EUROPEAN SOUTHERN OBSERVATORY

Very Large Telescope

FLAMES TEMPLATES REFERENCE MANUAL

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88.0	09/02/2011	None	Change of period

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1. List of acronyms and abbreviations

AT	Acquisition Template
ARGUS	Giraffe Integral Field Spectroscopy mode
BOB	Broker of Observation Blocks
CCD	Charge-Coupled Device
CCS	Central Control Software
CT	Calibration Template
FACB	Field Acquisition Coherent Bundle
FFL	Flat Field Lamp
FLAMES	VLT Multi Object Fiber Facility
FP	Fiber Positioner
FPOSS	Fibre Positioner Observation Support Software
GIRAFFE	Spectrograph, part of Flames
IFU	Integral Field Unit
MEDUSA	Multi-Object Spectroscopy mode
MOS	VLT Multi-Object slit spectrograph
OB	Observation Block
OT	Observation Template
P2PP	Phase II Proposal Preparation
TAL	Th-Ar Lamp
TSF	Template Signature File
UVES	UV Visual Echelle Spectrograph

2. REFERENCES

[1] FLAMES Templates Reference Guide, VLT-PLA-ESO-13700-1995, V 1.0

[2] P2PP User's Manual, VLT-MAN-ESO-19200-1644, V 9

[3] INS Common Software for Templates -User Manual, VLT-MAN-ESO-17240-2240, V 2

[4] FLAMES User Manual, VLT-MAN-ESO-13700-2994, V 85.0

[5] HOS/BOB User Manual, VLT-MAN-ESO-17220-1332, V 2.0

[6] FPOSS User Manual, INS-MAN-ESO-13700-0079, V 85.0

3. INTRODUCTION

This document describes the F**LAMES** (Fibre Large Array Multi Element Spectrograph) **Templates**. These templates are used to take science and calibration exposures with FLAMES-GIRAFFE and FLAMES-UVES that are normally prepared using p2pp.

The reader of this reference manual is assumed to be familiar with the FLAMES instrument (ref. [4]), with the P2PP tool (ref. [2]) and with the FPOSS preparation software (ref. [6]).

FLAMES templates are characterised by the TSFs (Template Signature Files) allowing the user to create OBs (Observation Blocks) of science and calibration exposures. The templates are the building blocks of science and calibration OBs.

4. TEMPLATE NAMES

FLAMES TSFs are divided into groups according to the functions to be performed.

The name of a TSF has the following scheme:

FLAMES_<*mode*>_<*type*>_[<*description*>].tsf

where

mode is the name of instrument mode (may be: *uves*, *giraf*, *com*)
type is the type of template (may be: *acq*, *obs*, *cal* or *tec*)
description is an optional string identifying the purpose of the template (*exp* for a science exposure, *dark* for a dark exposure, *bias* for a detector bias frame, *flatatt* for an attached flat field exposure, *flat* for a standalone flat field exposure, *wave* for a standalone wavelength calibration exposure).

4.1 TSF keywords

Every TSF specifies and uses a Reference Setup File, which contains the setting of all keywords needed to perform one or more observations foreseen by that template.
Keywords appearing in FLAMES TSFs are:

1. Keywords whose value has to be set by the user (through the P2PP tool).
2. Keywords whose value is fixed for a given template but cannot be put in the Reference Setup File (because this file is shared among different templates).

Obviously, fixed keywords can not be set by the user at P2PP level and hence they are not visible.

5. TEMPLATE LIST

FLAMES has 3 modes:

1. **UVES** : fibers feed the RED arm of the UVES spectrograph
2. **GIRAFFE** : fibers feed the GIRAFFE spectrograph
3. **COMBINED**: fibers feed both the UVES and the GIRAFFE spectrographs, allowing simultaneous observations.

The following two tables list the available FLAMES templates.

Table 1 lists the templates, which are supplied to the users together with the P2PP tool for the preparation of their science OBs.

Type	Name
ACQUISITION TEMPLATES	**FLAMES_uves_acq** **FLAMES_giraf_acq** **FLAMES_com_acq** **FLAMES_giraf_acq_argfast**
OBSERVATION TEMPLATES	**FLAMES_uves_obs_exp** **FLAMES_giraf_obs_exp** **FLAMES_com_obs_exp** **FLAMES_giraf_obs_argoff** **FLAMES_giraf_obs_argstd** **FLAMES_giraf_obs_ifustd**
CALIBRATION TEMPLATES	**FLAMES_uves_cal_flatatt** **FLAMES_giraf_cal_flatatt** **FLAMES_com_cal_flatatt**

Table 1 - Science and nighttime calibration templates

Table 2 lists the TSFs that are in addition available only at Paranal observatory. These templates are used for calibration purposes by the Paranal Science Operations team.

Type	Name
CALIBRATION & TECHNICAL TEMPLATES	**FLAMES_uves_cal_dark** **FLAMES_uves_cal_bias** **FLAMES_uves_cal_flat** **FLAMES_uves_cal_wave** **FLAMES_uves_tec_fmtchk** **FLAMES_uves_tec_orderdef** **FLAMES_uves_tec_sflat** **FLAMES_giraf_cal_dark** **FLAMES_giraf_cal_bias** **FLAMES_giraf_cal_flat** **FLAMES_giraf_cal_wave**

Table 2 - Daytime calibration and technical Templates

6. ACQUISITION TEMPLATES

The FLAMES instrument package contains four acquisition templates (cf. Table 1): the first three correspond to the three instrument modes (see sect. 6.1, 6.2 and 6.3). The fourth template is used for *fast* acquisition in the ARGUS mode of GIRAFFE only (see sect. 6.4).
For the first three templates the corresponding fiber combination (cf. Table 3) is selected by the user at the level of FPOSS (Fiber Positioner Observing Support Software, ref. [6]), and saved in a 'Target Setup File'. This parameter file contains the instrument modes and the coordinates of the field center, of the targets, of the VLT guide star, and of the fiducial stars. The latter are required for the acquisition of the field using up to four imaging fiber bundles, the so-called FACBs (fiber acquisition coherent bundles).

In P2PP this 'Target Setup File' has to be attached to the corresponding acquisition template and will be passed on to the FLAMES instrument for the configuration and observation of the field.

		Instrument Keywords		
Instrument Mode	*Instrument Sub-Mode* (fibre combination)	*INS.MODE* (FLAMES mode)	*INS.GIRAF.MODE* (Giraffe mode)	*INS.UVES.SLIT* (Uves slit mode)
UVES	**UVES** (8 fibres)	**UVES**	**-**	**8FIB**
	UVES (7 fibres + 1 calibration)	**UVES**	**-**	**7+1FIB**
	UVES (6 fibres for 520 setting)	**UVES**	**-**	**6FIB**
GIRAFFE	**MEDUSA**	**GIRAF**	**MED**	**-**
	IFU	**GIRAF**	**IFU**	**-**
	ARGUS sky	**GIRAF**	**ARG**	**-**
COMBINED	**MEDUSA + UVES** (8 fibres)	**COM**	**MED**	**8FIB**
	MEDUSA + UVES (7+1 fibres)	**COM**	**MED**	**7+1FIB**
	MEDUSA + UVES (6 fibres)	**COM**	**MED**	**6FIB**
	IFU + UVES (8 fibres)	**COM**	**IFU**	**8FIB**
	IFU + UVES (7+1 fibres)	**COM**	**IFU**	**7+1FIB**
	IFU + UVES (6 fibres)	**COM**	**IFU**	**6FIB**
	ARGUS + UVES (8 fibres)	**COM**	**ARG**	**8FIB**
	ARGUS + UVES (7+1 fibres)	**COM**	**ARG**	**7+1FIB**
	ARGUS + UVES (6 fibres)	**COM**	**ARG**	**6FIB**

Table 3 - FLAMES modes and fibre combinations

The name of the 'Target Setup File' follows the scheme:

<FieldName>.<Mode>.<TimeStamp>.ins

where *FieldName* is the field label given by the user (at FPOSS level), *Mode* is the fibre combination used and *TimeStamp* is the time (*hhmmss*) of day when file is saved.
This convention ensures the uniqueness of the file name. As further check for the user, all parameters stored in the 'Target Setup File' will be visible in P2PP when the user selects the file.
A preview window as part of the file selector box displays the contents of the selected file (Figure 2).

It is recommended to check in the preview window the defined ***instrument mode*** of the 'Target Setup File', which is reported in the keyword ***INS.MODE***. In the following this mode has to match the mode of the corresponding acquisition, observation, and calibration templates from which the OB is composed.

Figure 1 - P2PP window: FLAMES acquisition template

The field as defined in the 'Target Setup File' is eventually configured on the fiber positioner plate for a given time, i.e., the *configuration time,* which is usually set to the mid-time of the science exposures contained in the OB. For the fibre positioner to be able to compute the configuration time at the time of the configuration of the plate, the total execution time of the OB must be known. This execution time is computed automatically by external scripts within P2PP. The calculated time includes an estimate for the execution time of the acquisition template of 900 sec.

The FLAMES acquisition templates require configuration wavelengths to be specified by the user. These wavelength settings can be selected by the user from a *combo box* which reports all UVES and/or GIRAFFE wavelength settings, respectively. The GIRAFFE wavelengths are preceded by the character 'L' or 'H' indicating if the setting belongs to the Low or High resolution mode of the GIRAFFE spectrograph. Additionally, eight of the High resolution setups have the same central wavelength but use a different order sorting filter. These setups are for example denoted H805.3A, H805.3B, H920.5A, H920.5B.

Note that the selected configuration wavelengths must ***match*** the wavelength setting(s) selected in the Observation Templates of the same OB to avoid increased light losses at the fibre entrances due to atmospheric dispersion effects.

6.1 FLAMES_uves_acq

This template must be chosen when FLAMES is used with the UVES spectrograph alone.
The user has to specify the following parameters:

1) Config. wavelength
2) FPOSS target setup file

The field will be configured for the given wavelength appropriate to the airmass of observation and observation length. This observation length is automatically calculated within P2PP. In addition, during the observation of the field on the sky the telescope will track at the same given wavelength to compensate for atmospheric dispersion effects.

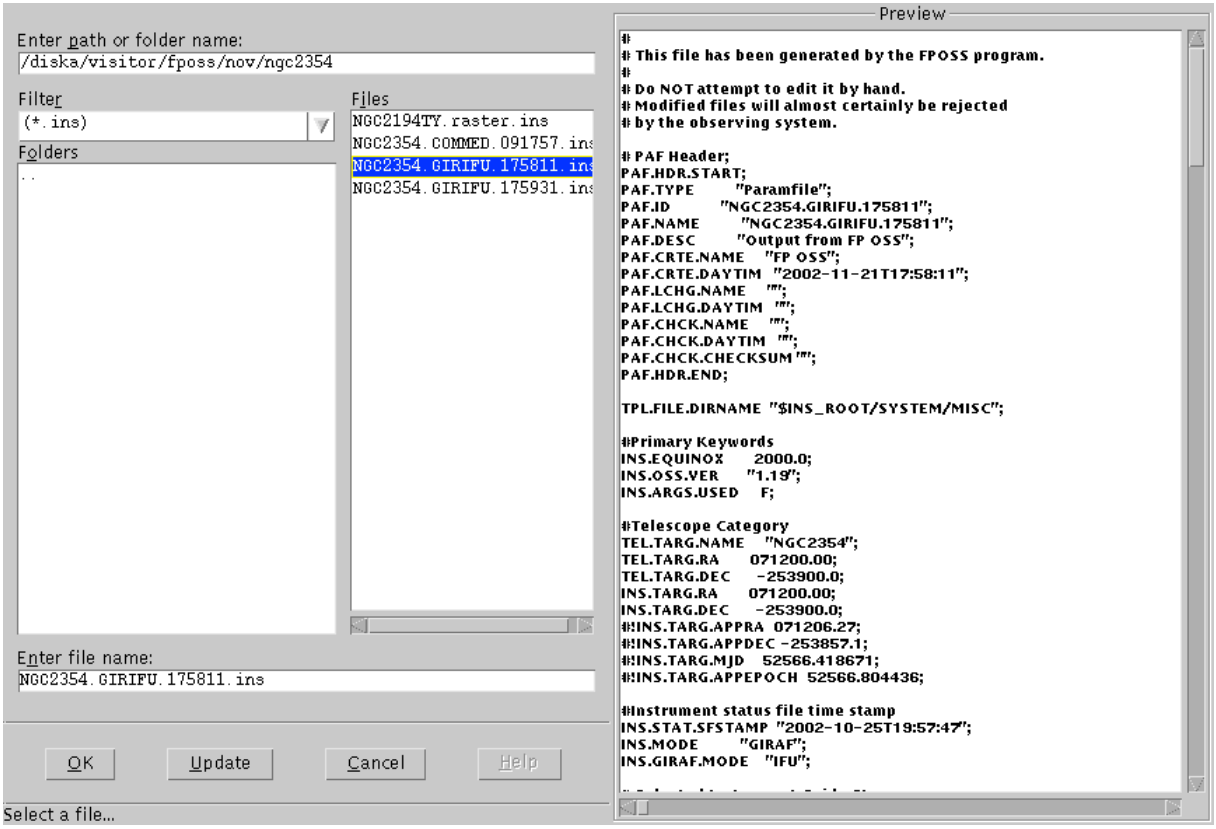

Figure 2 - P2PP preview window for the Target Setup File

6.2 FLAMES_giraf_acq

This template must be chosen when FLAMES is used with the GIRAFFE spectrograph alone.
The user has to specify the following parameters

1) Config. wavelength
2) FPOSS target setup file

The field will be configured for the given wavelength appropriate to the airmass of observation and the observation length. This observation length is automatically calculated within P2PP. In addition, during the observation of the field on the sky the telescope will track at the same given wavelength to compensate for atmospheric dispersion effects.

6.3 FLAMES_com_acq

This template must be used when FLAMES is used in one of the COMBINED modes of GIRAFFE and UVES. The user has to specify the following parameters (as an example cf. Figure 1):

1) GIRAFFE config. wavelength
2) UVES config. wavelength
3) FPOSS target setup File

The GIRAFFE fibres in the field will be configured for the given GIRAFFE wavelength, the UVES fibres for the UVES wavelength. However, for the telescope tracking wavelength, preference will be given to the GIRAFFE wavelength. Therefore, it is important to avoid large differences in the GIRAFFE and UVES wavelengths which would lead to increased fiber entrance losses for the UVES fibres in particular for long exposures at higher airmasses. The positioning of the fibres also requires the observation time (and hence OB length); this is calculated automatically within P2PP.

6.4 FLAMES_giraf_acq_argfast

This template can be used if the ARGUS integral field unit is used in *fast* acquisition mode. In this mode, no target setup file needs to be created with FPOSS. The preset to the target will be executed blindly with the telescope. The accuracy of the centering of the target relies alone on the accuracy of the target and the VLT guidestar coordinates which should be provided in the same astrometric system. No further acquisition corrections with the FACBs can be carried out in this case. The ARGUS Sky fibres can either remain parked outside the field of view or can be placed on a fixed radius around the ARGUS IFU.
The purpose of the fast ARGUS acquisition is to allow an observer in *visitor mode* to preset from one target to the next *without* reconfiguring the fibres on the plate on which the ARGUS IFU is located. As long as the radius on which the sky fibres are placed and the ARGUS scale are not changed, the plate will not be reconfigured when presetting to the next target. This approach saves about 25 minutes of overhead between two ARGUS observations. In service mode, the regular acquisitions (as described in sect. 6.1, 6.2, 6.3) with FPOSS prepared target setup files must be used. Here, the overheads will be compensated by alternating ARGUS observations with MEDUSA, IFU, or UVES fibre configurations.
For the fast acquisition template the following parameters have to be specified by the user:

1) Right Ascension of the target
2) Declination of the target
3) Equinox of the target
4) Epoch of coordinates
5) Differential tracking velocity in Right Ascension
6) Differential tracking velocity in Declination
7) Guide Star Mode
8) Right Ascension of the guide star (if 6 set to ‘SETUPFILE’)
9) Declination of the guide star (if 6 set to ‘SETUPFILE’)
10) Config. wavelength
11) Argus position angle on sky
12) Argus scale
13) Flag if Argus sky fibres parked. If parked set to ‘T’. If sky fibres used, set to ‘F’.
14) Argus sky fibre radius (if 12 set to ‘F’)

In addition to the target coordinates epoch and equinox, the fast acquisition template allows to specify differential tracking velocities for moving targets. The mode for the guide star is by default set to

'CATALOGUE', meaning the guide star is selected from the VLT guide star catalogues. This can lead to errors if for example the guide star has a large proper motion or the coordinate system is different between the guide star and ARGUS pointing. If set to 'SETUPFILE', the specific guide star selected with the coordinates given in the fields below will be used. If the target and guide star coordinates are taken from the same astrometric catalogue (and are corrected for proper motion), a high precision in the centering of the target on the ARGUS IFU can be achieved and only depends on the resiudal error between these two coordinates.
During the observations the telescope will track on the configuration wavelength, which must match the Giraffe wavelength in the observing template. Further, the ARGUS position angle (PA) on sky must be specified. For PA=0, the long axis of the ARGUS array is aligned with the N – S, for PA=90, the long axis is aligned with E – W. The user can choose between two ARGUS scales: 1:1 corresponding to 0.52" per microlens or 1:1.67 corresponding to 0.3" per microlens.
A flag decides if the ARGUS sky fibres will remain parked outside the plate; if set to false, all ARGUS sky fibres will be placed on the plate equidistantly at the radius specified in the last field. If set to true, then the sky fibres will remain on the porch. Finally, we note that for the ARGUS FAST mode, no UVES fibres are available.

7. OBSERVATION TEMPLATES

The FLAMES instrument package contains five observing templates (cf. Table 1), i.e., three for the different instrument modes using target setup files and two for the use with the Argus fast acquisition.

Note: in the following, the observation template must be selected according to the ***mode*** previously selected in the ***acquisition template***. Further this mode must match the mode defined in the keyword INS.MODE of the ***Target Setup File***.
If these conditions are not fulfilled, the OB will fail at execution time. Users should remember to verify their OBs within p2pp to avoid common problems.

7.1 FLAMES_uves_obs_exp

The UVES observation template requires the following four parameter selections :

1) Central wavelength
2) Exposure time
3) No. of exposures
4) Readout mode

The user can choose from the 'Central wavelength' *combo box* one of the three predefined standard wavelength settings of the red arm of the UVES spectrograph:

520, **580**, **860**.

All other instrumental configurations like cross disperser number and filter name are predefined and do not have to be selected.

Users can also select the readout mode between:

255kHz,1x1,low and 625kHz,1x1,low

7.2 FLAMES_giraf_obs_exp

The GIRAFFE observation template requires the following five parameter selections :

1) Central wavelength
2) Simultaneous Th-Ar calibration lamp
3) Exposure time
4) No. of exposures
5) Readout mode

The user can choose from the 'Central wavelength' *combo box* one of the 39 predefined resolution and wavelength settings (8 in Low and 31 in High resolution) of the GIRAFFE spectrograph:

L385.7, **L427.2**, **L479.7**, **L543.1**, **L614.2**,
L682.2, **L773.4**, **L881.7**,

H379.0, **H395.8**, **H412.4**, **H429.7**, **H447.1A**, **H447.1B,**
H465.6, **H484.5A, H484.5B**, **H504.8**, **H525.8A, H525.8B**, **H548.8**,
H572.8, **H599.3**, **H627.3**, **H651.5A, H651.5B**, **H665.0, H679.7**,

H710.5, **H737.0A, H737.0B**, **H769.1**, **H805.3A**, **H805.3B**
H836.6A, H836.6B, **H875.7**, **H920.5A, H920.5B** .

Recall that the 'B' settings have a higher resolution (as they work in higher order) but lower throughput than the 'A' settings, but the same central wavelength. In addition to the central wavelength, the status of the 'Simultaneous Th-Ar calibration lamp' must be selected. As default, the Thorium-Argon hollow cathode lamp is selected to be 'ON' during the GIRAFFE exposure. If 'OFF' is selected, no simultaneous calibration lamp will be switched on during the GIRAFFE exposure. The latter is recommended to avoid contamination of the object spectra by strong Argon lines in the simultaneous calibration spectra, or if observing faint objects with fibres on the GIRAFFE CCD adjacent or near to the SimCal fibres. Note that very strong Argon lines are found at wavelengths larger than 650nm can badly affect nearby fibres when the lamp is switched ON.

Two readout modes are available depending on the requirements for time sampling:

255kHz,1x1,low and 625kHz,1x1,low

7.3 FLAMES_com_obs_exp

The COMBINED observation template for simultaneous UVES and GIRAFFE observations requires the following eight parameter selections which are simply the combination of the UVES and GIRAFFE paramters as described above :

1) GIRAFFE central wavelength
2) GIRAFFE simultaneous Th-Ar calib. lamp
3) GIRAFFE exposure time
4) GIRAFFE No. of exposures
5) GIRAFFE readout mode
6) UVES central wavelength
7) UVES exposure time
8) UVES No. of exposures
9) UVES readout mode

7.4 FLAMES_giraf_obs_argoff

This observing template is mostly identical with the FLAMES_giraf_obs_exp template but allows the user to offset the ARGUS IFU on the sky between subsequent exposures e.g to obtain dithered images of a larger area on the sky. For this purpose the templates requires three additional parameters:

6) No. of offsets
7) List of offsets in Right Ascension
8) List of offsets in Declination

The number of offsets parameter specifies how many offsets from the subsequent list of RA and DEC offsets will be executed. If the list is shorter than the number of offsets, the list will be cycled through. At each offset position the specified number of exposures is taken. The specified offsets are offsets to the telescope position. At the end of the template, the telescope is centered back to the original position. Note, that the ARGUS sky fibres will offset together with the ARGUS IFU.

7.5 FLAMES_giraf_obs_argstd

Same as the FLAMES_giraf_obs_argoff observing template but for the observation of spectrophotometric standard stars in the ARGUS mode. The template allows to offset the star on the

ARGUS IFU using the offset parameters described above. Spectrophotometric standard stars observed with this template can be automatically identified in the archive or by the data reduction pipeline as standard star calibrations from their FITS header keywords (DPR.CATG=CALIB and DPR.TYPE=STD).

7.6 FLAMES_giraf_obs_ifustd

Same as the FLAMES_giraf_obs_exp observing template but for the observation of spectrophotometric standard stars in the IFU mode. Spectrophotometric standard stars observed with this template can be automatically identified in the archive or by the data reduction pipeline as standard star calibrations from their FITS header keywords (DPR.CATG=CALIB and DPR.TYPE=STD).

Figure 3 - Acquisition and observing template with an opened *combo box* for the wavelength

8. CALIBRATION TEMPLATES

As a general rule (see ref. [4]), FLAMES calibrations will be taken during the day. With the exception of the *attached* calibration templates, the user does not have to prepare any calibration OB. Calibrations will be provided by Paranal Science Operation team, following the FLAMES Calibration Plan.

Calibration templates are grouped in: *attached* calibration, *detector* calibration, *Stand-alone* calibration and *technical* calibration.

8.1 Attached calibration

The attached calibration templates are offered to the user to perform *flatfield* calibrations in exactly the same fiber configuration as the science observation. Hence, the fibre, rotator, and instrument setup will remain as of the end of the preceding observation template. The telescope, however, will be preset to the zenith to allow the insertion of the flatfield screen in front of the observing plate.
Since this type of attached flatfield calibrations is time consuming and is normally carried out during the night, they are only recommended for observations, which require the best possible flatfielding performance. For most observing programs the standard daytime flatfield calibrations as delivered by the observatory are sufficient. In visitor mode attached flatfields can be taken during the daytime, time permitting.

The following attached calibration templates are available:

FLAMES_uves_cal_flatatt
FLAMES_giraf_cal_flatatt
FLAMES_com_cal_flatatt

An *attached* calibration templates must be inserted as the last template of an OB after at least one observation template. The mode must match the mode of the observations template.
As the only parameter, the 'No. of exposures' for the GIRAFFE, UVES or both spectrographs must be defined. The exposure times for the flatfield calibrations are taken from a lookup table maintained in the FLAMES instrument workstation and are available in the FLAMES User manual.

8.2 Detector calibration

Four templates are available in order to perform detector calibrations:

FLAMES_uves_cal_dark **FLAMES_uves_cal_bias**
FLAMES_giraf_cal_dark **FLAMES_giraf_cal_bias**

For a *dark* exposure the exposure time and the number of exposures must be specified. For a *bias* exposure only the number of exposures is required.

8.3 Stand-alone calibration

Daytime flatfield and wavelength calibrations are obtained by the Paranal observatory with the following calibration templates:

FLAMES_uves_cal_flat
FLAMES_giraf_cal_flat

FLAMES_uves_cal_wave
FLAMES_giraf_cal_wave

For UVES the user has to choose the *Uves slit mode* needed for the calibration: 8FIB, 7+1FIB or 6FIB. Other parameters to be chosen are the number of exposures, central wavelength and Plate name (number 1 or 2).
For UVES it is also necessary to specify which fibres group will be used for the calibration: ODD fibres, EVEN fibres, ALL (i.e. Odd+Even) fibres, or a sequence of all 3 types (ODD+EVEN+ALL).

Both *flat-field* and *wavelength* calibrations are performed by setting fibres on a 360° spiral pattern and illuminating them with a fibre projector which is located close to the gripper of the robot. The spiral pattern is defined by the Start and the End radius which has to be specified in the template.
The light of different calibration lamps can be fed to the fiber projector depending on the type of calibration, i.e., with a Tungsten lamp for flatfield exposures, and a Thorium-Argon or a Neon lamp for wavelength calibrations.

The fibers can be illuminated in two different ways: either by sweeping over the fibres along the spiral pattern or by visiting each individual fiber for a given time. The number of sweeps over the fibres or the time to visit each button must be specified, respectively.

Further, the user has to set (or unset) two final technical flags needed to know if Uves fibres must be parked before starting calibration template and if fibres must be configured on the spiral before the calibration.

The exposure time (intended as *shutter* open time) is not defined by the user but is automatically computed according to either the number of defined sweeps or the number of fibres and their visiting time.

8.4 Technical calibrations

These templates are used for technical calibrations of UVES only. They are:

FLAMES_uves_tec_fmtchk
FLAMES_uves_tec_orderdef
FLAMES_uves_tec_sflat

The first template performs the format check calibration using the UVES internal *simultaneous wavelength calibration* lamp.
The second has been devised to localize the echelle orders using the UVES internal *simultaneous flatfield calibration* lamp.
The third template is the only FLAMES template which does not make use of fibres, but provides regular UVES *slit flatfield* calibrations. However, the template allows to shift the slit along its long axis to illuminate the locations of all 9 UVES fibers per subslit.

Tables B10, B11 and B12 provide a complete list of all *keywords* (both free and fixed) of these templates.

A. FLAMES Template Signature Files

In the following Tables all FLAMES TSFs are listed with their free and fixed parameters.
For the acquisition templates also keywords supplied and available from the FPOSS target setup file are reported.

When using the P2PP tool the user has to fill only the fields (keywords) shown on white background color in the following tables. Keywords shown on gray background color are fixed or already selected by the user through the FPOSS utility or are fixed by the template itself.

Some keywords with fixed values will be overwritten during execution of the template by the sequencer script depending on other user-selected parameters.

For example the **OCS3.INS.LAMP** keyword in **FLAMES_uves_obs_exp.tsf** may be:

"NOFIBRE"	if INS.UVES.SLIT equals 8FIB or 6FIB
"WLFIBRE1"	if INS.UVES.SLIT equals 7+1FIB and INS.PLATE equals 1
"WLFIBRE2"	if INS.UVES.SLIT equals 7+1FIB and INS.PLATE equals 2.

Instrument keywords have always a prefix identifying the sub-system involved: **OCS1** corresponds to the Fiber Positioner, **OCS2** is to the GIRAFFE, and **OCS3** to the UVES subsystem.

Note that for the Acquisition Templates not all keywords contained in the FPOSS target setup file are not reported in Tables A1, A2 and A3 as the file generated for e.g. the Medusa mode may contain several hundred of keywords depending on the number of assigned fibres.

Parameters read from the FPOSS target setup file are grouped in keywords selecting:

1) **Instrument Guide Star** and **Instrument Potential Guide Stars**;

2) **FACBs - Allocated Reference Stars** (and related total Fibre number)

3) **Allocated Fibres** for **GIRAFFE**, **UVES** and **ARGUS sky** (and related total Fibre number).

FLAMES_uves_acq.tsf

To be specified:		
Keyword	Range	Label in P2PP
OCS1.INS.TARG.SETUP	*.ins	FPOSS target setup file
TEL.UVES.WLEN	520 580 860	Config. wavelength
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
OCS1.INS.ADC.USED	F	FP Argus ADC used flag
OCS1.INS.CFGTIM	AUTO	Configuration time flag
OCS1.INS.PCC.AMBI.TEMP	AUTO	ASM param. flag: temperature
OCS1.INS.PCC.AMBI.PRES	AUTO	ASM param. flag: atmospheric pressure
OCS1.INS.PCC.AMBI.RHUM	AUTO	ASM param. flag: relative humidity
SEQ.PRESET	T	Preset flag
TEL.TARG.TYPE	COORDINATE	type definition
Parameters read from FPOSS:	*(Target Setup File from FP)*	
Keyword	Value	Label

To be specified:		
TEL.TARG.RA	Ra()	RA of the Field Center
TEL.TARG.DEC	Dec()	DEC of the Field Center
TEL.TARG.EQUINOX	2000	Equinox of Ra/Dec
INS.MODE	UVES	Instrument mode
INS.UVES.SLIT	8FIB 7+1FIB 6FIB	Uves slit mode
Parameters calculated by P2PP:		
Keyword	Value	Label
OCS1.INS.TIME	1 .. 36000	OB total execution time

Table A1

FLAMES_giraf_acq.tsf

To be specified:		
Keyword	Range	Label in P2PP
OCS1.INS.TARG.SETUP	*.ins	FPOSS target setup file
TEL.GIRAFFE.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B, H836.6 H875.7 H920.5A H920.5B	Config. wavelength
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
OCS1.INS.ADC.USED	F	FP Argus ADC used flag
OCS1.INS.CFGTIM	AUTO	Configuration time flag
OCS1.INS.PCC.AMBI.TEMP	AUTO	ASM param. flag: temperature
OCS1.INS.PCC.AMBI.PRES	AUTO	ASM param. flag: atmospheric pressure
OCS1.INS.PCC.AMBI.RHUM	AUTO	ASM param. flag: relative humidity
SEQ.PRESET	T	Preset flag
TEL.TARG.TYPE	COORDINATE	type definition
Parameters read from FPOSS:	*(Target Setup File from FP)*	
Keyword	Value	Label
TEL.TARG.RA	Ra()	RA of the Field Center

To be specified:		
TEL.TARG.DEC	Dec()	DEC of the Field Center
TEL.TARG.EQUINOX	2000	Equinox of Ra/Dec
INS.MODE	GIRAF	Instrument mode
INS.GIRAF.MODE	MED IFU ARG	Giraffe mode
Parameters calculated by P2PP:		
`Keyword`	Value	Label
OCS1.INS.TIME	1 .. 36000	OB total execution time

Table A2

FLAMES_com_acq.tsf

To be specified:		
`Keyword`	`Range`	`Label in P2PP`
OCS1.INS.TARG.SETUP	*.ins	FPOSS target setup file
TEL.UVES.WLEN	520 580 860	UVES config. wavelength
TEL.GIRAFFE.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	GIRAFFE config. wavelength
Fixed values:		
`Keyword`	`Value`	`Label (not seen in P2PP)`
OCS1.INS.ADC.USED	F	FP Argus ADC used flag
OCS1.INS.CFGTIM	AUTO	Configuration time flag
OCS1.INS.PCC.AMBI.TEMP	AUTO	ASM param. flag: temperature
OCS1.INS.PCC.AMBI.PRES	AUTO	ASM param. flag: atmospheric pressure
OCS1.INS.PCC.AMBI.RHUM	AUTO	ASM param. flag: relative humidity
SEQ.PRESET	T	Preset flag
TEL.TARG.TYPE	COORDINATE	type definition
Parameters read from FPOSS:	*(Target Setup File from FP)*	
`Keyword`	`Value`	`Label`
TEL.TARG.RA	Ra()	RA of the Field Center
TEL.TARG.DEC	Dec()	DEC of the Field Center
TEL.TARG.EQUINOX	2000	Equinox of Ra/Dec
INS.MODE	COM	Instrument mode

To be specified:		
INS.UVES.SLIT	8FIB 7+1FIB 6FIB	Uves slit mode
INS.GIRAF.MODE	MED IFU ARG	Giraffe mode
Parameters calculated by P2PP:		
`Keyword`	`Value`	`Label`
OCS1.INS.TIME	1 .. 36000	OB total execution time

Table A3

FLAMES_giraf_acq_argfast.tsf		
To be specified:		
Keyword	Range	Label in P2PP
TEL.TARG.ALPHA	ra	Alpha coordinate for the target
TEL.TARG.DELTA	dec	Delta coordinate for the target
TEL.TARG.EQUINOX		Equinox
TEL.TARG.ADDVELALPHA	-15 .. 15	Alpha additional tracking velocity
TEL.TARG.ADDVELDELTA	-15 .. 15	Delta additional tracking velocity
TEL.TARG.EPOCH	-2000 .. 3000	Epoch
TEL.TARG.PMA	-10 .. 10	Proper motion in RA in arcsec/year
TEL.TARG.PMD	-10 .. 10	Proper motion in DEC in arcsec/year
TEL.AG.GUIDESTAR	CATALOGUE SETUPFILE NONE	Get Guide Star from
TEL.GS1.ALPHA	ra	Guide star alpha
TEL.GS1.DELTA	dec	Guide star delta
TEL.GIRAFFE.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8H525.8A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	Config. Wavelength
INS.ARGS.POSANG	0 .. 360	Argus Position Angle
INS.ARGS.SCALE	1:1 1:1.67	Argus Scale
INS.SKY.PARKED	T F	Argus Sky fibres parked
INS.SKY.RADIUS	0.5 .. 12.5	Argus Sky fibre Radius
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
OCS1.INS.ADC.USED	F	FP Argus ADC used flag
INS.MODE	GIRAF	Instrument mode
INS.GIRAF.MODE	ARG	Giraffe mode
INS.ARGS.USED	T	Argus Used
SEQ.PRESET	T	Preset flag
TEL.TARG.TYPE	COORDINATE	type definition

Table A4

FLAMES_uves_obs_exp.tsf		
To be specified:		
Keyword	Range	Label in P2PP
OCS3.INS.GRAT2.WLEN	520 580 860	Central wavelength
OCS3.DET2.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
OCS3.DET2.READ.SPEED	225kHz,1x1,low 625kHz,1x1,low	Readout speed
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	SCIENCE	Data product category
DPR.TYPE	OBJECT,OzPoz (if 8FIB or 6FIB) OBJECT,SimCal (if 7+1FIB)	Data product type
DPR.TECH	MOS	Data product technique
OCS3.INS.LAMP	NOFIBRE (if 8FIB or 6FIB) WLFIBRE1 WLFIBRE2 (if 7+1FIB)	Calibration lamp
OCS3.INS.GRAT2.SETTINGS	520 CD#3 SHP700 580 CD#3 SHP700 860 CD#4 OG590	Uves mode settings: [wavelength grating filter]
OCS3.DET2.EXP.TYPE	Normal	Exposure type

Table A5

FLAMES_giraf_obs_exp.tsf		
To be specified:		
Keyword	Range	Label in P2PP

To be specified:		
OCS2.INS.GRAT.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8 A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	Central wavelength
OCS2.INS.SIMFLAG	ON OFF	Simultaneous Th-Ar calib. lamp
OCS2.DET1.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
OCS2.DET1.READ.SPEED	225kHz,1x1,low 625kHz,1x1,low	Readout speed
Fixed values:		
`Keyword`	`Value`	`Label (not seen in P2PP)`
DPR.CATG	SCIENCE	Data product category
DPR.TYPE	OBJECT	Data product type
DPR.TECH	MOS (if Medusa mode) IFU (if Ifu or Argus modes)	Data product technique
OCS2.INS.SIMLAMP	TAL	Simultaneous calib. lamp type
OCS2.INS.SLITLAMP	NONE	Lamp selection for the single slit calibration unit
OCS2.INS.REFOCUS	T	Refocus flag
OCS2.DET1.EXP.TYPE	Normal	Exposure type

Table A6

FLAMES_com_obs_exp.tsf

To be specified:		
`Keyword`	`Range`	`Label in P2PP`
OCS2.INS.GRAT.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8	GIRAFFE central wavelength

To be specified:		
	H525.8A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	
OCS2.INS.SIMFLAG	ON OFF	GIRAFFE simultaneous Th-Ar calib. lamp
OCS2.DET1.WIN1.UIT1	0 .. 36000	GIRAFFE exposure time
SEQ.NEXPOGIR	0 .. 30	GIRAFFE No. of Exp.
OCS2.DET1.READ.SPEED	225kHz,1x1,low 625kHz,1x1,low	GIRAFFE Readout speed
OCS3.INS.GRAT2.WLEN	520 580 860	UVES central wavelength
OCS3.DET2.WIN1.UIT1	0 .. 36000	UVES exposure time
SEQ.NEXPOUVE	0 .. 30	UVES No. of Exp.
OCS3.DET2.READ.SPEED	225kHz,1x1,low 625kHz,1x1,low	UVES Readout speed
Fixed values:		
`Keyword`	`Value`	`Label (not seen in P2PP)`
DPR.CATG	SCIENCE	Data product category
DPR.TYPE	OBJECT	Data product type
DPR.TECH	for Uves branch: MOS for Giraffe branch: MOS (if Medusa sub-mode) IFU (if Ifu or Argus sub-modes)	Data product technique
OCS2.INS.REFOCUS	T	Refocus flag (Giraffe)
OCS2.DET1.EXP.TYPE	Normal	Exposure type (Giraffe)
OCS2.INS.SIMLAMP	TAL	GIRAFFE simultaneous calib. lamp type
OCS2.INS.SLITLAMP	NONE	Lamp selection for the single slit calibration unit (Giraffe)
OCS3.INS.LAMP	NOFIBRE (if 8FIB or 6FIB) WLFIBRE1 (if 7+1FIB) WLFIBRE2 (if 7+1FIB)	Calibration lamp (Uves)
OCS3.INS.GRAT2.SETTINGS	520 CD#3 SHP700 580 CD#3 SHP700 860 CD#4 OG590	Uves mode settings: [wavelength grating filter]
OCS3.DET2.EXP.TYPE	Normal	Exposure type (Uves)

Table A7

FLAMES_giraf_obs_argoff.tsf

To be specified:		
Keyword	Range	Label in P2PP
OCS2.INS.GRAT.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8 A H525.5B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	Central wavelength
OCS2.INS.SIMFLAG	ON OFF	Simultaneous Th-Ar calib. lamp
OCS2.DET1.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
SEQ.NOFF	0 .. 100	No. of Offsets.
TEL.TARG.OFFSETALPHA	-999 .. 999	RA offsets in arcsec (list)
TEL.TARG.OFFSETDELTA	-999 .. 999	DEC offsets in arcsec (list)
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	SCIENCE	Data product category
DPR.TYPE	OBJECT	Data product type
DPR.TECH	MOS (if Medusa mode) IFU (if Ifu or Argus modes)	Data product technique
OCS2.INS.SIMLAMP	TAL	Simultaneous calib. lamp type
OCS2.INS.SLITLAMP	NONE	Lamp selection for the single slit calibration unit
OCS2.INS.REFOCUS	T	Refocus flag
OCS2.DET1.EXP.TYPE	Normal	Exposure type

Table A8

FLAMES_giraf_obs_argstd.tsf

To be specified:		
Keyword	Range	Label in P2PP
OCS2.INS.GRAT.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	Central wavelength
OCS2.INS.SIMFLAG	ON OFF	Simultaneous Th-Ar calib. lamp
OCS2.DET1.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
SEQ.NOFF	0 .. 100	No. of Offsets.
TEL.TARG.OFFSETALPHA	-999 .. 999	RA offsets in arcsec (list)
TEL.TARG.OFFSETDELTA	-999 .. 999	DEC offsets in arcsec (list)
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	STD	Data product type
DPR.TECH	IFU (if Ifu or Argus modes)	Data product technique
OCS2.INS.SIMLAMP	TAL	Simultaneous calib. lamp type
OCS2.INS.SLITLAMP	NONE	Lamp selection for the single slit calibration unit
OCS2.INS.REFOCUS	T	Refocus flag
OCS2.DET1.EXP.TYPE	Normal	Exposure type

Table A9

FLAMES_giraf_obs_ifustd.tsf		
To be specified:		
Keyword	Range	Label in P2PP
OCS2.INS.GRAT.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	Central wavelength
OCS2.INS.SIMFLAG	ON OFF	Simultaneous Th-Ar calib. lamp
OCS2.DET1.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
SEQ.NOFF	0 .. 100	No. of Offsets.
TEL.TARG.OFFSETALPHA	-999 .. 999	RA offsets in arcsec (list)
TEL.TARG.OFFSETDELTA	-999 .. 999	DEC offsets in arcsec (list)
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	STD	Data product type
DPR.TECH	IFU (if Ifu or Argus modes)	Data product technique
OCS2.INS.SIMLAMP	TAL	Simultaneous calib. lamp type
OCS2.INS.SLITLAMP	NONE	Lamp selection for the single slit calibration unit
OCS2.INS.REFOCUS	T	Refocus flag
OCS2.DET1.EXP.TYPE	Normal	Exposure type

Table A10

FLAMES_uves_cal_flatatt.tsf		
To be specified:		
Keyword	Range	Label in P2PP
SEQ.NEXPOUVE	0 .. 30	No. of Exp.
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,FLAT,ATTACH	Data product type

To be specified:		
DPR.TECH	MOS	Data product technique
OCS3.DET2.EXP.TYPE	Normal	Exposure type
OCS3.DET2.WIN1.UIT1	coded value	Exposure time (Uves)

Table A11

FLAMES_giraf_cal_flatatt.tsf

To be specified:		
Keyword	Range	Label in P2PP
SEQ.NEXPOGIR	0 .. 30	No. of Exp.
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,FLAT	Data product type
DPR.TECH	MOS (if Medusa mode)	Data product technique
	IFU (if Ifu or Argus modes)	
OCS2.DET1.EXP.TYPE	Normal	Exposure type
OCS2.INS.REFOCUS	T	Refocus flag
OCS2.DET1.WIN1.UIT1	coded value	Exposure time (Giraffe)

Table A12

FLAMES_com_cal_flatatt.tsf

To be specified:		
Keyword	Range	Label in P2PP
SEQ.NEXPOGIR	0 .. 30	GIRAFFE No. of Exp.
SEQ.NEXPOUVE	0 .. 30	UVES No. of Exp.
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category

To be specified:		
DPR.TYPE	for Uves branch: LAMP,FLAT,NASMYTH for Giraffe branch: LAMP,FLAT	Data product type
DPR.TECH	for Uves branch: MOS for Giraffe branch: MOS (if Medusa mode) IFU (if Ifu or Argus modes)	Data product technique
OCS2.DET1.EXP.TYPE	Normal	Exposure type (Giraffe)
OCS2.INS.REFOCUS	T	Refocus flag (Giraffe)
OCS2.DET1.WIN1.UIT1	coded value	Exposure time (Giraffe)
OCS3.DET2.EXP.TYPE	Normal	Exposure type (Uves)
OCS3.DET2.WIN1.UIT1	coded value	Exposure time (Uves)

Table A13

B. FLAMES Template Signature Files: calibration and technical

In the following Tables all calibration and technical FLAMES TSFs are listed with their free and fixed parameters. These Templates are intended to be used only by the Paranal Operations Team.

FLAMES_gira_tec_expfree.tsf

To be specified:		
`Keyword`	`Range`	`Label in P2PP`
OCS2.DET1.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
OCS2.INS.GRAT.NAME	HR LR	Grating name
OCS2.INS.GRAT.WLEN	365 .. 950	Central wavelength
OCS2.INS.GRAT.ORDER	2 .. 15	Grating order
OCS2.DET1.WIN1.BINX	1 .. 2	Binning mode along X
OCS2.INS.FILT.NAME	LR1 LR2 LR3 LR4 LR5 LR6 LR7 LR8 HR1 HR2 HR3 HR4 HR5 HR6 HR7 HR8 HR9 HR10 HR11 HR12 HR13 HR14 HR15 HR16 HR17 HR18 HR19 HR20 HR21 HR22	Filter name
OCS2.INS.SLITLAMP	NONE HAL TAL NEL FFL	Lamp for single slit calibration unit
OCS2.INS.SLIT.NAME	Medusa1 Medusa2 IFU1 IFU2 ARGUS LongSlit	Slit / Plate selection
OCS2.INS.SIMLAMP	NONE HAL TAL NEL	Lamp for simultaneous calibration box unit
Fixed values:		
`Keyword`	`Value`	`Label (not seen in P2PP)`
DPR.CATG	SCIENCE	Data product category
DPR.TYPE	OBJECT	Data product type
DPR.TECH	MOS (if Medusa mode) IFU (if Ifu or Argus modes)	Data product technique
OCS2.INS.REFOCUS	T	Refocus flag (Giraffe)
OCS2.DET1.EXP.TYPE	Normal	Exposure type (Giraffe)

Table B1

FLAMES_uves_cal_dark.tsf

To be specified:		
Keyword	Range	Label in P2PP
OCS3.DET2.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	DARK	Data product type
DPR.TECH	IMAGE	Data product technique
INS.MODE	UVESCAL	Instrument mode
OCS3.DET2.EXP.TYPE	Dark	Exposure type

Table B2

FLAMES_uves_cal_bias.tsf

To be specified:		
Keyword	Range	Label in P2PP
SEQ.NEXPO	0 .. 30	No. of Exp.
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	BIAS	Data product type
DPR.TECH	IMAGE	Data product technique
OCS3.DET2.WIN1.UIT1	0	Uves exposure time (sec)
INS.MODE	UVESCAL	Instrument mode
OCS3.DET2.EXP.TYPE	Dark	Exposure type

Table B3

FLAMES_giraf_cal_dark.tsf		
To be specified:		
Keyword	Range	Label in P2PP
OCS2.DET1.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	DARK	Data product type
DPR.TECH	IMAGE	Data product technique
INS.MODE	GIRCAL	Instrument mode
OCS2.DET1.EXP.TYPE	Dark	Exposure type
OCS2.INS.REFOCUS	F	Refocus flag

Table B4

FLAMES_giraf_cal_bias.tsf		
To be specified:		
Keyword	Range	Label in P2PP
SEQ.NEXPO	0 .. 30	No. of Exp.
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	BIAS	Data product type
DPR.TECH	IMAGE	Data product technique
INS.MODE	GIRCAL	Instrument mode
OCS2.DET1.WIN1.UIT1	0	Giraffe exposure time (sec)
OCS2.DET1.EXP.TYPE	Dark	Exposure type
OCS2.INS.REFOCUS	F	Refocus flag

Table B5

FLAMES_uves_cal_flat.tsf
To be specified:

To be specified:		
Keyword	Range	Label in P2PP
INS.UVES.SLIT	8FIB 7+1FIB 6FIB	Uves slit mode
SEQ.NEXPO	0 .. 30	No. of Exp.
OCS3.INS.GRAT2.WLEN	520 580 860	Central wavelength
OCS1.INS.PLATE	1 2	Plate number
OCS1.INS.CAL.TYPE	ODD EVEN ALL ODD+EVEN+ALL	Uves calibration Type
OCS1.INS.STARTR	180000 ?	Spiral R at 0 deg (micron)
OCS1.INS.STOPR	170000 ?	Spiral R at 360 deg (micron)
OCS1.INS.NUM	1 .. 250	Number of sweeps over fibres
OCS1.INS.PARK	T F	Park UVES Fibres before configuration
OCS1.INS.CONFIG	T F	Configure fibres before calibration
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,FLAT,ODD,OzPoz LAMP,FLAT,EVEN,OzPoz LAMP,FLAT,ALL,OzPoz (if 8FIB or 6FIB) LAMP,FLAT,ODD,SimCal LAMP,FLAT,EVEN,SimCal LAMP,FLAT,ALL,SimCal (if 7+1FIB)	Data product type
DPR.TECH	MOS	Data product technique
OCS3.INS.GRAT2.SETTINGS	520 CD#3 SHP700 580 CD#3 SHP700 860 CD#4 OG590	Uves mode settings: [wavelength grating filter]
OCS3.DET2.EXP.TYPE	Normal	Exposure type
OCS1.INS.LAMP	TUNGSTEN	FP calibration lamp type
OCS1.INS.TIME	0	Exposure time of each fibre (sec)
OCS1.INS.CONT	SWEEP	Calibration method

Table B6

FLAMES_uves_cal_wave.tsf

To be specified:		
Keyword	Range	Label in P2PP
INS.UVES.SLIT	8FIB 7+1FIB 6FIB	Uves slit mode
SEQ.NEXPO	0 .. 30	No. of Exp.
OCS3.INS.GRAT2.WLEN	520 580 860	Central wavelength
OCS1.INS.PLATE	1 2	Plate number
OCS1.INS.CAL.TYPE	ODD EVEN ALL ODD+EVEN+ALL	Uves calibration Type
OCS1.INS.STARTR	180000 ?	Spiral R at 0 deg (micron)
OCS1.INS.STOPR	170000 ?	Spiral R at 360 deg (micron)
OCS1.INS.LAMP	THORIUM NEON	FP calibration lamp type
OCS1.INS.TIME	0 .. 250	Exposure time of each fibre (sec)
OCS1.INS.PARK	T F	Park UVES fibres before configuration
OCS1.INS.CONT	SWEEP VISIT	Calibration method
OCS1.INS.NUM	1	Number of sweeps over fibres
OCS1.INS.CONFIG	T F	Configure fibres before calibration
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,WAVE,OzPoz (if 8FIB or 6FIB) LAMP,WAVE,SimCal (if 7+1FIB)	Data product type
DPR.TECH	MOS	Data product technique
OCS3.INS.GRAT2.SETTINGS	520 CD#3 SHP700 580 CD#3 SHP700 860 CD#4 OG590	Uves mode settings: [wavelength grating filter]
OCS3.DET2.EXP.TYPE	Normal	Exposure type

Table B7

FLAMES_giraf_cal_flat.tsf

To be specified:		
Keyword	Range	Label in P2PP
SEQ.NEXPO	0 .. 30	Number of exposures

To be specified:		
OCS2.INS.GRAT.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8 A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H838.6B H875.7 H920.5A H920.5B	Central wavelength
OCS1.INS.STARTR	180000 ?	Spiral R at 0 deg (micron)
OCS1.INS.STOPR	170000 ?	Spiral R at 360 deg (micron)
OCS1.INS.FIBTYPE	Medusa IFU	Fiber type - calibration mode
OCS1.INS.NUM	1 .. 250	Number of sweeps over fibres
OCS1.INS.PLATE	1 2	Plate number
OCS1.INS.PARK	T F	Park UVES fibres before configuration
OCS1.INS.CONFIG	T F	Configure fibres before calibration
Fixed values:		
`Keyword`	`Value`	`Label (not seen in P2PP)`
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,FLAT	Data product type
DPR.TECH	MOS	Data product technique
INS.MODE	GIRAF	Instrument mode
OCS2.INS.SLITLAMP	NONE	Lamp selection for the single slit calibration unit
OCS2.INS.SIMLAMP	HAL	Lamp slection for the simultaneous calibration box unit
OCS2.INS.REFOCUS	T	Refocus flag
OCS2.DET1.EXP.TYPE	Normal	Exposure type
OCS1.INS.LAMP	TUNGSTEN	FP calibration lamp type
OCS1.INS.TIME	0	Exposure time of each fibre (sec)
OCS1.INS.CONT	SWEEP	Calibration method

Table B8

FLAMES_giraf_cal_wave.tsf

To be specified:		
Keyword	Range	Label in P2PP
SEQ.NEXPO	0 .. 30	Number of exposures
OCS2.INS.GRAT.WLEN	L385.7 L427.2 L479.7 L543.1 L614.2 L682.2 L773.4 L881.7 H379.0 H395.8 H412.4 H429.7 H447.1A H447.1B H465.6 H484.5A H484.5B H504.8 H525.8A H525.8B H548.8 H572.8 H599.3 H627.3 H651.5A H651.5B H665.0 H679.7 H710.5 H737.0A H737.0B H769.1 H805.3A H805.3B H836.6A H836.6B H875.7 H920.5A H920.5B	Central wavelength (nm)
OCS1.INS.STARTR	180000 ?	Spiral R at 0 deg (micron)
OCS1.INS.STOPR	170000 ?	Spiral R at 360 deg (micron)
OCS1.INS.FIBTYPE	Medusa IFU	Fiber type - calibration mode
OCS1.INS.LAMP	THORIUM NEON	FP calibration lamp type
OCS1.INS.TIME	0 .. 250	Exposure time of each fibre (sec)
OCS2.INS.SIMLAMP	TAL NEL	Lamp slection for the simultaneous calibration box unit
OCS1.INS.PLATE	1 2	Plate number
OCS1.INS.PARK	T F	Park UVES fibres before configuration
OCS1.INS.NUM	1 .. 250	Number of sweeps over fibres
OCS1.INS.CONT	SWEEP VISIT	Calibration method
OCS1.INS.CONFIG	T F	Configure fibres before calibration
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,WAVE	Data product type
DPR.TECH	MOS	Data product technique
INS.MODE	GIRAF	Instrument mode
OCS2.INS.SLITLAMP	NONE	Lamp selection for the single slit calibration unit
OCS2.INS.REFOCUS	T	Refocus flag
OCS2.DET1.EXP.TYPE	Normal	Exposure type

Table B9

FLAMES_uves_tec_fmtchk.tsf

To be specified:		
Keyword	Range	Label in P2PP
OCS3.DET2.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
OCS3.INS.GRAT2.WLEN	520 580 860	Central wavelength
OCS3.INS.LAMP	WLFIBRE1 WLFIBRE2	Calibration lamp slit
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,FMTCHK,SimCal	Data product type
DPR.TECH	MOS	Data product technique
INS.MODE	UVESCAL	Instrument mode
OCS3.DET2.EXP.TYPE	Normal	Exposure type
OCS3.INS.GRAT2.SETTINGS	520 CD#3 SHP700 580 CD#3 SHP700 860 CD#4 OG590	Uves mode settings: [wavelength grating filter]

Table B10

FLAMES_uves_tec_orderdef.tsf

To be specified:		
Keyword	Range	Label in P2PP
OCS3.DET2.WIN1.UIT1	0 .. 36000	Exposure time
SEQ.NEXPO	0 .. 30	No. of Exp.
OCS3.INS.GRAT2.WLEN	520 580 860	Central wavelength
OCS3.INS.LAMP	FFFIBRE1 FFFIBRE2	Calibration lamp slit
Fixed values:		
Keyword	Value	Label (not seen in P2PP)
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,ORDERDEF,SimCal	Data product type
DPR.TECH	MOS	Data product technique
INS.MODE	UVESCAL	Instrument mode
OCS3.DET2.EXP.TYPE	Normal	Exposure type
OCS3.INS.GRAT2.SETTINGS	520 CD#3 SHP700 580 CD#3 SHP700 860 CD#4 OG590	Uves mode settings: [wavelength grating filter]

Table B11

FLAMES_uves_tec_sflat.tsf

To be specified:		
`Keyword`	`Range`	`Label in P2PP`
OCS3.DET2.WIN1.UIT1	1 .. 36000	Exposure time
SEQ.NEXPO	1 .. 100	No. of Exp.
SEQ.NOFF	1 .. 100	Number of offsets
OCS3.INS.LAMP	FFL3 FFL4	Flat field calibration lamp
OCS3.INS.SLIT3.WID	0.15 .. 10.0	Slit width
OCS3.INS.SLIT3.LEN	0.2 .. 30.0	Decker Height
OCS3.INS.SLIT3.OFFSETX	-5 .. 5	Decker offsets in arcsec
OCS3.INS.FILT3.NAME	FREE BG40 SHP700 OG590 BK7_5 BK7_10 BK7_15	Filter
OCS3.INS.GRAT2.NAME	CD#3 CD#4	Cross disperser id.
OCS3.INS.GRAT2.WLEN	500.0 .. 1100.0	Cross disperser wavelength
OCS3.INS.TIL2.POS	-220.0 .. 220.0	Camera tilt
OCS3.DET2.READ.SPEED	225kHz,1x1,low 50kHz,2x2,high 225kHz,1x2,low 50kHz,2x3,high 625kHz,1x1,low	Readout mode
Fixed values:		
`Keyword`	`Value`	`Label (not seen in P2PP)`
DPR.CATG	CALIB	Data product category
DPR.TYPE	LAMP,FLAT	Data product type
DPR.TECH	ECHELLE	Data product technique
OCS3.DET2.EXP.TYPE	Normal	Exposure type

Table B12

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