mvn_ngi_filelvlcng_v01_r01.pdf

Bold and starred level indicates most recent and current version to be used.

Level	Ver/Rev	Features	Major changes
L1a	**v01_r01****	Raw data of all orbits uncalibrated (hsk, sci, msg) No alterations made by science team. All other products can be derived from this product.	None: this is our current working version
L1b	**v07_r02/03****	**Calibrated data: Includes ephemeris and Background subtractions**	**Improved background subtraction on neutral data; corrected sclk drift (10/1/15-2/2/16)**
L1b	v07_r01	Calibrated data: Includes ephemeris and Background subtractions	Added t_utc column for easy searching.
L1b	v06_r04	Calibrated data: Includes ephemeris and background subtractions	Background subtraction now uses warmup and first 50 sec of inbound for more accurate measurement of background. Re-run of ephemeris with updated kernels. Removed any outstanding bad pointing l1b files. Corrected output to match PDS label files (i.e. orbit, tid, umkid, counts converted from float to integer to match label file)
L1b	v06_r01	Calibrated data: Includes ephemeris and background subtractions	Note v01-v05 (most changes were in format with ephemeris discussions and background subtraction techniques. v04, v05 and v06 only versions published to SDC, altitude, Vsc and time formats were finally all agreed upon by all instrument teams in v06.
L1b	v06_r02	Calibrated data: Includes ephemeris and background	New background subtractions method r01 used linear fit to warmup, inbound and

		subtractions	outbound, r02 averaged warmup and first 5 seconds of inbound
L1b	v06_r03	Calibrated data: Includes ephemeris and background subtractions	Background subtraction method same (r02) Updated ephemeris with updated kernels from naïf. Removed l1b files corresponding to COMM passes, unrecoverable data gaps or other bad pointing periapsis.
L2 all	**v05_r02/03 ****	**Derived neutral and ion densities**	**Updated ion densities to STATIC/LPW, corrected sclk drift, adjusted neutral fractionation patterns**
L2 all	v05_r01**	Derived neutral and ion densities	Added: t_utc, lat, long, lst, sza for ease of use. Updated neutral fractional calibrations (cal_gas 7/30/15). Updated ion calibrations with LPW (9/18/15). Updated error calculations (Poison distribution & %error error should be plotted as X = X +/- %e). Corrected errors from overlap calculations between attenuations.
L2 csn/cso	v04_r04**	Derived neutral data product: csn contains only closed source neutral product (Ar, CO2, He, N2) while cso contains data for all neutral products we can compute (Ar, CO2, He, N2, CO, O2, O, NO)	New adjustment method for overlap between attenuation cps for 44, 28, 40 and 16. Computing OS and CS** density for CO (cso only) for orbits greater than 714. Improved computation of O. [KP product will use CS value whenever possible]. Improved fractionation patterns and sensitivity for C, O, N, CO2, CO, He, and NO. Precision now computed as a percentage error. Interpolated all cps and density to 2s cadence closer to each point of measurement to reduce error in interpolations.
L2	v04_r03	Derived neutral data	Fixed error with csv column on

csn/cso		product: csn contains only closed source neutral product (Ar, CO2, He, N2) while cso contains data for all neutral products we compute (Ar, CO2, He, N2, CO, O2, O, NO)	O2 abundance/precision (period where a comma should be minor correction)
L2 csn/cso	v04_r02	Derived neutral data product: csn contains only closed source neutral product (Ar, CO2, He, N2) while cso contains data for all neutral products we compute (Ar, CO2, He, N2, CO, O2, O, NO)	**error in O2 abundance/column (period where comma should be) combines the two columns in csv format. Added precision and quality columns. Precision in physical units of abundance (affected by variations in atmosphere). Updated fragmentation patterns. Interpolated to 1s cadence on cps and abundance to ease subtraction between interacting species (O, CO, N, C, etc.)
L2 csn/cso	v04_r01	Derived neutral data product: csn contains only closed source neutral product (Ar, CO2, He, N2) while cso contains data for all neutral products we compute (Ar, CO2, He, N2, CO, O2, O, NO)	Interpolated to 1s cadence. Updated fractionation patterns and corrected error on N2 sensitivity. All negative density values set to NaN to prevent confusion. Some errors at periapsis and in overlaps for CO, O and CO2 corrected in later formats.
L2 csn/cso	v03_r01	Derived neutral data product: csn contains only closed source neutral product (Ar, CO2, He, N2) while cso contains data for all neutral products we can compute (Ar, CO2, He, N2, CO, O2, O, NO)	No interpolations. This version generally worked through DD1 & 2 and was used to work through hi and lo emission changes.
L2 csn/cso	v02	Derived neutral data product: csn contains only closed source	No time interpolations. Was used to determine count drift error from beginning of mission

		neutral product (Ar, CO2, He, N2) while cso contains data for all neutral products we can compute (Ar, CO2, He, N2, CO, O2, O, NO)	through February. There are many files from this version and v03 that are from December and January that were forced to 'work' in the code that do not have reliable results.
L2 csn/cso	v01	Derived neutral data product: csn contains only closed source neutral product (Ar, CO2, He, N2) while cso contains data for all neutral products we can compute (Ar, CO2, He, N2, CO, O2, O, NO)	Generally first efforts to get siding spring and early mission results out. More calibration was done throughout mission.
L2 ion	v04_r02**	Derived ion data product: contains all ion densities m2-150.	Interpolated to 2s cadence to match better with measurement times and with neutral computation. Improved overlap computation. Corrected skipping errors for overlap calculation for m32 corrections.
L2 ion	v04_r01	Derived ion data product: contains all ion densities m2-150.	Interpolated to 1s cadence, added precision and quality flags.
L2 ion	v03_r03	Derived ion data product: contains all ion densities m2-90.	Precision and quality flags, no interpolation. No roll over correction for m32, 16, 28 or 44.
L2 ion	v03_r02	Derived ion data product: contains all ion densities m2-90.	No precision/quality, no interpolation, no rollover correction. Adjusted sensitivity to LPW October and December data.
L2 ion	v03_r01	Derived ion data product: contains all ion densities m2-90.	Can account for masses up to 150 when script call for it, and sensitivity adjusted to LPW data October and December.
L2 ion	v01&v02	Derived ion data product: contains all ion densities m2-90.	Can only account for m2-90. Adjusted sensitivity only to LPW October data.
L3 all	**v02_r02/03****	**Derived averaged**	**Corrected**

		density product & scale Height : average density over 10 km steps; scale heights & temperatures	
L3 all	v02_r01**	Derived averaged density product & scale Height : average density over 10 km steps; scale heights & temperatures	Added t_utc for ease of use, Scale heights for all open source species.
L3 res-den/sht	v01_r03**	Derived averaged density product & scale Height : average density over 10 km steps; scale heights for all species, temperatures for Ar	Corrected formatting errors necessary for PDS delivery (i.e. making sure orbit, tid, etc # was integer); Removed temperatures for all species except Ar for clarity
L3 res-den/sht	v01_r02	Derived averaged density product: average density over 10 km steps scale heights for all species, temperatures for all CSN species	Fixed formatting error to be compliant with PDS formats. Corrected temperature and scale height computation
L3 res-den/sht	v01_r01	Derived averaged density product: average density over 10 km steps scale heights for all species, temperatures for all CSN species	Produced for each neutral product. Does not correspond with ion files.