

Offering More Information To Astronomers

Guo Hongfeng

*National Astronomical Observatories of China,
#20A Datun Rd., Chaoyang District, Beijing 100012, China,
ghf@bao.ac.cn*

Abstract. The requirements of obtaining large amounts of data in astronomical research, the information services which we can offer to astronomers from the internet, and the possibility of offering more information for astronomers by means of collaboration and sharing data among the international astronomical community are discussed in this paper. The collaborations and the network data services among the Chinese astronomical community are also reported.

1. Introduction

Astronomical observations, historical and modern, especially ground-based and space-based missions, produce a huge amount of data. The results of data analysis produce a large quantity of documentation. It is necessary for astronomers to rapidly acquire and share the newest information for their important research work. Therefore, it is more and more important to disseminate astronomical information and offer a good information acquisition environment by means of collaboration within the international astronomical community (H. Andernach et al. 1994).

2. International Astronomical information Services

There are many kinds of astronomical information service systems in the world that offer large amounts of astronomical data to astronomers worldwide. Modern techniques employing computers and networks provide possibilities to store, disseminate and share information via the internet. The new ideal of the Virtual Observatory (Brunner et al. 2001) will combine most astronomical data into an integrated system. It will offer more astronomical information to all astronomers via the internet. This is a better way to efficiently utilize international astronomical resources.

3. Astronomical information service in China

3.1. Data Center

We have established a primary astronomical data service system (Guo & Ke 1997) based on the internet (<http://www.bao.ac.cn/>, <ftp://ftp.bao.ac.cn/>).

It consists of the data which can be accessed through our data center, including catalogues, bibliography, national & international astronomy data resources, astronomical links, etc.

We collaborate with ADS and CDS and have set up their mirror sites. It is very useful for Chinese astronomers to share data with the international astronomical community. We also exchange data with other data centers and offer more data to Chinese astronomers via the internet. We issue data news by sending email to our users and guide them to browse or download data quickly.

These services (Guo H. 1997; 2000) are very convenient for Chinese astronomers allowing them to acquire data and save browsing time on the network.

3.2. Libraries

There are 5 astronomical observatories and several stations in China and each has its own library. Some of them have the information searching system based on the network. The systems include databases on books, journals, theses, and other collections and have search interfaces and administrative functions. Users can access those systems via the internet and find useful information by searching author, keyword, serial number of publication and so on.

More information can be found by visiting the homepage of the library of the National Astronomical Observatories of China, the former Beijing Astronomical Observatory, (<http://www.bao.ac.cn/bao/lib/>), and the homepage of the library of the Shanghai Astronomical Observatory (<http://202.127.29.72/>).

3.3. Publications

There are several publications supported by the Chinese Astronomical Society. Each of them has an electronic version on the internet.

- * Acta Astronomica Sinica
Chinese version, English translations on Chinese Astronomy and Astrophysics, <http://www.pmo.ac.cn/pmolj/indexlj.htm>
- * Chinese Journal of Astronomy and Astrophysics
English version, <http://www.chjaa.org/>
- * Progress in Astronomy
Chinese version, with English Abstract,
<http://center.shao.ac.cn/twxjz.htm>

There are also some publications supported by different observatories. Some of them have an electronic version on the internet, e.g.

- * Publications of Beijing Astronomical Observatory
English version,
<http://www.bao.ac.cn/bao/publ/AR/>
- * Annals of Shanghai Observatory
Chinese & English,
<http://center.shao.ac.cn/twtmk/contentse.htm>

3.4. Collaboration within the Chinese astronomical community

We collaborate with other libraries and have established a Chinese astronomical network service system in which we share data with each other. It is not only

good for our users who can get more astronomical information from the system but also for our librarians in different libraries who can exchange and share the administrative information in the same system.

We plan to combine various network service systems, e.g. data centers, libraries, publications and so on, into an integrated system in order to offer our users a more effective access to these data.

3.5. Collaboration among institutes of the Chinese Academy of Sciences

We have joined the Chinese Digital Library Project and plan to share data among different fields. We also plan to collaborate with other institutes within the Chinese Academy of Sciences and join a Chinese academic network service system. It will consist of different professional information service systems based on a special network. We hope to offer more scientific and technical information to Chinese astronomical researchers and engineers through this system.

4. Collaboration within the international astronomical community

Demands of developing nations Getting more information from the international astronomical community

Difficulties of developing nations Lack of manpower and financial support

For instance, there are 46 kinds of SCI(E) journals on astrophysics, but we cannot subscribe to all of them because of the high price. Even the library of our national observatory can order only around 20 % of them. Some publishers (book and journal) have full text service, but require subscriptions to the printed version first. This is the problem facing Chinese astronomers who need to get more information.

The possibility of international collaboration There are many ways to collaborate within the international astronomical community, e.g.

(1) Sharing data: Good examples of sharing data are the ADS and CDS systems. We hope a similar library data service system, especially a full text search system, will become available.

(2) Publications Exchange: We exchange printed publications with about 200 astronomical institutes around the world. It would be possible to make an agreement among astronomical institutes to publish their publications on the internet and open them to users who join the agreement. It will be a more efficient way to share data and save money and manpower.

(3) Digital library in the Virtual Observatory(VO): Generally VO will include data produced by large telescopes and facilities, databases provided by data centers, analysis systems made by specialists, and many other astronomical resources. However VO should also include a digital astronomical library which will need collaboration among astronomical libraries, publishers, and other organizations. The digital library would store astronomical books, journals and other information in an electronic format and offer a full text searching service to the entire astronomical community via the internet.

5. Conclusions

With the rapid development of computer and network techniques, it is possible to collaborate worldwide and establish a suitable and efficient astronomical information service system on the internet.

As Chinese astronomical information workers, our main goal is to provide our users more information in an advanced and useful acquisition environment. We hope that collaboration among the international astronomical community will offer more information to users worldwide.

References

- Andernach, H., Hanisch, Robert J., Murtagh, F. 1994, *PASP*, 106, 1190-1216
Guo Hongfeng and Ke Darong 1997, *Baltic Astronomy*, Vol. 6,
Guo Hongfeng 1997, *Publ. of BAO*, No. 32, 100
Guo Hongfeng 2000, *Publ. of BAO*, No. 35, 124
Brunner, Robert J, Djorgovski, S. George, Szalay, Alex S., 2001, *ASP Conf. Ser.*, Vol. 225, 353