CREDO Hackathon 2018:

Astronomical Dark Frames

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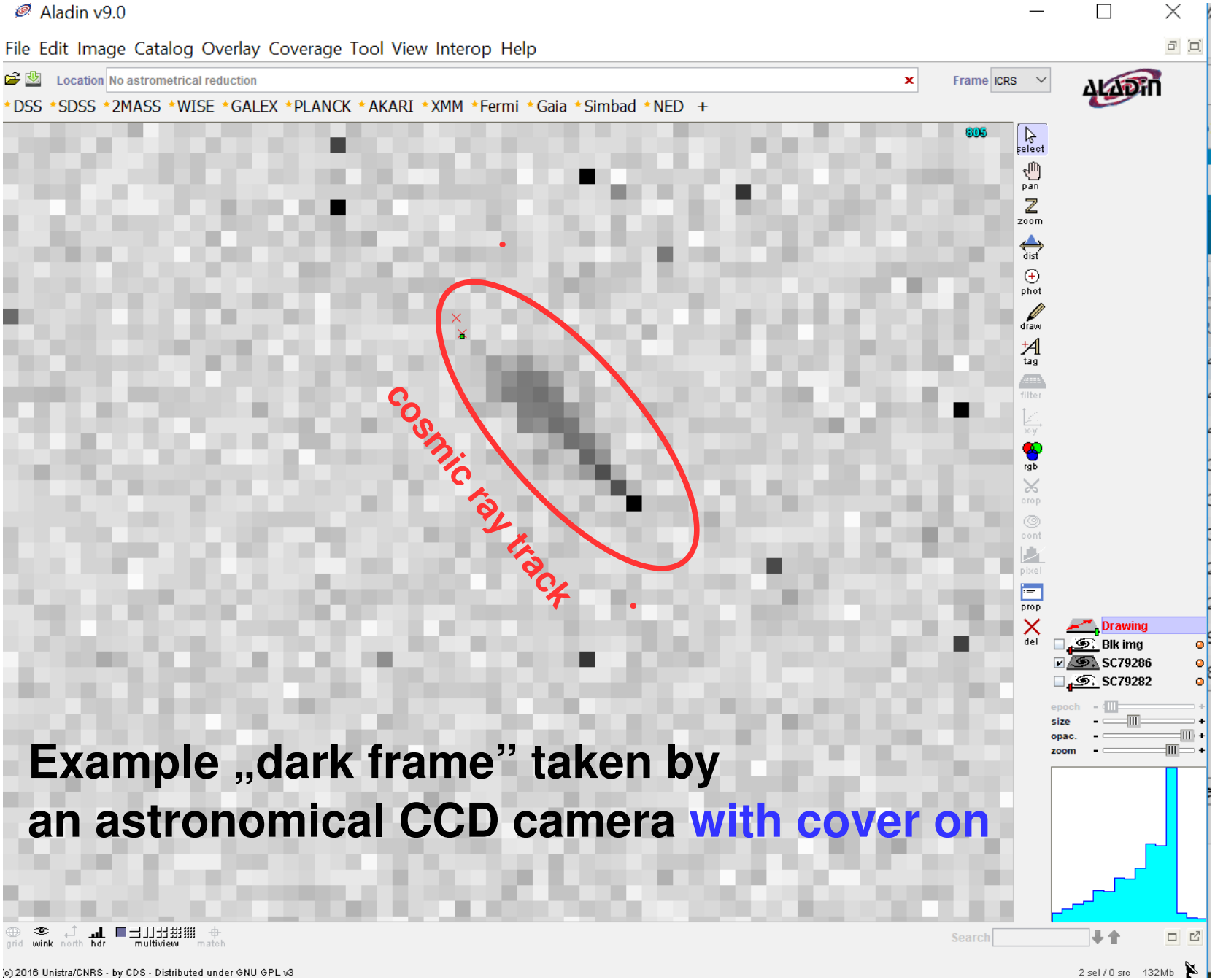
CREDO School, 3.10.2018

CREDO attracts... astronomers!



Credit & idea by Massimo Ramella (INAF)

The task

Task:

- import as many cosmic ray images as possible using both CREDO and astronomical dark frames (30%)

- apply time clustering analysis as the one presented by Kevin Almeida Cheminant during the CREDO Week 2018, with the results displayed e.g. as done at credo.science/plots, with the final one number telling the (dis)agreement with the null hypothesis, expressed in sigma (40%)

- apply machine learning algorithms to categorize the imported images, visualize categories

Rules

Start: 3.10.2018,15:30 CEST
Expert's consulting/supervising time: 3.10.2018 ,15:30-18:00 CEST
End: 5.10.2018, 16:30 CEST
Report session: 5.10.2018, 16:30-17:30 CEST
Jury debate: 5.10.2018, 17:30-17:55 CEST
Winner announcement: 5.10.2018, 17:55

Main prize: right to nominate the corresponding author on the paper „for the CREDO Collaboration" concerning the analysis undertaken during the hackathon

Workspace: https://credo2.cyfronet.pl/redmine/projects/astronomical-dark-frames-october-2018

Rules: all progress shown continuously under subprojects within the working space

Resources

Data:
- public archives of astronomical observatories, e.g.:
http://archive.eso.org/eso/eso_archive_main.html
- api.credo.science (see FAQ, send the email request with cc to Piotr.Homola@gmail.com)
- Dark Frame test set by M. Ramella
https://www.dropbox.com/s/dzsass01d7vkn4q/Dark%20frames-20181003T144152Z-001.zip?dl=0

Software:
- good for pixelized image processing, e.g.
http://iraf.noao.edu/ (recommended by M. Ramella), or
http://aladin.u-strasbg.fr/java/nph-aladin.pl?frame=downloading
- machine learning open source
- time clustering methods and algorithms
https://github.com/credo-science/CREDO-monitor-TimeClusteringAlgo
https://credo2.cyfronet.pl/redmine/projects/time/wiki

FAQ

1. Q. Team declaration until when? A. 3.10.2018 18:00 CEST
2. Q. Literature? A. M. Ramella proposes:
https://www.dropbox.com/sh/92ff27h8o8jxmnr/AACOVXhb98adcBM3ceDSIIIWa?dl=0