Quick how-to using Leicester:

1. Get raw or processed data from the Leicester page: https://www.swift.ac.uk/swift_portal/
2. Utilize xrtpipeline to clean raw data: https://www.swift.ac.uk/analysis/xrt/xrtpipeline.php
    - Or use xrtpipe.py
3. Put all processed data (event and exposure images) either into 1 source folder or one of your choice
4. Merge event files in a directory using xselect via evt_merger.py (Leicester tutorial)
5. Merge exposure maps via img_merge.py (https://www.swift.ac.uk/analysis/xrt/exposuremaps.php)
6. Only for my analysis, run obs_time.py to get exposure time of observations
7. Detect sources using ximage (https://www.swift.ac.uk/analysis/xrt/xrtcentroid.php)
    - Follow ximage_detect.py -> detect_analysis.py -> find_sig_dets.py
8. Extracting the spectrum of the source and background (xselect_step.py):
    - Follow up to grppha: https://www.swift.ac.uk/analysis/xrt/spectra.php
    - Acquire the ARF and RMF files: https://www.swift.ac.uk/analysis/xrt/arfs.php
    - Merge the spectra (src - bck). Continue from grppha: https://www.swift.ac.uk/analysis/xrt/spectra.php
        - “group min 1” for faint sources, group min 10, 15, or 20 for brighter sources
9. Use Xspec to fit the spectrum (if group min 1, use “statistic cstat”): https://heasarc.gsfc.nasa.gov/xanadu/xspec/manual/
    - xspec_step.py and xspec_reader.py follow these steps

Light curves and time filtering:

1) Utilize xselect to filter time: https://www.swift.ac.uk/analysis/xrt/timing.php
    a) Read events of relevance
    b) “Extract curve bin_size_t = {x}”
    c) “filter time” and choose your mechanism
    d) “extract event copyall=yes” -> “save event” to save your slice
        i) copyall is very important for the exposure map
2) Need to now generate a new exposure map for filtered time: https://www.swift.ac.uk/analysis/xrt/exposuremaps.php
    a) Will require ancillary files and hk xrt files from raw data
    b) Use xrtexpomap to generate this time filtered exposure map

Big how-to in manual: https://www.swift.ac.uk/analysis/xrt/files/xrt_swguide_v1_2.pdf

For further help, you can reach me: kdn5172@psu.edu