

## 20 Argumente für den Astronomieunterricht:

### Why astronomy is useful and should be included in the school curriculum:

- Astronomy is deeply rooted in almost every culture, as a result of its practical applications, and its philosophical implications.
- Among the scientific revolutions of history, astronomy stands out. In the recent lists of “the hundred most influential people of the millennium,” a handful of astronomers were always included.
- Astronomy has obvious practical applications to timekeeping; calendars; daily, seasonal, and long-term changes in weather; navigation; the effect of solar radiation, tides, and impacts of asteroids and comets with the Earth.
- Astronomy is a forefront science that has advanced the physical sciences in general by providing the ultimate physical laboratory – the universe – in which scientists encounter environments far more extreme than anything on Earth. It has advanced the geological sciences by providing examples of planets and moons in a variety of environments, with a variety of properties.
- Astronomical calculations have spurred the development of branches of mathematics such as trigonometry, logarithms, and calculus; now they drive the development of computers: astronomers use a large fraction of all the supercomputer time in the world.
- Astronomy has led to other technological advances, such as low-noise radio receivers, detectors ranging from photographic emulsions to electronic cameras, and image-processing techniques now used routinely in medicine, remote sensing, etc. Its knowledge is essential as humankind continues to explore outer space.
- Astronomy, by its nature, requires observations from different latitudes and longitudes, and thus fosters international co-operation. It also requires observations over many years, decades, and centuries, thus linking generations and cultures of different times.
- Astronomy reveals our cosmic roots, and our place in time and space. It deals with the origins of the universe, galaxies, stars, planets, and the atoms and molecules of life – perhaps even life itself. It addresses one of the most fundamental questions of all – are we alone in the universe?
- Astronomy promotes environmental awareness, through images taken of our fragile planet from space, and through the realization that we *may* be alone in the universe.
- Astronomy reveals a universe that is vast, varied, and beautiful – the beauty of the night sky, the spectacle of an eclipse, the excitement of a black hole. Astronomy thus illustrates the fact that science has cultural as well as economic value. It has inspired artists and poets through the ages.
- Astronomy harnesses curiosity, imagination, and a sense of shared exploration and discovery (I think Ontario science teacher Doug Cunningham was the first to put this so eloquently).
- Astronomy provides an example of an alternative approach to “the scientific method” – observation, simulation, and theory, in contrast to the usual experiment and theory approach.
- Astronomy, if properly taught, can promote rational thinking, and an understanding of the nature of science, through examples drawn from the history of science, and from present issues such as pseudoscience;
- Astronomy, in the classroom, can be used to illustrate many concepts of physics, such as gravitation, light, and spectra.
- Astronomy, by introducing students to the size and age of objects in the universe, gives them experience in thinking more abstractly about scales of time, distance, and size.
- Astronomy is the ultimate interdisciplinary subject, and “integrative approach” and “cross-curricular connections” are increasingly important concepts in modern school curriculum development.
- Astronomy attracts young people to science and technology, and hence to careers in these fields.
- Astronomy can promote and increase public awareness, understanding, and appreciation of science and technology, among people of all ages.
- Astronomy is an enjoyable, inexpensive hobby for millions of people.

Quelle: Percy, J. R.: *Teaching and Learning Astronomy*, New York 2005