

**AVENGe - Advances in
Very-High Energy
Astrophysics with
Next-Generation Cherenkov
Telescopes**

Report of Contributions

Contribution ID: 94

Type: **not specified**

Welcome & Workshop Purpose

Monday, 29 May 2023 11:30 (10 minutes)

Presenter: ANTONELLI, Lucio Angelo (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Introduction to CTA Key Science Projects

Contribution ID: 95

Type: **not specified**

Introduction to Key Science Projects

Monday, 29 May 2023 11:40 (20 minutes)

Presenter: ZANIN, Roberta (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Introduction to CTA Key Science Projects

Contribution ID: **96**

Type: **not specified**

The CTA+ Project

Monday, 29 May 2023 12:00 (20 minutes)

Presenter: CAPPI, Massimo (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Introduction to CTA Key Science Projects

Contribution ID: 97

Type: **not specified**

Introduction to the Science of KSPs

Monday, 29 May 2023 12:20 (20 minutes)

Presenter: LONGO, Francesco

Session Classification: Introduction to CTA Key Science Projects

Contribution ID: 98

Type: **not specified**

The Italian Contributions to the CTA Key Science Projects

Monday, 29 May 2023 12:40 (20 minutes)

Presenter: STAMERRA, Antonio (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Introduction to CTA Key Science Projects

Contribution ID: 99

Type: **not specified**

Galactic Plane Survey KSP: status & perspectives

Monday, 29 May 2023 14:30 (30 minutes)

Presenter: PINTORE, Fabio (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Plane Survey

Contribution ID: **100**Type: **not specified**

Galactic PeVatron candidates in the LHAASO J1956+2845 sky region

Monday, 29 May 2023 15:00 (20 minutes)

In recent years the number of known sources emitting in the TeV-PeV regime has increased significantly thanks to facilities like LHAASO and HAWC. The more natural candidates, for energetic and ambient properties, are pulsars and their environment.

However, due to the limited angular resolution of the current instruments, many of the observed sources have more than one lower-energy counterpart. The identification and the classification of these sources is one of the primary goals of future facilities as CTAO, thanks to the designed sensitivity and angular resolution above 1 TeV.

In this talk I will present the sky region containing LHAASO J1956+2845, a case study to test the CTAO performances. This region extends for about 2 degrees and contains three HAWC sources, two of which are spatially coincident with LHAASO J1956+2845. Three middle-aged pulsars and three SNR/PWN systems are located in the field, but the associations are yet to be done, and it is not clear yet which of them is the principal contributor to the ~100 TeV emission.

Presenter: RIGOSELLI, Michela (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Plane Survey

Contribution ID: **101**

Type: **not specified**

KSP1 contributed talk 2

Session Classification: Galactic Plane Survey

Contribution ID: **102**

Type: **not specified**

Discussion

Monday, 29 May 2023 15:20 (40 minutes)

Session Classification: Galactic Plane Survey

Contribution ID: **103**

Type: **not specified**

The CTA Dark Matter Program and Capabilities Beyond Gamma-rays - Status and Perspectives

Wednesday, 31 May 2023 11:30 (35 minutes)

Presenter: Dr SATURNI, Francesco Gabriele (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Dark Matter & FUND Physic

Contribution ID: **104**

Type: **not specified**

Axion-like Particles and Lorentz Invariance Violation

Wednesday, 31 May 2023 12:05 (20 minutes)

Presenter: GALANTI, Giorgio (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Dark Matter & FUND Physic

Contribution ID: 105

Type: **not specified**

Status and Perspectives of Intergalactic Magnetic Field Studies

Wednesday, 31 May 2023 12:25 (20 minutes)

Presenter: MICELI, Davide (University & INFN Padova)

Session Classification: Dark Matter & FUND Physic

Contribution ID: **106**

Type: **not specified**

Status of the CTA Key Science Project

Tuesday, 30 May 2023 16:30 (40 minutes)

Presenter: PINTORE, Fabio (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Center

Contribution ID: **107**

Type: **not specified**

The Galactic Center at VHE

Tuesday, 30 May 2023 17:10 (20 minutes)

Presenter: PONTI, Gabriele (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Center

Contribution ID: **108**

Type: **not specified**

Discussion

Tuesday, 30 May 2023 17:30 (1 hour)

Session Classification: Galactic Center

Contribution ID: **109**

Type: **not specified**

Introduction: The extragalactic survey key science project - Status and perspectives

Monday, 29 May 2023 16:30 (20 minutes)

Collaboration

Presenter: PRANDINI, Elisa (DFA Padova)

Session Classification: Extragalactic Survey

Contribution ID: 110

Type: **not specified**

Extragalactic survey: some updates based on recent findings (Solicited Talk)

Monday, 29 May 2023 16:50 (20 minutes)

Presenter: GIOMMI, Paolo (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Extragalactic Survey

Contribution ID: 111

Type: **not specified**

The Fermi-LAT experience: lesson learned (Solicited talk)

Monday, 29 May 2023 17:10 (20 minutes)

Collaboration

Presenter: GASPARRINI, Dario (Istituto Nazionale di Fisica Nucleare sez. di Roma Tor Vergata)

Session Classification: Extragalactic Survey

Contribution ID: 112

Type: **not specified**

Search for new TeV sources from our MWL and spectroscopic survey

Monday, 29 May 2023 17:50 (10 minutes)

Collaboration

Presenters: ULGIATI, Alberto (Istituto Nazionale di Astrofisica (INAF)); PALANO, Simona (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Extragalactic Survey

Contribution ID: **113**

Type: **not specified**

Open discussion

Monday, 29 May 2023 18:00 (30 minutes)

Session Classification: Extragalactic Survey

Contribution ID: 114

Type: **not specified**

Divergent Pointing mode as observation strategy (Solicited talk)

Monday, 29 May 2023 17:30 (20 minutes)

Presenter: BURELLI, Irene (University of Udine - INFN Trieste)

Session Classification: Extragalactic Survey

Contribution ID: 115

Type: **not specified**

Extragalactic Transients KSP: status & perspectives

Tuesday, 30 May 2023 11:30 (30 minutes)

Presenter: CAROSI, Alessandro (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Extragalactic Transients

Contribution ID: **116**

Type: **not specified**

GRB at VHE: lessons learned so far

Tuesday, 30 May 2023 12:20 (20 minutes)

Presenter: NAVA, Lara (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Extragalactic Transients

Contribution ID: 117

Type: **not specified**

Prospects of detecting early VHE emission from compact binary mergers: synergy between Einstein Telescope and CTA

Tuesday, 30 May 2023 12:00 (20 minutes)

Presenter: BANERJEE, Biswajit (Gran Sasso Science Institute (GSSI))

Session Classification: Extragalactic Transients

Contribution ID: **118**

Type: **not specified**

Discussion

Tuesday, 30 May 2023 12:40 (20 minutes)

Session Classification: Extragalactic Transients

Contribution ID: 119

Type: **Oral contribution**

Multi-wavelength context of the Cherenkov Telescope Array

TeV emitters are typically multi-wavelength sources, generally highly variable and occasionally highly polarized. This makes it critical to line up ground-based dedicated facilities for identification, follow-up and monitoring of CTA targets in polarized and total radio-to-optical light. Furthermore, the CTA itself provides suitable infrastructure for the implementation of specific observing techniques, such as the still pioneering Stellar Intensity Interferometry.

As part of the “CTA Plus” program funded by the Italian Research Ministry under the EU PNRR aegis, 4 initiatives will be implemented: a wide-field optical polarimetric imaging camera for the VST (VSTPol), a fast optical/IR photometer and optical polarimeter (eSiFAP) for the TNG, radio receiver upgrades for the INAF radio antennas, and a prototype for stellar intensity interferometry with the SSTs, to be tested on the ASTRI MiniArray. This talk will describe the instruments design and the observing strategies, and highlight the synergies with CTA.

Collaboration

PNRR program CTA+ (WP1400 radio, infrared, optical support for CTA)

Primary author: Dr PIAN, Elena (INAF-OAS, Bologna)

Presenter: Dr PIAN, Elena (INAF-OAS, Bologna)

Contribution ID: 120

Type: **Oral contribution**

Galactic PeVatron candidates in the LHAASO J1956+2845 sky region

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Collaboration

Primary author: Dr RIGOSELLI, Michela (Istituto Nazionale di Astrofisica (INAF))

Presenter: Dr RIGOSELLI, Michela (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Plane Survey

Contribution ID: 121

Type: **Oral contribution**

High-Energy Variability in PWNe

Despite the long held assumption that PWNe at high energy could be counted as “stable candles”, detection of gamma-ray flares in the Crab nebula, led us to revisit our ideas about the working of such systems. Given the lack of resolution of current gamma-ray observations, analysis of variability was performed at other wavelengths in search for possible counterparts that could guide us to the origin of these violent events without much luck. I will review here the status of our knowledge of high-energy variability (and variability in general) in PWNe, as well as the various models that have been proposed, and what are the prospect of observing similar events in other systems.

Collaboration

Primary author: BUCCIANTINI, Niccolò (Istituto Nazionale di Astrofisica (INAF))

Presenter: BUCCIANTINI, Niccolò (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Transients

Contribution ID: 122

Type: **not specified**

The Galactic Transients KSP

Tuesday, 30 May 2023 09:00 (30 minutes)

Presenter: Dr MEREGHETTI, Sandro (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Transients

Contribution ID: 123

Type: **not specified**

Galactic Transients at Very High Energies: microquasars, millisecond pulsars & more

Tuesday, 30 May 2023 09:30 (20 minutes)

Presenter: PAPITTO, Alessandro (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Transients

Contribution ID: 124

Type: **not specified**

High-Energy Variability in PWNe

Tuesday, 30 May 2023 09:50 (20 minutes)

Presenter: BUCCIANTINI, Niccolò (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galactic Transients

Contribution ID: 125

Type: **not specified**

Solicited (TBC)

Tuesday, 30 May 2023 10:10 (20 minutes)

Session Classification: Galactic Transients

Contribution ID: 126

Type: **not specified**

Discussion

Tuesday, 30 May 2023 10:30 (30 minutes)

Session Classification: Galactic Transients

Contribution ID: **127**

Type: **not specified**

Discussion

Wednesday, 31 May 2023 12:45 (15 minutes)

Session Classification: Dark Matter & FUND Physic

Contribution ID: 128

Type: **not specified**

The Galaxy Cluster KSP, Status and Perspectives

Wednesday, 31 May 2023 09:00 (40 minutes)

Presenter: BRUNETTI, Gianfranco (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galaxy Clusters

Contribution ID: **129**

Type: **not specified**

Solicited (TBC)

Session Classification: Galaxy Clusters

Contribution ID: **130**

Type: **not specified**

Discussion

Wednesday, 31 May 2023 09:40 (40 minutes)

Session Classification: Galaxy Clusters

Contribution ID: 131

Type: **not specified**

Multi-wavelength context of the Cherenkov Telescope Array

Wednesday, 31 May 2023 10:20 (20 minutes)

Presenter: PIAN, Elena (Istituto Nazionale di Astrofisica (INAF))

Session Classification: CTA+/MWL/Synergies

Contribution ID: 132

Type: **not specified**

Pevatrons & SFR Status and Perspective

Tuesday, 30 May 2023 14:30 (50 minutes)

Presenter: Dr CARDILLO, Martina (INAF- IAPS)

Session Classification: Pevatrons & SFR

Contribution ID: 133

Type: **not specified**

Discussion

Tuesday, 30 May 2023 15:20 (40 minutes)

Session Classification: Pevatrons & SFR

Contribution ID: 134

Type: **Oral contribution**

Blazar monitoring by the Whole Earth Blazar Telescope (WEBT) Collaboration

Wednesday, 31 May 2023 10:40 (20 minutes)

Born in 1997 to provide an optical follow-up of gamma-loud blazars observed by the Compton Gamma Ray Observatory, the Whole Earth Blazar Telescope (WEBT) is a large collaboration including several tens of astronomers around the northern hemisphere who monitor blazars mainly in the optical (including polarimetry), but also in the radio and near-infrared bands. Since 2000 the Collaboration has been led by Italian researchers from the INAF- Osservatorio Astrofisico di Torino and has actively collaborated with other teams, in particular the AGILE, Fermi, and MAGIC ones. The strength of the WEBT is the high temporal resolution of the light curves, which can be obtained thanks to the distribution in longitude of its members. This allows us to study the details of the blazar multiwavelength behaviour, and to propose models for its interpretation. We are looking forward to a fruitful collaboration with the VHE community in the era of the new-generation Cherenkov telescopes.

Collaboration

Whole Earth Blazar Telescope (WEBT)

Primary author: RAITERI, Claudia Maria (Istituto Nazionale di Astrofisica (INAF))

Presenter: RAITERI, Claudia Maria (Istituto Nazionale di Astrofisica (INAF))

Session Classification: CTA+/MWL/Synergies