Goodman Spectroscopic Tools Documentation

Release 1.0

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ONE

GOODMAN HIGH THROUGHPUT SPECTROGRAPH

WARNING This is the first release of this pipeline, although we have thoroughly tested it there might still be bugs. Please let me know by an e-mail to storres [at] ctio noao edu.

The Goodman High Throughput Spectrograph is an imaging spectrograph if you wish to know more about the instrument please check the SOAR website

To see full documentation please go to the GitHub hosted site for Goodman

1.1 What is contained in this package?

This repository contains tools for spectroscopy, but after the data is reduced, i.e. bias and flat corrected, for that part please use David Sanmartim's github repository.

This package have the following capabilities.

- [x] Identify targets in images
- [x] Trace the target
- [x] Extract the target with background subtraction
- [x] Find the wavelength Solution (Requires User Input)
- [x] Linearize data
- [x] Write wavelength solution to a FITS header
- [x] Create a new file for the wavelength calibrated 1D spectrum

1.2 How to install it?

Either clone or download this code. If you decide to clone it just do ...

Or you can simply go and click *here* for download a zip file with all the script files.

1.3 How to use it?

To get a list of the possible arguments do:

```
/path/to/this/repo/redspec.py --help
```

The simplest way of running this pipeline is to go to your data folder, already processed with goodman_ccdreduction and execute `redspec.py`

```
/path/to/this/repo/redspec.py
```

Will run the following defaults:

- [x] Observing Mode **0**: One solution applied to all night
- [x] Interactive Mode **True**
- [x] Data Path **./**
- [x] Destination folder for processed data **./**
- [x] Search Pattern **fzh_**
- [x] Output prefix **g**
- [x] Reference Files Path */path/to/this/repo/***refdata/**
- [x] Plots Enabled **False**
- [x] Reference Lamp **None**

1.4 Important Notes

Needs python2.7 and a newer version of numpy1.12.0 otherwise there will be problems with numpy.linspace

There is a `requirements.txt` file that you can use as follow

```
pip2.7 install -r requirements.txt
```

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