## Contents

Launching MultiStarOrbiter

Double click on MultiStarOrbiter.exe

Creating the INI file

When the program is launched for the first time, it will ask you to create the INI file so it can locate the basic Orbiter and data base files in the future.

Click on the "Create system INI file" button.
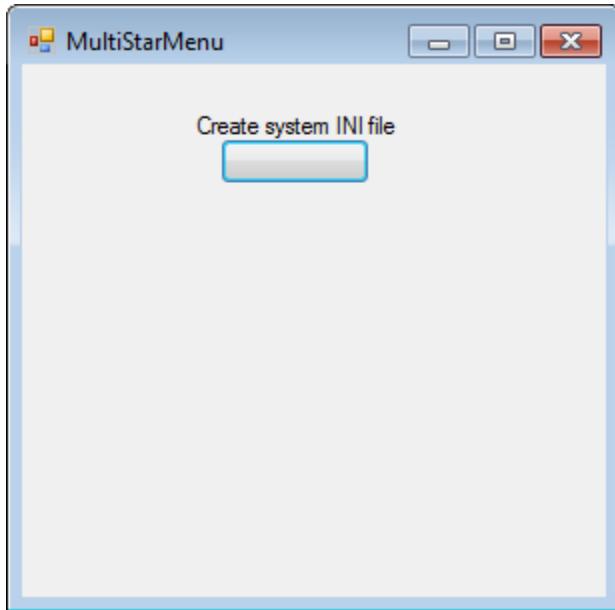
A set-up form will pop up with some default locations already in place. You may have to change them so click on the "Search" button to do so.
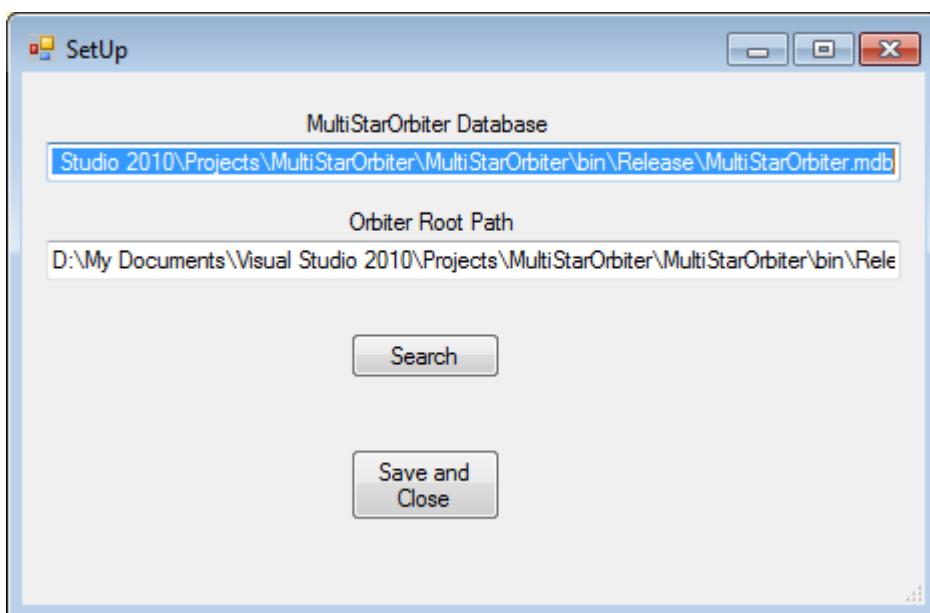
Navigate to the location where you saved the "MultiStarOrbiter.mdb" file. Click "Open".
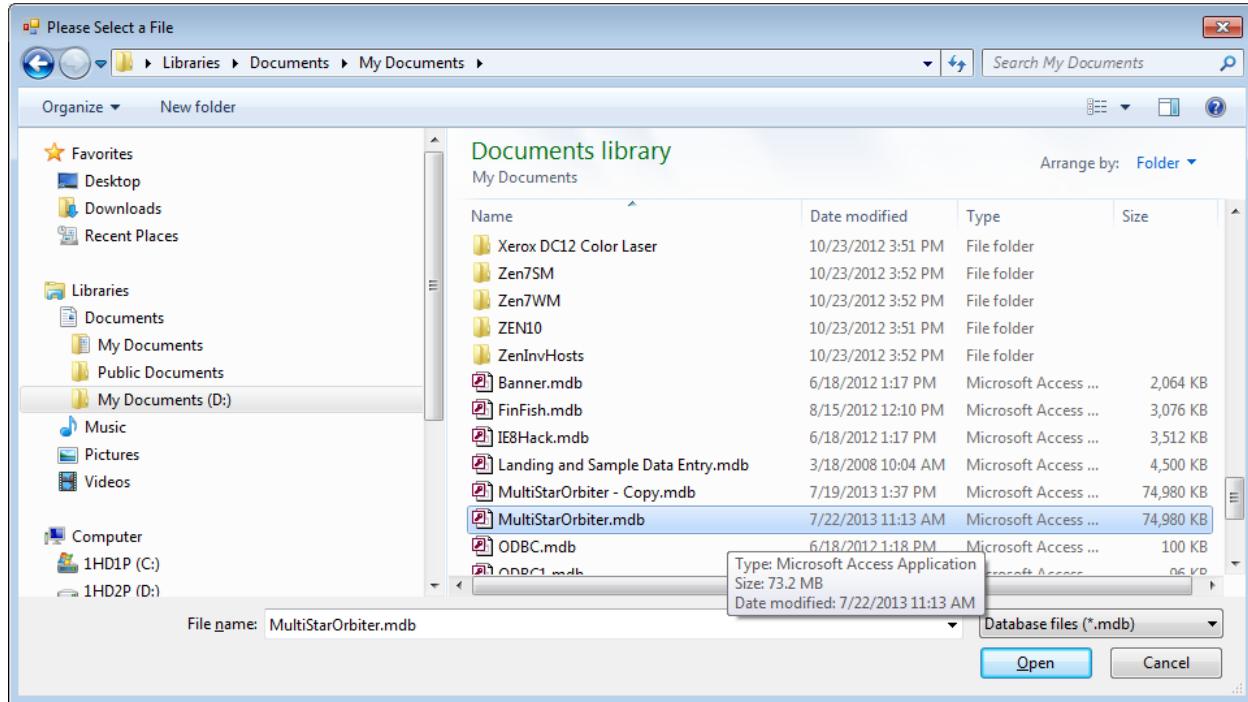
You will now be asked to locate the Orbiter Root Directory.
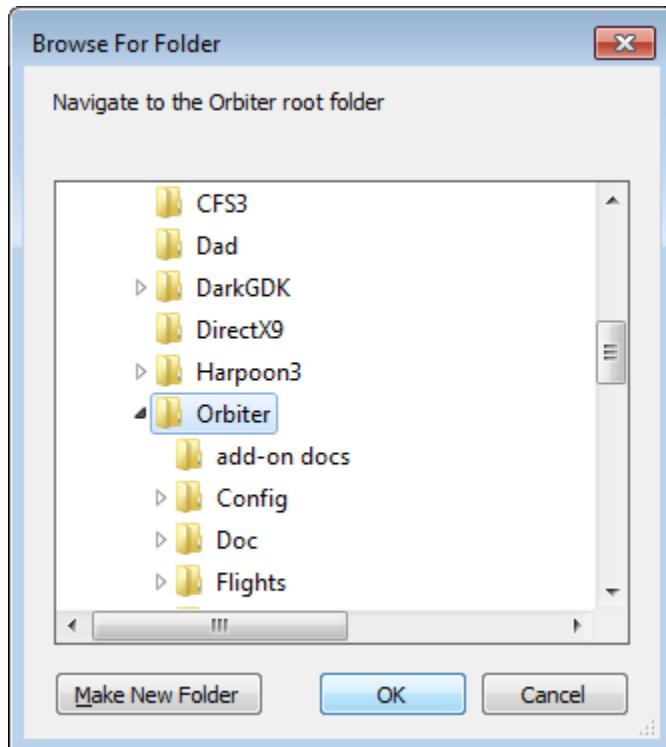


Navigate to the location of the Orbiter Root Folder.

Click "OK".

Click on the "Save and Close" button.
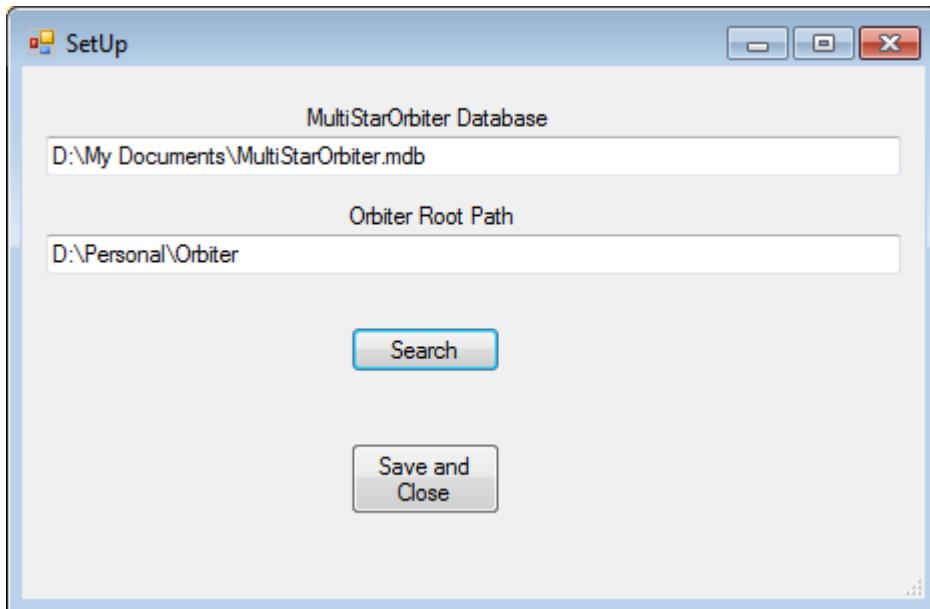
Creating a "Galaxy"

Click on the "Create Star Systems" button.
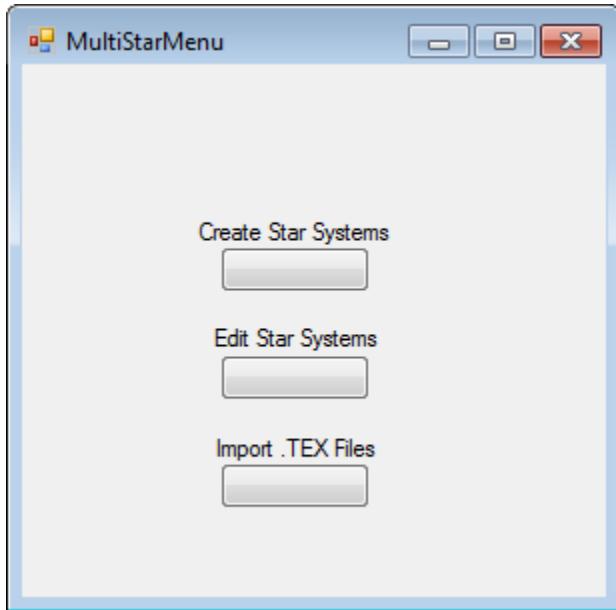
The Database path is filled from the INI file.

Enter the maximum number of systems you wish to create. Note that the program will take more time for mores systems created. Try a max of 100 at a time.

Select either "Random" or "Custom". If you selected custom, select the Stellar Type of your choice – Max Stars is set to "1" for this option and cannot be altered.

Click on the "Create" button.
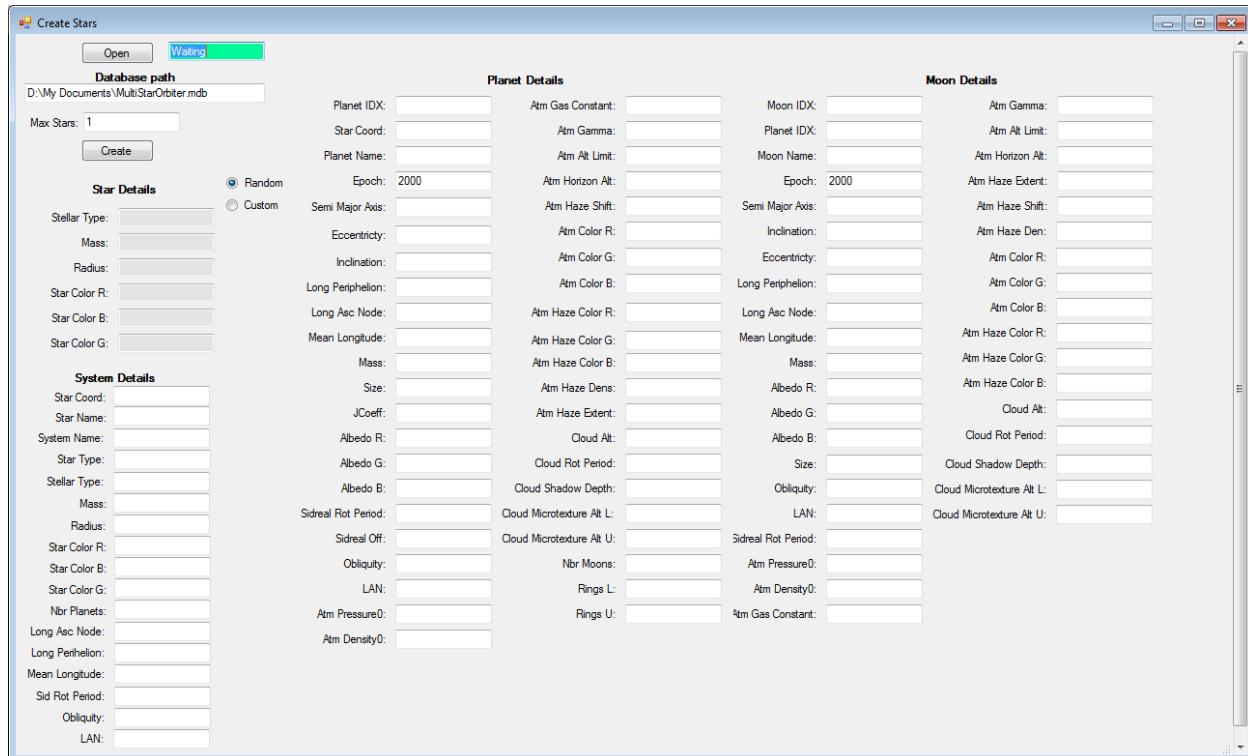
The program will tell you how many system you currently have. You are allowed a maximum of 1000.

The first system is Sol.
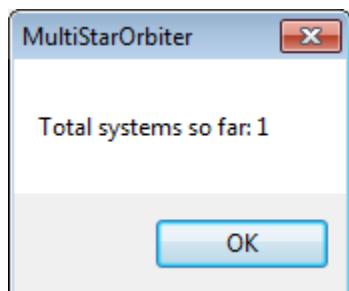
Clicking on "OK" starts the create process. When it's done, you'll see a yellow "Done" at the top.

Create Stars

Open | Done

Database path

D:\My Documents\MultiStarOrbiter.mdb

Max Stars: 1

Create

Star Details

Stellar Type: M1V
Mass: 0.5
Radius: 0.768
Star Color R: 1
Star Color B: 0.8
Star Color G: 0.55686274509803

○ Random
○ Custom

System Details

Star Coord: 906796
Star Name: 906796
System Name: System 906796
Star Type: M
Stellar Type: M1V
Mass: 3.33874284957633
Radius: 534790656
Star Color R: 1
Star Color B: 0.8
Star Color G: 0.55686274509803
Nbr Planets: 9
Long Asc Node: 3.23339697224469
Long Perihelion: 3.88492838201418
Mean Longitude: 1.02782439649946
Sid Rot Period: 244464
Obliquity: 70.3
LAN: 28.47

Planet Details

Planet IDX: 90679609
Star Coord: 906796
Planet Name: Planet_09
Epoch: 2000
Semi Major Axis: 82267588636.2843
Eccentricty: 0.074
Inclination: 0.03874630939427
Long Periphelion: 3.93676466079841
Long Asc Node: 1.89280957378785
Mean Longitude: 1.93749000263891
Mass:
Size: 11498420
JCoeff: 0.000989
Albedo R: 0.56
Albedo G: 0.33
Albedo B: 0.02
Sidreal Rot Period: 184115
Sidreal Off: 0
Obliquity: 66.72
LAN: 70.73
Atm Pressure0: 17480000
Atm Density0: 65

Atm Gas Constant: 188.92
Atm Gamma: 1.2857
Atm Alt Limit: 380000
Atm Horizon Alt: 300000
Atm Haze Shift: 0.01
Atm Color R: 0.79
Atm Color G: 0.22
Atm Color B: 0.78
Atm Haze Color R: 0.97
Atm Haze Color G: 0.53
Atm Haze Color B: 0.4
Atm Haze Dens: 0
Atm Haze Extent: 0
Cloud Alt: 114000
Cloud Rot Period: 346000
Cloud Shadow Depth: 0
Cloud Microtexture Alt L: 228000
Cloud Microtexture Alt U: 760000
Nbr Moons: 1
Rings L: 0
Rings U: 0

Moon Details

Moon IDX: 9067960901
Planet IDX: 90679609
Moon Name: Moon_0901
Epoch: 2000
Semi Major Axis: 2374727840
Inclination: 0.08482300164692
Eccentricty: 0.086
Long Periphelion: 0.59079395180008
Long Asc Node: 3.90168354283332
Mean Longitude: 4.28932116970126
Mass: 3.06066946746999
Albedo R: 0.1
Albedo G: 0.15
Albedo B: 0.57
Size: 1522600
Obliquity: 77.99
LAN: 79.21
Sidreal Rot Period: 234750
Atm Pressure0: 0
Atm Density0: 0
Atm Gas Constant: 0

Atm Gamma: 0
Atm Alt Limit: 0
Atm Horizon Alt: 0
Atm Haze Extent: 0
Atm Haze Shift: 0
Atm Haze Den: 0
Atm Color R: 0
Atm Color G: 0
Atm Color B: 0
Atm Haze Color R: 0
Atm Haze Color G: 0
Atm Haze Color B: 0
Cloud Alt: 0
Cloud Rot Period: 0
Cloud Shadow Depth: 0
Cloud Microtexture Alt L: 0
Cloud Microtexture Alt U: 0

Close the window.

Editing Star Systems

Click on the "Edit Star Systems" button.
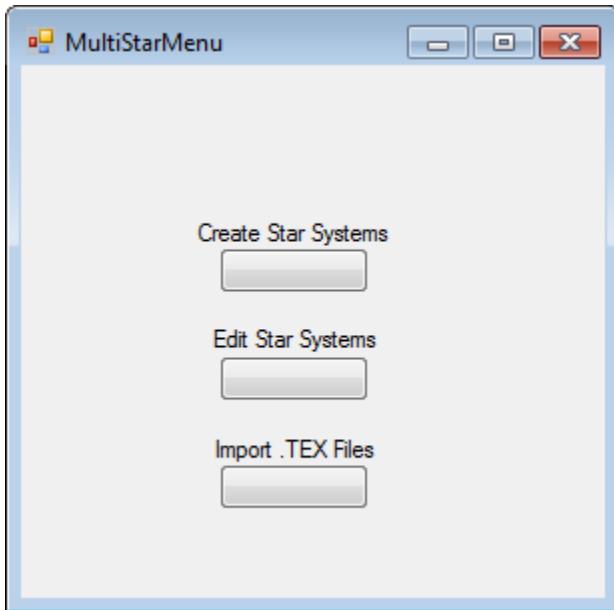
The database path is filled by the INI file.

In the "Enter Selection Data" box, you can enter the Coordinates (i.e. 505050), the name of the star (i.e. Sol), the Stellar Type (i.e. G2V) or the Star Type (i.e. G).


Then click on the corresponding button.

You can change any data you wish. Just remember, bad data will either end up looking bad or causing a CTOD in orbiter.

Importing Texture files.

After you have created a new planet or moon texture file and moved it to the "Textures" folder, Click on the "Import .TEX Files" button.
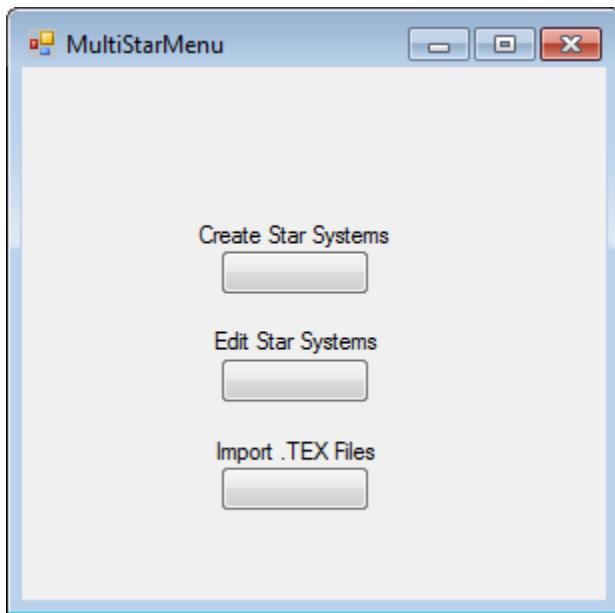
The basic orbiter textures appear along with three I have included (Pluto, Deimos and Phobos)
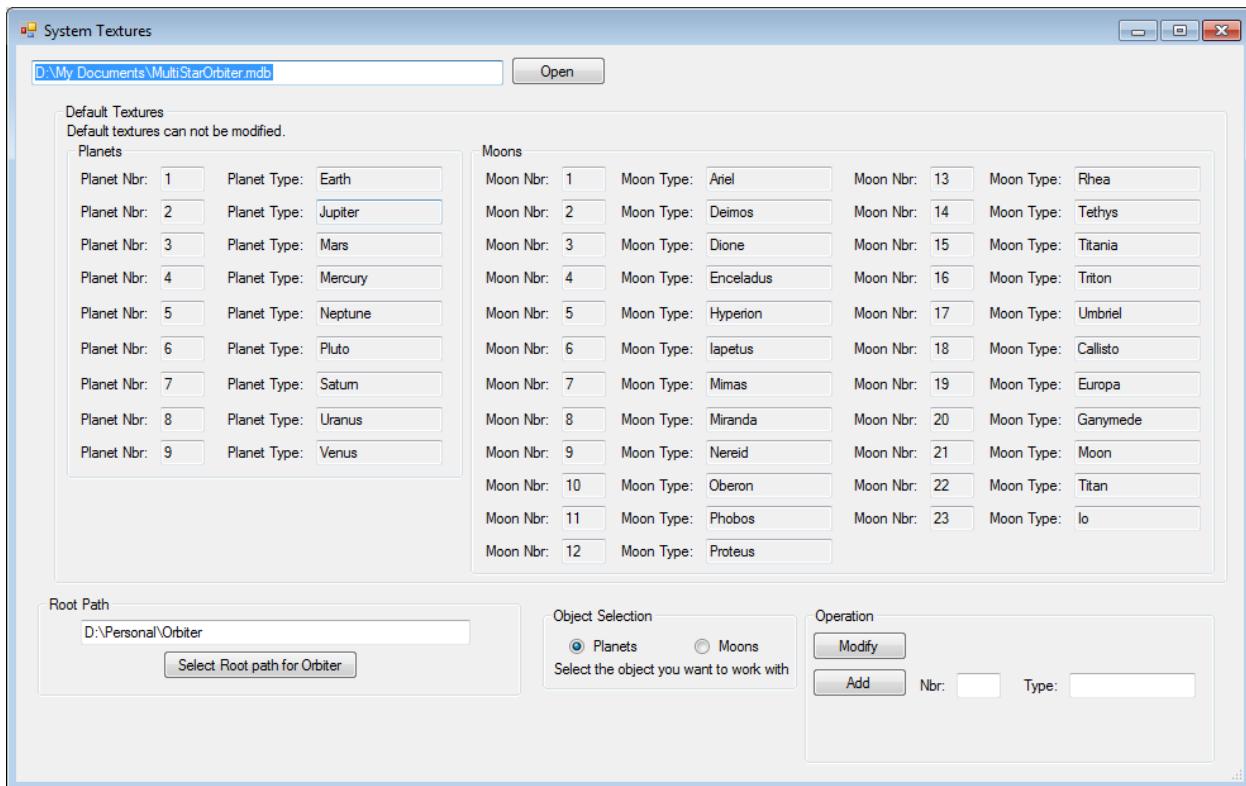
To modify a texture you have already created, select either Planets or Moons and click on the "Modify" button.
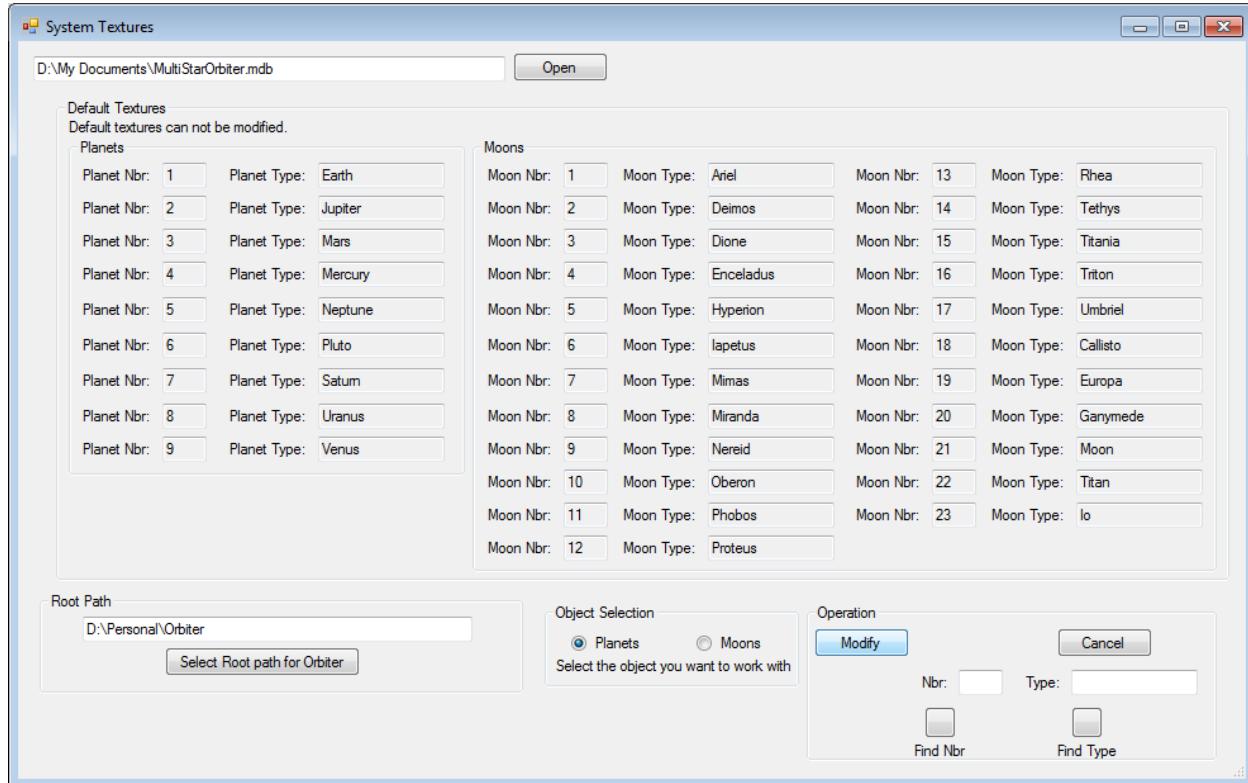
Enter the number in the number field and Click on "Find Number" or the name in the name field and click on "Find Name".
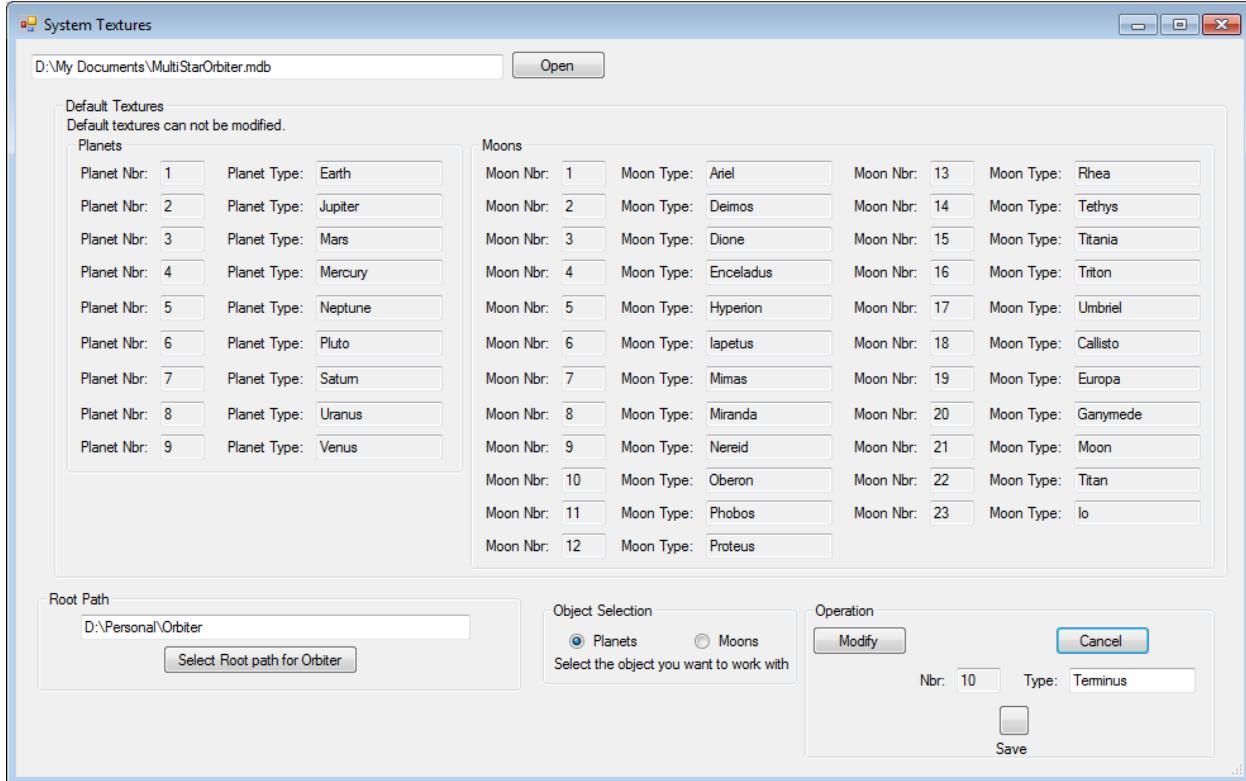
Once it shows up, You can change the name to another texture you have created. Click on "Save".

To add a texture you have already created, select either Planets or Moons and click on the "Add" button.
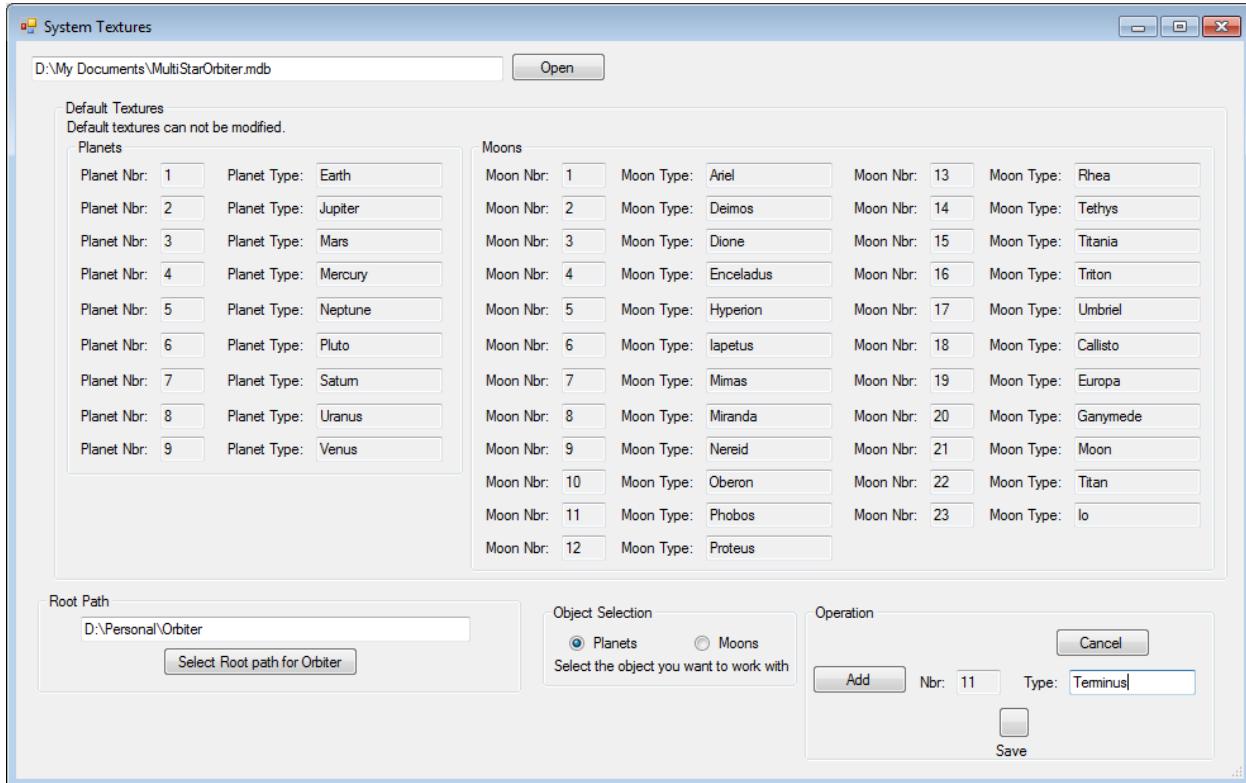
Enter the name of the texture and click on the "Save" button.

You can now close the form.

Creating a System Configuration File

After finding a system in Edit Star Systems, click on the "Create Cnf Files" button.
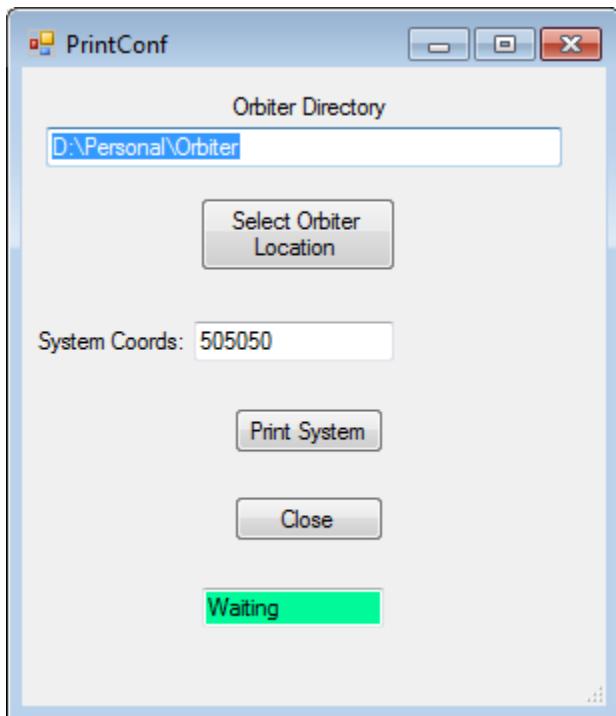
The Orbiter Directory path is filled from the INI file.

Click on the "Print System" button.

A warning window pops up. Note that clicking "OK" will create a number of .CNF files in your Config folder.
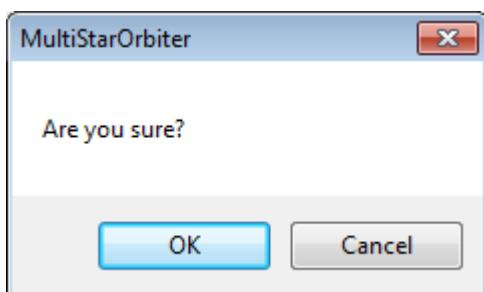
Once the file creation process is complete, you will get a yellow "Done" at the bottom.
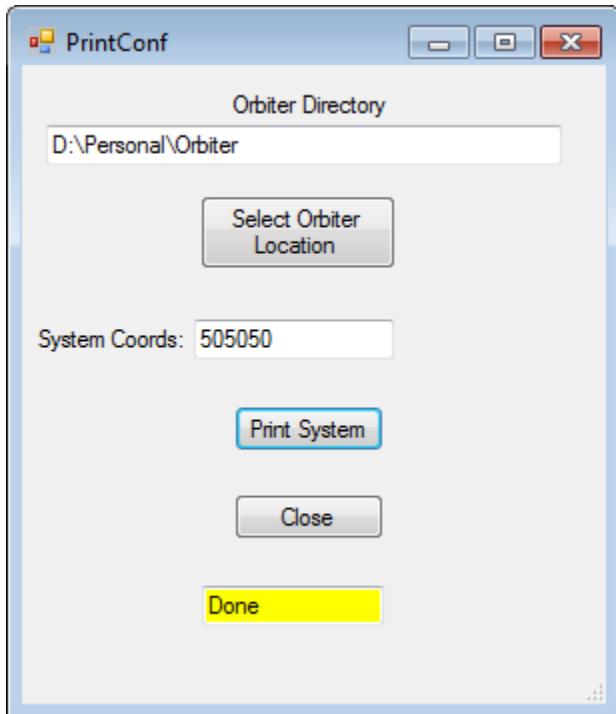
Once done, close the form.

System Configuration file modification

If you have the Add-On "3D Sun" from dagoO, you will need to modify the system config file. Locate the file in the config folder, and edit it by adding another planet at the bottom. (Planetxx = Su where xx is the next available planet)
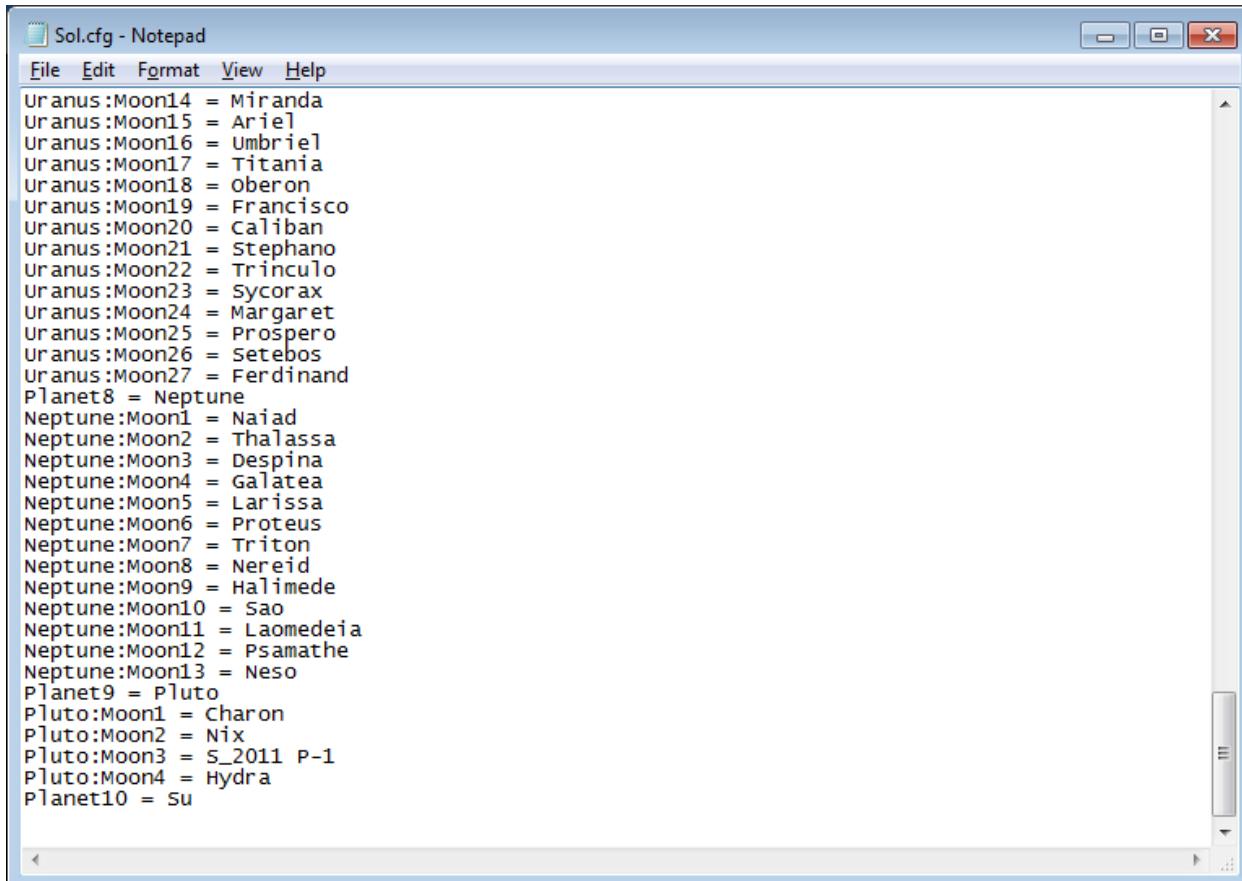
```
Sol.cfg - Notepad
File  Edit  Format  View  Help
Uranus:Moon14 = Miranda
Uranus:Moon15 = Ariel
Uranus:Moon16 = Umbriel
Uranus:Moon17 = Titania
Uranus:Moon18 = Oberon
Uranus:Moon19 = Francisco
Uranus:Moon20 = Caliban
Uranus:Moon21 = Stephano
Uranus:Moon22 = Trinculo
Uranus:Moon23 = Sycorax
Uranus:Moon24 = Margaret
Uranus:Moon25 = Prospero
Uranus:Moon26 = Setebos
Uranus:Moon27 = Ferdinand
Planet8 = Neptune
Neptune:Moon1 = Naiad
Neptune:Moon2 = Thalassa
Neptune:Moon3 = Despina
Neptune:Moon4 = Galatea
Neptune:Moon5 = Larissa
Neptune:Moon6 = Proteus
Neptune:Moon7 = Triton
Neptune:Moon8 = Nereid
Neptune:Moon9 = Halimede
Neptune:Moon10 = Sao
Neptune:Moon11 = Laomedeia
Neptune:Moon12 = Psamathe
Neptune:Moon13 = Neso
Planet9 = Pluto
Pluto:Moon1 = Charon
Pluto:Moon2 = Nix
Pluto:Moon3 = S_2011 P-1
Pluto:Moon4 = Hydra
Planet10 = Su
```

Here is the Add-On download:

http://orbithangar.com/searchid.php?ID=4284

Launching AstrogateStars

Double click on AstrogateStars.exe

(If it does not launch, try running MultiStarOrbiter first and creating an .INI file.)

AstrogateMenu

Current Coordinates

505050

Astrogate Star Systems

Search Star Systems

Destination Coordinates

442935

Vessel Conf
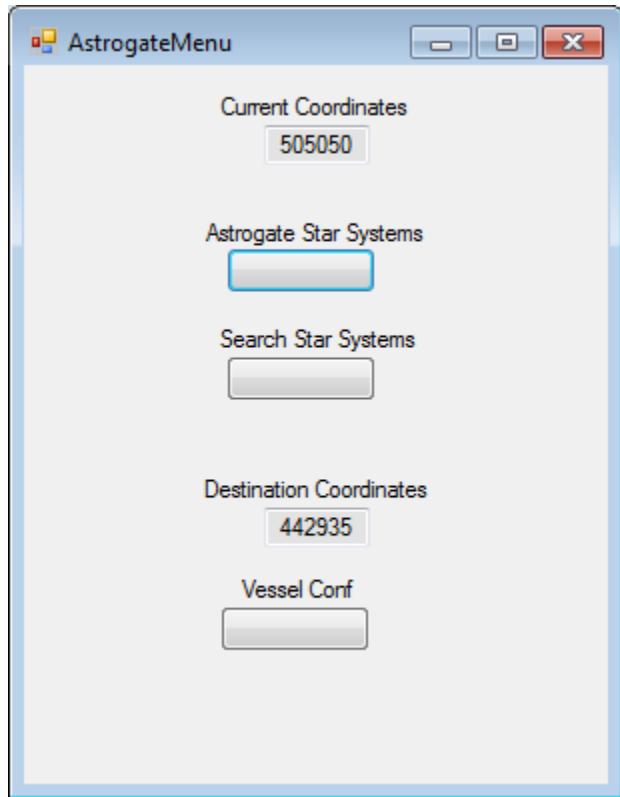
Galaxy Navigation

Clicking on the "Astrogate Star Systems" button brings up a form that I am developing into a Galaxy navigation system. This is not fully implemented at this time as I am not fully convinced my math is working correctly. To use, simply but a destination coordinate in, enter a range (between 1 and 6, inclusive). Click on Calculate. Click on Jump. Repeat the last two steps until you arrive at your destination.

Searching the Galaxy

Click on the "Search Star Systems" button. It behaves just like "Editing Star Systems" in MultiStarOrbiter but does not have the edit function. It has a more extensive search parameter that is based on the current location in Galaxy Navigation. For the time being, enter 99 in "Range to Search". Hovering your cursor over the "Enter Selection Data" field will explain what can be entered there.

Once you have found a Star System, you can browse it. If you find a planet that is in the Habitible Zone, a pop-up appears indicating the planet's name.

Click on "OK" to continue browsing.

When done, Close the form.

You can also create the Config files just like in "Edit Star Systems".

Creating a Scenario

Click on the button "Vessel Conf"

Click on "Get System".
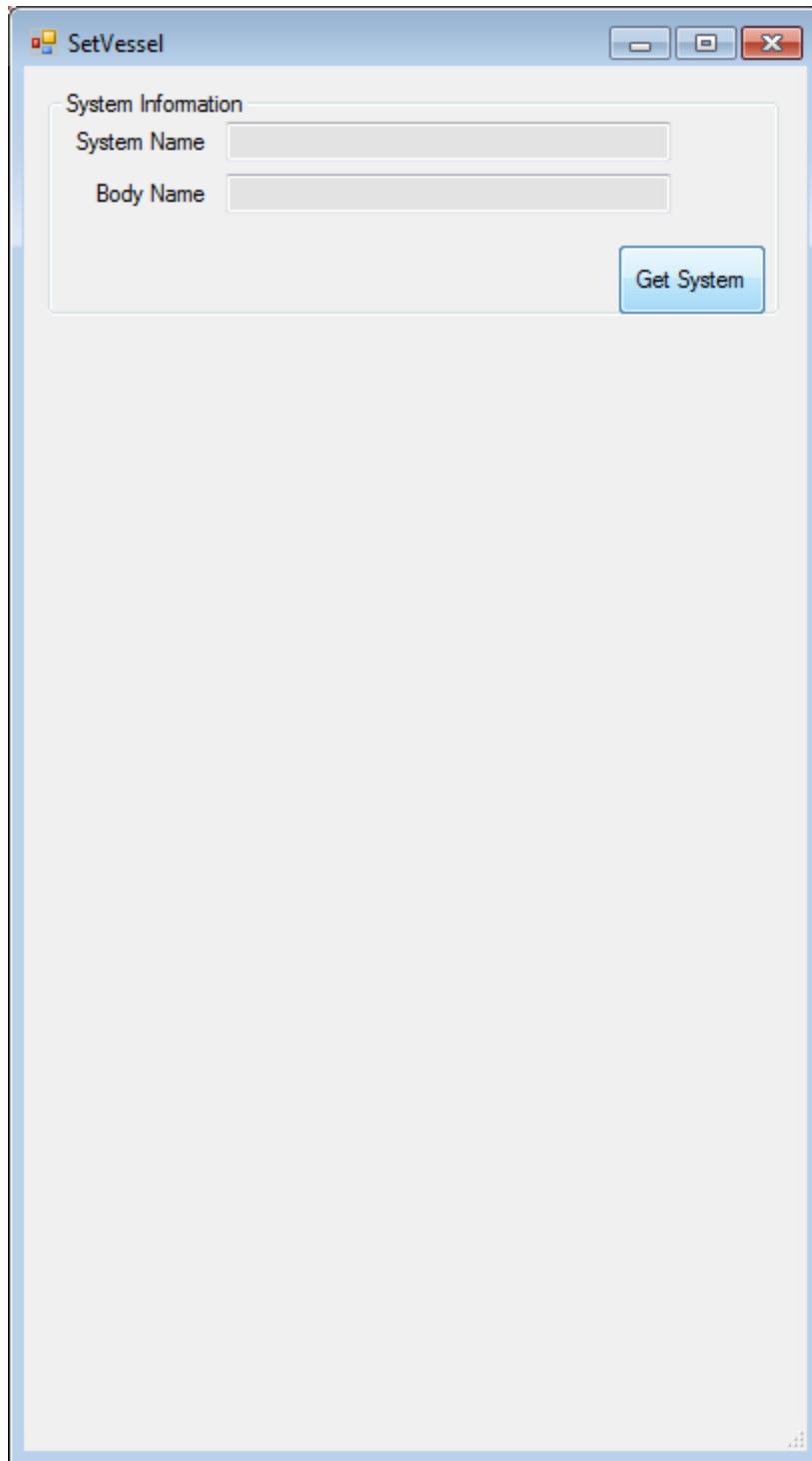
The "Search Star Sytems" form appears. Navigate to the Star System you want. Select the Star, Planet or moon you want to orbit and click on the corresponding "Select" button.

Click on "OK"

Click on "Get Scenario"

Click on the "Get Scenario" button
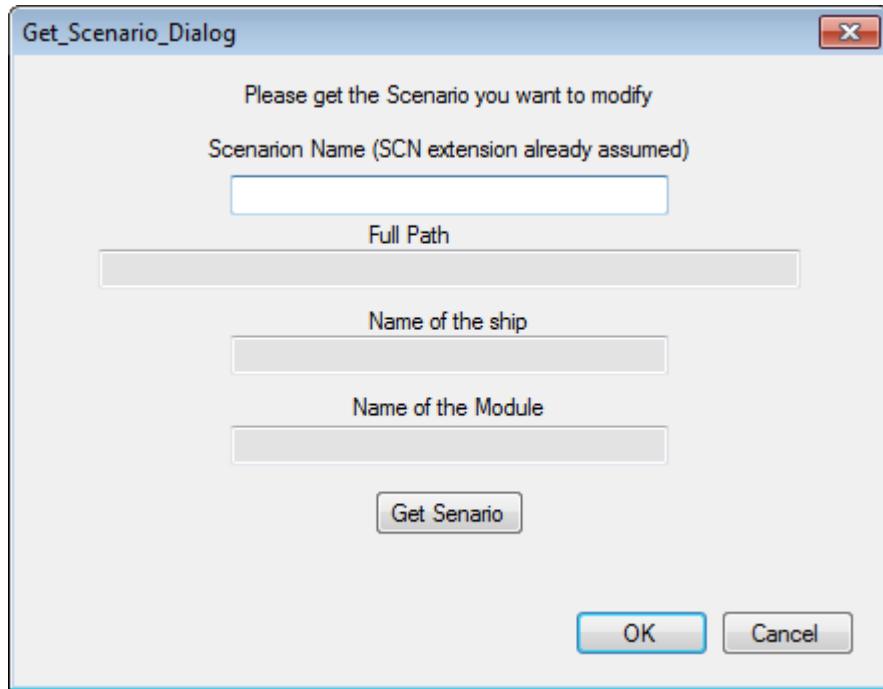
Navigate to and select the scenario that has the vessel you want in orbit over the selected system.

Click on "Open".
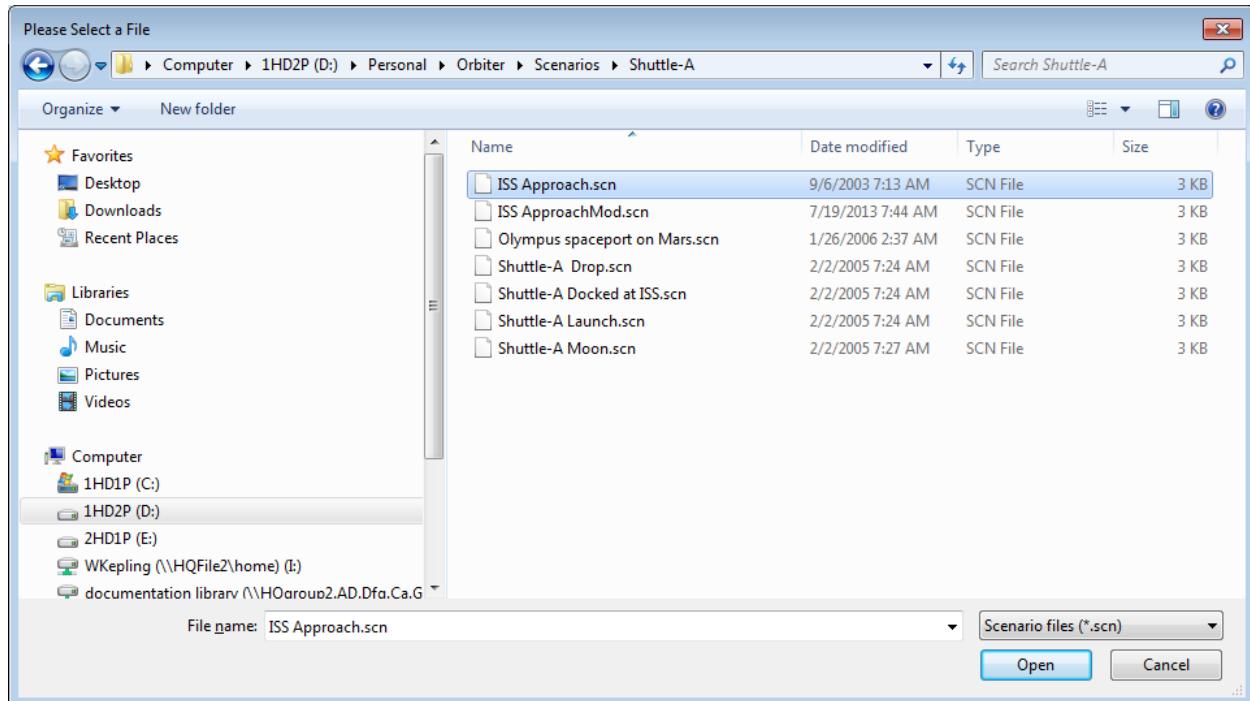
If the ship shows up on the pop-up, click Yes. Click No until it doe.
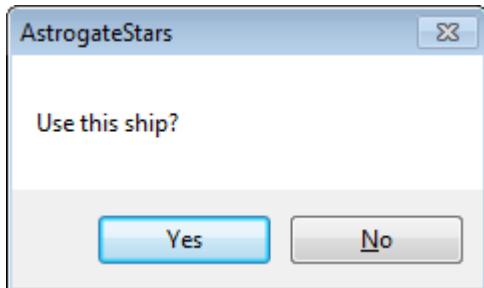
Once you have the ship, click on "OK".
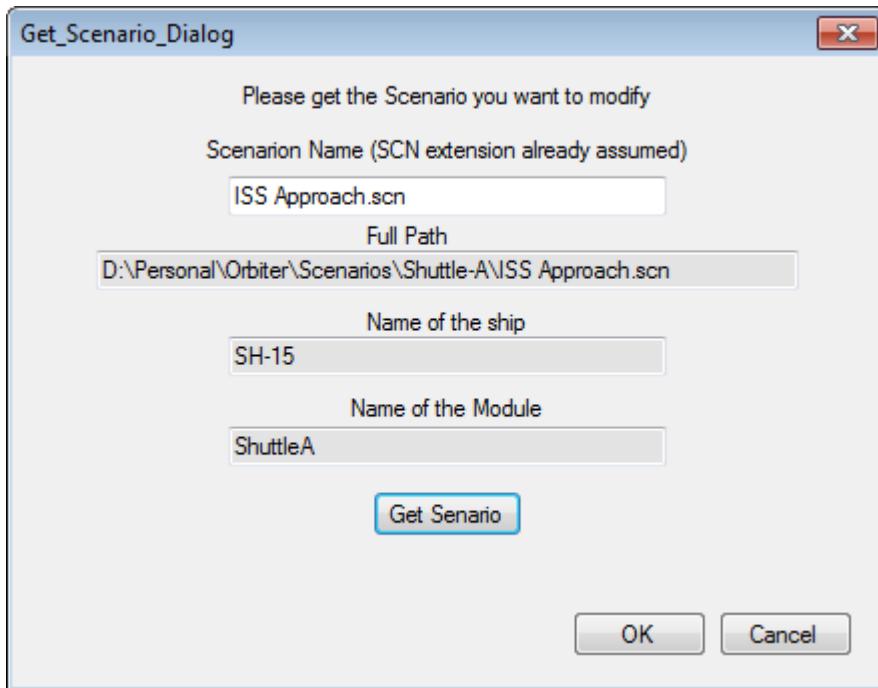
Enter the height of the orbit above the surface of the body in meters. If there is an atmosphere and the orbit is in it, the form will let you know and ask for another value.

Enter the Semi-Major Axis for the orbit. It has to be greater than or equal to the Orbit Height.

Enter the desired LAN (>= 0 or < 360)

SetVessel

System Information
System Name   Sol

Body Name   Earth

Get System

Scenario Information
Module Name   ShuttleA

Ship Name   SH-15

Scenario Name   ISS Approach1.scn

Scenario Path   D:\Personal\Orbiter\Scenarios\Shuttle-A\ISS

Get Scenario

Orbital Elements
Body's Mass in Kilograms   5.973698968E+24

Body's Radius in Meters   6378100

Height of Orbit above Planet's Surface in Meters   374000

Desired SMA   6752100

Desired LAN   169.03

Desired Inclination

Desired MJD Date

RPOS

RVEL   Calculate Orbit

Enter the desired inclination (>=0 or <=90)

Enter the desired MJD date. Use this format: DD/MM/YYYY HH:MM:SS xM (where x is either A or P)

SetVessel

System Information
System Name   Sol

Body Name   Earth

Get System

Scenario Information
Module Name   ShuttleA

Ship Name   SH-15

Scenario Name   ISS Approach1.scn

Scenario Path   D:\Personal\Orbiter\Scenarios\Shuttle-A\ISS

Get Scenario

Orbital Elements
Body's Mass in Kilograms   5.973698968E+24

Body's Radius in Meters   6378100

Height of Orbit above Planet's Surface in Meters   374000

Desired SMA   6752100

Desired LAN   169.03

Desired Inclination   74.51

Desired MJD Date
8/26/2013 8:20:50 AM

RPOS

RVEL   Calculate Orbit

Click on the "Calculate Orbit" button.
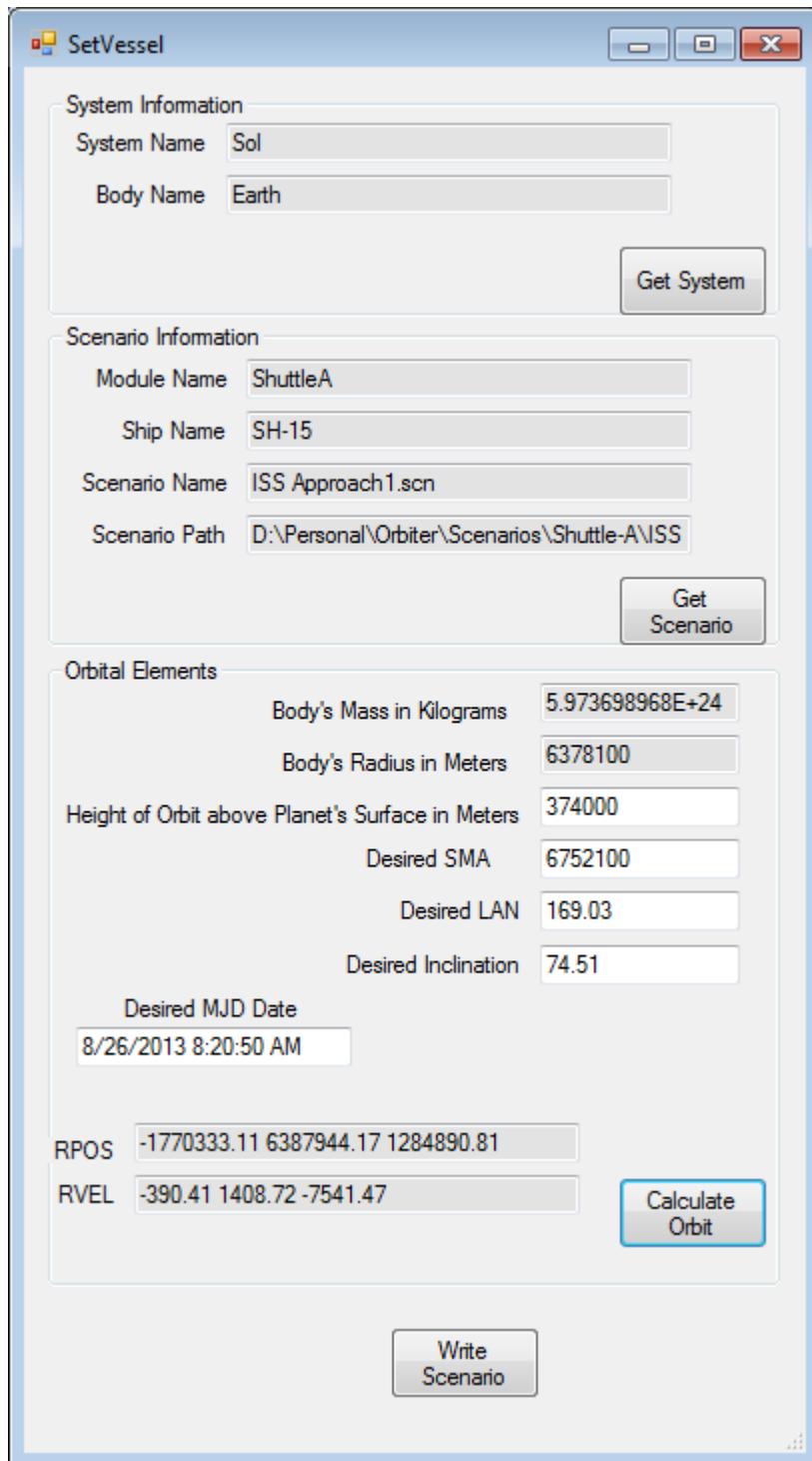
For now, this is semi-accurate orbit over the body. I have not been successful in including the AgP into my orbit calculations. Eventually, I hope to figure out how to do this.

Click on the "Write Scenario" button.

You can now close the SetVessel form.
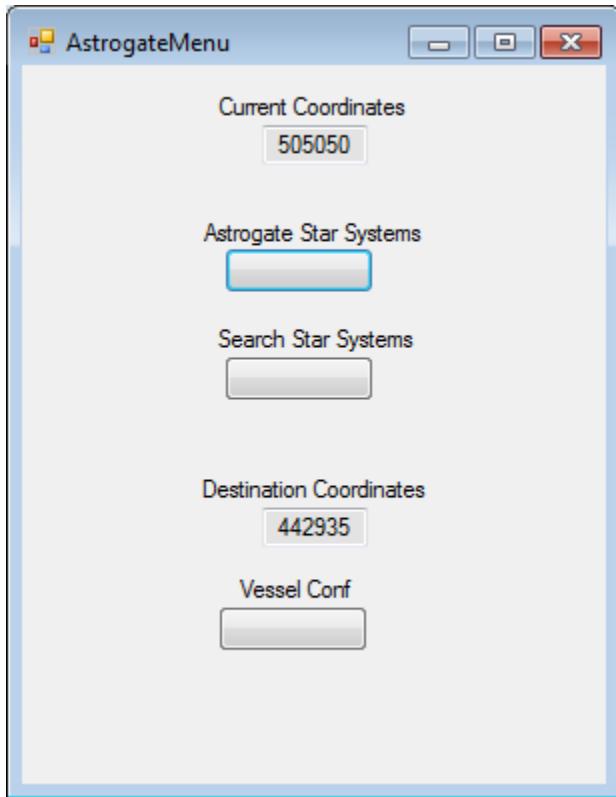
You can now exit the program.

Launching Orbiter

The new scenario will be located in the base folder of the scenario you selected in "Astrogate".
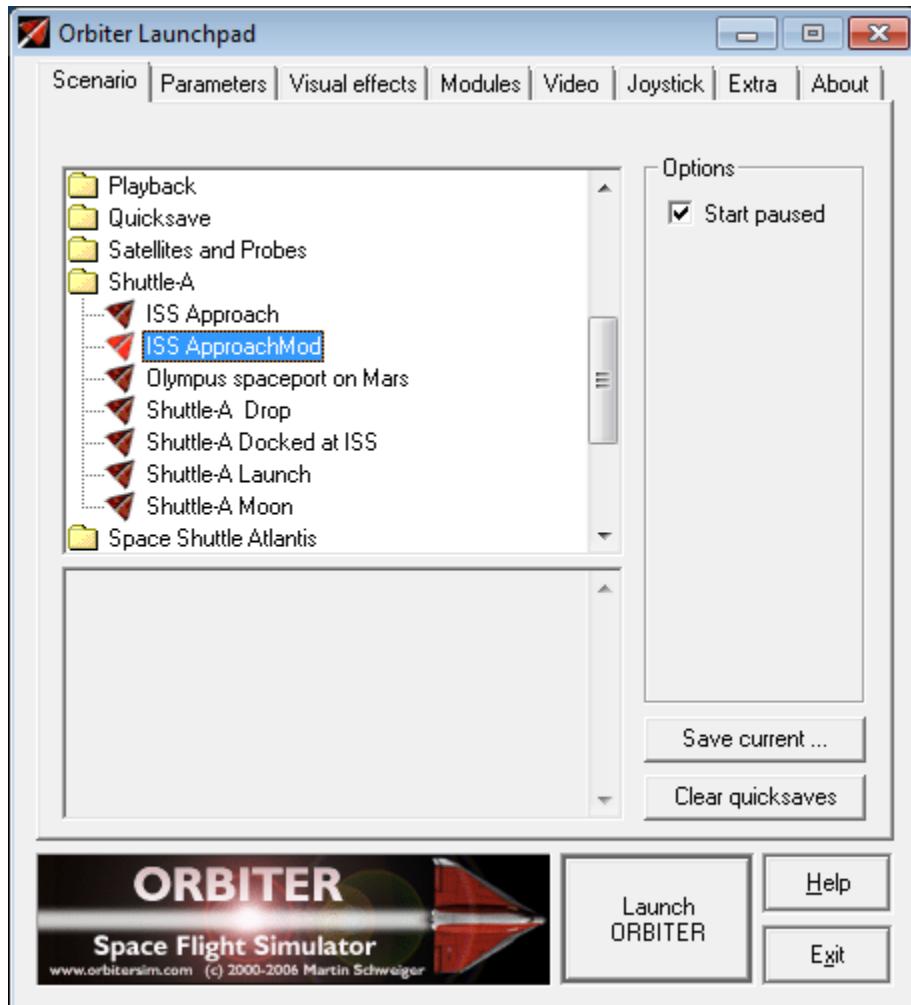
At this time, only the ship you selected will be in the orbit that was calculated. All other vessels will still have their old RPOS and RVEL parameters and will likely be either transported to the star, crashing into the body or going into orbit around the star. If your vessel was docked, the object it was docked with will come along nicely as well.

I plan improvements to this utility as soon as I can get the math figured out.

Contact info

Contact Albinon on the Orbiter forum.

http://www.orbiter-forum.com/