1D spectral extraction for perfectly registered & perfectly calibrated data

Story

As an impatient astronomer, I just want to extract a 1D spectrum for a single source given perfectly registered images and assuming calibrations are correct. I want it fast and I don't want to think about forward modeling.

Inputs

- Direct and slitless images with perfect WCSs
- catalog information (coordinates, magnitudes ...)
- Exposure times?
- Noise model? Or components of the noise model (gain, exptime, read noise, subtracted background)?
  - Or is this already in an uncertainty array?
- Detector signatures already removed (e.g. CALWEBB_DETECTOR1)
- Identification of the pixels in the direct image corresponding to "the source" (e.g. from a segmentation map)
- Identification of any pixels in the direct image corresponding to contaminating sources

Outputs

- A 1D extracted spectrum in a format that can be used by specutils
  - Flux vs. wavelength
  - Uncertainties
  - Propagated data-quality flags
  - Flags of the pixels that are contaminated by other sources; IDs of the contaminating sources

Computations

- Maps pixels in the direct image to x,y, wavelength
- Accumulates the flux at each wavelength (onto some wavelength grid)
  - Perhaps weighted by the flux in the direct image at this cross-dispersion location
- Accumulates uncertainties at each wavelength
- Accumulates some kind of contamination flag at each wavelength
  - As a quick & dirty story, this could be as simple as looking at overlapping bounding boxes
  - Probably best to record the IDs of the contaminating sources

Drawbacks

- This doesn't do much to address contamination
- This mixes together wavelength and position more than a forward-modeling approach.
- Uncertainties are likely to be quite misleading