

**LISA –  
THE LIBRARY AND INFORMATION SERVICES  
IN ASTRONOMY CONFERENCES**

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**Abstract.** In this chapter, we give an overview of the history of LISA meetings and describe their logistics. The topics covered by the conferences and how they have changed over time are reviewed, and we investigate how LISA influences the professional life of astronomy librarians.

## 1. Introduction

The world of astronomy is small. Given the fact that astronomy is dealing with the universe, its structure and composition, this may sound like an incongruous statement. But the number of observatories worldwide is actually much lower than, for instance, that of biological research centers or chemistry labs. Likewise, the community of astronomy librarians is sufficiently small in number to know colleagues at other institutions by name. If we need advice in our daily work or want to exchange experience regarding latest tools and resources, we contact these fellow librarians. In the course of time a remarkable network has been developed that is unknown in most other subject areas.

There is one drawback though: geographic isolation. As observatories are often remotely located and the number of astronomy institutes per

country is very low, our closest colleagues are typically far away so that we cannot meet them personally on a regular basis. Professional meetings are, therefore, essential in order to stay abreast of the changes that occur in our work.

LISA conferences provide such an opportunity. This conference series on “Library and Information Services in Astronomy” is important because it offers a forum for astronomy librarians to discuss common problems and possible solutions, to share experience and knowledge with colleagues from all over the world, and to learn from invited experts the direction in which the information profession is moving. LISA conferences are tailored to the professional situation of astronomy librarians; they help us fulfill the information needs of our library users.

## 2. History – How LISA Began

The first Library and Information Services in Astronomy (LISA) conference was held in Washington, DC in 1988 and was also the first meeting specifically organized as an international gathering of astronomy librarians. A history of how this LISA conference actually happened is perhaps of interest. When Brenda Corbin, US Naval Observatory (USNO) librarian, attended the XVIII<sup>th</sup> IAU General Assembly in Patras in 1982 as a guest, she asked permission to present to Commission 5 a brief overview of projects of interest to astronomy librarians. In this overview, it was proposed that an international meeting of astronomy librarians, planned and sponsored by the Commission, be taken under consideration. The Commission members in attendance decided to support the idea of a meeting, and the author continued to discuss such a meeting with other astronomy librarians and with Gart Westerhout, then Scientific Director of the US Naval Observatory and also a member of Commission 5.

At the XIX<sup>th</sup> IAU General Assembly in Delhi in 1985, Westerhout continued to discuss the possible conference with the Commission. As Brenda Corbin was not present in Delhi, Robyn Shobbrook, then librarian at the Anglo-Australian Observatory and present at the GA, represented astronomy libraries, adding her support to such an international meeting. On his return from Delhi, Westerhout reported that Commission 5 warmly welcomed plans for such a meeting and would ask for financial support from the IAU. He also volunteered the USNO as host for the conference and volunteered Brenda Corbin to arrange the planning. She had never been involved with conference planning, but with help from many colleagues, especially Sarah Stevens-Rayburn, Space Telescope Science Institute (ST ScI), Ellen Bouton, National Radio Astronomy Observatory (NRAO), Adelaide del Frate, Coordinator of NASA libraries, George Wilkins, Royal Green-

wich Observatory (RGO), and Gart Westerhout and other staff members at the USNO, a conference was planned. In fact it was George Wilkins who suggested the name of the conference: Library and Information Services in Astronomy.

The first LISA conference was held in Washington, DC in the summer of 1988, just before the XX<sup>th</sup> IAU General Assembly in Baltimore, MD. The IAU provided part of the financial support, and the meeting was designated as IAU Colloquium 110. It was a very successful conference with 120 librarians and astronomers in attendance from all over the world. It was an exciting time as librarians met face to face for the first time with colleagues they had corresponded with for many years. Close contacts among astronomy librarians had always existed, but the contacts became more formalized with the LISA meeting.

In this age of instant communication, it is perhaps difficult to think back to the earlier days when most international communication was by airmail letters. The idea that astronomy librarians could actually travel from all parts of the globe and meet in person was an incredible thought. The excitement generated at the meeting by astronomy librarians just being together as a group was impressive and is still remembered vividly by all those who attended. Unfortunately, there was no group photograph taken as some of the conference planners were so new at planning meetings they did not realize there *should* be a group photo.

The proceedings, published by the USNO, were edited by the Co-Chairs of the SOC, George Wilkins and Sarah Stevens-Rayburn (Wilkins & Stevens-Rayburn 1989). Gart Westerhout was very supportive of the conference and paid for the proceedings to be published with US Naval Observatory funds. Copies were given to every participant and also sent to most Observatory libraries throughout the world. In addition, copies were sent to most major US universities and all library and information science schools, making the LISA I proceedings the most widely distributed of any LISA conference. WorldCat shows that 107 libraries have copies of these proceedings. Much credit must be given overall to Gart Westerhout, for without his support for this meeting, and also the financial support he provided from the USNO, the meeting would not have taken place.

When LISA I was held, there was no plan at the time to have another meeting, or make the conference a series of meetings. However, after five or six years had passed, we began to discuss the possibility of another meeting as the first had been so successful. LISA II was held in Garching, Germany in 1995, sponsored by the European Southern Observatory; LISA III in Tenerife, Canary Islands, Spain in 1998, hosted by the Instituto de Astrofisica de Canarias; and LISA IV in Prague, Czech Republic in 2002, sponsored by the Astronomical Institute of the Charles Univer-

sity, Prague, and the Astronomical Institute of the Academy of Sciences of the Czech Republic. LISA V, currently planned for June 2006, will be held in Cambridge, Massachusetts, USA and will be co-hosted by the Harvard-Smithsonian Center for Astrophysics (CfA) and the Massachusetts Institute of Technology (MIT) Libraries.

The proceedings of all LISA conferences including the one planned for LISA V (Graves, Birdie & Ricketts, in preparation) are listed in the Bibliography at the end of this chapter. Information about past and future LISA conferences as well as a link to the LISA Manual, a guidebook compiled by previous meeting organizers, can be found on the web<sup>1</sup>.

### **3. Conference Logistics**

As the idea for a special workshop for astronomy librarians was initially developed during discussions at an IAU General Assembly, LISA conferences traditionally have had a close cooperation between astronomers and librarians. Unlike other librarians' conferences, scientists have always been actively involved as organizers and as participants. Convincing the authorities who control travel funds of the value of meeting other professionals in the same subject area has not always been easy, and the support of astronomers interested in libraries was and still is invaluable in conveying this idea. Other typical attendees are publishers, representatives from journal agencies and computer scientists, especially those involved with astronomical data centers.

The main target audience of LISA conferences, however, is astronomy librarians. Participants represent a large variety of organizations, from observatories with a 'solo librarian' who runs the library alone to university librarians, affiliated with large library systems. The time and site of LISA I were excellently chosen to assure attendance by a large number of participants. With the XX<sup>th</sup> IAU General Assembly being held immediately afterwards, LISA I achieved the remarkably high number of 120 registrants (see Table 1). LISA II, held in 1995, did not take place jointly with any other major event. However, even seven years after the first meeting, the momentum of the initial meeting could be easily revitalized, and the second LISA conference welcomed 121 participants, this time with many more attendees from Europe. At the end of the meeting, the general consensus was that the interval between meetings should be three to four years, and when LISA III came along in 1998, potential participants had already been waiting for it to happen. The conference had 101 participants. The number of attendees rose to 106 at LISA IV in 2002.

<sup>1</sup><http://www.eso.org/libraries/lisa.html>

TABLE 1. Numbers of participants, talks, posters, other presentations and countries represented at LISA conferences.

	LISA I Washington DC USA 1988	LISA II Garching Germany 1995	LISA III Puerto de la Cruz Tenerife Spain, 1998	LISA IV Prague Czech Rep. 2002
Participants	120	121	101	106
Talks	55	22	36	37
Posters	8	30	20	30
Other presentations	Special interest groups	Tutorials, Panel discussions, BOF sessions	Open forum	Panel discussions, poster reviews
Countries	26	26	23	25

An important aspect of LISA conferences has always been the internationality of their attendees (see Table 2). All conferences welcomed participants from more than 20 countries, and the number of languages spoken at the Opening Receptions is impressive. The Scientific Organizing Committee (SOC) is typically composed of members from a wide geographical distribution to broaden the scope of the topics covered. All participants profit immensely from this unbiased exchange of experiences, and the conference becomes richer and more diverse than national meetings.

However, the large international diversity requires special attention as it brings additional problems for organizers and participants. While even attendees from Western countries have difficulty obtaining the financial support to attend, this problem is even more severe for participants from developing countries. In order to help mitigate the situation, the Friends of LISA (FOL) committee was founded before LISA II. This support group is unique in the field of astronomy and will be dealt with in more detail below. Organizers are also more often confronted with visa-related questions from potential attendees, but the largest problem is the conference language. At international meetings, English is widely accepted as the common language. However, participants who do not travel regularly often fear they will not be able to understand speakers or to express their own opinion adequately in a language other than their mother tongue. LISA organizers therefore encourage speakers to use presentation software to prepare slides and handouts which help non-native speakers follow their talks, and

TABLE 2. Nationalities of LISA participants.

	LISA I	LISA II	LISA III	LISA IV
Argentina	2	1	2	2
Austria		2		
Australia	2	2	1	2
Belgium	1	1		
Brazil	1			
Canada	1	1	1	2
Chile	1		2	2
China	5	1		2
Czech Rep.	2	3	3	10
Denmark		3	3	1
Finland			1	1
France	6	14	8	15
Germany	6	22	11	7
Hungary	1	3		4
India	3	1	1	6
Indonesia	1			
Israel	1			
Italy	2	12	10	6
Japan	3	3		1
Korea		2		
Malaysia	1			
Mexico		2	4	3
Netherlands	2	3	2	2
N. Irealand		1	1	
Poland	3	3	3	2
Russia	2	5	4	4
South Africa	1	1	1	1
Spain	1	1	11	2
Sweden	1	1	1	1
Switzerland	1	1	1	1
Ukraine		3	2	2
United Kingsom	5	6	8	3
USA	65	23	20	24
Total	120	121	101	106

the constant reminders to “*Please speak slowly!*” have almost become a trademark of LISA conferences.

Some problems require more sophisticated solutions than only visual aids. When a hearing-impaired colleague participated who could not pos-

sibly understand the oral presentations, volunteers were recruited to take turns making detailed notes of the talks for her on a PC installed in the auditorium. Sitting side by side, she could read on screen what was being typed. Speed was important, typos were not. No matter how many mistakes entered the manuscript, it was still a good way to follow the presentation. As a side-effect, many of the volunteers learned through this exercise how to distinguish good from bad presentations. When one has to take notes, one becomes aware that some speakers structure their talks such that they are easy to summarize while others seem to talk to themselves rather than to the audience.

Volunteer work has always played a crucial role at LISA conferences. The more limited the financial underpinnings of a conference are, the more the organization depends on the willingness of individuals to spend their private time, energy and often money on the project. No organizer has ever been able to stick to normal working hours during the months before the conference. The universe seems to circle around this single event, and the to-do list somehow never gets any shorter, no matter how many tasks have already been accomplished. For the organizers, it is impressive to see how many different questions can be asked by registrants, what kinds of problems need to be solved and which logistical issues have to be dealt with before the event. When it finally takes place, the organizers only rarely have a chance to listen to talks because they are kept busy dealing with organizational matters while participants enjoy themselves at the presentations or during coffee breaks. Sometimes the final stages of conference preparation coincide with important private endeavors. Monique Gómez, our LISA III host, had given birth to a girl merely four months before the conference. Despite her many obligations as a young mother, she mastered fabulously all challenges that came with the conference organization. The child, by the way, was very appropriately called *Elisa*.

Many librarians had never been to a professional conference before LISA I. Some did not expect to receive permission to attend and hence were reluctant to even apply. Luckily, the network of astronomy librarians has always been very close, and many colleagues needed just a little personal encouragement to believe that their institutes' authorities would actually support them. Now, after four LISA conferences have taken place and the fifth is in preparation, recognition of the importance of LISA conferences has become widespread and many observatory directors are aware of the value of these meetings. However, despite this change of attitude, librarians (and many astronomers too) are again facing difficulties in getting funding as budgets are shrinking and travel costs become unbearable for many institutions.

Funding for LISA conferences is achieved in various ways. Unlike some

large scientific conferences, the registration fee cannot be set arbitrarily high as otherwise no librarian would find the money to attend. On the other hand, the registration fee often is the predominant income to cover meeting costs unless one organization is willing to bear all or a major fraction of the costs. Thanks to the excellent work of the LISA I organizers, this meeting was accepted as an IAU Colloquium (no. 110) and was thus funded by the IAU. LISA II, an IAU Technical Workshop, still received some IAU support, but the bulk of costs was born by the hosting institution, ESO. Subsequent conferences were no longer eligible for funding as it is the IAU's policy to not support series of meetings. LISA III organizers worked miracles when they achieved funding through the European Union. The meeting was a Euroconference and was partially funded by the European Commission under their TMR (Training and Mobility of Researchers) program. For LISA IV, Marek Wolf obtained generous funding from Sun Microsystems.

Donations are a crucial part of the funding of LISA meetings, both from commercial and private sponsors. Publishers, journal agents, learned societies, and librarians' professional organizations are contacted during the planning phase of a conference, hoping that they might be willing to support the meeting. In its efforts to acquire financial support, the Local Organizing Committee can find itself in competition with the Friends of LISA Committee which also tries to collect funds. In contrast to the LOC, FOL also contacts private sponsors who are happy to see that their personal contributions enable participation of colleagues who would not have been able to attend without financial support. Private donations to FOL are yet another sign of how much LISA participants appreciate the conferences' internationality.

Thoughtful selection of the conference dates can help increase the number of participants. The best example is LISA I which was held immediately before the IAU General Assembly. LISA V has been scheduled to follow a large conference of librarians, the Annual Conference of the Special Libraries Association, which also will be held on the east coast of the US. It is hoped that SLA attendees interested in astronomy, in particular those traveling from the western US or beyond, will use the opportunity to remain on the east coast and participate also in LISA V.

At the time of writing, a formal procedure for choosing LISA conference sites is not yet in place. Since the second meeting, a group of librarians that had been actively involved in previous conferences (sometimes referred to as the Preliminary Organizing Committee, or POC) has suggested the next host. For LISA II to V, the POC consisted of Ellen Bouton (NRAO), Brenda Corbin (USNO), Marlene Cummins (Univ. Toronto) and Sarah Stevens-Rayburn (STScI). Uta Grothkopf (ESO) joined after LISA II. Selections have been based on various factors: first and foremost, enthusiasm

and dedication of the hosting organization are essential. Without administrative, financial and logistical support from their institutions, librarians will not be able to organize and carry out a LISA meeting. In addition, the conference site should be accessible at reasonable airfares from many parts of the world and must provide good infrastructure at the hosting institution (meeting rooms, technical equipment, means of communication) as well as in the neighborhood (moderately priced accommodation, public transportation).

All previous LISA sites fulfilled these requirements. While the site selections of LISA I, II and III were almost exclusively based on the willingness of the local librarians to take on the organization, the Preliminary Organizing Committee was very happy to receive applications from four sites for LISA IV. A survey among potential participants revealed the strengths and weaknesses of the individual candidate sites and helped to select the most viable location. With the fourth conference held, LISA had taken place once in the US and three times in Europe. For LISA V, it was felt that the conference should return to the United States. The Wolbach Library at the Harvard-Smithsonian Center for Astrophysics and the Libraries of the Massachusetts Institute of Technology, Cambridge, MA, volunteered to co-host the meeting in June 2006. When the time comes for LISA VI, it might be appropriate to find a host outside of the US and Europe. By then it is hoped to have a proper "LISA Steering Committee" in place that takes care of all issues in conjunction with site selection and pre-conference organization.

A small group of librarians has been instrumental in the scientific organization of all or almost all LISA conferences that have taken place up to now. The local organizers, however, have changed from one meeting to the next. In order to avoid repeating mistakes that other organizers have made before, the so-called "LISA Manual" was put together by the POC. It contains "lessons learned" – sometimes through mistakes, sometimes through success – and guidelines for future organizers. Some examples of "lessons learned" include: starting registration procedures earlier so that foreign attendees have enough time to obtain the documents needed; giving additional instructions before the conference to speakers whose first language is not English; not scheduling too many speakers in a session so that ample time is available for discussion of the issues raised (it is quite easy to assume every session will be on time and speakers will always stay on schedule – organizers learned quite early that this is not the case); allowing ample time for viewing the posters and speaking with the authors.

The Manual also summarizes the tasks of the various committees (Preliminary Organizing Committee (POC), Scientific Organizing Committee (SOC), Local Organizing Committee (LOC), Friends of LISA (FOL)), con-

tains information about essential issues organizers need to consider, and provides checklists and sample documents. The Manual is available on the web<sup>2</sup>. It should be expanded after each LISA meeting with the experiences gathered by the recent organizers so that perhaps, one day, unnecessary mistakes, bad timing, and disadvantageous decisions can be avoided altogether.

#### **4. Friends of LISA**

The Friends of LISA Committee (FOL) was established before LISA II in order to assist astronomy librarians in resource-poor countries to attend the conference by collecting sufficient funds from donors to cover housing, a small per diem, and, in some cases travel expenses and registration. FOL also tries to find reasonable accommodation at the venues such as dormitories and hostels in order to hold down costs for the grantees.

Although there was no official Friends of LISA Committee for LISA I, the IAU provided some funds to assist librarians from developing countries in attending the meeting as it was designated an IAU Colloquium. However, the FOL became a formal entity when planning began for LISA II and has functioned for all LISA meetings since that time. The FOL Committee consisted of Ellen Bouton (NRAO), Brenda Corbin (USNO) and Marlene Cummins (Univ. Toronto) for LISA II, and added Ron Enders (Ellen's husband) as treasurer of FOL for LISA III and IV. For LISA V the FOL Committee is still Bouton, Corbin and Enders, but members Jessica Moy (NOAO) and Liz Bryson (CFHT) have now joined the Committee.

FOL solicits funding from publishers, astronomical institutions, and other organizations, and asks for individual donations from librarians and interested astronomers. Some publishers and institutions have been supporting the conferences with financial donations since LISA II. They realize the importance of the exchange of information among astronomy librarians and astronomers, and wish to be part of promoting diverse attendance. Another donor for LISAs I-IV was The Special Libraries Association (SLA), a professional organization to which many US and Canadian astronomy librarians belong. SLA recognized the significance of this international gathering of librarians in a specialized subject field and was very interested in supporting these conferences. Some donors helped only once, but in a significant way. For example, the Soros Foundation supported travel and per diem expense specifically for several Eastern European librarians to attend LISA II. Individual donations were at a particular high for LISA IV as the proceedings were to be dedicated to Joyce Rey Watson, who had passed away in 2001, and the donations were in her memory. Organizations such

<sup>2</sup><http://www.eso.org/libraries/lisamanual/>



Figure 1. Friends of LISA IV Committee: Brenda Corbin, Ellen Bouton, Ron Enders, Marlene Cummins pictured at LISA IV (2002).

as the AAS, AUI and ESO have been steady supporters, again realizing the importance of a truly international conference. To show the scope of the fundraising necessary, the total amounts raised in US dollars are: LISA II – \$9,822; LISA III – \$17,850; LISA IV – \$18,275; LISA V – \$21,091. Even with the substantial amounts collected, the funds were still not sufficient to cover all requests for assistance, and some applicants had to be turned down.

Each meeting has been enriched by the attendance of librarians from developing countries who provide the meeting with diverse viewpoints relating to the world of astronomy libraries. The FOL Committee feels that helping colleagues keep pace with the latest trends enables them to return as leaders and experts to their institutions and to their local and national library communities. This benefits both the librarians who would not otherwise be able to attend without financial assistance, but also the other attendees who reap the rewards of a richer and more diverse conference. FOL grantees are enthusiastic participants in the conference and many contribute papers, both oral and poster presentations. Librarians thus assisted are both grateful and enriched by the conference experience and upon their return home have been able to share their newly acquired knowledge with other colleagues. Table 3 shows the number of FOL grantees and countries represented for LISAs II-V.

TABLE 3. FOL Grantees.

Meeting	FOL Grantees	Countries represented
LISA II	23	10
LISA III	21	10
LISA IV	29	12
LISA V	18	11

### 5. Subject Matter Covered by LISA Conferences

During the past two decades, vast changes have taken place in astronomy libraries, and especially in the dissemination of astronomical information. The LISA conferences, spanning 1988 to the present provide an excellent survey of the developments that occurred during this period. Due to the comparatively small number of core journals and databases, coupled with generous funding from space agencies and non-profit organizations, astronomy has often been a leader in pursuing evolving technologies earlier than other subject areas. More than once, astronomy librarians were already applying technologies in their day-to-day work with which colleagues in other disciplines were just becoming acquainted. A few examples from the early days: e-mail arrived at the US Naval Observatory as early as 1987, just in time to assist with the planning of LISA I; project *STELAR* (*STudy of Electronic Literature for Astronomical Research*) was launched in March 1991 and developed later into the *NASA/ADS Abstracts Service*; the first webpages of the ESO, NRAO, and ST ScI libraries were made available in 1994; and the electronic edition of a scientific journal in astronomy (*ApJ Letters*) appeared in July 1995. More recent LISA meetings discussed networked databases, digitization projects, open access projects in astronomy libraries, digital data creation and preservation, as well as experimental navigation and knowledge discovery tools.

Not only has technology developed rapidly, but also the professional role of librarians has changed considerably. While the library's mission remains the same – to fulfill the information needs of our users by selecting, collecting, preserving, and providing access to relevant information resources – the library's function in accomplishing this mission has become increasingly invisible to the user. Interconnected databases and seamless access among resources are often taken for granted and not attributed to libraries. An important topic of LISA conferences has therefore been the quest to clarify the librarians' role in a changing environment. Emerging fields of activity

for librarians are becoming increasingly a focus during meetings, and each conference has provided examples of new areas of work.

Several other topics have been with us throughout all LISA conferences: collection development, information retrieval and delivery, and the organization and management of books, journals, and other materials provided by astronomy libraries; the so-called journal crisis with ever-rising subscription costs; and the establishment, maintenance and development of bibliographic and full text databases in astronomy, to name just a few. For all of these areas, LISA conferences provide a forum that allows us to see how technology has changed both the material we handle (paper, non-print material, online publications) and the way these tasks are accomplished.

Special attention has always been given to two topics: historical documents, including their preservation and archiving, and collaborative projects. As the network of astronomy librarians is very tight, with many personal contacts among colleagues from all over the world, improving collaboration has traditionally been of considerable interest to attendees. A variety of projects has been initiated from ideas originally developed at LISA conferences, often arising from the concern that access to information is not the same for everyone, as the gap between those with easy access to information resources and those without is becoming larger and more severe. Awareness of the situation in various countries has regularly been discussed at LISA meetings.

Table 4 and Fig. 2 give a schematic overview of topics covered during LISA conferences. Assigning a talk or poster to a specific group is not always unambiguous, but we believe that the table nevertheless reveals some trends regarding LISA subject areas. Explanations of the groups are given below the table.

In the following, we look more closely at topics discussed during LISA I to IV.

#### LISA I:

When the first LISA conference was planned, it was the organizers' principal aim to provide an opportunity for astronomy librarians to discuss common problems and to facilitate cooperation among colleagues from different countries. Representatives from other professions concerned with providing astronomical information were invited also, which guaranteed lively discussions on a wide range of topics. Special attention was given to new developments in the use of computers and telecommunication networks without overlooking the needs of librarians and astronomers who did not have easy access to such facilities (see Wilkins & Stevens-Rayburn 1989, Preface).

In all, 63 presentations were made and organized in the conference proceedings in seven sections. *Publication and Acquisition of Books and Journals* dealt with printed literature in libraries, in particular the difficulties in

TABLE 4. Topics covered at LISA conferences. Total numbers do not necessarily coincide with totals mentioned elsewhere in this chapter; they are based on the papers published in the proceedings. LISA II information is based on the program.

	LISA I	LISA II	LISA III	LISA IV
Information maintenance <sup>1</sup>	22	7	4	7
E-journals/future of publishing <sup>2</sup>	1	6	8	8
Information retrieval prints tools <sup>3</sup>	9	10	3	2
Information retrieval nonprint tools <sup>4</sup>	5	18	10	10
Information delivery <sup>5</sup>	6	2	1	2
Historical documents/historical records <sup>6</sup>	5	6	5	6
Preservation/digitization <sup>7</sup>	1	1	2	6
Archives, data centers, VO <sup>8</sup>	6	9	1	5
Bibliometrics <sup>9</sup>	0	1	3	9
Collaborative projects <sup>10</sup>	7	1	5	3
Role of librarians <sup>11</sup>	1	1	5	13
Total	63	62	47	71

<sup>1</sup> Organization and management of books, journals, and other items; acquisition incl. journal costs; handling of preprints, observatory publications, non-print material etc.

<sup>2</sup> including ADS, e-journals consortia

<sup>3</sup> Directories, keywords, astronomy thesaurus. Since LISA II, ‘print tools’ typically had at least an electronic equivalent (see <sup>4</sup>)

<sup>4</sup> Similar to <sup>3</sup> but electronic complement, bibliographic and full text databases incl. SIMBAD bibliographic data; experimental knowledge discovery

<sup>5</sup> Tools and technologies: e-mail, online library catalogs, libraries’ webpages

<sup>6</sup> including maintaining the historical record

<sup>7</sup> including historical literature in ADS

<sup>8</sup> including SIMBAD astronomical data and archive projects

<sup>9</sup> including publications in specific countries

<sup>10</sup> Resource sharing, document delivery, collaborative projects

<sup>11</sup> Library of the future, creative librarian, user assistance

obtaining material published in foreign countries. *Searching for Astronomical Information* gave an overview of retrieval aids including updates on the astronomy section of the Universal Decimal Classification and a report on the IAU Astronomy Thesaurus which was published in 1993 by Robyn and Robert Shobbrook (Shobbrook & Shobbrook 1993). At the time of LISA I, the “T-Rex” was still an ongoing project and envisioned only in paper format. Finding aids like the *Astronomy & Astrophysics Abstracts*, astronomical directories and the *Union List of Astronomy Serials* (Lola 1983), all in paper format, were explained, as well as some databases and online information systems (*e.g.*, *PHYS*, *European Space Information System*).

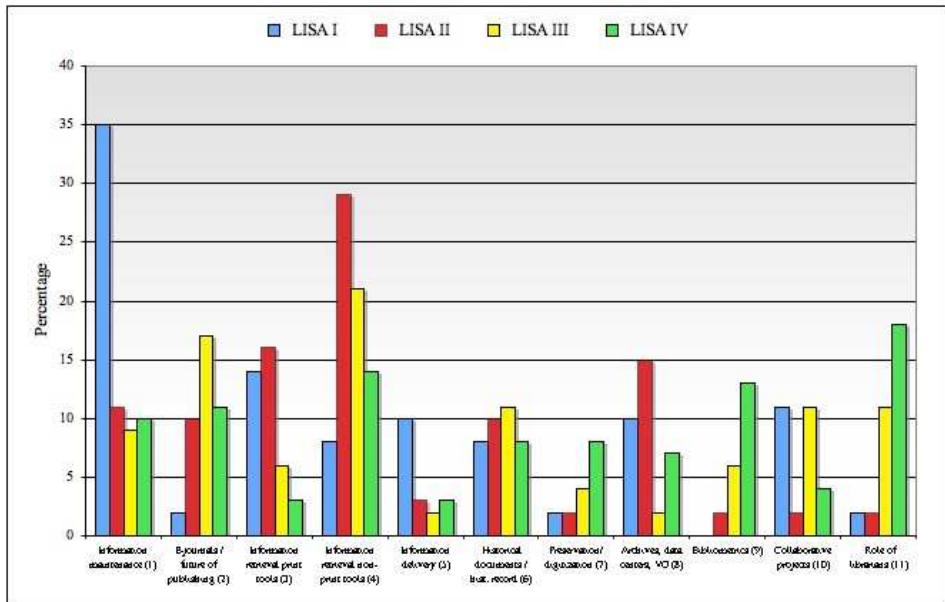


Figure 2. Illustration of Table 4, in percentage.

The section on *Handling and Use of Special-Format Materials* gathered papers that described use and management of preprints, observatory publications and other non-book materials in astronomy libraries. A session entitled *Astronomical Data Centers* provided an overview of archive projects, including two papers with detailed descriptions of the SIMBAD database and its wealth of astronomical and bibliographic information. Care and handling of historical documents as well as the importance of maintaining the historical record were discussed in the section *Conservation and Archiving*. Finally, a wide range of *Other Library Activities* was presented, ranging from the use of computers in small libraries to resource sharing among national and international astronomy libraries.

Two presentations were outstanding as they anticipated developments that occurred during the following years. In *The Future of Astronomical Literature*, Helmut Abt outlined how publishing of scientific journals would evolve; he foresaw speedier publication through electronic submission and reviewing of manuscripts, placement of papers in a “central memory bank”, and greatly improved information retrieval through enhanced search facilities (Abt 1989). Pat Molholt’s description of *The Astronomical Library of the Future* is equally memorable. She described libraries as “technology-intensive environments” where technology will go “far beyond allowing librarians simply to do things faster”, and where networked resources will be

developed to fulfill the information requests of users whenever and wherever they need it (Molholt 1989).

#### LISA II:

LISA II had two major aims: “(1) to provide the opportunity for librarians of astronomical observatories and institutes to meet to discuss common problems and ways of stimulating greater cooperation between libraries and their services; and (2) to raise discussion about the interface areas between astronomical libraries and the wide range of online and other astronomical computer-based services which are becoming ever more widespread” (Murtagh *et al.* 1995, Foreword).

Formal presentations were preceded by one day of “hands-on” tutorials which were meant to introduce participants to some of the important new tools and techniques in astronomical information retrieval. The tutorials were entitled *The Internet for Librarians; The World Wide Web: a Web even a Fly would Love; Astronomical Data; SIMBAD for Librarians; The Preprint Perplex in the Electronic Age; and Starcat, Previewing Data*.

The Keynote was given by José-Marie Griffiths, Director of the School of Information Sciences at the University of Tennessee, who discussed *The Changing Role of Librarians*. Increasingly, astronomy librarians became aware of the large changes affecting the profession and were eager to find their niche in the developing scenario.

Organizers experimented with new formats. In addition to formal presentations, LISA II featured 30 posters, a panel discussion on *Astronomy Libraries in Economically Less-Favored Countries*, three Birds of a Feather (BoF) sessions (following the example of ADASS conferences) on *Digitization of the Library, Main Site/Remote Site Library Operations*, and the *Universal Decimal Classification (UDC) 52*, as well as an open discussion entitled *The Astronomical Library and the Internet*.

The conference program reflected how much information retrieval and delivery had shifted from print to electronic resources. The use of databases and networked systems was strongly represented among the oral presentations, while information retrieval using print resources was discussed almost exclusively in poster papers. Handling of historical documents was dealt with mostly in the context of digitization projects and the concern about reliable preservation of e-documents. Electronic information retrieval, the internet and databases, had moved to the center of attention. As a consequence, after the conference someone (not a librarian) suggested renaming LISA “Library and Information Systems (instead of Services) in Astronomy”. This change, however, was prevented by insisting that “the human factor”, manifested in service, still remained an integral part of the work of librarians, even in the digital age, and the original name was retained.



Figure 3. LISA II group photo. (Courtesy: ESO)

### LISA III:

Starting with the third meeting, LISA conferences were assigned a motto chosen by the POC. The LISA III theme was *Managing Change Gracefully*. It drew attention to “the vast changes librarians and other information professionals are facing today, both in methods of information delivery and the kinds of information being delivered” (Grothkopf *et al.* 1998, Preface).

Astronomy librarians were (and still are) working in a changing environment in which we must redefine our role. Astronomers have become used to interconnected resources being available from anywhere, at any time, through the Internet, and they often bypass the library in their search for information. LISA III emphasized the librarians' role as a mediator between users and information providers by investigating the distinct needs of library users.

The organizers were delighted to welcome M.A. Hoskin, Editor of the *Journal for the History of Astronomy*, as a speaker during the session on historical documents. Other talks in this session provided insight into the scientific use of archives and rare books applied in education.

The impact of electronic information resources was discussed in the Keynote address by Ann Okerson from Yale University. Her talk, entitled *In Today's E-information Marketplace: Am I a Swan or Ungainly Duckling? (Greeting Change Gracefully)*, illustrated how the internet has changed not only the librarian's work environment, but also access to information at large. Scientific electronic journals had become widespread, and consortia were established as a new business model among libraries. Fewer preprints were arriving in our libraries on paper, but they were posted more and more often on the astro-ph (arXiv) preprint server. astro-ph identifiers had become valid references and were quoted in scientific papers, just like articles published in journals. The question was arising about how to include such references in the citation counting of bibliometric studies.

The panel discussion with representatives from publishers and database providers focused on *Linking References and Citations: Secondary Services Facilitate Interoperability of Electronic Resources*. Information resources were becoming increasingly networked. Along with the ease of access to documents came the danger of forgetting that guaranteeing their retrieval and integrity over time had become an urgent duty of librarians, publishers, and official organizations. Accordingly, several talks discussed the problems intrinsic in licensing, disseminating, and archiving electronic journals.

At the time of LISA III, the electronic age was well upon us, and information resources which were not available on the internet were increasingly being marginalized. In their enlightening talk "*If it's not on the Web, it doesn't exist at all*": *Electronic Information Resources – Myth and Reality*, Sarah Stevens-Rayburn and Ellen Bouton (Stevens-Rayburn & Bouton 1998) reviewed the status of astronomical research via electronic means, and pointed out the potential danger of relying exclusively on online resources.

#### LISA IV:

The LISA IV conference motto was *Emerging and Preserving – Providing Astronomical Information in the Digital Age*. It stressed the importance that technology had gained in the professional lives of librarians. In the

preface of the conference proceedings, the editors described this rapid evolution as follows: “Whereas, on the one hand, we librarians agreed that we are living in the most exciting time ever for information retrieval and dissemination, we are, on the other hand, sensitive to a fragile coexistence with current technologies and the communities we serve” (Corbin *et al.* 2003, Preface). Accordingly, the changing role of librarians was the focus of several talks which documented the efforts of astronomy librarians to establish their role in the 21<sup>st</sup> century.

One session was dedicated to *Virtual Observatory Projects*, another to *Trends, Collaborations and Models in Electronic Publications* where evolving models for electronic documents were discussed. The topics *Preservation and the History of Astronomy* were strongly represented, showcasing digitization projects and other attempts to preserve the legacy of historical literature.

In astronomy, as in most other sciences, numbers of publications and citations had become essential in the evaluation of individual scientists, telescope instruments and entire institutions. In many observatories librarians were involved in preparing such statistics; hence citation analysis had gained importance in the work of astronomy librarians. Several talks presented bibliometric studies, often carried out using the NASA ADS abstracts service which had become the predominant tool for retrieval of astronomical literature. Finally, the session on *New Tools in Knowledge Discovery* demonstrated interconnections among astronomical information resources and the increasingly seamless navigation from observations to publications and back to the astronomical data from which these publications resulted.

LISA IV featured three panels on *Physical vs. Electronic Libraries, Developing Countries, and Astronomy Users* that provided excellent opportunities for discussion. Poster reviews were a newly introduced format that drew (well-deserved) attention to 30 excellent posters presented on a large variety of topics.

## 6. Benefits of the LISA Meetings

In the first discussions of an international astronomy librarians’ meeting at the IAU GA in 1982, Commission 5 attendees and the invited guest Brenda Corbin (USNO) were very much in agreement that astronomers should be involved in this meeting. Also, the idea that astronomers and librarians should interact and cooperate in general was accepted. Perhaps this idea of collaboration was an idea whose time had not yet fully come to reality, but would certainly develop during the first and later LISA conferences. It was fortunate that Commission 5 member George Wilkins (RGO) agreed to

become Co-Chair of the SOC for the first LISA, as he had long been a strong supporter of the role of astronomy librarians and the value they brought to the field. Of the 120 attendees at the first LISA, 23 were astronomers, and 17 of the papers were given by astronomers.

Astronomy librarians sometimes fall into two groups. One group is those whose institutions value them and their work, and look to them as active partners in the research projects of the institution. The other group, through absolutely no fault of the librarian, is one where the institutional leaders think of the library as more of a clerical entity, merely ordering books and journals and putting them on the shelves. It is difficult to know why institutional directors have two such diverse attitudes. However, with the LISA meetings, some change has been fostered as now many directors see that a true professional conference is being held, astronomers are participating, and librarians are giving relevant and interesting professional papers. Librarians who receive grants from an outside funding source to attend an international meeting certainly help institutional directors take notice, and therefore raise the librarian's stature and worth in the eyes of the institution. LISA meetings make it clear that librarians should be considered vital and valued partners in their institutions' research. Attitudes have been changed, and one hopes attitudes will continue to be changed in the way the librarian is viewed.

The LISA meetings reflect the flow of librarians coming into and leaving the field. It has long been customary that astronomy librarians tend to stay in their positions most of their careers, accumulating corporate knowledge in the field that made them especially valuable in their positions. A few examples are Joyce Rey Watson (CfA and ADS), Robyn Shobbrook (AAO), Helen Knudsen (CalTech), Cathy Van Atta (NOAO) and Marlene Cummins (Univ. Toronto). Some of the librarians who were very active in planning LISA I have retired, but some are still working. As new librarians come into the field, there are several ways in which they immediately become a part of the community. They are added to ASTROLIB, the internet announcement list which was an outgrowth of LISA I. Ellen Bouton (NRAO), formed and managed the list until her retirement in 2003. Marsha Bishop, current NRAO librarian, now manages the list. Librarians send messages to Ms. Bishop, which are then sent to astronomy librarians worldwide. ASTROLIB has proven to be a very successful means of communication among all astronomy librarians.

Another way to introduce new librarians to their colleagues is via the list of all astronomy librarians and their contact information which is on the ESO website. Uta Grothkopf (ESO), initiated and maintains this list. An outgrowth of LISA II, this online source makes it possible to locate colleagues all over the world. This is especially helpful if one is looking

for publications from a certain observatory. As most astronomy librarians are always willing to assist their colleagues, new librarians in the field find immediate cooperation and a friendly greeting via this route. It is easy for one to feel a part of a community almost immediately for these and other reasons. Meeting these colleagues in person for the first time at a LISA conference strengthens the relationship and the sense of close community.

The LISA meetings not only bring librarians into contact with other librarians, but also with scientists from other institutions. Before LISA, librarians certainly had contacts with scientists at their own observatories, and perhaps from neighboring institutions, but not from a broad range of institutions. LISA provides cross-pollination and allows these two groups face to face contacts. One result is that librarians now collaborate with other librarians and also astronomers in international projects. Many of the papers at LISA IV discussed the necessity for linked databases, especially in large projects such as the virtual observatory, and librarians are certainly involved in these databases. These meetings also provide an opportunity for librarians and astronomers to share their ideas and discuss future projects. One example of this collaboration is that two librarians have become full members of the IAU, and three others are expected to become members at the upcoming XXVI<sup>th</sup> General Assembly.

The publishing and distribution of books and journals and the disseminating of research data and results continue to change dramatically and to evolve at dizzying speed. Libraries and library services in astronomy are required to keep pace. Traditional collections and services are constantly supplemented, modified, and even eclipsed by a variety of electronic materials and their corresponding services and platforms. Astronomy librarians constantly try to keep up with these and other changes, and they work hard to learn the new skills and techniques needed for new models of service. LISA meetings from the beginning have assisted librarians and data providers in their efforts. The LISA conferences have been very successful, and it is hoped that future meetings will continue to foster even more cooperation and resulting benefits. LONG LIVE LISA!

### Acknowledgements

We would like to thank the following colleagues for their careful reading of the manuscript and suggestions for the improvement of this chapter: Ellen Bouton (NRAO), Thomas E. Corbin (USNO, retired) and Sarah Stevens-Rayburn (STScI).

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<sup>3</sup><http://www.eso.org/libraries/lisa4/>

<sup>4</sup><http://www.eso.org/libraries/lisa3/>

<sup>5</sup><http://sesame.stsci.edu/lib/union.html>

<sup>6</sup><http://www.eso.org/libraries/lisa-ii/lisaii-prog.html>

<sup>7</sup><http://msowww.anu.edu.au/library/thesaurus/>

<sup>8</sup><http://www.eso.org/libraries/lisa3/reprints/stevens-rayburns.pdf>

<sup>9</sup>Full text available from ADS with bibcode 1989lisa.conf