Descriptive Summary

Creator: Lingenfelter, Richard E.
Title: Richard Lingenfelter Papers,
Date (inclusive): 1980 - 1999
Extent: 17.53 linear feet(44 archives boxes and one oversize folder.)

Abstract: Papers of Richard E. Lingenfelter, research astrophysicist and UCSD physics lecturer. The collection documents his years at UCSD (1979-1999) as a member of the Center for Astrophysics and Space Sciences. Lingenfelter worked in the areas of solar high energy emissions, gamma-ray bursts and supernovas (especially SN 1987a). He also served on such committees as NASA's Gamma-ray Program Working Group and the National Research Council's Astronomy Assessment Panel. The collection is rich in Lingenfelter's research and writings, including research materials, notes, correspondence, drafts, and final versions of many of his papers. Research proposals developed by Lingenfelter document experiments leading to his theoretical work in gamma-rays, and subject files record his areas of research interest. Correspondence documents his work refereeing for journals and consulting for scientific organizations. The conferences series chronicles Lingenfelter's participation in the planning of the 19th Annual International Cosmic Ray Conference in 1985. The collection is organized in nine series: 1) BIOGRAPHICAL MATERIALS, 2) WRITINGS, 3) PROPOSALS, 4) COMMITTEES, 5) RESEARCH PROJECTS, 6) REFEREE REPORTS AND CONSULTING, 7) CONFERENCES, 8) SUBJECT FILES, and 9) ORIGINALS OF PRESERVATION PHOTOCOPIES.

La Jolla, California 92093-0175
Collection number: MSS 0425
Language of Material: Collection materials in English
Access
Collection is open for research.
Acquisition Information
Not Available
Preferred Citation
Richard Lingenfelter Papers, MSS 0425. Mandeville Special Collections Library, UCSD.
Publication Rights
Publication rights are held by the creator of the collection.
Biography
Richard E. Lingenfelter was born on April 5, 1934, in Farmington, New Mexico. He received his B.A. in physics from UCLA in 1956 and was a Fulbright Research Scholar at the TATA Institute for Fundamental Research in 1968-69. He held research positions at Lawrence Radiation Laboratory (1957-1962) and at UCLA's Institute of Geophysics and Planetary Physics (1969-1979). Lingenfelter took the post of research physicist, theoretician and senior lecturer at UCSD's Center for Astrophysics and Space Sciences (CASS) in 1979.

At CASS, Lingenfelter has worked with the Solar Physics Group and the High Energy Astronomy Group. His areas of research include cosmic gamma-rays, gamma-ray bursts and supernovas (especially SN 1987a). Lingenfelter's major research proposals and projects include Solar Flare Gamma Ray and Neutron Studies and Gamma-rays from Astrophysical Sources. Lingenfelter has also been involved with such NASA missions as the Gamma-Ray Observatory, the Nuclear Astrophysics Explorer, the Solar Maximum Mission, and the High Energy Astrophysical Observatory 1.

Lingenfelter served as chair of the NASA Gamma-ray Program Working Group (1986-1995), and participated on the NASA Gamma-ray Observatory User's Committee (1986-1993), among others. He has been a consultant for NASA as well as for the National Science Foundation, the California Space Institute and the Lunar and Planetary Institute. The ASTROPHYSICAL JOURNAL, THE PHYSICAL REVIEW, and JOURNAL OF GEOPHYSICAL RESEARCH are among the many journals for which he has reviewed manuscripts. He is the author of over 200 scientific articles, many published in these same journals. Lingenfelter has also published several articles and books in the field of western American history.

Institutions at which Lingenfelter instructed undergraduate students in physics, earth science and history include UCLA; TATA Institute of Fundamental Research; the University of Nanjing, China; the International Summer School on Particles and Fields in Space at Balatonfured, Hungary; and, UCSD.

Scope and Content of Collection
The papers of Richard E. Lingenfelter document his professional life as a research astrophysicist, including his writings in the fields of x-ray and gamma-ray emissions and the properties of solar flares. The collection comprises research proposals,
committee meeting minutes, conference materials, and subject files containing articles and notes on topic including supernovas, gamma-ray bursts, meteorites, and high energy astronomy generally.

The collection is organized in nine series: 1) BIOGRAPHICAL MATERIALS, 2) WRITINGS, 3) PROPOSALS, 4) COMMITTEES, 5) RESEARCH PROJECTS, 6) REFEREE REPORTS AND CONSULTING, 7) CONFERENCES, 8) SUBJECT FILES, and 9) ORIGINALS OF PRESERVATION PHOTOCOPIES.

SERIES 1: BIOGRAPHICAL MATERIALS

The BIOGRAPHICAL MATERIALS series consists of Lingenfelter's curriculum vitae and articles mentioning Lingenfelter or his research.

SERIES 2: WRITINGS

The WRITINGS series is arranged in two subseries: A) Presentations and B) Journal Articles and Papers. Both series are arranged alphabetically by title of the work. The Presentations subseries includes talks, speeches and lectures, comprised mainly of drafts and viewgraphs. The Journal Articles and Papers subseries includes primarily versions of published works and consists of drafts, notes and research materials as well as reprints. The works in both subseries range over such topics as solar flares, annihilation radiation, x-rays and gamma-rays, cosmic rays, neutron stars, and supernovae.

SERIES 3: PROPOSALS

The PROPOSALS series, arranged alphabetically by title of proposal, documents the development process of various projects and contains drafts, notes and research materials, as well as final copies of proposals. Projects of note include "Theoretical Studies in Gamma-ray Astrophysics" and "Solar Flare Gamma-ray and Neutron Studies."

SERIES 4: COMMITTEES

The COMMITTEES series is arranged alphabetically by committee name and contains primarily meeting minutes. Notable committees include NASA's Gamma-ray Project Working Group, the Gamma-ray Observatory User's Committee and the National Research Council's Astronomy Assessment Panel. The NRC Astronomy Assessment Panel researched and reported on the state of the astronomy profession and summarized the demographics of degrees awarded, employment and productive writing, and research patterns in astronomy and astrophysics in the late 20th century.

SERIES 5: RESEARCH PROJECTS

The RESEARCH PROJECTS series is organized in two subseries: A) Nuclear Astrophysics Explorer and B) Gamma-Ray Observatory. The Nuclear Astrophysics Explorer (NAE), planned but never launched, evolved into the International Gamma-Ray Astrophysics Laboratory (INTEGRAL). This subseries contains notes, research materials, meeting minutes, and project plans. The Gamma-Ray Observatory (GRO) subseries contains notes, research, meeting minutes, project plans, reports, and data obtained from the mission. Proposals for these projects are located in Series 3.

SERIES 6: REFEREE REPORTS AND CONSULTING

The REFEREE REPORTS AND CONSULTING series, consisting of correspondence regarding Lingenfelter's duties as a referee and consultant, is arranged in two subseries: A) Consulting and B) Reviewing and Refereeing. Both series are ordered alphabetically by journal title or firm for which consulting was done. Lingenfelter refereed for the ASTROPHYSICAL JOURNAL, PHYSICAL REVIEW, and the JOURNAL OF GEOPHYSICAL RESEARCH, among others. He did consulting work for such organizations as the California Space Institute, NASA and Universities Space Research Association.

SERIES 7: CONFERENCES

The CONFERENCES series documents conferences in which Lingenfelter played a significant role in planning and/or presenting new research. Conferences of note include the Gamma-ray Transients Workshop sponsored by the American Institute of Physics (1981-1982), the Santa Cruz Summer Workshop in Astronomy (1983), the 22nd annual meeting of NASA's Committee on Space Research (COSPAR) (1979), and the 19th Annual International Cosmic-ray Conference (1985) held in La Jolla. This series is arranged alphabetically by sponsoring agency.

SERIES 8: SUBJECT FILES

The SUBJECT FILES series is arranged alphabetically and includes notes, data, charts, reprints, and occasional correspondence on such topics as gamma-ray bursts, high energy solar emissions, supernovas, and meteorites.

SERIES 9: ORIGINALS OF PRESERVATION PHOTOCOPIES

This series contains originals too fragile or acidic to be kept with the rest of the collection. All of these materials have been photocopied and the photocopies are placed in their appropriate series.

Indexing Terms

The following terms have been used to index the description of this collection in the library’s online public access catalog.

Subjects

Lingenfelter, Richard E. -- Archives
University of California, San Diego -- Faculty -- History
University of California, San Diego. -- Center for Astrophysics and Space Sciences
Compton Observatory
Solar Maximum Mission (Project)
Tata Institute of Fundamental Research
United States. -- National Aeronautics and Space Administration
National Research Council (U.S.). -- Astronomy Survey Committee
CASS High Energy Astronomy Group
Astrophysicists -- United States -- Biography
Astrophysics
Astronomy
High Energy Astronomy Observatories
Gamma rays
Gamma Ray bursts
Supernovae

BIOGRAPHICAL MATERIALS

box 1, folder 1  Articles that mention Lingenfelter's research 1969 - 1989
box 1, folder 2  Curriculum vitae 1989 - 1999

WRITINGS

Presentations

box 1, folder 3  Accreting Neutron Stars and the Origin of Gamma-ray Bursts
                  Note
                  Undated - Contains only notes and overhead transparencies.

box 1, folder 4  Back of the Envelope Conjectures About the Pulsar in Supernova 1987A 1989
                  Note
                  Contains only notes and overhead transparencies.

box 1, folder 5  Bias and Evidence of Classical Gamma-ray Repeaters 1993
box 1, folder 6  Celestial Sources of Gamma-ray Line Emission 1972 - 1974
                  Note
                  Overhead transparencies.

box 1, folder 7  Cosmic Gamma-rays up to 300 GeV - Part 1 1989
                  Note
                  Given at Moscow International Cosmic Ray Conference (ICRC) - Contains only notes, drafts and overhead transparencies.

box 1, folder 8  Cosmic Gamma-rays up to 300 GeV - Part 2 1989
                  Note
                  Given at Moscow ICRC - Contains only drafts.

box 1, folder 9  Cosmic-ray Origin and Propagation
                  Note
                  Given at the 16th ICRC, Kyoto, Japan, August 1979 - Contains final paper.
Gamma-ray Astronomy 1982
Note
Invited paper for the ANNUAL REVIEW OF NUCLEAR AND PARTICLE SCIENCE, Vol. 32 - Contains only notes and draft.

Gamma-ray Bursts - A Review of Fact and Fantasy
Note
Undated - Contains only notes and overhead transparencies.

Gamma-ray Burst Selection Biases 1993
Gamma-ray Line Astrophysics 1985
Note
Given at the 19th ICRC - Contains only drafts.

Gamma-ray Production - Supernova 1987A NASA Workshop
Note
1987, March 6.

Highlights of the Aspen Astrophysics Workshop - Aspen Astrophysics Winter Workshop 1992
Note
Contains only notes and overhead transparencies.

March 5, 1979 Gamma-ray Burst
Note
Undated - Contains notes and overhead transparencies.

Nuclear Gamma-ray from Compact Objects 1978
Note
Contains only notes.

Rosat Observations of Supernova Remnant N49 1993
Two Population Disk and Halo Gamma-ray Burst Models
Note
Given at St. Louis, undated - Contains only notes and overhead transparencies.

10MeV Gamma-ray Burst Discussion 1985 - 1986
Note
Contains notes.

Angular Dependence of Solar-Flare Neutron-Capture Gamma-ray Line Emission
Note
20th ICRC - With Xin-Min Hua - Contains draft.

Annihilation Radiation and Gamma-ray Continuum From the Galactic Center Region
Note
Undated - With Reuven Ramaty - Contains drafts.
box 2, folder 13  
**Annihilation Radiation and Positions From Energetic Particle Interactions 1983 - 1985**

Note
Contains drafts.

box 3, folder 1  
**Annihilation Radiation From the Direction of the Galactic Center**

Note
Undated - Contains notes.

box 3, folder 2  
**Apollo Laser Altimetry and Inferences as to Lunar Structure**

Note

box 3, folder 3  
**Are Repeaters Responsible For Gamma-ray Burst (V/Vmax) < 1/2 ?**

Note
Undated - With J. C. Higdon - Contains reprint.

box 3, folder 4  
**Calculated Gamma-ray Line Fluxes From the Type II Supernova 1987A 1987**

Note
With K. M. Chan - Contains reprint and drafts.

box 3, folder 5  
**Calculated Gamma-ray Line Fluxes From the Type II Supernova 1987A - Part 1 1987 - 1989**

Note
With K. M. Chan - Contains reprint and calculations.

box 3, folder 6  
**Calculated Gamma-ray Line Fluxes From the Type II Supernova 1987A - Part 2 1987 - 1989**

Note
With K. M. Chan - Contains notes and calculations.

box 3, folder 7  
**Calculated Gamma-ray Line Fluxes From the Type II Supernova 1987A - Part 1 1987 - 1989**

Note
With K. M. Chan - Contains notes and research materials.

box 3, folder 8  
**Calculated Gamma-ray Line Fluxes From the Type II Supernova 1987A - Part 2 1987 - 1989**

Note
With K. M. Chan - Contains notes and research materials.

box 3, folder 9  
**Calculated Gamma-ray Line Fluxes From the Type II Supernova 1987A - Part 3 1987 - 1989**

Note
With K. M. Chan - Contains notes and research materials.

box 3, folder 10  
**Calculated Gamma-ray Line Fluxes From the Type II Supernova 1987A - Part 4 1987 - 1989**

Note
With K. M. Chan - Contains notes and research materials.
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<tr>
<th>Box and Folder</th>
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<td>box 4, folder 1</td>
<td>Compound Diffusion of Cosmic Rays 1970 - 1972</td>
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<td>Note</td>
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<td></td>
<td>With Reuven Ramaty and L. A. Fisk - Contains notes and draft.</td>
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<td>box 4, folder 2</td>
<td>Compton Backscattered 511 KeV Annihilation Line Emission and the 170 KeV Line From the Galactic Center... 1990 - 1991</td>
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<td>With Xin-Min Hua - Contains reprint, notes and drafts.</td>
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<td>box 4, folder 3</td>
<td>Compton Backscattered 511 KeV Annihilation Line Emission and the 170 KeV Line From the Galactic Center... 1990 - 1992</td>
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<td>With Xin-Min Hua - Contains notes, drafts and data.</td>
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<td>box 4, folder 4</td>
<td>Cosmic Gamma-ray Lines 1986</td>
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<td>With Reuven Ramaty - Contains reprint, notes and drafts.</td>
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<tr>
<td>box 4, folder 5</td>
<td>Cosmic-ray and Solar Particle Studies 1976 - 1978</td>
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<td>Note</td>
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<td></td>
<td>Contains notes and Final Project Report.</td>
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<tr>
<td>box 4, folder 6</td>
<td>Cosmic-ray Neutron Demography 1960 - 1961</td>
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<td>With W. N. Hess and E. H. Canfield - Contains reprint.</td>
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<td>box 4, folder 7</td>
<td>Cosmic-ray Prehistory and Propagation</td>
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<td>13th ICRC - With J. C. Higdon - Contains reprint.</td>
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<tr>
<td>box 4, folder 8</td>
<td>Cosmic-ray Produced Neutrons and Nuclides in the Earth's Atmosphere 1976</td>
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<td>Contains reprint.</td>
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<td>box 4, folder 9</td>
<td>Determination of the 3He/H Ratio in the Solar Photosphere From Flare Gamma-ray Line Observations</td>
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<td>1982, June (?) - With Xin-Min Hua - Contains reprints, notes and drafts.</td>
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<td>box 4, folder 10</td>
<td>Determination of the 3He/H Ratio in the Solar Photosphere From Flare Gamma-ray Line Observations 1987</td>
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<td>Contains notes, viewgraphs and research materials.</td>
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<td>box 4, folder 11</td>
<td>Diffuse Galactic Annihilation Radiation and the Present Rate of Galactic Nucleosynthesis 1992</td>
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<td>Note</td>
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<td>box 5, folder 1</td>
<td>Diffuse Galactic Gamma-ray Lines - Part 1 1975 - 1976</td>
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<td></td>
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<td>With Reuven Ramaty - Contains notes and drafts.</td>
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</table>
box 5, folder 2  
**Diffuse Galactic Gamma-ray Lines - Part 2 1975 - 1976**  
Note  
With Reuven Ramaty - Contains notes and drafts.

box 5, folder 3  
**Distance Model For Gamma-ray Bursts 1983**  
Note  
With Geoffrey J. Hueter - Contains notes and drafts.

box 5, folder 4  
**Evidence For a Possible 164 Day Period in Gamma-ray Bursts From GBS0526-66 - Part 1 1984**  
Note  
With Richard E. Rothschild - Contains reprints, drafts, overhead transparencies, and notes.

box 5, folder 5  
**Evidence For a Possible 164 Day Period in Gamma-ray Bursts From GBS0526-66 - Part 2 1984**  
Note  
With Richard E. Rothschild - Contains correspondence and notes.

box 5, folder 6  
**EXOSAT Observations of the 5 March 1979 Gamma-ray Burst Source Location 1985 - 1987**  
Note  

box 5, folder 7  
**Fireball Model For the March 25, 1978 Gamma-ray Burst - Part 1 1983**  
Note  
With Geoffrey J. Hueter - Contains reprints and notes.

box 6, folder 1  
**Fireball Model For the March 25, 1978 Gamma-ray Burst - Part 2 1983**  
Note  
With Geoffrey J. Hueter - Contains notes and drafts.

box 6, folder 2  
**Fireball Model For the March 25, 1978 Gamma-ray Burst - Part 3 1983**  
Note  
With Geoffrey J. Hueter - Contains notes and drafts.

box 6, folder 3  
**Fireball Model For the March 25, 1978 Gamma-ray Burst**  
Note  
Undated - Contains overhead transparencies and notes.

box 6, folder 4  
**Galactic Positron Annihilation Radiation**  
Note  
Undated - With Reuven Ramaty - Contains drafts (PHYSICS WORLD).

box 6, folder 5  
**Gamma-ray Astronomy 1982 - 1988**  
Note  
Contains reprint, notes and draft.

box 6, folder 6  
**Gamma-ray Burst Lines 1979**  
Note  
Contains drafts, notes, data, and research materials.
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<tr>
<th>Box Folder</th>
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</table>
| box 6, folder 7 | **Gamma-ray Burst Size-Frequency Distributions: Spectral and Temporal Selection Effects 1985 - 1986** | Note  
With James C. Higdon - Contains reprint and overhead transparencies - ASTROPHYSICAL JOURNAL. |
| box 6, folder 8 | **Gamma-ray Burst Size-Frequency Distributions: Spectral Selection Effects 1985** | Note  
With James C. Higdon - Contains notes and drafts. |
| box 6, folder 9 | **Gamma-ray Burst Size-Frequency Distributions: Spectral Selection Effects 1985** | Note  
With James C. Higdon - Contains reprints and notes. |
| box 6, folder 10 | **Gamma-ray Burst Size-Frequency Distributions** | Note  
Undated - Contains viewgraphs and overhead transparencies. |
| box 7, folder 1 | **Gamma-ray Bursts 1986 - 1990** | Note  
Contains correspondence, notes and research materials. |
| box 7, folder 2 | **Gamma-ray Bursts 1986 - 1990** | Note  
With James C. Higdon - Contains reprint and draft. |
| box 7, folder 3 | **Gamma-ray Bursts - Are They Galactic Or Cosmic?** | Note  
| box 7, folder 4 | **Gamma-ray Evidence For a Stellar Mass Black Hole Near the Galactic Center 1987** | Note  
With Reuven Ramaty - Contains notes and drafts. |
| box 7, folder 5 | **Gamma-ray Line Emission From Supernovae and their Remnant 1989** | Note  
With K. W. Chan - Moscow ICRC - Contains draft and research materials. |
| box 7, folder 6 | **Gamma-ray Line Radiation** | Note  
Undated - With Reuven Ramaty - Contains reprint. |
| box 7, folder 7 | **Gamma-ray Lines and Neutrons From Solar Flares 1982 - 1983** | Note  
| box 7, folder 8 | **Gamma-ray Lines From the Galactic Center and Gamma-ray Transients 1980** | Note  
With Reuven Ramaty and D. Leiter - Contains draft. |
| box 7, folder 9 | **Gamma-ray Lines From Interstellar Grains 1976 - 1977** | Note  
With Reuven Ramaty - Contains reprint and research materials. |
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<td>7, 10</td>
<td>Gamma-ray Lines From Solar Flares</td>
<td>Note</td>
<td>Undated - With Reuven Ramaty - Contains reprint.</td>
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<td>8, 1</td>
<td>Gamma-ray Lines From Type 1 Supernovae 1990 - 1991</td>
<td>Note</td>
<td>With K. W. Chan - Contains reprint, draft and research materials.</td>
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<td>8, 3</td>
<td>Gamma-rays From an Extragalactic Supernovae 1983 - 1984</td>
<td>Note</td>
<td>With R. Cowalk - Contains notes, draft and data.</td>
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<td>8, 4</td>
<td>Gamma-rays From the Galactic Center 1982</td>
<td>Note</td>
<td>With Reuven Ramaty - Contains notes and draft.</td>
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<td>8, 5</td>
<td>Interpretations and Implications of Gamma-ray Lines From Solar Flares, the Galactic Center and Gamma-ray... 1980</td>
<td>Note</td>
<td>With Reuven Ramaty - Contains draft and charts.</td>
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<td>8, 7</td>
<td>Lunar Sinuous Rille Elevation Profiles</td>
<td>Note</td>
<td>Undated - With G. Schubert and W. M. Kaula - Contains draft.</td>
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<td>8, 8</td>
<td>NASA - Technical Memorandum 83816 - Goddard Contributions to La Jolla Workshop on Gamma-ray Transients 1981</td>
<td>Note</td>
<td>Contains reprint and note.</td>
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box 8, folder 9  **Natural Tritium 1964 - 1968**  
Note  
With A. Nir, et al. - Original title was Cosmic-ray Deuterium and Helium-3 - Contains reprint and notes.

box 8, folder 10  **Nature of Cosmic-ray Sources 1973**  
Note  
Contains reprint.

box 8, folder 11  **Nature of the Annihilation Radiation and Gamma-ray Continuum From the Galactic Center Region 1988**  
Note  
With Reuven Ramaty - Contains final copy and drafts.

box 8, folder 12  **Neutron Production in the Solar Atmosphere and the Angular Dependence of the Capture Gamma-ray Emission 1982 - 1986**  
Note  
With Xin-Min Hua - Contains drafts, notes and overhead transparencies.

box 9, folder 1  **Neutron Production in the Solar Atmosphere and the Angular Dependence of the Capture Gamma-ray Emission**  
Note  
Undated - With Xin-Min Hua - Contains reprint, drafts and notes.

box 9, folder 2  **Nuclear Gamma-ray Lines in Accretion Source Spectra 1976 - 1977**  
Note  
With James C. Higdon - Contains correspondece, research materials and notes.

box 9, folder 3  **Nuclear Gamma-ray Lines in Accretion Source Spectra 1977**  
Note  
With James C. Higdon - Contains reprint and notes.

box 9, folder 4  **Nuclear Gamma-rays From Compact Objects 1978**  
Note  
With James C. Higdon and Reuven Ramaty - Contains drafts and data.

box 9, folder 5  **Nuclear Gamma-rays From Energetic Particle Interactions 1978**  
Note  
With Reuven Ramaty and B. Kozlovsky - Contains notes and drafts.

box 9, folder 6  **Nuclear Gamma-rays From Solar Flares 1972**  
Note  
With Reuven Ramaty - Contains reprint.

box 9, folder 7  **Nuclear Processes and Neutrino Production in Solar Flares - Part 1 1980**  
Note  

box 10, folder 1  **Nuclear Processes and Neutrino Production in Solar Flares - Part 2 1980 - 1985**  
Note  
With Reuven Ramaty, et al. - Contains research materials.
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<th>Box Folder</th>
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<tr>
<td>11, 1</td>
<td>Origin of Cosmic-rays 1979</td>
<td>Contains draft and research materials.</td>
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<td>11, 6</td>
<td>Positron Annihilation Radiation From the Region of the Galactic Center 1991</td>
<td>With Reuven Ramaty - Contains drafts and research materials.</td>
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box 11, folder 7  Positrons From Accelerated Particle Interactions 1987
   Note
   With Reuven Ramaty and B. Kozlovsky - Contains drafts.

box 11, folder 8  Positrons From Supernovae - Part 1 1993
   Note
   With K. W. Chan - Contains reprint and drafts.

box 11, folder 9  Positrons From Supernovae - Part 2 1991 - 1992
   Note
   With K. W. Chan - Contains drafts.

box 12, folder 1  Positrons From Supernovae - Part 3 1981 - 1992
   Note
   With K. W. Chan - Contains notes and research materials.

box 12, folder 2  Positrons From Supernovae - Part 4 1987 - 1992
   Note
   With K. W. Chan - Contains notes and research materials.

box 12, folder 3  Possible X-ray Counterpart to 5 March 1979 Gamma-ray Burst 1991
   Note
   With Richard E. Rothschild and F. D. Seward - Contains final copy, photos, notes, and
   research materials.

box 12, folder 4  Primary Cosmic-ray Positrons and Galactic Annihilation Radiation 1979
   Note
   With Reuven Ramaty - Contains notes and draft.

box 12, folder 5  Productivity - Written for the National Research Council Astronomy Assessment
   Panel 1993
   Note
   Contains drafts.

box 12, folder 6  Pulsar Contribution to the Galactic Gamma-ray Emission 1976
   Note
   With James C. Higdon - Contains reprint.

box 12, folder 7  Pulsars and Local Cosmic-ray Prehistory 1969 - 1973
   Note
   Contains reprint, notes and research materials.

   Note
   Contains reprint, notes and research materials.

box 13, folder 2  Sea Sediments, Cosmic-rays, and Pulsars 1973
   Note
   With James C. Higdon - Contains only reprint.
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<tr>
<td>box 13, folder 3</td>
<td><strong>Size-Frequency Distribution of Gamma-ray Bursts From Thermonuclear Runaway on Neutron Stars... - Part 1 1984</strong></td>
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<td>Note: With James C. Higdon - Contains notes, drafts and research materials.</td>
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<td>box 13, folder 4</td>
<td><strong>Size-Frequency Distribution of Gamma-ray Bursts From Thermonuclear Runaway on Neutron Stars... - Part 2 1984</strong></td>
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<td><strong>Size-Frequency Distribution of Gamma-ray Bursts From Thermonuclear Runaway on Neutron Stars... - Part 3 1984</strong></td>
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<td>Note: With James C. Higdon - Contains reprint, notes and drafts.</td>
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<td>box 13, folder 6</td>
<td><strong>Solar Flare Neutrons and the Angular Distribution of Flare Accelerated Ions 1986</strong></td>
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<td>Note: With Xin-Min Hua - Contains reprint and drafts.</td>
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<td>box 13, folder 7</td>
<td><strong>Solar Neutrons and the Earth’s Radiation Belts 1964</strong></td>
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<td>Note: With E. J. Flamm - Contains reprint.</td>
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<td>box 13, folder 8</td>
<td><strong>Solar Particle Fluxes and the Ancient Sun 1979 - 1980</strong></td>
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<td>Note: With Hugh S. Hudson - Contains reprint, notes and drafts.</td>
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<td>box 14, folder 1</td>
<td><strong>Solution to the Gamma-ray Burst Conundrum: Two Source Populations</strong></td>
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<td>Note: Undated - With J. C. Higdon - Contains reprint.</td>
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<td><strong>Steady State Solar Neutron and Gamma-ray Production</strong></td>
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<td>Note: Undated - Contains notes and drafts.</td>
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<td>box 14, folder 3</td>
<td><strong>Structure and Content of the Galaxy and Galactic Gamma-rays</strong></td>
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<td>Note: Undated - With Reuven Ramaty - Contains reprint.</td>
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<td><strong>Studies of Gamma-ray Line Emission From Astrophysical Sources 1979 - 1981</strong></td>
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<td>Contains final project report, drafts and correspondence.</td>
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<td>box 14, folder 5</td>
<td><strong>Sun in Time - Part 1 1989</strong></td>
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<td><strong>Sun in Time - Part 2 1989</strong></td>
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<td><strong>Sun in Time - Part 3</strong></td>
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<td>box 14, folder 8</td>
<td><strong>Supernova Radio Remnants and the Filling Factor of the Hot Interstellar Medium - Part 1 1979</strong></td>
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<td>With James C. Higdon - Contains notes and drafts.</td>
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<td>box 14, folder 10</td>
<td><strong>Synchrotron Cooling and Annihilation of an e+ - e minus Plasma: the Radiation Mechanism for the March 5, 1979.</strong></td>
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<td>Undated - With Reuven Ramaty - Contains drafts.</td>
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<td>box 14, folder 11</td>
<td><strong>Technique For Determining the Solar-Flare Photospheric Scale Height From SMM Gamma-ray Measurements - Part 1 1991 - 1992</strong></td>
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<td>box 14, folder 12</td>
<td><strong>Technique For Determining the Solar-Flare Photospheric Scale Height From SMM Gamma-ray Measurements - Part 2 1991 - 1992</strong></td>
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<td>box 15, folder 1</td>
<td><strong>Thermonuclear Runaway</strong></td>
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<td>box 15, folder 5</td>
<td><strong>Topics in Gamma-ray Astronomy</strong></td>
<td>Note</td>
<td>1985 (?) - With Reuven Ramaty - Contains reprint, drafts, notes, and computer diskette.</td>
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### Articles

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<td>Two Population Model For the Sources of Gamma-ray Bursts 1992</td>
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<td>Note With James C. Higdon - Contains notes and draft.</td>
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<td>Calculation of Gamma-ray Line Emission From the Surface and Atmosphere of Mars 1986</td>
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<td>Collaborative Study of Cosmic Gamma-ray Bursts and Energetic Particle Production in Plasmas 1989</td>
<td>Note Principal investigator is Kevin Hurley, et al.</td>
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<td>Gamma-ray Line All Sky Survey Spectrometer Explorer (GLASSE) - Proposal drafts 1992</td>
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<td>High Resolution Spectroscopy of Cosmic Gamma-rays - NAE - Drafts 1989</td>
<td>Note See also Series 5A, NAE.</td>
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box 17, folder 5  Historical Study of Environmental Degradation Resulting From Mining in the Western U.S. 1975 - 1977

box 17, folder 6  Integrated Study of Earth Resources in the State of California 1971 - 1973
Note
Principal investigator is Richard Lingenfelter, et al.

box 17, folder 7  Long Term Space Astrophysics Research Program 1989 - 1990
Note
Principal investigator is Laurence Peterson.

box 17, folder 8  Monte Carlo Calculations of Gamma-ray Line and Neutron Spectra From Martian Soils and Atmosphere 1991
Note
Principal investigator is James Higdon - Mars Observer Program.

box 17, folder 9  Planetological Studies of Mars, Mercury, and Moon 1971 - 1977
Note
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box 17, folder 10  Positrons and their Radiation in Astrophysics
Note
1987, February - March - Principal investigator is Reuven Ramaty.

box 17, folder 11  Positrons and their Radiation in Astrophysics
Note
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box 17, folder 12  Production and Propagation of Solar Flare Charged Particle Secondaries 1993
box 17, folder 13  Research in Solar Gamma-ray Production 1981 - 1982
box 17, folder 14  Serendipitous ROSAT Observations of Solar Flaring 1989
Note
Principal investigator is Hugh Hudson.

box 17, folder 15  Small Astrophysical and Solar Spectroscopy Explorer (SASSE) 1993
Note
Principal investigator is William Wheaton.

box 18, folder 1  Solar Flare Gamma-ray and Neutron Studies - Part 1 1982 - 1983
box 18, folder 2  Solar Flare Gamma-ray and Neutron Studies - Part 2 1982 - 1983
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**Solar Flare Light Nuclear Studies 1993**  
Note  
Includes proposal title: Study of Solar 3He/H Ratio Using SMM Gamma-ray Data by principal investigator Philip Dunphy.

box 19, folder 6  
**Solar Neutrons and Gamma-ray Calculations 1985**

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**Space Station Observer for Nuclear Gamma-ray Spectroscopy - Vol. 1 1988**  
Note  
Principal investigator is George Nakano.

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**Theoretical Studies in Gamma-ray Astrophysics - UCSD 9312 1983 - 1984**

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Note  
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Note  
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<td>California Space Institute Advisory Committee - Annual report and grant information 1987</td>
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<td>box 22, folder 8</td>
<td>California Space Institute Advisory Committee - Membership and proposal review materials 1987</td>
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<td>box 22, folder 9</td>
<td>Center for Astrophysics and Space Sciences (CASS) - Director Search Committee - Notes and correspondence 1986 - 1987</td>
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<td>CASS Executive and Policy Committee - Reports and minutes 1980 - 1981</td>
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<td>NASA - AMOWG - Member list 1988</td>
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<td>NASA - GRAPWG - Executive summary - Drafts 1996</td>
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<td>NASA - Gamma-ray Observatory (GRO) Users' Committee 1986 - 1987</td>
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<td>The GRO Users' Committee contains notices, memoranda, agendas, minutes, charts, correspondence, and research materials.</td>
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box 26, folder 4  NASA - High Energy Transient Experiment (HETE) - Working Group - Part 1 1983
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box 26, folder 5  NASA - HETE - Working Group - Part 2 1984
box 26, folder 6  NASA - INTEGRAL - Science Advisory Committee 1994
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               Meeting - Presentation materials 1988
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Nuclear Astrophysics Explorer (NAE)

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box 28, folder 2  NAE - Concept Study - Meeting minutes 1988
               Note
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box 28, folder 3  NAE - Concept Study - Meeting minutes 1989 - 1993
box 28, folder 4  NAE - Concept Study - Orientation Meeting
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<td>32, 10</td>
<td>GRO - Science Reports 1992</td>
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<td>32, 11</td>
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<td>33, 1</td>
<td>GRO - Science Reports 1994 - 1996</td>
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<tr>
<td>33, 2</td>
<td>GRO - Theory Workshop - Minneapolis</td>
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<td></td>
<td>Note</td>
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<td></td>
<td>1980, September.</td>
</tr>
</tbody>
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### CONSULTING, REVIEWING AND REFEREEING

#### Consulting

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<td>National Academy of Science (NAS) 1992</td>
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<td></td>
<td>Report - Why Has Increased Funding Been Accompanied by Increased Dissatisfaction in the Research Community.</td>
</tr>
<tr>
<td>33, 4</td>
<td>NASA 1978 - 1981</td>
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<tr>
<td>33, 5</td>
<td>NASA - Advanced X-ray Astrophysics Facility (AXAF)</td>
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<td></td>
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<td></td>
<td>Undated.</td>
</tr>
<tr>
<td>33, 6</td>
<td>NASA - AXAF - Spacecraft Guide - Pioneer 1 1990</td>
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<td>33, 7</td>
<td>NASA - Goddard Stirling Cooler 1986</td>
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<td>33, 8</td>
<td>NASA - High Energy Radiation, Particles and Plasmas in Astrophysics 1984</td>
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<tr>
<td>33, 9</td>
<td>NASA - Peer Review Subcommittee for the Scientific Evaluations of Spacelab and LDEF proposals 1978 - 1992</td>
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<tr>
<td>33, 10</td>
<td>Universities Space Research Association - Astronomy and Space Physics Science Council 1991</td>
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<td>1992, January - June.</td>
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<td>33, 12</td>
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#### Reviewing and Refereeing

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<td>34, 1</td>
<td>ASTROPHYSICAL JOURNAL 1975 - 1985</td>
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<tr>
<td></td>
<td>Includes journal Club citation of article - 1988.</td>
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<tr>
<td>34, 2</td>
<td>Astrophysics and Space Science 1975</td>
</tr>
<tr>
<td></td>
<td>Note</td>
</tr>
<tr>
<td></td>
<td>Contains photo.</td>
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<tr>
<td>34, 3</td>
<td>Cal Space - Proposal Review Committee materials 1987 - 1988</td>
</tr>
</tbody>
</table>
CASS - Continuous Hard X-ray Imager For Astrophysics (CHIP)
Note
Undated.

Institute of Geophysics and Planetary Physics (IGPP) 1989 - 1993

JOURNAL OF GEOPHYSICAL RESEARCH 1962 - 1978

Law and Society Review 1977

Lunar and Planetary Institute 1975 - 1989

National Endowment For the Humanities - Letter
Note
1979, November.

National Science Foundation 1968 - 1991

NATURE 1982

Nye County, Nevada - Science Center 1989

PHYSICAL REVIEW and PHYSICAL REVIEW LETTERS 1967 - 1988

Rossi Prize 1990 - 1992

SCIENCE 1969 - 1983

SOLAR PHYSICS
Note
1996, June.

American Institute of Aeronautics and Astronautics (AIAA) - Aerospace Sciences Meeting
Note
1989, January 9-12.

Note
Edited by Lingenfelter. Includes papers by Lingenfelter.

Note
Edited by Lingenfelter. Includes papers by Lingenfelter.

AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Abstracts 1981
AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Planning - Part 1 1981
Note
Lingenfelter is on the organizing committee.

AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Planning - Part 2 1982

AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Planning materials and schedules 1981

AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Proceedings 1981

AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Proceedings - Part 1 1981

AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Proceedings - Part 2 1981
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<td>35, 6</td>
<td>AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Proceedings - Part 3 1981</td>
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<td>35, 7</td>
<td>AIP - La Jolla Institute and CASS - Gamma-ray Transients Workshop - Summary and Panel Discussion - Drafts 1981</td>
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<td>35, 8</td>
<td>COSPAR 22nd Meeting 1979</td>
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| 35, 9     | Gamma-ray Burst Symposium  
Note: 1979, November. |
| 36, 1     | High Velocity Neutron Stars and Gamma-ray Bursts Workshop 1995  
Note: 1993, October 20-22. |
| 36, 2     | Huntsville Gamma-ray Burst Workshop - Abstracts and correspondence  
Note: 1994, October 20-22. |
| 36, 3     | International Cosmic-ray Conference (ICRC) - 16th Annual Meeting 1979  
Note: 1979, October. |
| 36, 4     | ICRC - 16th-18th Annual Meeting 1979 - 1984 |
| 36, 5     | ICRC - 19th Annual Meeting - Budget 1984 - 1985 |
| 36, 6     | ICRC - 19th Annual Meeting - First Circular 1984 - 1985 |
| 36, 7     | ICRC - 19th Annual Meeting - Second Circular 1985 |
| 36, 8     | ICRC - 19th Annual Meeting - Third Circular 1985 |
| 36, 9     | ICRC - 19th Annual Meeting - Conference management 1984 |
| 37, 1     | ICRC - 19th Annual Meeting - Contributed Paper Sessions 1985 |
| 37, 2     | ICRC - 19th Annual Meeting - Correspondence - Delegates 1984 - 1985 |
| 37, 3     | ICRC - 19th Annual Meeting - Correspondence - Invitations and planning 1985 |
| 37, 4     | ICRC - 19th Annual Meeting - Correspondence - Speaker invitations 1984 |
| 37, 5     | ICRC - 19th Annual Meeting - Flyer art 1985  
Note: 1994, October 20-22. |
| 37, 6     | ICRC - 19th Annual Meeting - General Conference Description 1984 |
| 37, 7     | ICRC - 19th Annual Meeting - Local Organizing Committee 1985 |
| 37, 8     | ICRC - 19th Annual Meeting - Miscellaneous 1983 - 1985 |
| 37, 9     | ICRC - 19th Annual Meeting - NASA proposal 1985 |
| 37, 10    | ICRC - 19th Annual Meeting - National Science Foundation (NSF) proposal materials 1985 |
| 38, 1     | ICRC - 19th Annual Meeting - Participant Support 1985 |
| 38, 2     | ICRC - 19th Annual Meeting - Program Committee 1982 - 1985 |
| 38, 3     | ICRC - 19th Annual Meeting - Steering Committee 1981 - 1983 |
| 38, 4     | ICRC - 19th Annual Meeting - Steering Committee - Part 1 1984 |
| 38, 5     | ICRC - 19th Annual Meeting - Steering Committee - Part 2 1984 |
| 38, 6     | ICRC - 19th Annual Meeting - Steering Committee 1985 |
| 38, 7     | ICRC - 19th Annual Meeting - Time tables for mailings deadlines 1984  
Note: Presented several papers - Contains abstracts. |
| 38, 8     | ICRC - 20th Annual Meeting 1987  
Note: 1979, October. |
| 39, 1     | Jet Propulsion Laboratory - Workshop on the Galactic Center 1982  
Lunar and Planetary Institute - Conference on the Ancient Sun  
Note: 1979, October. |
| 39, 2     | Max Planck Institut fur extraterrestrische Physik - Compton Symposium on Gamma-ray Astronomy 1994 |
| 39, 3     | NASA - Compton Observatory Science Workshop  
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<td>1989, January.</td>
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<tr>
<td>39/9</td>
<td>Santa Cruz Summer Workshop in Astronomy</td>
<td>1983, July. Richard Lingenfelter helped organize the event - Includes draft of &quot;A Fireball Model for the March 25, 1978 GRB&quot;.</td>
</tr>
<tr>
<td>40/10</td>
<td>UCSD Workshop on High Velocity Neutron Stars and Gamma-ray Bursts 1994 - 1995</td>
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<tr>
<td>40/1</td>
<td>UCSD Workshop on High Velocity Neutron Stars and Gamma-ray Bursts 1995</td>
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<tr>
<td>40/2</td>
<td>Workshop on Nuclear Spectroscopy of Astrophysical Sources 1987</td>
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<td>40/3</td>
<td>44 Ti Lines</td>
<td>1992, April - July.</td>
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<td>40/4</td>
<td>Antipodal Pairs - Notes, charts and research materials</td>
<td>1993, September.</td>
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<td>40/7</td>
<td>Astronomical and Geophysical Variation in C14 Production</td>
<td>1962, April - 1969, May.</td>
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<td>40/8</td>
<td>Charts - Unknown</td>
<td>Undated.</td>
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box 40, folder 9                Cosmos 954 - Library of Congress information search
                                      Note
                                      1981, July.

box 40, folder 10               Diffuse Galactic Center Radiation at 0.511 MeV
                                      Note
                                      1986, July.

box 40, folder 11              Diffuse Positron Emission From Supernovae - HEAO-3
                                      Note
                                      1982, February.

box 40, folder 12               Effect of Selection and Triggering Biases on the Structure of Size-Frequency Distribution of the Gamma...
                                      Note
                                      1984
                                      James Higdon's notes.

box 41, folder 1                Galactic Center
                                      Note

box 41, folder 2                Gamma-ray Burst Sources - Charts and notes
                                      Note
                                      1986, July.

box 41, folder 3                Gamma-ray Burst Sources - Charts, drafts and notes 1981 - 1983
                                      Note
                                      Contains mostly notes.

box 41, folder 5                Gamma-ray Bursts - November 19, 1979 1979 - 1982
box 41, folder 7                Gamma-ray Bursts - Abstracts 1993 - 1995
box 41, folder 8               Gamma-ray Bursts - Calculations - Program listings
                                      Note
                                      Undated.

box 41, folder 9                Gamma-ray Bursts - Catalog of Cosmic Gamma-ray Bursts
                                      Note
                                      Undated.

box 41, folder 10               Gamma-ray Bursts - Central Bureau for Astronomical Telegrams - Circulars
                                      Note
                                      1996, September - October.

box 41, folder 11               Gamma-ray Bursts - Charts
                                      Note
                                      Undated.

box 41, folder 12               Gamma-ray Bursts - Charts and figures 1985 - 1989
box 41, folder 13               Gamma-ray Bursts - Notes
                                      Note
                                      1993, April - July.
box 42, folder 1  Gamma-ray Lines From Transient Sources 1978
       Note
       Consists of notes.

box 42, folder 2  High Energy Astronomy - Newsletters
       Note

box 42, folder 3  Lunar GD 158 1970 - 1972
       Note
       Contains images.

box 42, folder 4  Lunar Neutrons - Flux Output 1971 - 1972
box 42, folder 5  Meteorites 1955 - 1962
box 42, folder 6  Meteorites 1960 - 1975
box 42, folder 7  NGC 4151 1975 - 1979
box 43, folder 1  Neutron Stars and Nucleosynthesis - James C. Higdon notes 1984
       Note
       MSS Modification.

box 43, folder 2  Preliminary Konos Data
       Note
       1983, January.

box 43, folder 3  Pycnonuclear Model 1983
box 43, folder 4  Soft Gamma-ray Spectra 1990
       Note
       Artifact of data.

box 43, folder 5  Solar Flares - Oriented Scintillation Spectrometer Experiment (OSSE) 1991 - 1994
box 43, folder 6  Solar Gamma-rays 1966 - 1968
box 43, folder 7  Solar High Energy Astrophysical Plasma Explorer (SHAPE) 1986
box 43, folder 8  Solar Maximum Missions (SMM) - Bessel Function Charts
       Note
       Undated.

box 43, folder 9  SMM - Solar Neutron Decay 1966 - 1984
box 43, folder 10 Stratospheric Observatory For Infrared Astronomy (SOFIA) 1991
box 44, folder 1  Supernovae and radiocarbon dating 1971 - 1973
box 44, folder 2  Supernova Remnants and the Interstellar Medium
       Note
       1980, February.

box 44, folder 3  X-ray Timing Explorer (XTE) - HEXAXTE 1988

ORIGINALS OF PRESERVATION PHOTOCOPIES

box 44, folder 4  Originals of preservation photocopies