Errata for USGS DEM Version 2

The following are notes that should be added either to the errata or some other appropriate place pertaining to this release.

This release, hereafter referred to as “version 2”, provides an update to the following products, referred to as “version 1”:

MESSDEM\_1001/DEM/GLOBAL/IMG/MSGR\_DEM\_USG\_SC\_I\_V01.IMG

MESSDEM\_1001/DEM/GLOBAL/IMG/MSGR\_DEM\_USG\_SC\_I\_V01.LBL

MESSDEM\_1001/DEM/GLOBAL/JPEG2000/MSGR\_DEM\_USG\_SC\_J\_V01.JP2

MESSDEM\_1001/DEM/GLOBAL/JPEG2000/MSGR\_DEM\_USG\_SC\_J\_V01.LBL

MESSDEM\_1001/DEM/GLOBAL/JPEG2000/MSGR\_DEM\_USG\_SC\_J\_V01\_AUX.XML

MESSDEM\_1001/DEM/POLAR/IMG/MSGR\_DEM\_USG\_NP\_I\_V01.IMG

MESSDEM\_1001/DEM/POLAR/IMG/MSGR\_DEM\_USG\_NP\_I\_V01.LBL

MESSDEM\_1001/DEM/POLAR/IMG/MSGR\_DEM\_USG\_SP\_I\_V01.IMG

MESSDEM\_1001/DEM/POLAR/IMG/MSGR\_DEM\_USG\_SP\_I\_V01.LBL

MESSDEM\_1001/DEM/POLAR/JPEG2000/MSGR\_DEM\_USG\_NP\_J\_V01.JP2

MESSDEM\_1001/DEM/POLAR/ JPEG2000/MSGR\_DEM\_USG\_NP\_J\_V01.LBL

MESSDEM\_1001/DEM/POLAR/ JPEG2000/MSGR\_DEM\_USG\_NP\_J\_V01\_AUX.XML

MESSDEM\_1001/DEM/POLAR/ JPEG2000/MSGR\_DEM\_USG\_SP\_J\_V01.JP2

MESSDEM\_1001/DEM/POLAR/ JPEG2000/MSGR\_DEM\_USG\_SP\_J\_V01.LBL

MESSDEM\_1001/DEM/POLAR/ JPEG2000/MSGR\_DEM\_USG\_SP\_J\_V01\_AUX.XML

Also the complete contents of MESSDEM\_1001/EXTRAS/ISIS have been replaced/updated with the new version 2 release. Note all products have been remained using “V02” in their file names.

Below are additional details regarding products contained in version 2 of this release:

1. A preliminary version of the USGS global DEM (MSGR\_DEM\_USG\_SC\_I\_V01.IMG) was inadvertently released in the initial version 1 of the PDS release of May 9, 2016. The new data products included in version 2 of this release is the correct version corresponding to the DEM that was used to create all the cartographic maps in version 1 of the DPS release. The main difference in version 2 products is they are derived using a 1-sigma filter applied to the point cloud when processing each output pixel. Version 1 did not have this filter applied. It has been confirmed that version 2 of the DEM was used in the derivation of MDIS and MASCS map products where it is indicated that the USGS DEM was used in the creation of those products. None of those products are affected by this release.
2. Version 1 of the polar products (MSGR\_DEM\_USG\_NP\_I\_V01.IMG and MSGR\_DEM\_USG\_SP\_I\_V01.IMG), were derived (i.e., projected) from the version 1 of the global DEM. Version 2 of both the north and south pole products are independently derived using the same technique as the Version 2 global DEM.
3. The global DEM label keyword DATA\_SET\_MAP\_PROJECTION refers to the DEM\_EQU\_MAP.CAT catalog file describing the Equirectangular projection. However, it should be noted that the Simple Cylindrical projection used in this Version 2? global DEM is compatible with the Equirectangular projection with a center latitude of projection of 0 (zero), and therefore applies to this DEM.
4. The EXTRAS/ISIS products have been update to be consistent with version 2 of the DEMs. Additional detached ISIS labels have been added to provide radius values (MSGR\_DEM\_USG\_??\_I\_V02.IMG.radius.lbl) in addition to labels providing elevations (MSGR\_DEM\_USGS\_??\_I\_V02.IMG.lbl). The following instructions are provided to create an ISIS compatible DEM product that can be used as a shape model for Mercury:
   1. Copy MESSDEM\_1001/DEM/GLOBAL/IMG/ MSGR\_DEM\_USG\_SC\_I\_V02.IMG to the directory containing the ISIS detached labels.
   2. Run the ISIS application *demprep* to produce the ISIS-compatible shape model:
      1. *demprep from=MSGR\_DEM\_USG\_SC\_I\_V02.IMG.radius.lbl to=MSGR\_DEM\_USG\_SC\_I\_V02.prep.cub*
   3. It is now ready to use as an ISIS shape model for any Mercury mapping processing in ISIS. Here is an example on how to apply the shape model in *spiceinit* for an MDIS image:
      1. *spiceinit from=EN0210451707M.cub shape=user model=MSGR\_DEM\_USG\_SC\_I\_V02.prep.cub*

Note that the polar DEMs can be used as an ISIS shape model directly and do not require step b) above (i.e., *demprep* should *not* be run on the polar DEMs).