

The Library of Odessa Astronomical Observatory

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Abstract.

The Astronomical Observatory of Odessa National University, founded in 1871, is one of the oldest scientific and educational institutions in the Ukraine. The observatory was situated on the Langeron tract, and at present is located near the Black Sea. In 1889, the Observatory possessed only 21 specimens of books and journals all of which had been sent to the observatory from different countries.

1. Introduction

The observatory library was founded in 1917, due to the efforts of a young and active director, A. Ya. Orlov; however, the original collection is based on the private collection of F. F. Vitrash, who was a member of the Pulkovo Observatory.

During the last century, the university was divided into several educational institutions, such as the Odessa Economical Institute, Medical Institute etc. The library reserves were also divided and parts of the collection were given to the Odessa Astronomical Observatory. In 1993, Odessa State University was re-established and the astronomical observatory was given back to University.

2. Observatory Publications

At present, two-thirds of the library consists of literature written in foreign languages. The library funds comprise the period from the mid 19th century through the present. Some issues are more than 100 years old, such as the *Astronomical Almanac*, *Astronomische Nachrichten*, *Astronomical Journal*, etc. There is a selection of some periodical issues such as *Astrophysical Journal* (1903–1993), *Publication of the Astronomical Society of the Pacific* (1917–1993), *Monthly Notices of the Royal Astronomical Society* (1917–1993). Unfortunately, there were periods of time when the Observatory had not been receiving these journals.

The library possesses other observatory publications. For example, *Mitteilungen der Archenhold-Sternwarte zu Berlin-Treptov* and *Mitteilungen der Astronomische Ergenossische Sternwarte-Zurich* from 1900 to 1990. In addition, the Odessa Astronomical Observatory has published its own transactions and these have been exchanged with other observatories. Through 1917, the

results of Odessa's scientific research were published in *Notes, Transactions of the Imperial Novorossia University*, and also in foreign periodicals, with priority given to *Astronomische Nachrichten*. From 1914-1915, the Observatory published the *Circular of Odessa Astronomical Observatory* and the *Odessa Astronomical Calendar*. *Transactions of Astronomical Observatory* began in 1917 and was temporarily discontinued until the years 1935–1940, when it saw a brief resurgence. From 1946-1965, five volumes of the *Proceedings of Astronomical Observatory* have been published and exchanged with other astronomical institutions.

3. The Collection

Unfortunately, after 1963, the scientific division of the University lost its rights to publish. In addition, since 1970 the library was not able to maintain its exchange with foreign observatories. Since current literature could only be acquired in capital cities and large astronomical centers, Odessa Observatory was not only isolated from the international community, but also dramatically hampered in its efforts to provide effective research tools for the community it served.

Now the library represents a large depository of scientific information. The total collection consists of 100,000 items that include subjects in astronomy, physics, radio engineering and mathematics. In addition to space research and popular astronomy, the library has a wealth of historical books, including: *Manual of Spherical Astronomy* (published in 1866), *History of the Sky* (1875), *Astronomie Populaire* (1875), *Pictorial Astronomy* (1897). The library possesses such rarities as the book of K. D. Pokrovsky (the director of Odessa Astronomical observatory in period from 1935 to 1944), *Sky Guide* (1897), R. Procters *Old and New Astronomy* (1895), V. Meyers *The Universe* (1905), the journal entitled *Russian Astronomical Society* (1896–1916), atlases and maps such as *Position Medial* (Petropolis, 1852), *Himmels Atlas Leipzig*, 1886, and *Atlas Celeste*, Paris, 1887.

The library maintains a large collection of He reference books including: Astronomical YB, astronomical calendars, catalogues of asteroid ephemerides, lunar occultations, ephemerides of pulsating and eclipsing variable stars, etc. There are catalogues of the stars positions, visual magnitudes, spectral classes, absolute energy distribution in the spectra of stars of different spectral classes, catalogues of the galaxies, and other catalogues that contain information from about physical and kinematic properties of celestial bodies. The library also has a large selection of general and special dictionaries, encyclopedia, references, and monographs pertaining to astronomical time.

4. Unique Databases

Odessa Astronomical Observatory possesses other unique scientific databases. One such database is comprised of a large collection of photo plates developed by the program "Sky Patrol". This collection, consisting of about 100,000 photographic plates, is the third largest in the world, next to the Harvard and Sonnenberg collections. The time interval covered by Odessa astrographic observations is from 1953 to 1998. Odessa observatory also keeps more than 10,000

photo plates that were exposed in the Simeiz Observatory (Crimea) from 1890 to 1953. These plates were especially intended for the precise determination of planets, asteroids and comet position. The final and most outstanding portion of the collection was collected at the Mayaki astronomical station and consists of about 80,000 plates exposed from 1957 to 1998. The area observed is from 15 to +90 degree (declination) while limited magnitude are 12 (photo visual band) and 15 (photographic band).

5. Catalogues and Archival Material

Another actively used archive is the depository of unpublished photometrical observations of variable stars. This data was collected through a cooperative initiative with IAU Commission 37 in 1966. Two copies of the data are stored at CDS (France) and the library of the Royal Astronomical Society (London, GB).

More than 30 years ago, Odessa Astronomical Observatory began regular near-IR observation of the stars. As a result of this program, the catalogue of energy distribution in the spectra of 725 stars has been created, as well as an additional catalogue for 555 stars in different spectral classes. The creation of these catalogues was gathered from several former USSR observatories, but all participants standardized the actual data reduction methods.

Since 1920, observations with Repsold meridian circle was initiated at Odessa astronomical observatory and more than 160,000 coordinates for celestial bodies were estimated. This data became the basis for the creation of 31 catalogues relating to star and planet positions.

The observatory possesses several archives on 550 meteors (their atmospheric trajectories, orbital elements, etc). Their characteristics were published by the International Astronomical Data Center (ADC) and Odessa Astronomical observatory created catalogues comprising a list of 120 comets from more than 1,500 photographic plates.

6. Conclusion

It should be noted that the difficult economic situation in recent years has negatively affected the observatory's ability to enlarge its library fund. At present, the main library is financed, but none of the new independent states, formerly under the USSR, have money for journal subscriptions. It is only due to the humanitarian efforts of some staff members and their scientific relationships with colleagues from other countries, (e.g., participation in LISA conferences) that the library has received journals we could no longer afford. The library accepts these contributions with great pleasure. We are deeply indebted to our colleagues from ESO Bibliotheca for their extremely important help with *Monthly Notices of the Royal Astronomical Society* (issues from 1966 to 2000), and we are thankful to Dr. V. Trimble for her assistance in acquiring the *Publication of Astronomical Society of the Pacific*. We are also thankful to members of Copernic University (Torun, Poland) for their help with the journal *Urania*, and for receiving *Astronomy & Astrophysics Abstracts*.

During the last year, our observatory renewed the publication of its own edition *Odessa Astronomical Publication* (previously known as *Transaction of Astronomical Observatory*). This edition, published in English, has consolidated our ties and strengthened our literary exchanges between the Odessa library and other astronomical institutions.