

Part 3: Observatories

The Frič Brothers Observatory in Ondřejov

In the 19th century, the traditional old observatories in cities or even city centres proved insufficient for modern astronomical and astrophysical research. New observatories were built in the mountains outside of cities. The land for a private observatory of the Frič brothers was bought in 1898 in Ondřejov in Central Bohemia. The observatory was named after two Czech amateur astronomers and entrepreneurs, who ran the precision mechanics workshop in Prague: *Josef a Jan Frič – dílna pro přesnou mechaniku*. They produced, among other things, original instruments for astronomy. The brothers met Professor Šafařík, who lived near their workshop and became their mentor and associate. Jan Frič died unexpectedly in 1897, and one year after his death, Josef Frič commemorated him by founding the observatory *Žalov* (“žal” is the Czech word for “grief”) on the Mandina Hůra, a hill near Ondřejov. After Šafařík died in 1902, his widow, Pavlína Šafaříková, donated his astronomical equipment, library and memorabilia to the new observatory.

From 1900–30, it continually grew from one observation station and a wooden hut into a modern scientific institute. The architectural plans for the construction were designed by Czech architect Josef Fanta (1856–1954). On 1 August 1906, the first observation was performed. At that time, the observatory consisted of a study with a clock cellar, four observation houses with collapsible roofs, and a residential house for the gardener. An astrograph was installed in the western dome in 1920, and Šafařík’s telescope with a high-quality Clark objective lens was installed in the central dome in 1922.¹⁶⁰ The first mechanical workshop was built in 1923.

The Ondřejov Observatory was connected to the university by Nušl, who came to Prague in 1901 and soon began cooperating with Frič. Nušl became the first director of the observatory and an associate professor of astronomy at Czech CFU in 1905. Nušl and Frič constructed their circumzenithal telescope and its five subsequent models.

On 28 October 1928, Frič donated the observatory and its lands, buildings, instruments and library to the Czechoslovak Republic for the purposes of CU.¹⁶¹ The donation had several conditions, including independent

160 Cyril Polášek, *Jednoapůlstoletý osmipalcový objektiv Alvana Clarka hvězdárny Astronomického ústavu Akademie věd České republiky v Ondřejově u Prahy: Historická astrooptická studie věnovaná 145. výročí vzniku objektivu v Bostonu, USA, i Clarkovu objevu podvojnosti 99Her*, 3rd ed. (Ondřejov: Astronomický ústav AV ČR, 2006).

161 Its full name was *Žalov, the Charles University Observatory of the Frič brothers (Žalov, hvězdárna bratří Josefa a Jana Friče při Universitě Karlově)*.

administration, the appointment of Nušl as the director, and the privilege of the Frič family to use several rooms in the observatory buildings. The observatory was formally joined with the State Observatory in the Klementinum, which subsequently served as its administrative and computation centre. The process was finished in 1933, and as the observatory and its scientific activities grew, it was able to provide several positions for newly graduated astronomers. Even before the donation, the observatory employed seven astronomers and offered practical training for students, who commuted there and helped with calculations.

Until the postwar period, the observatory was relatively isolated. There were no telephone lines and no railway stations in the vicinity, and connection to Prague was provided by one car. The observatory was not known to the general public because amateur astronomers and their popularization activities were focused on public observatories.

Even the German astronomers, who came to the German University in 1940, did not know about the Ondřejov Observatory's existence until 1942. Then Professor Schaub negotiated with the Reichsprotektor Karl H. Frank (1898–1946) and enforced the occupation of the Ondřejov Observatory. This was officially realized in November 1943. Later, Schaub and his staff moved to the observatory.¹⁶² During his stay, he published several papers on binaries. Schaub got on well with the Czech personnel at the observatory.¹⁶³ They continued with their research, which included atmospheric absorption, lunar eclipse photometry, and meteor observation.

In May 1945, in the final days of the war, conflicts arose between Czech and German astronomers at the observatory.¹⁶⁴ Schaub left for Prague and was later deported to Germany. The observatory was guarded by Czech staff and survived the end of the war and the postwar period without any damage.¹⁶⁵

162 Fischer and Hibst, "Die deutsche Astronomie".

163 Tomáš W. Pavlíček and Martin Šolc, "Cesty československých astronomů k mezinárodnímu uznání v dobách totalitního řízení vědy," in *Ne-svoboda, despotie a totalitarismus v kultuře a kulturních dějinách*, ed. Radomír Vlček (Praha: Česká společnost pro slavistickā, balkanistickā a byzantologickā studia – Historický ústav AV ČR – Slovanský ústav AV ČR, 2021), 490–520, here 493.

164 Fischer and Hibst, "Die deutsche Astronomie"; Zdeněk Kopal, „Ondřejovská hvězdárna za druhé světové války," in *Ondřejovská hvězdárna*, 130–34.

165 Kopal, "Ondřejovská hvězdárna".

The Astrophysical Observatory in Stará Ďala

Another state observatory, which was initially private and was later donated to the state, was the observatory of Baron Miklós Konkoly-Thege¹⁶⁶ in Stará Ďala,¹⁶⁷ built in 1871–74 as a modern scientific institute and as the first astrophysical observatory in the entire Austro-Hungarian Empire.¹⁶⁸

Towards the end of the 19th century, the observatory was fully financed by Konkoly-Thege and had nine domes, several pavilions for meteorological observations and geophysics, and several large buildings. Its instruments included a 254mm Merz-Konkoly refractor and a 162mm Merz refractor. When Baron Konkoly-Thege ran into financial difficulties, he donated the observatory to the state in 1899 with the condition that he remain its director until his death, which occurred in 1916.¹⁶⁹

After the Austro-Hungarian Empire dissolved in 1918, the observatory was transferred to the Czechoslovak Republic. The meteorological observatory was joined with the State Meteorological Institute. The astrophysical and geophysical observatories were merged with the State Astrophysical Observatory in Stará Ďala. Kaván, the adjunct of the CU Astronomical Institute, accepted the position of its director. The Hungarian staff left the observatory in 1920, and a portion of its equipment was transferred to a new observatory in Svábhegyi, near Budapest.

In the 1920s, the observatory was equipped with a 60cm Zeiss reflector, a large instrument from a top manufacturer of astronomical instruments at that time. The instrument had to wait for the arrival of Carl Zeiss employees and Šternberk. Šternberk had experience with large instruments from his studies in Babelsberg and from the installation of the König telescope at the Štefánik People's Observatory in Prague.¹⁷⁰

The observatory was in the Hungarian occupation zone during the Vienna Arbitration. On 13 October 1938, the evacuation of the institute was ordered.

166 Miklós (Nicolaus) Konkoly-Thege (1842–1916), descendant of an old noble family from Stará Ďala. Studied law, physics, and meteorology at the universities of Pest and Berlin. Travelled to a number of observatories in Europe and gained the necessary knowledge and contacts for future scientific work and instrument design. Director of the Meteorological Service from 1890.

167 O'Gyalla in Hungarian. Today, Hurbanovo in Slovakia.

168 Martin Kalina, „Matematika a fyzika na Slovensku, JČMF a JSMF,” *Pokroky matematiky, fyziky a astronomie* 57, no. 1 (2012): 3–11; Stanislav Šišulák and Ladislav Pastorek, “Instrumentation and Observations at the Astronomical Observatory in Hurbanovo in 1871–1918,” *Journal for the History of Astronomy* 53, no. 4 (November 1, 2022): 475–96.

169 Šišulák and Pastorek, “Instrumentation and Observations”.

170 Mohr, “Čtyřicet let”; Bohumil Šternberk, “Vzpomínky na minulost,” *Říše hvězd* 59, no. 12 (1978): 245–58.



The war ends and Luboš Perek (right) and his peers leave forced employment at Junkers to return to their studies, Prague, April 1945
(MÚA, A AV ČR, Luboš Perek collection, photo album WWII)