
Commemorating the:
30th anniversary of the EAAE
and the
15th anniversary of the NASE
EAAE
European Association for Astronomy Education
ESO
IAU
nase
Network for Astronomy School Education

1.Promoting training teachers in Astronomy - 13:15 - 13:25
2.CoAstro: Using citizen science to democratize astronomical literacy 13:25 - 13:35
3.On a Mission: Pro-Am-Schools Collaboration in Small Body Research 13:35 - 13:45
4.Astroaccesible: An Outreach Project for BVI with Benefits for Everyone 13:45 - 13:55
5.MW-Gaia Educational Activities and the Legacy 13:55 - 14:05
6.A tactile 3D journey: from planets to the cosmic web 14:05 - 14:13
7.Innovative Strategies for Public Engagement and Scientific Literacy 14:13 - 14:21
8.Unlocking the Stars: Astronomy Education in the UK 14:21 - 14:29
9.A new approach to facilitate the teaching of astronomical precession 14:29 - 14:37

EAAE European Association for Astronomy Education

ESO

IAU

nase Network for Astronomy School Education

Promoting training teachers in Astronomy

1. Ederlinda Viñuales-Gavín

2. Rosa M. Ros-Ferré

3. Šarūnas Mikolaitis

1. Zaragoza University (Spain)
2. NASE president, Polytechnical University of Catalonia (Spain)
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Rosa Maria Ros-Ferré

European Association for Astronomy Education

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Network for Astronomy School Education

EAAE – European Association for Astronomy Education

and

NASE – Network for Astronomy School Education

In this talk, we present the work these two associations have been doing for years ***Promoting training teachers in Astronomy***.

- EAAE was founded in Athens, Greece in 1995 and

- NASE was founded in Rio de Janeiro, Brazil in 2009. NASE courses begins in 2010.

Both the EAAE and NASE have members in the five continents.

The EAAE: Our Foundation

The objectives of the Association refer to those agreed in the Declaration of the workshop on *Teaching of Astronomy in Europe's Secondary Schools* held in November 1994 at the headquarters of the ESO (European Southern Observatory) in Garching.

Following this Declaration, in 1995 the EAAE was founded in Athens with the particular aims:

ES
EA

NOTE: The postal and fiscal address of the EAAE is the ESO headquarters in Garching..

The EAAE: Our Foundation

1. To **promote** a greater **interest** in, and an awareness of, the role of astronomy education.

2. To **increase the effectiveness** of European astronomy education at all levels through research and the exchange of information and experiences.

3. To be a responsible institution, capable of providing informed and authoritative advice on **coordinated European astronomy education**.

4. To encourage the **development of resources** for teaching of astronomy.

NOTE: The postal and fiscal address of the EAAE is the ESO headquarters in Garching..

Our principal aim

EAAE

From the beginning of our path, our priority has been the **training of teachers in Astronomy** because we were aware, in those years, of the **deficiencies** in Astronomy that the majority of European science teachers had.

We were also aware that the **interdisciplinarity** of Astronomy allowed us to **reach teachers of almost any discipline**, especially scientific, but also others such as philosophy, history, geography,...

For this reason, in 1997 the 1st EAAE-ESO Summer School is summoned.

1st Summer School in La Seo de Urgel, España

10th Summer School in La Palma, Canary Island, España

The EAAE-ESO Summer Schools until today 1

So far **21 summer schools** have been carried out.

- The first 10 were held annually in the summer, each one in a different country of the European Union. In several of these Summer Schools, course participants received financial support from the EU.

  - The 1st Summer School took place in 1997 in La Seo de Urgel (Spain) and the 10th in 2006 in Santa Cruz de la Palma, Canary Islands (Spain).

In these first 10 courses we wanted, if it was possible, to dedicate them to specific and attractive topics for the participants. So in, for instance,

- the 2nd, which took place in Rome, we focused on the monuments that can be found in that city related to Astronomy;
- for the 3rd we took advantage of the total solar eclipse that could be observed from Briey (France) and we scheduled the Summer School there.
- For the 6th we went to Lapland (Finland) to observe the midnight sun.

All courses were carried out in collaboration with entities related to Astronomy in the host country.

14th Summer School

in Varna, Bulgaria

September 2010

19th Summer School

in Enontekö, Finland

December 2013

20th Summer School

London, U. K.

July 2015

The EAAE-ESO Summer Schools until today 2

After the 2008 economic crisis, EU funding for participants in EAAE training courses disappeared. As a result, the program had to be rescheduled, as teachers' participation in the Summer Schools as planned was very expensive so,

- The remaining 11 courses were convened by members of the EAAE in certain countries. There were years in which there were 2 courses (from 2010 to 2013) and others in which there were none (2011 or 2014).

The participants were mostly from the country where the course was held since they did not have financial aid.

- The 11th course took place in Garching (Germany) from July 19 to 23, 2007.
- The 20th was held in London from July 20 to 24, 2015 in collaboration with the Royal Astronomical Society (RAS)-
- The last Summer School (the 21st) took place in 2016 in Loulé, Algarve (Portugal).

All courses were carried out in collaboration with entities related to Astronomy in the host country.

The need to change our approach

EAAE

Due to the challenges we encountered in organizing astronomy courses, such as finding a location to teach both inside and outside the classroom, finding sufficient time for participating professors, and, above all, the high costs involved for interested participants, we had to focus our activity in another direction.

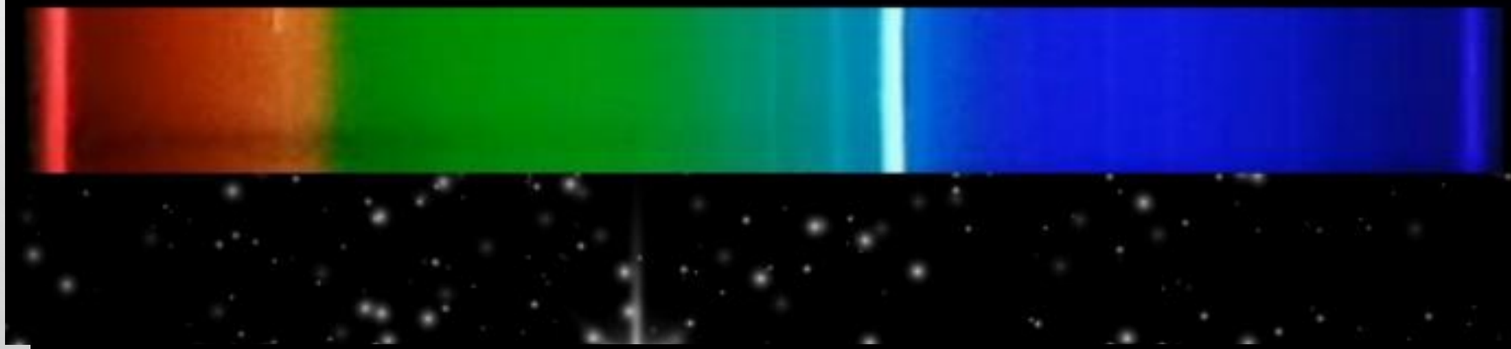
In fact, the new direction began long before we stopped organizing the European courses. We set out to call for projects involving high school teachers and students. Thus, in 2002, our iconic "**Catch a Star**" competition was launched for the first time, and to this day.

The Space Art competition began in 2016 and is held annually.
The first edition of **Astronomy in All Seasons** took place last year, in 2024.

All three competitions are held annually, and with them, the EAAE seeks to offer diverse activities throughout the year so that everyone who wants to explore and enjoy astronomy can do so, regardless of the season.

- **Catch a Star** has been held continuously since 2002.
- The call is open from November 1st to March 31st of the following year.
- The goal of the **Catch a Star** contest is to **stimulate the creativity** and **independent work** of students from European secondary schools, to strengthen and expand their astronomical knowledge and skills, and to help the spread of information technologies in the educational process.
- The projects received for participation come from all over the world and range between 40 and 60, depending on the year. **Participating countries typically exceed 20**. In the last edition, proposals were received from Singapore, India, Russia, several from Turkey, the United States, Hispanomerica, and, of course, Europe. Most of the **projects are very well developed** and generally of very high quality, demonstrating the teachers' commitment to their students.
- The contest consider different categories depending on the age of the participants.
- The current project coordinator is **Hristo Stoev** from Bulgaria.

Determination of the Sun's composition and temperature through spectroscopy



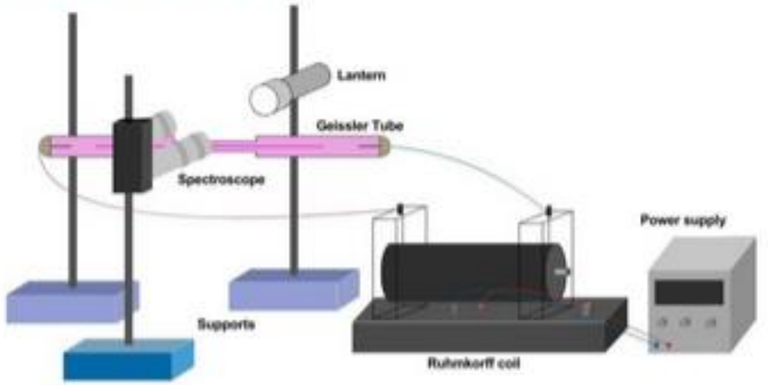
Institut Guindàvols

Author: Laia Torrell

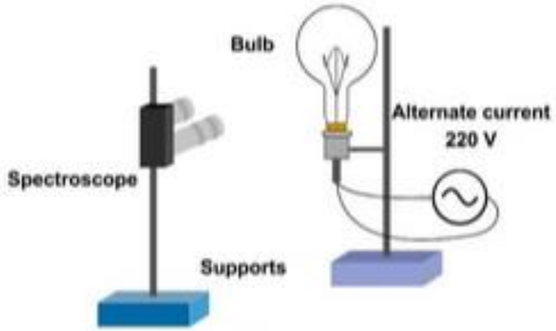
Tutor: Anicet Cosialls

2024/2025

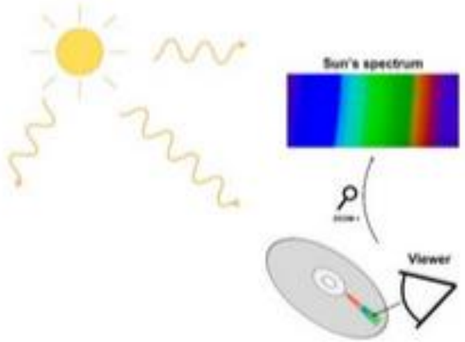
9.1. Appendix I: Experiments setups:



Setup 1. Experiment 1.



Setup 2. Experiment 2.



Setup 3. Experiment 3.

https://www.eaae-astronomy.org/projects/catch-a-star

- **Space Art** was first held in 2016 and has been held annually ever since.
- The call opens on December 1st and closes on March 31st of the following year.
- The goal of Space Art is to foster creativity and independent work among young students (ages 6-18) by learning about astronomy and thus strengthening and expanding their astronomical knowledge and creativity. **Art is a perfect way to achieve this.**
- Participation is very high, with students from all over the world participating. In the 2024 edition, 879 students from 25 countries participated, and in this year's 2025 edition, 375 from 21 countries participated.
- The contest consider different categories depending on the age of the participants.
- The current project coordinators are Ivo Joking (Bulgaria) and Antonio Acedo del Olmo (Spain)

Lalam Sarah, 17 years old, Lycée Léonard de Vinci, MONTAIGU-VENDEE, FRANCE

Evija Feldmane, 17 years old, Riga School of Design and Art, Riga, Latvia

Yi Fan Xie, 16 years old, SSIG G. Pascoli- Arzergrande, Arzergrande, Veneto, Italy

Matteo Cuccato, 14 years old, IC Codevigo, Codevigo, Italy

Astronomy in all Seasons

The EAAE, launches in 2024 the project *Astronomy in All Seasons* which aims to cover a period of the year in which there are no other EAAE projects called.

Each year, easy-to-execute projects are proposed that those interested in participating can easily complete. Each project can be submitted individually or in a group, and is open to all audiences, regardless of age or country. Astronomy in all Seasons is open from April 1 to October 31 every year.

✧ In 2024 the contest was: ***Looking for Sundials***. In this contest, we asked students to find a sundial and explain not only what type of clock it was (horizontal, vertical, equatorial, etc.), but also where it was located. If it was on an important building, for example, they were to mention something about the building.
The contest had 60 participants from 12 countries and the coordinator was Ederlinda Viñuales-Gavín.

✧ In 2025 the contest is: ***Goodbye Gaia: Our Common Home***. This is a simple competition featuring Gaia-related activities to celebrate her farewell after 30 years of expanding our knowledge of the universe. Students and anyone, regardless of age and from anywhere in the world, are invited to participate in the proposed activities.
It is now open and the coordinators are: Carlos Viscasillas Vázquez and Šarūnas Mikolaitis from Lithuania.

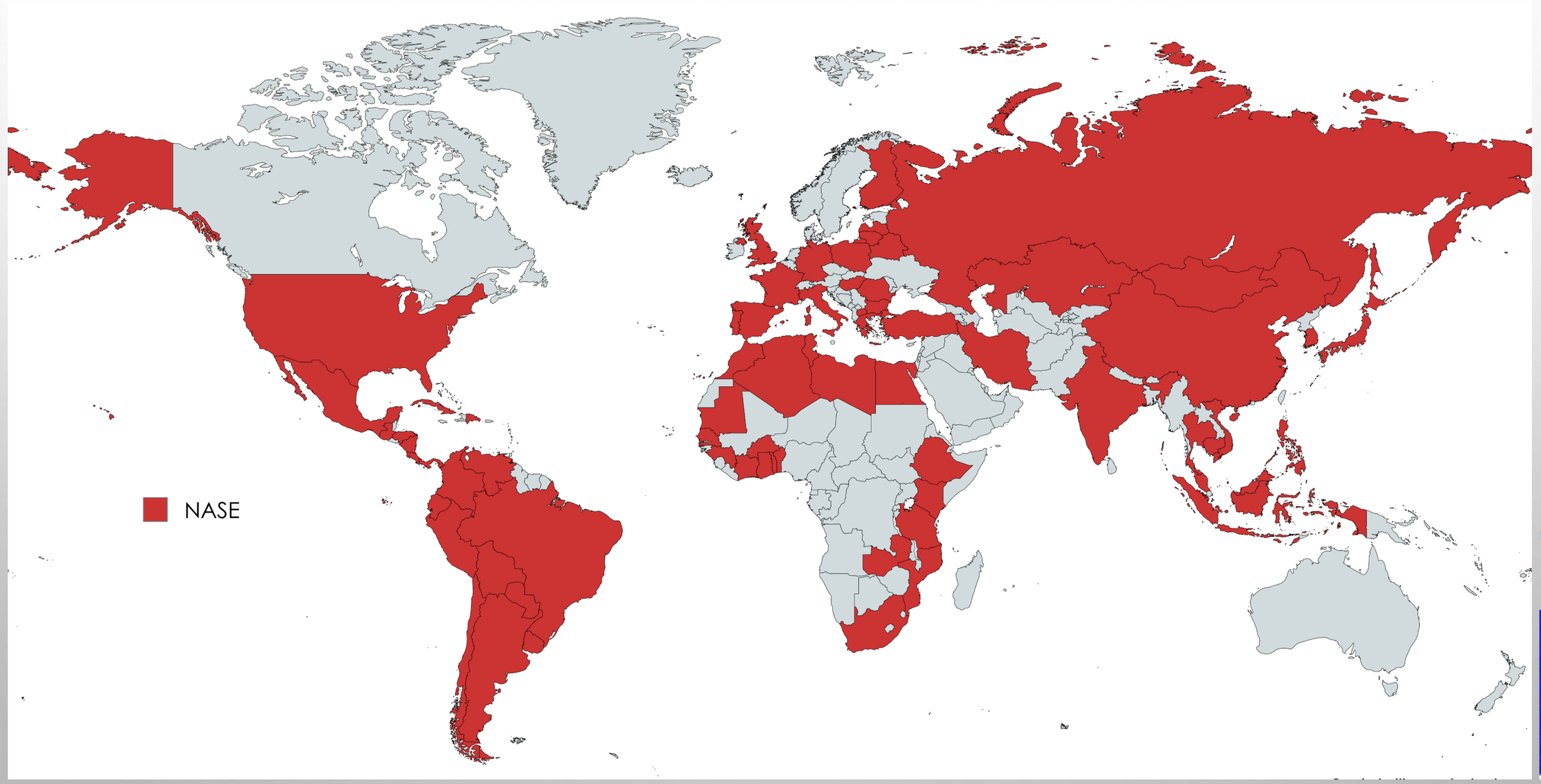
NASE: Who we are?

NASE is a successful Working Group of International Astronomical Union IAU, devoted to training teachers in Astronomy Education in:

- an innovative way
- bases on the hands-on-activities
- with simple, not expensive resources and tools
- promoting observations (with amateurs helping)
- **excellence in the transmission of the contents by Quality Management System ISO 29990:2010 non-formal education**

Network for Astronomy School Education

More than 1144 voluntaries in 78 countries
Courses face to face, online and hybrids



Astronomy promoting science as STEAM

Astronomy is STEAM and NASE uses this aspect in order to **introduce, in a different way,** Maths, Physics, Chemistry, Biology, and **other knowledges** such as Geography, Social Science…

NASE creates a **Local Group** of local teachers, professors, amateurs who organizes courses, seminars, observations and prepare new materials for the NASE website and helping in other countries.

More than 105 NASE Local Groups.

SUMMARY: NASE STATISTICS

- **465 NASE courses + 78 courses in co-operation**
- **in 78 countries**

- **105 NASE local working groups involving 1144 NASE members** (47 IAU members and 1097 non IAU members)
- **15 691 participants** **involving between 11 609 300 and 5 804 700 students** (in average a teacher has between 100 and 200 students per year)

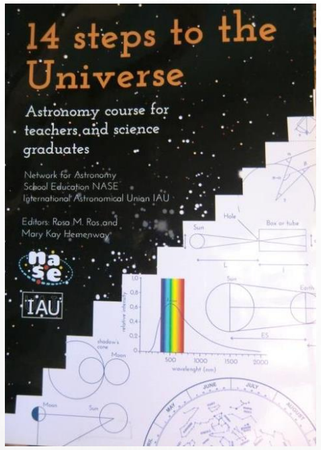
✓ We adapt in LATITUD and LONGITUD our materials.
✓ **We teach in the language of the country: website in 27 languages**
✓ We prepare relationship of astronomy and culture local
✓ We show that astronomy is part of our live day by day: “astronomy in the city”

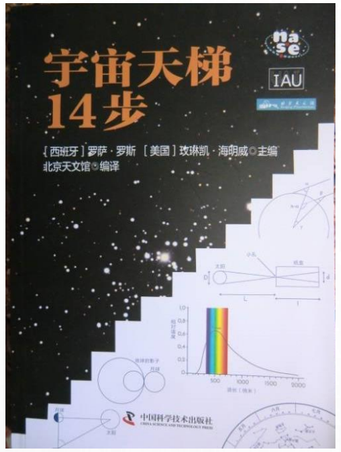
NASE courses,

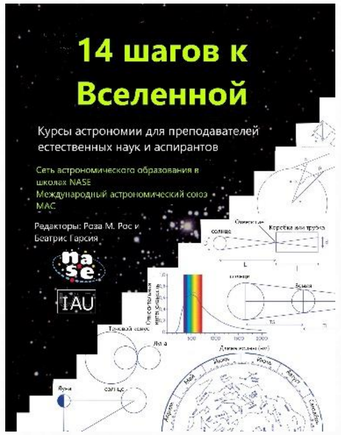
- **Astronomy** (mainly Earth, Sun, Moon system).
- **Astrophysics** (stars evolution and cosmology).
- **Astrobiology** (planets, exoplanets, astrobiology).
- **Astronomy and Culture** (astronomy in the cities)
- **General** (include previous contents mentioned)

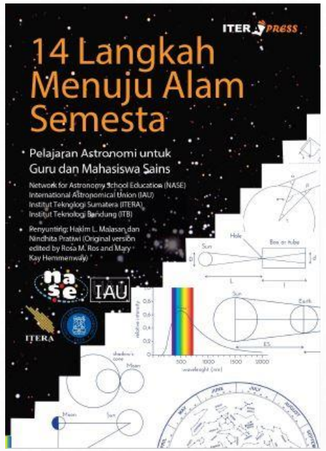
- **AstroKids** (astronomy for pre-schooler teachers)

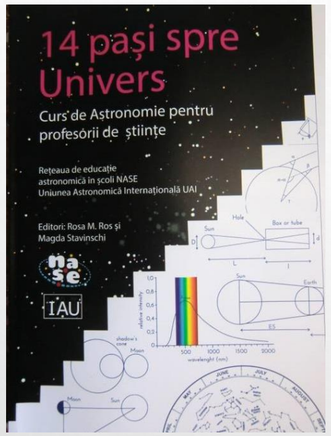
- ✓ They are independent for participants
- ✓ Focus on practical workshops (building and using)
- ✓ Participants receive information about materials to prepare models and tools for understanding
- ✓ 100 Mute videos explained in life

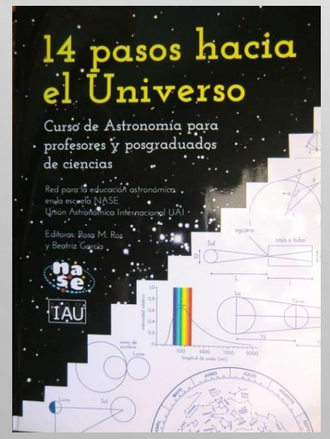












Books

10 Printed Book

English,
Spanish,
Chinese M,
Romanian,
French,
Persian,
Portuguese
Indonesian,
Russian,
Catalonian,

Website 16

Armenian,
Mongolian,
Kiswahili,
Greek
Korean
Thai
Hungarian
Bulgarian
Turkish
Hindi
Arabic
Malayan
Vietnamese
Japanese
Latvian
Lithuanian

Our goal: NASE METHODOLOGY

- ✓ We promote that students think using observation, models and simple devices made themselves

http://www.naseprogram.org


Veikla 12: Antrasis kosminis greitis
*Ekin = ½ mv2
*Epot = -GMplanetm/Rplanet
*Emec= Ekin +Epot = 0
*gplanet = GMplanet/RZplanet
Tada: -GMplanetm/RPlanet + ½ mv2 =
0
½ mv2 =
gplanetmRplanet
rezultatai:

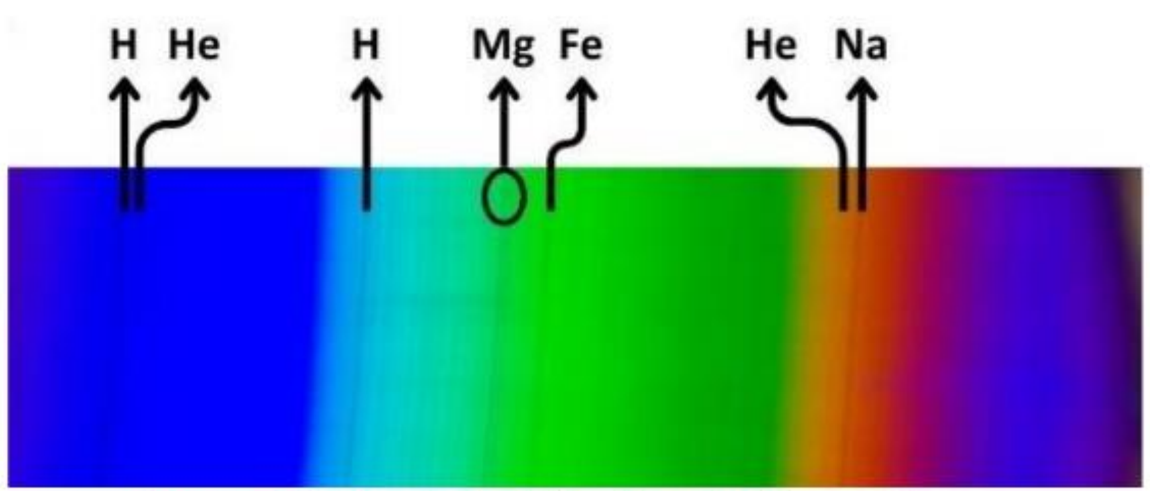
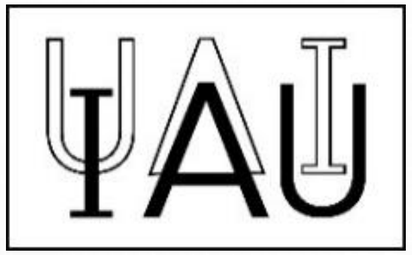


Image 17. Analysis of the Fraunhofer spectrum.



MARCH 20TH TO SEPTEMBER 23RD
PROGRAM UNESCO-INTERNATIONAL DAY OF LIGHT
SKY COLORS: WHY SKY IS BLUE? WHY SUNSETS ARE RED?....

ONLINE EVENT MARCH 22ND
ONLINE/FACE TO FACE EVENT OCTOBER 3-5TH IN ARGENTINA

www.eaae-astronomy.org

www.naseprogram.org

European Association for Astronomy Education

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