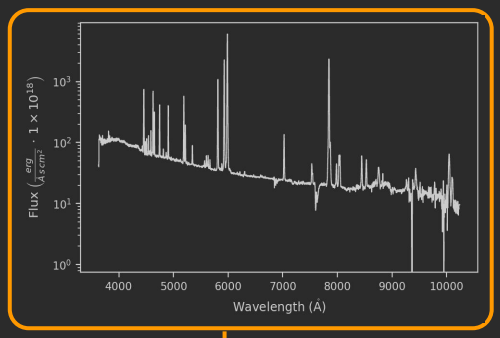
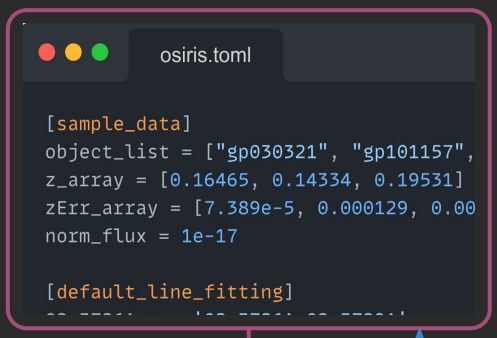
a) Load the data

- Create an observation from a .fits/.txt file.
- Write the analysis parameters in a .toml.





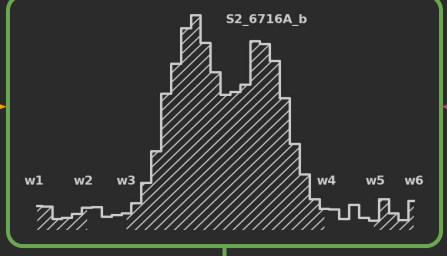
b) Prepare a lines table

- Use the LiMe database to ready a table with the candidate lines in your astronomical objects.
- Set the transition dispersion units and air/vacuum values.
- Change the database default profile (Gaussian, Lorentz…) and shape (emission or absorption).

Label	wave	w1	w2	w3	w4	w5	w6
N2_6583A	6583.36	…	…	…	…	…	…
He1_6677A	6676.87	…	…	…	…	…	…
S2_6716A	6716.33	…	…	…	…	…	…
S2_6731A	6730.71	…	…	…	…	…	…
He1_7065A	7065.10	…	…	…	…	…	…
He1_7065A	7065.10	…	…	…	…	…	…
O2_7319A	7318.81	…	…	…	…	…	…
O2_7320A	7319.88	…	…	…	…	…	…
O2_7330A	7329.55	…	…	…	…	…	…
O2_7331A	7330.62	…	…	…	…	…	…

c) Adjust the line bands to the observation

- Use the spectrum resolving power to predict the line interval width (w3, w4).
- Define blended and merged lines



d) Confirm the line presence

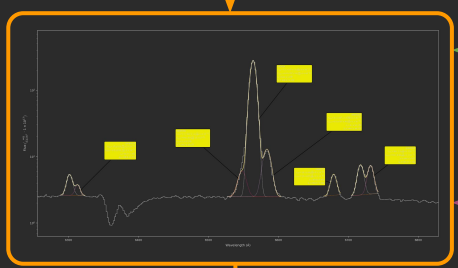
- Automatic detection:
- *Fit the continuum*
- *Threshold peaks/troughs above continuum noise*
- *Match features with theoretical transitions.*

- Manual review via interactive plots

Label	wave	w1	w2	w3	w4	w5	w6
H1_6563A_b	6583.36	…	…	…	…	…	…
~~He1_6677A~~	~~6676.87~~	…	…	…	…	…	…
S2_6716A_b	6716.33	…	…	…	…	…	…
~~He1_7065A~~	~~7065.10~~	…	…	…	…	…	…
O2_7319A_m	7318.81	…	…	…	…	…	…
O2_7330A_m	7329.55	…	…	…	…	…	…

e) Line measurements

- Integrated measurements
- Profile-dependent measurements:
  - *Use the configuration file to constrain the profile parameters*



f) Review results

- Check line diagnostics: χ^2 , AIC, BIC…
- Interactive plots

Ok?

- Use hierarchical configuration to tailor the analysis.

g) Save results

- Multiple supported files (.fits, .txt, .pdf, .xlsx, .asdf)
- Theme the default plots.