CENTRA - FCUL Pitch

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Ciências ULisboa

centra
centre for astrophysics and gravitation

Fork. Research

Who we are

- Group of the Faculty of Sciences of the University of Lisbon, specialised in technologies for Space Sciences
  - ★ Instrumentation
  - ★ Data processing, analysis and visualisation

- Group forks research to applications in other fields. Spin-off: Fork Research

  Fork. Research

- Expertise for partnering, either as Academia or as an SME.

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Márcia Barros
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Paulo Garcia
Associate Professor
SIM

Paulo Gordo
Research Engineer
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Victor Almendros Abad
PhD Student
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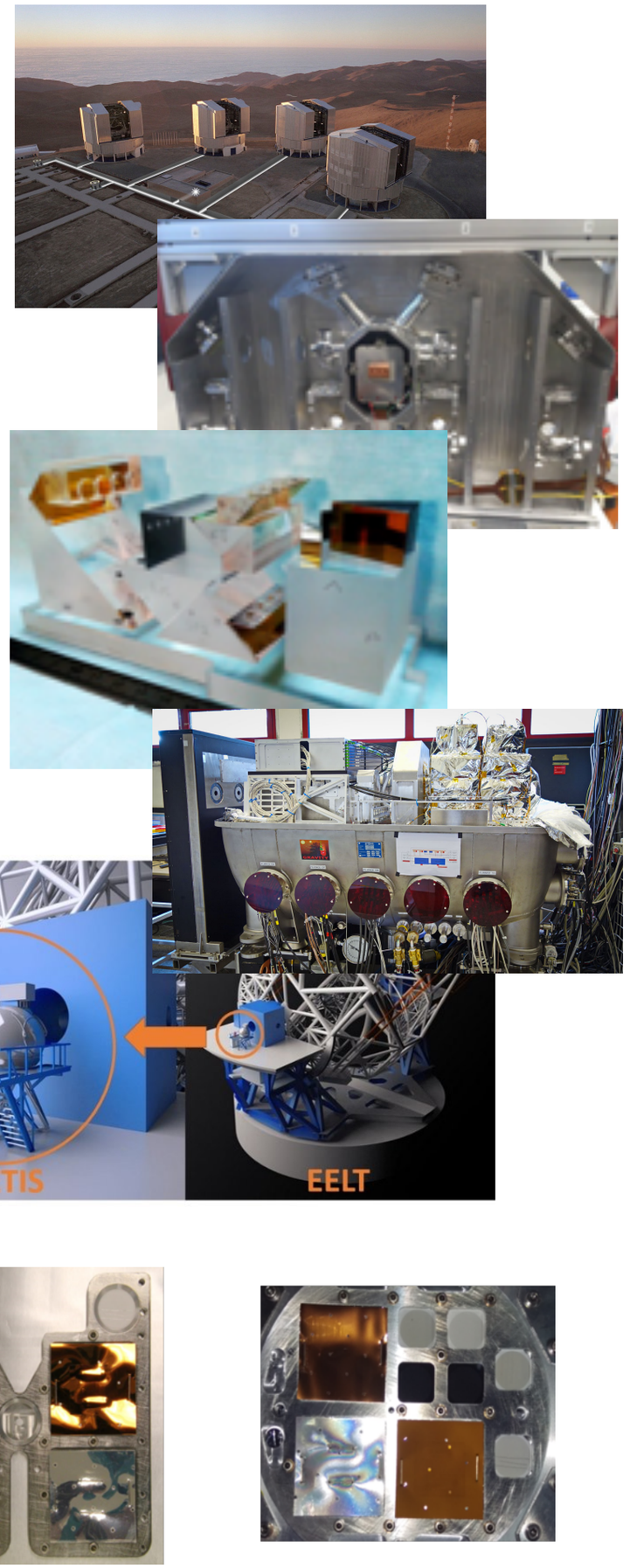
What we do

Instrumentation

- Optics
- Mechanics (cold and warm)
- Near and mid infrared
- Applications: adaptive optics, interferometry at the ESO VLT (CAMCAO, GRAVITY) and ELT (METIS), microchip laser
- Testing: Space Debris from Spacecraft Degradation Products



What we do

Data processing, analysis and visualisation

- Astrometry and construction of astrometric reference catalogues:
  - ★ attitude determination (star trackers)
  - ★ orbit determination (SST)
- Machine learning (unsupervised classification, pattern recognition)
- Recommender systems (scientific use)
- Visualisation of large datasets (visual analitics)

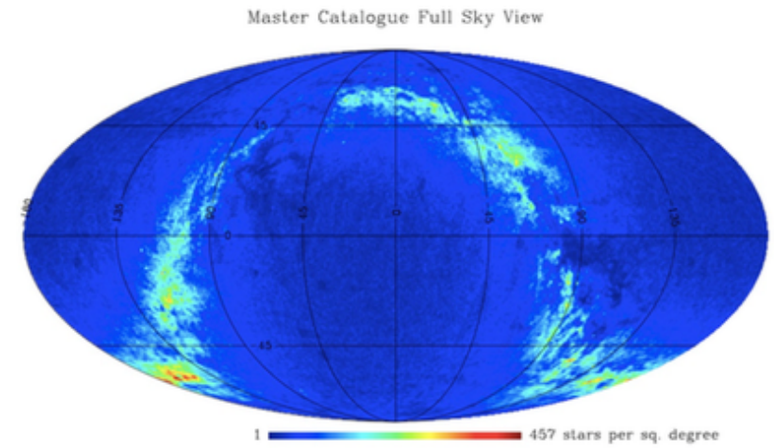
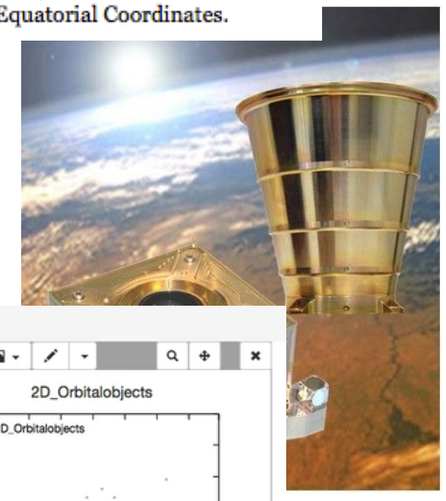
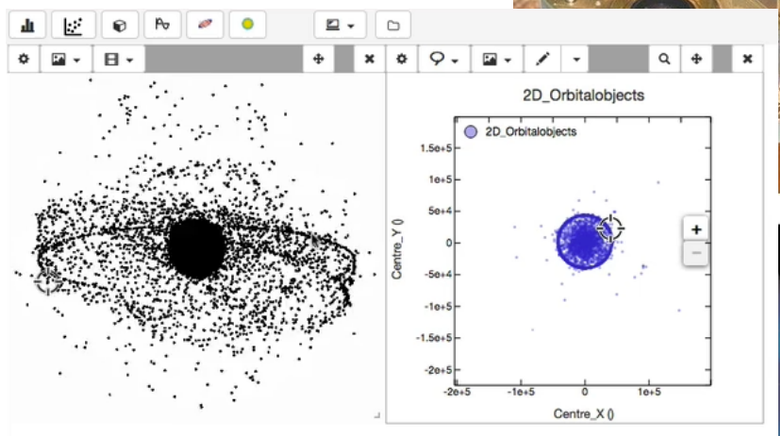
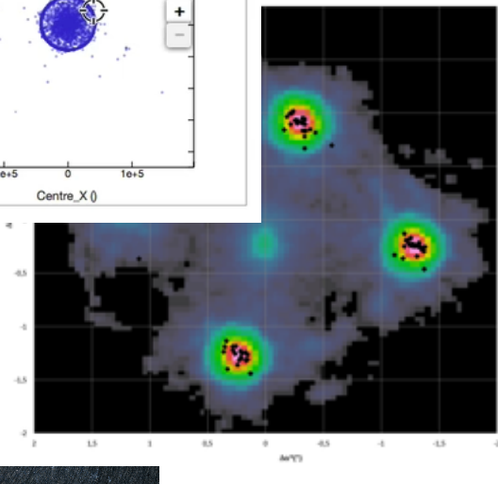
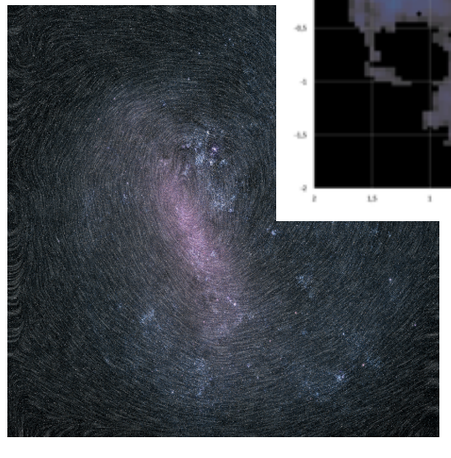


Figure 2. Stellar distribution of the MSC catalogue sources at J2000.0 represented in a Mollwide spherical projection in Equatorial Coordinates.

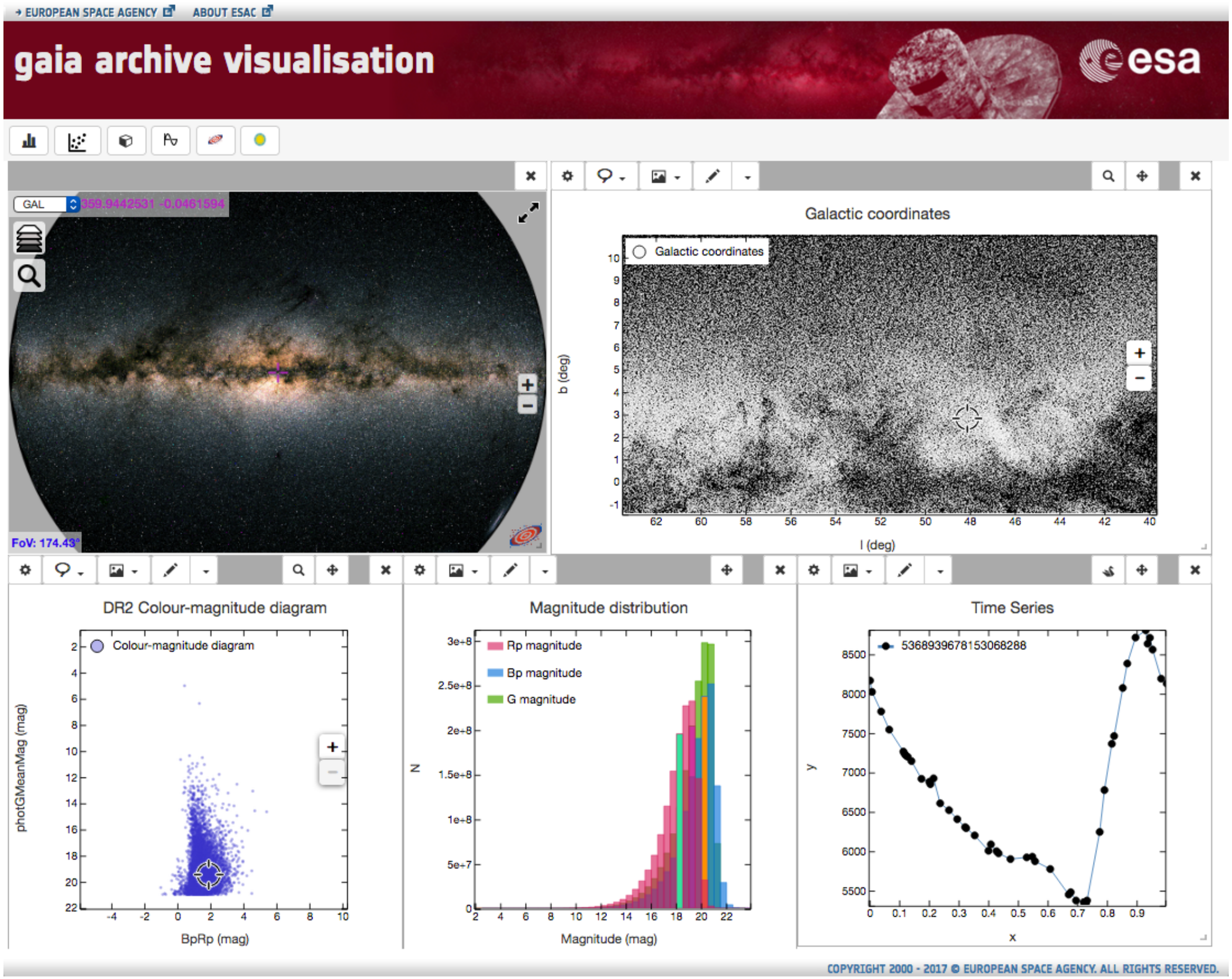








Gaia visualisation service - explore 1.7 billion sources in real time



http://gea.esac.esa.int/archive/visualization/

NATIONAL GEOGRAPHIC | PHOTO OF THE DAY | TV | PERPETUAL PLANET | LATEST STORIES |

How 1.7 Billion Stars Were Mapped With Dazzling 3-D Precision

CNN Today @cnntoday · 25 de abr

"We're viewing the galaxy in a way that we've never been able to view it before." - @jfaherty Astrophysicist at @AMNH on #GaiaMission by @esa @ESAGaia #GaiaDR2 #ESAC #Gaia #MilkyWay

CNN International

Gaia Space Telescope Maps Milky Way

See more at edition.cnn.com

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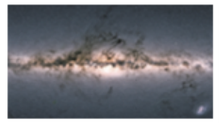
NEWS · 25 APRIL 2018

Billion-star map of Milky Way set to transform astronomy

European Gaia spacecraft's first major data dump — the most detailed 3D chart yet of our Galaxy — will keep researchers busy for decades



ASTRONOMERS ARE GOING PLACES WITH A 3-D MAP OF THE GALAXY
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LIZ PHAIR REVISITS 'GUYVILLE' AND HER EVOLUTION AS AN ARTIST
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Weekend

THE E.U. REGULATOR WHO'S STANDING UP TO TECH GIANTS
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NOTORIOUS RBG: TRAILBLAZING JUSTICE AND, NOW, MOVIE STAR
PAGE 17 | FILM

The New York Times

INTERNATIONAL EDITION | SATURDAY-SUNDAY, MAY 12-13, 2018

A graphical representation of Gaia's all-sky data on the Milky Way and neighboring galaxies, based on measurements of nearly 1.7 billion stars. The map shows the total brightness and color of stars observed by the ESA satellite in each portion of the sky between July 2014 and May 2016. Thanks to additional data in the 2nd data release, this representation has fewer artifacts than the DR1 image, and it also additional color information. Read more about the image here.
Gaia Data Processing and Analysis Consortium (DPAC) / A. Moitinho / A. F. Silva / M. Barros / C. Barata (Univ. of Lisbon, Portugal) / H. Savietto (Fork Research, Portugal)