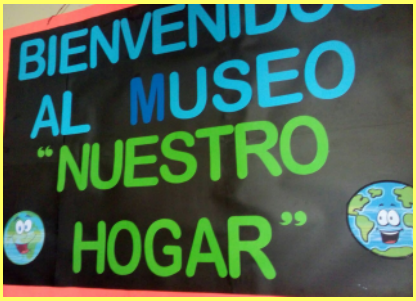
NEWSLETTER

09/2017 Nº 6

EDITORIAL



It is gratifying to verify that the material of the course NASE serves to spread the science. We interviewed Ricardo Pastrana, Chief of the Department of Astronomy and Astrophysics of the faculty of Spatial Sciences of the Autonomous National University of Honduras.

Please explain what is the Museum "Our Hearth" that you have done.

It has been an exhibition of mock-ups on the Earth, in the frame of the celebration of the world day of the Earth that was celebrated on April 22, 2017.

Since I worked at the school of average education Institute Abelardo R. Fortín we consider to realize some activity on this matter. In a teachers' meeting of the center I proposed to make something different from the used thing, that is usually an exhibition of murals. I proposed to them that if they would allow me to coordinate the activities of the celebration, I would do an assembly of mock-ups that make it possible to see the planet from another perspective.

The exhibition was realized in the library of the institute and lasted 2 days. More than 1500 secondary students (12 to 18 years) visited it and more than 100 teachers.

Please tell us how did you do it?

We realize the assembly with the collaboration of a group of 22 students of baccalaureate and 4 teachers. The students put the materials for the construction of the mock-ups. We use several mock-ups of the course of NASE: that of the solstices and equinoxes, that of the System Earth Moon and that of the diameters of the planets.

The monitors belonged to NASE: Katia Dominguez, Sonia Alvarado and Juan Carlos Ramos. Also I have to mention Ing. Valentín Mauri, who collaborated in the exhibition of the museum with a rock samples exhibition. He dedicates himself to the geology and gives the class of planetary geology. Although the material does not correspond to the NASE activities, he is part of the team NASE-Honduras and is credited like an ambassador NASE.

I think that other groups NASE can make something similar. This type of activities allows to show the astronomical knowledge to a big number of persons.

NEWS

NASE, in the Garden of the Galaxy of Pamplona (Spain)

The Town hall of Pamplona, in collaboration with the Planetarium of this Spanish city, has constructed a very special garden in the Yamaguchi park, next to the Planetarium. More than 500 shrubs selected by the Municipal Service of Gardens have created a vegetable replica true to scale the Milkyway. Every shrub represents a concrete region of the Galaxy, with its stars, nebulas, heaps and properties corresponding to the region in which it is.

More than 300 educational entities, groups and associations have supported a shrub, turning into "gardeners of the cosmos" with the advice of the Municipal Service of Gardens and the information of the galactic magnitudes of the teaching team of the Planetarium of Pamplona. The project includes a water source in the centre, which there will represent the black hole Sagittarius A*.

NASE is present with a shrub of complete Salix Hakuro Nishiki, or speckled willow, which represents the gas and the interstellar dust that exists in the galaxy.

INTERNATIONAL DAY OF THE LIGHT

The International Day of the Light will be proclaimed in the General Conference of the UNESCO in November, 2017 and the first celebration will take place on May 16, 2018.

United Nations Educational, Scientific and Cultural Organization

International Day of Light 16 May

One wants that it is an annual event to remember the importance of the central role that redeems the light in the life of the citizens, in that activities develop in the areas of science, culture, art, education, sustainable development and in other fields like the medicine, the communications and the energy.

In this way continues the successful International Year of the Light of 2015. It is to hope that the wide topic of the light will allow many different sectors from the society to take part in activities in the whole world, about May 16. A complete web will be online in November, 2017, in https://www.lightday.org/ . Meanwhile, activities can begin to be planned for May 16, 2018 checking the big variety of events that took place throughout the International Year of Light in 2015 in http://www.light2015.org/Home.html

COURSES

93 course NASE in San Luis Potosí (Mexico) - October 28-30, 2016

The fourth course that is done in cooperation with the Autonomous University of San Luis Potosí.

In this occasion came especially publishers, planetaria operators and other professionals who gave astronomy courses. It was not for beginners.

In spite of this, in the final survey they proved to be very satisfied by the content of the course. But the high participation in the meetings, and the experiences exchange was really very productive.

94 course NASE in Tena (Ecuador) March 6-10, 2017

In cooperation with the Department of Education, the faculty of Sciences and the National Polytechnical School.

They were 62 teachers who had not had scarcely any contact earlier with the astronomy, of the Amazon Napo province.

In the final survey they showed its satisfaction for the practical activities, which in general were considered useful to them for their classes.

95 course NASE Salta (Argentina) - April 24-27, 2017

It was realized in cooperation with the Program VoCar-CONICET and the Department of Education, Science and Technology of the Government of the Province of Salta.

They showed that if these elements should join the education of the didactics of the teachers, it might motivate better the students.

An interesting proposal they did was the need to revalue historic monuments of the cities, sometimes forgotten or very little used.

96 course NASE in Foz de Iguaçu (Brasil) - May 21-26, 2017

In cooperation with the Technological Park Itaipu, the Astronomical Pole Casimiro Montenegro and the state department of education. It is to emphasize the good organization and the work of the coordinators and teachers. The scope for the development also was ideal.

The assistants expressed its gratitude for the course, which combines theoretical and practical activities. This is one of the strong points. Also they showed that most of the contents fit to the guidelines of education of the astronomy in the state of Paraná. It is very recommendable that more teachers have access to this training.

They were 69 teachers, lots of primary as of secondary school and students older than 18 years. The majority of them had certain knowledge of Astronomy, obtained in courses of the Astronomical Pole or in the university. They were very interested in the big number of activities of the course NASE, which in general can be realised in the classroom with very low cost.

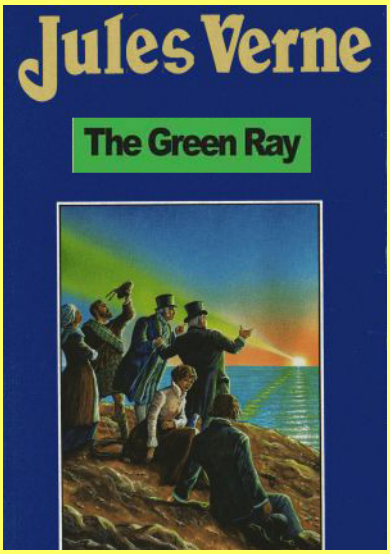
97 course NASE in Jujuy (Argentina) - June 8-9, 2017

Took place in cooperation with the Department of Education, the Secretary of Science and Technology and CONICET. The course developed in the secondary school of the district Alto Comedero, in the capital of the province. The neighbourhood is in the periphery of the city, where inhabit families of few financial resources.

The participating 43 teachers did not have any previous education in astronomy. Several give classes in rural school hostels, some of them 5000 meters high, without access to Internet. In these cases often the teachers give several matters, so that the interdisciplinary approach of the natural sciences that NASE proposes, turned out to be attractive to them. Also they appreciated the possibility of realising experiments without laboratory and of having access to software without need for connection to Internet.

For diverse reasons, the course was done only in two days, and the absence of time was evident. Several participants indicated it in the final survey.

MATERIAL



THE GREEN BEAM

A novel published by Jule Verne in 1882 titles "The green beam". It reports about the search of Sam and Sib Melville for the sunset where it should be possible to see the famous green beam. As usual this French author bases its novels on some real scientific concepts, which makes that his novels have initiated many scientific vocations between the young people.

But: is the green beam real? Of course, although it is not easy to see it. The sunset is needed especially reddish, a flat horizon and little luck.

The light of the Sun is white, what means that it contains all the colours of the visible spectrum. The blue photons are dispersed by the atmosphere, and are forwarded continually, what seems to us that they come to our eyes from all the directions. For that reason, the day sky is blue, and not black as in the Moon or in the space, where is no ambience.

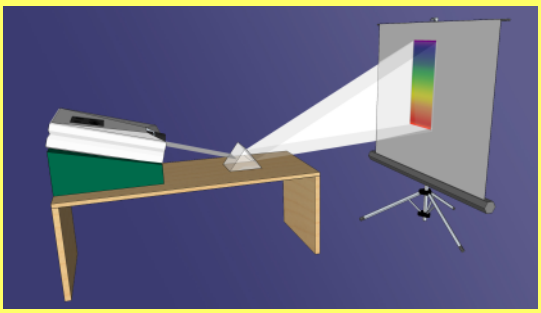


Fig. 1 Beam dispersed with a prism

This dispersion is more intense in the sunsets, since the layer of atmosphere that the beams cross is bigger. In the course Nase there is an experience to simulate the reddish colour of the sunset. Here we present now a similar simulation, which reproduces the green beam.

We need a projector that simulates the beam of the sun, or a torch. But the light beam must be fine, for example coming from a slit. We disperse the white light with a prism, which projects on a screen all the colours of the visible spectrum (Fig 1). If we interpose a box of transparent walls, which contains water and some drops of milk (Fig 2), we will see that the blue photons disappear of the screen, as it happens in the sunset.

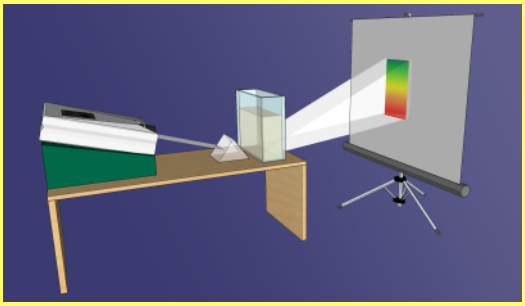


Fig 2 Takes the blue ones from themselves

If we now raise slowly a globe (Fig 3), we simulate the sunset, and see that the green light remains isolated in the final moments, which is exactly what happens in the green beam. This activity was realized by Carmen Botella and Encarna Angosto in XII Meetings of ApEA in Málaga.

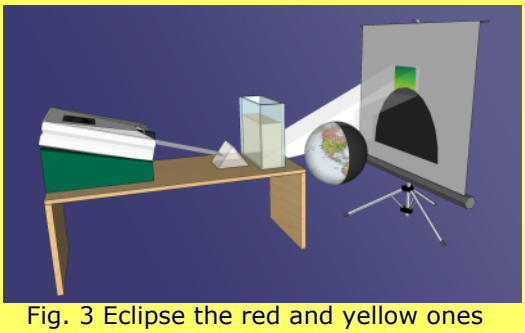


Fig. 3 Eclipse the red and yellow ones

You can find many practical materials on the web page of NASE (in Spanish and in English):

http://sac.csic.es/astrosecundaria/es/material_complementario/MaterialComplementario.php