

REG Gaia:

ESO Call for spectroscopic surveys

Madrid , 13 setiembre 2010

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## Why the Gaia ChemoDynamical Survey?

The low resolution spectrograph on-board (RVS) will not reach the same limiting magnitude as the rest of the Gaia instruments

### RVS:

- resolution:  $R=11\,500$  for stars brighter than about 14 and  $R=6\,500$  for fainter stars
- small wavelength coverage
- not well suited for detailed studies of elemental abundances.

## **GCDS Consortium – foundation April 2010 (Paris):**

### **program:**

- large or very large 8-m survey programmes, over a 6+ year span
- a complementary large survey on 4-m class facilities
- development of suitable 4-m class instruments
- development of supporting modelling techniques (interpretation)

### **timeline:**

- of order 10 years.

### **organization:**

- <http://camd08.ast.cam.ac.uk/Greatwiki/GreatCds/GcDsOrganisation>
- GCDS Consortium Agreement (meeting in April 2010, Paris)

**Individuals can sign up** to the GCDS structure groups they are interested in:

- <http://camd08.ast.cam.ac.uk/Greatwiki/GreatCds/GcDsStructure>

### **Collaborating groups:**

..... 14 institutions + Univ. Alicante (I. Negeurela on behalf of the REG) + IAC

## GCDS Structure (April 2010, Paris):

4 **Science Experiments** (SEs) + the Survey Planning currently active.

- SE1: Mass Distribution of the Galaxy  
(Spain: C. Jordi, F. Figueras)
- SE2: How did galaxies form as traced by chemistry  
(Spain: P. Garzón, F. Figueras, D. Montes, J. González)
- SE3: How clusters and stars formed and evolved  
(Spain: I. Negueruela, D. Montes, C. Jordi)
- SE4: Additional Science (variable stars, hot stars, ...)

(en rojo los participantes españoles en los distintos grupos)

## **GCDS Structure: (April 2010, Paris):**

### **The Technical Working Groups:**

The TGWs are responsible for the technical development of the GCDS programme, and will include representatives from the SE

**TWG 1: 8-meter case & usage (Spain: P. Garzón)**

**TWG 2: 4-meter case & usage (Spain: P. Garzón)**

**TWG 3: Survey Planning and Optimization (Spain: P. Garzón)**

First group designed to work on the response to the ESO Lol

**TWG 4: Data processing & management**

**TWG 5: Supporting theory and techniques (Spain: F. Figueras)**

## Call for Public Spectroscopic Surveys with ESO Telescopes

- These surveys are envisaged to be massive observing programs with **up to 300 observing nights to** be allocated over several semesters.
- Deadline : 15 October 12:00 CEST.
- Invitation for proposals : end January 2011
- Proposal deadline : 31 March 2011
- Start survey in October 2011.

**Organization in GREAT/GCDS:**

**<http://camd08.ast.cam.ac.uk/Greatwiki/GcdsFwg1EsoPs10>**

# Resumen reuniones: Junio/Julio/Agosto

SE2 (+SE1)

## SE2: First VLT Survey Planning telecon: June 18, 2010

<http://camd08.ast.cam.ac.uk/Greatwiki/GreatCds/GcdsFwg1/GcdsFwg1Jun10>

<http://camd08.ast.cam.ac.uk/Greatwiki/GcdsFwg1EsoPs10>

2 groups created, they are currently working on the preparation of a GCDS response to the ESO Lol call :

- **Public Survey Planning Group** : C. Babusiaux, B. Famaey, S. Feltzing, E. Grebel, D. Kawata, A. Korn, S. Randich, N. Walton (Spain?)

- **Management plan Group** : P. Bonifacio, G. Gilmore, S. Randich, N. Walton

[relevant documentations](#) : first letter of intent

[actions](#) : (very specific: calibration, lamps, HR?...)

[Meetings](#) (several ...)

## SE2: VLT Survey Planning group

Meeting of the ESO public survey "survey planning group"

- first group meeting at lunch time at the ESTEC GREAT Plenary meeting
- [SPGM1: 1st teleconf](#) : Thu 29 July 2010 @ 10.00 CEST [Doodle](#)
- [SPGM2: 2nd teleconf](#) : Thu 12 August 2010 @ 10.00 CEST
- [SPGM3: 3rd teleconf](#) : Friday 20 August 2010 @ 10.00 CEST
- [SPGM4: 4th teleconf](#) : Friday 3 September 2010 @ 10.00 CEST
- [SPGM5: 5th teleconf](#) : Wednesday 8 September 2010 @ 10.00 CEST
- [SPGM6: 6th teleconf](#) : Tuesday 14 September 2010 @ 10.00 CEST
- [VLT Survey Planning: SE synthesis meeting](#) : 17 Sep 2010, Paris

## **SE2: VLT Survey Planning group**

### **Minutes of the 29 July 2010 meeting:**

- Updates on SE3: they will have their own LoI
  - they will observe more than 100 clusters
  - with significant coverage of each Open Clusters.
- SE2: main science focus - formation of the disk - inside/out? - radial migration - influence of the spiral arms. What is the distribution function of elements as a function of location, age.

## SE2: VLT Survey Planning group

### Minutes of the Friday 20<sup>th</sup> August teleconf:

#### Paris 17 Sep 2010 meeting preparation:

- attendance - this group plus one or two reps from each of SE1 (from James Binney, Matthias Steinmetz, Hans-Walter Rix) and SE3.
- Aim of the meeting:
  - each SE will have developed their 'proto' [Lols](#) in advance of this meeting
  - each SE will have a view of their **minimum** observational needs to make key science progress in their area
  - outcome of the meeting - a reasoned single Lol setting out the key SE1/2 and perhaps 3 aims.
  - general agreement (from SE1/SE2) that it would be desirable to have a single Lol
  - need to ensure that the Gaia connection - especially timeline as to what comes when - is clear
- SE3 update from SR the SE3 Lol draft is being worked on:
  - looking at target selection - a preliminary list of 80 clusters from very young to the oldest ones
  - setups - same UVES (3) setup as SE2 - then for Giraffe HR21 and HR15n (Ha) (needed for the Lithium in young stars) plus a blue setup (tbd)

## **SE2: VLT Survey Planning group**

### **Minutes 5<sup>th</sup> september:**

- PB mentioned the importance of including the Spanish community.
- NAW will generate the email list and draft email to be sent to the 'SE2' community next week.

## First draft of the Lol SE2(+SE1) (see document):

### Scientific Rationale:

- The bulge-disk interface and the (secular) origin of the thick disk
- The halo-disk interface and the (merger) origin of the halo and thick disk
- Direct constraints on the disk and halo potential

### Observing strategy, including instruments to be used:

We propose to use GIRAFFE/FLAMES to survey the elemental abundances and radial velocities in the major Galactic components (halo, thick disk, thin disk, and bulge) and obtain data for red clump stars, F and G type dwarf stars in 1135 fields along strategically chosen sight lines.

### Estimated observing time:

Period	Instrument	Time (h)
P88	GIRAFFE/UVES	750
P89	GIRAFFE/UVES	750
P90	GIRAFFE/UVES	750
P91	GIRAFFE/UVES	750

This letter has been made to contain the main science drivers and objectives for the **'SE2' case, while preparing a SE1/SE2 merged Lol**. We are looking forward for feedback from the GCDS community, either through wiki or direct contact with any member of the survey planning group.

# Resumen reuniones: Junio/Julio/Agosto

**SE3** (Cúmulos y estrellas masivas)

**SE3 telecon held on 13th July:**

<http://camd08.ast.cam.ac.uk/Greatwiki/WGB1ESOSpectroSurvey>

**Three technical working:**

TWG1 SURVEY PLANNING (coordinator: Giusi Micela)

TWG2 AVAILABLE TOOLS (coordinator: Rob Jefferies)

TWG3 SAMPLE DEFINITION (coordinator: Ulrike Heiter)

**Main science themes already defined:**

STAR FORMATION: (Coordinators: **D. Barrado y Navascues**, G. Micela, S. Randich)

EVOLUTION OF ANGULAR MOMENTUM: (Coordinator: A. Lanzafame)

STELLAR EVOLUTION: (Coordinators: F. van Leeuwen, A. Vallenari)

INTERNAL STRUCTURE AND DYNAMICS: (Coordinators: F. van Leeuwen, A. Spagna)

FORMATION AND EVOLUTION OF THE THIN DISK: (Coordinators: A. Bragaglia, E. Pancino)

## Minutes SE3 telecon held on 13th July:

<http://camd08.ast.cam.ac.uk/Greatwiki/WGB1ESOSpectroSurvey>

“Eventually, at our last telecon held on July 13 **we decided that we will send a separate LoI**, but we will try to coordinate with the other groups and show complementarity.

**We can still consider merging with SE2 (SE1)** for the final proposal, in case ESO will suggest it.

**TWG1. SURVEY PLANNING (I. Negueruela)**

**TWG2. AVAILABLE TOOLS**

**TWG3. SAMPLE DEFINITION**

**LIST OF PARTICIPANTS IN THE FLAMES SPECTROSCOPIC SURVEY ON OPEN CLUSTERS AND YOUNG ASSOCIATIONS:** **A. Delgado, N. Huelamo, A. Mora, I. Negueruela, E. Alfaro**

Próximamente  
teleconferencias y  
reuniones

## ESO WF Spectrograph - Call for Proposals - Sep 2010

(<http://camd08.ast.cam.ac.uk/Greatwiki/GreatCds/GcdfsFwg3/GcdfsFwg3Tele20100913>)

### Telecon 20100913 @ 09.30 BST

**Attendees:** Roelof de Jong (AIP, Potsdam), Piercarlo Bonifacio (GEPI/Paris), Sofia Feltzing (Lund, Sweden), Gavin Dlaton (Oxford), Mike Irwin (IoA, Cambridge), Ian Parry (IoA, Cambridge), Nicholas Walton (IoA, Cambridge), Andreas Quirrenbach (LSW), Ralf Bender (LMU), Joe Mohr (LMU), Scott Trager (Groningen), Sofia Randich (INAF-Arcetri), Matthias Steinmetz (AIP, Potsdam). (Spain?)

### Agenda and Discussion Points

1. desirability of an Lol response with groups involved with the GREAT chemodynamical survey (GCDS)
2. science case - taken from GCDS ideas
  - suggestions for need for bring on board a 'cosmology' group - AIP have their x-ray folk in mind for instance.
3. specific of the ESO !CfP
  - questions to ESO by 15 Sept 2010 (will ESO fund a development on a non-European telescope - e.g. La Palma - probably not but good to check)
  - responsibilities - putting the Lol together.
  - those wishing to lead (presumably the ones with best access to funds)

VLT Survey Planning: SE synthesis meeting : 17 Sep 2010, Paris

¿Participación española?

# “Gaia Chemo-Dynamical Survey” Survey science, workshop Nice 2-4 Nov. 2010

<http://cassiopee.oca.eu/spip.php?article324/>

## Important Dates

September 17, 2010: Deadline for Abstract submission

September 17, 2010: Deadline for financial support application

September 30, 2010: Registration deadline

## Aims

- a **50-participant workshop** centered on (GCDS) Survey science
- We aim to open the initial GCDS to supporting communities
- discuss its implementation across the existing and planned instruments, in particular the forthcoming ESO call for Large Public spectroscopic Survey.

¿Participación española?

**Reunión REG:**

**Madrid, 13/09/2010**

**(durante la IX Reunión Científica de la SEA)**

# Reunión REG (Madrid, 13/09/2010)

Puntos a tratar:

- Participación española en GCDS
- ¿Cuántas cartas de respuesta a ESO se están preparando?
- Actualmente no tenemos participación española en el núcleo que confeccionando la/las cartas de respuesta a ESO
- ¿Quiénes pueden ser nuestros representantes?
- Participación española en la reunión GREAT-Niza (Nov. 2010)