The Brno Regional Network of Observers (B.R.N.O.)—Variable Star Section of the Czech Astronomical Society—and Its Activities

Miroslav Zejda
B.R.N.O.—Variable Star Section of CAS, c/o N. Copernicus Observatory and Planetarium, Kraví hora 2, 616 00 Brno, Czech Republic

Abstract Variable star observing has a long tradition in the Czech Republic. Eclipsing binaries have been a main interest since 1960, but recently we have observed other types of variable stars as well. The whole spectrum of our activities is discussed.

1. History

The first well-known observations of variable stars in the Czech country were made by Tycho Brahe and Johannes Kepler, who observed the supernovae of 1572 and 1604. Systematic observations were started in the second half of the 19th century by Vojtěch (Adalbert) Šafařík, and later on by Ladislav Pračka. In 1917, the Czech Astronomical Society was created (one year before the founding of Czechoslovakia). The Variable Star Section was established as one of the first specialized sections in 1924. Several famous Czech and Slovak professional and amateur astronomers worked to guide this section—for example, the future world-famous astronomer Zdeněk Kopal, and the co-discoverer of Nova Lac 1936, Záviš Bochníček. Extrinsic variable stars were the main targets of the observing program during those times.

2. Eclipsing binaries and new philosophy

The period after World War II was a very difficult time for variable star observers in Czechoslovakia. Professor Obůrka—the first director of the Public Observatory in Brno (the present-day N. Copernicus Observatory and Planetarium)—tried to rebuild interest in the field of variable stars.

However, he had a new philosophy. He was a teacher and he wanted above all to make young people enthusiastic for variable star observing. He abandoned the program of observing semiregular and irregular variable stars and turned to short periodic variables. The observers could see the results of their observations after a short time, usually during the very same evening, and that was very important to support their enthusiasm. This way, they acquired spontaneously methods of scientific research. As a scientific view of nature was officially propagated in our country, our predecessors even got some financial support from the authorities. The observing program on eclipsing binaries was officially started in the Summer of 1960, with the help of K. Kordylewski from Cracow Observatory, and it has been running until now.

3. The present

Almost one thousand observers have worked on this program. Most of them had observing activities only for a short time but many of them became good physicists, chemists, biologists, physicians, or simply scientists, some of them being real authorities in their fields. There are several professional astronomers among them as well. Most present-day observers are members of the *Brno Regional Network of Observers—Variable Star Section of Czech Astronomical Society*—that has its seat at the *Nicholas Copernicus Observatory and Planetarium in Brno*. The seal of our section is given in Figure 1.

At present we have ninety members from six countries, mainly from Czech Republic and Slovakia, of course, and several tens of collaborators. They obtain several hundreds of timings of minimum brightness of eclipsing binaries every year.

All timings of minima have been published in *Contributions of the Nicholas Copernicus Observatory and Planetarium in Brno*. The latest issue (as of 1995) is No. 31. It contains 2,246 timings of minima of brightness of 297 eclipsing binaries, and eleven articles.

A small example of our work follows. It is a description of the discovery of the variable star GSC 4383.0384, later named ES UMa, published in the *Contributions*.

GSC 4383.0384 was recommended as a comparison star for the SN 1993J observing campaign. Observing supernova 1993J in the evening April 16, 1993, Kamil Hornoch and Jan Kyselý independently noticed a brightness change of this comparison star. The variability of the star was confirmed by photoelectric measurements done at the N. Copernicus Observatory by Dalibor Hanžl on the same night (see Figure 2).

Our observations are mainly visual. We have only a few tens of photographic or photoelectric observations and several CCD observations (timings of minima). We have an archive of observations in which there have been stored not only timings of minima but also individual estimates, measurements, or photos. All published times of minima are in electronic form. The whole set of these observations is available at our observatory. Two years ago we have started to work on a database of timings of extrema of periodic variable stars.

A small group of our members has founded the "Jelly-Fish" team dedicated to the observation of physical variable stars. The activity of this group is presented in another paper in these proceedings.

We will support the observations of other types of variable stars, too. Today's philosophy, mainly with respect to the use of new technology, is clear: what matters is to observe and not what to observe.

B.R.N.O. headquarters has issued the journal *Perseus* and some materials for observers, for example, guides, catalogues, predictions of times of minima, charts, and so on. Of course it is very important to have some observing camps and meetings. We hold a conference on variable star research every year in the Autumn. It is a good opportunity to exchange our experiences when we meet each other.

4. Conclusion

B.R.N.O.—the Variable Star Section of the Czech Astronomical Society—is really different from the other variable star observing groups around the world. The average age of our members is very low. However, to teach young people how they can explore the Universe is a very exciting activity, especially when young individuals may compare themselves with Bochníček, Kopal, or Kohoutek.

5. Acknowledgements

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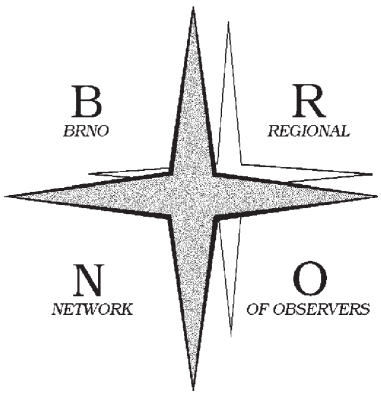

Figure 1. The seal of B.R.N.O.—the Variable Star Section of the Czech Astronomical Society.

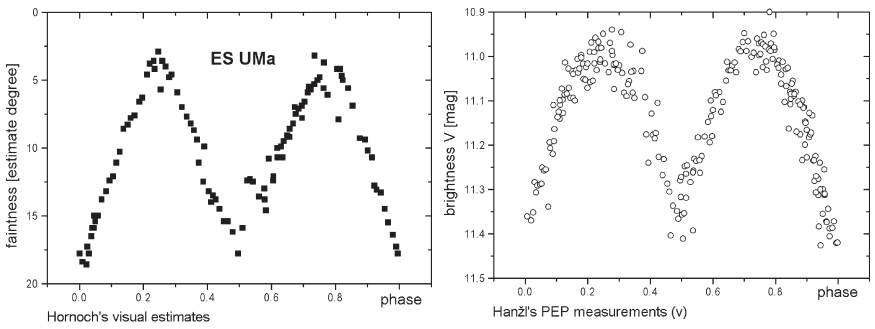

Figure 2. ES UMa: visual (left) and Photoelectric Photometry (right) observations.