

ASTRONOMICAL EDUCATION IN THE NICHOLAS COPERNICUS OBSERVATORY AND PLANETARIUM IN BRNO

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ABSTRACT. The astronomy can be an ideal vehicle for extending the informal education. The planetariums can be the appropriate choice for an extended education. The science of astronomy has a great advantage over other disciplines and all those attributes can be fully utilised in creation of an educational programs for students and general public. The following article will describe how The Nicholas Copernicus Observatory and Planetarium in Brno dealt with some aspects of the astronomical education.

Key words: Physics: experiments: education: popularization;

1. Introduction

Welcome to the world of dreams, of stars, of planets – welcome to The Nicholas Copernicus Observatory and Planetarium in Brno, Czech Republic – European Union.

2. Astronomy as Instrument of Popularization

The astronomy can be an ideal vehicle for extending the informal education. The planetariums or museums can be the appropriate choice for an extended education. The science of astronomy has a great advantage over other disciplines; the starry sky is familiar to every human. Even blinds can see stars in our institution because we have got a haptic planetarium. As humans, we are deeply moved by sunrise and sunset or the dark heavens with twinkling stars. Sun and Moon eclipses, despite our education can have a profound effect on us humans as it has on the builders of the Stonehenge. Therefore, the astronomy combines the poetic emotional side with the natural science. In addition, astronomy is a good example of the inter-

disciplinary science. All those attributes can be fully utilised in creation of an educational programs for student and public at large. The following article will describe how The Nicholas Copernicus Observatory and Planetarium in Brno dealt with some aspects of the popularization of science. Most of our activities are not only about creating programs about astronomy or observations, but also, for example, additional educational programs about the experiments in the field of optics. Where else can students find a better practical application about the optics, then here, at the planetarium! Astronomy can be, in this case, an instrumental tool helping to explain the laws of the optics (generally physics) to the students (Ledvinka, 2005a).

The Nicholas Copernicus Observatory and Planetarium is in Brno in the southeast of the Czech Republic. It is almost in the centre of the city, which makes it easily accessible for tourists, school trips and members of the public.

Our main focus is on educating and informing the public about astronomy. We stage astronomical observations, audiovisual performance for schools and general public, exhibitions and give lectures on optics for elementary and high schools.

On the list of the multi-visual performances for the public you will find programmes aimed at a modern survey of the solar system structure and a study of remote areas of the universe at the observation satellites, the ancient history of Brno, etc. We must not forget to mention our foreign language programmes, productions and performances for people with visual impairment. The pleasant environment of the main planetarium, which includes top audio-visual technologies, is also very convenient for various commercial presentations, seminars and formal events.

At the Brno observatory we have several types of telescopes on disposal, beginning with portable apparatuses up to lenses of 15 or 20 centimetres in diameter. The attractions of the evening sky can be examined with assistance from staff at the

observatory. Our visitors will be able to see the moon, some of the planets and, naturally, also distant objects in the universe, such as double stars, star clusters, nebulae and galaxies. One can also observe the actual sun in detail by means of a projection of the sun onto a large screen by specially adapted telescopes.

2.1. Astronomical Education

We offer a lot of astronomical shows for general public in planetarium dome. People can see the sky at day and at night. Visitors can come along observe Sun at day and they can see planet, nebulas, stars and constellations in the evening. The Adventure Science is a special serie of science show. The lecturer is showman with excellent knowledge of physics and other natural sciences. These shows show Physics and Chemistry as attractive natuaral sciences for everyone.

- The Adventure Physics (Tyc, 2006) is first part of the series The Adventure Science. The lecturer shows some amusing experiments from mechanics, thermodynamics, acoustics, optics and electromagnetism.
- The Adventure Chemistry (Pisala, 2006) is second part of the series. The lecturer shows some amusing experiments from chemistry.

We had a great success with those programs (The Adventure Physics and The Adventure Chemistry), which during its fourteen performances were visited by 3000 visitors (Pokorny, 2001; Ledvinka, 2005a).

2.1.1 Astronomical Education For the Schoolable Public

For pupils we have prepared a lot of audiovisual performaces with astromomical themes (www.hvezdarna.cz) (e.g. Sun forgotten star, Rare Earth, Moon hoax, etc).

The Adventure Optics is special lecture for students of elementary and high schools. This physical show demonstrate elementary laws of optics in amusing way. This show the great response from the schoolabele public. The Adventure Optics was visited by 3400 pupils in last year (Ledvinka, 2007).

2.1.2 E-learning For Everyone

Astronomical courses was prepared for a long time but the attendance became fall down recently. Hence we have prepared Internet astronomical course for everyone (Pokorny, 2006). Name of this course is *Vademecum – The Guide of the Universe*. Participants of the course graduate ten lessons from astronomy. Their knowledge are test. The participants can use consult of our staffers.

3. Conclusion

- Our experience evince interest of general public about natural sciences especially astronomy.
- School children can be capture by science too but they want an attractive form of natural sciences.
- And this is our duty.

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