

The IYA2009 in Guanajuato, Mexico: Activities for astronomy education and popularisation at *La Azotea*

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Abstract

Since the year 2000 the facilities of a rustic observatory, named *La Azotea* (the roof-top terrace), have been part of the Departamento de Astronomía de la Universidad de Guanajuato, 400 km NW of Mexico City, where ten professional astronomers do research and teach at both undergraduate and graduate level. In previous meetings we described the refurbishment of this public observatory which was finally reopened in November 2006. We present here the main achievements of the refurbishment and the first public activities.

Introduction

The public *La Azotea* observatory had already made rudimentary astronomical observations over decades. Miguel Izaguirre, an engineer in topography, was in charge of the site from the 1950s. He received funding for a dome, a 150 mm reflector, and a 100 mm refractor, which were installed on the roof of the main university building, right in the historic centre of Guanajuato City (Figure 1). In addition, an office and a classroom with a capacity for some 50 people were constructed. For more than 10 years, the classroom was also used to teach astronomy to high-school students.

Miguel Izaguirre initiated the project to install a professional observatory in the mountains surrounding Guanajuato City late in the 1970s. In a fruitful collaboration between the Universidad de Guanajuato and the Universidad Nacional Autónoma de México (UNAM), a 57-cm Ritchey-Chretien was installed some 25 km W of Guanajuato City. Years later, in 1994, these efforts gave birth to the Departamento de Astronomía (DA), where nowadays ten professional astronomers do research and teach at both undergraduate and graduate level¹ (see Figure 2).

Since 1990, however, with the retirement of Izaguirre, the public observatory *La Azotea* received neither maintenance nor any modernisation. After a total of 35 years without any major refurbishment, the general state of the facilities (Figure 3a) had become less than satisfactory. By 2001, when the site was formally placed under the DA administration, the only modern equipment was a portable 8-inch SC-telescope. During the following 5 years we ran a public programme of free astronomical observations for a non-specialised audience. However, substantial repair work on the building and dome, and the acquisition of new telescopes and adequate furniture were urgently required. By March 2006 we were awarded the finances for both, a refurbishment of the building (see Figure 3b) and new equipment. This support was given by the Universidad de Guanajuato and the Consejo Nacional de Ciencia y Tecnología del Estado de Guanajuato.

¹ <http://www.astro.ugto.mx>



Figure 1 – The central building of Universidad de Guanajuato and the observatory.



Figure 2 – A view of the Department of Astronomy.

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Results of the refurbishment

1. The building: lecture room and office were totally rebuilt (Figure 3b).
2. Antique Instruments: We repaired two antique instruments, a transit-telescope of Lerebours & Secretain (Paris ~1850, found without optics), and a heavy mount by Negretti & Zambra (London ~1880). Both instruments were in very bad shape but are now fully operational. The heavy mount was stripped of its gravity drive and given a modern electric motor. It currently carries our new 14-inch Schmidt-Cassegrain (SC) telescope (see below).
3. Modern Telescopes: The observatory is now equipped with one 14-inch SC, two portable 8-inch SC telescopes, one new portable 4-inch refractor, solar filters, and a set of filters and eyepieces for astrophotography.
4. Other: The office and lecture room are now equipped with comfortable furniture. A beamer, sound system, computers and internet access have been installed, and a modest collection of Spanish astronomy books and magazines is available. These upgrades now enable us to carry out conferences and seminars.



Figure 3(a-b) – A view of the observatory before (Figure 3a) and after (Figure 3b) refurbishment.

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Activities and Future:

The following activities have been carried out during 2007 and will continue in 2008:

- A daily programme of astronomical observations open to the general public and school groups. Already, we have ~200 visitors per month.
- A Conference Series in Astronomy, consisting of five public talks. For over 12 years, we have been organising two such series per year (in spring and autumn) in Guanajuato. Our XXV Conference Series was held, for the first time, at *La Azotea* in April–May 2007, complemented by astronomical observations, and it was a complete success (Figure 4).
- In July 2007 we organised the 1st Summer School in Astronomy for elementary and high school teachers. The topics were: the History of Astronomy, Stars, Galaxies, and Using a Telescope (Figure 5).
- It has been proposed that *La Azotea* act as a consultation centre on astronomical topics for teachers and students.



Figure 4 – View of a public talk.



Figure 5 – View of a group during the first summer school for teachers.

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For the near future, we have plans for some additional activities; for example, the foundation of an amateur astronomy society, and regular daytime visits of school classes in order to promote solar observations and basic physics experiments.

We plan to involve university students from our astronomy programmes in some public activities. Students in advanced levels of the undergraduate physics programme will support our work as part of their social duties. Our aim is to run *La Azotea* as a centre for science popularisation with an important impact on students from all educational levels. With the activities described above we will start a public promotion campaign for the IYA2009 early in 2008.