

# Bulgaria airports guide



Bulgaria airports Add-on page: <https://www.orbithangar.com/showAddon.php?id=81eb9fca-7d00-4197-b9a6-1ec188152ac2>

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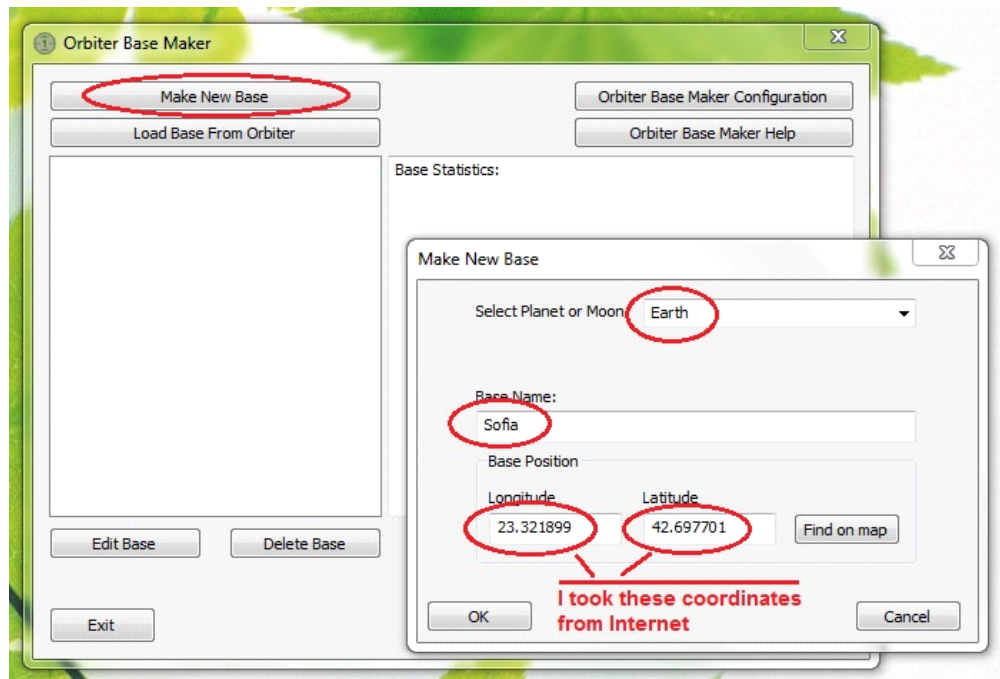
## First steps

Welcome in this document i will describe how i made Bulgaria airports surface bases.  
For starters I readed this guide

Tutorial: How to create surface bases: <https://www.orbithangar.com/showAddon.php?id=c91cf480-1642-4faf-abd0-8e8ce8a93f09>

For the creation of the bases I downloaded and using next program

Orbiter Base Maker V2.0.3: <https://www.orbithangar.com/showAddon.php?id=843d44ed-0816-4ea3-b767-d4748d002bf5>



## Data for airports

you can take information from next address: <https://skyvector.com>

The image shows a screenshot of the SkyVector website displaying information for Sofia Airport (LBSF). The website interface includes a search bar, navigation links (Aeronautical Charts, Airports, Charts, Help, Fuel Prices), and a header for 'LBSF Sofia Airport'. The main content area provides location information, operations data, airport communications, nearby navigation aids, and runway details.

**Location Information for LBSF**  
Coordinates: N42°41.70' / E23°24.50'  
View all [Airports in Grad Sofiya, Bulgaria](#).  
Elevation is 1742.0 feet MSL.  
Magnetic Variation is 3° East

**Operations Data**  
Airport Use: Open to the Public

**Airport Communications**  
SOFIA Approach: 123.70  
SOFIA Approach: 129.90  
SOFIA ATIS: 124.05  
SOFIA Tower: 118.10  
SOFIA Tower: 120.20

**Nearby Navigation Aids**

ID	Name	Freq	Radial / Range	ID	Name
SE	SOFIA	109.50	277° 0.6	S	SOFIA
SOF	SOFIA	112.60	099° 0.9	F	SOFIA
VIT	VITOSHA	113.45	029° 9.4	SF	SOFIA
BLO	BAILOVO	117.50	272° 18.0	BOZ	BOZHOU

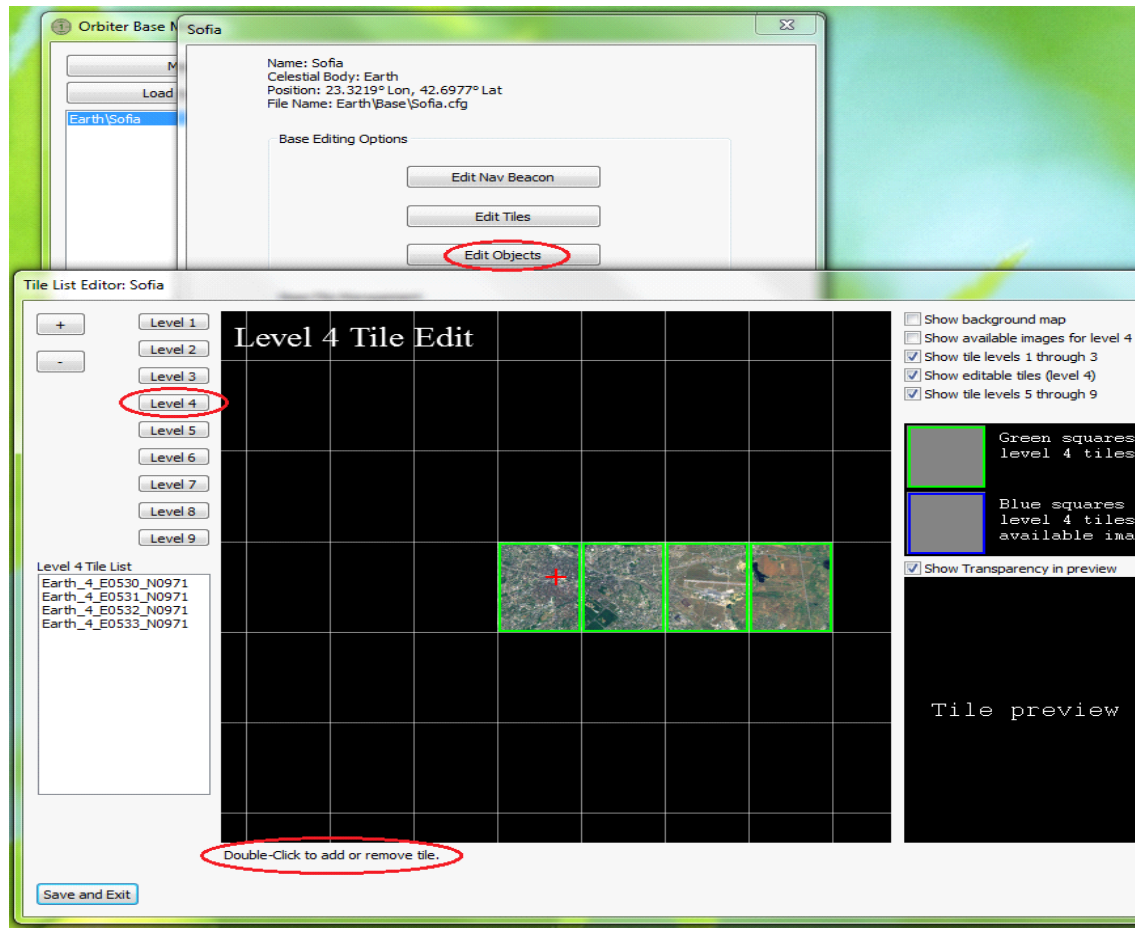
**Runway 09/27**  
Dimensions: 11811 x 148 feet / 3600 x 45 meters  
Surface: Hard  
Runway 09  
Runway 27  
Coordinates: N42°41.85' / N42°41.71' /

The Orbiter Base Manager window is open, showing the 'Sofia' base. The 'Edit Nav Beacon' button is circled in red. The 'Edit Base' button is also circled in red. The 'Edit Navigation Beacon' dialog box is open, showing the 'SOF' beacon with a frequency of 118.1. Red arrows point from the 'SOF' and '118.1' in the dialog box to the corresponding values in the 'Nearby Navigation Aids' table on the website.



# Adding surface temporary

Adding map tiles to easy placing and positioned correctly objects



Adding and positioning objects

Orbiter Base M

Sofia

Name: Sofia  
Celestial Body: Earth  
Position: 23.3219° Lon, 42.6977° Lat  
File Name: Earth\Bases\Bases.cfg

Base Editing Options

Edit Nav Beacon

Edit Tiles

Edit Objects

Edit Structures: Sofia

Cursor position - Longitude:23.4195 Latitude:42.6958. cfg file

Hide Objects

Add Object

RUNWAY  
RUNWAY  
LPAD1  
BLOCK  
HANGAR  
HANGAR2  
HANGAR2  
TANK  
MESH  
BLOCK  
Hidden:

Delete Object

Grid: 100M

Snap To: 1M

Rotate By: 15°

Show Parameters

Save and Exit

Move

Select

Left Arrow

Right Arrow

Up Arrow

Down Arrow

Image of Sofia airport

OK

Cancel

3600+200=3800

Length 3800

Direction 274.59924

ILS1 123.7

ILS2 129.9

Width 45

Number of Lights 40

☒ Use Runway Lights

☐ Use D3D9 Parameters for Lights

PAPI

Approach Angle 20

Cone Aperture 3

Offset From Runway 200

VASI

Approach Angle 1.5

Distance Between Lights 150

Offset From Runway 670

port

Elevation is 1742.0 feet MSL.

Magnetic Variation is 3° East

Operations Data

Airport Use: Open to the Public

Airport Communications

SOFIA Approach: 123.70

SOFIA Approach: 129.90

SOFIA ATIS: 124.05

SOFIA Tower: 118.10

SOFIA Tower: 120.20

Nearby Navigation Aids

ID	Name	Freq	Radial / Range	ID	Name
SF	SOFIA	109.50	277° 0.6	S	SOFIA
SOF	SOFIA	112.60	099° 0.9	F	SOFIA
VIT	VITOSHA	113.45	029° 9.4	SF	SOFIA
BLO	BAILOVO	117.50	272° 18.0	BOZ	BOZHO

Runway 09/27

Dimensions: 11811 x 148 feet

Surface: Hard

Coordinates: N42°41.85' / E23°23.97'

Elevation: 1739

Runway Heading: 091°

Runway 27

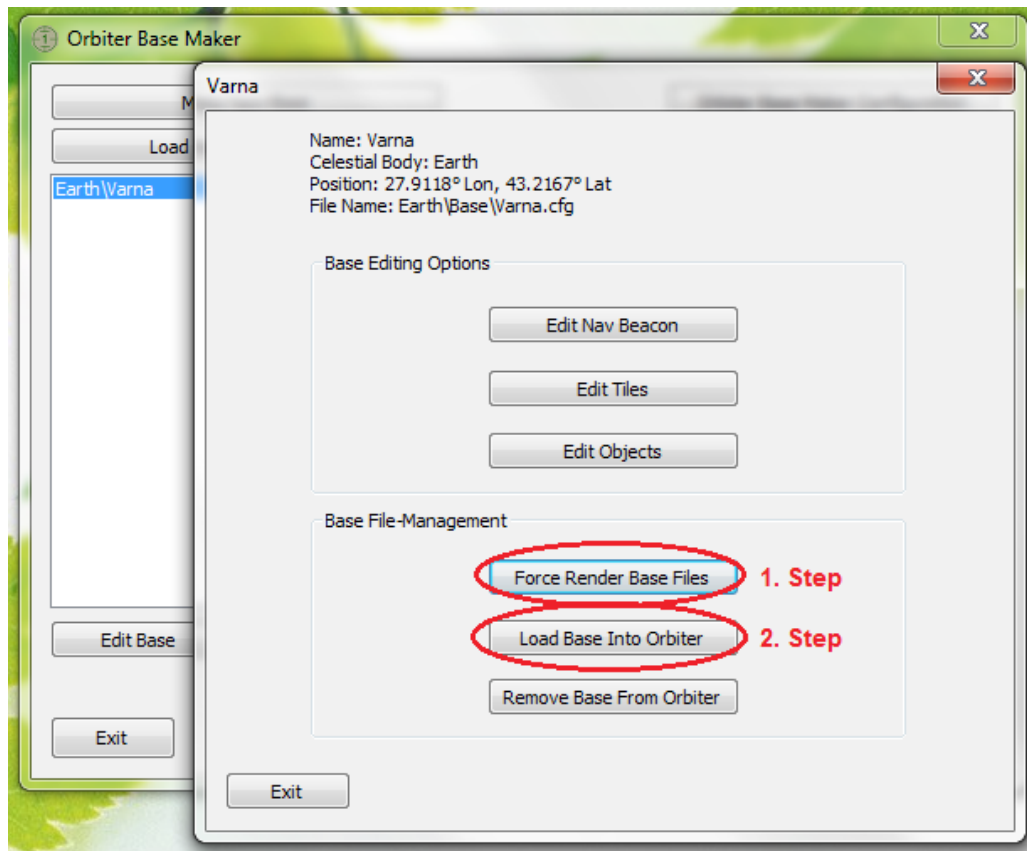
Coordinates: N42°41.71' / E23°26.38'

Elevation: 1744

Runway Heading: 271°

## Generate the base

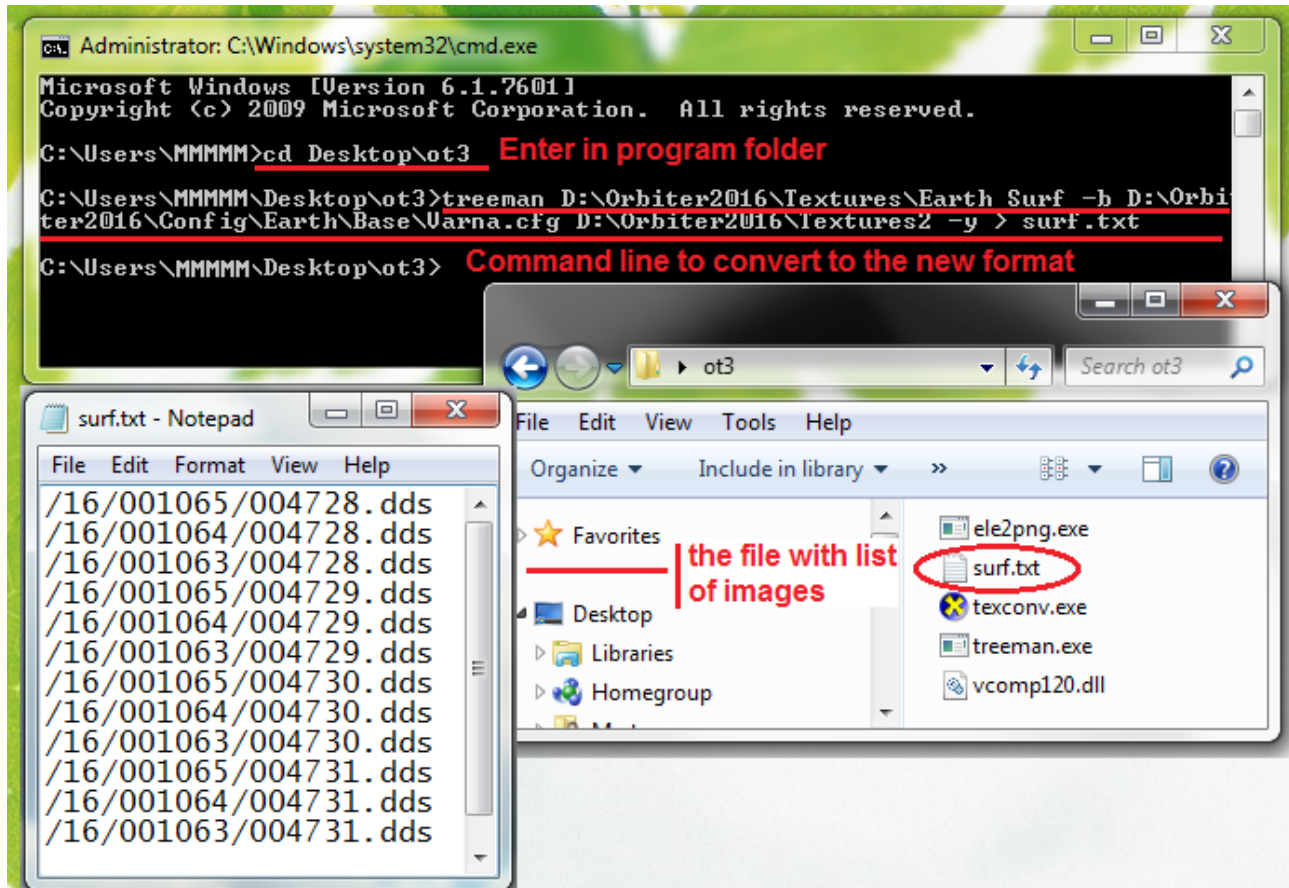
After you complete with the modeling on the base press “Force Render Base” and “Load Base Into Orbiter” buttons



## Convert textures

Into new format of orbiter 2016 should use the following the tool

Orbiter texture tree tools (OT3): <http://www.orbiter-forum.com/showthread.php?t=37452>



Used command:

**treeman D:\Orbiter2016\Textures\Earth Surf -b D:\Orbiter2016\Config\Earth\Base\Varna.cfg D:\Orbiter2016\Textures2 -y > list.txt**

with this command You will convert old names of images to new names of images and placing them in new folders structure and will be generated a file "list.txt" with list of images.

But for better surface map I general image in **PNG format** with next programs

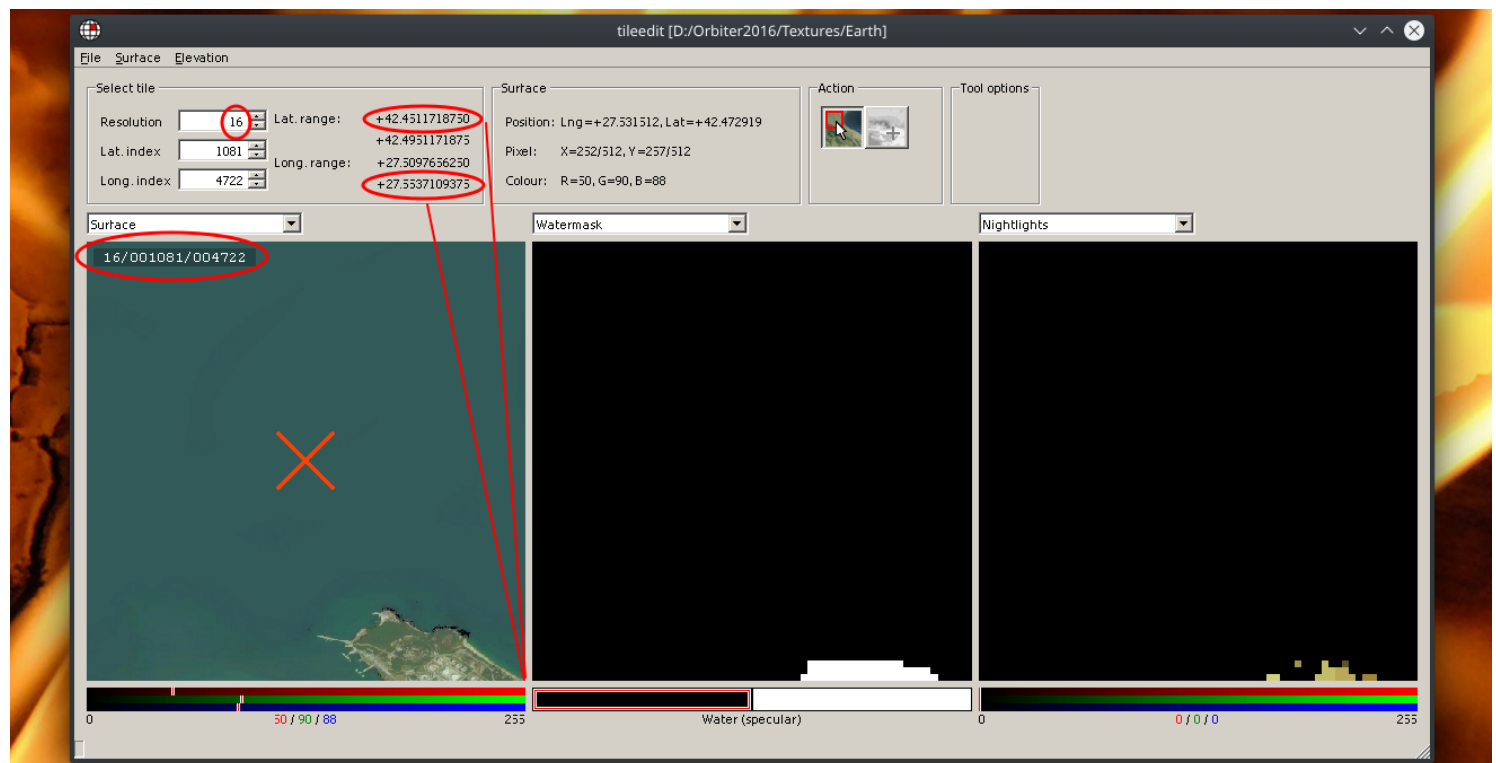
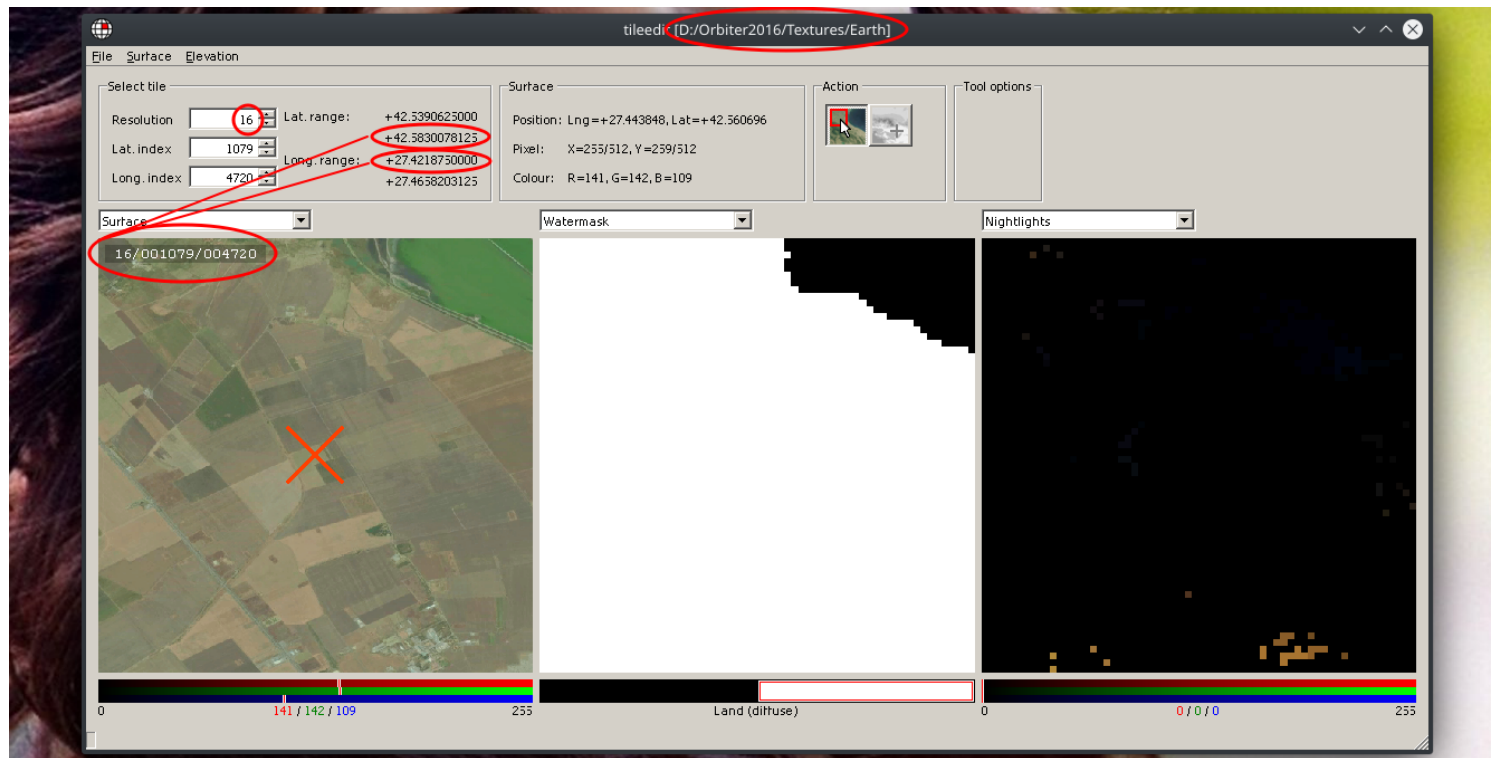
SASPlanet: <http://www.sasgis.org/download/>

tileedit <https://www.orbiter-forum.com/showthread.php?t=40442>

## tileedit information

From tileedit should to be taken:

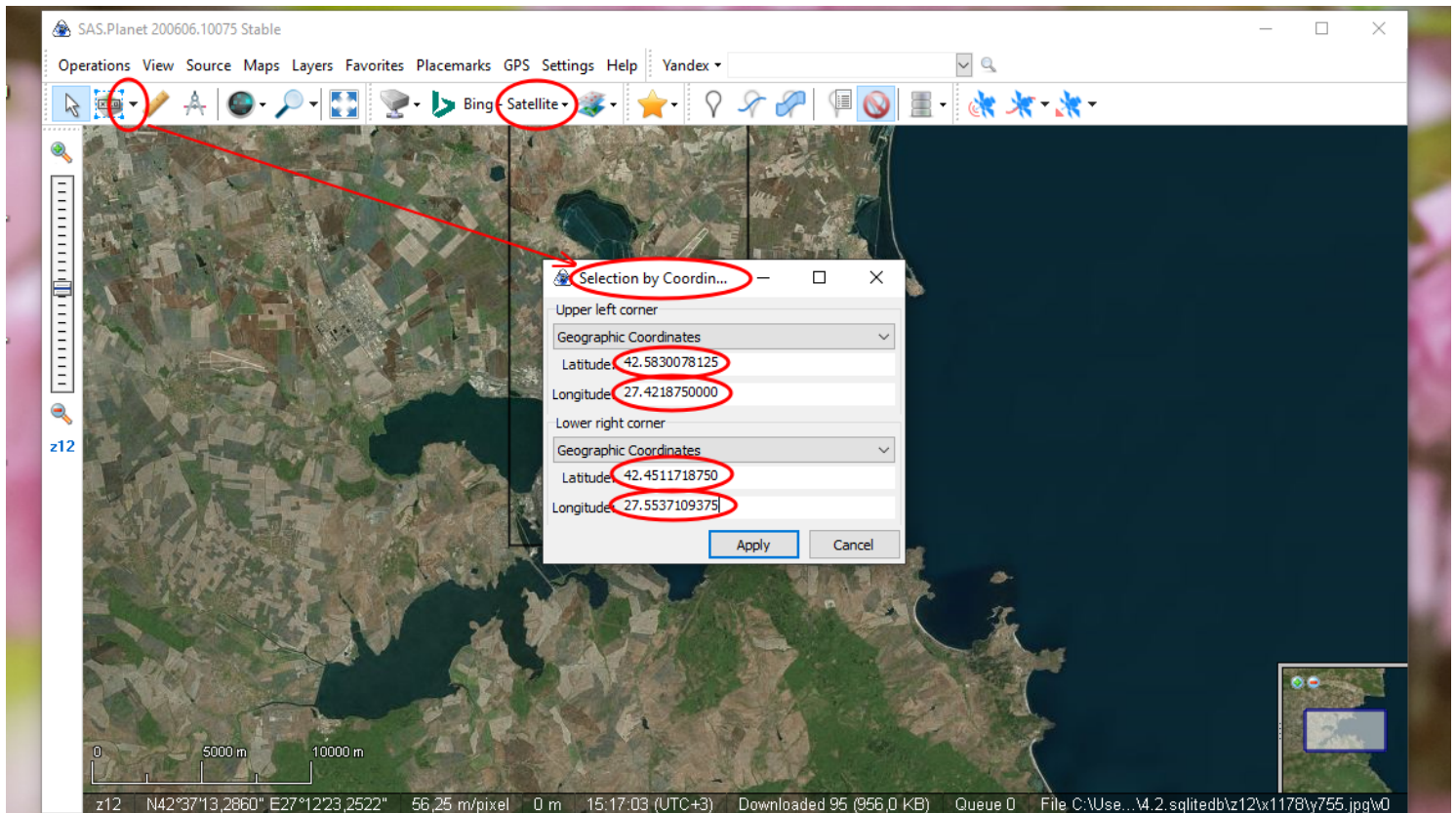
- Coordinates of upper left (+42..., +27...) and lower right (+42..., +27...) corners
- Name of the folder (16/001079) and file name (004720) of upper left tile
- Name of the folder (16/001081) and file name (004722) of lower right tile





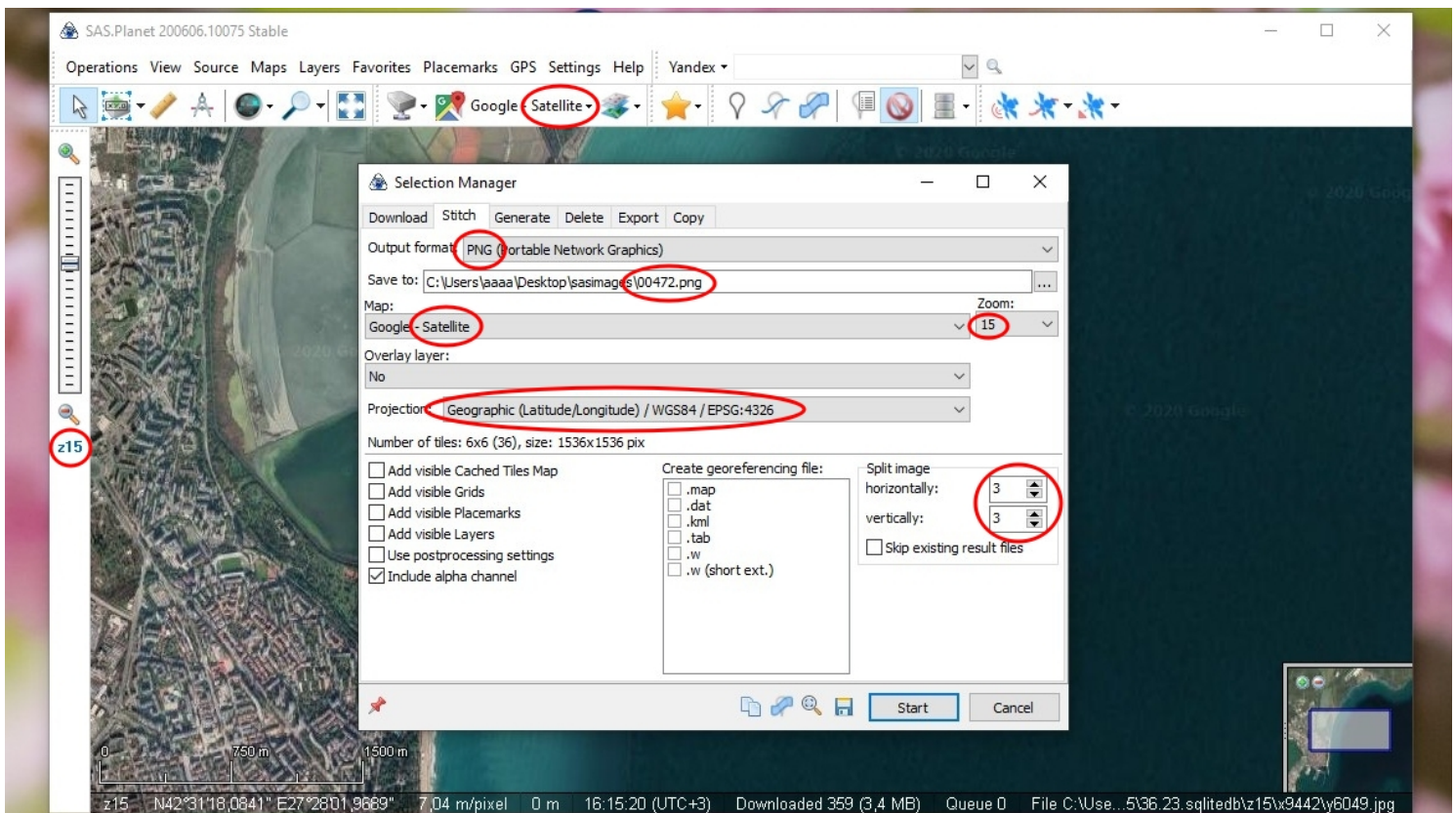
## SASPlanet for new textures

Coordinates should to be used in SASPlanet program for download new high resolution map



Selecting zoom level minus one from tileedit

Numbers for splitting of image by horizontally and vertically are counted from upper left tile to lower right tile from tileedit, and if yours area is different then counted right tiles

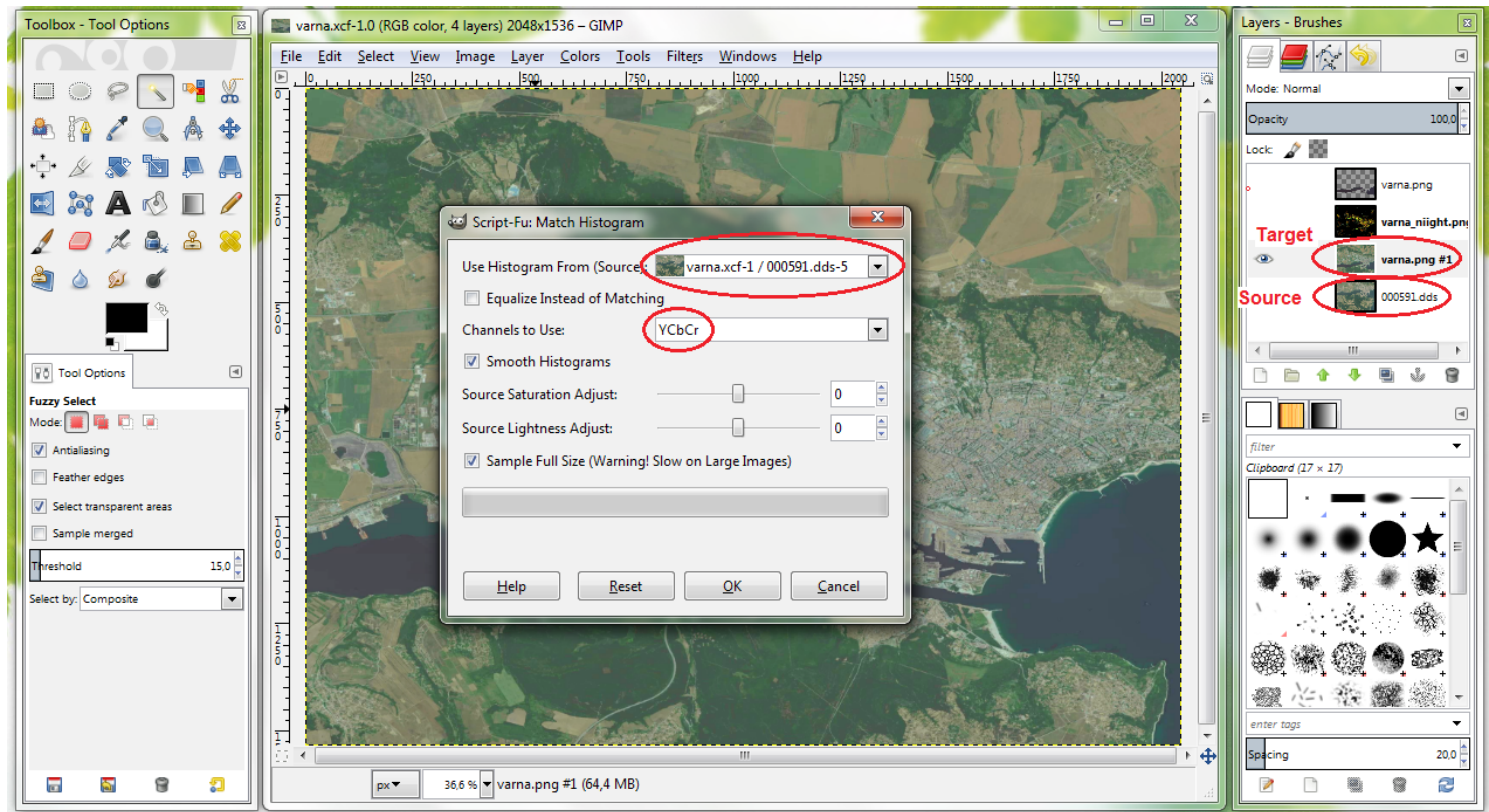




## Reduce the color for new textures

Difference between the splitted image and native orbiter textures can be use this addition for Gimp

Gimp script: Histogram Match: <http://www.silent9.com/blog/archives/162-Gimp-Script-Histogram-Match.html>

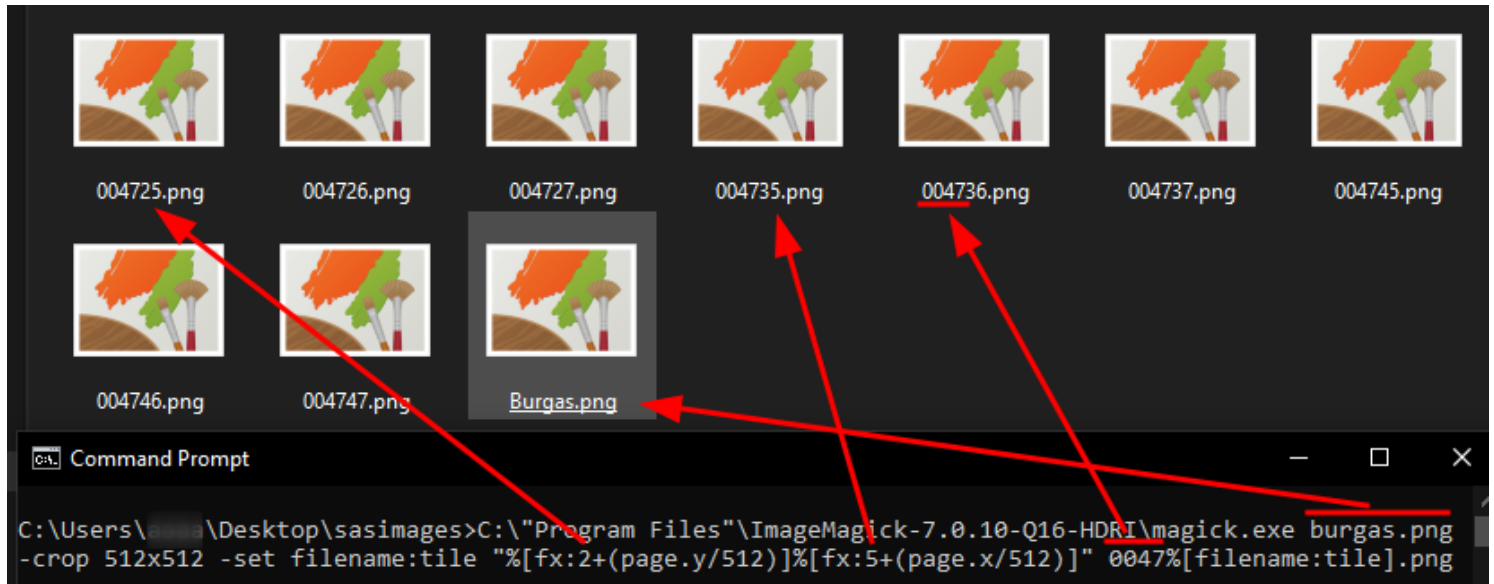


## Splitting for new textures

For splitting image in files with size 512x512 are used next program and command:  
ImageMagick (open source): <https://imagemagick.org/script/download.php>

`C:\Program Files\ImageMagick-7.0.10-Q16-HDRI\magick burgas.png -crop 512x512 -set filename:tile "%[fx:2+(page.y/512)]%[fx:0+(page.x/512)]" 0047%[filename:tile].png`

Result: as numbers **0047,2** and **5** are taken from tileedit program



## Converting splitted files

To the converting splitted files into dds format and delete png files is use the following command

`C:\Program Files\ImageMagick-7.0.10-Q16-HDRI\magick mogrify -format dds -define dds:compression=dxt1 -define dds:cluster-fit=true -define dds:mipmaps=10 *.png & del 0*.png`

## Move and partially rename

After converting of the files is necessary to be moved and partially renamed at tree structure in folders with next commands!

Commands for procedures:

:: Components bellow are taken from from tileedit program (16\001079\004720)

:: Just edit parameters in four rows with yours and execute in the terminal

:: Write your level in this case it is level 16

set dir1=16

:: Write your sublevel without first 00 from tileedit

set dir2=1079

:: Write your file name without first 00 and the last 0

set file=472

:: Write location of your Orbiter directory

set orbiter=D:\Orbiter2016

:: md ... → made directory, move ... → move the files, ren ... → rename of the files

md %dir1%\00%dir2% & move 00%file%\*.dds %dir1%\00%dir2% & set file0=%file%

set /a dir2=dir2+1 & set /a file=file+1

md %dir1%\00%dir2% & move 00%file%\*.dds %dir1%\00%dir2% & ren %dir1%\00%dir2%\00%file%\*.dds 00%file0%\*.dds

:: Copy commands bellow without robocoy ... one more time if your map

:: is bigger than 3x3 tiles as is this example for smaller remove next commands

set /a dir2=dir2+1 & set /a file=file+1

md %dir1%\00%dir2% & move 00%file%\*.dds %dir1%\00%dir2% & ren %dir1%\00%dir2%\00%file%\*.dds 00%file0%\*.dds

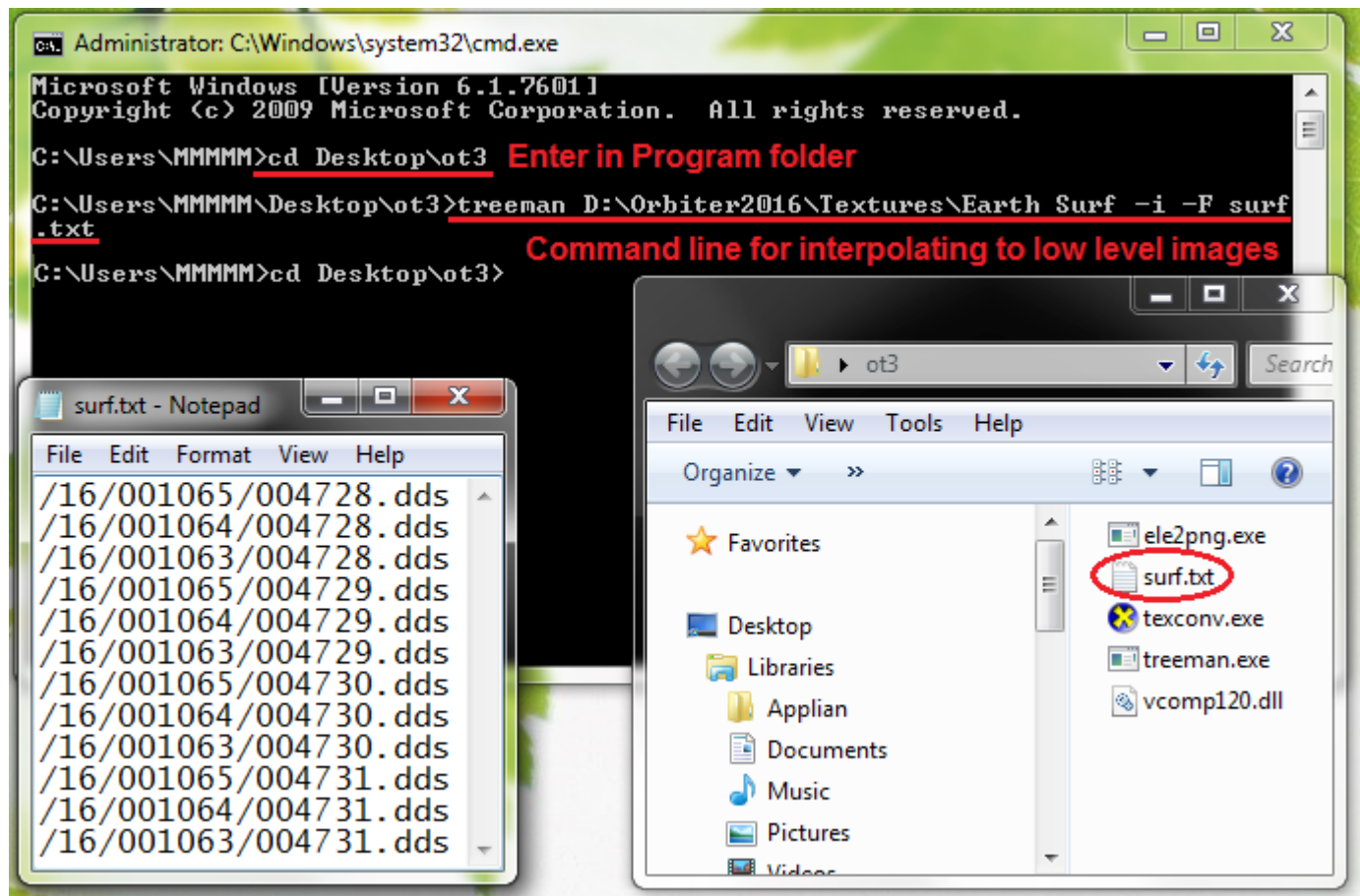
:: Command to transfer into your Orbiter directory

robocopy %dir1% %orbiter%\Textures\Earth\Surf\%dir1% /E /MOVE

```
>>set dir1=16
>>set dir2=1079
>>set file=472
>>set orbiter=D:\Orbiter2016
>>md %dir1%\00%dir2% & move 00%file%*.dds %dir1%\00%dir2% & set file0=%file%
\004722.dds
\004721.dds
\004720.dds
3 file(s) moved.
>>set /a dir2=dir2+1 & set /a file=file+1
>>md %dir1%\00%dir2% & move 00%file%*.dds %dir1%\00%dir2% & ren %dir1%\00%dir2%\00%file%*.dds 00%file0
%.dds
\004731.dds
\004730.dds
\004732.dds
3 file(s) moved.
>>set /a dir2=dir2+1 & set /a file=file+1
>>md %dir1%\00%dir2% & move 00%file%*.dds %dir1%\00%dir2% & ren %dir1%\00%dir2%\00%file%*.dds 00%file0
%.dds
\004742.dds
\004740.dds
\004741.dds
3 file(s) moved.
>>robocopy %dir1% %orbiter%\Textures\Earth\Surf\%dir1% /E /MOVE
```

## Generate low level for new textures

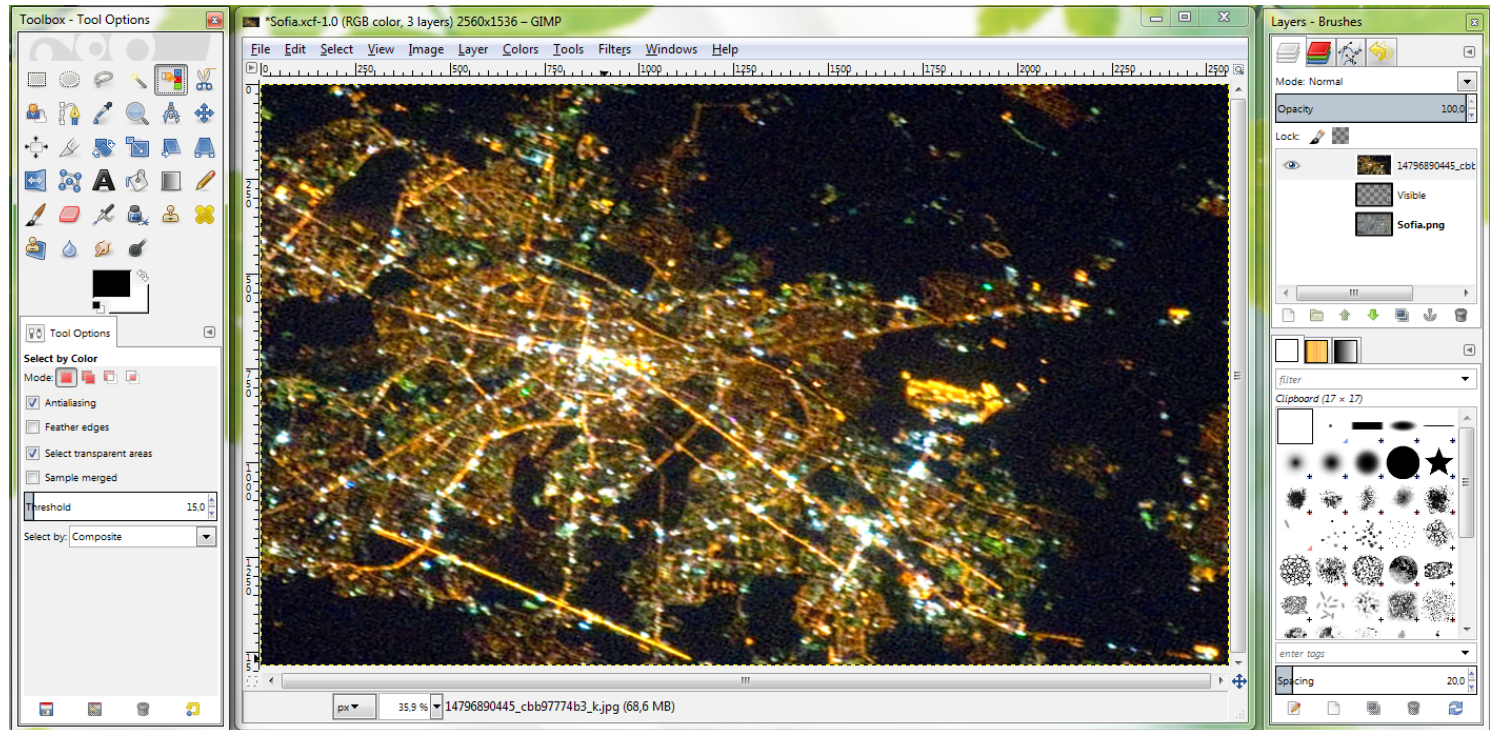
Low level of textures is necessary to being interpolating with the following command:  
**treeman D:\Orbiter2016\Textures\Earth Surf -i -F list.txt**





## Night mask

For night image (Mask)



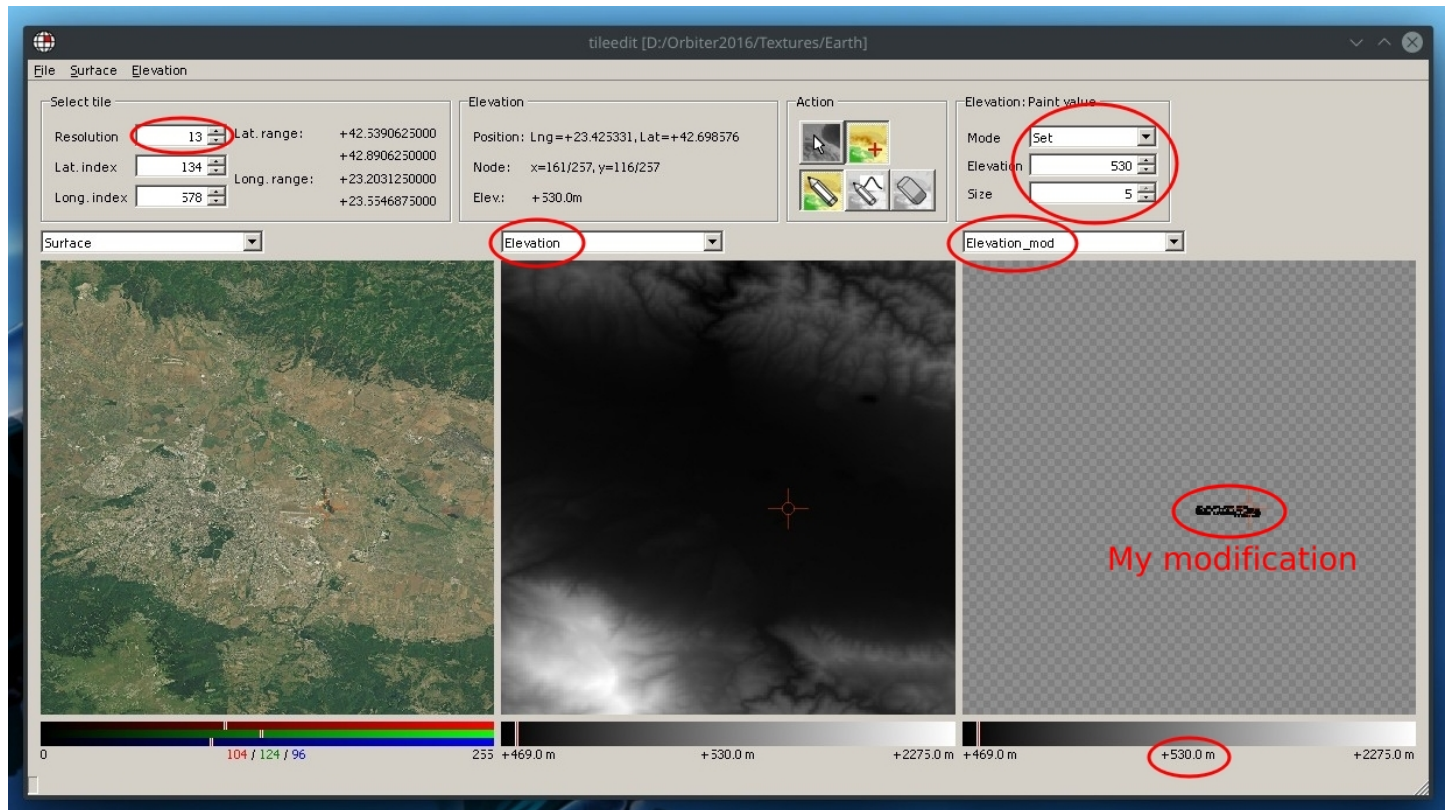
After image is ready is needed to be repeated steps of splitting and conversion but for a Mask folder

Command for generate low level for Mask

treeman D:\Orbiter2016\Textures\Earth Mask -i -F list.txt

## Creating the elevation files

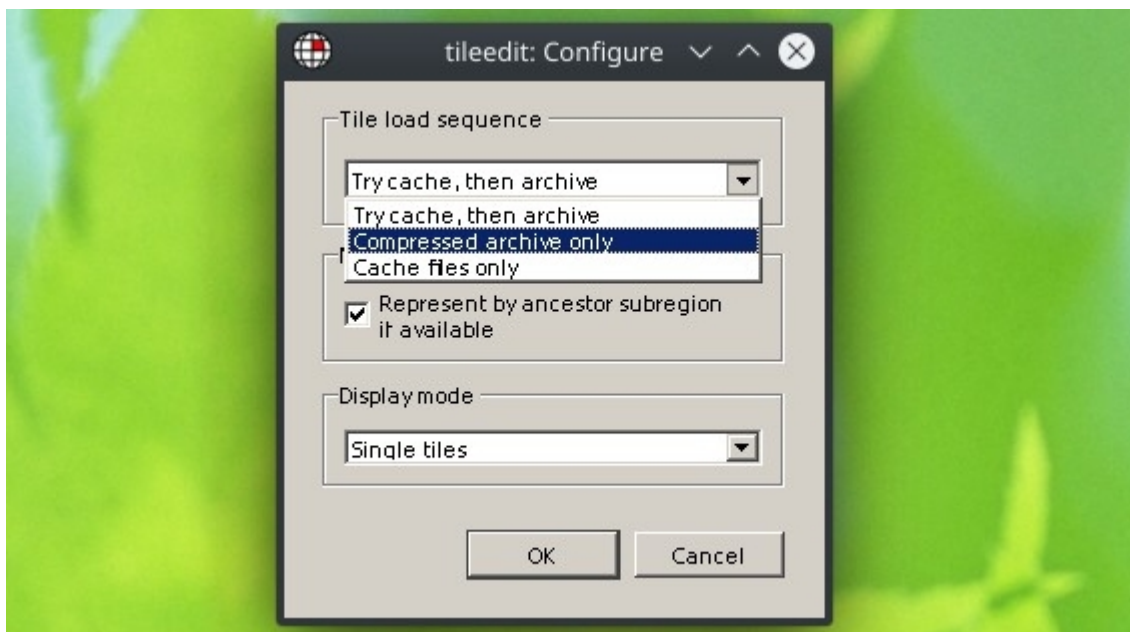
Open yours Orbiter folder in my case it is "<D:/Orbiter2016/Textures/Earth>"



Here should to be change **Resolution to 13**, **Mode to Set** and **Size between 3-5 of the pen** then to draw on the map as you choice altitude in my case it is 530 meters in Elevation field

these steps should to generate a flat area with altitude 530 meters for a smooth landing

but in case of problem with generation on the files open configure option from file menu and switch to "Compressed archive only", then press the button OK wait a bit and switch again to "Try cache, then archive", then press the button OK, this should to generate files and folder structure in Orbiter folder





And the structure of the folders should looks something like on the picture below

