

Euro-VO AIDA WP5

Service activities for higher education and outreach

INAF – CDS – ESO – ARI Heidelberg – INTA

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Objectives

- Provide a way for students, teachers, amateur astronomers, curious people to benefit from the VO enterprise
- Produce educational material in order to attract students and teachers to the VO
- Offer to students a glimpse of the professional world of astronomy

Key characteristics: multi-lingual, multi-platform, documented

The work plan

Phase A

Select tools and implement an initial set of requirements for educational and outreach purposes. Produce use cases.

Phase B

Test tools and use cases in schools. Collect feed-back and use it for a first revision of tools and use cases.

Phase C

Advertise our products and diffuse them widely also via a dedicated web-site. Perform a second cycle of testing and production of final tools and use cases.

Our tools

- Aladin (CDS)
- Stellarium (ESO) (Stellarium/VirGO (ESO))
- SimPlay (CDS)

Use cases

- [the sky](#) (celestial sphere, constellations, light pollution)
- [the stars](#) (stellar observables, H.-R. diagram)
- [the Pleyades](#) (stellar parallaxes, stellar evolution, H.-R. diagram)
- [the Barnard's star](#) (proper motions)
- [confirmation of a candidate Supernova](#) (astrometry, SN)
- [the Hubble diagram and galaxy morphologies](#) (galaxies)
- [distance to the Andromeda galaxy](#) (galaxies, distances)

Tests in schools (2008-2009)

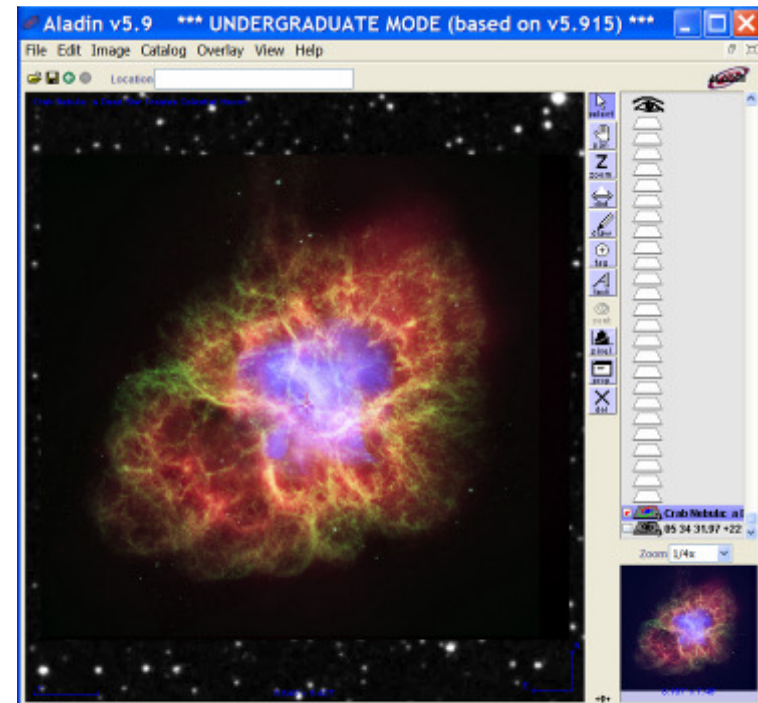
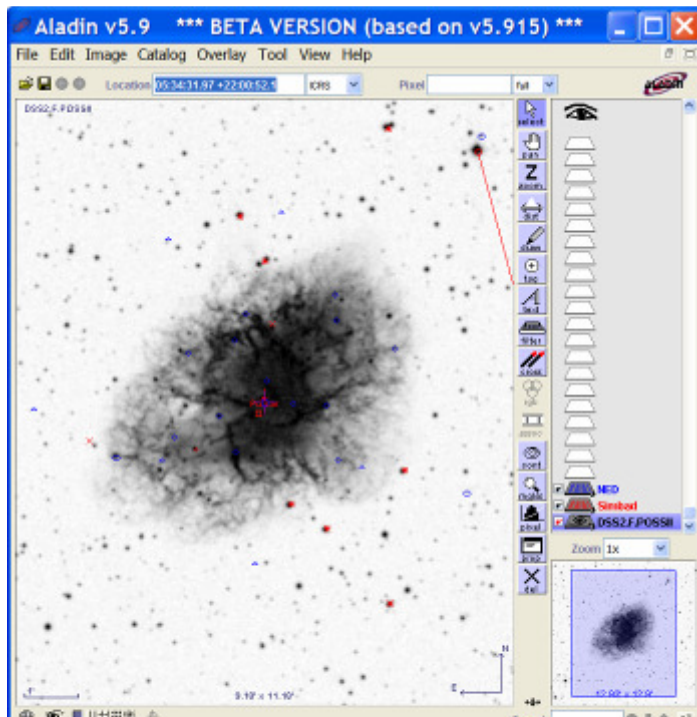
Full classroom support of our team to teachers and students in selected schools

Goal: debugging and improvement of first generation software and educational material based on the response of students.

Tests in schools (2009-2010)

Large number of highschool classes plus Trieste University. Only limited in-classroom support from our team.

Goal: Test user friendliness toward teachers of second generation software and educational material. Collect feedback for final revisions.



Server selector

Others | File | all VO | FOV | Sextractor

Image servers: Aladin images, SkyView, Sloan, MAST, CADC, SWarp, DSS..., YLA..., Others...

Aladin image server ? (beta server)

Step 1: Specify a target/radius and press SUBMIT

Target: m1

Search cone: 20 arcmin

>>> Step 2: load one or several images by li... tr...

| SURVEY | COLOR | SIZE | OBS ID | RE |
|--------------------------|--------|------------------|---------------|----------------------|
| <input type="checkbox"/> | 2MASS | J (IR J) | 8.6' x 17.1' | 971018N_JI0810185 1. |
| <input type="checkbox"/> | 2MASS | K (IR K) | 8.6' x 17.1' | 971018N_KI0810185 1. |
| <input type="checkbox"/> | 2MASS | H (IR H) | 8.6' x 17.1' | 971018N_HI0810185 1. |
| <input type="checkbox"/> | POSSI | 0-DSS2 (0.645um) | 13.0' x 13.0' | 361 1. |
| <input type="checkbox"/> | POSSII | F-DSS2 (0.658um) | 13.0' x 13.0' | 554 1. |
| <input type="checkbox"/> | POSSII | J-DSS2 (0.491um) | 13.0' x 13.0' | 554 1. |
| <input type="checkbox"/> | POSSII | N-DSS2 (0.84um) | 13.0' x 13.0' | 554 1. |
| <input type="checkbox"/> | POSSI | E-DSS1 (0.41um) | 14.2' x 14.2' | 361 1. |
| <input type="checkbox"/> | POSSI | E-DSS1 (0.41um) | 1.7" x 1.7" | 361-LOW 6. |
| <input type="checkbox"/> | POSSI | 0-DSS2 (0.645um) | 6.5" x 6.5" | 361-PLATE 24 |
| <input type="checkbox"/> | POSSII | F-DSS2 (0.658um) | 6.5" x 6.5" | 554-PLATE 24 |

Default image format: JPEG FITS

Server selector

Others | File

Image servers: Optical, Infrared, Radio, Bubble, Aladin images

Catalog servers: All VizieR, Surveys, Missions, SIMBAD, NED, SkyBot, Others..

Optical : DSS (ESO/Garching/Germany) ?

Fill in all these fields and press the SUBMIT button

Target: m1

Sky Survey: DSS1 - POSS1 Red and UKSTU Blue

Height (arcmin): 15

Width (arcmin): 15

Aladin v5.9 * BETA VERSION (based on v5.915) *****

File Edit Image Catalog Overlay Tool View Help

Location **04:16:49.13 -02:54:32.6** ICRS Pixel full

IRAS-IRIS100MU

180° x 180°

1.5° x 1.5°

Zoom 1/32x

Data are being downloaded... look at the "stack"

Search

| COO... | RA | DEC | PMRA | PMDEC | PLX VALUE | RV VALUE | GA... | GA... | G... | G... | U | FLUX ERROR | B | FLUX ERROR |
|--------------------------------|-------------|-------------|------|-------|-----------|----------|-------|-------|------|------|---|------------|-------|------------|
| <input type="checkbox"/> 6361 | 63.565675 | -12.739453 | | | | -1.4 | | | | | | | 11.6 | |
| <input type="checkbox"/> 6736 | 62.07925 | -21.05194 | | | | 4162.0 | 2.... | 1.... | 10 | | | | 12.31 | |
| <input type="checkbox"/> 11233 | 39.63625 | -6.67742 | | | | 1485.0 | 2.57 | 1.... | 92 | | | | 12.32 | |
| <input type="checkbox"/> 11234 | 41.5 | -7.57694 | | | | 1397.0 | 2.... | 1.... | 115 | | | | 11.61 | |
| <input type="checkbox"/> 11232 | 40.09833 | -8.43306 | | | | 1371.0 | 4.... | 2.... | 15 | | | | 12.11 | |
| <input type="checkbox"/> 11232 | 40.26999379 | -8.25576436 | | | | 1474.0 | 2.... | 2.... | 120 | | | | 11.63 | |

TIP: Enable/disable a plane (click on its logo)

33 sel / 1203 src 132Mb

Arcturus (α Boo) - HP 69673 A

Magnitudine: **0.15** (B-V: 0.82)

Magnitudine assoluta: -0.11

RA/DE (J2000): 14h15m39.7s/+19° 10'53.7"

RA/DE (della data): 14h16m6s/+19° 8'19"

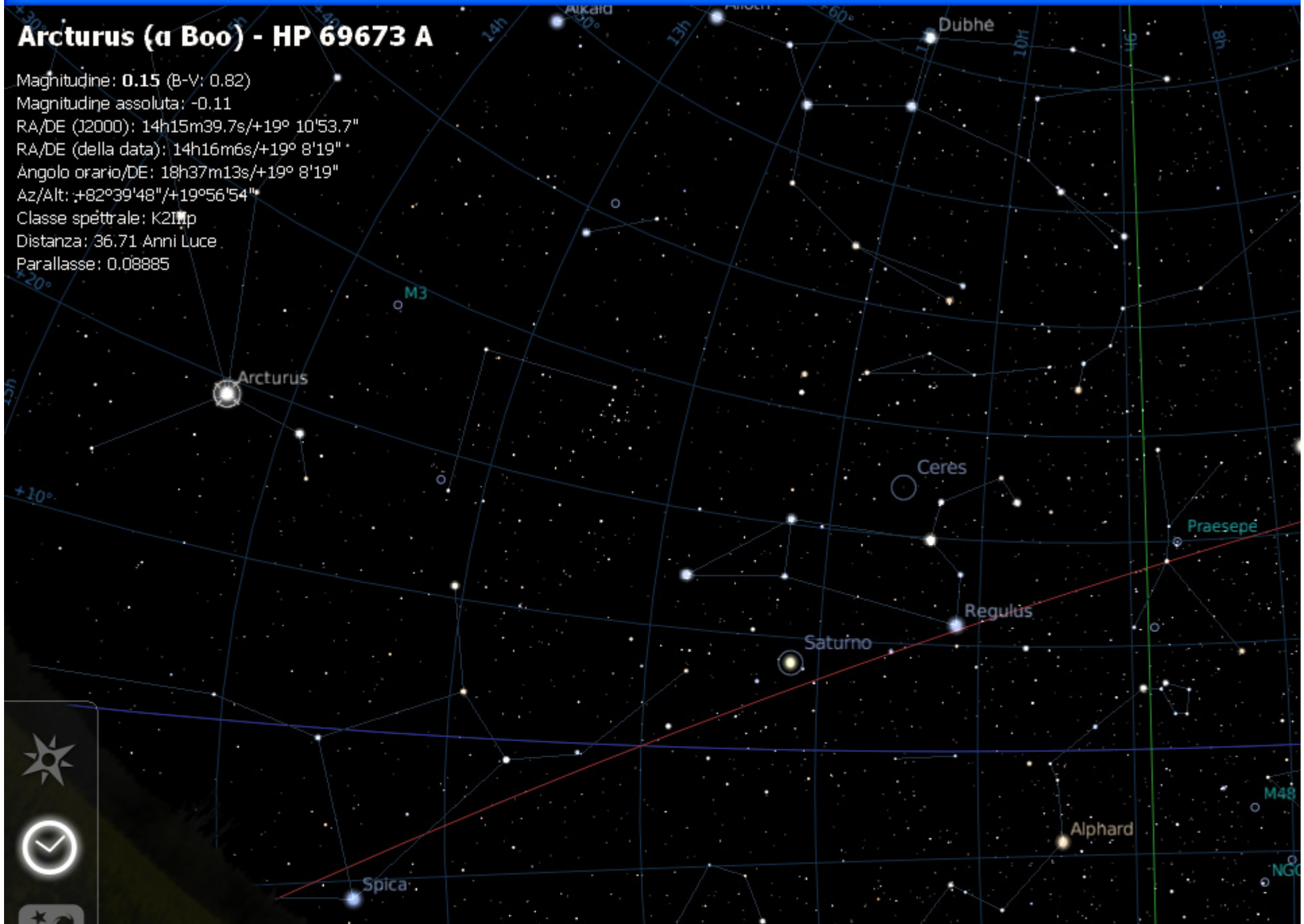
Angolo orario/DE: 18h37m13s/+19° 8'19"

Az/Alt: +82°39'48"/+19°56'54"

Classe spettrale: K2I⁺p

Distanza: 36.71 Anni Luce

Parallasse: 0.08885





SimPlay (CDS)


Search 02 22 47.21 +42 22 42.2


Target:
NGC 891

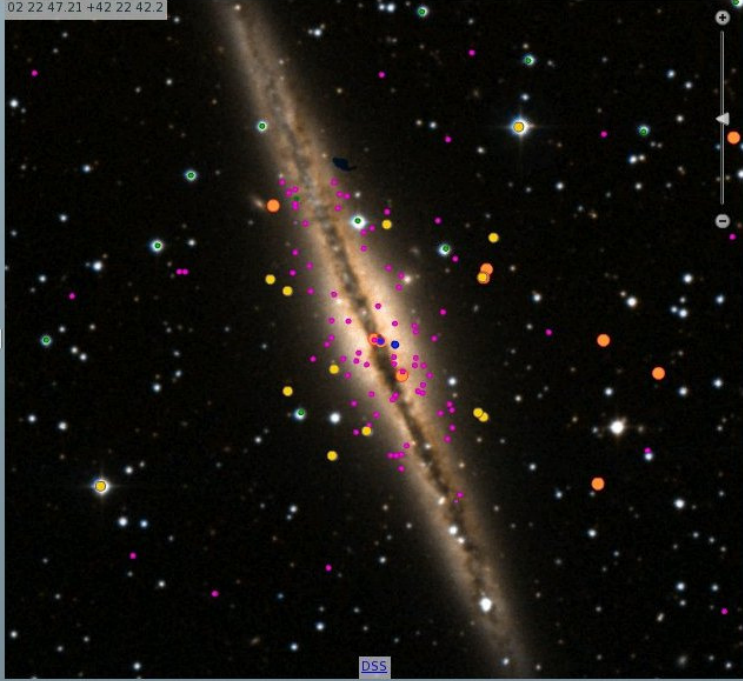
Examples:
M51 | 22 37 04.29 +34 24 58.5

 Coma Cluster

 NGC 891

 M 101

 NGC 1055



Objects options

Tooltips activated

- Star (15)
- Galaxy (10)
- Nebula, PN, SNR (33)
- HII region
- IR object (2)
- UV object (21)
- Other types (27)
- Radio, HI, Maser (2)
- X-ray object (34)

Data

| TYPE | OTYPE | MAIN_ID | RA | DEC | B | V | SP_TYPE | PMRA | PMDEC | BIBLIST | GALDIM_MAJ |
|--------|---------|---|-------------|-------------|---|---|---------|------|-------|---------|------------|
| Galaxy | RadioG | GB6 B0219+4207 | 02 22 32.40 | +42 20 44.0 | | | | | | 3 | |
| Galaxy | PartofG | [RPS97]NGC_891_1 | 02 22 24.21 | +42 21 45.3 | | | | | | 1 | |
| Galaxy | PartofG | [RPS97]NGC_891_2 | 02 22 30.78 | +42 20 14.6 | | | | | | 2 | |
| Galaxy | Galaxy | ZOAG G140_39-17_38 | 02 22 40.70 | +42 22 40.0 | | | | | | 1 | |
| Galaxy | EmG | CXOSEXSI_1022205.0+422338 | 02 22 05.08 | +42 23 37.7 | | | | | | 3 | |
| Galaxy | AGN | CXOSEXSI_1022210.8+422016 | 02 22 10.93 | +42 20 16.1 | | | | | | 3 | |

Latest accomplishments:

The screenshot shows a web-based application window titled "Server selector". It features a navigation pane on the left with "Image servers" (Optical, Infrared, Radio, Hubble, Aladin images) and "Catalog servers" (Simbad, Surveys, Missions). The main area is titled "Discover the universe" and contains a tree view of object categories. The "Galaxies" category is expanded, showing sub-categories like "Spiral" and "Irregular galaxies", with several items checked. A "SUBMIT" button is visible at the bottom of the main area. The background of the application is a large image of a spiral galaxy.

Discover the universe ?
Select categories of objects and press SUBMIT.

- Nebulae
 - HII regions [example](#)
 - Planetary nebulae ! [example](#) [more info](#)
 - Reflection nebulae
 - Emission objects
 - Dark nebulae
 - Clouds
 - Molecular clouds
 - Supernova remnants [more info](#)
- Galaxies
 - Lenticular galaxies
 - Spiral
 - Spiral Sa galaxies
 - Spiral Sb galaxies
 - Spiral Sc galaxies
 - Barred Spiral Sba galaxies
 - Barred Spiral Sbb galaxies
 - Barred Spiral Sbc galaxies
 - Irregular galaxies [example](#)
 - Dwarf galaxies
- AGN
- Compact groups [example](#)
- Stars

Dedicated outreach objects only ! Use Simbad for exhaustive results

Reset Clear Help **SUBMIT** Close

Atlas - v6.0
Free software sky atlas
Images of any part of the sky,
in astronomical catalogs,
related data and information.

in UNDERGRADUATE mode

VO
Virtual Observatory
for Data Access

by Pierre Fernique,
François Bonnarel.

ension has been developed
IDA European project

grid allsky multiview

Massimo Ramella, WPTL, INAF

Latest accomplishments:

The new AIDA/WP5 site

Latest accomplishments

Improved use cases

