

PIGWAD and Mapping Tools Update

Topics:

- PIGWAD Update
- Downloads
- Tools
 - Free Shapefile Viewers
 - Shapefile Creators
 - 3D
 - Profiles
 - Anaglyphs

PIGWAD Update:

- Upgraded to new version ArcIMS 4.0
- New spatial server for faster displays – not online yet
- Change to standardized template
- More datasets (explained next) and downloads added
- Feature Extraction
- Testing new image server which will allow you to mix RGB channels, do transparency on multiple layers and save out GIS ready jpeg.

Mars datasets

- **MSSS Mars MOC Mosaic (231 meters per pixel)**
- **Mars Digital Image Mosaic 2 (231 meters per pixel) no albedo**
- **Mars Digital Image Mosaic 1 (6000 and 1500 meters per pixel) albedo**
- **MOLA Shaded Relief (MOLA contour)**
- **Geology**
- **MOC footprints**
- **MOLA tracks**
- **1:15M Global Geologic Map**
- **Stereo Expected Precision Map**
- **Image Resolution Map**
- **Photoclinometry Figure of Merit Map**
- **Low-res TES mineral maps**
- **Graticule**

Venus datasets

- **Image Base (1 and 30 km/pixel bases)**
- **Crater Catalog**
- **Volcano Catalog**
- **Coronae Features (Type 1 and Type 2)**
- **Nomenclature**
- **Radar Properties**
- **Topography (GTDR) Image (contours 1 and 2 km interval)**
- **Reflectivity (GREDR) Image (contours 0.1 and 0.2 unit interval)**
- **Emissivity (GEDR) Image (contours 0.1 unit interval)**
- **RMS Slope (GSDR) Image (contours)**
- **Graticules (5x5 deg, 30x30 deg)**

Moon datasets

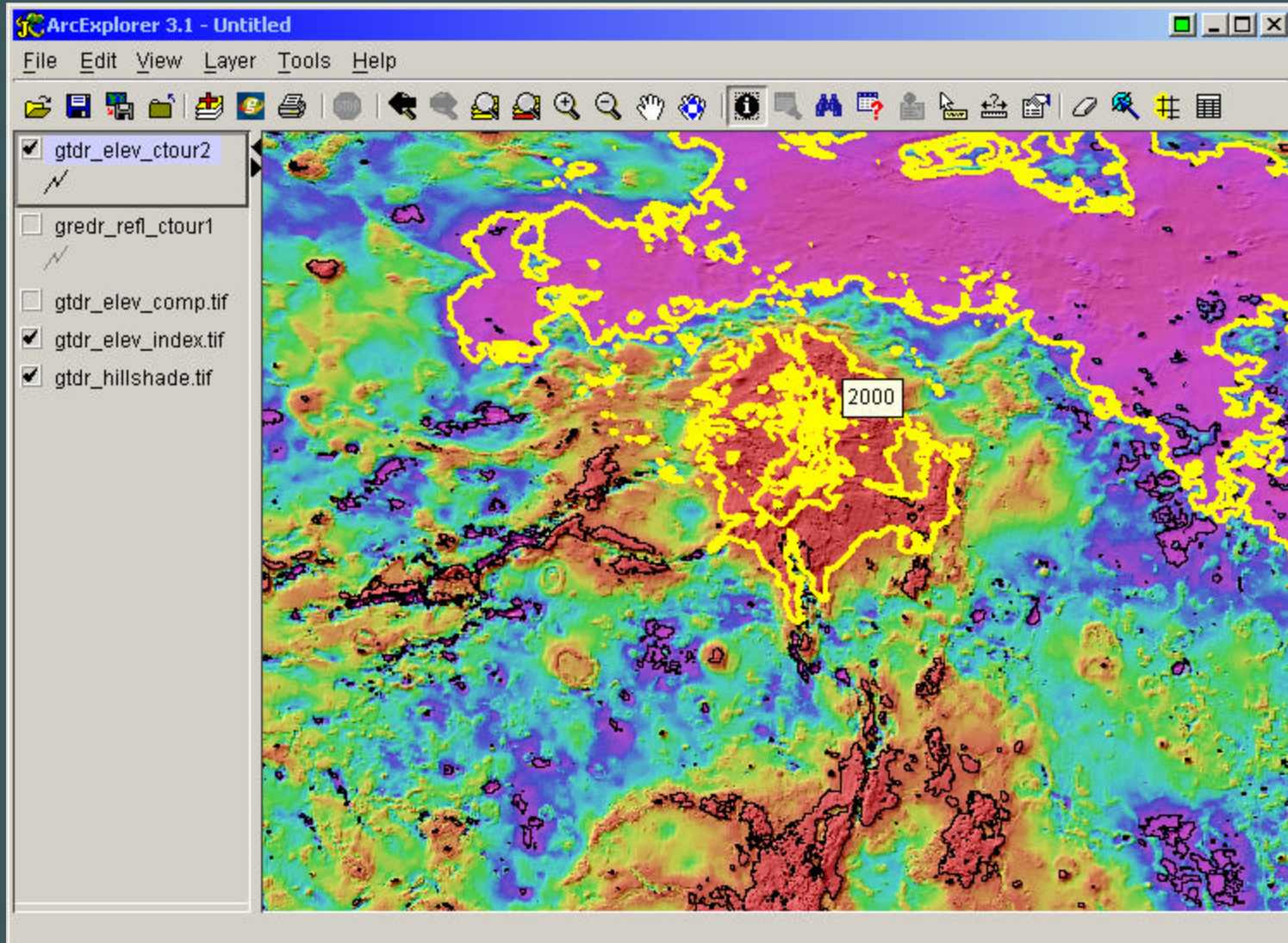
- **Clementine 750nm image base (303 and 16 pixel / degree)**
- **Nomenclature**
- **Geologic Maps**
- **Geologic Map Index**
- **Topography images (contours - 1 and 2 km intervals)**
- **Free-air Gravity images (contours - 1 and 2 km intervals)**
- **Graticules**

Free Shapefile Viewers

- ArcExplorer

<http://www.esri.com>

Windows, Sun, Linux, Mac OSX?



Venus hillshade with color layer set to 60% transparent, elevation contours

Free Shapefile Viewers

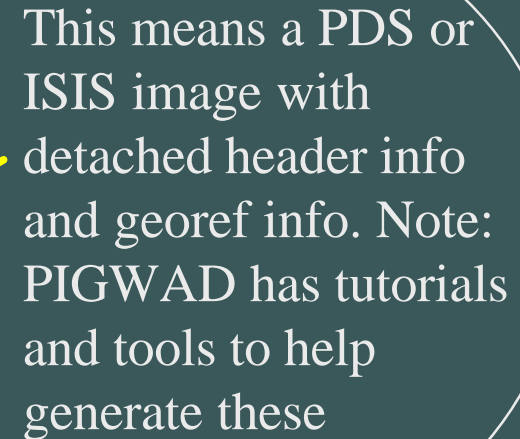
- ArcExplorer

<http://www.esri.com>

Windows, Sun, Linux, Mac OSX?

Supports multiple image types

- Jpeg
- Geotiff
- You need a “GIS” PDS image
- “GIS” ISIS cub
- Image transparency



This means a PDS or ISIS image with detached header info and georef info. Note: PIGWAD has tutorials and tools to help generate these

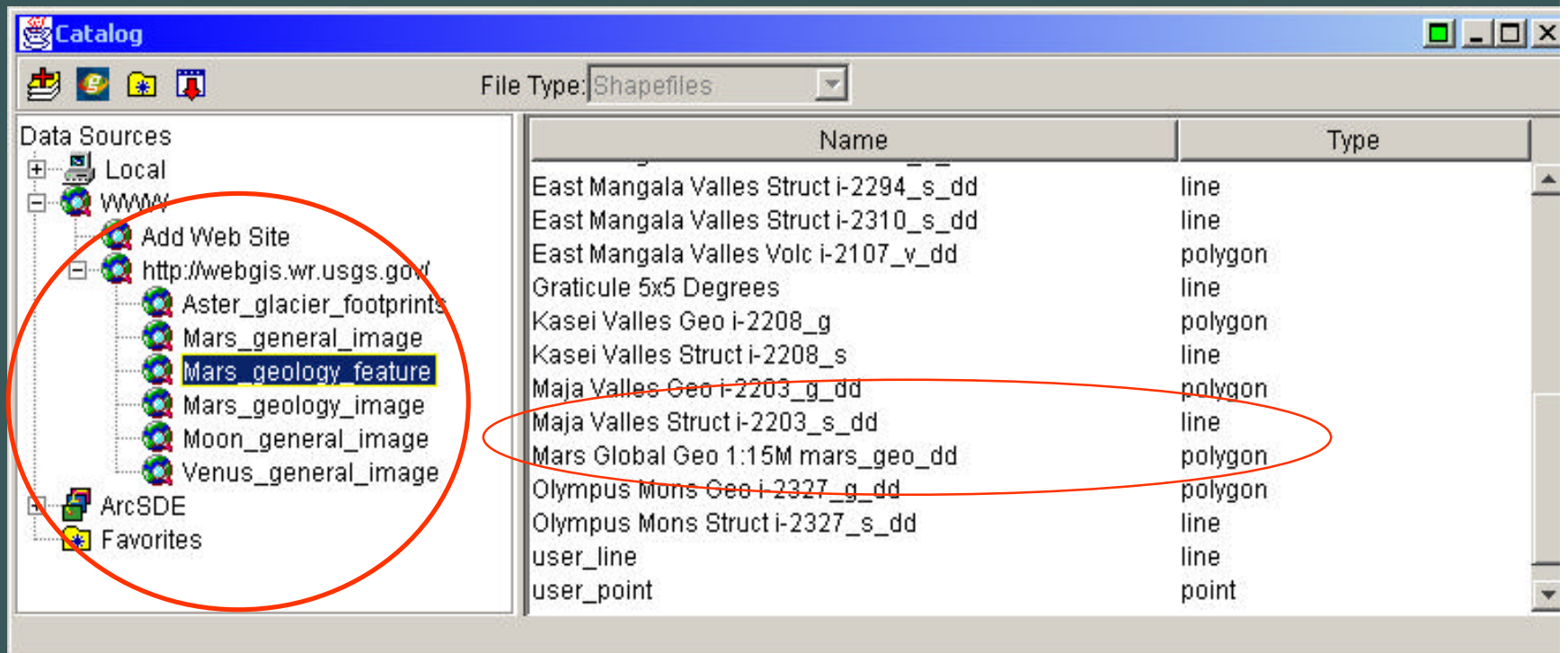
Supports shapefiles

- Color legends
- Scale dependancies
- Smart queries
- Map tips
- Buffering
- Saving projects

Free Shapefile Viewers

- ArcExplorer

Supports PIGWAD online maps and layers and thousands of Earth online maps



This means you can show your own shapefiles on top of PIGWAD layers without downloading anything.

Free Shapefile Viewers

- ArcExplorer

Set backs

- planetary spheroids not supported. Distances are wrong if using decimal degrees. User should use files in meters
- Cannot create or edit shapefiles
- New version will be available for download at the end of June.
- Can't query image pixels or display DEMs

Free Shapefile Viewers

<http://www.pcigeomatics.com>

- PCI Geomatic FreeView

Windows only

The screenshot displays the PCI Geomatic FreeView interface. The main window shows a map with a central feature outlined in red. An 'Attribute Manager' window is open, displaying a table of attributes for the selected shapefile. The table has columns for Shape Id, AREA, PERIMETER, and NORTH_F. An orange arrow points from the text 'Shapefile Query tools' to the attribute manager window.

Shape Id	AREA	PERIMETER	NORTH_F
212	38394800000.000	28342540.000	
213	6824236000.000	114866.125	
214	17896000000.000	153310.297	
215	38379300000.000	5682072.000	
216	23165630000.000	2374890.750	
217	95228030000.000	568732.438	
218	725167100.000	100597.617	
219	10102100000.000	256053.334	
220	76684050000.000	7118858.000	
221	19887250000.000	166184.734	
222	45511.418	1585.443	
223	103984.711	1477.760	
224	1544194000.000	110394.336	
225	75434420000.000	398478.938	
226	77362768.000	37867.180	
227	7123413000.000	275480.250	
228	4501061000.000	118620.945	
229	58671130000.000	506292.781	
230	14766380000.000	949006.188	
231	19080820000.000	772844.812	

Record 213 : Field 1 0 of 261 Records 0 of 6 Columns

Zoom: 538% x0.30 -88685.44E -158502.31N 0 selected

Shapefile Query tools

Free Shapefile Viewers

•PCI Geomatic FreeView



- View any number of images at any depth (8, 16, and 32 bit), at any size and in any resolution with NO conversion

ECW, Mr. Sid, Tif, Jpeg, GeoTif, RAW (PDS/ISIS), ...



- Vector support

•More than 100 formats

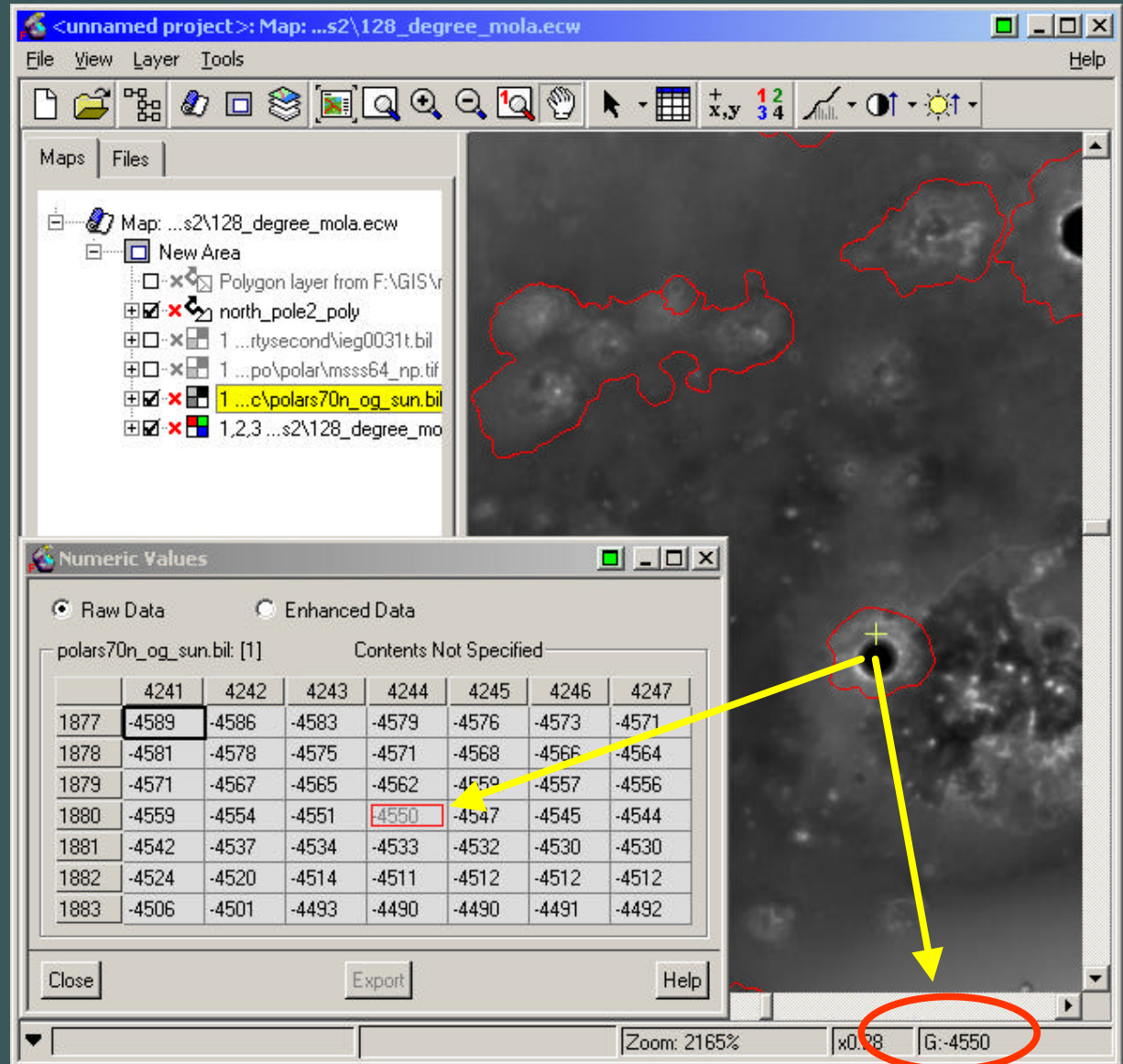
Note: We may start having users download ECW or Mr.Sid formats as you can get 100 to 1 compression. We will also look into Jpeg2000. This will be for GIS files like Mdim 2.1, Clementine, Venus SAR which can be multiple Gigs in size. This make the files easier to download an handle and serve in full mosaics not just pieces.

Free Shapefile Viewers

- PCI Geomatic FreeView

Image pixel
query on
images or
DEMs

- No profile tool
- No planetary projections



Free Shapefile Viewers

- Geo Mapper

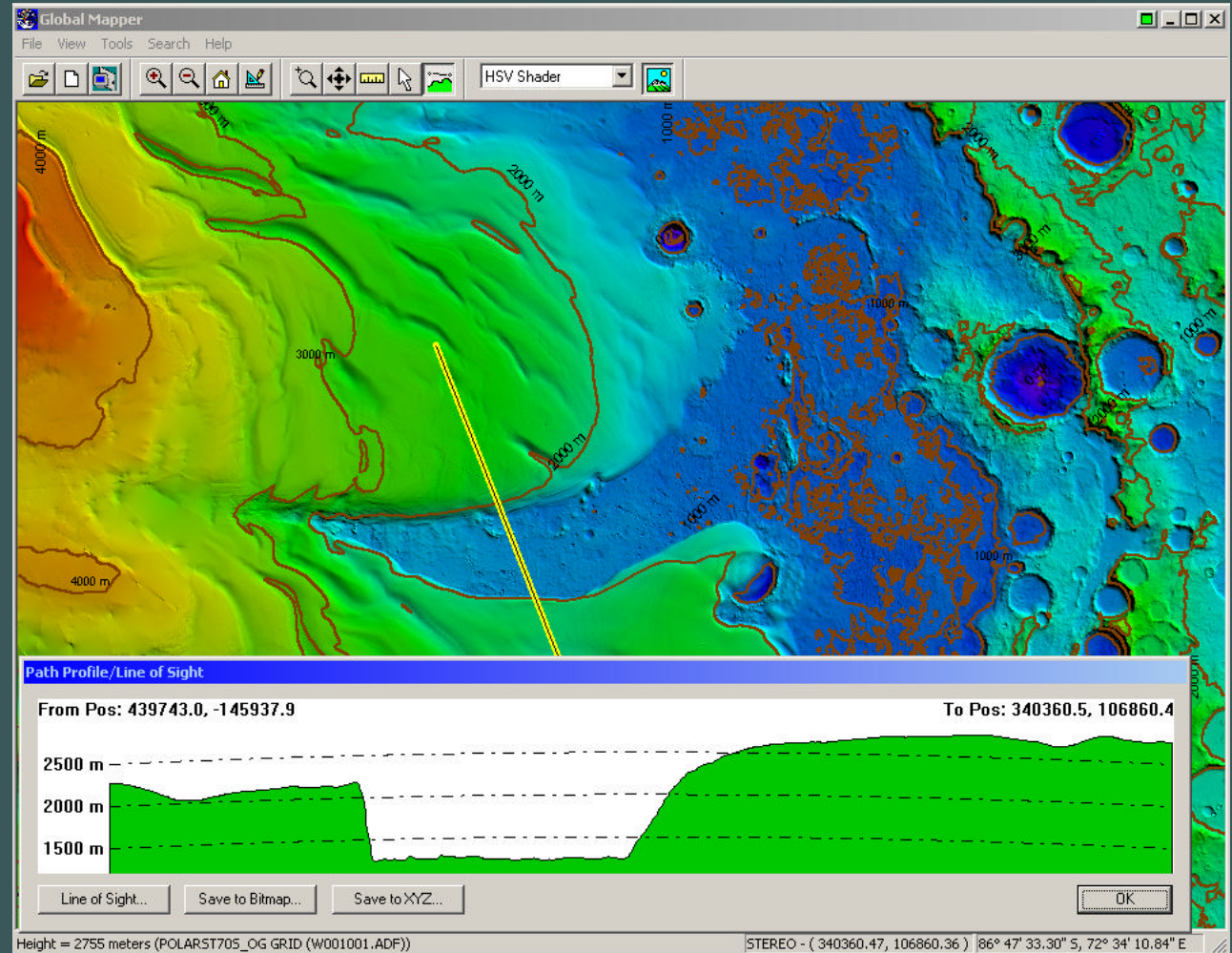
<http://www.globalmapper.com/>

Windows only

Using “GIS” ISIS
DEM (MOLA 230
m/p) The program

- Colored it
- Shaded it
- Contoured
- Profiled

- Query Pixels and
vectors



Problem: Note how the profile is plotted over a sphere. It will not let you accurately set a planetary sphere

Free Shapefile Viewers

•Geo Mapper

Formats:

- Vector Data (i.e. DLG's, Shapefiles, etc.)
 - AutoCAD DXF format
 - ☺ •ESRI Shapefile format
 - MapInfo MIF/MID format
 - ☺ •XYZ ASCII format
 - USGS DLG-O format
 - SVG (Scalable Vector Graphic) format
- Raster Data (i.e. DRG's, DOQ's, etc.)
 - GeoTIFF format
- Elevation Data (i.e. DEM's, etc.)
 - USGS DEM format
 - ☺ •GeoTIFF DEM format
 - Surfer Grid (ASCII and binary) formats
 - XYZ ASCII Grid format
 - ☺ •Arc Grid and ASCII Grid format
 - 3D DXF Mesh format
 - RockWorks Grid format
- ☺ •Contour Generation
- Profiles (sort-of)
- ☺ •Hillshading

Free Shapefile Viewers

- Geo Mapper

Set backs

- planets spheroids not supported
- Free mode is limiting 😞
 - Only supports 4 layers at a time
 - Cannot convert image to different image format
 - Cannot convert vectors
 - Cannot export contours to shapefiles ...
 - To enable these features the product cost \$130

Free Shapefile Viewers

- There are many more:

<http://software.geocomm.com/> for article:

“GIS Viewing Tools You Shouldn't Be Without!”

Last but not Least:

We are looking into a free viewer created in cooperation with GLIMS (Global Land Ice Measurements from Space). They are generating a image viewer and and shapefile attribution. Hopefully this would have a shapefile digitizer also. This would be available for Linux, Sun, Windows, and even Mac OSX!

3D Viewer

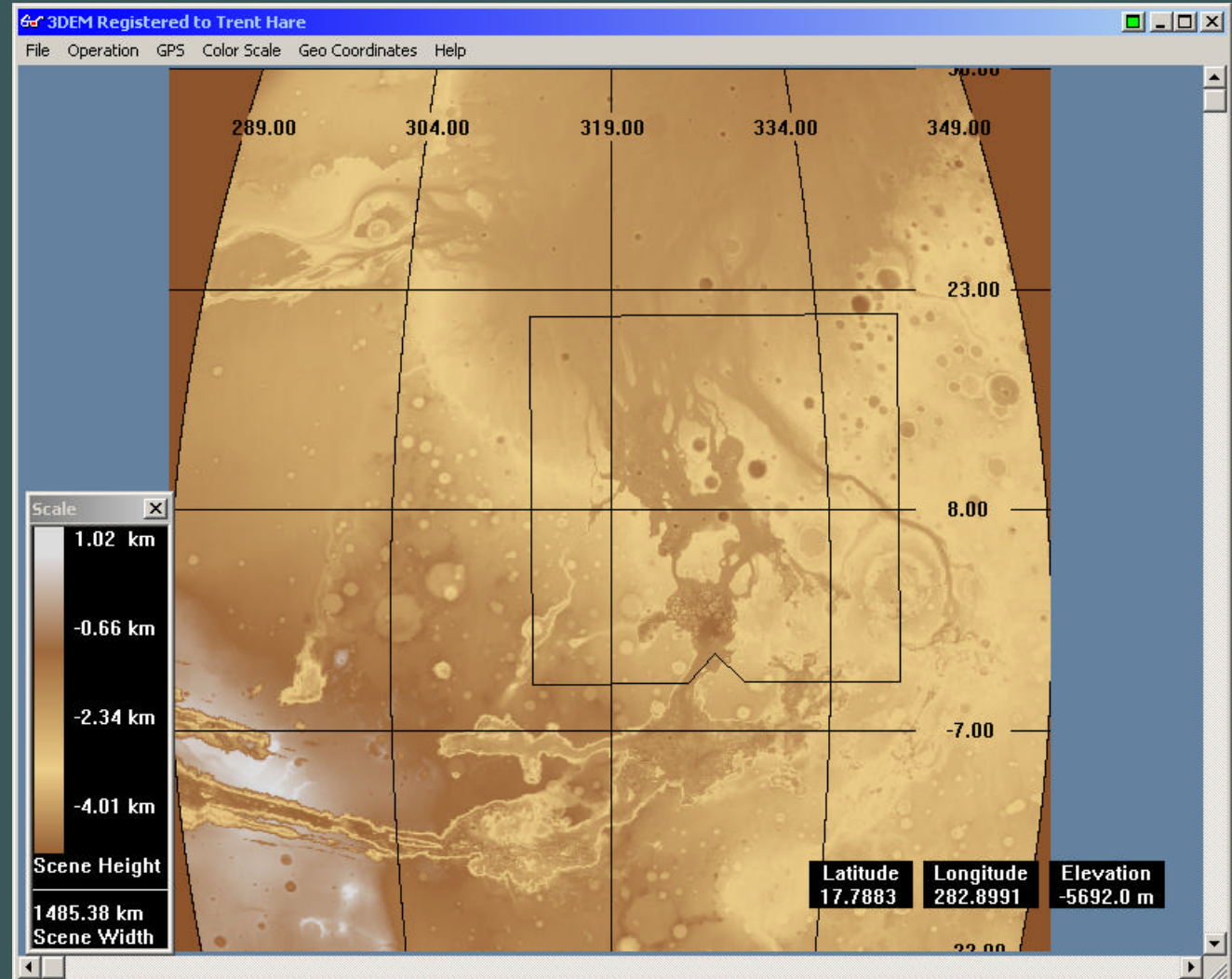
•3DEM

- Profiles
- 3D Views
- Anaglyphs
 - Extremely useful
- 3D movies

Limitations:

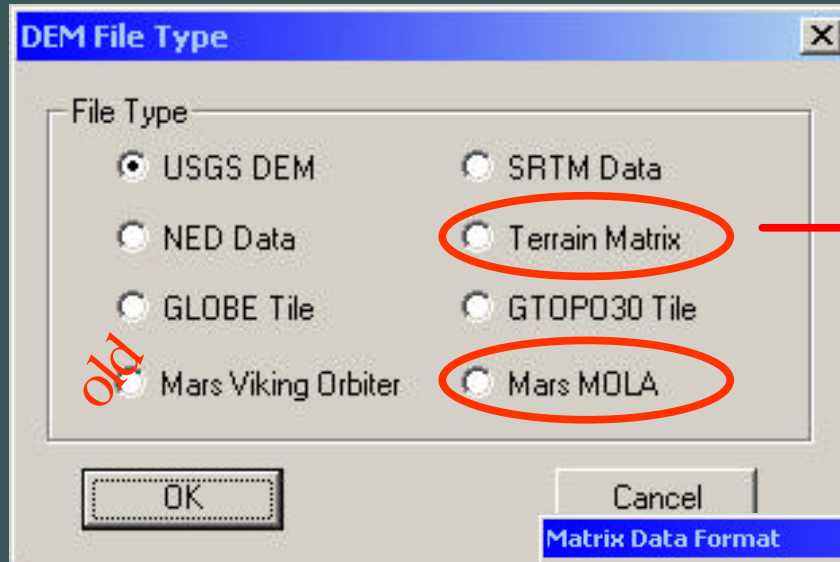
- \$35 (try for free)
- Windows
- Static 3D views

<http://www.visualizationsoftware.com/>
Windows only

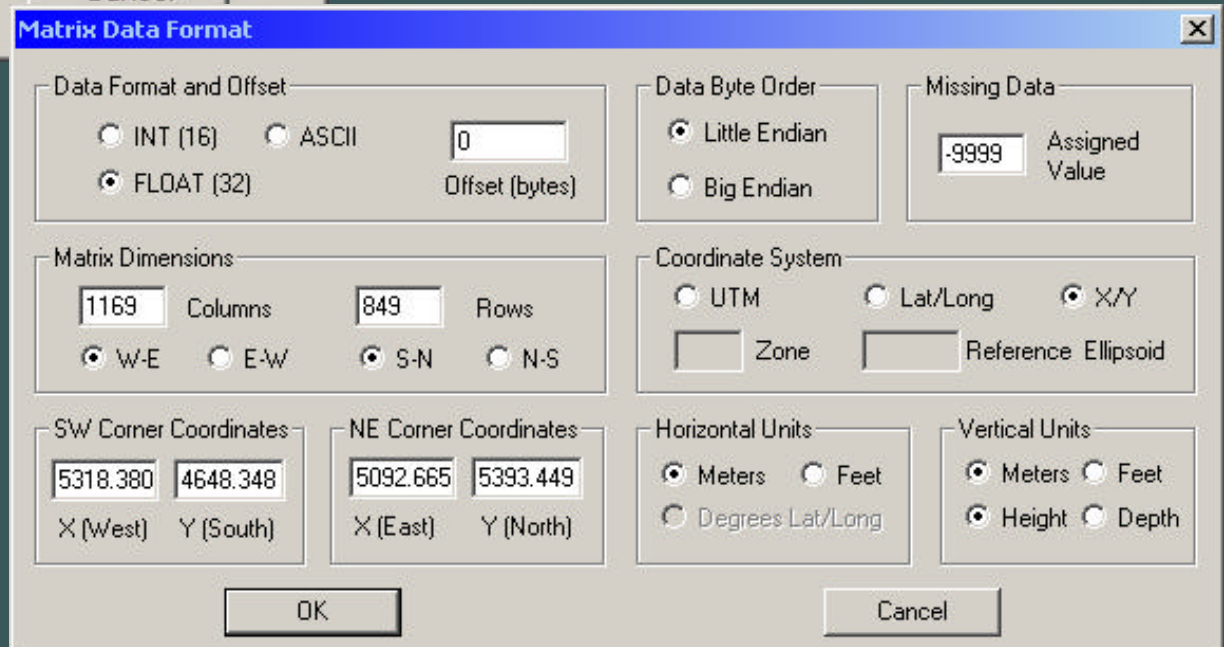


3D Viewer

- 3DEM



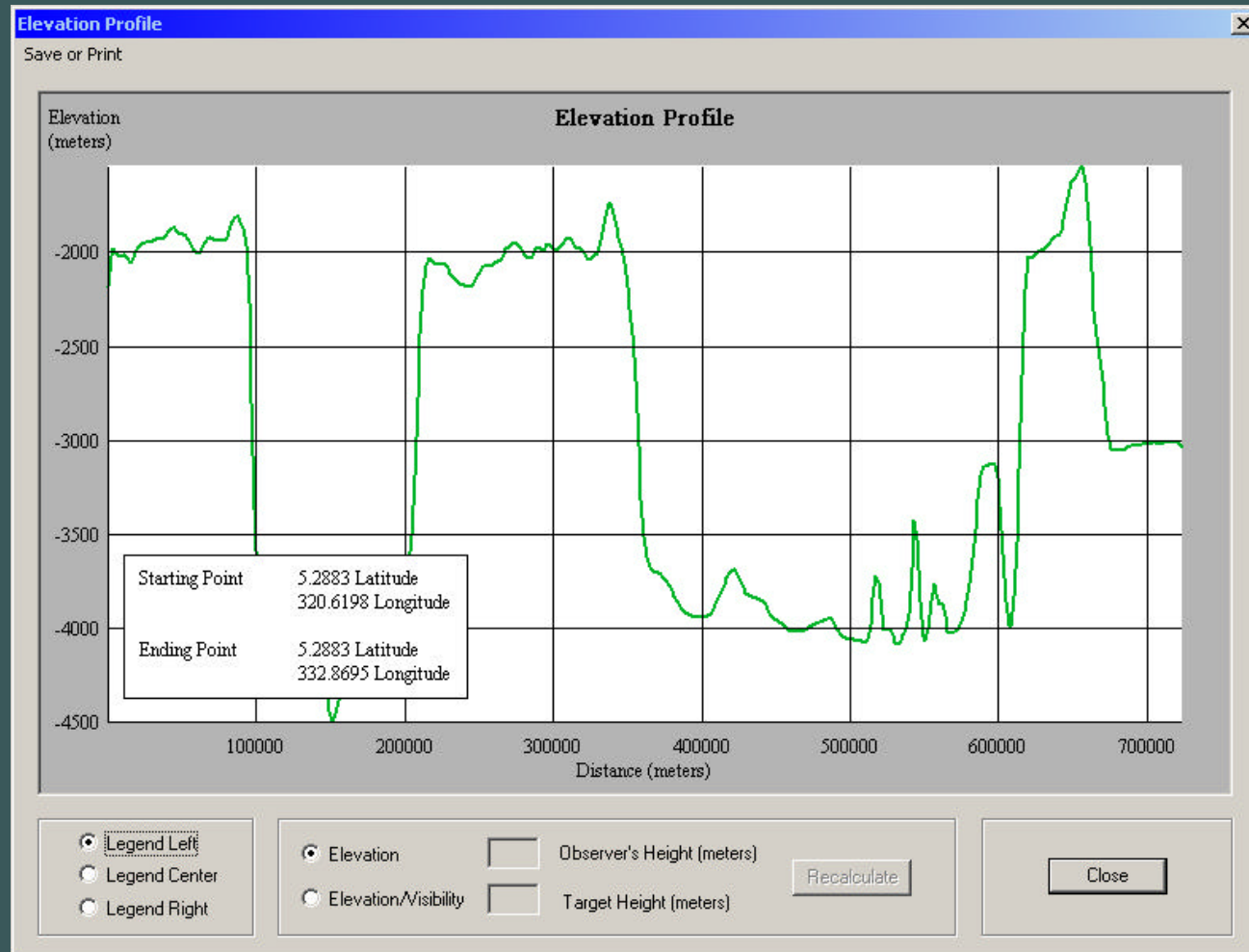
Basically means most ISIS, PDS, raw GIS DEM formats are supported, but you have to fill out the box below.



3D Viewer

•3DEM

Profiles

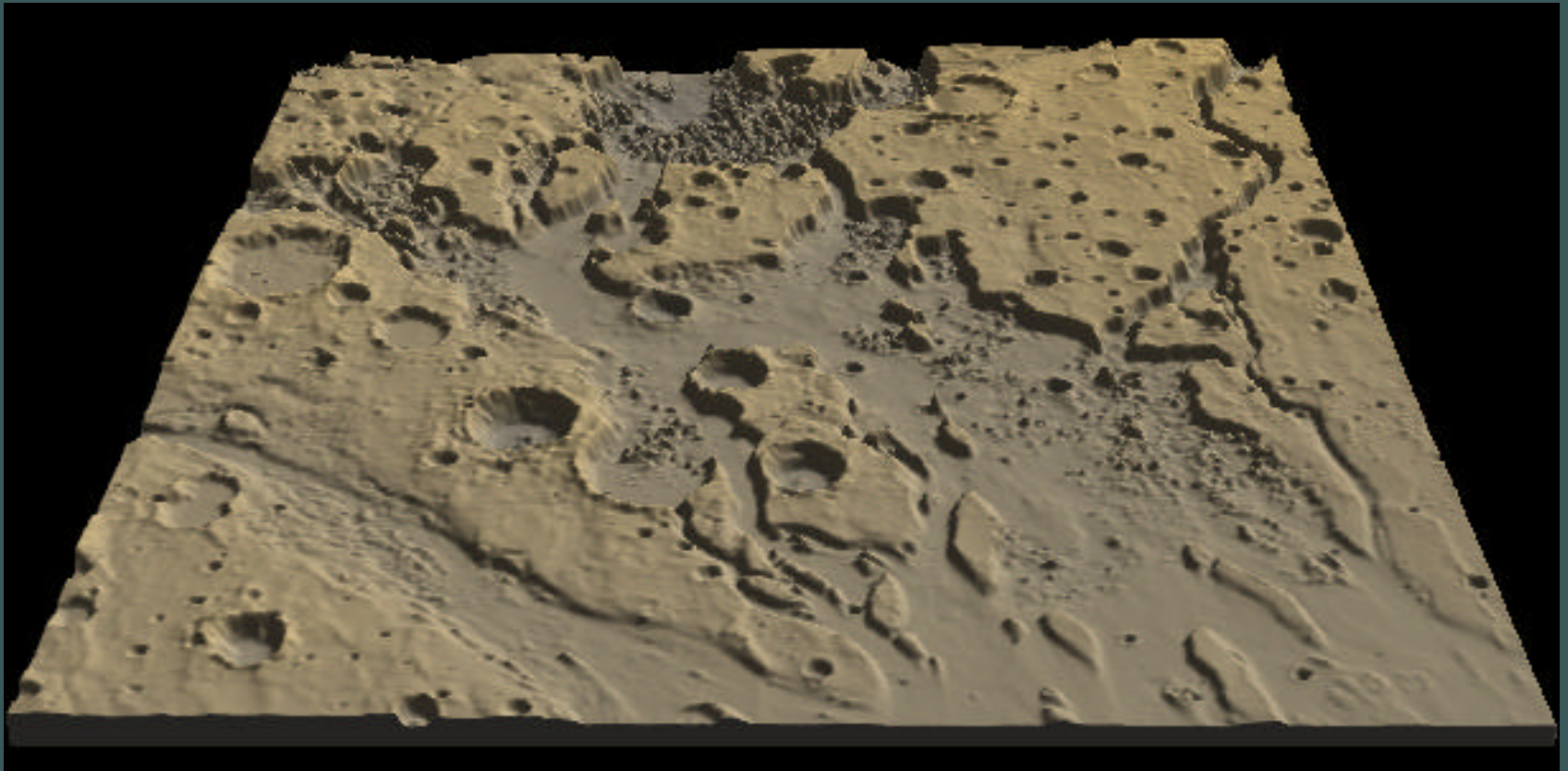


No way to set exaggeration or turn legend off

3D Viewer

•3DEM

3D Views



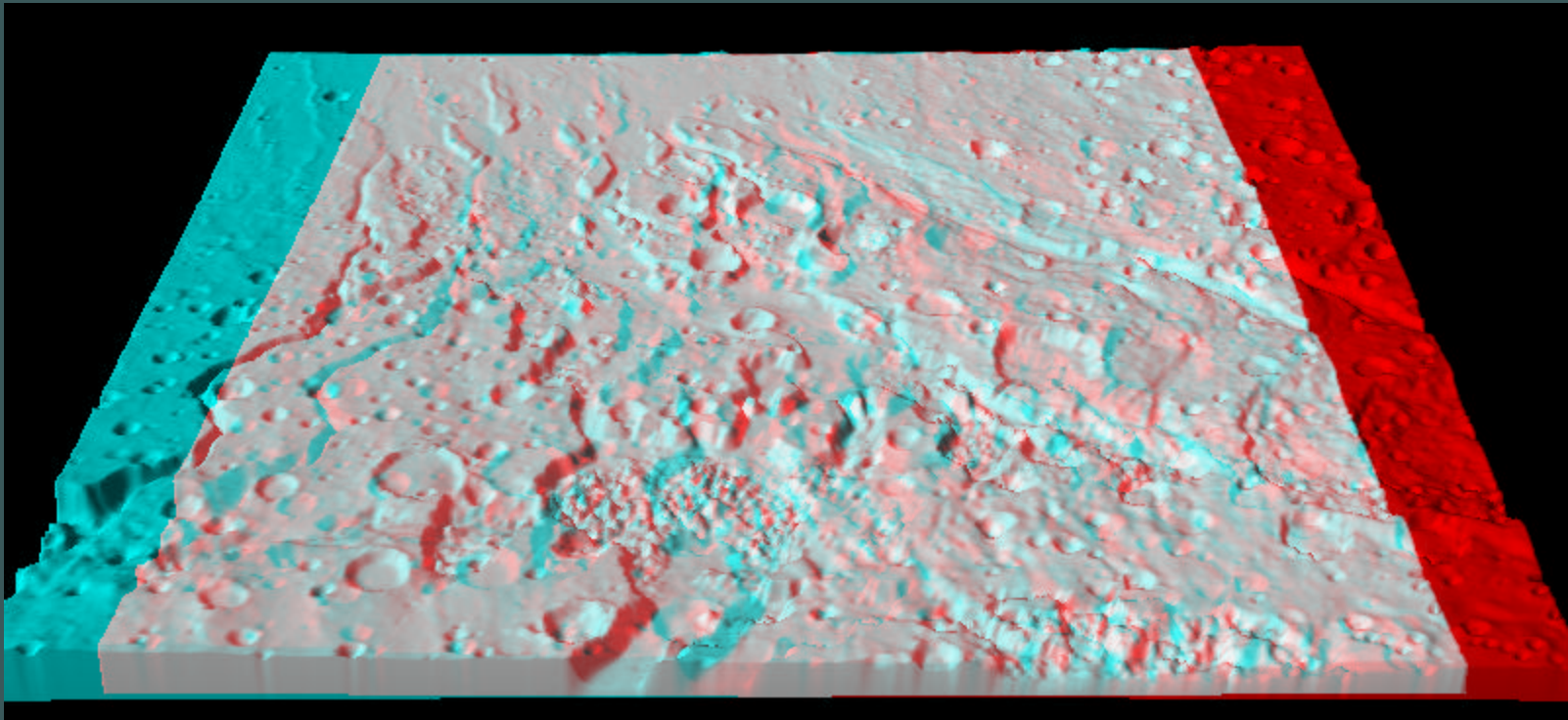
And you can drape registered image textures

3D Viewer

•3DEM

Anaglyphs

Red/Blue and Flicker glasses



Shapefile Creators

We are currently going to support a free stand alone ASCII to shapefile converter. The input format is known as a generate format and supports points, lines, polygons (possibly circles, rectangles).

Please visit PIGWAD for tutorials on how to format the generate file and for the latest downloads. We will try to support Windows, Linux, Sun, and Mac OSX.

<http://intevation.de/~jan/gen2shp/gen2shp.html>