The Library of the Institute of Theoretical Astronomy of the Russian Academy of Sciences (1924 -1994). History, Present State, Perspectives for the Future

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The Library of the Institute of Theoretical Astronomy (formerly The Library of the Astronomical Institute of the People's Commisariat of Education, USSR (1924 - 1938); the Library of the Astronomical Institute of the USSR Academy of Sciences (1939 - 1943 (Dec. 16))) was established by the decision of the first director and founder of the Institute, Boris Vasil'evich Numerov (1891 - 1941), an outstanding astronomer in the fields of celestial mechanics, astrometry and geodesy, a corresponding member of the USSR Academy of Sciences since 1929 and a very gifted person who perished a victim to a repressive stalinist regime in 1941.

The basis of the Library holdings formed the collections of books and periodicals belonging to the Computational and Astronomo-Geodetic Institutes which merged in 1923 to form the Astronomical Institute.

From the time of its foundation (1924) to 1930 the library had no professional librarian.

Beginning with 1924 and to 1936 (the time of his arrest) the director of the Institute B.V.Numerov devoted much of his time and efforts to primary and then current acquisition of relevant publications.

During his numerous scientific missions abroad (Germany, USA, the countries of the South America, etc) along with equipment he purchased urgently needed foreign publications and laid the basis for exchange of publications with foreign astronomical institutions since from 1922 the Institute started publishing its own works:

1. Astronomical Yearbook of the USSR, 1922 -

2. Bulletin of the Astronomical Institute, 1924 -
3. Ephemerides of Zinger's pairs, 1926 -
4. Naval Astronomical Yearbook, 1930 -
5. Air Astronomical Yearbook, 1936 -

which were widely used for the exchange. Among the preserved archieval documents of the USSR Academy of Sciences one may come across the lists of the ordered publications (books and periodicals) in his own handwriting.

The above mentioned publications included the works of the classics of astronomy and the related fields of sciences (G.Hill, J.L.Lagrange, P.C.LaPlace, U.J.LeVerrier, H.Poincare et al) as well as complete collections of the most relevant periodicals (Astronomical J. (USA), Astr. Nachrichten, Astr. Jahresbeicht (Germany), Monthly Not. of the R.A.S. (England), the most important Yearbooks etc.) many of which are entering the "core" group of periodicals at present.

For the same time period (1924 - 1930) the responsibility for running the library and excecution of librarian's duties were imposed on a researcher E.G. Yachontov (1896 - 1964) later on the Dr. of Science of the State Optical Institute.

At times a professional librarian, mainly, from the Library of the USSR Academy of Sciences, was invited for catalogizing the library holdings. Starting from 1930 to 1942 the library was run by a professional librarian with a fair knowledge of German who died in 1942 from the consequences of hunger being already evacuated from the besieged city.

The Library of the Institute during the War of 1941 - 1945 yr

By Jan. 1 1941 the library holdings comprised 15272 stock units including 9502 foreign editions.

At the beginning of the World War II the library holdings had been prepared for evacuation but it was never done since the major part of the Institute's staff remained in Leningrad under the head of Dr. Ivan Danilovich Zhongolovich. The activities of the staff at that time were completely subordinated to the needs of the Leningradian front. The Institute fulfilled the tasks set by the Geodetic Section of the Leningradian Front Headquarters, the Navy Hydrographic Department, the Research Artillery Institute, the

Department of Military Air Forces of the Leningradian front and some other military organizations.

The Library continued its functioning on information provision of the works carried out by the Institute. The missing publications were borrowed from the State Public Library (now the National Library of Russia) and the Library of the USSR Academy of Sciences which never interrupted their library services during the war and the siege of Leningrad.

An additional acquisition took place at the expense of the gifts from private collections of the researchers who went to the battle-front, and those who died of hunger in the besieged city.

In Kazan worked the so-called "Kazan group" of the Astronomical Institute responsible for edition of the Astronomical Yearbook of the USSR (Astronomichesky Ezhegodnic). This group consisted predomonantly of the evacuated staff members of the Astronomical Institute, several evacuated astronomers from Pulkovo Observatory and a few astronomers from the Tomsk and Sverdlovsk Universities. For the needs of this group over 50 various reference editions (chiefly mathematical tables) were taken to Kazan. The staff member of the Pulkovo Observatory, O.V.Koval'nitskaya was appointed a librarian.

Meanwhile, Vera Pavlovna Andrejeva-Georg, a bright philologist who masbered a number of European languages (German, French, Italian) and knew several oriental languages was nominated a chief librarian (15.VII 1942 - 16. II 1945) of the "Leningradian group" of the Astronomical Institute.

Jointly with Elena Ivanovna Winterhalter (1890 - 1974) the chief librarian of the Pulkovo Observatory, they carried out the stock taking and as a result they revealed the loss of 1580 storage items which was a relatively small amount as compared to the heavy losses suffered by other libraries.

On Nov. 16. 1943 in agreement with the resolution taken by the Presidium of the USSR Academy of Sciences the Institute was entrusted with responsibility to carry out the research work in the fields of celestial mechanics, theoretical astronomy and ephemeris computations. In this connection, the Astronomical Institute incorporated since 1939 into the system of academic institutions was renamed in the Institute of Theoretical Astronomy of the USSR Academy of Sciences. Correspondingly the Library acquired its present name.

Meanwhile the Library collections were continuosly replenished with new editions in agreement with the trends of research work.

The Post War Period

By 1.06.1945 the library stock comprised 16393 storage items: 5568 books and 10828 units of periodicals.

From 16.II 1945 to 16.III 1963 the library of the Institute was headed by Nina Stepanovna Bergmann (1894 - 1977) an expert in librarianship and bibliography. She made a significant contribution to cataloging and recataloging in accordance with the existing cataloging rules. She slightly expanded the reference aids of the library by creating some topical files (on the existing ephemeris editions, bibliography of a gifted celestial mechanician M.A.Vilÿev (1893, 1.09 - 1919, 1.07) who died at an early age). She compiled also Bibliographical Index to Bulletins of the ITA of the USSR Academy of Sciences for 1924 - 1958 yr. and introduced an accession arrangement of the library holdings (books) and a numerical arrangement of periodicals.

In March 1963 N.S.Bergmann retired and Maria Vasil'evna Lapteva (who previously had worked as a bibliographer at Saltykov-Shchedrin State Public Library Central Reference Section) took office as the chief librarian and since that time she has occupied this post.

The reference aids consisted in 1963 of an alphabetic catalog both for books and periodicals, each of these being divided in two parts (foreign and home publications) and several card files: the above mentioned topical ones, and an address file (with addresses of the exchange partners) and some auxiliary files.

Stosk figures by 1.I.1963:

total 73571 u. incl. foreign 54122 u.

period. 61828 u. incl. foreign 49780 u.

books 11743 u. incl. foreign 4342 u.

An urgent need for a classified catalog was felt.

To help the library to solve this problem the director of the Institute, a prominent celestial mechanician Mikhail Fyodorovich Subbotin (1893, 28.VI - 1966, 26.XII) created the Library Council having nominated as the members to the above, the most bright young scientists (V.A.Brumberg, M.S.Petrovskaya, Yu.V.Batrakov, A.M.Fominov) with G.A.Chebotarev at the head. Later on when G.A.Chebotarev became the director of the Institute (1964 - 1975) his post was taken by V.K.Abalakin (at present the director of the Pulkovo Observatory).

As a basis for creating the classified catalog the UDC was taken (namely the Russian version of 1963). The UDC division "space research" 629.19 was not yet enough developed at that time. Therefore it was decided to develop this division jointly with the members of the Library Council. G.A.Chebotarev and Yu.V.Batrakov enthusiastically set to work to develop a scientifically adequate space research division with its class subdivisions and the other details. The librarian's part of the work consisted in adopting the elaborated classification scheme to the UDC rules and inserting it into its proper position in UDC. Then this part of the work was completed, the whole "team" started classifying the documents. Such practice continued for about half a year and since it took too much of a valuable time the further classifying was done by the librarian under consulting aid of the scientists.

Further improvement of the Library's information retrieval system was attained by creating an alphabetical subject index to the classified catalog as well as several topical files (including analytical entries and thus supplementing the classified catalog) on the main trends of research of the Institute, for instance, those on Celestial Mechanics and Space Research which being based on the same classification system, are mutually interrelated.

The works undertaken by the Library in the last 30 yr. have been designed to facilitate the acquisition of relevant research materials, to speed up the cataloguing and, by the same token, access to the library collections.

For optimizing the composition of the specialized collection, the library carried out the investigation on the following problems:

1. Information provision (requirements) of the main research trends of the Institute.

2. Revealing the sources of relevant information by analyzing both home and foreign abstract and review editions (Astronomy and Astrophys. Abstracts (Germany), International Aerospace Abstracts (USA), Physics Abstracts (England), Science Citation Index (USA), Bibliographia Geodaetica (Germany), etc.) as well as the leading journals (Astron. J. (USA), Celestial Mechanics (Holland), etc.).

3. Frequency of using the already existing collection of periodicals to obtain objective criteria on the value of each publication under study either for justifying its further storage and determining the required depth of its storage or for its withdrawal.

For the goals indicated in point 3, we elaborated a comparatively simple form which made it possible to combine the data on using the documents for the period starting from the earliest date of publication available at the library to the period of analysis, with the data on the frequency of requesting the individual publications each year of the period under study, . (See the model of the form).

Thus, the form provided an accurate statistical evaluation on the use of publications with respect to branch, language and chronological aspects simultaneously showing the dynamics of using the items of various imprint years at definite time intervals of the period under study.

The above mentioned investigation of information flows, analysis of information provision of specific research trends of the Institute and readability made it possible to define more precisely the sources of primary importance for a successful realization of scientific projects carried out by the Institute.

The most used periodicals included those published in USA, Great Britain, and Germany which contained a representative group of international journals. The leading language of the scientific astronomical literature was English. Its share made up 75% of the requested periodicals, leaving 12% for German, 10% for French and 3% for the other foreign languages.

It is noteworthy, that the Library had 20 of the 29 (foreign) "core" journals of the SCI astronomy group, ranked by impact factor.

Present State of the Library

Stock figures.

By January 1.1995 the total library holdings reached 151720 items:

a) monographs 23592 or 15.54%;

b) periodicals 128128 units or 84.46%.

The number of foreign publications amounts to 115890 units or 76.38%.

The part of foreign periodicals reaches 80% of the total amount of periodicals.

Composition of the holdings

At present the library holdings represent a unique collection of publications on theoretical astronomy, celestial mechanics, space research, mathematics, physics, and the other related fields of sciences in agreement with the main research trends of the Institute in Russian and foreign languages.

The library holdings include complete collections of the main foreign periodicals from the time of their origin to the present days as well as a unique collection of astronomical yearbooks (33 titles).

The most rare collections of yearbooks are represented by the following editions:

1. Connaissance des temps on de movements celestes et de navigateurs. – Paris: Bureau de longitudes(1702 -

2. Berliner astron. Jahrbuch. – Berlin (1800 -

3. Monatliche Correspondenz. – Gotha (1800 -

4. Jahrbuch / Hrsq. von H.V.Schumacher mit Beiträgen von Bessel, Hansteen et al. – Stuttgart (1843 -

etc.

To the oldest journals belong:

1. Annalen der Königlichen Sternwarte zu Wien (1821 -

2. Astronomische Nachrichten. – Berlin (1823 -

3. Uccle. Obs. Royal de Belgique. Annalen... - (1848 -

4. Monthly Notices of the R.A.S. – London (1833 -

5. Paris Observatoire. Annales. – Paris (1855 -

and many others.

The Library holdings include a vast collection of original and translated works of the classics of astronomy, mathematics and other related sciences (l.Euler, G.Hill, U.J.LeVerrier, J.L.Lagrange, P.C.LaPlace, H.Poincare and many others).

According to the analysis of foreign publications, carried out in 1992, the Library collections include 9710 ancient and rare books relating to the XVI - XIX centuries.

Among these:

In German 6544 items

In English 2324 items

in French 760 items

in Latin 50 items

in other languages (Italian, Spanish, Swedish) 32 items

In all 9710 items

Noteworthy is the collection of over 500 items of carefully selected publications which belonged to a prominent celestial mechanician, the correponding member of the USSR Academy of Sciences, Mikhail Fyodorovich Subbotin (28 VI 1893 - 28 XII 1966) presented to the Library by his family.

The library of ITA RAS is the only one of the kind, which posesses such a complete collection in the above mentioned fields of sciences on the territory of F.S.U.

Acquisition Sources

Acqusition sources for the Russian editions are as follows.

(1) The books are purchased by preliminary ordering with the aid of publisher's catalogs, folders and other information sources.

Periodicals are acquired by semiannual subscription catalog of periodicals "Russian Press" (formerly "Soyuzpechat'") and those of the agency "Research and Techical Information Services" (former VINITI).

(2) Exchange of publications.

Exchange of publications is carried out between the astronomical institutions within Russia and those in the F.S.U. republics.

(3) Gifts.

Gifts from individual authors libraries and institutions are irregular and not very numerous, reacting about 50 - 60 items annually.

Foreign Publications.

The sources for acquisition of foreign publications are practically the same with the exception that beginning with 1992 the libraries of academic institutions have been deprived of funding their chief acquisition source of foreign publications i.e. purchasing these for hard currency for well known reasons including government's policy towards science in general and particularly the Russian Academy of Sciences.

Under these conditions such sources as exchange and gifts have attained primary importance. The library has intensified its activities on extending its contacts with societies, libraries and individual researches.

Thus, in 1994 library realized contacts with 53 foreign astronomical institutions of 38 countries of the world. As a result the library obtained 77 titles of periodicals and 15 books.

Among individual contributors to our library holdings I should like to thankfully mention B.G.Marsden of the Minor Planet Center SAO, Cambridge (USA), S.Nakano, Director of the OAA Comp. Section (Japan), T.Gehrels of Lunar and Planetary Laboratory, Tucson, Arizona (USA).

Thanks to the Librarian of the Astronomical Inst. Univ. of Amsterdam (The Netherlands) Roelf Takens, it became possible not only to fill up the gaps, but also to receive current issues (in xerographic form) of the first rank journal Celestial Mechanics and Dynamical Astronomy badly heeded by researchers.

For many years the library regularly receives the publications of the Royal Astronomical Society (England).

It is difficult to overestimate the share of relevant journals received due to financial support of George Soros ISF sent either directly to the library from publishing offices (Springer, Astron. & Astroph. European J.) or received through the Acqusition Department of the Central Library.

To illustrate an annual amount of acquisitions from different sources, below are given the results for 1994.

1994 Annual Acquisitions from Different Sources

Total number: 2454 items incl. foreign 1848 or 75.3%

1. Exchange and gifts: 1625 items incl. foreign 1528 or 94%
2. Central Libr. Acqius. Dep.: 528 items incl. foreign 309 or 58.5%
3. Subscription (Russ. Press Agency): 301 items incl. foreign 11 or 3.6%

Information Retrieval System

Information retrieval system of the Library consists of a ramified system of the catalogs and files on cards mutually supplementing each other and providing an efficient retrieval of the desired documents.

The Library has the following catalogs:

1. Dictionary Book catalog including all the sorts of entries (author, title, secondary and collective entries, etc.) arranged together in one alphabet providing additional lines for the readers and the members of staff alike. The catalog is divided in two parts for foreign and home entries.

2. Dictionary periodicals catalog arranged by title and collective entries (in 2 parts as the above).

3. Classified catalog is based on UDC. At present it contains over 40000 entries (24 catalog drawers). The catalog is provided with an alphabetical subject index.

The Library files (10) of different nature and purpose (address, information, topical and auxiliary ones) are intended to dacilitate the reference and information services. Topical files "Celestial Mechanics" and "Space Research" supplement and extend the corresponding divisions of the classified catalog by including analytical entries.

Library Quarters

The Institute occupies the building of the former French Embassy (before the October revolution of 1917). Before spring of 1994 the library occupied 3 (325 sq. m.) of the 4 appartments facing the Neva.

The administration of the Institute attempting to survive (in the absence of funding for acquiring, maintaining and operating the equipment) by renting some apartments to commercial organizations, squeezeed the library.

Now the Library occupies only 246 sq. m. (providing storage capacity of 1025 shelve meters) as compared to the former 325 sq. m. with storage capacity 1728 shelve meters.

As a result the library depository lost 79 sq. m. and 41% of its storage capacity. Thus, the library was forced to reconsider its holdings and has prepared for withdrawal 20000 items.

Perspectives for the Future

The defficciency of storage capacities necessitates to reconsider the acquisition policy, in the first place, in favour of acquiring the required information on compact disks and microfiches.

Secondly, a computer should become an integral part of the library functions (processing, reference, information and other library services).

So far the library has no PC and Institute is not yet linked up with INTERNET, though both problems may be solved this autumn.

The Learned Council of the Institute at its session devoted to library problems (Dec. 1994) expressed its deep apprehension and adopted the following resolutions:

— to acquire a computer for library purposes.

— to stop withdrawal of publications fron the library holdings since it will lead to the loss of its inherent information value.

— to consider allocating the library an additional depository.

— the library jointly with the Library Council members should develop computerized problem-oriented bibliographic complexes to provide the relevant information on the principal research trends of the Institute.

In accordance with the last resolution, the library is developing preliminary topical files on cards for the following complexes:

1. Code name "Orbit". Development of qualitative, analytical and computerized algebra methods in celestial mechanics.

2. Code name "Terra". Development of compact analytical approximation methods and efficient numerical algorithms in the problems of celestial mechanics.

3. Code name "Juno". Determining the motion of the Solar System minor bodies.

and some other complexes.

I conclude this presentation with the hope that the unfavourable situation in science and libraries existing in our country will improve for the best and our plans will come true.