GHOST SV Observation Evaluation Form

Title: High resolution integrated light spectroscopy of extragalactic compact stellar systems

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## Description of the primary goals and the main findings

Observations for a few UCDs and one nuclear star cluster were prepared in the OT. These were faint and slightly extended objects in CenA and the Virgo cluster, with V ~ 17.2 - 18.2 mag. For these fairly faint targets, we requested 1.5h integrations in CC50/IQ70 or 2h in CC70/IQ70. Unfortunately, none of these science targets were observed. On one cloudy night, tests of guiding on the extended nuclear star cluster of a dwarf elliptical in Virgo were performed. The object has an effective radius of 1.1" and g=17.6. Seeing on that night was IQ70-85. Observers tested both direct GHOST guiding on this target and companion guiding, both of which worked well.

Additional comments on GHOST performance:

Further tests will need to be made to determine the limitations of observing extended objects with GHOST and to provide guidance on when companion guiding would be needed for extended objects.

Reduced data for a spectrophotometric standard and two velocity standards taken under this program will be included in the archive.

The flux standard HD205905 was previously observed with GRACES, in 2-fiber mode. This star was observed in different cloud and seeing conditions by the two instruments, so throughput cannot be compared. However, we find that the resolution is quite comparable for the two instruments. For GRACES, the expected resolution in this mode is 36-40k with the highest resolution between 650-900nm. For GHOST, the standard resolution mode has R ~56k. This higher resolution is more obvious at redder wavelengths. At bluer wavelengths, it is quite comparable.
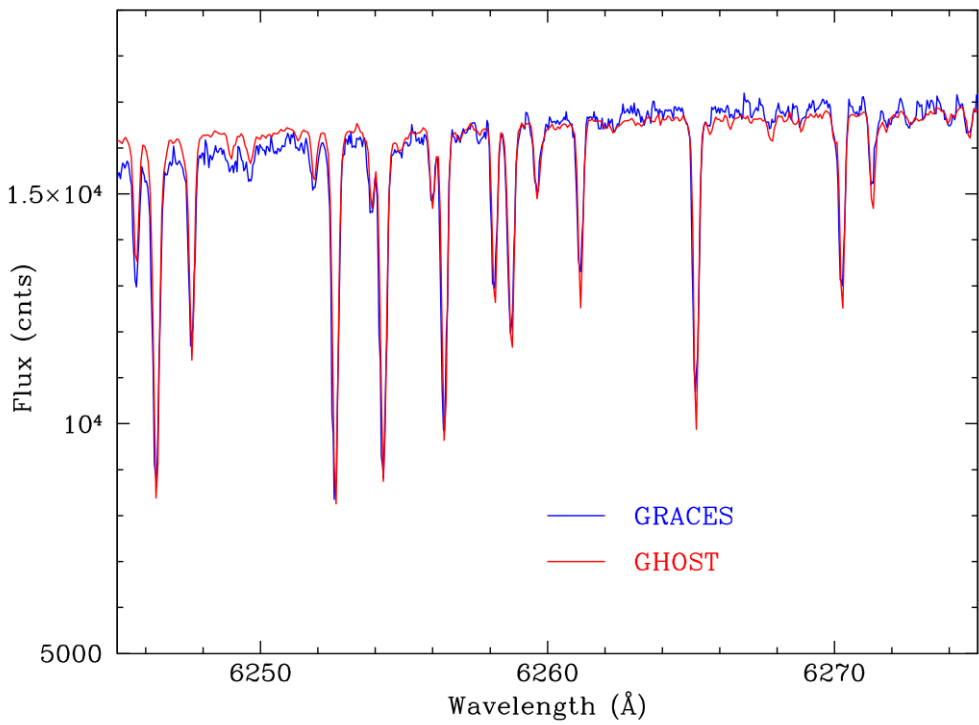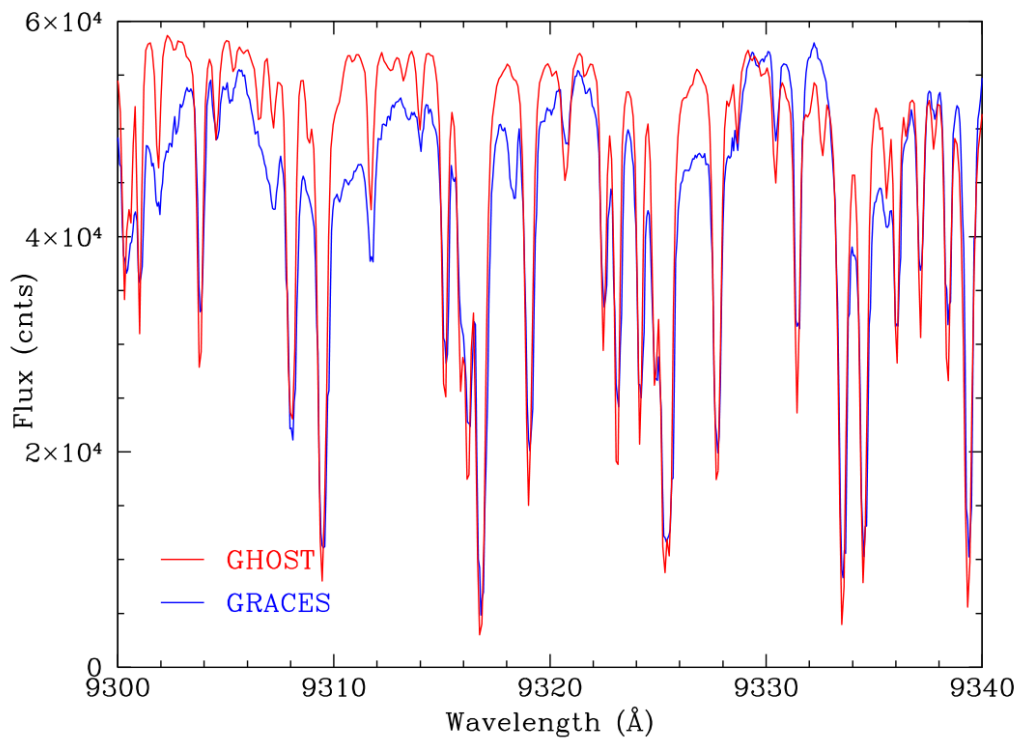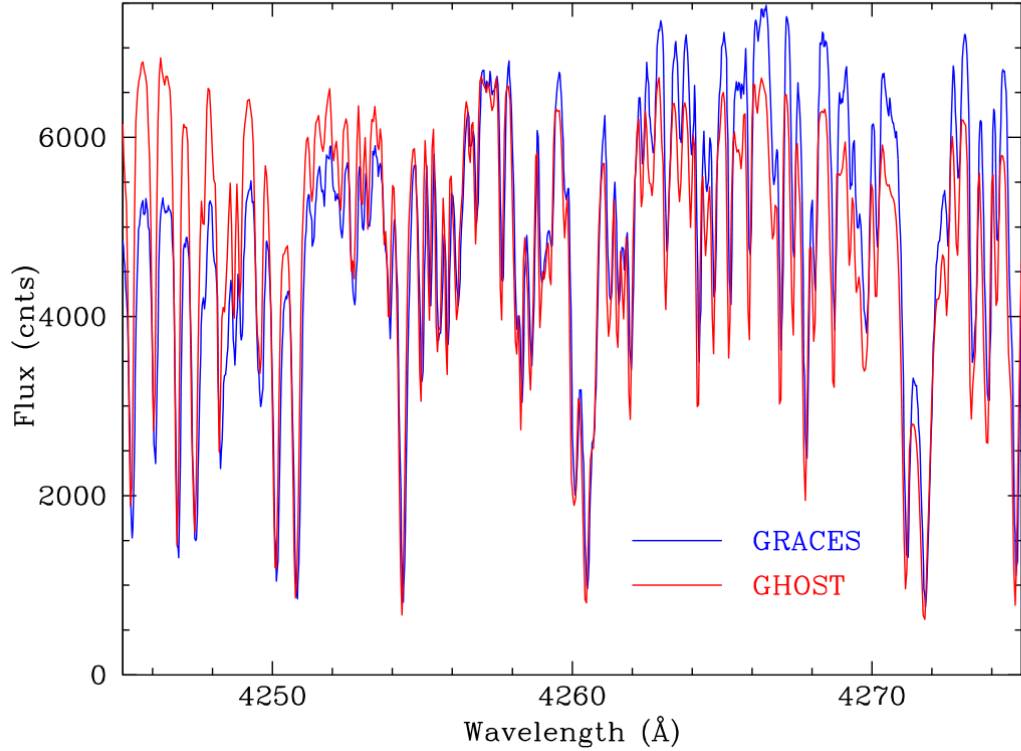
Suggestions for improvements:

No additional comments beyond those I've already noted.

Any additional comments about GHOST SV

I found the SV process to be useful in uncovering issues and suggesting improvements for all aspects of the operational process, ahead of wider scale usage by the full community. The small team worked well together and everyone seemed very invested in testing and improving the system, and in playing with their own GHOST data. There was much excitement about the data which I'm sure will translate to the larger community.