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A COSMIC X-RAY ASTRONOMY BIBLIOGRAPHY: THE ASTROPHYSICAL JOURNAL, 1962 to 1972

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This report presents the results of a survey of the Astrophysical Journal for the time period January 1962 through March 1972 (volumes 135-172). Some 395 references are contained within this document related to cosmic X-ray astronomy.

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A COSMIC X-RAY ASTRONOMY BIBLIOGRAPHY: THE ASTROPHYSICAL JOURNAL, 1962 to 1972

SUMMARY

This report presents the results of a survey of the Astrophysical Journal for the time period January 1962 through March 1972 (volumes 135-172). Some 395 references are contained within this document related to cosmic X-ray astronomy.

The style of this report is that of the bibliography. That is, the main body is divided into three sections: (1) Part I — Author - Title Bibliography; (2) Part II — Author Index to Part I; and (3) Part III — Subject Index to Part I. Also included as Appendix A — Volume - Page Bibliography is a convenient listing of articles by volume-page (or by year).

It is to be emphasized that this document is a strict bibliography, thus, yielding only bibliographic information. It is not annotated as in previous bibliography summaries by the author [1, 2]. Also, it should be stressed that this work represents only one scientific journal — The Astrophysical Journal — and for only the time period since 1962, the inception year for the study of cosmic X rays. Similar reports for the same time frame for other journals are envisioned.

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[1] Wilson, R. M.; Reynolds, J. M., and Fields, S. A.: A Stellar X-Ray Astronomy Summary and Bibliography. NASA TM X-53952, October 21, 1969.

[2] Wilson, R. M.; Reynolds, J. M., and Fields, S. A.: A Solar X-Ray Astonomy Summary and Bibliography. NASA TM X-53991, January 1970.

INTRODUCTION

The detection and study of cosmic X rays is a most recent phenomenon. It was just ten years ago when the pioneer studies of Drs. Giacconi, Gursky, Paolini, and Rossi [3] were first performed to detect the existence of cosmic X rays, X rays originating from outside the solar system.

Over the years many studies and experiments have been performed. The X-ray observations were chiefly carried out by rockets and balloons. The ground-based optical and radio observations were attempted to correlate X-ray emission regions with known visual or radio components. The results of these studies have shown the existence of a large number of X-ray-emitting regions, some stellar in origin, resolved against a diffuse, nearly isotropic background. The list of X-ray objects now numbers more than one hundred, owing chiefly to the use of satellite observation and improved observing and positioning techniques. Some of the X-ray emitters are indeed identifiable with known visual and radio components. For example, Taurus X-1 is identifiable with the Crab Nebula (M1), a supernova remnant (SN 1054) in the constellation Taurus that contains a pulsar (NP 0532) at its center; Scorpius X-1 is a 12th to 13th magnitude blue, star-like object in the constellation Scorpius; and Virgo X-1 is the radio galaxy M87 in Virgo. Other X-ray objects have been correlated with Seyfert galaxies (NGC 1275), QSO's (3C 273), and normal galaxies (LMC); also, one object (Cen X-3) exhibits a light curve similar to that of an eclipsing binary star.

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[3] Giacconi, R.; Gursky, H.; Paolini, F. and Rossi, B.: Evidence for X-Rays from Sources Outside the Solar System. Phys. Rev., Vol. 9, 1962, pp. 439-443.

Because cosmic X-ray astronomy is a relatively new discipline, its rate of growth — that is, the total number of papers related to cosmic X-ray astronomy — has been rather substantial. Of the 395 references included within this bibliographic text, 126 are dated since 1970; 251 are dated since 1968. Because cosmic X-ray astronomy has evolved rather rapidly and because of its importance in astrophysical and astronomical analysis and interpretation, a comprehensive bibliography of all the articles published in the scientific journals related to cosmic X-ray astronomy should be available. With this purpose in mind, this report represents a beginning.

The author recently completed a survey of the Astrophysical Journal for the time period January 1962 through March 1972 (volumes 135-172) for the purpose of determining all articles related to cosmic X-ray astronomy. Thus, included in this compilation are all articles and items which contain some reference to cosmic X-ray observation or theory, whether or not the main purpose of the article concerned X-ray observations. Three hundred and ninety-five references were determined and are included in this bibliography.

The style of this report is like that of most bibliographies— that is, it is divided into three main sections. Part I — Author-Title Bibliography lists the references alphabetically by the authors' names and the title of the article or item. Part II — Author Index to Part I identifies all the authors listed in Part I and their works. It also is in alphabetical order by author's name. Part III — Subject Index to Part I provides the reader with an

outline of topics that are discussed in the articles listed in Part I. In Parts II and III the numbers appearing after the author's name or after the subject topic refer to the numerical listing in Part I. For example, "O'Dell, C. R. - 281" refers the reader to reference number 281 in Part I. The reader would find the reference "281. O'Dell, C. R.: Positional Correlations of Galactic Objects and X-Ray Sources. Vol. 147, 1967, pp. 855-857." Similarly, in the subject index "Epsilon Aurigae - 387" refers the reader to reference number 387 in Part I. The reader would then find reference "387. Wilson, R. E.: A Model of Epsilon Aurigae. Vol. 170, 1971, pp. 529-539."

A fourth section is also included in this report. Appendix A — Volume-Page Bibliography is a convenient listing of all the articles and items referenced in Part I by volume-page (or by year). In this section it is quite simple to determine the total number of papers related to cosmic X-ray astronomy published each year for this particular journal.

It is emphasized that this bibliography concerns itself with only one journal — the Astrophysical Journal — for a certain period of time, 1962 to 1972, and on a particular topic, cosmic X-ray related papers. It is a "strict" bibliography, not of the annotated style.

In conclusion, the author again states that this bibliography is only a beginning toward the desired goal of obtaining a truly comprehensive listing of cosmic X-ray related papers of the major scientific journals. Similar reports are, therefore, envisioned.

PART I

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APPROVAL

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By Robert M. Wilson

The information in this report has been reviewed for security classification. Review of any information concerning Department of Defense or Atomic Energy Commission programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.

This document has also been reviewed and approved for technical accuracy.

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