

INTERNATIONAL ASTRONOMICAL UNION

COMMISSION 46 — TEACHING OF ASTRONOMY

NEWSLETTER

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ASTRONOMY EDUCATIONAL MATERIAL

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ADDENDUM 1985 - 1988

PART A : Material in English

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ASTRONOMY MATERIALS APPEARING IN PRINT DURING 1985-1987

Every three years since 1970, the Education Commission of the International Astronomical Union has prepared lists of the new astronomy books appearing in print, as an aid to astronomy educators. This is the 1988 installment.

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Explanation of the Listings

These listings attempt to include every astronomy book that has appeared in print from January 1, 1985 through December 31, 1987. While I am sure that a few books have escaped my search net, it would be fair to say that the listings include almost all of the total published.

If you have been having some difficult "keeping up" with what is happening in astronomy, the enclosed listings help to understand why. They have increased in size by almost 70% from the previous edition. During the interval 1985-1987, new astronomy books appeared at the rate of one every 28 hours. This does not include journals, magazines, pamphlets, departmental publications, reprint or preprint series. Most notable is the growth of the number of published proceedings of all manner of technical symposia, colloquia, workshops, summer schools, and other professional gatherings. The number of publications for juveniles is also growing rapidly.

The listings have been taken from:

- 1) The notification cards of the Library of Congress cataloguing division. Books located from this source have their call number listed in the Library of Congress classification system.
- 2) Scientific and Technical Books in Print 1988
- 3) Publishers' Catalogues

The books have been classified into:

JUVENILE: Children's material, from pre-school up to adolescent.

EDUCATIONAL: Material suitable for a literate adult, or a college astronomy class for non-science majors. This material will contain little or no mathematics, and whenever concepts from other areas of physics or science are employed, they are explained or defined.

TECHNICAL: Material using considerable mathematics, or assuming an advanced level of knowledge in the field.

This classification scheme is somewhat simpler than previous years, but I think it reflects the manner in which the material is actually used in practice. Whether a book has mathematics or not is the biggest determinant of what group will be able to comprehend it. College texts and laboratory workbooks have been included in the Educational Category; they are generally identified as texts or lab books in the description or subheading of the listing. Also in the Educational category are star charts, almanacs, and materials for beginning and advanced stargazers and amateur astronomers, since this material is also useful for college classes and of interest to the educated layman as well. By the way, books on astrology were not included in this listing, unless by accident.

It is possible that there may be an occasional misclassified book between the Educational and Technical listings. Occasionally, I had no information available except a title upon which to base a

judgement about classification. However, due to the Library of Congress cards, the classifications should be more accurate than in past editions.

Previous versions of Astronomy Education materials have included prices, but they have been omitted this time around, primarily because the Library of Congress notification cards do not include prices. But further, the prices tend to obsolete rapidly anyway, and it is generally straightforward to obtain the price of a desired book from a dealer or the publisher. Prices have continued to increase with time. A typical price for a child's book is now approaching \$10 US, and a hardcover text will often exceed \$30 US. Symposia and Proceedings can have spectacular pricetags, frequently ranging up into the hundreds of dollars.

Although the publishers' names are abbreviated, I have tried to include enough letters to make the name comprehensible. A complete list of publishers and their addresses is given in Books in Print. A few abbreviations I have used that may not be obvious are:

USGPO: United States Government Printing Office

NTIS: National Technical Information Service (for NASA publications)

SPIE: International Society for Optical Engineering

Non-print Materials

It is much more difficult to assemble a "1985-87" listing of astronomy non-print materials, since they are not listed in any particular source, and when they are found (for example, in a supplier's catalog), there is often no indication of a date to be associated with them. This means that to tally these materials, a comprehensive survey of all available materials needs to be conducted. Only in one area has this been carried out to date; an up-to-date summary of computer software is given in one of the works cited in this paper: Mosely and Fraknoi, Computer Software for Astronomy, Astronomical Society of the Pacific. Note that this particular area of educational materials is growing exponentially, and any update rapidly begins to outdate.

A comprehensive survey of all astronomy education materials was undertaken for the 1985 Commission 46 Report, and it was published in book format under the name The Universe at Your Fingertips: An Educator's Desktop Reference to Astronomy Education Materials, by R. Robert Robbins and Andrew Fraknoi. That volume is still being distributed by the Astronomical Society of the Pacific. It was a comprehensive, annotated bibliography of all types of educational resources in addition to books; for example, movies and videotapes, computer programs, laboratory equipment, magazines, newsletters, and addresses of astronomy organizations. The next edition of that publication would be the proper vehicle for a comprehensive review of non-print items; it is anticipated that such an edition will be constructed sometime during 1989.

Having said this, however, there are still a few selected developments that should be mentioned here, even if their discussion is not comprehensive.

Visuals

A clear trend is developing away from 16-mm movies and in the direction of videocassettes and laser disks. An example of a series of programs that appears only on videocassettes is The Planets, a 7 program set (The Children of the Sun, Mercury and Venus, The Blue Planet, The Angry Red Planet, Planets of Gas, The Search for Planet X, Are We Alone?) hosted by Heather Couper and distributed by Films for the Humanities, Inc., Box 2053, Princeton, N. J. 08543, USA. A recent brochure indicates that the programs are about \$150 each.

Laser disks (also called videodisks) ultimately have a greater capability than videotapes. While the tapes contain motion sequences only and have only one sound track, the disks can contain any combination of slides, diagrams, motion sequences (including movies and animation), text, and

computer commands, as well as two sound tracks that can contain any combination of recorded voice, sound effects, and/or music. A 12-inch videodisk can store 108,000 frames, or one hour of motion video. It can play forward and backward at variable speed, and can freeze a single frame indefinitely without harming the disk or player. They can also feature random access, better quality audio and video than tapes, and are very durable. This description is taken from the Apple Education News, Spring 1987, an Apple computer company publication that goes on to describe numerous examples of using these capabilities for instructional purposes. Linking the enormous information content of a videodisk with a computer creates the almost endless educational possibilities of interactive video.

A number of suppliers now list many or most of the extensive sets of visuals produced by NASA over the years on laser disks. For example, Optical Data Corporation (P.O. Box 97, Florham Park, NJ 07932-0097 USA) produces a series of earth science, space science and astronomy laser disks, along with equipment systems to play them. This format can mix slides and movies on the same disk, and under computer control, either or both can be called up at will. The laser disks typically price out around \$400 USA, and the disk player and control system for them will run from \$1000 to over \$2000, depending upon sophistication. If you are seeking wide screen or projected television display, that machinery will add further costs.

An even more recent development is data and visuals on CDROM diskettes. These Compact Disks hold 600 MBytes on a 4.72 inch disk, and readers for them are currently running around \$700 USA. The Planetary Data Systems group at JPL has produced two CDROM disks to date: one contains 800 digital images from the Voyager Uranus encounter, and the other has more than 1400 data files from all scientific disciplines. They have also developed software to display the images. For information about this development, contact Mike Martin at the PDS Program, Jet Propulsion Lab, Pasadena, California.

A further example of the power of CRROM disks: the Grolier Encyclopedia is currently being published in this format. Instead of an update or "Book of the Year" coming out every year to keep your encyclopedia up to date, a purchaser receives each year, for a modest cost, an entire new encyclopedia (on CDROM) with the new information integrated into its proper place.

As one aspect of this trend, it is becoming possible to find bargain sales advertised on many 16-mm movies, some fairly recent.

Miscellaneous

- 1) The Universe in the Classroom is a Newsletter on Teaching Astronomy, sponsored by the Astronomical Society of the Pacific, the American Astronomical Society, and the Canadian Astronomical Society. Any teacher may receive this newsletter free of charge by writing the ASP.
- 2) NASA Report to Educators is printed 4 times a year and also distributed free to teachers requesting it.
- 3) It is also worth noting that the University of Texas McDonald Observatory Publication Star Date has now outgrown its "newsletter" status and become a full-color astronomy magazine. To subscribe is \$10 US per year.
- 4) Finally, the September 1987 edition of Sky and Telescope is a reference in astronomy worth citing for North American astronomers. It contains a detailed listing of (1) addresses of planetariums and museums (2) addresses of observatories (3) Astronomy Societies (4) Astronomy Clubs (5) addresses of dealers and manufacturers of astronomy products, and finally (6) a listing of computer information services and electronic bulletin boards involved with astronomy, all cross-referenced.

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
1	(no author listed)	Current Topics in Chinese Science, Section E. Astronomy	Gordon & B 85	
2	(no author listed)	Ephemeris of the Sun, Polaris and Other Selection Stars 1987-88	USGPO 86	
3	(no author listed)	Organic Geo- & Cosmochemistry (Topics in Current Chemistry Vol 139)	Springer-V 87	
4	(no author listed)	Space Technology and Opportunity	Brookfield 85	
5	Abbott, L. et al	Inflationary Cosmology	World Sci 86	QB981.A34
6	Adler, Isodore	The Analysis of Extraterrestrial Materials	Wiley 86	QB450.A35
7	Akasofu, S. et al	The Solar Wind and Earth	Kluwer 87	QB529.S627
8	Aller, Lawrence	Physics of Thermal Gaseous Nebulae	Reidel 87	
9	Allison, M. et al	The Jovian Atmosphere (NASA-Goddard conference)	NASA-NTIS 86	QB661.J68
10	Alvarez, E. et al	Gift Seminar on Theoretical Physics: Cosmology & Particle Physics (Proc.)	World Sci 87	
11	Anderson, A. et al	Space Geodesy and Geodynamics	Acad Pr 86	QB343.S66
12	Appenzeller, I. et al	Circumstellar Matter: Proc. of 122nd IAU Symposium-Helidelberg	Kluwer 87	QB792.I58
13	Ardiaciano, G.	Projective Relativity, Cosmology, and Gravitation	Hadronic Pr 86	QC173.55.A73
14	Arp, Halton C.	A Catalogue of Southern Peculiar Galaxies and Associations (Vols. I and II)	Cambridge U 86	QB857.A76
15	Arp, Halton C.	Quasars, Redshifts, and Controversies	Interst. Med 87	QB860.A76
16	Arsenault, H. H.	International Conference on Speckle	SPIE 85	QC427.8.S64I58
17	Atreya, S. K.	Atmospheres & Ionospheres of the Outer Planets and Their Satellites	Springer-V 86	QC801.P46
18	Audouze, J. et al	Nucleosynthesis and its Implications on Nuclear and Particle Physics (NATO)	Kluwer 86	QB450.N38
19	Avduyevsky, V.	Scientific Foundations of Space Manufacturing	Imported 86	
20	Babcock, A.	IAU Symp. 128: The Earth's Rotation and Reference Frames for Geodesy	Reidel 87	QB633.I58
21	Backer, Donald	The Galactic Center (Proc. of the Symposium honoring C. Townes)	1987	
22	Bainum, P & Von Bun, F	Europe-United States Space Activities	Univelt 85	
23	Barr, L.	Advanced Technology Optical Telescopes III	SPIE 86	QB88.A382
24	Barrow, J. D.	Material Contents of the Universe (Phil. Trans. Royal Soc. London)	Scholium 86	
25	Beauregard, C. de	Time, The Physical Magnitude	Kluwer 87	Q174.B67
26	Beck, R. & Grave, R.	Interstellar Magnetic Fields: observation and theory	Springer-V 87	QB791.7.I58
27	Beckman, John et al	Progress in Stellar Spectral Line Formation Theory	Kluwer 85	
28	Beckmann, Peter	Einstein Plus Two	Golem 87	QC173.59.M3B43
29	Beer, P. and A.	Vistas in Astronomy, Vols. 26 (1985), 27 (1986)	Pergamon	
30	Bernstein, J. et al	Cosmological Constants: papers in modern cosmology	Columbia U 86	QB985.C66
31	Bhatnagar, K.B.	Space Dynamics and Celestial Mechanics: Proc. of Delhi Workshop	Reidel 86	QB349.S69
32	Bhattacharyya, J. C.	Thrust Areas in Astronomy and Astrophysics	Ind NatSc.Ac84	QB43.2.B48
33	Bibliography	Astronomical Publications at the University of Helsinki Observatory	Yliopistopain86	Z5156.T34
34	Binney & Tremaine	Galactic Dynamics	Princeton U 87	
35	Black, D & Mathews, M	Protostars and Planets II.	U Ariz 85	
36	Blades, C. et al	Quasar Absorption Lines (Space Tel. Sci. Inst. Symp. Series #2)	Cambridge U 87	
37	Bohme, E.	Astronomy & Astrophysics Abstracts, Vol. 42	Springer-V 86	
38	Bohme, S. et al eds.	Literature 1986, Part 1.	Springer-V 86	
39	Boland, W. et al	Birth and Evolution of Massive Stars and Stellar Groups: Symp. for Blaauw	Kluwer 85	QB843.S9B57
40	Bowler, D.	Spectral Reflectances of Natural Targets for Use in Remote Sensing Studies	NASA-NTIS 85	QC425.S67
41	Bowler, M. G.	Lectures on Special Relativity	Pergamon 86	QC173.65.B69
42	Brahic, A.	IAU Colloq. 75: Planetary Rings	CEPADUES 84	QB603.R55I19
43	Bransden, B. et al	Physics of Atoms and Molecules	Wiley 87	QC173.B677
44	Bressan, O. et al	Relativity, Supersymmetry & Cosmology (Proc.)	World Sci 86	

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
45	Briand, J.	NATO Advanced Institute on Atoms in Unusual Situations	Plenum 86	QC170.N37
46	Bruzzo, U. et al	Proceedings of 7th Ital. Conf - General Relativity and Gravitational Physics	World Sci 87	QC173.6.I86
47	Buchler, J. et al	Chaos in Astrophysics (NATO Workshop)	Kluwer 85	QB466.C45.N38
48	Buchler, J. et al	Chaotic Phenomena in Astrophysics	NYAcad Sci 87	Q11.N5
49	Burbidge, G. et al	Annual Review of Astronomy & Astrophysics, Vols. 23 (1985), 24 (86), 25.	Ann Rev	
50	Burns, J. & Matthews	Satellites (IAU Colloq. 77, Cornell)	U Ariz Pr 86	QB401.S38
51	Buti, B. ed.	Advances in Space Plasma Physics (Proceedings ICTP)	World Sci 85	
52	Cairns-Smith, A. et al	Clay Minerals and the Origin of Life	Cambridge U 87	
53	Carter, B. et al	Gravitation in Astrophysics (NATO Institute - Cargese)	Plenum 87	QB460.N38
54	Carter, W. D. et al	Remote Sensing from Satellites: COSPAR Workshop	Pergamon 85	
55	Carusi, A. et al	Long-term Evolution of Short Period Comets	Hilger 85	
56	Casci, Corrado, ed.	Recent Advances in the Aerospace Sciences	Plenum 85	
57	Cazenave, Anny	NATO Workshop on Earth Rotation: Solved and Unsolved Problems	Kluwer 86	QB633.N38
58	Centrella, Joan	Dynamical Spacetimes and Numerical Relativity (Proc. of Drexel Workshop)	Cambridge U86	QC173.6.D96
59	Chagas & Canuto	The Impact of Space Exploration on Mankind	Gordon & B 87	
60	Chamberlain, J. W.	Theory of Planetary Atmospheres: An Intro. to their Physics & Chemistry	Academic Pr86	QB603.A85C48
61	Charon, Jean	Complex Relativity: Unifying all Four Physical Interactions	Paragon 87	QC173.55.C476
62	Chin-Eng Transl Group	Chinese-English Glossary of Astro-Science Terms	Dunwoody 86	
63	Chiosi, C. et al	Spectral Evolution of Galaxies: Proc. of Workshop	Kluwer 86	QB856.S64
64	Choquet-Bruhat, Y. et al	On Relativity Theory (Eddington Centenary Symposium-India)	World Sci 85	QB460.S55
65	Christensen-D, J. et al	Advances in Helio- and Astro- Seismology (Proc. Symp.)	Reidel 87	
66	Christiansen, W. et al	Radiotelescopes	Cambridge 85	
67	Ciacci, R. et al	General Relativity and Gravitational Physics (Proc. Genoa Conference 1986)	World Sci 87	
68	Cline, D.	Proc. of the Workshop on the Design of a Low Energy Antimatter Facility	World Sci 86	QC170.W67
69	Cochran, Curtis ed.	Space Handbook (2nd ed.)	USGPO	
70	Contopoulos, G. et al	Cosmology: the structure and evolution of the Universe	Springer-V 87	
71	Corona, Manual	Hydrodynamical Approach of Galaxy Formation: 2 & 3 Component Fluids	Hart-Gorre 85	QB857.C66
72	Corwin, H. et al	Southern Galaxy Catalogue: 5481 galaxies S. of decl. -17 on U.K. Schmidt	U.Tex.Astr 85	QB857.C674
73	Cox, A. et al	Astrophysical Process in Upper Main Sequence Stars	Geneva Obs 83	QB799.C69
74	Cox, A. N. et al	Stellar Pulsation: proc. of memorial conference for John Cox at Los Alamos	Springer V 87	QB838.S74
75	Craig, I & Brown, J.	Inverse Problem in Astron : Guide to Inverslon Strategies for Remote Data	Hilger 86	
76	Crawford, D.	Instrumentation in Astronomy VI (AAS-SPIE Proceedings)	SPIE 86	QB84.5.I57
77	Culhane, J.	X-Ray Instrumentation in Astronomy	SPIE 86	QB472.A1X24
78	Curtis, Anthony ed.	Space Today Chronicles	ARCsoft 87	
79	Czyz, Wieslaw	Selected Problems of the Physics of Neutron Stars	N.U.J. 84	QC1.K7
80	D'Auria, P.	1st Torino Meeting on Superunification and Extra Dimensions	World Sci 86	QC174.17.S9M44
81	Dalgarno, A. et al	Spectroscopy of Astrophysical Plasmas	Cambridge U 87	
82	Davis, Philip A. G.	Stellar Radial Velocities	L. Davis 85	
83	Davis, Philip, A. G., ed.	Horizontal-Branch and UV-Bright Stars	L. Davis 85	
84	De Jager & Svestka ed.	Progress in Solar Physics	Kluwer 86	
85	De Loore, C. et al	IAU Symp. 116: Luminous Stars and Associations in Galaxies	Kluwer 86	QB799.I59
86	De Sabbata, Enzo	Introduction to Gravitation	World Sci 86	QC178.D4
87	Deinzer, W. et al	Small Scale Magnetic Flux Concentrations in Solar Photosphere (workshop)	VandenH&R86	AS182.G811
88	Demianski, M.	Relativistic Astrophysics	Pergamon 85	QB461.D4613

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
89	Di Gesu, V.	Data Analysis in Astronomy II (workshop)	Plenum 86	QB51.3.E43I58
90	Di Gesu, V.	Selected Topics on Data Analysis in Astronomy (Workshop)	World Sci 87	QB51.3.E4W67
91	Diercksen, G. et al	Molecular Astrophysics (Proc. NATO Workshop)	Reidel 85	
92	Dixon, Conrad	Basic Astro Navigation	Sheridan 85	
93	Drechsel, H. et al	IAU Colloquium 93: Cataclysmic Variables: recent multi-freq. obs. & theory	Kluwer 87	QB837.I18
94	Duerbeck, Hilmar	A Reference Catalogue and Atlas of Galactic Novae	Kluwer 87	QB841.D84
95	Duncombe, R. et al	Fundamental Astronomy & Solar System Dynamics: papers honoring Fricke	Kluwer 86	QB1.F86
96	Durney, B. & Sofia, S.	Internal Solar Angular Velocity: theory, obs., & relationship to mag fields	Kluwer 87	QB523.N38
97	Durrant, C. J.	The Atmosphere of the Sun	Hilger 87	QB528.D87
98	Duxbury, T. et al	Phobos-Close Encounter Imaging from the Viking Orbiters	NASA-NTIS 84	QB403.D88
99	Eddington, A. S.	Space, Time, and Gravitation (Science Classic)	Cambridge U87	QC173.59.S65E33
100	Eddington, A. S.	The Expanding Universe (Science Classics Series)	Cambridge U 87	
101	Eddington, A. S.	The Internal Constitution of the Stars (Science Classic Series)	Cambridge U87	QB875.E33
102	Eggleton, P. et al	Interacting Binaries (Proc. NATO Workshop)	Reidel 85	
103	Eichhorn, H. et al	IAU Symposium 109: Astrometric Techniques	Kluwer 86	QB807.I57
104	Elder, John W.	The Structure of the Planets	Acad Pr 87	
105	Elliot, J. & Kerr, R.	Rings: Discoveries from Galileo to Voyager	MIT 85	
106	Epstein, R. et al	Magnetospheric Phenomena in Astrophysics (AIP Conference-Los Alamos)	AIP 86	QB460.M34
107	Faber, Sandra	Nearly Normal Galaxies: from the Planck time to the present	Springer-V 87	QB856.S26
108	Fang, L. & Ruffini, R.	Galaxies, Quasars, and Cosmology	World Sci 85	QB856.G35
109	Fang, L. & Ruffini, R.	Quantum Cosmology (Vol. 3 Adv. Series in Astroph. & Cosmology)	World Sci 87	
110	Fassler, D. et al	3rd Symp. on Optical Spectroscopy	Teubner 85	QC450.S96
111	Fazio, G. et al	Astronomy from Space (COSPAR Proceedings)	Pergamon 85	
112	Fender, Janet S.	Synthetic Aperture Systems	SPIE 84	QB88.S97
113	Ferreira, L.S. et al	Models and Methods in Few-Body Physics: proceedings- Lisbon school	Springer V 87	QC174.17.P7A98
114	Ferrara, S.	Supersymmetry	Elsevier 87	QC174.17.S9S972
115	Ferronsky, V.	Jacobi Dynamics: many-body problems in Integral characteristics	Reidel 87	
116	Feuerbacker, B. et al	Materials Science in Space	Springer-V 86	
117	Frank, J. et al eds.	Accretion Power in Astrophysics	Cambridge U 85	
118	Fulchignoni, M. et al	The Evolution of the Small Bodies of the Solar System (Fermi School Proc.)	North Holl 87	QB651.I58
119	Futterman, J. et al	Scattering from Black Holes	Cambridge U 87	QB843.B55F88
120	Gibbons, G. W. et al	The Very Early Universe	Cambridge U 85	
121	Gibbons, John	Internationa Cooperation and Competition in Civilian Space Activities	USGPO	
122	Gibbons, W. et al	Supersymmetry and Its Applications: superstrings, anomalies and supergrav	Cambridge U 86	QC174.17.S9N84
123	Giese, R & Lamv, P.	Properties & Interactions of Interplanetary Dust	Kluwer 85	
124	Gilmore, G. et al	The Galaxy (NATO Adv. Study Institute Proceedings)	Kluwer 87	QB857.7.G354
125	Ginzburg, V. L.	Physics & Astrophysics: A selection of key problems	Pergamon 85	
126	Giuricin, G. et al	Structure and Evolution of Activity Galactic Nuclei	Kluwer 85	QB856.S77
127	Godart, O.	Cosmology of Lemaitre	Pachart 85	QB981.G59
128	Goodman, J. and Hut, P	Dynamics of Stars Clusters	Kluwer 85	
129	Gorini, V. et al	NATO Advanced Research Workshop on Fund. Aspects of Quantum Theory	Plenum 86	QC173.96.N37
130	Gough, D. O. ed.	Seismology of the Sun and Distant Stars	Plenum 86	
131	Green, Robin	Spherical Astronomy	Cambridge U 85	
132	Grewing, M. et al	The Exploration of Halley's Comet (Proc. Symp. Heidelberg)	Springer-V 87	

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
133	Gribbin, J.	In Search of the Big Bang: quantum physics and cosmology	Bantam 86	QB991.B54G75
134	Grueter, W. et al eds	Solar Radiation Data from Satellite Images	Reidel 86	
135	Haeringen, H. van	Charged-Particle Interactions: Theory and Formulas	Coulomb Pr 85	QC174.17.C67H34
136	Hagyard, M.	Measurements of Solar Vector Magnetic Fields (Marshall SFC Workshop)	NASA 85	QB539.M23M43
137	Harris, Ray	Satellite Remote Sensing: An Introduction	Methuen 87	
138	Hartmann, W. K. et al	Origins of the Moon (Hawaii Conference)	Lun Pl Inst 86	QB580.O75
139	Harvey, Bruce	The Combination of VLBI and Ground Data for Geodesy and Geophysics	U. N.S.Wales85	QB301.H37
140	Hatheway, A.	Structural Mechanics of Optical Systems	SPIE 87	QC370.5.S78
141	Hawking, S. & Israel, V	Three Hundred Years of Gravitation	Cambridge U 87	QC178.T47
142	Hayes, D. et al	Calibration of Fundamental Stellar Quantities (IAU Symp. 111)	Reidel 85	
143	Hearnshaw, J. B.	The Analysis of Starlight	Cambridge U 87	
144	Hearnshaw, J. et al	IAU Symposium 118: Instrument. & Research Progs. for Small Telescopes	Kluwer 86	QB88.I583
145	Helfand, D.J. et al	IAU Symposium 125: The Origin and Evolution of Neutron Stars	Kluwer 87	QB843.N4I57
146	Heller, M. et al	The Expanding Universe: Lemaitre's unknown manuscript	Pachart 85	QB991.E94L46
147	Henning, Thomas ed.	The Role of Dust in Dense Regions of Interstellar Matter	Kluwer 87	
148	Hewitt, A. et al	Observational Cosmology: proc. of 124th IAU Symp. Beijing	Kluwer 87	QB980.I57
149	Hilf, E. and Wien, K	PDMS and Clusters: Proc. of 1st Int'l Workshop on Physics of Small Systems	Springer V 87	QC454.M3I56
150	Hillebrandt, W.	Nuclear Astrophysics (workshop)	Springer V 87	QB463.N83
151	Hillebrandt, W. et al	Physical Processes in Comets, Stars and Active Galaxies: workshop proc.	Springer-V 87	QB717.P49
152	Hillier, Rodney	Gamma Ray Astronomy	Oxford U 85	
153	Hinchliffe, I. ed.	Cosmology & Particle Physics: Proc. of Berkeley Workshop	World Sci 86	
154	Hoffmeister, C. et al	Variable Stars	Springer-V 85	
155	Holbrow, C. et al	Space Colonization: technology and the liberal arts (Proc. Conf.)	1986	
156	Hollenback, D.J. et al	Interstellar Processes: Proc. of the Symposium	Reidel 87	QB460.I59
157	Holtet, J. & Egeland, A	The Polar Cusp (Proc NATO Workshop)	Reidel 85	
158	Hord, R., ed.	CRC Handbook of Space Technology: Status & Projections	CRC Pr. 85	
159	Houghton, J.	The Physics of Atmospheres	Cambridge U 86	
160	Hughes, Peter	Spacecraft Altitude Dynamics	Wiley 86	
161	Hughston, L. & Tod, K.	Introduction to General Relativity	Cambridge U 87	
162	Humphries, C.	Optical/IR Telescope Arrays: potential for 1990's large aperture systems	Edin Roy Obs84	QB88.O665
163	Hunger, K. et al	IAU Colloq. 87: Hydrogen Deficient Stars and Related Objects	Kluwer 86	QB843.A12I57
164	Hut, P. and McMillan S.	The Use of Supercomputers in Stellar Dynamics	Springer-V 86	QB807.U74
165	Israel, F. P.	Light on Dark Matter: proc. of the 1st IRAS Conference	RFeidel 86	QB470.A1I73
166	Jacobs, H. and R.	Numerical-Chronological Author Index 1979 to 1985	Univelt 87	
167	Jarosewich, E. et al	The Allende Meteorite Reference Sample	Smithson 86	QE1.S227
168	Jaschek, J. et al	Cool Stars with Excesses of Heavy Elements	Kluwer 85	
169	Jaschek, C. and M.	The Classification of Stars	Cambridge U87	QB881.JU37
170	Jervis, J.	Cometary Theory In 15th Century Europe	Kluwer 85	
171	Jezowska-Tr, B. et al	Rare Earths Spectroscopy: Symposium	World Sci 85	QC462.R2I57
172	Johnson, Hollis et al	The M-Type Stars	NASA-NTIS 87	QB843.M16M89
173	Kafatos, M. & Henry	The Crab Nebula and Related Supernova Remnants	Cambridge U 85	
174	Kafatos, M. et al	Astrophysics of Brown Dwarfs (workshop)	Cambridge U 86	
175	Kaku, Michio	Beyond Einstein: the cosmic quest for the theory of the universe	Bantam 87	QC173.7.K35
176	Kamide & Slavin	Solar Wind: Magnetosphere Coupling	Kluwer 86	

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
177	Karttunen, H. et al	Fundamental Astronomy (senior level text)	Springer-V 87	
178	Katz, Jonathan	High Energy Astrophysics	Addison-W 86	
179	Kenyon, S. J.	The Symbiotic Stars	Cambridge U 86	
180	Khachikian, E. et al	IAU Symp. 121: Observational Evidence of Activity in Galaxies	Kluwer 87	QB858.3.I58
181	Kitagaki, T. & Yuta, H.	Neutrino Physics and Astrophysics (Proc. of Japan 1986 Conference)	World Sci 87	
182	Kitamura, M. et al	IAU Asian-Pacific 3rd Regional Meeting (Kyoto)	Reidel 86	QB61.I56
183	Kitchin, C. R.	Stars, Nebulae, and the Interstellar Medium	Hilger 87	QB807.K56
184	Kivelson, M.	The Solar System: observations and Interpretations	Pren-Hall 86	QB500.5.S65
185	Klapdor, H.V.	Weak and Electromagnetic Interactions in Nuclei	Springer-V 86	
186	Klein, Miles	Optics	Wiley 86	QC355.2.K53
187	Kleinknecht, K. et al	Neutrino Physics & Astrophysics (Proceedings of Conference-Dortmund)	World Sci 85	
188	Klinger, J. et al	Ices in the Solar System (Proc. NATO Workshop)	Reidel 85	
189	Klinglesmith, D. et al	Astronomical Microdensitometry Conference: Proc. of Goddard Workshop	NASA-NTIS 84	QB121.A8
190	Kolb, E. & Turner, M.	The Early Universe	Addison-W 86	
191	Kolb, Edward	Inner Space/Outer Space: Interface of cosmol., astrophys., & particle phys.	Univ Chic 85	QB980.I56
192	Kolberg, E.	Instrumentation for Submillimeter Spectroscopy	SPIE 86	QC454.M5I57
193	Kondo, Y. et al	Exploring the Universe with the IUE Satellite	Kluwer 87	QB474.E97
194	Konnen, G. et al	Polarized Light in Nature	Cambridge U 85	
195	Kontopoulos, G.	Cosmology: the structure and evolution of the universe	Springer V 87	QB981.K69513
196	Kormendy, J. et al	IAU Symposium 117: Dark Matter in the Universe	Reidel 86	QB790.I573
197	Korsch, D.	Reflective Optics: Proceedings of the SPIE	SPIE 87	QC385.R44
198	Kovalevsky, J. et al	Relativity in Celestial Mechanics and Astrometry (IAU Symp. 114)	Reidel 86	
199	Krasnopolskii, V.	Photochemistry of the Atmosphere of Mars and Venus	Springer- V 85	QC801.P46
200	Krisciunas, K.	Astronomical Centers of the World	Cambridge U 87	
201	Krishna Swamy, K.S.	Physics of Comets	World Sci 85	QB721.K74
202	Kron, R. et al	Towards Understanding Galaxies at Large Redshift (5th Workshop-Erice)	Kluwer 87	QB856.E77
203	Kubackova, L.	Probability and Statistics in Geodesy and Geophysics	Elsevier 87	QB201.K7413
204	Kundt, W.	Astrophysical Jets and Their Engines (NATO Adv. Study Institute)	Kluwer 87	QB466.J46N37
205	Kundu, M. et al	Energetic Phenomena on the Sun: the Solar Max Mission Flare Workshop Proc	NASA-NTIS 86	QB526.F6S597
206	Kuo, T. et al	Int'l Conference on Unified Concepts of Many-Body Problems (SUNY Symp.)	North-H 87	QC174.17.P7I56
207	Kwok, S. et al	Late Stages of Stellar Evolution (Calgary Workshop)	Kluwer 87	QB806.L38
208	Kylafis, N. et al	Plasma Penetration into Magnetospheres: Medit. School on Plasma Astroph.	Crete U. 86	QB603.A85M43
209	LaBonte, B.	Solar Irradiance Variations on Active Region Time Scales: workshop	NASA-NTIS 84	QB531.S576
210	Lagerkvist, C. et al	Asteroids, Comets & Meteors (Proc. of Uppsala Symposium)	Coronet 86	
211	Lamb, F. K.	High Energy Astrophysics	Beni/Cum 85	QB460.H54
212	Lamers, H. et al	Instabilities in Luminous Early Type Stars	Kluwer 87	QB843.S53I57
213	Lang, K. R.	Astrophysical Formulae	Springer-V 86	
214	Lautsen, S. et al	Exploring the Southern Sky: ESO Atlas	Springer-V 87	
215	Lazutin, L. L.	X-ray Emission of Auroral Electrons & Magnetospheric Dynamics	Springer-V 86	
216	Lebowitz, J. L.	Simple Models of Equilibrium and Nonequilibrium Phenomena	Elsevier 87	QC175.S77
217	Leger, A. et al	Polycyclic Aromatic Hydrocarbons and Astrophysics	Kluwer 86	QB790.P65
218	Leon, J. et al	3rd CSIC Workshop: SUSY and Grand Unification - Strings to Collider Phenom	World Sci 86	QC174.17.S9C75
219	Leung, Y. C.	Physics of Dense Matter	World Sci 85	
220	Liang, E. et al	Gamma-Ray Bursts (AIP Conference-Stanford)	AIP 86	QB471.7B85G34

TECHNICAL LISTINGS 1985-1987

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221	Lifschitz, I.	Introduction to the Theory of Disordered Systems	Wiley 87	QC173.4.O73L5413
222	Linsky, J. et al	Cool Stars, Stellar Systems, and the Sun: Proc. of 5th Cambridge Workshop	Springer V 87	QB799.C36
223	Livio, M. and Shaviv, G	12th Texas Symposium on Relativistic Astrophysics	NYAcadSci 86	Q11.N5 Vol. 470
224	Londono, C. et al	Recent Trends In Optics Systems Design (Lens Design Workshop)	SPIE 87	QC385.2.D47C65
225	Longo, Guisepppe	Suppl. to the Gen. Cat. of Photoelectric Mags and Colors of Galaxies In U.B.V	Univ TX Aus 85	QB857.L66
226	Lovenal, M	Cosmological Biology	Philos Lib 85	
227	MacCallum, M.	11th Int'l Congress on General Relativity and Gravitation	Cambridge U 87	QC173.6.I573
228	MacCallum, M.	Galaxies, Asymmetric Systems and Relativity: essays to honor Bonnor	Cambridge U 85	QB857.G38
229	Madonna, Richard	Orbital Mechanics	Krieger 87	
230	Madore, B. et al	Galaxy Distances and Deviations From Universal Expansion (NATO Workshop)	Kluwer 86	QB857.N366
231	Madore, Barry F.	Cepheids: theory and observations (IAU Symp. #82)	Cambridge U 85	
232	Madore, Barry F. et al	New Ideas In Astronomy (Symp. of 60th birthday of H. Arp)	Cambridge U 87	
233	Makarenko, G.	Terrestrial Oceans and Lunar Maria	Imported 85	
234	Markov, M.	The Physical Effects in the Gravitational Field of Black Holes	Nova Sci 87	QC1.A4114
235	Marsden, R.	The Sun and the Heliosphere in 3 Dimension: Proc. of 19th ESLAB Symp.	Reidel 86	QB520.E74
236	Martinez, A. P.	Planetary and Proto-Planetary Nebulae--from IRAS to ISO	Reidel 87	QB855.5.P52
237	Marx, S.	Astrophotography (IAU Workshop)	Springer V 87	QB121.I18
238	Mason, K. et al	The Physics of Accretion onto Compact Objects: Proc. of Tenerife Workshop	Springer V 86	QB466.A25P48
239	Massey, H & Robins, M	History of British Space Science	Cambridge U 86	
240	Matolcsi, Tamas	Models for Space-time: a concept of mathematical physics	Akad Kiado 84	QC173.59.S65M36
241	Matsumoto, H. et al	Computer Simulation of Space Plasmas	Kluwer 85	
242	Mavromatis, Harry	Exercises In Quantum Mechanics: Illustrative Problems and Their Solutions	Reidel 86	QC174.I5.M38
243	McDonald, Keith L.	Solar-Terrestrial Electromag Phenomena: role of the breach In Sun's Toroid	Univ Utah 84	QB539.T4M39
244	McDonough, T.	The Search for Extraterrestrial Intelligence: Listening for Life in Cosmos	Wiley 86	
245	McDowell, R.	Optical Fabrication and Testing Workshop: Large Telescope Optics	SPIE 85	QB88.O66
246	McElroy, John	Space Science and Applications: progress and potential	NYInst.EEE 86	QB500.S6155
247	McLean, Donald J. ed	Solar Radiophysics	Cambridge U 85	
248	Mehra, J.	Erwin Schrodinger and the Rise of Wave Mechanics	Springer-V 87	QC173.98.M44
249	Melchiorri, F. et al	Gamow Cosmology (Proc. Fermi School)	North Holl 86	QB980.I58
250	Melosh, H. J.	Impact Cratering: a geologic process.	Clarendon 86	QBH603.C7M45
251	Melrose, D.	Instabilities In Space and Laboratory Plasmas	Cambridge U 86	
252	Melugin, R.	Cryogenic Optical Systems and Instruments II	SPIE 86	QB470.A1C76
253	Metcalfe, Ed	Atomic Absorption and Emission Spectroscopy	Wiley 87	QC454.A8M48
254	Michette, Alan G.	Optical Systems for Soft X-rays	Plenum 86	QC482.G68M53
255	Mihalas, D. et al	IAU Colloq. 89: Radiation Hydrodynamics In Stars and Compact Objects	Springer-V 86	QB817.I58
256	Milani, A. et al	Non-gravitational Perturbations and Satellite Geodesy	Hilger 87	
257	Miller, Joseph	Astrophysics of Active Galaxies and Quasi-Stellar Objects	Univ Sci 85	QB858.3.A87
258	Millis, R.	Identification, Optimization and Protection of Optical Telescope Sites	Lowell 87	QB84.I34
259	Molinari, A. et al	From Nuclei to Stars (Summer School)	Elsevier 86	
260	Molinaro, Angelo	The Two State Universe	Branden 87	QB981.M78
261	Mook, Delo E.	Inside Relativity	Princeton U 87	QC173.55.M66
262	Moore, H.J.	Physical Properties of the Surface Materials at Viking Landing Site (Mars)	USGPO 87	QB641.P47
263	Morfill, G. ed.	Dust in Space and Comets: COSPAR Proc.	Pergamon 85	
264	Morfill, G. et al	Physical Processes in Interstellar Clouds	Kluwer 87	QB790.P47

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
265	Moritz, H. et al	Earth Rotation: theory and observation	Ungar 87	QB633.M77
266	Morris, Mark et al	Mass Loss from Red Giants	Kluwer 85	
267	Muller, R.	High Resolution in Solar Physics: 8th IAU Europ. Regional Meeting	Springer-V 85	QB522.118
268	Murtaugh, F. et al	Multivariate Data Analysis With Astronomical Applications	Kluwer 87	QB149.M87
269	Murthy, P. V. R. et al	Gamma-Ray Astronomy	Cambridge U 86	QB471.R36
270	Musgrove, A. et al	Bibliography on Atomic Energy Levels and Spectra: July 79 to Dec. 83	NBS-USGPO 85	QC100.U57
271	Nagata, T.	Proc. 9th Symp. on Antarctic Meteorites	Nat Inst Pol 84	QB755.5.A6S96
272	Narlikar, J.	From Black Clouds to Black Holes	World Sci 85	
273	NASA	NASA Space Plans and Scenarios to 2000 and Beyond	Noyes 86	
274	NASA	The Status and Future of Lunar Geoscience (Working Group Report)	NASA-NTIS 86	QB592.S73
275	NASA Adv. Council	Core Program: mission operations: planetary exploration through Year 2000	USGPO 86	QB601.N36
276	NASA Conference	19th International Cosmic Ray Conference (La Jolla)	NASA-NTIS 85	QC484.8.I58
277	Nat. Res. Council	Survey of Panel on Gravitation, Cosmology, and Cosmic-ray Physics	Nat. Acad. Pr 86	QC178.G64
278	Nat. Research Council	Gravitation, Cosmology & Cosmic-ray Physics (Physics Through the 1990's)	Nat Acad Pr 86	
279	NATO Sci. Affairs	Workshop on Seismology of the Sun and Distant Stars	NATO 86	QB520.N36
280	Nieto, J. L.	New Aspects of Galaxy Photometry: proc. of the 8th IAU Europ. Reg. Meeting	Springer-V 85	QB857.N48
281	NOAA	A Geodetic Glossary (Nat. Geodetic Survey)	NOAA 86	QB279.G46
282	Norman, C. et al	Stellar Populations: Proc. of the Baltimore Meeting	Cambridge U86	QB881.S74
283	Nuth, J. and Stencel, R.	Interrelationships Among Circumstellar, Interstellar, & Interplanetary Dust	NASA-NTIS 85	QB791.I565
284	O'Reilly, W. ed.	Magnetism, Planetary Rotation & Convection in the Solar System	Kluwer 85	
285	Ojima, M.	Geohistory: global evolution of the Earth	Springer V 87	QB631.O36
286	Pacini, F.	High Energy Phenomena Around Collapsed Stars (NATO Adv. Study Institute)	Kluwer 87	QB463.N39
287	Padevet, V.	The Role of Thermal Motions of Air Particles for Fireballs	Czech Acad 85	QB1.C284A3
288	Papagiannis, M.	The Search for Extraterrestrial Life: Recent Developments (IAU Symp. 112)	Reidel 85	
289	Parker, Barry	Search for a Supertheory: from atoms to superstrings	Plenum 87	QC173.7.P364
290	Pedrotti, Frank	Introduction to Optics	Prentice H 87	QC355.2.P43
291	Peimbert & Jugaku, ed	Star Forming Regions	Kluwer 87	
292	Peimbert, M. et al	IAU Symp. 115 (Tokyo): Star Forming Regions	Reidel 86	QB806.I58
293	Penrose, R., Isham, C.	Quantum Concepts in Space and Time	Oxford U 86	QC173.96.Q36
294	Percy, John	The Study of Variable Stars Using Small Telescopes (Toronto Conference)	Cambridge U 87	
295	Phillip, A. Davis, ed.	Spectroscopic and Photometric Classification of Population II Stars	L. Davis Pr. 86	
296	Pinch, Trevor	Confronting Nature: the sociology of solar-neutrino detection	Kluwer 86	QB539.S65P55
297	Piran, T. et al	Interaction Between Elementary Particle Physics and Cosmology (Proc.)	World Sci 87	QB981.J47
298	Press, W. et al	Numerical Recipes	Cambridge U 86	
299	Pretzl, K. et al	Low Temperature Detectors for Neutrinos and Dark Matter (workshop)	Springer V 87	QB539.S65L69
300	Priest, E.	Solar System magnetic Fields	Reidel 85	
301	Pringle, J. & Wade, R.	Interacting Binary Stars	Cambridge U 85	
302	Prokhorov, S.	Light in Einstein's Universe: Role of Energy in Cosmology and Relativity	Kluwer 85	
303	Ramaty, R. et al	Essays in Space Science: Proc. of the F.B.McDonald 60th Birthday Symp.	NASA 87	QB495.E83
304	Regis, Edward, ed.	Extraterrestrials: Science and Alien Intelligence	Cambridge U 85	
305	Reiss, Fred	Standard Guide to the Jewish and Civil Calendars	Behrman 86	
306	Roberts, Morton	Astronomy & Astrophysics	AAAS 85	
307	Roberts, W. T.	Solar Terrestrial Observatory Space Station Workshop Report	NASA-STIB 86	QB136.S65
308	Rogers, Andrei et al	Molecular Astrophysics: migration and settlement	Kluwer 85	

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
309	Rohlf, K.	Tools of Radio Astronomy	Springer-V 86	QB475.R63
310	Rowan & Robinson	The Cosmological Distance Ladder	Freeman 85	
311	Rozental', I. L.	Particle Physics and Cosmology	Springer V 87	QB981.R73
312	Rozental, I.L.	Big Bang Big Bounce	Springer-V 87	
313	Rucker, H. & Bauer, S.	Planetary Radio Emissions (Workshop Proceedings)	Ost. Akad. W 85	QB600.P538
314	Runcorn, S. K.	The Physics of the Planets: their origin, evolution, and structure	Wiley 87	QB600.P48
315	Ruzmaikin, A. A.	Magnetic Fields of Galaxies	Kluwer 87	QB857.5.M34R89
316	Sachs, R. G.	The Physics of Time Reversal	U. Chicago 87	QC173.59.T53S23
317	Sagitov, M.	Lunar Gravimetry	Acad Pr 86	QB591.L825
318	Sanchez, N.	From Black Holes to Quantum Gravity	World Sci 87	
319	Sandage, A. & Tamman	A Revised Shapley-Ames Catalog of Bright Galaxies	Carnegie Inst87	
320	Sanger, G.	Large Optics Technology	SPIE 86	QB66.L37
321	Sanz, J. et al	Observational and Theoretical Aspects of Rel. Astrophys. & Cosmology	World Sci 85	
322	Sapar, A. and L.	Improved IUE Data Reduction from ESHI and ESSR Files	Valgus 84	QB871.S27
323	Sarazin, Craig	X-Ray Emission from Clusters of Galaxies	Cambridge U 87	QB858.7.S27
324	Saslaw, W.	Gravitational Physics of Stellar and Galactic Systems	Cambridge U 85	
325	Sato, H. & Inami, T.	Quantum Gravity and Cosmology (8th Summer Kyoto Institute)	World Sci 86	QC178.S94
326	Sato, H. et al	Yamada Conference on Gravitational Collapse and Relativity - Kyoto	World Sci 87	QB806.Y36
327	Sawyer, C. et al	Solar Flare Prediction	Col. A. U. Pr 86	QB526.F6S29
328	Saxena, S.	Chemistry and Physics of Terrestrial Planets	Springer-V 86	QB631.C49
329	Scalo, John	The Stellar Initial Mass Function	Gordon & B 86	
330	Scarsi, L. ed.	Selected Topics on Data Analysis in Astronomy	World Sci 87	
331	Scheffler, Helmut	Physics of the Galaxy and Interstellar Matter	Springer V 87	QB857.S3413
332	Schove, D. J.	Chronology of Eclipses and Comets	Longwood 85	
333	Schroeder, D.	Astronomical Optics	Acad Pr 87	QB86.S35
334	Schroter, E. et al	The Role of Fine-Scale Magnetic Fields on the Structure of the Solar Atmos.	Camb U 87	QB528.I53
335	Schroter, E.H. et al	Solar and Stellar Physics (5th Europ. Solar Meeting)	Springer V 87	QB50.E87
336	Scoles, G.	Atomic and Molecular Beam Methods	Oxford 87	QC173.4.A85A86
337	Serra, G.	Nearby Molecular Clouds: proc. of IAU Europ. Regional Meeting	Springer-V 85	QB462.6.N43
338	Setti, G. et al	Large-scale Structure of the Universe, Cosmology, and Fundamental Physics	CERN 84	QB980.E76
339	Seuss, Hans E.	Chemistry of the Solar System	Wiley 87	QB450.S48
340	Seymour, Percy	Cosmic Magnetism	Hilger 86	
341	Seyrafi, K.	Light, the Myster of the Universe	Electro-Op 86	QC352.S48
342	Shapiro, M.	Genesis and Propagation of Cosmic Rays (NATO Institute, Erice)	NATO 87	QC484.8.N42
343	Shapiro, M. M.	Cosmic Radiation in Contemporary Astrophysics (NATO Institute)	Kluwer 86	QC484.8.N39
344	Shapiro, S. et al	Highlights of Modern Astrophysics: concepts and controversies	Wiley 86	QB461.H54
345	Shutz, B.	First Course in General Relativity	Cambridge U 85	
346	Simon, P. A. ed.	Solar Maximum Analysis (COSAPAR Symp.)	Pergamon 85	
347	Slettebak, A. et al	IAU Colloquium #92: Physics of Be Stars	Cambridge U87	QB843.B12I58
348	Smith, James R.	From Plane to Spheroid: determining the figure of the earth from 3000 BC...	Landmark 86	QB283.S64
349	Smoluchowski, R. et al	The Galaxy and the Solar System	U. Ariz 86	QB857.G4
350	Soldano, B.	Newton's Law of Universal Gravitation and the Fine Structure Constant	Grenridge 87	QC178.S54
351	Spitzer, Lyman	Dynamical Evolution of Globular Clusters	Princeton U 87	QB853.S66
352	Stephenson, G.	Special Relativity for Physicists	Dover 87	QC173.65.S74

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
353	Swarup, G. et al	Quasars (IAU Symp. 119 - Bangalore)	Reidel 86	
354	Swings, J. & Pierre, J	Highlights of Astronomy, Vol. 7	Kluwer 86	
355	Syunyaev, R.	Astrophysics and Space Physics Reviews Vol. 4 (1985), 5 (1986)	Harwood	
356	Szebehely, V.	Stability of the Solar System and Its Minor Natural and Artificial Bodies	Kluwer 85	
357	Szebehely, V. et al	Dynamical Astronomy: Proc. of 2nd U.S.-Hungary Workshop	U Tex Pr 85	QB349.D96
358	Taff, Laurence G.	Celestial Mechanics: a Computational Guide for the Practitioner	Wiley 85	
359	Tandberg-Hanssen, E.	Solar Flares and Coronal Physics Using P/O F as a Research Tool (Workshop)	NASA-NTIS 86	QB526.F6S594
360	Taube, M.	Evolution of Matter and Energy	Springer-V 85	
361	Taylor, W. et al	International Lens Design Conference	SPIE 86	QC385.2.D47I57
362	Tenreiro & Quiros	An Introduction to Cosmology and Particle Physics	World Sci 87	
363	Thompson, A. R. et al	Interferometry and Synthesis in Radio Astronomy	Wiley 86	QB479.3.T47
364	Tolman, Richard C.	Relativity, Thermodynamics and Cosmology	Dover 87	
365	Toptygin, I.	Cosmic Rays in Interplanetary Magnetic Fields	Reidel 85	
366	Townsend, L.	Tables of Nuclear Cross Sections for Galactic Cosmic Rays: Absorption	NASA-NTIS 85	QC485.9.G34T67
367	Truemper, J. et al	The Evolution of Galactic X-ray Binaries (NATO Workshop)	Kluwer 86	QB821.N36
368	Tucker, W. & Giaconni	The X-ray Universe	Harvard 87	
369	Tully, R. & Fisher, J.	Atlas of Nearby Galaxies	Cambridge U 87	QB857.T853
370	Tully, R. & Fisher, J.	Catalog of Nearby Galaxies (companion to atlas)	Cambridge U 87	
371	Turner, S.	Applied Geodesy: global positioning system; networks, accelerators, ...	Springer V 87	QB281.A77
372	Turnshek, Diane	An Atlas of Digital Spectra of Cool Stars	Western Res 85	QB843.C6A85
373	Turner, K.	NATO Adv. Workshop on Very High Energy Gamma Ray Astronomy	Kluwer 87	QB471.N38
374	U.S. Congress	Space Science: past, present, and future: report (Subcommittee on Sp. Sci.)	USGPO 86	QB498.2.U6U55
375	Ulmer, M.	Relativistic Astrophysics (Proc. 13th Texas Symposium)	World Sci 87	
376	Underhill A. et al	Origin of Nonradiative Heating/Momentum in Hot Stars (NASA Workshop)	NASA-NTIS 85	QB843.E2O75
377	United Nations	Education, Training, Research, and Fellowship Opportunities in Space Sci.	U. Nations 86	QB500.262.E38
378	Unruh, W.	The Early Universe (NATO Inst: Chem. Transport in Metasomatic Processes)	Kluwer 87	
379	Valtonen, M.	IAU Colloquium #96: The Few Body Problem	Kluwer 87	QB362.F47I58
380	Van De Kamp, Peter	Dark Companions of Stars: astrometric commentary on lower end of main seq	Reidel 86	QB807.V28
381	Van Woerden, H. et al	The Milky Way Galaxy	Kluwer 85	
382	Vardya, M. et al	IAU Symposium 129: Astrochemistry	Reidel 86	QB450.I58
383	Vega, H. J. de	Field Theory, Quantum Gravity, and Strings (Meudon Seminar)	Springer V 86	QC174.45.A1F54
384	Verschuur, G. et al	Galactic and Extragalactic Radio Astronomy	Springer-V 87	
385	Vetterling, W. et al	Numerical Recipes Example Book (Fortran, Pascal - 2 books + diskettes)	Cambridge U 86	
386	Vinereau, Nechit	Astronomical Principles of Meteorology	Vantage 87	
387	Viotti, R. & Vittone, A.	Physics of Formation of Fell Lines Outside LTE	Reidel 87	
388	Vorontsov-Veliaminov	Essays About the Universe	Mir 85	QB981.V8413
389	Vorontsov-Veliaminov	Extragalactic Astronomy	Harwood 87	QB857.V6713
390	Walborn, N. et al	International Ultraviolet Explorer Atlas of O-type Spectrum of 1200 to 1900A	NASA-NTIS 85	QB843.O12W35
391	Walker, Gordon	Astronomical Observations	Cambridge U 87	
392	Wall, Stephen et al	Conclusion of Viking Lander Imaging Investigation: picture catalog of data	NASA-NTIS 85	QB641.W24
393	Walter, H. U.	Fluid Sciences and Materials Science in Space	Springer-V 87	
394	Weedman, Daniel	Quasar Astronomy	Cambridge U 86	QB860.W44
395	Weinberg & Piran	Physics in Higher Dimensions (Proc. of Jerusalem 1985 School)	World Sci 86	
396	Welford, W.T.	Aberrations of Optical Systems	Hilger 86	QC372.2.D4W44

TECHNICAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
397	Wells, William G.	Spaceborne Gravity Gradiometers (Goddard Workshop)	NASA-NTIS 83	QB330.S64
398	Werner, A. et al	Synopsals of the Nomenclature of the Fixed Stars	IPS 86	
399	West, Richard M.	Reports on Astronomy: Transaction of the IAU Vol. 19, A.	Kluwer 85	
400	Wetherill, G. et al ed.	Annual Review of Earth & Planetary Sciences Vol. 13	Ann Rev 85	
401	Whelan, C. R.	Guide to Military Space Programs	Pasha 86	
402	Whitby, Max	Tomorrow's World: Space Technology	Parkwest 87	
403	White, Frank	The Overview Effect: Space Exploration and Human Evolution	Houghton-M 87	
404	Wilhelms, Don E.	The Geologic History of the Moon	USGPO 86	QB592.W5
405	Winkler, K.H. et al	NATO Workshop on Astrophysical Radiation Hydrodynamics	Kluwer 86	QB466.G38N38
406	Wolstencroft, R. et al	Laboratory and Observational Infrared Spectra of Interstellar Dust (W'shop)	Roy Obs Edin84	QB791.W67
407	Yanai, K. et al	Symposium on Antarctic Meteorites (10th-Nat. Institute of Polar Research)	NIPR 86	QB755.5.A6S96
408	Yuan, Chi	Selected Worlds of C. C. Lin Vol. 2 Astrophysics	World Sci 87	
409	Zeeuw, Tim de	Structure and Dynamics of Elliptical Galaxies (IAU Symp. 127)	Reidel 87	
410	Zeilik, M. and Gibson, D	Cool Stars, Stellar Systems, and the Sun: Proc. of 4th Cambridge Workshop	Springer-V 86	QB799.C36
411	Zensus, J. et al	Sperluminial Radio Sources (Big Bear Solar Observatory Workshop)	Cambridge U 87	QB475.A1S85
412	Zharkov, V. N.	The Interior Structure of the Earth & Planets: revised and expanded	Harwood 86	
413	Zirin, Harold	Astrophysics of the Sun	Cambridge U87	QB521.Z57

EDUCATIONAL LISTINGS 1985-1987

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2	(no author listed)	Astrophotographie II	Willmann-Bell87	
3	(no author listed)	Seasonal Star Charts and Luminous Star Finder with Halley's Comet	Hubbard Sci. Co.	QB65.S43
4	(no author listed)	Ulysses: A Voyage to the Sun	USGPO 86	
5	Abell, George et al	Exploration of the Universe (text, 5th ed.)	Saunders 87	QB45.A16
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9	Allen, J. and Martin, R.	Entering Space: An Astronaut's Odyssey	Stew T & C 85	
10	Almanac	Astronomical Almanac for the Year 1987	USGPO 86	
11	Almanac	Nautical Almanac for the Year 1987, 1988	USGPO 85, 86	
12	Arzumanian, Ashot	Envoy of the Stars: Academician Victor Ambartsumyan	Progrss Publ 87	QB36.A47A7913
13	Ashbrook, Joseph	The Astronomical Scrapbook: Skywatchers, Pioneers and Seekers	Cambridge U 85	
14	Asimov, Isaac	The Edge of Tomorrow	State Mut 85	
15	Asimov, L	Creations	State Mut 86	
16	As. Soc. Pacific	The Return of Halley's Comet	ASP 85	QB723.H2R48
17	Atkinson, J. et al	The Real Stuff: A History of NASA's Astronaut Recruitment Policy	Praeger 85	
18	Baird, John C.	The Inner Limits of Outer Space	Dartmouth 87	QB54.B34
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20	Batten, Alan Henry	Resolute & Undertaking Characters: the Lives of W. & O. Struve	Kluwer Acad 87	QB36.S75B38
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22	Baughter, Joseph F.	The Space-Age Solar System	Wiley 88	QB501.B38
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26	Bergmann, Peter G.	The Riddle of Gravitation	Scribner 87	QC173.55.B49
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29	Berry, Richard	Build Your Own Telescope	Scribner 85	QB88.B47
30	Berry, Richard	Discover the Stars	Harmony 87	QB63.B476
31	Bittleston, Adam	The Seven Planets	Floris 85	QB601.B58
32	Blattman, George	The Sun	Anthropoph 85	
33	Blumenberg, Hans	The Genesis of the Copernican World	MIT Pres 87	QB28.B5813
34	Bobrovnikof, Nicholas	Astronomy Before the Telescope	Pachart Pub 84	QB15.B63
35	Bos, K. & Proctor, W.	The Return of the Star of Bethlehem	Zondervan 85	
36	Boslough, John	Stephen Hawking's Universe	NY: Quill 85	QB981.B727
37	Bretagnon, Pierre	Planetary Programs and Tables from -4000 to +2800	Willmann-Bell86	QB603.M6B74
38	Briggs & Taylor	A Photographic Atlas of the Planets	Cambridge U 86	
39	Brit. Ast. Assoc. Staff	Guide to Observing the Moon	Enslow 86	
40	British Museum	Moon, Mars, and Meteorites	Cambridge U 86	
41	British Museum	The Age of the Earth	Cambridge U 86	
42	British Museum	The Story of the Earth	Cambridge U 86	

EDUCATIONAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
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44	Bullock, Tom	Astronomy: Second Contact (text)	Kendall H 87	
45	Burch, David	Nautical Almanac 1988: Yachtman's Edition	Paradise Cay86	
46	Burdett, G. et al	The Human Quest In Space (Science & Tech. Serles V. 65)	Univelt 87	
47	Burgess, Eric	Venus: an errant twin	Columbia U 85	
48	Burgess, Michael	Space Log: A Chronological Checklist of Manned Space Flight 1961-86	Borgo Pr 87	
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50	Bynum, W. et al	Dictionary of the History of Science	Princeton 85	
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61	Clark, David H.	The Cosmos from Space	Crown 87	QB44.2.C57
62	Clark, Douglas A.	Aerospace Historian: Cumulative Index by Author, Title, ...	MA-AH 85	
63	Clarke, Arthur	The Promise of Space	Berkley 85	
64	Cleere, Gail S.	A Magnificent of Conflagration	US GPO 85	QB723.H2C54
65	Cohen, Daniel	Carl Sagan: Superstar Scientist	Dodd Mead 87	QB36.S15C64
66	Cohen, Martin	In Darkness Born: the Story of Star Formation	Cambridge U 86	QB806.C64
67	Cooke, Donald	Life and Death of Stars	Crown 85	
68	Corliss, William R.	Stars, Galaxies, Cosmos: a Catalog of Astronomical Anomalies	Sourcebook 87	QB52.C689
69	Corliss, William R.	The Moon and the Planets: a Catalog of Astronomical Anomalies	Sourcebk Prj 85	QB581.C68
70	Corliss, William R.	The Sun and Solar System Debris: a Catalog of Astronomical Anomalies	Sourcebook 86	QB52.C69
71	Cornell and Carr, eds.	Infinite Vistas	Scribner 85	QB88.154
72	Couper, Heather	New Worlds: In Search of the Planets	Addison Wes 86	QB604.C68
73	Couper, Heather	The Universe	Random 85	
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EDUCATIONAL LISTINGS 1985-1987

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87	Deskins, David	Looking Back: Amateur Adventures with Halley's Comet	Intrinsic Pub 87	QB723.H2D47
88	DeVorkin, D.	The History of Modern Astronomy & Astrophysics	Garland 85	
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101	Durham & Purrington	Frame of the Universe	Columbia U 85	
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103	Ebbighausen, E. G.	Astronomy (text, 5th ed.)	1985	
104	Eberhart & Hynck	UFO's and the Extraterrestrial Contact Movement: a Biblography	Garland 86	
105	Edberg, Stephen J.	Observe Comets: the Assoc. of Lun. & Plan. Observers' Guide	Astr. League 85	QB721.E34
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111	Field, George B.	The Invisible Universe: Probing the Frontiers of Astrophysics	Vintage Bks 87	QB43.2.F54
112	Field, Judith Veronica	Kepler's Geometrical Cosmology	U Chicago 87	QB981.F47
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115	Fraknoi, Andrew	Interdisciplinary Approaches to Astronomy	ASP 85	
116	Fraknoi, Andrew	Unlverse In the Classroom: a Resource Gulde for Teaching Astronomy	Freeman 85	QB61.F73
117	Fraknoi, Andrew et al	Astronomy as a Hobby	ASP 86	
118	Friedlander, M.	Astronomy: From Stonehenge to Quasars	Prentice H 85	
119	Friedman, H.	Sun & Earth: A Scientific American Book	Freeman 87	
120	Gal-Or, B.	Cosmology, Physics and Philosophy: Incl. a new theory of aesthetics	Springer-V 87	
121	Gallant, Roy A.	National Geographic Picture Atlas of Our Unlverse	Natl Geogr 86	QB68.G34
122	Genet and Genet, eds.	Microcomputers In Astronomy II	Fairborn Obs 84	QB51.3.E43M53
123	Gibbins, Peter	Particles and Paradoxes: the Limits of Quantum Logic	Cambridge U 87	QC174.12.G52
124	Gibbons, G. W.	The Very Early Universe	Cambridge U 85	
125	Gibbons, John	International Cooperation & Competition In Civllian Space Activities	USGPO 85	
126	Gibilisco, Stan	Comets, Meteors & Asteroids: How They Affect Earth	TAB 85	

EDUCATIONAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
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128	Goldstein, B. R.	The Astronomy of Levi ben Gerson (1288-1344)	Springer-V 85	
129	Goldstein, Bernard	Theory and Observation in Ancient and Medieval Astronomy	Variorum 85	QB16.G65
130	Goodman, John C.	Space, Our Next Frontier	Natl Ctr Pol 85	
131	Gordon, Barry	Astrophotography	Willmann-Bell85	
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137	Gribbin, John R.	In Search of Schrodinger's Cat: the Startling World of Quantum Phys	Wildwood 84	QC173.98.G75x
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145	Hargrove, E.C., editor	Beyond Spaceship Earth: Environmental Ethics and the Solar System	Sierra Club 86	QB501.5.B49
146	Harpur, Brian	The Official Halley's Comet Book	Hodder & St 85	QB723.H2H37
147	Harrison, Edward R.	Darkness at Night: a Riddle of the Universe	Harvard U 87	QB28.H37
148	Harrison, Edward R.	Masks of the Universe	Collier 85	QB981.H324
149	Hartmann & Miller	Out of the Cradle: exploring the frontiers beyond earth	Workman 84	
150	Hartmann, William	Origins of the Moon	LP Inst 86	
151	Hartmann, William K.	Astronomy: The Cosmic Journey (text, 3rd ed.)	Wadsworth 87	QB45.H32
152	Hartung, E.	Astronomical Objects for Southern Telescopes: Amateur's Handbook	Cambridge 85	
153	Haynes, Robert	How We Get Pictures From Space	USGPO 86	
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160	Hey, Anthony J.G	The Quantum Universe	Cambridge U 86	QC174.12.H48
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162	Hoagland, Richard C.	The Monuments of Mars: a City on the Edge of Forever	N Atlantic 87	QB641.H63
163	Hocky, Thomas A.	The Book of the Moon: a Lunar Intro. to Astron, Geology, Space Phys.	Prentice Hall 86	QB581.H63
164	Hoff, Darrel et al	Activities in Astronomy, 2nd. ed.	Kendall H 84	
165	Hoffman, Jeffrey	Astronaut's Diary	Caliban 86	
166	Holdridge, L.	A Complete Cosmology	Vantage 86	
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EDUCATIONAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
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170	Hoyle, Fred	The Small World of Fred Hoyle: an autobiography	Joseph 86	QB36.H75A3
171	Hoyt, William Graves	Coon Mountain Controversies: Meteor Crater & Impact Theory Devel.	U Arizona 87	QB756.M4H69
172	Huls, Mary Ellen	Astronomical Observatory Architecture	Vance Biblio. 86	Z515.O27H84
173	Hunger, Hermann	Halley's Comet in History	Brit Mus. 85	QB723.H2H35
174	Hunt, G. and Moore, P.	Atlas of Uranus	Cambridge U 87	QB681.H86
175	Hunt, Garry E.	Atlas of Uranus	Cambridge U 87	QB681.H86
176	Huss, Glenn I.	The Second Huss Collection of Meteorites	Huss Public. 86	QB755.H87
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205	Lancaster Brown, Peter	Halley & His Comet	Sterling Pub Co	QB723.H2L36
206	Lancaster Brown, Peter	Halley's Comet & the Principia	Aries Press 86	QB723.H2L37
207	Lattimer, Dick	All We Did Was Floy to the Moon	Whisp Eagle 85	
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210	Levy, David H.	Observe Meteors: Assoc. of Lun. & Plan. Obs: Meteors Obs. Guide	Astr League 86	QB743.L48

EDUCATIONAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
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212	Lewis, J. and R.	A Space Resource: breaking the bonds of the earth	Columbia U 87	
213	Liller & Mayer	The Cambridge Astronomy Guide: An Intro. to Practical Astronomy	Cambridge U 85	
214	Lindberg, David C.	The Discourse of Light from the Middle Ages to the Enlightenment	UCLA 85	QC381.L56
215	Longair, M.S.	Allice and the Space Telescope	John Hopkins 86	QB500.268.L66
216	Lovell, Bernard	The Guide to Modern Astronomy	Cambridge U 87	QB43.2.L68
217	Lovell, Bernard	The Jodrell Bank Telescopes	Oxford U 85	
218	Lovell, Bernard	Voice of the Universe: Bullding the Jodrell Bank Telescope	Praeger 87	QB479.G72N86
219	Luis, Andy	Astronomy and Astronautics: an Enthuslast's Guide to Books & Perld.	Mansell 86	Z515.L87
220	Mackintosh, Allan, ed.	Advanced Telescope Making Techniques	Willmann-Bell86	QB88.A385
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229	McAleer, Neil	The Mlnd-Boggling Unlverse: a Journey Through Distant Space	Doubleday 87	QB44.2.M425
230	McAleer, Neil	The Omnl Space Almanac	1987	
231	McDonough, T.	Space: the next 25 years	Wiley 87	
232	McDonough, Thomas R.	The Search for Extrstrl Intelligence: Listening for Life In the Cosmos	Wiley 87	QB54.M527
233	McDougall, Walter	The Heavens and the Earth: a polttical history of the space age	Basic 86	
234	McGowen, T.	Album of Spacellght	Macmillan 87	
235	McSween, Harry Y.	Meteorltes and Their Parent Planets	Cambridge U 87	QB755.M465
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237	Meus, Jean	Astronomlca Formulæ for Calculators	Willmann-Bell85	QB51.3.E43M43
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239	Michaud, Michael	Reaching for the High Frontier: the Amerlcan Pro-Space Movement	Praeger 86	
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246	Moore, Patrick	The Sky at Nlght	W.W. Norton 85	QB44.2.M688
247	Moore, Patrick	Yearbook of Astronomy	Norton 1987	
248	Moore, Patrick	The Nlght Sky with Binoculars	Cambridge U 86	QB63.M6523
249	Moore, Patrick	The Return of Halley's Comet	P. Stephens 84	QB723.H2M66
250	Moore, Patrick, ed.	The Astronomy Encyclopedia	Crown 87	QB14.A88
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252	Morrison & Owen	The Planetary System	Addison Wesley	

EDUCATIONAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
253	Mosley & Fraknoi	Computer Software for Astronomy	ASP 86	
254	Motz, Lloyd	Constellations	Doubleday 87	QB63.M67
255	Muirden, James	Astronomyh with a Small Telescope	P-H 85	
256	Muirden, James	How to Use an Astronomical Telescope	S&S 85	
257	Munitz, Milton	Cosmoc Understanding: Philos. & Science of the Unlverse	Princeton U 86	
258	Murdin, Lesley	Under Newton's Shadow: Astronomical Practices In the 17th C.	A. Hilger 85	QB33.G7M87
259	Murdin, Paul et al	Catalogue of the Universe	Cambridge U 86	
260	NASA	Planetary Exploration Through Year 2000: A Core Program	USGPO 86	
261	NASA	Planetary Exploration Through Year 2000: An Augmented Program	USGPO 86	
262	Needham, Joseph	Heavenly Clockwork: the Great Astronomical Clocks of Medieval China	Cambridge U 86	QB107.N32
263	Needham, Joseph	The Hall of Heavenly Records: Korean Instruments and Clocks	Cambridge U 86	QB85.8.H35
264	Neher, André	Jewish Thought & the Scientific Revolution of the Sixteenth Century	Oxford U 86	QB36.G36N4413
265	Newton, Jack	The Guide to Amateur Astronomy	Cambridge U 87	QB64.N49
266	Oberg, J. and A.	Pioneering Space; living on the next frontier	McGraw-H 87	
267	Olsen, Roberta	Fire and Ice: A History of Comets in Art	Walker 85	
268	Osterbrock, Don	James Keeler: Pioneer Astrophysicist & Early Dev. of Am. Astrophysics	Cambridge U 85	
269	Ottewell, Guy	Astronomical Calendar	Astr Wkshp	
270	Parish, Leonard	Common Sense and Humour in Physics	Cortney Pub 83	QC173.55.P367
271	Parker, Barry R.	Einstein's Dream: the Search for Unlved Theory of the Universe	Plenum Pr 86	QC173.7.P36
272	Pasachoff, Jay	A Briel View of Astronomy (text)	Saunders 86	
273	Pasachoff, Jay	Astronomy: From Earth to the Universe (text, 3rd ed.)	Saunders 87	
274	Pasachoff, Jay M.	Astronomy, from the Earth to the Universe (text, 3rd. ed.)	Saunders 86	QB45.P287
275	Peltier, Leslie C.	Leslie Peltier's Guide to the Stars	AstroMedia 86	QB63.P43
276	Pepperday, Michael	Update for the Nautical Almanac	Meridan Surv86	QB8.A83P46
277	Percy, John R., ed.	The Study of Variable Stars Using Small Telescopes	Cambridge U 86	QB835.S84
278	Peterson, Richard B.	The Wonderful Apparillon: the Story of Halley's Comet	Lighthouse 85	QB723.H2P48
279	Petit, Michel	Variable Stars	Wiley 86	QB8835.P4313
280	Pigeon, Gladys	Life on Planet to Planet	Todd & H 87	
281	Pingree, David	The Astronomical Works of Gregory Chlonlades	J.C. Gieben 86	QB11.P56
282	Plant, Malcolm	Dictionary of Space	Longman 86	QB497.P57
283	Pogue, William R.	Astronaut Primer	L5 Soc 86	
284	Powers, Robert M.	Mars: Our Future on the Red Planet	Houghton M 86	QB641.P73
285	Preiss, Byron, ed.	The Universe	Bantam 87	QB981.U55
286	Preston, Richard	First Light: The Search for the Edge of the Universe	Atlantic 87	
287	Pvenson, Lewis	The Young Einsteln: the advent of relativity	Hilger 85	
288	Quarmby, Roy	Halley's Comet In South Afrlca, October 1985-May 1986	Delta Books 85	QB723.H2Q83
289	Raup, David M.	The Nemesis Affair: the Death of Dinosaurs & the Life of Science	Norton 86	QB631.R38
290	Raymo, Chet	The Soul of the Night: An Astronomical Pilgrlmmage	Prent H 85	
291	Redondi, Pietro	Gallleo: Heretlc	Princeton 87	
292	Regis, E. ed.	Extraterrestrials: science and allen Intelligence	Cambridge U 85	
293	Reidy, David	The Southern Sky: a Gulde to Practical Astronomy	Allen & Unw 87	QB63.R38
294	Renner, Eric	Billography of Pinhole Optics In Scl and Art from the 5th Cen. B.C.	Pinhole Res 85	Z7144.06R46

EDUCATIONAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
295	Ridpath & Tiirion	Universe Guide to Stars and Planets	Universe 85	
296	Ridpath, I. & Tirion, W.	The Monthly Sky Guide	Cambridge U 87	
297	Ridpath, Ian	A Comet called Halley	Cambridge U 86	QB723.H2R53
298	Ridpath, Ian	The Monthly Sky Guide	Cambridge U 87	QB63.R525
299	Robbins, R. & Byrd, G.	Student Study Guide to Accompany Discovering Astronomy, 2nd ed.	Wiley 87	
300	Robbins, R. & Fraknoi	The Universe at Your Fingertips: Bibliography of Astr Educ Materials	ASP 85	
301	Robbins, R. & Jefferys	Discovering Astronomy (text, 2nd ed.)	Wiley 87	QB43.2.J43
302	Robbins, R. & Jefferys	Instrument Package for Discovering Astronomy 2nd. ed.	Wiley 87	
303	Roberts, Monte J.	Capture a Comet: an Amateur Photographers Guide to Halley's Comet	Aurorae Publ 85	QB723.H2R63
304	Ronan, Colin, ed.	Amateur Astronomy: a Comprehensive and Practical Survey	Hamiyn Publ. 84	QB45.A49
305	Ronan, Colin, ed.	The Shorter Science and Civilization in China, Vol. 3	Cambridge u 86	
306	Rosen, Edward	Three Imperial Mathematicians: Kepler Trapped Bet Tycho & Ursus	Abaris Books 86	QB35.R67
307	Rossotti, Hazel	Why the World Isn't Grey	Princeton 85	
308	Roy, A.E.	Astronomy, Principles and Practice (text, 3rd. ed.)	A. Hilger 87	QB43.2.R68
309	Russell, Bertrand	The ABC of Relativity	New Am. Lib. 85	QC173.55.R85
310	Saiko, John	Study Materials for Project Universe	Kendall H 86	
311	Sagan, Carl	Comet	Random 85	
312	Sagan, Carl	Cosmos	Ballantine 85	
313	Sanborn, Laura	Bright Star Guide to the Heavens of the Northern Latitudes	Search Pub 85	
314	Saunders, Harold N.	All the Astrolabes	Senecio Pub 84	QB85.S278
315	Saward, Dudley	Bernard Lovell: a Biography	Salem Hse 86	
316	Schocken, Wolfgang	The Calendar of the Mayas: Broken Cogwheels of Eternity	Schocken 86	
317	Schwinger, Julian	Einstein's Legacy	Scient. Am 85	QC173.59.S65S39
318	Sears, Derek W.G	Thunderstones: Essay on Meteorites, particularly of Arkansas	U Arkansas 86	QB755.5.U6S43
319	Seeds, Michael	Exploring the Universe (text, 2nd ed.)	Wadsworth 85	
320	Seeds, Michael A.	Foundations of Astronomy (text)	Wadsworth 86	QB43.2.S43
321	Seeds, Michael A.	Horizons, Exploring the Universe (text)	Wadsworth 87	QB45.S44
322	Seiss, Joseph	The Gospel in the Stars	Kriegel 86	
323	Sekido and Elliot	Early History of Cosmic Ray Studies: Reminiscences with Photos	Kluwer 85	
324	Sen & Shukla, eds.	History of Astronomy in India	Indian Sci Ac 85	QB18.H57
325	Shanks, Thomas G.	The American Atlas: US Latitudes & Long., Time Changes & Zones	ACS Public. 84	QB205.U37
326	Shanks, Thomas G.	The International Atlas: World Latitudes, Longitudes, & Time Changes	ACS 85	QB205.U373
327	Shatalov, Vladimir	USSR-India: Path to the Stars	Vikas India 86	
328	Shields, John Potter	The Amateur Radio Astronomer's Handbook	Crown Publ. 86	QB477.S45
329	Slocum, Jonah	Celestial Navigation, 3rd. ed.	Basic Sci Pr 85	
330	Smith, A. Mark	Descartes's Theory of Light & Refraction: A Discourse on Method	Am Phil Soc 87	QC426.S65
331	Smyth, W.H.	The Bedford Catalogue: from the Cycle of Celestial Objects	Willmann-Bell86	QB63.S64
332	Snow, Theodore	The Dynamic Universe: An Intro to Astronomy (text, 2nd ed.)	West 85	
333	Snow, Theodore P.	Essentials of Dynamic Universe: Introd. to Astronomy (text 2 ed.)	West Pub 87	QB43.2.S663
334	Sobel, Michael	Light	U Chicago Pr 87	QC355.2.S63
335	Solomon, Joan	Space, Cosmology and Fiction	Basil Black 86	
336	Spielberg & Anderson	Seven Ideas that Shook the Universe	Wiley 85	

EDUCATIONAL LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
337	Staal, Julius D.W.	Stars of Jade: Astronomy & Star Lore of Ancient Imperial China	Writ Press 84	QB17.S77
338	Stachel, J. et al	Collected Papers of Albert Einstein, Vol. 1: Early Years 1879-1902	Princeton 87	
339	Stephenson, Bruce	Kepler's Physical Astronomy	Springer-V 87	QB43.2.S74
340	Storm, Robert G.	Mercury: the Elusive Planet	Cambridge U 87	QB611.S77
341	Suggs, William	Cosmic Frontiers: An Introductory Course In Astronomy (text)	Kendall H 85	
342	Swarup, G. ed.	History of Oriental Astronomy: Proceedings of an International Ast.	Cambridge U 87	QB18.H58
343	Swimme, Brian	The Universe Is a Green Dragon: a cosmic creation story	Bear 85	QB981.S89
344	Szamosi, Geza	The Invention of Time and Space	McGraw-Hill 86	QC173.59.S65S99
345	Talbot, Michael	Beyond the Quantum	Collier Macm 86	QC174.12.T35
346	Taylor, H. Dennis	The Adjustment and Testling of Telescope Objectives	A. Hilger 83	QB88.T3
347	Time-Life Staff	Space	Time Life 87	
348	Tobin, Walker	Mariner's Pocket Companion	Nav Inst Pr 86	
349	Toghill, Jeff	Celestial Navigation	Norton 87	
350	Trento, Joseph	Prescription for Disaster: from the Glory of Apollo to Betrayal	Crown 87	
351	Tucker, Wallace	Cosmic Inquiries; Modern Telescopes and Their Makers	Harvard U 86	QB88.T83
352	United Nations	Report of the Committee on the Peaceful Uses of Outer Space	UN 85	
353	Ventre, John E. et al	A Brief History of the Cincinnati Astronomical Society	Cin. Ast. Soc 85	QB1.V37
354	Verschuur, Gerrit L.	The Invisible Universe-Revealed: the Story of Radio Astronomy	Springer-Verlag	QB475.V47
355	Wachtel, C.	The Corlolls Effect	Hanging L 85	
356	Wahlin, Lars	The Collapsing Universe	Colutron 85	
357	Walker, Gordon A.H.	Astronomical Observations: an Optical Perspective	Cambridge U 86	QB86.W35
358	Wallis, Brad D.	A Manual of Advanced Celestial Photography	Cambridge U 86	QB121.W25
359	Warner, Brian	Maclear & Herschel: Letters & Diaries at the Cape of Good Hope	A. Balkema 84	QB36.M27A4
360	Wasson, John T.	Meteorites: Their Record of Early Solar System History	Freeman 85	
361	Webb Society	Deep-Sky Observer's Handbook Vol. 1 Double Stars	Enslow 86	QB64.W36
362	Webb Society	Deep-Sky Observer's Handbook Vol. 2 Galaxies	Enslow 86	QB64.W36
363	Webb Society	Deep-Sky Observer's Handbook Vol. 6 Anonymous Galaxies	Enslow 86	
364	Webb Society	Deep-Sky Observer's Handbook Vol. 7 Southern Sky	Enslow 86	
365	Whipple, Fred	The Mystery of Comets	85	
366	White, Richard	Canadian Meteorites	Alberta Mus 84	QB755.5.C2W47
367	Whitney, Marvin E.	The Ship's Chronometer	Am Watchm 85	QB107.W47
368	Will, Clifford M.	Was Einsteln Right?	Oxford U 86	QC173.6.W55
369	Wilson, Andrew	Solar System Log	Jane's 87	
370	Wright, Helen	James Lick's Monument: the buildding of Lick Observatory	Cambridge U 87	
371	Wright, Helen	James Lick's Monument: the Saga of Capt. Richard Floyd and the	Cambridge U 86	QB82.U62M689
372	York, Michael	The Roman Festival Calendar of Numa Pompilius	P Lang 86	
373	Young, Louise	The Unfinished Universe	S & S 86	
374	Zee, A.	Fearful Symmetry: the Search for Beauty in Modern Physics	Macmillan 86	QC174.17.S9Z4
375	Zelik, M. & Smith, E.	Introductory Astronomy and Astrophysics (text, upper divlsion)	Saunders 86	QB45.Z43
376	Zelik, Michael	Astronomy, the Evolving Universe (text, 5th ed.)	Wiley 87	QB45.Z428
377	Zim, Herbert Spencer	Stars: a Guide to the Constellations, Sun, Moon, Planets & Other	Golden Press 85	QB64.Z5

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	Author	Title	Publisher	Call Number
1	(no author listed)	Checkerboard Press Astronomy Encyclopedia	Checkerboard 87	QB46.R333
2	(no author listed)	Let's Discover Outer Space	Raintree 86	AG6.L43
3	(no author listed)	The Marshall Cavendish Book of Space	Cavendish Corp 86	QB46.M37
4	(no author listed)	The Four Seasons	Outlet 85	
5	Allington, Richard	Spring, Autumn, Summer, Fall (4 books)	Raintree 85	
6	Anderson, L.W.	Light and Color	Raintree Child 87	QC360.A52
7	Ardley, Neil	Sun and Light (experiments)	F. Watts 83	QC365.A73
8	Ardley, Neil	The Universe	Rourke Ent 85	QB46.A68
9	Arvetis, Chris	What Is the Moon?	Macmillan 87	
10	Arvetis, Chris	Why Is It Dark?	Rand McNally 84	QB633.A78
11	Asimov, Isaac	How Did We Find Out About Sunshine?	Walker 87	QB521.5.A83
12	Asimov, Isaac	How Did We Find Out About the Speed of Light?	Walker 86	QC407.A85
13	Baker, David	Believe It or Not Space Facts	Rourke 87	
14	Baker, David	Experiments In Space	Rourke Ent 86	QB500.264.B35
15	Baker, David	Exploring Mars	Rourke Ent 87	QB641.B227
16	Baker, David	Eyes In the Sky	Rourke Ent 86	QB81.B35
17	Baker, David	Factories In Space	Rourke 87	
18	Baker, David	Family of the Sun	Rourke Ent 86	QB501.3.B35
19	Baker, David	Journey to the Outer Planets	Rourke Ent 87	QB602.B35
20	Bank Street	Let's Explore the Seasons	Barron 86	
21	Bargar, Sherie L.	Explore the World of Space	Rourke Ent 85	QB46.B29
22	Barrett, N. S.	Planets	F. Watts 86	QB602.B37
23	Barrett, N. S.	Sun and Stars	F. Watts 85	QB521.5.B37
24	Barrett, N. S.	The Moon	F. Watts 85	QB582.B37
25	Barrett, N. S.	Night Sky	F. Watts 86	QB467.B37
26	Bell, R. and R.	My First Book About Space: (developed with NASA)	Messner 85	
27	Bell, Robert A.	The Big Little Golden Book of Planets	Western Pub 87	QB602.B4
28	Berger, Melvin	Atoms, Molecules, and Quarks	Putnam 86	QC173.16.B47
29	Berger, Melvin	Star Gazing, Comet Tracking and Sky Mapping	Putnam 85	
30	Billings, Charlene	Christa McAuliffe	Enslow 86	
31	Brandt, Keith	Planets and the Solar System	Troll 85	
32	Branley, Franklyn	Gravity Is a Mystery	Crowell 86	QC178.B66
33	Branley, Franklyn	Mysteries of Life on Earth and Beyond	Dutton 87	QB54.B696
34	Branley, Franklyn	Mysteries of Outer Space	Lodestar 85	
35	Branley, Franklyn	Mysteries of the Planets	Dutton 87	QB602.B718
36	Branley, Franklyn	Planets In Our Solar System	Crowell 87	QB602.B73
37	Branley, Franklyn	Star Guide	Crowell 86	QB801.7.B74
38	Branley, Franklyn	Sunshine Makes the Seasons	Crowell Jr 85	
39	Branley, Franklyn	The Moon Seems to Change	Harper & Row 87	QB582.B72
40	Branley, Franklyn	What the Moon Is Like	Crowell 86	QB582.B73
41	Branley, Franklyn	What the Moon Is Like	Harper & Row 86	QB582.B73
42	Branley, Franklyn	Journey Into a Black Hole	Crowell 86	QB843.B55B73

JUVENILE LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
4 3	Branley, Franklyn	Mysterles of the Satellites	Lodestar 86	QB401.5.B73
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4 5	Breiter, Herta S.	Time and Clocks	Raintree Child 87	QB209.5.B73
4 6	Briggs, Carole	Women In Space: reaching the last frontier	Lerner 87	
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4 9	Ciupik, Larry A.	The Universe	Raintree Child 87	QB46.C53
5 0	Couper & Henbest	Galaxles and Quasars	Watts 87	
5 1	Couper & Henbest	The Moon	Watts 87	
5 2	Couper, Heather	Comets and Meteors	Watts 85	
5 3	Couper, Heather	Space Trip!	Stevens 86	
5 4	Couper, Heather	Telescopes and Observatorles	F. Watts 87	QB88.C78
5 5	Couper, Heather	The Sun	F. Watts 86	QB521.5C68
5 6	Darling, David	Other Worlds: Is There Life Out There?	Dillon 85	
5 7	Darling, David	The New Astronomy: An Everchanging Unlverse	Dillon 85	
5 8	Darling, David	The Universe: Past, Present and Future	Dillon 85	
5 9	Davis, Nancy et al	Fall and September	DaNa 86	
6 0	DeWitt, Sandy	The Bunnies' Book of Seasons	Platt& Munk 87	QB631.D48
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6 2	Edmonds, Jane	Time!	G. Stevens 85	QB209.5.E36
6 3	Electric Company	Seasons	Crown 85	
6 4	Fox, Mary	Women Astronauts: aboard the Shuttle	Messner 87	
6 5	Fradin, Dennis	Halley's Comet	Childrens Pr 85	QB723.H2F7
6 6	Fradin, Dennis	Radiation	Children's Pr 87	QC475.25.F73
6 7	Fradin, Dennis	Space Telescope	Children's Pr 87	QB500.268.F73
6 8	Fradin, Dennis	The Search for Extraterrestrial Intelligence	Childrens Pr 87	QB54.F88
6 9	Frazier, K.	Solar Systems	Silver 85	
7 0	Furniss, Tim	Let's Look at Outer Space	Bookwright 87	
7 1	Furniss, Tim	Our Future In Space	Watts 86	
7 2	Furniss, Tim	Space	Watts 85	
7 3	Gallant, Roy	Private Lives of the Stars	Macmillan 86	QB8017.G35
7 4	Gallant, Roy	The Macmillan Book of Astronomy	Macmillan 86	QB46.G325
7 5	Girard, Linda W.	Earth, Sea, and Sky: the work of Edmond Halley	Whitman 85	QB36.H25G57
7 6	Gleiter, Jan	Tell the Time	Raintree 87	AB209.5.G54
7 7	Goennel, Heide	Seasons	Little 86	
7 8	Green, Suzanne	Seasons	Doubleday 87	QB631.G73
7 9	Haines, Gail Kay	Which Way Is Up?	Atheneum 87	QC178.H128
8 0	Hamer, Martyn	Comets	F. Watts 84	QB721.5.H36
8 1	Highland, Harold J.	The How and Why Wonder Book of Light and Color	J.G. Ferguson 87	Q163.S467
8 2	Holland, Margaret	Ticktock Around the Clock	Willowisp Pr 87	QB209.H58
8 3	Irvine, Mat	The ScIENCE of the Cosmos	Silver Burdett 86	QB46.I717
8 4	Irwin, Nellie	And So It Is Seven: A Tribute to the 7 Challenger Astronauts	Dorrance 87	

JUVENILE LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
8 5	Jackson, Kim	The Planets	Troll 85	
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8 7	Jay Michael	Planets	Watts 87	
8 8	Jespersion, James	From Quarks to Quasars: a tour of the universe	Atheneum 87	QB983.J47
8 9	Joels, Kerry	The Official Young Astronaut Handbook	Bantam 87	
9 0	Kandoian, Ellen	Under the Sun	Dodd-Mead 87	QB521.5.K36
9 1	Kelch, Joseph W.	Small Worlds: 60 Moons of the Solar System	Prentice-Hall 87	QB401.5K45
9 2	Kelsey, L. and Hoff, D.	Recent Revolutions In Astronomy	F. Watts 87	QB46.K37
9 3	Kerrod, Robin	Changing Things	Burdett 87	QC173.16.K47
9 4	Lambert, David	The Solar System	Bookwright 84	QB501.3.L354
9 5	Lampton, Christopher	Astronomy	F. Watts 87	QB46.L28
9 6	Lampton, Christopher	The Space Telescope	F. Watts 87	QB500.268.L36
9 7	Lauber, Patricia	Journey to the Planets	Crown 87	QB602.L258
9 8	Lord, Suzanne	A Day In Space	Scholastic 86	
9 9	Lucas, Ernest	Our World: How? What? When? Why?	Lion Pub 86	QB631.L78
1 0 0	Lyon, Charlene	The Tale of Halley's Comet: an Educational Coloring Book	Niota 85	
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1 0 6	Mayall, R. N. et al	Sky Observer's Guide (Golden Guide Series)	Western P 85	
1 0 7	McGowen, Tom	Album of Astronomy	Checkerboard 87	QB46.M2
1 0 8	McKay, D. and Smith, B.	Space Science (Ideas and Instructions for Projects)	F. Watts 86	QB500.264.M36
1 0 9	Moskin, Marietta	Sky Dragons & Flaming Swords: Story of Eclipses, Comets,...	Walker 85	
1 1 0	Muirden, James	About Stars and Planets	Warwick 86	QB46.M947
1 1 1	Osband, Gillian	Planet Earth: an exploration in three dimensions	Putnam 87	QB631.083
1 1 2	Parker, Steve	Marshall Cavendish Science Project Book of Light	Cavendish Corp 86	QC360.P37
1 1 3	Pasachoff, Jay M.	Peterson First Guide to Astronomy	Houghton Miffl 86	QB46.P376
1 1 4	Penn, Linda	Young Scientist Explore: The Sun, Moon, and Stars	Good Apple 85	
1 1 5	Petit, Jean-Pierre	Big Bang (adventures of Archibald Higgins)	W. Kaufman 85	QB991.B54P4813
1 1 6	Petit, Jean-Pierre	Everything Is Relative (adventures of Archibald Higgins)	W. Kaufman 85	QC173.575.P4713
1 1 7	Petit, Jean-Pierre	The Black Hole (the adventures of Archibald Higgins)	W. Kaufman 85	QC173.59.S65P4613
1 1 8	Petty, Kate	Comets	F. Watts 85	QB721.5.P48
1 1 9	Petty, Kate	The Planets	F. Watts 84	QB602.P47
1 2 0	Petty, Kate	The Sun	F. Watts 85	QB521.5.P48
1 2 1	Round, Graham	What If I Were an Astronaut?	Barron 87	
1 2 2	Rutland, Jonathan	The Planets	Random House 87	QB602.R87
1 2 3	Sabin, Louis	Space Exploration and Travel	Troll 85	
1 2 4	Santrey, Laurence	Moon	Troll 85	
1 2 5	Schatz & Osawa	The Return of the Comet	Pacific Sc Ctr 85	
1 2 6	Schwerin, Doris	The Sun Book (Includes cassette)	Caedmon 86	QB521.5.S38

JUVENILE LISTINGS 1985-1987

	Author	Title	Publisher	Call Number
127	Simon, Seymour	Mars	Morrow 87	QB641.S494
128	Simon, Seymour	Stars	Morrow 86	QB801.7.S56
129	Simon, Seymour	The Sun	Morrow 86	QB521.5.S49
130	Simon, Seymour	Uranus	Morrow 87	QB681.S56
131	Sipiera, Paul	I Can Be An Astronomer	Childrens Pr 86	QB51.5.S57
132	Spizzirri, Linda	Comets: An Educational Coloring Book	Spizzirri 86	
133	Stern, Alan	The U. S. Space Program after Challenger	Watts 87	
134	Sutton, Felix	The How and Why Wonder Book of the Moon	J.G. Ferguson 87	Q163.S467
135	Thigpen, Thomas	Stories In the Sky: (discovering Bible pictures in constellations)	Chariot 86	QB801.7.T48
136	Thomson, Ruth	The Four Seasons!	G. Stevens 85	QB631.T46
137	Vogt, Gregory	Halley's Comet: what we've learned	F. Watts 87	QB723.H2V64
138	Vogt, Gregory	Space Walking	Watts 87	
139	Walz-Chojnacki, Greg	Comet! the story behind Halley's comet	AstroMedia 85	QB723.H2W35
140	Wandelmaier, Roy	Stars	Troll 85	
141	West, Robin	Far Out: How to Create Your Own Star World	Carolrhoda 87	
142	Whyman, Kathryn	Solar System	Gloucester 87	QB501.3.W47
143	Wilkin, Fred	Matter	Childrens Pr 86	QC173.36.W55
144	Williams, Geoffrey	Adventures In the Solar System: Planetron and Me	Price/Stern/S 86	QB46.W53
145	Winthrop, Elizabeth	My First Book of the Planets	Western Pub 85	QB602.W56
146	Wright, Pearce	The Space Race	Watts 87	
147	Zim, Herbert	Stars (Golden Gulde Series)	Western P 85	