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Outreach, Education and Communication Initiatives of the CTA Observatory

37th ICRC, July 12-23, 2021

**ALBA FERNÁNDEZ-BARRAL, MEGAN GRUNEWALD ON
BEHALF OF THE CTA OBSERVATORY**



- **Educational Activities**
 - “Physicists On-Call” programme
- **Online Outreach and Communication Initiatives**
 - CTAO’s Series of Films
 - CTA’s Webinar Series for Researchers
 - CTAO’s Outreach Webinar Series
- **CTAO’s Astrodiversity Project**
 - “Women of CTA”
 - “Best Practices for Colour Blind Friendly Publications & Descriptions”



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Educational Activities



Educational material

<https://www.cta-observatory.org/outreach-education/cta-for-educators/>



- **“CTA for Educators”**
 - Material organized by levels
 - Worksheets, handbooks, games...
 - [“Dictionary of the Extreme Universe”](#)
 - All tools available also in Spanish:
[“CTA para Educadores”](#)
 - **Physicist On-Call program**

>> Visit our [Multimedia](#) page for more CTA materials, including brochures, fact sheets, images and videos

LEVEL: ELEMENTARY

Exploring CTA Science with Ted & Friends



enjoyable, too! Test what you learn from each episode with the educational material and games you will find below.

Join Ted the Telescope and his friends Big Bear and Little Bear as they explore the exciting objects in space Ted and his telescope friends will look at as they search the night sky for gamma rays. Each of the seven episodes is about 3-4.5 minutes in length and covers a different topic. Watch the full series on our YouTube channel in English, Spanish or Portuguese. The series was created by Alice Hopkinson, an undergraduate student at Durham University, and is recommended for children ages 5-11, but “big kids” should find it

Educational Activities



These handbooks with activities can be performed with students at different ages to initiate or delve into the fascinating Universe of gamma-ray astronomy. All initiatives are collaborative and based on the diversity that characterizes CTA, in order to promote equal participation and education without barriers of any type.

And for those fun breaks, we include some games that would help children to rest.

~ Exploring CTA Science with Ted and Friends - Activities

~ Games

LEVEL: HIGH SCHOOL

Worksheets and Games



Introduce new astrophysical concepts with the help of this series of worksheets. Each worksheet includes a short reading section that is supported and tested by a separate page of activities and questions. Any of the pages can be printed independently according to the activity carried out.

And for a break, use the crossword to entertain and reinforce what has been learned. And, if they get stuck, don't forget to use the [Dictionary of the Extreme Universe](#) to help guide them to the answers they need.

~ Worksheets

~ Games

“Physicists On-Call”

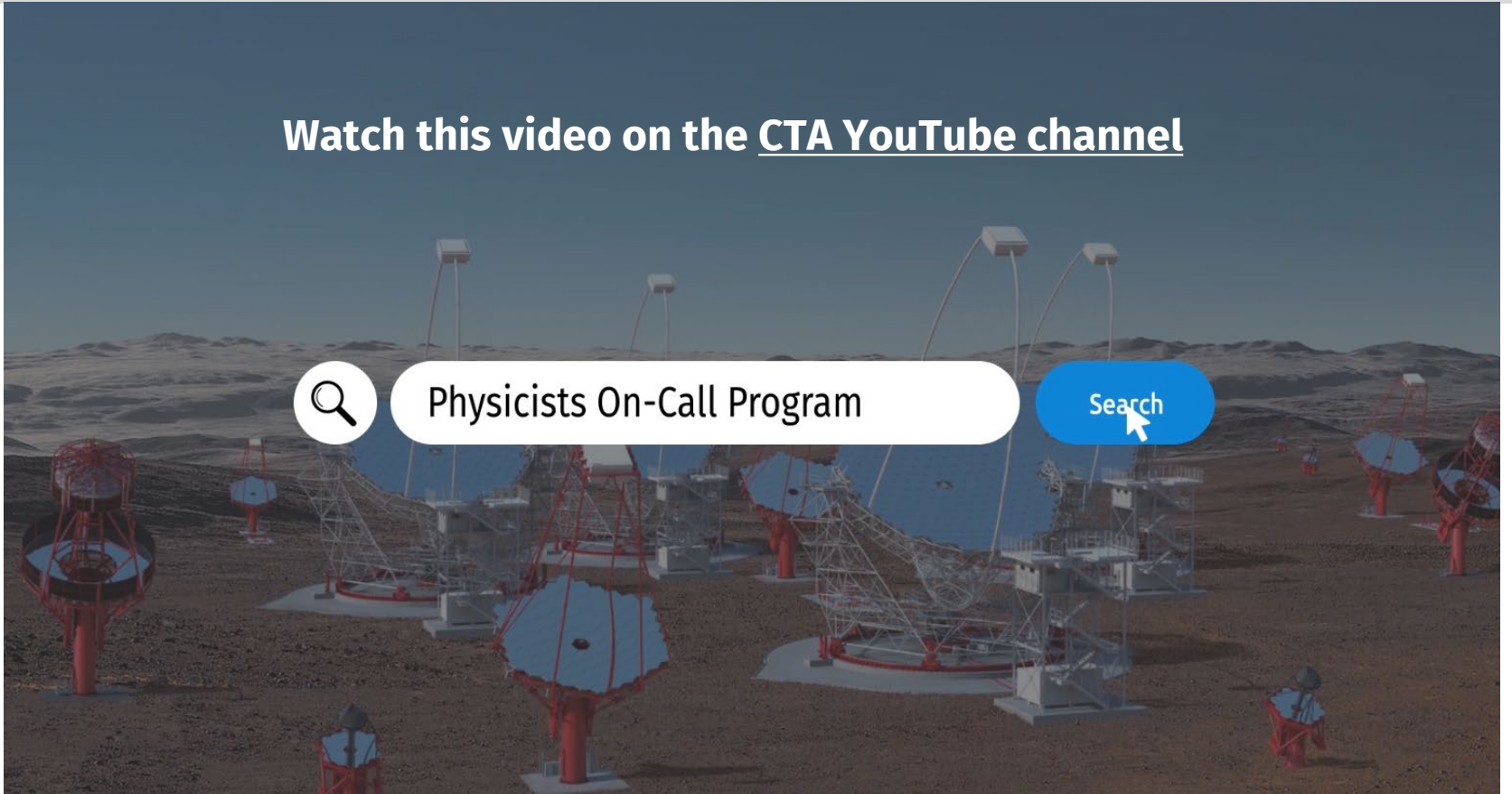


Watch this video on the [CTA YouTube channel](#)



Physicists On-Call Program

Search

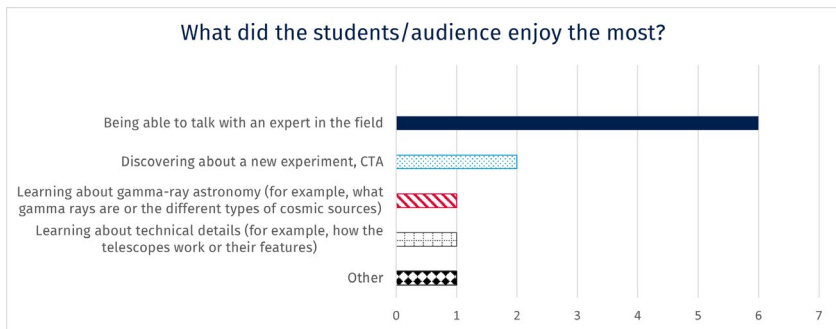


Preliminary Results



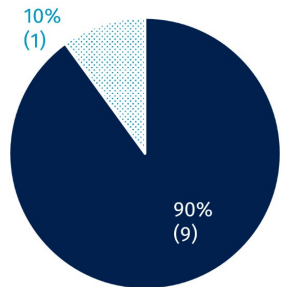
- Requested Talks: 14
- Participating speakers: 8 (4 women, 4 men)
- Reached countries: 5 (Argentina, Italy, Iran, Spain and UK)
- Languages: 5
- **Total number of people reached: 421 people** (average ~40 people/talk, based on the available survey results – not all talks)

Preliminary Results



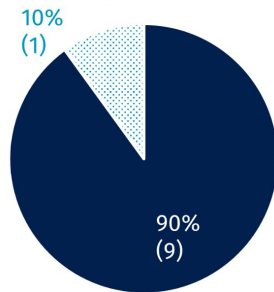
Other: "Being able to talk with an astrophysicist and learning firsthand the experience of being a woman working in astrophysics"

How was the interest shown by the students/audience throughout the talk?



■ Very high ■ High

How would you rate the talk?



■ Very good ■ Good

- **As an educator, do you think this was a positive experience for your students?:** Very Positive 100% (10)
- **How would you rate the organisation of the talk?:** Very Good 100% (10)
- **Would you participate again?:** Yes 100% (10)
- **Would you recommend the programme to your colleagues?:** Yes 100% (10)

Options: very high/good, high/good, average/fair, low/poor, very low/poor



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Online Outreach and Communication Initiatives

Watch this video on the [CTA YouTube channel](#)

How do you discover more about the Universe
than ever before?

- **“CTA Science: Emission to Discovery”** ([link](#))
- **“The CTA-North Site: Our Northern Eye on the High-Energy Universe”** ([link](#))
 - Premiered on a live [streaming event](#) with Sky-live.tv (June 2020)
- **“The CTA-South Site: Our Southern Eye on the High-Energy Universe”** ([link](#))
 - Premiered on a live [streaming event](#) with ESO and PUC (March 2021)

CTA's webinars

SYNERGIES IN THE EXPLORATION OF THE EXTREME UNIVERSE

for researchers

Scientific Organizing Committee (SOC)

- **Ulisses Barres**, CBPF
- **Matthias Fülling**, CTAO
- **Elina Lindfors**, University of Turku
- **Luigi Tivaldo**, IRAP
- **Roberta Zanin**, CTAO
- Federico Ferrini, CTAO
- Werner Hofmann, MPIK
- Jurgen Knödleseder, IRAP
- Rene Ong, UCLA

Event Organizing Committee (EOC)

- **Alba Fernández-Barral**, CTAO
- Megan Grunewald, CTAO

470
subscribers

GOAL

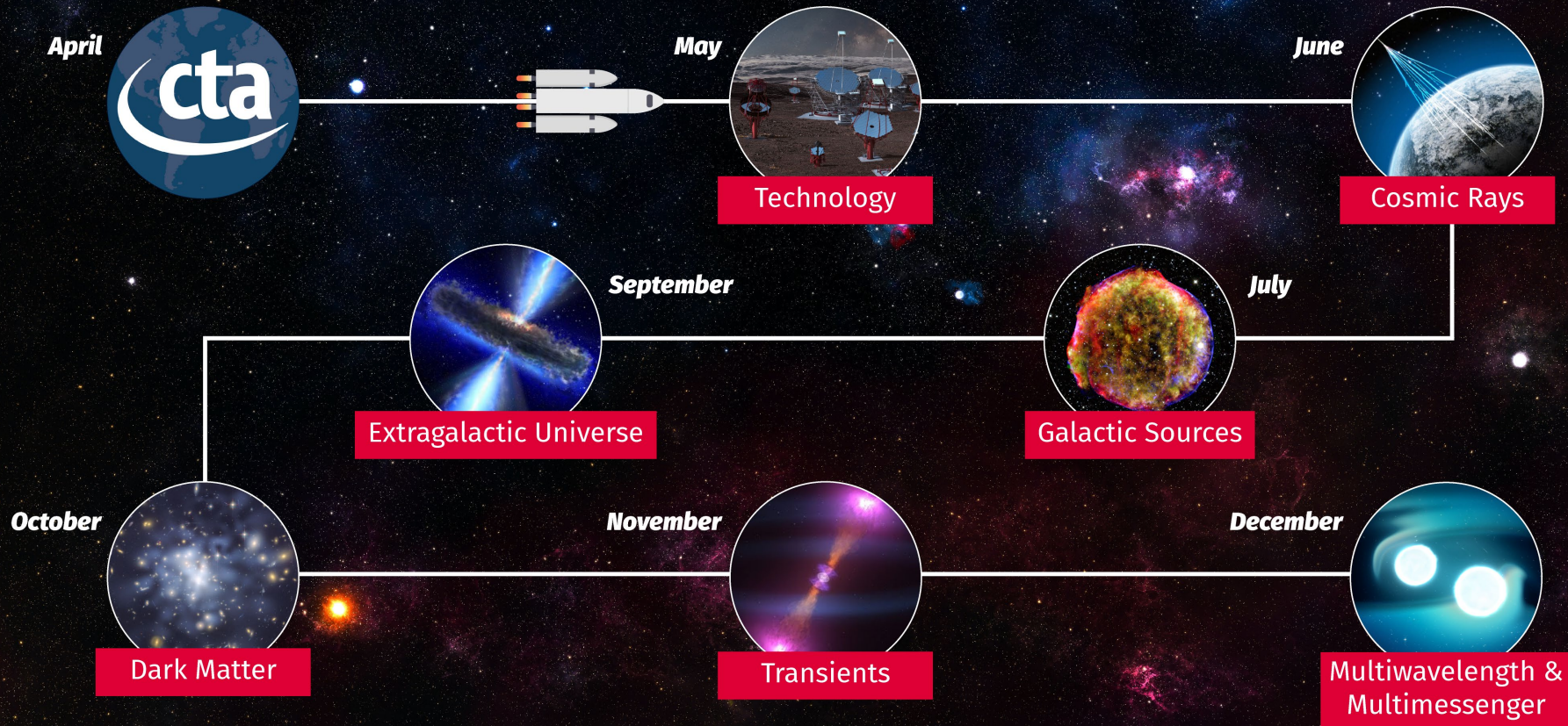
- Engage with astronomy community
- Connection with external MWL/MM groups
- Keep CTA community up-to-date about MWL/MM developments

TECHNICAL ASPECTS

- 4th Thursday of each month
- Alternating time
- Zoom - [Subscription required](#) (once for the entire series)

JOURNEY THROUGH THE EXTREME UNIVERSE

A CTA Webinar Series



One Wednesday/month, at 17:00 UTC on the CTA YouTube and Facebook channels (link [CTA website](#) and [YouTube playlist](#))



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CTAO's Astrodiversity Project

<https://www.cta-observatory.org/outreach-education/astrodiversity/>

Women of CTA



Women of cta
MONDAY 11 FEBRUARY 2019, 16:00
PINACOTECA NAZIONALE DI BOLOGNA,
SALA GNUDI, VIA DELLE BELLE ARTI 56

Prof. Patrizia Caraveo
Director of research-IMM Milan
and Contract Professor, University of Pavia
IMAF Representative, CTA Consortium Board
Commander of the order of Merit of the Italian Republic

Dr. Emma de Oña Wilhelm
Institute of Space Sciences (IEEC-CSIC), Barcelona
and Deutsches Elektronen-Synchrotron (DESY), Zeuthen
Science Coordinator, CTA
Humboldt Fellow

Chiara Montanari
CTA Observatory, biologist
Interface Manager, CTAO Project Office
First Italian woman to lead an antarctic expedition

PUBLIC PRESENTATIONS & QUESTIONS SESSION
DISCOVER THE MYSTERIOUS UNIVERSE AND GET ANSWERS TO YOUR
CURIOSITIES FROM SOME OF THE WOMEN BEHIND THE WORLD'S
LARGEST GAMMA-RAY OBSERVATORY.

Presentations in English
Questions Session with public in Italian and English
More information: www.cta-observatory.org

Women of cta SECONDA EDIZIONE
Martedì 11 Febbraio 2020, H. 18:00
Scuderia | Future Food Urban Coolab
Piazza Giuseppe Verdi 2, Bologna

Tre donne astrofisiche presentano la loro esperienza professionale e personale nella carriera scientifica. Unisciti a noi per soddisfare tutte le tue curiosità in merito!

Carla Aramo (Ricercatrice e CTA group leader, INFN-Napoli)
Ambra di Pianto (Studentessa della magistrale, IMAF-Bologna)
Roberta Zanin (Project Scientist, CTAO)

Giornata internazionale delle donne e delle ragazze nella scienza

Evento e aperitivo gratuiti e aperti a tutti
Presentazioni e sessione di domande in italiano
Maggiori informazioni: www.cta-observatory.org

#WomenofCTA
www.cta-observatory.org

WOMEN of cta
3rd Edition

Get a glimpse of the study of the extreme gamma-ray Universe through the eyes of three astrophysicists.

Elina Lindfors (University of Turku)
Mireia Nievas (Instituto de Astrofísica de Canarias)
Leslie Paige Taylor (University of Wisconsin-Madison)
Moderated by: Alba Fernández-Barral (CTA Observatory)

11 February 2021 - 18:30 CET
Live streaming on YouTube & Facebook

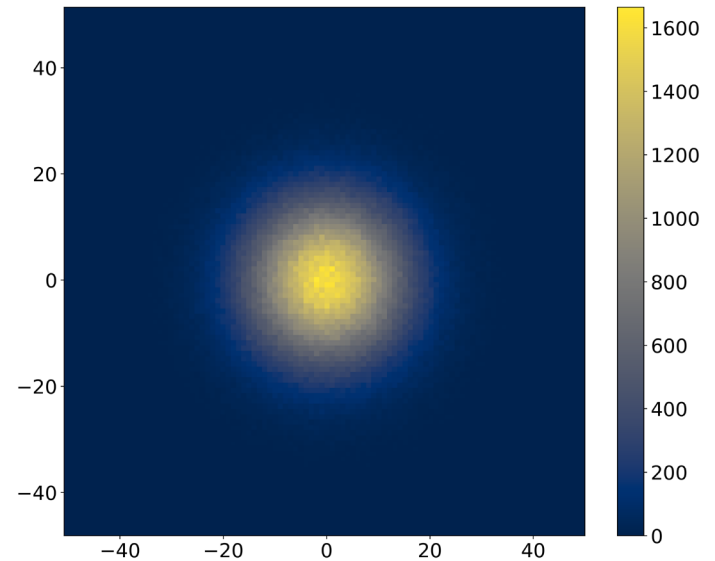
In honour of the
International Day of Women and Girls in Science

- Annual event carried out on **February 11**, on occasion of the *International Day of Women and Girls in Science*
- It gathers three experts from the astrophysics and engineering fields to share their professional and personal experience in science and contributions to CTA
- It is part of a global effort to raise awareness about gender inequity and under-representation of women in science

Colour Blind Friendly Material



- **Colour Vision Deficiency (CVD):**
Reduction or no capacity to distinguish colours. It affects 1 in 12 men and 1 in 200 women. Most common red-green colour blindness
- **CTAO's "Best Practices for Colour Blind Friendly Publications & Descriptions:"** [link](#)
- Guidelines and tools, including Python packages and usages, to select suitable colours and patterns for different types of plots, as well as to create inclusive descriptions





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[@CTA_Observatory](https://www.instagram.com/CTA_Observatory)



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Questions?

alba.fernandezbarral@cta-observatory.org

