1 Pending ISIS discretionary tasks

Whenever you take data for any of the following tests, please email *mh@ing.iac.es* and *cf@ing.iac.es* with a short description of e.g. weather conditions and the running numbers of the images.
Last updated: Jan 20 2014 (Marie Hrudková)

1.1 Off-sky tests

1.1.1 Slit width measurements

Objectives: the aim of this test is to check the slit width absolute calibration taking a series of tungsten lamp exposures with different slit width and the same exposure time. This is to monitor the slit width zero point over the time, and the test should be repeated regularly, preferably always when ISIS in in use and if there is time. **Please try to do this test especially if the ISIS slit temperature is below 8 degrees**. You can check the temperature from the ISIS Mimic and ISIS fits headers.
Set-up: No spectrograph set-up is needed (i.e. no need to check rotation, focus, tip, tilt). Use binning 1 1. Preferably use ISIS blue arm to avoid the need of neutral density filters, but also red arm and ND filters can be used if necessary.
Description: remember that all the time during this test all the lights at the dome must be off!
- take 5 biases.
- make a test flat for which exposure time (and ND filters, if needed) you get around 30 thousand counts/pixel using slit width of 3 arcsec. Then, use this exposure time and take flats with slitarc 3; 2.5; 2; 1.5; 1.25; 1; 0.75; 0.5; 0.4.

Time needed: 10-15 min

1.1.2 Acceptable wavelength range

Objectives: check the range of wavelength for which the original set-up is still acceptable.
Set-up: any
Description: record the original central wavelength. Perform the scrips isis_rotation, isis_tilt and isis_focus and copy and paste the output in a file. Move the central wavelength by appropriate step (depending on the wavelength coverage of each grating, e.g. for R1200R grating move by $\sim$ 300 Å). Record the central wavelength into the file. Perform the scrips isis_rotation, isis_tilt and isis_focus and copy and paste the output in the file. Move again the central wavelength and repeat the procedure until the set-up values are not acceptable any more. Repeat the procedure to the other direction of the original central wavelength. If there is a time, this test can be done with different set-ups (gratings and central wavelengths).
Time needed: 1 h.

1.2 On-sky tests

1.2.1 Telescope focus – priority 1

Objectives: to check that the telescope focus is consistent for both red and blue arms.
Description: do usual focusruns in both arms and find the best telescope focus.
Conditions required: seeing stable and less or equal than 0.6 arcsec, no or thin clouds, any sky brightness.
Time needed: 15 min.

1.2.2 Check anastigmatism – priority 1

Objectives: to check the spectrograph anastigmatism on sky, without a need of using a dekker. This information will be useful for a set-up procedure in the future.
Description:

Afternoon preparation: make sure to finish the afternoon set-up inside the recommended collimator ranges
(see http://www.ing.iac.es/Astronomy/instruments/isis/isis_astigmatism.html)

In the night: set the telescope value to the best telescope focus value determined for the blue arm in the previous test 1.2.1. Use the same star and an exposure time as used in the test 1.2.1. Take an exposure in the blue arm. Then change the blue collimator value with a step of 300-500 μm to both sides, in the range plus minus 3000 μm from the best spectral collimator focus determined earlier in the afternoon. In each step position of the collimator, take an exposure in the blue arm with the same exposure time as before. Write down the running numbers and collimator positions.
Conditions required: seeing stable and less or equal than 0.6 arcsec in optical, no or thin clouds, any sky brightness.
Time needed: 20 min.

1.2.3 ISIS zero point – priority 2

Objectives: check ISIS zero point (mag for 1 detected photon/s/Å).
Description: acquire few spectrophotometric standards at high elevation and take 3 unsaturated exposures/each star longer than 2 s for both arms. Use wide slit.
Conditions required: photometric, any seeing, any sky brightness (check SuperWASP transparency web-pages to decide whether the night is photometric).
Time needed: 45 min.

1.2.4 ISIS slit alignment – priority 2

Objectives: check how well is ISIS slit aligned with the acquisition camera.
Description: Use narrow slit, e.g. 1 arcsec. Check the alignment using (one or both of) the following two methods:
1) With sky PA = 0 acquire a star on one end of slit in the acquisition viewing camera

and note down the position of the center of the star. Then nod the telescope North-South until you reach the other side of the slit, and again note down the position of the center of the star. You can also note down by how much is the star displaced from the center of the slit after the telescope moved to the other end of the slit. Repeat the same, but with sky PA = 90 and nodding East-West.
2) Select from the list of double stars a pair separated by 1-2 arcmin. The list can be found in ING system catalog: http://www.ing.iac.es/Astronomy/tonotes/misc/systemcat.html#slit or in the green folder in the WHT control room (labelled something like Star lists). Acquire the star pair at nominal PA, and center both stars on the slit. Move by 1 arcmin in x direction, i.e. along the slit. Check that stars stay within slit. Move to the opposite direction and check again. Note down any slit misalignments between the two movements.
Conditions required: any sky brightness, reasonable seeing ($<$ 2 arcsec)
Time needed: 30 min