Library and Information Services in Astronomy IV
July 2-5, 2002, Prague, Czech Republic
B. Corbin, E. Bryson, and M. Wolf (eds)

Analysis of the Publication Pattern of Radio Astronomers from India during 1990–2001

Sunita Barve and Gopal-Krishna

National Centre for Radio Astrophysics[1]*, Tata Institute of Fundamental Research, Post Bag No. 3, Ganeshkhind, Pune 411007, India*
sunitab@ncra.tifr.res.in & krishna@ncra.tifr.res.in

Abstract.

We present a preliminary analysis of some broad features of publication trends in the research work of radio astronomers from India (including those on visits to institutes outside the country).

The period covered by this study is 1990–2001 (12 years) and the work published in refereed journals as listed in the ADS database is considered in our study.

1. Introduction

There are 315 publications in the sample. Of these, 206 (65%) have their first author with Indian affiliation, while the remaining 35% have the first author affiliated with a foreign institute.

The total number of radio astronomers from India who authored the papers in our sample is 45. Their institutional affiliations are: Indian Institute of Astrophysics, Bangalore (3), National Centre for Radio Astrophysics (TIFR), Pune (21), Physical Research Laboratory, Ahmedabad (2), Radio Astronomy Centre (NCRA-TIFR), Ooty (5), Raman Research Institute, Bangalore (14).

2. Questions Posed

For each publication in our sample, we have considered the following points:

1. Is the paper observational (i.e., does it report new observations)?
2. If so, was an Indian telescope used (and which type: radio/others)?
3. Does the paper report (new) multi-waveband observations (i.e., observations taken in more than one waveband, e.g., radio+optical)?
4. Is the paper published as a rapid publication (e.g., as a letter to *Nature/MNRAS/ApJ/A&A*?)

[1]NCRA-TIFR operates the Giant Metrewave Radio Telescope (GMRT)

5. Is the paper published in an Indian journal? The journals considered here are: *Bulletin of the Astronomical Society of India(BASI)/Indian Journal of Radio and Space Physics(IJRSP)/Journal of Astrophysics and Astronomy.*

6. Are observations made in waveband(s) other than radio also utilized in the paper (i.e., taking them from literature/archive)?

3. Results

3.1. Papers Reporting "New" Observations

Out of the total 315 papers, 217 (69%) reported new observations. (See Fig. 1a)

Year	No. of Papers	Observational Papers	First author from outside India
1990-1993	79	56 (71%)	12(21%)
1994-1997	90	65 (72%)	26(40%)
1998-2001	146	96 (66%)	22(23%)
Total (12 years)	315	217 (69%)	60 (28%)

3.2. Papers Reporting "New" observations Made using Indian Telescopes

Out of the total 217 observational papers, 86 (40%) papers are based on observations using Indian telescopes. The break up is as follows:

Sr.	Name of the Telescope	Type	Papers published
1.	Gauribidanur Dipole Array	Radio	10+1
2.	Gauribidanur Radio Heliograph	Radio	5
3.	GMRT	Radio	10†
4.	Mt. Abu 1.2m	N-IR	1
5.	ORT	Radio	36+1
6.	OSRT	Radio	5‡
7.	Rajkot Radio Telescope	Radio	2
8.	RRI 10.4m	MM	6
9.	Thaltej Dipole Array	Radio	4
10.	UPSO 1m	Optical	1+1
11.	VBT 1m	Optical	1+1
12.	VBT 2.34m	Optical	5
Total No. of telescopes used: 12			86

† Available only since late 1999

‡ Operations closed

3.3. Papers Reporting "New Multi-Waveband" Observations

As shown in Fig. 1b, out of the total 217 observational papers 31 (∼14%) reported new multi-waveband observations (i.e. in addition to radio-band observations). Of these, 14 papers had the first author affiliated to a foreign institute.

Year	No. of Papers	First author from outside India
1990-1993	9	4
1994-1997	11	8
1998-2001	11	2
Total	31	14

3.4. Papers Published as "Rapid Publication"

Out of total 315 papers 33 papers (∼10%) were published as a rapid publication (See Fig. 2a). Of these 11 papers had their first author affiliated to a foreign institute.

Year	No. of Papers	First author from outside India
1990–1993	5	2
1994–1997	7	3
1998–2001	21	6
Total	33	11

3.5. Papers Published in "Indian Journals"

Out of the total 315 papers 40 papers (∼13%) were published in Indian journals.

Year	Name of the Indian Journal		
	BASI	IJRSP	JAA
1990-1993	1	2	10
1994-1997			12
1998-2001	3		12
Total	4	2	34

3.6. Papers using "Multi-Waveband" Observations

Out of total 315 papers 91 papers (∼29%) made use of multi-waveband observations (the non-radio part taken from the literature/ archive) (See Fig. 2b). Of these, 32 papers had their first author affiliated to a foreign institute.

Year	No. of Papers	First author from outside India
1990-1993	24	10
1994-1997	23	10
1998-2001	44	12
Total	91	32

4. Noticeable Trends

1. There is a steady increase in the number of observational papers published by Indian radio astronomers. However no trend is evident when we consider the number of observational papers as a fraction of all papers published (Section 3.1).

2. There is a steep rise in the number of papers appearing as "rapid publication". For a vast majority of such papers, the principal author is from India (Section 3.4).

3. During the recent years,there has been a steep rise in the number of publications in which use of multi-waveband data have been utilized (Section 3.6).

Acknowledgments. This work is based on the use of Astrophysics Data System (ADS). We thank Shri Annabhat Joshi for help with preparation of this paper in LaTeX.

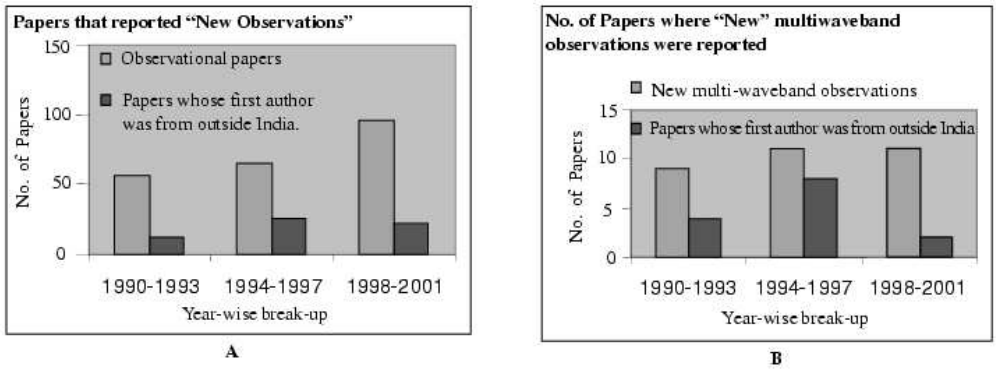

Figure 1 **a.** Histograms showing papers reporting "new observations"; **b.** Papers reporting "new multi-waveband observations".

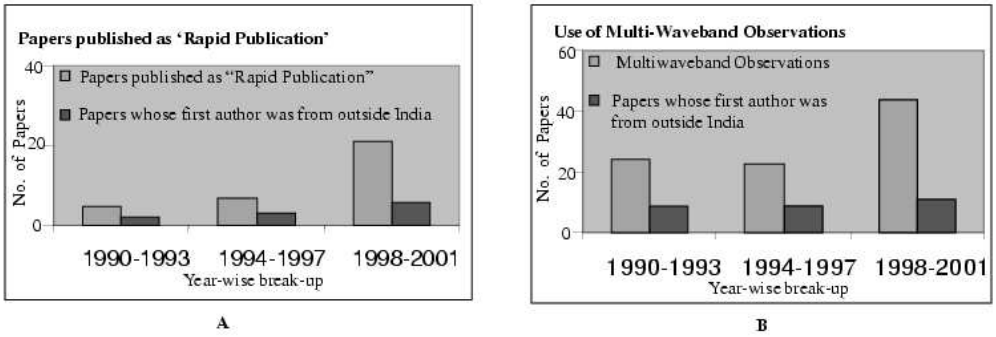

Figure 2 **a.** Histograms showing papers published as rapid publications; **b.** Papers reporting multi-waveband observations.