

SP_Crater.doc
Mars Global Digital Dune Database: MC-30
By R.K. Hayward, L.K. Fenton,
T.N. Titus, A. Colaprete, and P.R. Christensen
2012
(<http://pubs.usgs.gov/of/2012/1259>)

Summary

See Pamphlet.doc, Mars Global Digital Dune Database Purpose.

Description

See Pamphlet.doc, Mars Global Digital Dune Database Abstract.

Credits

There are no credits for this item.

Access and use limitations

There are no restrictions.

ArcGIS Metadata

Resource Identification

Citation Title: SP_Crater_Geog
Alternate Titles: South Pole Crater
Presentation Format: digital map
Collection Title: Mars Global Digital Dune Database
Responsible Party:
Individual's Name: Rosalyn K. Hayward
Organization's Name: USGS,
Astrogeology Contact's Position: Geologist
Contact's Role: Originator
Contact Information:
Phone:
Voice: (928) 566-7022
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Address:
Delivery Point: 2255 N. Gemini Dr.
City: Flagstaff
Administrative Area: Az
Postal Code: 86001
Country: United States
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Publication Information:

Publication_Place: Reston, Virginia

Publisher: U.S. Geological Survey

Online_Linkage: <http://pubs.usgs.gov/of/2012/1259>

Themes Or Categories Of The Resource :

geoscientificInformation

Tags For Searching: Dune, Aeolian, Mars, Database, GCM

Discipline Keywords: Planetary Science

Place Keywords: Mars

Theme Keywords: Dune

Theme Keywords: Aeolian

Theme Keywords: Database

Theme Keywords: GCM

Dataset Languages: English (United States)

Dataset Character Set Utf8 - 8 Bit Ucs Transfer Format

Status: Completed

Resource Maintenance:

Update Frequency: Not Planned

Scope Of The Updates: Dataset

Resource Constraints:

Constraints:

Limitations Of Use:

There are no restrictions.

Spatial Representation Type: Vector

* Processing Environment: Microsoft Windows Server 2008 R2 Version 6.1 (Build 7601) Service

Pack 1; Esri Arcgis 10.0.2.3200

Other Extent Information:

Geographic Extent:

Bounding Rectangle:

* Extent Type Extent Used For Searching

* West Longitude -179.999924

* East Longitude 179.999924

* North Latitude -64.771375

* South Latitude -80.314777

* Extent Contains The Resource: Yes

Point Of Contact:

Individual's Name: Rosalyn K. Hayward

Organization's Name: USGS, Astrogeology

Contact's Position: Geologist

Contact's Role: Originator

Contact Information:

Phone:

Voice: (928) 566-7022

Fax: (928) 566-7014

Address:

Delivery Point: 2255 N. Gemini Dr.
City: Flagstaff
Administrative Area: Az
Postal Code: 86001
Country: United States
E-Mail Address: rhayward@usgs.gov

Reference System

Reference System Identifier

Value 104905

* Codespace Esri

* Version 10.0.0

Data Quality

Scope Of Quality Information

Resource Level: dataset

Lineage:

Process Step:

See Pamphlet.doc, Mars Global Digital Dune Database Process.

Data Quality Report - Completeness Omission:

See Pamphlet.doc, Mars Global Digital Dune Database – Completeness of Database.

Data Quality Report - Conceptual Consistency

Measure Description:

All attributes were verified by displaying the lines in both the database and the spatial coverage and they are believed to be logically consistent.

Data Quality Report - Topological Consistency

Measure Description:

These data are believed to be logically consistent. Line geometry is topologically clean.

Data Quality Report - Absolute External Positional Accuracy:

Measure Description:

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.

ESRI Metadata and Item Properties

Metadata Properties:

Arcgis: Arcgis1.0

Metadata Style: FGDC CSDGM Metadata
Metadata Standard Or Profile: FGDC
Created In Arcgis: 2012-05-14t13:03:12
Last Modified In Arcgis: 2012-06-03t15:08:05
Automatic Updates:
Last Update: 2012-06-03t15:06:39
Have Been Performed: Yes

Item Properties

Name: SP_Crater_Geog
Content Type: Downloadable Data

ESRI Spatial Information

Extent In The Item's Coordinate Reference

Bounding Rectangle:

- * West Longitude -179.999924
- * East Longitude 179.999924
- * North Latitude -64.771375
- * South Latitude -80.314777
- * Extent Contains The Resource: Yes

Coordinate Reference

Type: Geographic

Geographic Coordinate Reference: GCS_Mars_2000

Coordinate Reference Details

Geographic Coordinate
System

Well-Known Identifier: 104905
X Origin: -399.99999999999989
Y Origin: -399.99999999999989
XY Scale: 1000000000.0000001
Z Origin: -100000
Z Scale: 10000
M Origin: -100000
M Scale: 10000
XY Tolerance: 1.6870604858115214e-008
Z Tolerance: 0.001
M Tolerance: 0.001
High Precision: True
Left Longitude: -180
Well-Known Text
GEOGCS["GCS_Mars_2000",DATUM["D_Mars_2000",SPHEROID
["Mars_2000_IAU_IAG",3396190.0,169.8944472236118]],PRIMEM
["Reference_Meridian",0.0],UNIT["Degree",0.0174532925199433],A
UTHORITY ["ESRI",104905]]

ESRI Feature Class

Feature Class Name: SP_Crater_Geog

- * Feature Type: Simple
- * Geometry Type: Polyline
- * Has Topology: False
- * Feature Count: 348
- * Spatial Index: True
- * Linear Referencing: False

ESRI Fields and Subtypes

SP_Crater_Geog Feature Class

* ROW COUNT 348

FIELD OBJECTID

* ALIAS OBJECTID

* DATA TYPE OID

* WIDTH 4

* FIELD DESCRIPTION

Internal feature number.

* DESCRIPTION SOURCE

ESRI

* DESCRIPTION OF VALUES Sequential unique whole numbers that are automatically generated.

FIELD Shape

* ALIAS Shape

* DATA TYPE Geometry

* FIELD DESCRIPTION

Feature geometry.

* DESCRIPTION SOURCE

ESRI

* DESCRIPTION OF VALUES Coordinates defining the features.

FIELD Longitude

ALIAS Crater_Longitude_East

* DATA TYPE Double

* WIDTH 8

FIELD DESCRIPTION

Position of the centroid of the crater in decimal degrees east longitude.

FIELD Latitude

ALIAS Crater_Latitude_Aerocentric

* DATA TYPE Double

* WIDTH 8

FIELD DESCRIPTION

Position of the centroid of the crater in decimal degrees latitude (aerocentric).

FIELD CBarlowID

ALIAS Crater "BarlowID"

* DATA TYPE String

* WIDTH 20

FIELD DESCRIPTION

A unique ID number constructed after the method used by Barlow (2003) to assign ID numbers to craters. Longitude is listed first and both values are extended to one decimal place. The + or – sign of the latitude is given, indicating the break between the two values. Thus 122.5 east longitude, -34.5 south latitude, becomes 1225-345. The longitude is always four digits and the latitude is always three digits, filling in with leading zeroes where necessary. Note that the term "crater" was used for simplicity, even though a small number of the circular depressions containing dunes may not be impact craters.

FIELD MC

ALIAS Mars_5M_Chart

* DATA TYPE SmallInteger

* WIDTH 2

FIELD DESCRIPTION

Mars Chart (1:5 million) number for quadrangle in which dune field is located.

FIELD area_km_si

ALIAS Crater_Area_km2_sinu

* DATA TYPE Double

* WIDTH 8

FIELD DESCRIPTION

Crater area, in km², is given when a dune field is located within a crater. When a dune field is located within a crater that is within one or more other craters, the innermost crater is considered to exert the most influence, so its area is used. Areas were calculated in the sinusoidal projection and are based on our digitized craters. Note that the term "crater" was used for simplicity, even though a small number of the circular depressions containing dunes may not be impact craters.

FIELD Cr_diam

ALIAS Crater_Diameter_km

* DATA TYPE Double

* WIDTH 8

FIELD DESCRIPTION

Crater diameter, in km, is given when a dune field is located within a crater. Diameter is calculated by formula based on the area of the crater. Note that the term "crater" was used for simplicity, even though a small number of the circular depressions containing dunes may not be impact craters.

FIELD Shape_Length

* ALIAS Shape_Length

* DATA TYPE Double

* WIDTH 8

* FIELD DESCRIPTION

Length of feature in internal units.

* DESCRIPTION SOURCE

ESRI

* DESCRIPTION OF VALUES Positive real numbers that are automatically generated.

FIELD Shape_Area

* ALIAS Shape_Area

* DATA TYPE Double

* WIDTH 8

FIELD DESCRIPTION

Area of feature in internal units squared. Do not use this field because it is probably not accurate. Use the Crater_Area_km2_sinu field for accurate area values.

* DESCRIPTION SOURCE

ESRI

* DESCRIPTION OF VALUES Positive real numbers that are automatically generated.

Metadata Details

Metadata Language: English

Metadata Character Set: Utf8 - 8 Bit Ucs Transfer Format

Scope Of The Data Described By The Metadata: Dataset

* Scope Name: Dataset

Metadata Contact:

Individual's Name: Rosalyn K. Hayward

Organization's Name: USGS, Astrogeology

Contact's Position: Geologist

Contact's Role: Originator

Contact Information:

Phone:

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* Last Update: 2012-06-03

Maintenance:

Update Frequency: Not Planned

Scope Of The Updates: Dataset