


PYRAMID



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WORLD- HOPPING

THE FAST REACH
by Matt Riggsby

A SONG OF MANY WORLDS
by Christopher R. Rice

GENERATION SHIPS
by David L. Pulver

HYPERJUMPING
by Jason "PK" Levine

THE TIME PUNCH
by J. Edward Tremlett

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From Earth-rooted tales of the maybe-today to far-flung, impossible space opera, moving from world to world has been a staple of science fiction for nearly a century. In this *Pyramid*, we focus our sensor arrays on all things related to world-hopping: how to get to other planets, what to do when you get there, and interesting places for interplanetary explorers to visit.

In some settings, the most efficient way to get from point A to Point B is to go through *The Fast Reach*; it may not be the *safest* way, but it's always *interesting*. Matt Riggsby – the explorer who delivered delights found within *GURPS Fantasy-Tech 1: The Edge of Reality* – describes a curious cluster of 11 star systems that connect more civilized regions. This article, suitable for any starfaring setting, includes both full-color and printer-friendly maps for this cluster of worlds.

Sometimes the intelligent life that explorers encounter doesn't live on the planet – it is the planet. With *A Song of Many Worlds*, you'll know the *GURPS* stats for living planets, new plant-centered psionic abilities (built off the foundation of *GURPS Psionic Powers*), and a *GURPS* template for someone who can really commune with nature.

Moving into space is the trip of a lifetime . . . sometimes literally! When interplanetary voyages take more than a few decades, you need to rely on *Generation Ships*. In the latest installment of *Eidetic Memory* from David L. Pulver, you'll get tips for dealing with social and physiological issues, ideas for campaign usage, and guidelines and new *GURPS Spaceships* rules from the designer himself for creating generation ships, including an example vessel.

When faster-than-light abilities exist in a setting, *Hyperjumping* might be the best way to represent it. *GURPS* Assistant Line Editor (and intergalactic scholar) Jason "PK" Levine suggests ways for expanding the Hyperjump-limited version of the Warp advantage. Now you have more FTL options than ever!

Planet-hopping might not mean traveling around the universe but visiting parallel Earths. Discover the malfunctioning cross-temporal marvel known as *The Time Punch* in this systemless campaign framework perfect for *GURPS Atomic Horror* or *GURPS Infinite Worlds*.

This issue's Random Thought Table explores what makes safe landings on planets possible, while Odds and Ends offers another method for safely going to other worlds and a Murphy's Rules that's not "ordinary." Whether you're stepping through warp gates, firing up FTL drives, or boldly going where none have before, this month's *Pyramid* should give you planet-sized possibilities!

Article Colors

Each article is color-coded to help you find your favorite sections.

- Pale Blue:* In This Issue
- Brown:* In Every Issue (letters, humor, editorial, etc.)
- Dark Blue:* *GURPS* Features
- Purple:* Systemless Features

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FROM THE EDITOR

A WORLD OF IDEAS, A-WHIRL'D OF IDEAS?

One of the great things about a world-hopping campaign is that it's feasible to do just about anything from installment to installment. Whether it's a seemingly endless parade of varied civilizations (like *Star Trek* or *Star Wars*), or a tightly clustered set of mostly or fully defined planets (like *Fading Suns* or the *Firefly* universe), the potential for adventure erupts with each new destination.

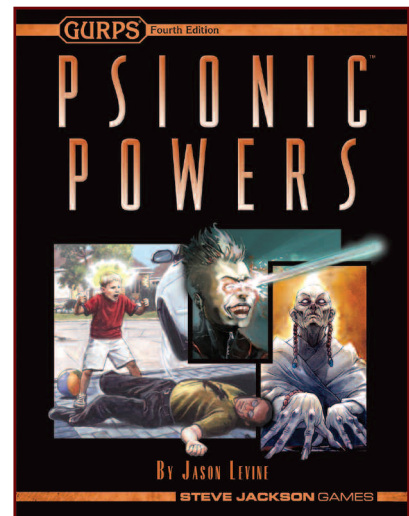
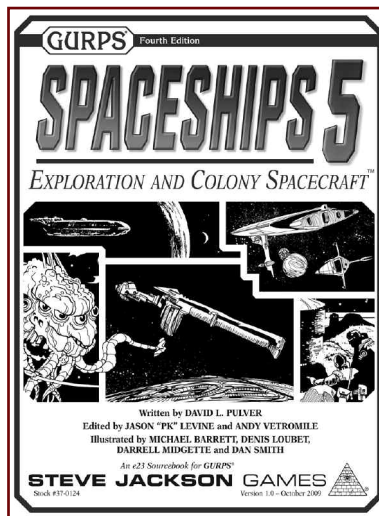
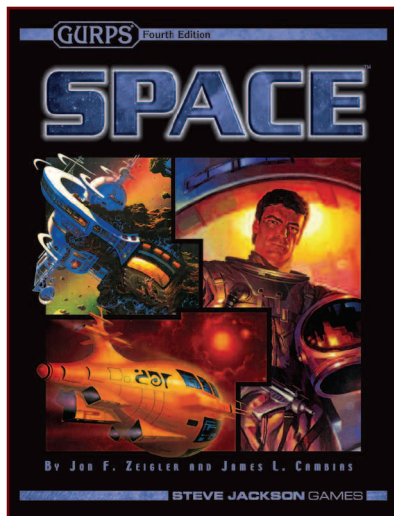
In this way, multi-world campaigns almost have an embarrassment of riches. After all, it's certainly possible to fill a lifetime of adventures on one world; that's what every one of us is doing right now. And it's equally possible to set an immensely satisfying campaign that centers around one city or even space station. However, when designing on a smaller scale, there's always a sense that you can't go completely nuts with revelations; after all, if the adventure centers on one city, it stretches

credulity to suddenly reveal that 90% of the population is a robot. However, this isn't a limitation in a multi-planet campaign; why *can't* nearly all the citizens of this never-before-visited city be androids?

It is in this spirit of never-ending adventure that we present this issue of *Pyramid*. Whether you're seeking new ways to move across space and time to visit someplace new, or discovering unusual entities with abilities far different from humanity, or uncovering the secrets of a new part of space, this issue should have something to add to your campaign.

WRITE HERE, WRITE NOW

Did you enjoy our visit to strange new worlds? Or should we stay closer to home next time? Let us know privately what you thought about our interplanetary voyages, at pyramid@sjgames.com. Alternatively, you can share your thoughts about your extraplanar exploits at forums.sjgames.com.



Additional Material: Scott Paul Maykrantz

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New Traits

The following are new traits used in this article.

Code of Honor

see p. B127

Worldsinger: Defend the gaia from those who attempt to give lasting harm. Keep the secrets of those worlds who wish to be left in peace. Use a gaia's resources in a respectful way. Be respectful to those who are respectful to the gaia. Oppose any plans that would cause the gaia to be permanently injured (clear-cutting, strip-mining, etc.). -10 points.

Control and Create

see *Powers* pp. 90-92 and 92-94

Both of these advantages disallow them affecting living matter, though a GM may permit the following enhancement on Control (Wood) and Create (Wood), extending their usefulness from dead plant matter to *living* plant matter. This could be adapted to other forms of Control or Create, but the GM should be cautious.

New Special Enhancements

Vital Creation/Manipulation: Your ability ignores the prohibition against creating or controlling living beings, when said living beings fall into the category of Control or Create you have. Use of this enhancement is *taxing*, anytime you create or control a living being you must spend an additional 2 FP above and beyond what it otherwise might have cost you.

For Control, this ability becomes resisted by the *higher* of Will or HT, and lasts for one second only. Living creatures like plants have a IQ of 0 (and therefore a Will of 0), so they automatically fail this roll. The target is aware that his body does not respond to his commands, this ability is *not* subtle. The GM may decide that a suitably modified Mind Control, Possession, etc. is more appropriate than Control with this modifier.

For Create, this ability allows you to make *living* things, usually plants or animals, though it could also be used for bacteria or other tiny microorganisms. You do not need this for machines or other shaped inanimate matter (*Powers*, p. 93).

This enhancement is called Vital Manipulation for the Control advantage and Vital Creation for the Create advantage. If you can only affect complex materials, this is a +0% modifier; otherwise, it is +100%.

Hidden Lore

see p. B199

The following two new specialties are relevant to worldsingers or those who wish deeper knowledge of the entities they entreat.

Gaia: You know about the variations in gaian consciousness. You know best how to deal with them, what they might allow if approached properly, and how to recognize the signs they send. You might even know the location of secret or undiscovered gaia if the GM allows.

Psis: You know all sorts of psionic secrets. This includes details about underground institutes, who the factions are (and their agendas), and which famous people are secretly psis.

New Perks

The following perks are appropriate to plant telepaths.

Detect Plant Sapience: With a touch and an IQ+4 roll, you can determine if a plant is sapient. This includes any tree that is currently the subject of the Arboreal Immurement spell (*Magic*, p. 165). This trait originally appeared in *Plant Spells*.

Little Green Digit: Once per day, you can modify a skill roll as if you had Green Thumb (p. B90) at the same level as this perk (you may have up to four levels). You cannot take this perk if you have Green Thumb. This trait originally appeared in *Plant Spells*.

Floating Blossom: You have a minor form of Plant Control (p. 14) – you can cause plants to move in small ways. This may take the form of a cherry-blossom tree “raining” petals on you; leaves rustling on a bush, or having the fruit of a plant drop into your hand (make a DX roll to catch). While this has no real combat applications, the GM may deem otherwise in certain situations. If you later buy Control Plants, the GM may let you “spend” the point from this perk on it.

ONE VOICE, MANY WORLDS

It is up to the GM whether worldsingers are common or rare, though it is probably best if they are rare, making them a valued commodity. The same holds true on how common gaia are. If they are rare while worldsingers are common, the psis will feel less special than they should be.

Worldsingers are in many ways like a fantasy druid – they converse with animals and plants, and are beloved by nature

itself. Some may act as intermediaries between gaia and humans. Others may see themselves as protectors of intelligent worlds, not allowing them to come to harm. This could provide all sorts of challenging interactions between worldsingers (and other psi) and their non-psi expansionist or capitalist brethren.

Habitats: To ensure sufficient genetic diversity, a generation ship should be built to support at least 20 people for a voyage of a few decades, at least 200 for a few centuries, and least 2,000 for a few millennia. Use luxury cabins – good-sized apartments or houses – and add lots of establishments!

Reaction Drives and Fuel Tanks: What distinguishes a space ark from a conventional space-station habitat is the engine and fuel. The more fuel carried, the faster the journey but the less room for interior space. The best arrangement in a conventional ship is to put fuel tanks in front and back of the ship, for extra shielding against impacts and radiation from ship's drive, with the hollow habitat in the center hull.

The engine's delta-V per fuel tank is crucial – the higher it is, the faster the ship can reach the destination and the less space needed for fuel. Unlike some craft, an ark can't afford to devote more than about 25-30% of its total systems to fuel tanks and drives, since it needs room for open space, crew habitats and the like. Realistically, this limits TL9-12 drive choices to fusion rocket, advanced fusion pulse drive, or, with costly fuel, antimatter plasma or pion drive. A useful value is the percentage of light speed (c) the ship can practically reach. Find this by halving the delta-V in miles per second (since it needs to decelerate to a stop) and then dividing by 186,000 mps (the speed of flight). Distance in light years divided by the fraction of light speed gives flight time in years (excluding time for acceleration, often a minor part of the total). For time required to travel a parsec, multiply by 3.26.

Design Switch: Ecological Life Support

GURPS Spaceships (p. 19) allows a single open space to provide total life support for a full ship. This is optimistic – it may supply enough oxygen, but to grow food would require farming so intensively that the space can't really be considered "open." However, many generation-ship concepts assume food production is handled by conventional but more efficient farming techniques inside the vessel. Plentiful interior area for fields, orchards, and the like gives the space ark its unique character.

If the ecological life support switch is used, total life support (see *Spaceships*, p. 17) can't be reliably sustained for the centuries required on a generation ship – at least not without revolt! Instead, the ship needs sufficient open space devoted to agriculture to support a varied diet, as well as provide oxygen. Each "area" of open space is 1/20 of an acre, so using estimates for productivity of agriculture aboard space habitats, a one-acre mixed farm could provide a comfortable, varied diet for about 400 people, which translates to a total life-support capacity of 20 people per open space "area." (This could be doubled with more restrictive diets, but that might not be practical for decades at a time!) The actual number of "areas" in an open space system depends on the size of the ship.

For example, a SM +14 ship gets 100 "areas" per open space system, so each would support 2,000 people. A SM +15 vessel gets 200 "areas," or 4,000 people. For a typical mid-size space ark with 10,000 to 20,000 people, five to six open space systems is suitable.

If the space ark becomes primitive, the productivity may or may not decline, depending on the society, automation, etc. Some spaces could revert to desert or wilderness, reducing overall population capacity.

Power Plants: Generation ships can get by without needing many Power Points – usually only for factory systems and perhaps the odd self-defense weapon. However, it's necessary to design the power plant for the long haul. See *Power Plants and Long Voyages* (p. 25).

Weaponry: Few fictional generation ships are heavily armed, but a small "meteor defense" system can be useful to destroy space debris in its path.

Hangar: A generation ship will benefit from having hangar space. Most are too big to land, so will need smaller craft for solar system and planetary exploration, not mention to disembarking thousands of passengers. A ship could carry a full squadron of vessels, possibly including armed craft. Some of these might even fly escort ahead of the vessel to intercept dangers.

Cargo: Although the vessel needs enough cargo capacity to transport colonization equipment, spare parts, and supplies, habitat steerage cargo is often adequate.

Factory: Over the years, things are going to break down. A generation ship should have a factory system, lots of minifacs, or both. Another advantage, especially with laboratories, is that this allows the ship to potentially advance in TL and improve its systems as it travels, especially if it can receive signals with the latest new theories and inventions from "home."

Mining and Refinery: This capability is very useful at the end of the trip, but may be useless through much of the ship's voyage. As such, these systems may be better installed on mining craft carried in a hangar bay.

Design Options and Switches: Spin gravity and, in some instances, exposed radiators are typical of these designs.

ZIUSUDRA-CLASS GENERATION SHIP (TL10)

This design is intended to showcase the optional ecological life support switch (above) and power plant rules (p. 25). It uses the core *Spaceships* rules with that variant plus the "smaller systems" rule from *GURPS Spaceships 7: Divergent and Paranormal Tech* and *GURPS Spaceships 8: Transhuman Spacecraft*.

The *Ziusudra* is an unstreamlined 3,000,000-ton (SM +15) generation ship. It is 2,000' long and is built for a voyage of up to 4,200 years, limited by onboard reactor fuel. It spins slowly to generate artificial gravity at 1G. It can reach about 0.001c (1/1,000 light speed) using half its delta-V to accelerate and the other half to slow down.

It is a typical cylindrical space ark resembling a modest-sized space habitat with an engine and fuel tank cluster at one end. To ensure occupant comfort and life support, much of it is open space. It is designed to start with about 3,500 people but slowly grow to perhaps 24,000 (the most its open spaces support).

Distance Table

Distance In				Penalty
Light-Seconds	AU	Light-Years	Parsecs	
1 to 5.4	0.002 to 0.01	–	–	-10
Up to 54	Up to 0.1	–	–	-11
Up to 540	Up to 1	–	–	-12
Up to 5,400	Up to 10	–	–	-13
Up to 54,000	Up to 100	–	–	-14
Up to 540,000	Up to 1,000	Up to 0.017	Up to 0.005	-15
Up to 5.4M	Up to 10,000	Up to 0.17	Up to 0.052	-16
Up to 54M	Up to 100,000	Up to 1.7	Up to 0.52	-17
Up to 540M	Up to 1M	Up to 17	Up to 5.2	-18
Up to 5.4B	Up to 10M	Up to 170	Up to 52	-19
Up to 54B	Up to 100M	Up to 1,700	Up to 520	-20
Up to 540B	Up to 1B	Up to 17,000	Up to 5,200	-21
Up to 5.4T	Up to 10B	Up to 170,000	Up to 52,000	-22
Up to 54T	Up to 100B	Up to 1.7M	Up to 520,000	-23
Up to 540T	Up to 1T	Up to 17M	Up to 5.2M	-24
–	Up to 10T	Up to 170M	Up to 52M	-25
–	Up to 100T	Up to 1.7B	Up to 520M	-26
–	–	Up to 17B	Up to 5.2B	-27
–	–	Up to 170B	Up to 52B	-28
–	–	Up to 1.7T	Up to 520B	-29
–	–	Up to 17T	Up to 5.2T	-30
×10	×10	×10	×10	-1

M = million, B = billion, T = trillion. A dash means that it's inconvenient to express such a distance using the given units, not that it *can't* be done.

While it may seem odd at first that Restricted Distance, 0.02 to 0.1 AU gives the same discount as Restricted Distance, 11,000 to 100,000 AU, this is intentional. Being restricted to greater distances allows you to travel with fewer rolls, but also makes precision very difficult. The farther away you *must* jump, the less the specific distances matter.

If your ability to travel is *further* limited in some meaningful way, represent this with a Nuisance Effect.

Example: A **Traveller J-3** ship must choose from three distances when it hyperjumps, traveling exactly one, two, or three parsecs. It thus has Restricted Distance, 1 to 3 Parsecs (-40%) and Nuisance Effect, Must hyperjump in whole parsecs (-5%).

Risky Blind

+10%

You can hyperjump to places you've never seen and have no data on (*Where Am I Going?*, p. 28), as if you had the Blind enhancement. However, when jumping blind, *any* failure on your IQ or Navigation roll is treated as a critical failure!

The Third Imperium . . . is a far-flung interstellar community encompassing more than 11,000 worlds . . .

– **GURPS Traveller**

MAKING THE JUMP

You must roll against IQ or Navigation (Hyperspace) to use Warp with Hyperjump. Unlike with normal Warp, this is not an activation roll; the transition into hyperspace is automatically successful unless you have Requires Attribute Roll (p. 26). Instead, this roll is to determine how accurately you've plotted your course. Thus, do not roll until the *end* of the trip.

Your roll is modified by the following factors:

1. *Preparation Time:* As per p. B98.
2. *Distance:* Use the *Distance Table* (above).
3. *Reliable:* This enhancement provides its usual bonus.
4. *Removal:* See *Where Am I Going?* (p. 28) for details.
5. *Equipment:* If you are using Navigation (Hyperspace) *instead* of IQ, apply any modifiers for equipment quality (p. B345), software (see **GURPS Ultra-Tech**), etc.
6. *Fatigue Points:* +1 per FP spent – or +1 per 2 FP spent if you're hyperjumping blind, which requires Blind (p. B98), Blind Only (from **Powers**), or Risky Blind (above). Vehicles without FP might be able to spend HT here (GM's option).

The result determines exactly what happens:

Critical Success: You end up exactly where you want to be, and the hyperjump takes less time! Move up one step on the *Hyperjump Table* (p. 26) to determine your effective speed; if you're already traveling at one light-year per second, the hyperjump takes 1/10 as long.

Success: Your journey is effective and accurate.

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