

Questions, Comments and Answers following the presentation

SPHERE Julien H. Girard

Hummel: Could you please say a few words about the TIM board?

The TIM board is a time reference board (used on several instruments and recently installed in MUSE) that allows to cope for time drifts, leading to eventual positioning errors. For SPHERE we detected discrepancies in the true north measured on the same astrometric field and a systematic bias that increased with time (months!). The SPHERE derotator control, crucial element, was causing this (on top of wobbles but that's another issue). We installed the TIM board at the end of July 2016 and it solved this drift problem.

Schmidtbreich: You mentioned that the consortium does the best calibrations. Shouldn't these calibrations or the technique be made available?

Both the consortium and us (the IS team on Paranal) are still learning. For astrometry, they have observed 3 FoV consistently since commissioning and have published their results. We are doing the same fields and intend to do a few more (relationship IRDIS – IFS). Our goal is to publish values of true north and plate scale every 3 months. The calibration plan is still moving but we realized (us and the scientists from the consortium) that we were performing enough calibrations, that the original calibrations plans (from PAE) were stating too many items which are not needed and for which the templates/recipes are not working or not mature.

Masciadri: It should be very useful to have an archive for RTC data similar to what done for measurement of instrument conceived for turbulence and atmospheric parameter. Does ESO think to implement that?

There is at present a waste of data. It happens that people who work in the turbulence field would take advantage in having this RTC measurements, but we do not have success in having that.

We now have a technical archive accessible to all ESO instrument scientists. The SPARTA “summary files” are already accessible from the normal science archive (except for the SHINE GTO survey). RTC circular files for SPHERE are extremely heavy (several GB for 1 minute of grabbing). They can be taken and made available on case by case basis by the IS or AO scientist.

Osip: I ask that you comment on limitations imposed by detector persistence and optical ghosting.

H2RG detectors (IRDIS, IFS but also SINFONI) are more subject to persistence issues than Aladdin2/3 (NACO, ISAAC). However, with SPHERE we are not trying to co-add hours of observations of faint galaxies. We can rather easily set the minimum DIT (exposure time) and “flush” out most of the persistence in a few minutes (for instance, when we slew to another target). Also. In many occasion the persistence occurs at the coronagraph position, a zone which is usually dead and masked at data processing. Exceptionally we can decide to switch to another instrument to avoid risk of contaminating the next observation when a strong case of saturation happened and/or in an odd place on the detector.