**D**esktop **E**xploration of **R**emote **T**errain



Test Plan for Version 1.0 Beta

# Unit Tests

These tests check the routines in MathUtils and Landscape classes that perform the functions for regional surface area, volume, mean elevation, etc. and for other math tasks throughout DERT.

To run the unit tests run the application *gov.nasa.arc.dert.test.DertTest*.

# Ephemeris Test

This test checks whether the implementation using SPICE is correctly setting the time for the Sun. Follow these steps to run the test:

1. Open DERT and load the Victoria Crater landscape.
2. Open the lighting view and set it to Solar.
3. Open the light position view and set it to UTC.
4. Enter the time value 2006-11-14T15:39:55.237. This is the observation start time from the RDR label file from one of the images of the stereo pair used to make the DEM.
5. Enable shadows.
6. The shadows in the orthoimage should line up with the shadows generated by DERT.
7. Open the Marble view.
8. The solar incidence angle should be 54.37 degrees.
9. The sub-solar azimuth should be 293.18 degrees.

The solar incidence and sub-solar azimuth angles as well as the observation time for a landscape orthoimage can be found in the PDS label of the source image from the stereo pair used to make the DEM. Use the image with the same file name as the orthoimage. The sub-solar azimuth is offset from the north azimuth. Subtract the value in the PDS label from 90 degrees to get the value in DERT (azimuth is rotates around the negative Z axis). If the shadows are off a bit, enter the center longitude and latitude calculated from the boundaries in the image label in the shadow sphere section of the lighting view.

# Features Test

This test checks all the DERT features accessed through the user interface.

To run this test open the user guide and run all the examples.