

**GURPS**

Fourth Edition

# UNDERGROUND ADVENTURES™



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## About GURPS

Steve Jackson Games is committed to full support of *GURPS* players. Our address is SJ Games, P.O. Box 18957, Austin, TX 78760. Please include a self-addressed, stamped envelope (SASE) any time you write us! We can also be reached by e-mail: [info@sjgames.com](mailto:info@sjgames.com). Resources include:

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*Errata.* Everyone makes mistakes, including us – but we do our best to fix our errors. Up-to-date errata pages for all *GURPS* releases, including this book, are available on our website – see above.

Rules and statistics in this book are specifically for the *GURPS Basic Set, Fourth Edition*. Page references that begin with B refer to that book, not this one.

# INTRODUCTION

*“Here is the cavern, Father.” Antonius Laurens was a tribune in his legion, but he spoke with deference, using his companion’s religious title, as fitted their business.*

*Centurion Mauritius Scipio glanced around with a tactician’s eye and saw no sign of human passage in the undergrowth. This might be private enough for a mithraeum, he thought. Now to see the mystery that young Laurens had hinted at.*

*“Light your lamp, Bridegroom,” he said, “and let’s enter the chamber.”*

*The entryway was steep, and Scipio walked carefully, wishing he had the staff he was named for, to steady his feet. At first, there was nothing to be seen. Then, the lamp’s flicker fell upon the further walls, and what was painted there.*

*Bulls! Marvelously depicted bulls, painted in two colors, like images on a Greek vase – but painted as big as life, or bigger. That one on the far wall might be the very bull that Mithras slew. He gestured for Laurens to follow, and it seemed almost to breathe in the shifting light as they approached it.*

*Might it have already been sanctified to Mithras, long ago? But he saw none of the other images that went with Mithras. Animals other than bulls were there, but not the right ones, and nowhere was Mithras himself. Yet he knew what sort of place this was, and he shivered.*

*“Can we use this place, Father?”*

*Scipio gathered his thoughts. “I know not if it be lawful,” he said. “This place is sanctified, and not sanctified to the Bullslayer. And it is old, for no one has been here in many years. Before we may use it, there must be an offering, to whatever god or goddess dwells here, and we must seek an omen. And if it is not favorable, I think we must leave the place undisturbed.”*

From Paleolithic caves to Parisian sewers, from asteroid mines to the hollow earth, underground locations make perfect settings for adventure. Roleplaying games were born there. Why not go back for a visit?

The realities of underground environments present special challenges, whether you go there in natural caverns, artificial tunnels, or huge subterranean vehicles. **GURPS Underground Adventures** offers information and gaming suggestions on both the facts and the fantasies.

The *facts* include realistic details on subterranean dangers, from narrow passages to poison gases to cave-ins; on technologies for coping with them; and on skills needed to use those technologies. As a larger context for these facts,

there’s a survey of current scientific knowledge of the earth’s interior.

The *fantasy* begins with guidelines for inventing underground adventures and campaigns, and for creating characters who can undertake them. For larger-scale fantasies, there’s a survey of myths, legends, and scientific speculations about the interior of the planet Earth, with suggestions about turning them into campaign settings. Several campaign seeds provide starting points for underground ventures.

Whether you want to design a campaign specifically around an underground setting, include an underground episode in an ongoing campaign, or make the hazards of your dungeon fantasy more vivid and detailed, **Underground Adventures** gives you the resources you need.

For details on specific items of equipment, refer to **GURPS Low-Tech**, **GURPS High-Tech**, or **GURPS Ultra-Tech**. In certain settings, **GURPS Magic** is useful for specifics on spells.

## PUBLICATION HISTORY

A shorter version of **GURPS Underground Adventures** made up one chapter in **GURPS All-Star Jam 2004**, a supplement for **GURPS Third Edition**. This version has been updated to the Fourth Edition and to reflect current geology and technology. It was expanded to provide more skills, more tools, and more speculative ideas. Its new material builds on **GURPS Low-Tech**, **GURPS High-Tech**, **GURPS Ultra-Tech**, **GURPS Magic**, and **GURPS Powers**.

## ABOUT THE AUTHOR

William H. Stoddard is a professional copy editor, specializing in scientific and scholarly books in fields ranging from aerospace technology to archaeology. Fortunately, he likes reading nonfiction; his research library is threatening to take over his apartment, and he regularly visits the nearest university library for supplemental reading. His other pleasures include cooking, reading science fiction and alternate history, and running and playing in roleplaying games, which he has been doing since 1975, when he first encountered **Dungeons & Dragons**. His previous work for Steve Jackson Games includes writing the latest editions of **GURPS Supers** and **GURPS Low-Tech**. He lives in San Diego with his cohabitant Carol, two cats, two computers, and far too many books!

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# CHAPTER TWO

# TIGHT PLACES

Caves present explorers with a variety of obstacles. In the first place, they're often completely dark. Their passages aren't always level and may even be vertical, requiring climbing; they may also be narrow (see *Narrow Passages*, p. 12). Cave floors may have gaps or breaks (p. 11).

Certain underground experiences warrant Fright Checks (pp. B360-361), such as having the lights go out suddenly or being stuck. Hostile creatures are more fearful than above the ground, because they may appear without warning out of shadows or around bends. Floods, cave-ins, or rock bursts require Fright Checks at -1 to -5, depending on the disaster's scale and suddenness.

## PERCEPTION

Except near their entrances, most caves are lightless, making Vision rolls impossible (-10 to visually guided actions, if at all possible). Fantasy or science-fictional caves may have phosphorescent lichen or luminous minerals. If they exist, treat them as comparable to starlight, allowing Vision rolls at -7 to -9.

Cave explorers normally carry whatever sort of lights their TL allows (see *Lighting*, p. 23). Some of these illuminate a radius; others project a beam. Either form eliminates or reduces Vision penalties in the area it illuminates, but leaves the explorer blinded to anything outside that region. Treat the light as *in plain sight* to distant observers who have a clear view of it: +10 to Vision rolls to see it (p. B358). However, they're at -7 to see anything outside its radius.

The ability to see infrared, whether with thermal-imaging gear (**GURPS High-Tech**) or Infravision, provides visibility in lightless environments. Most underground environments are in thermal equilibrium, so seeing most inanimate objects is at -2 because of low contrast. Human beings and other heat sources often stand out: +10 to Vision rolls to detect them.

An explorer with no light source can find his way by touch, either keeping one hand on a cave wall (full Move) or crawling (1/3 Move). Either requires a roll vs. DX-6 for each stretch of cave traveled; failure means encountering a hazard. Spending extra time by moving slowly (see p. B346) provides bonuses that offset the penalty. The Cane Travel technique (p. 21) furnishes similar bonuses that take the place of extra time. Dark Vision allows normal vision with no light source, and with no penalty for looking into or out of an illuminated area.

Hearing sometimes works differently in underground environments. Caves are often almost completely silent; any sound stands out, giving +4 to Hearing rolls to *notice* a sound. Additionally, sound carries farther in narrow tunnels or tunnel-like caves. On the *Hearing Distance Table* (p. B358), once the range in yards exceeds the width of the tunnel, the penalty to Hearing rolls is -1 for each *two* steps.

*Example:* A party of Saxon warriors ventures into the mines of a colony of zwerger (p. 28), lured by stories of treasure. They keep their voices down to a quiet conversation level (range one yard). The Hearing penalty is -1 at two yards. However, the tunnel is only two yards wide! The penalty is -2 at eight yards, -3 at 32 yards, -4 at 128 yards, and -5 at 512 yards. The zwerger have a chance to hear them a long way off.

Eventually, they come on a place where the tunnel opens out to four yards, and find a pile of metal there. One of them, Gottfried, points at it and shouts (range eight yards). There is no Hearing penalty at four yards (the width of the tunnel) or at eight yards. The penalty is -1 at 32 yards, -2 at 128 yards, and -3 at 512 yards.

Stone surfaces reflect sound efficiently, creating echoes. Hearing rolls to *locate* the source of a sound, or to perceive and analyze its details, are at -2.

## NAVIGATION

Journeying underground presents special challenges. The sky is hidden, which makes celestial navigation impossible; global positioning systems don't work, because the ground blocks signals (but see *Local Positioning System*, p. 24). Underground navigation normally goes by dead reckoning. Travel without at least a compass, or travel at a pace that doesn't allow time for careful measurements, depends on landmark recognition, at -5 to effective skill. Area Knowledge of a cave can substitute for Navigation based on landmark recognition.

The simplest navigation task is figuring out where you are in relation to a known starting point. Navigation (Land) will tell you where you are in a two-dimensional network, and where you encountered slopes or vertical shafts. Navigation (Underground) (p. 21) will also tell you how deep you are, and give you a sense of three-dimensional spatial relations.

The same roll will find the way to a known location: your point of entry, a place on the way to where you are, or a point on a map or chart. Roll at +2 to decide which way to go in an unbranched passage or to choose between two branches; roll at +1 if there are three to five branches – there is no bonus for more. If you are digging a new tunnel, which could aim in any direction, the roll is unmodified.

Trying to find an unknown location is a further -4 to skill. This could be the entry, if you've gotten lost; a possible second exit somewhere else; or the deepest point in a complex, or some other desirable destination.

If you're on the surface, and have time for surveying, you can determine a precise destination – either an identified second exit from a cave, or a planned end for a tunnel. Treat such a point as known. Surveying requires a Navigation (Land) roll and takes a day; see also *Navigation* (p. 24).

**Spells†:** Break Rock (p. 23), Climbing, Ignite Fire, Light, Purify Air, Predict Earth Movement, Seek Earth, Seek Landform (p. 22), Seek Water, Shape Earth, Test Air, and Walk Through Earth, all (H) IQ-1 [1]-12. • One of the following spell packages:

1. *The Way of the Bat:* Keen Hearing, Keen Scanning Sense (Sonar) (p. 18), and Sound Vision, all (H) IQ-1 [1]-12.
2. *The Way of the Mole:* Identify Metal, Seek Fuel, and Test Fuel, all (H) IQ-1 [1]-12.
3. *The Way of the Owl:* Dark Vision, Keen Vision, and Night Vision, all (H) IQ-1 [1]-12.
4. *The Way of the Spider:* Find Direction, Pathfinder, and Trace Labyrinth (pp. 22-23), all (H) IQ-1 [1]-12.

\* Multiplied for self-control number; see p. B120.

† Thaumatology and all spells include +1 from Magery 1.

### Customization Notes

If the realm of the dead lies beneath the ground, a chthonomancer may choose a different option: *The Way of the Scarab*, encompassing Death Vision, Sense Spirit, and Summon Spirit. This requires taking Magery 2 as an advantage, which raises the level of *all* spells to 13 for the same point cost. Replace Hidden Lore (Chthonian Lore)-13 with Expert Skill (Thanatology)-12.

For a lower-powered chthonomancer, drop DX to 10 and reduce total advantages by 5 points. For a higher-powered one, look at some of the high-end underground spells, and raise IQ to 14, for higher ability with *all* spells and many skills. A specialized high-powered template could include Breath Adaptation, Resist Fire, and their prerequisites, for ventures deep into a hollow planet.

A more radical redesign would make the chthonomancer into a priest of the underworld gods. Replace Magery with Power Investiture and Clerical Investment, and treat the listed spells as those granted by the gods (possibly with adjustments; they may not approve of Ignite Fire or Light).

## GEOLOGIST

75 points

From ancient Greek natural historians to high-tech 21st century scientists, people studying the earth often go out into the field. The geologist has basic survival and technical skills and mastery of the scientific knowledge of his age.

**Attributes:** ST 10 [0]; DX 10 [0]; IQ 12 [40]; HT 11 [10].

**Secondary Characteristics:** Damage 1d-2/1d; BL 20 lbs.; HP 10 [0]; Will 12 [0]; Per 12 [0]; FP 11 [0]; Basic Speed 5.25 [0]; Basic Move 5 [0].

**Advantages:** Fit [5]. • 15 points chosen from among Administrative Rank [5/level], High Manual Dexterity [5/level], Natural Scientist 1 (p. 19) [10], Single-Minded [5], Status [5/level], Tenure [5], or Wealth (Comfortable) [10].

**Disadvantages:** -15 points chosen from among Absent-Mindedness [-15], Bad Temper [-10\*], Code of Honor (Professional) [-5], Jealousy [-10], Secret (Plagiarism or Scientific fraud) [-10], Shyness (Mild) [-5] or (Severe) [-10], Wealth (Struggling) [-10], or Workaholic [-5].

**Primary Skills:** Either Naturalist (H) IQ+1 [8]-13 (at TL0-4) or Geology (H) IQ+1 [8]-13 (at TL5-12). • One of Cartography, Electronics Operation (Scientific), Photography, or

Prospecting, all (A) IQ+1 [4]-13; or Mathematics (Surveying) (H) IQ [4]-12.

**Secondary Skills:** Expert Skill (Natural Philosophy) (H) IQ [4]-12 (at TL0-4) or one of Astronomy, Chemistry, or Physics (Geophysics), all (H) IQ [4]-12; or Physics (VH) IQ-1 [4]-11.

**Background Skills:** Survival (any land specialty) (A) Per-1 [1]-11 and Writing (A) IQ-1 [1]-11. • 2 points in Climbing (DX/A), Computer Operation/TL (IQ/E), Current Affairs/TL (Science & Technology) (IQ/E), First Aid/TL (IQ/E), Hiking (HT/A), Leadership (IQ/A), Mathematics/TL (Applied) (IQ/H), Research/TL (IQ/A), Teaching (IQ/A), or additional skills from the primary skills list.

\* Multiplied for self-control number; see p. B120.

### Customization Notes

Administrative Rank represents employment in a governmental scientific agency. Tenure suits professors at research universities. Wealth (Comfortable) is appropriate to gentlemen (or ladies) with scientific interests.

A variant on this template can represent a paleontologist. Replace Geology with Paleontology (any specialty) as a primary skill. Choose a secondary skill from Anthropology, Biology (Botany, Ecology, Microbiology, or Zoology), Expert Skill (Natural Philosophy), or Geology. Biology without an optional specialty is possible, but less likely, as nearly all paleontologists specialize.

The simplest way to create a lower-cost template is to lower IQ to 11 and either reduce elective advantages to 10 points or increase disadvantages to -20 points. For a higher-cost template, divide added points between raising the scientific skills, including additional scientific skills, and adding classic “adventurer” skills useful in field surveys.

*All I can do at dowsing is find  
water, oil, coal, and gas. I'm no good  
at all on metals – I couldn't feel gold  
if I were perched right on the roof  
of Fort Knox; I couldn't feel radium  
if it were frying me to a crisp.*

– E.E. Smith,

*Subspace Explorers*

## LURKER

125 points

In a world with extensive underground settlements, or haunted underground ruins, some people may specialize in ventures beneath the surface. They may be freelance treasure seekers, or hire out to larger organizations as guides or spies.

## Crystalloid

71 points

The vast heat flux at the boundary of the inner and outer cores might give rise to life and even intelligence. One such theoretical race, made of crystallized impure iron, stores memories in magnetic domains. It senses by sonar, and aspires to venture into the bitterly cold mantle and crust, if they can build suitable craft. An average crystalloid weighs 343 lbs. but is less than a cubic foot in volume.

The Striking Surface perk allows the crystalloid to inflict 1 extra point of damage with unarmed attacks, thanks to its armored carapace.

A crystalloid's comfort zones are as follows.

- Native gravity 0.45 G; G-increment 0.1 G.
- Native pressure 3,300,000 atmospheres; normal range 2,640,000-3,960,000 atmospheres.
- Native temperature 9,000°F; comfort zone 8,505-9,495°F.

Because of the density of the molten iron in which they live, the base range of their sonar is 24,000 yards.

A crystalloid on the surface has additional advantages or disadvantages, depending on the technology that keeps it alive. One inhabiting a sealed chamber filled with molten iron could fairly have Increased Life Support [-40], given the extreme measures needed to keep it alive. A form-fitting environment suit wouldn't give it this disadvantage, but the wearer may need High TL to have access to it; see *Crystalloid Surface Suit* (below). If no such protective gear exists, the GM may add Can't Wear Armor (-40%) to the crystalloid's DR, reducing the template value by 12 points.

It's also possible to design a crystalloid super that can function on the surface, with the following traits: Burning Attack 3d (Always On, -20%; Emanation, -20%; Explosion 3, +150%) [32]; Improved G-Tolerance (1 G increment) [15]; No G-Intolerance [10]; Sealed [15]; Temperature Tolerance 40 [40]; Tunneling 3 [45]; and Vacuum Support [5]. This adds 162 points to the racial template, raising cost to 233 points.

The surface of Earth's inner core has an area of seven million square miles. At TL8, it has a carrying capacity of 700 million crystalloids.

**Attribute Modifiers:** ST-1 [-10]; IQ+2 [40]; HT+2 [20].

**Secondary Characteristic Modifiers:** SM -1; HP+5 [10]; Basic Move-2 [-10].

**Advantages:** Absolute Direction (p. 18) [5]; Amphibious [10]; Detect Magnetic Fields (Precise, +100%; Signal Detection, +0%) [20]; Doesn't Breathe [20]; DR 6 [30]; Extended Lifespan 2 [4]; Extra Arms 10 (Short, -50%) [50]; High Manual Dexterity 2 [10]; Injury Tolerance (No Eyes; No Neck) [10]; Scanning Sense (Sonar; p. 18) [20]; Single-Minded [5]; Spines (Short) [1]; Telecommunication (Magnetic-Ripple Comm; see below) [10].

**Perks:** Striking Surface. [1]

**Disadvantages:** Blindness [-50]; Decreased Time Rate [-100]; G-Intolerance (0.1G) [-10]; Selfish (12) [-5]; Short Arms (2) [-10].

*The very place, where he have been alive, Undead for all these centuries, is full of strangeness of the geologic and chemical world.*

– Bram Stoker, *Dracula*

### Crystalloid Surface Suit (TL11)

A form-fitting environment suit that protects against the dangerously low pressures of the mantle or the near vacuum of Earth's surface, and against temperatures as frigid as -109°F. It provides life support for up to two weeks. It contains biomedical sensors that allow remote diagnosis at -2, or give +1 to hands-on diagnosis, but only for crystalloids. Its material is interwoven crystals of refractory metals, giving DR 10 against most forms of injury, but DR 20 against burning and corrosion. It weighs 20 lbs. and costs \$40,000.

## Under the Hood: Game Mechanics for Crystalloids

By the standard rules for hot and cold temperatures (pp. B93, B430, B434), crystalloids would have a comfort zone 55°F wide, from 8,972.5°F to 9,027.5°F (see *Physics of Earth's Interior*; p. 8). With HT 12, they would need Temperature Tolerance 705 to survive on the surface. **Underground Adventures** adopts a variant treatment of temperature comfort zones, modeled on the standard rules for native pressures and Pressure Support (pp. B77-78). The GM may want to use this for non-water-based life in general.

The midpoint of the human comfort zone is 62.5°F; this is 522° above absolute zero. The crystalloid comfort zone centers on 9,000°F, which is 9,460° above absolute zero, approximately 18× as high. The width of their comfort zone is 55°F × 18 = 990°F, from 8,505°F to 9,495°F.

Each point of Temperature Tolerance adds HT × 18° to this. A HT 12 crystalloid with Temperature Tolerance 39 for cold (allowing down to 81°F) could just barely survive on the Earth's surface.

Magnetic fluctuations, not sound, form the basis of crystalloid communication. A new version of Telecommunication (p. B91) represents this.

**Magnetic-Ripple Comm:** You communicate using electromagnetic waves generated by a fluctuating magnetic field. Your signal is omnidirectional. Base range is 500 yards in line of sight when you are immersed in the material of Earth's outer core; in rock or air, it decreases to five yards. *10 points.*



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