1 Introduction

This document contains the atlas for line identification of NTT EMMI Echelle spectra taken with the Grating Echelle #14 with Grism #4 as cross-disperser. [This is the (final) version obtained through a median of 3 images.]

2 Hints & Tips for the reduction

The Red CCD of EMMI contains a gap that complicates the reduction of the spectra. The following remarks can be made for the reduction:

- To remove useless parts of the CCD, as well as blue orders impossible to trace, a cropping of the image should be done. A good compromise is: columns from 600 to 2060, and rows from 300 to 1800 (for an image binned 2x2). The Echelle #14 with Grism #4 goes very far in the red (above 1\,\mu m). At that wavelength, the CCD becomes inefficient. Therefore, the values given above also trim a few orders in the red. With this area, there are 50 orders.

- I found not way to correctly trace the entire order (22) that cross the gap. However, choosing an horizontal cut for the order identification where this order are well defined allow to trace correctly the fraction of the order that is on the given side of the gap. With the cropping values given above, I used an horizontal cut at row 1100. Of course, it is always better to define a reference trace with a bright (standard) star before making the flat.

- 44 orders are allowed by the flat-field frames. However, the calibration spectrum is not well defined in the orders 1 to 3 and 42 to 50. The orders between 5 and 40 of the spectrum are numerous and well defined enough for a full wavelength solution for the 50 orders, although extreme orders close to the borders are interpolated. Users interested by a very precise wavelength calibration should not use these limiting orders, or trim even more the blue part of the CCD.
3 Image of the calibration spectrum

Below is the image of the Thorium-Argon frame cropped to the dimensions mentionned above. The CCD gap is indicated as well as the identification of the orders.
NTT EMMI :: Echelle Grating 14 Grism 4 :: order 24
NTT EMMI :: Echelle Grating 14 Grism 4 :: order 44