

\$ 6.00

STARFARING



A GAME BY KEN ST. ANDRE

STAR FEARING



#1

The universe is not only stranger than
we imagine. It is stranger than we can
imagine.

– J. B. S. Haldane

Oh yeah?

– Ken St. Andre



I THINK YOU'RE RIGHT,
ZELDA. THIS IS A
BLACK HOLE AND NOT
A MALFORMED STAR-
GATE!

研

STARFARING

--a science fiction game of
interstellar exploration, growth, and combat I
Outrageously illustrated by E. Hogan.
Unleashed on the world by Ken St. Andre.

--These rules are only a framework.
The game depends on the quality of your imagination
to fill in the details of life in
the starfaring society of 2700 A.D.

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by Ken St. Andre and Flying Buffalo, Inc.
A Cosmic Circle production.
All questions, comments, suggestions for improvements,
volunteered artwork should be sent to
Ken St. Andre, 2232 E. Pinchot #8, Phoenix, Arizona 85016

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PO Box 1467
Scottsdale, Arizona 85252

CONTENTS

PART 1 Theory

Introduction	2
Abbreviations and Jargon	3
Sequence of Play for Starfaring.	6
The Universe.	8
Interstellar Society.	11
Game Scenarios.	13
The Players.	16
Building Your Starship.	18
Basic Ship Components.	18
Shells.	18
Warpengines.	19
Star Crystals.	20
Instrumentation.	21
Used Ships.	22
Paying Off the Ship.	22
Creating Crew or Other Characters.	23
Humans.	23
Neuters (Androgynes).	24
Androids.	24
Robots.	25
Aliens.	26
Standard Disclaimer.	26

PART 2 Mechanics

Tables and Explanations.	27
Weapons and Conflict.	28
(Ship's Saving Roll in Combat).	29
(Table of Damages from Hits in Combat).	30
Ship Weapons and Shields.	31
Slish Ships.	31
Rewards and Payment.	32
Store for Starfarers.	33
Table of Psionic Powers.	36
Space Hazards.	39
Space Hazards Defined.	40
The Slish	40
Galactic Core Radiation	40
Meteor Strike.	41
Power Crystal Malfunction	41
Supernova.	41

Subspace Hazards Defined . . . . .	.43
Derbis. . . . .	.43
Kthulhus. . . . .	.43
Berserkers. . . . .	.43
Randomization . . . . .	.45
Random Star Location . . . . .	.46
Star Types. . . . .	.47
Star Systems. . . . .	.48
Planetary Types. . . . .	.50
Life Among the Stars. . . . .	.51
Table of Interstellar Distances. . . . .	.53



INTRODUCTION

STARFARING is a game of interstellar exploration for two or more players who will interact verbally to imaginatively create their own universe while they are playing. It is science-fiction storytelling in your own living room. It is far-wandering, quick-thinking, bright-imaging. Set in a star-spanning human culture of approximately 700 years hence, it can be what you, the players, are willing to make of it in terms of visualizing the society of the future. The exploration of the stars is our main focus, but you, the player, can make what you want out of the basic structure; for, STARFARING is designed as an infinitely expandable game for any number of interested players. Starting with the base society and the Star Crystal/Subspace Drive, all of galactic and inter-galactic space is available to the player with the imagination to define his own rules and then stick to them. (However, please set your imaginative postulates around some other human home world than Earth, which belongs to all of us and must be shared.)

When designing this game, I had no idea that my artist would have such a bizarre imagination. None of the artwork herein included is meant to be offensive to any ethnic group, but is merely an attempt to represent more than white American masculinity in what we hope is an amusing fashion. (Now, having disclaimed intentional racism, sexism, or alienism, all I can say is if you don't like the artwork, that's your problem.)

Ken St. Andre
August, 1976.



YES, WE DO DETECT
WATER ON THIS PLANET!

ABBREVIATIONS AND JARGON

Many of the terms used in this game may be unfamiliar to game players who don't happen to be astronomers, physicists, or mind-readers. Therefore, we include this short glossary. Glance over it now, and if you see an abbreviation or a term in the rules that is not explained at the same time, look back here for it.

andyvats	slang term for the complex chemical factories where androids are created,
astrogation	navigation between and among the stars,
a.u.	astronomical unit: the average distance between the earth and the sun--93 million miles,
Bio-mechanical link	a helmet device that interfaces directly between human brains and ship's computer.
bions	Bionic Life Support Function units: the standard amount of life support equipment and energy needed to maintain a human being comfortably on a star voyage of any length; defined as at least 2000 cu. ft. of space. It is the basic rating for determining hull or shell cost when building a starship.
Brahma	in Vedic Indian mythology, the supreme god of the universe, source of all power,
	an abbreviation standing for the speed of light which is 186,000 miles per second (300,000 km./sec.). Made famous by Einstein in his theory of relativity: e equals mc^2 .
	Centigrade--a temperature scale based on the freezing and boiling points of water at sea level. 0 degrees C equals 32 degrees F; 100 degrees C equals 212 degrees F.
cold storage	cryogenic freezing of living organisms to be thawed out and recovered later--also called suspended animation. This method is used for transporting large numbers of people between stars, as it requires too much energy to build ships with bion ratings high enough to carry ten thousand people at once,
crowns	bio-links to the computers.
deor	1/10 of a day: the unit measure of time in Starfaring: equal to 2.4 hours or 144 minutes,
FTL	faster than light. Applied to stardrives and starships.

G.M.	Galaxy Master (or Game Master)--the most important player in Starfaring, the one who makes the game possible by creating a star cluster, a home world, etc. The G.M. must take the part of planetary governments, the laws of nature, or alien intelligence,
homeworld	a human world with a well-developed culture and resources, capable of launching interstellar explorations. In this game, Earth is not used by G.M.s as a homeworld in order to allow for and demand infinite inventiveness by the players in creating unique human cultures.
light year	the distance light travels in 1 year--roughly 6.25 trillion miles.
me.	Megacredit (1 million credits)--the smallest unit of currency that we both with in Starfaring.
parsec	(derived from parallax and second) a unit of measure of astronomical distance equal to 3.26 light years or 19.2 trillion miles,
Psi or Psionics	those mental powers of Humanity or alien races that bypass ordinary cause and effect relationships such as telepathy, psychokinesis, clairvoyance, astral projection, etc. See table of psi powers near the end of the rules,
Psionic booster	a helmet device that amplifies a person's normal psionic abilities via feedback circuits established in helmet and brain,
Psionic nullifier	a helmet device that dampens a person's normal psi abilities by deadening the psi centers in the brain.
randomizing	any method that suits you for arriving at random numbers. Two methods are described in the rules: one using a deck of cards, and the other involves a pocket calculator.
S.M.	Ship Master--the main persona of the game players; the personality who describes the actions taken by ships and their crew--usually either the captain or the owner of the starship.
S.R.	Saving Roll--a number which must be rolled on 2 dice to avoid harm of some kind. There are saving rolls for ships in combat, and for individuals in danger. The S.R. is defined as 20 minus whatever attribute the character is using (either Physique, Health, or Mentality). The S.R. for ships in combat is described in the rules for combat.
shell people	Intelligences, both human and alien, consisting of a living brain, a minimal body, and a mechanical life support system. They are self-contained in a metal shell (hence the name) for safety, and are often installed in starships, in effect becoming the ship itself,

and thus giving inert metal life, intelligence, and personality. Shell people must be created by die rolls just as other crew must be.

Shiva in Vedic Indian mythology, the god of death and destruction.

stan. abbreviation for standard--the normal measure of energy in this game. It has no 20th century equivalent I can think of right off hand, but it is not exorbitantly large,

Star Gate an entry from real space to Subspace, but in a very distant part of the galaxy or even beyond it.

Subspace (no, not a space full of subs)--a subset of the universe corresponding 1 to 1 with real space as we know it, but where all motion has the effect of faster than light travel when translated back into the real universe,

upgrading improvement of warpengines by addition of extra power accumulators and dispersers. Also, improvement of Star Crystal ratings by Hondstatter tuning.

Vishnu in Vedic Indian mythology, the god of life and preservation.

warp one a standard unit of speed equal to 10% of the speed of light in normal space, or 1 parsec per day in Subspace (which equals 1241 times the speed of light).

warpengine the standard drive unit for Starfaring ships. It converts Brahma crystal energy into motion by distorting the curvature of the space around the ship in a controlled fashion. The greater the distortion, the greater the speed that is obtained. Excessive space distortion either destroys the ship or pushes it into Subspace, thus limiting sublight speeds to .5c.

zero sum game any game characterized by winners and losers. The term zero sum is derived by assuming that one person's victory balances out another person's defeat. Examples: Chess, Monopoly, Bridge.

MILDRED, MILDRED!
RUN THROUGH MY
EROTIPROGRAMMING!
PLEASE!

DURING A BATTLE?
IF THE CAPTAIN FOUND
OUT SHE'D KILL US
BOTH!

... BESIDES,
SHE'D GET
JEALOUS!



#

SEQUENCE OF PLAY FOR STARFARING

In setting up and playing Starfaring, you will need to go through the following stages.

(1) Star Cluster Creation: One person, the Galaxy Master, will need to mentally postulate a homeworld to operate from, and will need to draw up on paper a star cluster for exploration. This process is described in the rules, and the charts necessary for creating sun systems, life, etc. are all included at the end of this booklet. I have found that as a solitaire player, the process of creating your own star cluster is almost as fascinating as playing the game, and far more interesting than most other solitaire pursuits. Of course, that may just be my own prejudices operating.

(2) Creation of scout ships. Here is where the players can really let their imaginations go. If they don't get what they want, it is their own fault. As a Galaxy Master, you should hold Ship Master players to the self-imposed limitations that they will either deliberately or inadvertently create in this stage of setting up. Crews are also determined.

From here on in, up to the end of the game, it will steadily recycle itself in either conversation (or secret written orders) between G.M. and S.M.s as the players react to create their own science fiction scenarios. The whole purpose of Starfaring is to stimulate the imagination as much as possible. Negative attitudes should be avoided. The Galaxy Master's rulings are final, though players may attempt to reason with him/her/it. The G.M. represents not an individual, but the impersonal forces of the universe.

(3) The Ship Master describes the actions taken by his ship and crew. He keeps track of energy expenditure and any knowledge pertinent to the play or results of the game.

(4) The Galaxy Master explains the results of the Ship Master's actions. He acts on behalf of alien intelligences, space debris, or universal forces. He should have a slightly (but not overtly) hostile tone--not giving away everything in sight to the players. Space is not all that friendly. He must encourage and stimulate novelty on the part of the players, and still be ready to amaze and amuse them with his own when the situation comes up.

(5) All necessary die rolls and mathematical computations should be performed, especially for combat. Results are evaluated.

(6) Have the Ship players been destroyed or have they returned to homeworld? Either case ends the game. If not, go back to step 3, and play through the conversation cycle again.

Winning:

Starfaring is *not* a zero sum game with one winner and one loser. Instead, winning is defined as how well the game is played. Ship Masters who come back alive with important and interesting discoveries are obviously winners. A Galaxy Master who was able to keep the game interesting and fun for his players is also a winner. This game approximates life in having no absolute or final rewards. Ideally, a player should be able to continue until the player character dies. Happy Starfaring!



THE UNIVERSE

Man made it to the stars the hard way in slower-than-light Bussard Ramjets. Then he got lucky. On a dead world circling Barnard's star, explorers found a million year old base of some vanished alien race and a working starship. Thus, Man learned about the Star Crystals. The three types were named after Brahma, Shiva, and Vishnu and related to power, energy weapons, and energy shields respectively; and in the years of study that followed, the new Subspace drive gave humanity the galaxy.

It was already too late for the planet Earth, but thousands of elite groups were able to flee the over-populated, over-polluted homeworld and find new havens in the stars. Two hundred years after the finding of Star Crystals no one could say how many human worlds were spread throughout the galaxy, but several hundred at least existed in a loose confederacy of planetary governments. Several alien intelligent lifeforms had been contacted, but none who had their own star drive; except for the Slish, who, unfortunately, proved to be totally hostile and totally uncontactable.

It was at this time that the Robotic Wars began. Some say the Robots erupted from a depopulated Earth and spread their rebellion through the stars. Some say that Robotic electrical life represented the next step in evolution towards a smarter, more perfect organism. At any rate, the Robots tipped their plans too soon, and Humanity was able to fight back. For fifty years, Man was driven out of system after system by the totally superior Robotic race, which could seemingly build themselves to meet any function.

There were, of course, millions of machines that remained loyal to their creators, and without them Man would have been snuffed out instantly. But those years of combat instilled an instinctive prejudice and distrust of mechanical life that has still not been eradicated.

It was psionics that eventually defeated the Robots. With the aid of a completely telepathic race of nitrogen-breathing octopoids, Man developed the literally mind-freeing drug LSDX-6000 which released and amplified all the latent psionic talents of the human mind. As the drug went into distribution, the patterns of victory and defeat in space began to turn around. The Robots

had never developed psychic powers, and were incapable of developing any. They found themselves unable to cope with an enemy that was precognitively aware of all their plans, or one that had the telekinetic power to mentally enter and ruin their most delicate machinery. Mothers throughout space took the drug, and human children were born with powerful psychic talents and no longer needed to take the drug. In twenty years the Robots were everywhere on the run; in thirty years they had seemingly been annihilated.

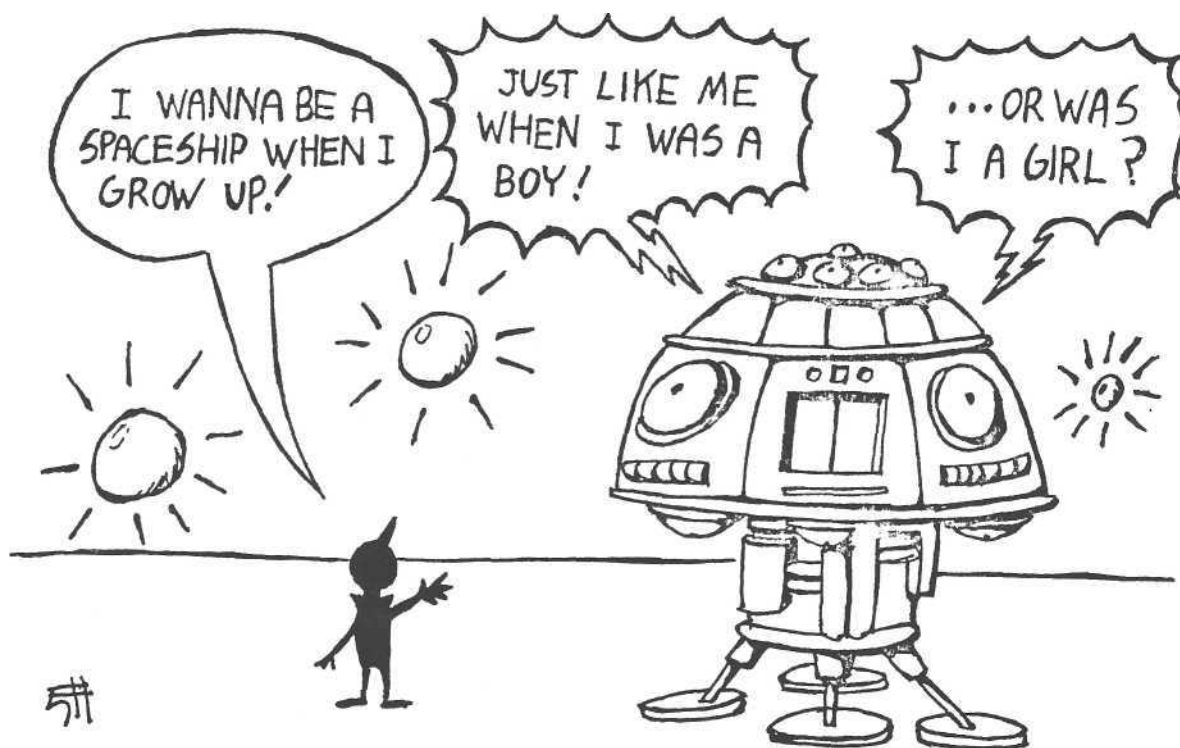
Centuries passed and Man reached a plateau in his evolution. The most important scientific development was the limited matter converter, which practically wiped out interplanetary commerce except in such things as art items and heavy metals. The matter converter could not produce anything denser than iron; nor would it produce manufactured material, though it could be set to feed raw material directly into a manufacturing process. Man encountered a few other friendly interstellar races, but their science was either incomprehensible or else contained nothing new.

One of the things Man had never quite been able to accomplish was physical immortality. True, the life span had been expanded to average 200 years, but men still died. The background radiation of the galaxy seemed to be partially responsible, and then there was always the possibility of accident. So there arose the class of shell people--people who chose for one reason or another to keep their brains alive enclosed in an artificial life-support system. It was learned that such brains didn't accumulate any poisons as time went on, and the rate of cellular deterioration leading to senility and death slowed by a factor of 100. A century after the first pioneering work, there was no shortage of shell people. These disembodied beings found that they could develop a tremendous advantage in working with computers, and many of them were connected to the mechanical brains so necessary for interstellar travel. Thus, Man gained truly intelligent ships.

The other major scientific breakthrough of the time was the discovery that a star's gravitational field could be used to open a gateway into Subspace elsewhere in the universe. The spaces reached through these Star Gates were vastly further away than Man had yet traveled from his own sphere of influence. Coupled with an ever-increasing shortage of Star Crystals and uninhabited earth-type planets, the Star Gates triggered an enormous surge of exploration, whose like had not been seen in 400 years.

The resources involved in opening a Star Gate were so enormous that only planetary governments (and only the richest of them) were able to accomplish it. Soon governments were in the business of encouraging adventurous citizens to take a scoutship through a Gate and explore for them. Such ships were enormously expensive, but the governments involved were willing to make colossal loans running into tens of thousands of megacredits to

those willing to risk their lives and try it. The explorers were almost always such eccentric individuals that they found conventional society boring, or else they were money-mad commercialists. At any rate, they all found absolute freedom beyond the Star Gates (as well as considerable danger and wealth).



INTERSTELLAR SOCIETY

The starfaring culture of 2700 A.D. is technologically capable of nearly anything we can imagine, within certain limits. Those limits are: (1) No teleportational devices have been created mechanically, although certain individuals with high psionic abilities do seem to have the ability; (2) Psionic powers have not been duplicated within machines, although mechanical boosters and nullifiers do exist; (3) True tachyonic faster-than-light drives have not been developed (Subspace travel, using Star Crystals, works by jumping the starship out of the "Real" universe into Subspace which allows translight speeds depending upon the amount of Star Crystal energy expended through the Warpengine.); (4) There is a marked prejudice against self-aware Robots as a carryover from the Robotic Wars; (5) The average human intelligence is slightly inferior to average twentieth century American intelligence, but the lack is more than compensated for by the universal increase in psi abilities and the ready availability of information from computers and other mechanical sources; (6) Nuclear weapons are reserved for planetary governments and are not available to even the wealthiest citizen.

The structure of government throughout human space is basically commercial rather than communistic or imperial. Individual rights are highly respected, but individual privileges are extremely rare. Money talks, and citizens can have just about anything they can pay for, with exceptions such as nuclear devices.

Intelligent life in the starfaring community is divided into the following classes which, however, have identical rights under the law:

- Humanity: a natural biological organism with developed psionic powers.
- Androids: chemically constructed life without psi or reproductive powers.
- Shell people: Human or alien minds either totally disembodied in a mechanical life-support system, or encased in a rudimentary body of small size maintained by mechanical life-support systems. (Usually used extensively in computer linkages for management and control purposes.)
- Robots: self-aware devices of mineral/plastic/electrical structure without psi powers or innate reproductive ability.
- Alien intelligence: you name it, and it exists in the galaxy somewhere. Each non-terrestrial species has unique characteristics, abilities, and handicaps to be worked out by the player who conceives the species.

Self-aware computers are classified as Robots. Lower-grade computers--those incapable of doing their own original programming in problem situations--are not regarded as life forms, and are the single most useful tool for Humanity in this time. Bio-mechanical links exist for integrating a controlling human intelligence with the machine to temporarily produce a cybernetic personality superior to either of the parts.



IF YOU SAY, "WE'RE
REALLY SWAMPED!"
ONE MORE TIME ...



GAME SCENARIOS

I. STANDARD EXPLORATION. The player in his scoutship is sent into another sector of space, one without any human homeworlds. Once there, the player takes whatever actions seem best to him in search for Star Crystals, Earth-type worlds, Alien intelligences, heavy metals, or anything else of value. The usual procedure is to pick a likely-looking star, go to it, map the system if any, and prospect for Star Crystals (special Star-Crystal sensing devices are standard equipment aboard all starships. They are able to sense Star Crystal energy output in either modulated or unmodulated form. Such sensors are generally not used in Human space because of the enormous number of starships, each of which would register.) After the player has done as much exploration as he wants to (or he runs out of time), the player goes back to the Star Gate and returns to his homeworld for evaluation of his finds and monetary reward. It is up to the Galaxy Master to either cleverly make up things for the explorer to find and try his wits on, or to have the situations already set up and then activate them as the player comes into range.

Example: The scoutship Portpisbee entered the system of a G-type star and discovered a large solar system which was inhabited by a culture of many different forms of mammalian creatures who seemed to be controlled by a hive, or racial, mind. They had interplanetary travel, and were not at all afraid of creatures from the stars. In fact, they tried to capture the Portpisbee and its crew, both by guile and by force, but were frustrated in their efforts by the wariness and superior technology of the starship's captain. It turned out that the true intelligence of these aliens belonged to a breed of bacteria that lived in the brains of mammals as parasites on the host body. They were compatible with human life, and would have like nothing better than to spread to the stars and throughout the galaxy. They were thwarted, and the system was placed in quarantine. The system, named Medusa, has not been destroyed, because the government of Gcenn's World would very much like to take over the system with its two inhabitable Earth-type planets intact.

II. THE PLANET SEARCH CONTEST. A game scenario for two or more starship players, it postulates that a planetary government has mismanaged things to the point where the homeworld is desperately overpopulated and needs someplace to ship a fraction of its excess population. Starship owners are offered a liberal bounty for uninhabited Earth-type planets, with the best reward going

to the person who first discovers a suitable colony. (In the society of 2700 A.D. the optimum planetary population is regarded as 100 million people, and even a 10% surplus is considered as inexcusable overcrowding.) (As I write these rules, this scenario has not yet been tried. The Galaxy Master should probably deal with each of the players secretly, which could be handled by either having them write out their instructions, or by seeing them separately in a different room.) Various strategies present themselves. Everyone could go off on their own and hope for the best. Ships could work together and either fight it out for planetary rights when found, or share the bounty between them. Crews with a better psionic rating might try to spy on their competitors by using astral projection or just plain telepathy, etc.

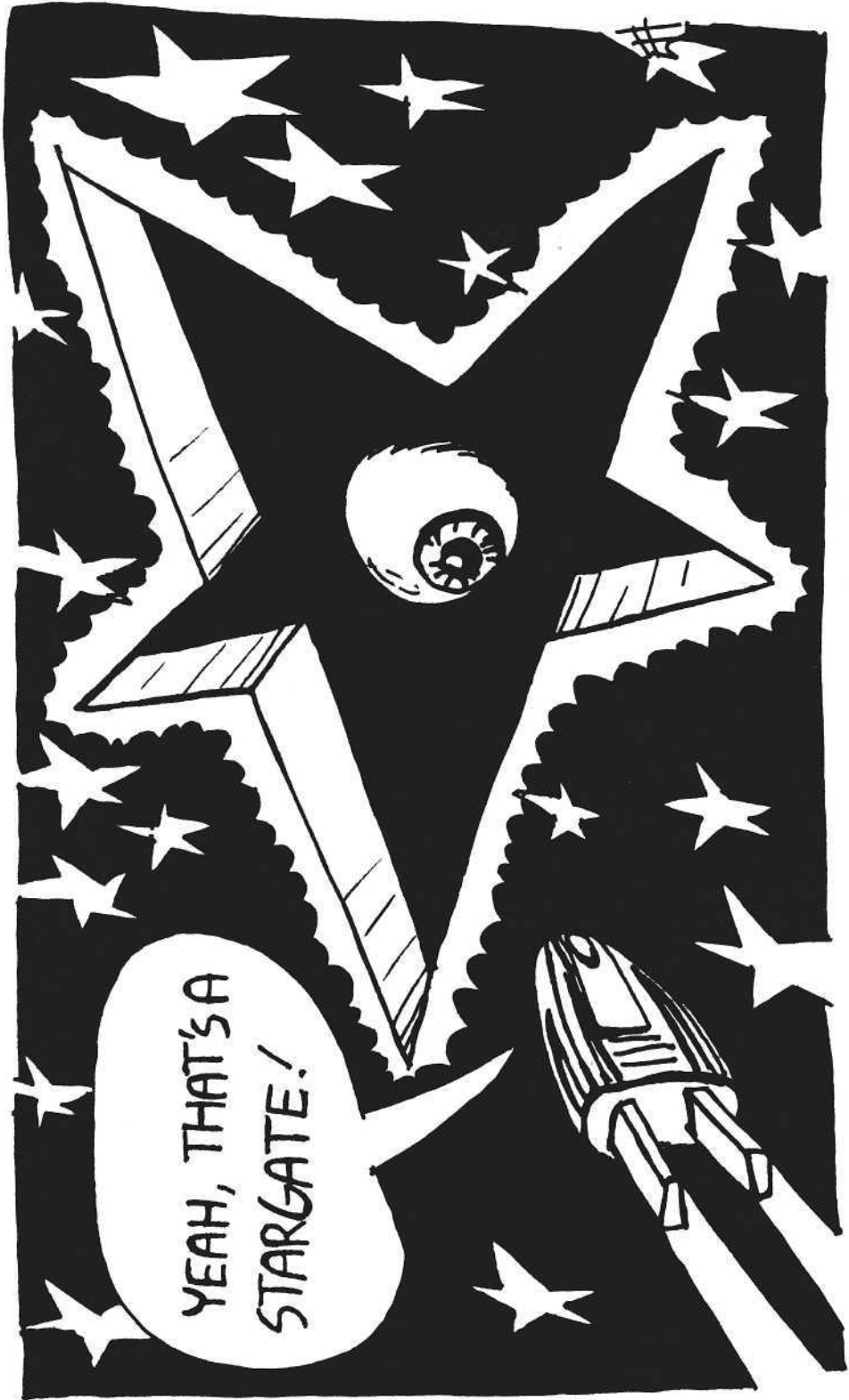
III. ALIEN (OR ENEMY) ATTACK. This is the most difficult scenario to set up and play. Essentially it consists of any situation which represents primarily battle in space with energy weapons. The framework of STARFARING presents you, the player, with two possible enemies to use as villains and be played by the Galaxy Master: the Slish and the Robots (who may not have actually been completely destroyed after all). The Slish are arch-typically B.E.M. in concept, methane breathers, tentacled, the works. They are non-telepathic and unreasonably hostile to all other life-forms. They have a faster-than-light star drive, but it does not utilize Star Crystals; nor can the Slish enter Subspace. They do not utilize their FTL drive inside solar systems. They seem to be especially interested in gas giant planets, and are most often encountered near one. They do use energy weapons similar in effect to the Shiva beam weapons of humanity, but their shields do not seem to be as powerful as Human shields. Aside from these generalizations, Slish ships vary in quality, just as Human ships will, and it is up to the individual Galaxy Masters to set their own limits on the powers of the Slish if they choose to use them.

When last encountered, Robotic technology was the same as Human technology except for their lack of psionic powers. Any new developments in Robotic powers are left to the imagination of the Galaxy Master, but artificial psionics are forbidden.

It is also perfectly plausible to assume that one or more Human homeworlds may be at war and are fighting it out in space. In this case, I suggest that the players representing the different worlds have a third player referee as Galaxy Master, and that a random method of determining comparative strengths in ship numbers and sizes be worked out. (The best of such methods submitted to me will be published in a supplement to this game.) Combat in space, at tremendous speeds, and using high energy weapons, would take place in computer-controlled exchanges predicated on psionic prediction of probable location at a given moment in time. The most important thing would be relative psionic ratings, and the major advantage would lie with the ship whose gunnery computer was bionically linked with a high-psi

Human brain. In an even match of energy weapons, effective use of psi power could well be the difference between victory and defeat. Probably the best method of having combat is for the combatants to write down their orders separately and secretly and let the referee evaluate the result.





THE PLAYERS

Each complete game of STARFARING requires at least two players who will belong to the two different classes: Galaxy Masters and Ship Masters.

The Galaxy Master is the one who develops and runs the machinery of the game. The G.M. speaks for planetary governments, alien races, interstellar media, etc. The G.M. has the job of imagining and mapping out a new star cluster for the starships to explore. The G.M. must put in some Star Crystal troves, Earth-type planets, alien forms of life, hazards of space, etc.

Designing an unexplored star cluster makes a fascinating solo game in itself. You may work according to any plan you wish, or you may make use of the randomizing procedures and charts further on in the rules for a more mechanical and consistent method of universe exploration. (If those tables do not suit your image of galactic construction, feel free to invent suitable tables or rules of your own to work with.) You will need either graph paper, or hex sheets on which to map your cluster. Each star or star system should be assigned a set of three coordinates (X, Y, and Z) representing its location in real space on an arbitrary coordinate system which uses the Star Gate entrance as the central 0, 0, 0 point. Our standard unit of distance is the parsec (approx. 3.26 light years), since I felt that the light year was too short and the light zulu (10 light years) was too long. Our standard unit of speed is warp one, which is a distance of 1 parsec in 1 day or 1241 times the speed of light. Specific information about star types, classes, planets, temperatures, etc. is available in the tables further on, or is readily obtainable at any library.

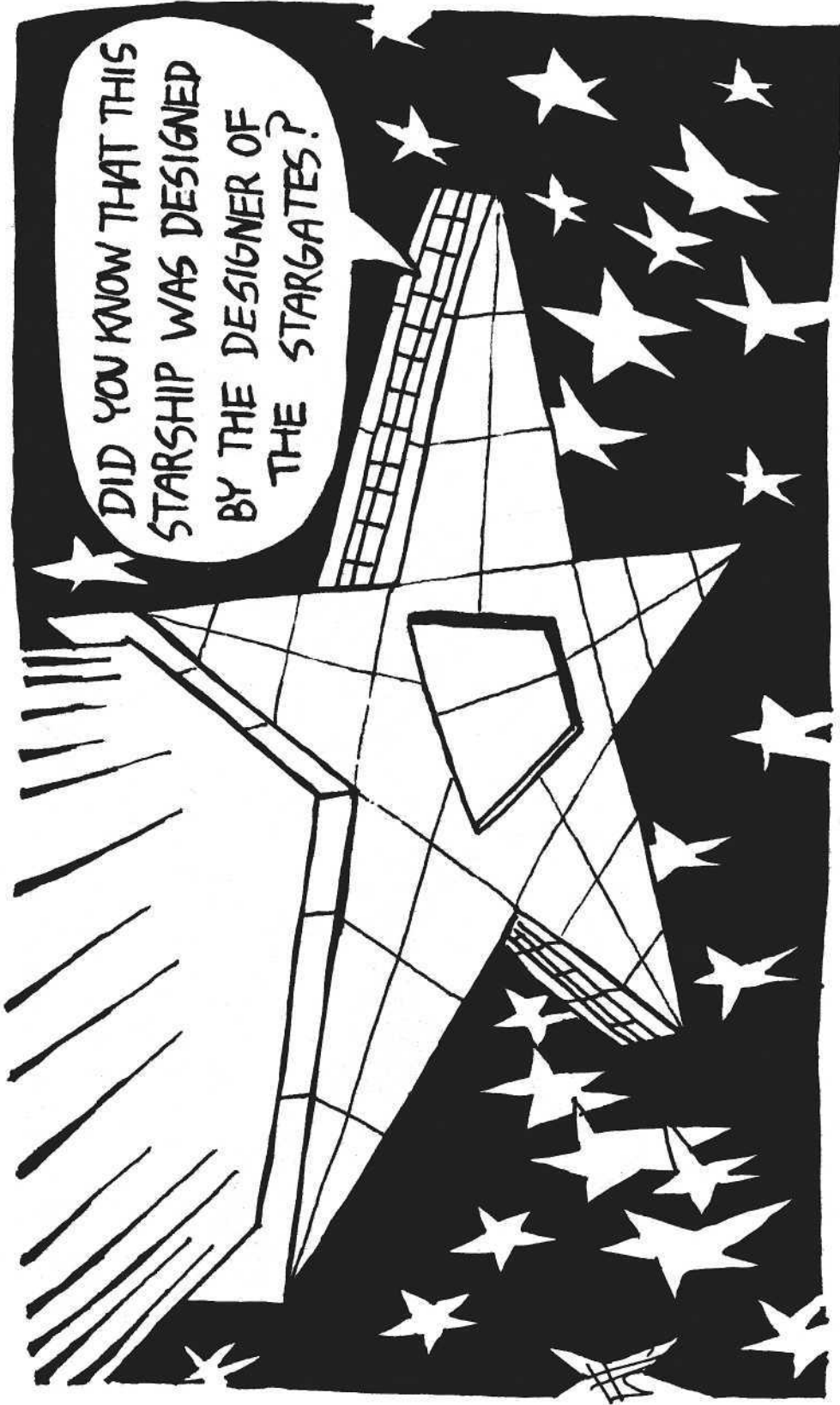
The other class of player is the Ship Master -- who is the person responsible for decision making and the description of ship actions during the game. If it comes down to a question of individual actions either aboard ship, planetside, or in space, this player must carry the story line. The Ship Master needs to be given a specific identity, whether it is a stay-at-home capitalist who hires all the help he needs, or whether it is the ship's actual human captain, or the shell person linked to the computer to be the ship's brain. The Ship Master can also be a Robotic, Android, or Alien intelligence, if that is what turns you on. In any case, the S.M. should have a personality (with rated attributes) and stick to it.



I DON'T KNOW WHY,
ABDUHL, BUT THIS
STARGATE DOESN'T
LIKE ARABS.

#

DID YOU KNOW THAT THIS
STARSHIP WAS DESIGNED
BY THE DESIGNER OF
THE STARGATES?



Unless you are buying a used ship (q.v. under ship building), the Ship Master must build his starship from scratch. In order to do so, the S.M. will take a loan of 100,000 mega-credits from the planetary government, which must be repaid with interest (to be decided by G.M. and announced before the ship is built). The first thing to do is to decide on a name and which class of being the Ship Master will be. Next, consult the rules on character creation, make your die rolls, and write down the attributes. The collateral for your government loan will be your ship and there is a penalty clause if you don't pay off the loan from your earnings in a relatively short period of time. Planetary governments claim the ships of those who don't pay off their loans on time--within five trips.

Now that you have your money, you must build your ship, which consists of picking out a certain hull size, fitting it with Star Crystals and Warpengine, and setting the Bionic Complement (abbreviated bions) which defines how many crew members you may carry under various conditions and actually refers to the ship's life-support systems. Special instrumentation and exploring tools also need to be purchased, and a crew must be hired (i.e. created) with all their individual attributes. Sorry, the perfect specimens you want for your crew are not readily available, and you will have to use more-or-less ordinary specimens (depending on the die rolls). Robots, Androids, shell people, and Aliens all have different attributes from ordinary Human citizens, but are still created by die rolls. After a character has been created, it should be considered to have an independent life of its own, should be paid for its services, and may, in time, advance to be an S.M. itself. Where appropriate, the sex of individual characters should be determined at the same time as its other attributes. We do not visualize the world of the STARFARING future as sex-biased either for or against males, females, or androgynes.

BUILDING YOUR STARSHIP

Basic Ship Components.

- Shell: includes hull, interior spaces, airlocks, and life-support systems.
- Warpengines: includes inertia-free gravity drive used to propel ships while in normal space at speeds up to .5c.
- Brahma Crystal: includes modulation and energy storage circuits.
- Vishnu Crystal: includes power demand and dispersal circuits to the hull.
- Shiva Crystal: includes power demand circuits and energy weapons circuits.
- Instrumentation: ship's computers, sensing devices, matter converter, etc. (You may have just about anything that you can logically justify to the Galaxy Master--including devices which sense for the nearest star in Subspace up to a range of 10 parsecs. Once you have reached the vicinity of a star in Subspace, you may also sense for the number of associated planets, if any. Etc.) (You may not design mechanical units to perform psionic functions, with the sole exceptions of psionic boosters and nullifiers which must be worn by a Human in order to have any effect.)
- Accessories: must be purchased in addition to the ship--usually include such things as special weapons, equipment, space suits, specially-designed force fields, unusual instrumentation like nullifiers and boosters, drugs, other bionic devices.
- Crew: number of crewmen is optional as are types. Ship Masters should be prepared to list their crew members and powers before the game begins.

As a ship designer, you may dispense with any of the above systems you want to as long as you accept the resulting consequences. For example: if you don't buy a Warpengine, your ship cannot convert Brahma Crystal energy into a useful form and will never go anywhere.

Shells.

Scoutcraft shells are constructed to the Ship Master's desired design. They are rated for size by Bionic Life-Support Function units (known as bions for short). One bion will

comfortably support one Human being and has a volume of approximately 2000 cu. ft., much of which may be occupied by various devices used in keeping a man comfortable (i.e. a bed; culinary, educational, entertainment or scientific apparatus; spare clothing; etc.). Two people can subsist uncomfortably in a 1 bion ship, but there will be mounting problems with oxygen production, waste disposal, etc. Four people is the overload limit for 1 bion, and the system may break down to the danger of everyone.

Scoutcraft shells have basically four sizes, determined by the bion number.

		<u>Cost</u>
Small	up to 5 bions	10,000 mc.
Mod	up to 10 bions	19,000 mc.
Large	up to 15 bions	27,000 mc.
Exorb	up to 20 bions	34,000 mc.

Larger ships are known. They generally use a multi-crystal drive and belong to planetary governments. Most common are the gigantic Colony ships, rated at 100 bions, with cold storage facilities for up to 10,000 people. The Warships, remnants from the Robotic Wars, have bion ratings between 100 and 500, but very little cargo space. In some parts of Human space, it is illegal for a private individual to own a ship larger than Exorb size.

Warpengines.

Warpengines are so called because they generate the warps in space by which ships enter Subspace. A speed of Zero in Subspace is equivalent to a speed of c in Real Space; however, due to the resistance of the medium in Subspace, a ship will not travel at all when its warpspeed is zero. In order to re-enter real space, a reverse warp must be created. The cost in energy is 1000 standards, regardless of the direction of the warp.

Warpengines are rated by the amount of Brahma Crystal energy they can handle without burning out. Warpengines cost 3000 mc. per unit of warpspeed they can generate.

Warpspeeds: In Subspace - warp 1 equals 1 parsec per day
warp 2 equals 2 parsecs per day
warp 3 equals 4 parsecs per day
warp 4 equals 8 parsecs per day, etc.

In real space - warp 1 equals .1 c
warp 2 equals .2 c
warp 3 equals .3 c
warp 4 equals .4 c
warp 5 equals .5 c .
Higher warpspeeds in real space cannot be obtained by Human ships.

<u>Warspeed</u>	<u>Real space energy cost</u>	<u>Subspace energy cost</u>
1	100 standards	1000 standards
2	200 "	2000 "
3	400 "	4000 "
4	600 "	8000 "
5	800 "	16000 "
6	Impossible. Engine either explodes or breaks into Subspace.	32000 "

Warpengine repair and upgrading: To be repaired or upgraded, a warpengine must be pulled out of its lethally radioactive quarters and decontaminated before repair work is done. A fee of 1/4 of the upgrading charge of 3000 mc. per warp unit is assessed when such work is done.

All warpengines (unless completely destroyed) are capable of producing the warps that translate ships into Subspace and back out. However, in normal space, an engine rated at Warp 3 can only attain .3 c as its maximum speed.

Warspeeds lower than 1 in normal space generally require only nominal amounts of energy which need not be calculated. For very slow travel in Subspace, please calculate the true energy cost.

Star Crystals.

For all three varieties of crystal the price is the same: 1000 mc. per 1000 standards of energy produced or processed. Crystal rating depends upon two factors: natural size and Hond-statter tuning. Crystals bought for new starships are sold, basically untuned, by their size. The largest natural crystal in existence has a rating of 25 (i.e. 25,000). Tuning costs 1000 mc. per 1000 standards, and maximum tuning will just double a crystal's natural capability.

A crystal in use (especially a Brahma Crystal) sometimes detunes itself spontaneously. (See Space Hazards section.) Untuned crystals do not detune. Keep track of natural rating.

Crystals may be combined in parallel to produce higher energy outputs than is possible by using one crystal alone. Ordinary shells are not designed to accommodate such linkage and must undergo modification at a cost to be determined by the G.M. in question before the game.



Instrumentation.

The basic cost in instrumentation is computers. Computer functions are subdivided into a number of areas: astrogation, gunnery, life-support monitoring and control, research analysis/sensor interpretation, and library. The Ship Master may either buy a single master computer which integrates all of these various functions, or may buy a number of micro-processors, each responsible for a different function and controlled by a central processing unit. There are advantages to each system. The chief advantage to using the Great Brain single unit is that it costs less to install. The chief advantage to the multi-unit construction is that it is unlikely to be totally knocked out if damage is suffered by any of the parts.

Cost:

Master Computer in 1 unit	8000 mc.
Multi-unit construction:	
Library	1000 mc.
Research analysis	3000 mc.
Life support	500 mc.
Gunnery	1000 mc.
Astrogation	500 mc.
Centralprocessor	4000 mc.

The cost of these computers includes all sensory input/output devices necessary for their functions. Supplementary instrumentation, such as would be required for graphic displays suitable for non-electronic human senses, cost one-half the computer cost in that particular area. (Thus, if you desire on your control room visible light screens, computer controlled, that show starfields, close-ups of other ships in space, etc., it would cost an additional 750 mc. when building the ship (i.e. half the cost of the Gunnery and Astrogation modules).

It is not possible to make contact telepathically with a computer unless a shell person is wired into the ship's brain and controls it. There is an additional charge of 2000 mc. for modifying a computer to accommodate a shell person comptroller, but as it serves to give the ship literally its own intelligence, it is worth it.

However, bio-links (colloquially called crowns) to the ship's computers exist. They take the form of helmets that electrically pick up and amplify specific brainwaves which are then translated into thoughts or commands by the computer which will then do the required information processing at electronic speeds and feed the results back to the human operator via the helmet. The result is practically instantaneous knowledge of a desired subject by the human operator. Such a link-up is almost de rigueur for the weapons' operator in combat. Unless the enemy ship is moving on a mathematically predictable course, or else is moving at speeds slower than .02 c (or else is prohibitively close), then the only way to hit the enemy is to shoot at where they are



...AND HERE'S THE "ENTER-
PRISE", PREVIOUSLY OWNED BY
A FEDERATION FOR THREE
YEARS. THEY ONLY TOOK
IT OUT ONCE A WEEK TO
EXPLORE STRANGE NEW
WORLDS, SEEK OUT NEW
LIFE, AND NEW CIVILIZATIONS,
AND BOLDLY GO WHERE
NO MAN HAS GONE BEFORE.
ONLY 500 MEGACREDITS!

CHILDREN USED STARK'S

LET TURN STAVE ON!

ON THE

WINTER

100%

GLORIA PRICE

CHILDREN USED STARK'S

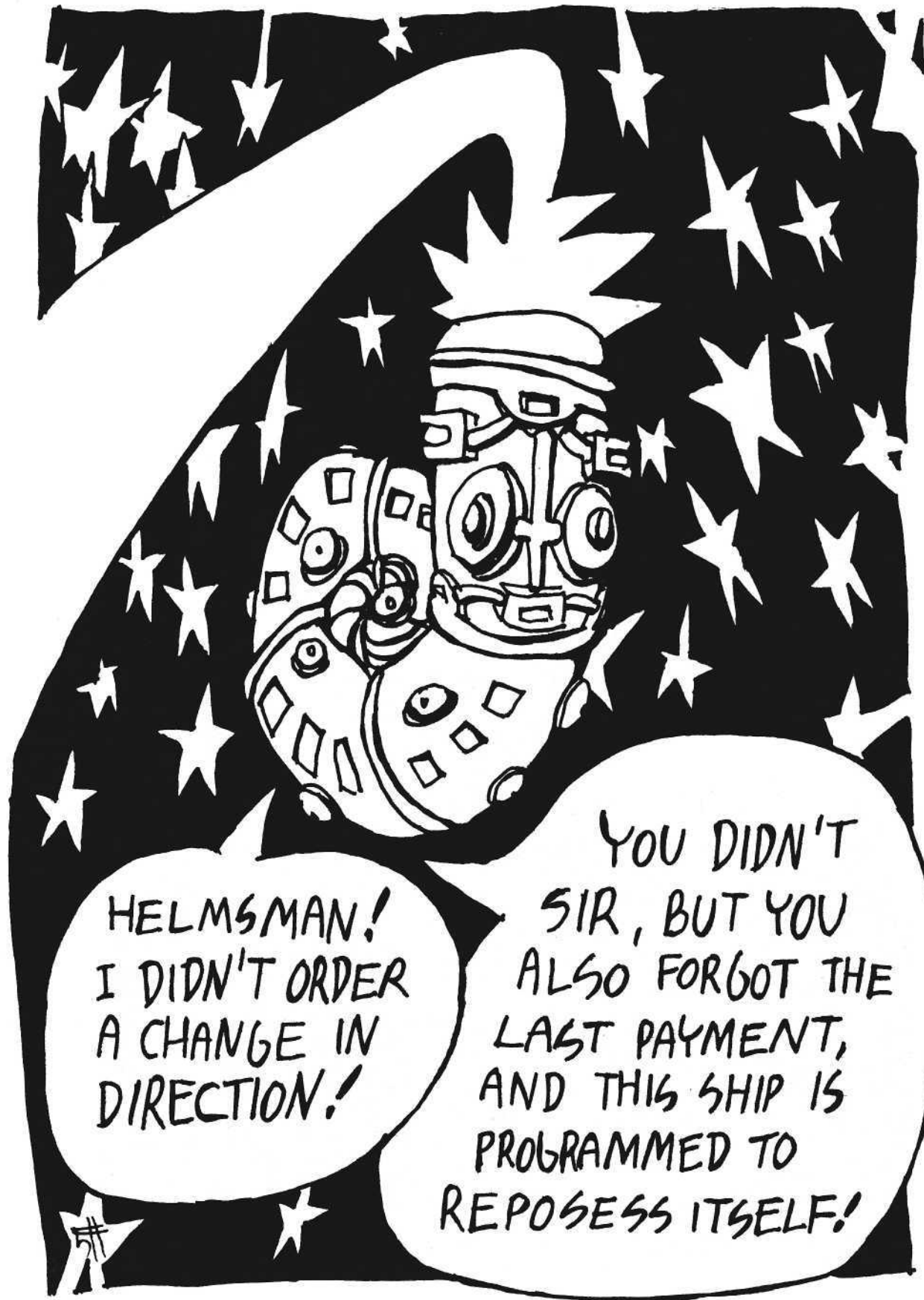
THE LIVING

STARK'S

ZELON

CALL GUNZ-742-20153

CHILDREN USED STARK'S



HELMSMAN!
I DIDN'T ORDER
A CHANGE IN
DIRECTION!

YOU DIDN'T
SIR, BUT YOU
ALSO FORGOT THE
LAST PAYMENT,
AND THIS SHIP IS
PROGRAMMED TO
REPOSSSESS ITSELF!

going to be, and only with psychic prediction of the future can that be accomplished. Thus, one crown comes with every armed ship, but if more are desired for other purposes, they must be purchased.

Used Ships.

For those Ship Masters unable or unwilling to build their own ship from scratch, they may take over a used ship from the planetary government. The arrangement for obtaining these ships is a little different. The Ship Master rolls 3 dice five times and 1 die once. These numbers tell you the vital statistics of your ship, regardless of how mismatched the figures may come out.

Roll 3 dice	Multiply by 1000 for Brahma Crystal rating
Roll 3 dice	Multiply by 1000 for Shiva Crystal rating
Roll 3 dice	Multiply by 1000 for Vishnu Crystal rating
Roll 1 die	This is your Warpengine rating.
Roll 3 dice	Divide by 2. This is your bion rating.
Roll 3 dice	Multiply by 1000. This is how many mc. goes with the ship to buy accessories, hire crew, etc.

Optional - Many of these old, used ships have a shell person already linked to the old general-purpose computer. See rules for creating shell people, under Crew.

Paying Off The Ship.

The planetary government demands a 20% interest payment on any loans it makes, and it holds the title to your ship until your loan is completely paid. Ship Masters must attempt to pay off their loans from bounty earned on explorations. If half the debt is not paid after 3 explorations, the planetary government may seize the ship. If the entire debt is not paid *after* five trips, the government will seize the ship.

Once ships have been paid off, they may be remortgaged for up to another 5 trips, if the Ship Master wishes to borrow more money and improve his vessel.

Used ships are valued at 1000 mc. per crystal unit plus 3000 mc. per warpengine rating. Shells and instrumentation are not charged for. The extra cash that went along with the ship must also be paid back.

HE SEEMS FRIENDLY ENOUGH,
BUT DO I FEEL RELUCTANT
ABOUT ACCEPTING HIS LOAN?



CREATING CREW OR OTHER CHARACTERS

HUMANS!!

Humans may be either male, female, or neuter. If the neuter gender is chosen, just say so; otherwise roll 1 die. Odd indicates male; even indicates female.

A new character should be given a name. The rest of the person's character will develop as attributes are assigned and games are played, and the character gets the chance to take certain actions. I'm going to create a sample character as I go along with this description, and her name is Sh'n.

The four important characteristics about human characters are: Mentality, Psi rating, Physique, and Health. I'm going to explain these one by one.

Mentality is general intelligence. Intelligence quotient is a somewhat dated concept to explain Mentality. This is really a measure of an individual's problem solving and rational thinking ability, and bears no relationship at all to chronological age. Usually, a ship's captain is considered (or chosen to be) one of the smartest people aboard. Roll 3 dice and multiply by 10 for a Mentality rating. Sh'n has a Mentality of 90, which is considered very low average. Ratings of 80 and lower are generally regarded as stupid. Ratings of 130 or better are considered bright. Ratings of 170 or higher are at the genius level. Mentality may be adversely affected by such things as exposure to radiation, drugs, injury, or they may be improved by using special drugs or by telepathic contact with alien races (this is up to the G.M.).

Man's most important powers are his Psionic ones. In the 400 years since the Robotic Wars, human psi powers have declined considerably as the race has built up a very high toleration of LSDX-6000. Relatively few individuals retain the great psi powers of centuries since, but with the aid of psionic boosters, and occasionally of a mind-link that cumulates psi powers, some remarkable effects can still be achieved. (See table of psi powers and costs for what is available and how to use it.) Sh'n has a weak rating of 9 (Roll 3 dice). She may use psi power only 2 times before losing the ability, and it takes her 5 days to recover. (Roll 1 die for each of the latter 2 characteristics.) She is not a psychic star. Incidentally, the main use of psi powers is that of telepathy which greatly facilitates contact with alien races.



YOU STUPID SON
OF A **SLISH!**

I'LL HAVE YOU
KNOW **SLISH** AND
HUMANS AREN'T
INTERFERTILE!

I HOPE HE'S
RIGHT!

Physique is a measure of a person's general strength and appearance. Sh'n has a rating of 14, out of a possible maximum of 18--we know that she is at least pretty good looking. (Roll 3 dice; 3 is the minimum, 18 is the maximum.) Physique may vary, depending on conditions, but 18 is the highest it can ever get. Having an 18 physique means the person is at his/her maximum of physical perfection and beauty. Any further development would only tend to the grotesque. (When wearing a prosthetic exo-skeleton, the strength component of physique may be boosted to a level higher than 18, but that number is than a rating for strength only.)

Health is one's general measure of well-being. One can be strong and beautiful while dying from a laser wound; thus there is no absolute direct relationship between Health and Physique. (If hurt somehow in the play of the game, subtract the wound factor directly from health.) When a person's health reaches zero, the person is dead. With a health of 3 or below, the person is in a coma and unconscious. (Roll 3 dice for health rating.) Sh'n is a nice healthy girl with a rating of 14. If wounded or sick, subtract 1 Physique point for each 2 Health points taken off.

Sh'n's player card now looks like this:

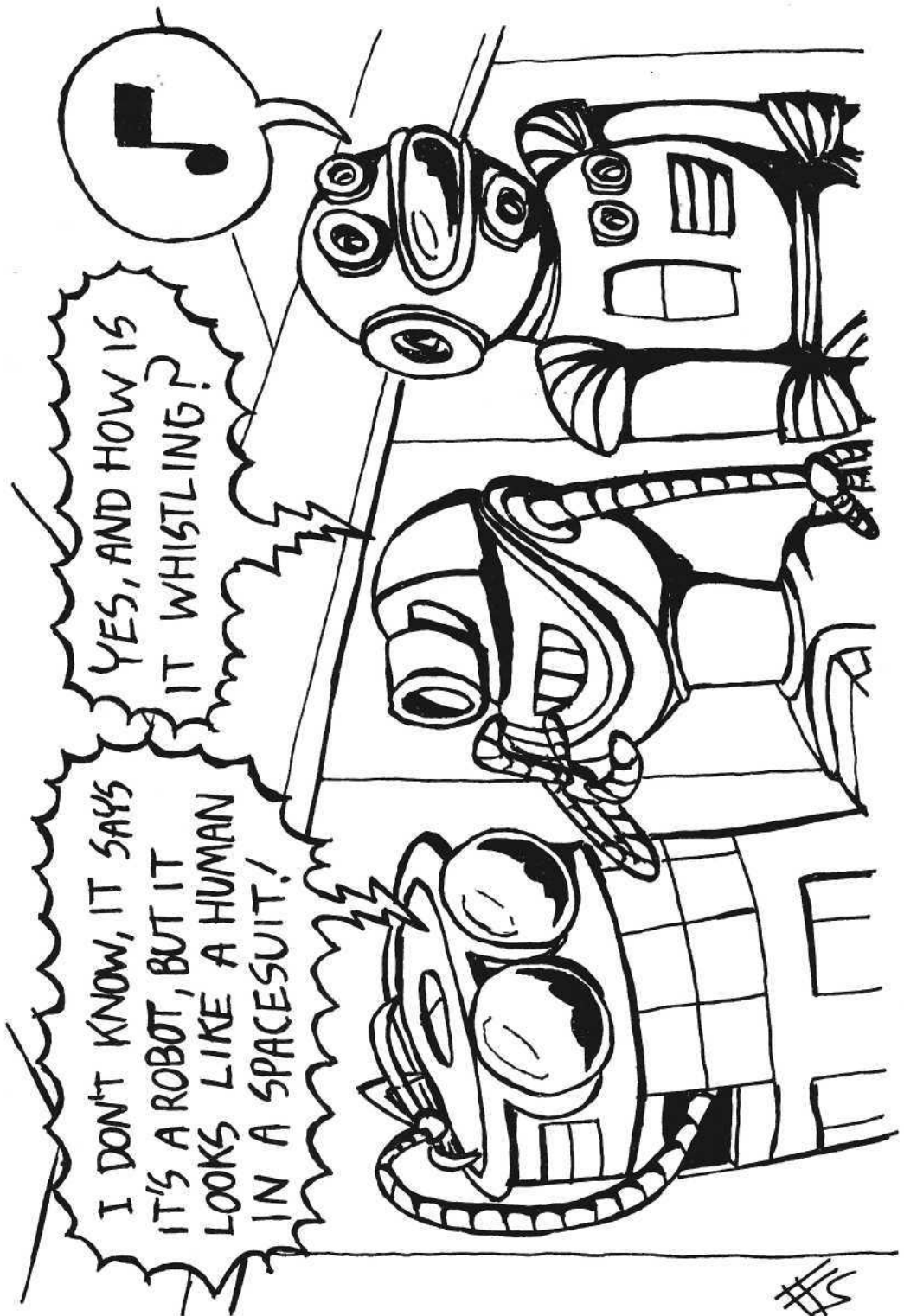
Name: Sh'n the sweetheart. Occupation: Starship crew-Relaxation
Officer.
Mentality 90 Psi 9 Psi Use 2 Psi Recovery 5
Physique 14 Health 14 Money 0 mc.

Neuters or Androgynes.

It has been discovered that individuals not emotionally unstable because of biological, sex-derived urges, passions, and emotions are, on the average, more intelligent and also healthier than normal men and women. Create them just the same as you would create another human, but add 3 to the Mentality rating and add 1 to the ratings for Physique and Health.

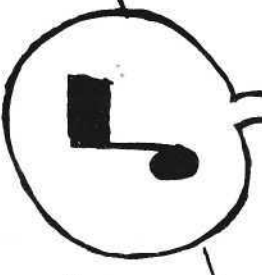
Androids.

Androids are artificially constructed beings, most of whom are in human shape. They have no psi powers, but often have mechanical implants which give them powers not possessed by normal humans. They are generally smarter, healthier, stronger, and more beautiful than humans. (When creating individual Androids, roll 4 dice for each attribute, but skip the psi powers.) Androids cannot naturally reproduce themselves--they all come from the andyvats. But they are independent citizens, since it was discovered that once educated and left at large for some time they developed personalities. By law, newly created Androids are the servants of the being who caused them to be created and paid for their creation, for a period of 10 years. At the end of that time, the Android is free of all obligation and may live as it



I DON'T KNOW, IT SAYS
IT'S A ROBOT, BUT IT
LOOKS LIKE A HUMAN
IN A SPACESUIT!

YES, AND HOW IS
IT WHISTLING?



#5

chooses within the law. They have great regenerative powers, and regain lost Health points at a rate of 4 per day, but not great enough to regenerate damaged brains. At this time in history, they are relatively rare.

Robots.

While androids are chemically created protoplasm, Robots are entirely electro-mechanical beings. They range from simple devices for performing specific functions to man-like beings whose positronic brains are greatly superior to the ordinary human. Robots do not have psionics. Nor do they have Physique or Health as such. Instead of Physique and Health, they have Charge and Efficiency, which are both rated on a scale between 0 and 1.00.

Robotic Mentality for those with positronic brains is determined by rolling 3 dice and multiplying by 50. Thus, the dumbest of the true Robots is equivalent to a very bright human. Their Mentality, however, is seldom at full power, but instead depends on the decimal rating of their Charge times their Efficiency times their Mentality. (Example: a Robot with an average Mentality of 500 who is only at .5 Charge and .5 Efficiency has an effective Mentality of 125.)

As humans need food, Robots need electricity. The interior of their abdomens is one great storage battery. Fully charged, their rating is 1.00 and they contain 10 standards of energy. Under normal circumstances, the charge runs down at 10% per day. A fully charged Robot has sufficient strength in its servo-motors to lift and carry 2000 lbs. (Paranoid humanity feared to build them too powerful.) At lesser charges, its effective weight handling ability is less. A Robot whose charge has fallen to 10% or less, no longer has the power of self-locomotion.

There are various reasons why a Robot's efficiency might not be at its best. For this game, let us assume that a Robot is not likely to be brand new, and thus not likely to be at 100% efficiency. For figuring the starting Charge and Efficiency of Robots, either do a randomizing process on a pocket calculator (which can be determined by the player while doing it), or take an ordinary deck of cards, shuffle it well, and draw two cards. Face cards are read as nines, aces are read as ones, deuces as twos and so forth. Let the first card drawn be put in the tens column and the second card in the ones column. If the first card drawn is a 10, do not draw another one--the Robot is at 100%. Otherwise, read the two cards as a decimal fraction between .00 and 1.00. Repeat the process once for the Charge rating and once for the Efficiency.

I leave it to players and G.M.s who use Robots to work out the fine points of this system. It seems obvious that Robots

operating on low charges or at low efficiency might be more of a hazard than an advantage for a player in this game, but I leave the option to you.

Note: As humans must buy the food they eat and clothes they wear, Robots must pay for the electricity they require, and for the mechanical repairs needed to remain at high efficiency. Due to the Human prejudice against mechanical life, they often wind up paying exorbitant rates, at the discretion of the G.M.

Aliens.

It is up to individual Game Masters or players to describe the powers, attributes, limitations, and appearances of alien intelligences. When the situation comes up, they should also then determine a fair method for randomly generating individuals of that species. (Send such formulae to me with name and description of the alien and it will be published and made available through the STARFARING newsletter we plan to follow this game.)

Standard Disclaimer.

If you are unsatisfied with our method of creating individual characters of various kinds, or if you wish to branch out into fields we haven't mentioned, please feel free to do so, and to share your ideas with us. Just be consistent in any creative schemes you come up with. (We promise to publish any outstanding ideas submitted.)



TABLES AND EXPLANATIONS





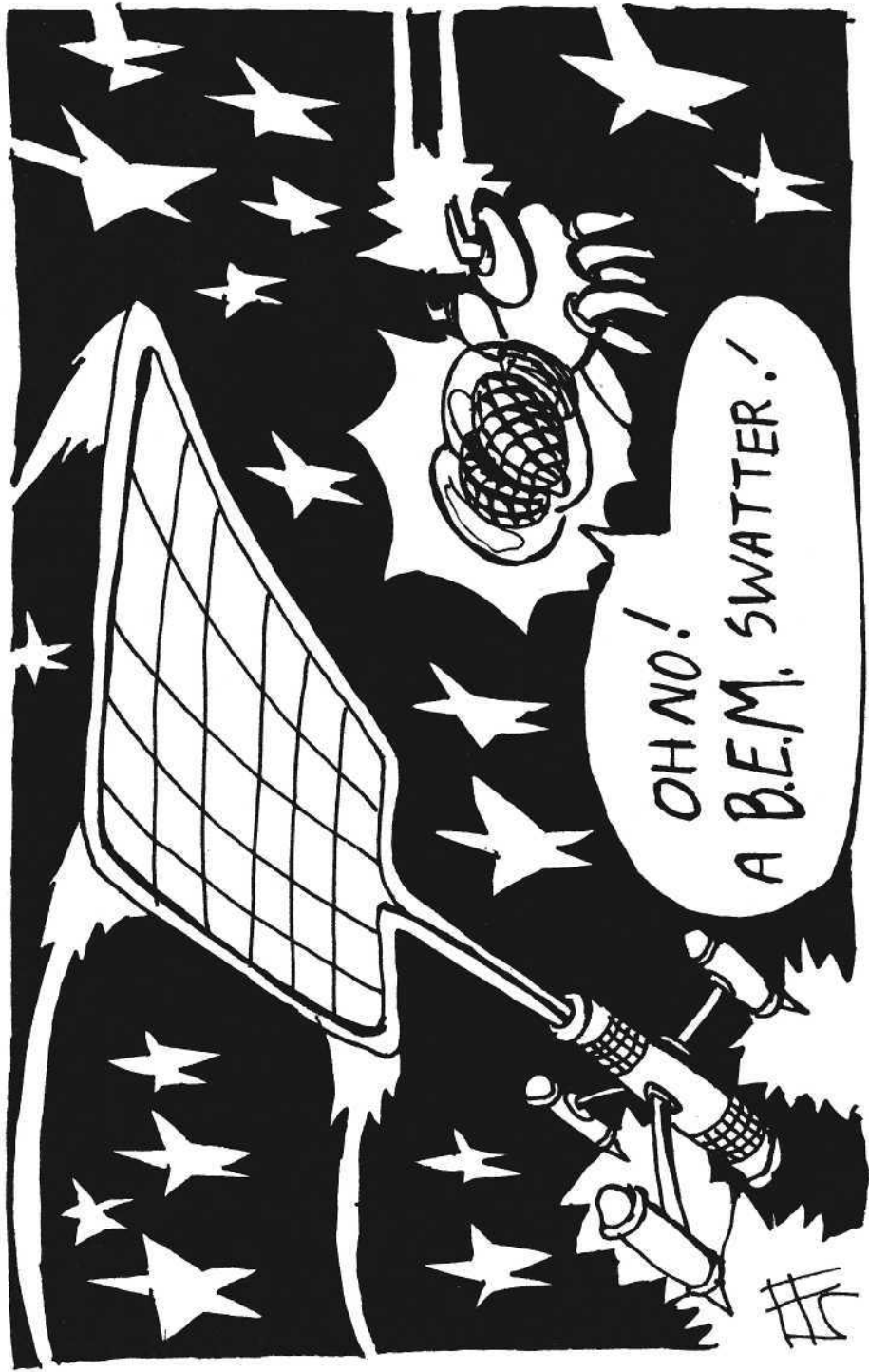
WEAPONS AND CONFLICT

With ships maneuvering at appreciable fractions of the speed of light and firing at each other over distances of thousands and hundreds of thousands of miles, no weapon slower than lightspeed itself is likely to be of much use. Thus, most of the ship-to-ship weapons of the future (all of them I discuss in this game) are energy weapons. Even utilizing beam energy weapons which travel at the speed of light, one cannot fire at a ship in a known position, because in combat it will be constantly moving in evasive action, and it will not be there when the ray arrives. Ergo, ships in combat must fire at the point in space where they estimate the other ship will be at a given time. The Shiva Crystals aboard Human ships modulate Brahma Crystal energy into a disruptive beam of force, invisible in itself but accompanied by a pulse of red light to allow for accurate tracking with an effective range of 200,000 miles. The energy weapons of other races, like the Slish, are assumed to work in a similar fashion, though they may have been produced differently.

I had at first assumed that fighting ships using ray weapons would automatically always hit each other, but now I see that, unless they were fighting at very close range, they would be more likely to miss. One would almost need to be psychic (as well as lucky) to hit another ship in this game. Fortunately, the Human brains linked to the ship's gunnery computer are psychic, and, depending on the degree of psychic power they have, they can actually foretell the future--in this case, aided by the mathematical interpolations of the computer, they would know where to aim in space.

At extreme range, 200,000 miles, it would take the energy beam a little more than 1 second to reach that location in space. But a ship travelling at .1 c would have moved 18,600 miles in that second, and thus the beam would miss it if aimed at its last known position. Ships moving at higher speeds would be missed by even greater margins. Thus, an attacking ship at close range could do no more than calculate probable position to fire at, and the result would really be determined by a Saving Roll made by the attacked ship. This Saving Roll would be determined by the mental and psychic attributes of the ship's brain, but would also be affected by distance between the combative ships.

At a range of 10,000 miles, the energy beam would reach its target in .05 plus seconds and the target ship could



change position (at .1 c) by nearly 1000 miles. Getting closer and closer, at a mere 10 miles distance, the beam would reach its target in .00005 plus seconds, and the target ship could change its position by from 1 to 5 miles depending on its speed (.1 to .5 c). (You can see how handy your own pocket calculator is for calculations of this nature.)

Regardless of all this, we need to make it possible for ships to be hit by energy weapons, so we are going to come up with a formula for Saving Rolls based on ship's brain psi and mentality ratings, ship's distance, and ship's speed. (Note: if more than one person is bionically linked to the computer, their psi totals are added, but the mentality total is not cumulative and is that of the brightest person in the linkup.) S.R. equals $1000 / (\text{Men. plus Psi times } 10000 / \text{Range in miles all divided by the fraction without the decimal of the speed of light at which the ship is moving. The formula simplifies to } 10,000,000 / (M - \text{Psi}) \times R \times S_c)$ where M stands for high Mentality in linkup, Psi is Psi total in linkup, R is approximate range in miles, and S_c is the decimal fraction of the speed of light expressed as a whole number. Roll 2 dice. Doubles add and roll over. Saving Rolls of 3 or lower are automatic misses; S.R.s of 30 or more are automatic hits.

If a ship is hit, its Vishnu field will flare up to shunt off as much of the energy impact as it can. If any energy gets through, it will immediately do two things--punch a hole through the ship's shell causing loss of atmosphere, and damage one of the stricken ship's functioning systems depending on where the hit took place. For every 500 standards of energy or fraction thereof getting through, roll 1 more die to determine amount of damage. No more than one system will be damaged on one shot. Human starships have six separate systems. For which system is damaged, roll 1 die and consult chart on following page.

<u>Die Roll</u>	<u>System</u>	<u>Damage Description</u>
1	Brahma Crystal	Subtract number of hits rolled on die or dice from Brahma Crystal rating.
2	Shiva Crystal	Same as above.
3	Vishnu Crystal	Same as above.
4	Warpengine	Reduce the warpengine rating by 1 for every 2 hits scored.
5	Crew	The number rolled on the hit die or dice is how many crew members are killed outright. All crew members except shell people roll 2 dice. (Doubles add and roll over.) Crew in space armor may add 5 to whatever they roll; crew in combat suits may add 10. Those with the lowest scores are the first to die, until 1 crew member is gone for each hit suffered.
6	Computers	If the ship has the integrated single computer, it is knocked out for duration of the battle. All systems revert to manual control. If a shell person is part of the link-up, it must roll at least a 10 on 2 dice to survive.

If the ship has the multi-unit computer set-up, roll 1 die again to see which unit is knocked out.

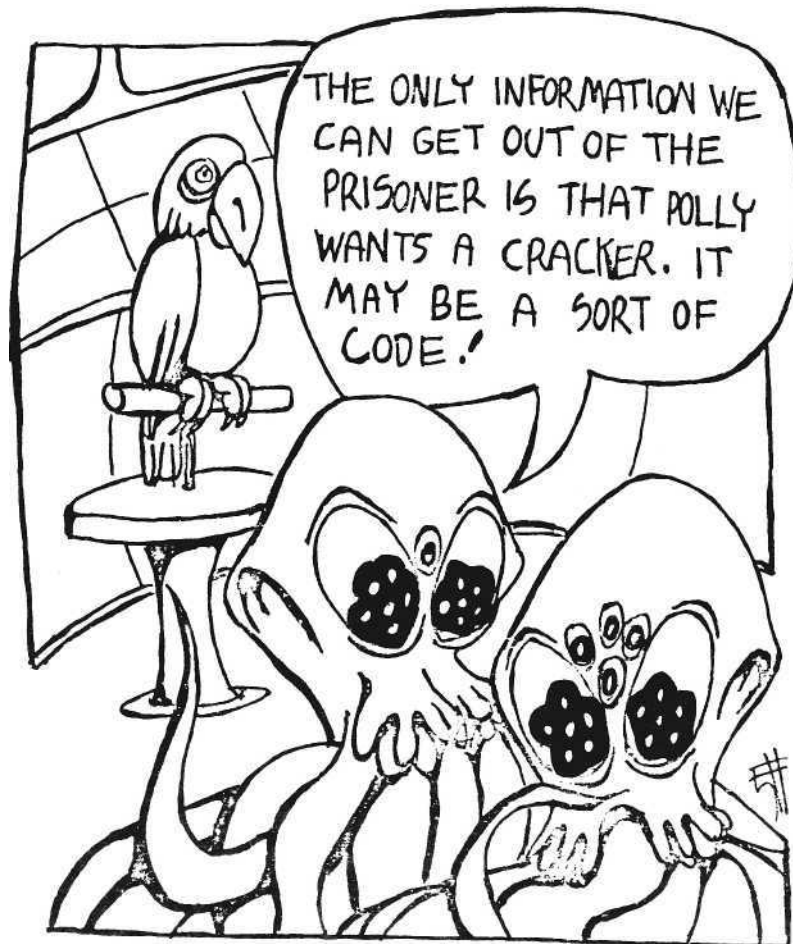
1	Astrogation	When a subsystem is knocked out, the sensory devices continue to operate, but must be interpreted manually. That means you can still use a system if you paid for the optional human-oriented graphic displays when building your ship.
2	Gunnery	
3	Library	
4	Research analysis	
5	Life support	
6	Central processor	

Ship Weapons and Shields.

The outer shells of human ships have a micro-circuit with thousands of nodes for energy release imprinted just below the paint and tied into the Gunnery computer and Shiva Crystal electronically, so that they can discharge a Shiva bolt in any desired direction from the appropriate spot on the hull. If the Gunnery computer is knocked out, the weapons system fails (unless one has an auxiliary computer that can be connected, or unless one takes personal weapons outside the hull and continues to fight.)

Slish Ships.

Attacking Slish ships approach on a constantly corrected straight line towards their target ship, firing at a rate of 5 times per combat turn. This means that while the human ship is making Saving Rolls to determine if it is hit by the Slish who have evolved the technique of firing randomly in the general direction of their randomly evading target, the Slish ship is on a mathematically predictable course; and though they fire 5 times for every once you fire, you will hit the Slish ship every time as long as your Gunnery computer is working.





I THINK YOU MIS-
UNDERSTOOD! YOU
SEE, THAT JEWEL
ON YOUR NECKLACE
IS A STAR
CRYSTAL...

REWARDS AND PAYMENT

The basic unit of currency in Human space is the Credit, It is, however, a small unit, and most of the items necessary for Starships have prices up in the Megacredits (1 million credits - mc.). Explorers are paid for their work on the following scale on my homeworld--the rates of compensation may be different on other homeworlds (that's up to the G.M., but they shouldn't be too different).

<u>Item</u>	<u>Compensation</u>
Star Crystals Meaning considerable deposits--not just an isolated crystal here and there.	100,000 mc. Possibly more if deposits are very extensive.
Habitable Earth-type planets	10,000 mc.
Heavy metals planets	500 mc.
Every other planet discovered	100 mc.
Each new star visited	1,000 mc.
Friendly contact with new intelligent life	5,000 mc.
Friendly contact with new interstellar life	10,000 mc.
Destruction of alien spacecraft Hostile life forms only, like the Slissh.	500 mc. And losses or damage to your ship during combat will be made up by insurance.

Anything costing less than 1 mc. in this game is considered too insignificant and cheap to bother with.

STORE FOR STARFARERS

<u>Item</u>	<u>Cost in mc.</u>
Weapons:	
Handguns (output-1 stan.)	1
Rifles (output-up to 10 stan.)	10
Cannons (output-up to 100 stan.)	100
These all generally operate on broadcast power from the ship, but may store up to 3 firing charges.	
Small arms and explosives of all other varieties	1 buys a shipful
Armor:	
Softsuit (flexible spacesuit with air supply included)	2
Space armor	10
Combat suit	100 (Built to your design-use of energy weapons or shields cost extra, depending on strength needed.)
Airbelt	10 (Generates a weak force field that allows free passage to oxygen only. Will screen out bacteria, water, poison gases and insects. Will not turn bullets, energy beams, or other massive attack.)
Vehicles:	
All-terrain vehicles	100 (Built to your design-making them spaceworthy costs an extra 10 mc. For more modifications ask G.M. for costs.)
Power:	
Brahma Crystals (Power)	1 per unit rating 1000 per 1000 stan. rating; 1000 is the smallest power crystal that can power a starship; 25000 is the largest naturally occurring crystal.



Item	Cost in mc.
Power: (continued)	
Shiva and Vishnu Crystals	1 per unit stan. rating 1000 per 1000 unit stan. rating
Crystal improvement	1000 per 1000 unit stan. rating for all crystals. Not practiced on crystals rated below 1000.
Portable nuclear fusion reactor weight: 1000 lb. size: 5 x 5 x 5 '	500 produces 500 stan. Rated at 1 yr. continuous use. Caution: deadly if broken open.
Instruments:	
Slish detector	50 Sounds alarm if Slish ship approaches within 10 a.u.
Psionic Boosters	3 per every unit of raise desired up to a maximum strength of 33. Use of psi boosters reduces Health by 1/2 unit per unit of psi boost. Takes effect within the hour. Health recovered at 1 unit per day.
Psionic Nullifiers	4 per every unit of psi power repressed. An instrument rated at 10 may, of course, be used at lower settings. Nullifiers do not have adverse effects on Health. For every unit/deor psi depressed under nullifier, you need equal time to recuperate before full- strength psi use. No protection when nullifier not activated.
Star Finders	40 May be set to locate and determine position of nearest star, within 10 parsecs. Uses 10 stans. of energy for each unit (1 parsec) searched. Works in normal and Subspace.
Subspace Communicator	200 Sends a message at warp one back to home planet via Star Gates.

<u>Item</u>	<u>Cost in mc.</u>	
Warpengines:	5000	Basic engine capable of doing Warp 1.
To upgrade warpengines	3000	per warpspeed unit
Drugs:		
Cleversniff	12	per .01 pure dose. Raises Mentality temporarily 100 pts. for a period of 1 to 6 days depending on individual. Residual gain of 10 pts. never lost.
Megavitaplexxx	20	per 5 dose package. Has individual effects. Raises Health and Physique 1 unit per day up to 12 days (depending on individual--roll 2 dice) up to maximum. Effects permanent. Temporary side-effect of reducing Mentality by 1/5 while it is acting.
Psicortone	50	per .05 pure dose. Temporarily suppresses Psi power for 1 to 6 days. When power is recovered, it is augmented 1 pt. for each day suppressed. May tend to suppress Psi power for taker during periods of great stress.
X2C	1	Powerful hallucinogen and euphoric--guaranteed to satisfy all hedonistic cravings. Is addictive and detrimental to Mentality. Lose 5 pts. for every 3 usages. 10 doses per mc. Used medicinally and by addicts called Sillyseers. Has unknown psychic effects depending on individual and G.M.

When playing a game that uses the whole galaxy as a stage, it doesn't make sense to worry about the small things. Anything costing less than 1 mc. is too insignificant to list here.

TABLE OF PSIONIC POWERS

<u>Power</u>	<u>Code</u>	<u>Description of Powers</u>	<u>Psi Power Needed</u>
Psychokinesis	PK	Control, levitate, or manipulate small objects such as dice, weighing up to 1 kg. (Once the basic skill of PK is mastered by the adept, it gets easier to manipulate heavier objects. Adept may control another 100 kg. of mass for every 5 extra Psi points.)	10
Teleportation	TP	Instantaneous travel without crossing intervening space. Works only on organic living material, and the adept must have a clear picture of where he desires to arrive. Distance: 10 meters or less 1 kilometer or less 100 kilometers or less 1 million kilometers or less (To teleport any other living organism not contained wholly by the adept's personal aura—such as another person or being, double the Psi power required.)	12 18 25 33
Telepathy	TL	The ability to selectively read another being's mind and understand the contents; also the ability to intrude your own thoughts or feelings into another mind. By broadcasting powerful emotions, this power may be used as a mental weapon. Reading a mind: Sending:	15 17

Telepathy (continued)	Universal translation with any number of other living beings:	22
	Mental attack:	20 or higher

Precognition	PC	The ability to "see" or foretell a probable future. (G.M. will describe your vision for you, and then based upon your probability of being correct, which he will randomly verify by a procedure of his own— either dice or pocket calculator or even playing cards may be used—he will direct the game to either take the course foreseen or to take a different course because the future seen lay in a different probability universe.	
		5%	10
		10%	12
		15%	14
		20%	16
		25%	18
		30%	20
		35%	22
		40%	24
		45%	26
		50%	28
		55%	30
		60%	32
		65%	34
		70%	36
		75%	38
		80%	40
		85%	42
		90%	44
		95%	46

The G.M. may deal with these increments in blocks of 10% if he wishes, especially when using dice or cards to determine if the prediction comes true. You will never reach a 100% accurate prediction.

Clairvoyance	C	A mental picture of what is currently happening at some other place or to some other person.	15
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Clairaudience	CA	Hearing what is happening currently at some other place or to some other person.	12
		Both at the same time.	24
Astral Projection	AP	The ability to disassociate one's astral body from one's physical body and use it as an invisible, intangible scout in place of regular ship's sensors. The astral body has a top speed of 1 parsec per deor and a top range of its Psi power in parsecs. There are monsters and perils on the astral plane that can destroy the astral body. If the physical body is slain, the astral body also dies unless it can find another body to inhabit within 3 days.	12 or higher



SPACE HAZARDS

For each turn that a ship is in space, either Subspace or regular space, the G.M. will roll 2 dice. If he gets a 12, the ship encountered some form of trouble. See charts below for possible hazards. (Realizing that other G.M.s may be more inventive or better read than I, I say feel free to add your own inventions to these lists of space hazards. You can expand the range of random numbers possible simply by rolling more dice.)

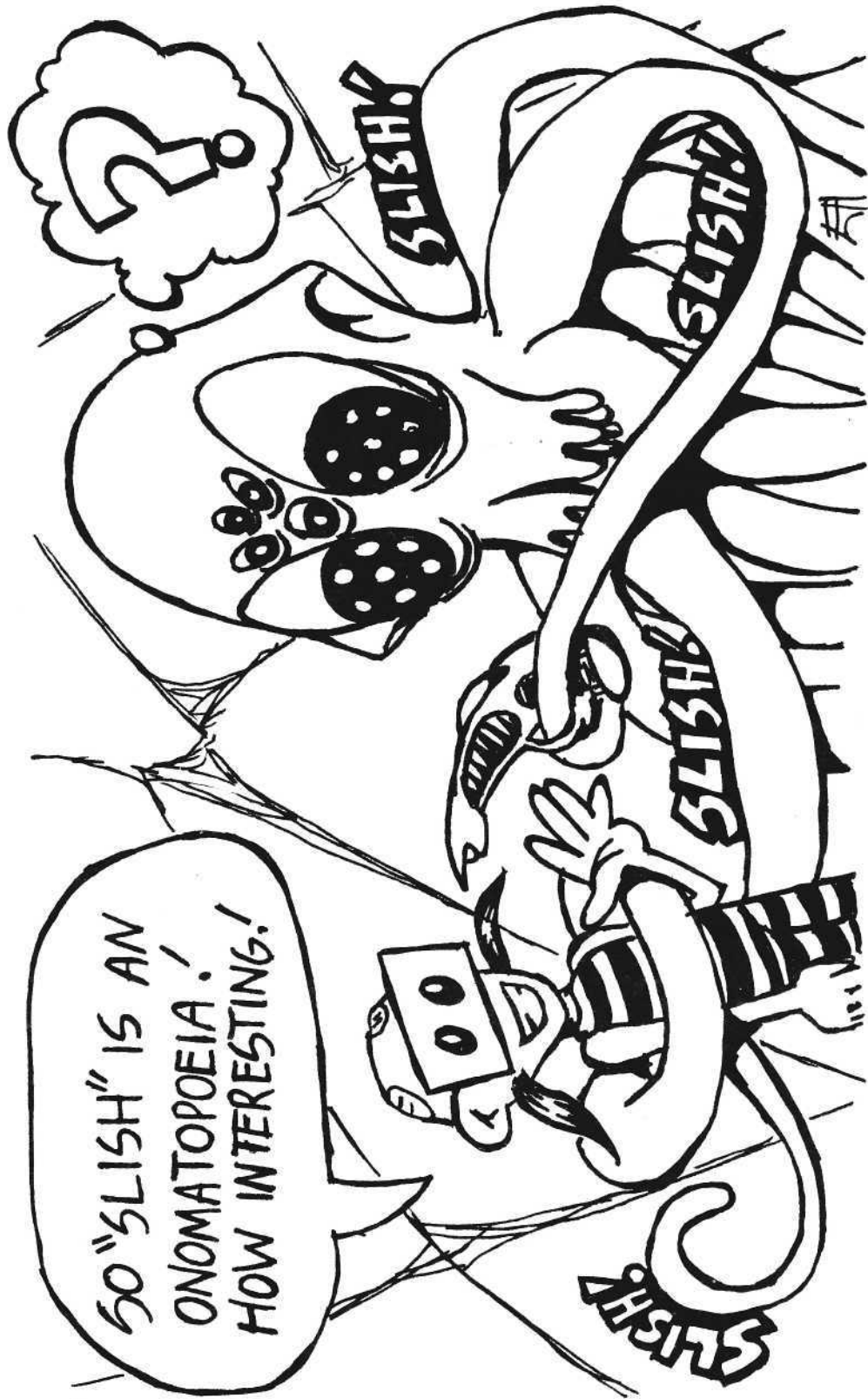
For definitions of each of the following catastrophies and how they affect a ship and crew, see the following page.

NORMAL SPACE

<u>Hazard</u>	<u>Dice Roll</u>
Slush ship or ships	2-4, 10-12
G.C. Radiation	8, 9
Meteor Strike	7
Power crystal malfunction	6
Triggered supernova (Only in vicinity of O, B, or A class tars larger than the Sun.)	5

SUBSPACE

<u>Hazard</u>	<u>Dice Roll</u>
Derbis	5-9
Kthulhus	3, 4, 10, 11
Berserkers	2, 12



SO "SLISH" IS AN
ONOMATOPEIA!
HOW INTERESTING!

SLISH

SLISH

SLISH

SLISH

SPACE HAZARDS DEFINED

1. The Slish

The Slish seem to be the other major form of inter-stellar travelling life in our galaxy. They are an octopoid, tentacled race, and so completely alien that no successful contact has ever been made with them. They are definitely non-psionic and seem completely immune to the psionic powers of human telepaths. No one captured by the Slish has ever returned to tell the tale. The Slish home system or systems have never been found, but they seem to roam through our galaxy at will. They have a FTL drive, but it does not utilize Star Crystals and they are incapable of entering Subspace. They travel in groups of 1 to 6 ships (Roll 1 die) and establish bases in the atmospheres of gas giant planets. They attack Human ships on contact. They seem to have slightly faster reaction times than Men, and slightly faster ships in normal space, hitting speeds estimated at .65 c. To create Slish ships you need only roll for weapons and shields. (Roll 2 dice and multiply by 1000) Slish weapons always fire at full strength, but their shields can be depleted and breached by pouring more energy into it than the shield is rated to handle. (Example: A Slish ship has an energy shield of 7000 and is fighting a Human craft. The G.M. does not tell the players what the Slish ship's energy shield is at. In the first round of combat, the Human ship was damaged and 4 crewmembers died; the Slish ship was hit with 4000 standards bringing its shields down to 3000. In the second round of combat, the Human ship was again damaged, losing only 3 crew this time, but the Slish took another 4000 hits and was converted into a sphere of incandescent gases and flying debris.)

2. Galactic Core Radiation

This mysterious radiation seems to originate in the core of the galaxy, and perhaps at the center of other galaxies. It is not constant in intensity, nor is it normally deadly, but it does tend to generally deteriorate Health, Physique, and Mentality at a constant rate. (Roll 1 die and subtract that number from those ratings for all crew members, including the ship's brain.) Oddly, it always seems to stimulate the psionic powers to the same extent that it weakens the other characteristics. (Add the 1 die roll to the Psionic powers of everyone on board.) It travels in pulses at the speed of light, and no known form of shielding serves to stop it. (Health weakened by G.C.R. will rebuild to its former level at the rate of 1 unit every 10 days, except as noted for other types of beings. Other characteristics are permanently changed.)

3. Meteor Strike

In the early days of space navigation, ships used elaborate detection systems to warn of impending or collision course meteors, comets, etc.; but after the development of the automatic defensive energy screen, such devices were regarded as superfluous and were universally discarded. Travelling at speeds up to .5 c, it was generally Human ships that bumped into slow-moving space rocks, rather than the other way around. Ships destroyed in space by collisions with very large meteors are estimated to number no more than 1 per century. (Roll 2 dice and multiply by 100 for the energy needed to vaporize striking meteor. If it penetrates, roll 1 die to see which system is damaged. For every 500 units of energy that it exceeded the shields by, roll 1 die again for damage to a different system.) Due to rapid decompression on penetration, all crewmembers must make a S.R. based on either Physique or Health, whichever is the better rating. (Highly unlikely example: The good ship Foobis, while traveling in a depleted energy condition in normal space, smashes into an enormous chunk of rock (22 rolled on 2 dice—doubles always add and roll over). The shields took all the power they could get—1500 standards—exhausting the power batteries, but a basketball-sized piece of stone, still penetrated with a hit rating of 700. The player rolls 1 die twice, getting a 6 and a 5. He sustained damage to warpengines and crew. Again he rolls 1 die, getting a 6. His warpengine was only rated at one—it was completely destroyed. He rolls 1 die for casualties; 6 of his 8 crewmembers were slain instantly. Before deciding which 6 die, make a S.R. for all 8 crewmembers. The two of them who make their S.R.s by the greatest amount, or who miss it by the least, are the 2 survivors.)

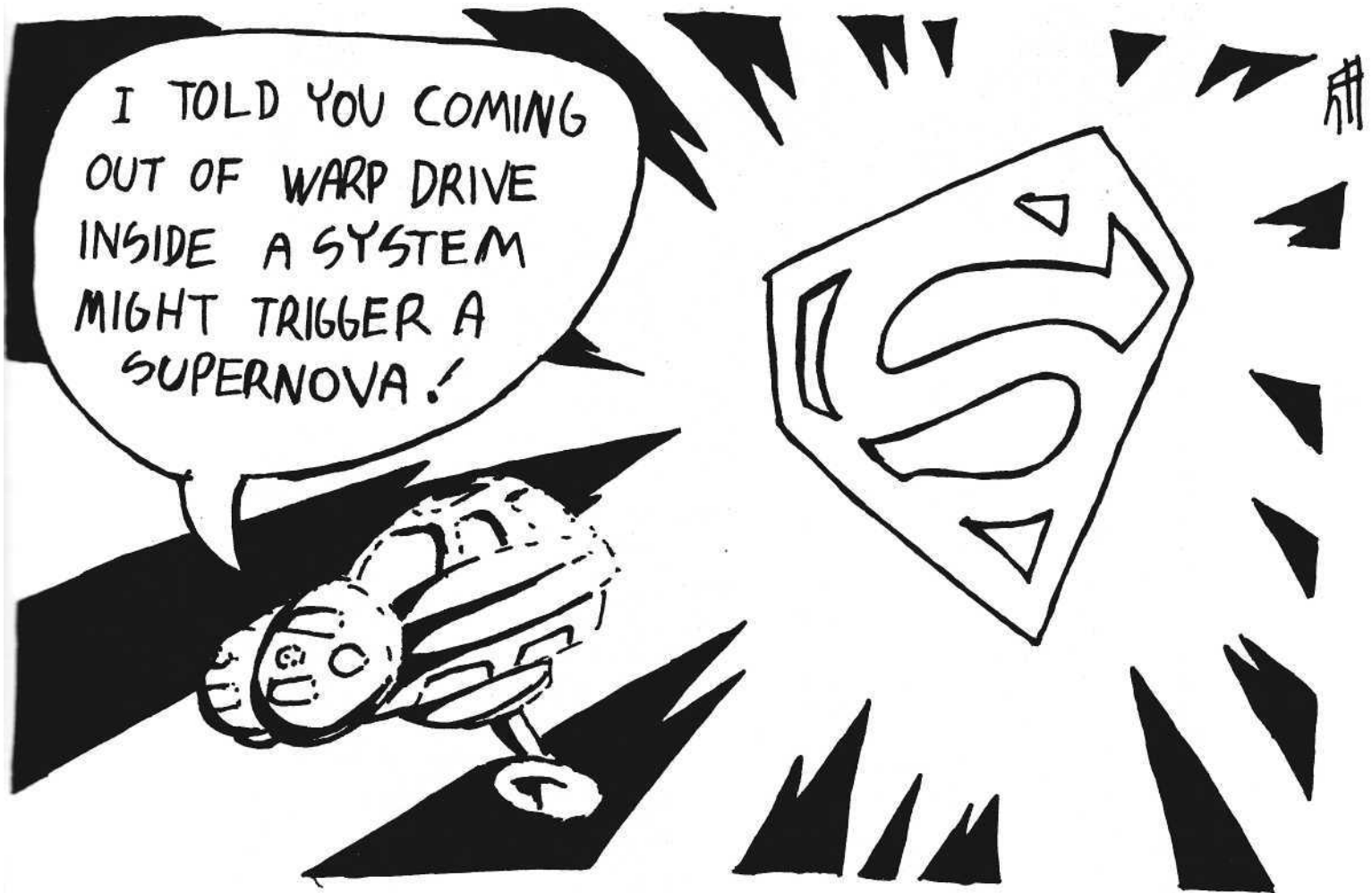
4. Power Crystal Malfunction


Once in a great while, a tuned Brahma Crystal will spontaneously change state. Generally, it deteriorates, but sometimes it leaps dramatically upward in power gain. (Roll 1 die. If you get 1-5, subtract that number from the crystal's rating. If you get a 6, add that number to the crystal's rating.) (Example: A crystal rated at 12 malfunctions; the player rolls a 5—his crystal is now rated at 7. Star crystals that fall below 0 in rating explode and destroy the whole ship.) So far, no acceptable theory has been proposed to explain why Star Crystals make these sudden changes.

5. Supernova

Unstable stars of spectral classes 0, B, and A with masses greater than Sol are sometimes triggered into a supernova explosion by the fleeting space distortion caused by a starship entering or leaving Subspace nearby (nearby being defined as within the star's planetary system, if it has one, or within 1 light hour, if it doesn't. Most ships appear out of Subspace within that range. It is not known by Mankind that his starships can have such effects. If it happens, the first effect is a wave of potentially lethal radiation. (Roll 3 dice and subtract that

number from the Health of all crew members. Subtract half that number from the Mentality of all survivors, including the ship's brain. Standard procedure in such an emergency is for the ship's brain to send it back into Subspace where it is safe; but if ship's brain has been reduced to 5 or less, it will forget to do so, and must be told to do it by any other survivor with Mentality greater than 7. If the ship does not get into Subspace, it will be vaporized by the expanding shell of superheated gases. (Star Crystals will always be produced in the remnant of the sun after such an explosion.)





WELL, BECOMING FREE
HYDROGEN MAY BE THE
AMBITION OF THE REST
OF YOU DEBRIS, BUT I
WANT TO JOIN A ROCK
GROUP!

15

SUBSPACE HAZARDS DEFINED

1. Derbis


A Subspace life-form most nearly resembling a rock with eyes. It thinks, after a fashion, and has a goal—to reduce itself to free hydrogen. Starships are a tremendous boon to such creatures, and they smash into them with glee, after having learned that the energy shield will disintegrate them. Derbis come in different sizes—a result of occasional collisions between their own kind. Derbis damage is similar to Meteor damage in normal space. To determine the energy of any given piece of Derbis, multiply a 3 dice roll by 100—triples add and roll over.

2. Kthulhus

Kthulhus are the dominant life-form in Subspace. They exist and grow by devouring the slight energy leakage from normal space into Subspace. They are disturbed by the warping of Subspace caused by Starship warpengines, and when they detect it, they will approach and attack the source. Their weapons are entirely mental, and are generally in the form of increasingly less subtle hallucinations. They attack the psionically gifted first, and less gifted later. People with psionic ratings of 6 or lower generally feel almost no effect. Ship's brains are vulnerable to attack. Each individual is affected differently by Kthulhu hallucinations, but all suffer a decrease in their Mentality rating. If the Kthulhu is not driven off promptly, IQs begin to fall. For Psi ratings of 15 or higher, roll 2 dice and subtract number from Mentality for each crew member. For ratings of 7-14 roll 1 die and subtract from Mentality. For ratings of 6 or lower just subtract 1 from Mentality. Mentalities lower than 5 are not capable of independent decisions. Kthulhus are disconcerted but not harmed by energy weapons. Getting hit with one is much like what you would feel if someone hit you in the face with a fresh chocolate cake. Kthulhus may be driven off or slain by psychic blasts of hatred or aversion from a crew member concentrating on the idea of a Kthulhu, and who has a higher psi rating than the Kthulhus rating. To get the Kthulhu's rating, roll 3 dice (triples add and roll over). If not chased away or eluded, Kthulhus will call up space Derbis to attack the ship at a rate of 1 per deor or 10 per day.

3. Berserkers

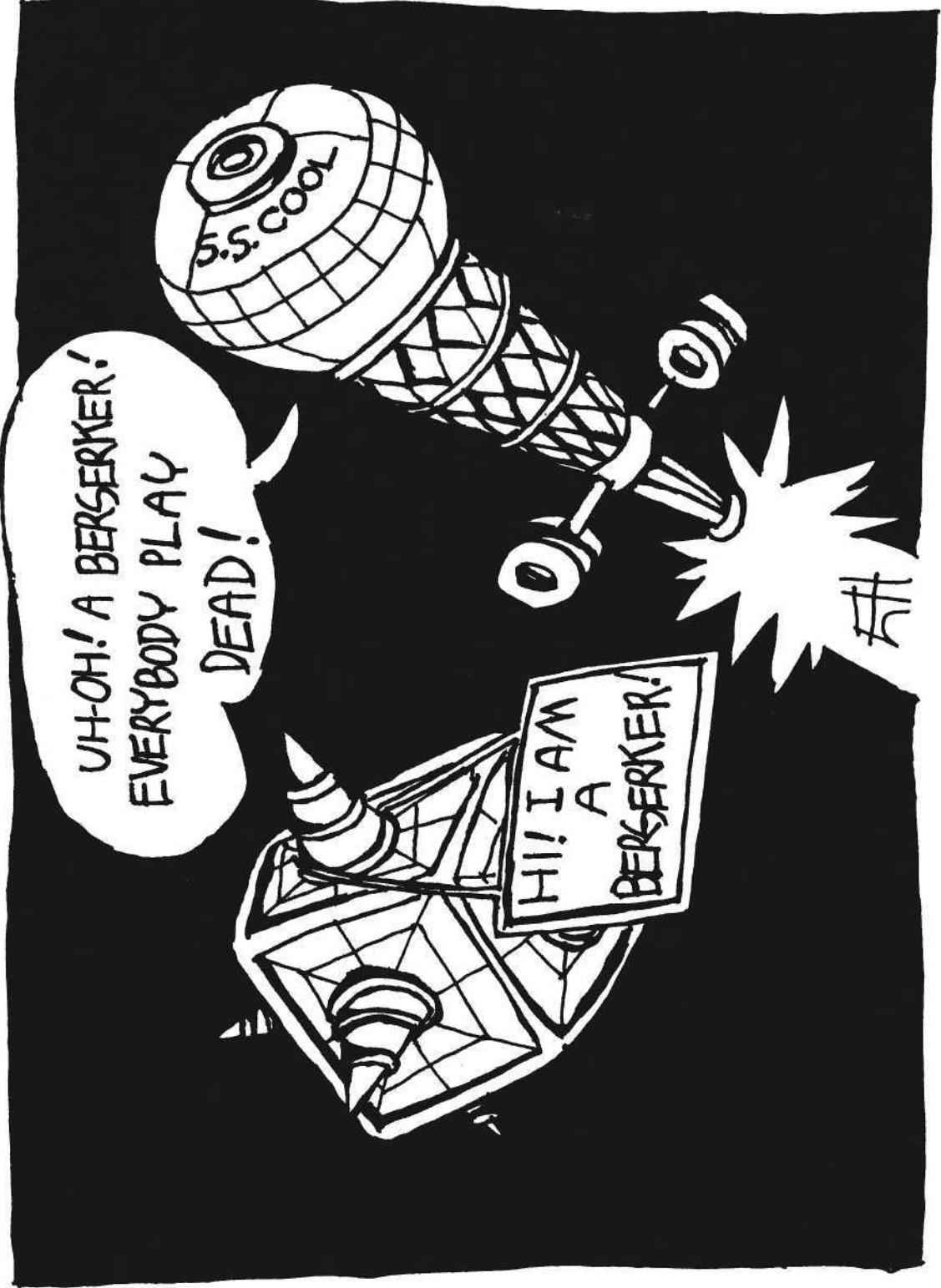
Berserkers are Robotic non-lifeforms from an alternate universe (named the Saberhagen Reality) who, having cleansed their own cosmos of the foul disease of life, spread to Subspace



NOW, THE COMPUTER SAYS
A KTHULHU IS DRAINING
OUR ENERGY...

...THE CREW
SAYS THIS IS
THEIR BIG-
GEST HIGH
SINCE MAD-
MOSS WAS
OUTLAWED...

...AND YOU, PSYCHOLOGIST NUTLEY,
SAY THIS IS ALL BECAUSE
OF MY MOTHER'S HARSH POTTY-
TRAINING METHODS!!!!



UH-OH! A BERSERKER!
EVERYBODY PLAY
DEAD!

HI I AM
A
BERSERKER!

S.S. COOL

in hopes of continuing their function—the eradication of all life. Berserkers' greatest frustration, if a machine can feel frustration, is that they can't get out of Subspace into our universe. They can, however, prevent ships from leaving while they destroy them, by means of a tremendously powerful tractor beam. Berserker ships have weapons and accumulators. The weapons are practically the same as Human weapons, but always fire at full strength (Roll 3 dice for weapons). They have no shields as Men have, but the surface of their ships conducts all destructive energy into a great energy accumulator. The only way to destroy them is by overloading their accumulators, at which time they explode. (Roll 5 dice and multiply by 1000 for how much energy they can absorb.) Berserker ships always travel alone. So far they have not succeeded in capturing intact a Human vessel.

RANDOMIZATION

When it comes to star creation and populating space, the G.M. may take one of two approaches. He may either plan it all out himself, making all decisions on star class, number of planets, forms of life thereon, etc. according to his own preconceptions; or he may use a randomizing process within a previously set-up framework. I'm going to describe two methods of randomizing, and then give the charts I used for creating my own star clusters.

Method One (the simple, cheap way).

You will need a deck of ordinary playing cards. Remove all the face cards, retaining the Ace through 10 in each suit. Cards all have their face value, except for the 10 which has the value of zero. Shuffle thoroughly. Decide how many places you wish to carry the randomization (3 or 4 is sufficient) and deal out that many cards face up from left to right. Read the cards as a decimal fraction between .000 and .999. Consult the appropriate table for results.

Method Two (the expensive, fun way).

You will need a pocket calculator. Radio Shack sells an excellent one for \$30. By utilizing the square, square root, and percentage keys, and then reading only the decimal display behind the decimal point, an unpredictable series of numbers can be generated. The secret, of course, is to have a good input number (such as the star's coordinates in space) on which to perform these operations. Random input numbers may be generated by rolling dice or by drawing cards as in the method described above. More expensive calculators, which provide many more functions, may be used to generate random numbers by, for example, taking the sine of the input number, dividing it by pi, and then taking the square root, reading your result behind the decimal point. I guarantee you will not be able to anticipate the final result, which means the number is random as far as you are concerned.

IT'S A TRICK! THESE
ARE FAKE STARS!
THIS IS SUBSPACE!



時

RANDOM STAR LOCATION

Although there is no good reason why your star clusters should be spherical (outside of the astronomical reason that a lot of them really are), we will use a spherical example because it is easy to understand. Assuming that the 0, 0, 0 point for the cluster will be the point where the Star Gate lies in Subspace, then pick an arbitrary radius in parsecs. 10 parsecs generates a cluster of reasonable size for exploratory purposes.

Roll 3 dice. Read them from left to right. Randomize (by whatever process you use). If using a calculator, look at the first number in the display. If it is odd, your coordinate will be positive; if it is even, negative. If you are using cards, flip a coin for positive or negative on the coordinate. Take the first number behind the decimal point for your coordinate. Now randomize on the number currently on the display, repeating the above process for the second coordinate. Repeat once more for the third coordinate. An example follows using my calculator.

(Random star location: Roll 3 dice. Enter 242. Square 242 equals 58564. Hit plus key to enter number. Hit % key equals 34297420. Hit square root key equals 5856.3999. 1st no. is odd; 1st decimal is 3; first coordinate is plus 3. Hit % key equals 34297420. Hit square root key equals 1851.9562. 1st no. is odd; 1st decimal is 9; 2nd coordinate is plus 9. Hit % key equals 1084579.6. Hit square root key equals 1041.4315. 1st no. is odd; 1st decimal is 4; 3rd coordinate is plus 4. Star coordinate is 3, 9, 4.)

As you can see, it would be a lot easier to just use the playing card method here, but maybe not as much fun.

STAR TYPES

<u>Class</u>	<u>Description</u>
1. O	Large white-hot stars with a surface temperature around 40,000 degrees C.
2. B	Large blue-white stars with temperatures around 25,000 C.
3. A	Violet-white stars with temperatures around 11,000 C.
4. F	Greenish-yellow stars with temperatures around 7,500 C.
5. G	Yellow stars like the sun. Temperature around 5,300 C.
6. K	Orange stars with temperatures around 4,900 C.
7. M	Cool red stars—many of them variable—with temperatures around 3,400 C.
8. White giants	White-hot stars many times larger than any of the stars listed above.
9. Red giants	Essentially the same as the red dwarf M stars, but hundreds or thousands of times larger.
Supergiants	
10. B	All supergiants are similar to the stars listed above, but are hundreds of times larger.
11. F	
12. G	
13. K	
14. M	
15. White dwarves	Very hot, very small stars—the remnants of novas.
16. Black dwarves	Super dense stars that have burned out and no longer emit light. Not the same as Black Holes.
17. Novae	Exploding stars
18. Black Holes	A super-massive star that has collapsed space and time around itself.
19. Nebulae	Clouds of gas in space—some are dark and some are highly energized.
20. Dust Clouds	Areas of space filled with dark dust.

STAR SYSTEMS

Probably half the stars in our galaxy are members of multiple star systems with all the stars rotating around a common center of gravity. After I have determined the system's coordinates, I roll 1 die, odd or even, to see if it will be a multiple star system. If it is even, I roll 1 die again to see how many stars are in the system, letting it be the number rolled unless it is a 1, in which case I make it a double system. Sometimes multiple stars are very close together; sometimes they are well separated. (For example: the white dwarf companion of Sirius has a rotational period around its primary of 50 years. That puts it about as far away as from the sun to Saturn. The three stars in the Alpha Centauri system are as much as 1/4 of a light year apart. Other binary systems have stars so close together that the period of rotation is 2 or 3 days.) Thus, if stars are very close together, or very far apart, it is possible for multiple systems to still have planets, and thus to have life.

Earlier, I divided interstellar objects into 20 different classes. The table below uses that division and an assumed probability ratio to randomly create stars, etc. If you disagree with this probability assignment, you may reassign it to suit yourself, but I like this one because it yields a good variety of stars in space. It is important that you generate, via dice, cards, or some other system, different beginning numbers for each randomization.

<u>Number</u>	<u>Description</u>	<u>Random Range</u>
1	Class 0, main sequence	.000-.025
2	Class B, main sequence	.026-.075
3	Class A, main sequence	.076-.150
4	Class F, main sequence	.151-.225
5	Class G, main sequence	.226-.275
6	Class K, main sequence	.276-.350
7	Class M, red dwarf	.351-.500
8	White giants	.501-.550

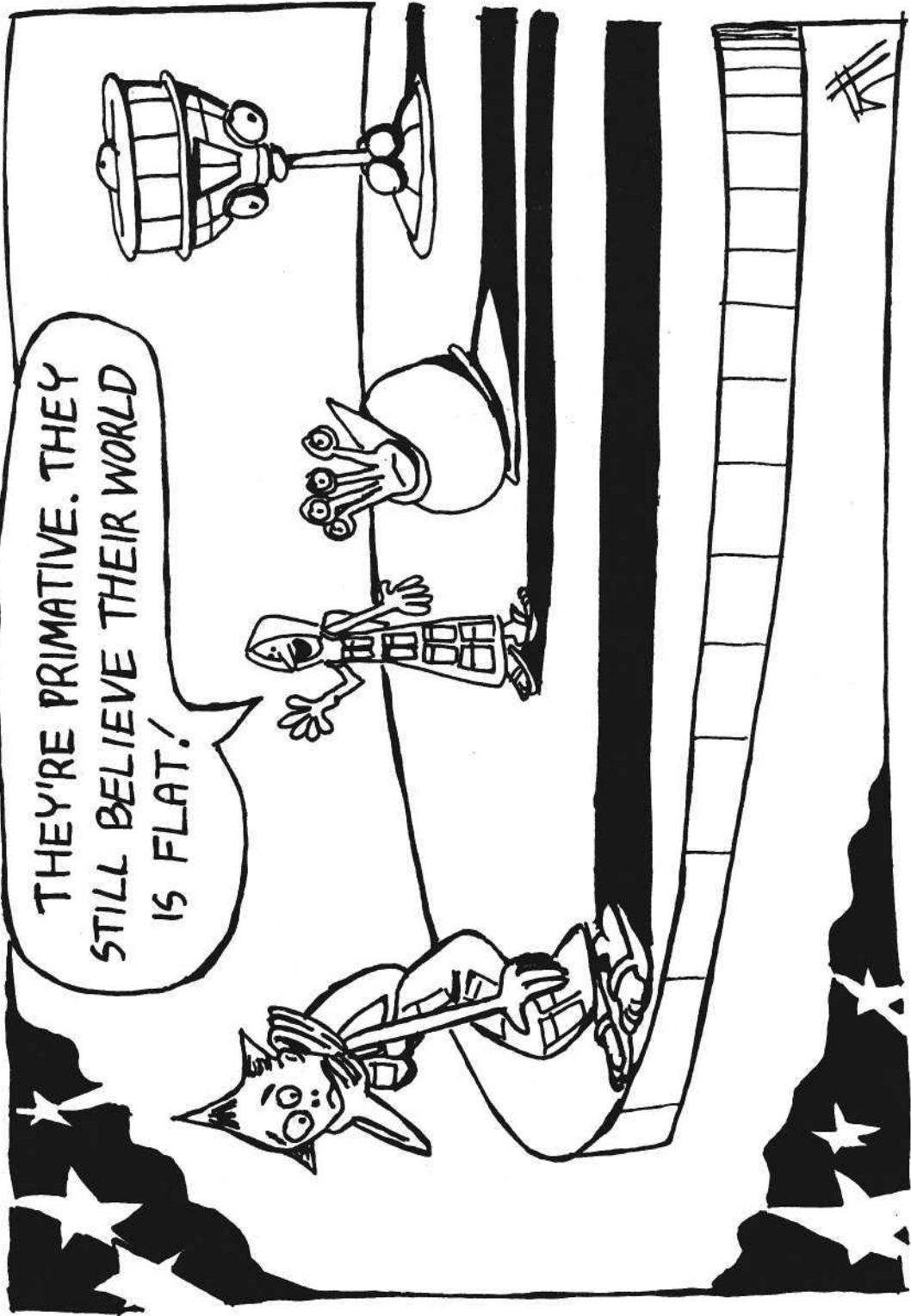
<u>Number</u>	<u>Description</u>	<u>Random Range</u>
9	Red giants	.551-.700
10	Class B, Supergiant	.701-.760
11	Class F, Supergiant	.761-.780
12	Class G, Supergiant	.781-.820
13	Class K, Supergiant	.821-.840
14	Class M, Supergiant	.841-.900
15	White dwarves	.901-.950
16	Black dwarves	.951-.960
17	Novae	.986-.995*
18	Black Holes	.996-.999*
19	Nebulae	.961-.970
20	Dust clouds	.971-.985

*Note: Nos. 17 and 18 are slightly out of sequence when randomizing.

Each spectral class of star is generally further subdivided numerically from 0 to 9 indicating a temperature range. To get that number take the fourth decimal point digit in the randomizing process as generated above.

A few rare spectral types have been omitted from this table, notably classes N and S. These heavy element stars are not generally regarded as on the main sequence, but tend to develop out of Population II F, G, and K stars.

To make it easy to generate a lot of stars quickly on a calculator, use the last 4 digits of the random number generated above as the input number for a new randomizing process. You will, of course, drop the decimal point when re-entering them.



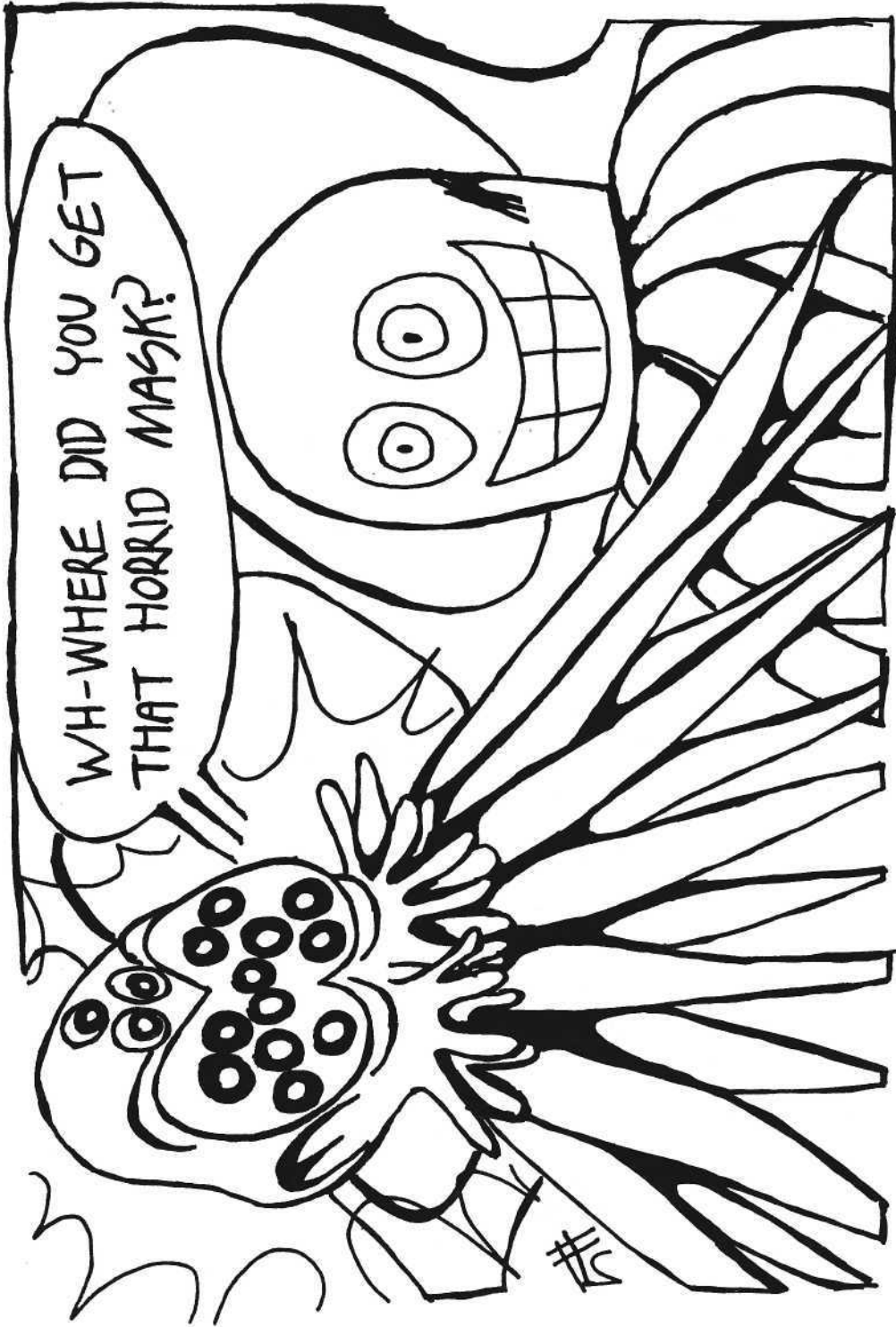
PLANETARY TYPES

For convenience in randomly generating planets, I have divided them into six types. When randomly generating planets, roll 1 die and let the number represent the planetary type. For those who like nice, neat solar systems, generate all the planets first and then put them into a nice, neat order.

1. Airless Ball. (Roll 1 die again. If you roll a 5 or 6, substitute an asteroid belt for the airless ball planet.) Solar equivalents are Mercury and Luna.

Sub-terrestrial, Planets large enough to maintain a weak atmosphere. Gravity ranges from .3 to .8 of Earth's.
3. Terrestrial. An Earth-type planet, even if it doesn't contain a mainly nitrogen-oxygen atmosphere. Gravity ranges from .8 to 1.5.
4. Super-terrestrial. A Venus-type planet, characterized by a super dense atmosphere, even though the planet is not greatly larger than the Earth. Gravity is .9 to 4.0. Not, however, in any case to be considered a gas giant like Neptune or Jupiter.
5. Gas giants. Large, cold planets like Uranus and Neptune. They will always have moons, some of which may be as large as airless balls or sub-terrestrials.
6. Jovians and super-Jovians. (Roll 1 die again. If you roll a 6, you have a super-Jovian, a gas giant 2 to 4 times larger than Jupiter and a small star in its own right, though a very cool one.) They will always have moons. Super-Jovians may have planets up to Super-terrestrial in orbit around them.

It is possible for life of some strange form or another to evolve on any of these types of planets, though only the terrestrial analogues have a really high probability.



LIFE AMONG THE STARS

This game would be very dull without alien lifeforms to lend interest. The G.M. will need to stretch his imagination to quickly come up with alien life for explorers to encounter. If he knows in advance what it is possible to find at the various stars in the way of life, he will be able to quickly invent corresponding details and perhaps mysteries for the explorers to solve. For example, my randomizing process (described below) told me that there would be carbon-based humanoid non-intelligent life around a white dwarf star in the Red Cluster. Knowing that white dwarves—most of which have already gone through a nova explosion—are very unlikely to still have planets gave me the idea of having this humanoid life inhabit an artificial satellite in a close orbit, being cared for by non-intelligent mechanical devices. This situation poses a fascinating puzzle for the explorer who discovers it, and I hope I can think of a good story before this particular star system is entered.

The following randomization process is the one I use on my own calculator for the description of life to be found at the stars in the Red Cluster. Other randomization methods are equally valid, of course.

Enter star position X, Y, Z on your calculator.
 Multiply this figure by its number (1-20) according to star type.
 (See star types list.)
 Take square root.
 Divide by number of stars in the system. If zero stars are in system, divide by 1.
 Look at numbers behind the decimal point for your random life determinant.

<u>Random Range</u>	<u>Quality of Life</u>
.00-.50	No life.
.51-.80	Life, but no intelligence.
.81-.95	Intelligent life:
.81-.87	pre-industrial civilizations
.88-.91	pre-atomic energy civilizations
.92-.94	pre-global high technology civilizations
.95	united world culture
.96-.98	Life with interplanetary space travel and advanced technology.
.99-	Life with interstellar space travel. Probably uses Star Crystals.

If star has life, proceed with the following randomization.
 Multiply your last random number by the star's spectral type
 number (i.e. the 4 in Gx4).
 Hit % key for life cycle base. Read random determinant after
 decimal point.

<u>Random Range</u>	<u>Life Cycle Based On:</u>
.00 -.450	Carbon (DNA-RNA life as we know it)
.451-.650	Methane
.651-.750	Chlorine
.751-.850	Silicon (stony life forms)
.851-.950	Robotic (artificially-created life)
.951-.990	Ectoplasm
.991-.999	Pure energy (no need to determine form of life)

Multiply last random number by the last digit in it between 1
 and 9.
 Take square root for new Random Range of most advanced life form
 body shape.

<u>Random Range</u>	<u>Dominant Life Form Shape</u>
.000-.083	Bacterial
.084-.166	Free-form Amoeboid
.167-.220	Fungoid
.221-.300	Vegetable
.301-.383	Insectoid
.384-.466	Arachnoid
.467-.549	Ichthyoid
.550-.700	Reptilian
.701-.755	Avian
.756-.839	Tentacled (Molluscoid)
.840-.910	Mammalian
.911-.999	Humanoid (Truly manlike life and intercompatible biologically with humanity, if carbon-based.)

Of course, this chart refers to the highest form of life
 on the planet. All lower forms of life are assumed to be present.
 This is also meant only as a general analog, not an exact descrip-
 tion. Please remember when imagining life forms that alien life
 is supposed to be alien-throw in as many differences as you can
 to make things interesting.

We would be very interested in seeing what people
 invent for their intelligent alien life forms. Please send
 descriptions of alien races to me for inclusion in the Encyclopedia
 Galactica of Intelligent Races. If possible, we will publish these
 descriptions for the benefit of all STARFARING players.

The above archtypes are only my preconception. We would
 be very interested in seeing other life form shape charts that the
 players might work out.

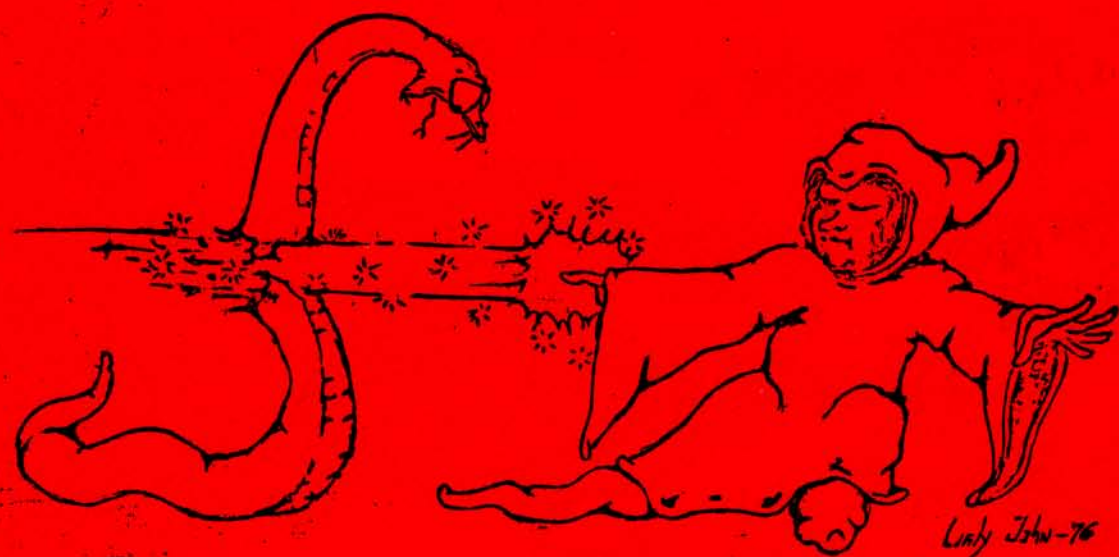
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	1.4	2.2	3.2	4.1	5.1	6.1	7.1	8.1	9.1	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0
2	2.2	2.8	3.6	4.5	5.4	6.3	7.3	8.2	9.2	10.2	11.2	12.2	13.2	14.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.1	24.1	25.1
3	3.2	3.6	4.2	5	5.8	6.7	7.6	8.5	9.5	10.4	11.4	12.4	13.3	14.3	15.3	16.3	17.3	18.2	19.2	20.2	21.2	22.2	23.2	24.2	25.2
4	4.1	4.5	5	5.7	6.4	7.2	8.1	8.9	1.8	10.8	11.7	12.6	13.6	14.6	15.5	16.5	17.5	18.4	19.4	20.4	21.4	22.4	23.3	24.3	25.3
5	5.1	5.4	5.8	6.4	7.1	7.8	8.6	9.4	10.3	11.2	12.1	13	14.0	14.9	15.8	16.8	17.7	18.7	19.6	20.6	21.6	22.6	23.5	24.5	25.5
6	6.1	6.3	6.7	7.2	7.8	8.5	9.2	10	10.8	11.7	12.5	13.4	14.3	15.2	16.2	17.1	18.0	19.0	19.9	20.9	21.8	22.8	23.8	24.7	25.7
7	7.1	7.3	7.6	8.1	8.6	9.2	9.9	10.6	11.4	12.2	13.0	13.9	14.8	15.7	16.6	17.5	18.4	19.3	20.2	21.2	22.1	23.1	24.0	25.0	26.0
8	8.1	8.2	8.5	8.9	9.4	10	10.6	11.3	12.0	12.8	13.6	14.4	15.3	16.2	17	17.9	18.8	19.7	20.6	21.5	22.5	23.4	24.3	25.3	26.2
9	9.1	9.2	9.5	9.8	10.3	10.8	11.4	12.0	12.7	13.5	14.2	15	15.8	16.6	17.5	18.4	19.2	20.1	21.0	21.9	22.8	23.8	24.7	25.6	26.5
10	10.0	10.2	10.4	10.8	11.2	11.7	12.2	12.8	13.5	14.1	14.9	15.6	16.4	17.2	18.0	18.9	19.7	20.6	21.5	22.4	23.3	24.2	25.1	26	26.9
11	11.0	11.2	11.4	11.7	12.1	12.5	13.0	13.6	14.2	14.9	15.6	16.3	17.0	17.8	18.6	19.4	20.2	21.1	22.0	22.8	23.7	24.6	25.5	26.4	27.3
12	12.0	12.2	12.4	12.6	13	13.4	13.9	14.4	15	15.6	16.3	17.0	17.7	18.4	19.2	20	20.8	21.6	22.4	23.3	24.2	25.1	26.0	26.8	27.7
13	13.0	13.2	13.3	13.6	14.0	14.3	14.8	15.3	15.8	16.4	17.0	17.7	18.4	19.1	19.8	20.6	21.4	22.2	23.0	23.9	24.7	25.6	26.4	27.3	28.2
14	14.0	14.1	14.3	14.6	14.9	15.2	15.7	16.2	16.6	17.2	17.8	18.4	19.1	19.8	20.5	21.3	22.0	22.8	23.6	24.4	25.2	26.1	26.9	27.9	28.7
15	15.0	15.1	15.3	15.5	15.8	16.2	16.6	17	17.5	18.0	18.6	19.2	19.8	20.5	21.2	21.9	22.7	23.4	24.2	25	25.8	26.6	27.5	28.3	29.2
16	16.0	16.1	16.3	16.5	16.8	17.1	17.5	17.9	18.4	18.9	19.4	20	20.6	21.3	21.9	22.6	23.3	24.1	24.8	25.6	26.4	27.2	28.0	28.8	29.7
17	17.0	17.1	17.3	17.5	17.7	18.0	18.4	18.8	19.2	19.7	20.2	20.8	21.4	22.0	22.7	23.3	24.0	24.8	25.5	26.2	27.0	27.8	28.6	29.4	30.2
18	18.0	18.1	18.2	18.4	18.7	19.0	19.3	19.7	20.1	20.6	21.1	21.6	22.2	22.8	23.4	24.1	24.8	25.5	26.2	26.9	27.7	28.4	29.2	30	30.8
19	19.0	19.1	19.2	19.4	19.6	19.9	20.2	20.6	21.0	21.5	22.0	22.4	23.0	23.6	24.2	24.8	25.5	26.2	26.9	27.6	28.3	29.1	29.8	30.6	31.4
20	20.0	20.1	20.2	20.4	20.6	20.9	21.2	21.5	21.9	22.4	22.8	23.3	23.9	24.4	25	25.6	26.2	26.9	27.6	28.3	29	29.7	30.5	31.2	32.0
21	21.0	21.1	21.2	21.4	21.6	21.8	22.1	22.5	22.8	23.3	23.7	24.2	24.7	25.2	25.8	26.4	27.0	27.7	28.3	29	29.7	30.4	31.1	31.9	32.6
22	22.0	22.1	22.2	22.4	22.6	22.8	23.1	23.4	23.8	24.2	24.6	25.1	25.6	26.1	26.6	27.2	27.8	28.4	29.1	29.7	30.4	31.1	31.8	32.6	33.3
23	23.0	23.1	23.2	23.3	23.5	23.8	24.0	24.3	24.7	25.1	25.5	26.0	26.4	26.9	27.5	28.0	28.6	29.2	29.8	30.5	31.1	31.8	32.5	33.3	34.0
24	24.0	24.1	24.2	24.3	24.5	24.7	25.0	25.3	25.6	26	26.4	26.8	27.3	27.9	28.3	28.8	29.4	30	30.6	31.2	31.9	32.6	33.3	33.9	34.7
25	25.0	25.1	25.2	25.3	25.5	25.7	26.0	26.2	26.5	26.9	27.3	27.7	28.2	28.7	29.2	29.7	30.2	30.8	31.4	32.0	32.6	33.3	34.0	34.7	35.4

To find distance between stars for coordinate distances greater than 25 use

$$\text{formula } D = \sqrt{x^2 + y^2 + z^2}$$

To use chart let vertical column = X distance and horizontal column = Y
 Read result X + Y. Round off and use X + Y in the X column and
 the Z distance in the horizontal column, which gives approximate
 distance to the star in question.

Meadow Not
wyth Wizzards, for
they are Subtle and
quicke to Anger!



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STARFARING

Tristan Scan



FINEST HOUR '76

A GAME BY KEN ST. ANDRE