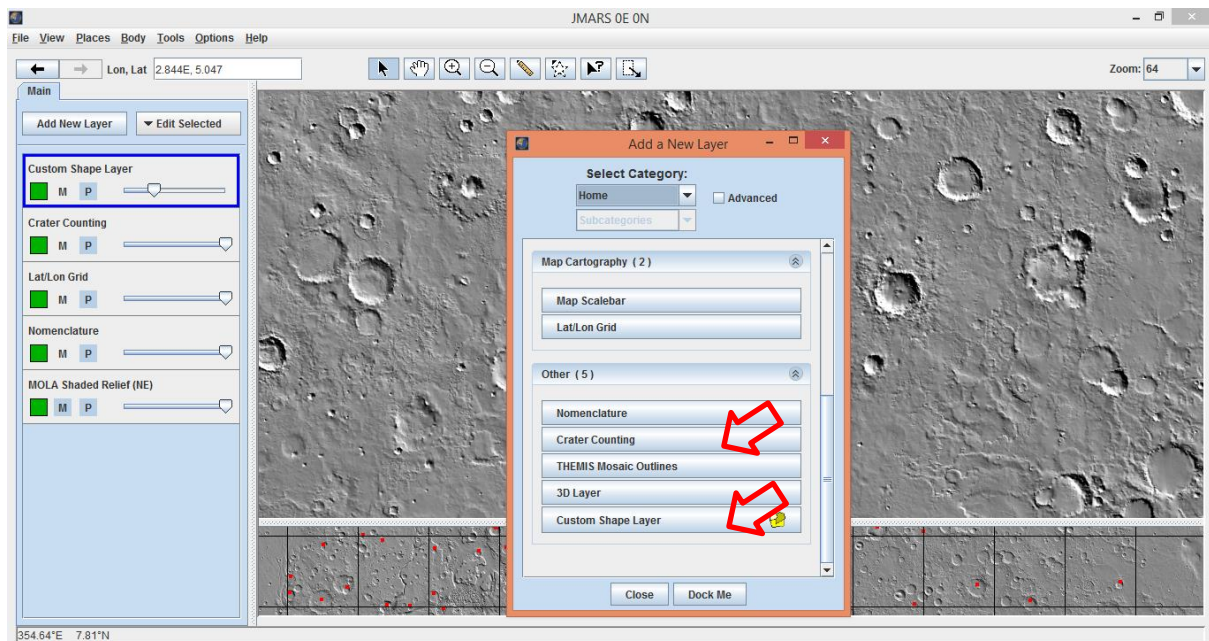# Crater Counting and Crater Stats

Guide
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First you have to select an area in which you want to conduct the crater counting. This are needs to be within the same surface unit. Counting craters of different surface units will not provide information about each layer separately. Make sure that your counting area is clearly identifiable as the same surface unit and also try to exclude secondary crater fields. The shape of the counting area is not important, just the size information will be used. Your area does not need to be as big as the mapped unit. It can just be a small part of it. Big counting area → many craters to count → reliable surface age. Within JMARS you have to create two new layers, one for the counting area (remember: you need the size of it in km^2) and one for the crater counting itself.

After creating both layers you should start with defining your area. After that select the crater counting layer and map every crater that you see in this area. Only map the craters of you are sure that it is an impact, try to exclude secondary impacts which are positioned in chains or fields. Also map overlapping craters. Just keep counting! It is very important to count ALL the craters in the region, otherwise you will have problems to find the surface age. Small craters are the key!
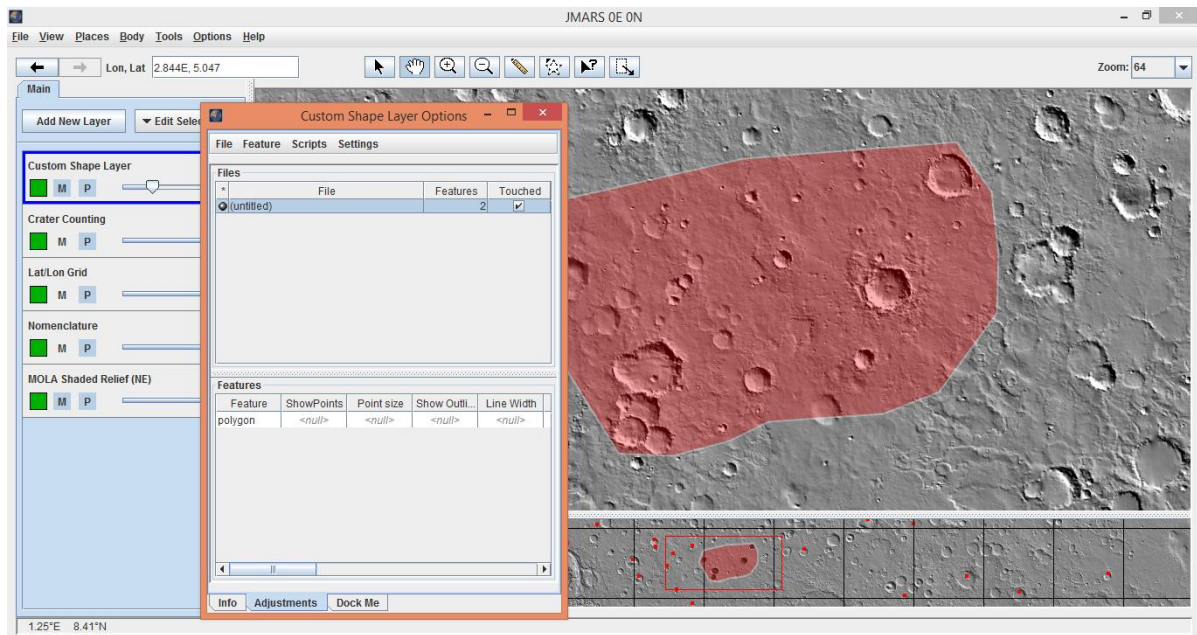
After your mapping has been done you have to copy the crater list with only the diameter into Notepad (see diam file). Unfortunately, JMARS does not provide this option yet (April 2015). Also insert the area of your region into this file.
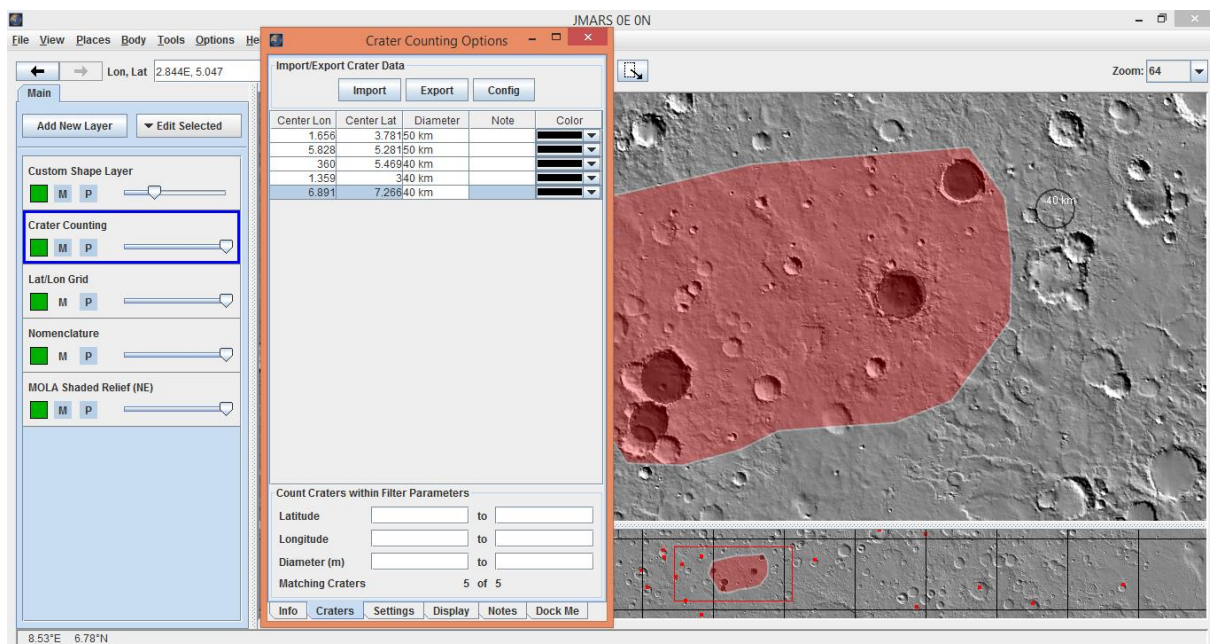
Your file should look similar to this.

Safe your table as a .diam file or rename the ending afterwards!

Download the Crater Stats software here:

http://hrscview.fu-berlin.de/craterstats.html

You already read about this software in the last paper, it is time to use it! There is a detailed introduction to the software!

You have to subscribe here to receive a username and password for the IDL Virtual Machine download: http://hrscview.fu-berlin.de/software.html at IDL VIRTUAL MACHINE → join cratersoftware mailing list.

After downloading and installing only IDL you will be able to open the .sav file in the craterstats2 folder!

Craterstats2 will open this window:
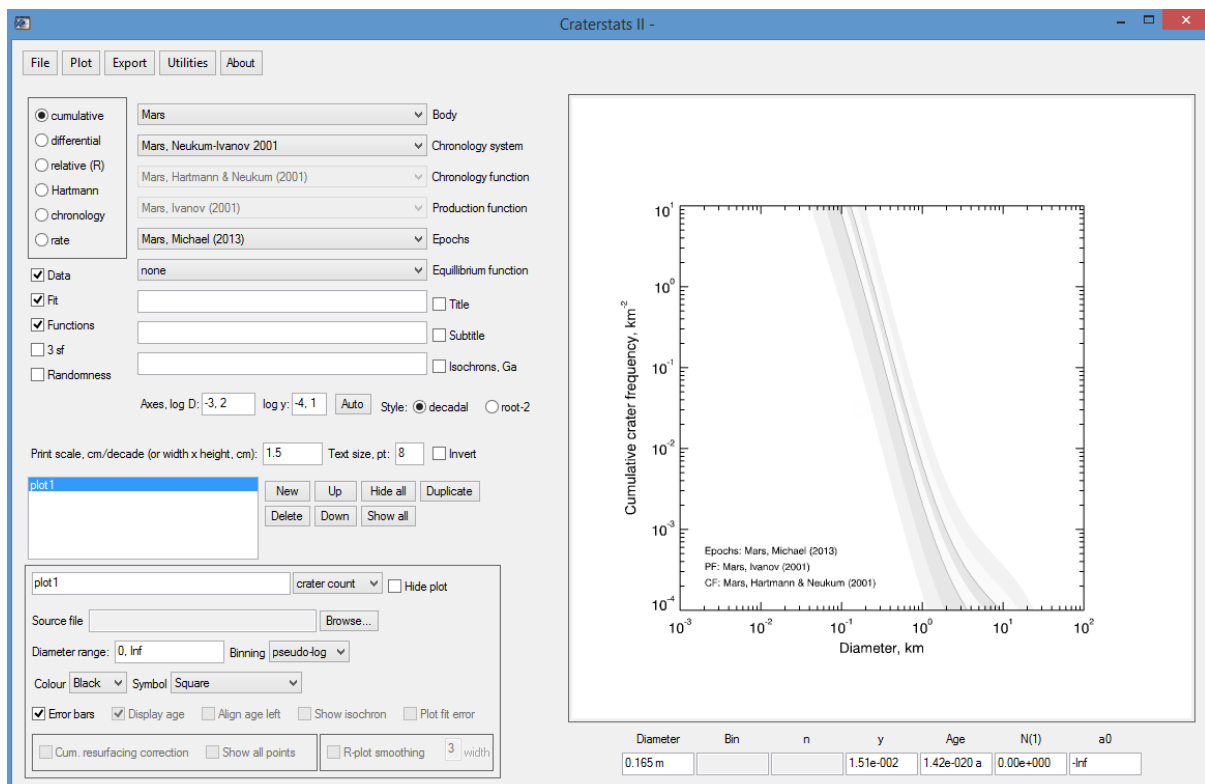
Please note that this software can be used for various planetary bodies, there it is important to select the Moon and the right chronology function on the left. All available functions are explained at: http://hrscview.fu-berlin.de/craterstats.html
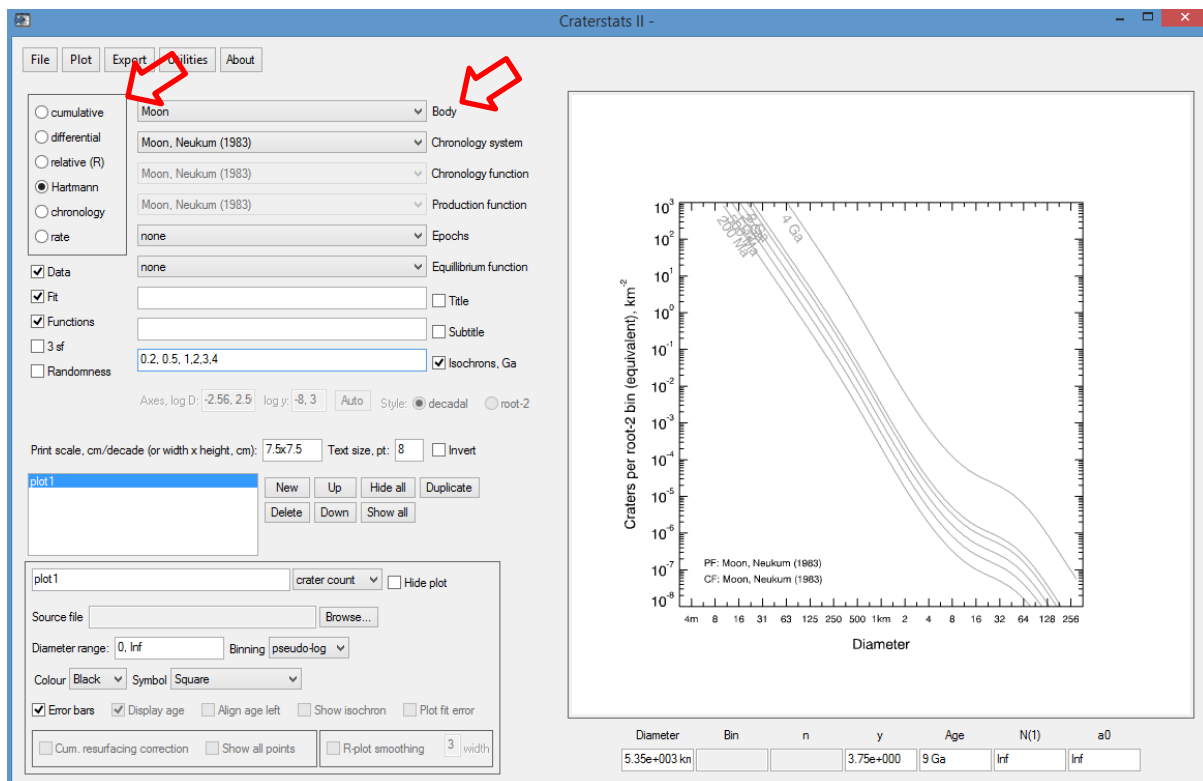
Your goal is to obtain a surface age and have as many craters as possible included in your fit. The crater age curve needs to be fitted to the counted craters. Sometimes multiple curves need to be fitted, due to a resurfacing event.