# Chapter 7

# Finding Pulsars from the command line

## 7.1 Introduction

Pulsar surveys in radio produce large numbers of potential pulsars, these then have to be inspected. For this exercise you are given a large number of potential pulsars. For each potential pulsar you will find a `.bestprof`-file and a `.png`-file. The former is a text file with meta data while the latter is a diagnostic plot. The data set should contain a pulsar that you have to find using command line tools.
The data you need is available from

### 7.1.1 Grading

This exercise is required but will be graded PASS or FAIL. Hand in your work via the `http://astro.mprog.nl` website.

### 7.1.2 The assignments

- Start a report to be handed in as a A4-sized PDF file. Make sure you include your name and student number on the first page of your report.
- Download the file `L0TAAS.tar.gz` (containing a number of pulsar non-detections and pulsar detections) and copy it to a directory where you can work.
- Unpack the tarball, you will now be presented with a number of sub directories containing the images and metadata files.
- Open one of these `.png` images from the command line. If you don't know which command to use to open these images, perform a web search to find out which command will do that. (Add the command you used to the report.)
- Now that you have seen the plot, open the metadata (hint: the bestprof files are text files). Looking through this file you will see that the reduced chi-squared is an entry in the header, we will need these later. How many entries are there in the header? (Add the number to your report.)
- How many possible detections are there in the complete data set? (Add the answer to your report.)
- Add the picture of the brightest profile to your report (the brightest detection will have the highest reduced chi squared). You should use the meta data to find the brightest non-detection. Also add to the report how you found the brightest one.
- Now add the 100th brightest profile you report and explain how you found it. (The reader contains a hint as to how you could do this.)