

## Main results in the activities of the Soviet Centre of Astronomical Data for 5 years

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Basic information is presented on the activities and functions of the Soviet Centre of Astronomical Data, on the catalogues available at the Centre, main topics of scientific and technical investigation. A list of papers published by scientists of the Centre during 5 years is given in the Supplement.

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The Soviet Centre of Astronomical Data (CAD) has been functioning at the Astronomical Council of the USSR Academy of Sciences since 1980. It was established as a branch of the Strasbourg (International) Astronomical Data Centre for Astronomical Institutions of the USSR and other socialist countries within the framework of the Soviet-French cooperation in science and technology. An earlier paper (D l u z h n e v s k a y a et al., 1982) outlined the major problems, the structure and the duties of both the Strasbourg and the Soviet Centre of Astronomical Data during the first three years of their activities.

Currently the Data Bank of the Soviet Centre of Astronomical Data includes 342 catalogues on magnetic tape with the storage of 1000 Mbytes and 31 catalogues on microfiches (140 microfiches).

The CAD carries out regular activities in preparation, tape-recording and dispatching Soviet catalogues compiled in the USSR to the Strasbourg Centre of Astronomical Data. By common effort of the CAD personnel 25 stellar catalogues have been tape-recorded and dispatched to Strasbourg among which there are the I<sup>st</sup> and the II<sup>nd</sup> volumes (4<sup>th</sup> edition) of the General Catalogue of Variable Stars (N. P. K h o l o p o v et al.), the Catalogue of Suspected Variable Stars (N. P. K h o l o p o v et al.), the Catalogue of Physical Parameters of Spectral Binaries (Z. K r a i c h e v a et al.), the Catalogue of Orbital Elements, Masses and Luminocities of Binaries (M. A. S v e c h n i k o v), the Catalogue of Spectral Types of Luminosity Classes of 10396 stars in Kapteyn areas Nos 2-43 (T. A. B a r t a y a et al.).

At present the CAD tape-records the Catalogue of Star Formation Regions (V. S. A v e d i s o v a) and the III<sup>rd</sup> volume of the General Catalogue of Variable Stars (N. P. K h o l o p o v et al.) as well as the Supplements to the Catalogue of Clusters and Associations (B. B a l a z s et al.).

Since January 1986 all the work of the CAD is carried out on a new EC-1045 computer of the Astronomical Council of the USSR Academy of Sciences installed at Zvenigorod Station of the Astronomical Council. Its speed is equal to 860 000 operations per second, physical storage is 4 Mbytes. Its external storage includes 100 Mbytes discs and 25 Mbytes magnetic tapes (the density is 1600 and 800 bpi). Specialized programming support worked out at the Astronomical Council is constantly improved enabling data sampling from catalogues on any parameters available.

In 1985 a Data Base was put into operation (32 Mbytes). It is based on the Strasbourg Catalogue of Stellar Identification including information almost about 450 000 stars from 27 most complete original catalogues (numbers of stars in these catalogues, equatorial and galactic coordinates, stellar magnitudes, spectral classes, etc.). 9 samplings have been compiled at the requests of Soviet astronomical institutes using the Data Base. More than 400 catalogues have been copied and more than 40 samplings have been compiled at 135 requests during the whole period of the CAD activities. After information requested the CAD gives a list of all the Catalogues available at present at the Centre on the magnetic tape.

Research is carried out by the team of the Centre on the basis of the results in statistic processing of stellar catalogues on the "Evolution of Galaxy stellar composition" problem, including the evolution of the stellar disk population in the solar neighbourhood, some aspects of the evolution of chemical composition in this region as well as characteristics of mass functions of different objects of the plane galactic disc and especially of the initial mass function. A complex analysis of observational data on open clusters and their possible genetic relation with star formation regions is well considered. A special issue of *Nauchnie Informatsii* (No 51) of the Astronomical Council of the USSR Academy of Sciences and more than 40 papers have been published by the team of the Centre on the results of the above study. Many of them are written together with scientists of other countries — J. Palous (Czechoslovakia), Ram Sagar (India), etc., who visited the Astronomical Council of the USSR Academy of Sciences to carry out joint research. For the past years the following scientists worked at the Astronomical Council: Dr. Ram Sagar of India, Dr. M. Wenger of France, Dr. J. Palous of Czechoslovakia, Prof. G. Lynga of Sweden, Dr. M. Soliman of Egypt, Prof. B. Hauck of Switzerland, Prof. G. Westerhout of the USA, Prof. Kim En Hek of Korea, Dr. K. Firmani of Mexico, Dr. A. Antov of Bulgaria, and others, were on a short visit at the Centre of Astronomical Data. Many scientists of various scientific institutions of the USSR visit the Centre of Astronomical Data, especially good relations have been established with scientists of the Abastumani Astrophysical Observatory of the Georgian Academy of Sciences with whom a number of activities have been carried out and papers published on the basis of the study of the data of the Abastumani catalogue of stellar spectral classes and luminosities. The CAD participates in a very extensive cooperative programme of the study of the main meridional section of the Galaxy. In this programme are involved also the Sternberg Astronomical Institute, the Main Astronomical Observatory of the Ukrainian Academy of Sciences, the Abastumani Astrophysical Observatory of the Georgian Academy of Sciences and the Institute of Astrophysics and Physics of Atmosphere of the Estonian Academy of Sciences.

Due to the changes in the structure of the Problem Commission on "Physics and Evolution of Stars" of multilateral cooperation of the Academies of Sciences of socialist countries and to establishment of its activities within the framework of three projects, the CAD has been approved as a basic centre of the 3rd Project on "Compilation and Data Processing of Astronomical Catalogues on the Electronic Computer" from 1986 on. To discuss the programme of joint activities the

Astronomical Council of the USSR Academy of Sciences called together representatives of the Academies of Sciences of socialist countries involved in the Project. The meeting was held in Riga in September 1985.

Magnetic tape-recording of the Catalogue of Clusters and Associations (B. Balazs et al.) and its Supplement is being done within the framework of this cooperation.

The CAD maintains good scientific relations and exchanges of catalogues with the Data Center of the Zentralinstitut für Astrophysik of the Academy of Sciences of the GDR, the Goddard Space Flight Center of NASA (USA), Astronomical Institutions of India, Sweden, Mexico, Brazil, Finland.

On the initiative of the CAD as a branch of the Strasbourg Center of Stellar Data an International Colloquium on "Stellar Catalogues: Data Compilation, Analysis, Scientific Results" was held in Tbilisi in September 1985. Scientists of 8 countries participated in the Colloquium: GDR, USSR, USA, France, Czechoslovakia, Switzerland, Sweden, and Japan. The Soviet delegation included representatives of 15 astronomical institutes whose activities are related to stellar catalogues.

The Colloquium was of great significance for the analysis of the situation in the world in this field of science, for strengthening scientific cooperation with scientists of Western Countries, and for obtaining unique information. The Proceedings of the Colloquium are issued in a special volume of the Bulletin of the Abastumani Astrophysical Observatory, Nr 59.

The Soviet Centre of Astronomical Data Reports annually on its activities at meetings of the International Scientific Council of the Strasbourg Centre of Stellar Data. Its reports were also presented at the meetings of the Scientific Council of the Astronomical Council of the USSR Academy of Sciences and at the meetings of the United Scientific Council in Astronomy and of the Presidium of the USSR Academy of Sciences.

In accordance with the resolution of the United Scientific Council in Astronomy the information on the activities of the CAD will be published twice a year in the *Astronomicheskij Tsirkul'ar*.

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