

| Category                      | Subcategory   | Feature  | Importance/Avg |            |               |                   | MOSCOW  | Phase  | Comments |                                      |  |  |  |  |
|-------------------------------|---|--|----------------|------------|---------------|-------------------|---------|--------|----------|--------------------------------------|--|--|--|--|
|                               |   |  | StdDev         | Effort Avg | Effort StdDev | Importance/Effort |         |        |          |                                      |  |  |  |  |
| Visualization                 | 2D cutouts  |  | 0.42           | 0.07       | 0.00          | 0.00              | #DIV/0! |        |          |                                      |  |  |  |  |
|                               | 1D Interface to specviz   |  | 1.72           | 0.28       | 2.63          | 0.32              | 0.65    | Could  |          |                                      |  |  |  |  |
|                               | interface to MOSViz   |  | 1.08           | 0.67       | 3.66          | 0.72              | 0.30    | Could  |          |                                      |  |  |  |  |
|                               | Contamination highlighting  |  | 0.66           | 0.55       | 0.51          | 0.61              | 1.29    | Must   | 2        |                                      |  |  |  |  |
| User Interface                | Contamination highlighting for different orientations                         |  | 1.69           | 0.68       | 5.12          | 0.35              | 0.33    | Should |          | 2                                    |  |  |  |  |
|                               | user-friendly APIs  |  | 1.51           | 0.58       | 5.42          | 0.29              | 0.28    | Should |          | 2                                    |  |  |  |  |
|                               | Interactive GUI   |  | 0.00           | 0.00       | 0.00          | 0.00              | #DIV/0! |        |          |                                      |  |  |  |  |
|                               | Web-browser interface   |  | 0.95           | 0.69       | 1.60          | 0.48              | 0.59    | Could  |          | 2                                    |  |  |  |  |
| Organization and bookkeeping  | Organization and bookkeeping  |  | 1.53           | 0.81       | 1.28          | 0.66              | 1.20    | Should |          | 2                                    |  |  |  |  |
|                               | Input data formats  |  | 0.00           | 0.00       | 0.00          | 0.00              | #DIV/0! |        |          |                                      |  |  |  |  |
|                               | HST FITS files  |  | 1.87           | 0.40       | 1.00          | 0.51              | 1.88    | Must   | 1        |                                      |  |  |  |  |
|                               | SExtractor catalogs   |  | 1.39           | 0.63       | 0.94          | 0.04              | 1.48    | Should |          | 2                                    |  |  |  |  |
| Input data formats            | Photutils catalog objects   |  | 1.10           | 0.52       | 0.82          | 0.26              | 1.33    | Should |          | 2                                    |  |  |  |  |
|                               | Astropy tables  |  | 1.60           | 0.57       | 0.87          | 0.26              | 1.85    | Must   | 1        |                                      |  |  |  |  |
|                               | Output data formats   |  | 0.00           | 0.00       | 0.00          | 0.00              | #DIV/0! |        |          |                                      |  |  |  |  |
|                               | Latex tables  |  | 0.56           | 0.41       | 1.08          | 0.67              | 0.52    | Could  |          | 2                                    |  |  |  |  |
| Output data formats           | FITS (tabular)  |  | 1.62           | 0.25       | 0.94          | 0.43              | 1.94    | Must   | 1        |                                      |  |  |  |  |
|                               | Spectrum1D objects  |  | 1.62           | 0.70       | 0.88          | 0.43              | 1.84    | Must   | 1        |                                      |  |  |  |  |
|                               | HDF5  |  | 0.63           | 0.54       | 0.93          | 0.66              | 0.68    | Could  |          | 2                                    |  |  |  |  |
|                               | ASDF  |  | 0.40           | 0.44       | 0.71          | 0.66              | 0.57    | Should |          | 2                                    |  |  |  |  |
| Option specification          | MOSViz input table  |  | 0.59           | 0.56       | 0.63          | 0.79              | 0.94    | Must   |          | 2                                    |  |  |  |  |
|                               | Command line  |  | 0.00           | 0.00       | 0.00          | 0.00              | #DIV/0! |        |          |                                      |  |  |  |  |
|                               | Option/configuration file (YAML, XML)   |  | 1.69           | 0.36       | 1.05          | 0.51              | 1.61    | Must   | 1        |                                      |  |  |  |  |
|                               | Geometric transformations   |  | 0.00           | 0.00       | 0.00          | 0.00              | #DIV/0! |        |          |                                      |  |  |  |  |
| Computation                   | Simulations   |  | 1.51           | 0.99       | 1.19          | 0.92              | 1.26    | Must   | 1        |                                      |  |  |  |  |
|                               | Noiseless, at native sampling of FLT files                                    |  | 0.18           | 0.61       | 0.14          | 0.00              | 1.30    |        |          |                                      |  |  |  |  |
|                               | Noiseless, using a supersampled spatial template                              |  | 1.81           | 0.45       | 1.20          | 0.45              | 1.51    | Must   | 1        |                                      |  |  |  |  |
|                               | Adding noise  |  | 1.30           | 0.72       | 1.30          | 0.99              | 1.00    | Should |          | 2                                    |  |  |  |  |
| Analysis                      | Adding geocoronal background  |  | 1.26           | 0.51       | 1.19          | 0.38              | 1.06    | Should |          | 2                                    |  |  |  |  |
|                               | Spatial scanning  |  | 0.98           | 0.57       | 1.42          | 0.47              | 0.69    | Could  |          | 2                                    |  |  |  |  |
|                               | 0.90  | 0.76   | 1.48           | 0.87       | 0.61          |                   | Won't   |        |          |                                      |  |  |  |  |
|                               | 0.00  | 0.00   | 0.00           | 0.00       | #DIV/0!       |                   |         |        |          |                                      |  |  |  |  |
| Create an emission-line map   | Create an emission-line map   |  | 1.22           | 0.79       | 1.31          | 0.87              | 0.93    | Could  |          | 2                                    |  |  |  |  |
|                               | Fit a set of templates  |  | 0.49           | 0.84       | 0.43          | 0.00              | 1.14    | Should |          | 2                                    |  |  |  |  |
|                               | Astropy models and user-provided template grid-model                          |  | 1.02           | 0.75       | 1.04          | 0.81              | 0.99    | Should |          | 2                                    |  |  |  |  |
|                               | built-in template library   |  | 1.02           | 0.69       | 1.31          | 1.21              | 0.78    | Could  |          | 2                                    |  |  |  |  |
| 3D cube construction          | 3D cube construction  |  | 0.96           | 0.72       | 1.03          | 1.28              | 0.93    | Could  |          | 2                                    |  |  |  |  |
|                               | Measure line strengths  |  | 1.34           | 0.73       | 1.14          | 0.72              | 1.18    | Should |          | 2 using the original 2D grism images |  |  |  |  |
|                               | Measure redshifts   |  | 1.35           | 0.75       | 1.21          | 0.91              | 1.11    | Should |          | 2 using the original 2D grism images |  |  |  |  |
|                               | Combine with broadband photometry   |  | 1.08           | 0.78       | 1.26          | 0.96              | 0.86    | Should |          | 2 using the original 2D grism images |  |  |  |  |
| Docs                          | 0.00  | 0.00   | 0.00           | 0.00       | #DIV/0!       |                   |         |        |          |                                      |  |  |  |  |
|                               | API documentation   |  | 1.99           | 0.33       | 1.09          | 0.39              | 1.83    | Must   | 1        |                                      |  |  |  |  |
|                               | Tutorial / cookbook   |  | 2.05           | 0.42       | 1.07          | 0.45              | 1.92    | Must   | 1        |                                      |  |  |  |  |
|                               | minimal code comment standard   |  | 1.44           | 0.76       | 0.68          | 0.62              | 2.12    | Must   | 1        |                                      |  |  |  |  |
| Preparation                   | Sphinx documentation/Readthedocs  |  | 1.44           | 0.69       | 1.11          | 0.21              | 1.30    | Should | 1        |                                      |  |  |  |  |
|                               | 0.00  | 0.00   | 0.00           | 0.00       | #DIV/0!       |                   |         |        |          |                                      |  |  |  |  |
|                               | Astrometric registration  |  | 0.20           | 0.47       | 0.19          | 0.00              | 1.07    |        |          |                                      |  |  |  |  |
|                               | Using Gaia & PanSTARRS, etc   |  | 1.25           | 0.75       | 1.33          | 0.44              | 0.94    | Won't  |          | Not grism specific                   |  |  |  |  |
| Identify associated data sets | Register dithered direct images   |  | 1.55           | 0.85       | 1.30          | 0.37              | 1.19    | Won't  |          | Not grism specific                   |  |  |  |  |
|                               | Register to existing catalog  |  | 1.62           | 0.63       | 1.18          | 0.44              | 1.38    | Won't  |          | Not grism specific                   |  |  |  |  |
|                               | Associate direct & grism images   |  | 1.86           | 0.57       | 0.87          | 0.42              | 2.13    | Must   | 2        |                                      |  |  |  |  |
|                               | Find other datasets that overlap  |  | 1.48           | 0.51       | 1.07          | 0.33              | 1.39    | Should | 2        |                                      |  |  |  |  |
| Create input source catalog   | 0.13  | 0.42   | 0.12           | 0.00       | 1.11          |                   |         |        |          |                                      |  |  |  |  |
|                               | Using pre-configured photutils  |  | 0.21           | 0.51       | 0.23          | 0.00              | 0.91    |        |          |                                      |  |  |  |  |
|                               | Using pre-configured SExtractor   |  | 1.36           | 0.61       | 0.87          | 0.68              | 1.56    | Must   | 2        |                                      |  |  |  |  |
|                               | 0.00  | 0.00   | 0.00           | 0.00       | #DIV/0!       |                   |         |        |          |                                      |  |  |  |  |
| Detection                     | Find an isolated emission line  |  | 0.14           | 0.31       | 0.37          | 0.00              | 0.37    |        |          |                                      |  |  |  |  |
|                               | EM2D algorithm  |  | 1.12           | 0.47       | 1.59          | 0.47              | 0.71    | Should | 2        |                                      |  |  |  |  |
|                               | 0.00  | 0.00   | 0.00           | 0.00       | #DIV/0!       |                   |         |        |          |                                      |  |  |  |  |
|                               | 2D spectral extraction  |  | 0.52           | 0.89       | 0.50          | 0.74              | 1.04    |        |          |                                      |  |  |  |  |
| Extraction                    | Simple cutout with WCS of the source of interest (compatible with Spectrum1D) |  | 1.40           | 0.62       | 0.99          | 0.49              | 1.41    | Must   | 1        |                                      |  |  |  |  |
|                               | 1D extraction relying on SED models   |  | 1.12           | 0.63       | 1.23          | 0.91              | 0.91    | Should |          |                                      |  |  |  |  |
|                               | 1D extraction with no model assumptions                                       |  | 1.55           | 0.63       | 1.00          | 0.89              | 1.55    | Must   | 1.5      |                                      |  |  |  |  |
|                               | 1D "optimal" extraction   | Weighted by profile in direct image (no wavelength dependence) | 1.31           | 0.72       | 1.18          | 0.26              | 1.11    | Should | 2        |                                      |  |  |  |  |
| Contamination modeling        | Weighted by profile in direct image including wavelength dependence           |  | 1.43           | 0.68       | 1.65          | 0.42              | 0.87    | Could  |          | 2                                    |  |  |  |  |
|                               | Based on multi-band profiles from some other data source                      |  | 0.74           | 0.46       | 1.84          | 0.26              | 0.40    | Could  | 2        |                                      |  |  |  |  |
|                               | 0.00  | 0.00   | 0.00           | 0.00       | #DIV/0!       |                   |         |        |          |                                      |  |  |  |  |
|                               | Contamination modeling  |  | 0.34           | 0.76       | 0.42          | 0.00              | 0.82    |        | 2        |                                      |  |  |  |  |

