Line Identification for NTT EMMI Echelle Spectra
Thorium-Argon :: Grating Echelle 14 & Grism 5
(March 2004)

1 Introduction

This document contains the atlas for line identification of NTT EMMI Echelle spectra taken with the Grating Echelle #14 with Grism #5 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 350 to 2065, and rows from 300 to 1800 (for an image binned 2x2). With this area, there are 64 orders.

- I found not way to correctly trace entirely the orders (33 & 34) 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 385. Of course, it is always better to define a reference trace with a bright (standard) star before making the flat.

- 64 orders are allowed by the flat-field frames. However, the calibration spectrum is not well defined in the orders 1 & 2, and of course in the order 33 & 34. 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 mentioned above. The CCD gap is indicated as well as the identification of the orders.

![Image of the calibration spectrum](image_url)
4 Atlas of line identification
NTT EMMI :: Echelle Grating 14 Grism 5 :: order 8

ADU

Wavelength Å

10

4150 4160 4170 4180 4190

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NTT EMMI :: Echelle Grating 14 Grism 5 :: order 44