Communicating astronomy with the public in Cuba

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Abstract
Communicating astronomy with the public to produce attractive materials for a broad audience on TV is a difficult job in a third world country. One way of developing effective communication in fields like astronomy, astrophysics, and cosmology whilst connecting the professional astronomer with a majority of the people is to combine the knowledge of the scientist with the most spectacular TV production methods of first world countries: integrating, through commentary and analysis, astronomy and science into the public debate of lay citizens. Here I present my ten years of experience of presenting a TV programme devoted to general science outreach. I also comment on the progress of the construction of the new planetarium, a cultural centre for science and technology, to be opened as part of the commemoration activities for the 2009 International Year of Astronomy. It is hoped to guide the interest of the people of Cuba towards basic science and astronomy in the most populated and frequented area of the country.

Introduction
The collage in Figure 1 belongs to a fifteen to twenty minute introduction to the most popular Cuban TV programme devoted to science outreach. It is broadcast nationwide by Telerebelde, one of the main TV channels, for one hour in a primetime slot after the Sunday evening news when most Cuban families are at home with the TV set as the main source of entertainment.

Science outreach on television in a third world country is hard to do if you want to produce attractive materials for a broad audience. Budget constraints (in most cases) and lack of the technical equipment required to produce first class visual materials conspire against the motivation and creativity of local scientists and media professionals.

One way to show the advance of the national scientific community in fields like astronomy, astrophysics, and cosmology whilst connecting the professional astronomer with a broad majority of the people is to combine the knowledge of the scientist with the most spectacular TV production methods of first world countries: integrating, through commentary and analysis, astronomy and science into the public debate of lay citizens.

The science communication objective of this paper is to describe how our TV professionals can convey cutting-edge science to the general public, despite limited resources, to produce imaginative television and film footage, by highlighting the development, knowledge and wisdom of local scientists.
Figure 1 – Pasaje a lo Desconocido snapshots

Figure 2 – GOTO G CUBA Projector

Figure 3 – Planetarium and Cultural Centre 3D interior rendering

Figure 4 – Cultural Centre building under refurbishing

Figure 5 – Panoramic View of the Plaza Vieja, Havana Old Town
In my astronomy outreach TV experience, I have learnt that in order to reach a broad audience and a reasonably high rating index in a TV science popularisation programme you should create a fascination for the, as yet unproven, effect or theory, by maintaining a balance between a mystery to be unravelled and hard science. It is important to show the uncertain fight between the questionable truth and the scientific speculation. Maybe a single one of these elements, or a partial, or whole mix of them will be the spice to flavour the final product making it attractive to a broader audience.

Ten years ago, in March 1997, Cuban television aired a science outreach programme entitled *Pasaje a lo Desconocido* for the first time. The programme aimed to convey cutting-edge science and new discoveries to a public with a special interest in the subject.

As a popular TV critic remarked in the main Cuban newspaper: “very few TV programmes devoted to science outreach, have promoted the desire to know about, the reflection on, and polemic for, science themes in Cuban television so well.” Paneque (2004).

The programme, intended at first for a niche market of interested viewers, has turned out to be a general phenomenon. The initial high popularity rating for the programme led the TV directorate to move the regular airing space from a late night Tuesday to a Thursday slot, and finally, to a Sunday prime time slot, just after the news at 8:30 pm.

These decisions are proof of the impact of the programme on the whole nation, with a regular audience ranging from 3 to 4 million viewers out of around 12 million inhabitants in the country.

The programmes have not only covered the hardest topics of cosmology and astrophysics, which have been made more popular by including elements on extraterrestrial life and UFOs, but also some more general episodes on science and culture, and their unlimited range of unanswered questions.

The introduction of one or two Cuban panellists and the contrast of their opinions with the messages of the documentaries, add an undeniable national touch the programme. The participants play a decisive role in the success of the popularisation, sometimes arguing between themselves, sometimes expressing their own points of view, but always being questioned by the programme host who assumes the role of the lay citizen.

The evaluation of the audience impact of this programme within the rest of Cuban TV programming is conducted regularly by the Centre of Social Studies of the Cuban Television and Radio Institute and presented in its annual report. In 2003 *Pasaje a lo Desconocido* was 26th out of 117 programmes, with a mean audience index of 25 and public acceptance of 90-95 percent. If we take into account that more than half of the programmes obtain mean audience indexes less than 10 it is possible to figure out the relevance acquired by the programme in the national TV spectrum. Its peak audience was obtained in 2002, reaching 48 points, when it was aired on the other main TV channel CUBAVISION.
In general, we all love mystery; it is the way to reach the soul of the people while illustrating fundamental concepts established by science. We have learned that science outreach must leave space for reasonable doubts and questions in the spirit of the scientific method to achieve maximum effectiveness.

If *Pasaje a lo Desconocido* is a success as an outreach experience it is due, in the most part, to the use of first class visual materials spiced by a debate. In this way, the knowledge and wisdom of the local scientific community is highlighted and scientific developments are conveyed to the public by debate between lay citizens.

In the summer holidays period in 2007, when films and programme materials are carefully selected for the bigger and wider audience that are at home, *Pasaje a lo Desconocido* made a special tribute, airing outreach video material celebrating the Fifteen Year Jubilee of the Hubble Space Telescope.

### A new planetarium and cultural centre in Havana

Astronomical education in Cuba is not widespread in the educational system; nevertheless the public interest in science in general, but in particular in astronomy, is very high, as is reflected by the attention paid to educational and scientific programme broadcasts in the national television channels.

The Planetarium and Cultural Centre for Science and Technology is under construction (Figure 2) and is aimed at guiding this interest towards a basic science and astronomy orientation of people in the most populated and frequented area of the country.

A key objective of this project shall be to serve as an instructive and motivational form of entertainment for the casual or habitual visitors to the Centre; offering vivid images, games with interactive displays and audio presentations on astronomy and related sciences, guided by qualified specialists.

Another fundamental aim will be to establish a plan for complementary educational material in coordination with schools, to allow children and young people to participate in activities enabling them to get into the fascinating world of astronomy, the exploration of outer space and life as a cosmic phenomenon.

The setting up of the new Planetarium and Cultural Centre for Science and Technology in Havana (Figure 3) will come under the general administration of the Office of the Historian of the City of Havana, and led by the Ministry of Science Technology and Environment. The planetarium (Figure 4) obtained under a Japanese Cultural Grant Aid, will develop into an unparalleled national resource for scientific outreach and education of the sciences. Surrounded by the attractive colonial “ambience” (Figure 5), it will become a centre for dissemination of information about new discoveries and scientific programmes developed at national and international levels.

### References