

MW-GAIA: BRINGING THE MILKY WAY TO SCHOOLS 2021

JUNE
2-4
2021

TOPICS COVERED

- The Milky Way as a Galaxy: the science and research background
- Dissemination of the GAIA science
- Bringing the research closer to the public
- Teaching the Milky Way in schools
- How to make teaching and science communication more inclusive

Deadline for abstract submission: 14 May 2021

Deadline for registrations: 1 June 2021



Poster 5



COST ACTION CA-18104 HOSTED BY
INSTITUTO DE ASTROFÍSICA E CIÊNCIAS DO ESPAÇO (PORTO, PT)
VILNIUS UNIVERSITY (VILNIUS, LT)

ORGANIZERS



Álvaro Folhas

Agrupamento de Escolas Agueda Sul; NUCLIO; CITEUC; FPCEUC, Portugal

Astronomy: A lever for Science Education

Education and training are fundamental foundations for the future of societies in any country. The current world poses new challenges to education in face of the development of scientific and technological knowledge, generating, every day, an exponential growth of information on a global scale. According to the OECD Skills Strategy (2015) “Skills have become the fundamental driving force for economic success and individual well-being in the 21st century. Without adequate investment in skills, people remain on the margins of society, technological progress does not translate into growth and countries are no longer able to compete in economies that are increasingly based on knowledge”. About that, the OECD Education Project 2030 proposes that countries find answers to two fundamental questions:

- What knowledge, skills and attitudes do we need to develop (and adopt) to prepare our students for the future?
- How can education systems promote this knowledge, skills and attitudes effectively?

These needs force us to rethink School and the Teaching models, creating stimulating and challenging STEM activities, embracing several subjects as a whole. Knowledge, as life, is interdisciplinary, and this interdisciplinarity must have an increasing presence in school activities.

Astronomy is probably the most interdisciplinary field of knowledge, offering a fertile ground for the development of challenging activities and projects that mobilize the interest of students, developing a taste for Science, but also stimulating a set of skills that they will need for the challenges of the 21st century.

Over many years I have developed activities with students at School's Science Clubs, in non-formal education, using Astronomy as the main lever for learning. Students participated voluntarily in these activities, just because it's fun and so different from regular classes. These activities range from astronomical observation sessions, using small optical telescopes, and construction for didactic exploration of small devices (such as spectroscopes, sundials, quadrants, apparatus for determining the solar diameter) to scientific work, such as asteroid research (IASC Project), measurement of sunspots or lunar craters, determination of stellar magnitudes to study supernovae and rotation of our galaxy, using the professional telescopes of the Faulkes Telescope Project and the EU-HOU radio telescope constellation. Other activities, such as the Experience of Eratosthenes, are already being developed within an interdisciplinary framework, involving different curricular disciplines, in its own schools curricular time.

Most of the activities carried out were promoted by NUCLIO - Núcleo Interativo de Astronomia e Inovação na Educação, that develops a meritorious work by developing and disseminating projects and initiatives involving Astronomy and Teaching all around the world, providing the necessary resources for the development most of the activities referred to in this work.

We have to light the brightness in our student's eyes.



Our Science Club

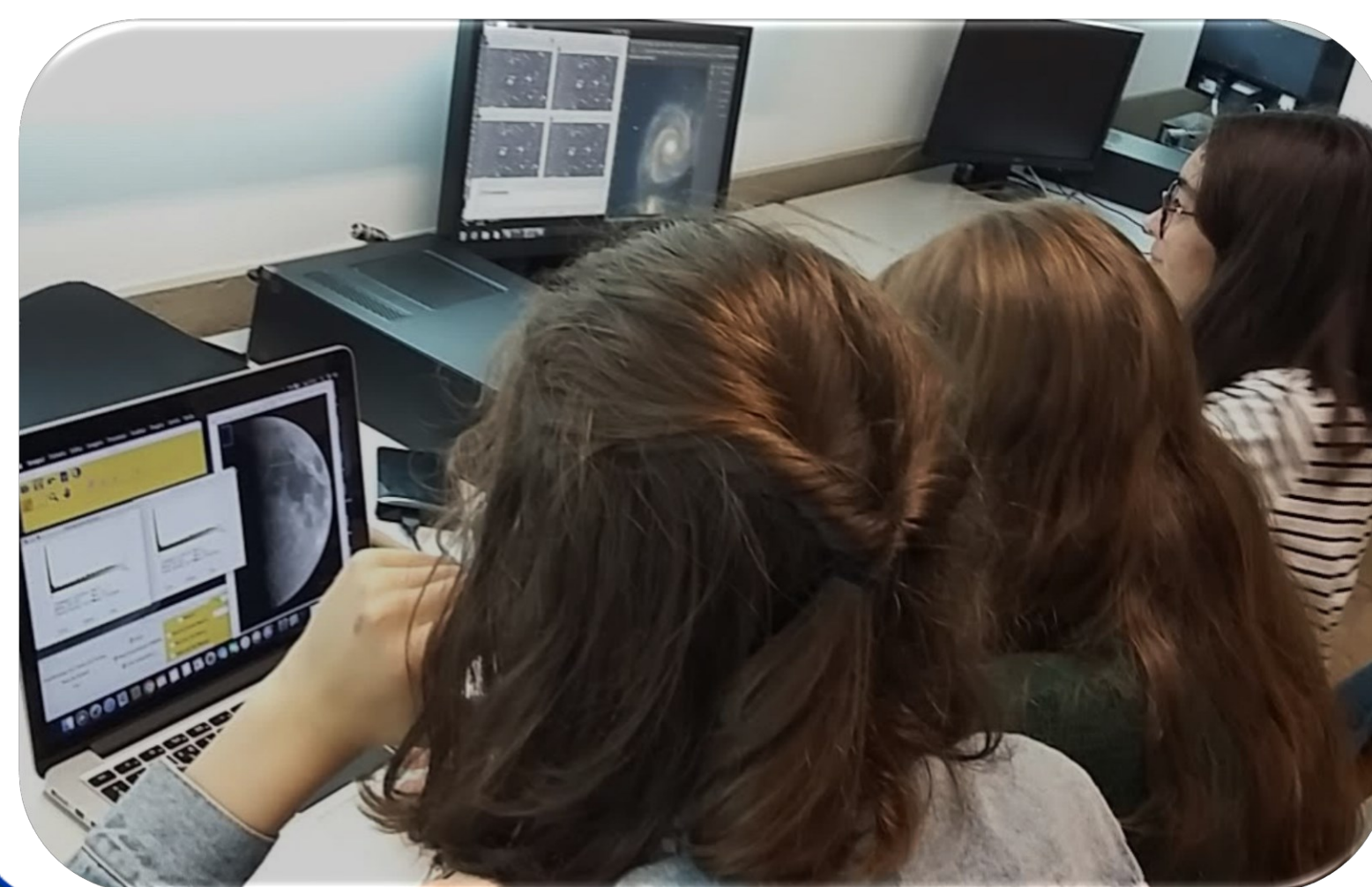
The School has to be rethought to meet the needs of the 21st century. It has to grab the student for Science, in a challenging and interdisciplinary way. Nothing better than **Astronomy** to fulfill this aim.

Our **Science Club** has as main objective to present a set of scientific activities that show a new approach about “**what Science is**” and “**how science is made**”. It is also added to this purpose: **the Challenge**.

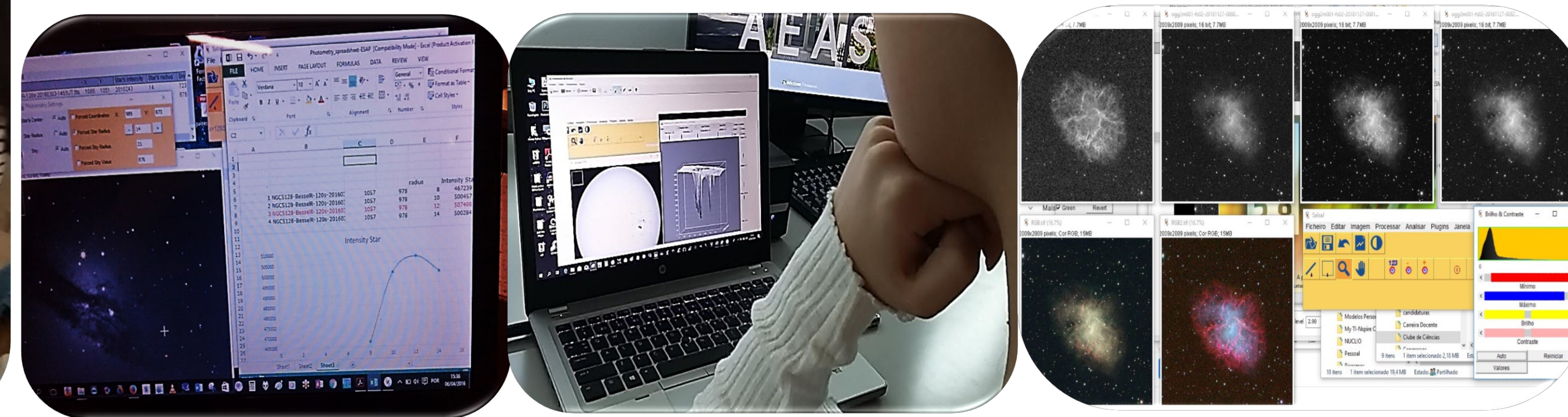
This non-formal teaching space seeking to work not only concepts, but essentially competences in an interdisciplinary way.



Using Remote Telescopes



We use **Faulkes Telescope Project** telescopes by remote control, in real time, directly in the classroom, with the possibility of carrying out scientific research, such as looking for exoplanets or studying supernovae, etc.

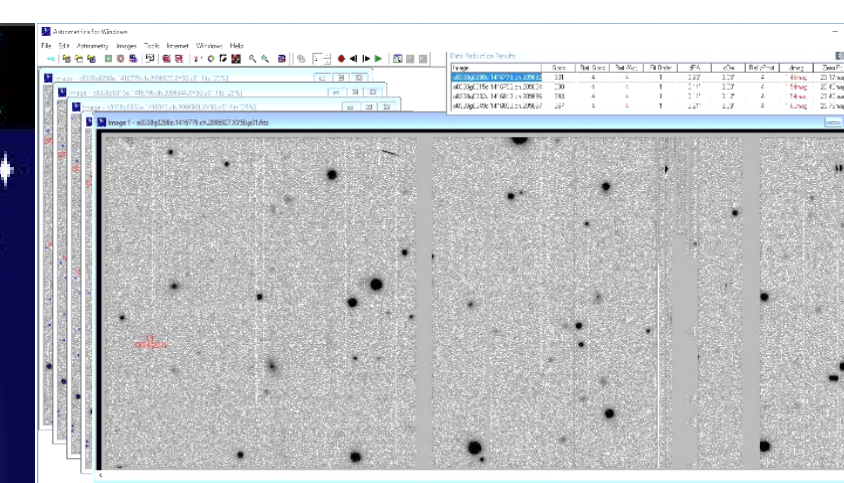
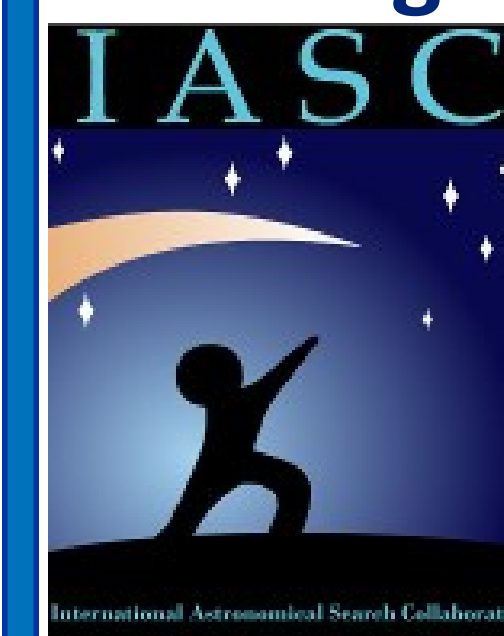


Stargazing



Astronomical observation sessions allow us to create links to the Universe

Chasing Asteroids



The **IASC Program**, presented in Portugal by **NUCLIO**, provides us material to discover new asteroids.

NUCLIO Asteroid Search Campaign		October 9 - November 3, 2020				
Object	Students	School	Location	Status	Date	Linked
P1180ie	J.Oliveira, C.Gomes, I.Ferreira, D.Almeida, G.Ferreira, A.Folhas, A.Devevas	Agrupamento de Escolas Águeda Sul	Portugal	Preliminary	10/15/20	ANV0001
P1180if	J.Oliveira, C.Gomes, I.Ferreira, D.Almeida, G.Ferreira, A.Folhas, A.Devevas	Agrupamento de Escolas Águeda Sul	Portugal	Preliminary	10/15/20	ANV0001
P1180TC	J.Oliveira, C.Gomes, I.Ferreira, D.Almeida, G.Ferreira, A.Folhas, A.Devevas	Agrupamento de Escolas Águeda Sul	Portugal	Preliminary	10/15/20	ANV0001
P118Bp1	J.Oliveira, I.Ferreira, G.Ferreira, A.Folhas, A.Devevas	Agrupamento de Escolas Águeda Sul	Portugal	Preliminary	10/20/20	SMC0001
P118Btj	J.Oliveira, G.Ferreira, A.Folhas	Agrupamento de Escolas Águeda Sul	Portugal	Preliminary	10/20/20	SMC0001
P118K2v	J.Oliveira, C.Gomes, I.Ferreira, D.Almeida, G.Ferreira, A.Folhas, A.Devevas	Agrupamento de Escolas Águeda Sul	Portugal	Preliminary	10/22/20	SMC0002

Acknowledgement



We have to light the brightness in our student's eyes

Hands-on activities

We made several interdisciplinary activities and experiments such as making and exploring Sundials, building and launching rockets, exploring Eratosthenes Experiment, achieving Sun Diameter, etc.



Scientist Talks & many other things

