

## 2009: the year of living dangerously

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### Abstract

Tenerife is not Jakarta. Neither is 2009 the year 1965, nor the *Museo de la Ciencia y el Cosmos* (Museum of Science and the Cosmos) the hotel “Indonesia”, meeting point of reporters from around the world. Nor am I the journalist Jill Bryant (Sigourney Weaver) in the Australian Peter Weir film. But 2009, a year of international commitment to Astronomy (and wild economic crisis budget cuts), will be a time in space that many people will remember for how we live, what problems we face and what tools we used to discover together the Universe. Stimulating interest in the stars was our goal in the museum. Playing with all the colours of a filter wheel, our strategy. Energy and creativity were our available resources. We had to innovate and not die trying. Finally, mainstreaming was the concept, the philosophy, in exchange for bold value and ineffable endeavor. The *Museo de la Ciencia y el Cosmos* accepted the challenge, explored new resources for science communication and made risky bets, many of them hand in hand with the *Instituto de Astrofísica de Canarias* (IAC). A year later, we value the role of this museum in the film.

### 1 Introduction

The title of the article, which belongs to a famous and extraordinary film in the award record of the actress Sigourney Weaver, was selected for a reason: 2009 was the year of living dangerously. And in the film of 2009, the *Museo de la Ciencia y el Cosmos*, run by the *Organismo Autónomo de Museos y Centros* of the *Cabildo de Tenerife* (Autonomous Organism of Museums and Centers of the Tenerife’s local island Government) played an important role. People working here were bound to do a good job in this film given the astronomical bias of this museum since its creation. It was the first museum sponsored by a research center, the *Instituto de Astrofísica de Canarias* (IAC), in collaboration with the *Cabildo de Tenerife* (the island local Government). The bias is reflected in its name, (nicknamed “the Cosmos” by friends), and in its logo, which depicts the coordinates of the Montes Tenerife on the surface of the Moon. The name was used for this ridge thanks to the

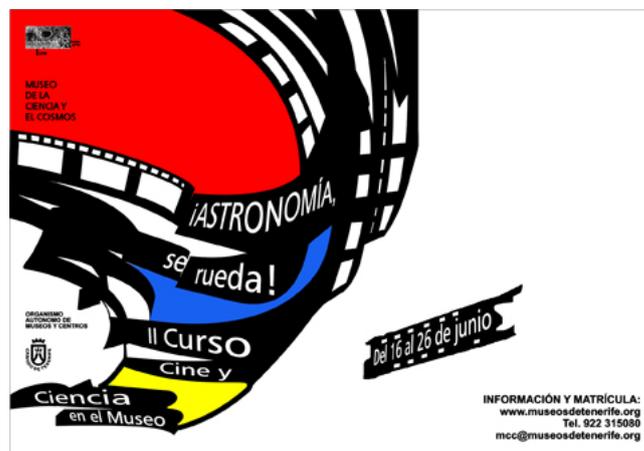


Figure 1: Poster announcing the second course on Film and Science at the Museum, entitled ASTRONOMA, se rueda! (Astronomy and action!) and cover of the book. (*Museo de la Ciencia y el Cosmos*)

Scottish astronomer Charles Piazzi Smyth, the first astronomer who observed the Universe from the peaks of Tenerife, in 1856, demonstrating the astronomical advantages of high mountains to look to the skyward. In addition to the large radio antenna (eighteen meters in diameter) crowning the museum roof, with the logo painted inside, which has become a landmark in the area, and a solar telescope and a sundial on the roof of the star-shaped building, also 50% of its permanent exhibition is astronomical. Besides, it has facilities like a full dome digital and analogical planetarium and a tourism attraction called cosmic tourism. But 2009, a year of international engagement with astronomy, also brought about the economic crisis and its savage budget cuts, as we all know. Despite that, our objective was to stimulate interest in the stars. And our strategy, to play with all the colors of a filter wheel. Exploring new resources, contexts and ways of scientific communication, in this case astronomy, and placing risky bets, many of them hand in hand with the IAC.

## 2 Cinema

We started with the binomial cinema-astronomy. We organized the second course on Film and Science at the museum, entitled “¡ASTRONOMÍA, se rueda!” (ASTRONOMY, action!) (Fig. 1). With great teachers and 60 students enrolled for two weeks and for which we had no official support. The highlight of the course was the closing session with the presence of film director Alejandro Amenábar, who gave an interesting talk. And all thanks to the contacts that the filmmaker had with researchers from the IAC, as Antonio Mampaso, who was one of scientific advisors of the film “Agora”. Besides, the course was enriched by an exhibition of antique astronomical contraptions used in the making of the film “Agora”, based on the life and work of Greek astronomer Hypatia, with photographs of the scenes where they appeared (Fig. 2). We set up a beautiful show, we wrote explanation texts and



Figure 2: An exhibition of antique astronomical contraptions used in the making of the film “Ágora”, based on the life and work of Greek astronomer Hypatia. (*Museo de la Ciencia y el Cosmos*)

we published a small catalog. It was an important lure to visit the museum and to learn a little more than astronomy. We estimated about 5 000 visitors. Later, we edited the book with the content of the course (“¡ASTRONOMÍA, se rueda!”). But also related to cinema was a project selected by the Spanish Committee for IYA2009. I mean the planetarium show for children “Jors, Jars, Jurs and the Galigalitos”, made available for purchase by museums and planetaria, as some already did: those of La Coruña, Pamplona, Cuenca, Valladolid, and Palma de Mallorca. A project which, fortunately, as others that will be referred to here, was funded by the “Septenio” program of the Canary Islands Government and FECYT (Spanish Foundation for Science and Technology). The puppets of the planetarium program will be part of a spectacular exhibition that will open at the end of this year (Fig. 3).

### 3 Theater

Convinced of the great potential of the performing arts as a resource for scientific communication, the Museo de la Ciencia y el Cosmos produced the multimedia play “The Lost Honor of Henrietta Leavitt” (Fig. 4). This play has conceived as a tribute to the role of women in Astronomy, women whose work did not get the deserved recognition because of social prejudice in the past, with awareness and understanding of the feminine limited to the purely domestic. Museum staff and actors put a lot of enthusiasm and work in this performance, with attention to details and design in order to sweeten its approach, from scenery to costumes through the projection of images on screen. And above all, we paid special attention to the sound effects because they are key to a performance where music plays a leading role, including songs by Shirley Bassey that served as a transition between scenes. This was a project funded in part by the FECYT and carried out in collaboration with the Planetarium



Figure 3: Poster announcement the Planetarium programme for children “Jors, Jars, Jurs y los Galigaitos”, one of the projects selected by the Spanish Committee for IYA2009. (*Museo de la Ciencia y el Cosmos*)

of Pamplona, where two performances took place in March, coinciding with the V Congress of Social Communication of Science, after 6 functions had taken place in Tenerife. The show has been entirely successful in terms of audience, with 2000 people of all ages and groups having seen it. The script has been published and you can access four scenes of the play with astronomical content at YouTube through the Museos de Tenerife web site.

## 4 Music

We also are convinced that astronomy combines well with music, for example. Thanks to “Septenio”, the funding program mentioned above, we hosted three very different concerts, accompanied by stunning astronomical images and great success: “Bach to the Universe”, with Ara Malikian, an Armenian violinist, and other musicians; “Spheres”, electronic music with the group “928” in collaboration with the Museum Elder.

## 5 Poetry

We also brought together astronomy with literature. With music by Caco Senante and other Canarian musicians, who gave voice and music to the verses of the Nicaraguan poet Ernesto Cardenal, author of “Cántico cósmico” and guest of honor at the museum. The poet recited with great frenzy and passion verses about the orgasm of the stars.



Figure 4: One of the scenes of the multimedia play entitled “The Lost Honour of Henrietta Leavitt”, staged in Tenerife and Pamplona, a tribute to the role of women in Astronomy. (*Museo de la Ciencia y el Cosmos*)

## 6 Painting

We also had astronomy in painting: “Poética del cosmos” (Cosmos poetics), with paintings by Arminda del Castillo, poems related to astronomy and accompanied with music specifically composed for it.

## 7 Talks

We also had, as always, astronomy talks throughout the year. We designed an attractive poster for each. Some staged as gossip shows as “Truths and lies on Galileo” or whether the copulation between Gaia and Uranus actually took place. On balloons and the dark side of astronomy. On all types of particles that fall from the sky to us. We even learned how to repair an orbiting telescope like Hubble, having to adjust hundreds of weightless screws. And we also organized a three day course on astronomy in ancient Egypt.

## 8 Workshops

And in parallel to the course on Astronomy in Egypt, we organized a workshop on Egyptian writing for children entitled “The Big Dipper in hieroglyphics”. We had astronomy workshops in collaboration with the Amateur Astronomers of Tenerife (GOAT). To mark the 15th anniversary of the museum we recruited teenagers of the same age, and gave them the title of “Los hijos del Cosmos” (The children of the cosmos), pledging to keep them in mind in

future occasions: In 2009, they visited the *Observatorio del Teide* (Teide Observatory). With our *cosmoneta* (our science van), equipped with workshops and a portable planetarium, we went to all islands of the Canary Archipelago, and collaborated with shopping malls and playgrounds. As part of our daily activities and self-financing, we have birthday parties (birthday with the stars) and astronomical sleep-overs. We also hosted “cosmic” storytelling for children.

## 9 Experiments

200 schoolchildren reproduced, with funds of the FECYT, the Eratosthenes experiment to measure the circumference of the Earth, but this time using two historical points as references: two lighthouses of our geography, Finisterre, the end of the known world, and Orchilla on the island of El Hierro, the westernmost lighthouse of Spain and zero meridian of the ancient world. The value obtained was a stunning 39 666 km, with a margin of error of only about 400 km.

## 10 History

And we also addressed history. We made an exhibition on the history of astronomy in the Teide, with project milestones from the past and the future. A 7 minute video on the astronomer Piazzi Smyth and his stay in Tenerife, produced by the museum was shown in continuous play. We recorded statements of his biographer, Mary Brück, who died shortly after the completion of this video. This piece is available, too, on YouTube through the Museos de Tenerife web site. We also had an exhibition of stunning images of eclipses of the past decade provided by the Shelios expeditions. In 2009, we also celebrated an important event: October 2, 1959, the 50th anniversary of the total solar eclipse seen from the Canary Islands that was somehow the origin of the *Observatorio del Teide* (Teide Observatory). About fifty people who wanted to share with us their memories of that phenomenon in the sky answered to our call and came to the museum to participate in our activities. All their testimonies were collected in a brochure. Some people gave us photos of how they observed the eclipse. Many recalled and brought photos of the American planes that landed at Los Rodeos airport preparing to follow the eclipse. Many remembered the supersonic aircraft flying over the skies of Tenerife. Even someone told us how she was wearing her wedding dress that day. We compared the current press releases with those of 50 years ago.

## 11 Exhibitions

There were two additional exhibitions shown along our famous staircase: “Meterroritos” and “Tenerife: A balcony to the universe”, again with the collaboration by GOAT. We closed the year with an exhibition entitled “El universo, para que lo descubras” (The universe, yours to discover), by Enrique Pérez and Guillermo Tenorio-Tagle.

## 12 Radio

Thanks to the *Agencia Canaria de Investigación, Innovación y Sociedad de la Información* (ACIISI) (the Canarian Agency for Research, Innovation and Information Society) and the Canary Islands Radio, and with the collaboration of the Museum Elder, we started broadcasting in January 2009 a weekly radio program called “Galaxias y centellas” (Galaxies and sparks), which won an award in the last contest of Science in action (“Ciencia en acción”) and continues today. This program has covered all current astronomical news, including a live coverage of the inauguration of the GTC. The podcasts are available at: <http://www.galaxiasycentellas.es>. Museum relations with the media, particularly the local ones, are very good. We answer all enquiries and interview requests on astronomy. And in 2009, we got several photographs published, as it was the case with the comet Lulin.

## 13 Publications

In addition to posters, brochures and the book “¡ASTRONOMÍA, se rueda!” mentioned above, we released an astronomical desk calendar with astronomical data for each month. Also T-shirts with our logo for the year were made. And thanks again to the ACIISI, we published a monographic newspaper entitled “Astronomía en el museo” (Astronomy in the museum), which includes all the ways we have explored to make science communication.

## 14 Games

And if we really want to promote vocations in astronomy, nothing better than a game. In collaboration with the IAC, we made an “Astromemory” game (Fig. 5). This is a memory game, consisting of 52 pairs of telescopes and astronomical images, obtained mostly from the Canarian Observatories. The object is to collect the highest number of pairs, remembering their position on the board. One thousand copies of the game are being distributed to children in shelters or homes. The rest are for sale at the museum.

## 15 Humor

Finally, humor was also present to welcome the year 2009 on 28 December 2008, the day of the Holy Innocents (equivalent to April’s Fools Day in Anglo-Saxon countries), simulating the crash of a meteorite on the roof of the museum. A show of science and fiction, interviews, stunts, etc. We also had our astronomical carnival. But our flagship project in this field was the exhibition “Astronomía en viñetas” (Astronomy in comic strips), for which we did not obtain external funding, despite of it being one of the eleven projects selected by the Spanish Committee for the IYA 2009 (Fig. 6). The aim was to popularize astronomy with humor through comic strips of our best national and international artists. We were fortunate to count with the generous collaboration of artists who contributed their artwork: Antonio Forges



Figure 5: Cover of the “Astromemory” game, made by the Museum and the IAC. (*Museo de la Ciencia y el Cosmos*)



Figure 6: Poster announcement the exhibition “Astronomía en viñetas” (Astronomy in comic strips), one of the projects selected by the Spanish Committee for IYA2009. (*Museo de la Ciencia y el Cosmos*)



Figure 7: One of the comic strips of the exhibition “Astronomía en viñetas” (Astronomy in comic strips): against light pollution. (*Museo de la Ciencia y el Cosmos*)

(Forges), Joaquín Lavado (Quino), Antonio Mingote (Mingote), Ramón Rodríguez (Hipo Popo Pota y Tamo), and Pepe Medina (Medina). Twelve comic strips were accompanied by explanatory texts which extended the astronomical concepts discussed in them. The brochure won first the prize for scientific communication on paper in the “Ciencia en acción” contest (Fig. 7). We even got the permission to use a comic strip by Charles M. Schulz, through Creative Associates and United Media, but limited to our premises and so we did a great banner at the entrance of the museum. Initially, the project conceived by its coordinator, Rubén Naveros, was much more ambitious: to bring astronomy to large outdoor spaces. Finally, finding no other solution and seeing ourselves already in the last months of the year, we had to adapt this project to our limited budget and turn it into a smaller traveling exhibition that started at the museum and toured different locations, and was also available on the Spanish website International Year of Astronomy 2009. Over 2000 came to see it at the museum. Later, this exhibition was present in malls, public squares, playgrounds, other museums such as Valladolid and Elder in Las Palmas, and, of course, schools, with some collaboration by the *Fundación Santillana* (Santillana Foundation). Our true reward was to confirm the high value of this resource for the communication of astronomy. In some cases, the students did their own exhibition of comic strips related to astronomy at their schools.

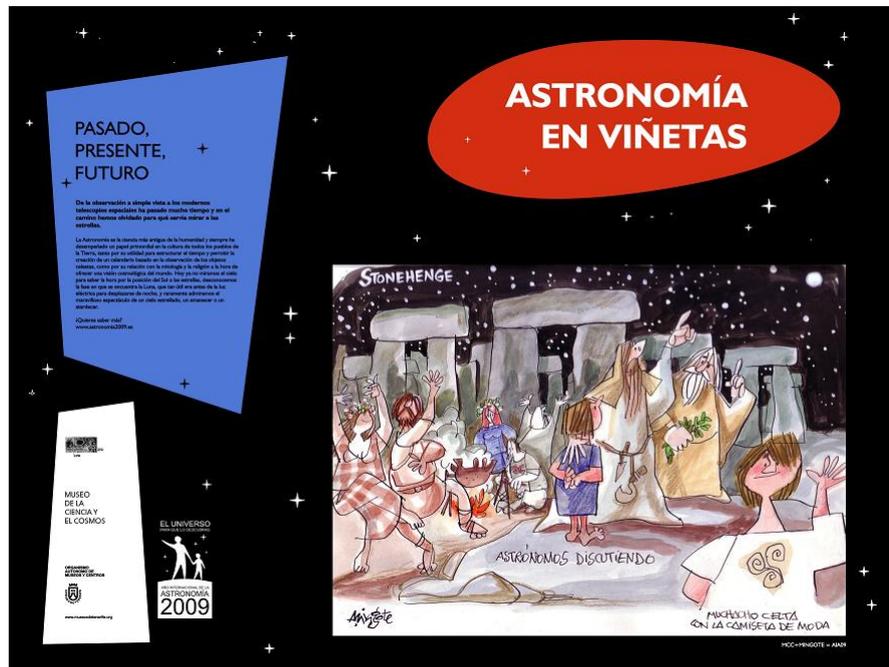


Figure 8: Another comic strip of the exhibition “Astronomía en viñetas” (Astronomy in comic strips): astronomers meeting. (*Museo de la Ciencia y el Cosmos*)

## 16 Conclusion

At the *Museo de la Ciencia y el Cosmos* we are convinced that astronomy can partner very easily, more so than any other branch of science, with any human activity, whether movies, theater, music, painting. . . and even humor. A proof of this statement is the success in terms of visitor numbers of all our activities. Mainstreaming works (Fig. 8).