invited as Advisor for Crystallographic Computing in England, Denmark, Holland, and Germany, five occasions. Occasional service on NSF Panels President's Task Force on the Development of the Instructional and Research Computing Network, University of Maryland.

Chemical Crystallography - Presenting papers at Meetings of the American Crystallographic Association and the International Union of Crystallography Meetings. Elected to the Computing Committee of the American Crystallographic Association, three years starting (1990).

Experience Other Than in Higher Education:

Programmer for Administrative Data Processing 1966-68

Consultant, National Bureau of Standards 1967-71

Research Scientist, Sandia Corporation Summer 1970

American Crystallography Editor for Computer Physics Communications Journal 1972-81

Program Chairman, American Crystallographic Association Spring 1975 Meeting in Charlottesville, Virginia Summer 1977

Research Scientist, Allied Chemical Corporation

Visiting Scientist, Crystallography Center, University of Western Australia, Nedlands, W.A., Australia Summer 1982

Research Scientist, Sandia Corporation Summer 1984

Research Scientist, Sandia Corporation Summer 1985

Research Scientist, Sandia Corporation Summer 1986

Visiting Professor, Crystallography Dept., University of Western Australia December 1986

Consultant, Upjohn Co., Kalamazoo, MI 1986-87

Experience in Computing: 38 years

1954 IBM 604, 407 - Plugboard programming of machines

1954-1958 IBM 650 - Machine code - symbolic programming

1958-1967 IBM 704, 709, 7094 - Used with assembly language, and FORTRAN II modifications of operating systems

1967-present Use of FORTRAN66, FORTRAN77 on the following machines: UNIVAC 1108, 1140, 1100/82, ICL 1906A, CDC CYBER SERIES, IBM 360, 370 etc. seq. DEC10, DEC VAX, DEC PDP8, PERKIN ELMER 6/32, HONEYWELL MULTIX, PRIME, CRAY, silicon-graphics, pcs.

Extensive experience in preparation and documentation of user oriented software.

FORTRAN programming for transportability of software. Use of preprocessors for assuring transportability of software. Preparation, testing, distribution of hundreds of application programs consisting of tens of thousands of lines of code. The software prepared in machine language, FORTRAN and structured FORTRAN. Production of crystallographic system software which is used worldwide on many different computers. Extensive experience with various character codes, magnetic tape reading and conversion. Production of Technical reports and papers

utilizing word processing on a PC.

IV. A. Other creative and scholarly activities

Grants and Contracts:

NSF: "The Development of a Generalized Transportable Software Package for the Solution and Refinement of Molecular Structures by Single Crystal Diffraction", CHE-79-20201-01, 3/1/80 - 8/31/82.

NSF: "The Development of A Generalized Transportable Software Package for the Solution and Refinement of Molecular Structures by Single Crystal Diffraction" (additional support), CHE-80-09957, 7/15/82 - 12/31/83.

National Bureau of Standards: "Measurements and Evaluations of Reference X-Ray Diffraction Powder Patterns", 1986-87.

National Bureau of Standards: "Crystalite Size and Microstrain in Ceramics", 1986-88

Office of Naval Research: "Macromolecular Calculations in the XTAL System of Crystallographic Program, 1986-1990.

Office of Naval Research: "Macromolecular Calculations in the XTAL System of Crystallographic Programs, 1992-1995.

IV. B. Publications:

1. J.M. Stewart (1959) Structure of Coordination Compounds of Nickel and Palladium. Univ. Microfilms. LC Card No. Mic. 59-1240, 93 pages. Dissertation Abstracts 19, 2783.
2. J.M. Stewart and E.C. Lingafelter (1959) The Crystal Structure of bis-Salicylaldiminato-Nickel(II) and -Copper(II). *Acta Cryst.* 12, 842-845.
3. J.M. Stewart, E.C. Lingafelter, and J.D. Breazeale (1961) The Crystal Structure of Diaquabis(salicylaldehydato) Nickel. *Acta Cryst.* 14, 888-891.
4. J.W. Tracy, N.W. Gregory, J.M. Stewart, and E.C. Lingafelter (1962) The Crystal Structure of Chromium(II) Iodide. *Acta Cryst.* 15, 460-463.
5. J.M. Stewart (1964) Crystal Structure Calculations System, XRAY63, for the IBM 709/7090/7094. Technical Report 6, Computer Science Center, Univ. of Maryland, College Park, Maryland, 23 pages.
6. J.M. Stewart and B.C. Stewart (1965) A Fortran II Program for a Grade Book for Multisection Courses. Technical Report, Computer Science Center, Univ. of Maryland, College Park, Maryland, 20 pages.
7. C. Dickinson, J.M. Stewart, and J. R. Holden (1966) A Direct Determination of the Crystal Structure of 2,3,4,6-Tetranitroaniline. *Acta Cryst.* 21(5), 663-670.
8. E.C. Lingafelter, P.L. Orioli, B.J.B. Schein, and J.M. Stewart (1966) Parameter Interactions and the Ferroelectric Mechanism in Guanidinium Aluminum Sulfate Hexahydrate. *Acta Cryst.* 20(3), 451-455.
9. J.M. Stewart (1967) X-Ray Crystallographic Computing System. Technical Report 58, Computer Science Center, Univ. of Maryland, College Park, Maryland, 181 pages.
10. J.O. Glanville, J.M. Stewart, and S.O. Grim (1967) Structure of bis(triphenylphosphine)diphenylacetyleneplatinum. *J. Organometal. Chem.* 7(1), P9-P10.
11. B.J.B. Schein, E.C. Lingafelter, and J.M. Stewart (1967) Redetermination of the Structure of

- the Ferroelectric Crystal Guanidinium Aluminum Sulfate Hexahydrate, GASH, and its Chromium Isomorph. *J. Chem. Phys.* 47(12), 5183-5189.
12. H.L. Ammon, P.H. Watts, J.M. Stewart, and W.L. Mock (1968) The Structure of Thiopin 1,1-Dioxide. *J. Am. Chem.* 90(16), 4501-4503.
 13. J.M. Stewart and R.L. Clark (1968) University of Maryland Student Scheduling Program. Technical Report 63, Computer Science Center, Univ. of Maryland, College Park, Maryland, 25 pages.
 14. F.A. Kundell, W.J. Svirbely, and J.M. Stewart (1968) Kinetics 68, Program for the Solution of Competitive-Consecutive Second Order Kinetics Reactions. Technical Report 69, Computer Science Center, Univ. of Maryland, College Park, Maryland, 79 pages.
 15. J.M. Stewart and R.L. Clark (1968) University of Maryland Student Scheduling Algorithm. Proceedings of the 23rd National Conference, Association for Computing Machinery 23, 555-562.
 16. H.L. Ammon, M. Sundaralingham, and J.M. Stewart (1969) Crystal and Molecular Structure of 2,2--Di(1,4-naphthoquinone). *Acta Cryst. B* 25(2), 336-343.
 17. L.A. Plastas and J.M. Stewart (1969) Crystal Structure of Ethyl 2-Imino-4-oxo-5-phenylimidazolidine-1-carboximate. *J. Chem. Soc. D*(18), 1039.
 18. H.J. Plastas, J.M. Stewart, and S.O. Grim (1969) The Structures of Pentacarbonyltriphenylphosphinechromium and Pentacarbonyl (triphenylphosphite)chromium. *J. Am. Chem. Soc.* 91(15), 4326-4327.
 19. L.A. Plastas and J.M. Stewart (1969) Crystal Structure of 2-Imino-5-phenyl-4-thiazolidinone. *J. Chem. Soc. D*(14), 811.
 20. H.S. Preston and J.M. Stewart (1970) Crystal Structure of the Antimalarial Chloroquine Diphosphate Monohydrate. *J. Chem. Soc. D*(18), 1142-1143.
 21. G. Donnay, J.M. Stewart, and J. Preston (1970) The Crystal Structure of Sonoraite, $\text{Fe}_3\text{Te}_4\text{O}_3(\text{OH})\cdot\text{H}_2\text{O}$. *Tschermaks Miner. Petrogr. Mitt* 14(1), 27-44.
 22. W.H. DeCamp and J.M. Stewart (1970) The Molecular Structure of 1,1-Dimethyl-3-Phenylpyrazolium-5-Oxide. *J. Heterocycl. Chem.* 7(4), 895-901.
 23. C. Dickinson, J.M. Stewart, and H.L. Ammon (1970) X-Ray Crystal Structure of the Antimalarial and Antileptrotic Drug 4-4--Diaminodiphenyl Sulfone. *J. Chem. Soc. D*(15), 921.
 24. H.L. Ammon, P.H. Watts, Jr., and J.M. Stewart (1970) On the Structure of beta-Thianthrene Dioxide. *Acta Cryst. B* 26(4), 451-453.
 25. J.M. Stewart (1970) Phase Determination as Applied in the XRAY76 System., Novel Computing Techniques. (Two Book Chapters). *Crystallographic Computing*. F.R. Ahmed, S.R. Hall, and C.P. Huber, eds., Munksgaard. Copenhagen: 71-74, 363-367.
 26. W.E. Keefe, R.C. Williams, W.T. Ham, Jr., and J.M. Stewart (1970) A Semiautomatic Integrating Densitometer with Digital Readout for One Dimensional X-Ray Diffraction Films. *Rev. of Sci. Instrum.* 41(12), 1712-1714.
 27. J.S. Willis, J.M. Stewart, H.L. Ammon, H.S. Preston, R.E. Gluyas, and P.M. Harris (1971) The Crystal Structure of Picryl Chloride. *Acta Cryst. B* 27(4), 786-793.
 28. H.L. Ammon, L.L. Replogle, P.H. Watts, Jr., K. Katsumoto, and J.M. Stewart (1971) Some Chemistry and Crystallography of the Heptafulvenothiophene-Azulenodihydrothiophene System. *J. Am. Chem. Soc.*, 93(9), 2196-2202.
 29. M. Sax, J. Pletcher, C.S. Yoo, and J.M. Stewart (1971) Crystal Structure of N,N--Bis(4-ethoxyphenyl)acetamidinium Bis-p-nitrophenylphosphate Monohydrate. *Acta Cryst. B*

27(8), 1635-1644.

30. W.H. DeCamp and J.M. Stewart (1971) The Crystal and Molecular Structure of 3-Methyl-3-pyrazolin-5-one. *Acta Cryst. B* 27(6), 1227-1232.
31. J.M. Stewart, G.J. Kruger, H.L. Ammon, C. Dickinson, and S.R. Hall (1972) The X-RAY System of Crystallographic Programs for any Computer. Technical Report 192, Computer Science Center, Univ. of Maryland, College Park, Maryland, 283 pages.
32. H.S. Preston, J.M. Stewart, H.J. Plastas, and S.O. Grim (1972) The Crystal and Molecular Structure of trans-Bis(triphenylphosphite)tetracarbonylchromium(O). *Inorg. Chem.* 11(1), 161-165.
33. F.R. Ahmed, D.W.J. Cruickshank, A.C. Larson, and J.M. Stewart (1972) Calculations Commonly Used in Crystal Structure Analysis. International Union of Crystallography Commission on Crystallographic Computing, Standard Tests of Crystallographic Computer Programs. *Acta Cryst. A* 28(5), 365-393.
34. W.E. Keefe and J.M. Stewart (1972) The Direct Determination of the Crystal Structure of the Anti-Radiation Compound, 2-Aminoethanethiosulfuric Acid. *Acta Cryst. B* 28(8), 2469-2474.
35. C.S. Choi, J.E. Abel, B. Dickens, and J.M. Stewart (1973) The Crystal Structure of 1,3,5,7-Tetraceto-1,3,5,7-tetrazacyclo-octane. *Acta Cryst. B* 29, 4.
36. H.E. Marr, III, J.M. Stewart, and M.F. Chiu (1973) The Crystal Structure of Methylene Blue Pentahydrate. *Acta Cryst. B* 29(4), 847-853
37. H.J. Plastas, J.M. Stewart, and S.O. Grim (1973) Crystal and Molecular Structures of Pentacarbonyltriphenylphosphinechromium(O) and Pentacarbonyltriphenyl(phosphite)chromium(O). *Inorg. Chem.* 12(2), 265-272.
38. J.M. Stewart and B. Morosin (1975) The Crystal and Molecular Structure of Bis(2,4-pentanedionato)beryllium. *Acta Cryst. B* 31(4), 1164-1168.
39. T.O. Doyle, J.M. Stewart, N. Filipescu, and W.R. Benson (1975) Configuration of Dienestrol. *J. Pharm. Sci.* 64(9), 1525-1528.
40. S.O. Grim, L.J. Matienzo, D.P. Shah, J.A. Statler, and J.M. Stewart (1975) Synthesis and Structure of a Molybdenum(O) Compound Containing a Stable Nine-membered Chelate Ring. *J. Chem Soc. Chem. Com.* 928.
41. J.M. Stewart (1976) Optimization of Data Storage for Crystallographic Programming (Book Chapter). *Crystallographic Computing Techniques*. F.R. Ahmed, K. Huml, and B. Sedlacek, eds., Munksgaard. Copenhagen: 433-443.
42. J.M. Stewart, ed. (1976) The XRAY System of Crystallographic Programs Version of 1976 XRAY76. Technical Report 446, Computer Science Center, Univ. of Maryland, College Park, Maryland, 232 pages.
43. J.M. Stewart and J. Karle (1976) The Calculations of epsilon Associated with Normalized Structure Factors, E. *Acta Cryst. A* 32(6), 1005-1007.
44. J.M. Stewart, J. Karle, H. Iwasaki, and T. Ito (1977) Two papers on the Calculation of epsilon for Obtaining Normalized Structure Factors. *Acta Cryst. A* 33, 519.
45. H.E. Marr, III, G.J. Kruger, and J.M. Stewart (1977) 2-Methyl-2-nitro-1,3-propanediol. *Acta Cryst. B* 33, 2886-2887.
46. S.R. Hall, J.T. Szymanski, and J.M. Stewart (1978) Kesterite, $\text{Cu}_2(\text{Zn,Fe})\text{SnS}_4$, and Stannite, $\text{Cu}_2(\text{Fe,Zn})\text{SnS}_4$, Structurally Similar but Distinct Minerals. *Canadian Mineralogist* 16, 131-137.
47. B. Morosin, H.J. Fpastas, L.B. Coleman, and J.M. Stewart (1978) The Crystal Structure of

- the Charge-Transfer Complex between N-Ethylphenazinium (EtP) and Dimerized 7,7,8,8-Tetracyanoquinodimethanide (TCNQ) Ions. *Acta Cryst. B* 34, 540-543.
48. J.M. Stewart (1978) Program Systems., XRAY76 (2 Book Chapters). *Computing in Crystallography*. H. Schenk, R. Olthof-Hazekamp, H. van Koningsveld, and G.C. Bassi, eds., Delft University Press. The Netherlands: 3-16, 30-33.
49. J.M. Stewart and R.J. Munn (1978) RATMAC: An Adaptation of RATFOR and MACRO of Kernighan and Plauger (Book Chapter). *Computing in Crystallography*. H. Schenk, R. Olthof-Hazekamp, H. van Koningsveld, and G.C. Bassi, eds., Delft University Press. The Netherlands: 235-240.
50. R.J. Munn and J.M. Stewart (1978) RATMAC: Kernighan and Plauger's Structured FORTRAN Programming Language. Technical Report 675, Computer Science Center, Univ. of Maryland, College Park, Maryland, 20 pages.
51. S.R. Hall and J.M. Stewart (1978) The XTAL System of Crystallographic Programs: Guidelines for Authors. Technical Report 700, Computer Science Center, Univ. of Maryland, College Park, Maryland, 60 pages
52. R.M. Doherty, W.R. Benson, M. Maienthal, and J.M. Stewart (1978) Crystal and Molecular Structure of Quinidine. *J. Pharm. Sci.* 67(12), 1698-1700.
53. R.M. Doherty, C.R. Hubbard, A.D. Mighell, A.R. Siedle, and J.M. Stewart (1979) Synthesis and Crystal and Molecular Structure of ((C7H7)3P)4Cu4W2O2S6, a Dimer of Bis((tri-p-tolylphosphine)copper)oxotriethio-tungsten. *Inorg. Chem.*, 18(11), 2991-2995.
54. R.J. Munn and J.M. Stewart (1979) RATMAC Primer (first edition). Technical Report 804, Computer Science Center, Univ. of Maryland, College Park, Maryland 57 pages.
55. R.J. Munn and J.M. Stewart (1980) RATMAC: A Preprocessor for Writing Portable Scientific Software. *Software-Practice and Experience* 10, 743-749.
56. S.R. Hall, J.M. Stewart, and R.J. Munn (1980) XTAL: New Concepts in Program System Design. *Acta Cryst. A* 36, 979-989.
57. A.R. Siedle, C.R. Hubbard, A.D. Mighell, R.M. Doherty, and J.M. Stewart (1980) Platinum Thio-tungsten Compounds. Crystal and Molecular Structure of Bis(triethylphosphine)platinum Tetrathio-tungsten. *Inorg. Chem. Acta.* 38(2), 197-202.
58. S.R. Hall and J.M. Stewart (1980) XTAL: New Concepts in Program System Design (Book Chapter). *Computing in Crystallography*. R. Diamond, S. Ramaseshan, and K. Venkatesan, eds., Indian Academy of Sciences. Bangalore: 22.01-22.26.
59. R.J. Munn, J.M. Stewart, M.K. Pagoaga, and T.C.I. Munn (1980) The University of Maryland Gradebook Program GRADE, a User's Manual. Computer Note 24, Computer Science Center, Univ. of Maryland, College Park, Maryland, 31 pages.
60. R.J. Munn, J.M. Stewart, and M.K. Pagoaga (1980) The University of Maryland Optical Scan Sheet Grading Program. OPTSCAN, a User's Manual. Computer Note 25, Computer Science Center, Univ. of Maryland, College Park, Maryland 20 pages.
61. A.P. Norden, R.J. Munn, M.D. Pagoaga, J.M. Stewart, and S.R. Hall (1980) The RATMAC Text Formatter TEXT, Guidelines and Command Summary (first edition). Computer Note 26, Computer Science Center, University of Maryland, College Park, Maryland, 89 pages.
62. S.R. Hall, J.M. Stewart, A.P. Norden, R.J. Munn, and S.T. Freer (1980) The XTAL System of Crystallographic Programs: Programmer's Manual. Joint Technical Report. National Resource for Computations in Chemistry and Computer Science Center, University of Maryland. LBL-10812/TR-873, Lawrence Berkeley Laboratory, University of California, 107 pages.

63. H.B. Pickard, J.M. Stewart, M.K. Pagoaga, and A.P. Norden (1980) Laboratory Manual for Chemistry 204-214. Chemistry Department, University of Maryland, 110 pages.
64. M.K. Pagoaga, S.M. Stuntz, J.M. Stewart, and V.A. Alexion (1980) Stockroom Preparations Manual for Chemistry 204-214. Chemistry Department, University of Maryland, 49 pages.
65. R.J. Munn, J.M. Stewart, A.P. Norden, and M.K. Pagoaga (1980) RATMAC: Primer (second edition). Joint Technical Report. National Resource for Computations in Chemistry and Computer Science Center, University of Maryland. LBL-11847/TR-804, Lawrence Berkeley Laboratory, University of California, 87 pages.
66. M.C. Kerr, H.S. Preston, H.L. Ammon, J.E. Huheey, and J.M. Stewart (1981) The Crystal Structure of trans-bis(8-aminoquinoline)aquazain(II). *J. Coord. Chem.* 11, 111-115.
67. R.J. Munn, J.M. Stewart, M.K. Pagoaga, and T.C.I. Munn (1981) OPTSCAN and GRADE - Automated Grading and Record Keeping *J. of Chem. Ed.*, 58,694-695.
68. R.J. Munn, J.M. Stewart, H. van der Meer, and T.C. van Soest (1981) RATMAC: A Structure FORTRAN Programming Language with Powerful MACRO Facilities. UNILEVER/OACN/CAV Publication MA-81-01 1, 107 pages.
69. A.P. Norden, R.J. Munn, M.K. Pagoaga, J.M. Stewart, and S.R. Hall (1982) The RATMAC Text Formatter TEXT, Guidelines and Command Summary (second edition). Computer Note 26.1, Computer Science Center, Univ. of Maryland, College Park, Maryland, 112 pages.
70. J.M. Stewart, R.M. Doherty, R.J. Munn, A.P. Norden, M.K. Pagoaga, S.R. Hall, R.A. Alden, S.T. Freer, and R. Olthof-Hazekamp (1982) The XTAL System of Crystallographic Programs: Programmer's Manual (second edition). TR-873.1, Computer Science Center, Univ. of Maryland, College Park, Maryland, 124 pages.
71. H.L. Ammon, P.H. Mazzocchi, L. Liu, E.C. Colicelli, R. Doherty, and J.M. Stewart (1982) The Structure of Five Bicyclic Lactams: 2-benzyl-3-oxo-2-azabicyclo(2.2.1)hept-6-exo-yl p-toluenesulfonate, . . . , 2-benzyl-6-exo-phenosy-2-azabicyclo(2.2.2)octan-3-one. *Acta Cryst. B* 38.
72. R.M. Doherty, J.M. Stewart, A.D. Mighell, C.F. Hubbard, and A.J. Fatiadi (1982) The Structure of the 1:1 Molecular Complex of Pyrene and Dicyanomethylenecroconate. *Acta Cryst. B* 38, 859-863.
73. J.M. Stewart (1982) Crystallographic Computing Systems. *Computational Crystallography*. David Sayre, ed., Clarendon Press. Oxford: 497-505.
74. R.M. Doherty, J.M. Stewart, W.R. Benson, M.M. Mienthal, and W.H. DeCamp (1983) Intermediates in the synthesis of Laetrile: the crystal and molecular structures of . . . and methyl(ethyl 2,3,4-tri-O-acetyl-beta-D-glucosid)uronate. *Carbohydrate Research* 116, 150-155.
75. R.A. Alden, . . . , J.M. Stewart, . . . (1983) Cooperative programming in crystallography. *Computers in Chemistry* 7, 137.
76. M.K. Pagoaga, J.M. Stewart, and D.E. Appleman (1983) Intralayer Bonding and Sheet Structure of Uranyl Oxide Hydrates. *American Crystallographic Association Program and Abstracts* 11, 46.
77. Editors J.M. Stewart and S.R. Hall, Co-editors R.A. Alden, R. Olthof-Hazekamp and R.M. Doherty (1983) The XTAL System of Crystallographic Programs: User's Manual (first edition). TR-1364, Computer Science Center, Univ. of Maryland, College Park, Maryland, 404 pages.
78. Editors T.M. Norden, M.K. Pagoaga, J.M. Stewart, S.R. Hall, and I. Castledan (1984) The XTAL System of Crystallographic Programs: User's Pocket Manual TR-1379, Computer Science Center, Univ. of Maryland, College Park, Maryland, 104 pages.

79. B. Morosin, J.M. Stewart, R.A. Graham (1985) X-Ray Line Profile Analysis on Shock Modified Hematite, Proc. American Crystallographic Association, Vol. 13, pp 36.
80. Editors J.M. Stewart, S.R. Hall, Co-editors R. Olthof-Hazekam and K.D. Watenpaugh (1986) The XTAL System of Crystallographic Programs User's Manual (third edition) TR-1364.2, Computer Science Center, Univ. of Maryland, College Park, Maryland.
81. Editors J.M. Stewart, S.R. Hall, Co-editors M.K. Pagoaga and D.M. Gladhill (1986) The XTAL System of Crystallographic Programs System Manual (first edition) TR-1675, Computer Science Center, University of Maryland, College Park, Maryland.
82. M.K. Pagoaga, D.E. Appleman and J.M. Stewart (1986) A New Barium Uranyl Oxide Hydrate Mineral, Protasite, Mineralogical Magazine, March 1986, Vol. 50, pp. 125-8.
83. Editors S.R. Hall, J.M. Stewart (1987) XTAL Systems of Crystallographic Programs User's Manual. Book form published Crystallography Dept., Univ. of Western Australia.
84. M.K. Pagoaga, D.E. Appleman and J.M. Stewart (1987) The Crystal Structures and Crystal Chemistry of the Uranyl oxide hydrates becquerelite, billietite and protasite. American Mineralogist, Vol. 72, pp. 1230-1238.
85. J.M. Stewart. Invited paper International Union of Crystallography Computing School (1987) Adelaide Australia. Chapter to be published in book form.
86. B. Morosin, R.A. Graham, Y. Zhang, and J.M. Stewart (1986) X-ray line profile analysis of Shock-modified compounds in Proceedings of the International Symposium on Intense Dynamic Loading and Its Effects, Science Press Beijing, pp. 732-735.
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