

Status of the coordination unit CU6 spectroscopic processing

- ❖ **Agenda of CU6**
- ❖ **Objectives of CU6**
- ❖ **CU6 top-level work packages**
- ❖ **CU6 organization, work breakdown structure & responsibilities**
- ❖ **Short term actions**

D. Katz

Agenda of CU6 organization (1)

❖ Agenda

- **Feb 05:** CU6 draft work breakdown structure
- **Q1 05:** Community expressed its interests via Letters of Intent (LoI)
- **Apr 05:** Barcelona RVS 9th workshop
 - ✓ First revision of the work breakdown structure: Classification tasks transferred to CU8 (**SPE-CU-001**)
 - ✓ Detailed review of the community interests
- **Sep 05:** Cambridge RVS 10th workshop
 - ✓ Second revision of the work breakdown structure: spectra observation and modelling transferred to CU8, interface with CU4/CU7 clarified
 - ✓ Review of the top-level work packages scopes
- **Oct 05:** 2nd DACC meeting
 - ✓ Third revision of the work breakdown structure: simulation of the RVS instrument transferred to CU2

Agenda of CU6 organization (2)

➤ **Oct. 05 – Feb. 06:**

- ✓ Definition of spectroscopic process. scenario: **GAIA-C6-TN-OPM-DK-001-2**
- ✓ Minor revision of the work breakdown (account data processing scenario):
GAIA-C6-SP-OPM-DK-002-1

➤ **Feb. 06:** Review of the community commitments

➤ **March 06:** 1st CU6 workshop: **Proposal & validation of responsibilities**

➤ **March – June 06:** Preparation for the ESA AO & consortium start

- ✓ If needed (FTE committed < work load), coordinators of top-level work packages (TWP) and work packages (WP) identify/find support teams
- ✓ Coordinators of TWP review/refine TWP: list of WP
- ✓ Coordinators of TWP/WP describe their TWP/WP: input/output/method/...
- ✓ Coordinators of TWP and WP assess algorithms CPU load
- ✓ Coordinators of GDPAC, CU1, CU6, TWP, WP define agenda 2006 - 2011

Objectives of CU6

- ❖ To define, implement, test, optimize and operate a spectroscopic data processing sub-system that will deliver:
 - Monitoring of the RVS instrument and data good health.
 - Calibrations of the characteristics of the RVS instrument
 - Epoch and/or mean radial and rotational velocities (for single and multiple lines spectra).
 - Binarity/multiplicity diagnoses.
 - Stability/variability diagnoses.
 - Science alerts.
 - Calibrated, cleaned, normalized spectra: to be used by other coordination units (e.g. CU8)

CU6 top-level work packages

GWP-C-601-00000	Coordination & management of CU6
GWP-D-602-00000	Architecture & technical coordination of CU6
GWP-D-603-00000	Software quality assurance
GWP-C-604-00000	Integration CU6 modules & test CU6 sub-system
GWP-D-609-00000	Host framework development, validation & test
GWP-S-610-00000	Spectro. first look, sanity check & science alerts
GWP-S-620-00000	Spectra extraction
GWP-S-630-00000	Calibration of the spectroscopic instrument
GWP-S-640-00000	Radial velocity zero point
GWP-S-650-00000	Single transit analysis
GWP-S-670-00000	Multiple transits analysis

Proposal for the organization of CU6

- ❖ CU6 coordinator : **D. Katz**
- ❖ Science coordinator : **D. Katz**
- ❖ Technical coordinator : **A. Jean-Antoine**
- ❖ CU6 steering committee : Coord. of Top-level Work Packages
→ **Cropper, Désert, Jasniewicz, Jean-Antoine, Katz, Levoir, Viala**
- ❖ Documentalist : **C. Turon**
- ❖ TWP : 1 coordinator per WP (see next slides)
- ❖ WP : 1 coordinator per WP (see next slides)
- ❖ For CU6 coordinator election, send comments by 15 March to:
François Mignard (francois.mignard@obs-nice.fr)

GWP-C-601-00000 Coordination & management of CU6

- ❖ GWP-C-601-00000 Coordination & management of CU6
 - **Katz (Co)**
- ❖ GWP-C-601-01000 Management of CU6
 - **Katz (Co), Jean-Antoine, Turon**
- ❖ GWP-C-601-02000 **Documentation** review and validation
 - **Katz (Co), Jean-Antoine, Turon**
- ❖ GWP-C-601-03000 Simulations/Test & auxiliary data management
 - **Sartoretti (Co), Turon, Katz**

GWP-D-602-00000 Architecture/technical coordination of CU6

- ❖ GWP-D-602-00000 Architecture/technical coordination of CU6
 - **Jean-Antoine (Co)**
- ❖ GWP-C-602-01000 Management
 - **Jean-Antoine (Co)**
- ❖ GWP-C-602-02000 Functional analysis
 - **Jean-Antoine, Thévenin, Pichon, Bigot**
- ❖ GWP-D-602-03000 Architecture definition
 - **Jean-Antoine (Co), Jocteur-Monrozier**
- ❖ GWP-D-602-04000 Interface definition
 - **Jean-Antoine (Co), Thévenin, Katz**
- ❖ GWP-D-602-05000 Follow-up during scientific code develop.
 - **Jean-Antoine (Co), Jocteur-Monrozier**
- ❖ Participation TBD:
 - **Pastore**

GWP-D-603-00000 Software quality assurance

- ❖ GWP-D-603-00000 Software quality assurance

 - **Levoir (Co)**

- ❖ GWP-D-603-01000 Support for quality assurance, code configuration, code rules

 - **Levoir (Co)**

- ❖ GWP-D-603-02000 Configuration management (CNES site)

 - **CNES (TBD)**

GWP-C-604-00000 Integration of CU6 modules & test of CU6 sub-system

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➤ **Jean-Antoine**

❖ GWP-C-604-01000 Integration of CU6 modules & test of CU6 sub-system

➤ **CNES (TBD)**

❖ Participation TBD

➤ **Pastore**

GWP-D-609-00000 Host framework development, validation & test

- ❖ GWP-D-609-00000 Host framework development, validation and test
 - **Jean-Antoine (Co)**

- ❖ GWP-D-609-01000 Host framework: specifications, development follow-up, tests
 - **Jean-Antoine (Co), Jocteur-Monrozier, IT company**

- ❖ GWP-D-609-02000 Framework system architecture definition/feasibility study
 - **CNES (TBD)**

GWP-S-610-00000 Spe 1st look, sanity checks & science alerts (1)

- ❖ GWP-S-610-00000 Spectroscopic first look & science alerts
 - **Désert (Co - TBC)**
- ❖ GWP-C-610-01000 Management, configuration management & interfaces of FL/SA
 - **Désert (Co - TBC)**
- ❖ GWP-C-610-02000 Detailed functional analysis of first look and science alerts
 - **Désert (Co), Hébrard, Lecavelier (TBC)**
- ❖ GWP-S-610-03000 Interface with Quick Look group
 - **Mignot (Co - TBC)**
- ❖ GWP-S-610-04000 Science Quick Look: on board processing logs
 - **Mignot (Co - TBC)**
- ❖ GWP-S-610-05000 Science Quick Look: raw data
 - **Mignot (Co - TBC)**

GWP-S-610-00000 Spe 1st look, sanity checks & science alerts (2)

- ❖ GWP-S-610-06000 Detailed First Look: calibrations
 - **Désert (Co), Hébrard, Lecavelier (TBC)**
- ❖ GWP-S-610-07000 Detailed First Look: radial and rotational velocities
 - **Désert (Co), Hébrard, Lecavelier (TBC)**
- ❖ GWP-S-610-08000 Detailed First Look: faint stars
 - **Désert (Co), Hébrard, Lecavelier (TBC)**
- ❖ GWP-S-610-09000 Science alerts
 - **Hébrard (Co) or Lecavelier (Co), Désert (TBC)**

GWP-S-620-00000 Spectra extraction

- ❖ GWP-S-620-00000 Spectra extraction
 - **Cropper + 1.8 FTE**
- ❖ GWP-C-620-01000 Management, conf. management & interfaces
 - **Cropper (Co)**
- ❖ GWP-C-620-02000 Detailed functional analysis of the spectra extraction
 - **Cropper (Co) + TBD**
- ❖ GWP-S-620-03000 Extract spectra from raw images
 - **Cropper (Co) + TBD**
- ❖ GWP-S-620-04000 Apply calibration
 - **Cropper (Co) + TBD**
- ❖ GWP-S-620-05000 Model background generated by extended sources
 - **Cropper (Co) + TBD**
- ❖ GWP-S-620-06000 Model background generated by point like sources
 - **Cropper (Co) + TBD**
- ❖ GWP-S-620-07000 Clean spectra
 - **Cropper (Co) + TBD**
- ❖ GWP-S-620-08000 Normalization to the continuum
 - **Cropper (Co) + TBD**

GWP-S-630-00000 Calibration of the spectroscopic instrument

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 - **Cropper + 1.8 FTE**
- ❖ GWP-C-630-01000 Management, config. management & interfaces
 - **Cropper (Co)**
- ❖ GWP-C-630-02000 Detailed functional analysis of the calibrations
 - **Cropper (Co) + TBD**
- ❖ GWP-S-630-03000 Implementation of SGIS
 - **Cropper (Co) + TBD**
- ❖ GWP-S-630-04000 CCD bias, CCD readout and dark noises, CCD blemishes
 - **Cropper (Co) + TBD**
- ❖ GWP-S-630-05000 Photometric throughput, CCD flat field, linearity, saturation level
 - **Cropper (Co) + TBD**
- ❖ GWP-S-630-06000 AL & AC LSF
 - **Cropper (Co) + TBD**
- ❖ GWP-S-630-07000 Wavelength scale, Distortion map
 - **Cropper (Co) + TBD, David, Guerrier**
- ❖ GWP-S-630-08000 Scattered light & ghosts
 - **Cropper (Co) + TBD**

GWP-S-640-00000 Radial velocity zero point

- ❖ GWP-S-640-00000 Radial velocity zero point
 - **Jasniewicz (Co)**
- ❖ GWP-C-640-01000 Management, configuration management & interfaces of RV 0 pt
 - **Jasniewicz (Co)**
- ❖ GWP-S-640-03000 Radial velocity reference sources
 - **Jasniewicz (Co), Crifo, Soubiran, Zwitter, Hestroffer (TBC), Doressoundiram (TBC)**
- ❖ GWP-S-640-04000 Astrophysical zero point
 - **Jasniewicz (Co), Crifo, Soubiran, Hestroffer (TBC), Doressoundiram (TBC)**
- ❖ Participation TBD:
 - **Siebert**

GWP-S-650-00000 Single transit analysis (1)

- ❖ GWP-S-650-00000 Single transit analysis
 - **Viala (Co)**
- ❖ GWP-C-650-01000 Management, configuration management & interfaces
 - **Viala (Co)**
- ❖ GWP-S-650-02000 Definition test campaigns & comp. of algorithms perform.
 - **Viala (Co), David, Gomboc, Prsa**
- ❖ GWP-D-650-03000 Detailed functional analysis of sing. transit sing. lines
 - **Viala (Co), Delle Luche, Royer, Frémat**
- ❖ GWP-S-650-04000 Overview of existing techniques for spectra analysis
 - **TBD**
- ❖ GWP-S-650-05000 Coarse characterization of sources
 - **Martayan (TBC)**
- ❖ GWP-S-650-06000 Radial & rot. velocity CC w. template/mask in data space
 - **Delle Luche (Co), Viala, Royer**

GWP-S-650-00000 Single transit analysis (1)

- ❖ GWP-S-650-07000 Radial velocity by CC in Fourier space
 - **Frémat (Co), Viala, Delle Luche, Royer**
- ❖ GWP-S-650-08000 Rotational velocity by Fourier transform
 - **Frémat (Co), Viala, Delle Luche, Royer, Jankov (to be contacted)**
- ❖ GWP-S-650-09000 Radial and rotational velocity by minimum distance method
 - **Blomme**
- ❖ GWP-S-650-10000 Rotational velocities by Neural network
 - **Kaempf (TBC)**
- ❖ GWP-S-650-11000 Radial and rotational velocities for multi-l by TODCOR like method
 - **Gosset (Co), Rauw, Postdoc**
- ❖ GWP-S-650-12000 Radial and rot. velocities for multi-l by spectrum subtraction method
 - **TBD**
- ❖ Participation TBD:
 - **Bouchy, Siebert**

GWP-S-670-00000 Multiple transits analysis

- ❖ GWP-S-670-00000 Multiple transits analysis
 - **Cropper + 1.8 FTE**
- ❖ GWP-C-670-01000 Management, config. management & interfaces
 - **Cropper (Co)**
- ❖ GWP-D-670-02000 Detailed functional analysis of multiple transits data
 - **Cropper (Co) + TBD**
- ❖ GWP-S-670-03000 Overview of existing techniques for radial & rot. velocities
 - **Cropper (Co) + TBD**
- ❖ GWP-S-670-04000 Radial velocities from multi transit data [skew analysis]
 - **Cropper (Co) + TBD**
- ❖ GWP-S-670-05000 Assess sources spectroscopic stability/variability
 - **Eyer (Co), Hubert, Jankov, De Cat**
- ❖ GWP-S-670-06000 Optimal combination of spectra
 - **Cropper (Co) + TBD**
- ❖ GWP-S-670-07000 Mean radial and rotational velocities
 - **Cropper (Co) + TBD**

Short term actions: March – July 06

- ❖ Preparation for the ESA AO & consortium start
 - Review TWP contents
 - ✓ TWP Co.: Review & refine lists of WPs – DL: **7 April**
 - Consolidate manpower
 - ✓ TWP Co.: assess work load versus committed FTE – DL: **7 April**
 - ✓ TWP Co.: find support (if needed) – DL: **ASAP**
 - Describe TWP/WP (input/output/method ...)
 - ✓ CU6 Co.: circulate TWP/WP description template – DL: **10 March**
 - ✓ TWP/WP Co.: descriptions TWP/WP (incl. CPU load) – DL: **14 April**
 - ✓ Steer. com.: review/validate/comment the descriptions – DL: **5 Mai**
 - ✓ TWP/WP Co.: revised descriptions TWP/WP (if needed) – DL: **9 June**
 - Write response to AO – including agenda (CU6 chapter)
 - ✓ Steer. com.: first draft – DL: **12 Mai**
 - ✓ Steer. com.: second draft – DL: **23 June**
 - ✓ Steer. com.: final version – DL: **mid-July**