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SP_Dunes_ReadMe.doc
Mars Global Digital Dune Database: MC-30

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2012
(http://pubs.usgs.gov/of/2012/1259)

Database Organization:
The SP database (http://pubs.usgs.gov/of/2012/1259) includes the following:

General Information for All Users

SP_Pamphlet: Contains the following documentation:

SP_Dunes_Pamphlet – includes an abstract and describes the purpose of the database, the processes involved in creating the database, the completeness of the database, and references used in the documentation of the database. The pamphlet is provided in .pdf and .txt formats.

SP_Map

SP_Mars_Map – a 1:20,000,000 scale printable map of the dune fields and craters in the database, provided in .jpg and .pdf formats with a caption.

SP_Mars_Map_noCaption – a 1:20,000,000 scale printable map of the dune fields and craters in the database, provided in .jpg and .pdf formats without a caption.

Data for GIS Users (SP_GIS_Download_Package)

SP_ArcMapProjects: Contains ArcMap projects and "Layers" folder. The "Layers" folder contains layer files of all layers in the database as well as the vector "background" shapefiles. Layer files preserve the symbology used in our ArcMap projects. If a user prefers to set up new projects, the layer files provide a convenient way to continue to use our symbology. **Note that two layer files, SP_CcDcAzimuth_Point.lyr and SP_Average_Slipface.lyr, are point files that display an arrow whose rotation is based on an azimuth calculated in South Polar Stereographic projection. Those arrows will only display properly in South Polar Stereographic projection. Do not use them in any other projection.** In the list below, * denotes files that we created as part of the SP database. We did not create the other files, but include them for background and context. The ArcMap 10 projects can be opened in ArcMap 10. All database and background layers and images will be fully functional.

Layers folder:

SP Average Slipface.lyr *
SP CcDcAZimuth (Line).lyr *
SP CcDcAzimuth (Point).lyr *
SP Crater Centroid.lyr *
SP Crater.lyr *
SP CTX (December, 2009).lyr

SP Dune Field (Classified).lyr *
SP Dune Field Centroid.lyr *
SP GCM.lyr *
SP Geol Units (Tanaka and Scott).lyr
SP HiRISE (May, 2009).lyr
SP HRSC (March, 2008).lyr
SP Lat Lon (5 x 30 degrees).lyr
SP Lat Lon (5 x 5 degrees).lyr
SP MOC NA (2006).lyr
SP Raw Slipface.lyr *
SP THEMIS Daytime IR (May, 2010).lyr
SP THEMIS VIS (May, 2010).lyr

Projects:

SP_Dunes_MC30_ArcMapv10.mxd – groups together all THEMIS and MOC NA images associated with Mars Chart 30 and includes all other layers. We have restricted some layers to draw only when zoomed to a certain scale. Those layers will have a gray box in the table of contents and not draw until the preset scale is reached.

SP_Dunes_MC30_layout_ArcMapv10.mxd – contains all the vector and background layers, but no images. The project is set up with a layout template to enable easy printing of maps. The default map is also included in PDF and JPEG formats in the SP_Map folder.

SP_ArcReaderProjects: Contains the MC-30 project described above in .pmf format. The free software, ArcReader will open these files. The user should note that some layers can take very long to render in this format. We have restricted some layers to draw only when zoomed to a certain scale. Those layers will have a gray box in the table of contents and not draw until the preset scale is reached. See SP_Dunes_ReadMe_GIS for more details.

Projects:

SP_Dunes_MC30_ArcMapv10.pmf – groups together all THEMIS and MOC NA images associated with Mars Chart 30 and includes all other layers.

SP_Dunes_MC30_layout_ArcMapv10.pmf – contains all the vector and background layers, but no images. The project is set up with a layout template to enable easy printing of maps. The default map is also included in PDF and JPEG formats in the SP_Map folder.

SP_Geodatabase: Contains 2 folders, each containing one file geodatabase (mdb)

Geocentric folder: Contains a geocentric version of the file geodatabase, SP_Dune_Crater_ Geocentric_Geodatabase.mdb.

PolarStereographic folder: Contains a Polar Stereographic projected version of the geodatabase, SP_Dune_Crater_SPstereo_Geodatabase.mdb.

SP_Images: Contains all the images projected and available in the above described ArcMap and ArcReader projects.

SP_mola_128_new folder: Contains the MOLA gridded elevation raster, megt_n_128_65 (460 m/px, clipped to lat 65 S.) and the MOLA hillshade, hillshade_s_128.

SPSterVISMOC folder: Contains all the THEMIS VIS and MOC NA images that are used by the ArcMap and ArcReader projects. MOC NA images were processed using ISIS. THEMIS VIS images were processed using ArcMap10 tools. The images are in South Polar Stereographic projection in JPEG, JP2 or PNG format. The images are grouped into folders (for example, MOC and VIS) and are further subdivided into 6 regions for organizational convenience.

THEMIS_IR_mosaic folder: Contains two version of the THEMIS IR mosaic, clipped to lat 65° S. and unclipped, extending to about 50° S. Resolution is ~115 m/pixel. These mosaics are registered to MOLA and so will align correctly with nearly all dune field polygons.

THEMIS_VIS_mosaics folder: Contains two THEMIS VIS mosaics (summer and spring). Resolution is ~72 m/pixel. Note that these mosaics are not perfectly registered to MOLA and so will not always align with dune field polygons.
spld_readme.txt – contains information about the THEMIS VIS mosaics

SP_Metadata: Contains metadata files for each of the nine SP database layers in .pdf, and .txt formats. The metadata files describe the layers and their associated fields. Also contains metadata for MOLA background.

Arc_mola_polar_megt_128pd.txt – includes a description of source and processing of MOLA data.

SP_ReadMe: Contains the following documentation.

SP_Dunes_ReadMe_GIS – lists and describes the layers in the database and their attributes in .pdf and .txt formats. Also describes the layers that are not part of the database.

SP_Shapefiles: Contains shapefile versions of the dune database and the background shapefiles that we did not create, but that are included for the convenience of the user. Each shapefile layer requires 7 files (*.dbf, *.prj, *.sbn, *.sbx, *.shp, *.xml, and *.shx). For more details about the contents of each layer, refer to SP_Dunes_ReadMe_GIS.doc.

Backgrounds: Contains shapefile versions of vector background layers.

SP_CTX_footprints_dec09
SP_Geol_Units
SP_HiRISE_footprints_may_09
SP_HRSC_footprints_march2008
SP_LatLon_5x5
SP_LatLon_5x30
SP_MOC_NA_footprints_06

SP_THEMIS_DaytimeIR_footprints_may2010
SP_THEMIS_VIS_footprints_may2010

Geocentric: Contains shapefile versions of the Geocentric database layers.
SP_Average_Slipface_Geog
SP_CcDcAZimuth_Line_Geog
SP_CdDcAzimuth_Point_Geog
SP_Crater_Centroid_Geog
SP_Crater_Geog
SP_Dune_Field_Centroid_Geog
SP_Dune_Field_Geog
SP_GCM_Geog
SP_Raw_Slipface_Geog

PolarStereographic: Contains shapefile versions of the South Polar Stereographic database layers.
SP_Average_Slipface_Ster
SP_CcDcAZimuth_Line_Ster
SP_CdDcAzimuth_Point_Ster
SP_Crater_Centroid _Ster
SP_Crater_Ster
SP_Dune_Field_Centroid_Ster
SP_Dune_Field_Ster
SP_GCM_Ster
SP_Raw_Slipface_Ster

Data for Non-GIS Users

SP_DataForNon-GIS-Users: Contains Excel and tab delimited text formats of the dune database attribute table.
SP_DuneTable.xls – Excel spreadsheet with 2 worksheets containing (1) "Dune Fields" – attribute table from the SP_Dune_Field shapefile, (2) "Average Slipface" – attribute table from the SP_Average_Slipface shapefile.
SP_Dune_Field.txt and SP_Average_Slipface.txt – Text files produced from the 2 Excel worksheets described above.
SP_DuneTable_ReadMe – describes the Excel spreadsheet organization, the ASCII text files, and all fields included in the tabulated version of the database, provided in .txt and .pdf formats.

Metadata

Attribute Accuracy: All attributes were verified by displaying the lines and are believed to be logically consistent.

Logical Consistency Report: All attributes were verified by displaying the lines and are believed to be logically consistent. Line geometry is topologically clean.

Positional Accuracy:

Horizontal Positional Accuracy:

The horizontal accuracy is derived from the accuracy of the Mars Orbiter Laser Altimeter (MOLA) dataset (Smith and others, 2001). The globally adjusted MOLA dataset has an absolute horizontal accuracy on the order of 100 m, but individual features in images can probably only be tied to MOLA-derived shaded-relief digital image models with a precision on the order of 200 m. Other bases used included Thermal Emission Imaging System (THEMIS) digital images (Archinal and others, 2003; Christensen and others, 2004). The digital features were drawn at 20K to 100K scale with a node spacing of approximately 0.3 km to 2 km.

Data Created: 11/2003 to 1/2012

Status of the data

Complete

Time period for which the data is relevant

Date and time: June 2012
Description: publication date

Publication Information

Who created the data: Rosalyn K. Hayward, Tony Colaprete (NASA/Ames GCM)
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Constraints on accessing and using the data

Access constraints: none
Use constraints: none

Details about this document

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