Astronomical Activities in Lithuania

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Abstract The history of Lithuanian astronomy and current astronomical activities in Lithuania are described.

1. Early history

Astronomy in Lithuania has a long tradition dating back to the Stone Age. The remains of prehistoric stone circles, which may have been used as primitive observatories to follow the motions of the Sun and Moon, are scattered throughout Lithuania.

The first modern astronomical observatory in Lithuania was founded in 1753 at Vilnius University. Unlike some of the other European observatories of those days, which were primarily established to satisfy the needs of navigation and cartography, Vilnius Observatory was devoted solely to science and education. Its research program included observations of the Sun and Moon, studies of solar eclipses, and investigations of the planets and their satellites.

Once the Lithuania-Poland state was finally dissolved in 1798 and Lithuania was incorporated into Russia, the activities of the Vilnius Observatory were directed by the astronomers of the St. Petersburg Academy of Sciences. In 1865, the world's first photographic solar patrol was organized there, and about 900 solar photographs were obtained between 1868 and 1876. However, in 1876, a fire at the Observatory destroyed many of its highly valuable astronomical instruments, and although restoration was proposed, the czarist government did not respond and the Observatory was closed in 1881.

2. Between two wars (1919–1940)

After the closing of Vilnius Observatory in 1881, there were no astronomical observatories in Lithuania until 1928, when Kaunas Observatory was founded. A 12-cm astrograph and some other smaller instruments were employed there, mainly for educational purposes. In 1938, the Kaunas Observatory obtained a new 63-cm mirror, but the telescope building activities were discontinued because of the Second World War.

Shortly after the First World War, the southeastern part of Lithuania (including Vilnius, the capital of Lithuania) was annexed by Poland. Hence, the astronomical activities in Vilnius Observatory were restarted due to Polish astronomers. In 1922, an observatory was built on the outskirts of Vilnius, and after the purchase of several instruments, active observations of variable stars and minor planets began. In 1938, the Observatory obtained a 48-cm Grubb Parsons reflector with a

Zeiss spectrograph. The *Bulletin of the Astronomical Observatory in Vilnius* was published from 1921 to 1939.

3. After the Second World War

After the Second World War, Lithuania was incorporated into the Soviet Union and astronomical activities continued at Vilnius Observatory. By 1947, photographic observation of asteroids had started, and in 1954, observation of variable stars began anew. In 1957, the Artificial Earth Satellite (AES) observing station was founded, which existed as part of the USSR-AES observing network. By 1960, the 48-cm telescope was back in action for regular observations. In 1962, the Department of Astrophysics was established at the Institute of Physics, which now forms the largest unit of professional astronomers in Lithuania.

In 1969, the first dome was built on Kaldiniai Hill, near the town of Moletai, to accommodate a 25-cm photoelectric telescope. This was the beginning of the Moletai Astronomical Observatory, which today houses a 35/51-cm Maksutov, a 63-cm Cassegrain, and 165-cm Ritchey-Chretien telescope, the last being the largest telescope in the Nordic-Baltic countries.

In 1980, with the permission of the government of Soviet Uzbekistan, a joint observatory was established on the Maidanak hill in the Uzbek Pamir mountains. The 48-cm reflector was transferred there, and in 1981, a 100-cm Ritchey-Chretien telescope came into operation. Since 1982, thousands of observations in the Vilnius photometric system have been carried out there. (Following the breakup of the Soviet Union, however, Maidanak Observatory was incorporated into the Institute of Astronomy in Tashkent and is no longer at our disposal. The Moletai Astronomical Observatory, which is operated jointly by the organizations mentioned above, remains the only active astronomical observatory in Lithuania.)

Professional astronomical activities in Lithuania today are carried out by: (1) the Institute of Theoretical Physics and Astronomy; (2) the Astronomical Observatory of Vilnius University; (3) the Institute of Physics (Department of Physics of Stellar Systems); (4) the Institute of Applied and Material Science (Laboratory of Astrophotometry); and (5) the Vilnius Pedagogical University. Research is being done in the fields of galactic structure and evolution; late-type stars; young stellar objects and their environment; interstellar matter; evolution of galaxies; design, investigation, and optimization of scientific photometric equipment. An international research quarterly, *Baltic Astronomy*, has been published since 1992.

4. Amateur astronomy

The Lithuanian Astronomical Society was founded in 1978 as a part of the All-Union Astronomical-Geodesic Society. However, following the breakup of the Soviet Union, the activities of this society gradually ceased. During the first convention of the newly-formed Lithuanian Astronomical Union (LAU, established in 1996),

it was decided to form several branches of the LAU for amateur astronomers and teachers of astronomy.

Observational amateur astronomy has never been very popular in Lithuania. Nevertheless, there are a number of astronomy clubs all around Lithuania, which introduce school children of various ages to astronomy. Summer astronomy camps are organized each year at Moletai Astronomical Observatory, where children participate in various hands-on astronomical activities. Recently, a 40-cm Meade Schmidt-Cassegrain telescope was purchased by the neighboring Ethnocosmology Museum, and will be used by amateur astronomers and schoolchildren to work on various research and educational projects.

Moletai Astronomical Observatory receives 6,000–7,000 visitors a year, and this number is nearly doubling each year. Apart from guided tours, lectures on astronomy, and evening telescope sessions, special astronomical events (such as observing the partial solar eclipse on October 12, 1996) are also organized for both local and nationwide audiences.