

# GENIUS WP300

Nigel Hambly

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University of Edinburgh (UEDIN)

# The team

- Nigel Hambly (UEDIN): technical coordinator
  - 4 SM, front-loaded from Q1 2014
- Stelios Voutsinas & Mike Read (UEDIN): interface designers/engineers/VO services
  - 37 SM, ramp-up from Q2 2014
- Enrique Solano (CSIC): VO standards
  - 6 SM, from QX 201X
- Jerome Berthier (CNRS): VO web services
  - 2 SM, from QX 201X
- Riccardo Smareglia (INAF-OATs): VO publishing
  - 18 SM, from QX 201X (asap)



# Organisational aspects

- UEDIN:
  - Administration through European Office within “ERI”
  - We have complementary funding through UK STFC for CU9 work at the ~0.5 FTE level from Q4 2013 for NCH and Dave Morris
  - NCH is the DPAC CU9 WP930 manager:
    - DPAC CU9 WP930 > GENIUS WP300
    - DPAC CU9 WP933 > GENIUS WP310
    - DPAC CU9 WP934 > GENIUS WP340
    - DPAC CU9 WP935 > GENIUS WPs 320, 330 & 350
- Other participants:
  - Also have resources from national funding agencies



# How to keep all this under control...

Gaia CU9 WP930 planning/reporting: Nov/Dec 2013

Your browser's current zoom setting is not fully supported. Please reset to the default zoom by pressing #\*0. [Dismiss](#)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AG	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
									Hambly		Salgado		Gonzalez		Gutierrez		Enke		Partl		Giuffrida		Marrese		Baruffolo		Molinaro		Smareglia		Shih		Voutsinas		Morris		Moscato		Person 16																	
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3	Total available/Slack/ load		13	-1	108%	43	36	16%	43	36	16%	86	79	8%	22	17	23%	65	23	65%	26	0	100%	18	0	100%	17	16	6%	13	12	8%	13	12	8%	9	8	11%	43	32	26%	43	26	40%	18	0	100%	0	0	#DIV						
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21	931 Management: administration		7		0		7		0,00%		0,00%		7		7																																									
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23	932 GACS: arrange workshop		0		0		0		NA		NEW																																													
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25	933 Interface Control: Validation Apps		0		0		0		NA		NEW																																													
26	933 Interface Control: Crossmatch Apps		10		0		10		0,00%		0,00%																																													
27	933 Interface Control: Mirroring Apps		0		0		0		NA		NEW																																													
28	933 Interface Control: Data Mining Apps		0		0		0		NA		NEW																																													
29	933 Interface Control: end-user client Apps		11		0		11		0,00%		0,00%		1		1																																									
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31	933 Interface Control: Visualisation Apps		0		0		0		NA		NEW																																													
32	933 Interface Control: Linked Docs Apps		0		0		0		NA		NEW																																													
33	934 Database: data model		0		0		0		NA		NEW																																													
34	934 Database: data model: crossmatch		1		0		1		0,00%		0,00%		1		1																																									
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36	934 Database: performance		0		0		0		NA		NEW																																													
37	934 Database: PgSphere developments		0		0		0		NA		NEW																																													
38	934 Database: SQL/NoSQL development		47		26		21		0,00%		0,00%		2		25		25		19		10		9		14		8		6																											
39	935 Interface Design: Integrated Docs (with WP920)		0		0		0		NA		NEW																																													
40	935 Interface Design: Distributed Queries		0		0		0		NA		NEW																																													
41	936 Correlation Functions: ...		0		0		0		NA		NEW																																													
42	936 Correlation Functions: ...		0		0		0		NA		NEW																																													

[https://docs.google.com/spreadsheet/cc?key=0Au7Whcj5gyhOdFRldzRQa2xVYmIBYWNkd1BYS2luSmc&usp=drive\\_web#gid=24](https://docs.google.com/spreadsheet/cc?key=0Au7Whcj5gyhOdFRldzRQa2xVYmIBYWNkd1BYS2luSmc&usp=drive_web#gid=24)

# Aspects of archive system design

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# Context

- ESAC Science Archive Team (SAT)
  - Will design and implement Gaia Archive Core System (GACS)
  - Are open to collaboration and contribution concerning archive components
  - Require clean interfaces between DPAC CU9 (incl. GENIUS) contributed components and GACS

## Science Archives at ESAC



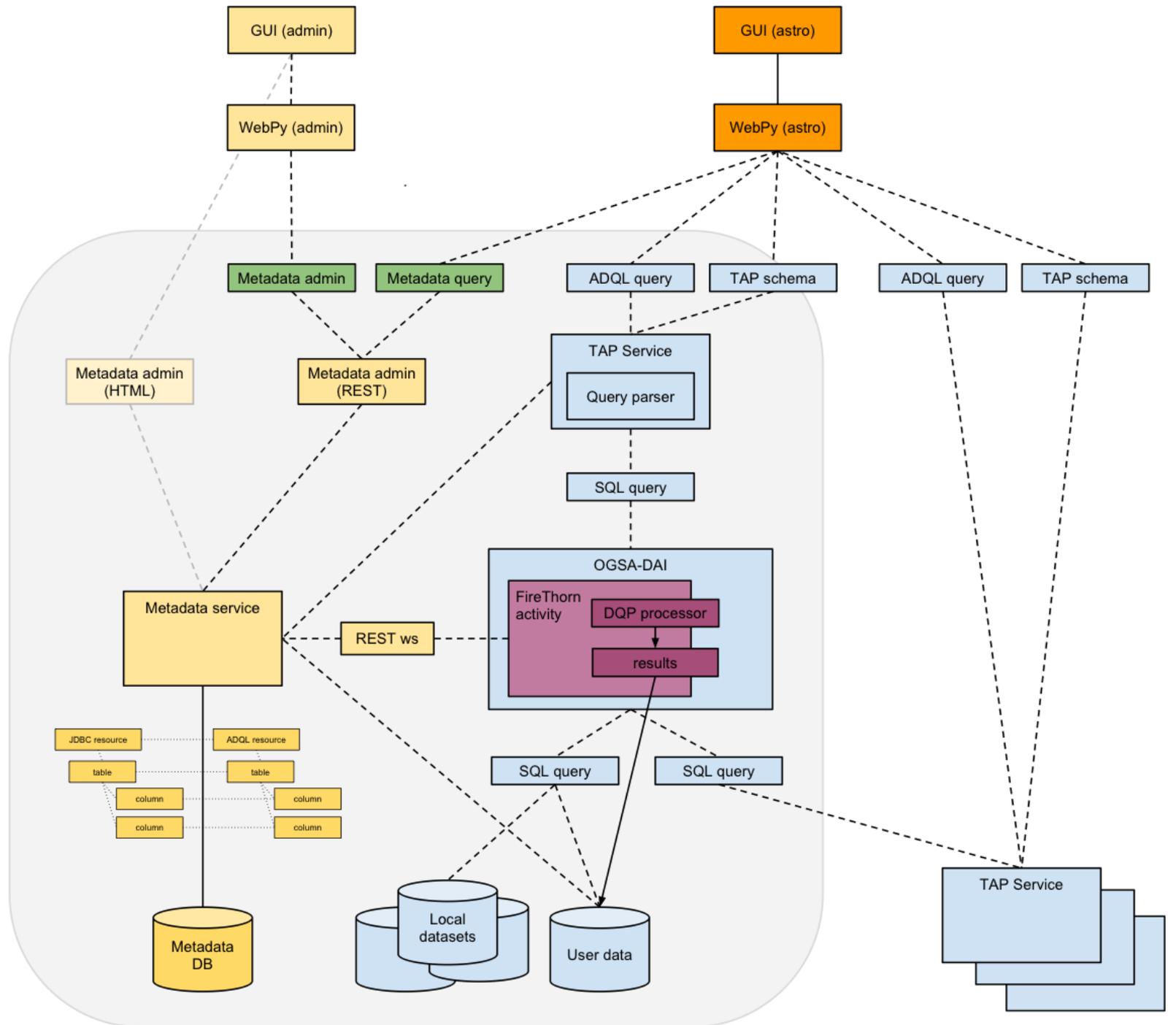
# The Virtual Observatory

My (parochial) view:

- VO is coming “of age”
  - Is now delivering on its promises
- and yet suffers from a certain amount of
  - Skepticism
  - Underfunding
- but all projects expect it to be available
  - “Data will be published via the VO.”
- It’s survival is now in the hands of data providers
  - Maintenance, deployment and development

# Examples of work in progress:

- VO tools
- “Web2.0” client-side interfaces that exploit VO infrastructural developments
- Infrastructural elements: TAPFactory
- Generalised catalogue cross-querying using TAP, Distributed Query Processing and OGSA-DAI





OmegaCAM Science Archive

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[Documentation](#)

Current folder: /

[Browse...](#) [Upload](#) [New folder](#)

- coords3
- gradients.jpg
- crossIDcoords444.crossIDcoor
- test22.test

coords3      gradients.jpg      crossIDcoords444.crossIDco

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## Freeform SQL Query

This form allows you to submit an SQL query to the OSA database ( [notes and tips](#) ).

Table Metadata

select \* from Filter

Send

*Please select from the list of TAP endpoints and execute your ADQL query*

Settings

Choose Database(s)

Cached  Registry [\[?\]](#)

Selected Databases

Launch in Viewer

Query Metadata URL [\[+\]](#)

Connect to SAMP

[VOTable](#) [FITS](#) [HTML](#) [CSV](#) [Copy](#)

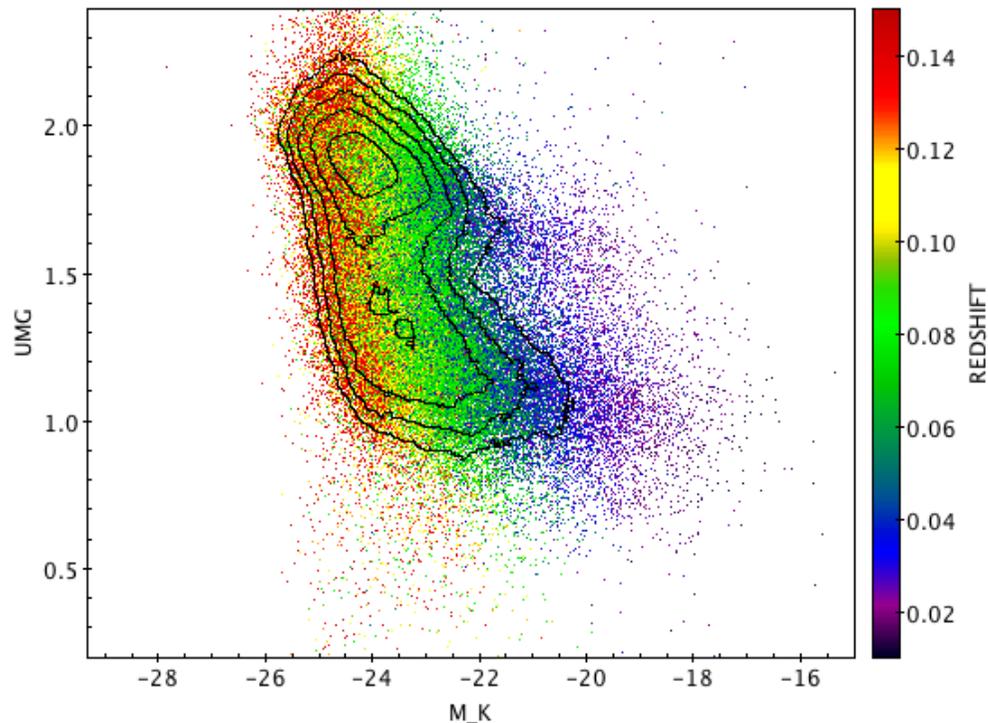
Show / hide columns

Show  entries

Search:

filterID	shortName	name	description	cutOn	cutOff	aebv	vegaToAB	oneSecMLVq

# WP934: e.g. crossmatch scale-up



- IR-optical galaxy catalogue on-the-fly
  - $10^8$  row, local solution needs scale-out over WAN for arbitrary catalogues for Gaia usage scenarios

```
SELECT ...
    (modelMag_u-extinction_u) -
    (modelMag_g-extinction_g) AS umg,
/* Einstein-de Sitter cosmology distance modulus
(note no K-correction, no evolution correction
and no internal extinction): */
    (kPetroMag-ak) - 25 - 5*(
    LOG10(2*2.998e5*(1+z.z-SQRT(1+z.z))/75)
    ) AS M_K
FROM lasSource AS s,
     lasSourceXDR7PhotoObj AS x,
     BestDR7..PhotoObj AS p,
     BestDR7..SpecObj AS z
WHERE
/* Join criteria: */
    z.specObjID=p.specObjID AND
    s.sourceID = x.masterObjID AND
    p.objID = x.slaveObjID AND
    x.distanceMins IN (
    SELECT MIN(distanceMins)
    FROM lasSourceXDR7PhotoObj
    WHERE masterObjID = x.masterObjID AND
          distanceMins < 2.0/60.0
    ) AND ...
```

# DQP under the covers

