

Euro-VO AIDA WP5

Service activities for higher education and outreach

INAF – CDS – ESO – ARI Heidelberg
Presented by R. Smareglia

IMPORTANT NEWS AT THE END!!!

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The work plan

Phase A **DONE**

1. Requirements and choice of outreach interfaces
2. Production and/or modification of existing software
3. Translation of outreach interfaces
4. Basic documentation with some examples

Phase B **DONE**

1. Identify testers and design appealing projects for them
2. Test Interface
3. Gather, translate and organize feed-back for interface revisions

Phase C **IN PROGRESS**

1. Produce documents (userguide, primer, examples, basic script library ...)
2. Produce basic outreach content for interface and dedicated web-site
3. Distribute and promote the use of our outreach products

Implementation of Basic Requirements

- compatibility* with Virtual Observatory standards
- presence of an adequate *sky-navigation tool*
- reduce* number of significant image and catalog sources
- careful *choice of buttons*
- access to *PR images* of special objects
- easy printing* and printer-friendly pages
- (partial) *off-line functionality*
- use of *local images* and catalogs
- capability to *operate with less than optimal resources*
- high level documentation: *reference guide* and user-friendly tutorial
- simplified documentation: *primers and use cases*
- selection of astronomical objects by class* (work in progress)
- simplified search options* (partially done)
- high level commands in script language* (abandoned after negative feed-back)

Our tools

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

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)

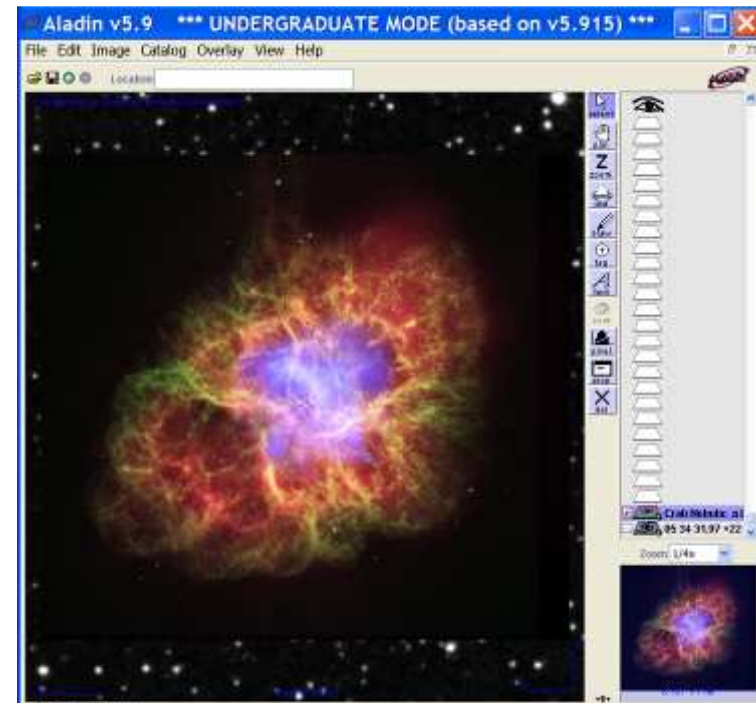
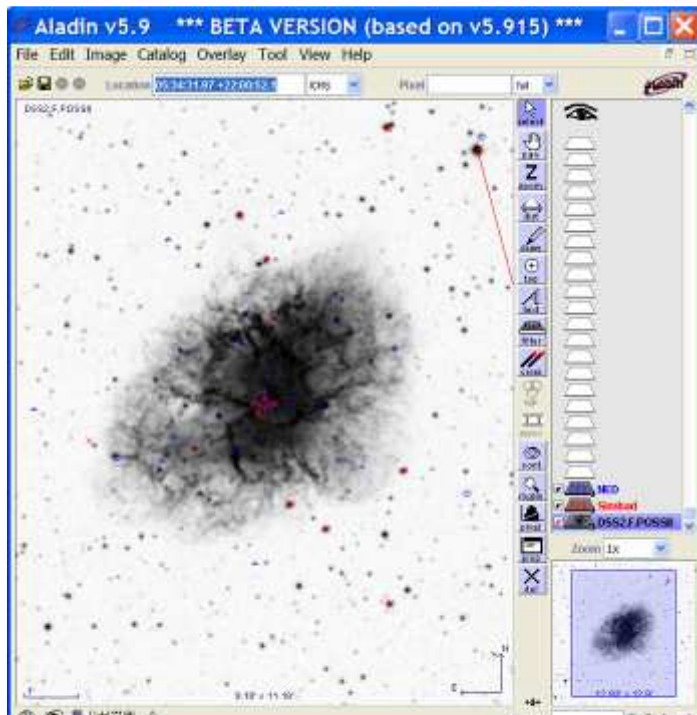
Tests in schools

4 months in 7 schools in north-eastern Italy

~ 250 students (13 and 17 years old)

~ 110 hours of classroom support (astronomy, VO, technical)

~ 150 feedback forms



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	RA
<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

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-IRIS 100MU

180° x 180°

1.5° x 1.5°

Zoom: 1/32x

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

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

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

33 obj / 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"

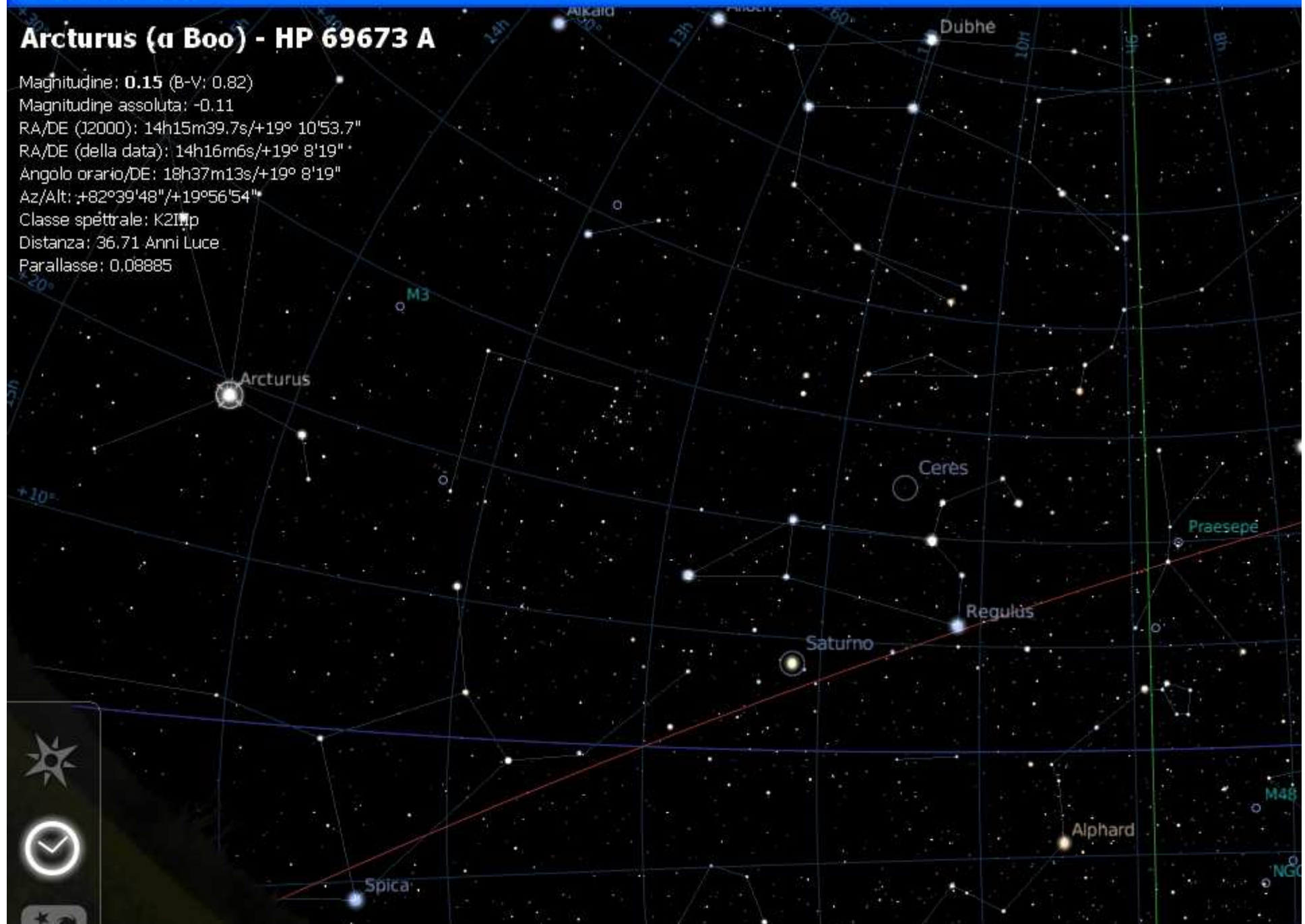
Angolo orario/DE: 18h37m13s/+19° 8'19"

Az/Alt: +82°39'48"/+19°56'54"

Classe spettrale: K2I⁺p

Distanza: 36.71 Anni Luce

Parallasse: 0.08885



SimPlay (CDS)

The screenshot displays the SimPlay (CDS) interface. On the left, a search panel shows the target 'NGC 891' and a list of examples including Coma Cluster, NGC 891, M 101, and NGC 1055. The central panel shows a multi-wavelength image of NGC 891 with various objects highlighted in different colors. On the right, an 'Objects options' panel lists various object types with checkboxes and counts: Star (15), Galaxy (10), Nebula, PN, SNR (33), HII region, IR object (2), UV object (21), Other types (27), Radio, HI, Maser (2), and X-ray object (34). Below the image is a 'Data' table with the following columns: TYPE, OTYPE, MAIN_ID, RA, DEC, B, V, SP_TYPE, PMRA, PMDEC, BIBLIST, and GALDIM_MAJ.

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	

Work in progress

- **selection of astronomical objects by class**
 - Galaxies category tree **DONE**
 - Stars category tree **DONE**
 - Galactic Nebulae category tree **IN PREPARATION**

Software tools will include trees before beginning of next school-year.

Work in progress (status ok)

- develop contacts with HOU and ESO
- dedicated Web Site for distribution of outreach material (*including quick presentation of use cases – in Italian, soon available in English*)
- more use cases (*e.g. Explore Messier Catalog, The Color of Stars, Distance of the Crab Nebula*)

Work in progress (pending)

- extend tests to schools in other countries
- continue translation efforts, in particular of **use cases**

WP5 at conferences

- Preliminary results and a description of WP5 activities have been (will be) presented at the following conferences:
 - Südthüringer Tag der Astronomie, Suhl, Germany, December 6, 2008
 - INAF National Meeting on Outreach and Education, Milano, Italia, January 28 – 29, 2009
 - General Assembly of the European Geoscience Union, Vienna, Austria, April 19 – 24, 2009
 - General Assembly of the Italian Astronomical Society, Pisa, Italia, May 4 – 8, 2009
 - Tage der Schulastronomie, University of Jena, Jena, Germany, June 25 – 27, 2009
 - VIII Convegno Nazionale sulla Comunicazione della Scienza, Napoli, Italia, 3-5 Dicembre 2009 **submitted**
 - Astronomy and its Instruments Before and After Galileo, Venezia, Italia, 28 sep - 3 Oct 2009 **submitted**

Important NEWS

- **AIDA-WP5 will be officially part of the course in Astronomy of the Trieste University (2009-2010)**
(test/feedback for higher education were missing!)
- **AIDA-WP5 obtained the STELLA certificate** *(very important step for distribution through EU programs)*
- **AIDA-WP5 invited to schools in Bulgaria** *(via Astronomy Department of the Sofia University)*

