

The Publications and Citations of Donald Lynden-Bell

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Since 1960, Donald Lynden-Bell has written 180 papers and has been cited in more than 5000 journal articles. Papers on which he is the first author are currently cited at a rate of about 300 times per year. He has had sixty-eight collaborators. These and other statistics are discussed here. A complete list of Donald's publications to date follows this article.

1. Introduction

Everyone who attended this enjoyable conference is aware of Donald Lynden-Bell's impact on science. While there is no need to quantify this, I thought it would be interesting to see what the standard "objective" criteria reveal about Donald's work, and to highlight the papers that have received the most attention.

2. Publications

Donald's publication list, complete as of February 1996, is appended to this article. Of the 180 papers, 129 have appeared (or will appear) in refereed journals; the rest are in conference proceedings and other books. The refereed papers have been published preferentially in a few journals (see figure 1). His PhD thesis and first paper appeared in 1960, and his yearly output since then has been 4.9 ± 3.3 papers, varying from zero in 1961 and 1984 to 13 in 1988 and 1989. He is the sole author on 48% and first author on a further 16% of his papers. There have been 11 years, all before 1983, in which he was the first author on all his publications.

Sixty-eight people have written papers with Donald. His most frequent collaborator is Joseph Katz, with whom he has produced 14 papers. Next in line are the Seven Samurai [e.g., Lynden-Bell *et al.* (1988)], and then Ofer Lahav with 10.

3. Citations

The Science Citation Index (SCI) is by no means an infallible source, but it certainly gives a reasonable impression and a lower bound on the number of times papers have been cited in journal articles.

Based on the SCI, figure 2 shows the number of citations of papers on which Donald is the first author, in each year from 1960 to 1994. The current rate is nearly 300 citations per year and growing. If papers on which Donald is not the first author are included, the rate is much higher (at least 400 citations per year). The numbers would be higher still if the SCI was a more complete source. Seventy-six of Donald's papers have been cited at least 10 times, thirty over 50 times, eighteen over 100 times, and one over 500 times. The top ten papers in this category are listed in Table 1. Since three fairly recent papers appear in this list, it is not surprising that the top ten ranking changes dramatically when we look at number of citations per year (Table 2). The burst of activity inspired by the discovery of the Great Attractor [Lynden-Bell *et al.* (1988)] is illuminated by its citation history from 1987 to 1994: 10, 16, 43, 45, 61, 78, 48, 41. Note that this paper was cited 78 times in 1992 alone.

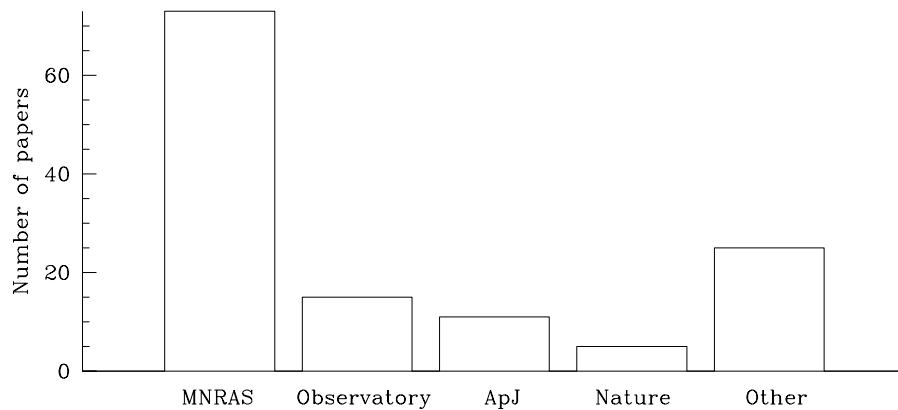


FIGURE 1. The distribution of DLB's 129 refereed papers. There are 73 in *MNRAS*, 15 in *The Observatory*, 11 in the *ApJ* and 5 in *Nature*.

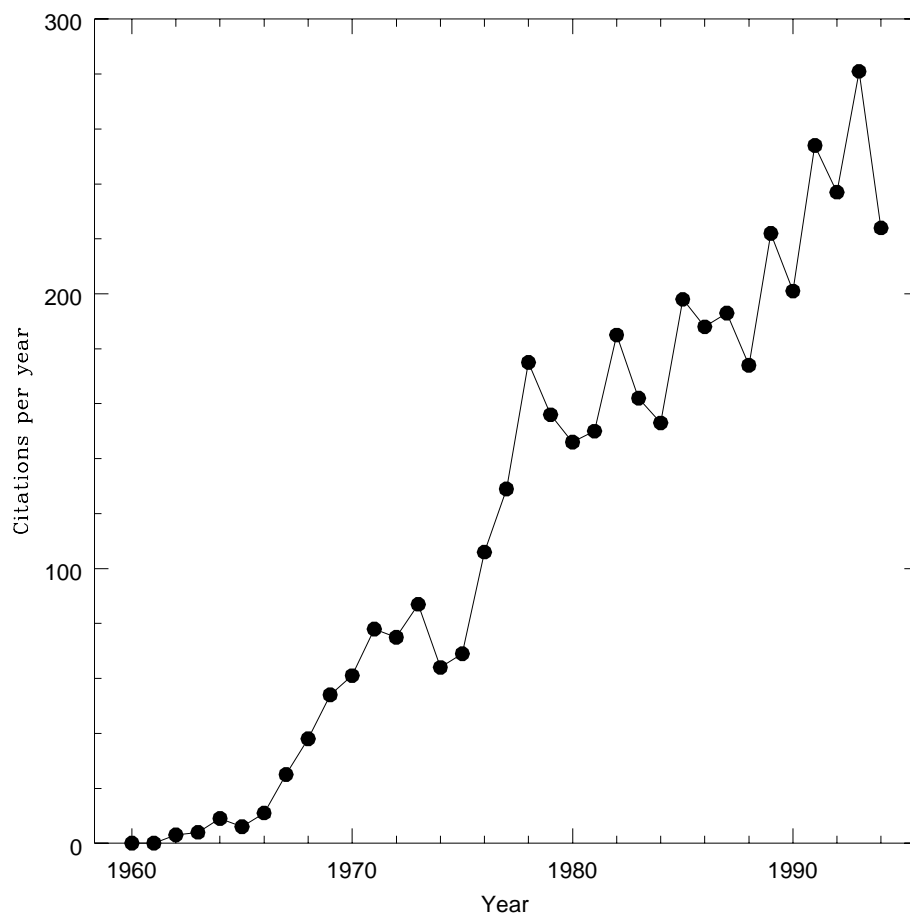


FIGURE 2. Yearly citations of first-author publications by DLB.

Citations	Paper	Topic
575	Eggen, Lynden-Bell & Sandage (1962)	Formation of the Galaxy
461	Lynden-Bell & Pringle (1974)	Viscous Discs
439	Lynden-Bell (1967)	Violent Relaxation
425	Lynden-Bell (1969)	Black Holes in Galactic Nuclei
342	Lynden-Bell <i>et al.</i> (1988)	The Great Attractor
210	Dressler <i>et al.</i> (1987)	Large-Scale Streaming
192	Lynden-Bell & Wood (1968)	Gravo-thermal Catastrophe
180	Goldreich & Lynden-Bell (1965b)	Swing Amplifier
175	Lynden-Bell & Kalnajs (1972)	Generating Spiral Structure
172	Dressler <i>et al.</i> (1987)	D_n - σ Relation

TABLE 1. Top ten DLB papers judged by total number of citations before 1995.

Citations/year	Paper	Topic
43 ± 22	Lynden-Bell <i>et al.</i> (1988)	The Great Attractor
26 ± 10	Dressler <i>et al.</i> (1987)	Large-Scale Streaming
22 ± 13	Lynden-Bell & Pringle (1974)	Viscous Discs
22 ± 10	Dressler <i>et al.</i> (1987)	D_n - σ Relation
21 ± 14	Faber <i>et al.</i> (1989)	Seven Samurai Summary
17 ± 8	Eggen, Lynden-Bell & Sandage (1962)	Formation of the Galaxy
16 ± 7	Lynden-Bell (1969)	Black Holes in Galactic Nuclei
16 ± 8	Lynden-Bell (1967)	Violent Relaxation
14 ± 7	Burstein <i>et al.</i> (1987)	Photometry
13 ± 7	Davies <i>et al.</i> (1987)	Spectroscopic Parameters

TABLE 2. Top ten DLB papers judged by citations per year.

Paper	Topic
Lynden-Bell (1964)	Shape Instability in Collapse
Goldreich & Lynden-Bell (1969)	Io and Decametric Bursts
Lynden-Bell (1969)	Black Holes in Galactic Nuclei
Lynden-Bell & Kalnajs (1972)	Generating Spiral Structure
Lynden-Bell & Pringle (1974)	Viscous Discs
Lynden-Bell & Lynden-Bell (1977)	Negative Specific Heat Paradox
Lynden-Bell (1978)	Gravity Power
Lynden-Bell & Katz (1981)	Isocirculational Flows
Lynden-Bell & Boily (1994)	Highly Wound Magnetostatics
Lynden-Bell, Katz & Bičák (1994)	Mach's Principle

TABLE 3. Top ten DLB papers judged by Donald himself, listed chronologically.

4. Favourites

Shortly before giving this talk, I asked Donald to list what he regards as his best papers. His immediate response was “Not the one on violent relaxation!” He feels his very best paper is Lynden-Bell (1969) in which he predicted that there are black holes in the centres of galaxies. His top ten are given (chronologically) in Table 3. Notice that only *three* of these appear in either of the two previous categories!

It is a pleasure to thank Alice Duncan for providing a list of Donald's publications, and especially Sigal Balshine-Earn for enthusiastic help in compiling and reducing all the citation data. Of course, I am most grateful to Donald for writing all these papers, and for giving me the opportunity to work with him myself.

5. Publication List

In the publication list that follows, papers have been placed in three categories by Donald:

- G* Galactic Structure
- Q* Quasars, Galaxy formation and evolution
- C* Cosmology

There are 74 papers in category *G*, 47 in *Q* and 51 in *C*. Eight papers do not fall in these categories. The list is ordered chronologically by year, and alphabetically by journal within each year. Non-refereed articles appear last in each year.

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