

Teaching and Communicating Astronomy at Rey Juan Carlos University

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Abstract We present our activities of popularization of Astronomy at Rey Juan Carlos University in Madrid, especially our 30-hour workshop for people older than 55 (University for the Elderly) held since the academic year 2002/2003. Our course aims to introduce the basic topics on Astronomy to a group of motivated students who, in most cases, were not able to complete their education in their youth due to the historical environment of Spain in the middle of the 20th century.

1 Introduction

Rey Juan Carlos University (URJC) is a Madrid-based public university created in 1996 (Fig.1), with around 22500 students (2007/2008). It is located in the Southern area of the Region of Madrid, with four campuses located at Móstoles, Alcorcón, Fuenlabrada and Vicálvaro (Madrid). Since 2008 the URJC has a varied offer of studies, including 7 Bologna-adapted degrees, 25 ‘traditional’ Spanish degrees, 17 double degrees, 2 Spanish-English bilingual degrees, 6 on-line degrees, official mas-

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ter studies, PhD courses and other studies. Within this context, it is interesting to remark that no degrees on Physics and/or Astrophysics are currently available at this university.

2 University for the Elderly: “With the Sky in your Pocket”

In 2002 the government of the Region of Madrid decided to create an education program especially designed for people older than 55. This population group encompasses many men and women who were not able to receive a high education in their youth due to the historical environment of Spain in the middle of the 20th century. With the goal of making culture and science closer to these people, the so-called “University for the Elderly” began at URJC as a three-year program with a varied range of subjects, including law, arts, mathematics, music, cinema, computer and science, among others.

Since the very first edition of these studies, the authors of this paper are responsible of a 30-hour course called “With the Sky in your Pocket: Workshop on Astronomy”. During the academic year 2007/2008 we had 56 students out of a total of 435 registered in the whole 3-year program. As it is an elective subject, our students are usually very motivated and enthusiastic about Astronomy.

3 Description of the Workshop

The workshop includes theoretical lectures, hands-on activities and observational sessions. The history of Astronomy, the Solar system, the celestial sphere, the constellations and the movements of celestial objects and the main components of the Universe (the birth and death of stars, galaxies and basic cosmology), among others, are some of the topics discussed. One of the most successful lectures is the one dedicated to the relationship between Science-Fiction and Cinema and Literature.

Hands-on activities include the construction and use of a paper-made planisphere, an impact craters workshop (Fig. 3), the construction of a simple spectroscope, the determination of the solar radius, the use of astronomical simulators and searching astronomical information over the internet (Fig. 2). In addition, several observational sessions are organized, including solar observations with safe home-made instruments and night observations with telescopes and binoculars (Fig. 4).

4 Other Activities

As a complement of our popularization of Astronomy, we have also organized several activities at URJC (Fig. 4, Fig. 5, Fig. 5). To cite only a few: public observations of Venus Transit (08/06/2004), Annular Solar Eclipse (03/10/2005) and Partial Solar Eclipse (29/03/2006), Youth Week of the Region of Madrid (October 2004), URJC’s Cultural Week, World Year of Physics (2005), activities for kids at Madrid Book Fair (2005), a festival on Information and Communication Technologies based Astron-

omy (FesTICval, 2008). For the International Year of Astronomy 2009, we are also preparing new activities, which will be advertised via our website (see below).

5 On-line Material

Our webpage hosts on-line material (Fig. 6) like lecture slides, instructions for hands-on activities (planisphere, spectroscope, solar overhead projector), as well as astronomical ephemeris, astronomical news, weather information, astronomical puzzles, and our appearances in the media (TV, radio, press). For details please visit www.tallerdeastronomia.es



Fig. 1 URJC. **Left:** Rectorate. **Right:** University for the Elderly. Graduation Day.



Fig. 2 University for the Elderly. **Left:** Astronomy & internet session. **Right:** At the Planetarium of Madrid.



Fig. 3 Impact craters workshop. **Left:** Example of a crater. **Right:** Making impacts.

6 Conclusions

Here we have presented our main activities devoted to teaching and communicating Astronomy at the Rey Juan Carlos University, a 1996-born university in the Region of Madrid. Despite no official studies on Physics and/or Astrophysics are available



Fig. 4 Night observations. **Left:** The class with the telescope. **Center:** Explaining the use of telescope. **Right:** Observing an eclipse.



Fig. 5 Other activities. **Left:** Venus Transit observation. **Center:** Youth week. **Right:** FesTICval.

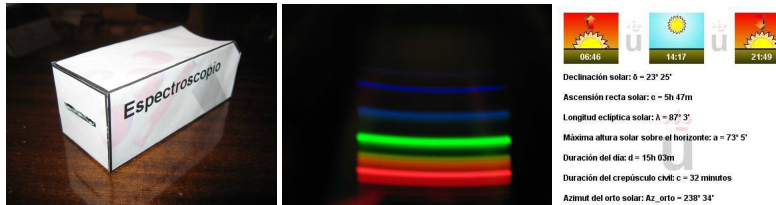


Fig. 6 On-line material. **Left:** Spectroscope. **Center:** Example of spectrum. **Right:** Astronomical ephemeris.

for regular students at this educational institution, the authors have been responsible of a 30-hour workshop on Astronomy for people older than 55 years old, which includes theoretical lectures, practical exercises and astronomical observations. Other popularization activities performed include talks to young people, public astronomical observations and appearances in the media.

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