JWST QSO templates

Templates ready to use in JWST ETC (<https://jwst-docs.stsci.edu/jwst-exposure-time-calculator-overview/jwst-etc-scenes-and-sources-page-overview/jwst-etc-user-supplied-spectra>), i.e., wavelength in micron and flux density in mJy.

* **Colina\_Quasar\_z=0\_ETC-Glikman+Hernan-Caballero.txt**
  + Quasar template provided by Luis Colina. Template used by European MIRI team based on the composite spectra of Hernan-Caballero et al. 2016 (<https://ui.adsabs.harvard.edu/abs/2016MNRAS.463.2064H/abstract>) and Glikman et al. 2006 (<https://ui.adsabs.harvard.edu/abs/2006ApJ...640..579G/abstract>)
  + Note it starts at MgII
* **jiang\_j1342\_qso4upload.txt**
  + Quasar template provided by Linhua Jiang et al. based on photometry of Pisco and J1148. For details see *jiang\_j1342SED\_20170801.pdf*
* **jiang\_j1342\_host4upload1.txt**
  + Empirical quasar host galaxy template provided by Linhua Jiang et al. based on photometry of Pisco and J1148. For details see *jiang\_j1342SED\_20170801.pdf*The host galaxy with 4400 flux 1/30 of the quasar flux
  + Note: this template is a “best guess” SED; however, it doesn’t include high resolution spectral features like Balmer absorption lines (unlike S99 model below).
* **jiang\_j1342\_host4upload2.txt** 
  + Same as above but host galaxy with 4400 flux 1/100 of the quasar flux
* **mcgreer\_z75qso.dat**
  + Quasar template at z=7.5 created by Ian McGreer
  + This is template is the most similar simulated spectrum to the available photometry of Pisco, using Ian’s code: <https://github.com/imcgreer/simqso>
  + See *mcgreer\_notebook\_JWST\_z65qso.pdf* for an Jupyter notebook of how this was created for a z=6.5 quasar (I don’t have the notebook for the final z=7.5 template).
* **mcgreer\_starburst99\_host\_models\_z75\_lines.txt**
  + Starburst99 quasar host galaxy templates at z=7.5 created by Ian McGreer
  + The templates have star formation rate of 100 solar mass per year and 0.1 solar metallicity and constant star formation history with stellar age of 30, 100 and 300 Myr and extinction E(B-V) of 0, and 0.2 (look at the header of the file)
  + For default model is suggested to use SFR = 100, age = 100 Myr, E(B-V) = 0
  + The starbust99 model is based on stellar population synthesis models. The model doesn’t include emission lines and/or features like PAH (according to Xiaohui PAH should not be strong, and we should not attempt to detect it).
  + The Halpha, Hbeta, Pa-beta, and Br-gamma lines were added by hand assuming Kennicutt relation between SFR and H alpha. A fiducial linewidth of 300 km/s is assumed for all the lines.
* **vandenberk2001\_z=0\_fnu\_noscale.txt**
  + Vanden Berk et al. 2001 template in the right units (micron, fnu) but need to be re-scaled to the appropriate magnitude. Note that the resolution is less than the NIRSpec high resolution mode (R<2700).
* **selsing2016\_z=0\_fnu\_noscale.txt**
  + Selsing et al. 2016 template in the right units (micron, fnu) but need to be re-scaled to the appropriate magnitude.
* **lyu\_quasar\_intrinsic\_spec\_template\_noscale.txt**
  + Empirical quasar spectral template provided by Jianwei Lyu. This product has been used by the US MIRI GTO team. It is a combination of a new UV-optical spectral template built with the SDSS DR7 quasar archive, the near-IR template by Gilkman et al., (2006) and the mid-IR average quasar template presented in Hao et al., (2007);
  + See details in the file header.

Are there any other templates that could be useful/relevant?