Instrument-specific FAQ (MUSE) (Phase 2)

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Frequently Asked Questions related to MUSE

•When should I turn on the Slow Guiding System (SGS)?

Answer: It is strongly recommended to use the SGS if the exposure time is longer than 4 minutes and provided that the target is not a moving target or a high proper motion target. 4 minutes is in fact the minimum interval of time after which offset corrections are sent from the SGS to the telescope.

•Is the NFM available in NGS-free mode?

Answer: No

•WFM-AO vs WFM-NOAO mode: Pro & Con

Answer: AO almost always delivers better image quality than observations without AO, therefore when using the WFM-AO mode the probability of execution of a given OB is generally higher (i.e. a given requested image quality has a higher probability of realisation if the AO is used). This improved image quality always result in improved S/N at the peak intensity of point sources. Beyond approximately 2” - 4” the wings of the PSF are the same as those without AO: all the energy redistribution occurs interior to 2” - 4”. The option of using the TTS-free AO mode provides 100% sky coverage. The performance gain in this mode is not fully characterised yet. Because of the notch filter, users should refrain from selecting the WFM-AO if interested in spectral features in the wavelength range between 582 and 597nm (for the nominal filter) or between 578 and 599 nm (for the extended filter).The spectrum obtained in AO mode is contaminated by Raman lines. Users are strongly encouraged to consult the User manual (Table 7 and Fig. 19) to check the wavelength and intensity of the Raman lines.Service Mode OBs have lower priority over Visitor Mode observations when laser collisions occur (meaning that UT4 and another telescope point to the same field, or the other telescope points through the laser beam of UT4, causing contamination by laser light). Therefore, if your target is located in highly requested RA bins (i.e. COSMOS, UDFS ...) you should consider that the use of the WFM-AO might not be always an advantage because of possible laser collision with other telescopes.

•Can I perform NFM observations on a moving target?

Answer: Yes, but only provided that the moving target is used also as NGS.

•Can I perform full WFM-AO observations on a moving target?

Answer: No, if your target is a moving object then the NOAO or the TTS-free modes should be used instead.

• TTS-free mode: what to do if I don't have a suitable TTS in WFM-AO mode?

Answer: It might happen that you want to observe a target in WFM-AO mode, but there does not exist a suitable Tip-Tilt star (TTS), or your foreseen TTS turns out to be too faint during observation preparation with P2. There exists the possibility to observe your target anyway in TTS-free mode. For that you have to set the parameter 'Perform acquisition with TTS' in the acquisition template 'MUSE_wfm-ao_acq_movetopixelLGS' to 'no'. Note that this implies that only the laser correction is applied which leads to a slightly degraded image quality as compared to the WFM-AO mode with TTS. WFM-AO observations that need differential tracking are actually only allowed in TTS-free mode.

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- Phase 2

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