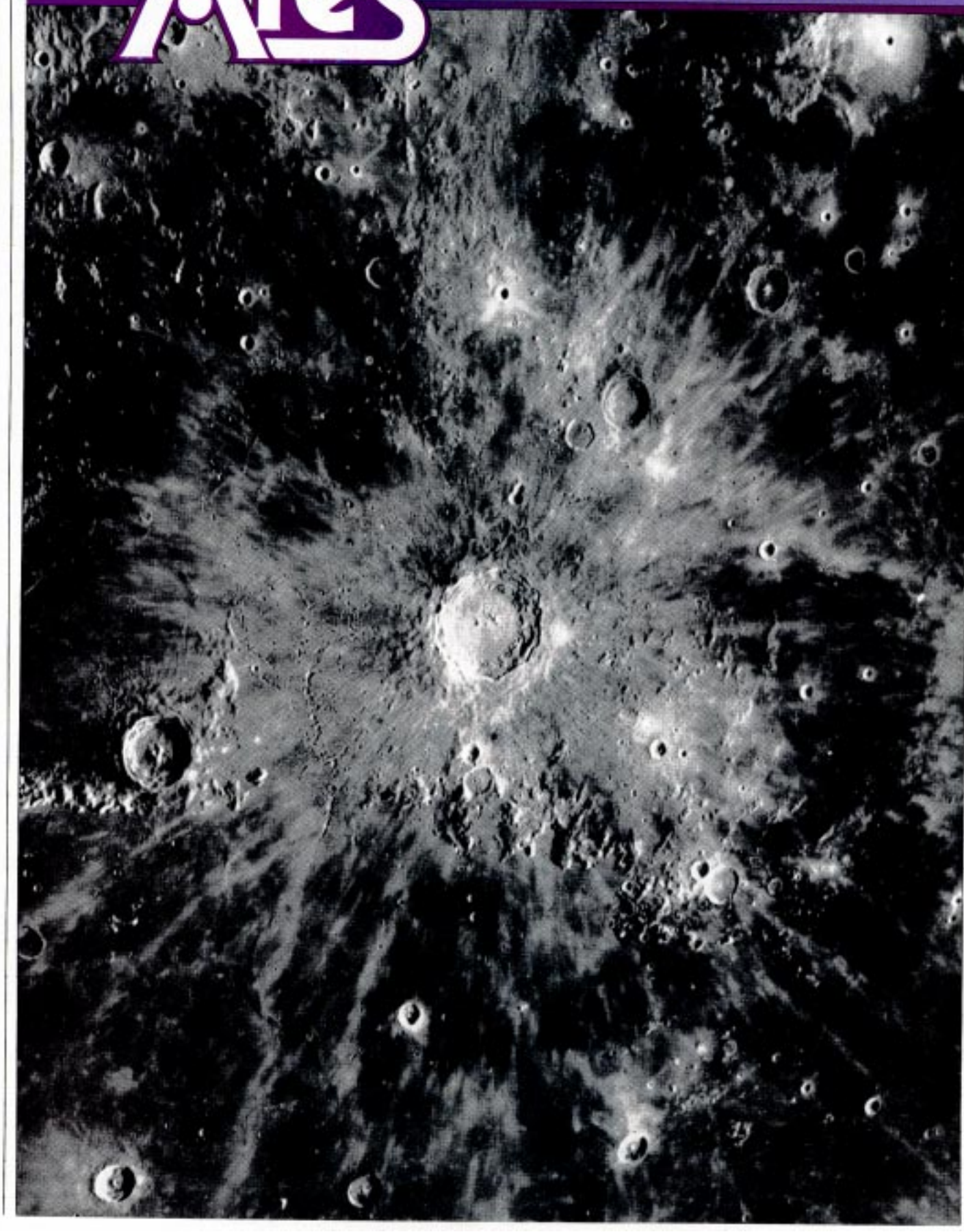
Arēs

SCIENCE FICTION GAMING SECTION



CONTENTS

ARES Log 70

THE LUNAR HIGH REPUBLIC
Edward E. Simbalist 71
Lunar history, society, and customs in the SPACE OPERA™ game

THE ZETHRA
Ed Greenwood 76
An enigmatic alien race encountered in the STAR FRONTIERS® game universe.

STARFIRE GAMING x 3
Jerry Epperson. 82
Three-dimensional warfare and more in the STARFIRE™ game system.

ON THE COVER
The giant lunar crater Copernicus, 95 km across and 3-4 km deep, stands out in this observatory photograph. In the future history of the SPACE OPERA™ game, Copernicus becomes the home for a major lunar colony and industrial complex. Photograph courtesy of Yerkes Observatory.

Welcome to the ARES™ science-fiction gaming section. Starting with this issue of DRAGON® Magazine, we continue our coverage of science-fiction role-playing and boardgames; every month we'll have the best articles from game experts and you, our readers. Our editorial direction is unchanged from our former magazine format, and we look forward to continued feedback from you on how and what we're doing.

The first of a special series of articles makes its appearance in this issue. The best-known world apart from our Earth is the Moon, our only natural satellite. How are the destinies of Earth and Moon intertwined? What does the future hold for us as the human race expands into outer space?

We contacted a number of game designers to help on a special project — to describe the Moon as an inhabited world, according to the future histories of the major SF role-playing games. On the next page begins Edward E. Simbalist's essay on Luna in the universe of the SPACE OPERA™ game. Stay tuned for other "points of view" in future issues.

Ed Greenwood offers a report on the Zethra, a new NPC alien race for use with the STAR FRONTIERS® rules. A mystery to Humans and Sathar alike, the Zethra travel through the Frontier Sector on missions of their own; only their unpredictability is predictable.

Our boardgaming feature, from Jerry Epperson, is a three-in-one package of variations on the STARFIRE™ game: simultaneous movement, advantage movement, and three-dimensional warfare. Role-players and boardgamers alike would do well to look this over for ideas they can apply to their own games and adventures.

Read on, and enjoy!

My soul is in the sky:
Tongue, lose thy light!
Moon, take thy flight!
A Midsummer Night's Dream
Act V, Scene I

— *The editors*

ARES™ Section 84
THE SCIENCE-FICTION GAMING SECTION

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Lunar statistics

StarSystem Coord	000/00 GSC 14.JJ/+000
Stellar Primary	G2V main sequence star
FTL Conversion	10,000 LS (light seconds)
Planets in System	10

Luna's past

On July 20, 1969, as the result of a crash program by the old American NASA, Apollo 11 landed in Mare Tranquillitatis; two astronauts, Neil Armstrong and Edwin Aldrin, undertook the first manned lunar expedition. After five more landings, the national will of the USA to conduct manned operations beyond close earth orbit declined for several decades.

The Soviet Union established a secret military outpost at Tycho Crater in A.D. 2005; a NorthAm expedition landed shortly afterwards at Clavius Crater, hundreds of kilometers distant, to assault the Soviet bomb launcher on the eve of the Wet Firecracker War. Only 17 warheads were fired before the linear magnetic accelerator was captured. The Battle of Tycho Crater, April 2, 2008, marks the entry of Terra into space warfare. It is also significant as the moment when Terrans accepted that their affairs were inextricably bound to the exploration and development of space.

Tycho soon expanded into a major military and scientific establishment, with 5,000 personnel by A.D. 2015. Mining operations commenced, while a new, more powerful magnetic launcher was completed to send raw materials to the L-5 colony construction sites.

The discovery of vast deposits of ice beneath the lunar surface made possible the colonization of the Terran moon as a "habitable" world. With an abundance of solar power, ice was made to yield oxygen in great quantities, with hydrogen produced as rocket fuel for deep space exploration. Most importantly, ice provided the water vital to hydroponic farms for

The Rays of Tycho Crater dominate this lunar photograph.

both Luna and the L-5 colonies. When L-5 *O'Neill* was completed in A.D. 2028, almost 60,000 people were living in Luna, 35,000 of them in Tycho City, a vast tunnel complex beneath the site of the original Soviet base.

Luna's attraction was considerable. The low gravity had a salutary effect on human physiology; the life expectancy of lunar colonists rose beyond 125 years. Degenerative diseases associated with aging in a high gravity field were almost unknown, and when encountered were of a minor nature. Heart ailments were a rarity. Aging seemed to slow drastically, and Luna exerted an appeal as a world granting eternal youth and vitality. Of course, prolonged periods in low gravity caused dramatic physical adaptations which made a high-gravity field like Terra's most uncomfortable for Lunarites, but the price was considered a small one to pay for the benefits gained from life on Luna.

The rise of the infamous Pure Earth Movement on Terra was a catastrophe for Luna. The space colonies were regarded as a luxury which could be ill afforded by the "poor and starving billions" of Terra. Transportation to Luna became a standard sentence for political dissidents, malcontents, and criminals. A flood of transportees swelled the lunar population to more than fourteen million by A.D. 2138.

Transportees and Free Citizens alike were brought under the increasingly harsh government of the Lunar Administration. Ever higher production quotas were imposed on lunar farmers, with savage penalties for failure to deliver the required grain at the launch head. The price paid for produce was held to cripplingly low levels, forcing farmers into ever-deepening debt to the Administration. By A.D. 2100, there was little difference between the lot of Free Citizens and that of convicted criminals.

The matter came to a violent conclusion on June 24, 2136, with the announcement of the frightful Air Tax by the Lunar Administration. Lunarites reacted with violent demonstrations; Admin "PeaceKeepers" intervened, and the population of Tycho City arose in general rebellion. News of the uprising spread to the other major colonies of Clavius, New Tokyo in Mare Imbrium, Copernicus, and Plato. By July 12, the Lunarites had eliminated the last vestiges of Terran control and had declared the Lunar High Republic.

Pure Earthian preparations to bring the rebels to heel were dramatically frustrated by the rebellion of the L-5 SkyCities the following week. Also suffering under Terran repression and disinterest, the L-5 colonies "spaced" their Pure Earthian administrators and refused to provide the spacecraft required to transport a Terran expeditionary force. With no spacecraft built or based directly on Terra, and an administration which had dismantled its planetary spacecraft production facilities and technology, Terra was helpless to suppress the rebellion of the OutWorlds.

Free Luna prospered, becoming a haven for refugees from Pure Earthian repression. After the socio-dynamic collapse of Terra in A.D. 2165, the Lunar High Republic played a signal role in the reconstruction of the shattered planet, and has since provided vast quantities of food to Terra at premium prices. Most importantly, it became the center of OutWorld exploration and colonization.

. . . ONE LIVES "IN" LUNA, NOT "ON" IT. THOUGH DOMED INSTALLATIONS EXIST ON THE SURFACE, ALL SETTLEMENTS ARE LOCATED LARGELY UNDERGROUND IN MULTI-LEVEL . . . TUNNEL COMPLEXES.

Luna today

Luna's vast shipyards and industrial complexes at Tycho City, New Tokyo, and Copernicus have outfitted numerous colonization expeditions, the bulk of the huge Solarian merchant marine, and the primary strength of the BattleFleets of the Terran Union and the Federation. A major naval base is located at Marius in Oceanus Procellarum (a AAAAAx5 starbase) and nine lesser bases exist as well (each AAAAA class), each guarded by some 2,000 heavy planetary defense guns and over 1,700 startorpedo launchers.

Luna is also a major mercantile center, with eight major civilian starports (each AAAAA class) and over fifty lesser starports (A to AAA class) at the main population and production centers. Some 5,800 interstellar corporations now maintain head offices and production facilities on Luna. A very respectable 158 starlines, from huge TransGalactic to the tiny independents, operate from New Tokyo, Copernicus, and Clavius, to span the vast reaches of the growing Federation.

The Lunar economy is one of the strongest in the Federation, with an average per capita income of CR 42,500 for a gross planetary product of MCR 10,625,000 per year. About MCR 2,000,000 is contributed annually toward Lunar and Federation defense. Free trade without tariffs is standard policy. Luna's chief exports include spacecraft, high-tech equipment, and foodstuffs. Imports include industrial and power metals and a variety of manufactured goods.

According to the census of A.D. 2583, the population has risen to 50,000,000 human citizens, and perhaps another 200,000,000 semi-permanent residents who are citizens of Terra and the other Solarian Outworlds. Some 7,000,000 non-humans also reside in Luna.

It should be noted that one lives "in" Luna, not "on" it. Though domed installations exist on the surface, all settlements are located largely underground in multi-level (and sometimes rambling) tunnel complexes. Seven cities with populations of more than 2.5 million are present: Tycho City, New Tokyo, Copernicus, Crisium, Clavius, Marius, and Aristarchus. Thirty-four cities with populations of more than 500,000 may be found, as well as 570 smaller centers. Most Lunarites are as at home on the surface as they are under it, with the majority owning vacuum suits for surface activities and as a precaution against blow-outs in the tunnels.

lunar government and laws

The Constitution of the Lunar High Republic is based upon that of the old U.S.A. However, it provides inalienable protections for the rights and freedoms of the individual on an order unheard of in earlier states. Oppressed for decades by one of the most viciously authoritarian regimes in Terran history, the

Lunarites laid down a code of conduct for government that amounts to a "hands off" policy with respect to most areas of human activity.

Each citizen is held to be "sovereign in his own right," fully answerable for his actions only when such actions endanger the rights and prerogatives of other citizens. Such laws as do exist confer authority to the government to intervene whenever the safety of the citizenry as a whole is threatened.

The universal belief is that the less government there is, the better. The principle followed is that of "user pay"; put in Lunarite terms, "If you want it, fellah, pick your own pocket!" At the same time, the ever-pragmatic Lunarite has no delusions about the cost of things, and he is prepared to pay the going rate for what he needs. His only objection is paying for anything he doesn't need or want. Suspicious of anything smelling of government bureaucracy or monopoly, he will prefer to do business with private interests, who invariably provide superior service for the credits spent because competition soon weeds out the inefficient and the unresponsive.

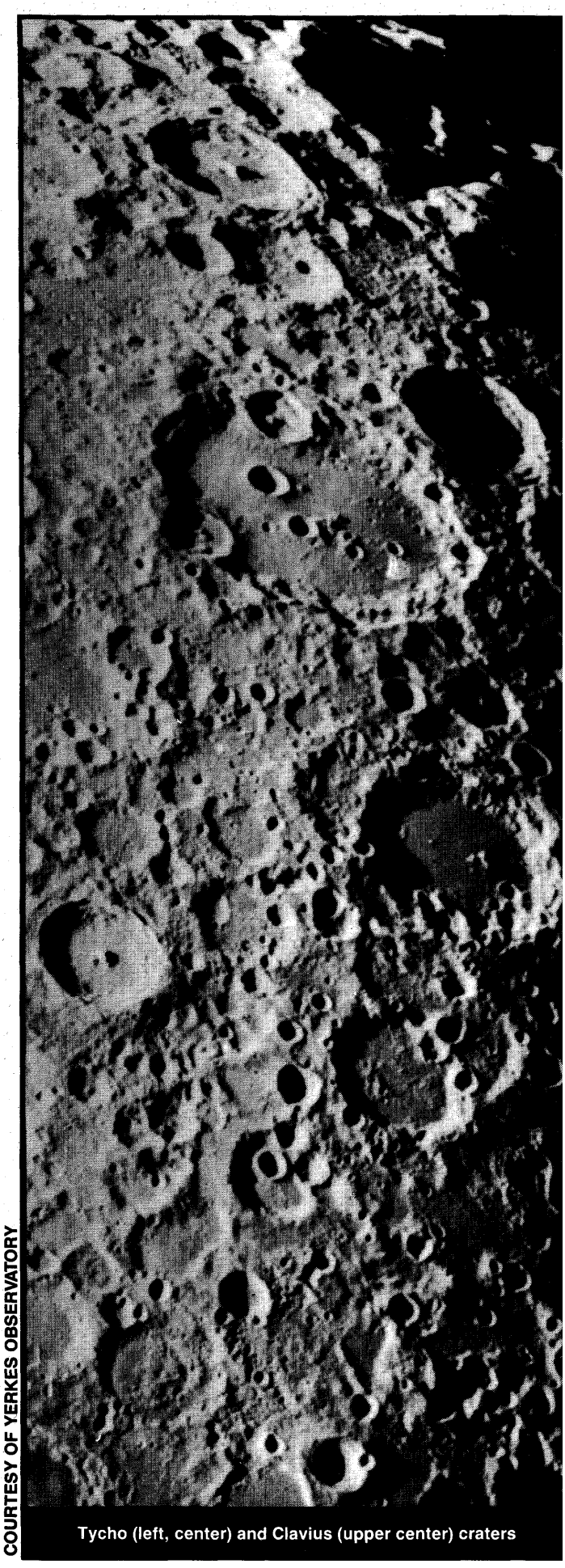
The regulation of business is left largely to "established custom," and a highly ethical code of business conduct has evolved. Sharp business practice is acceptable, but outright fraud and failure to perform on the terms of an agreement is guaranteed to bring disaster to the dishonest firm or individual. Good repute is essential to doing business. Once it is known that a person or company cannot be trusted, business will fall off to nothing in short order. Further, Lunar custom permits anyone convinced that he has been wronged to hold the individuals responsible to personal account. No one can hide behind the legal fiction of corporate action. If XYZ Corporation failed in its honorable duty, the officers of XYZ can expect to be "called out" if they do not set things straight.

The Lunarite always has the right to challenge anyone who has broken any of the numerous codes of behavior which arose during the penal period. It might seem that Lunar society is chaotic, with everyone free to do much as he likes in the absence of firm laws. Such is not the case at all. While a Lunarite is free, he is also obligated by honor and custom to respect the freedom and rights of others. Personal responsibility is absolute, even as personal freedom is exceedingly broad and unrestricted.

"Good manners" are essential in a world with its roots and its pride vested in its penal history. "Good manners" demand respectable and honorable conduct. The loudmouth, the dishonest man, the bully, the murderer, all may expect to be "spaced" through the nearest airlock to the surface or cut up with surgical precision in a duel with his victim or one of his victim's relatives or friends. Lesser offenses can result in a ruined reputation, hardly less disastrous in a society in which personal reputation really matters.

Lunarite "manners" extend to such fundamentals as honesty. The simple fact is that thieves do not exist on Luna. One can leave a valuable object in a public place and expect to see an advertisement in the "Found" column of the *Daily Lunatic,* the Selene Gazette, or any other newservice on the next day. Few thieves in Luna last long. The citizens are very skillful at operating air locks.

Wrongdoers may elect to go to "court" to settle matters — which involves both parties agreeing on binding arbitration by some individual they trust to make a fair decision. "Judging" is carried on by private citizens, and any Lunarite can set himself up as a "judge." For a pre-arranged fee, men of wise and honest reputation routinely hear cases brought before them, deciding matters quickly on the basis of the plain facts as any "reasonable" person sees them.



COURTESY OF YERKES OBSERVATORY

Tycho (left, center) and Clavius (upper center) craters

LUNA IS THE PRODUCT OF THE "BOTANY BAY" POLICIES OF THE PURE EARTHIAN REGIME WHICH DOMINATED TERRAN POLITICS FROM A.D. 2065 TO 2167.

Justice is dispensed with equal dispatch. Legalisms and lawyers are regarded with general hostility, and proceedings are conducted with an informality that is sometimes frightening to those used to formal rules of due process. The "court" tolerates no attempt to impede its determination of the true facts. The reputation of the "judge" depends upon his fairness and ability to cut through the fog of claims and counterclaims. In Luna, reputation is everything if one wants to do business. Judging is a most respectable and profitable business, and Lunar justice is counted among the most honest and certain of any in the Federation.

Lunar society

Visitors to Luna are advised to retain a "guide" — usually one of the many waifs who hang around the spaceports — to take them through the intricacies of the complex Lunar society. Until one learns the accepted modes of behavior, a "new chum" can easily get into trouble. At the same time, Lunarites are patient with tourists and newcomers, and may excuse conduct that would easily result in a duel if done by another Lunarite .

Luna is characterized by a degree of tolerance and diversity unequalled anywhere else. The population itself is a mixture of every racial, national, and religious group of humanity; their transportee ancestors came from every part of Terra. Intermarriage has produced a people exhibiting the bloodlines of every racial group of humanity. Many non-humans now live on Luna as well, and they enjoy the benefits of a tolerant society in which they meet with no prejudice or difficulty.

Lunar culture is a melting pot, with words, manners, and values drawn from scores of Terran cultures and combined into a uniquely Lunar pattern of life. Marriage practices appear in every known Terran form. A number of new marriage systems evolved on Luna which answered the unique problems of a penal colony at one time woefully short of women and having no security for the family besides what it could provide for itself. Even some alien marriage customs exist among Lunarites. All are held to be most respectable, and a quick offense is taken at any criticism.

Women are held in very high regard, and one is advised to avoid any disrespectful conduct towards them. Children occupy, a special place and are watched over and protected by the adult population. Indeed, one soon gains the impression that Lunar society resembles a single extended family, with everyone involved with the welfare of all his fellows..

The family is the basic social unit. The usual family involves multiple marriage, with women holding a dominant, matriarchal position. This harkens back to the early penal period, when women were at a premium and several men had to share a single wife. Equally common, are group marriages, with a number of male and female spouses. Such marriages seem to offer the greatest degree of security, for the death of any one spouse does not shatter the family or disastrously reduce its ability to earn income or retain its resources.

The marriage relationships are genuine partnerships in most instances, with each adult member of the family having input into family decisions. In many multiple marriages, for instance, a new spouse is carefully selected for both personal and business qualities that will enhance the family, and the spouse will not be taken without universal approval.

The powerful family ties perhaps explain the Lunarites' refusal to accept much government intrusion into their private lives. With an average of seven adults in family groupings, citizens possess most of the human and financial resources to pay their own way. If they do encounter difficulty, their friends will step forward to help out until the family reestablishes itself.

This is not charity, but rather a loan between friends, and such assistance is invariably repaid with fair interest. Neighbors looking out for neighbors and pluralistic marriages are the ways that the Lunarites survived the Pure Earthian terror. They have not abandoned such admirable customs because they are the most effective survival techniques available in any society.

The preference to do most things oneself or to hire some private firm to provide needed services is the reason that few government agencies exist in Luna. The armed forces are composed entirely of Federation troops and are concerned with the defence of Luna from outside attack. There is a police force, maintained by voluntary public contribution, but it is small and performs only investigatory functions (though with great efficiency).

If manpower is needed, the police can count on finding large numbers of volunteer deputies. Since most Lunarites sign up for a tour of duty with the Federation Armed Forces (and often retain their equipment and light weapons upon discharge), tough and disciplined posses are the rule. In the event of a direct attack on Luna, they would also serve as volunteer militia — a tradition that originated during the penal period.

Above all, the Lunarite devotion to "orderly" (read "lawful") behavior is itself the best defense against crime, foreign espionage, and sabotage. Lunarites witnessing any dishonest act will raise an outcry, and everyone nearby will join in the apprehension of the wrongdoers. Lunarites take care of their own.

Miscellaneous notes

The Lunarite proclivity for gambling is notorious throughout the galaxy. This, again, appears to be rooted in the penal days of the early colonies when everything was a gambling proposition. Accustomed to uncertainty and danger, Lunarites always figure the odds. They often show prescient powers by accepting risks that others would reject outright, and then succeeding in their ventures.

Gambling is in the blood of the true Lunarite, and one must take this into account whenever dealing with one. For instance, dicing for discounts on purchases (or added value, if one loses) is regarded as mandatory if one is expected to

patronize a business establishment again. And any form of "sporting proposition," be it racing, organized sports, or a street-corner pickup game of dice, will attract plenty of active participation from passers-by.

Visitors to Luna have the prospect of many unusual experiences. The world is disease-free — the result of thorough medical examination upon entry, a totally controlled environment, and the finest medical facilities in the Federation. Five interstellar universities have been established on Luna, each with superb medical facilities.

Lunar hotels are fully automated, with luxurious accommodations in even the modest, economy-class hostels. The cuisine is cosmopolitan in the fullest sense, with foods from a hundred worlds readily available. The population is friendly and helpful. The nightlife is varied, with entertainment drawn from the length and breadth of the Federation, guaranteed to satisfy any taste. Of course, Lunar gambling casinos are famous, and one can find his favorite game of chance at one or another establishment, however exotic and foreign the game might be.

In summary, Luna is the product of the "Botany Bay" policies of the Pure Earthian regime which dominated Terran politics from A.D. 2065 to 2167. The Lunar population is a mixture of all racial and cultural elements of humanity, and evidences a degree of toleration for difference perhaps unique in modern experience. Victims of brutal oppression and exploitation, the Lunarites are dedicated individualists who hold personal freedom paramount and resist any attempt to limit their personal choice and activities.

Yet Luna is a harsh and unforgiving world, and the Lunarites have learned to work together in a common cause. Whenever threatened, Lunarites submerge their individualism into an unshakeable group solidarity and will labor and fight for the survival of their neighbors and their way of life with great courage and self -sacrifice.

With such a committed social consciousness and sense of responsibility, one might expect Lunarites to be politically active, but the opposite is true. Politics is rarely on a Lunarite's mind. "Politics" is a matter of deciding what a problem is and who the best men are to solve the problem. The whole process is carried on at such an ad-hoc level that one wonders how anything ever gets done.

But, as noted, Lunarites are hard pragmatists and usually know the facts. That includes an awareness of the best men among them — ones who are both competent and trustworthy — and these are usually dragooned, kicking and screaming all the way, into doing what the community needs. In characteristic fashion, such leaders dispose of the matter as quickly as possible so that they can resign their posts and get back to their private lives and endeavors. Exercising power over others is distasteful to Lunarites, and will be avoided if possible.

Luna is one of the most highly developed planets in the Federation. The average level of education approaches the equivalent of a Master's degree at an elite university. Learning for the sake of learning is a basic Lunar virtue. Those less founded in the theoretical areas are invariably competent technicians or talented jacks-of-all-trades. Lunar economic success is directly related to Lunarite educational excellence.

The Federation Guide To Luna

The Moon in STAR TREK™: The Role-Playing Game

Nearly every Federation citizen, human or otherwise, has had a desire to visit the Sol System and the planet Earth. No trip to the "Blue Planet" would be complete, however, without a sidetrip to one of the most famous planetary satellites in known space: Luna, Earth's Moon.

Part of a 1978 U.S. Geological Survey map of the Mare Orientale region of the Moon appears below. The scale is about 1"=133 km.

CREDIT * DEPARTMENT OF THE INTERIOR U.S. GEOLOGICAL SURVEY

The Moon of A.D 2210 has lost none of the awe-inspiring power it has shown humanity for eons and still brings a sigh from those watching from Earth as it rises on the horizon, orange and full. Now, of course, the Moon means even more to humanity. Some 4.23 million beings, most of Earth/Luna human origin, live in the twenty-four domed surface and underground cities located on the Moon.

The Moon is well known for its mining industries, located primarily at the Clavius Mining Complex, as well as for the research and medical centers there. Today, however, the main economic resource for the Moon and its inhabitants is tourism. The Moon is an important stop on most Earth tours offered by the major interstellar travel agencies. In addition to out-system trade, the Moon is a popular recreation and vacation spot for Earthers who long for the thrill of space travel without straying too far from home.

Many interesting and varied experiences are offered by the lunar resorts, the most popular of these being the dust-skiing complexes located at Mare Imbrium and Mare Nubium. Dust skiing was recently included as an event in the Federation Interstellar Olympic Games; the Earth and Luna teams have their training facilities here. The Mars team has considered joining their colleagues, but for now they still use the slopes of Olympus Mons on their home planet.

Other points of more historic interest include the Goddard Moonbase Museum, located on the site of the first permanent lunar base, at Goddard Crater. Opened in A.D. 1998, Goddard Moonbase was still being used for various duties (ranging from geologic research to spare-parts storage) until the early 2100s, when the present museum was constructed.

The Tranquility Base Historical Site, with its impressive Apollodome Complex, is another must for any lunar tourist. For a nominal fee, many resorts around the Apollodome Complex offer guided tours of the various landing sites of the first Apollo moon missions and the landing sites of a few of the Ranger, Surveyor, and Luna probes that went on their information-gathering missions centuries ago.

Tourists with more current interests may visit the Star Fleet Disposal Yards, located in and around Mare Orientale all the way to the Cordillera Mountains. Out-of-date or heavily damaged vessels from the different branches of Star Fleet are collected and disposed of here, either by scrapping, cannibalization, or sale to the numerous parts dealers and used-ship brokers with offices in the surrounding cities. Orbiting above the Star Fleet Disposal Yards is the Quadrant Reserve Fleet, mothballed here for possible future service during an emergency. Parked in permanent low orbit, these hundred-odd vessels make a spectacular sight when the Sun sparkles off their silvered and protected hulls.

When touring the Star Fleet Disposal Yards, it must be remembered that this is a Federation Security Zone and the proper clearances must be obtained before any personal tours of vessel debris, wreckage, or hulks can be conducted. A number of junkyard areas in the Yards are considered dangerous and are prohibited to unauthorized personnel; these areas often contain active elements from warp-drive engine components and other unstable materials.

One of the most interesting scientific sites on Luna is the Dome Complex of Taenarium Observatory, located precariously on the promontory of the same name. This astronomical research center is still going strong after five add-on reconstructions and two hundred years of continued heavenly observation. The many architectural and structural design changes give the complex a unique look as it winds its way up Mount Arzachel, 3960 meters above the dusty floor of Mare Nubium. Taenarium Observatory remains the oldest and most prolific scientific institute on the Moon.

Another favorite tourist stop is the Clavius Mining Complex, opened in A.D. 2004. It was here that materials were mined for the first L-5 space colony, which opened in A.D. 2007. When interstellar colonization superceded interest in the L-5 colonies in the late 21st century, the Clavius Mining Complex fell on hard times (as did most of the technical industries located on the Moon). Eventually, the mines were reorganized to provide for the needs of the lunar inhabitants only, and a thriving, if somewhat diminished, economy was again established.

The underground and domed surface lunar cities are a wonder of technological achievement. Maginus, the administrative capital of Luna, is the largest urban area, with just over 800,000 inhabitants. Located northeast of the Clavius Mining Complex, Maginus is home to many of that facility's workers, who travel to the mines using the underground magnetotube shuttle system. In accordance with the independent attitudes of most lunar residents, the government is composed of an informal administration that coordinates local activities, with a combined Federation/Star Fleet Assistance Committee to provide whatever extra help the residents might require.

Politically, the Moon remains independent of Earth, although a healthy respect is given her "big brother," and preferred trade partnerships are common. This was not always the case. In the early 21st century, Earth insisted on governing the growing lunar population when it became apparent that lunar industry was undercutting terrestrial mineral and technology concerns. After years of difficult negotiation, these differences were laid to rest, and this has led to the continuing state of cooperation seen today between the worlds.

The largest city on the Moon's farside is Farside V, with a population just under 200,000. Formerly scientific bases, Farsides I through IV are now tourist resorts connected by magnetotube to the hub of Farside V. Not surprisingly, most lunar settlements are located nearside, facing Earth. Aside from being heavily surveyed and mapped, the nearside has a mystique associated with its view of Earth that appeals to tourists and inhabitants alike.

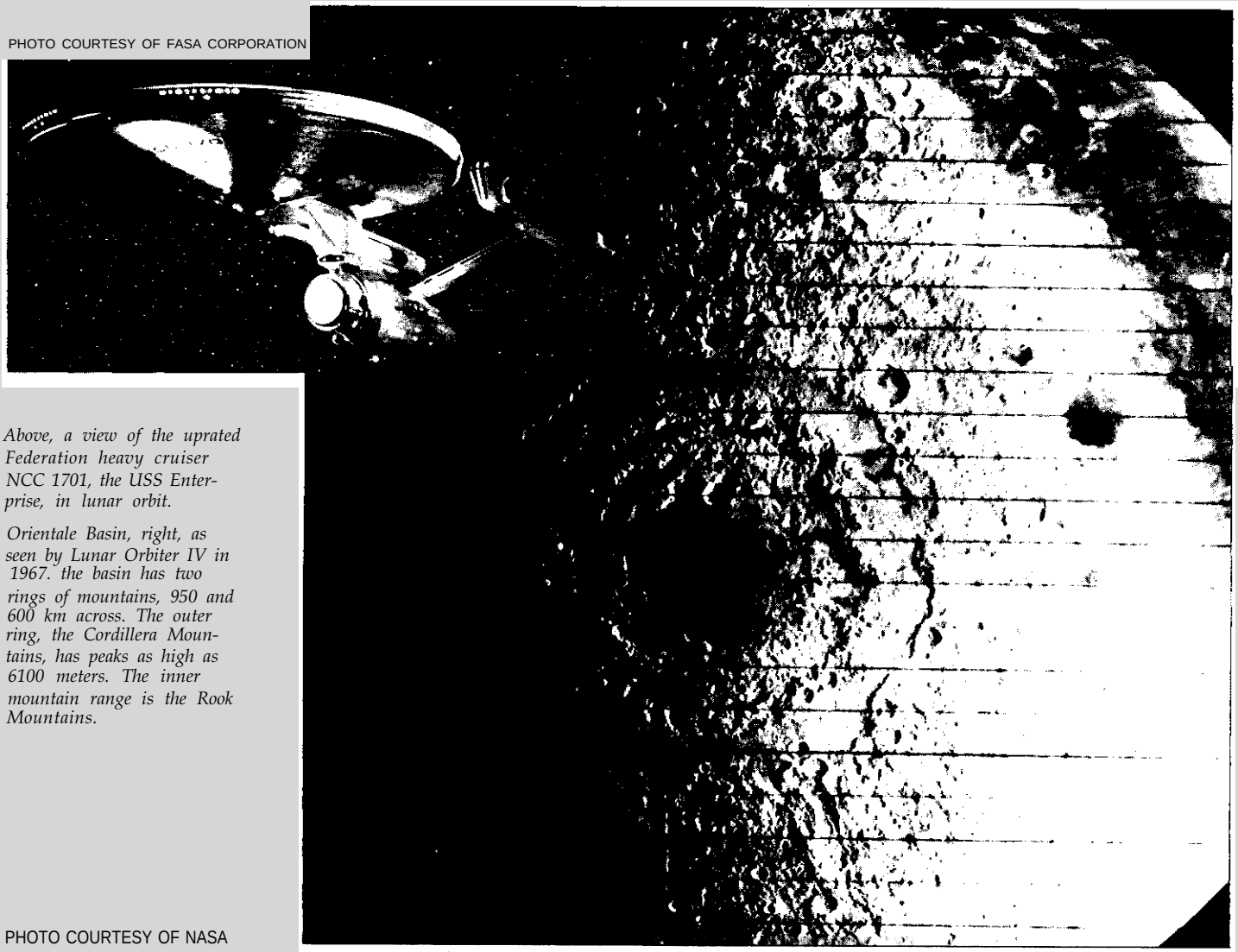
Tourists and residents often point out an apparent social difference between lunar settlers, perhaps the only one of consequence. "Nearsiders" are said to be more conservative and refined than the "farsiders," who are generally described as independent and informal in attitude. Some reports circulate of prejudicial treatment of "farsiders" by certain restaurant and resort employees on nearside, but no incidents of major significance have been reported.

Some of the other interesting cities on Luna shouldn't be missed if there is time for an extended tour. Petavius (120,000 inhabitants) is famous for the Petavius Needle, rising 1.07 km high, the tallest man-made structure on the Moon. A revolving restaurant caps the tower, and the view is considered the best that one can get from the "surface."

Janssenville is an architecturally interesting lunar city. Built along the base of a 147-kilometer long V-shaped cliff, the city could be considered the longest in the Federation. The outer edge of the complex is made up of shielded, transparent ports that look out toward the municipal spaceport/shuttle landing area and the outlying settlements in the Rheira Valley beyond.

Selene City in Mare Nectarus is another interesting stop. Considered the Moon's largest industrial center, it is the headquarters of such firms as Astro Moonbuggy, Ltd., General Oxygen (listed as $G0_2$ on the Federation stock exchange), and Ultraski, the official supplier of dust skis to the Federation Interstellar Olympics.

PHOTO COURTESY OF FASA CORPORATION



Above, a view of the uprated Federation heavy cruiser NCC 1701, the USS Enterprise, in lunar orbit.

Orientale Basin, right, as seen by Lunar Orbiter IV in 1967. the basin has two rings of mountains, 950 and 600 km across. The outer ring, the Cordillera Mountains, has peaks as high as 6100 meters. The inner mountain range is the Rook Mountains.

PHOTO COURTESY OF NASA

The twin cities of Eddington and Lunicgrad are also part of most tour packages. Located in the Sinus Iridum, the twin cities contain more above-ground construction than any other lunar urban area. Composed almost entirely of a series of large interconnecting domes, the two towns drew closer together as a result of new construction and finally overlapped. Most inhabitants now consider them a single city, known by various names such as Eddingrad, Lunicton, etc.

Transportation is no problem on the Moon. Most urban areas and their environs are connected by the underground magnetotube system. One can also take the instantaneous transporter system that uses an automated orbital relay station (any ship in orbit will do as well).

If adventuring is more one's style, or one doesn't wish his molecules scrambled, there is the ever-popular Luna Jump Buggy Service. These vehicles can accomodate up to two hundred passengers and run on eight huge bulbous tires. They also have an extensive array of thrusters to help them "jump" lunar terrain obstacles and debris. This gives an interesting ride that harkens back to the old rollercoasters of Earth's amusement parks. In addition to jump buggies, there are a number of private land rover and grav vehicles for hire at every city municipal spaceport.

For traveling further afield, a number of transportation systems are available. The Earth/Luna Shuttle leaves twice daily from Maginus Municipal Spaceport, with stopovers at the Tsiolkovsky L-5 complex and the Earth Orbital Services Station, near the Star Fleet Construction and Repair Yards. Within the next few years, a long-range transporter system will be put into operation; using one of the L-5 colonies as a relay point, passengers can be transported between the Earth and Moon in a matter of seconds.

Even now, it is not a time-consuming trip to reach the Moon. Any vessel going Warp 0.1 on Impulse power can reach the Moon from Earth orbit in 11 seconds. The Earth/Luna Shuttle takes forty minutes due to stopovers and loading/unloading, however. For quick exits from the lunar scene, merchant and passenger vessels in orbit may be boarded by transporter or shuttle service at any city spacecraft landing area.

No military presence is maintained on the Moon, save for the Star Fleet Disposal Yards. This is not considered a critical situation, as warships from Earth and other nearby worlds visit constantly. The Moon is also included in Earth's defensive perimeter in case of armed attack on the Sol System.

The Moon of A.D. 2210 has been civilized in many ways. It can, however, still be a place of danger and death to the unwary. Even with centuries of development, the Moon is a dusty, inhospitable wasteland with a few islands of humanity amid its rocky seas.

Adventuring on the Moon

Like any planetary body, the Earth's Moon in the STAR TREK™ game universe is full of adventuring possibilities as wide-ranging as the gamemaster's imagination. Some suggestions are

provided below to get groups started:

1. A player-character (PC) team of Star Fleet personnel is on detached duty to the Lunar Disposal Yards and is given the assignment of locating the wreck of a warship scrapped a hundred years ago. Archives have revealed that on one of the ship's last exploration missions, some key documents were withheld by the ship's captain and hidden somewhere in his stateroom.

These documents give the location of a distant planetary system that is the subject of some unusual stories (vast riches located there, fabled lost race lives there, etc). If these documents can be found, an expedition will be organized to check these stories out. Of course, other interested parties may also desire these documents. If they beat the PCs there, or arrive while the PCs are inside the wreck, trouble could develop.

Gamemasters should work up ship deckplans if they desire, or use the existing FASA plans for Constitution class ships. Plans for the Reliant class (hopefully appearing in 1984) could also be used in this adventure.

2. A team of PCs is in charge of security for Federation installations on the Moon. Suddenly they are informed that an anti-Federation terrorist group from Earth has taken hostages and captured the Apollodome at the Tranquility Base Historic Site. They threaten to blow the site up unless certain demands are carried out. This, of course, is entirely unacceptable to the Federation authorities; the PCs are ordered to gather a strike team and retake the Apollodome before the terrorists have a chance to carry out their threat.

Gamemasters will have to create the floor plans for the Apollodome, keeping in mind that it is a museum of space-flight history rather than a heavily-populated city area.

3. A command staff of PCs has been ordered by Star Fleet Command to report to the Reserve Fleet Control Office at the Star Fleet Disposal Yards on the Moon. There they will take command of the U.S.S. *Resolution*, NCC-382, and ready it for active duty as a target/decoy ship for fleet maneuvers.

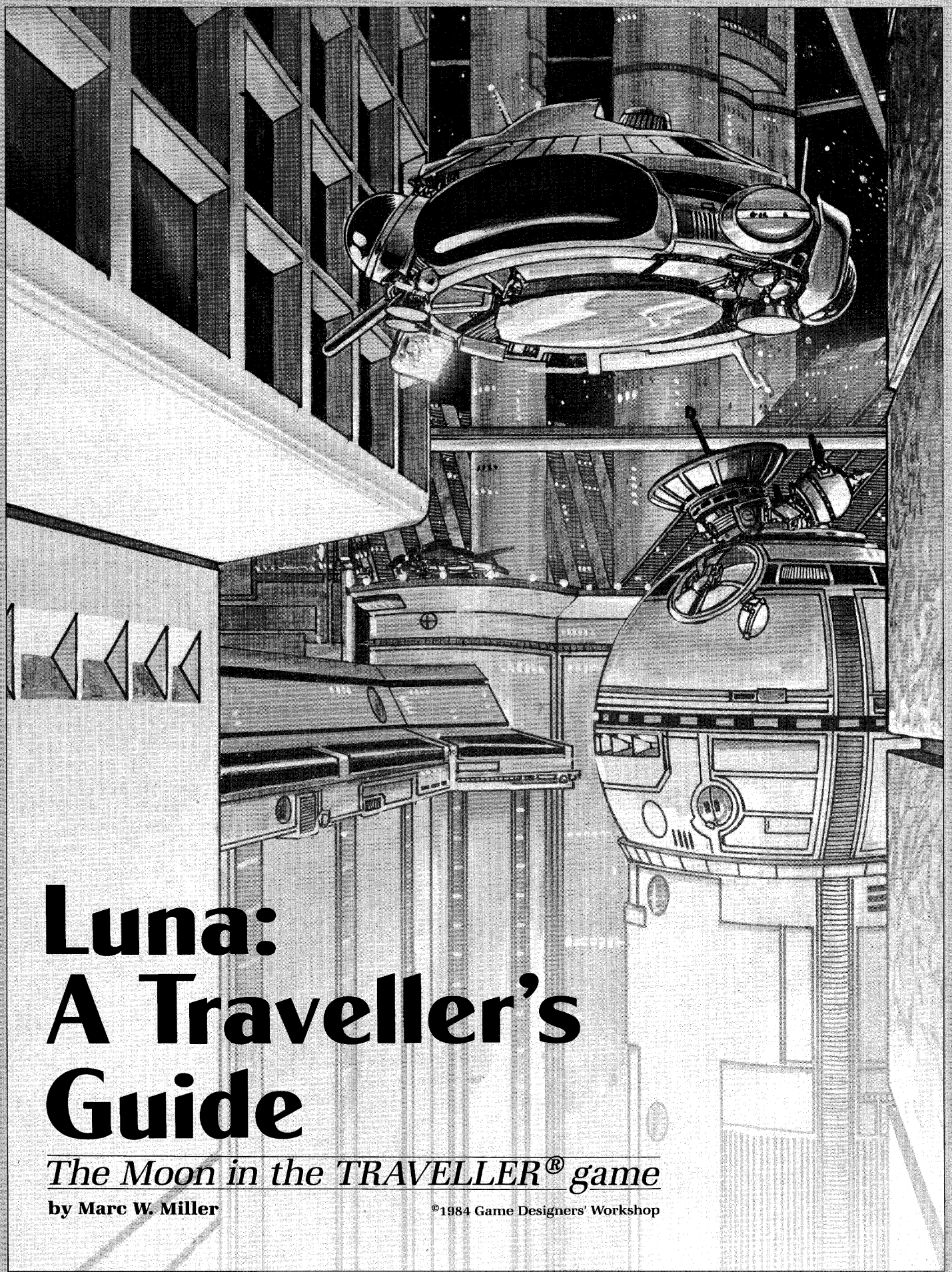
Many difficulties will be involved in getting the vessel space-worthy again after its lengthy period in mothballs. When the overhaul is complete, breakdowns may occur before the ship reaches the wargames area, ranging from annoying glitches to death-dealing disasters.

Upon arrival, the PCs must maneuver the *Resolution* in the games using piloting and command skills according to the difficulty levels required in the gunnery exercises. Of course, the vessel could be the target of nefarious hijackers who want to disrupt the wargames for some reason.

4. Other adventuring ideas can be produced for characters not working for Star Fleet. The Moon makes a good setting for a Merchant adventure using the STAR TREK game's TRADER game supplement. The familiarity players will have with the Sol System adds even greater realism and detail to such adventures, both on the Moon and the Earth in the STAR TREK game universe.

Those interested in adventuring on the Moon will find one playing aid extremely useful: a current map of the Moon. The one used for writing this article was a 1969 *National Geographic* magazine map, but other sources such as NASA have even more detailed survey maps. Actual maps of the gaming area add something special to the situation.

Good gaming in the Earthlight!



Luna: A Traveller's Guide

The Moon in the TRAVELLER® game

by Marc W. Miller

Illustrations by Keith Parkinson

Reference: Library Data, Solomani Rim Sector Edition; Gashidda, IIII

LUNA F20076C-F N Research Laboratory. Colony.

The only natural satellite of Terra (Solomani Rim 1827). 3476 km diameter; Gravity=0.1653 (Earth=1); K (density constant)=0.610; Mass=0.123 (Earth=1); Albedo=0.07. Orbits Terra at 60 diameters with a period of approximately 28 days. Temperature ranges from 100°C. to -100°C during the 655-hour local day.

Spacers should contact Terra system control at Copernicus Down Spaceport on standard frequency beta. All traffic within 200 diameters of Terra is under strict control from Luna; traffic in outer system is controlled from Rhea.

Overview: Luna is a province of Terra with status comparable to that of a continent; it is allowed self-rule for internal affairs but subject to the Terran Documents of Confederation which safeguard human and corporate rights. External affairs are handled by the Terran Ministry of State.

Since the conclusion of the Solomani Rim War, the Terra system has been under a stewardship administered by the Imperial military governor. The Military Governor for Terra reports directly to the Office of the Emperor, and holds the power to require or prohibit any activity deemed detrimental to the Imperium. The military government of Terra (and Luna) is scheduled to end 365-1111 Imperial.

Lunar industry depends primarily on mining and ore processing, although some ship construction takes place as well. Luna is a popular destination for Terran honeymoons (another name for Luna is "The Moon"), with several resort complexes at Copernicus catering to tourists and vacationers.

Population and Demographics: The eight million people on Luna are concentrated in three population centers — Archimedes, Copernicus, and Plato. Additional settlements such as the mines at Sinus Iridium and the Montes Apenninus, Farside Station, the Imperial research laboratory at Clavius, and the Imperial Naval Base at Theophilus account for less than 10% of the total population.

The oldest settlement on Luna is Archimedes (30° N, 5°W), established in -2510 as a small mining base. The location allowed construction of quarters and life support facilities under the crater walls while providing access to the mines in the Montes Apenninus. Archimedes is still Luna's major mining center.

Although pre-landing surveys can be credited with pinpointing the location, the mines at the Montes Apenninus proved to be an unexpectedly rich lode. They have been producing lead, iron, nickel, copper, and radioactives for over three thousand years, and the shafts now reach as far as twelve kilometers beneath the lunar surface. During the Long Night, strip mining of Mare Imbrium was also attempted, but the operation proved uneconomical and was discontinued in -800. Recently, some efforts have been made to restore the strip-mined portions of Mare Imbrium to their original condition.

Archimedes' population of 3.6 million is primarily concerned with the mining industry. Greater Archimedes includes several suburbs which have grown up around the main crater; these serve as bedroom communities.

Copernicus (20°N, 10°W) was originally a small scientific base operated by the United States of America, a dominant Terran nation. It was nearly closed down in -2403 when the major mining expansion took place at Archimedes. The *Harriman* disaster changed all that: the collision of an outgoing mass driver cargo module with the incoming passenger liner *George Harriman* cost 34 lives and pointed out the difficulties of landing spacecraft through a maze of mass driver launch points. Since the mines and the launch points couldn't be shifted, the starport was —to Copernicus.

Copernicus is the trade and travel center of Luna. Cargos and passengers normally pass through the spaceport there, though special arrangements for landings at other locations are possible. Ninety percent of all arrivals to Luna pass through Copernicus.

About 2.2 million people live at Copernicus, most engaged in (or in support of) marketing and distribution. The Lunar Senate, Chamber, and Executive are located at Copernicus, as are the Lunar Central Bank and several major trade brokerages.

Copernicus Down Spaceport lies southeast of Copernicus. Its extensive landing pad complexes reflect a time when the port was busier and had greater importance than today. Fully two-thirds of the facilities are no longer in use, though they stand ready in vacuum for reactivation if needed. Some sheltered areas have been converted to warehouses or business offices, but even those areas are under-utilized.

The academic community that has grown up around Plato (53°N, 10°W) has made it the third largest settled area on Luna, with a population of about 1,000,000. Plato is the site of the main campus of the University of Luna, regarded as one of the top schools for high energy physics and astronomy in the Terra system. The Plato community is the intellectual center of Luna, with local video, plays, and concerts continually being produced by faculty and students. The Lunar Court of Appeals also holds its sessions at Plato.

The remaining settlements on Luna are specialized areas devoted to specific activities. Clavius is a modern, high-technological industrial park with production facilities for electronic and gravity chips, vacuum-process equipment, and thin-film devices. The prime operator for the industrial park is Gesichtkries Sternshiffbau, AG (also known as GSbAG), with other corporations leasing its facilities. The most apparent feature of the park is the lack of a central dome. The atmosphere is contained by a network of focused grav modules which retard the escape of gasses; leakage is constantly replaced. Although there were some problems with the system in its early years, it has functioned without major problems since -1080.

Farside Station is a scientific research base operated as a branch of the University of Luna. Accessible only by spacecraft, the station is located in the center of the lunar farside, away from light, energy, and particle pollution associated with industrialized areas on the near side of the Moon. The station is primarily concerned with radio astronomy and cosmic ray research. Much of the activity at Farside Station has military applications, and access to the facility is restricted.

A mining center exists at Sinus Iridium. It was opened during the Solomani Rim War, closed after the war, and was recently reopened. Though still in the developmental stages, its developers hope that it will someday rival the Montes Apenninus mines in output.

Theophilus is a Imperial Naval base and training center.

Transport networks: The major settlements on Luna are linked primarily by monorail. The same problems which moved the main spaceport to Copernicus also pose a threat to unrestricted grav vehicle travel, and led to the construction of monorail links between Copernicus, Plato, Archimedes, and (most recently) Sinus Iridium. Aristillus and Autolycus, the residential suburbs east of Archimedes, are linked by a spur to Archimedes and thus to the main monorail system.

Grav vehicles are strictly controlled on Luna, and major areas are totally off limits to any vehicles at all. Where such

vehicles are allowed, they must be in contact with central vehicle control at all times.

In response to commercial needs, in 320 a grav vehicle route was laid out parallel to the monorail lines, to allow heavy-duty goods transportation between settlements. By 450, double monorail lines had been constructed to replace the old single lines, but the need for grav vehicle routes was still increasing. A limited number of clearly marked gravways were constructed as a result.

Each gravway has a central guidance cable which provides signals to grav vehicle autopilots, keeping the vehicles at safe intervals and on course. For visual identification, the route has been marked on the surface by draglines which create a churned effect in the lunar dust. These gravways feature franchised turnouts (every 400 kilometers or so) which provide food, fuel, and repairs.

Gravways connect Archimedes, Plato, Sinus Iridium, and Copernicus in a rough circle, with branches extending from Copernicus to Clavius, and from Archimedes to the Imperial Naval Base at Theophilus.

Surface (wheeled or tracked) transport on Luna is rare; grav vehicles are more efficient and faster. In addition, conservation and preservation groups have forcefully made the point that vehicle tracks are not weathered or eroded away. In some cases it is possible to positively date surface vehicle tracks to the earliest surface explorations. The few surface vehicles allowed are purpose items such as dirtmovers or construction equipment at the mines, or special prospecting vehicles.

Long distance transport, defined as covering more than 2000 km, is generally accomplished by spacecraft. It is the most economical means for sending bulk shipments and is quick as well. Landing pads for such shipments exist at each major settlement. Spacecraft access to the landing pads is relatively easy, provided the proper paperwork (a misnomer – it's all done electronically these days) is obtained first. Such spacecraft are under strict traffic control from Archimedes.

Political Science: Luna was originally a colony of the United States of America with special provisions for its non-American citizens. With the passing years, it evolved into several national colonies (American, European, Soviet, Japanese, Chinese, and Indian), but was eventually unified as a nation under the United Nations in -2433.

The current government of Luna is a representative democracy based on population and employment. Citizens elect representatives to the Lunar Senate based on geographic districts containing equal populations, and to the Chamber based on employment (the miners' union elects a Deputy, the university professors elect a Deputy, etc.) The Chamber and the Senate each select half the cabinet, which then chooses a prime minister as the actual head of government.

Luna has three major political parties: the Lunar Labor Party, the People's Social Party, and the Preservationist Party. The Labor Party generally controls the Chamber and naturally seeks to protect labor unions on Luna. The People's Social Party is a liberal, left-leaning organization which advocates government programs for social welfare, including programs for free air, subsidized housing, and guaranteed employment. The Social Party generally controls the Senate.

The Preservationist Party has environmental concerns as its primary issue. Although it has never controlled the Senate or the Chamber, it is skilled in establishing coalitions and taking into consideration passage of measures which it favors. Recent Preservationist issues have been restoration of the strip-mined areas of Mare Imbrium, strict regulation of mining projects in the Sinus Iridium, and population control.

Rumors are told of scattered Solomani bases across the lunar surface. Limited library data suggests that some such bases may still exist. A thorough search of the lunar surface by the Imperial Navy in 1080 failed to find any bases not already charted.

The Solomani Party (outlawed following the Solomani Rim War, but legalized in 1095) has a membership of about 2% of the total lunar population. The Solomani Party is formally disassociated from the Solomani Freedom Army, but an informal relationship between them apparently exists. Although the Solomani Freedom Army claimed responsibility for some acts of terrorism in the years after the war, it failed to find any true base of support and has no force in local politics.

History: The first landings on Luna took place in -2552; scattered investigations of the lunar surface were conducted by American, Soviet, and European teams between -2552 and -2501. The settlement of Luna began in earnest in -2501 when the United States of America (in association with England and Japan) established a mining site near Copernicus for the express purpose of supporting the newly established Lagrange colonies in Earth orbit. Ore scooped from the lunar surface was sent by mass drivers to the L4 and L5 colonies to facilitate colony expansion without paying the high prices required to move raw materials out of Terra's gravity well.

Inevitably, the mining of surface materials from Luna became a major industry. Refining the materials before shipment proved cost-effective, but it also required a greater population to accomplish the task. By -2400, the lunar population had grown to 60,000 (nearly a third of the Lagrange colonies' populations).

The development of the jump drive by a joint venture of several companies working on Luna led to the establishment of the megacorporation GSbAG and several shipyards on Luna. Initially, the pace of production was slow, but contact with the First Imperium in -2407 sparked the Interstellar Wars and a period of wartime prosperity for both Luna and Gesichtkries. The presence of the mining and refining industry there helped make Luna an excellent place for the production of basic starship components such as struts, frames, and structural plates. It became a vital link in the warship manufacture and assembly process that was a standard part of the Terran economy during the 200 years of interstellar wars.

The money poured into Luna helped increase its population and its standard of living, while military defense measures made the colony self-sufficient of Terra. By the end of the wars in 2219, Luna was a full member of the Terran Confederation.

The end of the wars, however, brought economic depression to Luna because of the decline in production and service of starships. It had become a one-industry town and was now suffering the consequences. Hampered by lack of funds, Luna nevertheless began to diversify and compete with the Lagrange colonies for vacuum-processing contracts, high quality crystal production, and pharmaceutical development. Though the Lagranges had zero-G available, Luna made up for it with its abundant resources. While the Lunar yards continued to produce starships, the expansion into other industries eventually restored prosperity to the colony.

Military bases: Luna has one active base on its surface, an Imperial Naval Base established in 1001 by the invading Imperials as a support base for the invasion of Terra. The Imperial base took over an existing Solomani naval base which had been in use for nearly 300 years.

The actual naval base occupies the crater Theophilus, near Mare Nectaris. A naval reservation around the base stretches from 10°north to 20°south, and from 20°east to 50°east, with access to the reservation prohibited without prior authorization. This reservation includes most of Mare Nectaris and the southern half of Mare Tranquillitatis.

Several abandoned military bases of various types remain on the lunar surface. A total of seventeen fighter pads established for the defense of the Imperial Naval Base have been abandoned; all lie within 400 km of the base. Some pads were converted to commercial or industrial uses; those within the naval reservation are guarded by automated security systems. An Imperial Marine protected forces training base occupied a section of the western wall of Mare Crisium from 1002 to 1060, but was closed because of force deployments by the Navy. The original base structures remain, stripped of all furnishings and equipment, and are now open to vacuum.

Rumors are told of scattered Solomani bases across the lunar surface, usually associated with Solomani Rim War activities. Limited library data suggests that some such bases may still exist as equipment caches or laboratories. A thorough search of the lunar surface by the Imperial Navy in 1080 failed to find any bases not already charted.

Laboratory: The Imperium maintains an extensive high-energy particle research laboratory in conjunction with the Naasirka megacorporation at Clavius. This laboratory was once devoted to the investigation of pi mesons, but has lately increased experimentation with ultra-high velocity baryons.

For the referee

Although Luna is not in the mainstream of the Terra system's affairs (Earth outshines it considerably), quite a few adventuring possibilities still exist on the Moon. The material presented above should help create a basic adventuring background for player characters on Luna.

Players may interprete the information as they see fit, perhaps turning their attention to the terrorist Solomani Freedom Army (a bunch of crackpots, rather than a vital political force) or the research laboratory at Clavius. Whatever catches their imagination can be used to create adventuring situations with great potential for excitement.

Any adventure, however, should have several "pulls" (opportunities for adventures) and "pushes" (restrictions and adventuring hazards). The following suggestions are adaptable to most gaming situations.

Pulls: Many pulls are possible in adventures set on Luna. For example, GSbAG is an old, respected megacorporation with its origins on Terra and Luna. The archives of GSbAG are located on Luna (at Plato, in the custody of the University of Luna Library). Many of the items in the archives are papers that have never been computerized, and the information on them does not show up in computer-system Library Data. These original books and drawings are valuable as antiques to buffs who collect GSbAG memorabilia much as some people collect stamps, guns, or autographs.

The abandoned Imperial Marines base at Mare Crisium might still contain mothballed or overlooked equipment which could be plundered. While the equipment might not be in great quantity, it may include standard-issue military goods not available on the open market.

Mining is a major industry on Luna. The mines at the Montes Apenninus are old, and they may eventually run out. The new mines at Sinus Iridium have been opened, and still other mining sites may be discovered elsewhere.

Pushes: Prospecting is severely controlled on Luna by the preservationists, but illicit prospecting can bring in good money if the search turns up a good site and the prospector is not caught in forbidden territory. Being caught in proscribed territory can mean a substantial fine or even imprisonment.

Similarly, violators of local space traffic control are subject to warnings, fines, and possible restriction of travel by the local authorities. Spacecraft cannot land at local pads without prior filing of flight plans and receipt of proper authority. Spacecraft in violation of these laws are subject to temporary seizure until a fine is paid and a search for contraband is performed.

Surface vehicles, either tracked or wheeled, are prohibited on the lunar surface unless a permit has been issued for them. Such permits are rarely issued and are never given for general use.

Private or rented grav vehicles are allowed only on specified gravways. Driving anywhere within ten kilometers of a gravway is considered a technical violation and merits a fine of only 1d6 x Cr100. Driving 10 kilometers or more away from a gravway is a criminal offense (the Preservationists at work!) and can result in up to one year in jail.

Laws are not the only pushes; local customs can be just as effective. Residential areas are isolated and insular. Visitors are rarely welcome unless invited, and may be forcefully expelled if they don't show reasonable pretexts for their presence.

Luna enjoys a unique position in the Terra system. Extraordinarily close to Terra, Luna has an environment of vacuum and raw materials set in a shallow gravity well. As a result, Luna is a major supplier of basic resources to the Lagrange colonies which orbit Terra. Competition with industrialized asteroids and the relatively low cost of anti-gravity has diminished Luna's economic role, but any loss of markets has been replaced by the need for locally produced manufactured goods.

Welcome to Luna!

A Field Guide to Lunar Mutants

The macrobes and plants of Tycho Center

by James M. Ward

In DRAGON® Magazine #86, the Moon of the GAMMA WORLD® game was described and adventuring suggestions for daring parties of explorers were given ("A World Gone Mad"). Six of the most commonly encountered mutant macrobes and plants of Tycho Center are presented below.

Macrobes

NAME: Sword Macrobe
NUMBER: 2d8
MORALE: 10 (never retreats)
HIT DICE: 8d6
ARMOR: 3
LAND SPEED: 12/600/12

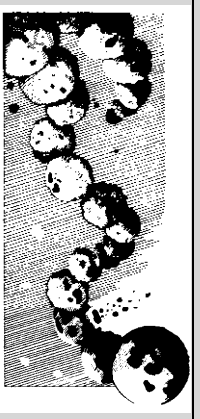
MS: 1d12	IN: 1d10
DX: 3d6	CH: 1d4
CN: 4d4	PS: 1d8+10

ATTACKS: See description
MUTATIONS: *Absorption (electrical), Adaptation* (as per the plant's power), and *Anti-Life Leech*
DESCRIPTION: This creature has a meter-long body and a two-meter tentacle. The Sword Macrobe can sense any plant or warm-blooded creature along an unblocked line of sight up to 30 meters away; the moment it finds prey, the .4-meter-long end of the tentacle activates and has the exact properties of a Vibro Blade. The creature will then move towards its target and flail out with the energized tentacle. All plants and animals slain by this attack will be absorbed and eaten by the Sword Macrobe after the combat is finished. This creature will continue to attack as long as "food" is around. It will never attack any other bacterial lifeform.

NAME: Ball Macrobe
NUMBER: 2d12 chains
MORALE: 1d4+6
HIT DICE: 1d6 per "seed ball"
ARMOR: 2
LAND SPEED: Nil

MS: 1d4	IN: 1d4
DX: 18	CH: 1d4
CN: 2d6	PS: 5d4

ATTACKS: See description
MUTATIONS: *Explosive Seeds, Spore Cloud* (as per the plant's powers)
DESCRIPTION: The adult version of this bacteria appears to be a long chain of multi-colored balls each about .2 meters across; there can be up to one hundred balls on the chain. The entire chain is always in motion, swaying slowly back and forth from an anchoring point on a wall or floor. The bacteria is sensitive to all forms of movement in a 60-meter radius. Anything moving into this area will cause the plant to hurl the endmost pair of macrobe balls at it.



One of the balls will explode on contact, doing 6d6 damage to all within a 3-meter radius and giving off a poisonous spore cloud of variable intensity (3d6) filling the three-meter radius with spores (attacking victims as per the *Spore Cloud* mutation). The second ball will attach itself to the victim's person. If the victim dies, then the "seed ball" will feed on the dead creature and grow. All victims who survive the attack will easily be able to shed the seed and destroy it.

NAME: Eye Macrobe
NUMBER: 1d4
MORALE: 1d6+4
HIT DICE: 6d6
ARMOR: 4
LAND SPEED: Nil

MS: 1d6+12	IN: 1d6+12
DX: 1d10+2	CH: 1d4
CN: 4d4	PS: 1d4

ATTACKS: See description
MUTATIONS: *Absorption (electrical);* triple power and range for the following mutations: *Telepathy, Telekinesis, Life Leech, Repulsion Field*
DESCRIPTION: This macrobe is about two meters long and will always be found growing on a wall near an electrical power source. It is very intelligent and serves as sort of a gardener for the rest of the macrobe colony. Using its mutations, it places new growths of bacteria in areas where they will grow and become useful to the whole colony. This mu-

tant has also been known to coordinate attacks against plants and robotic beings, and would attack animals and humans as well. Although it cannot move, it will get other macrobes to carry it from one chamber to another, so long as the chambers are secure from attack. The Eye Macrobe is rarely found at the forefront of any plant-bacteria battle.

Plants

NAME: Coner
NUMBER: 1d20
MORALE: 1d4+5
HIT DICE: 4d12
ARMOR: 3
LAND SPEED: Nil

MS: 1d6 IN: 1d4
DX: 3d4 CH: 1d4
CN: 3d4 PS: 3d4

ATTACKS: See description
MUTATIONS: *Explosive Seeds*, *New Body Parts*, *Increased Sense (hearing)*, *Shorter*
DESCRIPTION: This new mutant stands about one meter tall at full growth. It can grow on a solid metal floor if it can connect its root system to water and food sources within 30 meters of the parent plant. It reproduces by shooting its cones towards moving targets of any type that it senses with its acute hearing organs within 45 meters. Its first attack is to shoot explosive "energy cones" doing 1d20 points of electrical damage to whatever they hit (this damage is doubled if the plant can "plug" itself into an electrical power source in the local environment through its roots).

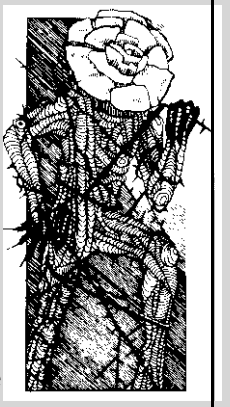
If the target dies or stops moving, the Coner shoots out a "tendril cone" connected to the parent plant by a thin cord. This seed will slowly sprout, its roots consuming the body of the target within two days; then it becomes a full-grown Coner and can either draw off the parent plant for water or find its own source. At least 30 energy cones may be found on a plant at any given time, and they take only two hours to grow back after being fired.

NAME: Rosoid
NUMBER: 1d4
MORALE: 1d6+4
HIT DICE: 18d6
ARMOR: 2
LAND SPEED: 12/600/12

MS: 3d6 IN: Variable
DX: 3d4 CH: 3d4
CN: 2d4+10 PS: 6d6

ATTACKS: Physical blow does 2d20
MUTATIONS: *Total Carapace*, *Throwing Thorns*, *Modified Leaves*, *Mobility*
DESCRIPTION: These mutant plants have humanoid shapes, and each walks about on two leglike stalks. All of their appendages are thickly wrapped in thorn vines and are covered in small rose flowers. Adult Rosoids are 3 meters tall and are very strong.

Rosoid thorns are coated with a poisonous and acidic sap.



The color of a Rosoid's roses determines how intelligent it is and what it will most likely attack. The yellow Rosoid is the most intelligent variety (IN: 2d6+6) and can use technological items of all types in its manipulative "hands." The red Rosoid has a low intelligence (IN: 2d4) and has been bred to attack robots of any type within sighting range (10 meters). The pink Rosoid is not very intelligent (IN: 1d6), but can sense the presence of macrobes within 15 meters of it and will instantly attack this lifeform regardless of the circumstances. The white Rosoid is the least intelligent type (IN: 1d4) and rarely leaves its original growing area. This plant will act to protect all other plants within its area and will attack all opponents by throwing its thorns (an attack all the types have).

Rosoid thorns are coated with a poisonous and acidic sap (intensity 13 poison). If the poison doesn't kill the attacker, the 1d10 of acid damage may do the trick. A Rosoid can throw 1d6 thorns each melee round.

NAME: Shooter
NUMBER: 1d20
MORALE: 1d4+6
HIT DICE: 10d6
ARMOR: 8
LAND SPEED: Nil

MS: 1d4 IN: 1d4
DX: 3d4 CH:1d4
CN: 4d4 PS: 3d4

ATTACKS: See description
MUTATIONS: New *Body Parts*, *Throwing Thorns*, *Texture Change*, *Taller*
DESCRIPTION: This mutant dandelion stands one meter tall and has changed greatly from its parent stock. Instead of one flower it has up to one hundred (10d10). Each bright yellow flower is composed of hard, razor-sharp petals. The plant attacks living material by shooting the flowers from their stalks, doing 3d10 points of damage to any solid object they hit; double damage is done against unarmored targets (AC 10). In the presence of moisture (like blood) the flower softens and becomes a seed that will grow in hours if left undisturbed. The Shooter can fire two flowers per melee round and can sense life forms up to fifty meters away.

Luna, The Empire and the Stars

The Moon in the OTHER SUNS™ game

Colony One landed on the northern rim of Copernicus crater in January of the year 51 of the Atomic Era (A.D. 1996). Fourteen on-site colonists touched down in a modified Manta-type shuttlecraft (successor to the Enterprise-type shuttles of the late '30s and early '40s).

Operators on Earth, working through waldoes, ran heavy machinery for the colony on a round-the-clock basis. With the assistance of the teleoperators, a lunar mass driver assembly was made operational by the end of A.E. 54; by the time it was ready for use, lunar mining shiploads by the kiloton were waiting at the injector head. Though there were only fifty on-site colonists by this date, the teleoperators on Earth numbered over fifteen thousand.

The Earth-based teleoperators enabled the US lunar installations to virtually explode across Copernicus. By A.E. 60, several mass drivers were in place and operational, three solar power satellite stations (SPSS) had been built using lunar materials, and the United States was beginning to see the return on its investment.

Hampered by their lack of sophisticated computers, the Soviet Union's lunar colony (established near Tycho in A.E. 58) lagged behind its western counterpart. The Soviets, after all, had to transport workers to the moon rather than keeping them on Earth and exporting their skills to Luna via computer-assisted waldoes. By A.E. 63 there were ten American SPSSs and only four Soviet SPSSs. Apart from their obvious civilian uses, the SPSS masers (used to broadcast power to ground stations) had military applications as well. That the US had only two hundred on-site colonists to the Soviet Union's eight thousand was considered unimportant. The US, after all, had nearly twenty-five thousand "colonists" if one counted the Earth-based teleoperators. The "orbital death ray" race was on in earnest, and the US appeared to be winning.

The lunar mines helped build orbital factories as well. Freed from gravity-induced manufacturing restrictions, these near-Earth orbit (NEO) factories produced a flood of new products which were too expensive or literally impossible to duplicate using Earth-based facilities. The first NEO factory was "on-line" in A.E. 57, and paid back its total construction cost, with interest, out of its first year's profits. Terran high-technology industries couldn't hope to compete with their orbital brethren; the stage was set for disaster.

By the late '40s, Japanese firms had come to dominate the microelectronics industry. The teleoperator systems used by NASA for the lunar colony work were, in fact, wholly built from Japanese-produced components. But NEO facilities broke the short-lived Japanese hold on the computer industry. The rising on in orbit returned the USA to a position of world

dominance in technology.

Faced with an ever-worsening trade deficit and with continued Japan-US trade restrictions born of the "good years" (when the American microelectronics and computer industries nearly ceased to exist), Japan was pushed into a closer relationship with Communist China. The forced withdrawal of US military forces from Japan in September of A.E. 61, the formal alliance between Japan and Communist China in February of A.E. 62, and the growth of the Chinese space navy throughout the fifties and early sixties, were all signs of the storm to come.

By A.E. 65, the small but growing Sino-Nipponese space navy was a force to be reckoned with in near-Earth orbit. On Sunday, 26 December, A.E. 65 (A.D. 2010 old calendar), at 0131 hours GMT, the financially bankrupt Sino-Nipponese Alliance struck at US and Soviet orbital facilities. World War III began, and the old world died.

The governments of the United States and the Soviet Union did not respond in kind to the "surgical" nuclear strikes launched by the Chinese. US and Soviet space forces destroyed the Sino-Nipponese space navy in six days, and the war ended on 1 January A.E. 66 with the destruction (by orbital maser systems) of the remaining military targets in enemy territory.

No accurate records exist of the number of military and civilian casualties inflicted by the war, but it has been estimated that two-thirds of humanity died in those six days. Of roughly two billion survivors, less than a third survived the next year.

The lunar installations did not participate directly in the war; it was over far too quickly. But had there been no lunar colonies, the cost of World War III would have been far higher. Though estimates of the aftereffects of atomic war made by scientists in the mid-'40s were overly pessimistic and inaccurate in detail, they were accurate enough as to the general consequences of such a conflict. The year after the war became known as the "year without summer;" the nuclear winter following the detonation of 3500 megatons in WWIII resulted in the death of two-thirds of the terrestrial survivors, and without the aid of the lunar-built NEO stations and the technical facilities on Luna itself, humanity might well have perished.

The US-Soviet space forces were the only effective combat powers left in the world. Planetary armies had been annihilated during the war; ground-based industries were gone, and the Earth was poisoned. The cosmonauts and astronauts of the two space services, heroes in a time that denied heroism, struggled to save humanity from itself.

In A.E. 66, there were eleven thousand colonists on Luna: ten thousand Soviets and one thousand Americans. In addition, three hundred US and two thousand Soviet military personnel were permanently stationed there. Another eight thousand astronauts and cosmonauts manned Earth-orbital facilities, together with twice that number of civilian technical personnel. They had solar power, abundant construction materials from Luna, and food from hydroponic gardens in the orbital facilities and the lunar farms. Their old homes in radioactive ruin, they set about to rebuild the world.

Luna was their industrial base, and Earth-Luna space was their home. These men had been taught the harsh lessons of survival by their extraterrestrial environment, and carried their lessons back to the mother world. Thus the Terran Federal Republic was born.

For twenty-five years, the last generation of Terran military personnel struggled to keep Earth and the dream of freedom alive. Luna was the training base, the industrial plant, and the breadbasket for the new republic. What the workers could save, they did — by bringing it into space, where a "normal" life was still possible (if still difficult). Elections, of course, were suspended "for the duration of the emergency." Both gravity control and a workable FTL stardrive were developed at the Tycho Akademy Nauk (Academy of Science) on Luna during this period.

By A.E. 90, however, the new generation of Space Force personnel, born and raised on Luna and the Orbital Bases (as they were now called), was ready for a new dream. Earth had been saved, but only 400 million humans lived there and their numbers decreased by nearly a million each year; life on the homeworld had become "nasty, brutish, and short." The Spacers numbered eight million (nearly five million on Luna), and were growing at a rate of 3% per year.

Unfortunately, three generals of the USSov Combined Aerospace Command decided to "correct" the political troubles of the Terran Federal Republic by replacing it with a new military government (with themselves as leaders, of course). On March 9th, A.E. 90, they acted, and a nuclear "accident" killed nearly half of Tycho colony's 1.3 million people. But the "accident" failed in its primary goal — to kill every other general rank officer of the Combined Command. General Mikhail Sergeivitch Malinkov, head of the Tycho Space Defense Command, escaped the cataclysm with four members of his staff. The Triumvirate seized power on Luna.

In the chaos that followed the loss of nearly 10% of its population and 25% of its industrial capacity, Luna halted export of all luxury goods and nearly halted the export of food and other essentials to the orbital colonies. Dependent upon Luna for much of their supplies, the last of the independent orbital

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The voting will be open until 1 November 1984, at which time the ARES Section editors will count up the votes and list the winners in the January 1985 issue of DRAGON® Magazine. Remember to put your name and address on your ballot.

And another thing: three names will be drawn at random from the entries we receive, and those three people will get a special prize from the ARES editors. Remember, only one ballot per person, and print or type as clearly as possible.

colonies came under direct Triumvirate control within six months. By mid-A.E. 91, a reign of terror had begun on Luna and the colonies. Over two hundred thousand lunar and orbital colonists were executed for "counterrevolutionary activities" before rebel forces, lead by General Malinkov, overthrew the Triumvirate in early A.E. 93.

A thankful populace offered General Malinkov a position as "President for Life of Luna and the Orbital Colonies." Over the next twenty-five years, General Malinkov refused the offer three times. The fourth time the offer was made, the title had been changed to "Emperor of Earth and Luna." Mikhail I's coronation was held in Copernicus colony on the 19th of September, in the 119th year of the Atomic Era. Humanity, never satisfied with democracy, returned once more to the security of hereditary monarchy.

During the last days of the Terran Federal Republic, the stardrive opened the galaxy to mankind. As had happened before in human history, the colonists were often the dregs of mankind; offered the choice of "death by hanging or transportation for life," many criminals became pioneers. This colonization procedure continued under the Provisional Government that followed Triumvirate rule, with political prisoners being added to the list of those offered the choice of exile. Under the rule of Mikhail I, political offenders were not offered a choice — they were all exiled to colonies lit by the light of other suns than Sol.

When Mikhail I died of old age in A.E. 126, his son Alexei I inherited an empire that stretched from Earth-Luna out to the stars. Alexei I, the Architect, designed the capital of the new Terran Empire. His son, Mikhail II, saw the completion of the capital on the lunar farside in A.E. 148. By the end of Mikhail II's reign in A.E. 198, the human race numbered three billion – seven hundred million on Luna and the Orbital Bases, three hundred million on Earth, one hundred million on colonies in the asteroid belt, and the rest in extra-solar colonies.

Under royal charter, the Alderson Naval Engineering Corporation was established on Luna in A.E. 147 "to promote and support the improvement of Terran Imperial Navy craft." Over the next century and a half, Alderson Naval Engineering and its successor company, Alderson Shipyards, did just that. Luna became the industrial and financial backbone of the Empire, as well as its capital world. When the sons and daughters of exiled colonists returned to Sol system to make their fortunes, they came not to backwater Earth, home though it might have been to mankind, but to the shining lights of the Imperial Capital, Luna.

During the Outworlds' Rebellion against the Empire (A.E. 319-331), Luna became a front-line military base as well. At the height of the rebellion in A.E. 326, Luna was under continuous attack by Rebel naval forces for nearly six months. The capital did not fall, and the Empire did not permit the Outworlds' Alliance to secede. While still mounting guard over the conquered worlds of the Alliance, the Empire met its first equal in space — the L'Doran Hegemony.

After fifteen years of increasingly serious contact problems, the Terran Empire found itself at war with the L'Doran Hegemony in A.E. 396. After its military defeat in one year, the Empire managed to have the peace negotiations held on Earth. It may have been one of the best decisions the First Empire made. The Hegemonic envoys were certain that the homeworld of humanity (which they had never before seen) had to be the industrial and military heart of the Empire, and they carried this misinformation back to their superiors. Luna, they decided, was a military base of little overall strategic importance.

Luna was a strongpoint of the Empire during the Outworlds' Rebellion, and it was strengthened every year thereafter. The terms imposed after the First Hegemony-Empire War restricted lunar military facilites but made no mention of industrial capacity. It was the most serious blunder the Hegemonic negotiators made, and they made many.

The military defenses of Earth-Luna were moved to the asteroid belt, and Luna geared up for another war. Luna built Triangle, Crossfire, and Starkeep deep space stations between the orbits of Uranus and Neptune. As a last line of defense, Infield Station was constructed in the asteroid belt. When humanity burst from its restricted worlds in A.E. 411, it was much better prepared for battle; lunar industries and scientific labs saw to that. Of Luna's eight hundred million people, fully one hundred million were trained space navy personnel.

Unfortunately for the First Empire, the L'Doran Hegemony was a multi-species confederacy that stretched a third of the way around the galaxy, with over a million member races. At its height, the First Empire held sway over a region 1200 light-years across, centered about Sol, with a mere two hundred slave races under its control. By A.E. 436, with the Second Hegemony-Empire War drawing to an end, the First Empire only controlled the space within 10 astronomical units of Sol (roughly nine hundred million miles, or 1.4 billion kilometers).

Crossfire, Triangle, and Starkeep were "neutralized" within days after Hegemonic naval forces arrived in the Sol System. Infield held out for nearly three months and then dropped out of communications. In late June A.E. 436, the battle moved toward Earth and Luna. Convinced that Earth was the heart of the First Empire, the attacking Hegemonic fleet concentrated its bombardment on that world, and Luna was spared the full force of the assault. By early August the war was over.

When the last elements of the Hegemonic warfleet left the Sol System in late August, Earth was a blackened cinder, its upper one hundred kilometers of rock blasted away, its atmosphere and oceans boiled off. The proud belt colonies were gone; only Infield was left, deep within Ceres (still "hot" enough on its surface to kill an unshielded human in ten minutes). There were six hundred survivors there out of the original complement of twelve thousand, among them Nicolai II, last member of the Imperial family. In scattered warrens deep beneath the lunar surface, there were three million survivors.

The Second Empire started with Luna, the surviving libraries and laboratories of the capital, and three million people. It was nearly nine hundred years before they managed to build their first FTL starship, but they never lost the secret of gravity control and they never lost hope. The capital has since moved to a more hospitable world far from Luna, and Luna with her two billion people is just another member world of the Second Empire, harsher than many, friendlier than some. But after thirteen centuries the people of Luna still remember their losses, and the glory that was theirs.

Humanity/Luna (A.E. 1782): Classification MHH2, Societal type S15R7. Single central government organized along military lines. Religious organizations cultivate veneration of the God-Emperor (absent from Luna since relocation of the capital in the 14th century A.E.). Population is distributed equally among one hundred thousand "defense bases" scattered across Luna. The Imperial Military Academy remains the major source of extra-solar credit. A harsh world with a stubborn people, Luna supplies a disproportionate share of the flag rank officers of the Second Empire's Space Navy.