USE OF COMPUTERS TO IMPROVE LIBRARY SERVICES AT THE SPACE TELESCOPE SCIENCE INSTITUTE

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There is a wonderful scene near the end of Frank Baum's *The Wizard of Oz* wherein the curtain hiding the wizard is suddenly whipped back and the wizard is exposed as a mere mortal, pushing buttons to make things happen, mostly through illusion. I often think my library users would have the same shock as Dorothy and her friends if they took the time to find out how we go about providing them with information. They'd whip back the curtain and find me madly pushing keys on the terminal, shouting "Ignore that woman over there!" This talk is supposed to be on the use of computers in astronomy libraries or at least in one astronomy library — and it is, but it also about providing an information service when you have only a modicum of information and a great demand for service. Since the Institute library has been in existence for only five years and because of the enormously transitory nature of much of astronomy publishing, we have remarkably little available in-house, particularly of the historical material. That's where the creativity of a wizard (or the computer of the librarian) comes in. We may not have a specific item or we may not have the item *exactly* as requested, but we know who does and we use any and every means possible to obtain the item quickly. We concentrate on providing the specific information needed even if the user is unaware that what was requested may be available in ways other than that suggested in the request. (My favorite example of this phenomenon is the one pointed out by D.A. Kemp of a paper that appeared in five different series plus twice in report form.)

So that users are kept mostly unaware of the lack of inhouse resources, we have set up our library databases so that one may check our holdings or make a request without ever having to come to the Library. Sitting in her office, the astronomer can check the online catalog by specifying any or all of the authors or editors, title, series, corporate authors, publisher, publication year, whether a conference or not, plus a few other obscure access points, developed for the truly desperate. Because the catalog is online, it doesn't have the many limitations of traditional card catalogs; e.g., one really can search for a book that "has something about television-type sensors" or "you know, that meeting in, ah, Coma a few years ago on galaxies." What it still lacks that a card catalog provides is serendipity: although one may put in wild cards for unknown letters or words, one is still more likely I think to turn up a book when unsure of the author or title by using a traditional catalog.

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Artificial intelligence will eventually bring that serendipity to computer searching, but has not yet done so.

Okay, the aforementioned astronomer has successfully retrieved several titles that matched her selection criteria; now what? Well, it depends on what she wants. If she merely wants bibliographic information to complete a citation, she hits a key and the full bibliographic record is displayed. If she decides she actually wants to look at the book, she hits another key and the display switches to circulation status, which shows either that the title is "on shelf" or checked out to another person and that person's room number. If she goes and retrieves the book from that person, she can then check it out to herself, also from her office. While the astronomer is doing all of this, the Wizard is keeping notes on what she's up to (Big Sister is watching you...) The system adds an entry to a log file each time the retrieve key is pressed, so that (a) we'll know what sorts of things people want which guides our selection process and (b) we can see what sorts of mistakes they make in searching so that refinements to both the system and the documentation can be made as needed. In addition, each time an item is checked out, a counter in the item record is activated and periodically we generate lists of titles that have circulated x number of times over a given time frame. We also produce periodic circulation statistics based on affiliation (e.g., ESA, Hopkins, etc.) so we'll know who's using the material, and gross classification (e.g., math, astronomy, etc.), again as a selection aid.

The heart of the system is an IDM 500, that is, an intelligent database machine, made by Britton–Lee, using Signal Technology's Smartstar software. The IDM uses a VAX as a front end to process the queries. If the IDM is the heart of the system, then the software developed inhouse, to make it bibliographically- and user-friendly, is its soul, and a slightly tarnished soul it is indeed! Bibliographic records are downloaded from OCLC at the point an order is placed or generated inhouse. Creating the records inhouse is done now only for documents and equipment, but the potential for generating inhouse records for "normal" items exists as well. (I ought to point out here for those who don't know, we also circulate calculators, modems, and computer terminals, along with the usual library fare of books and journals.) When an item is received, the location in the record is changed from ON ORDER to ON SHELF and a barcode is added to the front cover of the item and to the database. This means that new materials are normally ready for circulation within half-a-day at most of their receipt. Since our staff normally want everything the day before they thought to ask for it, it's useful to be able to have most things available before they ask.

I have spent most of my time discussing the online catalog because it's the part of our system that I find the most intriguing. I'm constantly finding out new things it can do. But we haven't yet tied all of our systems together and as time goes on, I'm less sure that I wish to. The IDM is a terrific device, but when the VAX is overloaded, as it frequently is, response time can be painfully slow. We therefore keep a microfiche backup of the catalog and periodically print out lists of titles

and authors so that when the computers are slow or down, the users aren't terribly inconvenienced. Also, having developed the software inhouse, we're at the mercy of good-natured programmers to help us when new releases of the VAX operating system or the database machine software come out. Upwardly compatible software is mostly an illusion in my experience which has made me think seriously about advisability of putting all of my "database eggs" into one database basket. It's been reasuring when the IDM has been down for one reason or another to still be able to provide information and services to our users, almost as quickly.

Non-IDM dependent uses of the computer in the Institute library include

1. maintaining online searchable lists of preprints, reprints, and journals

2. automatic distribution of a biweekly list of preprints and the updated 1987A bibliography to a distribution list both inside and outside of the Institute

3. receipt and re-distribution of IAU circulars

4. receipt of the Astronomy and Astrophysics Monthly Index and distribution of derived bibliographies to scientific staff

5. form letters using TEX or LaTEX for claims, address changes, and so on

6. memo distribution using VAXmail to selected groups of library users (distribution lists include Clusterphiles, Patrons, Hassle, and so on).

7. connecting to various and sundry information retrieval systems, both commercial and not, keeping logfiles thereof and sending results electronically to users.

In summary, we are frighteningly dependent on our electronic wizardry to get our daily work done. It is enormously exhilerating when it all works and enormously frustrating when it doesn't. Where we'll go from here, I would not hazard to guess, but my suspicion is that the library a decade from now will be as different from today's as today's is from the ones of ten years ago. As Dorothy so succinctly put it "Toto, I don't think we're in Kansas anymore."

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