

Last updated: September 19, 2011

- 1 This file:
 /Users/mburger/Work/NeutralModel/modelpro.2.0/Docs/quick_mercury_procedure.pdf
- 2 **IMPORTANT:** All angles are given in radians. This includes longitudes, latitudes, and TAA.
- 3 Create input file:
 - 3.1 look at
 /Users/mburger/Work/NeutralModel/modelpro.2.0/Docs/Mercury.template
 - 3.2 To determine model endtime:
 IDL> print, MercuryModelEndTime(atom,taa)
 - Gives $4\times$ the photoionization rate in seconds.
- 4 Run the model:
 IDL> model_driver, inputfiles, npackets
 - 4.1 inputfiles = list of inputfiles to run – as many as you want
 - 4.2 npackets = minimum number of packets in the end result (I generally set this to $1e7$)
- 5 Create the format structure. Look at:
 /Users/mburger/Work/NeutralModel/modelpro.2.0/Docs/MASCS.format
- 6 Compute the model result:
 IDL> result = produce_results(inputfile, format)
 IDL> result = *result.radiance/1000
 This gives the radiance in kR.
- 7 Load MASCS Data:
 IDL> data = load_MASCS_data(species, orbitnum, [phase], /Level3) or
 IDL> data = load_MASCS_data(species, tstart, tend, /Level3)
 - 7.1 For the flybys:
 - orbit = -1,-2,-3 for M1,M2,M3.
 - phase = tail, sweep, night, pole-north, pole-south
 - 7.2 For orbit, ignore phase
 - 7.3 tstart, tend = 'YYYY-MM-DDTHH:MM:SS.S' or 'YYYY-DOYTHH:MM:SS.S'
 - 7.4 Data is a structure containing:
 - Species
 - ET = ephemeris time
 - radiance = radiance in kR
 - sigma = uncertainty in kR
 - x, y, z = MSO s/c position in R_M
 - xbore, ybore, zbore = MSO boresight look direction in R_M
 - file = original CDR file for each point