Challenging C. P. Snow: Active Interaction between Arts, Cultural Heritage and the Universe in Finland

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Key Words

Arts and Sciences
Dialogue Between Astronomy and Arts
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Summary

Many events in Finland during the International Year of Astronomy 2009 (IYA2009) clearly demonstrated that there can be real interactions between the arts, humanities and science. We have found the 50-year-old concept, introduced by C. P. Snow, of two cultures unable to engage in a dialogue to be irrelevant. In Finland, astronomy has always been popular. The IYA2009 was celebrated in Finland with many local, national and international events. Altogether there were more than 400 events of all sizes. Arts and cultural activities were essential parts of many of these events.

Introduction

The Finns find the Universe, and thus astronomy, very interesting. Astronomy is the most popular scientific topic in the media — newspapers, journals, TV and radio alike. The community of amateur astronomers in Finland is big for the population size. At the end of 2009, the Ursa Astronomical Association, the national astronomy organisation, had over 15 000 members out of a population of around 5.2 million. More than 40 local astronomy societies are active all over the country. Most of them have an observatory for public star parties and schools and for their own observations. In most cases the observatories have been built with the financial support of the local community.

Ursa publishes the journal *Tähdet ja avaruus* (Stars and Space), which is issued eight times a year. The journal is one of the most esteemed publications that popularises science in Finnish. Ursa is also an important science publishing house with more than 100 popular books on astronomy and related sciences to its name. Ursa has a leadership role in astronomy in Finland, as mathematics and science teachers actively develop their work in co-operation with Ursa, creating new methods of teaching and learning, often as part of an international collaboration.

The 150th anniversary of astrophysics

The IYA2009 was officially inaugurated in Finland on 7 January 2009 as one of major events of the Science Forum, a nationwide biannual science communication event held from 7 to 10 January 2009 at the University of Helsinki. The main theme of 2009 was evolution. Cosmic evolution played a major role at the lectures and at other events. The 150th anniversary of spectroscopy, invented in 1859 by Robert Bunsen and Robert Kirchhoff, was also commemorated. This new technique revolutionised chemical analysis and marked the beginning of two new sciences — physical chemistry and astrophysics. It became possible to find the composition of the stars and other celestial bodies.

The importance of spectral analysis is indicated in the monument to Emperor Alexander II and to the political reforms and advanced legislation of 1863 in Finland. The importance of this scientific discovery is made clear in the monument's design, as in just a few decades, a tool essential for a breakthrough in research was used as a symbol in the statue, and its significance was generally recognised (see Figure 1).

Figure 1. Lux and the spectroscope. Since 1894, the monument, created by Johannes Takanen and Walter Runeberg, has stood in the Senate Square in the very centre of Helsinki. One of its figures, the goddess of knowledge, is holding a spectroscope as a symbol of intellectual inquiry and research, rather than the more conventional papyrus scroll or compass.

Voyage to the Moon

In the IYA2009, the arts received public attention at many events in Finland. At Kiasma, the National Museum of Modern Art in Helsinki, an international team of artists, Jussi Kivi, Oliver Kochta, Iina Kohonen and Mika Taanila created a multi-faceted art exhibition and an interlinked series of events named *Expedition To The Solar Eclipse*, running from 6 March to 7 June with themes relating to solar eclipse expeditions and space travel, with Ulla Taipale as curator. This group of artists had travelled to Novosibirsk for the 2008 total solar eclipse. Agnes Meyer-Brandis enlivened a voyage to the Moon by using a special species of geese — Moon geese (see Figure 2) — as told by Francis Goodwin in his book, *The Man in the Moone, or a Discourse of a Voyage thither*, by Domingo Gonsales, published posthumously in 1638. The artists and scientists also discussed explorations in time and space. The exhibition ended with a walk and series of events through the centre of Helsinki from Kiasma, the Museum of Modern Art to the Ursa's Observatory, with a stop and visit to the Helsinki University Observatory.

The heavens and the human mind interaction

The 7th International Conference on Environmental Aesthetics was the culmination of a series of scholarly conferences arranged between 26 and 28 March at Valamo Monastery in Heinävesi by Yrjö Sepänmaa, Professor of Environmental Aesthetics at the University of Joensuu. The theme was the aesthetics of the sky, space and heaven. The artistic contribution included several art performances, posters and exhibitions. People attach multiple, parallel and overlapping meanings to the concept "celestial". The conference approached this multi-layered idea from three perspectives: through its cultural and scientific significance, through different individual perceptions and how the various experiences could be depicted. Looking at the subject from the perspective of cultural history, aesthetics, spirituality and the sciences, separately and together, opened up interesting views. Three themes were discussed from the different points of view, the mythological and religious sky, the sky as atmosphere and space, and the imaged and imagined sky. The conference papers will be published as a book edited by Yrjö Sepänmaa. The weather favoured the conference because on the second night a star party was organised with the assistance of the astronomical society Warkauden Kassiopeia. The telescopes were provided and excellent guidance given by the chairperson of the society, Veli-Pekka Hentunen.

Global folklore and space exploration

In Joensuu, in central northeast Finland, the Museum of Northern Carelia and the local astronomy society Seulaset (the Pleiades) produced an exhibition that spanned a vast range of topics, from the age-old traditions of calendars and myths of creation of the world, to cosmic evolution as part of modern science, and GPS navigation and space astronomy (see Figure 3). The interactive exhibition was produced by Pertti Pääkkönen, Chair of the Seulaset

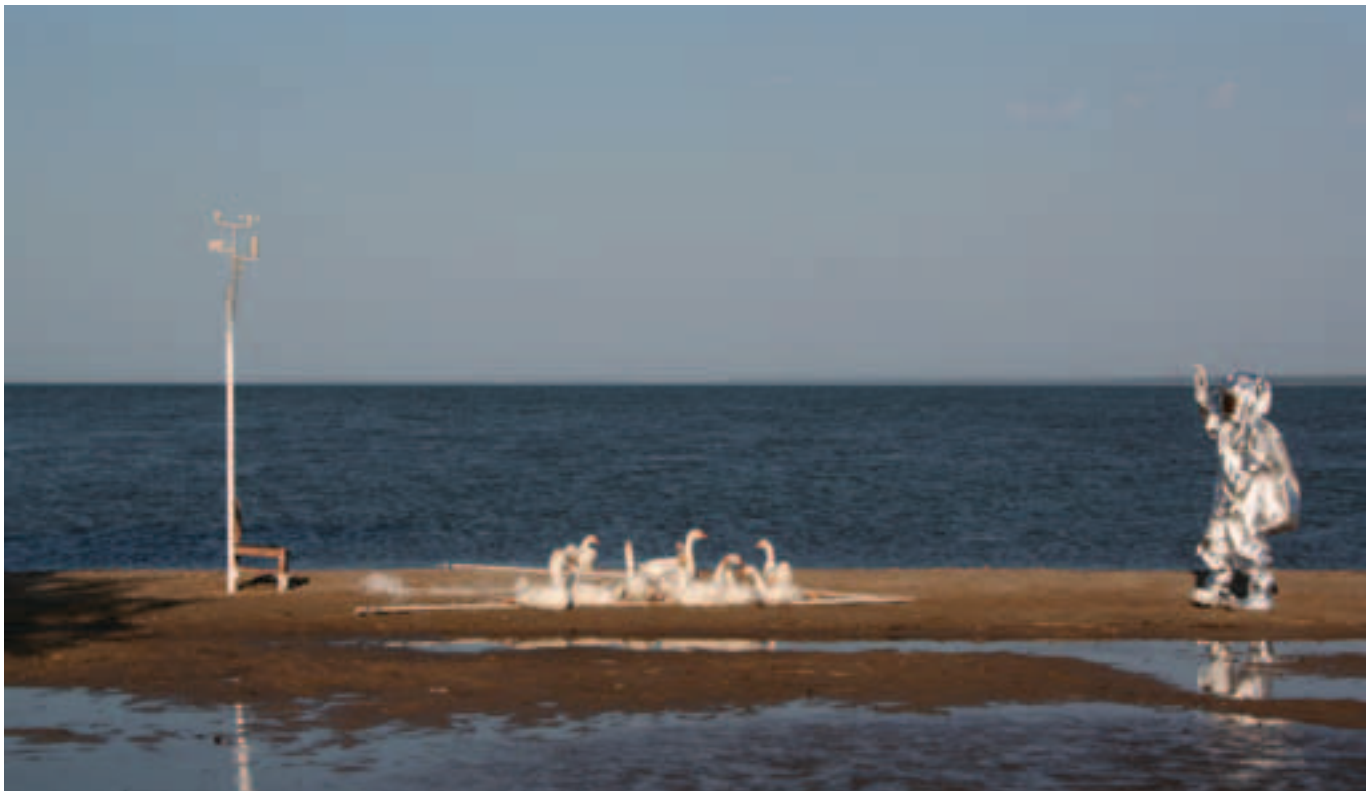

Figure 2. The artist Agnes Meyer-Brandis meets the Moon geese for a voyage to the Moon during the total solar eclipse in 2008. The experiment is part of Capsula´s guided expeditions. Photo: The Moon goose experiment/Agnes Meyer-Brandis 2008/VG-Bildkunst.

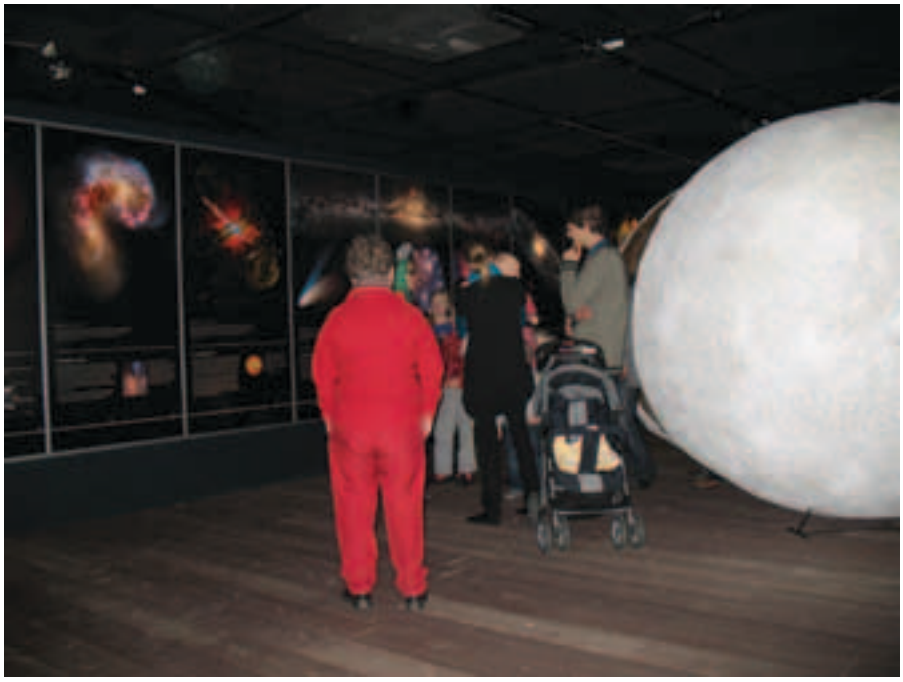

Figure 3. Space night for children in Joensuu. A space-themed masquerade brought about a hundred children to the Museum of North Carelia. On the right, a giant World Egg, part of many creation myths from round the world.

Society and a researcher at the University of Joensuu, and Iiris Heino and Outi Suoranta of the Museum and many enthusiastic colleagues. It was visited by many groups, including school classes with their teachers and the general public and was extensively covered by media. The name of the exhibition (8 October 2009 – 21 March 2010) was *Väinämöisen polvelta tähiksi taivaalle*, From the Knee of Väinämöinen to the Heavenly Stars. Väinämöinen is a central character — an omnipotent sage — in the Finnish national epos *Kalevala*.

C. P. Snow was wrong — The Galileo Symposium on the History of Philosophy and Science

Galileo Galilei was remembered in many contexts over the year. The general public was also reminded of the fundamental importance of the discoveries of Johannes Kepler in his *Astronomia Nova* published 1609. One commemorative multi-day event for teachers, young people and the general public was a symposium on the development of philosophy and science and their impact on people and society, arranged at the Maunula Science Gymnasium in Helsinki by nine educational, scholarly and cultural organisations, including Ursa. One of the guest lecturers was Jon Jenkins of the SETI Institute, who gave a presentation entitled *Hunting for Other Worlds — Kepler Probe and Exoplanets*. A special afternoon session was dedicated to the interaction between art and science. Four eminent artists, the sculptor Lauri Anttila, the novelist Olli Jalonen, the composer Kari Rydman and the visual artist Jyrki Siukonen discussed the role and meaning of the Universe in their creative work. With impressive pieces of art as examples, the audience was really carried through time and space to the heart of artistic creation. The artists demonstrated how deeply and seriously the concepts and structures of science can influence the arts. The presentations were followed by a lively discussion with the audience. The year 2009 also was the 50th anniversary of C. P. Snow's famous lecture *Two Cultures* in which he claimed that the arts and sciences are unable to communicate. The symposium convincingly showed that Snow was wrong. In the evening of the first day of the symposium, the drama group from the Martinlaakso Gymnasium of Vantaa presented a play on Galileo and his science. The text and setting on the stage were created by the pupils and their teachers by using different literary and scientific sources.

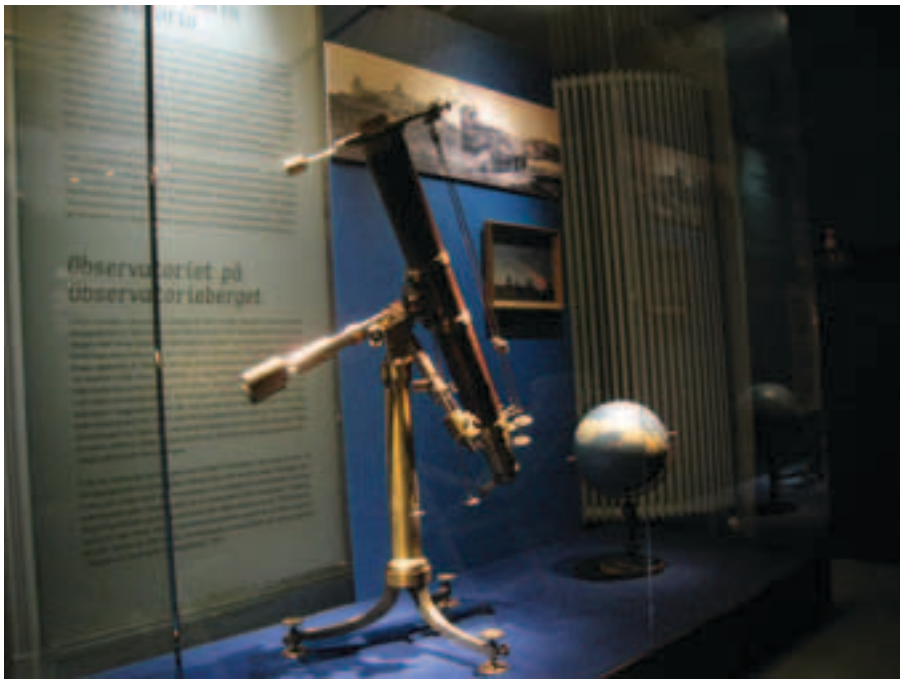

Figure 4. The history of astronomy was also part of Helsinki City Museum's exhibition The Night at Sederholm House. Photo: Helsinki City Museum.

Lights and shadows of the night

The Helsinki City Museum has an exhibition called *The Night at the Sederholm House*, which is located at the corner of the Senate Square in the very centre of Helsinki. The house was built in 1757 and is the oldest surviving house in Helsinki after the fire of 1808. The exhibition was planned by Tiina Väisänen and produced by Jaana Mellanen and Minna Sarantola-Weiss. The working group consisted of Marcus Haga, Eva Packalén, Päivi Roivainen and Hilkka Vallisaari with many colleagues. By displaying complete, genuine interiors, views of the historic town of Helsinki, pieces of art and everyday utensils, the exhibition describes different aspects of life in a city during a night in times past. One room is dedicated to time-keeping and astronomical research at the now 175-year-old University Observatory (see Figure 4). Old photographs and other material describe the glorious past of that institution, centrally placed in the city. One of the main attractions is the Observatory's heliometer made by Joseph von Fraunhofer. The exhibition is open until 29 August 2010.

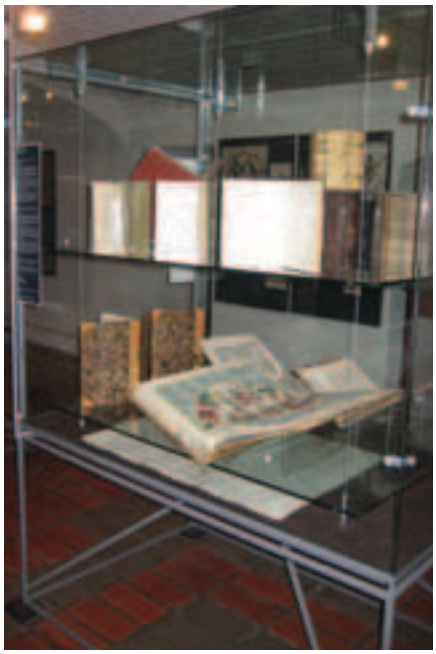

Figure 5. The history of the visual representation of the skies was displayed at the National Library's exhibition, The View from Paradise*, in Helsinki.*

Figure 6. Lauri Anttila's piece of sculpture showing the solar spectrum at noon at Ursa Observatory. Visualisation courtesy of Lauri Anttila.

The View from Paradise

The National Library of Finland is celebrating the International Year of Astronomy with an exhibition on the history of the maps of the heavens entitled *The View from Paradise*. The globes of antiquity have given way to today's digital databases which hold detailed information that can be used for analyses of the structure and evolution of the Universe. Besides the technical prerequisites for producing the charts, an examination of star maps reveals wide-ranging cultural linkages because each era's economic, cultural and political needs have always influenced the mapping of the heavens. In order to have a complete view of the Universe, the heavens were traditionally looked at from outside, as if from paradise. When it was understood that the stars were not fixed on a solid material sphere, but dispersed at different distances across a vast space, there was no longer any point in looking at the sky from outside. The point of view of the star maps was now from Earth. The great Finnish tradition in sky mapping is presented through the works of astronomers like Friedrich Argelander, Adalbert Krueger and Anders Donner (see Figure 5). Sky maps and guidebooks for amateur astronomers were also displayed at the exhibition. The exhibition was planned by Tapio Markkanen, designed by Marjaana Kinnermä and produced by Inkeri Pitkäranta. The exhibition closed on 30 April 2010 and will be available in virtual form[1]. A book with the same title in Finnish was published by Ursa.

Commemorating the International Year of Astronomy 2009

Lauri Anttila is an internationally known sculptor. Throughout his career Anttila has created pieces of art that connect the everyday environment, both urban and natural, with the cosmos. A long-time active observer himself, Anttila has created pieces that include the sundial on the floor of the Rovaniemi airport terminal, giving the position of the Sun at noon and the corrected official time (1992); and a second sundial that is possibly the biggest in the world, which gives the noon at each of the four time zones of Europe (Vuosaari, Helsinki 2000); and the memorial to the Finnish solar eclipse expeditions of 1945 and 1947. On the monument in Kangaslampi, Varkaus (2005), the Sun connects observation sites in Bana (Ghana), Bocaiuva (Brazil), Poroluoto and Kangaslampi (Finland). In May 1947 two Finnish expeditions to Ghana and Brazil were the first to determine the distance (about 5459 km) between the Old and New Worlds by direct triangulation. Ursa Astronomical Association asked Lauri Anttila to create a sundial at the site of the Ursa public observatory in Kaivopuisto, Helsinki. Anttila has created a horizontal sundial which is illuminated by the Sun at noon (see Figure 6). The surface of the sundial is covered with a huge solar spectrum with the continuum and absorption lines of different elements of the solar atmosphere cast by a mirror at the wall of the Observatory. The monument will be delivered to the City of Helsinki in June 2010, and received by the Mayor of Helsinki, Jussi Pajunen, a long-time member of Ursa.

Conclusions

Finland hosted several events which connected astronomy to art and culture during IYA2009. The public response to these projects was strong, but perhaps more importantly, new works emerged from the collaboration of scientists and artists.

Notes

[1] http://www.nationallibrary.fi

Biography

Tapio Markkanen obtained his doctorate in 1977 at the University of Helsinki. He has taught astronomy there and done research on Galactic structure, interstellar magnetic fields and star formation. He has also published scholarly works on the history of science. Tapio Markkanen has also been active in developing science education and communication. He is chairperson of the Ursa Astronomical Association for 2008–2011. As chair of the Finnish National Commission for UNESCO he also participates in the activities of that organisation.