GURPS Suite for AstroSynthesis 2

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Version 1.1.71

Disclaimer:

Setup

The GURPS Suite is a series of plugins that combine the data generated by AstroSynthesis and the [GURPS 4th Edition Space](#) World Design Sequence.

Requirements

This set of plugins has been built and tested on [AstroSynthesis v2.01e](#).

Files

The following files must be placed in your AstroSynthesis Plugins folder.

- GURPSBodyEditor.popmenu.AstroScript
- GURPSSuite.conf.vbs
- GURPSSuite.lib.vbs
- GURPSSuiteConfiguration.plugin.AstroScript
- GURPSSystemBuilder.plugin.AstroScript
- GURPSSystemBuilder.popmenu.AstroScript
- GURPSSystemSearcher.plugin.AstroScript
- GURPSSystemUpgrade.plugin.AstroScript

GURPS Suite Configuration

The GURPS Suite Configuration is located in the Plugins menu. This plugin is used to configure some settings for the GURPS Suite. These options allow you to choose how to handle discrepancies between AstroSynthesis and the GURPS 4th Edition World Design Sequence. The configuration options are stored on a per sector basis and by default none are selected.

Allow GURPS System Builder to modify Atmospheric Pressure

By checking this option you will allow the GURPS System Builder to change the Atmospheric Pressure of terrestrial bodies generated by AstroSynthesis to values specified in the GURPS 4th Edition World Design Sequence for the specific planet types.

Allow GURPS System Builder to modify Hydrographic Coverage

By checking this option you will allow the GURPS System Builder to change the Hydrographic Coverage of terrestrial bodies generated by AstroSynthesis to values specified in the GURPS 4th Edition World Design Sequence for the specific planet types.

Allow GURPS System Builder to modify Habitability Rating

By checking this option you will allow the GURPS System Builder to change the Habitability Rating of terrestrial bodies generated by AstroSynthesis to values specified in the GURPS 4th Edition World Design Sequence for Habitability Score.

GURPS Habitability Score to AstroSynthesis Habitability Rating

- 0 or less = Inhospitable

- 1 to 3 = Habitable

- 4+ = Hospitable

GURPS System Builder

The GURPS System Builder is located in the Plugins Menu or as a Right Click Menu Option. This will generate GURPS details for terrestrial bodies, stars, asteroid belts, planetoids, and gas giants. I will give a brief summary of each field that is added, for more details see [GURPS 4th Edition Space](#). You need to deselect the system and reselect it in order to see the changes.

Plugin Menu

When selected from the Plugins Menu the System Builder will run on all selected bodies.

Right Click Menu

When selected from the Right Click Menu the System Builder will run on the currently selected body. If the currently selected body has any child bodies you will be give the option to run the system builder on the child bodies as well, this is recursive so if those child bodies have children of their own they will also be built.

Terrestrial Bodies

- Size
  - The size of a terrestrial body is determined by it's Minimum Molecular Weight Retained. MMWR is calculated using the blackbody temperature, radius and density.
- Type
  - The type is primarily determined by the size and temperature but in some cases stellar age and mass of the parent star are taken into account as well.
- Climate
  - General description of the average climate. (Hot, Cold, Tropical, etc...)
- Atmospheric Pressure
  - General description of the atmospheric pressure. (Thin, Trace, Dense, etc...)
- Atmospheric Composition
  - Description of the atmosphere based on the terrestrial type. The gases and percentages that make up the atmosphere will also be placed in the Atmospheric Components list. These values are a best estimate on my part based on the descriptions given in the GURPS World Design Sequence.
- Volcanic Activity
  - The amount of volcanic activity on the terrestrial body.
- Tectonic Activity
  - The amount of tectonic activity on the terrestrial body.
- Resource Value
  - Represents mineral resources, native plant or animal species, arable land or anything else that could be considered of value to colonists or prospectors.
- Habitability Value
  - The sum of all factors (atmosphere, climate, hydrographic coverage, etc...) that would make the body pleasant for *humans.*
- Affinity Score
  - The sum of the Resource Value and the Habitability Value.

Stars

- Stellar Age

    ○ Used in determining if a terrestrial body is an Ocean or a Garden Type.

    ○ Used in determining volcanic activity on terrestrial bodies.

Asteroid Belts

- Resource Value

    ○ Represents mineral resources, native plant or animal species, arable land or anything else that could be considered of value to colonists or prospectors.

- Habitability Value

    ○ The sum of all factors (atmosphere, climate, hydrographic coverage, etc...) that would make the body pleasant for *humans.*

- Affinity Score

    ○ The sum of the Resource Value and the Habitability Value.

Planetoids

- Climate

    ○ General description of the average climate. (Hot, Cold, Tropical, etc...)

- Resource Value

    ○ Represents mineral resources, native plant or animal species, arable land or anything else that could be considered of value to colonists or prospectors.

- Habitability Value

    ○ The sum of all factors (atmosphere, climate, hydrographic coverage, etc...) that would make the body pleasant for *humans.*

- Affinity Score

    ○ The sum of the Resource Value and the Habitability Value.

Gas Giants

- Size

    ○ The size (small, medium or large) determined by the mass.

Small Bodies

According to NBOS Support
"'Small bodies' is really just a note that there are numerous small, unremarkable bodies in orbit (small chunks of rock). Its not a single body with a single orbit, but rather debris found in orbit at various places. So there's no orbital parameters per se, and they aren't shown in the system diagram. Think of it as the orbital equivalent of a 'look out for falling rocks' sign."

Unfortunately by default 'Small Bodies' have a distance of 0. This causes the Travel Calculator to throw an invalid floating point violation error, in order to fix this the distance is set to 0.01. This will achieve the same effect for all intents and purposes without causing the error.

GURPS Body Editor

The GURPS Body Editor is a Right Click Menu Option. It will allow you to edit almost all the fields created by the GURPS System Builder. Climate, Habitability Value and Affinity Score are not editable because they are calculated values. You will need to deselect the system and reselect it in order to see the changes.

Terrestrial Bodies

If you are going to edit the Mean Temperature, Atmospheric Pressure, or Hydrographic Coverage of a terrestrial body I suggest doing it through the GURPS Body Editor otherwise the Climate, Habitability Value and Affinity Score will not be recalculated to accurately represents the changes.   Editing the size does not change the diameter or mass values of the terrestrial body.

Planetoid Bodies

If you are going to edit the Mean Temperature, Atmospheric Pressure, or Hydrographic Coverage of a planetoid body I suggest doing it through the GURPS Body Editor otherwise the Climate, Habitability Value and Affinity Score will not be recalculated to accurately represents the changes.

Gas Giants

Editing the size of a Gas Giant does not alter the mass value of the gas giant body.

Stars

Editing the Stellar Age of a system does not recalculate any properties of the child bodies.

GURPS System Searcher

The GURPS System Searcher is located in the Plugins Menu. It will allow you to search through all the systems for terrestrial bodies, asteroid belts, planetoids, gas giants, and stars based on their GURPS properties.

GURPS Suite Upgrade

The GURPS Suite Upgrade is located in the Plugins menu. It will run on all selected bodies and provides you with the following update options:

GURPS System Upgrade

This option will convert bodies that were generated in my old GURPS System Updater plugin to the new data structure in the GURPS Suite.

Planetoid Upgrade

This option will generate GURPS details for planetoids in sectors that were built prior to version 1.1.64.

Ammonia Planet Upgrade

This option will rebuild terrestrial planets that were wrongly generated as ammonia planets built prior to version 1.1.71.

Once you are done with this plugin or if you do not plan on using it you can remove it from the Plugins menu by going to File → Program Preferences → Plug-Ins and unchecking the Active checkbox for GURPS System Upgrade.

Notes

- This plugin does change the values displayed in the system data tree and due to limitation in the scripting interface it will cause other custom fields (if you are displaying any) to not be displayed.

Change Log

- Version 1.1.71
  - Fixed terrestrial planets wrongly being built as ammonia type planets.
  - The GURPS Suite Upgrade plugin can be used to rebuild terrestrial planets that were wrongly built as ammonia type planets in sectors that were built prior to version 1.1.71.
  - Added a GUI and check boxes for the various upgrades that the GURPS Suite Upgrade plugin can perform.
- Version 1.1.64
  - Added GURPS details generation, editing and searching for planetoids. The GURPS Suite Upgrade plugin can be used to generate details for planetoids in sectors were built prior to version 1.1.64.
- Version 1.0.58
  - Initial release.
- Version 0.0.55
  - Testing release.