



NEWSLETTER

1/2019

Nº 8

- EDITORIAL
- ASTRONOMICAL NEWS
- LAST NASE COURSES
- TEACHING MATERIALS

EDITORIAL

This year the prize for the best local group of NASE 2018 has been divided between the group of Guatemala and Ecuador. Our congratulations go from here. We've asked them how they do it, and in the News section are their answers.

The IAU got 100 years old. Many activities are being prepared all over the world for this occasion. We include some of them, but on the IAU website you can find many more.

And finally, we include the news of the rectification of a historical debt. At the IAU General Assembly in Vienna, and then in a telematic vote, it was approved to change the name to the famous Hubble Law. From now on it will be called Hubble-Lemaître's Law. In the News section we explain the reasons. We will have to modify the textbooks, also the one of NASE...



NEWS

AWARDS TO THE BEST COURSES OF NASE 2018

In 2018, the NASE Best Course Award was given ex aequo to the Local Groups of Guatemala and Ecuador. Edgar Cifuentes and Nicolas Vasquez, from these teams, tell us how they do it:

How many courses have you done, and how many people have participated?

In both Guatemala and Ecuador, from 2012 to 2018 we have done one course each year, that is 7 courses in each country. An average of 50 people participated in each of them. Therefore some 350 Guatemalan teachers and as many Ecuadoreans have received this training.



How do you get the call to teachers?

In Guatemala, we tried the first course through the Ministry of Education, but with little success. Two years we did it through the Galileo Program, which is part of the structure of the National Science Olympiad. For the next three years we did it through our University's High School Teacher Training School, and we supplemented the information with social networks. Last year we made the call through our School of Physical Science and Mathematics and also complemented it with social networks. In all editions we have had the support of the University to reproduce the material and for lunches and coffee breaks during the course.

In Ecuador we are working together with the Ministry of Education: they summon the teachers to the courses and help us with logistics.

What kind of teachers is involved?

In Guatemala it's a little heterogeneous. There are students, high school teachers of physics and natural sciences, that includes a part of astronomy. There are also professionals or people interested in astronomy.

In Ecuador, there are mainly science teachers from schools and colleges. We have recognized that these teachers have a great deficit of didactic resources to teach mathematics and physics, and we try, through astronomy examples, to encourage the study of these subjects in a more enjoyable way.

The Workshops and the activities of the NASE course, how do you use them for your classes?



We have had little feedback from participants, but those who have contacted us report that they have conducted some of the workshops successfully in their respective schools or groups of people interested in learning astronomy. The most relevant case has occurred in the city of Quetzaltenango, where a heterogeneous group interested in astronomy has replicated all the workshops and has completed them with talks by astronomy professionals on different topics.

What difficulties do you find in your two countries for these courses?

In Guatemala, apart from financing, which is always a problem, the greatest difficulty is in choosing a date and time that allows the majority of interested parties to participate, as the institutions for which they work often put many obstacles in the way of participating in training courses. On the other hand, for now we have only developed them in Guatemala City and we cannot support with lodging the participants who come from outside that city.

In Ecuador a problem is also the low budget. And of course, the difficulty in the dates by the university activities of the trainers and assistants.



Finally, any advice for the other NASE groups around the world?

As in each place the advantages and difficulties are different, I would advise you from Guatemala to go ahead until you achieve it, overcoming all obstacles.

And from Ecuador, that through these courses, unite the astronomical community.

INTERNATIONAL ASTRONOMICAL UNION CELEBRATES 100 YEARS

It was 1919 when the IAU was founded. To commemorate this centenary, many special events are being prepared, so that schoolchildren and amateurs can participate, for example:

1. The 100 Hours of Astronomy (and here there will be prizes)
2. Baptism of Exoplanets
3. Women in Astronomy
4. Historical Eclipse of 1919
5. 50 years of man's arrival on the Moon, with a call for schools to send things on a mission in 2020
6. Einstein Schools, for schools to work with gravity
7. Eratosthenes 100



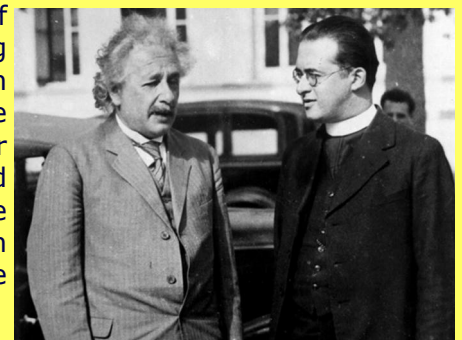
and that's just a few things. You can see the complete program in the web: www.iau-100.org



THE LAW OF HUBBLE SHALL BE CALLED THE LAW OF HUBBLE-LEMAÎTRE

At the IAU's XXX General Assembly, held in August 2018 in Vienna, it was proposed to change the name of the Law that relates the recession speed of galaxies to distance, taking into account that the Belgian astronomer George Lemaître published in 1927, in a lesser known scientific journal and

in French, two years before the publication of Hubble in 1929. The proposal was mostly supported by attendees in August, and in October telematically. This rectifies a historical error. It is known the old proverb that says that to rectify is of the wise.



COURSES



107 NASE Course in Bogotá (Colombia) - March 26-28, 2018

In cooperation with Planetarium of Bogotá, in whose facilities the course was held.

Thirty-one teachers participated, who in their final conclusions pointed out the great usefulness of each one of the workshops, conferences, demonstrations and theoretical-practical exercises, which deal with the diverse subjects of Astronomy and its related sciences. The professional quality of the team of instructors and trainers, who developed the activities of the Course, as well as the organization of the event, were also highlighted.



108 NASE Course in Guatemala - April 16, May 18, 2018

This course was done in cooperation with the University of San Carlos of Guatemala.

For the past two years, students who have been certified in NASE have begun the implementation of NASE courses in Guatemala, as a new group for high school teachers, with Friday and Tuesday hours.

The Director of the High School Teacher Training School of the University of San Carlos de Guatemala, highlighted the interest in forming the NASE group precisely because they serve the bulk of teachers at the national level, in partnership with the Ministry of Education.



109 NASE Course in Mendoza (Argentina) - May 23-1 June, 2018

In cooperation with CONICET in its VoCar program, and the Faculty of Exact and Natural Sciences of the National University of Cuyo.

The teachers valued the workshops, their content, the didactics and dynamics of the course, and considered it an excellent way to demonstrate that it is possible to work on astronomy in the school without expensive materials.

The interdisciplinarity between astronomy and other disciplines was also appreciated, as most of the attendees had not had any approach to this discipline. The material delivered, the realization of models that help to understand the phenomena and facilitate the demonstration of physical properties with cheap materials were considered very positively.



110 NASE Course in Jujuy (Argentina) - June 7-8, 2018

In cooperation with CONICET, and its VoCar program, with the Jujuy Ministry of Education and the Jujuy Secretariat of Science and Technology.

It was a course with only 8 participants. It was interesting to have teachers in rural schools bilingual Castilian-Quechua. They were interested in the activities, which cover official content with practical methodologies, and want to translate some content into Quechua.



111 NASE Course in Medellín (Colombia) - June 20-21, 2018

In cooperation with Planetario de Medellín and the Metropolitan Technological Institute.

It was a very successful course: 80 participants. One of them said: "I came with an idea and I go with a much better one; here in fact critical minds are formed because astronomy can be learned with the Internet but didactics and thought is fostered with these activities".



112 NASE Course in Guatemala (Guatemala) - June 20-22, 2018

The course took place in the Department of Physics of the Faculty of Engineering of the University of San Carlos. It was carried out thanks to the collaboration of the Directorate General of Teaching (DIGED) and the collaboration of instructors of previous courses.

The call was open, with preference for teachers who included astronomy topics in their courses. A total of 166 people responded, of whom 65 were selected.

113 NASE Course in Caacupé (Paraguay) - August 3-24, 2018

This course was made possible thanks to the Faculty of Exact and Natural Sciences (FACEN-UNA) and the Polytechnic Faculty (FP-UNA).

The participants valued the dedication and knowledge of the teachers who have given the course. They enjoyed the practical sizes of the course, and were left wanting more observations and more workshops. They propose to take this type of courses to different departments of the mountain range where the teachers have few means of continuous formation.

114 NASE Course in Marcala, (Honduras) - September 22 to 27 October, 2018

It was carried out thanks to the Astronomical Observatory of the National Autonomous University of Honduras and COMSA, Café Orgánico Marcala S. A.

It was the seventh course in Honduras, and the first to be held outside the capital. It took place over four non-consecutive days and the participants belonged to the COMSA International School (CIS).

In the end, the teachers assured that as CIS is an institution belonging to the agricultural sector, learning about the movement of the stars and especially the moon will have relevance in the new knowledge of the students.



115 Course in Foz do Iguazu (Brazil) - October 3-6, 2018

This course was in cooperation with the Casimiro Montenegro Filho Astronomical Pole.

The participants were teachers of different levels, with a high percentage of elementary and primary school teachers. That was not an obstacle, by the comments and exchange at the end of the course, so that everyone achieved a good degree of understanding of the contents.

116 NASE Course in Addis Ababa (Ethiopia) - October 11-14, 2018

This course was in cooperation with Ethiopian Space Science and Technology Institute (ESSTI), Ento Observatory and Research Centre (EORC), East-African Regional Office of Astronomy for Development (EA-ROAD), and Ethiopian Space Science Society (ESSS).

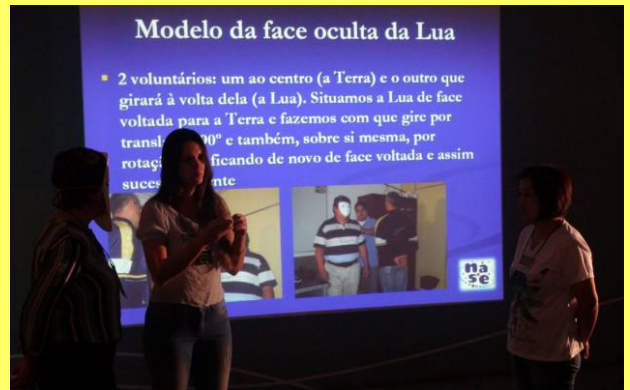
Forty-eight teachers participated. The ESSS Communications Chair mentioned that NASE was the best program she had ever participated in, and insisted on its high quality.



117 NASE Course in Shantou (China) - October 14-18, 2018

This course was made with the Beijing Planetarium. Almost 40 teachers participated.

They found the relationship between Greek mythology and constellations very interesting. For many it was the first time they heard storytelling in the teaching of formal astronomy.



118 NASE Course at Bandar Lampung (Indonesia) - October 22-25, 2018

In cooperation with Institut Teknologi Sumatera (ITERA), National Astronomical Research Institute of Thailand (NARIT) and Bukit Asam.

Thirty teachers participated. One of them suggested that students should also participate, but the amount of information and activities is only suitable for teachers, who should then take it to the classrooms and adapt it to their students.



119 NASE Course in Chiriqui (Panama) - November 12-15, 2018

In cooperation with the National Secretariat of Science and Technology of Panama (SENACYT).

Twenty-five teachers participated. In Panama there are astronomy topics in primary and secondary education, but as they are at the end of the agenda, they are often left unattended. It was proposed as a solution not to follow the order of the book and to give them at the beginning of the school year, which is when there are better skies in Panama.

There was also the opportunity to integrate the contents of the NASE course to the preparation of the Panamanian Space Science Olympics, which has great appeal among many students.



120 NASE Course in Salta (Argentina) - November 14-16, 2018

In cooperation with the VoCar-CONICET Programme, QUBIC (Q&U Bolometric Interferometer for Cosmology) and the Ministry of Education, Science and Technology of the Government of the Province of Salta.

Twenty-five teachers participated. They liked it very much because it is a very didactic course, applicable to the work in the classroom. The attendees stated that this subject is a weakness or lack in the training of degree teachers, who have no knowledge of physics. In addition, they are activities that attract students because they are very practical.



121 NASE Course in Medellin (Colombia) - November 16-17, 2018

In collaboration with the Planetarium of Medellín.

Forty-five teachers participated, who were very happy, and said that their expectations were more than fulfilled.

Considering the large number of applications received (180 in total), it is wished to schedule a similar course for the end of January 2019.

122 NASE Course in Cluj (Romania) - September 2- November 18, 2018

In cooperation with Universitatea Babeş-Bolyai and Academia Română.

This is the third course to be given in Cluj, Romania.

In this case, 25 teachers participated.



123 NASE Course in San Luis Potosí (Mexico) - November 21-23, 2018

In cooperation with Universidad Autónoma de San Luis Potosí.

For the fifth time the course was held by the Mexican working group in San Luis Potosi, with the presence of 20 participants. The group consisted of high school and university teachers, as well as science communicators dedicated to the informal teaching of Astronomy.



MATERIAL

A PLANETARIUM WITH MATCHBOXES

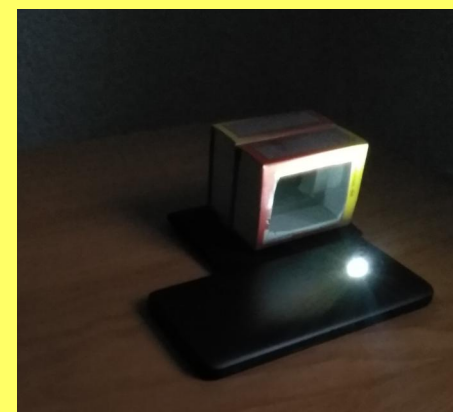
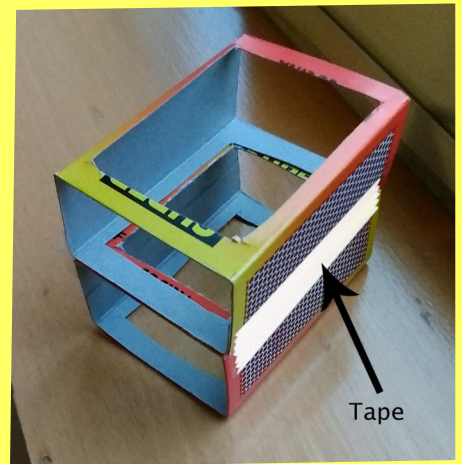
To teach the shape of constellations, it can be useful to make this small device with which you can project the constellations on a wall or on the ceiling of the classroom. All you'll need is a few matchboxes and a flashlight from your cell phone.

Take two big boxes of matches, take out the inner boxes and throw out the matches. Cut out the wide faces as shown in the figure, and tape the two boxes together on the sides.



Inside one of the inner boxes draw a constellation, for example Cassiopeia. With a pin pierce the stars that make it up.

In the second inner box, cut out almost the entire base. Insert these two inner boxes in their place, as seen in the photo.



You have to put the projector in front of the flashlight on your cell phone

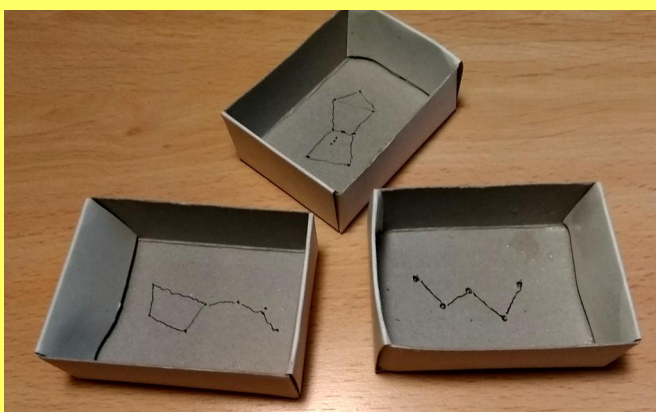
Now you can project the Constellation on the wall of a dark room, bringing the set thus mounted to the flashlight on your phone. If the flashlight has a double focus, each star will come out double. To avoid this you must cover one of the two spotlights with insulating tape.

You can make other constellations with more boxes, taking as template with the figures on the next page. Depending on the size of your matchboxes, you may need to print or photocopy the figures with some enlargement or reduction.

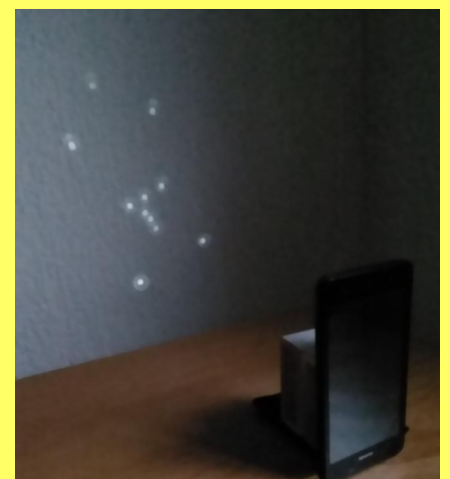


You can find many practical materials on the NASE website (in Spanish and English):

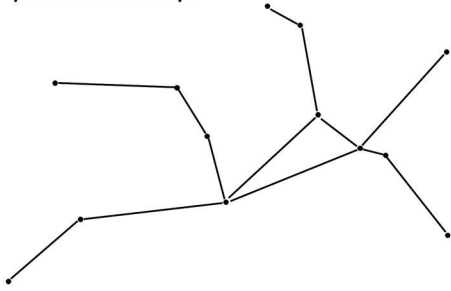
http://sac.csic.es/astrosecundaria/es/material_complementario/MaterialComplementario.php



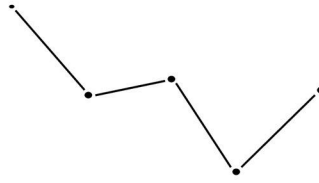
You can make many more constellations with the figures on the following page



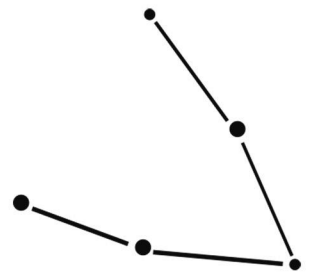
ANDROMEDA



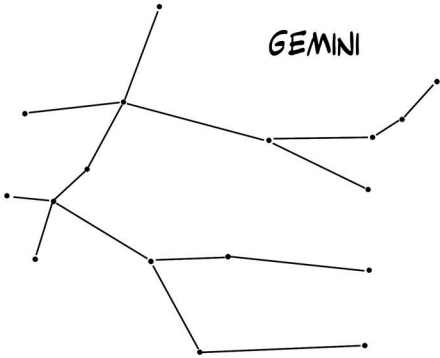
CASIOPEA



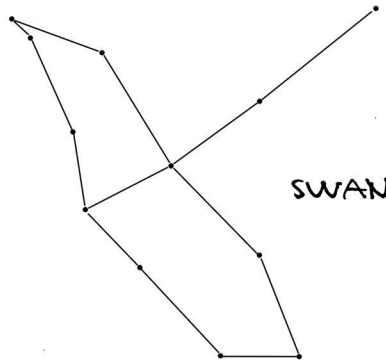
TAURUS



GEMINI

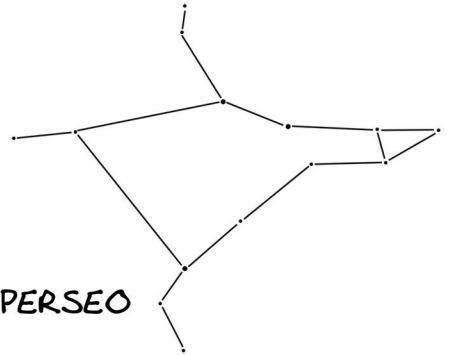


CASIOPEA

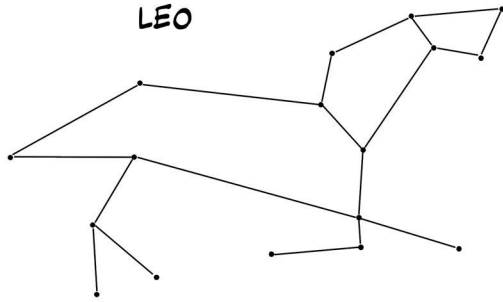


SWAN

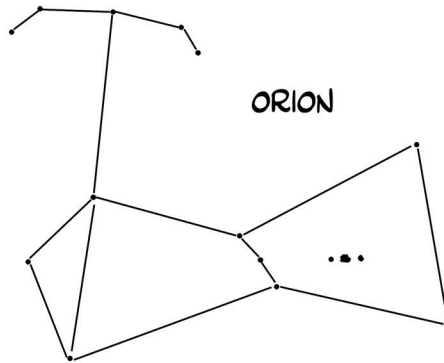
PERSEO



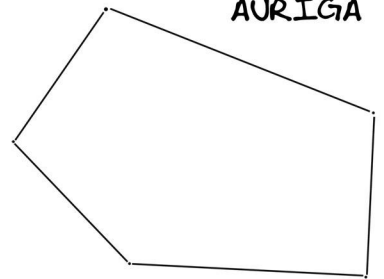
LEO



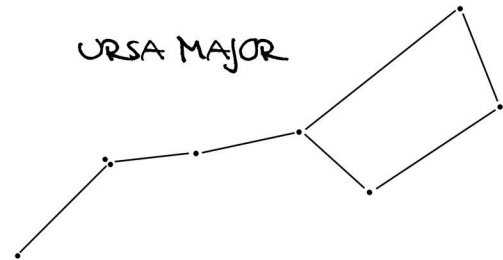
ORION



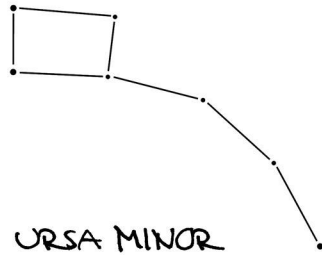
AURIGA



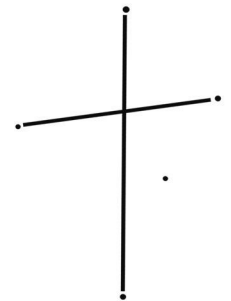
URSA MAJOR



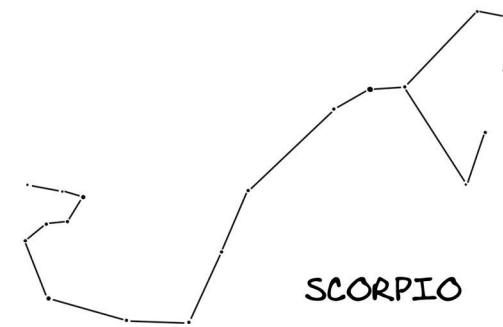
URSA MINOR



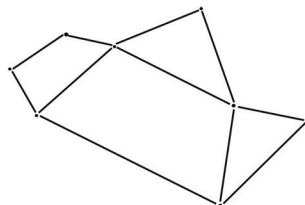
SOUTH CROSS



SCORPIO



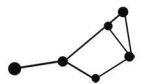
SAGITARIO



LIRA



PLÉYADES



16 CONSTELATIONS