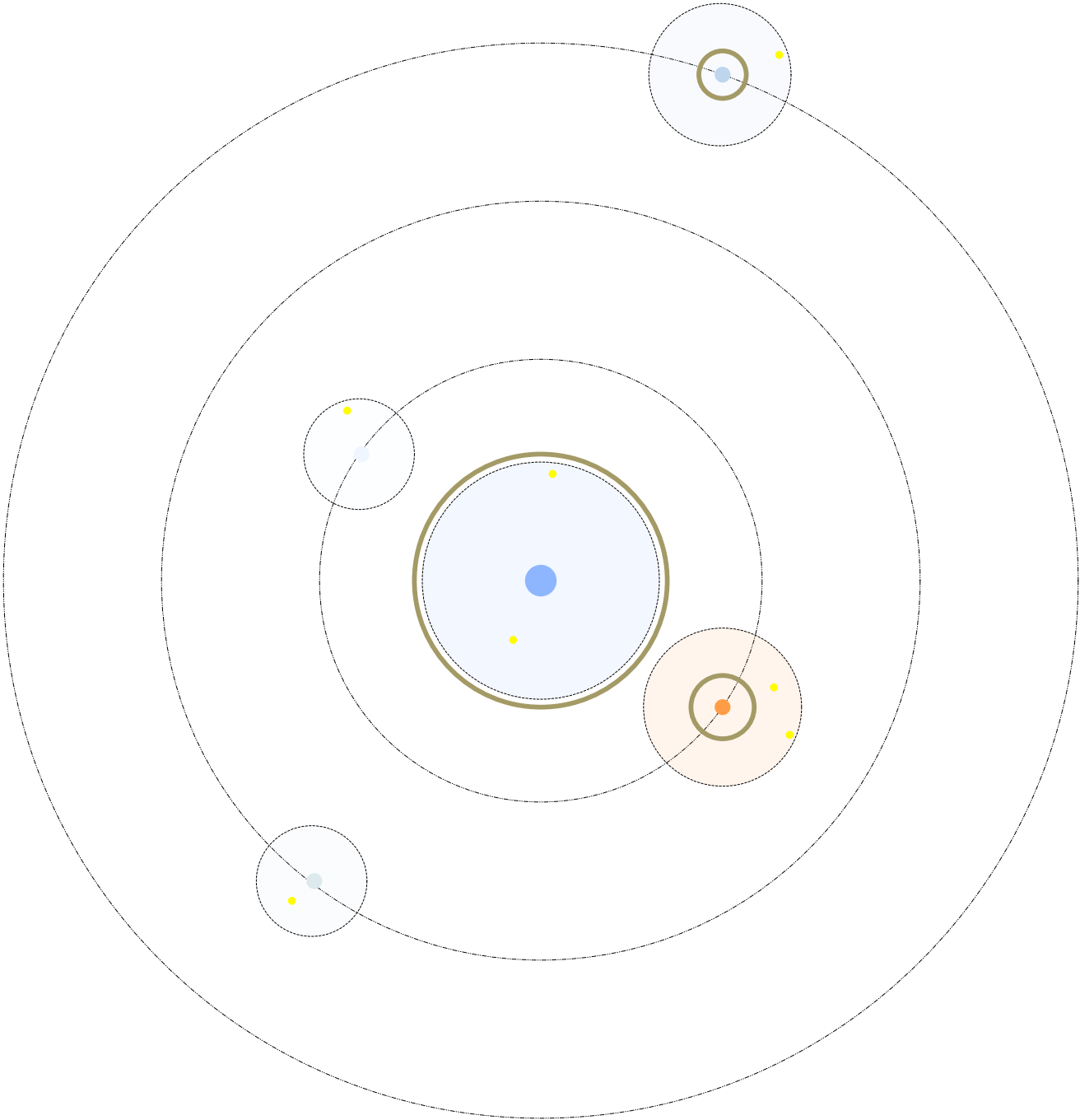


THE VERSE IN NUMBERS



INTRODUCTION: LIES, DAMN LIES AND CANON

What you are about to read is one of the most heroic efforts I have ever seen to make sense of something patently ridiculous. This is a work of exacting detail and you should be aware that once you start reading it, *The Verse In Numbers* will lead to calculators, graph paper, protractors and other math amphetamines. You will spend endless hours on Wikipedia, astronomy and astrophysics reference sites, reviewing, confirming and contending with the information here to the point where it might even eclipse that Warcraft addiction you've so carefully cultivated.

I say all this because I want to make sure you understand that the next 100 pages (no, really, 100 pages) represent the most painstakingly-researched and thoughtful effort to make sense of a bunch of hoey that I've encountered, and I am speaking as somewhat of an expert on hoey. J. Chris Bourdier is an insane genius and the most dedicated fan of any show/movie with whom it has been my pleasure to work. And I humbly bow my head to his Awesomeness and the singular achievement that this document represents.

Consider yourself warned.

And while we're on the subject of thoroughness and the crazy lengths fans will go to make sense of something which doesn't, I feel it's important to address the canonicity of this document, if for no other reason than to limit the number of e-mails I'll get if I don't.

What Chris has done here is take two-plus years of *editorial* research and applied real-world science to it. He did not get to choose the facts of the Verse, he only got to try and make sense of them. The concept, architecture, and many of the specifics of the Verse came from Joss Whedon, Tim Minear, and Jane Espenson, plus a host of very talented folks who worked on both *Firefly* and *Serenity*. A lot of it was on screen (even if it was only for a second) and much of it was part of the voluminous background materials which are generated by any movie or TV show set in imaginary worlds.

And, while we're at it, let's not forget Geoffrey Mandel, *Serenity* Graphic Designer, who designed many of the maps you see on-screen and who is the creator of *The Official Map of the Verse*, the development of which this document was originally drafted to support.

Beyond that, there is the *Official Serenity Role-Playing Game*, the *Serenity* comics from Dark Horse, and several other licensed resources.

The gaps which remained were filled in by *The Map of the Verse* Brain Trust, following closely the model for planet naming established by Joss.

What was produced was then reviewed, and ultimately approved by, Universal Studios.

So, what does that make *The Map of the Verse*? Canon? Extended Canon? Speculation?

Here's how I like to think about it – it's as accurate as it's possible to be right now. Meaning to say, it's 100 percent accurate, until Joss says it isn't. It's Joss' Verse, after all. We're just lucky that we were allowed to visit and bring home a few souvenirs.

Plus, while the Verse belongs to Joss, all of us Browncoats live in it. And you should know your way around your own neighborhood better than anyone else. So if something here doesn't make sense to you, ignore it. If something doesn't fit your personal narrative of the Verse, don't use it.

It's here for you, not the other way around.

Oh, the timeline was created to give context to the rest of the material (and as such, was added last). It's total and complete speculation. Feel free to ignore it or use it as you see fit.

Andy Gore
Quantum Mechanix Inc.
2.16.09

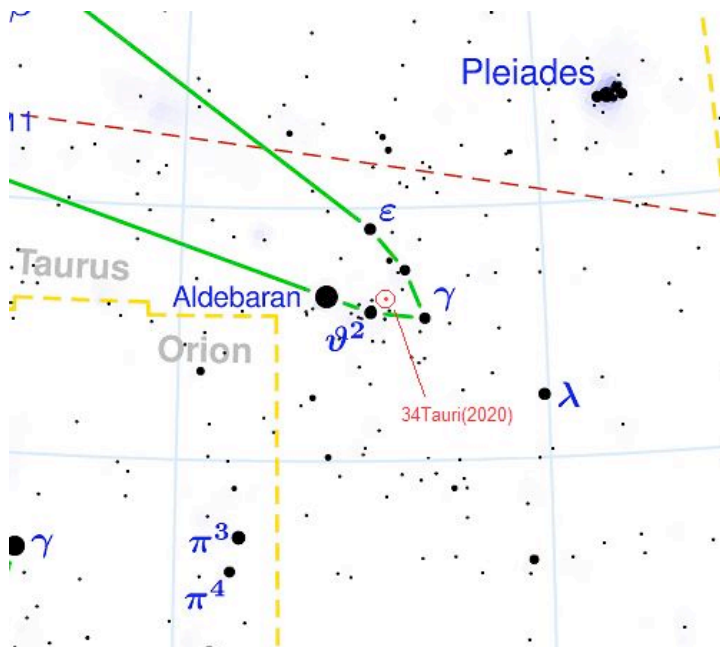
Note: This is a living document. There will be occasional updates as new planetary data is discovered or created, or as errors are found and corrected. Each planet or significant body has its own page to make it easier for readers to incorporate changes and updates.

Revision History:

- ❖ Version 1.0 – February 2009 – Initial Release
- ❖ Version 1.1 – March 2009 – Added orbital periods to primary stars. Added the moon, Ita, to Whittier, updated terraform and discovery charts, fixed grammar and punctuation errors.

THE VERSE

34Tauri(2020)



While the official discovery date for Uranus is March 13, 1781 by William Herschel, the planet was observed in 1690 by John Flamsteed, who thought that he'd discovered a new star in the constellation of Taurus. He named the star "34Tauri." Later observers realized that 34Tauri was actually a planet, and the designation "34Tauri" was removed from the record of discoveries.

In July of 2020, another new star was discovered in the constellation of Taurus. The astronomer who discovered the star decided to reapply the designation, modified by the addition of the year. The new star became 34Tauri(2020). The name of the discoverer was lost in the exodus from Earth.

Further study showed that 34Tauri(2020) was actually a small star cluster of five main sequence stars. Seven gas giants large enough to be brown dwarfs and seven Jovian-sized gas giants were also discovered in the cluster. Over the next few decades, dozens of terrestrial planets were revealed. A few of those showed the unmistakable signs of

oxygen, nitrogen – and water. For the first time, near-Earthlike conditions were found to exist elsewhere in the universe. Moons, asteroids, and other smaller bodies were speculated to exist in the star cluster, as well, which by all accounts was sizing up to be its own miniverse. Or the Verse, as it was dubbed in the media when news of the discovery was revealed.

When the decision was made to abandon Earth, 34Tauri(2020) was chosen to be the exodus fleet's destination. Engine systems capable of long periods of acceleration would propel the evacuation fleet to approximately 1/3 of light speed. Even then, the journey would take roughly 120 years to traverse the 40 light-year gap between Earth and 34Tauri(2020).

34Tauri(2020) – The Verse – in 2020 (names added by colonists upon arrival)

- 34Tauri(2020)A – White Sun – Class A0
 - P/2020(White Sun)01 – Qin Shi Huang – brown dwarf
 - P/2020(White Sun)02 – Lux – brown dwarf
- 34Tauri(2020)B – Georgia – Class G0
 - P/2020(Georgia)01 – Murphy – brown dwarf
 - P/2020(Georgia)02 – Elphame – gas giant
 - P/2020(Georgia)03 – Daedelus – gas giant
- 34Tauri(2020)C – Red Sun – Class G5
 - P/2020(Red Sun)01 – Himinbjorg – brown dwarf
 - P/2020(Red Sun)02 – Heinlein – brown dwarf
- 34Tauri(2020)D – Kalidasa – Class F5
 - P/2020(Kalidasa)01 – Penglai – brown dwarf
 - P/2020(Kalidasa)02 – Heaven – gas giant
 - P/2020(Kalidasa)03 – Zeus – gas giant
 - P/2020(Kalidasa)04 – Djinn's Bane – gas giant
- 34Tauri(2020)E – Blue Sun – Class F0
 - P/2020(Blue Sun)01 – Burnham – brown dwarf
 - P/2020(Blue Sun)02 – Fury – gas giant
 - P/2020(Blue Sun)03 – Dragon's Egg – gas giant

TIMELINE

- 2020** Star cluster in Taurus is discovered, designated "34Tauri(2020)". Five stars and 14 gas giants found.
- 2021** Recycling programs beginning to fail, global warming increasing.
- 2027 TO 2042** Terrestrial planets found by the dozens in 34Tauri(2020). Most are believed to be within acceptable limits for terraforming.
- 2027** P/2027(White Sun)03 showing chemical signature of Earthlike conditions. Despite reddish hue, P/2027(White Sun)04 showing similar conditions.
- 2030** It's official: Earth will lose the ability to sustain 21st century society and current population levels within 100 years.
- 2035** The quantum nature of gravity is deduced, allowing for rapid and unprecedented advances in gravity manipulation technologies. Creation of artificial gravity and gravity screening soon follow.
- 2037** Space technology development vastly accelerated by new discoveries. Due to the advent of gravity technology, terraforming can take decades instead of centuries.
- 2040** First theories for evacuating the Earth presented. Gravity manipulation technology makes evacuation plausible idea.
- 2042** Terraforming technology tested on Mars with positive results.
- 2045** Terraforming of Venus, Mars and Earth's moon begun. Terraforming efforts will be abandoned within two years due to a lack of native resources.
- 2048** Failure of terraforming efforts in the Solar System hit home. Global morale sink to new lows as riots break out in many major cities. Earth's governments decide that fast action is required to keep society from falling into chaos. As rebuilding Earth's ecosystem no longer appears to be an option, a plan for mass exodus is proposed instead. The GEA (Global Exodus Alliance) is formed and given unlimited governmental authority and complete control over Earth's meager remaining resources as member nations cede their power to the organization. The GEA moves quickly to take control of infrastructure, police and military and most of the private sector as well, all in the name of mobilization of the greatest single endeavor in human history.
- 2052** Collection and storage of samples of all life on Earth begun.
- 2060** With plans for colonization in place, global resources mobilized, and construction of arks and ark modules on-going, the GEA makes its final move to cement control over humanity: The GEA publishes the "Articles of Alliance", a super-constitution which supersedes all other legal systems on the planet. As China and the U.S. are contributing most of the resources and much of the know-how to the Exodus Project, they take joint stewardship over the new "global government". Smaller countries are given a choice – toe the line or give up any chance of having their populations join the exodus. Results are almost immediate – unilateral capitulation of 98 percent of Earth's governments. The Alliance is born.
- 2072** First Wave: Dozens of robotic terraforming ships are launched. Their targets are two planets orbiting the Verse's central sun, a white primary, dubbed "White Star" (later, simply "White Sun") by the Americans and "Bai Hu" or "White Tiger" by the Chinese.

- 2075** Latest projections show Earth unable to support more than 5 percent of current population within three decades. GEA recommends a vast expansion of the Exodus Project and Alliance approves – remaining cities will be systematically dismantled to increase the size of the ark fleet tenfold. Pollution runs wild as ark fleet is considered the only priority.
- 2090** Loading of ships begun with cargo, fuel, and stored genetic samples.
- 2094** Boarding of the ark ships begins. Over the last five decades, Earth population has dropped to around one billion due to starvation, disease, toxic contamination and criminal activities. Reproductive rates have dropped to near zero. Most of the Earth's population now lives in squalor. Although most ark ships will not depart until completely loaded (a process that takes years), survivors welcome the safe, sterile, climate-controlled environments of the Ark ships after the horror Earth has become. A rich black market develops that sells positions in the boarding lottery, falsified medical certificates and other items needed to gain quicker access to the arks.
- 2095** The Alliance declares global martial law.
- 2097** First ark ships begin to depart. Priority is given to those ships populated with the ancestors of those who will act as the terraforming and construction labor force upon arrival.
- 2100** Loading of the ark ships is complete. Over a quarter billion people are contained in hundreds of ships ranging in size from a municipal stadium to a small city. Remaining planet-side population negligible – the death rate during the years loading took place rose to near-extinction levels. Those who remain are either too ill to make the journey or are considered "undesirable" by the GEA.
- 2101** The final Ark ship leaves Earth orbit.
- 2110** All telemetry data from Earth ceases. It is assumed that remaining Earth population is 0.
- 2164 TO 2190**
As the Exodus fleet approaches, higher resolution imaging of the Verse becomes possible. Observers discover hundreds of planets and moons, many of which appear to be terraformable.
- 2190** Last person in the fleet who was born on Earth dies.
- 2218** Last member of first "star generation" dies.
- 2200** Robot terraformers arrive and "tweak" P/2027(White Sun)03 and P/2027(White Sun)04, start terraforming P/2028(White Sun)13.
- 2220** Terraforming of P/2027(White Sun)03 "Londinium" complete.
Terraforming of P/2027(White Sun)04 "Sihnon" complete.
Arks arrive in the Verse; start terraforming other worlds, mostly core worlds.
- 2225** Colonization of Londinium and Sihnon complete.
- 2240** P/2028(White Sun)13 "Bernadette" ready for colonization.
Terraforming of worlds in Georgia and Red Sun systems begun.
- 2251** Terraforming of P/2030(Red Sun)08 "Harvest" complete.
- 2253** Decision to use nano-compression technology to compress and ignite brown dwarfs.
P/2020(Blue Sun)01 "Burnham" first brown dwarf to be "*heliiformed*" due to distance from core systems. Ignition successful but produces random bursts of radiation.

- 2255** Terraforming of P/2028(White Sun)12 “Liann Juin” complete.
- 2256** Terraforming of P/2027(White Sun)06 “Osiris” complete.
- 2258** *Helioform* process improved to mostly stable levels, minor radiation bursts but within acceptable levels. P/2020(Red Sun)02 “Heinlein” helioformed.
- 2259** Heinlein stable. Heinlein’s satellites available for terraforming. P/2020(Red Sun)01 “Himinbjorg” helioformed.
- 2260** Himinbjorg stable. Himinbjorg’s satellites available for terraforming. P/2020(Georgia)01 “Murphy” helioformed. *Helioform* technology vastly improved, declared safe for brown dwarfs inside inner solar systems.
- 2261** Murphy stable. Murphy’s satellites available for terraforming. P/2020(White Sun)02 “Lux” helioformed.
- 2262** Lux stable. Lux’s satellites available for terraforming. Radiation burst problem at Burnham resolved. S/2038(Burnham)01 “Miranda” available for terraforming.
- 2266** Terraforming of P/2027(White Sun)07 “Ariel” complete.
Terraforming of P/2028(White Sun)09 “Valentine” complete.
Terraforming of P/2027(White Sun)08 “Bellerophon” complete.
- 2270** P/2020(Kalidasa)01 “Penglai” helioformed.
Terraforming of P/2028(White Sun)11 “Albion” complete.
- 2271** Penglai stable, satellites available for terraforming. P/2020(White Sun)01 “Qin Shi Huang”, last brown dwarf to be helioformed, is ignited.
- 2273** Qin Shi Huang stable. S/2032(Qin Shi Huang)01 “Santo” available for terraforming.
- 2290** Comm Station Ring 1 asteroids terraforming complete. Cortex coverage expanded.
- 2305** Comm Station Ring 2 asteroids terraforming complete. Cortex coverage optimum for four inner systems, considered mostly reliable in Blue Sun system.
Terraforming of S/2032(Qin Shi Huang)01 “Santo” complete.
- 2308** Terraforming of S/2040(Lux)02 “Persephone” complete except for S/2176(Persephone)01 “Hades”.
Terraforming of S/2040(Lux)01 “Pelorum” complete.
- 2404** Terraforming of S/2037(Murphy)02 “Shadow” complete.
- 2407** Terraforming of S/2041(Murphy)03 “Hera” complete.
- 2417** Terraforming of S/2036(Heinlein)02 “Silverhold” complete.
- 2420** Titan Terraforming Project complete. The moons of gas giants P/2020(Kalidasa)02 “Heaven,” P/2020(Kalidasa)03 “Zeus,” P/2020(Kalidasa)04 “Djinn’s Bane,” P/2020(Blue Sun)02 “Fury,” and P/2020(Blue Sun)03 “Dragon’s Egg” are ready for colonization, except for S/2165(Fury)03 “Seventh Circle” and S/2178(Zeus)06 “Betty.” While the moons are ready for colonization, they are not opened to colonists until 2436.
- 2433** Terraforming of P/2031 (Kalidasa)16 “Beaumonde” complete.

- 2435** Terraforming of P/2027(Blue Sun)04 “New Canaan” should be complete, but having trouble. Terraforming of New Canaan’s moons completed on schedule.
- 2436** Core resources running low, Londinium importing over 60% of raw materials despite extensive recycling programs.
Rimward expansion begins as worlds in Kalidasa and Blue Sun systems complete terraforming.
- 2506** Terraforming fails on Miranda. Some settlers die. Miranda removed from maps of habitable worlds.
The war for Unification begins.
- 2511** Unification War ends with the defeat of the Independents.
- 2518** Now

WHITE SUN

34Tauri(2020)A

Class: A0

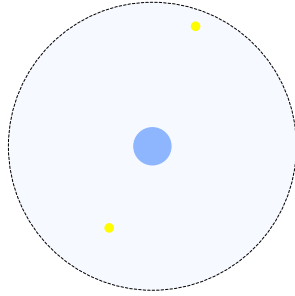
Radius: 2.5 Sol

Mass: 3.2 Sol

Luminosity: 80 Sol

Temperature: 10,800°K

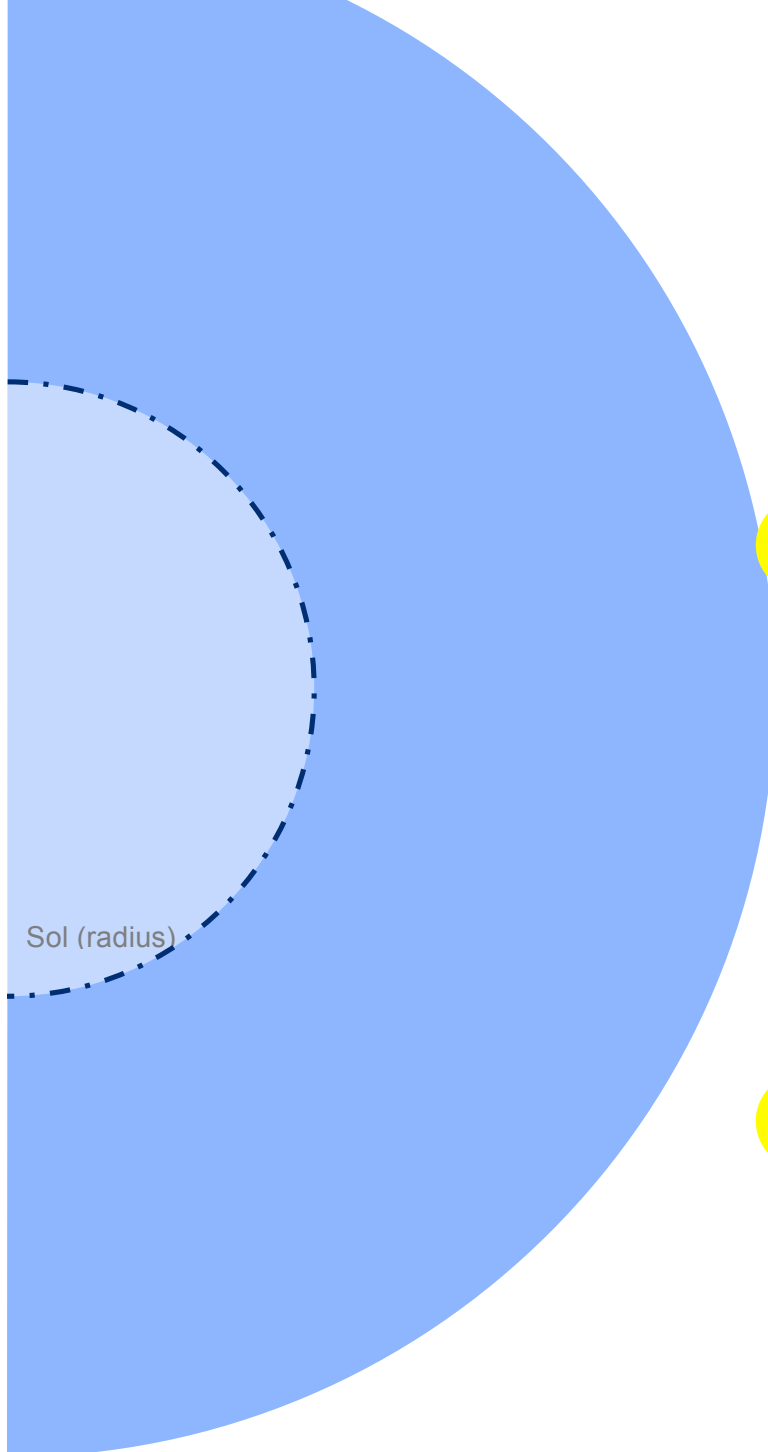
Verse Location: 0 AU – Anchor Star



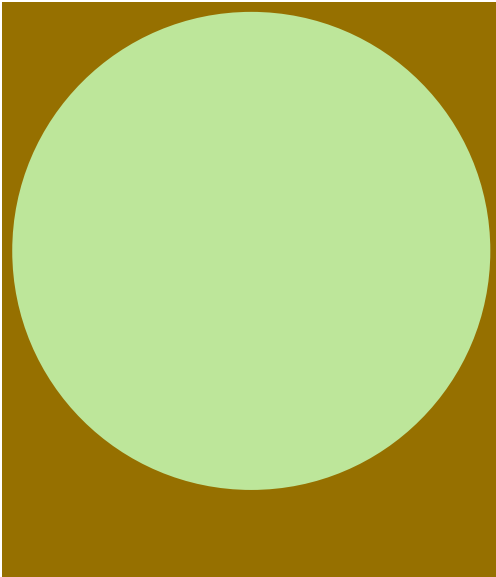
Silhouette not to scale

Silhouette scale size: 817.50 inches

Silhouette color indicates temperature, not appearance



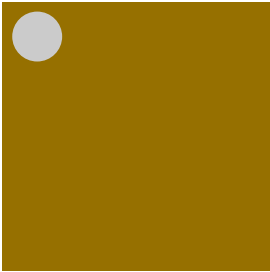
-  Bernadette
-   Londinium
-   Sihnon
-  Lian Jiun
-  Gonghe
-  Rubicon
-  Osiris
-   Qin Shi Huang
-   Santo
-  Valentine
-  Bellerophon
-  Ariel
-  Albion
-   Lux
-   Persephone
-   Pelorum
-  Halo



BERNADETTE

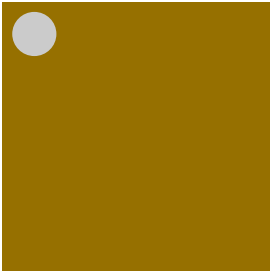
P/2028(White Sun)13
Primary: White Sun
Position: 1st from primary
Orbit: 1,234,182,428km (8.250 AU)
Period (years): 23.70 (days): 8,655
Diameter: 10,582km
Mass: 4.114×10^{21} tonnes
Surface Gravity: 0.9982 G
Terraformed (year): 2240
Population: 3,754,542,000

MOONS:



NAUTILUS

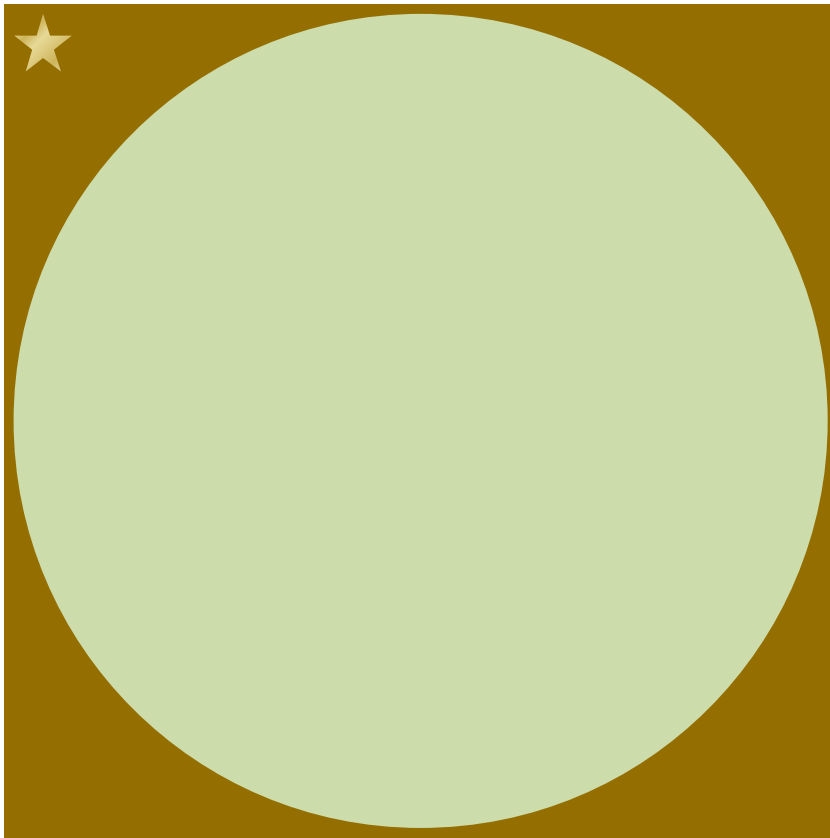
S/2175(Bernadette)01
Orbit: 249,860km
Period (days): 17.75
Diameter: 1,084km
Mass: 4.330×10^{19} tonnes
Surface Gravity: 1.0010
Terraformed (year): 2240
Population: 7,500,000



SPINRAD

S/2175(Bernadette)02
Orbit: 345,960km
Period (days): 24.57
Diameter: 978km
Mass: 3.486×10^{19} tonnes
Surface Gravity: 0.9900 G
Terraformed (year): 2240
Population: 250,000

NOTE: Bernadette is the home office of the Alliance Colony and Settlement Authority. The majority of settlement ventures to the border and rim worlds start with a form CSA-0010B Request for Resettlement and Homestead being waved to the central office at One OK Corral Plaza, New Tombstone, Bernadette.



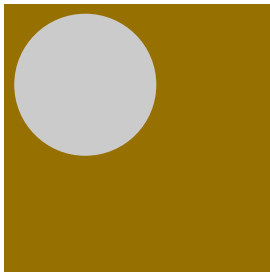
LONDINIUM

P/2027(White Sun)03
Primary: White Sun
Position: 2nd from primary
Orbit: 1,346,380,830km (9.000 AU)
Period (years): 27.00 (days): 9,862
Diameter: 18,000km
Mass: 1.210×10^{22} tonnes
Surface Gravity: 1.0145 G
Terraformed (year): 2220
Population: 4,510,000,000

Capital: Alliance

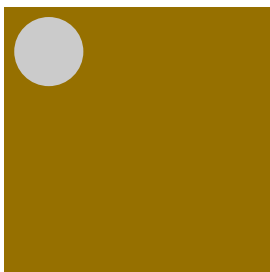
Capital: White Sun

MOONS:



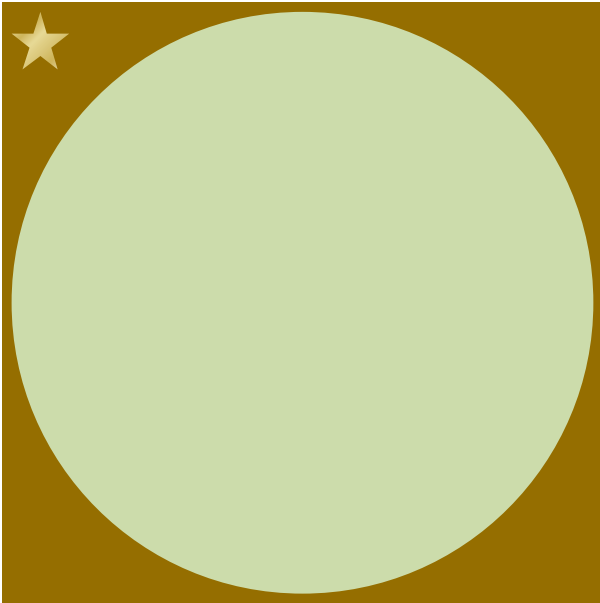
COLCHESTER

S/2172(Londinium)01
Orbit: 196,044km
Period (days): 13.92
Diameter: 3,145km
Mass: 3.650×10^{20} tonnes
Surface Gravity: 1.0025 G
Terraformed (year): 2220
Population: 9,100,000



BALHERNE

S/2172(Londinium)02
Orbit: 276,768km
Period (days): 19.66
Diameter: 1,524km
Mass: 8.213×10^{19} tonnes
Surface Gravity: 0.9607 G
Terraformed (year): 2220
Population: 722,000



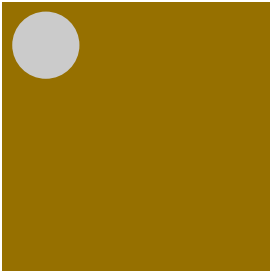
SIHNON

P/2027(White Sun)04
Primary: White Sun
Position: 3rd from primary
Orbit: 1,402,480,031km (9.375 AU)
Period (years): 28.70 (days): 10,484
Diameter: 12,881km
Mass: 5.987×10^{21} tonnes
Surface Gravity: 0.9802 G
Terraformed (year): 2220
Population: 5,330,000,000

Capital: Alliance

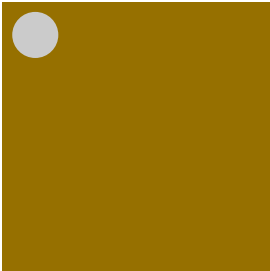
Capital: White Sun

MOONS:



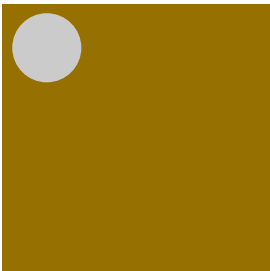
AIREN

S/2173(Sihnon)02
Orbit: 38440
Period (days): 2.73
Diameter: 1,470km
Mass: 7.726×10^{19} tonnes
Surface Gravity: 0.9713 G
Terraformed (year): 2220
Population: 47,000



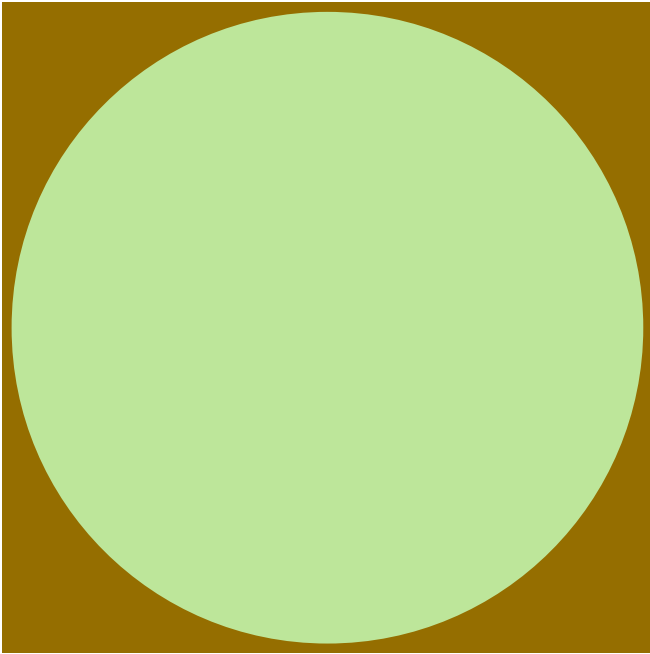
HIAOJIE

S/2164(Sihnon)01
Orbit: 326740
Period (days): 23.21
Diameter: 1,004km
Mass: 3.686×10^{19} tonnes
Surface Gravity: 0.9934 G
Terraformed (year): 2220
Population: 97,000



HIANSHENG

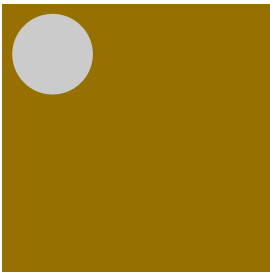
S/2176(Sihnon)03
Orbit: 422840
Period (days): 30.03
Diameter: 1,527km
Mass: 8.593×10^{19} tonnes
Surface Gravity: 1.0012 G
Terraformed (year): 2220
Population: 2,300,000



LIANN JIUN

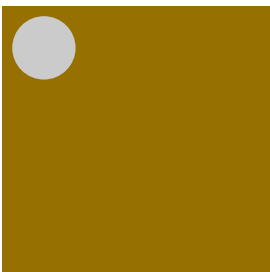
P/2028(White Sun)12
Primary: White Sun
Position: 4th from primary
Orbit: 1,626,876,836km (10.875 AU)
Period (years): 35.86 (days): 13,099
Diameter: 13,957km
Mass: 7.172×10^{21} tonnes
Surface Gravity: 1.0002
Terraformed (year): 2255
Population: 3,750,000,000

MOONS:



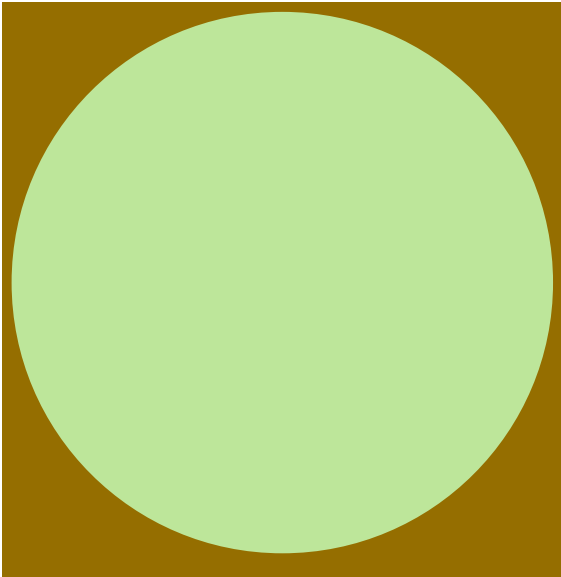
TIAN'AN

S/2176(Liann Jiun)01
Orbit: 196,044km
Period (days): 13.92
Diameter: 1,784km
Mass: 1.190×10^{20} tonnes
Surface Gravity: 1.0154
Terraformed (year): 2255
Population: 5,500,000



FU

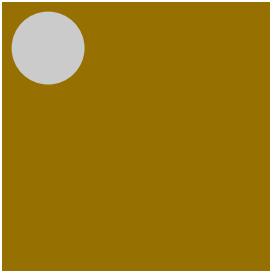
S/2176(Liann Jiun)02
Orbit: 238,328km
Period (days): 16.93
Diameter: 1,396km
Mass: 6.827×10^{19} tonnes
Surface Gravity: 0.9517
Terraformed (year): 2255
Population: 2,250,000



GONGHE

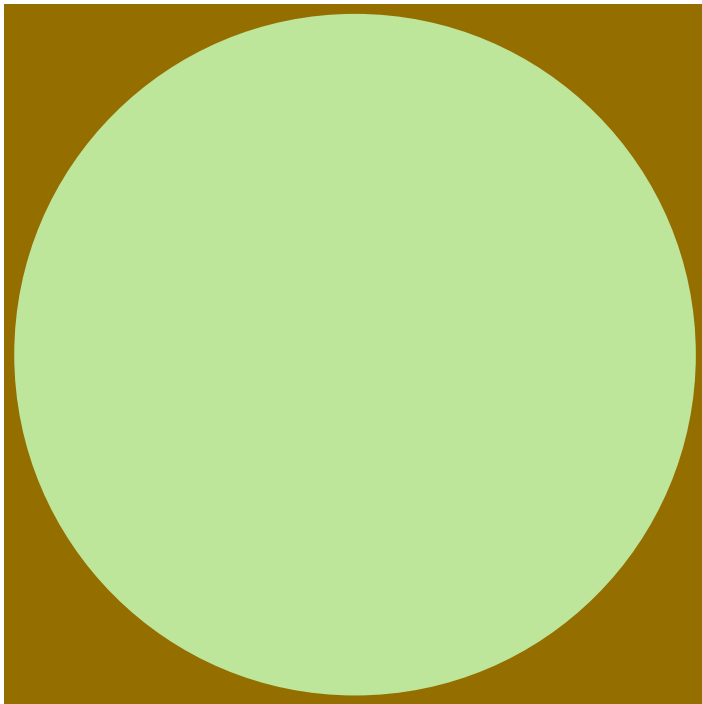
P/2027(White Sun)05
Primary: White Sun
Position: 5th from primary
Orbit: 1,851,273,641km (12.375 AU)
Period (years): 43.53 (days): 15,900
Diameter: 11,990km
Mass: 5.313×10^{21} tonnes
Surface Gravity: 1.0041
Terraformed (year): 2255
Population: 2,550,000,000

MOONS:



HING YUN

S/2173(Gonghe)01
Orbit: 338,272km
Period (days): 24.02
Diameter: 1,601km
Mass: 9.204×10^{19} tonnes
Surface Gravity: 0.9755
Terraformed (year): 2255
Population: 12,000,000



RUBICON

P/2028(White Sun)10

Primary: White Sun

Position: 6th from primary

Orbit: 1,963,472,044km (13.125 AU)

Period (years): 47.55 (days): 17,368

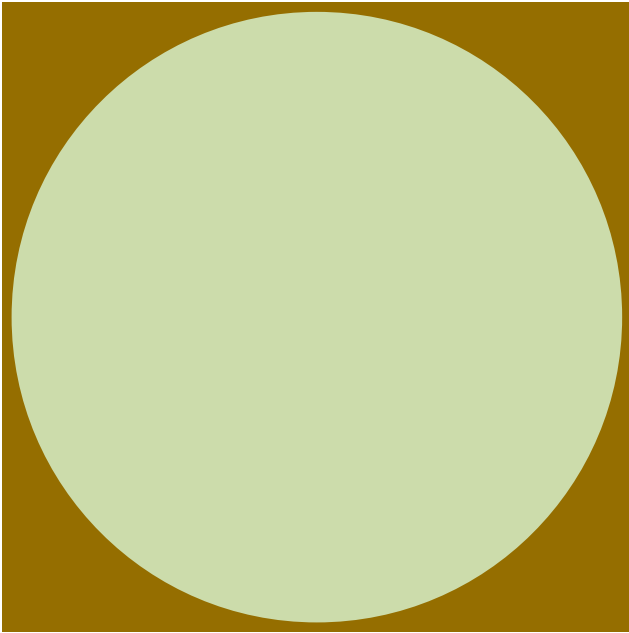
Diameter: 15,075km

Mass: 8.459×10^{21} tonnes

Surface Gravity: 1.0112

Terraformed (year): Scheduled

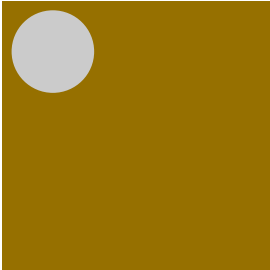
Population: 5,000 (Terraform Crew)



OSIRIS

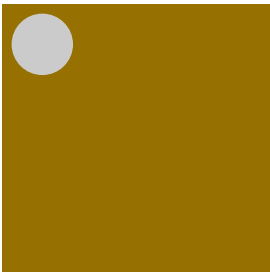
P/2027(White Sun)06
Primary: White Sun
Position: 7th from primary
Orbit: 2,019,571,245km (13.500 AU)
Period (years): 49.60 (days): 18,117
Diameter: 13,523km
Mass: 6.964×10^{21} tonnes
Surface Gravity: 1.0345
Terraformed (year): 2256
Population: 3,980,000,000

MOONS:



EPEUVA

S/2176(Osiris)01
Orbit: 96,100km
Period (days): 6.83
Diameter: 1,846km
Mass: 1.220×10^{20} tonnes
Surface Gravity: 0.9726
Terraformed (year): 2256
Population: 2,911,000



TANNHAUSER

S/2176(Osiris)02
Orbit: 126,852km
Period (days): 9.01
Diameter: 1,359km
Mass: 6.536×10^{19} tonnes
Surface Gravity: 0.9614
Terraformed (year): 2256
Population: 177,000

QIN SHI HUANG

P/2020(White Sun)01

Class: Artificial Star

Helioformed: 2271

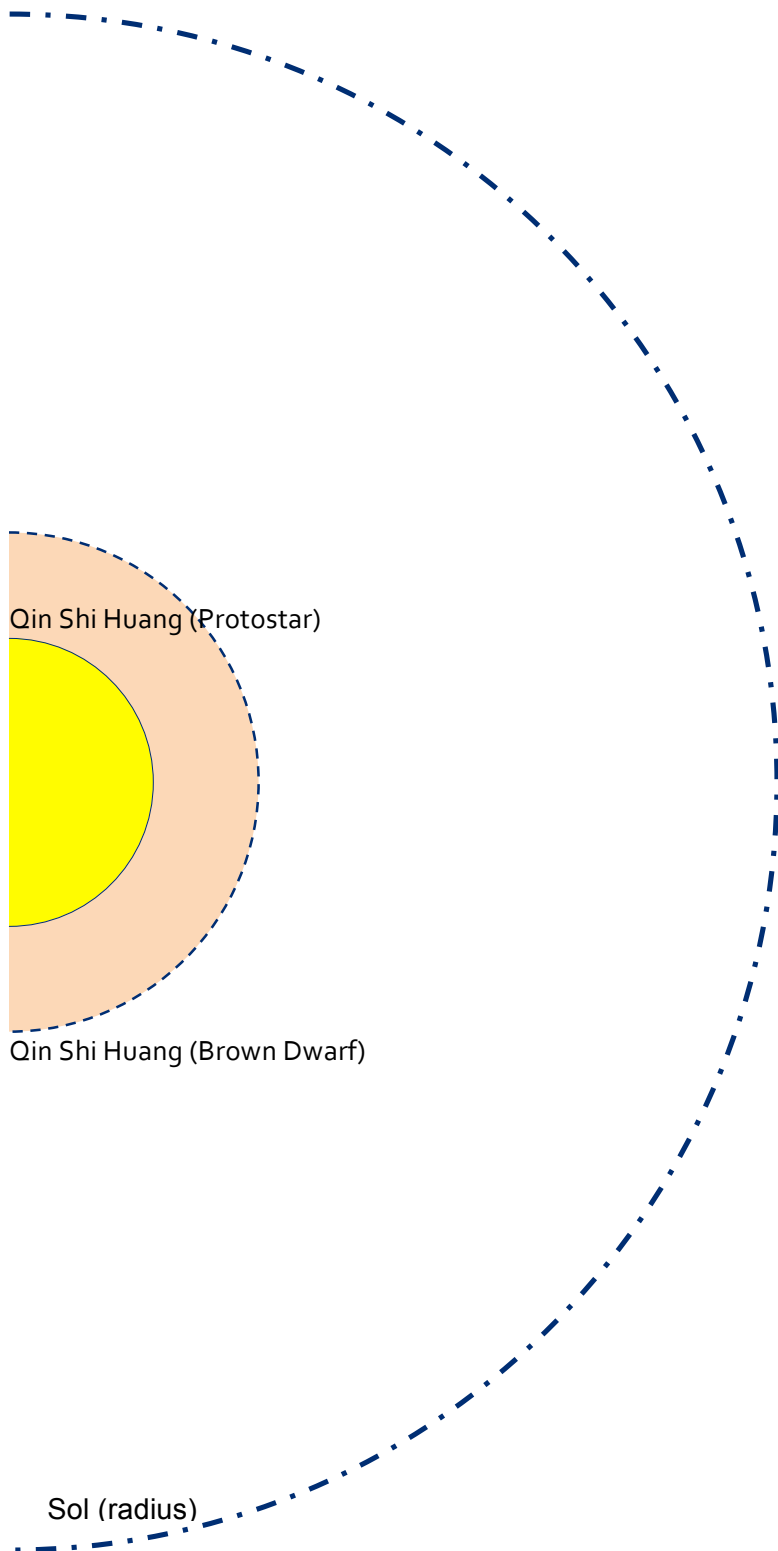
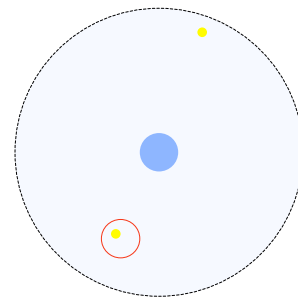
Radius: 0.32 Sol – Brown Dwarf (104.64 inches scale)

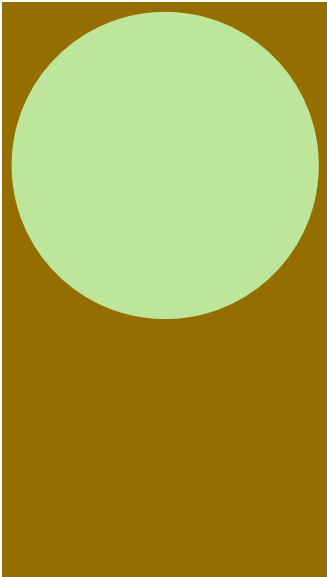
Radius: 0.19 Sol – Protostar (62.78 inches scale)

Mass: 0.32 Sol

Orbit: 2,440,315,254km (16.312 AU)

Period (years): 65.88

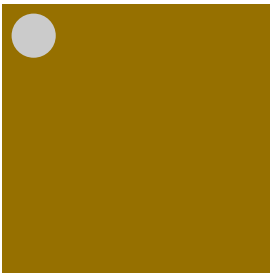




SANTO

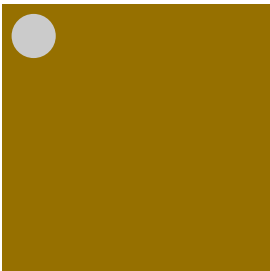
S/2032(Qin Shi Huang)01
Primary: Qin Shi Huang
Position: 1st from primary
Orbit: 6,504,258km
Period (days): 143
Diameter: 6,790km
Mass: 1.697×10^{21} tonnes
Surface Gravity: 1.0000
Terraformed (year): 2305
Population: 846,500,000

MOONS:



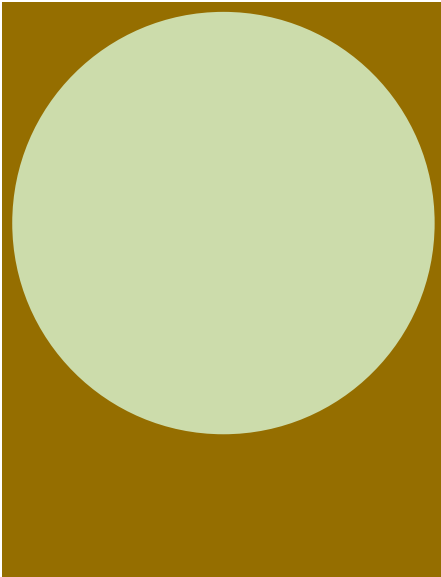
TETHYS

S/2173(Santo)01
Orbit: 115,320km
Period (days): 8.19
Diameter: 970km
Mass: 3.481×10^{19} tonnes
Surface Gravity: 1.0050
Terraformed (year): 2305
Population: 27,000



NEW LUTHOR

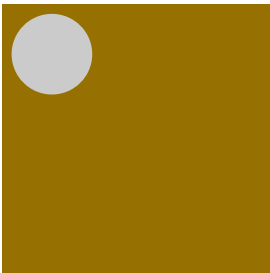
S/2176(Santo)02
Orbit: 230,640km
Period (days): 16.38
Diameter: 985km
Mass: 3.580×10^{19} tonnes
Surface Gravity: 1.0024
Terraformed (year): 2305
Population: 154,000



VALENTINE

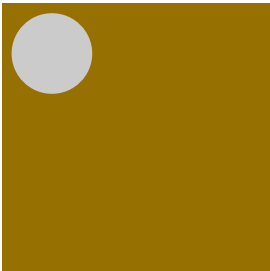
P/2028(White Sun)09
Primary: White Sun
Position: 9th from primary
Orbit: 2,861,059,264km (19.125 AU)
Period (years): 83.64 (days): 30,549
Diameter: 9,358km
Mass: 3.221×10^{21} tonnes
Surface Gravity: 0.9992
Terraformed (year): 2266
Population: 2,650,000,000

MOONS:



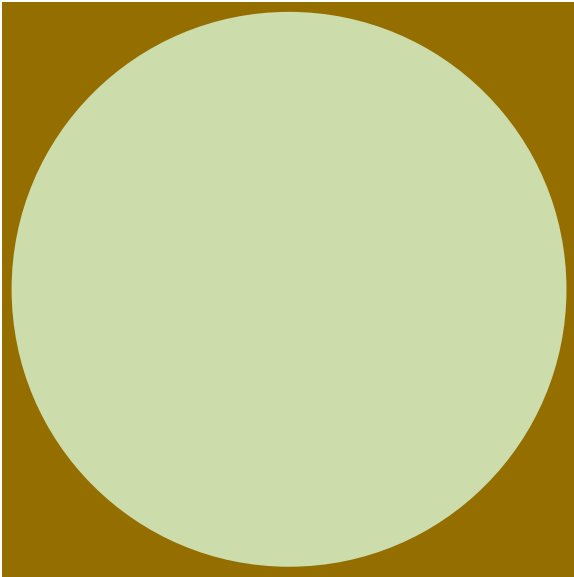
SELENE

S/2176(Valentine)01
Orbit: 57,660km
Period (days): 4.10
Diameter: 1,003km
Mass: 3.683×10^{19} tonnes
Surface Gravity: 0.9947
Terraformed (year): 2266
Population: 8,000,000



CHONS

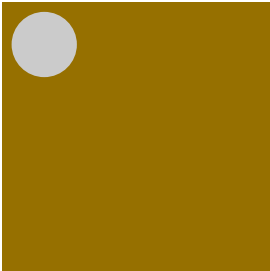
S/2176(Valentine)02
Orbit: 380,556km
Period (days): 27.03
Diameter: 1,018km
Mass: 3.714×10^{19} tonnes
Surface Gravity: 0.9737
Terraformed (year): 2266
Population: 11,000,000



BELLEROPHON

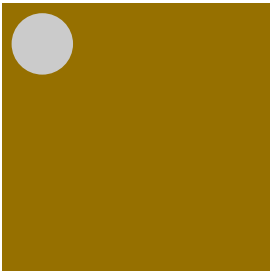
P/2027(White Sun)08
Primary: White Sun
Position: 10th from primary
Orbit: 2,917,158,465km (19.500 AU)
Period (years): 86.11 (days): 31,452
Diameter: 12,266km
Mass: 5.555×10^{21} tonnes
Surface Gravity: 1.0031
Terraformed (year): 2266
Population: 3,124,510,000

MOONS:



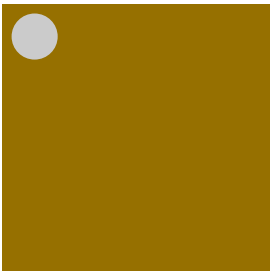
TYRINS

S/2172(Bellerophon)01
Orbit: 84,568km
Period (days): 6.01
Diameter: 1,456km
Mass: 7.934×10^{19} tonnes
Surface Gravity: 1.0167
Terraformed (year): 2266
Population: 7,000,000



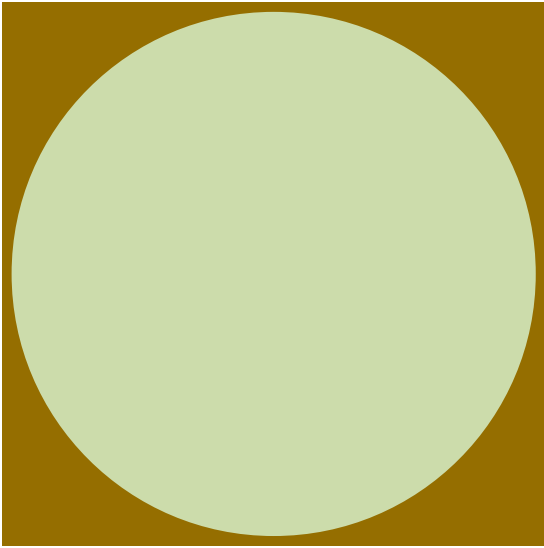
HANTHUS

S/2172(Bellerophon)02
Orbit: 107,632km
Period (days): 7.64
Diameter: 1,349km
Mass: 6.386×10^{19} tonnes
Surface Gravity: 0.9534
Terraformed (year): 2266
Population: 5,500,000



PARTH

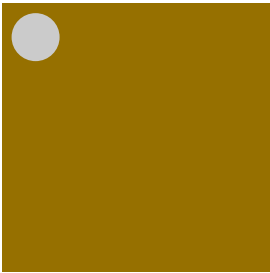
S/2172(Bellerophon)03
Orbit: 192,200km
Period (days): 13.65
Diameter: 1,006km
Mass: 3.871×10^{19} tonnes
Surface Gravity: 1.0391
Terraformed (year): 2266
Population: 3,000,000



ARIEL

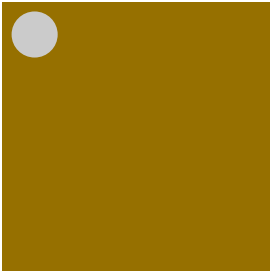
P/2027(White Sun)07
Primary: White Sun
Position: 11th from primary
Orbit: 3,085,456,069km (20.625 AU)
Period (years): 93.67 (days): 34,212
Diameter: 13,016km
Mass: 6.323×10^{21} tonnes
Surface Gravity: 1.0140
Terraformed (year): 2266
Population: 3,615,995,500

MOONS:



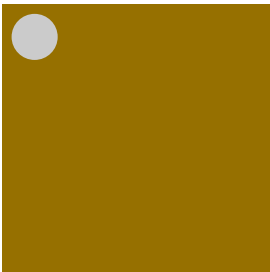
ARIOPOLIS

S/2176(Ariel)01
Orbit: 307,520km
Period (days): 21.84
Diameter: 1,075km
Mass: 4.143×10^{19} tonnes
Surface Gravity: 0.9739
Terraformed (year): 2266
Population: 4,500



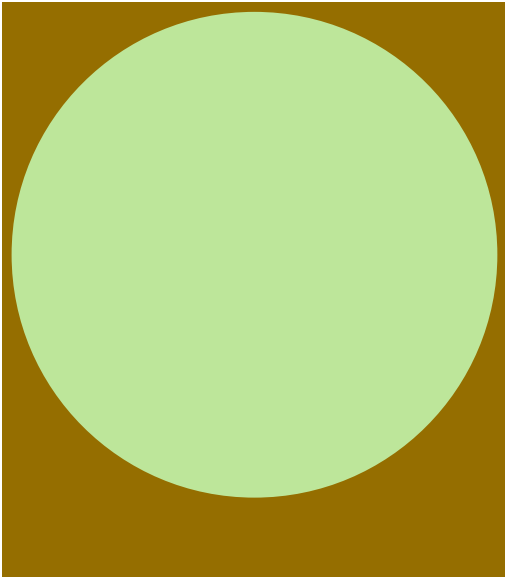
SHIVA

S/2176(Ariel)02
Orbit: 334,428km
Period (days): 23.75
Diameter: 1,003km
Mass: 3.563×10^{19} tonnes
Surface Gravity: 0.9621
Terraformed (year): 2266
Population: 4,570,000



POSEIDON

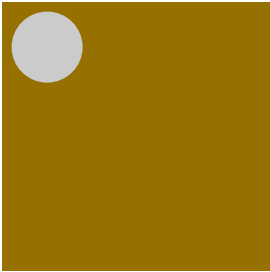
S/2176(Ariel)03
Orbit: 372,868km
Period (days): 26.48
Diameter: 1,024
Mass: 3.889×10^{19} tonnes
Surface Gravity: 1.0075
Terraformed (year): 2266
Population: 5,000,000



ALBION

P/2028(White Sun)11
Primary: White Sun
Position: 12th from primary
Orbit: 3,197,654,471km (21.375 AU)
Period (years): 98.82 (days): 36,095
Diameter: 10,760km
Mass: 4.196×10^{21} tonnes
Surface Gravity: 0.9847
Terraformed (year): 2270
Population: 2,154,500,000

MOONS:



AV ALON

S/2172(Albion)01
Orbit: 384,400km
Period (days): 27.30
Diameter: 1,589km
Mass: 9.042×10^{19} tonnes
Surface Gravity: 0.9729
Terraformed (year): 2270
Population: 10,000,000

LUX

P/2020(White Sun)02

Class: Artificial Star

Helioformed: 2261

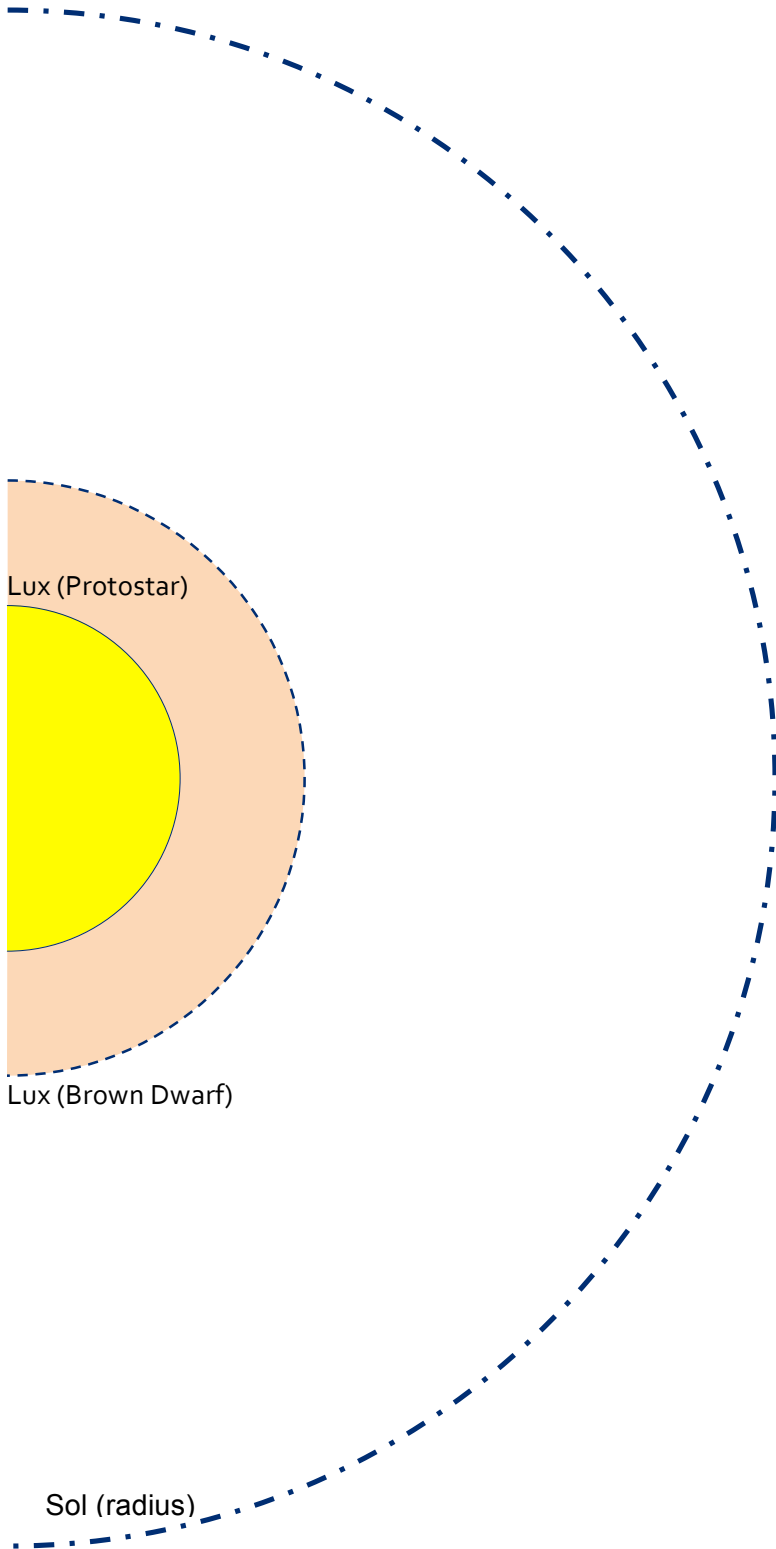
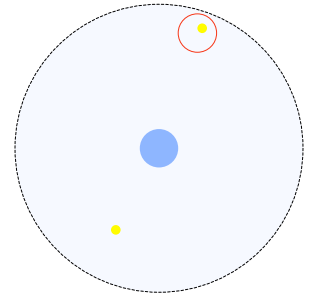
Radius: 0.39 Sol – Brown Dwarf (127.53 inches scale)

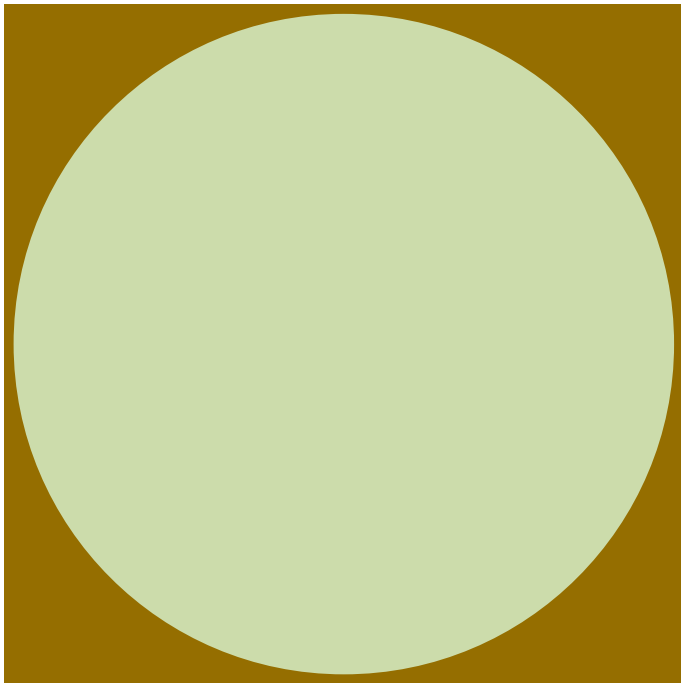
Radius: 0.23 Sol – Protostar (76.52 inches scale)

Mass: 0.39 Sol

Orbit: 4,487,936,100km (30.000 AU)

Period (years): 164.32

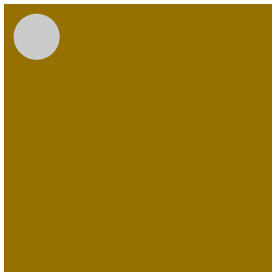




PERSEPHONE

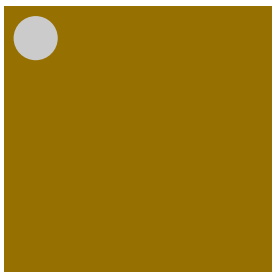
S/2040(Lux)02
Primary: Lux
Position: 1st from primary
Orbit: 5,495,784km
Period (days): 121
Diameter: 14,613km
Mass: 8.096×10^{21} tonnes
Surface Gravity: 1.0300
Terraformed (year): 2308
Population: 2,570,000,000

MOONS:



HADES

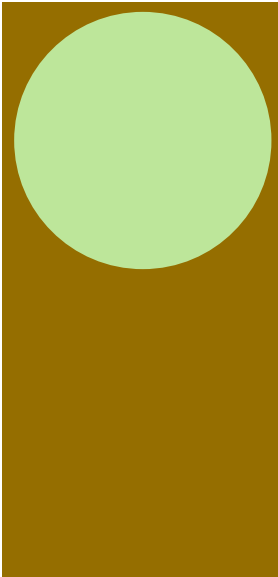
S/2176(Persephone)01
Orbit: 153,760km
Period (days): 10.92
Diameter: 1,018km
Mass: 3.828×10^{19} tonnes
Surface Gravity: 1.0036
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



RENAO

S/2177(Persephone)02
Orbit: 234,484km
Period (days): 16.65
Diameter: 992km
Mass: 3.608×10^{19} tonnes
Surface Gravity: 0.9960
Terraformed (year): 2308
Population: 42,000

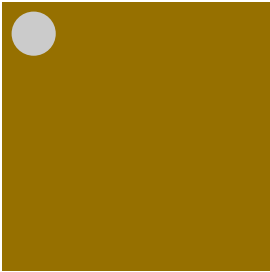
NOTE: The protostars Lux and Murphy reached their closest approach to each other in 2511, making the planets Persephone and Hera of vital strategic importance in the Unification War. Persephone was firmly an Alliance planet, while Hera was a major staging area for Independent Forces.



PELORUM

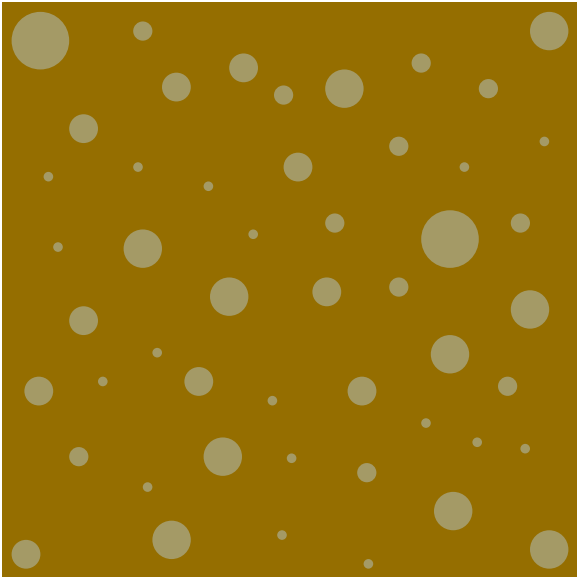
S/2040(Lux)01
Primary: Lux
Position: 2nd from primary
Orbit: 8,524,784km
Period (days): 188
Diameter: 5,700km
Mass: 1.208×10^{21} tonnes
Surface Gravity: 1.0100
Terraformed (year): 2308
Population: 563,500,000

MOONS:



HALEIDOSCOPE

S/2173(Pelorum)01
Orbit: 319,052km
Period (days): 22.66
Diameter: 993km
Mass: 3.695×10^{19} tonnes
Surface Gravity: 1.0180
Terraformed (year): 2308
Population: 750,000



HALO

Asteroid Belt

Primary: White Sun

Inner Boundary: 5,983,914,800km (40 AU)

Outer Boundary: 6,432,708,410km (43 AU)

Average Width: 448,793,610km (3 AU)

Number of cataloged objects: 78,472,112

Asteroid designation uses numbers and letters (excluding i, l, o, and z).

Example: A/2223(White Sun)3a45b

GEORGIA

34Tauri(2020)B

Class: G0

Radius: 1.05 Sol

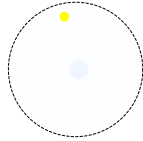
Mass: 1.1 Sol

Luminosity: 1.26 Sol

Temperature: 6,000°K

Verse Location: 68 AU – Red Sun's L3

Orbital Period: 560.74 years



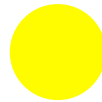
Silhouette not to scale

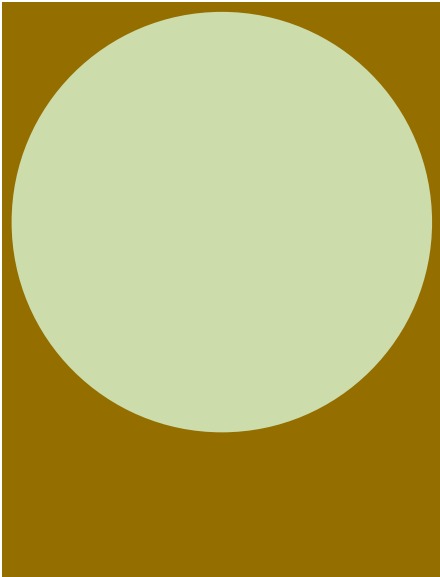
Silhouette scale size: 343.35 inches

Silhouette color indicates temperature, not appearance



- Ezra
- Regina
- Boros
- Kerry
- Ithaca / Priam
- Prophet
- Elphame
- Di Yu
- ★ ● Athens
- Daedelus
- Newhope
- Three Hills
- Meadow
- Murphy
- Hera
- Eris
- Shadow

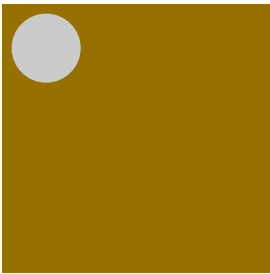




EZRA

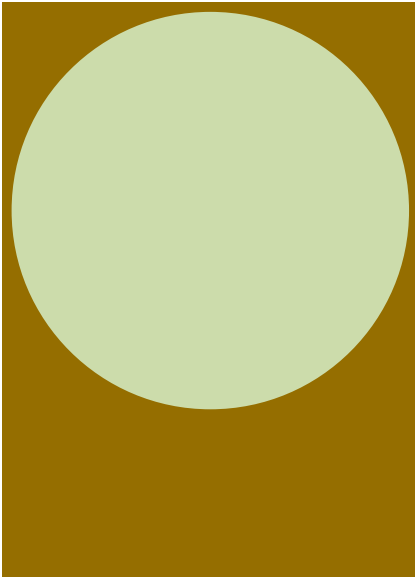
P/2027(Georgia)03
Primary: Georgia
Position: 1st from primary
Orbit: 52,359,255km (0.350 AU)
Period (years): 0.21 (days): 76
Diameter: 9,287km
Mass: 3.111×10^{21} tonnes
Surface Gravity: 0.9798
Terraformed (year): 2350
Population: 200,000,000

MOONS:



HERSCHEL

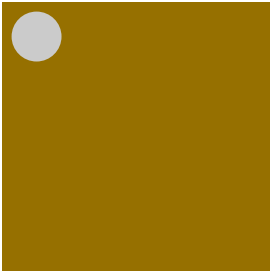
S/2176(Ezra)01
Orbit: 345,960km
Period (days): 24.57
Diameter: 1,527km
Mass: 8.370×10^{19} tonnes
Surface Gravity: 0.9752
Terraformed (year): 2350
Population: 67,000,000



REGINA

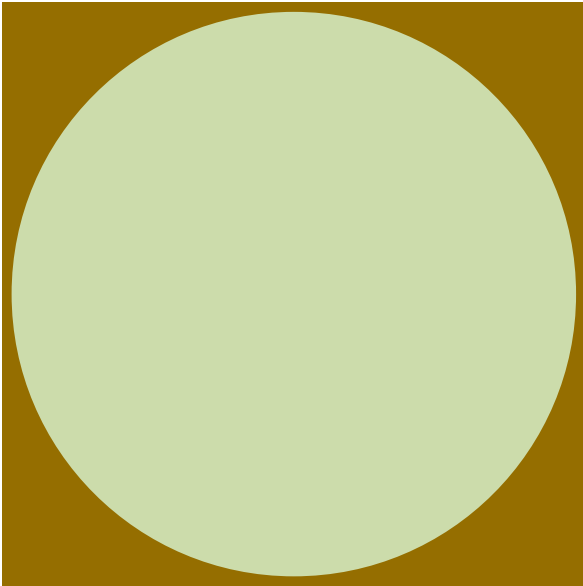
P/2027(Georgia)03
Primary: Georgia
Position: 2nd from primary
Orbit: 108,458,456km (0.725 AU)
Period (years): 0.62 (days): 225
Diameter: 8,809km
Mass: $4.1322.976 \times 10^{21}$ tonnes
Surface Gravity: 1.0420
Terraformed (year): 2352
Population: 250,000,000

MOONS:



ALEXANDRIA

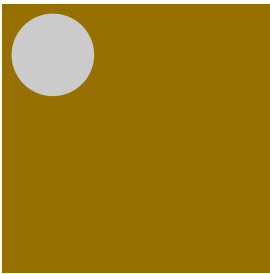
S/2174(Regina)01
Orbit: 422,840km
Period (days): 30.03
Diameter: 1,089km
Mass: 4.354×10^{19} tonnes
Surface Gravity: 0.9973
Terraformed (year): 2352
Population: 50,000,000



BOROS

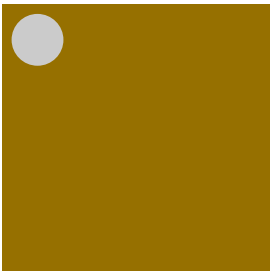
P/2027(Georgia)03
Primary: Georgia
Position: 3rd from primary
Orbit: 220,656,858km (1.475 AU)
Period (years): 1.79 (days): 654
Diameter: 12,500km
Mass: 5.917×10^{21} tonnes
Surface Gravity: 1.0287
Terraformed (year): 2350
Population: 550,000,000

MOONS:



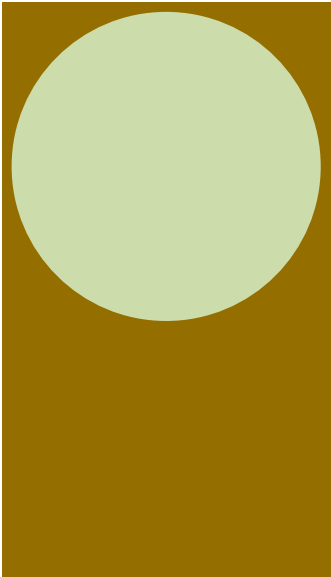
ARES

S/2177(Boros)01
Orbit: 284,456km
Period (days): 20.20
Diameter: 1,824km
Mass: 1.190×10^{20} tonnes
Surface Gravity: 0.9718
Terraformed (year): 2350
Population: 34,000,000



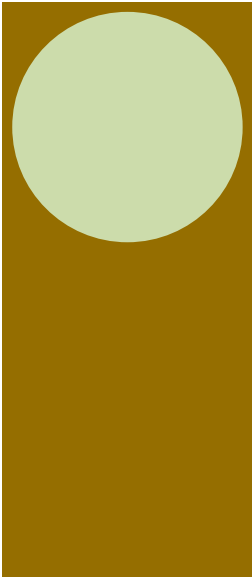
TURRENT'S MOON

S/2177(Boros)02
Orbit: 353,648km
Period (days): 25.12
Diameter: 1,168km
Mass: 5.046×10^{19} tonnes
Surface Gravity: 1.0048
Terraformed (year): 2350
Population: 1,000,000



KERRY

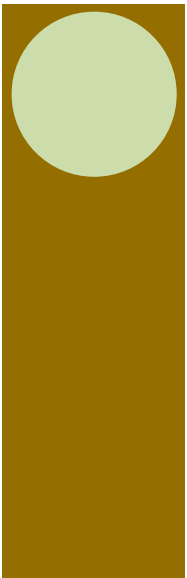
P/2027(Georgia)03
Primary: Georgia
Position: 4th from primary
Orbit: 276,756,060km (1.850 AU)
Period (years): 2.52 (days): 919
Diameter: 6,825km
Mass: 1.714×10^{21} tonnes
Surface Gravity: 0.9995
Terraformed (year): 2335
Population: 550,000,000



ITHACA

P/2027(Georgia)03
Primary: Georgia
Position: 5th from primary
Orbit: 388,954,462km (2.600 AU)
Period (years): 4.19 (days): 1,531
Diameter: 5,117km
Mass: 9.681×10^{20} tonnes
Surface Gravity: 1.0045
Terraformed (year): 2348
Population: 800,000,000

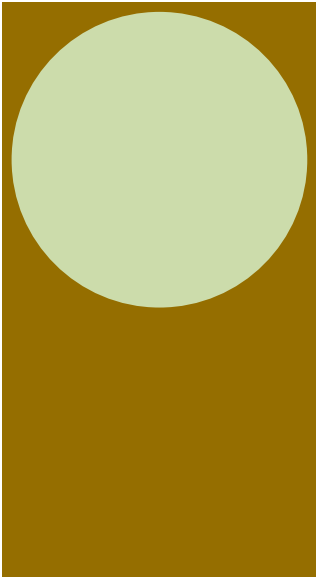
MOONS:



PRIAM

S/2172(Ithaca)01
Orbit: 99,944km
Period (days): 7.10
Diameter: 3,640
Mass: 4.926×10^{20} tonnes
Surface Gravity: 1.0100
Terraformed (year): 2348
Population: 250,000,000

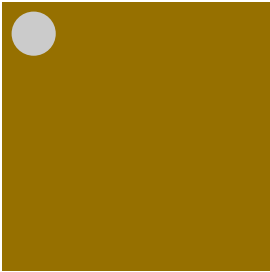
NOTE: Ithaca and Priam are close enough in size and mass to be a double-planet, orbiting around a barycenter about 33,700km above the surface of Ithaca.



PROPHET

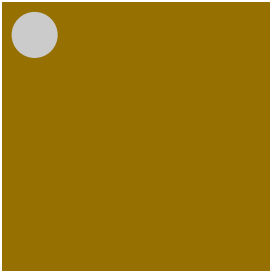
P/2031(Georgia)14
Primary: Georgia
Position: 6th from primary
Orbit: 557,252,066km (3.725 AU)
Period (years): 7.19 (days): 2,626
Diameter: 10,521km
Mass: 4.075×10^{21} tonnes
Surface Gravity: 1.0002
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



PERDIDO

S/2178(Prophet)02
Orbit: 123,008km
Period (days): 8.74
Diameter: 992km
Mass: 3.530×10^{19} tonnes
Surface Gravity: 0.9746
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



DUNNY

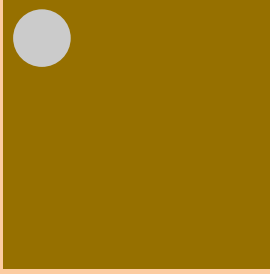
S/2176(Prophet)01
Orbit: 242,172km
Period (days): 17.20
Diameter: 1,014km
Mass: 3.698×10^{19} tonnes
Surface Gravity: 0.9770
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

ELPHAME

P/2020(Georgia)02
Position: 7th from primary
Orbit: 949,946,475km (6.350 AU)
Diameter: 143,749km
Silhouette not to scale

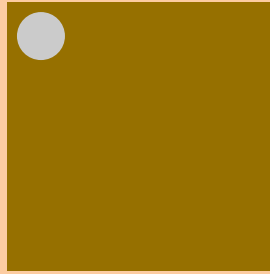
Primary: Georgia
Surface Gravity: 2.6012
Period (years): 16.00 (days): 5,845
Mass: 2.122x10²⁴ tonnes
Silhouette scale size: 33.84 inches

MOONS:



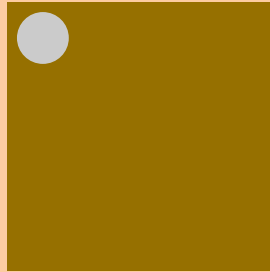
SUMMERHOME

S/2173(Elphame)01
Orbit: 1,249,300km
Period (days):88.73
Diameter: 1,294km
Mass: 5.887x10¹⁹ tonnes
Surface Gravity: 0.9551
Terraformed (year): 2355
Population: 75,000,000



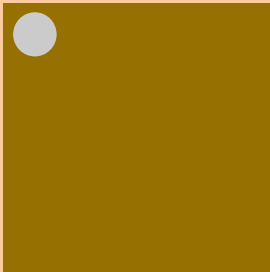
FIDDLER'S GREEN

S/2173(Elphame)02
Orbit: 2,690,800km
Period (days): 191.10
Diameter: 1,073km
Mass: 4.141x10¹⁹ tonnes
Surface Gravity: 0.9772
Terraformed (year): 2355
Population: 16,000,000



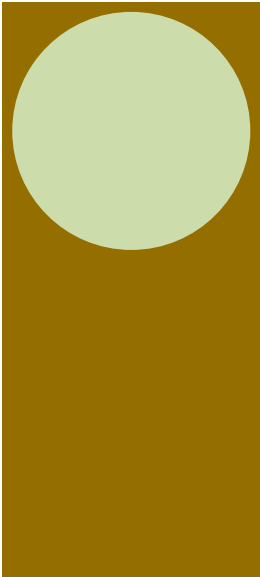
ITHENDRA

S/2176(Elphame)03
Orbit: 4,420,600km
Period (days): 313.95
Diameter:1,161km
Mass: 5.162x10¹⁹ tonnes
Surface Gravity: 1.0404
Terraformed (year): 2355
Population: 19,000,000



SWEETHOME

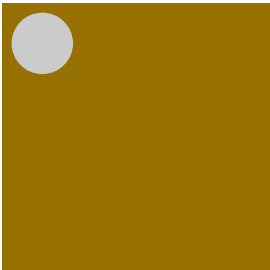
S/2176(Elphame)04
Orbit: 5,766,000km
Period (days): 409.50
Diameter: 980km
Mass: 3.603x10¹⁹ tonnes
Surface Gravity: 1.0193
Terraformed (year): 2355
Population: 4,500,000



DI YU

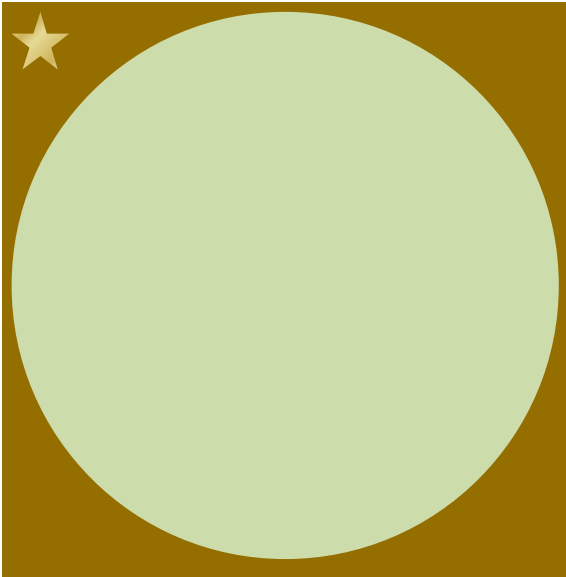
P/2030(Georgia)09
Primary: Georgia
Position: 8th from primary
Orbit: 1,286,541,682km (8.600 AU)
Period (years): 25.22 (days): 9,212
Diameter: 5,250km
Mass: 5.555×10^{21} tonnes
Surface Gravity: 1.0057
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



YAMA

S/2180(Di Yu)01
Orbit: 73,036km
Period (days): 5.19
Diameter: 1,371km
Mass: 6.926×10^{19} tonnes
Surface Gravity: 1.0011
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

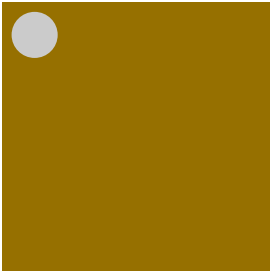


ATHENS

P/2027(Georgia)03
Primary: Georgia
Position: 9th from primary
Orbit: 1,342,640,883km (8.975 AU)
Period (years): 26.89 (days): 9,821
Diameter: 12,103km
Mass: 5.344×10^{21} tonnes
Surface Gravity: 0.9912
Terraformed (year): 2360
Population: 775,000,000

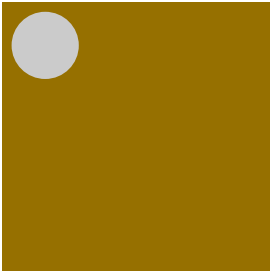
Georgia Capital

MOONS:



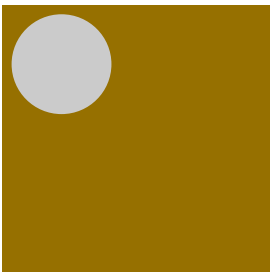
AHNOOIE

S/2176(Athens)03
Orbit: 76,880km
Period (days): 5.46
Diameter: 1,000km
Mass: 3.675×10^{19} tonnes
Surface Gravity: 0.9984
Terraformed (year): 2360
Population: 525,000



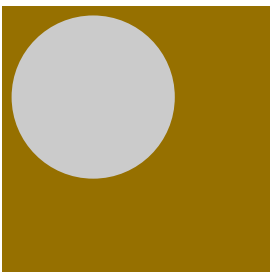
ARGABUTHON

S/2172(Athens)01
Orbit: 165,292km
Period (days): 11.74
Diameter: 1,500km
Mass: 8.087×10^{19} tonnes
Surface Gravity: 0.9765
Terraformed (year): 2360
Population: 1,500,000



ORMUZD

S/2173(Athens)02
Orbit: 319,052km
Period (days): 22.66
Diameter: 2,200km
Mass: 1.792×10^{20} tonnes
Surface Gravity: 1.0060
Terraformed (year): 2360
Population: 2,225,000



WHITEFALL

S/2177(Athens)04
Orbit: 395,932km
Period (days): 28.12
Diameter: 3,600km
Mass: 4.629×10^{20} tonnes
Surface Gravity: 0.9704
Terraformed (year): 2360
Population: 2,500,000

DAEDELUS

P/2020(Georgia)03

Position: 10th from primary

Orbit: 1,623,136,890km (10.850 AU)

Diameter: 160,465km

Silhouette not to scale

Primary: Georgia

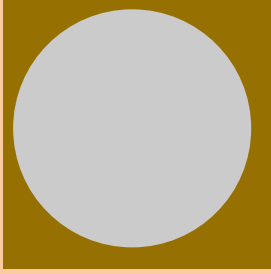
Surface Gravity: 2.6427

Period (years): 35.74 (days): 13,054

Mass: 3.000×10^{24} tonnes

Silhouette scale size: 43.86 inches

MOONS:



ARVAD'S HELM

S/2176(Daedelus)04

Orbit: 576,600km

Period (days): 40.95

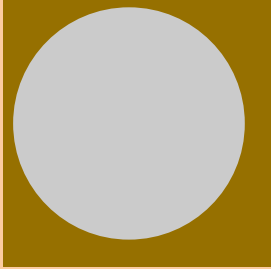
Diameter: 5,262km

Mass: 9.752×10^{20} tonnes

Surface Gravity: 0.9568

Terraformed (year): 2360

Population: 275,000,000



NOTTERDAM

S/2173(Daedelus)03

Orbit: 864,900km

Period (days): 61.43

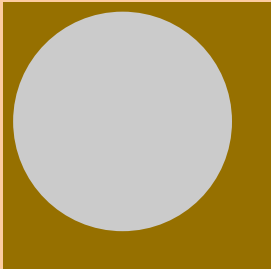
Diameter: 5,151km

Mass: 9.889×10^{20} tonnes

Surface Gravity: 1.0125

Terraformed (year): 2360

Population: 115,000,000



REA

S/2172(Daedelus)01

Orbit: 1,153,200km

Period (days): 81.90

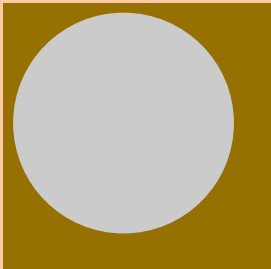
Diameter: 4,821km

Mass: 8.375×10^{20} tonnes

Surface Gravity: 0.9789

Terraformed (year): 2360

Population: 200,000,000



BOH

S/2172(Daedelus)02

Orbit: 2,344,840km

Period (days): 166.53

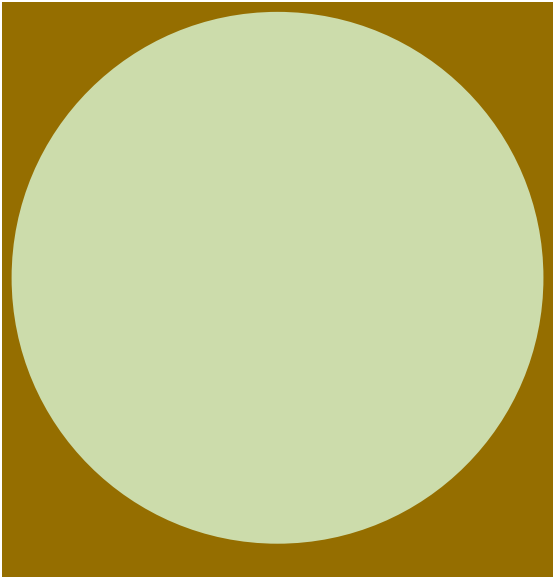
Diameter: 4,887km

Mass: 8.710×10^{20} tonnes

Surface Gravity: 0.9908

Terraformed (year): 2360

Population: 152,500,000



NEWHOPE

P/2027(Georgia)03

Primary: Georgia

Position: 11th from primary

Orbit: 1,903,632,896km (12.725 AU)

Period (years): 45.39 (days): 16,580

Diameter: 11,784km

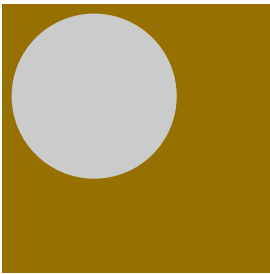
Mass: 5.214×10^{21} tonnes

Surface Gravity: 1.0200

Terraformed (year): 2358

Population: 500,000,000

MOONS:



THE COMMONS

S/2174(Newhope)01

Orbit: 180,668km

Period (days): 12.83

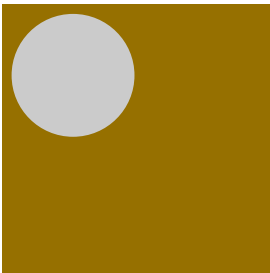
Diameter: 3,640km

Mass: 4.978×10^{20} tonnes

Surface Gravity: 1.0206

Terraformed (year): 2358

Population: 75,000,000



SPLENDOR

S/2176(Newhope)02

Orbit: 272,924km

Period (days): 19.38

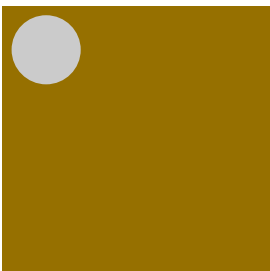
Diameter: 2,705km

Mass: 2.806×10^{20} tonnes

Surface Gravity: 1.0417

Terraformed (year): 2358

Population: 50,000,000



GODFORSAKEN

S/2176(Newhope)03

Orbit: 349,804km

Period (days): 24.84

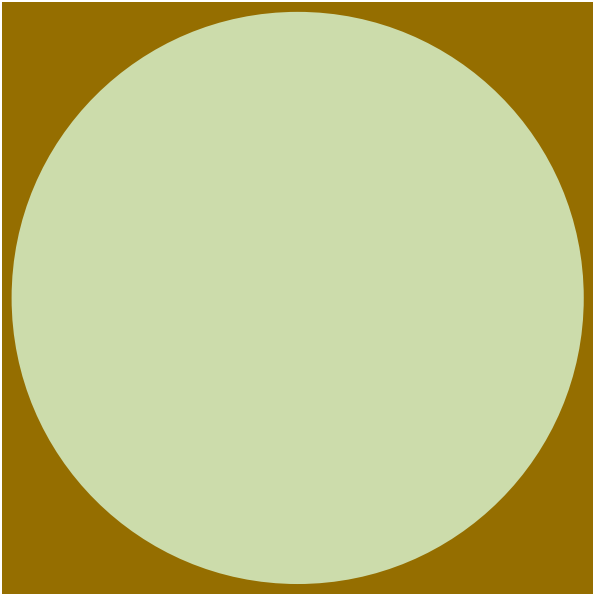
Diameter: 1,530km

Mass: 8.302×10^{19} tonnes

Surface Gravity: 0.9635

Terraformed (year): Scheduled

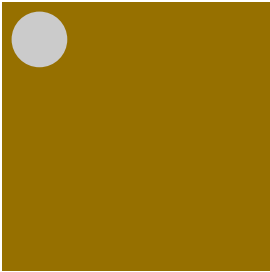
Population: 5,000 (Terraform Crew)



THREE HILLS

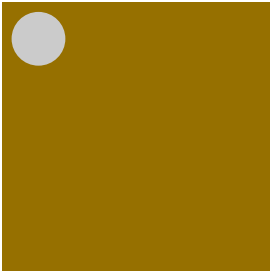
P/2027(Georgia)03
Primary: Georgia
Position: 12th from primary
Orbit: 2,015,831,298km (13.475 AU)
Period (years): 49.46 (days): 18,067
Diameter: 12,640km
Mass: 5.214×10^{21} tonnes
Surface Gravity: 1.0200
Terraformed (year): 2370
Population: 175,000,000

MOONS:



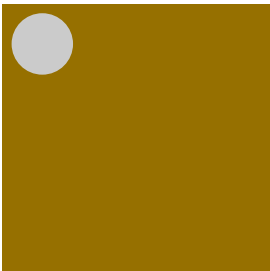
NEW LAFAYETTE

S/2164(Three Hills)01
Orbit: 57,660km
Period (days): 4.10
Diameter: 1,213km
Mass: 5.414×10^{19} tonnes
Surface Gravity: 0.9997
Terraformed (year): 2370
Population: 27,500,000



CONRAD

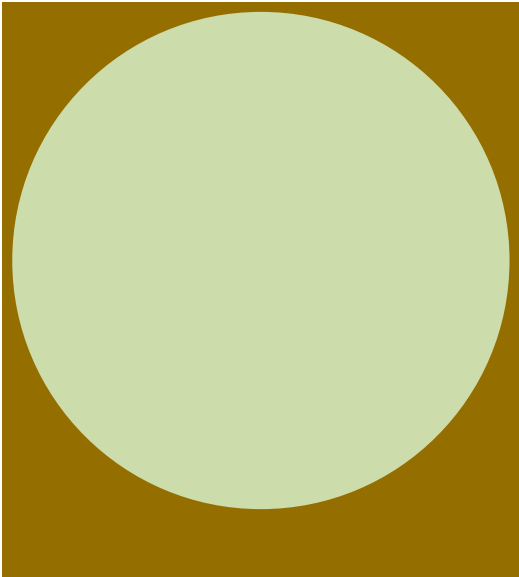
S/2164(Three Hills)02
Orbit: 96,100km
Period (days): 6.83
Diameter: 1,180km
Mass: 4.967×10^{19} tonnes
Surface Gravity: 0.9692
Terraformed (year): 2370
Population: 82,000,000



BOB

S/2164(Three Hills)03
Orbit: 134,540km
Period (days): 9.56
Diameter: 1,345km
Mass: 6.858×10^{19} tonnes
Surface Gravity: 1.0299
Terraformed (year): 2370
Population: 16,000,000

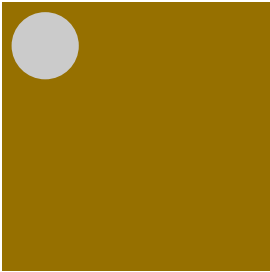
NOTE: Conrad boasts the highest population density in the Verse. 2510 census showed 62.49 people per square kilometer. The mild climate and abundance of small islands peppering Conrad's shallow oceans have made the moon a popular vacation and retirement destination.



MEADOW

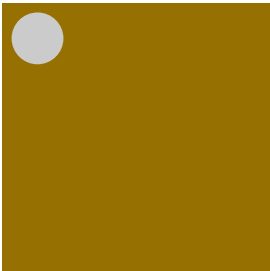
P/2027(Georgia)07
Primary: Georgia
Position: 13th from primary
Orbit: 2,071,930,500km (13.850 AU)
Period (years): 51.54 (days): 18,826
Diameter: 11,000km
Mass: 4.436×10^{21} tonnes
Surface Gravity: 0.9959
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



SALYUT

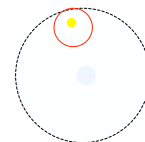
S/2176(Meadow)01
Orbit: 92,256km
Period (days): 6.55
Diameter: 1,469km
Mass: 7.912×10^{19} tonnes
Surface Gravity: 0.9960
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



MIR

S/2177(Meadow)02
Orbit: 357,492km
Period (days): 25.39
Diameter: 1,161km
Mass: 4.944×10^{19} tonnes
Surface Gravity: 0.9965
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MURPHY



P/2020(Georgia)01

Class: Artificial Star

Helioformed: 2260

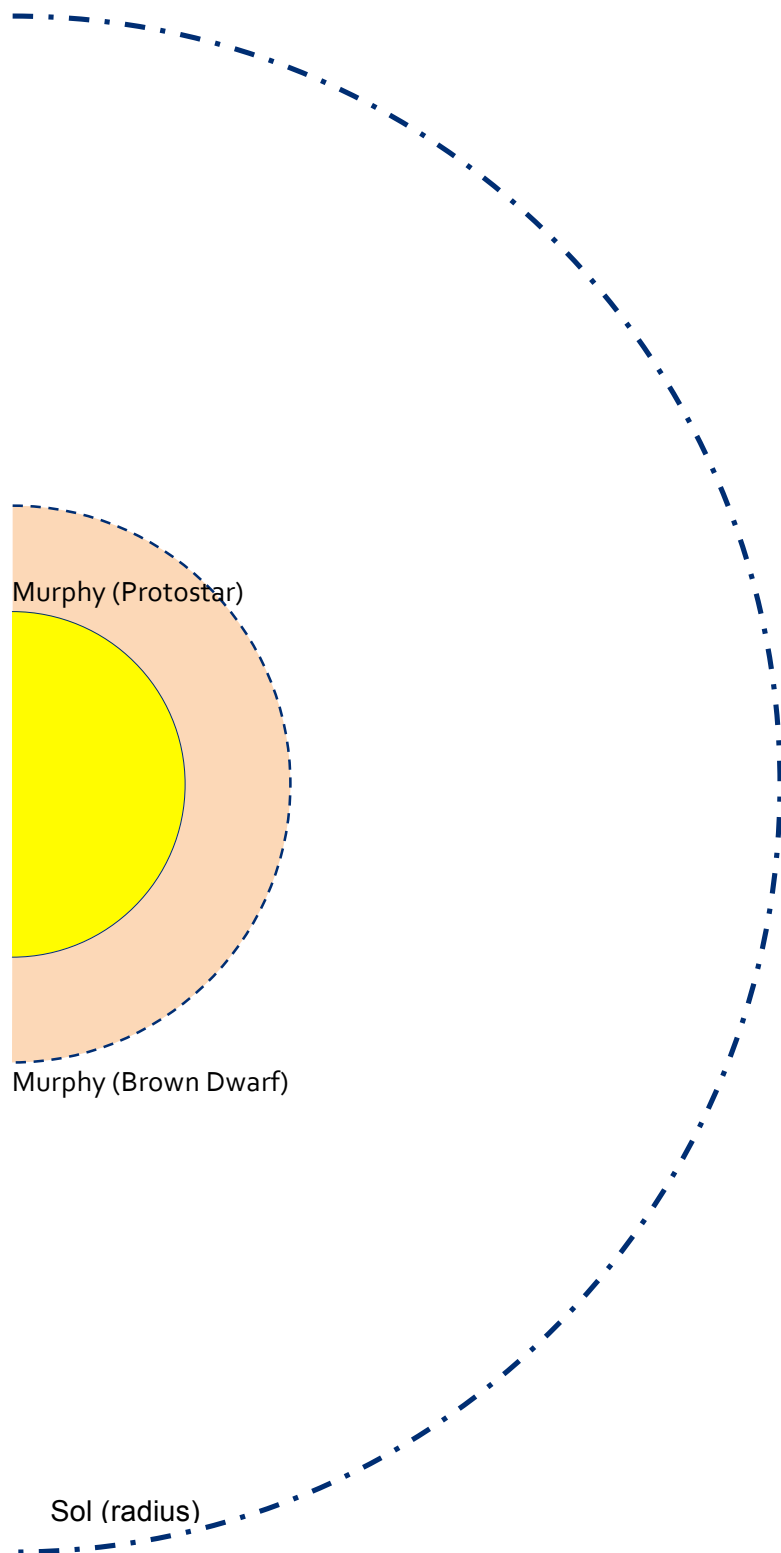
Radius: 0.36 Sol – Brown Dwarf (117.72 inches scale)

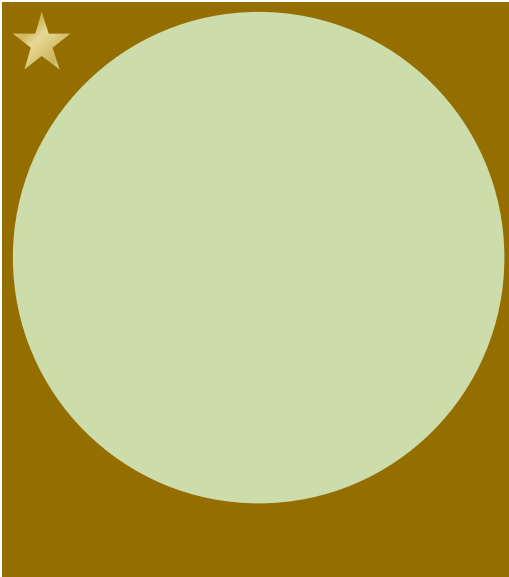
Radius: 0.22 Sol – Protostar (70.63 inches scale)

Mass: 0.36 Sol

Orbit: 2,393,565,920km (16.000 AU)

Period (years): 64.00



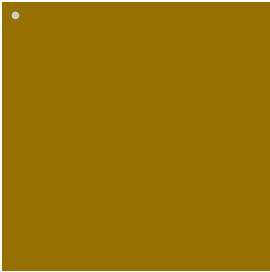


HERA

S/2041(Murphy)03
Primary: Murphy
Position: 1st from primary
Orbit: 4,503,425km
Period (days): 99
Diameter: 10,881km
Mass: 4.407×10^{21} tonnes
Surface Gravity: 1.0113
Terraformed (year): 2407
Population: 377,000,000

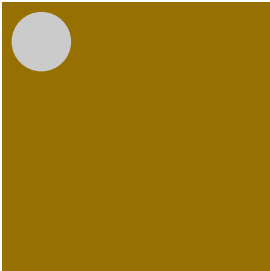
Georgia Capital

MOONS:



BULLET

S/2177(Hera)02
Orbit: 38,440km
Period (days): 2.73
Diameter: 175km
Mass: 6.335×10^{16} tonnes
Surface Gravity: 0.0562
Terraformed (year): N/A
Population: 0

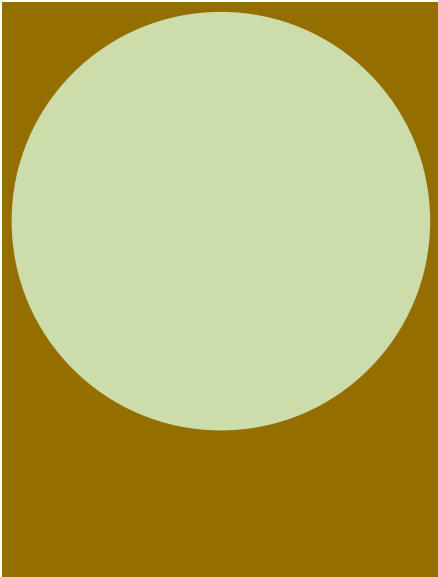


ERIS

S/2176(Hera)01
Orbit: 103,788km
Period (days): 7.37
Diameter: 1,321km
Mass: 6.289×10^{19} tonnes
Surface Gravity: 0.9791
Terraformed (year): 2407
Population: 38,000

NOTE: Hera and Persephone were known as the Gateway to the Border. During the Unification War, Hera was firmly in the hands of the Independents. While Aphrodite held a significant Alliance presence, Hera was the jumping-off point to the rest of the Border, and to the Rim. While some continue to argue the strategic importance of Hera from the standpoint of military value and commerce, it was undoubtedly the “center” of Independent consciousness after the loss of Shadow.

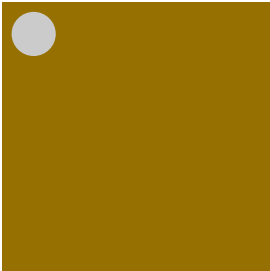
The Battle of Serenity Valley concluded the bloodiest engagement in the Unification War, and has been described by historians as “Gettysburg and Vicksburg all rolled into one place.” At the culmination of that battle, the Independents suffered their most crushing defeat, and lost their most strategic asset. While there were a few small skirmishes on other worlds, the Unification War effectively ended in Serenity Valley.



APHRODITE

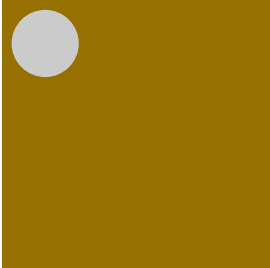
S/2037(Murphy)01
Primary: Murphy
Position: 2nd from primary
Orbit: 6,510,381km
Period (days): 143
Diameter: 9,256km
Mass: 3.175×10^{21} tonnes
Surface Gravity: 1.0068
Terraformed (year): 2405
Population: 280,000,000

MOONS:



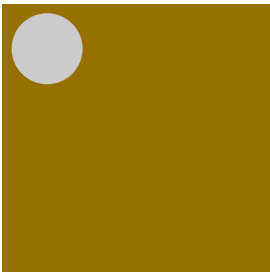
STURGES

S/2164(Aphrodite)01
Orbit: 269,080km
Period (days): 19.11
Diameter: 998km
Mass: 3.747×10^{19} tonnes
Surface Gravity: 1.0219
Terraformed (year): 2405
Population: 12,575,000



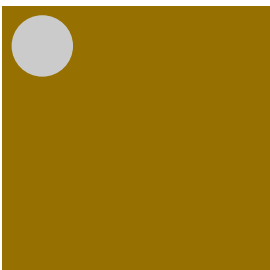
HILL

S/2164(Aphrodite)02
Orbit: 345,960km
Period (days): 24.57
Diameter: 1,498km
Mass: 8.384×10^{19} tonnes
Surface Gravity: 1.0150
Terraformed (year): 2405
Population: 3,500,000



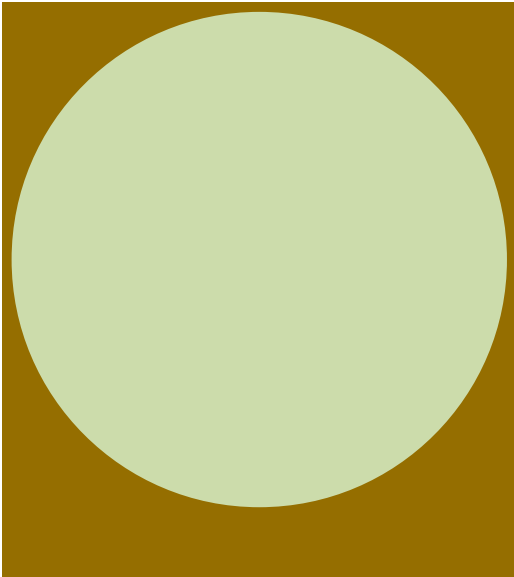
THORNLEY

S/2164(Aphrodite)03
Orbit: 399,776km
Period (days): 28.39
Diameter: 1,586km
Mass: 9.268×10^{19} tonnes
Surface Gravity: 1.0010
Terraformed (year): 2405
Population: 2,750,000



ANTON

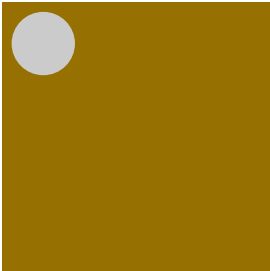
S/2164(Aphrodite)04
Orbit: 442,060km
Period (days): 31.40
Diameter: 1,379km
Mass: 6.709×10^{19} tonnes
Surface Gravity: 0.9585
Terraformed (year): 2405
Population: 7,500,000



SHADOW

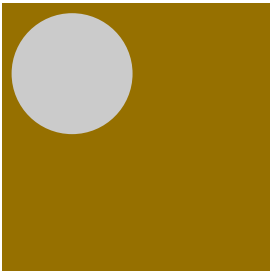
S/2037(Murphy)02
Primary: Murphy
Position: 3rd from primary
Orbit: 8,906,726km
Period (days): 196
Diameter: 10,973km
Mass: 4.527×10^{21} tonnes
Surface Gravity: 1.0215
Terraformed (year): 2404
Population: 13,300

MOONS:



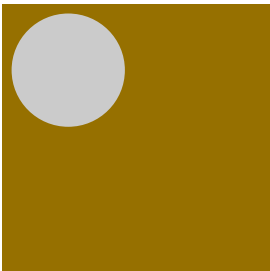
BRANSON'S MARK

S/2172(Shadow)01
Orbit: 126,852km
Period (days): 9.01
Diameter: 1,397km
Mass: 7.044×10^{19} tonnes
Surface Gravity: 0.9806
Terraformed (year): 2404
Population: 1,317



OSSOLAMBRIA

S/2172(Shadow)02
Orbit: 230,640km
Period (days): 16.38
Diameter: 2,684km
Mass: 2.766×10^{20} tonnes
Surface Gravity: 1.0430
Terraformed (year): 2404
Population: 38,450



SUMMERFAIR

S/2172(Shadow)03
Orbit: 430,528km
Period (days): 30.58
Diameter: 2,486km
Mass: 2.258×10^{20} tonnes
Surface Gravity: 0.9925
Terraformed (year): 2404
Population: 167,000

RED SUN

34Tauri(2020)C

Class: G5

Radius: 0.93 Sol

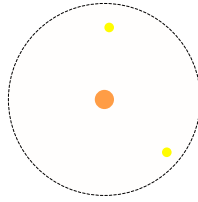
Mass: 0.93 Sol

Luminosity: 0.79 Sol

Temperature: 5,610°K

Verse Location: 68 AU – Georgia's L3

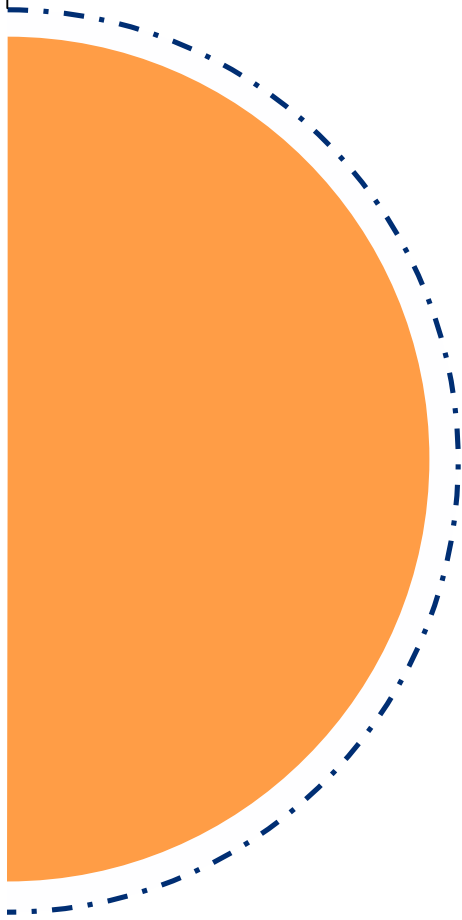
Orbital Period: 560.74 years



Silhouette not to scale

Silhouette scale size: 304.11 inches

Silhouette color indicates temperature, not appearance



Sol (radius)



Jiangyin



New Melbourne



Motherlode



Greenleaf



Harvest



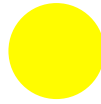
St. Albans



Anson's World



Jubilee



Himinbjorg



Aesir



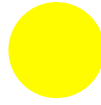
Moab



Brisingamen



Anvil



Heinlein



Triumph



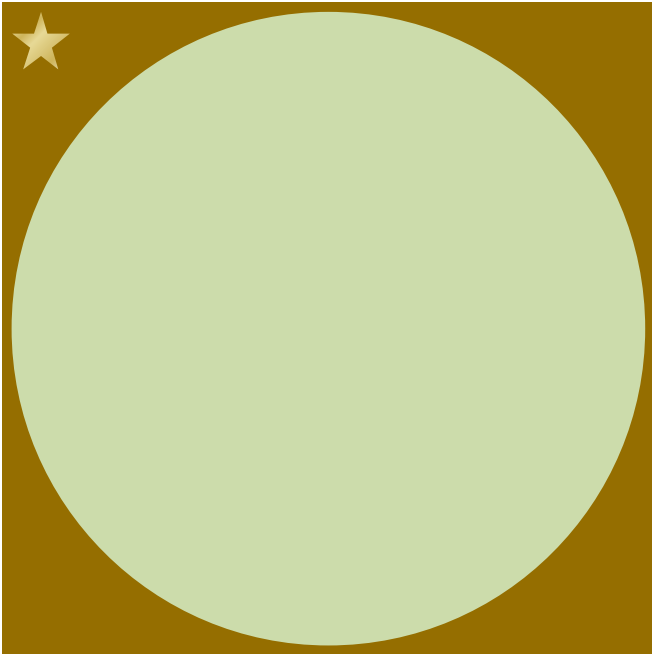
Paquin



Lazarus



Silverhold



JIANGYIN

P/2027(Red Sun)03

Primary: Red Sun

Position: 1st from primary

Orbit: 78,538,882km (0.525 AU)

Period (years): 0.38 (days): 139

Diameter: 14,007km

Mass: 7.227×10^{21} tonnes

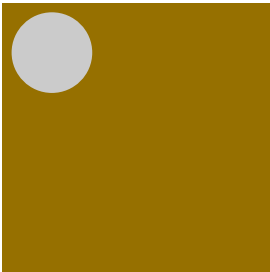
Surface Gravity: 1.0007

Terraformed (year): 2280

Population: 1,400,000,000

Red Sun Capital

MOONS:



TONGYI

S/2176(Jiangyin)01

Orbit: 126,852km

Period (days): 9.01

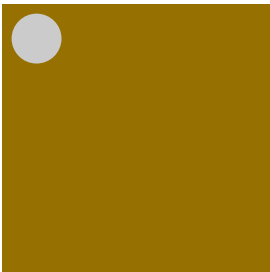
Diameter: 1,793km

Mass: 1.146×10^{20} tonnes

Surface Gravity: 0.9683

Terraformed (year): 2280

Population: 124,000,000



DANGUN

S/2176(Jiangyin)02

Orbit: 257,548km

Period (days): 18.29

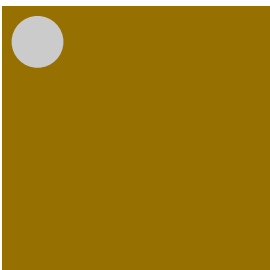
Diameter: 1,123km

Mass: 4.551×10^{19} tonnes

Surface Gravity: 0.9804

Terraformed (year): 2280

Population: 64,500,000



RHILIDORE

S/2176(Jiangyin)03

Orbit: 384,400km

Period (days): 27.30

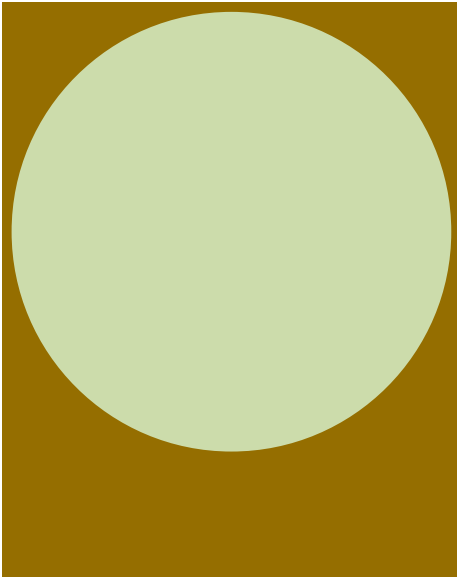
Diameter: 1,158km

Mass: 5.051×10^{19} tonnes

Surface Gravity: 1.0232

Terraformed (year): 2280

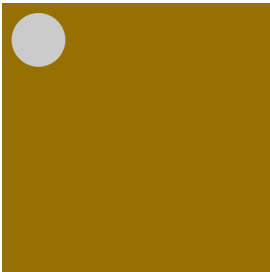
Population: 17,500,000



NEW MELBOURNE

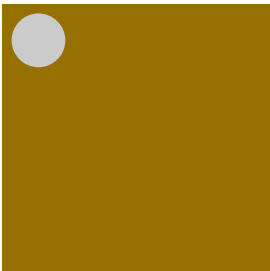
P/2027(Red Sun)03
Primary: Red Sun
Position: 2nd from primary
Orbit: 302,935,687km (2.025 AU)
Period (years): 2.88 (days): 1,053
Diameter: 9,713km
Mass: 3.503×10^{21} tonnes
Surface Gravity: 1.0087
Terraformed (year): 2280
Population: 27,000,000

MOONS:



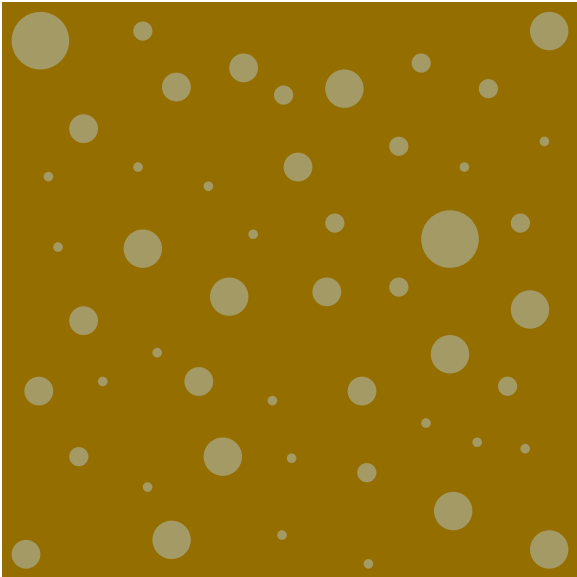
MARIA

S/2173(New Melbourne)01
Orbit: 230,640km
Period (days): 16.38
Diameter: 1,169km
Mass: 5.118×10^{19} tonnes
Surface Gravity: 1.0175
Terraformed (year): 2280
Population: 26,000,000



DESTINY

S/2173(New Melbourne)02
Orbit: 461,280km
Period (days): 32.76
Diameter: 1,207km
Mass: 5.174×10^{19} tonnes
Surface Gravity: 0.9649
Terraformed (year): 2280
Population: 17,500,000



MOTHERLODE

Asteroid Belt

Primary: Red Sun

Inner Boundary: 471,233,291km (3.150 AU)

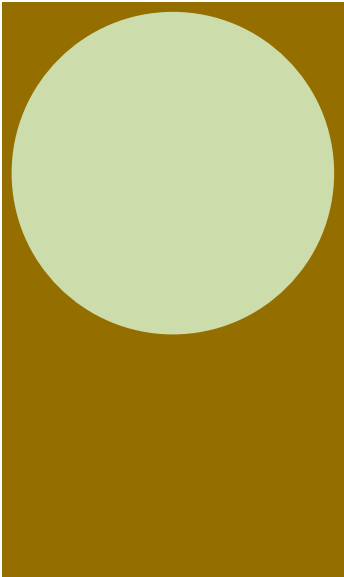
Outer Boundary: 751,729,297km (5.025 AU)

Average Width: 280,496,006km (1.875 AU)

Number of cataloged objects: 476,915

Asteroid designation uses numbers and letters (excluding i, l, o, and z).

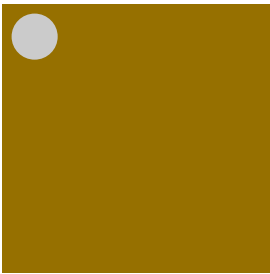
Example: A/2260(Red Sun)1ya59



GREENLEAF

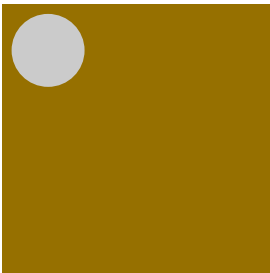
P/2027(Red Sun)03
Primary: Red Sun
Position: 3rd from primary
Orbit: 1,032,225,303km (6.900 AU)
Period (years): 18.12 (days): 6,620
Diameter: 7,139km
Mass: 1.857×10^{21} tonnes
Surface Gravity: 0.9898
Terraformed (year): 2281
Population: 220,000,000

MOONS:



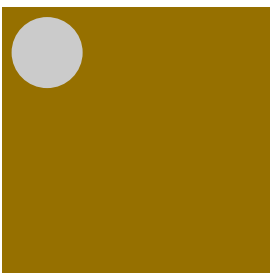
DYTON

S/2172(Greenleaf)01
Orbit: 115,320km
Period (days): 8.19
Diameter: 1,040km
Mass: 4.121×10^{19} tonnes
Surface Gravity: 1.0352
Terraformed (year): 2281
Population: 6,000,000



AGYAR

S/2172(Greenleaf)02
Orbit: 269,080km
Period (days): 19.11
Diameter: 1,598km
Mass: 9.650×10^{19} tonnes
Surface Gravity: 1.0266
Terraformed (year): 2281
Population: 2,000,000



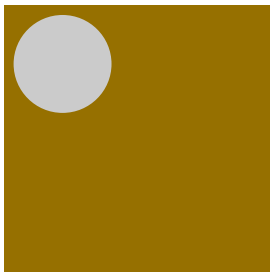
BRYSON'S ROCK

S/2172(Greenleaf)03
Orbit: 345,960km
Period (days): 24.57
Diameter: 1,573km
Mass: 9.511×10^{19} tonnes
Surface Gravity: 1.0443
Terraformed (year): 2281
Population: 1,750,000

HARVEST

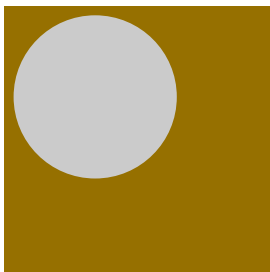
P/2027(Red Sun)03
Primary: Red Sun
Position: 4th from primary
Orbit: 1,256,622,108km (8.400 AU)
Period (years): 24.35 (days): 8,892
Diameter: 17,984km
Mass: 1.220×10^{22} tonnes
Surface Gravity: 1.0245
Terraformed (year): 2251
Population: 1,600,000

MOONS:



FARRADAY

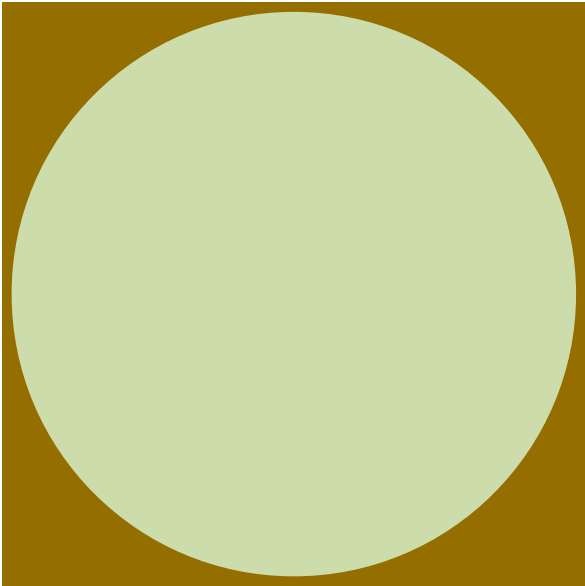
S/2174(Harvest)01
Orbit: 76,880km
Period (days): 5.46
Diameter: 2,158km
Mass: 1.650×10^{20} tonnes
Surface Gravity: 0.9602
Terraformed (year): 2251
Population: 200,000



HIGGINS' MOON

S/2178(Harvest)02
Orbit: 119,164km
Period (days): 8.46
Diameter: 3,590km
Mass: 4.657×10^{20} tonnes
Surface Gravity: 0.9817
Terraformed (year): 2251
Population: 640,000

NOTE: Harvest has become known as the Verse' Breadbasket, producing more natural and manufactured foodstuffs than any other world.



ST. ALBANS

P/2027(Red Sun)03

Primary: Red Sun

Position: 5th from primary

Orbit: 1,593,217,316km (10.650 AU)

Period (years): 34.76 (days): 12,694

Diameter: 12,500km

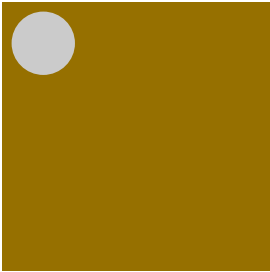
Mass: 5.883×10^{21} tonnes

Surface Gravity: 1.0229

Terraformed (year): 2290

Population: 30,000,000

MOONS:



PI GU

S/2172(St. Albans)01

Orbit: 76,880km

Period (days): 5.46

Diameter: 1,389km

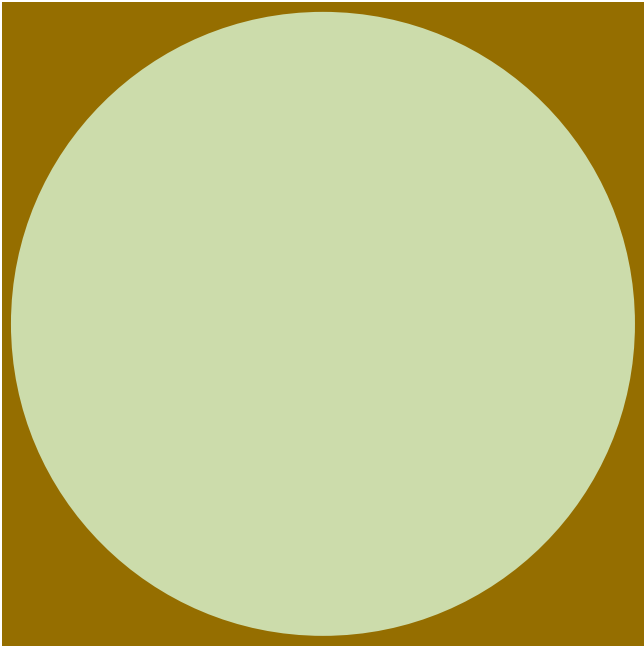
Mass: 7.120×10^{19} tonnes

Surface Gravity: 1.0026

Terraformed (year): 2290

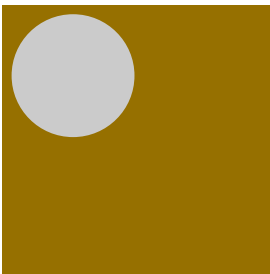
Population: 4,000,000

ANSON'S WORLD



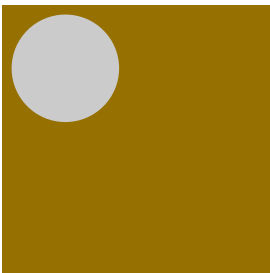
P/2027(Red Sun)03
Primary: Red Sun
Position: 6th from primary
Orbit: 1,705,415,718km (11.400 AU)
Period (years): 38.49 (days): 14,059
Diameter: 13,802km
Mass: 7.067×10^{21} tonnes
Surface Gravity: 1.0078
Terraformed (year): 2290
Population: 125,000,000

MOONS:



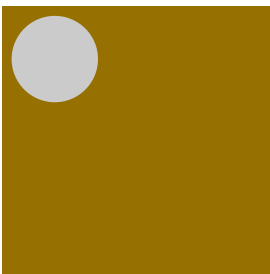
SPIDER

S/2176(Anson's World)02
Orbit: 76,880km
Period (days): 5.46
Diameter: 2,707km
Mass: 2.610×10^{20} tonnes
Surface Gravity: 0.9675
Terraformed (year): 2290
Population: 40,000,000



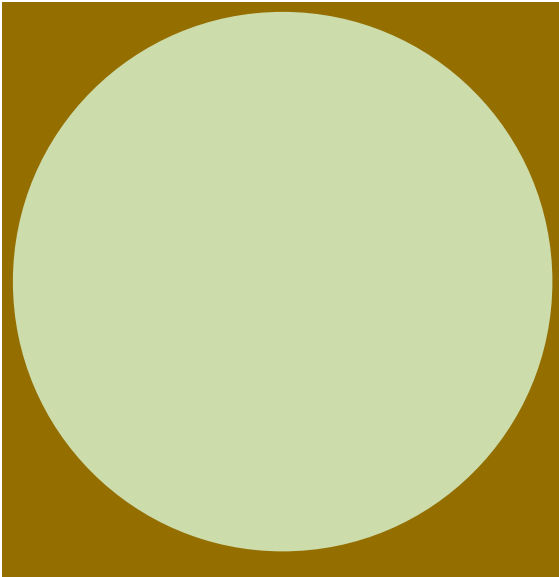
VARLEY

S/2174(Anson's World)01
Orbit: 130,696km
Period (days): 9.28
Diameter: 2,390km
Mass: 2.065×10^{20} tonnes
Surface Gravity: 0.9823
Terraformed (year): 2290
Population: 33,500,000



STEELE

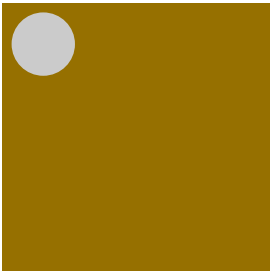
S/2176(Anson's World)03
Orbit: 311,364km
Period (days): 22.11
Diameter: 1,896km
Mass: 1.316×10^{20} tonnes
Surface Gravity: 0.9942
Terraformed (year): 2290
Population: 21,575,000



JUBILEE

P/2030(Red Sun)09
Primary: Red Sun
Position: 7th from primary
Orbit: 1,929,812,523km (12.900 AU)
Period (years): 46.33 (days): 16,923
Diameter: 11,952km
Mass: 5.310×10^{21} tonnes
Surface Gravity: 1.0099
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

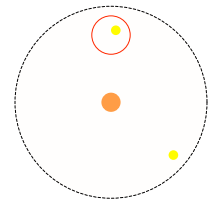
MOONS:



COVENANT

S/2173(Jubilee)01
Orbit: 261,392km
Period (days): 18.56
Diameter: 1,421km
Mass: 7.451×10^{19} tonnes
Surface Gravity: 1.0025
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

HIMINBJORG



P/2020(Red Sun)01

Class: Artificial Star

Helioformed: 2259

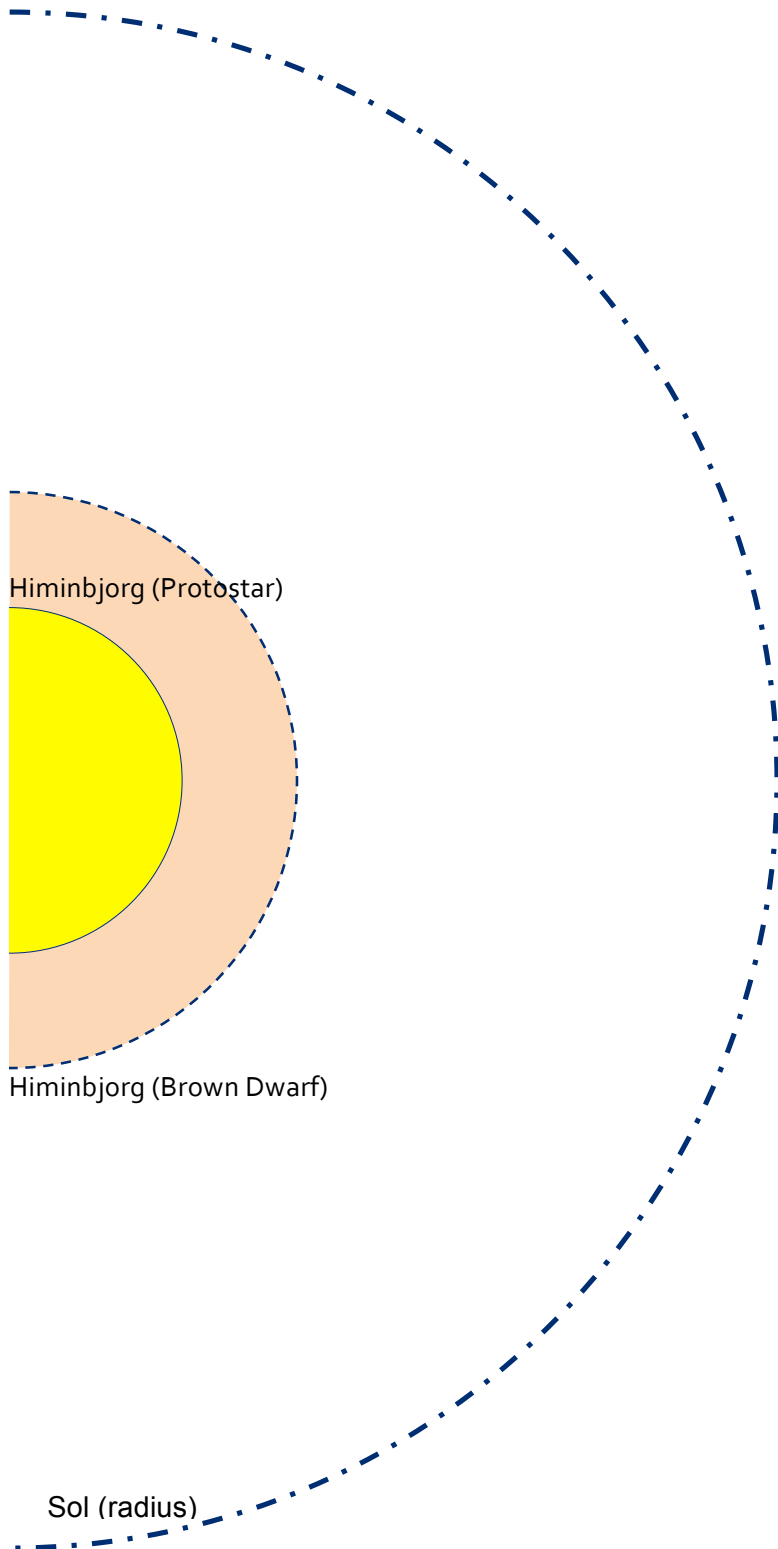
Radius: 0.38 Sol – Brown Dwarf (124.26 inches scale)

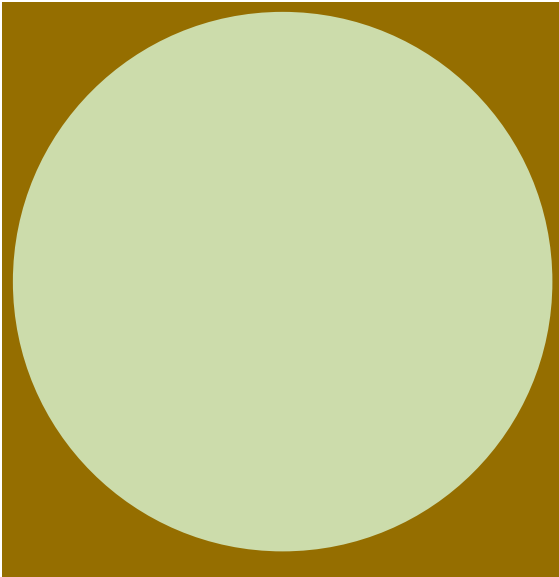
Radius: 0.23 Sol – Protostar (74.56 inches scale)

Mass: 0.38 Sol

Orbit: 2,543,163,790km (17.000 AU)

Period (years): 70.09

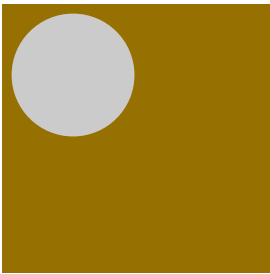




AESIR

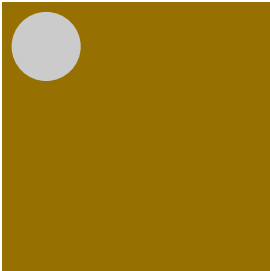
S/2035(Himinbjorg)01
Primary: Himinbjorg
Position: 1st from primary
Orbit: 2,501,258km
Period (days): 55
Diameter: 11,925km
Mass: 5.339×10^{21} tonnes
Surface Gravity: 1.0200
Terraformed (year): 2295
Population: 110,000,000

MOONS:



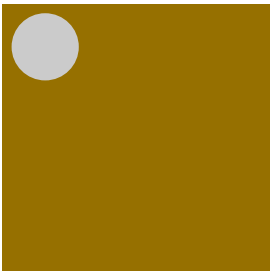
BESTLA

S/2172(Aesir)01
Orbit: 76,880km
Period (days): 5.46
Diameter: 2,707km
Mass: 2.605×10^{20} tonnes
Surface Gravity: 0.9656
Terraformed (year): 2295
Population: 18,500,000



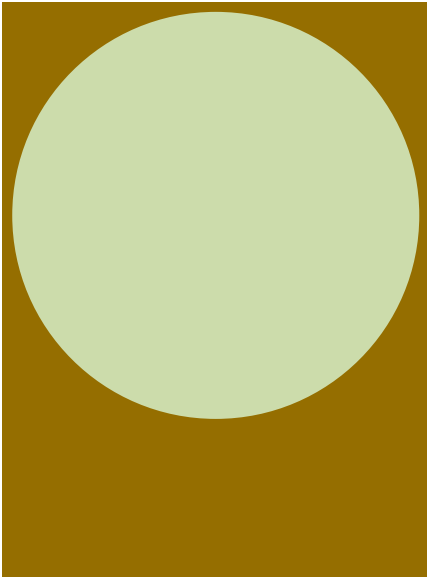
BORR

S/2172(Aesir)02
Orbit: 115,320km
Period (days): 8.19
Diameter: 1,529km
Mass: 8.827×10^{19} tonnes
Surface Gravity: 1.0258
Terraformed (year): 2295
Population: 790,000



ODIN

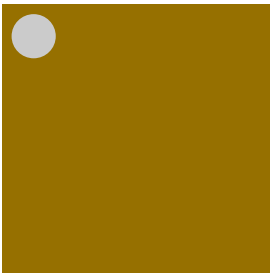
S/2174(Aesir)03
Orbit: 153,760km
Period (days): 16.38
Diameter: 1,472km
Mass: 7.840×10^{19} tonnes
Surface Gravity: 0.9830
Terraformed (year): 2295
Population: 17,450,000



MOAB

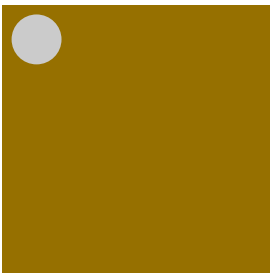
S/2035(Himinbjorg)02
Primary: Himinbjorg
Position: 2nd from primary
Orbit: 4,879,215km
Period (days): 107
Diameter: 9,001km
Mass: 2.985×10^{21} tonnes
Surface Gravity: 1.0009
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



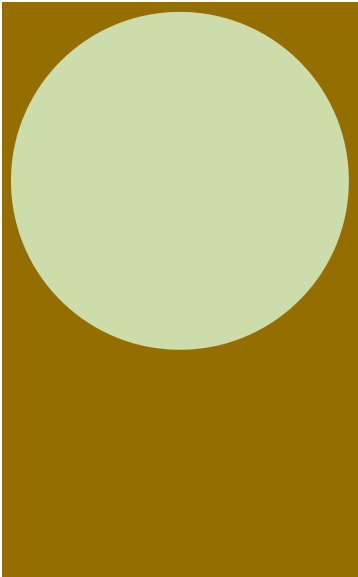
RED ROCK

S/2175(Moab)01
Orbit: 80,724km
Period (days): 5.73
Diameter: 975km
Mass: 3.449×10^{19} tonnes
Surface Gravity: 0.9856
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



MESA

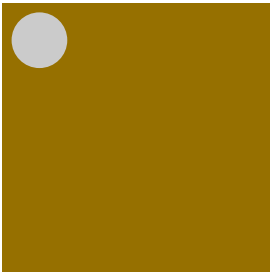
S/2175(Moab)02
Orbit: 169,136km
Period (days): 12.01
Diameter: 1,086km
Mass: 4.320×10^{19} tonnes
Surface Gravity: 0.9951
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



BRISINGAMEN

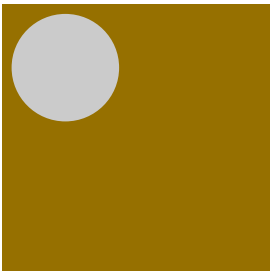
S/2035(Himinbjorg)03
Primary: Himinbjorg
Position: 3rd from primary
Orbit: 7,502,674km
Period (days): 165
Diameter: 7,458km
Mass: 2.055×10^{21} tonnes
Surface Gravity: 1.0039
Terraformed (year): 2300
Population: 74,500,000

MOONS:



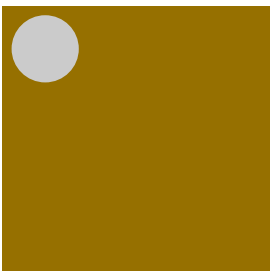
FREYA

S/2172(Brisingamen)01
Orbit: 57,660km
Period (days): 4.10
Diameter: 1,236km
Mass: 5.409×10^{19} tonnes
Surface Gravity: 0.9619
Terraformed (year): 2300
Population: 2,541,000



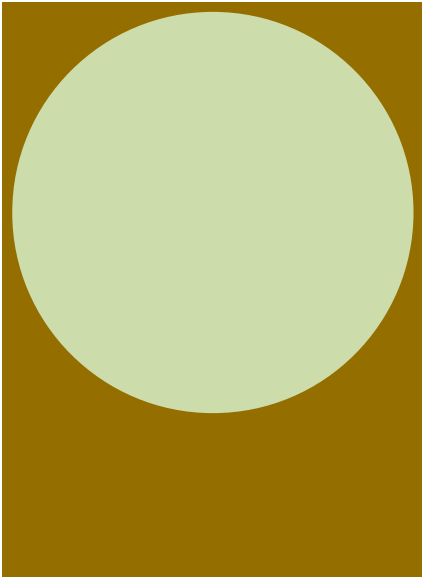
ALBERICH

S/2173(Brisingamen)03
Orbit: 115,320km
Period (days): 8.19
Diameter: 2,369km
Mass: 2.033×10^{20} tonnes
Surface Gravity: 0.9840
Terraformed (year): 2300
Population: 1,478,000



BEOWULF

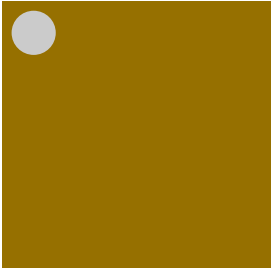
S/2172(Brisingamen)02
Orbit: 230,640km
Period (days): 16.38
Diameter: 1,478km
Mass: 8.408×10^{19} tonnes
Surface Gravity: 1.0456
Terraformed (year): 2300
Population: 1,239,000



ANVIL

S/2035(Himinbjorg)04
Primary: Himinbjorg
Position: 4th from primary
Orbit: 9,327,101km
Period (days): 205
Diameter: 8,880km
Mass: 2.845×10^{21} tonnes
Surface Gravity: 0.9801
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



HAMMER

S/2174(Anvil)01
Orbit: 138,384km
Period (days): 9.83
Diameter: 972km
Mass: 3.513×10^{19} tonnes
Surface Gravity: 1.0101
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

HEINLEIN

P/2020(Red Sun)02

Class: Artificial Star

Helioformed: 2258

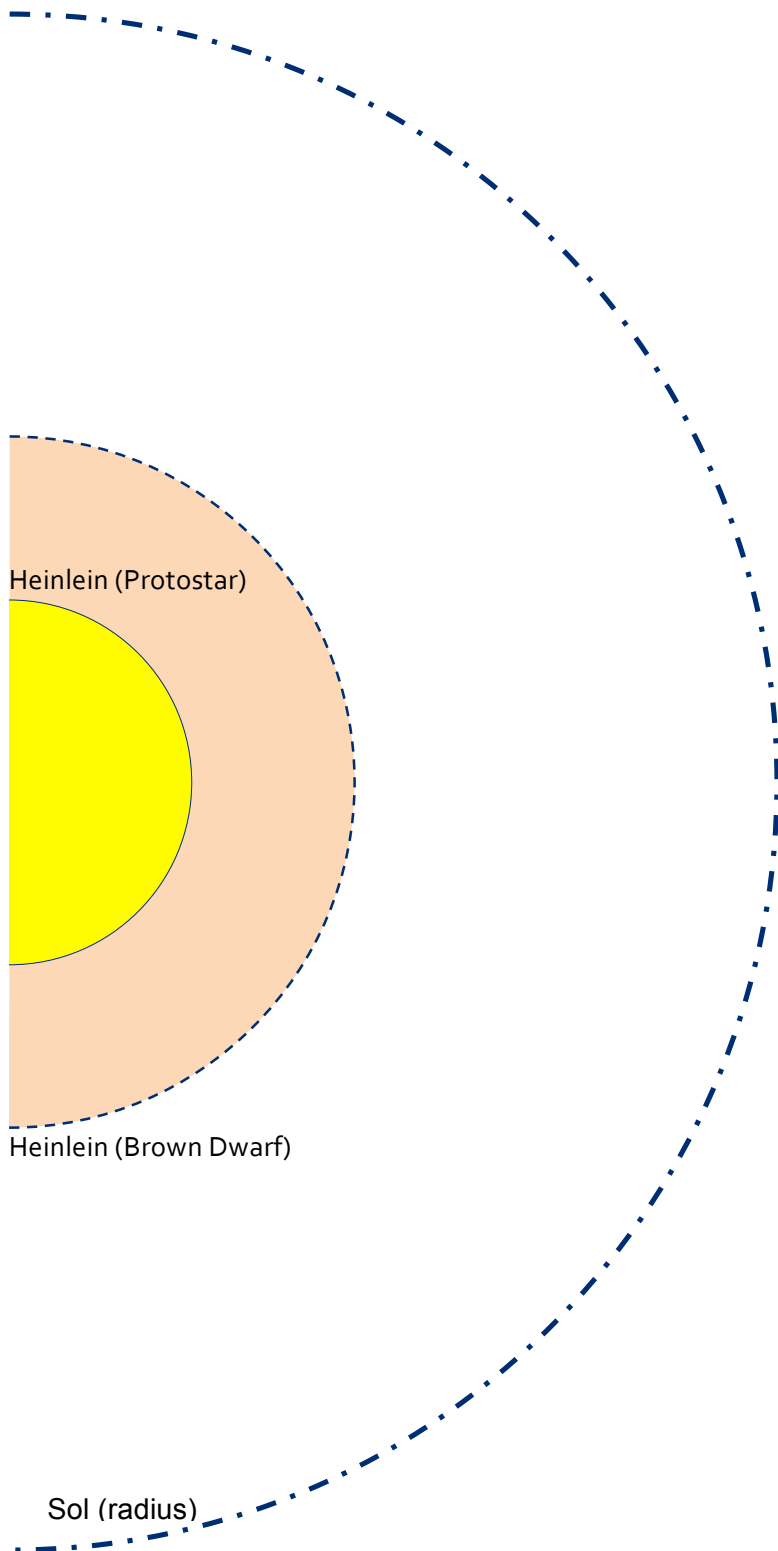
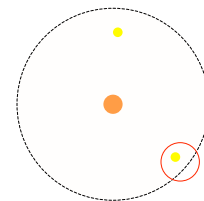
Radius: 0.40 Sol – Brown Dwarf (130.80 inches scale)

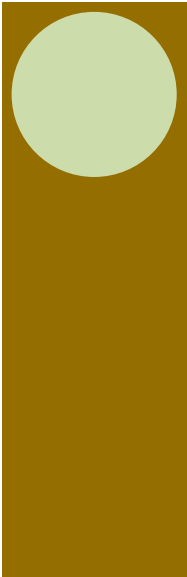
Radius: 0.24 Sol – Protostar (78.48 inches scale)

Mass: 0.40 Sol

Orbit: 2,842,359,530km (19.000 AU)

Period (years): 82.82

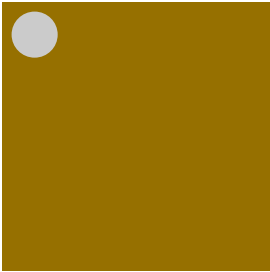




TRIUMPH

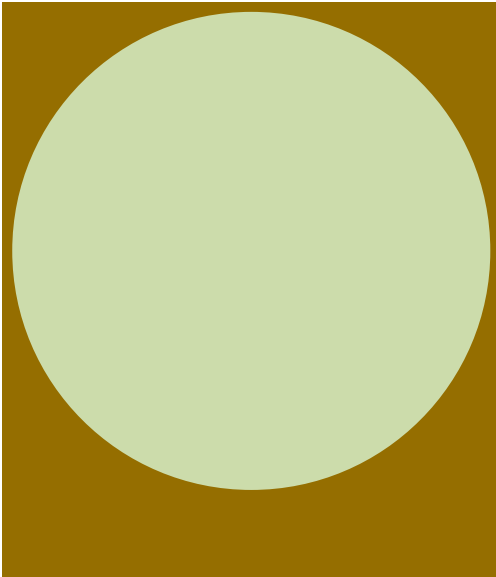
S/2036(Heinlein)01
Primary: Heinlein
Position: 1st from primary
Orbit: 3,000,213km
Period (days): 66
Diameter: 3,640km
Mass: 4.929×10^{20} tonnes
Surface Gravity: 1.0107
Terraformed (year): 2360
Population: 32,500,000

MOONS:



MYCROFT

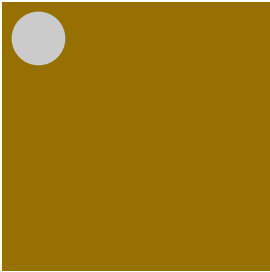
S/2164(Triumph)01
Orbit: 342,116km
Period (days): 24.30
Diameter: 1,040
Mass: 3.850×10^{19} tonnes
Surface Gravity: 0.9669
Terraformed (year): 2360
Population: 12,000,000



PAQUIN

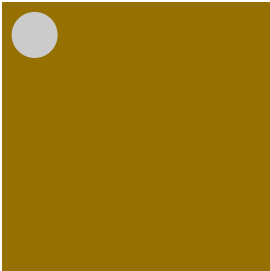
S/2038(Heinlein)03
Primary: Heinlein
Position: 2nd from primary
Orbit: 5,000,687km
Period (days): 110
Diameter: 10,579km
Mass: 4.231×10^{21} tonnes
Surface Gravity: 1.0271
Terraformed (year): 2415
Population: 175,000,000

MOONS:



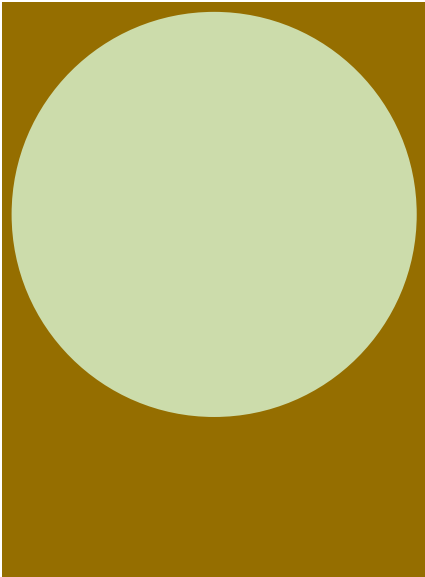
SHINBONE

S/2176(Paquin)02
Orbit: 111,476km
Period (days): 7.92
Diameter: 1,210km
Mass: 5.515×10^{19} tonnes
Surface Gravity: 1.0233
Terraformed (year): 2415
Population: 3,000,000



CLAWTHORN

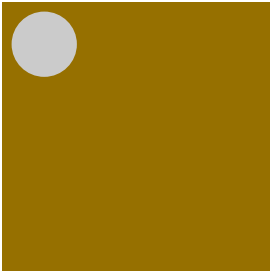
S/2174(Paquin)01
Orbit: 161,448km
Period (days): 11.47
Diameter: 1,002km
Mass: 3.571×10^{19} tonnes
Surface Gravity: 0.9663
Terraformed (year): 2415
Population: 750,000



LAZARUS

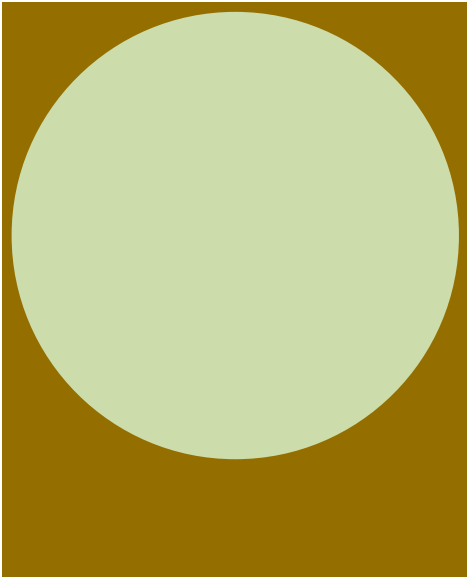
S/2038(Heinlein)04
Primary: Heinlein
Position: 3rd from primary
Orbit: 6,999,126km
Period (days): 154
Diameter: 8,962km
Mass: 3.029×10^{21} tonnes
Surface Gravity: 1.0246
Terraformed (year): 2410
Population: 143,000,000

MOONS:



DORA

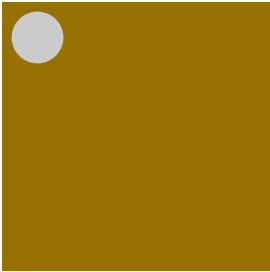
S/2164(Lazarus)01
Orbit: 288,300km
Period (days): 20.48
Diameter: 1,430km
Mass: 7.409×10^{19} tonnes
Surface Gravity: 0.9843
Terraformed (year): 2410
Population: 250,000



SILVERHOLD

S/2036(Heinlein)02
Primary: Heinlein
Position: 4th from primary
Orbit: 9,000,212km
Period (days): 198
Diameter: 9,887km
Mass: 3.617×10^{21} tonnes
Surface Gravity: 1.0052
Terraformed (year): 2417
Population: 744,000,000

MOONS:



BEGGAR'S TIN

S/2173(Silverhold)01
Orbit: 269,080km
Period (days): 19.11
Diameter: 1,147km
Mass: 4.666×10^{19} tonnes
Surface Gravity: 0.9636
Terraformed (year): 2417
Population: 377,000

COMM STATION RING 1

Primary: White Sun
Position: Georgia / Red Sun Orbit
Orbit: 68 AU

A/2260(White Sun)r24g4
Position: Georgia L4
Diameter: 1,294km
Mass: 6.165×10^{19} tonnes
Surface Gravity: 1.0002
Terraformed (year): 2290
Population: Unmanned

A/2260(White Sun)r24g5
Position: Georgia L5
Diameter: 1,084km
Mass: 4.173×10^{19} tonnes
Surface Gravity: 0.9647
Terraformed (year): 2290
Population: Unmanned

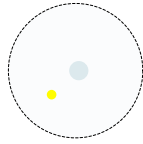
A/2260(White Sun)r24g6
Position: Red Sun L4
Diameter: 978km
Mass: 3.407×10^{19} tonnes
Surface Gravity: 0.9677
Terraformed (year): 2290
Population: Unmanned

A/2260(White Sun)r24g7
Position: Red Sun L5
Diameter: 1,004km
Mass: 3.664×10^{19} tonnes
Surface Gravity: 0.9874
Terraformed (year): 2290
Population: Unmanned

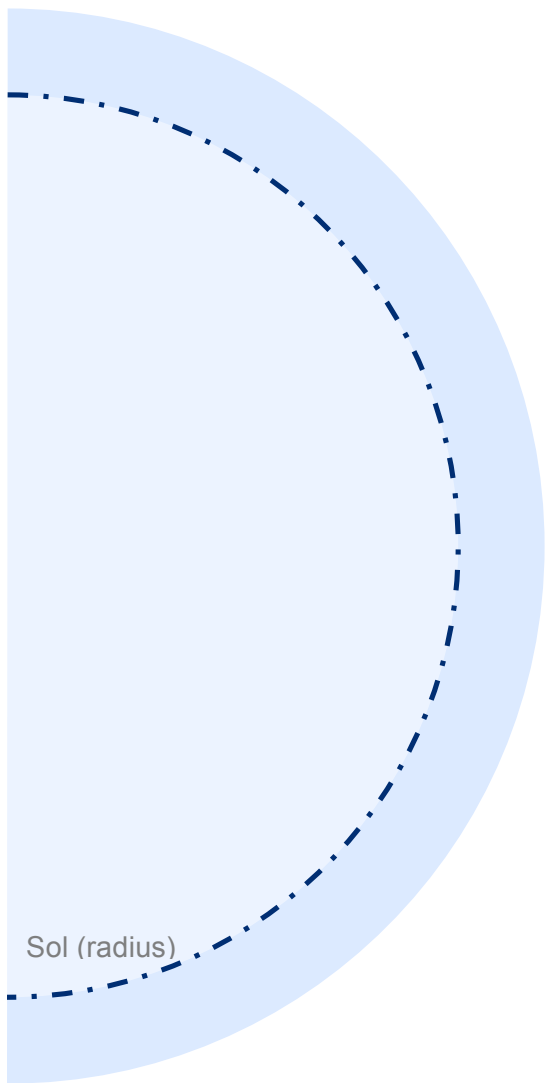
KALIDASA

34Tauri(2020)D

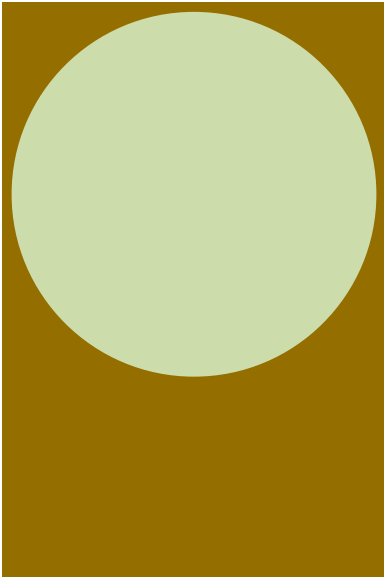
Class: F5
Radius: 1.2 Sol
Mass: 1.29 Sol
Luminosity: 2.5 Sol
Temperature: 6,540°K
Verse Location: 121 AU
Orbital Period: 1331.00 years



Silhouette not to scale
Silhouette scale size: 392.40 inches
Silhouette color indicates temperature, not appearance



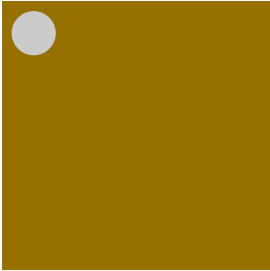
- Sho-Je Downs
- Verbena
- Constance
- Glacier
- Vishnu
- Heaven
- Angel / Zephyr
- Delphi
- New Kashmir
- Whittier
- Penglai
- Beylix
- Newhall
- Oberon
- Ghost
- Aberdeen
- Zeus
- ★ Beaumonde
- Djinn's Bane
- Salisbury



SHO-JE DOWNS

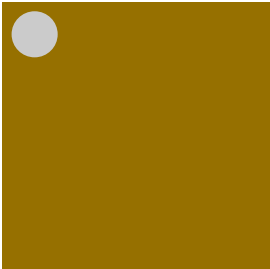
P/2028(Kalidasa)10
Primary: Kalidasa
Position: 1st from primary
Orbit: 127,158,190km (0.850 AU)
Period (years): 0.78 (days): 286
Diameter: 8,057km
Mass: 2.445×10^{21} tonnes
Surface Gravity: 1.0231
Terraformed (year): 2410
Population: 114,750,000

MOONS:



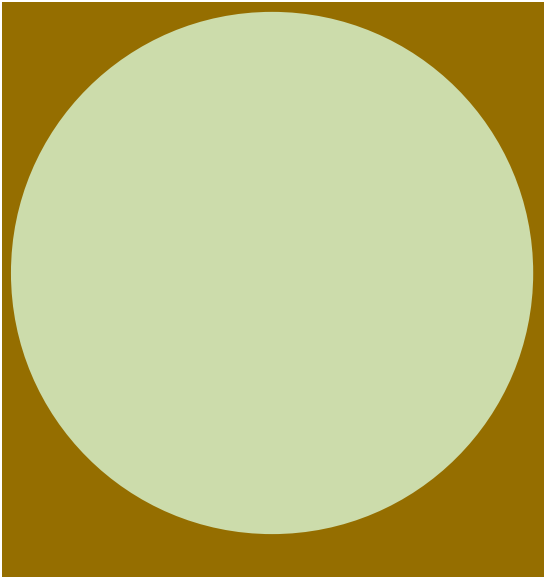
MIYAZAHI

S/2176(Sho-Je Downs)02
Orbit: 130,696km
Period (days): 9.28
Diameter: 970km
Mass: 3.343×10^{19} tonnes
Surface Gravity: 0.9651
Terraformed (year): 2410
Population: 215,000



KUAN LO

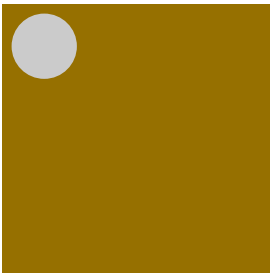
S/2174(Sho-Je Downs)01
Orbit: 165,292km
Period (days): 11.74
Diameter: 1,030km
Mass: 3.849×10^{19} tonnes
Surface Gravity: 0.9856
Terraformed (year): 2410
Population: 75,000



VERBENA

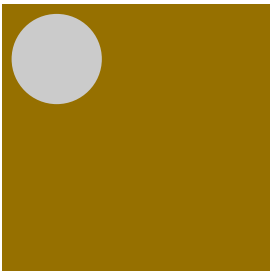
P/2030(Kalidasa)14
Primary: Kalidasa
Position: 2nd from primary
Orbit: 183,257,391km (1.225 AU)
Period (years): 1.36 (days): 495
Diameter: 11,538km
Mass: 4.798×10^{21} tonnes
Surface Gravity: 0.9792
Terraformed (year): 2415
Population: 78,500,000

MOONS:



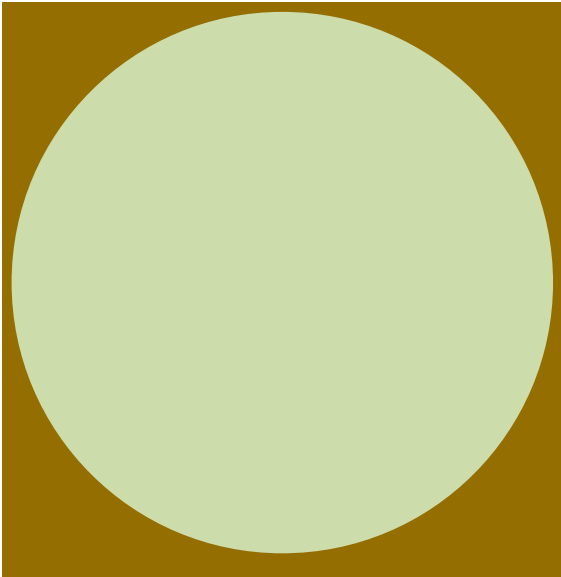
LASSEK

S/2172(Verbena)01
Orbit: 219,108km
Period (days): 15.56
Diameter: 1,465km
Mass: 7.639×10^{19} tonnes
Surface Gravity: 0.9760
Terraformed (year): 2415
Population: 1,200,000



BARRIMEND

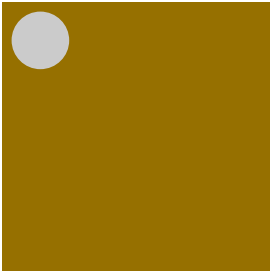
S/2172(Verbena)02
Orbit: 288,300km
Period (days): 20.48
Diameter: 2,009km
Mass: 1.528×10^{20} tonnes
Surface Gravity: 1.0284
Terraformed (year): 2415
Population: 3,000,000



CONSTANCE

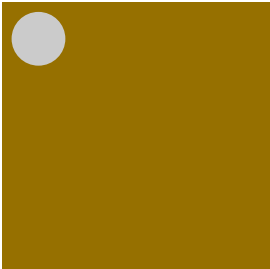
P/2027(Kalidasa)07
Primary: Kalidasa
Position: 3rd from primary
Orbit: 239,356,592km (1.600 AU)
Period (years): 2.02 (days): 739
Diameter: 11,976km
Mass: 5.527×10^{21} tonnes
Surface Gravity: 1.0469
Terraformed (year): 2415
Population: 85,000,000

MOONS:



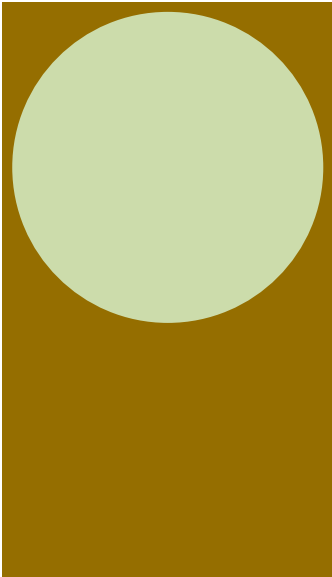
BARROWCLOUGH

S/2173(Constance)01
Orbit: 142,228km
Period (days): 10.10
Diameter: 1,278km
Mass: 6.051×10^{19} tonnes
Surface Gravity: 1.0065
Terraformed (year): 2415
Population: 250,000



DISRAELI

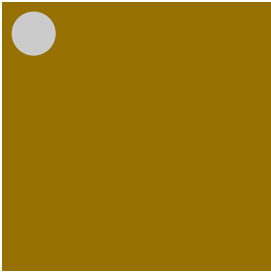
S/2173(Constance)02
Orbit: 280,612km
Period (days): 19.93
Diameter: 1,169km
Mass: 4.856×10^{19} tonnes
Surface Gravity: 0.9653
Terraformed (year): 2415
Population: 600,000



GLACIER

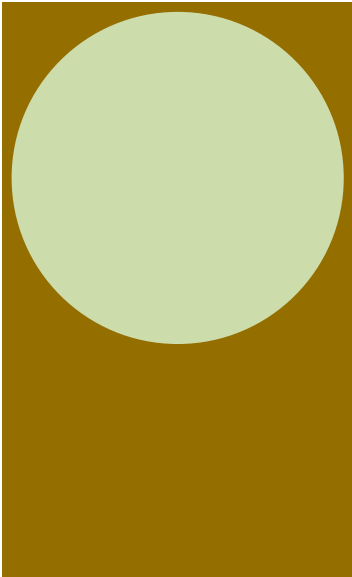
P/2028(Kalidasa)09
Primary: Kalidasa
Position: 4th from primary
Orbit: 351,554,995km (2.350 AU)
Period (years): 3.60 (days): 1,316
Diameter: 6,890km
Mass: 1.752×10^{21} tonnes
Surface Gravity: 1.0027
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



DENALI

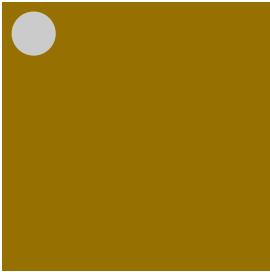
S/2178(Glacier)01
Orbit: 157,604km
Period (days): 11.19
Diameter: 996km
Mass: 3.670×10^{19} tonnes
Surface Gravity: 1.0050
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



VISHNU

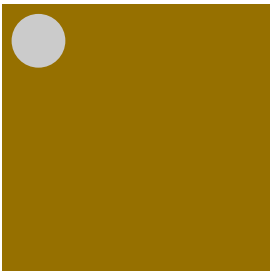
P/2029(Kalidasa)11
Primary: Kalidasa
Position: 5th from primary
Orbit: 407,654,196km (2.725 AU)
Period (years): 4.50 (days): 1,643
Diameter: 7,342km
Mass: 2.008×10^{21} tonnes
Surface Gravity: 1.0121
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



GANESHA

S/2179(Vishnu)02
Orbit: 146,072km
Period (days): 10.37
Diameter: 984km
Mass: 3.453×10^{19} tonnes
Surface Gravity: 0.9689
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



RAMA

S/2177(Vishnu)01
Orbit: 315,208km
Period (days): 22.39
Diameter: 1,006km
Mass: 3.613×10^{19} tonnes
Surface Gravity: 0.9700
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

HEAVEN

P/2027(Kalidasa)02

Position: 6th from primary

Orbit: 575,951,800km (3.850 AU)

Diameter: 135,709km

Silhouette not to scale

Primary: Kalidasa

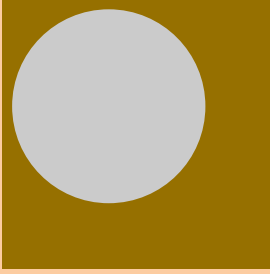
Surface Gravity: 2.4870

Period (years): 7.55 (days): 2,759

Mass: 1.708x10²⁴ tonnes

Silhouette scale size: 31.95 inches

MOONS:



URVASI

S/2170(Heaven)03

Orbit: 691,920km

Period (days): 49.14

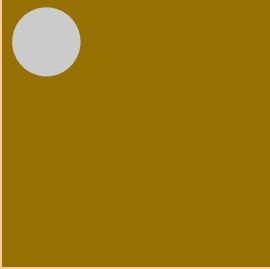
Diameter: 4,281km

Mass: 6.658x10²⁰ tonnes

Surface Gravity: 0.9869

Terraformed (year): 2420

Population: 77,500,000



MENAKA

S/2164(Heaven)01

Orbit: 768,800km

Period (days): 54.60

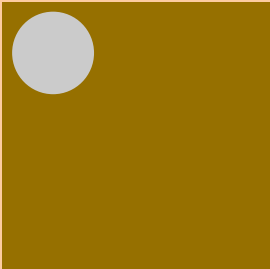
Diameter: 1,535km

Mass: 8.387x10¹⁹ tonnes

Surface Gravity: 0.9670

Terraformed (year): 2420

Population: 1,450,000



RAMBHA

S/2164(Heaven)02

Orbit: 1,441,500km

Period (days): 102.38

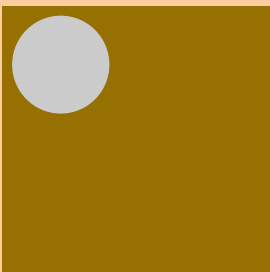
Diameter: 1,827km

Mass: 1.211x10²⁰ tonnes

Surface Gravity: 0.9857

Terraformed (year): 2420

Population: 962,000



TILOTTAMA

S/2170(Heaven)04

Orbit: 1,633,700km

Period (days): 116.03

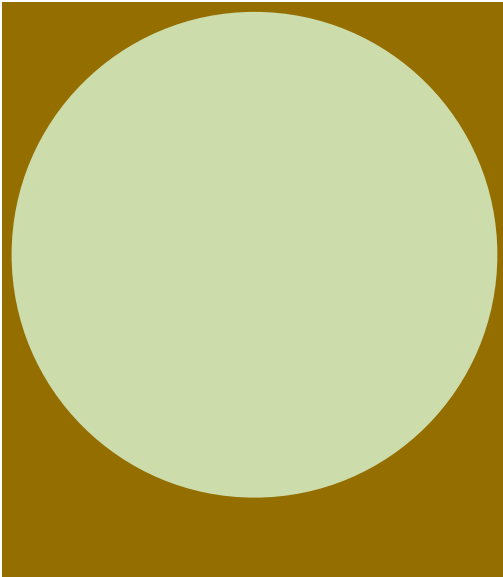
Diameter: 2,154km

Mass: 1.648x10²⁰ tonnes

Surface Gravity: 0.9648

Terraformed (year): 2420

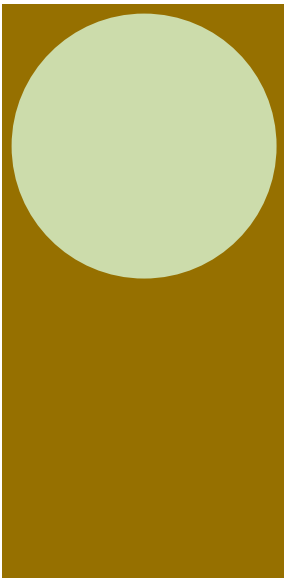
Population: 5,210,000



ANGEL

P/2027(Kalidasa)06
Primary: Kalidasa
Position: 7th from primary
Orbit: 688,150,202km (4.600 AU)
Period (years): 9.87 (days): 3,604
Diameter: 10,739km
Mass: 5.037×10^{21} tonnes
Surface Gravity:
Terraformed (year): 2410
Population: 62,000,000

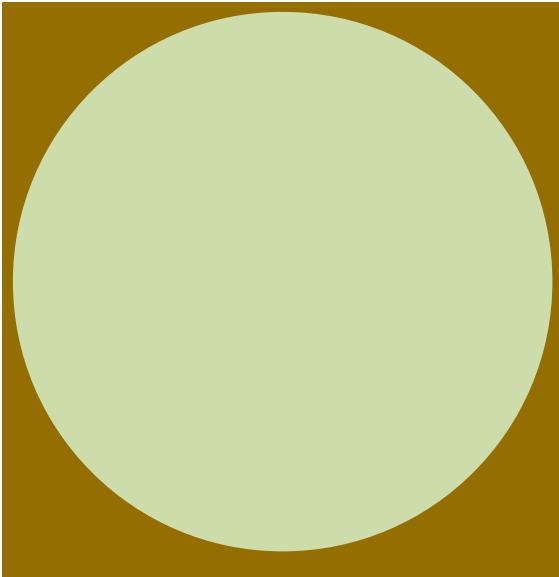
MOONS:



ZEPHYR

S/2165(Angel)01
Orbit: 688,150,202km (4.600 AU from Kalidasa – Angel's L4)
Period (years): 9.87 (days): 3,604
Diameter: 5,870km
Mass: 1.278×10^{21} tonnes
Surface Gravity: 1.0078
Terraformed (year): 2410
Population: 19,500,000

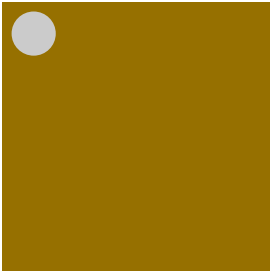
NOTE: Angel and Zephyr share the same orbit around Kalidasa. Zephyr was originally thought to be Angel's moon, and was classified as such, but Zephyr leads Angel by 60° , in her L4 position.



DELPHI

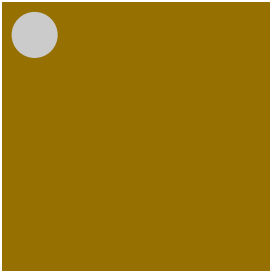
P/2029(Kalidasa)13
Primary: Kalidasa
Position: 8th from primary
Orbit: 744,249,403km (4.975 AU)
Period (years): 11.10 (days): 4,053
Diameter: 11,946km
Mass: 5.132×10^{21} tonnes
Surface Gravity: 0.9736
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



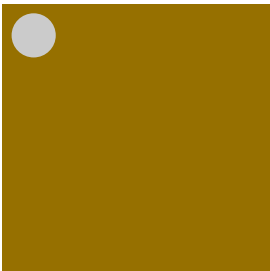
CLIO

S/2176(Delphi)02
Orbit: 69,192km
Period (days): 4.91
Diameter: 994km
Mass: 3.637×10^{19} tonnes
Surface Gravity: 1.0000
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



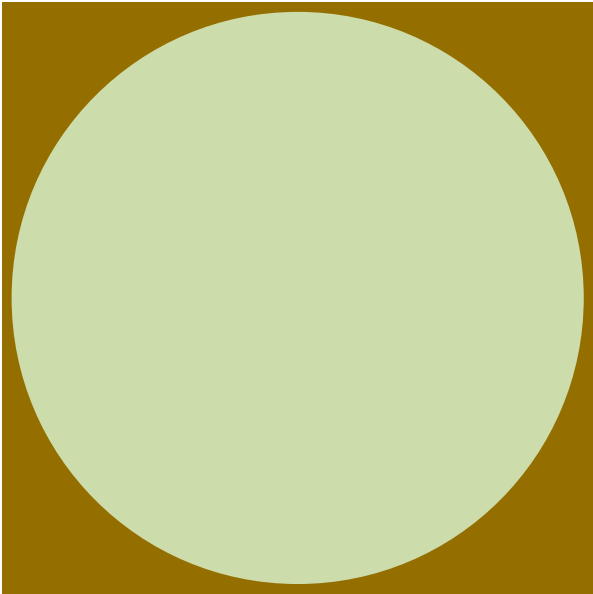
THALIA

S/2174(Delphi)01
Orbit: 188,356km
Period (days): 13.38
Diameter: 1,020km
Mass: 3.833×10^{19} tonnes
Surface Gravity: 1.0009
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



CALLIOPE

S/2176(Delphi)03
Orbit: 303,676km
Period (days): 21.57
Diameter: 981km
Mass: 3.539×10^{19} tonnes
Surface Gravity: 0.9991
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



NEW KASMIR

P/2028(Kalidasa)08

Primary: Kalidasa

Position: 9th from primary

Orbit: 800,348,605km (5.350 AU)

Period (years): 12.37 (days): 4,520

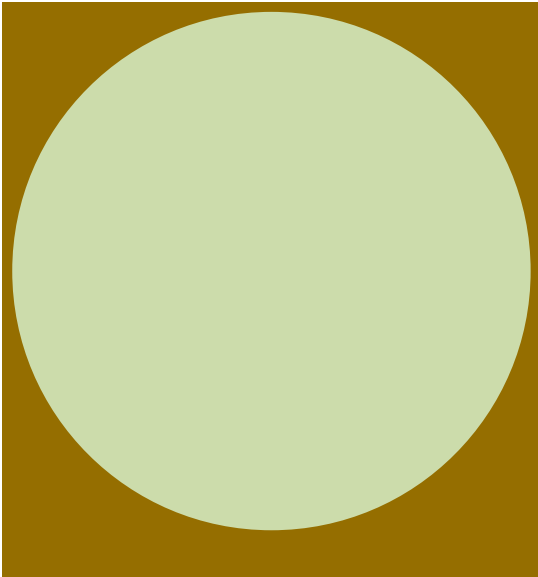
Diameter: 12,670km

Mass: 5.917×10^{21} tonnes

Surface Gravity: 1.0014

Terraformed (year): 2410

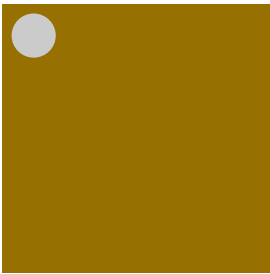
Population: 68,500,000



WHITTIER

P/2030(Kalidasa)15
Primary: Kalidasa
Position: 10th from primary
Orbit: 856,447,806km (5.725 AU)
Period (years): 13.70 (days): 5,003
Diameter: 11,468km
Mass: 4.985×10^{21} tonnes
Surface Gravity: 1.0297
Terraformed (year): 2410
Population: 36,500,000

MOONS:

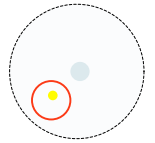


ITA

S/2176(Whittier)01
Orbit: 968,688km
Period (days): 68.80
Diameter: 965km
Mass: 3.155×10^{19} tonnes
Surface Gravity: 0.9204
Terraformed (year): Ongoing
Population: ~8,000+ (Terraform Crew + Depot Crew + other)

NOTE: Ita is the smallest body in the Verse to undergo terraforming. As a result, the terraforming efforts have not been successful. Ita has become a test bed for experimental terraforming techniques. In 2470, Ita was chosen as a location for a secondary Alliance orbital drydock facility. However budget restructuring has left the Ita facility as little more than a holding facility and scrapyards. "Towed to Ita" has become a euphemism for permanent impound. While there is a small used spaceship business at Ita, most ships leave Ita in pieces. The scrapyards at Ita's L4 and L5 positions are havens for small-time salvagers, both legitimate and otherwise.

PENGLAI



P/2020(Kalidasa)1

Class: Artificial Star

Helioformed: 2270

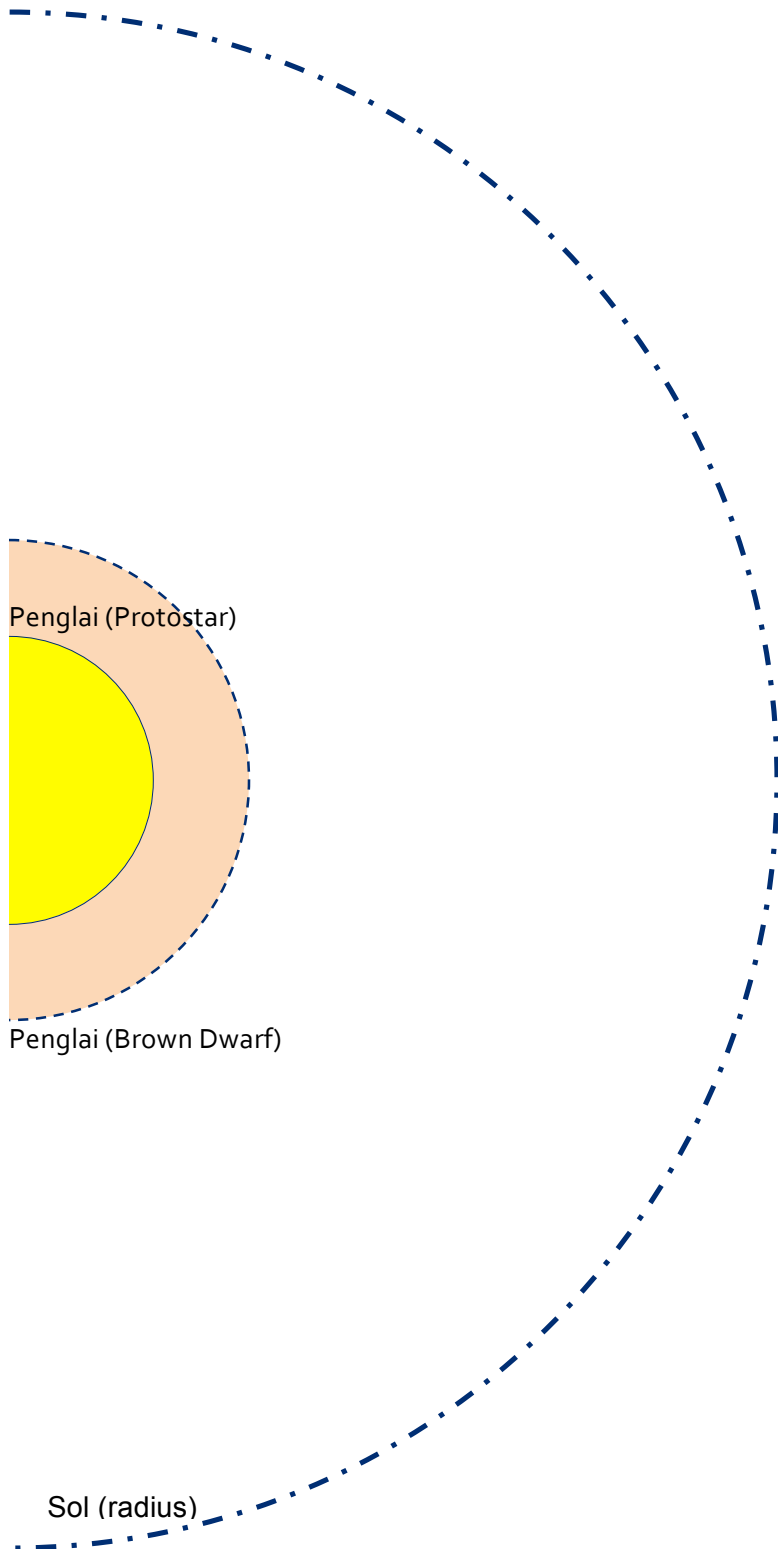
Radius: 0.32 Sol – Brown Dwarf (104.64 inches scale)

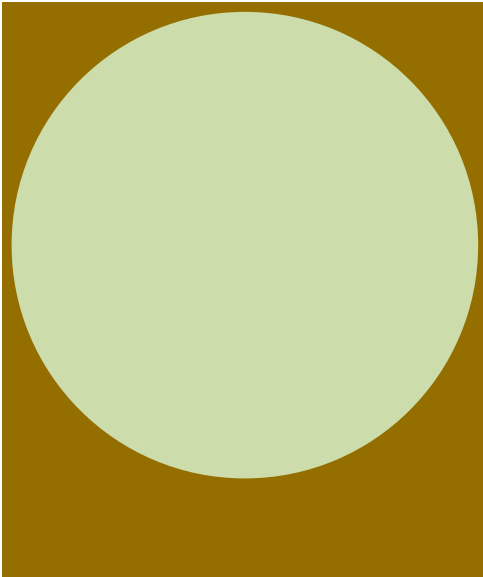
Radius: 0.19 Sol – Protostar (62.78 inches scale)

Mass: 0.32 Sol

Orbit: 1,221,092,614km (8.163 AU)

Period (years): 23.32

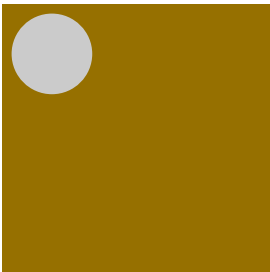




BEYLIK

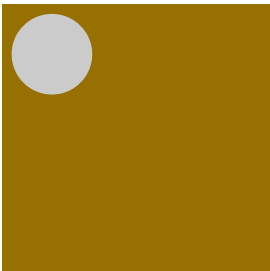
S/2040(Penglai)01
Primary: Penglai
Position: 1st from primary
Orbit: 4,138,472km
Period (days): 91
Diameter: 10,300km
Mass: 3.779×10^{21} tonnes
Surface Gravity: 0.9677
Terraformed (year): 2425
Population: 23,000,000

MOONS:



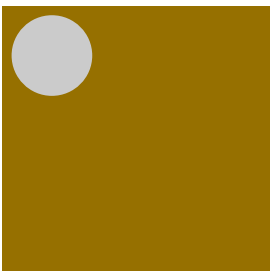
CHARITY

S/2165(Beylix)01
Orbit: 246,016km
Period (days): 17.47
Diameter: 1,470km
Mass: 7.705×10^{19} tonnes
Surface Gravity: 0.9687
Terraformed (year): 2425
Population: 750,000



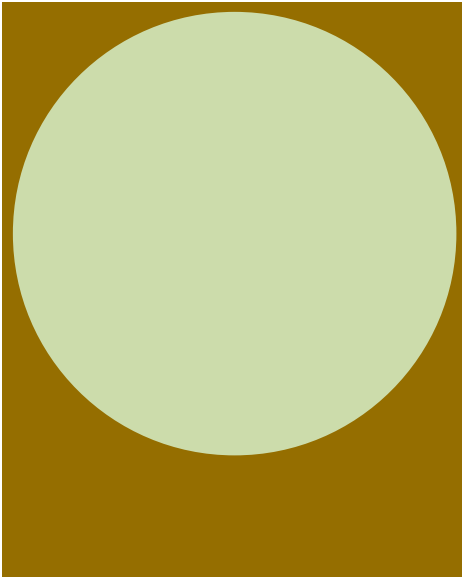
CINOTE

S/2165(Beylix)02
Orbit: 384,400km
Period (days): 27.30
Diameter: 1,358km
Mass: 6.546×10^{19} tonnes
Surface Gravity: 0.9643
Terraformed (year): 2425
Population: 400,000



ST. LUCIUS

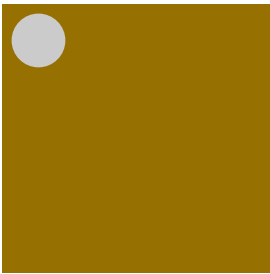
S/2165(Beylix)03
Orbit: 442,060km
Period (days): 31.40
Diameter: 1,029km
Mass: 3.852×10^{19} tonnes
Surface Gravity: 0.9882
Terraformed (year): 2425
Population: 330,000



NEWHALL

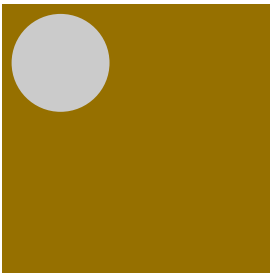
S/2040(Penglai)02
Primary: Penglai
Position: 2nd from primary
Orbit: 6,857,463km
Period (days): 151
Diameter: 9,806km
Mass: 3.591×10^{21} tonnes
Surface Gravity: 1.0145
Terraformed (year): 2425
Population: 8.000,000

MOONS:



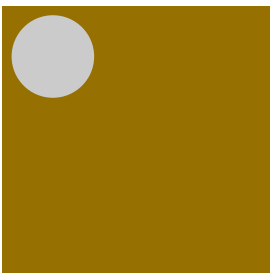
SEVERANCE

S/2165(Newhall)01
Orbit: 230,640km
Period (days): 16.38
Diameter: 1,172km
Mass: 5.102×10^{19} tonnes
Surface Gravity: 1.0091
Terraformed (year): 2425
Population: 400,000



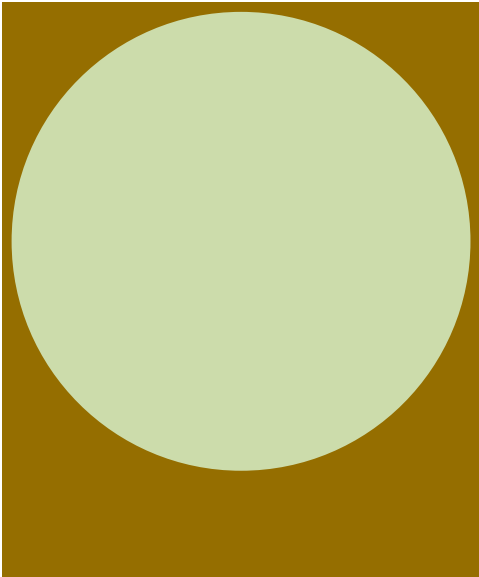
DARCHE

S/2165(Newhall)02
Orbit: 326,740km
Period (days): 23.21
Diameter: 2,183km
Mass: 1.839×10^{20} tonnes
Surface Gravity: 1.0482
Terraformed (year): 2425
Population: 2,000,000



MOHENRICHIA

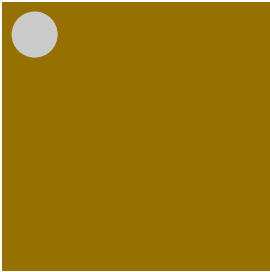
S/2165(Newhall)03
Orbit: 384,400km
Period (days): 27.30
Diameter: 1,846km
Mass: 1.239×10^{20} tonnes
Surface Gravity: 0.9874
Terraformed (year): 2425
Population: 500,000



OBERON

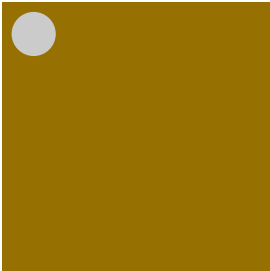
S/2042(Penglai)03
Primary: Penglai
Position: 3rd from primary
Orbit: 8,997,052km
Period (days): 198
Diameter: 10,155km
Mass: 3.914×10^{21} tonnes
Surface Gravity: 1.0310
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



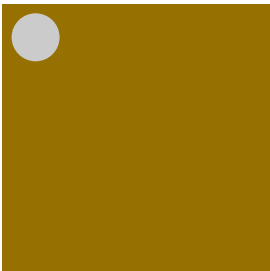
PUCK

S/2170(Oberon)01
Orbit: 113,398km
Period (days): 8.05
Diameter: 1,007km
Mass: 3.807×10^{19} tonnes
Surface Gravity: 1.0200
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



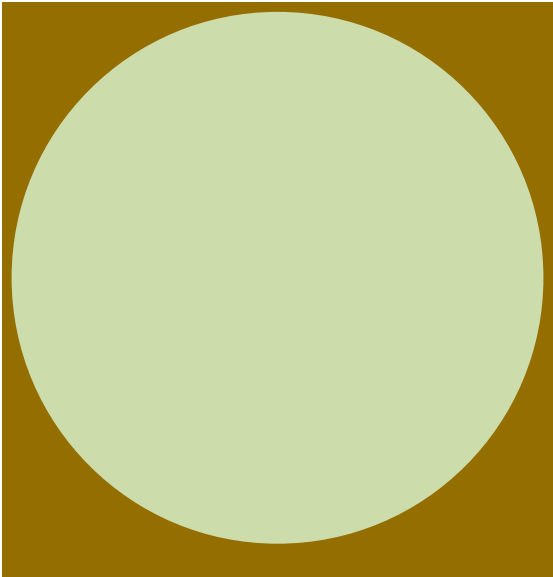
QUINCE

S/2171(Oberon)03
Orbit: 292,144km
Period (days): 20.75
Diameter: 990km
Mass: 3.611×10^{19} tonnes
Surface Gravity: 1.0010
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



BOTTOM

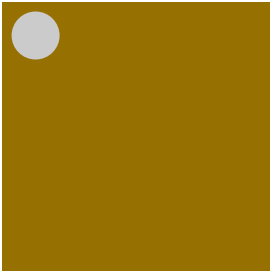
S/2170(Oberon)02
Orbit: 376,712km
Period (days): 26.75
Diameter: 1,050km
Mass: 4.066×10^{19} tonnes
Surface Gravity: 1.0020
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



GHOST

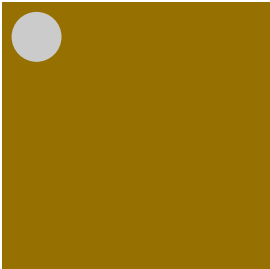
P/2032(Kalidasa)17
Primary: Kalidasa
Position: 12th from primary
Orbit: 1,585,737,422km (10.600 AU)
Period (years): 34.51 (days): 12,605
Diameter: 11,750km
Mass: 5.267×10^{21} tonnes
Surface Gravity: 1.0365
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

MOONS:



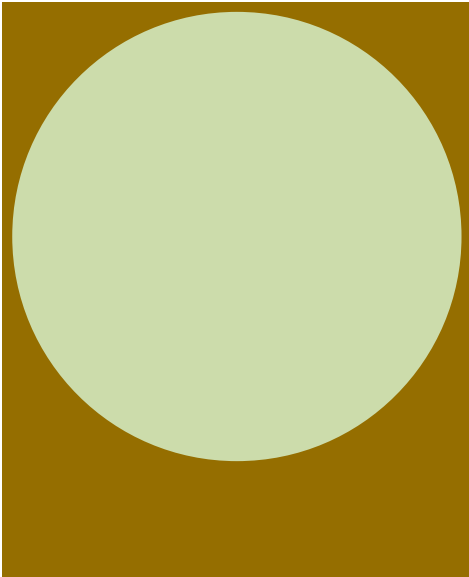
INFERNO

S/2173(Ghost)01
Orbit: 65,348km
Period (days): 4.64
Diameter: 1,057km
Mass: 4.137×10^{19} tonnes
Surface Gravity: 1.0060
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



HIBALIA

S/2173(Ghost)02
Orbit: 149,916km
Period (days): 10.65
Diameter: 1,101km
Mass: 4.471×10^{19} tonnes
Surface Gravity: 1.0021
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



ABERDEEN

P/2029(Kalidasa)12

Primary: Kalidasa

Position: 13th from primary

Orbit: 1,641,836,623km (10.975 AU)

Period (years): 36.36 (days): 13,280

Diameter: 9,931km

Mass: 3.733×10^{21} tonnes

Surface Gravity: 1.0284

Terraformed (year): 2430

Population: 12,000,000

ZEUS

P/2020(Kalidasa)03

Position: 14th from primary

Orbit: 1,810,134.227km (12.100 AU)

Diameter: 132,741km

Silhouette not to scale

Primary: Kalidasa

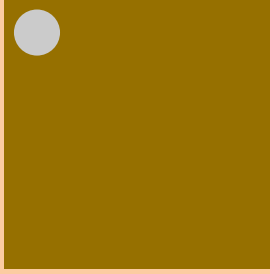
Surface Gravity: 2.4169

Period (years): 42.09 (days): 15,373

Mass: 1.553×10^{24} tonnes

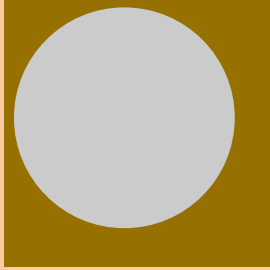
Silhouette scale size: 31.25 inches

MOONS:



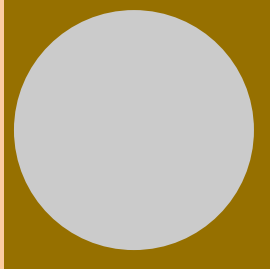
ISABEL

S/2178(Zeus)05
Orbit: 661,168km
Period (days): 46.96
Diameter: 1,000km
Mass: 3.565×10^{19} tonnes
Surface Gravity: 0.9684
Terraformed (year): 2420
Population: 60,000



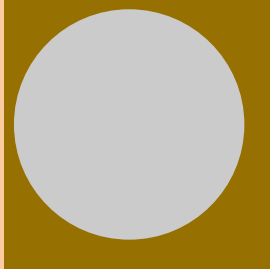
SOPHIE

S/2166(Zeus)01
Orbit: 757,268km
Period (days): 53.78
Diameter: 4,892km
Mass: 8.817×10^{20} tonnes
Surface Gravity: 1.0009
Terraformed (year): 2420
Population: 22,000,000



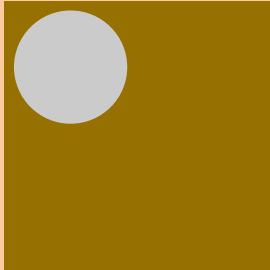
VICTORIA

S/2166(Zeus)02
Orbit: 826,460km
Period (days): 58.70
Diameter: 5,310km
Mass: 1.041×10^{21} tonnes
Surface Gravity: 1.0027
Terraformed (year): 2420
Population: 50,000,000



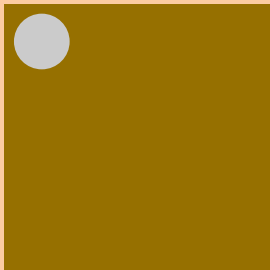
DELYNN

S/2166(Zeus)03
Orbit: 922,560km
Period (days): 65.52
Diameter: 5,111km
Mass: 9.659×10^{20} tonnes
Surface Gravity: 1.0045
Terraformed (year): 2420
Population: 35,000,500



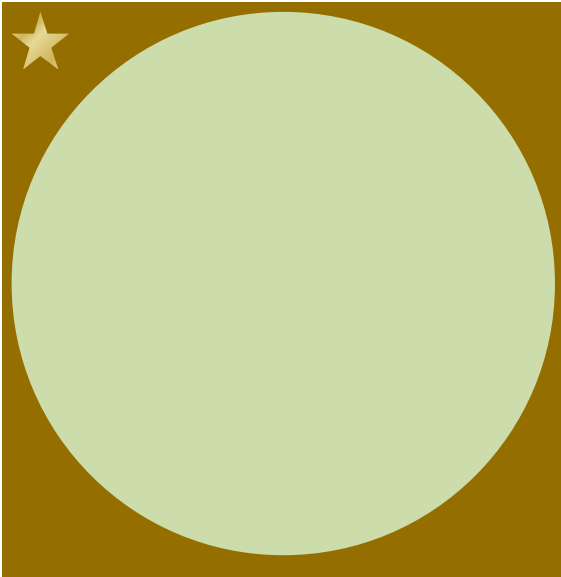
GAYLE

S/2169(Zeus)04
Orbit: 1,137,824km
Period (days): 80.81
Diameter: 2,486km
Mass: 2.283×10^{20} tonnes
Surface Gravity: 1.0036
Terraformed (year): 2420
Population: 250,000



BETTY

S/2178(Zeus)06
Orbit: 1,476,096km
Period (days): 104.83
Diameter: 1,234km
Mass: 5.615×10^{19} tonnes
Surface Gravity: 1.0018
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)

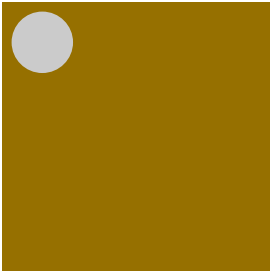


BEAUMONDE

P/2031(Kalidasa)16
Primary: Kalidasa
Position: 15th from primary
Orbit: 1,922,332,630km (12.850 AU)
Period (years): 46.06 (days): 16,825
Diameter: 12,026km
Mass: 5.339×10^{21} tonnes
Surface Gravity: 1.0029
Terraformed (year): 2433
Population: 184,000,000

Kalidasa Capital

MOONS:



HASTUR

S/2164(Beaumonde)01
Orbit: 115,320km
Period (days): 8.19
Diameter: 1,340km
Mass: 6.401×10^{19} tonnes
Surface Gravity: 0.9684
Terraformed (year): 2433
Population: 1,100,000

DJINN'S BANE

P/2027(Kalidasa)04

Position: 16th from primary

Orbit: 2,034,531,032km (13.600 AU)

Diameter: 201,568km

Silhouette not to scale

Primary: Kalidasa

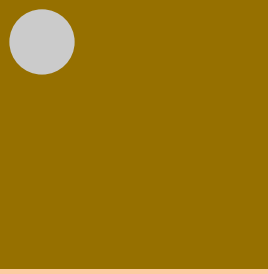
Surface Gravity: 3.1340

Period (years): 50.15 (days): 18,319

Mass: 7.052x10²⁴ tonnes

Silhouette scale size: 47.46 inches

MOONS:



ILLAT

S/2170(Djinn's Bane)01

Orbit: 1,499,160km

Period (days): 106.47

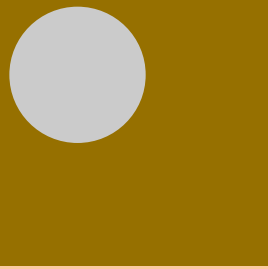
Diameter: 1,450km

Mass: 7.658x10¹⁹ tonnes

Surface Gravity: 0.9895

Terraformed (year): 2420

Population: 47,000



HILAL

S/2170(Djinn's Bane)02

Orbit: 1,672,140km

Period (days): 118.76

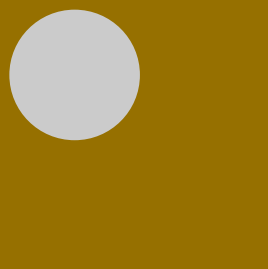
Diameter: 3,004

Mass: 3.200x10²⁰ tonnes

Surface Gravity: 0.9635

Terraformed (year): 2420

Population: 250,000



HUBAL

S/2170(Djinn's Bane)03

Orbit: 1,845,120km

Period (days): 131.04

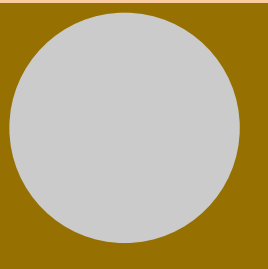
Diameter: 2,870km

Mass: 3.181x10²⁰ tonnes

Surface Gravity: 1.0493

Terraformed (year): 2420

Population: 6,000,000



SIN

S/2170(Djinn's Bane)04

Orbit: 2,114,200km

Period (days): 150.15

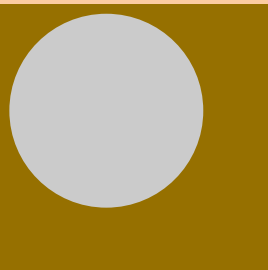
Diameter: 5,100km

Mass: 9.291x10²⁰ tonnes

Surface Gravity: 0.9704

Terraformed (year): 2420

Population: 16,500,000



TALAB

S/2170(Djinn's Bane)05

Orbit: 2,267,960km

Period (days): 161.07

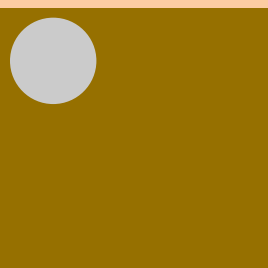
Diameter: 4,270km

Mass: 6.928x10²⁰ tonnes

Surface Gravity: 1.0323

Terraformed (year): 2420

Population: 12,000,000



WADD

S/2170(Djinn's Bane)06

Orbit: 2,402,500km

Period (days): 170.63

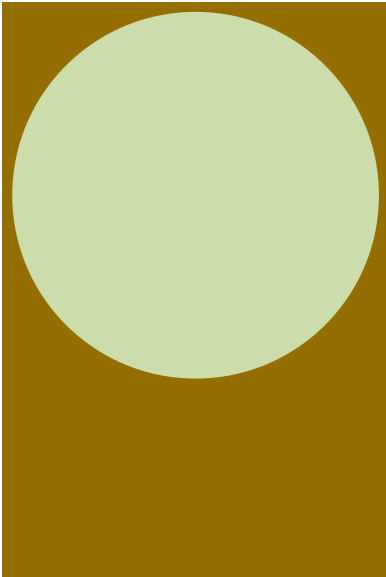
Diameter: 1,905km

Mass: 1.349x10²⁰ tonnes

Surface Gravity: 1.0102

Terraformed (year): 2420

Population: 20,000



SALISBURY

P/2027(Kalidasa)05

Primary: Kalidasa

Position: 17th from primary

Orbit: 2,146,729,435km (14.350 AU)

Period (years): 54.36 (days): 19,855

Diameter: 8,094km

Mass: 2.447×10^{21} tonnes

Surface Gravity: 1.0147

Terraformed (year): 2430

Population: 2,000,000

COMM STATION RING 2

Primary: White Sun
Position: Kalidasa Orbit
Orbit: 121 AU

A/2260(White Sun)r25m5
Position: Kalidasa +30°
Diameter: 970km
Mass: 3.460×10^{19} tonnes
Surface Gravity: 0.9990
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25m6
Position: Kalidasa +60° (L4)
Diameter: 985km
Mass: 3.552×10^{19} tonnes
Surface Gravity: 0.9945
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25m7
Position: Kalidasa +90°
Diameter: 1003km
Mass: 3.674×10^{19} tonnes
Surface Gravity: 0.9922
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25m8
Position: Kalidasa +120°
Diameter: 1018km
Mass: 3.776×10^{19} tonnes
Surface Gravity: 0.9900
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25m9
Position: Kalidasa +150°
Diameter: 992km
Mass: 3.442×10^{19} tonnes
Surface Gravity: 0.9502
Terraformed (year): 2305
Population: Mr. Universe

A/2260(White Sun)r25ma
Position: Kalidasa +180°
Diameter: 993km
Mass: 3.491×10^{19} tonnes
Surface Gravity: 0.9618
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25mf
Position: Kalidasa -30°
Diameter: 1,089km
Mass: 4.288×10^{19} tonnes
Surface Gravity: 0.9824
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25me
Position: Kalidasa -60° (L5)
Diameter: 1168km
Mass: 4.900×10^{19} tonnes
Surface Gravity: 0.9758
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25md
Position: Kalidasa -90°
Diameter: 1,073km
Mass: 4.213×10^{19} tonnes
Surface Gravity: 0.9942
Terraformed (year): 2305
Population: Unmanned

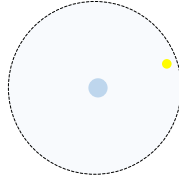
A/2260(White Sun)r25mc
Position: Kalidasa -120°
Diameter: 1,161km
Mass: 4.917×10^{19} tonnes
Surface Gravity: 0.9911
Terraformed (year): 2305
Population: Unmanned

A/2260(White Sun)r25mb
Position: Kalidasa -150°
Diameter: 1,000km
Mass: 3.628×10^{19} tonnes
Surface Gravity: 0.9855
Terraformed (year): 2305
Population: Unmanned

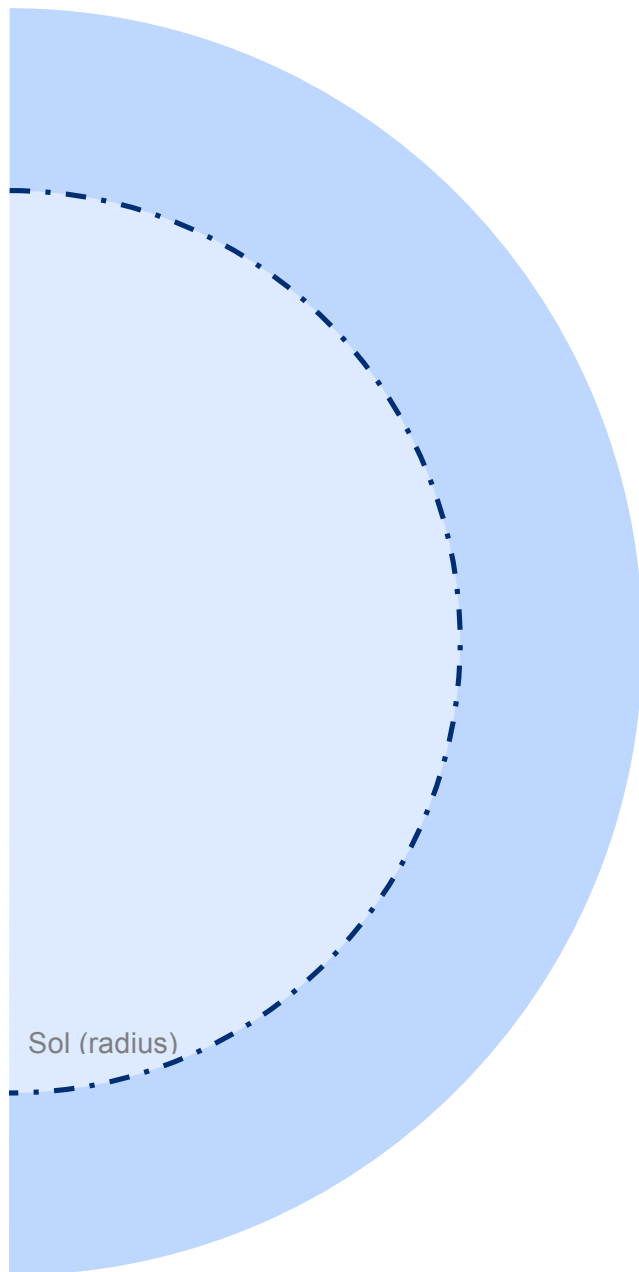
BLUE SUN

34Tauri(2020)E

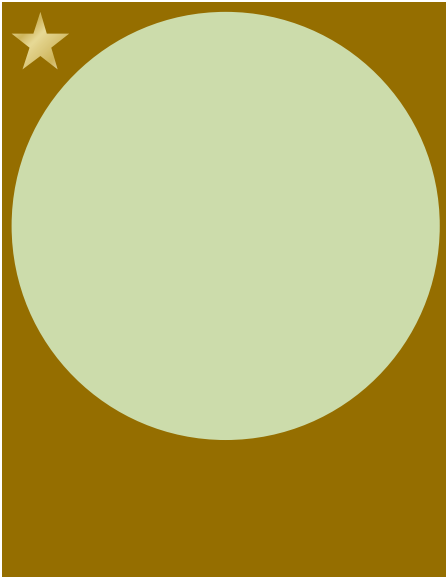
Class: F0
Radius: 1.4 Sol
Mass: 1.7 Sol
Luminosity: 6 Sol
Temperature: 7,240°K
Verse Location: 180 AU
Orbital Period: 2,414.95 years



Silhouette not to scale
Silhouette scale size: 457.80 inches
Silhouette color indicates temperature, not appearance



- ★ Meridian
- New Canaan
- Muir
- Fury
- Uroborus
- Highgate
- Dragon's Egg
- Deadwood
- Burnham
- Miranda

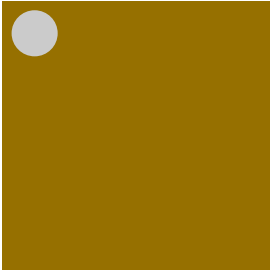


MERIDIAN

P/2031(Blue Sun)08
Primary: Blue Sun
Position: 1st from primary
Orbit: 246,836,486km (1.650 AU)
Period (years): 2.12 (days): 774
Diameter: 9,476km
Mass: 3.402×10^{21} tonnes
Surface Gravity: 1.0294
Terraformed (year): 2430
Population: 7,500,000

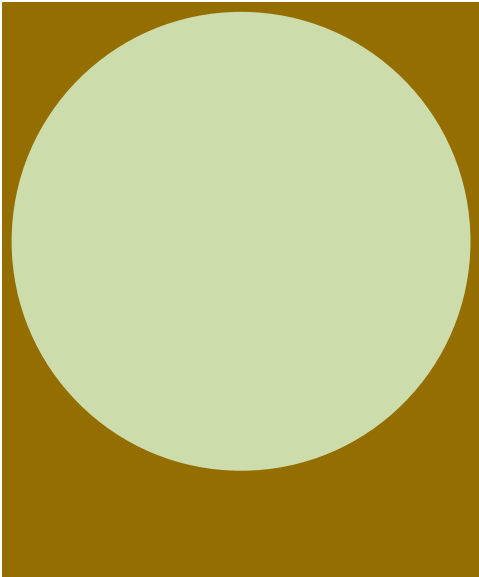
Blue Sun Capital

MOONS:



BURNET

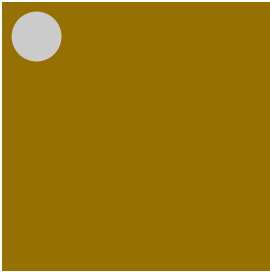
S/2179(Meridian)01
Orbit: 299,832km
Period (days): 21.29
Diameter: 1,004km
Mass: 3.721×10^{19} tonnes
Surface Gravity: 1.0029
Terraformed (year): 2430
Population: 750,000



NEW CANAAN

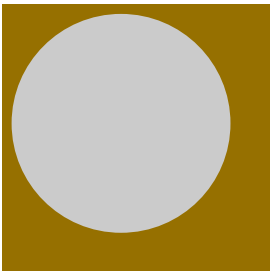
P/2027(Blue Sun)04
Primary: Blue Sun
Position: 2nd from primary
Orbit: 302,935,687km (2.025 AU)
Period (years): 2.88 (days): 1,053
Diameter: 10,171km
Mass: 3.710×10^{21} tonnes
Surface Gravity: 0.9743
Terraformed (year): Ongoing
Population: 238,000

MOONS:



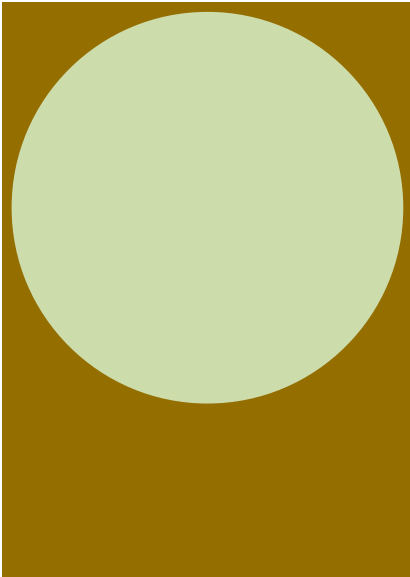
UG ARIT

S/2170(New Canaan)01
Orbit: 211,420km
Period (days): 15.02
Diameter: 1,123km
Mass: 4.696×10^{19} tonnes
Surface Gravity: 1.0115
Terraformed (year): 2435
Population: 46,000



LILAC

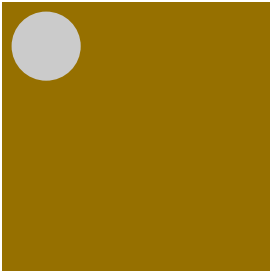
S/2170(New Canaan)02
Orbit: 238,328km
Period (days): 16.93
Diameter: 4,830km
Mass: 8.508×10^{20} tonnes
Surface Gravity: 0.9908
Terraformed (year): 2435
Population: 150,000



MUIR

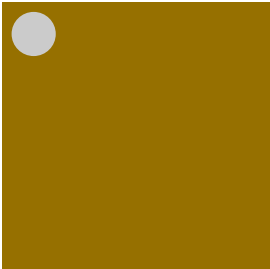
P/2030(Blue Sun)07
Primary: Blue Sun
Position: 3rd from primary
Orbit: 471,233,291km (3.150 AU)
Period (years): 5.59 (days): 2,042
Diameter: 8,649km
Mass: 2.650×10^{21} tonnes
Surface Gravity: 0.9623
Terraformed (year): 2440
Population: 3,500,000

MOONS:



ARMINIUS

S/2170(Muir)01
Orbit: 130,696km
Period (days): 9.28
Diameter: 1,523km
Mass: 8.300×10^{19} tonnes
Surface Gravity: 0.9721
Terraformed (year): 2440
Population: 450,000



SHEPHERD'S MISSION

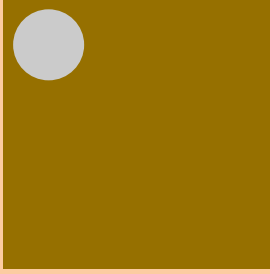
S/2170(Muir)02
Orbit: 249,860km
Period (days): 17.75
Diameter: 971
Mass: 3.363×10^{19} tonnes
Surface Gravity: 0.9691
Terraformed (year): 2440
Population: 175,000

FURY

P/2020(Blue Sun)02
Position: 4th from primary
Orbit: 920,026,901km (6.150 AU)
Diameter: 368,970km
Silhouette not to scale

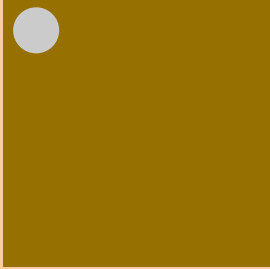
Primary: Blue Sun
Surface Gravity: 4.2750
Period (years): 15.25 (days): 5,571
Mass: 5.900×10^{25} tonnes
Silhouette scale size: 86.87 inches

MOONS:



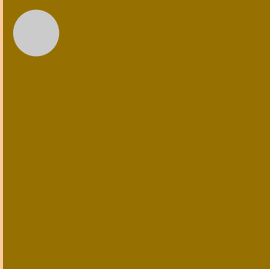
COLDSTONE

S/2165(Fury)02
Orbit: 3,459,600km
Period (days): 245.70
Diameter: 1,578km
Mass: 9.066×10^{19} tonnes
Surface Gravity: 0.9891
Terraformed (year): 2420
Population: 89,000



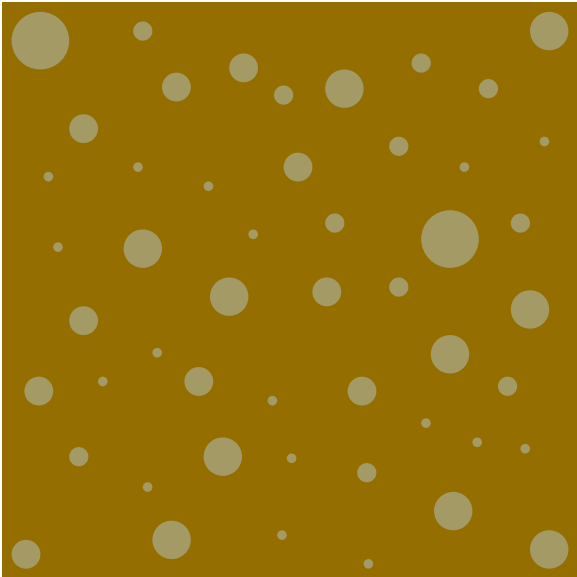
BLACKWOOD

S/2164(Fury)01
Orbit: 3,844,000km
Period (days): 273.00
Diameter: 1,001km
Mass: 3.812×10^{19} tonnes
Surface Gravity: 1.0336
Terraformed (year): 2420
Population: 48,750



SEVENTH CIRCLE

S/2165(Fury)03
Orbit: 7,688,000km
Period (days): 546.00
Diameter: 1,020km
Mass: 3.879×10^{19} tonnes
Surface Gravity: 1.0128
Terraformed (year): Scheduled
Population: 5,000 (Terraform Crew)



UROBORUS

Asteroid Belt

Primary: Blue Sun

Inner Boundary: 1,032,225,303km (6.900 AU)

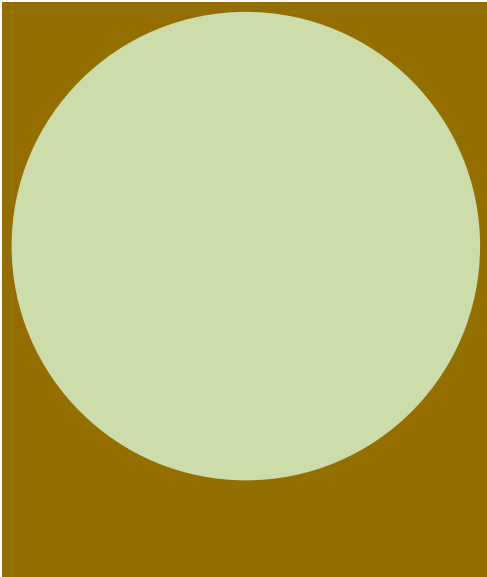
Outer Boundary: 1,256,622,108km (8.400 AU)

Average Width: 224,396,805km (1.500 AU)

Number of cataloged objects: 372,971

Asteroid designation uses numbers and letters (excluding i, l, o, and z).

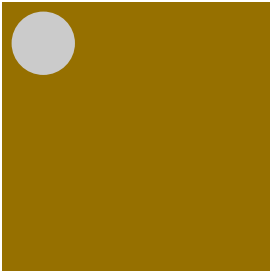
Example: A/2235(Blue Sun)1cj59



HIGHGATE

P/2029(Blue Sun)05
Primary: Blue Sun
Position: 5th from primary
Orbit: 1,368,820,511km (9.150 AU)
Period (years): 27.68 (days): 10,109
Diameter: 10,350km
Mass: 3.958×10^{21} tonnes
Surface Gravity: 1.0038
Terraformed (year): 2435
Population: 2,750,000

MOONS:



PERTH

S/2164(Highgate)01
Orbit: 219,108km
Period (days): 15.56
Diameter: 1,400km
Mass: 7.158×10^{19} tonnes
Surface Gravity: 0.9921
Terraformed (year): 2435
Population: 250,000

MOONS:

DRAGON'S EGG

P/2027(Blue Sun)03

Position: 6th from primary

Orbit: 1,761,514,919km (11.775 AU)

Diameter: 186,300km

Silhouette not to scale

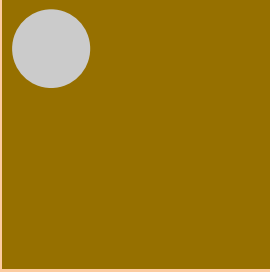
Primary: Blue Sun

Surface Gravity: 2.7124

Period (years): 40.41 (days): 14,758

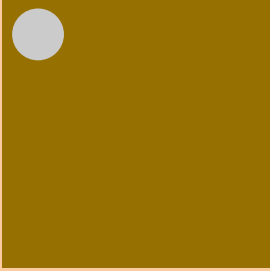
Mass: 4.819x10²⁴ tonnes

Silhouette scale size: 43.86 inches



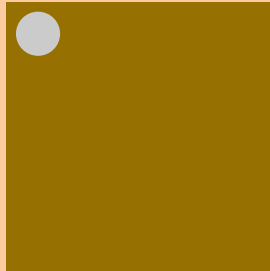
YUDHISHTIRA

S/2165(Dragon's Egg)01
Orbit: 1,151,200km
Period (days): 81.90
Diameter: 1,738
Mass: 1.070x10²⁰ tonnes
Surface Gravity: 0.9619
Terraformed (year): 2420
Population: 200,000



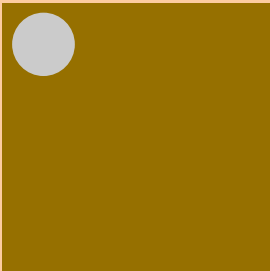
BHIMA

S/2165(Dragon's Egg)02
Orbit: 1,345,400km
Period (days): 95.55
Diameter: 1,160km
Mass: 5.140x10¹⁹ tonnes
Surface Gravity: 1.0378
Terraformed (year): 2420
Population: 46,000



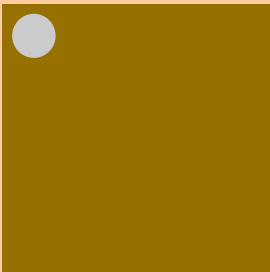
NAKULA

S/2165(Dragon's Egg)03
Orbit: 1,537,600km
Period (days): 109.20
Diameter: 988km
Mass: 3.499x10¹⁹ tonnes
Surface Gravity: 0.9738
Terraformed (year): 2420
Population: 65,500



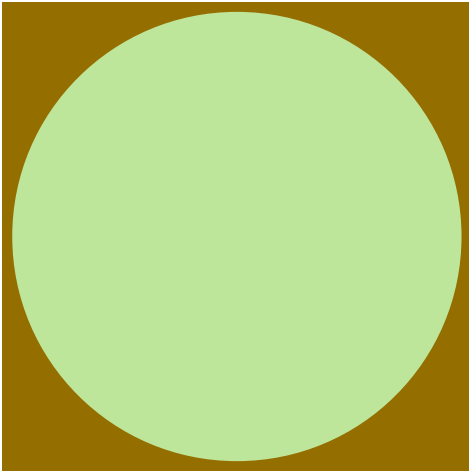
SAHADEVA

S/2165(Dragon's Egg)04
Orbit: 1,729,800km
Period (days): 122.85
Diameter: 1,392km
Mass: 6.917x10¹⁹ tonnes
Surface Gravity: 0.9698
Terraformed (year): 2420
Population: 8,000



GLYNIS

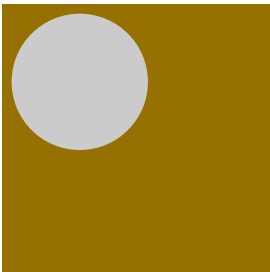
S/2165(Dragon's Egg)05
Orbit: 1,922,000km
Period (days): 136.50
Diameter: 990km
Mass: 3.734x10¹⁹ tonnes
Surface Gravity: 1.0349
Terraformed (year): 2420
Population: 1,000



DEADWOOD

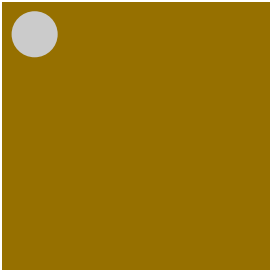
P/2030(Blue Sun)06
Primary: Blue Sun
Position: 7th from primary
Orbit: 2,098,110,127km (14.025 AU)
Period (years): 52.52 (days): 19,184
Diameter: 9,930km
Mass: 3.646×10^{21} tonnes
Surface Gravity: 1.0046
Terraformed (year): 2400
Population: 1,570,000

MOONS:



HAVEN

S/2164(Deadwood)01
Orbit: 184,512km
Period (days): 13.10
Diameter: 3,012km
Mass: 3.386×10^{20} tonnes
Surface Gravity: 1.0141
Terraformed (year): 2400
Population: 78,000



NEW OMAHA

S/2164(Deadwood)02
Orbit: 369,024km
Period (days): 26.21
Diameter: 1,025km
Mass: 3.716×10^{19} tonnes
Surface Gravity: 0.9608
Terraformed (year): 2400
Population: 50,000

BURNHAM

P/2020(Blue Sun)1

Class: Artificial Star

Helioformed: 2253

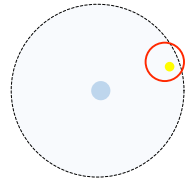
Radius: 0.30 Sol – Brown Dwarf (98.10 inches scale)

Radius: 0.18 Sol – Protostar (58.86 inches scale)

Mass: 0.30 Sol

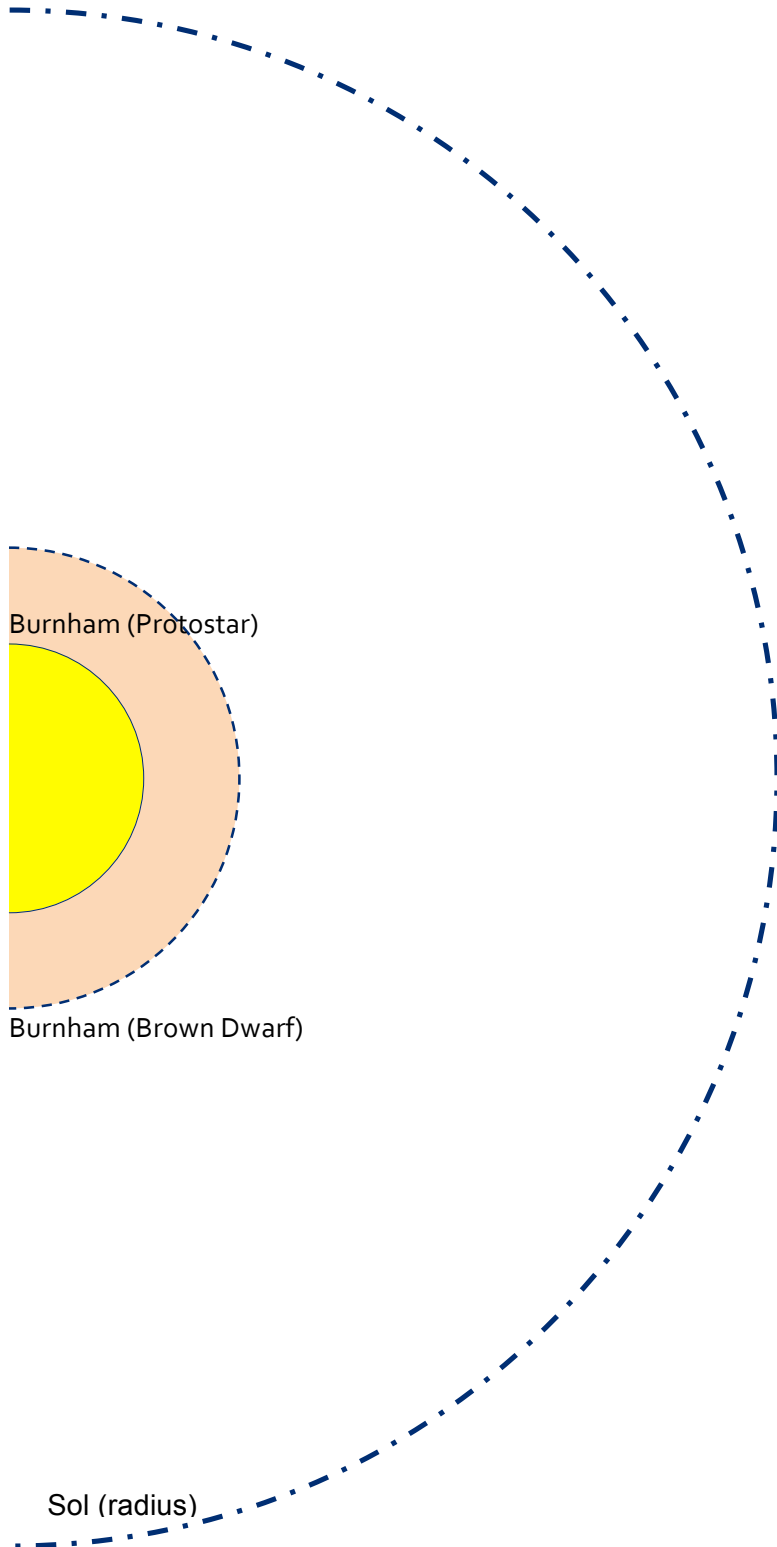
Orbit: 3,440,751,010km (23.000 AU)

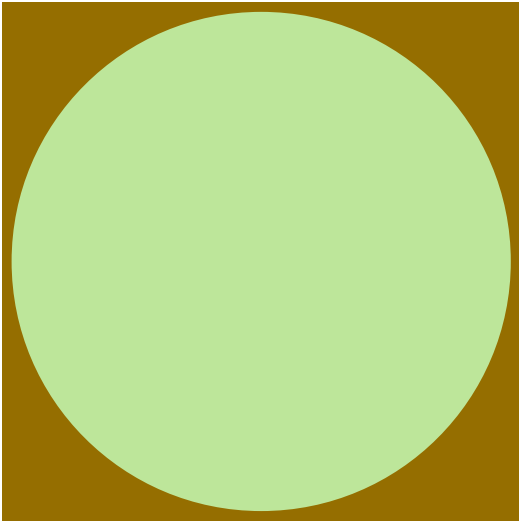
Period (years): 110.30



HISTORICAL NOTE:

Burnham was the first brown dwarf to be *Helioformed*, or compressed and ignited into an artificial sun, also called a “protostar.” It was determined that Burnham was the best candidate for this very experimental and dangerous procedure, due to its distance from the more populous core worlds, and its small size. After the process was refined at Burnham, it was then applied to the other six brown dwarfs in the Verse. The last brown dwarf to be helioformed was Qin Shi Huang, and only after the process was deemed as error-free as humanly possible.

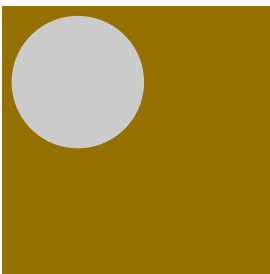




MIRANDA

S/2038(Burnham)1
Primary: Burnham
Position: 1st from primary
Orbit: 5,534,318km
Period (days): 122
Diameter: 11,023km
Mass: 4.473×10^{21} tonnes
Surface Gravity: 1.0001
Terraformed (year): 2433
Population: ~5,200+ (Reavers)

MOONS:



CALIBAN

S/2190(Miranda)01
Orbit: 88,412km
Period (days): 6.28
Diameter: 1,025km
Mass: 3.004×10^{20} tonnes
Surface Gravity: 0.9637
Terraformed (year): On Hold
Population: 0

NUMBERING THE VERSE

In the year 2020, an astronomer noted a new star cluster in the constellation of Taurus. He submitted his discovery and requested that the new cluster's designation be "34Tauri(2020)" in honor of his ancestor, John Flamsteed*. The name was approved. In the same year, a total of five stars were recorded in 34Tauri(2020), and listed as 34Tauri(2020)A through 34Tauri(2020)E. Also in that year, fourteen gas giants were also discovered. Seven were large enough to qualify as brown dwarfs, while the remaining seven were of Jovian size. As new bodies were discovered, they were added to the cluster's catalog with the following naming convention:

X/????(Y)Z

X = Celestial Body

P = Planet (gas giant or terrestrial)

S = Satellite (of any size, also satellites of satellites)

A = Asteroid

???? = Discovery Date (year)

Y = Primary

Z = Order of bodies discovered or cataloged for a particular primary

So, Londinium's designation is P/2027(White Sun)03, which means that Londinium is the third planet to be discovered orbiting White Sun, and was discovered in the year 2027. Londinium's full designation, without common names is P/2027(34Tauri(2020)A)03.

The full designation of New Luxor shows its place in the mapping of the Verse:

S/2176(S/2032(P/2020(34Tauri(2020)A)01)01)02

New Luxor, discovered in 2176, was the second satellite to be found orbiting Santo. Santo, discovered in 2032, is the first and only satellite of the gas giant Qin Shi Huang. The gas giant Qin Shi Huang, discovered in 2020, was the first planet to be discovered orbiting White Sun. Note that the number at the end of the designation, Z, shows the order of discovery, not the body's position in the system.

To simplify the full designation above:

34Tauri(2020)A = White Sun, Qin Shi Huang's primary

P/2020(White Sun)01 = Qin Shi Huang, the first planet to be discovered orbiting White Sun, and Santo's primary

S/2032(Qin Shi Huang)01 = Santo, the satellite orbiting Qin Shi Huang, and New Luxor's primary

S/2176(Santo)02 = New Luxor, the second of two satellites found to be orbiting, not Qin Shi Huang, but Santo instead.

Even though Santo is large enough to be considered a planet in its own right, it is classified as a satellite because it is orbiting Qin Shi Huang. Qin Shi Huang is a "protostar," or helioformed gas giant. It may be a star now, but its natural state is a gas giant, so its designation is that of a planet.

Asteroids follow the same designation format with one change: Due to the high number of bodies that would be cataloged in an asteroid belt, the catalog order number, Z, counts from 1 through 9, then continues with "a" through "y" (excluding l, o, and z) before continuing with 10. For example: 1, 2, ..., 9, a, b, ..., x, y, 10, 11, ...19, 1a, ...1y, 20, etc.

*Note: To date, no one has been able to recover the astronomer's name or home observatory from any record, so the astronomer's relation to Mr. Flamsteed is highly suspect.

TO TERRAFORM OR NOT

“Dozens of planets and hundreds of moons. Each one terraformed – a process taking decades – to support human life. To be new Earths.”

What gets terraformed? Terraforming can be performed on any body that meets the following criteria:

- ❖ It has to be large enough for Hydrostatic Equilibrium to form it into a sphere. For a rocky body with a composition that would be useful to settlers, the minimum size is 970km in diameter, or the size of the asteroid Ceres. Anything smaller would have an irregular shape that wouldn't hold an atmosphere all over.
- ❖ Its diameter cannot be greater than 1.4 times ETW (Earth That Was) due to limitations in terraforming technology.
- ❖ The target must lie in a 13.5 AU wide band around the star. The inner and outer boundaries for this band depend on the star's temperature. Currently, our technology is much better at warming cold places than cooling hot places.

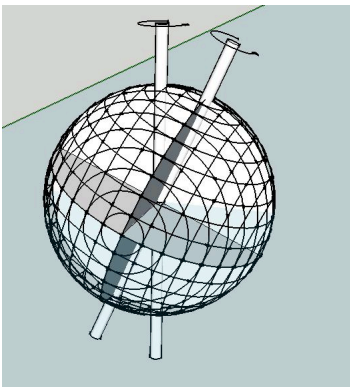
What needs to be done?

- ❖ The gravity needs to be adjusted to ETW-normal. Here's the reason for the upper size limit. It is much easier with our current technology to increase the gravity of a planet than it is to decrease the gravity. A less dense world can be compressed to increase its density and gravity. A world with more than twice the surface area of ETW (1.4 x the diameter) is too big to terraform.
- ❖ Continents and seabeds need to be sculpted.
- ❖ Atmospheric gases need to be released from the crust – water as well.
- ❖ What may well be lifeless rock needs to be processed into soil that will grow plants and crops.
- ❖ The planet's rotation and axial tilt need to be adjusted so that the planet has a 24 hour day and a standard 365-day seasonal year (see below).
- ❖ Plant and animal life needs to be introduced.
- ❖ Atmosphere processors are set to a maintenance mode to help maintain an ideal mixture of gases until the biosphere develops enough to handle that function.

The planet is now ready for colonization.

One of the biggest challenges faced by terraforming crews is the introduction of plant and animal life into a created environment on an alien world. How are plants and animals going to cope with seasons that will last for years? And how will colonists cope with calendars that are different for every world?

They won't have to. The terraforming crews will adjust the rotation period of the planet for a 24-hour day. They'll adjust the axial tilt to 23.439 degrees. Then they'll add a second rotational axis at 0 degrees (perpendicular to the plane of the system) with a rotation period of 365.25 days. This second axis will cause the planet to cycle through one complete seasonal year in 365.25 days, regardless of where the planet is in its orbit around its sun.



Summers will last just long enough to ripen crops, and not so long as to bake them in the fields. Animals with millions of years of migrations wired into their brains will know when to migrate away, and when to come home. The colonists' calendars will be aligned to the seasonal year instead of the planet's orbital revolution.

And Unification Day (along with every other holiday) will be celebrated on the same day on every world in the Verse.

THE VERSE DISCOVERED

Designation	Name	Designation	Name	Designation	Name
34Tauri(2020)A	White Sun	P/2028 (Kalidasa)10	Sho-Je Downs	S/2164(Aphrodite)01	Sturges
P/2020(White Sun)01	Qin Shi Huang	P/2029(Red Sun)07	New Melbourne	S/2164(Aphrodite)02	Hill
P/2020(White Sun)02	Lux	P/2029 (Kalidasa)11	Vishnu	S/2164(Aphrodite)03	Thornley
34Tauri(2020)B	Georgia	P/2029 (Kalidasa)12	Aberdeen	S/2164(Aphrodite)04	Anton
P/2020(Georgia)01	Murphy	P/2029 (Kalidasa)13	Delphi	S/2164(Triumph)01	Mycroft
P/2020(Georgia)02	Elphame	P/2029(Blue Sun)05	Highgate	S/2164(Lazarus)01	Dora
P/2020(Georgia)03	Daedulus	P/2030(Georgia)08	Three Hills	S/2164(Heaven)01	Menaka
34Tauri(2020)C	Red Sun	P/2030(Georgia)09	Di Yu	S/2164(Heaven)02	Rambha
P/2020(Red Sun)01	Himinbjorg	P/2030(Georgia)10	Kerry	S/2164(Beaumonde)01	Hastur
P/2020(Red Sun)02	Heinlein	P/2030(Georgia)11	Ezra	S/2164(Fury)01	Blackwood
34Tauri(2020)D	Kalidasa	P/2030(Red Sun)08	Harvest	S/2164(Highgate)01	Perth
P/2020(Kalidasa)01	Penglai	P/2030(Red Sun)09	Jubilee	S/2164(Deadwood)01	Haven
P/2020(Kalidasa)02	Heaven	P/2030 (Kalidasa)14	Verbena	S/2164(Deadwood)02	New Omaha
P/2020(Kalidasa)03	Zeus	P/2030 (Kalidasa)15	Whittier	S/2165(Angel)01	Zephyr
P/2020 (Kalidasa)04	Djinn's Bane	P/2030(Blue Sun)06	Deadwood	S/2165(Beylix)01	Charity
34Tauri(2020)E	Blue Sun	P/2030(Blue Sun)07	Muir	S/2165(Beylix)02	Cinote
P/2020(Blue Sun)01	Burnham	P/2031(Georgia)12	Regina	S/2165(Beylix)03	St. Lucius
P/2020(Blue Sun)02	Fury	P/2031(Georgia)13	Ithaca	S/2165(Newhall)01	Severance
P/2020(Blue Sun)03	Dragon's Egg	P/2031(Georgia)14	Prophet	S/2165(Newhall)02	Darcke
P/2027(White Sun)03	Londinium	P/2031 (Kalidasa)16	Beaumonde	S/2165(Newhall)03	Mohenrichia
P/2027(White Sun)04	Sihnon	P/2031(Blue Sun)08	Meridian	S/2165(Fury)02	Coldstone
P/2027(White Sun)05	Gonghe	S/2032(Qin Shi Huang)01	Santo	S/2165(Fury)03	Seventh Circle
P/2027(White Sun)06	Osiris	P/2032 (Kalidasa)17	Ghost	S/2165(Dragon's Egg)01	Yudhishtira
P/2027(White Sun)07	Ariel	S/2035(Himinbjorg)01	Aesir	S/2165(Dragon's Egg)02	Bhima
P/2027(White Sun)08	Bellerophon	S/2035(Himinbjorg)02	Moab	S/2165(Dragon's Egg)03	Nakula
P/2027(Georgia)04	Athens	S/2035(Himinbjorg)03	Brisingamen	S/2165(Dragon's Egg)04	Sahadeva
P/2027(Georgia)05	Newhope	S/2035(Himinbjorg)04	Anvil	S/2165(Dragon's Egg)05	Glynis
P/2027(Georgia)06	Boros	S/2036(Heinlein)01	Triumph	S/2166(Zeus)01	Sophie
P/2027(Georgia)07	Meadow	S/2036(Heinlein)02	Silverhold	S/2166(Zeus)02	Victoria
P/2027(Red Sun)03	Jiangyin	S/2037(Murphy)01	Aphrodite	S/2166(Zeus)03	Delynn
P/2027(Red Sun)04	St. Albans	S/2037(Murphy)02	Shadow	S/2169(Zeus)04	Gayle
P/2027 (Kalidasa)05	Salisbury	S/2038(Heinlein)03	Paquin	S/2170(Heaven)03	Urvasi
P/2027 (Kalidasa)06	Angel	S/2038(Heinlein)04	Lazarus	S/2170(Heaven)04	Tilottama
P/2027 (Kalidasa)07	Constance	S/2038(Burnham)01	Miranda	S/2170(Oberon)01	Puck
P/2027(Blue Sun)04	New Canaan	S/2040(Lux)01	Pelorum	S/2170(Oberon)02	Bottom
P/2028(White Sun)09	Valentine	S/2040(Lux)02	Persephone	S/2170(Djinn's Bane)01	Illat
P/2028(White Sun)10	Rubicon	S/2040(Penglai)01	Beylix	S/2170(Djinn's Bane)02	Hilal
P/2028(White Sun)11	Albion	S/2040(Penglai)02	Newhall	S/2170(Djinn's Bane)03	Hubal
P/2028(White Sun)12	Liann Jiun	S/2041(Murphy)03	Hera	S/2170(Djinn's Bane)04	Sin
P/2028(White Sun)13	Bernadette	S/2042(Penglai)03	Oberon	S/2170(Djinn's Bane)05	Ta'lab
P/2028(Red Sun)05	Greenleaf	S/2164(Sihnon)01	Xiaojie	S/2170(Djinn's Bane)06	Wadd
P/2028(Red Sun)06	Anson's World	S/2164(Three Hills)01	New Lafayette	S/2170(New Canaan)01	Ugarit
P/2028 (Kalidasa)08	New Kasmir	S/2164(Three Hills)02	Conrad	S/2170(New Canaan)02	Lilac
P/2028 (Kalidasa)09	Glacier	S/2164(Three Hills)03	Bob	S/2170(Muir)01	Arminius

Designation	Name	Designation	Name	Designation	Name
S/2170(Muir)02	Shepherd's Mission	S/2173(Ghost)01	Inferno	S/2176(Anson's World)02	Spider
S/2171(Oberon)03	Quince	S/2173(Ghost)02	Xibalia	S/2176(Anson's World)03	Steele
S/2172(Londinium)01	Colchester	S/2174(Regina)01	Alexandria	S/2176(Paquin)02	Shinbone
S/2172(Londinium)02	Balkerne	S/2174(Newhope)01	The Commons	S/2176(Sho-Je Downs)02	Miyazaki
S/2172(Bellerophon)01	Tyrins	S/2174(Harvest)01	Farraday	S/2176(Delphi)02	Clio
S/2172(Bellerophon)02	Xanthus	S/2174(Anson's World)01	Varley	S/2176(Delphi)03	Calliope
S/2172(Bellerophon)03	Parth	S/2174(Aesir)03	Odin	S/2176(Whittier)01	Ita
S/2172(Albion)01	Avalon	S/2174(Anvil)01	Hammer	S/2177(Persephone)02	Renao
S/2172(Ithaca)01	Priam	S/2174(Paquin)01	Clawthorn	S/2177(Boros)01	Ares
S/2172(Athens)01	Argabuthon	S/2174(Sho-Je Downs)01	Kuan Lo	S/2177(Boros)02	Turrent's Moon
S/2172(Daedulus)01	Rea	S/2174(Delphi)01	Thalia	S/2177(Athens)04	Whitefall
S/2172(Daedulus)02	Box	S/2175(Bernadette)01	Nautilus	S/2177(Meadow)02	Mir
S/2172(Shadow)01	Branson's Mark	S/2175(Bernadette)02	Spinrad	S/2177(Hera)02	Bullet
S/2172(Shadow)02	Ossolambria	S/2175(Moab)01	Red Rock	S/2177(Vishnu)01	Rama
S/2172(Shadow)03	Summerfair	S/2175(Moab)02	Mesa	S/2178(Prophet)02	Perdido
S/2172(Greenleaf)01	Dyton	S/2176(Sihnon)03	Xiansheng	S/2178(Harvest)02	Higgins' Moon
S/2172(Greenleaf)02	Agyar	S/2176(Liann Jiun)01	Tiantan	S/2178(Glacier)01	Denali
S/2172(Greenleaf)03	Bryson's Rock	S/2176(Liann Jiun)02	Fu	S/2178(Zeus)05	Isabel
S/2172(St. Albans)01	Pi Gu	S/2176(Osiris)01	Epeuva	S/2178(Zeus)06	Betty
S/2172(Aesir)01	Bestla	S/2176(Osiris)02	Tannhauser	S/2179(Vishnu)02	Ganesha
S/2172(Aesir)02	Borr	S/2176(Santo)02	New Luxor	S/2179(Meridian)01	Burnet
S/2172(Brisingamen)01	Freya	S/2176(Valentine)01	Selene	S/2180(Di Yu)01	Yama
S/2172(Brisingamen)02	Beowulf	S/2176(Valentine)02	Chons	s/2190(Miranda)01	Caliban
S/2172(Verbena)01	Lassek	S/2176(Ariel)01	Ariopolis	A/2260(White Sun)r24g4	Station 1a
S/2172(Verbena)02	Barrimend	S/2176(Ariel)02	Shiva	A/2260(White Sun)r24g5	Station 1b
S/2173(Sihnon)02	Airen	S/2176(Ariel)03	Poseidon	A/2260(White Sun)r24g6	Station 1c
S/2173(Gonghe)01	Xing Yun	S/2176(Persephone)01	Hades	A/2260(White Sun)r24g7	Station 1d
S/2173(Santo)01	Tethys	S/2176(Ezra)01	Herschel	A/2260(White Sun)r25m5	Station 2a
S/2173(Pelorum)01	Kaleidoscope	S/2176(Prophet)01	Dunny	A/2260(White Sun)r25m6	Station 2b
S/2173(Elphame)01	Summerhome	S/2176(Elphame)03	Ithendra	A/2260(White Sun)r25m7	Station 2c
S/2173(Elphame)02	Fiddler's Green	S/2176(Elphame)04	Sweethome	A/2260(White Sun)r25m8	Station 2d
S/2173(Athens)02	Ormuzd	S/2176(Athens)03	Ahnooie	A/2260(White Sun)r25m9	Station 2e
S/2173(Daedulus)03	Notterdam	S/2176(Daedulus)04	Arvad's Helm	A/2260(White Sun)r25ma	Station 2f
S/2173(New Melbourne)01	Maria	S/2176(Newhope)02	Splendor	A/2260(White Sun)r25mf	Station 2g
S/2173(New Melbourne)02	Destiny	S/2176(Newhope)03	Godforsaken	A/2260(White Sun)r25me	Station 2h
S/2173(Jubilee)01	Covenant	S/2176(Hera)01	Eris	A/2260(White Sun)r25md	Station 2i
S/2173(Brisingamen)03	Alberich	S/2176(Meadow)01	Salyut	A/2260(White Sun)r25mc	Station 2j
S/2173(Silverhold)01	Beggar's Tin	S/2176(Jiangyin)01	Tongyi	A/2260(White Sun)r25mb	Station 2k
S/2173(Constance)01	Barrowclough	S/2176(Jiangyin)02	Dangun		
S/2173(Constance)02	Disraeli	S/2176(Jiangyin)03	Rhilidore		

THE VERSE TERRAFORMED

Designation	Name	Terraform	Designation	Name	Terraform
P/2027(White Sun)03	Londinium	2220	P/2020(Kalidasa)01	Penglai	2270
S/2172(Londinium)01	Colchester	2220	P/2020(Kalidasa)01	Penglai	2271
S/2172(Londinium)02	Balkerne	2220	P/2020(White Sun)01	Qin Shi Huang	2271
P/2027(White Sun)04	Sihnon	2220	P/2020(White Sun)01	Qin Shi Huang	2273
S/2164(Sihnon)01	Xiaojie	2220	P/2029(Red Sun)07	New Melbourne	2280
S/2173(Sihnon)02	Airen	2220	S/2173(New Melbourne)01	Maria	2280
S/2176(Sihnon)03	Xiansheng	2220	S/2173(New Melbourne)02	Destiny	2280
P/2028(White Sun)13	Bernadette	2240	P/2027(Red Sun)03	Jiangyin	2280
S/2175(Bernadette)01	Nautilus	2240	S/2176(Jiangyin)01	Tongyi	2280
S/2175(Bernadette)02	Spinrad	2240	S/2176(Jiangyin)02	Dangun	2280
P/2030(Red Sun)08	Harvest	2251	S/2176(Jiangyin)03	Rhildore	2280
S/2174(Harvest)01	Farraday	2251	P/2028(Red Sun)05	Greenleaf	2281
S/2178(Harvest)02	Higgins' Moon	2251	S/2172(Greenleaf)01	Dyton	2281
P/2020(Blue Sun)01	Burnham	2253	S/2172(Greenleaf)02	Agyar	2281
P/2027(White Sun)05	Gonghe	2255	S/2172(Greenleaf)03	Bryson's Rock	2281
S/2173(Gonghe)01	Xing Yun	2255	P/2027(Red Sun)04	St. Albans	2290
P/2028(White Sun)12	Liann Jiun	2255	S/2172(St. Albans)01	Pi Gu	2290
S/2176(Liann Jiun)01	Tiantan	2255	P/2028(Red Sun)06	Anson's World	2290
S/2176(Liann Jiun)02	Fu	2255	S/2174(Anson's World)01	Varley	2290
P/2027(White Sun)06	Osiris	2256	S/2176(Anson's World)02	Spider	2290
S/2176(Osiris)01	Epeuva	2256	S/2176(Anson's World)03	Steele	2290
S/2176(Osiris)02	Tannhauser	2256	A/2260(White Sun)r24g4	Station 1a	2290
P/2020(Red Sun)02	Heinlein	2258	A/2260(White Sun)r24g5	Station 1b	2290
P/2020(Red Sun)02	Heinlein	2259	A/2260(White Sun)r24g6	Station 1c	2290
P/2020(Red Sun)01	Himinbjorg	2259	A/2260(White Sun)r24g7	Station 1d	2290
P/2020(Red Sun)01	Himinbjorg	2260	S/2035(Himinbjorg)01	Aesir	2295
P/2020(Georgia)01	Murphy	2260	S/2172(Aesir)01	Bestla	2295
P/2020(Georgia)01	Murphy	2261	S/2172(Aesir)02	Borr	2295
P/2020(White Sun)02	Lux	2261	S/2174(Aesir)03	Odin	2295
P/2020(White Sun)02	Lux	2262	S/2035(Himinbjorg)03	Brisingamen	2300
P/2020(Blue Sun)01	Burnham	2262	S/2172(Brisingamen)01	Freya	2300
P/2027(White Sun)08	Bellerophon	2266	S/2172(Brisingamen)02	Beowulf	2300
S/2172(Bellerophon)01	Tyrins	2266	S/2173(Brisingamen)03	Alberich	2300
S/2172(Bellerophon)02	Xanthus	2266	S/2032(Qin Shi Huang)01	Santo	2305
S/2172(Bellerophon)03	Parth	2266	S/2173(Santo)01	Tethys	2305
P/2028(White Sun)09	Valentine	2266	S/2176(Santo)02	New Luxor	2305
S/2176(Valentine)01	Selene	2266	A/2260(White Sun)r25m5	Station 2a	2305
S/2176(Valentine)02	Chons	2266	A/2260(White Sun)r25m6	Station 2b	2305
P/2027(White Sun)07	Ariel	2266	A/2260(White Sun)r25m7	Station 2c	2305
S/2176(Ariel)01	Ariopolis	2266	A/2260(White Sun)r25m8	Station 2d	2305
S/2176(Ariel)02	Shiva	2266	A/2260(White Sun)r25m9	Station 2e	2305
S/2176(Ariel)03	Poseidon	2266	A/2260(White Sun)r25ma	Station 2f	2305
P/2028(White Sun)11	Albion	2270	A/2260(White Sun)r25mf	Station 2g	2305
S/2172(Albion)01	Avalon	2270	A/2260(White Sun)r25me	Station 2h	2305

Designation	Name	Terraform	Designation	Name	Terraform
A/2260(White Sun)r25md	Station 2i	2305	S/2037(Murphy)01	Aphrodite	2405
A/2260(White Sun)r25mc	Station 2j	2305	S/2164(Aphrodite)01	Sturges	2405
A/2260(White Sun)r25mb	Station 2k	2305	S/2164(Aphrodite)02	Hill	2405
S/2040(Lux)01	Pelorum	2308	S/2164(Aphrodite)03	Thornley	2405
S/2173(Pelorum)01	Kaleidoscope	2308	S/2164(Aphrodite)04	Anton	2405
S/2040(Lux)02	Persephone	2308	S/2041(Murphy)03	Hera	2407
S/2177(Persephone)02	Renao	2308	S/2176(Hera)01	Eris	2407
P/2030(Georgia)10	Kerry	2335	P/2028 (Kalidasa)08	New Kasmir	2410
P/2031(Georgia)13	Ithaca	2348	P/2030 (Kalidasa)15	Whittier	2410
S/2172(Ithaca)01	Priam	2348	S/2038(Heinlein)04	Lazarus	2410
P/2030(Georgia)11	Ezra	2350	S/2164(Lazarus)01	Dora	2410
S/2176(Ezra)01	Herschel	2350	P/2027 (Kalidasa)06	Angel	2410
P/2027(Georgia)06	Boros	2350	S/2165(Angel)01	Zephyr	2410
S/2177(Boros)01	Ares	2350	P/2028 (Kalidasa)10	Sho-Je Downs	2410
S/2177(Boros)02	Turrent's Moon	2350	S/2174(Sho-Je Downs)01	Kuan Lo	2410
P/2031(Georgia)12	Regina	2352	S/2176(Sho-Je Downs)02	Miyazaki	2410
S/2174(Regina)01	Alexandria	2352	P/2030 (Kalidasa)14	Verbena	2415
S/2173(Elphame)01	Summerhome	2355	S/2172(Verbena)01	Lassek	2415
S/2173(Elphame)02	Fiddler's Green	2355	S/2172(Verbena)02	Barrimend	2415
S/2176(Elphame)03	Ithendra	2355	P/2027 (Kalidasa)07	Constance	2415
S/2176(Elphame)04	Sweethome	2355	S/2173(Constance)01	Barrowclough	2415
P/2027(Georgia)05	Newhope	2358	S/2173(Constance)02	Disraeli	2415
S/2174(Newhope)01	The Commons	2358	S/2038(Heinlein)03	Paquin	2415
S/2176(Newhope)02	Splendor	2358	S/2174(Paquin)01	Clawthorn	2415
S/2036(Heinlein)01	Triumph	2360	S/2176(Paquin)02	Shinbone	2415
S/2164(Triumph)01	Mycroft	2360	S/2036(Heinlein)02	Silverhold	2417
P/2027(Georgia)04	Athens	2360	S/2173(Silverhold)01	Beggar's Tin	2417
S/2172(Athens)01	Argabuthon	2360	S/2164(Heaven)01	Menaka	2420
S/2173(Athens)02	Ormuzd	2360	S/2164(Heaven)02	Rambha	2420
S/2176(Athens)03	Ahnooie	2360	S/2170(Heaven)03	Urvasi	2420
S/2177(Athens)04	Whitefall	2360	S/2170(Heaven)04	Tilottama	2420
S/2172(Daedulus)01	Rea	2360	S/2164(Fury)01	Blackwood	2420
S/2172(Daedulus)02	Box	2360	S/2165(Fury)02	Coldstone	2420
S/2173(Daedulus)03	Notterdam	2360	S/2165(Dragon's Egg)01	Yudhishtira	2420
S/2176(Daedulus)04	Arvad's Helm	2360	S/2165(Dragon's Egg)02	Bhima	2420
P/2030(Georgia)08	Three Hills	2370	S/2165(Dragon's Egg)03	Nakula	2420
S/2164(Three Hills)01	New Lafayette	2370	S/2165(Dragon's Egg)04	Sahadeva	2420
S/2164(Three Hills)02	Conrad	2370	S/2165(Dragon's Egg)05	Glynis	2420
S/2164(Three Hills)03	Bob	2370	S/2166(Zeus)01	Sophie	2420
P/2030(Blue Sun)06	Deadwood	2400	S/2166(Zeus)02	Victoria	2420
S/2164(Deadwood)01	Haven	2400	S/2166(Zeus)03	Delynn	2420
S/2164(Deadwood)02	New Omaha	2400	S/2169(Zeus)04	Gayle	2420
S/2037(Murphy)02	Shadow	2404	S/2178(Zeus)05	Isabel	2420
S/2172(Shadow)01	Branson's Mark	2404	S/2170(Djinn's Bane)01	Illat	2420
S/2172(Shadow)02	Ossolambria	2404	S/2170(Djinn's Bane)02	Hilal	2420
S/2172(Shadow)03	Summerfair	2404	S/2170(Djinn's Bane)03	Hubal	2420

Designation	Name	Terraform
S/2170(Djinn's Bane)04	Sin	2420
S/2170(Djinn's Bane)05	Ta'lab	2420
S/2170(Djinn's Bane)06	Wadd	2420
S/2040(Penglai)01	Beylix	2425
S/2165(Beylix)01	Charity	2425
S/2165(Beylix)02	Cinote	2425
S/2165(Beylix)03	St. Lucius	2425
S/2040(Penglai)02	Newhall	2425
S/2165(Newhall)01	Severance	2425
S/2165(Newhall)02	Darcke	2425
S/2165(Newhall)03	Mohenrichia	2425
P/2027 (Kalidasa)05	Salisbury	2430
P/2029 (Kalidasa)12	Aberdeen	2430
P/2031(Blue Sun)08	Meridian	2430
S/2179(Meridian)01	Burnet	2430
S/2038(Burnham)01	Miranda	2433
P/2031 (Kalidasa)16	Beaumonde	2433
S/2164(Beaumonde)01	Hastur	2433
P/2029(Blue Sun)05	Highgate	2435
S/2164(Highgate)01	Perth	2435
S/2170(New Canaan)01	Ugarit	2435
S/2170(New Canaan)02	Lilac	2435
P/2030(Blue Sun)07	Muir	2440
S/2170(Muir)01	Arminius	2440
S/2170(Muir)02	Shepherd's Mission	2440
S/2177(Hera)02	Bullet	N/A
S/2190(Miranda)01	Caliban	On Hold
S/2176(Whittier)01	Ita	Ongoing
P/2027(Blue Sun)04	New Canaan	Ongoing
S/2035(Himinbjorg)04	Anvil	Scheduled
S/2174(Anvil)01	Hammer	Scheduled
P/2029 (Kalidasa)13	Delphi	Scheduled
S/2174(Delphi)01	Thalia	Scheduled
S/2176(Delphi)02	Clio	Scheduled
S/2176(Delphi)03	Calliope	Scheduled
P/2030(Georgia)09	Di Yu	Scheduled
S/2180(Di Yu)01	Yama	Scheduled
P/2032 (Kalidasa)17	Ghost	Scheduled
S/2173(Ghost)01	Inferno	Scheduled
S/2173(Ghost)02	Xibalia	Scheduled
P/2028 (Kalidasa)09	Glacier	Scheduled
S/2178(Glacier)01	Denali	Scheduled
P/2030(Red Sun)09	Jubilee	Scheduled
S/2173(Jubilee)01	Covenant	Scheduled

Designation	Name	Terraform
P/2027(Georgia)07	Meadow	Scheduled
S/2176(Meadow)01	Salyut	Scheduled
S/2177(Meadow)02	Mir	Scheduled
S/2035(Himinbjorg)02	Moab	Scheduled
S/2175(Moab)01	Red Rock	Scheduled
S/2175(Moab)02	Mesa	Scheduled
S/2042(Penglai)03	Oberon	Scheduled
S/2170(Oberon)01	Puck	Scheduled
S/2170(Oberon)02	Bottom	Scheduled
S/2171(Oberon)03	Quince	Scheduled
P/2031(Georgia)14	Prophet	Scheduled
S/2176(Prophet)01	Dunny	Scheduled
S/2178(Prophet)02	Perdido	Scheduled
P/2028(White Sun)10	Rubicon	Scheduled
P/2029 (Kalidasa)11	Vishnu	Scheduled
S/2177(Vishnu)01	Rama	Scheduled
S/2179(Vishnu)02	Ganesha	Scheduled
S/2165(Fury)03	Seventh Circle	Scheduled
S/2176(Persephone)01	Hades	Scheduled
S/2176(Newhope)03	Godforsaken	Scheduled
S/2178(Zeus)06	Betty	Scheduled

AFTERWORD: "SHOW YOUR WORK!"

❖ Virtually every math teacher in Creation

While some of the numbers herein were picked out of the blue, most are derived from some simple formulas applied to a baseline set of values. Most, if not all, of the planetary data is based on objects from our solar system. All terrestrial planets use Earth diameter (12,742km) and mass (5.9763×10^{24} kg, converted to 5.9763×10^{21} metric tonnes) as a starting point, scaled up or down, depending on the planet. I decided that any terraformed moon would either start or end with a generally earthlike composition. As a result, moons were defined compared to Earth numbers instead of being based on any existing moon. For Jovian gas giants, I used Jupiter's diameter (142,984km) and mass (1.8985×10^{27} kg) as my starting point. I used fractions of Sol's diameter (Sol=1) and mass (Sol=1) for the stars and brown dwarfs / protostars. The numbers given for the stars are accurate according to a chart describing stellar classes on Wikipedia. The starting numbers for the brown dwarfs / protostars are "best guess." I decided that the helioform process (compression and ignition of a brown dwarf) would reduce the body's diameter to 60% of its original value while the mass remained constant.

Orbital periods are based on Earth for planets and stars, and the Moon for moons and planets around protostars. Since the protostars were originally super-massive gas giants, it made sense to treat the planets orbiting them as "very large moons" instead. So, their periods are listed in days instead of years. For those planets, their gas giant or protostar determines their orbital period.

A note about orbital periods and the standard Earth calendar: Any celestial body that orbits a star larger and hotter than Sol is going to orbit farther out, and have a longer orbital period. Currently, we define a year as one trip around the Sun, but a planet such as Londinium takes much longer. Londinium's orbital period is 8.61 years or 3,143 days. Every planet would have to rewrite the calendar to suit itself. But that would be a pain for writers (and our heroes) to deal with. So let's do this: Let's adjust the axial tilt to match the Earth, and then add a slower rotation axis perpendicular to the plane of the ecliptic, one that completes every 365.25 days. That will create a seasonal change that will mirror Earth. After that, it's a simple matter to ignore the planet's orbital period and go with the calendar. The same can be accomplished for any and all planets in the Verse. So, Dec 25th on Londinium is a winter day (northern hemisphere), regardless of where the planet is in its orbit. Also, Dec. 25th is the same day for every planet in the Verse at the same time.

"34Tauri(2020)": I wanted to start somewhere plausible when creating a number designation for the planets in the Verse. Since there are something like five million cataloged objects in the sky (or is it five billion?), every random series of letters and/or numbers that I threw together, based on the various designations I found, came up with an existing body. While I was researching moons of gas giants to determine plausible distances for Verse moons, I came across an article about John Flamsteed and his mistaken designation for Uranus. It turned out that in the 300+ years since then, 34Tauri was never reissued to an actual star. So that gave me a plausible starting point. I placed the Verse in the constellation of Taurus, and set its distance at 40 light years. While I've never heard Joss or Tim say specifically, the most common assumption is that the voyage took roughly 120 years. That means an average cruising speed of just over 1/3 light speed. We can assume that the ships accelerated slowly over long periods to reach that speed.

I appended a discovery year of 2020 onto 34Tauri, giving 34Tauri(2020). Stars are capital letters after the date, so White Sun's designation is 34Tauri(2020)A. Protostars were originally gas giants that were artificially compressed and ignited, so they are listed as planets, with the "P/" designation. "Lux" becomes the name given to P/2020(34Tauri(2020)A)02, or simply P/2020(White Sun)02. Moons start with "S/" for satellite. Planets that orbit protostars are simply large moons, even if they have moons of their own, so those start with "S/" as well. Moons of moons also start with "S/". Asteroids start with A/, and are numbered with 0-9 and a-y (lower case), excluding i, l, o, and z.

The dates used in the planet designations are an attempt to show a history of discovery. The five stars and 14 gas giants were discovered roughly at the same time, so they all show the year at 2020. More planets were discovered during the next few decades, so their dates reflect that. The large jump in the moon dates is my way of saying that the moons were first observed from the colony arks as they approached the cluster.

Planet Sizes: What is terraformable? What is too big, and what is too small? I've determined that in order for a body to be terraformed, it has to be large enough for Hydrostatic Equilibrium to take place. Hydrostatic Equilibrium occurs when the mass and gravity of a body will pull the shape of that body into a sphere. Current theory says that the minimum size is 900km in diameter for rocky bodies. That's the minimum size for a "dwarf planet." The asteroid, Ceres, at 970km in diameter is just above that. So, I've set Ceres as the smallest body suitable for terraforming. Since Joss has said that hundreds of moons were also made into "new earths," then those terraformed moons had to be at least 970km in diameter. I've arbitrarily set the upper limit at 18,020km in diameter. That will give the world twice the surface area of the Earth. That seems to me to be big enough.

Under normal circumstances, a moon's mass would be based on its volume. However, Jill Arway of [The Signal Podcast](#) (which you all listen to regularly, right?) proposed that a moon would be compressed, increasing its density so that its surface gravity would increase to roughly Earth normal. So a moon's mass is based on the square of its radius. Numbers given for moon diameter are after terraforming, even for those worlds not yet terraformed.

A note on mass: Typically, astronomical data is given in kilograms. For example, Earth's mass is given as 5.9763×10^{24} kg. However, the other Verse material produced so far by QMx uses the metric tonne (including the European spelling). So mass numbers here have been converted for consistency. As a result, Earth's mass becomes 5.9763×10^{21} metric tonnes.

Scale: The scale used in this pack is Earth=3 inches, and is accurate to the hundredth of an inch. To give an idea of the scale, here are some common numbers:

- ❖ Earth: 3.00"
- ❖ Moon: 0.35"
- ❖ Jupiter: 33.66"
- ❖ Sun: 327.74"

The maximum size that I can draw a silhouette in Word is 22", so the silhouette scale sizes for the gas giants, protostars, and stars are given numerically. The silhouettes are to scale with each other and/or to scale with Sol, but are not to scale with the planets and moons.

Quote: "Show your work!" is the bane of every math student hit with a sudden flash of inspiration on a test. It's always followed by the equally grating "If I can't see how you got the answer, then it's wrong!"

Written with loads of advice and suggestions from Andy Gore, Ben Mund, Geoff Mandel, Jill Arway, Nick Edwards, and Chris Bridges.

- ❖ J. Chris Bourdier
- ❖ Clemmons, NC
- ❖ February 2009