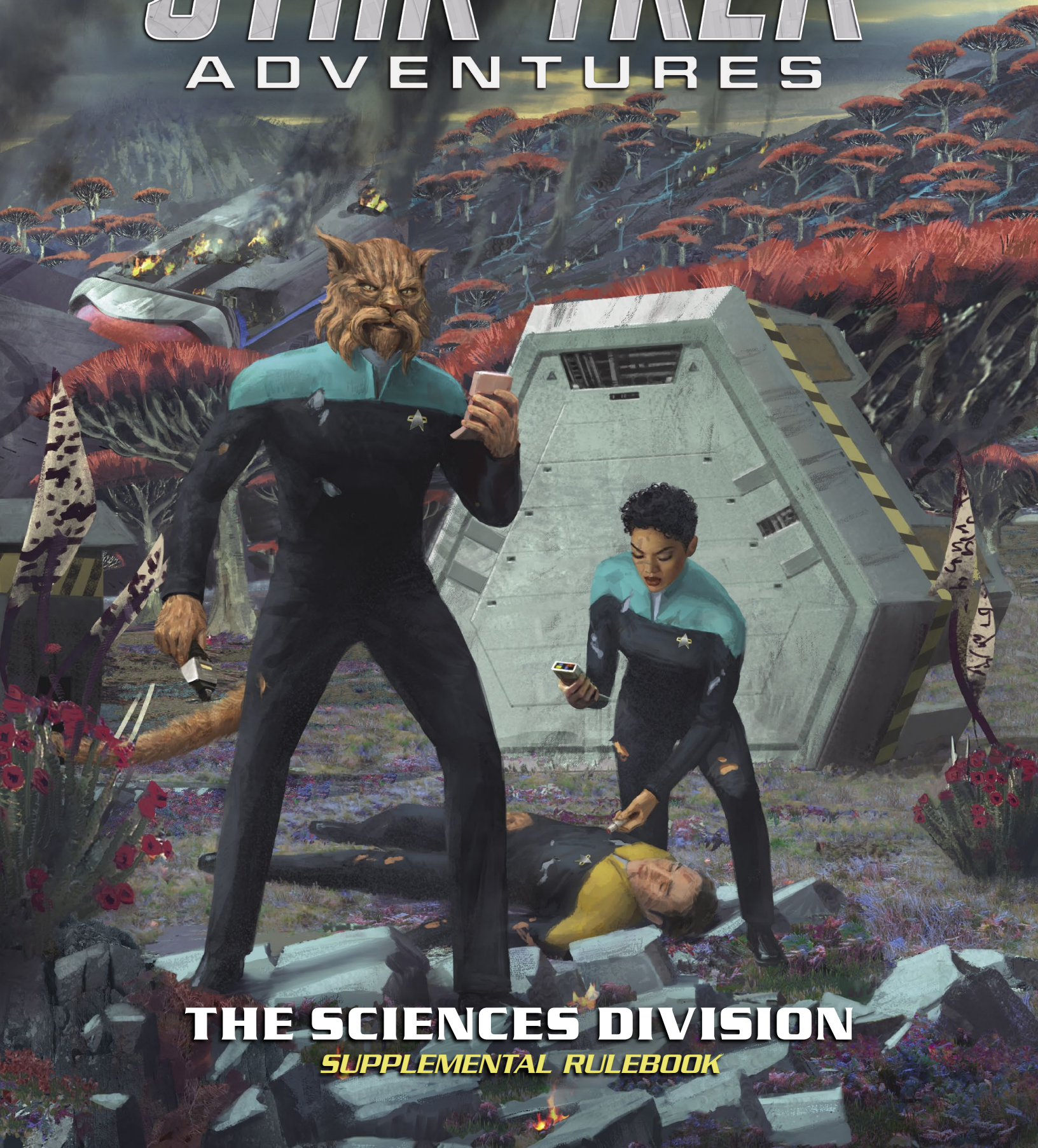


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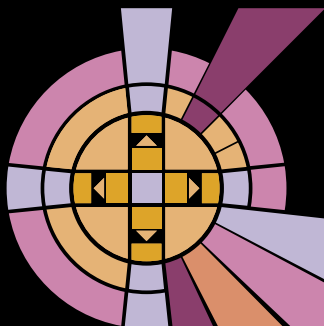
ADVENTURES



THE SCIENCES DIVISION
SUPPLEMENTAL RULEBOOK







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CREDITS

1732011

SYSTEM DESIGN
NATHAN DOWDELL

COVER ARTWORK
ELI MAFFEI

PRODUCED BY
CHRIS BIRCH

LINE DEVELOPMENT
SAM WEBB

INTERNAL ARTWORK

OPERATIONS MANAGER
GARRY HARPER

WRITING
ELIZABETH CHAIPRADITKUL,
MEGHAN FITZGERALD, JACK GEIGER,
AARON POLLYEA, AND JOHN SNEAD

JOSHUA CALLOWAY, MICHAL E. CROSS,
PIERRE DROLET, RICHARD L. GALE,
TOMA FEIZO GAS, NICK GREENWOOD,
RODRIGO GONZALEZ, VINCENT LAIK,
DAVID METLESITS, WAYNE MILLER,
GRZEGORZ PEDRYCZ, TOBIAS RICHTER,
MARTIN SOBR, AND JOHN TESKA

PRODUCTION MANAGER
STEVE DALDRY

CANON EDITING
SCOTT PEARSON

COMMUNITY SUPPORT
LLOYD GYAN

EDITING
JIM JOHNSON, SCOTT PEARSON,
AND RICHARD L. GALE

ART DIRECTION
VIRGINIA PAGE AND SAM WEBB

PUBLISHING ASSISTANT
VIRGINIA PAGE

181984

PROOFREADING
VIRGINIA PAGE AND MATEUSZ PŁOSZCZYCA

GRAPHIC DESIGN
MATTHEW COMBEN

SOCIAL MEDIA MANAGER
SALWA AZAR

221084

INDEX BY
BILL HERON

LAYOUT
RICHARD L. GALE

FOR CBS STUDIOS
BILL BURKE, JOHN VAN CITTERS,
MARIAN CORDRY, VERONICA HART,
BRIAN LADY, AND KEITH LOWENADLER

AUX SYS



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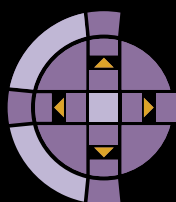
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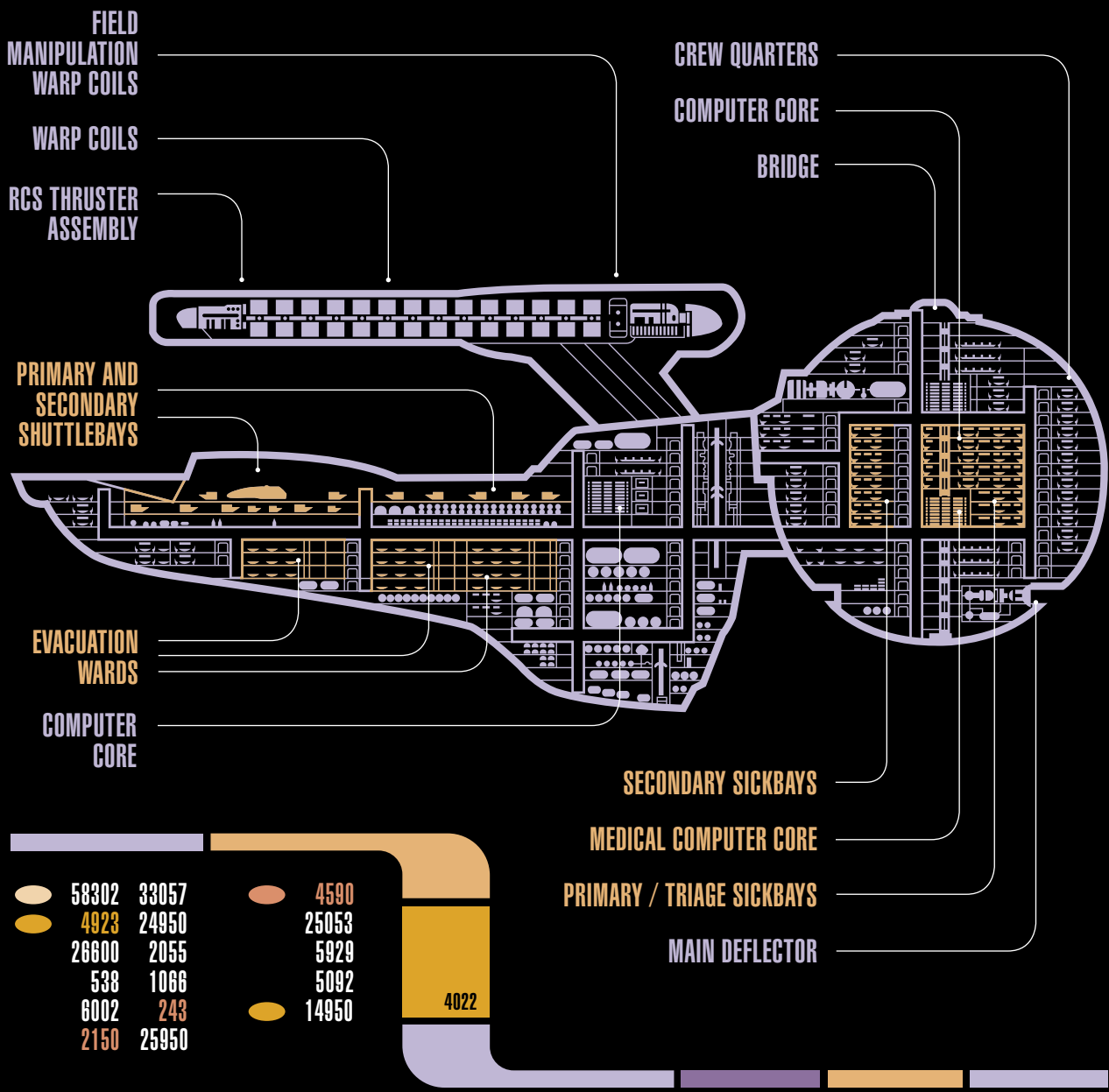


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538	1066	5092
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BAY ALLOCATION

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	2677-4240	235826	246249	52-793412	35	236783	3572	2463	54-94034585	457	4588213	21241-715	972851	8190038
	2893-3433	9513	127180	35-789456	155	6089	4159876	2452	56-78422801	762	2953803	63-55397-301	538889	3869027
51-5920	1984-3477	33839	220284	42-273396	21012	104585	1147593	2505	98-37499009	370	2600370	638-32442-990	173002	1739042
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CHAPTER
01.00

INTRODUCTION

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01.10 TO SEEK AND TO KNOW

004

INTRODUCTION

TO SEEK AND TO KNOW

"DOUBT IS THE BASIS OF ALL SCIENTIFIC PROGRESS."

— SUB-COMMANDER T'POL

Since well before the Federation's founding, science and medicine were at the heart of interstellar travel. Much of the impetus to travel to worlds orbiting other stars came from the desire to explore and understand the cosmos, a drive all scientists know exceptionally well. Like ancient ships sailing on oceans, starships have always included physicians among their crew. In addition to the obvious and often difficult task of attempting to keep the crew healthy when a hospital might be weeks or even years away, physicians on starships were also interested in discovery. Every new planet could be home to a plant that could cure a deadly disease, or ruins containing ancient medical records well in advance of anything in the physician's experience. Also, scientists and physicians on starships have always dealt with the fact that interstellar travel is dangerous – each new star system could hold some previously unknown astrophysical phenomenon that could destroy unwary starships or a disease that could wipe out an entire species. As a result, members of Starfleet's sciences division understand that their twin duties are solving scientific mysteries and working to keep these mysteries from harming the crew or their starship.

Like all Starfleet personnel, members of the sciences division come from a wide variety of backgrounds and species, and include civilian scientists, physicians, and counselors who choose to join Starfleet later in life. Science and medicine are respected professions outside of Starfleet, but most members of both professions lead relatively sedate lives. Throughout the history of Starfleet, a few skilled scientists, physicians, or psychologists have become science officers, medical officers, or counselors. These daring individuals gave up their academic life or civilian medical practice to join Starfleet well after completing their professional training. However, most members of the sciences division are people who joined Starfleet relatively early in their lives. These exceptional individuals were either drawn to science, medicine, or counseling before joining Starfleet, or became fascinated by one of these fields during their time at the Academy. The sciences division includes all these individuals and they collectively work to acquire and apply new knowledge in the service of Starfleet and the Federation as a whole.

A SCIENCE GRADUATE EXPERIENCE

TO: ENSIGN ROBERT NGOMO

FROM: PROFESSOR MANUELA ZAMORA VELASCO

Dear Professor Zamora Velasco,

I am convinced that your class at the Academy is why I and my crewmates on the *U.S.S. Nautilus* avoided harm. We were investigating a derelict spacecraft of unknown origin that had just entered the Janus system. I was assigned to sensor duty, and while everyone else was convinced that the trace amounts of gamma rays being emitted by the vessel were from damage to its power

core, it appeared to me that the vessel was too old for that to make sense. Guided by your insistence that, when possible, we check even unlikely assumptions, I suggested that we aim a low-power proton beam at a fragment of debris from the vessel before moving in for a closer examination, and the small explosion proved that the entire derelict was composed of anti-matter and could have easily destroyed the *Nautilus* if we had come into contact with any piece of it. I have no idea why an unknown ancient starship was composed of antimatter, but because I knew that antimatter displayed similar gamma ray emissions, and testing this possibility was relatively safe and easy, we avoided catastrophe. Thank you.

SUBSPACE TRANSMISSION



CONTENTS OF THIS BOOK

The *Sciences Division Supplementary Rulebook* provides Gamemasters and Players with an expanded look at the sciences division along with advice on how to add science and medicine into their campaigns and how to make it the focus of scenarios. This book discusses all types of sciences division personnel, including science officers, medical officers, and counselors. It also provides information about the details of the sciences division as a whole, including its history and regulations, along with extensive discussion of its most important regulation – the Prime Directive. Information about other agencies focused on scientific research, including the prestigious Daystrom Institute, is also included. This book also outlines the duties and purposes, and potential career paths, for officers in each department, and provides new and expanded rules for sciences division characters, such as new Focuses, Talents, Lifepath options, and career enhancements, as well as information about a variety of important scientific and medical mysteries that Starfleet is still attempting to understand.

CHAPTER 2: SCIENCES DIVISION

This chapter explores the intricacies of the sciences division as an organization and discusses the training and special responsibilities of science officers, medical officers,

and counselors, and how they differ from each other and from other Starfleet personnel. In addition, it includes detailed information about protocols for exploration missions and science missions, including an examination of science vessels and research bases. This chapter also includes a discussion of the Prime Directive, as well as information about how to attempt to solve or at least mitigate problems caused when someone has accidentally or deliberately violated it. The chapter concludes with a section on Starfleet's interactions with time travel, with information about both the current day Department of Temporal Investigations, and less certain data on the 29th century Temporal Integrity Commission.

CHAPTER 3: SCIENCES DIVISION CHARACTERS

This chapter provides Players with additional options for creating all types of sciences division characters, expanding on the character creation rules in the core rulebook. Additional Lifepath options and career enhancements are provided for science officers, medical officers, and counselors. It also contains an extensive list of Focuses and Talents for both the Science and Medicine Disciplines. These rules allow science officers to specialize in everything from physics and geology to spatial phenomena and quantum mechanics, while medical characters can specialize in options ranging from trauma surgery, infectious diseases, cybernetics, or psychological treatment.

DIVISIONAL COOPERATION

STARFLEET ACADEMY LECTURE BY DR. JOYCE TANAKA, 2351

The events on board the *U.S.S. Honshu* around stardate 40862.3 clearly illustrate the importance of close cooperation between the ship's counselor, the chief medical officer, and the science officer.

At the indicated stardate, numerous crew members aboard the *Honshu* began displaying notably increased irritability and insomnia, particularly the younger crew members. Because both the degree and the nature of their responses were so different, Counselor Anagonye initially assumed that the problems were because the *Honshu's* assignment to move or destroy potentially dangerous asteroids had been extended by five additional weeks, and the crew was already significantly overdue for shore leave.

However, the problems began getting worse, rendering several crew members unfit for duty. Rather than simply attempting to treat the symptoms, Lieutenant Commander Anagonye discussed the issue with Dr. Gav, the ship's CMO, and Science Officer Commander Broht. Using information about the severity of the distress of the various affected individuals, and where on the ship they lived and worked, the counselor, the CMO, and the science officer were able to discover that a minor imbalance in the ship's warp field was producing minute vibrations that affected the inner ear, creating the sensation of an almost inaudible high frequency sound in the ears of humanoids able to perceive sounds of this frequency.

If not dealt with, this problem could have eventually lead to widespread violence and possible fatalities. Only members of all three branches of sciences division working together were able to swiftly discover the source of this problem.

STARFLEET ACADEMY LECTURE

CHAPTER 4: RESEARCH & DEVELOPMENT

This chapter contains a wealth of new medical equipment and supplies, including portable devices used by medical officers on away teams as well as devices that are designed for use in well-equipped hospitals and sickbays across the Federation. In addition, it includes a discussion of unusual lifeforms and scientific mysteries Starfleet has encountered, along with suggestions for possible avenues for future research relating to these creatures and phenomena. This chapter also contains an in-depth discussion of the Q Continuum, including both information about its capabilities and advice for how to interact with it in the least dangerous fashion.

CHAPTER 5: USING THE SCIENCES DIVISION

This chapter provides Gamemasters with rules for creating engrossing medical encounters as well as scenarios involving spatial anomalies and xeno-biological mysteries. It also provides advice for missions where sciences division personnel are the focus of the scenario, such as scenarios concentrating on exploration, as well as scientific research, development, and discovery. In addition, this chapter provides Gamemasters with extensive advice on how to use both medicine and counseling in *Star Trek Adventures*. This chapter also discusses the stakes involved in solving scientific or medical mysteries, with options ranging from saving a single patient, to the entire starship, all the inhabitants of an otherwise doomed planet, or in a few rare cases, the entire Federation.

The last portion of this chapter provides detailed information on creating new alien lifeforms, including new humanoids, as well as information for creating both alien animals and truly alien intelligences. This chapter also contains information on creating unusual lifeforms that inhabit planets normally deadly to all humanoid life.

CHAPTER 6: SCIENCES PERSONNEL

This chapter provides detailed descriptions and game statistics for a range of science and medical oriented NPCs to use as allies or adversaries.

YESTERDAY'S ENTERPRISE

While the default year of *Star Trek Adventures* is 2371 (Stardates 48000-48999), all other *Star Trek* eras are available if desired by the Gamemaster and Players. For the sciences division, little has changed since Archer's and Kirk's eras, other than the addition of a more formalized counselor role to the medical department and an adjustment in ranks used in Starfleet.

Gamemasters wishing to run adventures during other time periods will have no trouble using information and rules in this sourcebook.

If a game rule, item of equipment, or technological advance is not available in a certain era (transporters, replicators, holodecks, etc.) there will be a sidebar like this one.



CHAPTER 02.00

SCIENCES DIVISION

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SCIENCES DIVISION DEPARTMENTS

"INSUFFICIENT FACTS ALWAYS INVITE DANGER."

— COMMANDER SPOCK

BRIEFING

Before your initial assignment as a science officer, medical officer, or counselor, all newly commissioned sciences division officers should review the basic structure of Starfleet's sciences division. Like the command and operations divisions, the sciences division contains two departments: science and medical. The science department is for all science officers and scientific advisors, regardless of their specialties. The medical department is all Starfleet medical and associated personnel, including both medical officers and counselors.

You should also keep in mind that you and the other science officers, medical officers, and counselors who make up the sciences division are expected to lead far more active lives than civilian academics, physicians, or therapists. Like all members of Starfleet, you will go into the field to explore ancient ruins, analyze previously unknown astronomical phenomena, treat injuries when you and the rest of your away team are trapped on a hostile planet, or help deeply

traumatized personnel function for the remainder of a dangerous mission. While there are civilian scientists and physicians who perform similar activities, you will rarely be working in the urban laboratories and hospitals they frequent. Instead, you will often practice your profession in difficult and often dangerous conditions. In return, you will have the chance to discover new knowledge, or at least knowledge that is new to the Federation, as well as helping to save the lives and minds of people who often have no one else to turn to for help.

THE SCIENCE DEPARTMENT

Science officers and Starfleet scientific advisors are found on starships and starbases across the Federation, as well as on remote science outposts. Because of the enormous breadth of their specialties, their duties range from anthropologists who spend months or years secretly living among members of a pre-warp civilization to better understand them to astrophysicists who study data from long-range sensor relays, searching for possible natural anomalies or dangers that might be worth investigating. However, all science officers must also be able to function as scientific generalists

SCIENCE AND OBJECTIVITY

COMMANDER T'POL, 2164

Perhaps the most important duty of any science officer, or, for that matter, any scientist worthy of the title, is to accept the truth of their observations, regardless of how problematic these truths may be. Unless one is guided by both logic and rigorous observation, the line between a carefully made hypothesis and wishful thinking can blur into meaninglessness. The fact that having the details of a situation be a particular way would be convenient, or potentially even life-saving, has no relation to what the situation is actually like. A science officer's duty is to analyze data she collects, to

formulate accurate hypotheses, and then to use these hypotheses to help her understand what she is observing. Dispassionate observation and theorizing may prove difficult if the phenomenon in question is a potentially lethal threat. However, in such cases the key to survival for your ship and your crew can only come from you gaining a clear understanding of the scientific truth in front of you, and then determining how these truths may be used to your ship's greatest advantage.

STARFLEET ACADEMY LECTURE



who can apply their knowledge and training to a wide variety of problems and effectively communicate and work with officers who possess radically different specialties.

Acquisition and use of valuable new knowledge are the primary goals of all science department personnel. This knowledge can take many forms, from an improved algorithm for predicting ion storms to revolutionary technological or cultural information lying buried in ancient alien ruins. All officers in this department are expected to both pursue investigations assigned to them by Starfleet or their commanding officer, and to possess the necessary knowledge, perception, and initiative to suggest alternative avenues of investigation.

Non-commissioned officers within the science department work as technicians and laboratory assistants who perform many routine tasks, including reviewing sensor logs of any potential anomalies that a science officer may wish to investigate, performing straightforward tests, and calibrating and resetting scientific equipment so that it is always available for science officers to use. Many non-commissioned officers in the science department cross-train in the engineering department, so they are better able to diagnose and repair problems with scientific and sensory equipment, and to recalibrate this equipment to a science officer's specifications. In practice, a science department non-com may have duties that range from feeding and caring for unusual laboratory animals to adjusting sensors and modifying laboratory equipment.

THE MEDICAL DEPARTMENT

Officers within the medical department include both medical officers and counselors. Both types of personnel share the responsibility of maintaining the physical and mental health of all personnel on board their starship or starbase, while also providing physical or mental treatment to civilians that the starship encounters or who visit the starbase. Both types of officers also share the responsibility for ensuring the safety of their starship or starbase by making certain that anyone with sufficiently problematic physical or mental difficulties is temporarily removed from duty, while also working to reduce the incidence and spread of these problems.

In addition, medical officers also perform medical research, studying alien diseases and treatments that they encounter and working to develop new and more effective treatments for existing ailments. Starfleet medical officers publish their results in medical journals and regularly attend conferences on new illnesses and treatments. Since every new world a starship visits provides both the risk of encountering new diseases and the possibility of discovering both new natural materials that can be used to treat diseases as well as new medical technologies developed by alien species, all medical officers working on starships perform at least some medical research. Many have extensive research projects that have saved many lives and earned them notable acclaim from their colleagues.

Non-commissioned officers within the medical department perform a wide variety of medical support tasks. They work

as nurses, surgical assistants, and medical technicians and perform a wide variety of other essential duties that permit medical officers to focus on the difficult tasks of diagnosing unusual illnesses and performing complex or difficult treatments, like surgery or administering strong and potentially dangerous drugs. One of their most important duties is triage. In any medical emergency, medical department non-coms both make the initial determination if a crew member requires the direct assistance of a medical officer and perform relatively straightforward treatments involving the use of dermal and bone regenerators and standard drugs. Medical department non-coms also assist counselors by helping to care for severely traumatized patients.

HISTORY

Terran spacecraft on long missions have carried physicians and at least minimal medical facilities on their voyages since the dawn of space travel, and scientists have been part of the crew of exploratory starships since such starships were first launched. These early starship missions lasted months or years, and communication with Earth could take weeks or even longer. These pioneering medical officers and science officers were entirely on their own, with only their knowledge and skill, and the few tools and databases they could bring along on their long journeys to the stars. Often these physicians and scientists were civilians, or occasionally military officers; regardless of their background, they were aboard early starships keeping the crew healthy, performing research, and otherwise fulfilling their duties. Decades before the founding of the Federation, Starfleet was already training both scientists and physicians for duty aboard starships and starbases. After the founding of the Federation, the sciences division remained one of the most important divisions of Starfleet.



The division's influence extends throughout Starfleet. In Starfleet Academy, all cadets are expected to master the basics of science and first aid, just as all members of the sciences division are expected to possess at least a minimal degree of knowledge of and competency with scientific and medical specialties beyond their own. In addition to assisting them with their own duties, and potentially saving lives, this emphasis on shared training and knowledge also means that in an emergency, or simply when circumstances require, all fully trained Starfleet personnel can assist science officers and medical officers in their duties. This shared knowledge also helps keep sciences division personnel from becoming isolated. Members of sciences division with different specialties can understand and potentially offer advice to each other, and to a lesser extent personnel belonging to other divisions of Starfleet can do the same. This shared training also offers opportunities for collaboration between members of different divisions when a problem cannot be neatly classified into a single specialized discipline. For example, performing medical

treatment on a newly discovered silicon-based lifeform could potentially require the expertise of a medical officer, a science officer who has specialized in geology, and perhaps even an engineer who understands the effects of loads and stresses on various materials, including stone. The training Starfleet provides ensures that these individuals can work well together and can understand at least basic issues with each other's specialties.

Sciences division personnel also respond to changes and problems in the rest of Starfleet. For example, counselors are a fairly recent addition to Starfleet Medical. Starfleet medical officers have always had at least some training in psychiatry, and some medical officers specialized in this field. However, separating medical officers from counselors and assigning counselors to all starships with relatively large crews started in the 24th century, when senior Starfleet officials examined reports on stress and stress responses among starship crews. They decided that the emotional difficulties imposed by extended space travel and the risks of exploration placed sufficient pressures on Starfleet personnel that their mental health and fitness required the creation of the position of 'counselor', entirely separate from a medical officer. As a result, all starships with large crews were expected to fill both positions. Although counselors and medical officers often work together during their duties, by the 24th century, neither position was considered subordinate to the other, and both were deemed necessary to keep the crew of a starship or starbase in optimum condition.

206

NAVIGATIONAL DEFLECTOR

ASTROMETRICS

SENSOR OPS

17 3756

66 3044

42 9522

31 3005

87 4804

29 2818

SCIENCES DIVISION

STARFLEET EXPLORATORY DIVISION

One of the primary purposes of Starfleet has always been exploration, and thus the Starfleet Exploratory Division is one of the most important branches of Starfleet and one of the oldest. The responsibilities of the senior Starfleet officials in charge of this branch include both determining the nature and type of future exploration missions and correlating and analyzing the data from past exploration. While starship captains are given considerable leeway for altering the parameters of exploration missions based on their findings, every exploratory mission begins as an assignment to visit a series of star systems, or to examine various points of interest in a limited volume of space. The Exploratory Division is also in charge of assigning missions to long-range automated probes that explore regions of space and perform basic surveys in advance of crewed starships.

While the details of missions differ, there are essentially two types of exploratory missions. The first is a general survey, where Exploratory Division assigns one or more starships to visit every star system, or more commonly, every star system that seems to harbor potentially interesting planets that are within a specific region of space. Exploratory Division creates these missions with the intent of expanding the boundaries of Starfleet's knowledge in a systematic fashion by examining astronomical information about previously unexplored regions of space and then determining the most efficient way for one or more starships to survey and explore regions just outside areas the Federation has previously surveyed.

The second type of mission is one where a starship is directed to examine a specific phenomenon. These missions could involve anything from examining a star that astronomical observations have shown to be behaving in an unexpected fashion, to looking into unusual data on a planet provided by one of Starfleet's long-range automated probes, or looking into the truth behind rumors about unusual events in or near a particular location. These missions can also include potentially dangerous and politically problematic assignments where Starfleet has intercepted information from a rival species or interstellar government that suggests that this polity is investigating an unusual event in a particular location. In these cases, Exploratory Division dispatches a starship to the location so that it will arrive before or roughly at the same time as any starships belonging to the rival polity.

EXPLORATION MISSIONS

Exploration missions are the first step to any future missions. Large space-based sensor arrays can find life-bearing worlds, receive intelligent transmissions, or detect unusual particle emissions, while long-range automated probes can scan the surface of a planet for life and for energy readings that indicate the presence of an industrial civilization. However, such information is both limited and, except for subspace communication from automated

THE RUINS OF HANORAN II

STARDATE 32379.8

TO: STARFLEET SCIENCE
FROM: DR. TALIS, HANORAN II SCIENCE BASE

Our exploration of the ruins of Hanoran II have provided us with an unexpected result, and thus I am requesting the presence of a Federation first contact team. The civilization on Hanoran II was destroyed 89,000 years ago, when a particularly powerful dwarf nova killed most life on the planet. The inhabitants were an industrial pre-warp species. Our research indicates that they were aware of the upcoming nova at least a decade before it occurred, and attempted to construct large shelters in deep caverns. The heat and charged particles rendered even the deepest shelters uninhabitable. However, we recently discovered a vast, heavily shielded chamber filled with more than 100,000 stasis tubes, which appears to have survived both the dwarf nova and the intervening millennia intact.

Sadly, we don't have the option of waiting. Entering the chamber where the stasis tubes are stored destabilized more than 5% of them. As a result, if we do not want more than 5,000 sentient beings to die, we need to awaken them within the next 110 days. As a result, we need a diplomatic and scientific team skilled in first contact situations as well as additional supplies – see attached specifications.



probes, usually decades or even centuries out of date. Also, current probes are designed solely to take long-range sensor readings, and cannot land on planets, closely explore subspace phenomena, or make complex decisions.

The only way to truly understand any planet or astrophysical oddity is to visit it. However, space is vast, and the Federation lacks the resources to fully explore even the entire Alpha Quadrant. As a result, exploration missions are most often inspired by unusual long-range sensor readings, reports from alien or Federation civilian ships that passed near the location, or, more ominously, by reports of vanished ships. Regardless of the mission's reason or focus, once a Starfleet vessel ventures beyond charted space, it begins carefully surveying all star systems it passes through. Science officers must remain alert for any readings that indicate previously unknown intelligences or warp-capable civilizations, as well as evidence of ancient ruins or other sites worthy of investigation. In addition, science officers must keep watch for ion storms, subspace anomalies, gravitational singularities, and other potentially dangerous or deadly spatial phenomena.

While many exploration missions may be mere general surveys, requiring a starship to map and collect data on a series of star systems, in both cases the ultimate goal is to reveal any dangers or features of interest. Dangers may include a star system inhabited by a hostile and relatively advanced technological species, working ancient alien defense arrays, or simply regions of space where ion storms, subspace ruptures, or similar threats are relatively common. Mapping and determining the nature of these is a vital part of all exploration missions. The most

common results of significance are planets bearing useful or rare substances such as dilithium, tritanium, or latinum, and Class-M planets suitable as new colonies. Other interesting options include pre-warp intelligent species that researchers can discretely observe, warp-capable species, previously unknown colony worlds that were settled long ago by one or more Federation species, alien ruins, unusual lifeforms, or unique natural phenomena worthy of careful investigation.

One of the most important features of almost all exploration missions is their preliminary nature. Often starships spend no more than a few hours, or at most a few days, in any individual star system before the captain sends a report to allow Starfleet Science, or perhaps some other branch of Starfleet to plan a follow-up mission, or the captain places warning buoys or beacons to warn other vessels of the dangers found there.

SURVEY MISSION PROTOCOLS

Although there is no single way to handle a mission to investigate a specific unusual phenomenon, there is a standard format for survey missions. The first step is to take long-range sensor readings of the entire star system. The science officer often starts this procedure while the starship is approaching the star system. This scan provides information about the type of star, the overall classification of any planets, spatial anomalies or other potential navigational hazards or dangers, and usually reveals the presence of any uncloaked spacecraft or space stations, and the presence of any artificial transmissions in the star system. The next step in depends upon the results of these scans. A star system of lifeless Class-D, J, and T planets with no evidence of artificial

signals or unusual energy signatures or obvious dangers will be scanned several more times to confirm previous results before the starship moves on to another system.

Starships may spend no more than a few hours in such a star system. However, all life-bearing worlds, even marginal Class-L planets, are given a closer look, as is any evidence of artificial signals like radio transmissions or of space travel. Worlds that display any hint of intelligent life are examined carefully, but first the starship attempts to conceal itself from primitive sensors of the types used by pre-warp civilization, most often by using deflector shields. If the starship discovers evidence of a warp-capable civilization, it attempts to make contact via subspace communication and, if necessary, other means. If the planet has either pre-industrial intelligent life or no intelligent life, an away team may beam down to examine the world more carefully. Away teams also beam down on lifeless worlds or worlds without intelligent life to examine potentially valuable mineral deposits and any evidence of ancient ruins of an extinct intelligent species.

FIRST CONTACT PROTOCOLS

One of the most exciting and important results of an exploration mission is first contact with a newly discovered sentient species. However, there are careful regulations governing first contact. If the civilization is pre-warp, then the crew cannot reveal their presence. If possible, science officers with training in xenanthropology can beam down to and visit a pre-warp civilization, but only if they are disguised as locals and reveal nothing about their off-world origins or advanced technology. Any studies made by the first ship to discover a new intelligent species is by its very nature preliminary, but useful insights can be gained, and this experience can be a once in a lifetime opportunity to any science officer trained in the social sciences.

Paradoxically, it is often far easier to safely visit a pre-industrial world where few locals have travelled more than a few days journey from their birthplace than it is to visit an advanced industrial society. On the latter worlds, the inhabitants can travel between continents in less than a day, may possess detailed electronic records about individuals, and have often begun making their first forays into space. Members of the Federation who visit the second type of world must take great care. Even if off-world visitors avoid being recognized as aliens, their ignorance of the details of daily life on such an interconnected world can result in the locals mistaking the away team for hostile infiltrators from an enemy state, or perhaps mentally ill individuals who need immediate treatment.

These preliminary investigations sometimes reveal remarkable information, like the fact that an intelligent species is clearly not native to the world. The explorers can then attempt to determine if more advanced species brought the current inhabitants to this planet, or if

SENSOR OPERATIONS

SENSOR SWEEP: The sensor operator uses the ship's sensors to locate objects or phenomena in space, or otherwise obtain information about something going on outside the ship. This is a **Reason + Science** Task, assisted by the ship's **Sensors + Science** with a Difficulty of 0. Interference, ambient conditions, or other phenomena increase the Difficulty.

LAUNCH PROBE: The sensor operator launches a sensor probe to study a situation or phenomenon in more depth or at a safe distance. This Task does not require a roll and has no Difficulty. The presence of the probe reduces the Difficulty of Tasks to make a *Sensor Sweep* by 2.

inhabitants once possessed a much higher technology that they have, for some reason, lost. On a few occasions, the inhabitants of such a world have turned out to be survivors of a previous species that everyone believed to be extinct. The discovery of the Fabrini asteroid ship *Yonada* by the U.S.S. *Enterprise* is one such discovery, and more than a few science officers dream of being the one to discover a world inhabited by the last surviving Iconians or some other famous or infamous long-vanished species. Also, on rare occasions, visitors to newly discovered worlds may find that the technologically primitive species they have observed are exceptionally advanced humanoids or non-corporeal beings who have disguised themselves as members of a pre-warp species.

While the Prime Directive normally applies to all contact with pre-warp species, it may not apply if the world is being regularly visited by species who lack the Prime Directive. Although regulations forbid Starfleet personnel from interfering in other cultures, protecting cultures from hostile or oppressive off-world interference is a different matter. If the crew believes that raiders, slavers, or would-be conquerors are currently or regularly visiting this world, Starfleet regulations permit the crew to protect the inhabitants. However, the crew must base their actions on accurate information about interference by off-world invaders. Stories of hostile or demanding 'sky gods' are far from uncommon, and such stories may be used to explain natural disasters or attacks by predators that are for some reason difficult to perceive.

The most exciting possibility for first contact is when a starship encounters another warp-capable civilization. Some species may be taking their first steps to the stars, or may have only visited a few other worlds, while others may have their own interstellar polity. Such situations offer great potential for both gain and loss. Science officers trained in the social sciences must work closely with any

crew members with diplomatic training to help the first meeting between the Federation and the newly contacted species go well, or at least not go so poorly that hostility and potential war are the result. While diplomacy is an essential component of first contact with warp-capable species, social science is just as vital. Most cultures attempt to show important or potentially dangerous visitors only a limited vision of their culture, while either concealing, or at least omitting aspects of their society that they do not wish outsiders to see. Sometimes cultures conceal information for privacy or security; other times, the individuals responsible for the deception worry that displaying the concealed institutions or behaviors might reflect poorly on the species as a whole. Occasionally, representatives of the culture attempt to project a peaceful and humane culture when the truth is entirely different. Perceiving the presence and causes of concealment can help prevent later misunderstandings or possibly even avert a significant threat to the Federation.

Science officers who are skilled in the social sciences can often recognize when aliens are concealing information about certain aspects of their culture and, suspecting such omission, look for more complete information. As a result, such a science officer could uncover the fact that a

newly contacted species that seems highly egalitarian has enslaved another species, or that a species which seems peaceful actually maintains a network of hidden military training camps. This sort of information can save the crew's lives and may also prevent a later war. Early observations can help prevent later deceptions, revealing cultural elements before the species has had time to hide them more cleverly.

SCIENTIFIC MYSTERY PROTOCOLS

One of the most important principles of exploring new scientific mysteries is that acquiring new knowledge is never worth the life of intelligent beings, including Starfleet personnel, and that any investigation which results in the starship's destruction is a failure. In addition to the obvious tragic loss of life, in such cases, the discovery is unlikely to ever reach Starfleet Science. Also, while Starfleet personnel have agreed to go on dangerous missions, civilians have not, so any investigation that risks nearby civilian starships or inhabited worlds is forbidden, unless the phenomenon already poses a clear threat to civilians.

The thrill of discovery and the awe of confronting the wonders of the universe must always be tempered by a

THE PRIME DIRECTIVE IN PRACTICE

BY CAPTAIN JEAN-LUC PICARD

The theory of the Prime Directive is simple and clear. However, in practice it can often be exceedingly complex, and sometimes rather messy. Obviously, the simplest approach is to have no contact or interaction with any pre-warp species. However, while doing so avoids any potential interference, it removes the possibility of Federation scientists being able to understand a unique culture. In the clear majority of cases, there is no harm in visiting a world where the away team can be disguised as local inhabitants, at least to the extent that they can be mistaken for inhabitants from a distant part of the planet.

Taking an idealized view of the Prime Directive also ignores the realities of shuttlecraft, escape pods, or even entire starships crashing or being forced to land on a world with a pre-warp culture, as well as the many issues raised by other aliens having previously and perhaps openly visiting a world. There's no harm in admitting off-world origin on a world other space travelers regularly visit. However, even here, members of Starfleet must prevent advanced technology from falling into the locals' hands.

Similarly, all Starfleet personnel must do their utmost to retrieve or destroy lost devices or crashed spacecraft to prevent any of the

local inhabitants from obtaining them. To ensure that they manage to retrieve or destroy all such technology, Starfleet personnel may need to admit their off-world origins, if they do so to a relatively small number of individuals and leave no solid evidence of their origins or technology behind. Many worlds have myths and stories of mysterious visitors, and providing the basis for another such story, while not also providing proof that it ever occurred, usually causes no problems, yet leaving behind even a single phaser or communicator can drastically change a culture.

Interfering with a species to prevent or halt greater interference has been an unfortunate necessity when a pre-warp species is contacted by an aggressive interstellar species intent on conquest, such as when the *Enterprise* under Captain Kirk supplied the inhabitants of the planet Neural with flintlock muskets to help counteract similar interference by the Klingon Empire. This sort of interference is never ideal, but when faced with the uncomfortable reality that some technologically advanced species use their technology to exploit and oppress others, the best Starfleet personnel can do is attempt to mitigate the harm caused by such actions.

STARFLEET ACADEMY LECTURE

keen awareness of the safety of the ship, its crew, and any nearby sentient beings. Daring captains and heroic science officers who make wondrous discoveries can win acclaim and rapid promotion, but Starfleet does not reward officers who needlessly ignore likely dangers or whose missions end with avoidable civilian casualties. As a result, science officers should utilize sensor scans and probes before making any direct contact with even the most harmless-seeming mysterious object or energy field. In addition, starships should make regular reports when investigating any unknown and potentially dangerous phenomena. These reports can provide Starfleet with information about whether a rescue mission may be necessary and provide any rescue vessels with data that may help them avoid problems.

LOST STARSHIP PROTOCOLS

Even when taking every possible precaution, space remains dangerous, and starships can be damaged or destroyed. If there is any possibility of survivors, Starfleet always attempts to send a rescue mission. Rescue missions in response to distress calls are relatively straightforward affairs. Any starship that responds knows when and where the damaged or destroyed vessel was located when it got into trouble, and most distress calls include at least some information about the cause, although this may be little more than mention that the starship's systems experienced a cascading failure with no obvious cause. With this information, the crew of the vessel assigned to a rescue can prepare themselves for whatever dangers they expect to find. However, a non-trivial number of starships simply vanish, and this is especially true of starships on exploratory missions. As the entity known as Q once said, "It's not safe out here. It's wondrous, with treasures to satiate desires both subtle and gross. But it's not for the timid."

Often the only indication that a Starfleet vessel has run into trouble is the fact that it's overdue for either responding to subspace communications or returning to the nearest starbase after its current mission. Due to the lack of accessible subspace relays beyond the boundaries of Federation space, the first sign of an incident may come several weeks after a starship runs into danger. All any ship attempting to search for it may know is its last known location, heading to a particular destination. However, where it actually headed may not be clear, since the nature of exploration missions is that mission parameters can shift depending upon what the starship discovers.

Upon reaching the missing starship's last reported location, the vessel attempting the rescue first looks for any sign of the ship, distress signals, escape pods, or humanoid life signs in the vicinity, and then begins searching for either wreckage or the ship's warp signature. Since starships rarely vanish in their last known location, tracking the starship's warp signature is the most likely of these tactics to work. However, after weeks or perhaps even a month or two, warp signatures fade, and so tracking a starship after that amount of time

involves a combination of careful sensor readings, and clever guesswork as to where the ship is likely to have gone. Eventually, the trail comes to an end. Sometimes, there is nothing there, and Starfleet records the ship's disappearance as a mystery. However, occasionally the science officer discovers sensor readings of a damaged starship and the search ends in either a rescue or much needed assistance in repairing a damaged starship. Usually, the resolution lies somewhere in between. Perhaps there is a cloud of wreckage, produced by a threat that the rescuing starship must then face. Maybe the rescuers discover a few escape pods and stories of raiders who captured the remainder of the crew, or possibly even another more recent warp signature, from the alien vessel that captured and towed away the missing ship. A rescue mission can easily become both a desperate attempt to save the lives of Starfleet personnel and a harrowing voyage of exploration.

TEMPORAL MISSION PROTOCOLS

One of the rarest and potentially most problematic and risky types of exploration missions are those where the starship is exploring the past. While the mechanics of traveling in time are well understood in the 24th century, doing so remains extraordinarily rare and risky. However, in addition to spatial warps, chroniton particle emissions, and other natural phenomena accidentally sending starships back in time, Starfleet very rarely sends starships on deliberate missions into the past. Often these missions are efforts to prevent someone from changing the past in ways that might harm the Federation or its members, but sometimes temporal missions are purely exploratory. Although historians regularly ask Starfleet for permission to visit various epochs in the past of species belonging to the Federation, or even of other notable species, Starfleet almost never grants such permission, due to the potentially grave risks to the timestream. Usually, the most a historian will obtain is permission for a carefully supervised visit to the Guardian of Forever (see core rulebook, p.338), where they can use instruments to scan the past of a particular world and era as the Guardian displays it, without risk of changing the past.

However, permission for a visit to the past is rarely granted, and normally under extremely controlled circumstances. Most often this is done to help resolve some important mystery or other difficulty in the present that might be solved if a long-dead mathematician's rumored formula had not been lost, if the exact wording of an ancient treaty can be learned, or if an important, but unclear aspect of planetary or interplanetary history can be better understood. These missions are often crucial for the Federation – Starfleet rarely grants permission to visit the past of any Federation species for any other reason, but while the mission's success may be vital, it is equally important to avoid disrupting the course of history. Even a seemingly minor change in the past can drastically alter the present. Starfleet expects any personnel visiting the past of a world



to carefully study the era they are visiting and to avoid altering the past if at all possible. If a visitor alters the past, either by accident or by malicious intent, Starfleet personnel are expected to restore history to its previous course by any means necessary. In addition, Starfleet almost never approves missions to eras when the world being visited had access to warp drive and similar advanced technologies, since concealing a starship's presence from a species capable of interstellar travel can be exceptionally difficult. Visiting worlds before the inhabitants possess more than rudimentary space flight is far safer, because the risk of locals detecting time travelers is far lower.

One unusual type of visit to the past is visiting a world inhabited by an extinct species at a time when that species was alive. Under extraordinary circumstances, Starfleet permits these visits to allow researchers to learn more about a specific aspect of an extinct culture, but such missions may also be approved as an attempt to discover why a seemingly thriving species suddenly vanished or was destroyed. However, even during these visits, Starfleet forbids time traveling personnel from changing the past, even if doing so might save the species from extinction.

Sometimes just visiting a world can change it enough to save it, and occasionally a chance action or comment by a time traveler can have the same effect. Barring extraordinary circumstances, such as saving a species from extinction causing a vast interstellar war or some similar catastrophe, Starfleet is not in the business of going back in time to make

certain that a now-thriving species becomes extinct, even if it previously had been. While some compassionate Starfleet officers have occasionally used this flexibility to attempt to save an extinct species they are visiting, Starfleet personnel who deliberately change the past for any reason other than to preserve the natural course of history are guaranteed to be court-martialed, and likely stripped of their rank and position. Regardless of the type of mission, personnel who travel into the past can expect one or more meetings with agents from the Department of Temporal Investigations. These meetings may happen both before the mission, to discuss potential problems and issues particular to the era being visited, and afterwards, so the officers can report on any problems or potential temporal anomalies caused or prevented.

MITIGATING EXPLORATORY MISTAKES

As more than a few Starfleet Academy instructors teach their students, good science requires acknowledging and attempting to fix mistakes, both their own and those made by others. In addition to catastrophic mistakes that led to the death of one or more Starfleet personnel or civilians, mistakes can also cost the Federation irreplaceable knowledge. Even if no one is harmed, anyone from Starfleet whose actions resulted in the destruction of potentially important ancient records or artifacts is likely to face a disciplinary review. No amount of eagerness to acquire new knowledge justifies allowing such knowledge to be lost forever.

One of the most serious mistakes that any Starfleet vessel can make when visiting a pre-warp culture is violating the Prime Directive, either deliberately or by accident. In the absence of notable extenuating circumstances, Starfleet punishes deliberate violations, while accidents may require a review of procedures to prevent similar problems from occurring again. However, the most important response to any violation of the Prime Directive is to attempt to reduce any damage done to the culture.

One of the most common violations of the Prime Directive is one where members of the culture witness advanced technology or the presence of off-world visitors. In general, one or even a few witnesses is rarely a problem, since without proof, they have nothing to back up their claims. Even if these individuals have artifacts or recordings, resolving the situation usually just requires an away team to acquire this physical evidence before others can see it. Similarly, the crew can replace medical information and samples gathered from examination of an off-world individual or their body with unusual, but definitively indigenous readings and samples, leaving a few physicians puzzled and suspicious, but with no actual proof that anything out of the ordinary occurred.

However, the situation is far more complex and difficult if a large number of people witnessed some obvious use of advanced alien technology, like a spacecraft crash landing, or worse yet a spacecraft using its weapons on the inhabitants or their buildings. Equally bad are situations where a member of Starfleet publicly reveals themselves and their technology. These are the types of cases where the crew must make difficult choices. They may need to convince the local people that what appeared to be inexplicable technology was actually a rare and strange natural phenomenon, or plant rumors and evidence that the alleged alien is actually a con artist wanted in a distant city or nation, or modify objects struck by phaser fire so they show traces of explosives known to the culture. Altering blood test results showing traces of hallucinogens in individuals who witnessed the events will also cast doubt on witness credibility.

However, science officers who are skilled in the social sciences must help plan and carry out these deceptions. Otherwise, seemingly harmless decisions could potentially destabilize the society in ways far worse than the original violation. The most difficult possible situation is an obvious violation of the Prime Directive on a world where the inhabitants of the region where the violation occurred distrust or are afraid of one or more other nations or city-states. In tense situations like this, attempting to create a false explanation for otherwise inexplicable events risks the event being seen as some sort of attack or other hostile act by one of the region's enemies. If not performed with great care, these efforts could inadvertently start a war. In such cases, sometimes the best result is to do nothing and trust that a single inexplicable event won't distort the culture more than potentially catastrophic trickery.

There is, however, a rarer type of violation that is almost always deliberate. In these cases, one or more Starfleet officers alter the culture without revealing their advanced technology or their off-world origin. Examples of this type of interference include everything from giving someone from the culture hints about developing advanced science or technology to assassinating a tyrant. In these cases, Starfleet personnel must avoid compounding the mistake by revealing their off-world origin, instead mitigating the damage in the most humane and effective manner possible. Replacing a murdered tyrant with a new tyrant is obviously never a good choice, but neither is allowing the nation to descend into civil war. In such a case, one option might be to discreetly protect a moderate potential leader from assassination and perhaps have disguised Starfleet personnel arrange for a peaceful meeting between two or more individuals who might prevent chaos and war. All of these actions are clear violations of the Prime Directive, but in attempting to redress a violation, Starfleet personnel are always expected to seek the most reasonable and stable solution.

FOLLOW-UP MISSIONS

The exploration of a world, the efforts to make peaceful contact with a newly discovered intelligent species, or research on an unusual natural phenomenon doesn't end after the first Starfleet mission that discovers it. Most initial exploration missions only last a few days, or at most several weeks, which is sometimes sufficient time to determine if something isn't worth revisiting but is almost never enough time to learn more than a fraction of the knowledge possible to obtain from anything new and interesting. As a result, Starfleet usually sends follow-up missions. Depending on distance and Starfleet's current priorities, they may send this mission anywhere from a few days or weeks after the exploration ship's initial report, to many months or years later. Usually, the follow-up is a scientific mission like those described in detail later. However, attempts to resolve serious violations of the Prime Directive or to correct mistaken assumptions may require more urgent follow-up missions.

Sometimes, upon reviewing a starship's reports about a phenomenon or a newly contacted culture, Starfleet researchers uncover evidence which suggests that the initial expedition may have arrived at mistaken conclusions. Indications of this type of problem may be nothing more than one or two small pieces of data that do not line up, like a supposedly peaceful culture where everyone wears items that they claim are ornaments, but which upon review look to be weapons. The evidence may be even more subtle, like residual chroniton emissions from a subspace anomaly that cause researchers to believe that a possible subspace corridor might actually lead into the past or the future, instead of merely to another region of space.

While most of these mistakes prove to be nothing more than hypotheses based on insufficient information, sometimes they are due to deliberate deception by members of an alien species or their automated stations. For example, an initial mission may encounter an apparent automated research base built by unknown aliens. However, later analysis of scans might reveal traces of neutrino and graviton emissions suggesting the presence of a vast underground power source or a carefully concealed large weapons system whose presence seems completely at odds with the station on the surface. Alternately, perhaps a starship contacts a small peaceful colony of previously unknown aliens on a newly discovered world, but later examination of the data on this planet discovers traces of chroniton radiation that suggests that these aliens might actually be time travelers.

Perhaps the crew of the first starship simply didn't ask the right questions or failed to discover one or more crucial pieces of information. However, there's also a chance that they were deliberately deceived. In this case, the aliens or artifact that this first ship discovered may actually pose a serious threat. In such situations, caution and discretion are of the essence. Discovering if the previous crew were deliberately deceived and why this happened may be crucial but allowing the artifact or aliens to learn that the deception has failed may place the starship in grave danger, depending upon the actual capabilities of the artifact or the aliens.

The most problematic follow-up missions are those where the new starship discovered that the previous Starfleet expedition not only found a pre-warp culture, but violated the Prime Directive, either by accident or deliberately. Since follow-up missions sometimes come months or years after the initial mission, preventing drastic changes to a culture may no longer be possible. Instead, the follow-up mission can often only attempt to document changes the interference caused, and, if possible, attempt to steer the culture away from alien-worshipping cults, paranoia about alien invasion, warfare using advanced weapons, or any of the many other possible negative results of breaking the Prime Directive.

OTHER EXPLORATION ORGANIZATIONS

The Federation as a whole relies on the Starfleet Exploratory Division for exploration of star systems and first contact with sentient beings outside of the Federation. However, individual member species are free to perform their own explorations as long as they abide by Federation law. Most member species lack the resources or the drive to pursue extensive independent exploration; members of these species who are passionate about exploration usually prefer to join Starfleet. However, a few alternatives exist.

VULCAN EXPEDITIONARY GROUP

One of the most prestigious is the Vulcan Expeditionary Group, which like most Vulcan organizations is open almost exclusively to Vulcans. This ancient organization predates the Federation by many centuries and has made thousands of important discoveries. It also remains important today, and regularly sends long-range probes and exploration missions well beyond the boundaries of explored space. Members of the Vulcan Expeditionary Group sometimes regard the members of Starfleet's Exploratory Division as illogical and insufficiently rigorous, but these feelings are usually tempered by a respect for both Starfleet and of Federation law.

SCIENTIFIC RIVALS

Unfortunately, a few unscrupulous or desperate researchers inside the Federation may either attempt to sabotage Starfleet exploration missions that are on the verge of discovering something they have sought and failed to find, or may simply attempt to steal Starfleet's research and use it, without credit, to augment their own. Such interactions can be problematic, and occasionally dangerous, but are also rare and can often be dealt with via either through Federation law or by the fact that the rogue researcher or researchers are rarely a match for a seasoned starship crew.

Rivalries with other Federation organizations are far from the only problems Starfleet explorers can face. Scientific mysteries also may be investigated and explored by non-Federation species, including those fairly hostile to the Federation, like the Romulans and the Breen. When a Starfleet vessel on an exploration mission encounters another species investigating the same phenomena, several options are possible. While there's typically no problem with different species studying a previously unknown type of ion storm or subspace tear, during occasionally dangerous investigations ships belonging to rival species may need to work together to gather complete data or perhaps in order for both to survive.

There are some discoveries where hostilities with other species are difficult to avoid. Technological relics like a functional Iconian Gateway (see core rulebook, p.334) are the type of discovery that every Starfleet crew hopes to make and a planet rich in high grade dilithium crystals or other exceedingly valuable minerals is also a strategically valuable resource. These sorts of important discoveries can become problematic if a rival species' starship is investigating the same world. In such cases, the crew's foremost duty is to prevent advanced and potentially revolutionary knowledge or any exceedingly powerful artifacts from falling into the hands of the Federation's enemies. Obviously, the best possible solution is to acquire the artifact for the Federation. However, preventing a rival starship from acquiring it can be quite difficult.

In general, resources, like dilithium rich planets or even Class-M planets suitable for colony worlds are not worth

the risk of war, and many other interstellar species also understand this fact. Instead, diplomacy and negotiation between the ships' captains, with the advice of the ships' science officers, can often work out an equitable solution. Possible answers can include anything from deciding on rights to the planet based on a game of chance to trading other information that is valuable, but which does not compromise Federation security, like the location of another world of roughly similar value.

However, unique and potentially disruptive artifacts like a functioning or even non-functioning Iconian Gateway pose

a far different and more difficult problem. An arrangement to share access to such an artifact might work, but often the only two acceptable options are either to acquire it for the Federation in a manner that does not start a war, or to destroy it. Although some Starfleet personnel might be uncomfortable with the level of deception involved, an ideal solution could be to make it appear that they destroyed an artifact, while using the explosion or other evidence of its destruction as a cover for acquiring it. Of course, the consequences of failing to successfully conceal this acquisition can easily be war, so such efforts must be handled with great care.

CHAPTER 02.30

SCIENCES DIVISION STARFLEET SCIENCE

"CONTACTING NEW WORLDS ALWAYS INVOLVES UNEXPECTED RISKS."

— SUB-COMMANDER T'POL

Starfleet Science works closely with the Exploratory Division, as well as with Starfleet Medical, and other branches of Starfleet depending on the mission. One of Starfleet's primary objectives is to help advance the Federation's scientific and technical knowledge. As a result, all but the most specialized Starfleet starships are equipped to pursue missions related to scientific objectives. Even starships assigned to patrol missions in disputed or potentially problematic areas of space, like the edge of the Romulan Neutral Zone or a region frequented by smugglers and pirates from the Orion Syndicate, will still investigate unusual phenomena, as long as doing so does not interfere with the ship's primary duties.

As a result, almost any Starfleet vessel could find itself investigating an unusual stellar phenomenon, exploring newly discovered alien ruins, or attempting to study a new lifeform. While exploratory vessels make most such discoveries, new discoveries are regularly made in well-charted regions of space, and even in star systems that have been within the boundaries of the Federation for decades or centuries. Perhaps a recent advance in sensor technology allows a starship to notice an unusual energy signature too faint or unusual for previous starships to

detect. Alternately, perhaps the starship was in range when a unique or exceedingly rare stellar event occurred, or possibly no Federation starship had even flown sufficiently close to a seemingly barren and rocky moon to notice the ancient alien spacecraft that had been lying wrecked in a crater for the last 25,000 years. In all such cases, the starship should investigate unless it is on a mission of sufficient urgency that it precludes spending a few hours, or perhaps even a day or two, performing an initial investigation. If this initial investigation proves fruitful, or if the starship lacks the time to do more than make note of the location, and either takes long distance sensor readings or sends out a single probe to relay preliminary data, then Starfleet sends out a follow-up science mission.

SCIENCE MISSIONS

There are several types of Starfleet science missions. Starfleet Science regularly sends nearby starships to investigate unusual phenomena and Starfleet expects all its vessels to investigate any unique or potentially important

events or locations that they encounter. These preliminary missions often provide impetus for a further assignment to either a science vessel or science outpost. Starfleet assigns vessels to perform various research missions, while science outposts are set up to study a single phenomenon in depth, often for months or years. Frequently, discoveries made by the first lead to the second. Starfleet Science also regularly requests that starships and starbases test new technologies in the field, to make certain that these technologies are sufficiently safe and reliable to be added to all starships and starbases.

SCIENCE SURVEYS

Most large Starfleet ships, like the *Galaxy*-class starships, are general purpose ships that can effectively perform a wide range of missions, including science missions, and most Starfleet vessels are designed and crewed so that they can perform a range of mission types adequately. As a result, Starfleet Science regularly requests starships that are not dedicated science vessels to perform science missions. Most often, Starfleet assigns ships to perform science missions because they are the nearest vessel to a given phenomenon. Usually, these assignments are either relatively time critical and are given to another type of starship because a science vessel cannot reach the location in time, or because Starfleet Science does not know if the phenomenon is worthy of more than a cursory examination. The option to send any Starfleet vessel in the area allows Starfleet Science to evaluate far more unusual events than it could manage using only dedicated science vessels. In addition, all Starfleet vessels have orders to investigate unusual phenomena encountered during their duties, as long as these investigations do not detract from the ship's ability to perform its assigned

missions. Often, the data collected by these vessels is sufficient to fully explain or classify the phenomena and no further research is needed unless the phenomenon changes or researchers later find they require further data. However, if the phenomenon proves to be too large, complex, or potentially interesting and valuable for the assigned starship to fully evaluate and understand, Starfleet sends a science vessel to further examine the phenomenon.

Although the details of science missions vary widely, the basic structure of many science missions remains the same. The starship scans the area, and if the phenomenon is associated with a planet or similar body that can safely be visited, an away team visits this body and performs an on-site evaluation of the phenomenon. Both the sensor scan and the away team attempt to discover the parameters of the phenomenon and also to learn if it is a natural phenomenon or something created by sentient beings. Recording naturally occurring phenomena, or phenomena created by artifacts belonging to an extinct species no longer found in the vicinity, is treated as part of standard science missions. However, anything being created by sentient beings who are either present or likely to return becomes both a scientific and a diplomatic issue. In this case, researchers must avoid direct contact with the source of the phenomenon to avoid appearing like thieves, causing Starfleet's first meeting with a newly discovered species to become a serious diplomatic incident.

The only exception to this policy is if the researchers discover that some previously unknown technology used by a hostile alien species is causing the phenomenon. In this case, the science mission becomes at least partly a mission of technological espionage, and researchers should make every effort to understand that phenomenon and the technology responsible for creating it, while also making certain that any tampering with the device cannot be detected.

Phenomena that are clearly not caused by the current activities of a sentient species are examined in great detail. The starship's science officer is responsible for deciding if the phenomenon warrants further investigation or if the current explorations have uncovered sufficient details to either fully understand the phenomenon, classify it as an example of something previously understood, or determine that there is little to be gained from further investigation. Regardless of the outcome of their observations, the science officer and the starship's captain prepare a report detailing the phenomenon, and making suggestions ranging from a warning that the phenomenon is too dangerous to investigate, to recommendation that there is little of interest present, or that the location seems sufficiently interesting and potentially valuable that Starfleet Science should immediately dispatch a science vessel to investigate the location. Science officers should take special care when making this recommendation, since being too cautious or too optimistic can place another starship at risk or cause Starfleet to waste

DR. RICHARD GALEN, 2357

In addition to causing serious errors in analysis, making assumptions too rapidly, and in the absence of complete information can also be exceedingly dangerous. The excavations on Boreal III provide an especially useful illustration of this problem. The cavern initially appeared to contain the remains of a small pre-industrial settlement in an unusually good state of preservation. However, before we entered the cavern we took careful readings and in addition to the fact that the level of preservation seemed too high for the length of time that had passed, we determined that the intermittent low-level energy readings were not the result of a sensor malfunction. As a result, we approached the artifacts cautiously and thus avoided activating what we later determined was a damaged but partially functional defense system protecting a museum exhibit. Had we not taken our time, the defense system could have damaged the artifacts and killed or injured one or more members of my team.

STARFLEET ACADEMY LECTURE

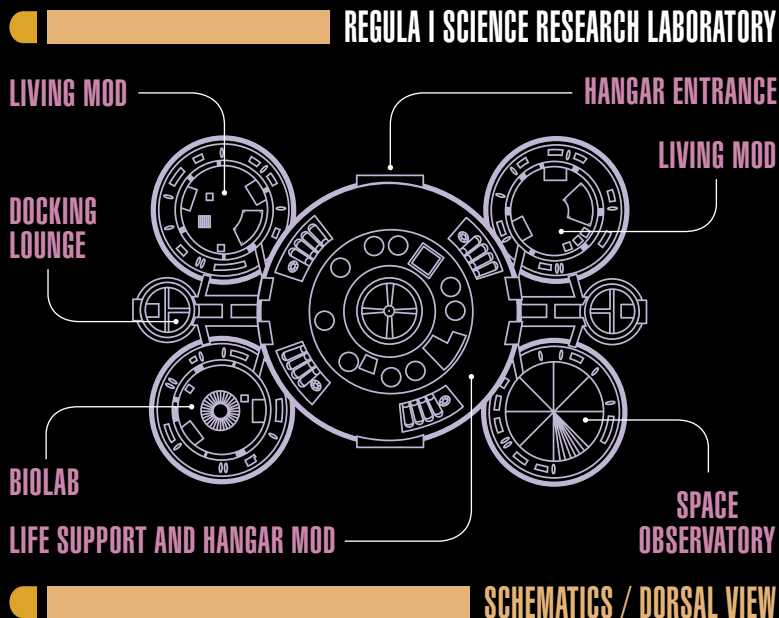
valuable time and personnel on a mission where there is little knowledge to be gained. Starfleet Science understands that all new knowledge is important, but also recognizes that some discoveries are more important than others, either because of the wealth of potential knowledge they might unlock or that they concern a topic that is of great interest to the Federation, from new medical treatments to improved warp drives. When making such reports, science officers must balance their own interest or fascination with the phenomenon with the needs of the Federation.

SCIENCE VESSELS

Science vessels are starships that are designed and equipped for scientific use. In general, they are somewhat smaller than exploratory starships, less well armed, and generally not equipped for missions lasting more than a year or two. The smallest common science vessels are mid-sized starships like the *Intrepid*-, *Nova*- or *Miranda*-class starships, carrying both equipment and a crew of between several dozen and several hundred designed to perform a wide range of scientific missions. While small, highly specialized science vessels exist, Starfleet values both flexibility and interdisciplinary efforts. If such a starship is on an archaeological mission investigating newly discovered ruins, the ship's archaeologists will oversee the investigation. However, any xenobiologists on board will be able to provide the archaeologists with important data about the species that created the ruins, while geologists will be able to learn more about the planet the ruins are on. Similarly, physicists could help understand the purpose of a piece of advanced alien technology or reveal that the aliens became extinct because their world passed through a series of deadly radiation belts.

All science vessels are assigned specific missions because of previous reports of an unusual or potentially interesting phenomenon. Such reports may come from a Starfleet exploratory vessel or automated probe, but the source might also be merchant ships that noticed odd sensor readings, colonists on a newly opened world, or as a result of the correlation of data provided by dozens of ships and sensor arrays yielding traces of an unusual signal or a unique energy pattern that no one had previously noticed.

As is the case with most scientific endeavors, the majority of a science vessel's missions are relatively short and uneventful. An ancient wrecked starship turns out to have been made by a previously discovered species, unusual energy readings are merely the result of radiation from an ordinary supernova or pulsar interacting with common minerals in an asteroid, or the readings of a strange new type of planetoid are nothing more than a large comet passing through a subspace anomaly. In almost all of these cases, new and potentially useful scientific data is collected, and this data helps fill in small gaps in the Federation's knowledge, but the science vessel does not discover anything remarkable or revolutionary. As a general rule, the course of science is slow but steady.



However, there are always exceptions. The crew of every science vessel hopes to add an important new chapter to the history of intelligent life in the Galaxy, discover a new and potentially useful subspace phenomenon, or make some other discovery that either improves the lives of Federation citizens or advances scientific knowledge in a large and important fashion. Such discoveries are relatively rare, but they happen, and the crew of any science vessel could be responsible for such a discovery. Of course, some of the most impressive discoveries are also among the most strange or dangerous. A science vessel that makes a major discovery could also be remembered as the starship whose wreckage was found near the phenomenon, or the vessel that vanished without a trace.

SCIENCE OUTPOSTS

Science outposts are stationary facilities designed to explore and investigate a single phenomenon or location. Depending upon the location, the outpost could take the form of a small space station, much like a miniature starbase, or a facility built on or under the surface of a planet or asteroid, which is then assigned a team of specialists equipped with all of the equipment they are likely to require. Unusual astronomical objects like wormholes, neutron stars, or black holes can all be of sufficient interest to establish a science outpost, as can extensive archaeological ruins, or a planet with unique lifeforms. Careful investigations of any of these subjects can take months or years.

The size of these outposts can be exceptionally variable, ranging from four or five researchers and support personnel examining an unusual pulsar to dozens of researchers and support personnel studying the planet-wide ruins of a long dead civilization, like the ruins on Camus II (core rulebook, p.335). All science outposts require both researchers, and, at absolute minimum, an engineer and a physician to maintain the facilities and the personnel, but the smallest

science outposts are often home to researchers who possess sufficient training in other fields to handle both research and other tasks without additional personnel. In contrast, the larger science outposts have complements that resemble the crew of a science vessel in types and range of duties. Often, a location where research proves especially fruitful begins as a small science outpost before gradually, or perhaps rapidly, growing in size as more features of interest are discovered, or as the researchers learn that the phenomenon being investigated relates to particular topics of special interest to Starfleet Science.

Although most research projects are carried out in universities or by organizations like the Daystrom Institute in one of their primary planetary or orbital facilities, some types of research are best performed in specific or remote locations. Such research may be potentially too dangerous to conduct near any populated world, may require specific conditions, like proximity to a natural source of tetryons, or may simply require a region of space far from planets or other significant sources of gravity. Additionally, some science outposts are created to investigate specific types of scientific phenomena rather than study one location.

Some science outposts are exceedingly remote and Starfleet vessels may only visit them once or twice a year, and a few of the most remote may only be visited once every few years. However, all science outposts sponsored by Starfleet must check in regularly via subspace communication; as with starships, the failure of a station to check in or respond to subspace messages for more than a week or two may be the first sign of trouble. This lack of communication could indicate anything from a minor mechanical failure that the researchers are unable to fix, to the station having been destroyed by threats ranging from research that proved to be more dangerous than expected, to attack by hostile aliens.

Regardless of whether a Starfleet vessel is making a routine visit to a science outpost or is visiting in response to an emergency or a loss of contact, the ship's chief medical officer and counselor are both responsible for performing at least an informal evaluation of the personnel. Periodically, visiting starships are also responsible for performing routine physicals and psychological evaluations at outposts too small to possess their own personnel and facilities for such evaluations. During either of these types of visits, medical and counseling personnel must carefully look for signs that any of the station's staff is concealing problems ranging from increasingly irrational resentment of fellow researchers to medical issues that would require extended treatment at a starbase. Because many of these problems could force one or more researchers to abandon promising avenues of research or turn over their duties to someone else for weeks or months, some researchers will do their best to conceal physical or mental problems from visiting medical officers and counselors. Particularly determined or unbalanced researchers may even attempt to enlist the assistance of

other personnel at the research base in maintaining this deception. Because such problems have occasionally resulted in incidents ranging from preventable deaths to potentially lethal violence, Starfleet considers routine physical and psychological evaluations to be exceedingly important, especially for science outposts that starships rarely visit.

Science officers on a visiting starship are also expected to review the research, and to discuss any irregularities or any unsafe or potentially unethical research. Starfleet Science lacks the personnel to provide an extensive staff for every science outpost, but also understands that even brilliant and well-trained individuals stationed at remote outposts for many years can become increasingly eccentric and difficult to deal with; intervening early is the best way to avoid serious or even deadly accidents or other problems.

TECHNOLOGY EVALUATION MISSIONS

Federation and Starfleet researchers and engineers regularly create new or improved systems for starships and starbases. Such systems can include everything from sensors or transporters with increased range to entirely new weapons systems or unusual systems like the Emergency Medical Holograms. Such systems must first undergo extensive laboratory tests and evaluations by both Starfleet personnel trained to make such evaluations and Starfleet personnel who would be making regular use of these new technologies. Once these tests are over, the next step before installation on both new starships and those undergoing routine maintenance is that the new device must undergo technology evaluation missions, where it is used on a single starship or starbase for several weeks or months. The results of these tests determine if Starfleet adopts or rejects the new technology. Starfleet Science can assign these missions to any Starfleet vessel or starbase, but they are most likely to use one of the large general-purpose starships like *Galaxy*-class vessels, as their vast range of missions offer any new technology the most thorough and wide-ranging test.

For technologies that starship personnel are unfamiliar with, Starfleet Science often assigns at least one scientist or research engineer who helped design or create this new technology to the crew for the duration of the technology evaluation mission. This researcher helps set up the new technology, answers questions, and observes how the technology works in practice. Results of previous tests have ranged from disastrous failures like the M-5 multitronic unit, to qualified successes, like the introduction of Emergency Medical Hologram (EMH) systems. Of course, while these missions typically uncover the most serious problems with any new technology, the only way to discover more subtle problems, such as the fairly abrasive bedside manner of the EMH, is through widespread use. Usually, successful technology evaluation missions result in the new technology being left on board the starship. The captain and crew objecting to this decision is often a sign that the technology is not ready for widespread use.

THE DAYSTROM INSTITUTE

The Daystrom Institute was founded in the 23rd century and named by Dr. Richard Daystrom, the inventor of the duotronic computer who later performed research in artificial sentience, which led him to create the failed multitronic computer. It remains both one of the premier scientific organizations in the Federation, and is also an organization that is loosely connected to Starfleet, and particularly to Starfleet's sciences division. It is in the unusual position of being both a department of Starfleet that Starfleet personnel can transfer to and from, and a partially independent organization that also employs civilian scientists and researchers who have no connection to Starfleet. As a result, it is one of the few organizations where Starfleet and civilian personnel regularly work side by side as colleagues. In this organization, Starfleet personnel remain bound by Starfleet rules and regulations, while civilians are governed by Federation law and the rules governing the Daystrom Institute as a whole.

In addition to sponsoring a multitude of science outposts, the Daystrom Institute administers several universities, including the well-regarded Daystrom Institute of Technology. It also regularly sends both civilian and Starfleet members to investigate unusual scientific phenomena all across explored space. One of the unusual features of the Daystrom Institute is the breadth of its expertise. While it is most famous for its work with cybernetics and artificial intelligence, it also employs researchers with specialties ranging from theoretical physics to archaeology. A separate division oversees each field of study, with most divisions being governed by a separate council, like the Daystrom Institute Archaeological Council. These councils draft and enforce rules for institute members pursuing a field of study, and often serve as the primary means of oversight and review for members of the Daystrom Institute who are not Starfleet personnel. Some Starfleet personnel who are members have spent most of their service either working as academics at a large research facility or stationed at remote and isolated research bases. These individuals may have considerable difficulty adjusting to life as a crew member living and working in the carefully regulated environment of a Starfleet starship or starbase.

OTHER FEDERATION SCIENCE ORGANIZATIONS

Between them, Starfleet and the associated Daystrom Institute are home to many of the finest scientific minds in the Federation, but there are a number of other important scientific organizations that brilliant and dedicated scientists belong to. The most famous is the Vulcan Science Academy, which is prestigious and well-funded, but is also exclusively open to Vulcans. Similar organizations include the Trill Science Ministry, the Weiss Institute for Theoretical Physics,

NOTABLE MEMBERS OF THE DAYSTROM INSTITUTE

The Daystrom Institute has been home to many of the Federation's most brilliant and influential scientists. The following are some of their most notable past and present members. In the 24th century, members include:

- **Commander Bruce Maddox** – Associate Chair of Robotics at the Daystrom Institute, he is a Starfleet officer who is a noted cyberneticist and was, at one point, convinced that even the most advanced androids are not actually sentient beings.
- **Dr. Leah Brahms** – Professor of Theoretical Physics at the Daystrom Institute of Technology, and Starfleet Design Consultant. She was one of the people who designed the subspace field generators on the *U.S.S. Enterprise NCC-1701-D*.
- **Vash** – A gifted but somewhat amoral archaeologist who has been a member of the Daystrom Institute Archaeological Council several times. She was suspended twice for ethics violations.

and many others. Members of these organizations are scientists and other researchers who have typically studied in one of the thousands of universities in the Federation and then been accepted as a member of that particular institute. Some of these organizations are large, well equipped, and perform research on a multitude of planets. Others are primarily found on one world, but any of them may contain researchers as brilliant and experienced as anyone in Starfleet Science. Members of some of these organizations are at least somewhat envious of the facilities and access to Starfleet starships that members of Starfleet Science possess, while others object to the various ethical and practical restrictions that membership of Starfleet Science are bound by.

There are cases of members of the Daystrom Institute and the Starfleet sciences division attempting to perform unethical research, such as when Starfleet Commander Bruce Maddox attempted to gain permission to deactivate and disassemble Lieutenant Commander Data in an effort to learn more about Soong-type androids. However, a common prejudice among Starfleet science officers is that scientists and researchers who are not part of Starfleet are more likely to engage in unethical research. This belief is not necessarily accurate but is supported by incidents such as when Doctor Toby Russell of the Adelman Neurological Institute performed untested and dangerous medical experimentation on Lieutenant Worf in an attempt to repair a severe spinal injury.

THE FEDERATION SCIENCE COUNCIL

All members of Starfleet Science, as well as members of all of the smaller independent research organizations and institutes, ultimately fall under the jurisdiction of the Federation Science Council. This organization is entirely independent of Starfleet and is instead a separate branch of the Federation government. Its primary function is advising the Federation Council on matters relating to science and technology. It existed prior to the Federation's formation, when it was an Earth-based organization known simply as the Science Council. In the 23rd century it was known as the Federation Science Bureau.

The Federation Science Council's authority is broad and extends to everything from requirements for Federation scientific equipment to controlling access to particularly sensitive research sites, and its directives apply equally to Starfleet science officers and their research and to civilian scientists within the Federation. One of this organization's most notable recent directives was limiting all Federation starships to speeds of no greater than Warp 5 in regions subject to subspace instabilities. The Federation Science Council also helps administer many of the remote science outposts maintained by the Federation both inside and outside Federation-controlled space.

CHAPTER 02.40

SCIENCES DIVISION STARFLEET MEDICAL

RELIEVED OF DUTY

**PERSONAL LOG, DR. AMANDA CORTEZ,
CMO, U.S.S. AL-BATANI, STARDATE 8942.7**

Today was the hardest day of my career. Captain Thelin is a dear friend, but I had no choice but to relieve him of duty. I was able to destroy the control filaments created by the neural parasite that attacked him when he and Science Officer Jenkins were exploring the derelict alien vessel. I initially assumed he had suffered no lasting effects from the parasite. However, his erratic behavior and bursts of paranoid rage prompted me to perform a second, more detailed scan. The parasite caused minor brain damage that left the captain prone to fits of rage and irrational behavior. I have confidence that he will recover but regenerating this type of subtle but pervasive neural damage requires at least a week of intensive treatment, followed by several weeks of cognitive therapy. I am hopeful that we will be able to remove the restraints well before he fully recovers. I understand that he wasn't himself when he accused me of mutiny, and that I followed the only proper course of action, but it was still exceptionally difficult. I assume the captain will understand the necessity of my actions when he recovers, but his accusations were still quite painful.

PERSONAL LOG

Starfleet Medical is a long-honored and prestigious Starfleet organization, and like Starfleet Science, predates the Federation's formation. Its general mandate is both biomedical research and overseeing the health of Starfleet personnel, and in a more general, indirect fashion, attempting to safeguard the health of all Federation citizens, especially in relation to epidemic diseases and illnesses that can potentially spread between Federation planets. The Starfleet surgeon general oversees Starfleet Medical, and has the authority to relieve Starfleet medical officers of duty if they are found guilty of either incompetence or gross violations of Starfleet regulations or medical ethics. Both Starfleet medical officers and Starfleet counselors are under the authority of Starfleet Medical, which also maintains and administers all Starfleet training and accreditation for medical officers and counselors, including Starfleet Medical Academy. Starfleet Medical is also the ultimate source of the authority possessed by medical officers and counselors, including their authority to declare quarantines or to remove Starfleet personnel from active duty.

CHIEF MEDICAL OFFICERS

The chief medical officer (CMO) of a starship or starbase possesses special responsibilities that are often as demanding and difficult as those of its commander. CMOs

THE ETHICS OF TREATMENT

BY DR. JULIAN BASHIR

It's important to remember that there are ultimately only two criteria for deciding on a course of treatment for your patient – your evaluation of the best medical course of action, and your patient's wishes. Other individuals, including high-ranking officials and perhaps even your commanding officer, may make their wishes known, but not only do you have no obligation to accept these suggestions, you are bound by your oath as a physician to reject these suggestions if they conflict with either your medical opinion or the patient's wishes for their own treatment.

That said, sometimes the patient's life and health are just two of the factors you must consider. If others are likely to die if your patient is unable to return to duty as swiftly as possible, then you should consider this fact. Prioritizing your patient's health is meaningless if doing so results in the destruction of the starship your patient is currently aboard. However, remember that while you may be certain of your medical opinion, your opinions about the seriousness of the situation your ship or starbase is currently in and about the critical nature of your patient's duties are far less certain. Ultimately, you must make a choice, and you must live with the results.

ACADEMY LECTURE

possess complete authority over all patients under their charge, including superior officers, and this authority continues until the chief medical officer releases the patient as fit for duty. In addition, Starfleet Order 104: Section C permits a chief medical officer to relieve a senior officer, including a ship's captain, of command if the medical officer deems the individual to be medically or psychologically unfit for command. While rarely used, this order can place the safety of a starship or starbase in the hands of its chief medical officer. Failing to relieve a superior officer of command can be catastrophic, but doing so prematurely or based on a faulty diagnosis can end either the officer's or the physician's career. In emergencies, even chief medical officers who have not specifically had command training are authorized to take command of a starship.

CMOs also possess the rarely used authority to declare quarantines. This authority extends from placing individuals suffering from unknown or potentially contagious afflictions in quarantine, to quarantining an entire starship or starbase. This authority is never used lightly since it can easily result in the death of everyone on the ship or base. A CMO only declares a quarantine if they believe it is necessary to prevent a widespread disease outbreak. The CMO's authority over a quarantine is absolute, and can use it to detain anyone in the starship or starbase she serves on, including civilians, individuals who are not members of the Federation, and even high-level diplomats from outside the Federation. Abuse or even mistaken use of this authority can have drastic consequences for both the CMO, and potentially even for the Federation as a whole.

Perhaps the most difficult duty any Starfleet medical officer can have is declaring a quarantine for an entire inhabited planet, regardless of whether it is a small colony of several

thousand or a teeming world that is home to hundreds of millions. Some CMOs are able to make this decision from the safety of their starship, but others must do so while they and the other members of their away team are down on the planet that they have just quarantined. All Starfleet medical officers understand that a quarantine does not bar authorized personnel from visiting the quarantined area – merely from leaving it. More than a few CMOs have quarantined a starship or a planet and then transported there to determine if they could cure the disease and thus lift the quarantine. Some have succeeded, while others have died performing the foremost duty of any physician – attempting to save lives. These difficult and complex duties are among the reasons Starfleet physicians receive extensive training in medical ethics, including how medical ethics intersect with the responsibilities of command and the duties of all Starfleet personnel.

STARFLEET MEDICAL ETHICS

The ancient Terran Hippocratic Oath remains central to the practice of medicine in Starfleet, but the demands of “first, do no harm” can be complex on a starship. Every Starfleet physician and nurse understands that no matter how much a patient wishes to use a treatment that gets them back on their feet and fit for duty faster, if this treatment has a high chance of serious long-term consequences or problematic side effects, the correct course of action is to instead use slower but safer treatments. This duty remains true even if the patient is a superior officer who is unhappy to be confined to sickbay for another few days. However, the situation becomes far more complex in battle or some other emergency, when that officer's skills may be vital for the

survival of the crew. In such cases, physicians must rely upon their own judgement as to what risks are acceptable given the circumstances, and when and if the needs of the many outweigh the needs of the few.

On occasion, medical officers have used dangerous treatments to keep someone with vitally important duties and who cannot safely be replaced functional until a crisis is over, even if these treatments may cause serious or perhaps even lethal harm to the individual. Medical officers never use such treatments unless the situation is dire and the individual requests them, but even in these situations, using such treatments is never an easy choice. As with most complex ethical quandaries, there is often no clear answer, and the best many physicians can hope for is that their patient and the rest of the crew of their starship survive the current crisis so that everyone can later discuss whether the choices the physician made were correct.

Another equally difficult decision Starfleet medical officers can face is choosing between preserving life and preserving quality of life. The best Federation medicine can keep individuals alive despite almost any injury, and can at least partially repair almost any damage to a patient's body or brain. However, the result of such treatments can be limited consciousness, or the distant and simulated consciousness caused by large-scale use of positronic implants. Allowing a patient to die rather than perform procedures that may preserve life but would destroy its quality, or perhaps even the patient's identity, is never an easy decision for any

physician, but is occasionally one Starfleet medical officers must make.

Similarly, while particularly daring physicians and medical researchers may be certain that a new experimental treatment they have developed can vastly improve a patient's quality of life, medical officers should use or approve the use of such treatments after they have been tested sufficiently to make certain that they both work and lack serious adverse side effects.

Because Starfleet physicians regularly face these and other equally difficult ethical problems, holodeck simulations and other exercises where physicians are exposed to difficult quandaries are an important aspect of Starfleet medical training. Similarly, one of the key factors in graduating as a Starfleet medical officer is possessing a combination of superlative medical skill and a burning desire to heal others and to preserve life, combined with a combination of both compassion and wisdom that is rare and difficult to teach.

MEDICAL MISSIONS

The basic structure of Starfleet medical missions is similar. Starfleet needs a starship to either transport medicines, physicians, or both to a location, or they need the starship to transport one or more patients to a fully equipped Starfleet

AN INTRODUCTION TO THE INTERSPECIES MEDICAL EXCHANGE IN THE 24TH CENTURY

BY DR. ALEXIS RUIZ

Since joining Starfleet three years ago, I have regularly been surprised that many Starfleet physicians who became doctors as part of their Starfleet training believe that the Interspecies Medical Exchange was ended shortly after the founding of the United Federation of Planet in 2161. They assume that since Starfleet medical training contains extensive training in interspecies medicine, there is little use for this program. This is true, for physicians trained in Starfleet. However, there are a great many civilian physicians, as well as a smaller number like myself, who join Starfleet after serving as a civilian physician for a number of years.

The Interspecies Medical Exchange remains exceptionally useful for civilian physicians, since it permits doctors who have

had little experience of medical needs and the medical practices of other species to gain large amounts of invaluable experience that might otherwise be difficult to obtain on any but the most cosmopolitan worlds. It also allows species who have recently joined the Federation to better integrate their medical practices and medical culture into Federation medicine. On a more personal note, the Interspecies Medical Exchange is also why I joined Starfleet. The two years I spent working as a doctor on Andoria provided me with invaluable knowledge of Andorian physiology and medicine, and also kindled within me the desire to serve the Federation as a whole, rather than simply practicing medicine on my homeworld of Alpha Eridani II.

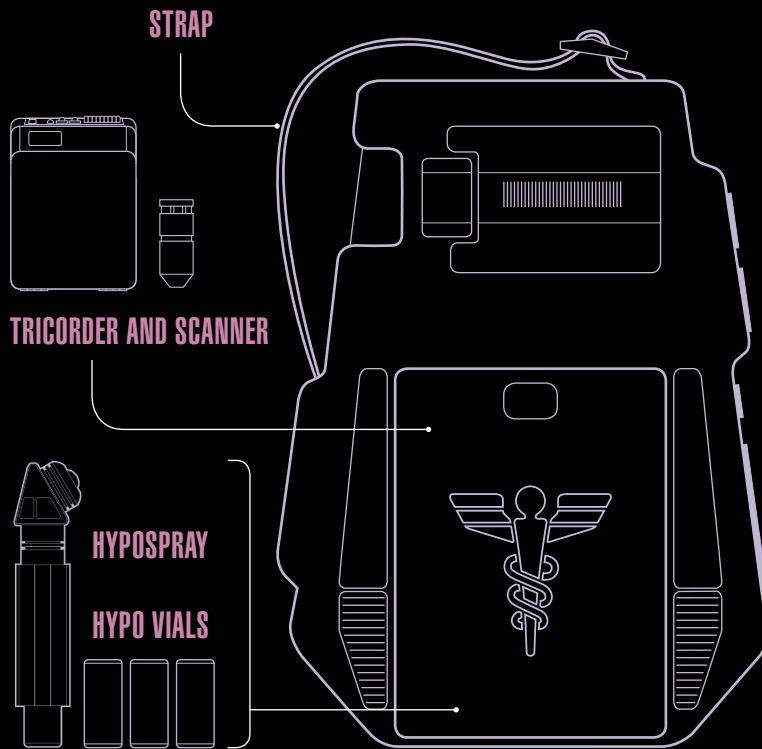


medical facility. However, the details of these missions can vary wildly. Sometimes, the starship is carrying medicine to help the staff of a crucial science outpost or diplomatic mission recover from a debilitating but non-life-threatening illness in time for some critical deadline, or perhaps the starship is carrying a single vitally important patient to medical care. However, all too often, the starship is delivering medicine, or perhaps simply physicians and the full resources of a large starship sickbay to a world beset by a plague. The relative similarities in the biology of many humanoids and of much life that has evolved on Class-M planets, and the fact that diseases can now spread between worlds at warp speed means that new and dangerous plagues are always a danger to the Federation's inhabitants.

Sometimes, the disease is one that is known, with standard treatments, but is either new to a world that has no facilities for its treatment or infects members of a colony or science outpost too small to be equipped with medical equipment necessary to treat it. In this case, once the starship arrives the crisis is largely over, and the primary imperative of the medical mission is arriving in time to save as many people as possible. This is the most common type of large-scale medical mission, and any delay in such missions can cost dozens or perhaps tens of thousands of lives. However, the other type of large-scale medical mission is far more dangerous and traumatic. New diseases are not common,

but they occasionally occur, as does biological warfare. In these cases, the starship may arrive at a world facing a disease that has no known cure, and the starship's medical personnel must attempt to find one.

The first step on such a mission is to attempt to determine the cause of the disease. Accomplishing this helps the medical personnel discover treatments, and reveals if some local toxin or energy field that can be eliminated or shielded against is causing the illness, or if the disease is caused by some contagious organism, and the physicians are dealing with an epidemic. The responses to these two options are radically different. For non-contagious illnesses, and especially for those caused by exposure to local conditions, small populations are evacuated, and larger populations are either moved to regions that are hopefully less toxic or are provided with filters, energy shields, or other devices that may help reduce exposure. The second case is one that all Starfleet medical officers dread, a potential epidemic. The protocol for unknown contagious diseases is always quarantine – no one leaves the affected region until a cure has been found, or the disease has run its course in all patients and further evidence of it cannot be found. The only exceptions to these quarantines are members of species that can be clearly shown to not be susceptible to either catching or carrying the disease.



dangerous new illness, they must first assume that it is contagious and maintain quarantine protocols until they learn that it is definitively not contagious. If the crew learns of the illness after some or all of them have been exposed to it, then these crew members, and potentially the entire ship must also be quarantined.

MEDICAL INTERFERENCE

One of the most difficult duties any Starfleet medical officer can face is the duty to do nothing if interference would violate the Prime Directive. Observing a vast and terrible plague that Federation medicine could easily cure is horrible, but if it is ravaging a pre-warp civilization, the Prime Directive must be obeyed. Of course, more than a few medical officers have found ways around this. While the Prime Directive clearly forbids openly using advanced medicine on a pre-warp population, using Federation medical knowledge to create drugs or immunizations using local materials and technologies, and then arranging for the locals to discover this information is sometimes acceptable, if done with sufficient care. Also, while doing so is impractical on a large scale, on a few occasions Starfleet medical officers have discretely added advanced medicines to local remedies to boost their effectiveness. Such actions skirt the edges of the Prime Directive, and casual disregard or carelessness in obeying it can result in a court martial, but Starfleet also understands the difficulties of simultaneously following medical ethics and Starfleet regulations. As a result, some leeway in the interpretation of the Prime Directive is acceptable to save lives, in much the same way that the *Enterprise's* actions to save the inhabitants of Drema IV were acceptable, because the inhabitants of this world had no way of knowing that their world's salvation was not simply a natural event.

Another difficulty Starfleet medical officers sometimes face in their duties is that definitions of illness are often culturally constrained. Colonists on a harsh world may simply accept that few people live past their 60s or that many children die, even if the cause is something simple like the fact that the colonists' diets are deficient in a trace mineral. Similarly, the society as a whole may blame factors ranging from defective genetics to intemperate behavior when some members of a society suffer ill effects because they are being exposed to a chemical that is unknown to that world. A classic example of this phenomenon was the fact that the Troglyte miners on Ardana were regularly being exposed to zenite gas that impaired their cognition. The inhabitants of Ardana's floating city of Stratos simply assumed that the Troglytes were inherently mentally deficient and initially disbelieved reports that zenite gas was to blame.

In such cases, either medical officers must become diplomats, or more practically, they must work with diplomatically trained Starfleet personnel to attempt to convince the inhabitants of the truth of their claims.

EQUIPMENT GUIDE

Unless they belong to one of these species, medical officers must wear protective garments and do their best to avoid direct contact with the locals. The alternative is to choose to beam or fly down and attempt to aid the locals in whatever ways they can, accepting that they will also be quarantined, and trusting that they or another physician can find a cure. Starfleet Medical discourages the second approach, but also understands that many physicians are unwilling to isolate themselves from patients in need, even if personally attending those patients puts them at grave risk of catching the same illness. However, Starfleet Medical's protocols direct that, when possible, some medical officers should remain on the starship and attempt to use its full facilities to discover a cure, while other physicians are down on the planet, ministering to the sick, and attempting to understand the cause, progression, and treatment of the illness.

Although modern technology allows physicians to eventually find a cure for almost any contagious disease, a few defy cures, and others cannot be cured rapidly enough to save medical officers who have been exposed. More than a few Starfleet physicians have given their lives attempting to aid sick and dying patients, because they could not remain safe while intelligent beings were suffering. One of the hard truths about all Starfleet medical missions is that when Starfleet personnel discover a

What happens next depends upon the planet and the specifics of the situation. On planets that belong to the Federation, cases where some portion of the populace attempts to deny medical intervention to another section of the populace, like children or lower-class workers, is a clear violation of Federation law. If the medical officer's efforts fail, they can turn the matter over to Federation diplomats and officials to resolve. However, individuals are always free to refuse to treat their own ills. Also, when dealing with worlds outside the Federation, Starfleet personnel are limited in the actions that they can force upon other warp-capable species. They are free to present their findings, and attempt to persuade local leaders of the benefits these treatments offer. However, Starfleet regulations forbid them from performing any sort of forceful interference. Ultimately, all Starfleet medical officers must respect the fact that other species have different cultures and values, even if these values make no sense to them.

COUNSELORS

While Starfleet vessels have carried medical personnel since well before the beginning of the Federation, the widespread, mandatory use of counselors on starships and starbases began in the 24th century. Counselors are responsible for the mental health and well-being of all personnel on their starship or starbase, in exactly the same way that physicians are responsible for their crew's physical health. The dividing line between these two duties is not always clear. However, in many cases the respective responsibilities of physicians and counselors are obvious. Physicians treat radiation burns and other forms of physical trauma, while counselors treat crew members suffering from various forms of mental stress, like anxiety, depression, or grief.

Even in peacetime, duty on a Starfleet vessel can be mentally taxing. Having the fate of dozens or hundreds of people depending upon your decisions is never easy, and the stresses of duty become far more difficult when fellow crew members are seriously injured or killed. While the crew of a Federation freighter may spend their entire careers dealing with nothing more serious than routine maintenance, in Starfleet, starship duty is often far less safe. Rescuing ships in trouble, interacting with potentially hostile alien species, and investigating astronomical phenomena that prove to be dangerous are all regular parts of this duty. In the course of these missions, many crew members see their fellows die, end up in situations where they are certain they will soon die, or witness the consequences of horrific accidents and deliberate atrocities.

A skilled counselor often means the difference between someone suffering lingering and increasingly problematic distress from these experiences, and that same individual finding a way to successfully process traumatic events.

However, while some crew members actively seek out their ship's counselor, others are reluctant to do so. A good counselor needs to be aware of the stresses that their crewmates have undergone, and to look for symptoms of problems.

Even more than medical officers, counselors regularly encounter patients who resist their services, either passively by refusing to seek out a counselor when they experience some emotional or mental difficulty, or more actively by refusing to discuss the issues they are having and even missing appointments when they are assigned to go see a counselor. Some older Starfleet personnel are resistant to visiting a counselor because they joined Starfleet before counselors were widely used on starships, and other individuals are either personally or culturally disinclined to discuss their emotions and mental states with anyone who is not a close friend or romantic partner. Dealing with this sort of resistance to treatment or even evaluation is one of the more common problems that counselors face. This process is made more difficult by the fact that while someone can be ordered to see a counselor, no order can force that person to go through the emotional work necessary to benefit from the process. If someone is sufficiently resistant to being helped, helping them may prove almost impossible. Although they rarely need to do so, a ship's counselor possesses the same authority as a ship's chief medical officer to remove someone from duty if the counselor believes the individual has a problem that may prevent them from effectively performing their duties.

A PROBLEM SHARED

PERSONAL LOG, RICHARD CHEN, SHIP'S COUNSELOR, USS EXCALIBUR, STARDATE 48354.8

Solving the problem of Lieutenant Wras's emotional troubles proved to be more difficult than expected, in large part because they weren't actually his troubles. His increased frustration and bouts of anger and depression were troubling both him and his colleagues, but I could find no source, until Ensign Mallory made an offhand comment about how these problems seemed worse whenever Lieutenant Chatwal was around. Sessions with the two Lieutenants, both separately and together revealed a very unusual connection. Lieutenant Wras is half Napean, but has received little psychic training and demonstrated only modest empathy. However, after Lieutenant Chatwal's fiancé broke up with him three weeks ago, instead of processing these emotions, he somehow formed a psychic connection with Lieutenant Wras that allowed him to effectively export his anger and grief over the breakup. Counselling Lieutenant Chatwal has resolved the problem, and I'm recommending both of them for psychic evaluation and training.

PERSONAL LOG

SCIENCES DIVISION

STARFLEET ACADEMY AND THE SCIENCES DIVISION

SCIENCES DIVISION CADETS

It is difficult to discuss training for sciences division cadets in a unified fashion, because during their time at Starfleet Academy, their training becomes increasingly diversified depending on which scientific discipline they focus upon. The initial training for prospective science officers, medical officers, and counselors is largely identical, with all three receiving even more extensive training in the sciences than other Starfleet cadets. However, after this broad initial training, prospective science officers have additional classes in their chosen fields of study, while prospective medical officers study biology and biochemistry, and prospective counselors are trained in psychology, counseling, and therapy techniques.

At this point in their training, there is little overlap between these three types of cadets. Individuals who have chosen different fields within the sciences division rarely have classes together, except for those common to all Starfleet cadets. These distinctions become even more obvious upon graduation. Prospective science officers and counselors are given their initial assignments. In contrast, prospective medical officers go on to attend Starfleet Medical Academy, where they obtain one of the finest medical educations in the Federation, and are then assigned to their duties as fully qualified Starfleet medical officers with the rank of lieutenant junior grade, rather than the rank of ensign that most other graduates of Starfleet Academy are given.

However, just as prospective medical officers leave Starfleet Academy to study medicine, prospective science officers work as junior science officers and prospective counselors are assigned as assistant counselors, working under a fully trained counselor. Instead of several additional years of rigorous classroom education, science officers and counselors receive extensive on the job training in a situation very similar to an apprenticeship. In addition, some science officers undertake an advanced scientific

education before entering Starfleet Academy, and some even possess the equivalent of a doctorate when they are accepted into the Academy. This unusual career path is one of several alternative options that some sciences division officers have pursued.

ALTERNATE CAREER PATHS

While most cadets enter Starfleet Academy in their late teens or early 20s, there are exceptions, especially in the medical department. Starfleet is open to highly skilled physicians like Dr. Leonard McCoy and PhD scientists, like psychiatrist Dr. Elizabeth Dehner, who both joined Starfleet after completing their medical or scientific education. Starfleet Academy also welcomes impressively skilled and dedicated older cadets, because they have already proven their excellence at their chosen profession and can now bring this excellence to Starfleet. However, this can sometimes be challenging, as these older candidates must compete and study alongside individuals who may be decades younger than they are. That being said, one of the advantages of 24th century medicine is that humans and most other humanoids can easily remain active officers in Starfleet into their late 90s, or even older, and thus someone who begins training in Starfleet Academy later in life can still have an exceedingly long career.

If these cadets successfully complete their training at Starfleet Academy, they are then immediately assigned to a starship or starbase and begin their duties, since they do not require any additional training to work as skilled scientists, medical officers, or counselors. While they are relatively uncommon, individuals who choose to join Starfleet after extensive professional education often excel at their duties and rapidly rise in rank so that they are often no lower in rank than officers their own age who first joined Starfleet when they were in their late teens. However, choosing to join Starfleet in this fashion can also prove difficult, because the individual must adjust to life under Starfleet's rigorous discipline after having studied for, and in some cases, pursued a civilian career for a number of years.

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SCIENCES DIVISION CHARACTERS

SCIENCE SCHOOL

"THERE IS A WAY OUT OF EVERY BOX, A SOLUTION TO EVERY PUZZLE; IT'S JUST A MATTER OF FINDING IT."

— CAPTAIN JEAN-LUC PICARD

NEW LIFE AND NEW CIVILIZATIONS

While its origins may have been militant in nature, since its earliest days, Starfleet's primary mission has been exploration and scientific discovery. It may be called on to defend the Federation and protect the billions upon billions of lives within its numerous worlds, but after any conflict, Starfleet ships return to their survey, research, and exploration missions.

With few exceptions, all Starfleet ships possess research and observation laboratories to assist in their primary mission of exploring space, with Starfleet Science ships possessing facilities so advanced that they rival those at dedicated research institutions. These allow the crew to perform exceptionally detailed investigations and analysis of the mysteries of the cosmos, without having to depend on labs and facilities that may be located hundreds of light years away. Even the Federation's smaller vessels and patrol ships have at least some form of scientific study equipment on board. It is not uncommon for ships with this reduced capacity to outperform the effectiveness of much larger starships belonging to the other major powers in the Alpha and Beta Quadrants.

Under most circumstances, Starfleet vessels are home to numerous scientists and research personnel. At any given time, the scientific facilities aboard these ships are alive with dozens of research projects – expanding our understanding of the universe and its many marvels. Some of the most ground-breaking scientific developments have occurred on Federation starships, and gaining access to the advanced technologies on board is extremely competitive, with researchers campaigning – sometimes for years – to have their research assigned to a Starfleet ship.

It is the responsibility of every Starfleet captain to balance the desires of these scientific hopefuls against the various other duties assigned to their ship, and all too often scientific discovery and investigation must be suspended when

a distress call is received or natural disaster threatens Federation citizens. Often the degree to which this occurs depends largely on the captain in question – and the commanding officers of Starfleet vessels are given wide latitude on which scientific endeavor receives the focus of limited ship resources. Inevitably, starships receive far more requests than they can fulfill and it is up to the ship's captain to decide which warrants their ship's attention.

INSTITUTIONS OF HIGHER LEARNING

Starfleet Academy may be the most common institution that Starfleet officers graduate from, but it is by no means the only one. Throughout Federation space, there are numerous colleges and universities that provide in-depth undergraduate, graduate, and post-graduate degrees and many individuals educated at these prestigious institutions pursue careers in Starfleet. Most often such graduates find homes within the science department aboard a starship, but this is not a requirement, with security and engineering departments being viable alternatives. Starfleet does, however, tend to limit the number of command candidates educated outside of the Academy and those wishing to pursue a career in command should expect strong recommendations to attend Starfleet Academy following graduation from other schools.

The Vulcan Science Academy, Stanford University, Daystrom Institute, and the University of Alpha Centauri are just a few of the many such schools found within the Federation. Attendance to one of these institutions can often be seen as a badge of honor and the alumni from these schools routinely maintain lifelong friendships or at least passing familiarity with one another. Occasionally these schools do have other requirements for entry, or restrict admission to a select grouping of species – the Vulcan Science Academy being an excellent example, as it is extremely uncommon for non-Vulcans to be granted entry. While restrictions like this may seem strange within the Federation, a society that celebrates



racial diversity, for Vulcans the Vulcan Science Academy simply is maintaining its centuries-old mandate to perfect and imbue logic into the next generation.

Upon graduation from one of these institutions, alumni wishing to move on to a career as a Starfleet officer must complete a six-month officer candidate school at Starfleet Academy. This condensed education briefly covers the materials that other Starfleet graduates have completed in preparation for assignment on a starship. Alternatively, alumni may simply seek a direct posting to a starship within the area of their degree program. Doing so results in the individual entering Starfleet as an enlisted crew member – which may limit their ability to participate and interact with senior officers.

Some characters may have conducted a working internship at one of the many research facilities in and around Federation space. These opportunities are fairly uncommon and there are always far more applicants than available positions. Working in these environments provides the student the opportunity to directly engage in ongoing research and familiarize themselves with a wide range of scientific equipment as well as laboratory protocols and research methodology. Unlike a traditional education at Starfleet Academy or at a university

(though there are many of these types of internships at those locales), an internship allows the student to directly engage in the practical applications of scientific study and the experience gained can launch a promising young hopeful into a career of prominence. Starfleet is always on the lookout for these individuals to work as assistants and technicians in its own research facilities.

If Starfleet does not reach out directly to a gifted intern, the experienced scientists and researchers at the lab may do so on the student's behalf, as many of these scientists have friendships and acquaintances among the officers of Starfleet. Much like university graduates, interns wishing to pursue a career as an officer must complete the officer candidate school prior to receiving a commission. It has been known, in very rare occasions, for Starfleet to offer a direct commission without being required to attend the Academy; however, such offers almost always come with an expectation that if the intern remains within Starfleet for more than two years, they will transfer back to the Academy to complete the course before advancing past ensign. As with university graduates, a promising intern may seek a more immediate posting and position within the laboratories onboard a starship and accept a position as an enlisted crewmember.

CREATING SCIENCE CHARACTERS

The following are suggestions for Players creating science-focused characters, usually the ship's chief science officer.

LIFEPATH STEP ONE

Any species can serve in a scientific role, though different species may have different approaches to solving science challenges. Species that offer increased Reason are especially effective scientists.

LIFEPATH STEP TWO

At this stage, the *Homeworld* and *Isolated Colony* options might improve Science, though Science can be improved later if another choice is made.

LIFEPATH STEP THREE

In step three, the *Starfleet*, *Business or Trade*, *Science and Technology*, and *Artistic and Creative* options can all increase Science, providing a Focus to help develop and specialize the character.

LIFEPATH STEP FOUR

At the Academy, the Sciences track with the Science major is the natural choice for a character, providing a significant increase to Science, as well as three Focuses and a single Talent. All can shape the character's abilities.

Instead of attending Starfleet Academy for four years, Players may choose to have been educated at one of the major universities throughout Federation space and commissioned as an officer upon graduation, selecting the University Alumni major. Alternatively, a character may have pursued a working internship at a major research station and obtained a commission in Starfleet following exceptional work in their field, and select the Research Internship major.

- **University Alumni Major** – This provides an additional selection within the sciences track. This selection provides characters with +2 Science and +1 to Command and Engineering, as well as the standard Value, increases to Attributes, three Focuses and a single Talent. In addition, the character gains a Trait that reflects the time, people and relationships that were important to the Character during their time on campus. *Example: Alumni of Stanford – Class of '59.*
- **Research Internship Major** – This provides an additional selection within the sciences track. This selection provides the characters with +2 Science, +1 Engineering, and +1 Medicine as well as the standard Value, increases to Attributes, three Focuses and a single Talent. In addition the character gains a Trait that reflects the research and scientific work done during their internship. *Example: Nanoprobe Breakthrough*

LIFEPATH STEP FIVE

At this step, all selections are perfectly acceptable for a science officer, depending on the concept the Player has in mind for the character. Young Officers represent newly commissioned officers fresh out of the Academy or commissioning program and eager to begin their personal voyage into the unknown. While it would be uncommon for such a junior officer to hold a senior staff position on a larger vessel, smaller ships will often have promising young officers as department heads. Experienced and Veteran Officers have spent years in space and been afforded the opportunity to contribute to scientific discoveries that have expanded humanity's understanding of the Galaxy. These officers can easily find themselves in positions of authority on larger, more prestigious postings or as senior officers on the newest, most advanced science and exploration vessels.

Nearly all military organizations from Earth's past contain the concept of the limited duty officer, and Starfleet is no exception. These individuals obtain special officer commissions that have certain restrictions associated with them. Limited duty officers are retained due to their exceptional education or skills within a specific area or areas – talents deemed vital by Starfleet. These officers obtain rank and privilege just like any other, but are usually prevented from advancing past commander, and are prohibited from holding an operational command. Unlike other commissioning programs, such as those discussed above – these officers are usually not required to attend or complete the officer candidate program and may never set foot in Starfleet Academy.

LIFEPATH STEP SIX

Here, a number of career events can increase Science, although this is more to add character flavor, perhaps showing the events that led to a current rank and position. *The Encounter with a Truly Alien Being*, *Learned a Unique Language*, *Special Commendation*, and *First Contact* are all particularly applicable to science characters.

LIFEPATH STEP SEVEN

With finishing touches, the character's Attributes and Disciplines can be fine-tuned to fit a particular vision. Once complete, select a role – this is likely to be the science officer.

SCIENCE IN PLAY

Each Discipline is an important part of a character's makeup, but what it signifies for any given character can vary. This section looks at what the Science Discipline may mean for a character at especially high or low ratings. These are suggestions, but may help Players visualize a character and how Disciplines reflect their nature.

SCIENCE SCORE OF 1

Characters with a Science Discipline of 1 have the most basic understanding of scientific principles and laws. These characters may only have completed a primary school education within the sciences, or simply have forgotten what they learned during their time in school. They understand the most basic concepts, such as gravity and momentum, but more advanced theories elude them.

This is not to say that they are incapable of operating systems, conducting repairs, or contributing meaningfully to their crews. It means only that they possess the most basic knowledge required to conduct these tasks and find themselves at a loss when trying to describe or discuss scientific theories in any great detail. These characters may find themselves at a disadvantage when dealing with purely scientific-based challenges and often rely heavily on their crewmates to give them direction when these challenges arise.

SCIENCE SCORE OF 2 OR 3

Characters at this level have a sound understanding of the sciences at work during day-to-day operations and may have even studied more advanced and difficult scientific theories, though their understanding of those theories may be somewhat flawed. They are capable of meeting most science-based challenges, as long as the difficulty is not too extreme and are able to work closely with characters possessing much higher ratings in Science without feeling lost or needing close direction.

This level is, by far, the most common of Starfleet officers not directly working within a dedicated science department or research group. They are able to follow explanations of advanced principles and laws and may even be capable of suggesting courses of action or identifying issues or complications before they become a serious hindrance. Still, they are not dedicated scientists and must rely on those that are to fully explore scientific mysteries or resolve scientific challenges facing the ship.

SCIENCE SCORE OF 4 OR 5

Characters at this level are career scientists and experts in at least one, but usually more, scientific fields of inquiry. These individuals are responsible for scientific breakthroughs and advancement of understanding. It is these characters that can easily identify subtle differences

between spatial anomalies, assist in charting courses through subspace ruptures, modify shield emitters and deflector dishes to protect their ship from dangerous nebulas, and so on.

Characters with these Science Discipline ratings are most at home aboard research, survey and science vessels – harnessing the advanced scientific equipment on board. Conversely, they may never have been aboard a starship before, instead spending their careers within a scientific laboratory or archaeological dig site. Anywhere new scientific problems, challenges, or mysteries are being uncovered, explored, and solved – you will find at least one character with a high Science Discipline score.

OTHER DISCIPLINES

As a single Discipline can define a character's identity in a variety of interesting ways, combinations of Disciplines can provide interesting context. The character's two highest Disciplines can be a definitive part of how they approach problems.

COMMAND

Individuals with high levels of Science and Command become natural team leaders, chief researchers, and so on. They understand not only how to explore new theories and advanced understanding – but are capable of inspiring and leading others to do the same. The upper echelons of Starfleet are filled with individuals at these levels.

Example: *Jean-Luc Picard, captain of the Enterprise-D and Enterprise-E, and Kathryn Janeway, captain of the U.S.S. Voyager, both have high Command and high Science, though their fields of expertise differ. Spock is also this kind of character, especially later in his career.*

CONN

Understanding ship operations can be just as important to a field scientist as their area of expertise. Characters possessing both high levels of Conn and Science are gifted pilots as well as researchers. These characters often find themselves on lone research missions aboard smaller craft – or working alongside the crew of a much larger vessel, either as a consultant or crewmember. The ship's operations division makes a natural home for these characters – allowing them to continue to support their ship during normal operations in between scientific missions.

Example: *Jadzia Dax is a highly competent pilot, often serving at the helm of the U.S.S. Defiant, and a dedicated and talented scientist. Jadzia gained this expertise in the years before she became Joined. She's a character with high Conn and Science Disciplines.*

ENGINEERING

Developmental research labs across the Federation are home to individuals with high levels of Science and Engineering. Here the most advanced scientific principles and theories are developed into working technological marvels. Parallel to these assignments are the operations managers and engineers throughout Starfleet, who must often find technological solutions to challenging or dangerous scientific problems. These individuals are able to fully explore and comprehend the nature of strange new worlds while ensuring that their ship and its crew are fully equipped to tackle the challenges these mysterious locations provide.

Example: *Lieutenant Commander Data and Ensign Harry Kim served as the operations managers on their respective ships. This duty required them to be accomplished engineers but also to be experts in various sciences – as neither ship had dedicated science officers amongst the senior staff. To perform these duties successfully, each possessed high Engineering and Science Disciplines.*

SECURITY

Unfortunately, the Galaxy is not a safe and serene place. When dealing with a new weapon developed by hostile cultures or encountering a truly alien being threatening life – too often the only solution involves tactical action. It is in these troubling circumstances that individuals with high scores in Science and Security shine. Characters at this level are able to study, understand, and exploit weaknesses in their enemies or to develop ways of using their offensive equipment to find a more permanent solution to dangerous situations.

Example: *Sub-Commander T'Pol was instrumental in the success of the Enterprise NX-01 during its travels beyond United Earth space, applying her knowledge and expertise in various sciences. However, she also served in the Vulcan Ministry of Security and undertook several successful missions. She represents a character with high ratings in both Security and Science.*

MEDICINE

At the forefront of medical research and development are those individuals who possess high ratings of the Science and Medical Disciplines. These individuals most often find homes at medical research institutions, laboring endlessly for cures to the most deadly and harmful ailments. While aboard starships, these individuals constantly evaluate the organic and inorganic materials gathered during away teams – applying these discoveries in hopes of uncovering new treatments and cures to improve and extend life. Many of these individuals are dreamers – often to the point of naiveté – and see their adventures in the great unknown with enthusiasm that is often unmatched by their crewmates.

Example: *Doctor Pulaski, who served as chief medical officer on several starships, including the U.S.S. Enterprise NCC-1701-D, was an excellent physician and a noted researcher. She pioneered numerous medical procedures and techniques and gained fame with groundbreaking research early in her career. She represents a character with high ratings in both Medicine as well as Science.*

SCIENCE FOCUSES

This section provides a selection of Focuses that may be particularly useful or interesting for a science officer, and a brief discussion of what a Focus represents or how it could be used. Focuses are not necessary: a character can know about any of these areas of expertise without having an associated Focus. Having the Focus indicates an ability to gain 2 successes when rolling equal to or under Science Discipline when a focused area of expertise is relevant.

Deliberately, and as in real life, there is overlap between different Focuses. Different fields of study and expertise inform one another, and individuals may develop similar skills from differing origins.

- **Archaeology:** The study of ancient civilizations, with emphasis on their technology, has been at the heart of scientific expeditions since the earliest days of space exploration, and before. Humanity has always held a deep fascination for what came before and finds profound fulfillment from connecting with ancient wisdom. This Focus can be applied any time the character encounters ancient structures, artifacts, or technology.
- **Astrometrics:** A relatively recent scientific field, astrometrics combines stellar cartography, broadband frequency analysis, and relativistic mathematics to detect and evaluate the movement of stellar bodies – both natural and artificial – for incredibly precise navigation. This Focus can be used to study the natural and forced movement of objects in space, chart the boundaries of entire civilizations, and plot complex navigational courses.
- **Astrophysics:** Civilizations have always studied the stars, nebulae, and other celestial bodies in order to lift the veil obscuring the formation of our Galaxy and life itself. It is the principles and developments within this field that lead to the first steps into space, rocketry trial and error notwithstanding, and while the movement of the heavens may have revealed most of its secrets, there are still more questions left unanswered. This Focus applies any time the character is dealing with the study of, or information pertaining to, stellar or celestial bodies.



- **Biology/Xenobiology:** The study of biological organisms, be they native to earth or beyond is a crucial area of focus for Starfleet. Experts in this field are able to identify and catalog the various kinds of new life encountered during a ship's travels, as well as determine potential hazards to the crew and develop countermeasures.
- **Botany/Xenobotany:** A complementary discipline to Biology, Botany performs many of the same investigations, but focuses on plant life instead. As Starfleet considers all life, animal or plant to be valuable and protected, Xenobotanists are called upon to study new plant life discovered and to determine the applications it may provide. Many new medical cures are uncovered through the application of this study.
- **Chemistry:** As the study of chemical compounds and processes, Chemistry is a fundamental science that has numerous advanced applications. New chemical compounds are often encountered during scientific survey and exploration missions and scientists with deep knowledge of Chemistry are called upon to identify and study these. This Focus is of particular value anytime the crew discovers an inorganic compound during the course of its missions.

- **Deflector Operations:** Next to modern sensor arrays, the navigational and secondary deflector arrays are key tools used in scientific study from the mid 22nd century onwards. At its core, deflector arrays are intended to protect a starship from colliding with microscopic debris while traveling through space, harmlessly pushing them aside. However, this simple concept allows for precise manipulation of everything from sub-atomic particles to sizable asteroids. Harnessing these broad applications requires delicate changes to the output of the array and are governed by this Focus.
- **Galactic History:** While knowledge of this topic may often be covered under other Disciplines, the academic study of history and applying parallels to current events is a scientific field all its own. Given the old saying that history is doomed to repeat itself, careful analysis of past events can often provide critical insight when challenges arise. This Focus can be used not only to recall or research events of the past, but also make those events meaningful to the modern day.
- **Photonic Applications:** Holographic technology has been used to varying degrees during different periods of Federation history. It was, however, the development of artificially intelligent holograms that breathed new

life into an otherwise ‘entertainment’ science. By the late 24th century, Starfleet had begun experimenting with holographic crew members and had even begun to theorize the use of autonomous holograms for extra-galactic exploration. Experts in this field are likely to possess this Focus and can use it for everything from holographic communication and holodecks to development of intelligent holographic individuals.

- **Quantum Mechanics:** The study of the motion and interaction of sub-atomic particles, this scientific field has numerous applications aboard Starfleet vessels. From deflector operations and bussard collectors to the theory behind transporter operation, characters with this Focus are acknowledged experts whenever miniscule particles and energies are at work.
- **Research:** One of the most common and fruitful areas of focus for a scientist, nearly all areas of scientific inquiry require significant amounts of research. This Focus provides the character with a background and expertise in the standardized methods of research and can be applied any time the character is involved in finding and applying catalogued scientific theories and conclusions.
- **Sensor Operations:** The wondrous mysteries of the universe are as diverse as the individuals who study them. Due to the dynamic and wide-reaching possibilities of information that can be obtained, sensor arrays are simply incapable of collecting and processing all of that data simultaneously. In normal operation, sensors are designed to operate on the widest spectrum possible – and then focus in on specific areas of interest. There are few as knowledgeable and skilled in this area as those who have devoted time and effort into full understanding what they are looking for. This Focus comes into play any time ship’s sensors need to cut through interference, during maintenance, or when conducting detailed scans and sweeps.
- **Subspace Theory:** While the pseudo-dimensional realm of subspace was not clearly understood when Zefram Cochrane made his historic flight aboard the *Phoenix*, its existence continues to be the subject of a vast amount of scientific inquiry. It is this trans-dimensional realm that allows for faster-than-light (FTL) travel and communication. This Focus provides the character with a significant understanding of the theories regarding subspace and can be used when developing predictive models for warp flight, configuring long range communications, and a host of other applications involving FTL technology.
- **Temporal Mechanics:** The study of time, Temporal Mechanics provides the character with a deep understanding of the natural flow of time as well as the potential situations where this flow may be disrupted. Furthermore, this Focus specializes in understanding and projecting the possible ramifications of changing the timeline and the various ways time travel can be attempted.
- **Unified Field Theory:** Once considered the ‘holy grail’ of the scientific community, by the time of the *Enterprise* NX-01’s famous journey into deep space, the Unified Field Theory had not only become accepted as a core scientific principle, but it led to the development of several key pieces of technology – such as artificial gravity plating and inertial dampers. This Focus can be used any time the character is utilizing or investigating how different fundamental forces, such as magnetism or gravity, interact with one another.
- **Warp Theory:** One of the most important scientific discoveries of human history, warp travel and all that came with it transformed human society into the near utopia that it is now. This Focus covers the theory of warp fields, including more recent developments like variable warp field geometry and asymmetrical warp fields. This comes into play anytime a character is working with warp engines or experimenting with warp fields.



SCIENCE TALENTS

This section provides additional Talents suited to science officers and characters with a high Science Discipline score. Each Talent may only be selected once unless otherwise noted. Players are free to rename the Talents they select to suit their own tastes and the backgrounds of their characters. This will not affect the rules for a Talent.

BAFFLING BRIEFING

Requirements: Science 3+ and Presence 9+

When the character engages in a Social Conflict using deception, the character may use Science in place of Command so long as their technical knowledge is used to mislead their opponent.

DEDICATED FOCUS X

Requirements: Science 4+

When this Talent is taken, choose a Focus your character has. When attempting a Task where that Focus applies, each d20 that generates 2 successes also generates 1 bonus Momentum. This Talent only applies to d20s in the character's dice pool, and does not apply to d20s added due to equipment, starship assistance, or character assistance.

EXPEDITION EXPERT

Requirements: Science 3+ and Fitness 9+

Prior to participating in an away team mission, the character may prepare by conducting a research Task. If they succeed, Momentum may be spent to allow the character to substitute their Science Discipline in place of any other, during any Task to navigate or transverse difficult terrain during the mission. Each point of Momentum spent from the research Task in this way allows for one such substitution.

LAB RAT

Requirements: Science 3+ and Engineering 3+

The character prefers to spend most of their free time engaged in various side projects and experiments. Because of this, they are extremely familiar with the equipment and capabilities of the labs on board their ship. When attempting an Extended Task while using a laboratory, the character gains the *Progression 1* Effect.

MENTAL REPOSITORY

Requirements: Science 3+ and Reason 10+

Using extensive mental conditioning, the character has access to memories with unprecedented clarity and accuracy. So long as the character takes time to focus their mind prior to attempting a Task – which takes 2 Intervals during a Timed Challenge – they reduce the Difficulty of the Task by 1 to a minimum of 1. In addition, if they succeed they gain a bonus Momentum which may only be spent on the *Obtain Information* Momentum spend.

RAPID ANALYSIS

Requirements: Science 3+ and Daring 9+

Tasks attempted as part of a Timed Challenge using the Science Discipline takes the character 1 Time Interval instead of 2. The amount of time taken for any Task may not be reduced to less than 1 Interval.

STUDENT OF WAR

Requirements: Science 4+ and Security 3+

The character has conducted extensive research into numerous kinds of conflict and has devoted their academic career to the study of war. While this knowledge may be purely theoretical, such information, when placed into the hands of more capable combatants, can be truly devastating. When the character provides assistance to a Combat Task, they may reroll their die.

TEMPORAL MECHANIC

Requirements: Science 3+ and Focus: *Temporal Mechanics*

Long study into the facets of temporal mechanics has given the character an intuitive understanding of the space-time continuum and the various phenomena that can distort it. Once per scene, when confronted with an anomaly that affects the flow of time and space, the character rolls one Challenge Dice (1▲) when attempting a Task relating to the phenomenon. The character generates bonus Momentum equal to the ▲ result, in addition to any Momentum generated from the Task result. If an Effect is rolled, the Gamemaster gains 1 Threat instead.

THEORY INTO PRACTICE

Requirements: Science 3+ and *Testing a Theory* Talent

When you attempt a Task using Engineering or Science where you gain the additional d20 from the Testing a Theory Talent, reduce the Difficulty of the Task by 1, to a minimum of 0.

UNCONVENTIONAL THINKING

Requirements: Science 3+ and Insight 9+

During any Challenge or Extended Task that uses the Scientific Method to adapt technology (see core rulebook, p.159) in which the character is participating, if the hypothesis being pursued is considered “Outside the Box” – the Difficulty of the Tasks are reduced by 1. It should be noted that Players are not aware of the fact they are pursuing an “Outside the Box” hypothesis under normal circumstances – it is up to the Gamemaster to ensure they receive the proper Difficulty reduction.

WALKING ENCYCLOPEDIA

Requirements: Science 2+ and Reason 9+

Once per session, when you attempt a Task, you may spend 2 Momentum (Immediate) in order to gain an additional Focus for the remainder of the session, due to your breadth of knowledge. However, any Task using that Focus increases in Complication range by 1, as you are not a true expert on that subject.

SCIENCES DIVISION CHARACTERS

MEDICAL SCHOOL

"OH, THIS WILL BE PERFECT — REAL FRONTIER MEDICINE!"

— DOCTOR JULIAN BASHIR

DO NO HARM

In an age where the fantastic has become commonplace, Starfleet's medical corps works tirelessly to enhance the quality of life for the countless species that make up the Federation. By the time of the Federation's formation, diagnostic and imagining technologies had already developed to the point of allowing medical professions to see a patient at a genetic level – and those with sufficient skill were able to remove genetic abnormalities before they could become serious health risks. Advancements in tissue regeneration and cybernetics had all but eliminated organ failure and replaced lost limbs. With advances such as these, the average life expectancy of most humanoid species exceeded a century, and virulent disease was all but a memory.

As the Federation continued to grow, and new scientific and technological discoveries were made, the medical community continued to advance. The diagnosis of patients and supplemental treatments grew increasingly less invasive and advanced medical equipment more widely available. By the mid-24th century, the standard medical kit – easily carried by a single person – contained as much capability as an entire medical clinic from a century before.

But it isn't just medical equipment that has advanced. Training and techniques that were once cutting edge have become antiquated – to the point of barbarity in the eyes of some physicians. The thought of opening up a patient's skull or destroying healthy tissue for the sake of treating the diseased are unheard of. After all, physicians seek to cure and to mend, not to cause harm. It is this nearly unifying creed that brings physicians from countless species under the same ideals. One would assume that this ideology would fit well within Starfleet, with its devotion to peaceful resolution and scientific discovery – but the needs of Starfleet as the protectors of the Federation, occasionally are at odds with the personal ethics of medical professionals. In the rare times this occurs, each medical practitioner must make an individual choice – to hold to their ideals or to heed the orders of Starfleet Command.

STARFLEET MEDICAL

Every doctor, surgeon, and nurse within Starfleet eventually answers to the advisory board of Starfleet Medical. This organization is responsible for ensuring that the latest developments in medical science are communicated throughout the fleet, and that each ship, starbase, outpost, and colony is staffed with adequate medical personnel. While Starfleet Command may make requests and recommendations, and a captain holds ultimate veto authority on postings aboard their ship, it is Starfleet Medical that assigns individuals to particular postings.

Cadets seeking to pursue a career as a medical officer begin at Starfleet Academy like any other, but after graduation, instead of reporting to the fleet, they transfer to Starfleet Medical to complete their education, which includes residencies and potential specialty fellowships. Starfleet Medical, however, is not the only location where young individuals can complete this portion of their education. Often, they will be assigned to medical facilities on Earth or other Federation worlds, clinics on outlying colonies or even as junior medical staff on Federation space stations. The one place that they cannot serve, however, is aboard Starfleet ships – not until they have completed their training.

The Academy, and even Starfleet Medical, is not the only way that physicians find their way into the ranks of Starfleet. Numerous universities and educational institutions within and without the Federation offer an education in the medical sciences. Sometimes these civilian physicians decide to broaden their horizons by traveling the stars, and will seek to obtain a Starfleet commission. These 'old country doctors' tend to be more experienced than their younger Starfleet educated counterparts – with all the idiosyncrasies that entails. Such individuals are often set in their ways and apply their previous experiences to their new duties – which is not to say they are any less capable. Some of the most famous Starfleet doctors can be counted amongst this group.

CYBERNETIC AND GENETIC ENHANCEMENTS

The Federation has strict laws against the use of genetic engineering to enhance individuals beyond their species norms. These laws grew out of the devastating lessons learned on Earth during the Eugenetic Wars. Any genetic engineering is looked on with scrutiny and skepticism. While the science is not expressly outlawed, any genetic manipulation can be grounds for a medical inquiry by Starfleet Medical or the Federation Science Council.

Genetic engineering has been used successfully in various other areas, including the development of plants capable of surviving in normally hostile environments and within terraforming projects. Use of genetic manipulation to repair damaged tissue and undo viral infections is widely condoned and commonplace, as is its use to treat life-threatening ailments, though even this is carefully administered and extensively reviewed. Anything beyond approved treatments is grounds for a lengthy prison sentence. Beyond the Federation's borders there are clinics and facilities that offer a variety of options, from cosmetic adjustments to full scale eugenetic-style augmentations. In various areas of space, this form of genetic augmentation is at least acceptable, if not outright common, but such individuals tread lightly when traveling within the Federation. By law, the Federation can detain or imprison not only the scientists and doctors that provide this service, but also the augmented individuals themselves and their family – if a child was augmented at the request of their parents.

An additional problem arising from extensive genetic manipulation is unforeseen and undesired aberrations. A significant percentage of individuals that are enhanced in this way also develop mental, emotional, and sometimes physical impairments. Occasionally, these are nothing more than mild quirks that mark the individual as different in some way. Most of the time, however, they develop into full blown psychoses ranging from anti-social behavior to self-harm to becoming a threat to others.

Another potential form of augmentation is through the use of cybernetics. Laws within the Federation are substantially less strict about bio-mechanical implants, and during various periods within Starfleet's history, cybernetically augmented officers are commonplace. A common form of such augmentation is a Neural Interface, implanted into the subject's brain and allowing them to directly interface computer systems with a thought. This significantly speeds up interactions with computers and computer controlled systems. Starfleet does not require their use and is extremely careful not to incentivize them by assigning or promoting augmented officers over non-augmented ones. Cybernetic prostheses are also common where organic replacements are not available or impossible – such as the replacement of major internal organs, as well as limbs and sensory organs. Here, augmentation is also possible, though it is not as prevalent as one might expect. It is possible to provide minor increases in physical strength, endurance, and agility

through cybernetic enhancement, but this is limited by the interaction between organic and inorganic components and the extreme stresses induced by artificial components significantly beyond what the body's natural form is capable of: attempting to greatly increase one's physical performance through cybernetics results in the body ripping itself apart. Very few species build and install cybernetic devices that exceed a species' natural capabilities. Cybernetic replacements that simply restore normal function do not require any special rules and are largely treated as narrative elements during gameplay.

AUGMENTED ABILITY

Requirements: Gamemaster permission

You gain the Augment Trait. Choose a single Attribute when this Talent is selected. You gain the Extraordinary Attribute 1 special rule (core rulebook, p.312) for the chosen Attribute. When the character uses this ability, they increase their Complication Range by 2 for that Task. This Talent may be selected multiple times, once for each Attribute.

NEURAL INTERFACE

Requirements: None

The character has had a cybernetic device implanted directly into their brain, allowing them to interface with computers and similar technologies with their thoughts. Initiating or breaking the link between their minds and a computer system takes a Minor Action, and while they are connected they may reroll the d20 gained from using ship's Systems. However, any time the ship suffers a Breach the character also suffers 3▲ of Stress.

PHYSICAL ENHANCEMENT

Requirements: None

The character has some portion of their body replaced by an advanced piece of bio-mechanical hardware. This device functions exactly like its organic counterpart; however, before attempting a Task, the Character may choose to take 3▲ Stress to add a single additional d20 to their dice pool. Any Injuries caused by this damage is resolved after the effects of the Task. Multiple dice may be bought in this way, but the damage is added together (so, buying two dice inflicts 6▲ damage, and buying 3 dice inflicts 9▲ damage). These dice count towards the normal limit of bonus d20s purchased.

SENSORY REPLACEMENT

Requirements: None

Due to physical injury or irreparable birth defect, the character has been forced to adopt a cybernetic device that replaces one of their sensory functions – most commonly sight or hearing. The character gains the Artificial Sense Trait, which can be used normally. In addition, when the character is using the *Obtain Information* Momentum spend, they may ask questions or be given information not normally available with organic senses.

CREATING MEDICAL CHARACTERS

The following are suggestions for Players creating Medical characters, usually the chief medical officer, chief of surgery, or senior nurse:

LIFEPATH STEP ONE

Any species can serve in a medical service role, though different species may have different approaches to solving medical challenges. Species that offer increased Reason, Insight, or Control may be especially effective medical professionals.

LIFEPATH STEP TWO

At this stage, the *Isolated Colony* and *Frontier Colony* options might improve Control, Insight, Reason, and Medicine, though Medicine can be improved later if another choice is made.

LIFEPATH STEP THREE

In step three, the *Starfleet*, *Agriculture or Rural*, and *Science and Technology* options all provide useful increases to the key Attributes and Disciplines for a medical officer.

LIFEPATH STEP FOUR

At the Academy, the Sciences track with the Medical major is the natural choice for a medical character, providing a significant increase to Medicine, as well as three Focuses and a single Talent. Players may use this selection to also represent characters who obtained their medical degree elsewhere and then joined Starfleet.

LIFEPATH STEP FIVE

Any option at this stage is reasonable for a trained medical professional. Young Officers reflect those characters who've just recently graduated from the Academy and are likely experiencing the wonders of deep space for the first time. Veteran Officers make for excellent seasoned professionals who've practiced medicine for decades and are rarely surprised by what they encounter.

LIFEPATH STEP SIX

Here, a number of Career Events can increase Medicine, although this is more to add character flavor, perhaps showing the events that led to a current rank and position or their experience. The *Death of a Friend*, *Serious Injury*, *Dealing with a Plague*, and *Special Commendation* are all appropriate for characters who have spent their lives dedicated to the treatment and betterment of others.

LIFEPATH STEP SEVEN

With finishing touches, the character's Attributes and Disciplines can be fine-tuned to fit a particular vision. Once complete, select a role – this is likely to be the chief medical officer or ship's counselor. However, the following are additional roles that are available to medical staff aboard a ship or starbase.

- **Chief Surgeon:** Medical department only. On larger ships, the medical staff may be robust enough to support a dedicated surgery team. The head of this team is the chief surgeon. While the duties of this role may often be filled by the chief medical officer, when there is a dedicated surgeon, a character may choose to assume this role. *The chief surgeon gains a Bonus d20 to Control + Medicine Tasks to treat an Injury from a Lethal attack.*
- **Head Nurse:** Medical department only. On almost any Federation starship, sickbay is staffed by a number of nurses, who assist the doctors on board with treating patients. There is, however, always a senior nurse – with the most experience, who works closely with the chief medical officer in managing the nursing staff. *The head nurse may substitute their Medicine Discipline in place of Command whenever attempting to coordinate or direct the medical staff on board the ship. Per the Direct Task, this may only be used with characters subordinate to the head nurse, and thus would not apply to doctors or surgeons.*
- **Anesthesiologists:** Medical department only. These medical professionals are experts in treating pain and ensuring that patients do not suffer during the course of their treatments. This is of particular importance during major surgeries and other invasive treatments, as the anesthesiologist is also responsible for monitoring the patient's vital signs and making adjustments to medications during the proceedings. This allows the surgeons and physicians to focus on the task at hand. *When the anesthesiologist is providing assistance during a Medicine Task, they do not count against any limit on the number of characters that may assist.*
- **Physician's Assistants:** Medical department only. Filling a role between doctor and nurse, physician's assistants are trained medical personnel that have attended medical school, but are not full doctors. Unlike nurses, however, they have sufficient training to diagnose and treat most minor to moderate conditions, and can make medical recommendations as well as prescribe medications. For more complex or life-threatening conditions, the physician's assistant will call in a full doctor and then provide assistance. *When providing assistance to another character attempting a Medicine Task on a patient that the physician's assistant has already treated with a successful Medicine Task – the physician's assistant provides two d20s to the Dice Pool instead of the usual one.*



DOCTOR'S ORDERS

When it comes to the physical and mental health of the crew aboard a Starfleet vessel, no one – not even the captain – outranks the chief medical officer. The senior physician aboard has the power to temporarily or permanently relieve any officer, including the ship's captain, if they feel that said individual's mental or physical health is impaired. Should the CMO invoke this authority over the captain, they should expect an unpleasant encounter, as captains are not accustomed to being told what to do on their ships.

Should this scenario play out in game, it is likely to be between the characters of two Players. These situations can create exceptionally interesting drama and conflict between characters, but should never do so between Players. Gamemasters are encouraged to use the Social Conflict rules when resolving these encounters between a ship's captain and its doctor. Just because a physician has the capability to relieve the captain doesn't necessarily mean they have the emotional fortitude to see it through.

As an example of dramatic Social Conflict between two main characters: during the events of the Season 4 episode of *Star Trek: Voyager* – titled “Year of Hell,”

the crew of the *U.S.S. Voyager* underwent a prolonged period of dangerous encounters, caused by temporal manipulations by the Krenim scientist, Annorax. As one catastrophe after another left the ship badly damaged and many of the crew dead or injured, Captain Janeway took it upon herself to perform many of the desperately needed repairs – often at great risk and impact to her life and health. The Doctor became increasingly concerned and repeatedly attempted to convince her to restrict her activities. At first, he merely expressed this concern and requested that she be more careful. As the situation escalated, he eventually felt forced to confront her, and when it became clear she would not heed his medical advice, invoked Starfleet Medical Regulation 121 Section A, and relieved her of her active command.

MEDICINE IN PLAY

Each Discipline is an important part of a character's makeup, but what it signifies for any given character can vary. This section looks at what the Medicine Discipline may mean for a character at especially high or low ratings. These are suggestions, but may help Players visualize a character and how Disciplines reflect their nature.

MEDICINE SCORE OF 1

With a Medicine score of 1, characters have only a rudimentary understanding of life sciences and are capable of dealing with only the most basic medical issues. This means that the characters are more likely to cause harm than to heal, even when they have a full set of medical instruments at their disposal. They will likely find basic Medicine-related Tasks challenging and their ability to assist true medical professionals will be fairly limited. Characters at this level will struggle to identify anything beyond the most basic of medical equipment and will likely have no idea how they function.

MEDICINE SCORE OF 2 OR 3

At a score of 2 to 3, characters have a reasonable education in the medical sciences – enough to successfully apply basic and advanced forms of first aid, and more importantly, to recognize when a medical situation is beyond them and requires more experienced responders. These characters know their way around a sickbay and can readily make use of most of the specialized equipment if the need arises, though challenging Medicine Tasks are likely to prove difficult without extensive assistance and support. Most Starfleet graduates obtain this level of medical training as part of their Academy courses and can be trusted to provide attending care during triage situations.

MEDICINE SCORE OF 4 OR 5

At this level of training, the character is a qualified medical professional and has completed medical school, along with supplemental training in the vein of internships, residencies, and fellowships. They are likely to possess multiple specialties and may have obtained some renown in the medical community through pure research or the development of new treatments, cures, and surgical techniques. They have a deep understanding of the physical form and can comfortably operate on dozens of species. Except in very rare circumstances, the senior medical staff members aboard a starship are all likely to have Medicine Discipline scores at this level.

OTHER DISCIPLINES

As a single Discipline can define a character's identity in a variety of interesting ways, combinations of Disciplines can provide interesting context. The character's two highest Disciplines can be a definitive part of how they approach problems.

COMMAND

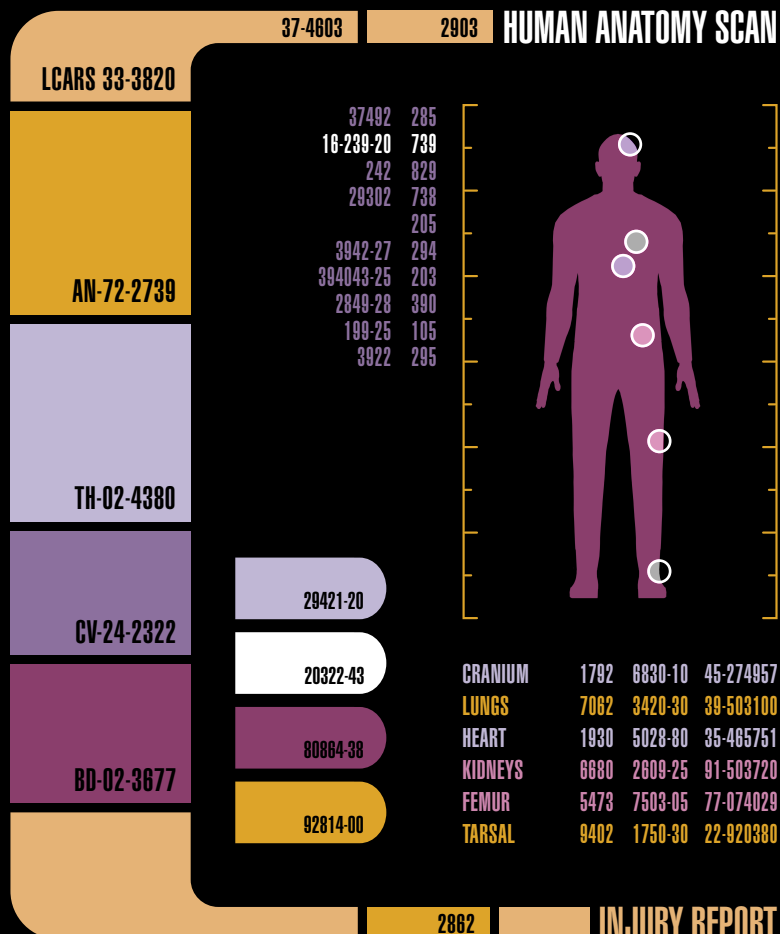
Inevitably, running a medical clinic, surgery center, or sickbay requires the same skills and affinities as a starship operations department or even a starship itself. Characters with high Medicine and Command Disciplines are not only able to treat illness, both physical and mental, but also able to effectively coordinate groups, communicate and negotiate, and lead subordinates. This combination is essential to any chief medical officer who needs to be able to lead the medical staff on board a ship or starbase. High Command is also useful for anyone who serves as a counselor.

Example: *Beverly Crusher, chief medical officer of the U.S.S. Enterprise, and former head of Starfleet Medical, is a character with high Command and high Medicine. Deanna Troi is a different type, using her Disciplines and training as a counselor to assist during diplomatic missions.*

CONN

While fairly uncommon, there are medical professionals who also are capable pilots and able to effectively operate most, if not all, ship's systems. Alternatively, the character may have traveled extensively and has knowledge of numerous alien species and their customs, as well as a comfortable knowledge of stellar navigation and star charts.

Example: *At one point during its historic mission, Doctor Phlox was required to operate the Enterprise NX-01 for over four days, completely alone – demonstrating a reasonable level of Conn in addition to his training in Medicine. Tom Paris served as a field medic as well as being the senior flight officer aboard the U.S.S. Voyager – though this was out of necessity rather than medical expertise.*



ENGINEERING

Possessing a deep understanding of both the organic and inorganic, characters with high scores in both Engineering and Medicine are capable of making the most of both in service to their patients. Often these individuals are experts in cybernetics and can diagnose physical ailments as easily as troubleshoot faulty relaying and circuitry. Interestingly, characters with this combination will often think of technology and starships as living beings and approach Engineering challenges the same way they would a patient. Conversely, they may instead view patients with a cold, logical, and methodical approach that would be more fitting while performing maintenance on a warp core.

Example: *Following the modification of his EMH programming, the Doctor aboard U.S.S. Voyager incorporated an extensive database of technical and engineering principles allowing him to expertly modify his own program but also to respond to emergencies both biological and technical.*

SCIENCE

Pure life scientists, characters with high scores in both Medicine and Science are at the cutting edge of medical research and development. These individuals are most commonly found in medical research labs or at the frontiers of Federation space, investigating and cataloging new strains of flora and fauna in hopes of developing new treatments for stubborn diseases. Similarly, they may be focused on the investigation of mysterious outbreaks or mutated bacteria in hopes of containing and preventing their spread. Characters with this combination are most likely to call upon the scientific method when attempting to overcome significant Medical Tasks.

Example: *Doctor Leonard McCoy was a highly talented doctor, scientist, exobiologist, and psychologist who served as a chief medical officer in Starfleet in the 23rd and 24th centuries. While on Janus VI, Doctor McCoy was the first doctor and exobiologist to study the Horta, and used a combination of skills to fashion a thermal concrete bandage for the wounded silicon-based lifeform. His gift for combining scientific knowledge with medical know-how illustrates high levels of both the Science and Medicine Disciplines.*

SECURITY

While they tend to avoid physical conflict, which may lead to fatalities, there are those that must treat soldiers on the battlefield. These individuals must be able to defend themselves in order to do their job. Some characters, however, may simply enjoy martial arts or target shooting as a hobby and thus have honed and developed these skills. Characters with high levels of Security and Medicine are equally comfortable in a fire-fight or surgery center.

Example: *Dr. Julian Bashir served as the chief medical officer aboard Deep Space 9, but would eventually*

become involved with the secretive organization, Section 31, during the Dominion War. While he never became a full operative, his skill in clandestine and combat operations were advanced enough to be offered a position within the group.

MEDICINE FOCUSES

This section provides a selection of Focuses that may be particularly useful or interesting for a medical officer, and a brief discussion of what a Focus represents or how it could be used. Focuses are not necessary: a character can know about any of these areas of expertise without having an associated Focus. Having the Focus indicates an ability to gain 2 successes when rolling equal to or under Medicine Discipline when a focused area of expertise is relevant.

Deliberately, and as in real life, there is overlap between different Focuses. Different fields of study and expertise inform one another, and individuals may develop similar skills from differing origins.

- **Anesthesiology:** The study of pain management and anesthesia for use during major, invasive medical procedures, as well as therapeutic treatments. This also can cover the monitoring patient's vital signs.
- **Biology/Xenobiology:** The study of biological organisms, and their biological processes is of great importance to medical professionals. Characters with this Focus are extremely knowledgeable in numerous species, both humanoid and not – as well as fauna native to dozens of worlds. This Focus can often be used to provide background information on a patient's physiology prior to attempting medical treatment.
- **Dentistry:** This field of medicine focuses on treating the mouth, teeth and gums. Advances in personal care have made routine dentist visits effectively painless for most humanoids, however, there is an ever-increasing need for dentists capable of operating on species such as Klingons, Ferengi or Nausicaans.
- **Emergency Medicine:** This Focus provides the character with in-depth knowledge and training required to make immediate decisions to prevent loss of life or further major medical complications. These individuals are most often found in emergency response groups as well as within the trauma ward of medical facilities.
- **Guided Therapy:** While there are many prescriptions that may be used to treat mental and neurological conditions – for low intensity situations; structured, guided therapy

and meditation can often be sufficient to reduce a patient's stress levels and improve overall mental wellbeing. This Focus can be used anytime the character is attempting to provide counseling to another individual in a structured environment.

- **Imaging Systems:** Modern medical science depends heavily on the state-of-the-art imaging equipment that allows physicians to literally see into a patient's body and directly identify ailments and damaged tissues. However, there are some individuals that are extremely well versed in the use of this technology and able to obtain information that others cannot. This Focus can be used any time an imaging device is used in the course of a Task or Challenge, where the quality and clarity of information is of particular value.
- **Immunology:** Characters with this Focus are well trained in the body's natural immune system, including how it identifies and reacts to foreign bodies to prevent the spread of infections. In addition, this Focus also provides the characters with extensive understanding of the disorders of the immune system and potential ways to prevent or treat autoimmune disorders.
- **Internal Medicine:** The broad study of internal organs. This Focus can be used any time the physician is dealing with the diagnosis and treatment of the internal organs – specifically those within the chest and abdomen.
- **Medical Toxicology:** Specializing in the treatment of injuries originating from exposure to drugs and chemicals, as well as biological and radiological contaminants. Further, characters with this Focus are extremely knowledgeable in counter-agents to prevent lasting damage, and may even be able to identify local flora capable of meeting those needs.
- **Neuropsychology/psychiatry:** A subspecialty that deals with diseases of the nervous system, especially when it results in emotional or mental disorders. Characters with this Focus possess a strong understanding of both the physical structure of the brain as well as how that drives emotional and thought processes.
- **Pediatrics:** This Focus applies whenever the character is engaged in the treatment of children or child development. As a broad area of study, this can overlap many other fields of medical sciences, but in each case – the common factor is children.
- **Psychiatry:** The study of intense mental and emotional disorders, education and training in psychiatry allows the character to identify the disorder in question as well as potentially predict the patient's behavior patterns and recommend treatment options.

- **Psychosomatic Disorders:** A interdisciplinary field of study that considers the interpersonal and communal relationships and the resulting stresses those relationships can cause, particularly when those stresses result in other physical symptoms. This Focus is used whenever the medical professional is attempting to diagnose or treat ailments that are believed to be from social or emotional stress.

- **Rheumatology:** The medical specialty dealing with the diseases of joints, bones, and connective tissues. This Focus can be used whenever the physician is attempting to determine the cause of recurring pain or identifying degenerative conditions affecting the joints, muscles, and bones.

- **Stress Disorders:** One of the most common mental ailments that Starfleet officers suffer from, stress disorders appear suddenly in nearly any individual when the circumstances are right. This usually involves some form of physical or emotional trauma, but the patient may not even be aware of how traumatic the event truly was for them. This Focus allows for the accurate identification of different kinds of disorders, as well as the pharmacological and homeopathic methods of treatment.

- **Surgery:** This Focus, as its name implies, covers surgical procedures of all kinds and any instance of when the treatment of Injuries requires surgical intervention. It also covers the tools and equipment required to perform a successful surgery and any particular concerns or issues that may arise when performing surgery on species.

MEDICINE TALENTS

This section provides additional Talents suited to medical officers and characters with a high Medicine Discipline score. Each Talent may only be selected once unless otherwise noted. Players are free to rename the Talents they select to suit their own tastes and the backgrounds of their characters. This will not affect the rules for a Talent.

BEDSIDE MANNER

Requirements: Command 3+ and Medicine 3+

When the character succeeds at a Medicine Task to heal another's Injury, the character may immediately remove a personal Complication from the patient, even if that Complication was unrelated to the treated Injury. In addition, whenever this character attempts a Reputation Check, they are considered to have one additional positive influence.

CHIEF OF STAFF

Requirements: Medicine 3+ and Command 3+

When using the Medicine Discipline to provide assistance to another character attempting a Medicine

Task, all characters providing assistance may reroll one d20 in their dice pool.

CYBERNETICIST

Requirements: Engineering 3+ and Medicine 3+

Whenever the character attempts a Task to work on, install, or remove a cybernetic device from a patient, they add a d20 to their dice pool.

FELLOWSHIP SPECIALTY

Requirement: Medicine 4+

Select a Focus. When you succeed at a Medicine Task where that Focus applies, the cost of the *Create Advantage* Momentum spend is reduced by 1, to a minimum of 1.

FIELD MEDIC

Requirements: Medicine 3+ and Security 2+

Through experience and training, the stress of battle fades when there's a patient in need. When attempting a Medicine Task while in the midst of combat, you may ignore the first Complication that would increase the Difficulty of this Task.

HEALING HANDS

Requirements: Medicine 3+ and Control 9+

When attempting the **Control + Medicine** Task to heal Injury-related Complications (core rulebook, p.177), reduce the Difficulty by 1, to a minimum of 1.

HEART, BODY AND MIND

Requirements: Command 2+ and Medicine 3+

Whenever you Assist a character with the *Recover* Combat Task, you gain 1 bonus Momentum that can only be spent on the active character to recover Stress.

I'M A DOCTOR, NOT A...

Requirement: Medicine 3+

When this Talent is purchased, select a Discipline with a score of 1. Once per scene, before attempting a Task using the selected Discipline, a point of Determination may be spent to substitute the character's Medicine Score in place of that Discipline. This does not have to be linked to a Value.

INSIGHTFUL GUIDANCE

Requirements: Command 2+ and Medicine 3+

Whenever you Assist a character, who is in a Social Conflict, using your knowledge of psychology or emotional states, that character is considered to have an Advantage in addition to the normal benefits provided by your Assist.

POSITIVE REINFORCEMENT

Requirements: Ship's Counselor role, Medicine 3+ and Presence 9+

You have a special skill for filling others with confidence and self-assuredness. Once per mission, you may attempt a **Presence + Medicine** Task with a Difficulty of 3, while providing emotional or mental treatment for another character. Success creates a personal Advantage for your



patient that lasts until the end of the mission. In addition to the normal effects of the Trait, that character can reroll their dice pool, as if they'd spent a point of Determination, once until the end of the mission. If the Task that the character used their reroll on fails, they lose the Advantage created by this Talent.

PRACTICE MAKES PERFECT

Requirements: Medicine 3+ and Reason 8+

Once per scene, after the character has succeeded on a Medicine Task relating to the treatment of a patient, reduce the Difficulty of the next Medicine Task relating to that patient by 1.

PSYCHOANALYST

Requirements: Medicine 3+ and a psychology related Focus

When you use the Medicine Discipline during a Social Conflict you may increase the Complication range of your Task by a number of steps. For each step you may ask a single question as if you'd spent Momentum on *Obtain Information*. Any Complications generated from this Task results in the individual you are interacting with becoming offended or upset with being "analyzed."

SURGERY SAVANT

Requirement: Medicine 4+

When attempting a Medicine Task during an Extended Task relating to surgery, the character gains the *Triumphant* Effect (core rulebook, p.91).

NEURAL CORTEX ACTIVITY

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22842	18473	45-62104	22793	5800	37592	6825	22803
6939	5030	61-30586	352	2640	2247	25126	2439
6042	20603	80-03720	69482	92422	77359	3690	302

28-1850

20-4285

25-4593

35-4850

4205

2086

3805

4750

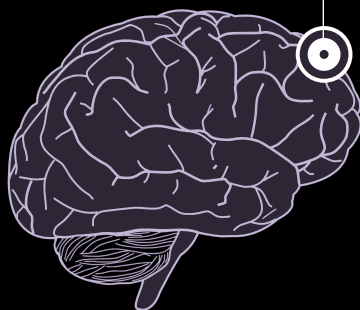
BIO-NEURAL ANALYSIS

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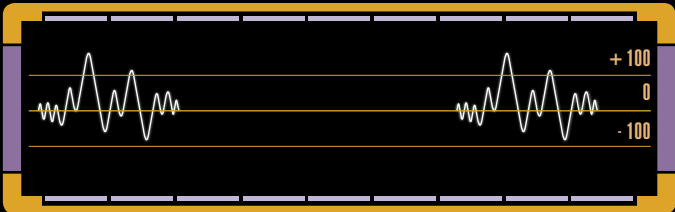
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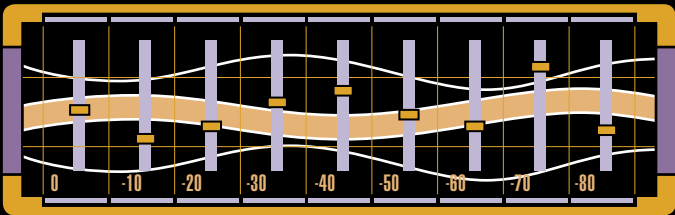
3604

2005

NEURON ACTIVITY MONITOR



BRAINWAVE ENERGY PHASE VARIANT



3902

1040

7402

1855

2275

BIOFUNCTION STATUS

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2980

3603

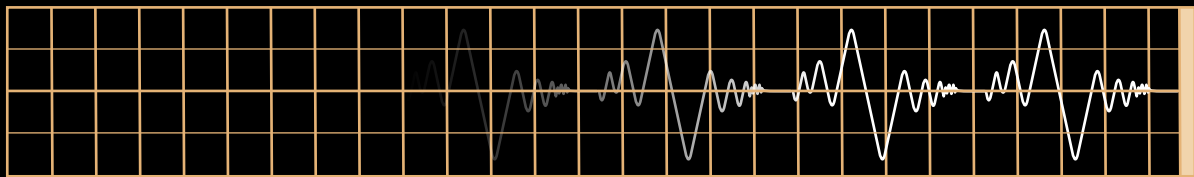
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5299

4036

LIFE FUNCTION STATUS

51-39575



20403 60470 305-0739 3950 61940 10574 16445 40056

CHAPTER 04.00

RESEARCH AND DEVELOPMENT

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RESEARCH AND DEVELOPMENT

MEDICAL EQUIPMENT

"PLEASE STATE THE NATURE OF THE MEDICAL EMERGENCY"

— EMERGENCY MEDICAL HOLOGRAM

Medicine is an inherently complex field, and Starfleet medical officers have access to a wealth of medical equipment. Some of it is portable and can be taken along on away team missions, while much of it can only be used in a hospital or sickbay. The following are some of the more important and common medical devices that have not previously been described, all granting a particular Advantage or rule with its use. Common equipment that is part of a medkit, which has no Opportunity Cost, may not have a unique benefit.

BIOBED

Almost everyone who has ever been to a hospital has experience with this ubiquitous device, used in hospitals and sickbays all across the Federation – all beds and examination tables in a sickbay are biobeds. This comfortable bed is equipped with dozens of medical and biological sensors that continuously scan a patient lying on it, providing both immediate data and a record of the entire time the patient has been on the diagnostic bed. Biobeds are the more advanced successor to the medical diagnostic beds of the 23rd century, and like that earlier version, biobeds are designed to connect to a surgical support frame that fits on top of the biobed and provides a sterifield, a cardiostimulator, and other devices useful for performing delicate or potentially risky surgeries. Biobeds can also create force fields to restrain patients.

- Using a biobed: a doctor performing surgery to heal a Lethal Injury ignores any Difficulty increase due to a Player Character spending Determination to ignore the Injury's effects, or any Injury-related Complications.

BLOOD GAS INFUSER

This small device is attached to the patient to provide their body with oxygen when they have temporary breathing problems. It is normally attached to the patient's head in order to prioritize providing oxygen to their brain, and can only be used in a sickbay or hospital, since the device connects to a larger unit that oxygenates the patient's blood. Blood gas infusers are designed for short-term operation and cannot safely be used for more than a few hours at a time.

- This device allows a doctor to temporarily keep a patient alive, even if the patient cannot breathe normally.

BONE REGENERATOR

(Opportunity Cost 1)

Also called a bone-knitting laser or an osteo-regenerator, this sturdy handheld device causes the bones it is used on to rapidly heal, allowing a medical officer to repair a fracture in a few minutes. This device is a standard component of any Starfleet medical or emergency kit.

- This device reduces the Difficulty of all Medicine rolls involving broken bones by 2, and also allows doctors to completely repair broken bones as part of a First Aid Task.

CARDIOSTIMULATOR

As the name suggests, this medical device is used to both restart stopped hearts, and to regulate and stabilize irregular heartbeats. Medical officers operate this small hand-held device by applying it to the patient's chest, much like late 20th century electronic defibrillator paddles. However, cardiostimulators are safer, less painful, and far more reliable.

- Characters attempting First Aid on another character from a Lethal Injury in combat may reroll a d20.

CORTICAL SCANNER

This small handheld device performs the same functions as a neurocortical monitor (core rulebook, p.197), except that it is designed to be used by a physician to make short-term scans. In addition to recording the activity of the subject's brain, medical officers can use this device to modify the patient's brainwaves, inducing sleep or wakefulness, and help subjects more rapidly regain consciousness after a blow to the head or after falling into a coma.

- Doctors may use this device to make a First Aid Task with a Difficulty of 1 to help someone unable to otherwise fall asleep, or to help someone who has been drugged, is very deeply asleep, or is in a coma wake up easily and rapidly.



CORTICAL STIMULATOR

(Opportunity Cost 1)

Designed to be attached to the head of humanoids, this small device uses electrical impulses to attempt to normalize and even restart the neural activity of sentient beings. It is commonly used to treat seizures, hallucinations, and similar short-term neurological problems and to attempt to awaken patients who are in comas, but physicians can also use it in life-and-death situations to attempt to restart the brainwaves of a humanoid who has recently died. When using this device to revive the dead, time is of the essence. The longer a humanoid's neural activity has ceased, the greater the chance that they cannot be revived. Also, any traumatic injuries or other problems that caused the patient's death must be repaired simultaneously, or this device will not be able to keep the patient's brainwaves going.

- Using a cortical stimulator on a patient allows doctors to make a Medicine roll to attempt to revive patients who have died within the last 5 minutes. Doctors can also use this device to reduce the Difficulty of any attempt to revive patients who are in a coma or otherwise unconscious by 1.

NEURAL CALIPER

This small, exceedingly safe device is the 24th century's answer to safe surgical anesthesia. When placed on the patient's forehead and activated, it causes the patient to rapidly lose consciousness, permitting surgery and other medical procedures to be safely and painlessly performed.

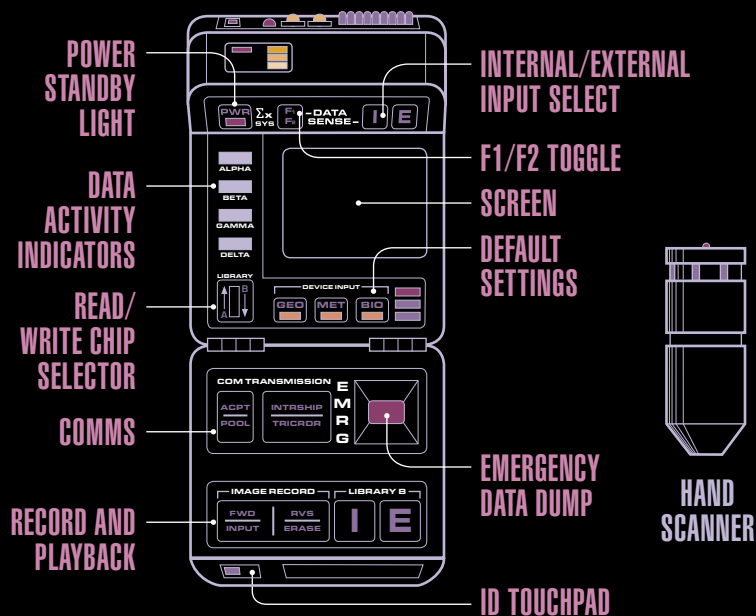
Once deactivated, it also allows patients to awaken rapidly and with minimal disorientation.

- This is a standard medical device that provides no special benefits, but it can be used to safely render unwilling targets unconscious by successfully grappling them and then succeeding at a Medicine Task with a Difficulty of 1 to apply the device. If someone else has successfully grappled the target, using this device is a Task with a Difficulty of 0.

NEURAL PAD

This unusual device connects the nervous systems of two humanoids. In the event that some drug, illness, or injury impairs a patient's nervous system in a life-threatening fashion, a neural pad allows the physician to temporarily stabilize this patient until they can be moved to a hospital or sickbay. A physician connects part of this device to the base of the patient's skull and the other to the base of the skull of a healthy individual. Then, they connect both devices to a medical tricorder with cables. Once operational, a neural pad allows the healthy individual's nervous system to boost and regulate patient's neural activity. This device is generally sufficient to maintain the patient's autonomic nervous system for enough time for them to be safely moved to a treatment facility where longer-term solutions can be utilized. Use of a neural pad normally has little risk, but can potentially be dangerous if used on an unfamiliar species, due to the possibility of some form of negative neural feedback.

MEDICAL TRICORDER



Placing patients in stasis in the hope that a treatment will be discovered later is often a desperate attempt to avoid the patient's death, since it is only used after all possible treatments and procedures have already been tried. As a result, patients are typically only placed in stasis units when they are on the verge of death, and may well be too ill to survive any cure that is developed later. A typical stasis unit is a tube roughly a meter in diameter and slightly more than two meters long. While some are built into the facility they are located in, most are designed to be transported, while continuing to maintain their patient in stasis.

- Lethally injured characters placed in stasis are stabilized until taken out of the unit.

STERI-FIELD

This low powered force field is built into the structure of all modern sickbays and other medical facilities, where it is projected around patients undergoing surgery or other forms of invasive medical treatment that could pose a risk of infection. This field does not impede movement; instead it cleans everything passing through it, removing dirt, bacteria, viruses, and other contaminants on the surfaces of physicians' skin as well as from their clothing and medical instruments.

- This device provides no bonuses as it is a part of all standard surgical equipment. Failure to use a steri-field requires the physician to succeed at a Medicine Task with a Difficulty of 1 to avoid any chance of infection. Failure means that the patient must attempt a **Fitness + Security** Task with a Difficulty of 1 to avoid suffering 1 additional point of Stress due to infection.

SUBDERMAL BIOPROBES

(Opportunity Cost 1 if it also has a homing beacon)

These devices are small sensors designed to be injected into living creatures. They record, and, if desired, can transmit detailed physiological data about the subject, and can also easily be modified to include a homing beacon that allows a starship to maintain a continuous transporter lock on the subject, and potentially beam up the subject the instant she suffers any injury or becomes sufficiently stressed. Subdermal bioprobes can also be set to detect energy fields and environmental conditions in the subject's immediate vicinity and can be used to determine the precise modulation of any force fields the subject passes through.

- This device allows a physician to remotely monitor a patient's condition. If equipped with a homing beacon, it also permits a transporter operator to maintain a continuous transporter lock on the subject, as long as nothing blocks the device's signal.

TEMPORARY HOLOGRAPHIC ORGANS

While rarely required, the function of missing or failing organs can be duplicated using the same holographic projector installed in sickbays to operate the EMH. These

- Physicians who use this device when attempting to stabilize seriously ill or injured patients, so they can survive transport to a hospital or sickbay may roll one additional d20 on their First Aid Task.

PRESSOR FIELD

This device is available in every modern sickbay and hospital. It generates a weak force field that can be precisely calibrated and directed so that the force field applies pressure during surgery. It is often used to temporarily stop bleeding until a blood vessel can be repaired and in other situations where precise, gentle pressure is needed.

- Physicians who use pressor fields during surgery may reroll 1d20.

STASIS UNIT

(Opportunity Cost 1, Escalation 2)

Originally developed as a means to suspend animation in passengers on sub-light spacecraft, where journeys could take up to centuries, once warp drive was developed stasis units were primarily used to either keep critically ill or injured patients alive until they could be transported to treatment or, if all known treatments fail, to preserve the still living patient until a treatment for their illness could be developed. Using stasis units to transport critically ill or injured patients primarily occurs on remote outposts or small starships with limited or damaged medical facilities, both of which often contain stasis units for use by anyone who suffers from an injury or illness too serious for the limited local facilities to manage. *Danube*-class runabouts and starships that are too small to accommodate a full sickbay are equipped with stasis units.

organs can precisely duplicate the function of almost any living organ for an indefinite period of time, but suffer from the serious drawback that the patient must remain immobile because the holographic projector cannot maintain the precise positioning necessary for the organs to function if the patient moves. Advances in holographic technology could potentially overcome this problem, but the patient would still be confined to sickbay or some other location with a holographic projector, such as a holodeck. Another downside of this technology is that it only functions if the patient's original organ or organs have been removed, since the holographic organ requires space inside the patient to exist. Despite these many drawbacks, holographic organs can allow badly injured patients to survive until functional organs can be repaired or grown or a mechanical substitute fabricated and transplanted into the patient.

- If the physician is willing to temporarily remove the damaged or diseased organs, and the patient is willing to remain completely immobile, this device permits the doctor to keep any patient alive, regardless of the trauma or disease they are suffering from. This device cannot replace a patient's brain, but it can temporarily replace any other organ or set of organs.

DRUGS

The Federation possesses a vast pharmacopeia of medicines. Some only work for a single species, but many function on most or all humanoid. However, detailed scans using a diagnostic bed or at least a medical tricorder are necessary to determine if a specific drug is likely to be safe or effective when used on a member of a humanoid species that is not in Starfleet's medical databases. The following are some of the drugs most often used by Starfleet medical officers.

ALKYSINE

Used immediately after a patient suffers a neurological damage, like a spinal injury, this drug usually lessens the effects of the damage.

ANETRIZINE

This injectable drug is used as a local anesthetic to either relieve localized pain or to permit localized surgery or other potentially painful medical treatment.

ARITHRAZINE

Used to treat radiation poisoning by deadly theta radiation, this drug can be given after exposure as a treatment or prior to likely exposure as a preventative against radiation damage.

AXONOL

This gaseous anesthetic rapidly renders patients unconscious and is sufficiently safe that it can also be used as a crowd control agent to quell riots by safely knocking the rioters

unconscious. Both anesthizine and neurozine are very similar drugs that can be used for the same purposes.

CERVALINE

An antirejection drug used to prevent rejection of transplanted tissue. To prevent a patient's body from rejecting a transplant, this drug must be given every few hours throughout the entire healing process.

CORDRAZINE

This powerful stimulant is used for patients experiencing cardiac arrest, to revive unconscious or comatose patients, or to stabilize patients who had come in contact with a dangerously powerful chemical that is depressing their metabolism. A more powerful version called tricordrazine is also widely used. An overdose of cordrazine can temporarily produce both delusions and violent paranoia.

COROPHIZINE

An antibiotic often used to prevent secondary infections caused by other illnesses.

CORTOLIN

This drug helps restore normal breathing functions in humanoids who have stopped breathing due to injury.

DERMALINE

This drug can be administered either as an injection or a gel applied to the patient's skin. It is used to treat first and second-degree burns.

DYLOVENE

A broad-spectrum antitoxin that is commonly used when someone has been poisoned by an unknown substance.

HYDROCORTILINE

A common pain medication often used for headaches.

HYRONALIN

This drug is used as a general treatment for radiation poisoning other than that caused by theta radiation. It can be given by injection both prior to exposure as a preventative and afterwards as a treatment. In gaseous form, it can safely be used to treat large number of humanoids simultaneously by introducing it into a starship's or building's air supply.

LECTRAZINE

This drug is used to stabilize humanoid cardiovascular and renal systems. When given in combination with hyronalin it provides enhanced protection against radiation.

TRI-OX COMPOUND

This common drug is injected to allow humanoids to function more comfortably and safely in low oxygen environments. It works by releasing oxygen directly into the patient's bloodstream. Each injection provides additional oxygen to the patient for up to an hour or two.

RESEARCH AND DEVELOPMENT

UNUSUAL LIFEFORMS

TRULY ALIEN BEINGS

Starfleet vessels have found life on countless worlds and even in deep space. Although most life is based on the same mixture of carbon, hydrogen, oxygen, and nitrogen found in Terran life and in almost all known humanoids, life based on silicon, diffuse gases, or even stable energy fields also exists. Life and even sentient life has also evolved on planets that would be instantly deadly to humanoids. Studying and attempting to understand the more unusual varieties of life continues to be an important part of any science officer's duties. The following are two of the most unusual and potentially interesting types of life Starfleet crews have encountered.

SPACEBORNE LIFEFORMS

One of the most unusual forms of life known to Federation researchers are those that live in space, and especially those that can propel themselves through space like living spacecraft. Some of these creatures are capable of traveling at warp speed. It is possible that the genetics of creatures capable of warp speed travel could be analyzed and used by bioengineers to create highly advanced living spacecraft. Also, studying the methods by which some spaceborne life can achieve warp speeds could potentially improve or even revolutionize warp drives. In theory, living creatures capable of traveling at warp speed could even be used to propel a spacecraft, in much the same way that sled dogs can pull a sled. However, some spaceborne lifeforms are also dangerous, and can attempt to infest, prey on, or devour starships.

There are several major types of spaceborne life. Although only known by one example, the deadliest was the infamous Crystalline Entity that destroyed several Federation colonies, including the Omicron Theta colony. This creature resembled a vast, fragile-looking crystal and its metabolism was based on directly converting organic material into energy. It could theoretically strip an entire planet of all life. There was some evidence that this creature was intelligent. It also could emit lower powered graviton pulses and seemed to use them as a form of communication. However, it was destroyed, and until another of its kind is encountered, further research into the

Crystalline Entity must remain speculative. It was defeated using a series of powerful graviton pulses, which eventually shattered it.

The most unusual spaceborne lifeforms are non-corporeal creatures composed of different types of gas. All known examples of these creatures are intelligent and capable of warp travel. However, they were also exceptionally alien creatures, and the infamous dikironium cloud creature was a deadly predator that could extract all iron from the blood of living creatures, a process that almost instantly killed its victims. This particular creature was especially powerful since it could manipulate gravitational fields and could also make small alterations in its position in the time stream, allowing it to both penetrate deflector shields and evade weapon's fire.

Currently, the only communications that have been established with intelligent gaseous spaceborne life have been both rudimentary and fleeting, but these few instances indicate that there is a potential to open communications and perhaps even diplomatic relations with an entirely new category of sentience. It is important to note that while these gaseous space dwelling creatures are classified as non-corporeal beings, they are composed of diffuse gases in combination with energy fields, rather than being made entirely from energy like many known varieties of non-corporeal lifeforms. In addition, none of these creatures appear to have previously been corporeal lifeforms that evolved into incorporeal form.

The third category of spaceborne life is the most familiar – creatures with organic bodies that can survive and move through space. There are a number of species of this type of spaceborne life, such as the entity that was captured and temporarily forced to become Farpoint station on Deneb IV. It could both live in space and travel at warp speed. At least some forms of organic spaceborne life are intelligent entities, and thus may possess a great deal of information about space, warp travel, and other forms of spaceborne life. Establishing communications with intelligent organic spaceborne lifeforms, and performing detailed biological studies of a variety of different types of corporeal spaceborne life could potentially yield a wealth of information that could advance biology, subspace

physics, and warp drive engineering. Studying these creatures might also be the first step in allowing the Federation to create living starships like Gomtuu (core rulebook, p.338).

NON-CORPOREAL LIFEFORMS

The most mysterious and most powerful types of life-forms Starfleet has discovered are non-corporeal lifeforms, a large number of which are sentient beings. The defining feature of most non-corporeal lifeforms is that they are made from energy fields and not matter. Some appear to be naturally occurring species like the Koinonians, while others, like the Organians and the transformed Zalkonians, were once corporeal sentient beings who evolved beyond their physical form and became non-corporeal lifeforms. The fact that Captain Jean-Luc Picard was beamed into an intelligent non-corporeal collective entity indicates that transporters can be adjusted to allow humanoids to temporarily assume non-corporeal form. Doing this may require the presence of an existing non-corporeal entity to beam the humanoid pattern into, but offers at least some potential for new forms of communication and understanding between humanoid and non-corporeal life.

The study of non-corporeal lifeforms can also provide insight into the future evolution of humanoid sentient life, as well as possibly providing information about the potent psychic or psychic-like powers that many non-corporeal species possess. While many non-corporeal lifeforms are willing to communicate with Federation starships, so far none have agreed to begin diplomatic relations and the vast majority of non-corporeal species that once had physical bodies consider corporeal sentient beings to be lesser creatures that, depending on the inclinations of the particular species, are to be protected, ignored, or even used for amusement. As with spaceborne life, establishing lasting communications and diplomatic relations with a non-corporeal species could be a major breakthrough for Starfleet.

DIKIRONIUM CLOUD CREATURE [NOTABLE NPC]

Composed of dikironium gas, these creatures are either invisible or appear as a thin mist. Their presence can be noticed by the sickly-sweet smell they give off. These creatures appear to be intelligent, but utterly hostile to corporeal life. Starfleet has only encountered one of these creatures, but it can breed and there are presumably others. These creatures most likely breed rarely, by fission, potentially producing hundreds or thousands of equally deadly offspring.

TRAITS: Dikironium Cloud

VALUE: Devourer of Iron-Based Blood

ATTRIBUTES

CONTROL 11

FITNESS 12

PRESENCE 07

DARING 10

INSIGHT 07

REASON 07

DISCIPLINES

COMMAND —

SECURITY 03

SCIENCE —

CONN 01

ENGINEERING —

MEDICINE —

FOCUSES: Gravity Manipulation

STRESS: 15

RESISTANCE: 4

ATTACKS:

- Consumption of Blood (Melee, 10▲ Area, Size 2H, Deadly, Debilitating)

SPECIAL RULES:

- Gaseous Creature:** This ravenous creature is a living cloud of gas that can spread itself across a space of a few meters. As part of the *Move* Minor Action, the Cloud can expand in size to cover a whole zone, putting itself within Reach of all characters inside that zone.
- Consumption Attack:** The Cloud's attack relies on getting into a living creature through the air, and so any EV suits, force fields, or other protective equipment stops a character being the target of the Cloud's attack.
- Invulnerable:** The Cloud is impervious to harm, and cannot be Injured in any way; attacks can be attempted, and damage is rolled as normal, and the creature has a Stress track, but it cannot suffer Injuries. Although the Cloud has a weakness to antimatter, which can cause Injuries if used to attack the creature.

KOINONIAN [NOTABLE NPC]

Unlike many non-corporeal lifeforms, Koinonians evolved in this form, and while they are powerful, their powers are far more limited than some other non-corporeal entities, seeming no wiser or more intelligent than most humanoids. After the corporeal beings they shared their world with destroyed themselves in a genocidal war, these creatures became aware of how fragile corporeal beings are and continue to feel guilt over not preventing the other species' destruction. Their energy emissions are detectable to ordinary sensors and a starship's shields can keep them out, although with effort they can briefly overload these shields. They can read minds, move and manipulate matter, cause living beings to fall unconscious, and create temporary constructs similar to those found in a holodeck, but more realistic. However, they cannot revive the dead, create living beings, or teleport themselves or any matter from one location to another. They must instead move their own non-corporeal form from one location to another, which they can do with great speed. Nothing short of a starship's weapons is likely to affect

these powerful beings. They are peaceful, but also lack understanding of organic lifeforms.

TRAITS: Koinonian

VALUES:

- We Must Aton for Letting The Corporeals Destroy Themselves
- Reduce the Suffering of Others

ATTRIBUTES

CONTROL	08	FITNESS	08	PRESENCE	09
DARING	08	INSIGHT	07	REASON	09

DISCIPLINES

COMMAND	01	SECURITY	02	SCIENCE	02
CONN	02	ENGINEERING	02	MEDICINE	—

FOCUSES: Anti-matter Manipulation, Telepathy

STRESS: 10 **RESISTANCE:** 2

ATTACKS:

- Matter Manipulation (Ranged, 5▲, Size 2H, Non-lethal)

SPECIAL RULES:

- **Telepathy (Talent)**
- **Matter/Antimatter Manipulation:** As a **Control + Engineering or Science** Task with a Difficulty of 2, a Koinonian can create an object or replica of an entity that functions almost identically to an original – but it cannot create a living being. This creation is treated as a Trait, rather than a new character in itself.
- **Incorporeal:** As an energy being, the Koinonian can move through matter.

ORGANIAN [NOTABLE NPC]

The Organians are exceptionally powerful entities whose powers can affect thousands of targets many light years away. Millions of years ago, they were corporeal humanoids, but evolved into creatures of pure energy with seemingly limitless powers. When visitors came to their planet, they appeared to be peaceful pre-industrial humanoids and desired only to be left in peace. However, they also abhorred the senseless taking of life and intervened in the affairs of less evolved species. These vastly powerful beings are roughly equal in power to the Q (see p.60 for details of the Q's power). The Organians are less willing to display the full extent of their powers than the Q, but can do so when they consider it necessary.

TRAITS: Organian

VALUE: Peace and Privacy

ATTRIBUTES

CONTROL	08	FITNESS	08	PRESENCE	10
DARING	07	INSIGHT	10	REASON	11

DISCIPLINES

COMMAND	03	SECURITY	01	SCIENCE	02
CONN	—	ENGINEERING	01	MEDICINE	02

FOCUSES: Diplomacy, Resurrection, Astral Projection, Telepathic Control

STRESS: 9 **RESISTANCE:** 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Telepathic Control:** An Organian can occupy the body of another character. This is an opposed **Reason + Command** Task with a Difficulty of 1. Success means the Organian controls the character for one round or scene, +1 round or scene per Threat spent.
- **Far Sight:** An Organian can attempt an Insight Task to observe events that are occurring in a scene in which they are not present. The Difficulty varies depending on the distance and the obscurity of the event.
- **Energy Resistance:** Organians are highly resistant to energy beam weapons, and have 4 Resistance against such attacks.
- **Ultimate Truth:** The Gamemaster can create a Trait about the scene, even if it does not develop from actions in the scene, as the Organians change the circumstances of the universe during this mission.

TRANSFORMED ZALKONIAN [NOTABLE NPC]

Corporeal Zalkonians are relatively ordinary humanoids belonging to a somewhat aggressive and authoritarian culture which values conformity and isolation and whose technology is slightly ahead of the Federation's. However, this species is in the process of evolving into powerful non-corporeal entities. No non-corporeal Zalkonians have existed for more than a few years, and while they are relatively powerful now, no one knows how mighty they may eventually become. Currently, no one in the Federation knows if transformed Zalkonians can travel at warp speed or simply transport themselves from one star system to another. Currently their powers seem to be less overwhelming and far-reaching than those of the Organians or the Q, but this may change as they learn the full extent of their powers and continue to evolve. Like the Organians and the Q, Starfleet scientists believe that Federation weapons and shields will have no effect on these impressive beings.

TRAITS: Transformed Zalkonian

VALUE: Evolve and Help Others of Their Kind Transform

ATTRIBUTES

CONTROL

07

FITNESS

08

PRESENCE

11

DARING

08

INSIGHT

10

REASON

10

DISCIPLINES

COMMAND

01

SECURITY

02

SCIENCE

02

CONN

01

ENGINEERING

—

MEDICINE

03

FOCUSES: Recovery

ATTACKS:

- Suffocation (Ranged, 5▲ Area, Size 1H)

SPECIAL RULES

- **Resurrection:** Zalkonian can resurrect the recently dead. By spending 3 Threat, and succeeding at an **Insight + Medicine** Task with a Difficulty of 2, the Zalkonian can bring a character back to life. If the character is a Player Character or an ally of the Player Characters, the Zalkonian adds 3 Threat to the GM's pool.
- **Incorporeal:** As an energy being, the Zalkonian can move through matter.
- **Immune to Vacuum**
- **Teleportation:** The Zalkonian can transport itself and other characters thousands of kilometers in an instant, by attempting a **Control + Science** Task with a base Difficulty of 2. The Difficulty increases by the number of additional characters the Zalkonian wishes to instantly transport.

CHAPTER 04.30

RESEARCH AND DEVELOPMENT SCIENTIFIC MYSTERIES

THE FINAL FRONTIER

Science in the 24th century is exceedingly advanced, and the Federation has made great headway in understanding all fields of science, but there is also infinitely more yet to learn. Every previously unknown civilization a Starfleet exploration mission discovers and every new type of stellar phenomenon that Starfleet telescopes or stellar surveys observes represents a new scientific mystery, but there are also a number of enduring mysteries that Starfleet has repeatedly encountered, and which are especially good choices for research.

PARALLEL UNIVERSES

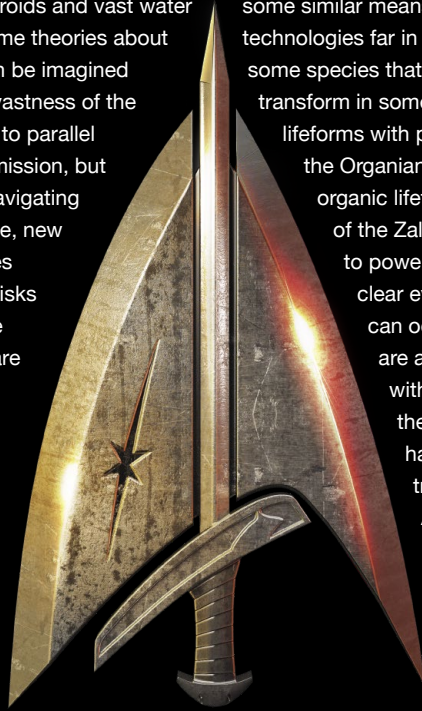
In addition to the unfortunately violent and chaotic mirror universe, there are clearly thousands or perhaps even tens of millions or more other parallel universes, each of which is

a complete universe filled with stars, starships, and sentient beings. Brief periods of contact have been made with some, but as of 2371 no reliable method has been created to allow starships to visit different parallel universes and then return. The exploration of parallel universes offers many of the same opportunities that interstellar travel does, including the chance to explore new worlds and discover wonders. Only, in this case, these are wonders of what may be called the multiverse rather than simply the universe.

One of the most unusual aspects of travel to parallel universes is that most known parallel universes are similar and thus the same individuals and some of the same events are present there, offering Starfleet personnel the fascinating, and perhaps deeply uncomfortable, chance to meet versions of themselves who lived through different events or perhaps who dealt with very similar events but made different choices. According to 20th century physicist Hugh Everett's many worlds interpretation of quantum mechanics, every choice made by every sentient being, and perhaps every

interaction by every subatomic particle spawns two or more parallel universes which differ only by the fact that a singular event was different.

Of course, there is no reason that all, or even most, parallel universes must be similar. Theoretically possible options for parallel universes include a universe where physical laws are radically different and there are far fewer stars, but each one is hundreds of times larger than any known stars, while also being sufficiently long-lived to create hundreds of planets that evolved complex, intelligent life. Even stranger options are also possible, like an entire universe filled with fluid, or even filled with breathable air, where asteroids and vast water drops were home to life. According to some theories about parallel universes, every universe that can be imagined actually exists somewhere in the infinite vastness of the multiverse. A reliable method of traveling to parallel universes could revolutionize Starfleet's mission, but would also require solid techniques for navigating between parallel universes, and if possible, new types of sensors to scan parallel universes before actually visiting them. One of the risks of travel to parallel universes is that some universes could have physical laws that are sufficiently different that anyone leaving a well-shielded starship would die or perhaps even instantly evaporate. Also, not all parallel universes need to be made from matter. Universes where anti-matter is far more common than matter are entirely possible, meaning that any contact with a physical object from such a universe would create a vast explosion.



PSYCHIC POWERS

Although telepathy and empathy are understood by Starfleet, other forms of psychic powers, like the telekinesis produced by some humanoids who are exposed to the element kironide, or the vast but ultimately sanity-destroying powers that Dr. Elizabeth Dehner and Lieutenant Commander Gary Mitchell developed after being exposed to the galactic barrier remain enduring mysteries. Also, while the basics of telepathy are moderately well known, occasional feats like telepathic contact over interstellar distances is not. Learning to reliably utilize this type of telepathy could permit instantaneous communications across almost any distance and potentially through any barrier. In addition, while Starfleet has encountered psychic technologies like the ancient Vulcan Stone of Gol (core rulebook, pp.335-336), or the telepathic implants used for interrogation by the Prytt, the Federation has little understanding of such devices and does not currently use any psychic technologies. Breakthroughs in the study of psychic powers could lead to the creation of

new psychic technologies, or potentially even of the ability to unlock new psychic powers in the minds of psychic individuals or even to allow more sentient beings to use psychic powers.

SENTIENT EVOLUTION

One of the most important scientific mysteries known to the Federation is the fate of corporeal sentient species. Some obviously become extinct through war, natural disaster, or some similar means, including a species that possessed technologies far in advance of the Federation's. However, some species that avoid extinction eventually evolve and transform in some unknowable way into non-corporeal lifeforms with powerful abilities. The Metrons and the Organians both claim to have previously been organic lifeforms, and the ongoing transformation of the Zalkonians from biological humanoids to powerful non-corporeal lifeforms provides clear evidence that such transformations can occur. Unfortunately, the Zalkonians are an aggressive and isolationist species with technology more advanced than the Federation's, and their government hates and fears the individuals who are transforming into non-corporeal lifeforms. As a result, opportunities for further study of Zalkonian transformations are limited. In addition, most of the advanced non-corporeal lifeforms that Starfleet vessels have encountered are unwilling to share much of their knowledge with the Federation, in what seems to be an analog of the Prime Directive – they do not want to interfere with the natural development of the Federation's various sentient species.

In addition to making further attempts to contact and study the Zalkonians, another option for research into sentient evolution is a more generalized study of non-corporeal lifeforms, with a specific focus on how they evolve or otherwise come into being. Locating and studying creatures, intelligent or not, that can shift between a corporeal and a non-corporeal form as part of their life cycle would also help scientists understand this type of evolution, but first researchers must locate such a creature. Also, all known non-corporeal lifeforms that have evolved from organic sentients possess powers that resemble, but are far more powerful than, the psychic powers possessed by Vulcans and Betazoids. Psychic Starfleet officers might be able to better understand the process of evolution into non-corporeal form by making mental contact with such non-corporeal lifeforms. In addition, studying psychic powers might help scientists understand the transformation from corporeal to non-corporeal life.

USING REAL LIFE SCIENCE

One of the defining features of science fiction is that it draws at least somewhat from actual science. Warp fields, psychic powers, and subspace do not, as far as we know, exist, but other features of the *Star Trek* universe do, including antimatter, supernovas, black holes, and, in theory at least, wormholes. Gamemasters should consider using actual science in some science-focused scenarios. In addition to providing a nearly boundless source of inspiration, such scenarios can also allow Players to use their own scientific knowledge to help figure out the mystery, a process that can be both a lot of fun and which also foregrounds the importance of science to the scenario.

Good choices for sciences to borrow are astrophysics and quantum physics, and the few places that they combine. For example, black holes are objects so unimaginably dense and heavy that light can't escape from their gravity field. However, it's possible that rare astronomical events, and even deliberate action by sentient beings, could create tiny black holes (often called quantum black holes or quantum singularities) – that have a mass no greater than a large mountain or perhaps a small asteroid. These objects are harmless if you are more than a few kilometers away, and at that range they are also difficult to detect without advanced sensors. If one of these black holes hit a planet, it might pass right through it, causing some local earthquakes, but no other damage, since it's so small. However, it also might (if it wasn't moving very fast) end up in the exact center of the planet, slowly devouring it – meaning that the planet would need to be evacuated within a century or two and possibly sooner. As this black hole grows from eating the planet, increasingly destructive earthquakes would occur, until the planet entirely collapses into the black hole in a few thousand years. Also, due to reasons that, like almost all aspects of quantum physics, are difficult to explain, tiny black holes evaporate, releasing large quantities of heat, visible light, and even x-rays and gamma rays, meaning they are hot and not safe to be close to. The smaller they are, the more energy they emit and the faster they evaporate. They continue growing hotter and more dangerous, until they explode with a force that can destroy anything nearby. Romulan starships are powered by artificial quantum singularities, presumably feeding the singularity enough mass to keep it from shrinking too much and exploding. Other species might use natural quantum black holes to generate power for their civilization. If any of these quantum singularities ceased getting a regular supply of matter, they would eventually explode with sufficient force to devastate a continent.

Also, there are more than half a dozen types of supernovas, all of which are stupendously powerful astronomical events that are the result of large stars exploding at the end of their life. One of these types is the rare hypernova. These exceptional explosions are 100 times as powerful as an ordinary supernova. A hypernova could render all star systems within 50 or even 100 light years lifeless, but the wave of destruction from this exploding star expands at the speed of a light, giving worlds a chance to evacuate, if someone knows the supernova or hypernova has happened. Obviously, this means that Federation starships need to periodically visit and scan the few large old stars in Federation space that might become supernovas or hypernovas.

For medically focused scenarios, if both the Gamemaster and at least one person playing a medical officer possess even a modest knowledge of medicine or biology, the Gamemaster can present information about a new illness in ways that suggest avenues of research. Even a minimum of knowledge can be useful, like knowing that people and other living things require a variety of trace minerals and metals, like iron or magnesium, to survive. Perhaps an illness doesn't seem to involve any sort of known disease organism, and the primary symptom is that level of metal in the victim's body. Where are these metals going, and what is removing them?

Similarly, looking up unusual real diseases and either combining them, or using diseases that don't normally affect humans can give a depth of detail to the scenario. Perhaps there is a disease that affects humanoids much like the fungus that transforms ants into so-called "zombie ants". This bizarre fungus takes over infected ants' behavior, causing them to climb a specific height above the ground before they die, and fungal fruiting bodies sprout from their heads – spreading the fungus to other ants. Perhaps a disease causes infected humanoids to swim or wade out into large bodies of water, where they drown, and the illness spreads into the water supply. Once the medical officer has analyzed the disease, and makes a successful Medicine Task, the Gamemaster could then tell them that the symptoms of this disease resemble the effects of that fungus on ants.

SUBSPACE CORRIDORS

Subspace corridors are naturally occurring passages through subspace that allow spacecraft to traverse long distances considerably faster than they could using warp drive, and may have provided the inspiration for the Borg's transwarp conduit network. Subspace corridors differ from wormholes

because they are usually far more stable, easier, and safer to traverse, and almost always cover considerably shorter distances, rarely more than a few hundred light years. Like almost all natural subspace phenomena, subspace corridors are relatively localized. Some regions of space have an abundance of subspace corridors, while other locations have few or none. The ability to easily detect, map, enter, and safely traverse natural subspace corridors would be of notable

assistance to the Federation. Also, being able to detect starships while they are traveling through subspace corridors would help prevent smugglers and attackers from using them to secretly enter or travel through Federation space. However, the greatest possible discovery associated with subspace corridors would be the ability to create artificial subspace corridors. This discovery could potentially give the Federation the same ability to move swiftly across long distances that more technologically advanced species like the Borg possess.

SUBSPACE RIFTS

Subspace rifts are dangerous subspace phenomena where the fabric of subspace intrudes into normal space, causing shock waves and making the use of warp drive nearby exceptionally dangerous. In 2370, Hekaran scientists proved that overuse of warp drives in the Hekaras Corridor was causing subspace rifts that threatened the habitability of the Hekaran homeworld. The ultimate problem was determined to be the fact that repeated use of warp drive in regions of space subject to subspace instabilities reduces the local barrier between normal space and subspace, eventually leading to these subspace instabilities becoming subspace rifts. The faster a ship travels, the more it damages and enlarges the

local subspace instabilities. As a result of this realization, Starfleet restricted the use of warp drive to a maximum speed of warp 5 in regions subject to subspace instabilities, except in emergencies.

As a result, the threat of subspace rifts has significantly impacted both transport and exploration in the many regions subject to subspace instabilities. Starfleet Science currently encourages science officers who specialize in the physics of warp drives or the study of subspace to research this problem. The best solution would be finding a method of modulating warp drives so that frequent high-speed warp travel no longer risks transforming subspace instabilities into subspace rifts. Alternative solutions could include finding a method of either closing subspace rifts or, better yet, harmlessly removing subspace instabilities. Research on all of these possibilities is ongoing, and, in fact, scientists and engineers have worked together to develop advanced warp drives and variable-geometry warp systems to help minimize the negative effects of ships traveling at warp speeds on the fabric of subspace. Such systems may be found on *Intrepid*-class starships and are planned to be implemented in next-generation spaceframes such as *Luna*- and *Sovereign*-class vessels. Any science officer who makes additional important contributions to these efforts would have performed a great service to both Starfleet and the entire Federation.

CHAPTER 04.40

RESEARCH AND DEVELOPMENT THE Q CONTINUUM

THE Q

The Q Continuum is a group of transdimensional immortal beings who live outside our current understanding of the bounds of time and reality. It's safe to say they are the single most deadly creatures in the known multiverse, but because they care so very little about lesser races, it seems generally unnecessary to consider them a real threat. The discovery of their existence is relatively new to Starfleet and perhaps with further study we will gain a deeper understanding of what exactly these beings are and what they mean to our reality.

PHILOSOPHY

Gods. Only this one word can properly describe the Q. In Earth's history, there are many tales of creators, destroyers, and beings with the powers over life, death, time, and reality. Such are the Q. Their powers are limitless and with a thought they move asteroid belts and create alternate realities. Perhaps the reality we live now is an alternate reality created by a bored Q? We'll never truly know.



An astute reader may notice that this section of the report is entitled 'philosophy' rather than 'physiology' and that is because we may never truly know what the Q are made of or how they were created. This is the same reason I as a psychologist head the Q research team rather than a hardened biologist. Analyzing the Q is a delve into the psyche mixed with a back and forth philosophical dialogue with some of the greatest biological researchers in the Federation.

Q may appear however they want, and mortal creatures are incapable of comprehending the Q's true form. Likewise, Q often appear as humanoids and take a gender – but this for our benefit. They have no known physiological weaknesses, but they do experience some sort of emotion, which goes beyond what we can experience.

If there is one limit to the Q's power, it is attention. It is generally assumed within our team that the members of the Continuum have the ability to be omnipotent if they wish. The reason the Q are not is unknown, but two of the most popular theories are: omnipotence is overwhelming, or omnipotence is boring. The first theory assumes a single Q is incapable of processing literally everything all at once without trouble and the latter assumes focus on a single target, truly living with something, is a more enjoyable experience. Based on the handful of interactions Starfleet has had with the Q, I am tempted to believe the latter, as most of their 'disruptions' into our daily lives seem to stem from a need for excitement.

This 'hum drum' view of the universe and being able to experience every single facet reality has to offer betrays another weakness of the Q: their incapability to create something truly novel for themselves. Captain Benjamin Sisko of Deep Space 9 noted in his logs the thrill-seeking nature of Q, the need for him to live through his interactions with a woman named Vash. Perhaps it is humanity's unpredictability that excites the being so; though they can force our actions, they will never truly know what we will do, given free will.

ORGANIZATION

The Q Continuum refers to both a transdimensional space the Q inhabit and the organization of the Q itself. Starfleet has very little information on how the Continuum is organized, but we do know there is a form of hierarchy. We posit that the hierarchy is defined by some sort of seniority based on various interactions with Q.

The best example we have of the Q hierarchy is the interactions of a Q and the human-born Q Amanda Rogers (see 'Notable Q'). In the few interactions Q had with Amanda it is clear he considered her subordinate to him. Not because of the normal bravado the Q exhibited in his other actions with Starfleet, but because of her age and relative inexperience. This leads us to believe there is an

order behind the Continuum, young respecting old and experience placed over the vigor of youth (as there is no evidence to prove Q become less powerful with age – in fact, the exact opposite).

INTERACTION WITH HUMANIDS

Starfleet's interactions with the Q have been antagonistic at best. While the various crew members who have encountered Q have done very little, in our eyes, to directly antagonize the Q, they've still managed to displease them. We suggest any interactions crew members have with Q be reported immediately, if possible, and if it will not endanger anyone in the direct vicinity.

CAPTAIN'S LOG

STARDATE — WHATEVER

This is Captain Q of the *U.S.S. Enterprise* reporting directly from the captain's chair!

See, that is how you start an entry. Jean-Luc is ever so dutiful in his entries, so stiff, he really needs to learn how to loosen up and enjoy himself. Live a little. Maybe I should send him to Risa for millennia? You all seem to love that place so much – at least 'Number One' does...

But I digress. Let me attempt to be what you tiny creatures consider professional. After my numerous interactions with your species, you will most likely have logs upon logs about who I am. As Captain Q, I am much too important to go through those undoubtedly incorrect logs and rectify them. Even a quarter of a millisecond, a passing thought, would be too much time spent on such a pointless task. Why? You humans never learn.

What is the point of enlightening something that will never truly be able to grasp what you are teaching? It is folly. And if I am going to be mixed up in folly, it will be of my own creating. Then again since I can create anything, and it is impossible for me to make an error – would it actually be folly? I'll muse more about that in my next log.

No, no, silly humans. Just keep hoping and reaching as you always do. I dare not tell you more of myself, because you do enjoy the game of 'discovery', do you not? Of embracing the unknown and when you find it, wringing every last piece of joy from it.

Adieu for now.

The true leader of the *Starship Enterprise*, Captain Q.

We also recommend any member of Starfleet interacting with the Q to uphold the criteria of the Prime Directive. The Q often conduct tests and while the exact grading criteria is impossible to guess, we must always stick closely to Starfleet morals. If there is any chance in dealing with the Q it is to represent Starfleet and the United Federation of Planets in the best light possible, showing the Q that what we value matters.

NOTABLE Q

Q

The most notorious Q Starfleet ever encountered is known only as Q. He usually presents himself as a male with brown hair and subjectively average looks for a Human. Throughout the years, he's had numerous run-ins with different branches of our organization but seems to focus his ploys mostly around Starfleet's captains. Captain Jean-Luc Picard of the *U.S.S. Enterprise* NCC-1701-D was the first to encounter this particular Q, but he's also harassed Commander Benjamin Sisko and the crew of Deep Space 9.

Q has noted on multiple occasions his disdain for humanity and even put the whole of humanity on trial, forcing Captain Picard to speak for our entire species under threat of removing us from existence. What's strange about Q's ire for humanity is the reasoning, or lack thereof, behind it. Picard noted Q's arguments for humanity being 'unworthy' were strung together with value judgments and personal preference. It is terrifying to think of the numbers of species who may have existed but failed a test from a Q and disappeared.

Q did reveal to Captain Picard that in his early years he was given Earth to observe. Perhaps the monotony of watching Humans grow and develop somehow pushed Q towards his resentment, and frankly, his obsession. As a being with unlimited power, being forced to observe creatures with so little power could be maddening.

AMANDA ROGERS

Amanda Rogers is a Q born on Earth, by two Q who made themselves Human and had a child. She was raised by two adoptive parents after her biological parents were apparently executed by a Continuum-created tornado. She eventually discovered her true nature with the help of the crew of the *U.S.S. Enterprise* NCC-1701-D.

Biologically, Ms. Rogers presents an interesting case study for the sciences, because before she discovered she was Q, she was totally Human. When Amanda discovered she had powers, she became a Q, along with all the powers that came with that. So, the question is: was Amanda ever truly Human if only a thought could revert her back to being Q? Can the Q ever actually truly experience something as another if they ultimately still retain a part of themselves, allowing them to become Q once more?

CAPTAIN'S LOG

RUNNING A MISSION WITH Q

A mission with the Q as a central theme makes for an exciting balancing act between presenting a being who can literally do anything, and ensuring your Players still have a good time. If you look at the various *Star Trek* series, the crew never think Q is their main mission; instead Q is the antagonist to what they try to accomplish, a thorn in their side, a God who makes them wonder if they truly won the day or if everything they do is subjectively pointless. Q is a test in morality and conveying that during a mission may be challenging.

Gamemasters should consider these questions along with the guidelines below – **Morality**, **Power Dynamics**, and **Scenes with Q** – to create an exciting mission:

1. What is the background mission happening that Q will hamper?
2. What is the Q looking for?
3. Why does the Q blame the crew?
4. What are three personality traits of the Q?
5. What excites the Q? What do they respond well to?

Example:

1. *The crew of the U.S.S. Ching Shih is on a mission to Alpha Delta-C in the far reaches of the Beta Quadrant. Alpha Delta-C is home to two nations who have been warring for centuries and have asked Starfleet to send a diplomat to help peace negotiations. The moment the U.S.S. Ching Shih arrives, the key diplomat of Alpha Delta-C's dark side is murdered.*
2. *Q shows up just in time to antagonize everyone. She's seen this situation literally a billions times before and knows peace talks are fruitless. She tells the crew that in one day she'll wipe one side out of existence to stop the problem – the crew must decide which side. In reality, Q is lonely and has forgotten how to make friends.*
3. *She doesn't blame the crew for this per se, but seeing how they work together infuriates her, when she knows all alliances always fall apart.*
4. *This Q is aloof, playful, and vindictive.*
5. *Ultimately, she wants a listening ear. Q wants companionship deeply and needs someone to remind her that friendship is possible.*

MORALITY

Every time a Q shows up in your story they should learn a lesson from the Player Characters. Whether that's about the universe, themselves, or puny Humans it doesn't matter—but they must learn something. At the heart of every Q episode in the various TV series is Q assuming he knows everything there is to know out there, discovering indirectly he is wrong – and never admitting it. After all, a Q has nothing to learn and if it appears they did learn something – it's just a novel experience for them and *not* something more.

CHIEF MEDICAL OFFICER'S LOG

DR. BEVERLY CRUSHER, U.S.S. ENTERPRISE

"Amanda was a lovely young woman. Raised by Human parents in Kansas, I can't help thinking the Continuum will benefit from some small-town morals. Despite discovering that she is a Q, Amanda still retains her sense of self, of who she is, and her kindness and grace. From my limited experience with the Q, I judged them all as aloof and often cruel, at least in a Human sense. I thought this was just their nature, but perhaps that isn't true. Maybe being an immortal being with unlimited powers gets boring after a while, makes you judge things quickly, makes you ignore the emotions of others? Then again there are always exceptions to every rule."

CAPTAIN'S LOG

It is also important during Q missions for a character to hold fast to their Values. Q tests the Players at every turn, and pokes and prods at what they believe and who they are. The only way a Q learns a lesson is if characters are true to who they are and push through every interaction with a being designed to make the crew miserable for their own enjoyment.

This is not to say characters shouldn't learn more about themselves when interacting with the Q. The exact opposite should happen. You're playing a Q correctly when Players are questioning every choice their character makes, literally weighing life and death, but in the end finding an inner strength to persevere.

POWER DYNAMICS

In roleplaying games Gamemasters are very much like a benevolent Q for their Players. Gamemasters create the world and everything the Players interact with; however, unlike the Q, there are mechanics to keep the Gamemaster in check. Plus, Gamemasters ultimately care if Players are having a good time and don't want to quash anyone's happiness.

When running a game with Q it can be tempting to throw off the chains of out-of-character morality and really mess with the Players, but do this too much and the game won't be fun anymore. The threat of what Q can do is much more interesting to play through rather than actually using their power. That said, there will be times when Players push against a Q and tell the Gamemaster, 'go ahead, do it.' In these cases, you should always give the Players an out. Think of it from the Q's perspective—you are all powerful and that is boring; testing Humans and watching them squirm is fun.

If we take the example from the start of this section, there may come a point where the Players call the Q's bluff and say, "Fine, wipe half a people from existence." As a Gamemaster, as Q, you only have one option – do it. You are all powerful and the pathetic mortals should know it!

Example: *The Players awake in a universe missing the poor erased souls. They start to get flashbacks of what is happening. The crew questions their sanity and what they lost. Ultimately the crew realizes what happened, calls Q, and makes her reverse it. Q is pleasantly surprised minds as weak as theirs managed to figure out what happened, even with the obviously blaring clues she built in. As a reward, she returns things to the way they were. Q has exercised her terrifying powers, but still allowed for the crew to interact with an interesting and challenging story.*

SCENES WITH Q

The various **Star Trek** captains speaking with Q engaged in intense soul-searching dialogues. This should be no different in your game. Portraying Q is one of the best ways for you to get inside your character's head to literally take any instance

they've encountered over the days, weeks, or years of playing and question them on it. Q is an excuse to flex your roleplaying muscles and for your Players to show everyone else at the table who they are.

Dramatic dialogue scenes with Q are also important because they are the few scenes where a Q forgets about their powers and engages a character on 'equal' footing. While a Q may have infinitely more information on the universe, Starfleet members have a stronger moral core. As Jean-Luc Picard put it, "He's devious and amoral and unreliable and irresponsible and... and definitely not to be trusted." On a verbal stage the differences between a Q and a member of Starfleet equal out and they can engage in a meaningful, albeit frustrating, conversation.

Ultimately, the conversation your crew has with a Q will be the reason they are able to convince a Q to leave their ship (or base) alone. Q may leave for a seemingly random reason, but it will ultimately be because of what they discussed with the Players. That's how mortals defeat gods.

CHAPTER 04.50

RESEARCH AND DEVELOPMENT TIME TRAVEL

Nothing complicates a mission like time travel. My advice, captain, is to avoid it whenever you can. However, chances are you'll find that space is filled with spatial anomalies, distortions in space-time, and temporal rifts – not to mention visitors from the future and all the myriad ways of traveling through time we *don't* know about yet. Since the likelihood that you'll get through your Starfleet career without encountering some kind of temporal phenomenon is low, I'll brief you on what we know, what we theorize, and what to watch out for.

Any information I share with you about the future is for your eyes only; communicate it to officers with a rank below captain only on a need-to-know basis.

TEMPORAL INCIDENTS

It's a wonder the space-time continuum is still in one piece, considering the significant number of reports we have on file detailing unplanned time travel escapades and disruptions to the timeline. Most ships on the forefront of galactic exploration experience such phenomena at least once. We won't be able to cover everything here, so I'll focus on a few reports from crews who seem to attract temporal disturbances like magnets. (Personally, I'm beginning to think the name *Enterprise* is to blame.) The Department of Temporal Investigations' lengthiest litany of violations belongs to none other than Captain James T. Kirk, who acted against temporal displacement regulations seventeen times (that we know of) and reported several other incidents as well.

FROM TEMPORAL AGENT DANIELS' HOLOGRAPHIC DATABASE

INTERCEPTED TRANSMISSION FROM VOSK TO HIS SUBORDINATES

Take heart. Though it appears that our journey is at its end, we will not allow these temporal agents to take from us what is rightfully ours. I stand before you with renewed hope – and with power, the power to escape this ignominious fate.

These humans venerate their Federation and its shackles, its precious Accords. They spout their meaningless platitudes: peace, unity, harmony. But I see through their pretty lies. They conquer as surely as we do, a hegemony of smiling shepherds herding their sheep. I say to you now, we will not let them subdue us! We will not let them erase us! We will take back the dignity they have tried to

steal from us, and we will be the undisputed masters of the space-time continuum!

Think of this not as an exile, not as a retreat with tails tucked between our legs. Think of it as the beginning of the end for the temporal agents and everything they have built. We will not simply destroy them – they deserve so much worse. No, we will eradicate them from their own history. By the time we finish with their sorry excuse for a planet, they will never have existed at all. And we will stand victorious over the smoking ruins of their timeline, the universe ours for the taking!

Even our full file on temporal encounters is missing those that resulted in loss of memory when the timeline was rewritten, those highly classified for Temporal Investigations' eyes only, and those never reported for one reason or another. Officers occasionally let slip clues to temporal phenomena they remember but refuse to discuss for fear of contaminating the timeline or violating the "Temporal Prime Directive." See "Temporal Regulations and the Ethics of Time Travel" (page 69), for more details.

LIGHT-SPEED BREAKAWAY FACTOR

Known more colloquially as the "slingshot effect," this method is repeatable, but dangerous and unreliable. The *U.S.S. Enterprise* NCC-1701 accidentally discovered it was possible to propel a starship back in time through an artificial time warp, by accelerating at high warp around a source of massive gravitational force, such as a star. However, a miscalculation using such a maneuver could fling the ship into the wrong time period, or destroy it completely.

Starfleet Command sent the *Enterprise* back in time deliberately using this method in 2268 to research gaps in our database regarding Earth history. In response to this (and other temporal incidents involving Kirk), the Federation Council subsequently introduced new legislation severely restricting temporal research and the unauthorized use of time travel due to the potential for upsetting the timeline, and in 2270 authorized the creation of the Department of Temporal Investigations. Nevertheless, in 2286 Kirk again ordered the use of the slingshot effect to retrieve members of a then-extinct species of whale from the past to save Earth. Indeed, DTI is still working today to unravel the extent of the changes

Kirk wrought by bringing humpback whales and Dr. Gillian Taylor from the 20th century to the 23rd.

TEMPORAL TECHNOLOGY

Many across the Galaxy have attempted to develop technology to safely and reliably travel through time. At some point in the future, we will succeed. So will factions outside the Federation, which causes the inevitable conflict you might expect. However, timeships and other devices will also provide the opportunity to learn much about the past that is lost to history.

The most extensive information we have about temporal technology from the future came from a man named Daniels, who will be a temporal agent working for a mysterious faction in the thirty-first century. Daniels tried to recruit Captain Jonathan Archer into what he called a Temporal Cold War. It appears to be a future conflict in which groups with temporal displacement drives and other means will carry out targeted sabotage of the timeline to thwart each other's plans. We suspect Daniels' faction to be a Starfleet successor, as he acted to preserve our current timeline against forces trying to stop the Federation from ever forming. It may follow a direct line from our own Department of Temporal Investigations, and/or the twenty-ninth century Federation's Temporal Integrity Commission, of which we know little. After Daniels' first of several recorded deaths aboard the *Enterprise* NX-01, Archer salvaged some of the thirty-first-century technology he left behind. DTI research and development teams still keep it under lock and key for careful, classified study.

Archer's crew also encountered stranger temporal phenomena, such as a short causality loop resulting from

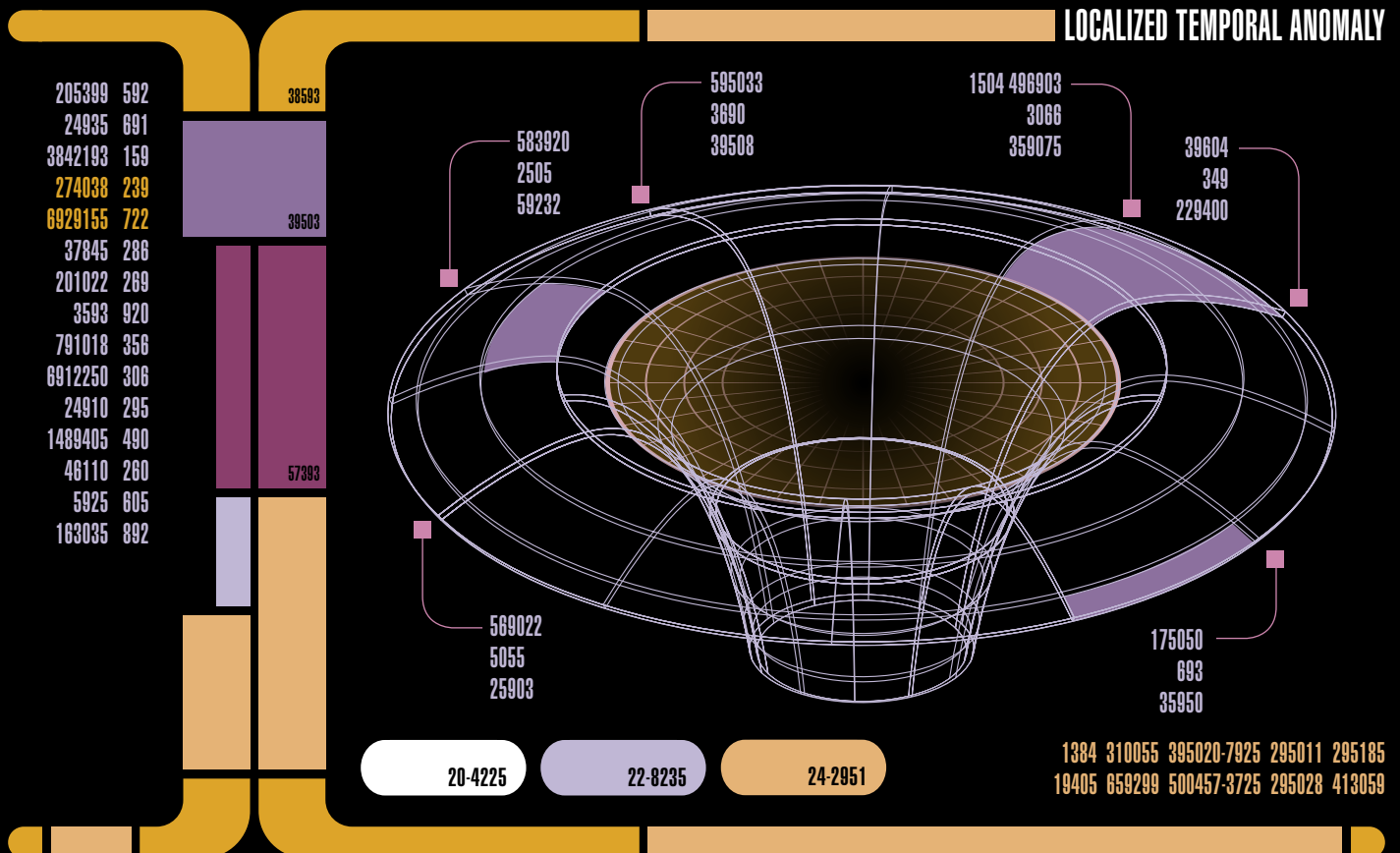
exposure to temporal radiation emanating from a damaged thirty-first century time pod, and the device Archer helped Daniels build during his trip to an alternate future that allowed him to communicate with Subcommander T'Pol in the twenty-second century. One of the factions in the Temporal Cold War will not have the ability to fully enter the past, only able to communicate with subordinates in the destination period. Another will discover the means to effectively cloak their time travel from temporal scanners, although this method is one-way. Daniels' faction will be able to view changes to the timeline before the ripples reach them; by acting quickly, they can travel to the point when the changes were made and alter events further before the ripples affect their present. They will also invent temporal tags, applied to objects so that someone can transport those objects to other time periods without personally bringing them along.

Captain Kirk's *Enterprise* reported two separate encounters with time portals, including the infamous Guardian of Forever: a sentient gateway leading to eras and worlds spanning our Galaxy's entire history. After Kirk and members of his senior staff nearly became trapped in the twentieth century, Starfleet Command took custody of the long-abandoned Guardian and classified its coordinates. Yet even during its authorized use for research, Kirk was involved in a second incident with the Guardian that eliminated his first officer, Mr. Spock, from

the timeline until, paradoxically, Spock himself was able to resolve the issue. Today, Temporal Investigations tightly controls all access to it.

Kirk and his crew also discovered that the people of Sarpeidon developed a device they called the atavachron, which they used to facilitate the temporal evacuation of their population into their own history before their star went supernova. Unique among time travel devices we have on file, the atavachron adjusted the user's physiology to align with the destination period, resulting in an inability to safely return. Unfortunately, since Sarpeidon's star, Beta Niobe, went supernova, this device is no longer available for study.

Human scientist Dr. Paul Manheim spent years working to prove that the linearity of time was the only thing keeping us from visiting other dimensions. The scientific community largely ignored his work until 2364, when his experiments in non-linear time on the planetoid Vandor IV succeeded at the cost of many lives and the integrity of space-time. The Manheim Effect, as it came to be known, caused strange repetitive phenomena. The crew of the *U.S.S. Enterprise* NCC 1701-D managed to stabilize Manheim's device before it inflicted too much damage. The Federation later sent a team of scientists to assist (and supervise) Manheim, since he insisted on continuing his experiments despite the dangers.



Captain Picard also reported contact with several travelers from the future. One of them, a failed inventor named Berlinghoff Rasmussen, turned out to be an impostor, but his time pod was a genuine article from the twenty-sixth century, employed as a historical exploration vessel. That pod returned to the period from which Rasmussen stole it, using a pre-programmed recall command. Picard also fulfilled a predestination paradox when he destroyed a dangerous quantum phase inhibitor from the twenty-seventh century called the *Tox Uthat* during a vacation on Risa. Visitors from that period, known as the Vorgons, arrived to seek the inhibitor using an unknown method that we suspect to be technological in nature. The legend of the *Tox Uthat*, persisting as rumors in our own century and in its time of origin, fascinates chronoanthropologists.

SENTIENT BEINGS

Because the various *Enterprises* have been the flagship of Federation exploration, their captains have reported the most encounters by far with beings naturally capable of causing temporal phenomena. For instance, in 2365, a sentient energy vortex sent Captain Picard six hours into the past, causing what may have been a causality loop until the Picard of our current timeline broke the cycle by making a different choice to save the *Enterprise* from destruction. It's unclear whether the vortex meant to do this, or whether it was a side-effect of the explosion.

The same crew discovered a shapeshifting species from Devidia II with the ability to exist slightly out of phase with our space-time continuum, rendering them effectively intangible and invisible to the eye. These Devidians exposed a snake-like creature, or ophidian, to a massive burst of triolic waves to open a portal through which they could travel through time and space. Most of Picard's senior staff traveled back to San Francisco in 1893 to recover Commander Data and stop the Devidians from preying on the neural energy of cholera victims. In doing so, they fulfilled another predestination paradox.

The U.S.S. *Enterprise* NCC 1701-D also discovered a species for whom we have no name; reports call them quantum singularity lifeforms, as they ordinarily incubate their young inside black holes. They originate from another space-time continuum, and their bioelectric patterns are in continuous temporal flux. They made a nest in the artificial singularity that powered a Romulan warbird's warp drive, shutting it down. The efforts of the Romulans and the *Enterprise* crew to power it back up shattered time into fragments, creating pockets where time flowed significantly more quickly or slowly than normal. Too much exposure to such pockets caused temporal narcosis in crewmen not caught in the initial incident, despite their attempts to protect themselves with subspace isolation fields.

Note that Q (see page 60) can theoretically send a person's consciousness forward or backward in time. Captain Picard

BAJORAN RANJEN SOLBOR JYNAN, THE ORB OF TIME

Two years have passed since the Cardassian menace fled our world, and yet, the scars they left on the Bajoran soul remain raw. Our kai has begun to speak of negotiating a treaty with these brutal tyrants. A treaty, after all they have done! Two years, and still they have returned none of the sacred Tears of the Prophets they ripped from our hands in their wickedness. I fear especially that the Orb of Time remains in their clutches.

The Prophets and their Celestial Temple exist independently of what we perceive as linear time. I'm told the Emissary received the Prophets' blessing to allow lesser beings such as ourselves to traverse their domain, by bringing our limited view of time to them and thus revealing his destiny as their messenger. He showed them that even in our linear state, which begets violence and suffering, we may someday be worthy of their grace.

The texts speak of the Prophets' power not only to show their humble servants future events, through the Orb of Prophecy, but to send us back to revisit the past through the Orb of Time. In doing so, they grant us the wisdom to correct our mistakes and learn from them. To think that the Cardassians hold such power in their bloodstained claws... What fresh horrors could they bring us, were they to discover the means to activate the Orb?

PERSONAL LOG

has reported two such incidents, although he acknowledges that in both cases Q could simply have staged hallucinations to test him personally. We'll proceed assuming these incidents did, in fact, occur.

In 2369, Picard went into cardiac arrest after a mission went awry. While the doctors operated, Q transported Picard's conscious mind back to his own body 42 years prior to prevent the attack that led to the installation of his artificial heart. Upon returning to the present, Picard found his life completely changed, and convinced Q to let him go back again and restore his original timeline. More recently, the Q Continuum tested humanity by shifting Picard's consciousness between the past, present, and future, creating an alternate timeline that no one now remembers except him. In that timeline, a multi-phasic temporal convergence ruptured the barrier between time and anti-time when the *Enterprise*, in three separate time periods, scanned the area with an inverse tachyon beam. This led to a paradox in which the anomaly had no origin: The very actions taken to investigate its existence created it. Left unchecked, this anomaly would have stopped life from ever forming on Earth; as it was, Picard, and the crews of three *Enterprises*, sealed the rupture in all three time periods, thus preserving our current timeline.



OTHER PHENOMENA

Many recorded temporal incidents were one-time occurrences that cannot be easily repeated in a controlled environment or even studied at much length. We can review sensor logs and readings, and propose theories, but ultimately these incidents remain largely mysterious.

In 2154, Captain Archer's *Enterprise* encountered their own descendants on a much older version of their ship and learned that in their immediate future they would sustain damage to their impulse engines, releasing a wake that would cause the subspace corridor they traversed to send them a hundred years backward in time. They prevented this outcome, but the *Enterprise* from the alternate timeline never emerged from the corridor. Scholars of temporal mechanics argue over whether the crew's descendants ceased to exist when they averted their original timeline, or whether the Kovaalan attack simply destroyed the alternate *Enterprise*.

A NEW FRONTIER

For all our talk of space being the final frontier, in truth I believe we will always have a new one to explore. Right now, our greatest frontier is time. Even with all these

incidents under our belts, we don't understand it as well as we would like. If we did, I suppose we would be striking out into history to study its breadth, just like those timeships from the future. Knowing we someday will is both exhilarating and terrifying.

The first known evidence of someone traveling through time was Captain Archer's initial encounter with Temporal Agent Daniels in 2151. Up until that point, Starfleet operated under the same assumption as the Vulcan Science Directorate: time travel was impossible. At the time, our tricorders weren't capable of detecting temporal signatures or chronitons, so the crew had to accept Daniels' story the old-fashioned way – through the evidence before their eyes.

Once the *Enterprise* NX-01's experiences shattered the Science Directorate's illusions, Starfleet Command – and then later, the Federation – began to devote resources to studying time travel as more than just a curiosity. For a short while after Kirk's crew discovered the slingshot effect, we entertained the notion of using it as a regular means of research and exploration, but the dangers proved too great in the end. Typical, really, that we will eventually come full circle with much more advanced temporal technologies and resume that course. Humanity never truly changes, does it?

TEMPORAL REGULATIONS AND THE ETHICS OF TIME TRAVEL

Since its inception, the Federation Council has set policy for dealing with temporal phenomena, although to date these policies have been minimal. Since we currently have no reliable, legal way to deliberately traverse time, the Council feels extensive legislation on the topic is premature. The most commonly invoked policy within Starfleet is Regulation 157, Section III, Paragraph 18: "Starfleet officers shall take all necessary precautions to minimize any participation in historical events."

It sounds simple enough, but be warned, captain – it's harder to follow than you think. We are creatures of the moment; we solve the problems right in front of us and connect with people face-to-face. In many regards, we're unqualified to regulate these situations, linear as our perspective is. What happens when an unexpected trip through time causes an entire Starfleet crew to vanish from history, but also produces a child who will never be born if the original timeline is restored? How do you order someone to give up their beloved daughter who isn't supposed to exist? For that matter, who are we to judge whether a person is *supposed* to exist?

For this reason, the Federation disallows Temporal Investigations officers from serving on the Board of Ethics or passing judgment on violators. These cases are incredibly complex, and temporal agents follow their mission statement to the exclusion of holistic concerns. They have seen the fallout of time travel firsthand; few of us could be objective in their shoes.

Much like the Prime Directive, temporal regulations are highly subject to interpretation in the moment. Who among us would not be tempted, given the chance, to go back in time and eliminate our greatest regrets? Save the lives of lost loved ones or beloved historical figures? But we currently have no way of charting the drastic consequences such an action might have, and once done, it may not be so easily undone.

FUTURE IMPERFECT

By 2769, all known species with access to temporal technology will agree to the Temporal Accords: a set of laws and procedures that govern the sanctioned use of time travel for research purposes only. The Temporal Cold War will result from some factions violating those accords at various points in time.

In the twenty-ninth century, the Federation will operate under a Temporal Prime Directive which supersedes our current temporal displacement regulations and broadens their applicability, presumably as part of efforts to abide by the Temporal Accords. This directive forbids disclosure of information about the future to anyone who could accidentally or deliberately use it to contaminate the

TEMPORAL MECHANICS

EXCERPT: *FUNDAMENTALS OF TEMPORAL MECHANICS*,
4TH EDITION, BY DR. ERNST VASSBINDER

...difficult for linear beings like ourselves to understand, but the future is both extant and mutable. Indeed, as of this edition's writing we know of no fewer than nine separate versions of our future, most if not all of which likely reside in alternate timelines due to the very knowledge of their existence.

Imagine, if you will, our time continuum as a train traveling along a track. We experience the journey as our present and can map the track behind us as our past. On the track ahead, there lie junctions where branch lines split off; as we approach them, the cause and effect of events determines on which track we ultimately travel, and thus, which track becomes part of that map of history, and which becomes simply the road not taken. However, when someone travels backward into the past, they may perform different actions that throw a switch at the junction, thus guiding our train onto a branch that becomes the new primary track.

Those spur branches we didn't take cease to exist as we pass them by. These are alternate timelines, not to be confused with parallel universes or quantum realities, which persist simultaneously with our own. Changes to the past effectively rewrite history, and anyone not involved with the change cannot perceive it: To them, the new sequence of events was always true. Gives a whole new meaning to the phrase "revisionist history," doesn't it?

That said, cross-contamination has occurred, through echoes embedded in organic memory or imprinted upon certain kinds of particles, like a temporal palimpsest whose layers are nearly impossible to discern. Whether artifacts of an unwritten timeline vanish into thin air at the moment the track switch is thrown, or whether they persist to create doppelgängers with different memories and experiences, seems to depend on the phenomenon that created the temporal disturbance in the first place.

Certain technologies utilizing subspace as a medium can protect individuals and objects from historical alterations. Effectively, they allow pieces of an alternate timeline to continue existing past their expiration date. Theorists conjecture that some types of temporal rifts or vortices may produce a kind of tail, or wake, made up of chronometric particles that preserve relics from alternate timelines as the shifts occur.

timeline or cause a paradox, just as our Prime Directive forbids us from sharing information that could alter the natural course of a civilization's development. It also carries forward our current policy of banning the unauthorized use of time travel.

TEMPORAL INVESTIGATIONS REPORT

2771-G, STARDATE 47264.9

AGENT LUCSLY, REPORTING

Three days ago, Dulmer and I received a garbled transmission, the victim of some kind of chronometric interference. Only a few bits and pieces of data were still intelligible, including the coordinates I've embedded in this report. We set course immediately.

Upon arrival, a ship of unknown specifications intercepted us. Her pilot was one Captain Braxton – if that was, or will be, his real name. He identified himself as an officer of the Temporal Integrity Commission, of the Federation timeship *U.S.S. Relativity*, and claimed he hailed from the twenty-ninth century. Naturally, we were suspicious.

Dulmer commented that it was awfully convenient for him to arrive just when we'd come to investigate a potential breach of temporal displacement protocol. Braxton informed us that he was there to perform the very same task, and that his authority trumped ours in this matter. I told him I didn't appreciate his tone.

Our sensors picked up a chroniton flux and we realized Braxton was attempting to lock onto us with some kind of temporal transporter.

We sabotaged his efforts, but this caused a rupture in space-time due to an unexpected reaction between our tachyon field and his transporter beam. Then, one of Braxton's crew said she'd determined the exact nature of the incursion they were chasing, cross-referencing their temporal sensor data with historical Starfleet reports database. She quoted Temporal Investigations Report 2771-G, stardate 47264.9.

I told Braxton he'd better send us that report three days ago. He said, "Are you telling me this was a double predestination paradox?" I said that was classified. He told me if he sent the report back so close to the anomaly it would scramble the message. Dulmer told him that was the point.

With Braxton's help, we sealed the rupture before it spread. Braxton muttered something about owing us an apology and took off. We've recommended a formal reprimand for him, to take effect in approximately five hundred years.

For the record, sir, I hate predestination paradoxes.

The 29th century Federation will employ the Temporal Integrity Commission, an organization dedicated to enforcing this Directive and preserving the timeline as they know it through controlled time travel. This will be as much a measure of self-preservation as it is a matter of ethics: More than one illegal incursion into the past would have prevented the Federation and Starfleet from forming.

By the 31st century, we believe the Federation as it is today will no longer exist. In its place appears to be the organization to which Daniels will belong. It's unknown whether this group will form before the Temporal Cold War breaks out or as a response to it. Regulations concerning time travel in Daniels' era seem relaxed enough for him to share some information about the future with Archer, as well as advanced technology from his century. Reports indicate that, in a timeline the *Enterprise* prevented, the Cold War ignited into true war and temporal operatives were authorized to make any historical changes necessary to ensure the Federation's future existence.

Our present-day Federation Council have released protocols for dealing with agents from the future, including Regulation 157, the temporal displacement policy, and the efforts of DTI. Acquiring or sharing information about the

future is permitted, with caveats pertaining to who may possess it and how it might affect our current timeline. Use your best judgment to decide whether to aid or impede any given future agent, depending on what you learn.

DEPARTMENT OF TEMPORAL INVESTIGATIONS

Officially, DTI is the Federation agency tasked with identifying and studying the causes and consequences of encounters with temporal phenomena, and determining whether any violations of temporal displacement regulations have occurred. Unofficially, people tend to see these agents as an overzealous arm of law enforcement, poking their noses into affairs they don't understand and purposefully interpreting policies as strictly as possible to find evidence of violations where none exists. In fact, the Federation doesn't actually authorize them to enforce anything. They simply investigate, make recommendations, and occasionally supervise or confiscate technologies that enable temporal disturbances.

Their ranks include agents trained in security, temporal and quantum mechanics, warp theory, subspace physics, cryptography, history, archaeology, chronoanthropology, and even investigative journalism. Joining Temporal Investigations requires a rigorous training regimen, extensive background checks, and tests of integrity and compliance.

The Federation must be confident that an agent won't succumb to the temptation to use any means of time travel they discover, or delve too deeply into knowledge of the future, even if it would aid them in their duties. Federation representatives once made overtures to an El-Aurian scientist in hopes that she would act as a temporal consultant, but she refused, stating that even investigation after the fact could alter the natural flow of time, and that we're playing with fire by trying.

BEYOND REGULATION

Time travel is now common enough for standard Starfleet procedure to dictate that any vessel involved in a suspected temporal disruption must check in with the Federation time beacon to resynchronize its internal chronometer and verify the current stardate. It's only a matter of time before factions outside the Federation develop timeships, whether we do or not. It would be a grave error to bury our heads in the sand and forbid time travel altogether. Instead, we must ready ourselves for it.

Not everyone agrees. Rumor has it the head of Temporal Investigations believes that all knowledge of the temporal sciences is so dangerous that we should reserve it only for a select few. If you ask me, that kind of attitude puts our crews and starships out there in terrible danger when they inevitably encounter anomalies in the field.

Classes on temporal mechanics are popular at the Academy, although many students regret taking them afterward due to the material's complexity. The field is well-established, but advances are slow. Our ability to recreate phenomena for observation is unreliable (and the methods are, in many cases, against regulations or unethical), so most work in temporal physics is theoretical.

Chronoanthropology is an exciting emergent field. Only a few anthropologists in the Galaxy specialize in the effects of temporal phenomena and causality on the evolution of civilizations and species. Only now have we amassed a body of data substantial enough to support these pioneers in their efforts.

Starfleet Medical holds an annual conference at which doctors and exobiologists from all over the Federation compare notes on how temporal phenomena affect organisms. Dr. Phlox of the *Enterprise* NX-01 wrote several papers on the topic, including one on a horrific and deadly condition he once observed in Temporal Agent Daniels that caused various parts of his body to age impossibly while others regressed to a high-fetal stage. It was the result of a weapon that hasn't yet been invented; we hope to develop a treatment to repair temporal damage to the body before that point. Advances in medical tricorder technology since then allow us to scan for brain patterns and other physiological signs that an organic being is from another time, or even another space-time continuum.

Starfleet encourages ships' counselors to familiarize themselves with the kinds of trauma that can result from time travel encounters. Forming relationships with people who never existed, or won't exist for centuries, can put undue strain on personnel. Commanding officers must make decisions that could alter our entire history, dictating which tomorrow we face and potentially condemning people or even entire civilizations to erasure from the timeline. Sometimes, abiding by the temporal displacement policy means watching people die when you could have prevented it. The moral dilemmas and emotional burdens of time travel are weighty and still ill-understood. We also have evidence that lengthy exposure to certain kinds of phenomena can inflict disorders such as temporal psychosis or temporal narcosis. Symptoms may include sensory aphasia, emotional dysregulation, loss of consciousness, or even death.

CAUSE AND EFFECT

Using time travel in a roleplaying game can be tricky. Writing about it in a novel or television episode is a little easier, because the author has full control over the story from beginning to end and can plan it all up front. When the Gamemaster works together with Players to create a story in real-time, and can't plan the ending because the Players are likely to come up with solutions the Gamemaster didn't expect, it can take a bit of finagling to work time travel in.

Time travel in a *Star Trek* story should never be convenient or reliable for the Player Characters. Even if someone brings a timeship from the future, the characters should always have a reason not to keep it and use it for themselves beyond a single story arc, whether that's because it blows up, causes a disruption in space-time, or vanishes when the timeline gets corrected. Players who use R&D actions to slingshot their ship back in time or ride the wake of a temporal vortex can overcome the challenges and accomplish their goal – but they'll need to try anew with different or greater complications and dangers each time.

RULES AND REGULATIONS

The section below gives quite a few warnings and rules about time travel. Characters should take these seriously, as ignoring them could cause paradoxes or worse. However, for the Players, these rules exist to be broken! The Gamemaster should never use Starfleet's temporal displacement policies to shut down Player options. Instead, use them as sources of drama that present ethical dilemmas and difficult choices. Whenever characters choose to make changes to history – or do so without meaning to – the immediate consequences should be story hooks to further the adventure, not punishments that limit what Players can do. Then, the Gamemaster can use the Reputation system to decide how the characters' actions affect their careers; interfering too much with the past might have a negative influence

STARFLEET TEMPORAL REGULATIONS SUMMARY

Starfleet sets forth policies regarding time travel, including:

- Starfleet officers shall take all necessary precautions to minimize any participation in historical events.
- Starfleet officers shall not knowingly and willfully employ unauthorized time travel. Only an admiral can grant authorization.
- Knowledge of the future shall be reserved for officers of rank captain and above, unless sharing such knowledge is necessary for the mission or the survival of the crew. Officers shall take every precaution to ensure such knowledge does not impair their judgment or invalidate our established timeline.
- Starfleet officers may, according to their best judgment, cooperate with time travelers from the future in the event that such travelers' agendas and identities can be sufficiently verified, and that doing so does not compromise Starfleet regulations or Federation law.
- Starfleet officers shall cooperate with the Department of Temporal Investigations in matters of temporal security, including but not limited to: answering all questions truthfully; providing any and all requested data, reports, and evidence; surrendering any and all temporal technologies or phenomena upon request; and accepting observation on missions involving time travel.

(and prompt Starfleet to send Temporal Investigations to interrogate them) but doing so to prevent a worse catastrophe – like the Borg going back in time to assimilate Earth – undoubtedly has a positive one.

TIME TRAVEL STORIES

TRAVEL TO THE PAST:

Trips to the past are usually about preventing catastrophe, stopping temporal sabotage, or discovering something lost to the present. Characters may end up in the past by accident or go on purpose. Often, a trip to the past means a trip to *Earth's* past, because that's the history we know best. If not, it usually means visiting a point in a character's personal history, or the history of another culture to which a Player Character belongs. These stories explore themes of self-reflection, learning from the mistakes of the past, and contemplating the nature of personal and societal progress.

Many ventures into the past are fish-out-of-water stories. These are fun because they force characters (not Players)

to deal with circumstances outside their comfort zones. Characters who are knowledgeable about the time period, or good at pretending they know what they're doing, shine here. Other ventures are Cassandra stories, more about knowing what will happen and trying to convince others to change their behavior without revealing the truth. Knowing a disaster is coming and desperately trying to prevent it, questioning all the while whether that's even possible or whether they're trapped in a time loop in which their actions will cause what they're trying to stop, is a powerful character motivator.

PREDESTINATION

Either the Players go back in time, thus filling a predetermined role in events that always happened exactly the way they will go; or someone else comes back from the future to change something, only to find that doing so is what caused the event to happen in the first place. The idea of predestination makes for great drama, but using it in a game risks taking away the Players' agency in deciding how things go. To avoid this, don't establish the paradox beforehand; instead, let the Players decide whether the future the characters want is the one that was always meant to happen (giving them a clear victory), or the one that ends up becoming an alternate timeline (giving them interesting pathos). If an NPC is the one causing the paradox, make sure the future they were trying to thwart is either broad or vague enough that the characters still don't know exactly how things will turn out, or obviously desirable, like the continued existence of humanity. These stories explore themes of fate vs. free will and determining your own destiny vs. taking comfort in the knowledge that things will turn out for the best.

FUTURE KNOWLEDGE AND ALTERNATE TIMELINES:

Whenever the Gamemaster introduces information about the characters' future, *always* consider it subject to change. Players will decide whether to actively pursue a future or work to avert it, and both should be valid approaches to the story. Anything and everything could end up in an alternate timeline by the end of the arc – even events that have *already* transpired in the campaign. However, the Gamemaster should take care not to invalidate the Players' previous triumphs and accomplishments by erasing them from history. If the events that led to a Milestone do end up never having happened through the Player Characters' actions, they don't lose their advancements.

The Gamemaster can use this technique to surprise the Players with shocking developments (like a character's untimely demise) or bewildering paradigm shifts (like suddenly being at war with the Klingons), and then reveal a method for the characters to travel back in time to change things or otherwise investigate a temporal anomaly that caused the alternate timeline. Make sure to introduce that thread relatively early in the story; don't leave Players hanging for too long, thinking the Gamemaster has unceremoniously killed off one of their favorite Support Characters. These

stories explore themes of choice and consequence, and glimpsing what could be or might have been.

CAUSALITY LOOPS

Causality loops are fun because they introduce a moment of revelation and a puzzle to solve. The Player Characters can be oblivious at first, figuring out the problem as they go along, or they can be the only ones unaffected by the reset, trying repeatedly to break the cycle. Or mix it up – perhaps one or some of the Player Characters are immune to the reset and others aren't. The risk is that the repetition of events becomes boring for the Players. The Gamemaster can avoid this by ensuring that each repetition of the loop presents some clue or change early on that makes the rest of the iteration unfold differently from the previous one. Feel free to skip over conversations and other events that are likely to play out the same way as before – simply narrate what happened in brief, and move on. These stories explore themes of déjà vu and past echoes, doom, imprisonment, and solving mysteries.

INVESTIGATING TEMPORAL PHENOMENA

Not all “time travel” stories involve characters actually traveling in time. They may receive an anachronistic message from the distant past or their own future, encounter time dilation or intrusions into their timeline from another one, meet beings from another space-time continuum or from outside space-time entirely, run into themselves from other time

periods, or experience time fragmentation and other, weirder things. Treat these as any other scientific oddity, except that all the previous considerations in this section still apply.

The Players can even play members of Temporal Investigations, or some future organization like the Temporal Integrity Commission. Remember that although they may be stereotyped as “time police” and some antagonistic NPCs may approach such roles that way, they *aren't* “time police” and shouldn't be. Playing temporal investigators or characters who travel through time exploring history firsthand is about discovery and uncovering the truth, not enforcing the Temporal Prime Directive. In their travels they will stumble upon problems that need solving, but it isn't their job to punish others for transgressions against the timeline.

RUNNING THE GAME

When running a session that involves travel into the past, it's a good idea to sketch out the basic sequence of events that *will* occur if the Player Characters don't disrupt them. Of course, they will – but having the sketch ahead of time means the Gamemaster can more easily predict how the changes characters make will propagate forward and show themselves when they return to the present. Time travel stories can get

ON THE NATURE OF DESTINY: THE EL-AURIANS

LECTURE AT THE UNIVERSITY OF BETAZED

We know the El-Aurian people as a species of “listeners.” What exactly this means is up for debate; the Borg eliminated their homeworld roughly a century ago, and since then only a few El-Aurians remain, wandering the Galaxy. Their small numbers and reluctance to talk about themselves give us little to go on. However, one of them is a bartender aboard the *Starship Enterprise*, and Captain Jean-Luc Picard's reports – and staunch faith in her uncanny intuition – have been quite illuminating.

Picard speaks of what could be empathic abilities, but of particular note is the incident a few years ago involving Commander Sela of the Romulan military. She claimed to be the daughter of the late Lieutenant Natasha Yar, who according to Starfleet Medical never had children and was barely older than Sela herself at the time of her death. Nevertheless, the El-Aurian Guinan insisted to Picard that she was certain Sela's story was true; and furthermore, that Yar was aboard the *Enterprise-C* when Romulans destroyed it at the Battle of Narendra III in 2344, and survived to bear a half-Romulan daughter. The only plausible explanation is time travel, although Guinan could not provide any details. Given her reported

track record, we must consider the idea that Lieutenant Yar somehow ended up in the past, probably via events in an alternate timeline.

I posit that the El-Aurian people possess extra-dimensional senses, the ability to intuitively perceive temporal phenomena and retain echoes of timelines that never happened. Curiously, when I interviewed Guinan myself, she spoke of feeling that certain events were “right” or “wrong,” and of things that were “supposed” or “not supposed” to happen. This instinct, that one timeline is objectively correct and others are not, is a unique perspective among those who have experienced alternate timeline phenomena. Others find the altered events disturbing and work to change them back to what they remember, but only out of personal interest.

So I raise the question: Does our space-time continuum in fact have a singular proper path? And if so, are the El-Aurians attuned to it in a way no other species is? Could we, with further study, discover scientific proof that destiny is real?

complicated, though, and it's usually unnecessary to track every detail of cause and effect when characters are jumping back and forth through time. Keep track of the major points of interest and don't worry too much about the rest. If the group loses track of causality, the Players get stuck because of a detail that's been previously established about the future, or the characters manage to change something so drastically that the campaign's present day would become an alternative setting, the Gamemaster can always create a way for the problem to become an alternate timeline, a paradox to be righted, or the result of a temporal anomaly.

Many time travel stories unfold just like mystery stories. The characters encounter something strange they can't explain, such as the corpse of a crewmate who's clearly also alive and well or a contemporary message from someone long-dead, and they investigate it. The easiest way to run this kind of time travel story is to work backwards: Decide

first what the end result of the alternate timeline was, such as "Lieutenant Caruso dies" or "a character's deceased ancestor is thrown three centuries forward in time." Then figure out the sequence of major events that led to the outcome, and identify some clues to each event to leave as a trail for the Player Characters to follow. Decide on one or several ways in which the characters can find each clue, and then finally, decide what the first clue is that starts it all off.

When characters visit the past or the future, they encounter technology they're not used to. Use pages 187-191 of the core rulebook as a guide when introducing anachronistic technology to the story. Highly advanced future technology that ends up in the characters' hands can present unique opportunities for R&D, and the dangerous – and politically complicated – effects of gaining premature access to knowledge and technologies can be a fascinating story arc to explore.

DR. MALACHEK, ROMULAN SCIENCE VESSEL DENEX

INTERCEPTED TRANSMISSION

Commander, you *insisted* the chronitons and tachyons our cloaking devices generate, and the quantum singularities that power our warp cores, were completely harmless and most certainly not responsible for any time-related phenomena. So, I performed a survey of incident logs from every Romulan ship equipped with a cloak and a quantum singularity drive over the past one hundred years.

It's a good thing you're not prone to wagers, because if you were, I would be rich, and you would be destitute! Here's a sampling of my findings.

An isolated fragment of time called a causality loop repeats endlessly until someone changes its course, thus preventing the event that caused the loop. Phenomena such as distorted dekyon fields can cause participants to experience echoes of previous loops. Victims can effectively jump forward in time a remarkable span if they're trapped long enough.

I've identified six distinct paradox types, although the word is rarely accurate. They range from predestination paradoxes, in which the act of going backward in time does not create an alternate timeline because the trip is itself part of the original sequence of events, to paradoxes in which objects or even people have no origin because time travel that introduced them to an earlier point in the timeline wrote their inceptions out of existence.

Sensor readings and careful calculations suggest the shifting endpoint of an unstable wormhole can lead to other time periods. The crew of a scout ship that disappeared into a

wormhole just last year appears in a history text dating back several centuries.

Chronitons, tachyons, temporal radiation, temporal energy, and chronometric particles are all capable of creating space-time disturbances when exposed to a variety of otherwise harmless emissions, including disruptor fire and even transporter beams! We can also *detect* disturbances by scanning for such things. Temporal and chroniton flux are indicators, as well.

Temporal anomalies, rifts, disruptions, and distortions, along with time portals and time warps, are all infuriatingly vague terms for myriad phenomena that can cause time travel, among other destructive or bizarre outcomes.

A phase differential can occur when a phase discriminator interacts with certain kinds of subspace fields. It displaces the subject into a slightly different time continuum by fractions of a percent, and makes them invisible and incorporeal to one another. And I don't even think that's the only way to do it!

Commander, I *strongly* urge you read my paper on the damage our most prized technologies are causing to the timeline, and submit it to the Ministry of Science. I know you think I'm just "excitable," but I fear that if we don't find suitable alternatives, someday we will manage to wipe the Empire from the Galaxy's history!

INTERCEPTED TRANSMISSION

CHAPTER 05.00

USING THE SCIENCES DIVISION



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USING THE SCIENCES DIVISION

SCIENCE DEPARTMENT STORYLINES

"YOU KNOW THE GREATEST DANGER FACING US IS OURSELVES, AND IRRATIONAL FEAR OF THE UNKNOWN. THERE IS NO SUCH THING AS THE UNKNOWN. ONLY THINGS TEMPORARILY HIDDEN, TEMPORARILY NOT UNDERSTOOD."

— CAPTAIN JAMES T KIRK

RED PLOT COMPONENTS

Sciences division personnel aren't always ideally suited for the primary goals of red plot components, but aspects of these plots can directly involve Disciplines and Talents that a science Player Character can bring to the table. Using these plot components means that, while command department Players may be moving the plot forward overall, there are obstacles that will draw in the science department Player Character. This will allow them to take part, or

even change the direction of where events are leading by providing insight or a discovery that may help the command department characters to come to a better solution.

Use this random table to generate a quick red plot component to drop into your mission or to generate an idea to develop for your science department characters.

GENERATING RED PLOT COMPONENTS

D20 ROLL	RED PLOT COMPONENT
1	Conspiracy
2–6	Diplomacy
7–11	First Contact
12–14	Political
15–17	Show the Flag
18–19	Spiritual
20	Starfleet JAG

BEYOND THE FINAL FRONTIER

The *Star Trek Adventures* core rulebook (page 298) suggested creating solutions to Encounters by using a color code (red solutions for command and diplomacy, gold solutions for action and combat, blue solutions for science and technological challenges). Here we present science department plot components, again coded red, gold, and blue.

- **Red plot components** focus on diplomacy, intrigue, first contact, political storylines, legal stories, and anything of a spiritual nature that doesn't fit into science.
- **Gold plot components** involve combat (personal or ship), physical action and activities, some intrigue or espionage, and some action-oriented technological storylines.
- **Blue plot components** focus on science or medical issues, engineering and technical issues, and tactical scenarios that don't fit easily into a gold component.

CONSPIRACY

Conspiratorial thinking is often at direct odds with logical and rational thought. When conspiracies do appear inside Starfleet, or the Federation as a whole, they are well hidden. To uncover these conspiracies, or to begin to unravel them, it can require a computer expert to break into a secure data network, for an astronavigator to accurately map a star system to find obscured installations, or a xenobotanist to discover the mind-altering pollen that is making their crewmates act like drones.

These examples show that conspiracies in your campaign can involve science department characters as integral to discovering the greater truth that is behind strange behavior, bizarre orders from command, or other mysteries that may plague a Starfleet vessel pushing at the edge of the frontier.



DIPLOMACY

Diplomatic negotiations rarely see science department characters front and center as friendships are forged or peaceful resolutions to disagreements are made. But there are many ways that science department characters could directly contribute to the success or failure of diplomats from either side of the table.

A new planet wishing admission to the Federation may have a collapsing ecology due to industrial pollution, causing political unrest, and a Starfleet Corps of Engineers terraformer may be able to determine a way to solve the immediate problems of the world and contribute to its successful integration into the Federation. Another example is that two species are at war over a world they both claim to have settled first, and an archaeologist from Starfleet may be integral to determining who was on the planet first.

Examples: *The computer-run war between Eminiar VII and Vendikar in The Original Series episode “A Taste of Armageddon” or attempting to stabilize a planet’s geology after the Prime Directive was ignored in The Next Generation episode “Pen Pals.”*

FIRST CONTACT

Initiating first contact with a species requires careful planning by the Federation, and science department personnel can

play an important role in the lead up to that first face-to-face meeting. Xenanthropologists and linguists can study a species to understand its past and current culture. Biologists study the planet’s ecology and whether there is any incompatibility with the local biochemistry and that of the rest of the Federation. Even computer experts and physicists can be involved to help understand an intelligent species’ data networks and any unique technology that they may have. While these duties may seem like a B-plot at first to your Players, it is easy to show that the information gathered by science department characters may prove critical to ensuring an easy transition of a species into the galactic community.

Examples: *The sociological observations made by Starfleet of the inhabitants of Mintaka III in The Next Generation episode “Who Watches the Watchers.”*

POLITICAL

Political stories are a large part of many *Star Trek* episodes. Political and diplomatic maneuvering around interstellar events can seem too large and out of reach for science department characters to be a part of, or contribute to. With careful planning, a Gamemaster can ensure that science stays a part of the political process of the Federation. One example may be Dr. Phlox from *Enterprise* being a member of the Interspecies Medical Exchange, not only providing medical care for those in need, but also becoming

a de facto ambassador of the Denobulan people to United Earth. A Starfleet physicist may be working with their Romulan counterpart, making a discovery that improves both civilizations' understanding of the Hubble Constant, and allowing both peoples a shared experience that brings them closer together. These two physicists may become integral to the Federation and Star Empire making a treaty during the Dominion War that brings the Romulans into the war supporting Starfleet.

Example: *The Enterprise episode "Cold Station 12" shows the fallout of past mistakes made on Earth with the creation of Augments and the Eugenics War, and from the same series "Affliction," where the stability of the Klingon Empire is put at risk over the release of the Augment Virus.*

SHOW THE FLAG

When Starfleet arrives at a far-flung colony world that has been giving off signals that it may wish to be independent from the Federation, Starfleet arrives to Show the Flag and remind everyone why being a voluntary part of the UFP is in their best interests. Showing the Flag may also be a way to convince independent systems to join the Federation, or to improve relations with another interstellar government. This proof can easily be assisting in building terraforming facilities on the surface or in orbit, saving the world from an incoming asteroid impact that would shatter the local ecosphere, or even helping a local botanist in developing a new strain of corn that resists local pests. This plot component may be used as a B-plot while diplomatic negotiations are going on, or as the primary plot of the mission depending on how much emphasis you wish to put upon the contribution of the science department.

Example: *We see this type of plot in The Next Generation episode "Deja Q" with the potential of a mass extinction level impact event about to occur on Bre'el IV.*

SPIRITUAL

Many people would see spiritual plot components as being entirely unsuited for science department characters, but that doesn't have to be the case. There are ways to mesh both science and spirituality together that can result in interesting plots. A Gamemaster that uses a spiritual plot component should try and weave science into it not to disprove something specifically or to look down upon a religion, but rather to use science to add to the understanding of a spiritual system or see a religion as a way towards understanding their field of study. A Spiritual plot component may even be an A-plot for science department characters that are archaeologists or xenoanthropologists as they study how a religion influences a society, changed it over time, and what impacts that belief system has on the individuals in it.

Example: *In Deep Space Nine, the Bajoran religion is based around the wormhole entities known as "The Prophets". The Orbs, religious relics of extreme importance, aren't magic and have effects that scientists can study and gain a greater understanding of the universe. The same can be said of any spiritual belief system that has actual beings or devices that accomplish 'miracles.'*

STARFLEET JAG

Starfleet JAG (Judge Advocate General) plot components are filled with different possible options for a Gamemaster to involve science department characters. With a crime possibly being committed by or to a member of Starfleet, accurate investigation and analysis of evidence can mean that nearly any field from particle physics and biology to linguistics, computer science, and even philosophy can be involved.

The analysis of the evidence can also lead to deeper understanding of past crimes when new techniques are developed, or the proven innocence or guilt of an individual may prove that other solved crimes may not be as closed as

EPISODES FOCUSED ON SCIENCE CHALLENGES

"DEAD STOP" (ENTERPRISE)

Enterprise is damaged by a Romulan mine and Captain Archer docks with an automated repair station that uses living minds to help enhance its processing capability.

"THE ULTIMATE COMPUTER" (THE ORIGINAL SERIES)

A highly advanced computer system is installed on *Enterprise* and takes control of the starship during a military exercise, forcing Captain Kirk to fight against both the computer and its creator.

"CLUES" (THE NEXT GENERATION)

Enterprise passes through a wormhole that results in the crew

blacking out, but they find evidence that much has happened while they were unconscious.

"TRIALS AND TRIBBLE-ATIONS" (DEEP SPACE NINE)

Captain Sisko must find a Klingon that is attempting to change the past, all while trying to ensure he doesn't do the same.

"EQUINOX, PART I AND II" (VOYAGER)

Voyager encounters another Federation ship being attacked by nucleogenic aliens and the crew must figure out a defense against the attacks and why they are occurring in the first place.

they were once thought. This makes these components easy to link with previous adventures your characters may have had, or lead to future missions as Starfleet tasks the science department personnel on the investigation with pursuing leads to wherever they may go.

Example: *Involving the science department in judicial events are seen in The Next Generation episode “The Measure of a Man” when Lieutenant Commander Data’s personhood is under question, and a similar episode from Voyager with The Doctor called “Author, Author.”*

BLUE PLOT COMPONENTS

Science department characters are ideally suited for blue plot components as their skills and training will be the primary way these components are solved. A science department character shouldn’t get their hopes up though as problems to be solved and breakthroughs to be made will only make the person a household name if they truly push into the unknown and test the limits of their knowledge and understanding of their field.

Use this random table to generate a quick blue plot component or drop into your mission or to generate an idea to develop for your science department characters.

GENERATING BLUE PLOT COMPONENTS

D20 ROLL	BLUE PLOT COMPONENT
1–5	Deep Space Exploration
6–7	Evacuation
8–9	Medical Issue
10–14	Near Space Exploration
15–17	Planetary Exploration
18–20	Research

DEEP SPACE EXPLORATION

Pushing the boundaries of science and exploration, deep space exploration assignments are highly sought after by many in Starfleet regardless of division, but sciences division personnel have a high priority on starships assigned to the vast areas of the Galaxy outside of the Federation. During these missions, a starship and her crew may spend months or even years away from a starbase and return with a treasure trove of research, unique discoveries, and unknown artefacts that scientists across the Federation will spend decades unravelling.

These types of assignments aren’t specific plots; rather, this is a chance to put together a ‘season’ arc of your own where the characters in your game can begin to explore a

new sector of space, or find themselves thrown hundreds or thousands of light-years from the Federation. One idea on how to set this up would be to come up with a sector of space and fill it with stars and possible adventure hooks. How far is this new area away from the Federation, and have any star-faring civilizations that live in this area ever heard of Starfleet? Are there any friendly or hostile governments present in this new sector? Maybe this deep space exploration will open up a first contact with a new culture that has settled many worlds inside that sector, and as the only Starfleet vessel in the area, the characters are tasked with determining if they are willing to join the Federation or even if they are a threat.

Example: *Episodes where deep space exploration is central, and the problems associated with it, are The Next Generation episode “Where No One Has Gone Before,” and the through line of Star Trek: Voyager.*

EVACUATION

While primarily focusing on medical personnel, an evacuation plot component can bring in all of the sciences. Perhaps there is heavy solar activity creating ion storms around a planet needing Starfleet personnel evacuated and a subspace physicist needs to find a way to punch through the interference to allow everyone enough time to evacuate. Perhaps the evacuations are due to some native lifeform attacking the outpost that a biologist may find a solution for instead of an evacuation. An unknown disaster could have befallen a Starfleet vessel, and as the escape pods are gathered the science and engineering departments must work hard to figure out what went wrong on board.

Example: *We see this on screen with “The Ensigns of Command” and the problems of evacuating the humans from Tau Cygni V due to interference from radiation and the transporters, as well as in “Up the Long Ladder” where an evacuation of a human colony leads into the solution for a genetic bottleneck at another human colony.*

MEDICAL ISSUE

More so than an evacuation plot component, a medical emergency seems even less likely to involve those outside the medical profession, but the Gamemaster can involve science department personnel just as easily. Borg nanites slowly assimilating the ship’s crew could involve cyberneticists and computer technology experts. An alien virus spreading through a colony could easily involve biologists, ecologists and even terraformers, as Starfleet tries to find the source of the infection and a cure. Strange spatial phenomena that prevent dreams might team the chief medical officer with a subspace researcher as they attempt to find a way to let the crew get a good night’s sleep. When using the medical issue plot component, the Gamemaster should always question how it is happening and why it is happening, and the answers to these questions can often provide insight into what other fields of study can be directly involved.

GRADUATE SPEECH

ADMIRAL T'MALASS CH'TON, HEAD OF STARFLEET'S SCIENCES DIVISION AND MEMBER OF THE SCIENCE COUNCIL OF THE FEDERATION (2298-2310)

"Everyone in the Federation knows by the time they begin their education that the primary goal of Starfleet is to explore strange new worlds, to seek out new life, and to go where no one has gone before. While there is always a place for strong leadership, diplomacy, and tactical expertise, Starfleet could not achieve any of its goals without its people that have donned the blue of the science department or have taken the Hippocratic Oath to become its physicians. Without the sciences division, exploration becomes sightseeing, new diseases become plagues, and events that could have ended life on this world and many others became inspirational stories for billions. Today I welcome you into the grand tradition that is Starfleet Science."

Example: *As mentioned previously, Miri from The Original Series is a great example of this, and any episode of Voyager dealing with the Vidi'ans and the Phage.*

NEAR SPACE EXPLORATION

This plot component is when a Starfleet vessel is assigned to patrol and explore areas claimed by the Federation or its allies. During this assignment there are many opportunities for science department characters to shine. Perhaps there is a scientific conference they are attending that becomes a murder investigation after one of the attendees is killed. A new phenomena or lifeform could be discovered in an already settled or explored star system. New discoveries can even be made as the Federation is a vast area and along its ever-expanding borders there are thousands of star systems yet to ever see a Starfleet vessel and could contain enough new discoveries to keep scientists busy for decades.

Example: *The cataloguing of gaseous anomalies and the equipment required for it came in handy when a bird-of-prey that could fire while cloaked attacked the Enterprise in Star Trek VI: The Undiscovered Country.*

PLANETARY EXPLORATION

This assignment can be given to any Starfleet vessel dependent on if they are nearby a planetary body that the Science Council has requested a detailed survey about, or as a long-term assignment for smaller science vessels. These surveys typically do not take place outside of space claimed by the Federation unless as a part of a deep space assignment, and can include gas giants, rocky terrestrial

worlds, and even asteroid and cometary bodies. On worlds with complex lifeforms these planetary surveys often can become extensive assignments as millions of species are sampled, scanned, and recorded.

A planetary survey assignment is a way to introduce Players to the universe of *Star Trek*. Players can get used to the mechanics of the game and the lore, all the while discovering new and interesting things that the Gamemaster has seeded throughout a world. Perhaps a long-dead civilization inhabited this solar system that the initial survey totally missed, and through scanning and exploring ruins on multiple worlds and moons there, the Players are able to learn the story of the Iconians. Perhaps it was a long-lost human colony that failed, and through this the Players learn the history of United Earth before the Federation. Beyond introducing the universe, planetary surveys are an interesting backdrop to a larger plot, such as the character's starship surveying a rouge world drifting between star systems when a number of Orion vessels appear, claiming they wish to scan and survey the same planet. Do they know something Starfleet doesn't? Are the Orion cartels using this planet as a waystation for criminal activity? Assisting in a complex planetary survey may also be a good way for the Gamemaster to introduce some non-Starfleet NPCs or characters, as Starfleet often allows universities to take part in planetary surveys, sharing the data with all.

Example: *Planetary exploration has a major role in "The Enemy Within" in the Original Series when a landing party is stranded on the world after the transporters malfunction from exposure to magnetic dust from the planet.*

RESEARCH

Starfleet may not be the largest or most heavily armed space-capable force in the Orion Spur, but its scientists and engineers are continually pushing the envelope with new technology and new experiments that can be applied to both the fleet and the civilian sector. There are many examples of a starship used as a testbed for new equipment in *Star Trek*. The Warp 5 and trans-warp drive experiments are only a couple, with more including outfitting a shuttlecraft with a version of metaphasic shielding that allowed it to survive a journey through a star's corona, and removing the majority of a starship's crew through the installation of the multitronic M-5 computer designed by Dr. Daystrom.

By including a research plot component, you can provide a setup for science department characters to advance their field or to attempt to make a name for themselves. This alone can be a great way to set up a B-plot dealing with espionage as rival scientists try to steal the research, jealous rivals attempt to sabotage or even to worm their way into the lab to share in any glory that occurs, or even diplomatic and political fallout as a new discovery has an

impact on the Orion Spur that changes the way people view their place in the universe.

Example: *The testing of the new metaphasic shielding technology that could allow a starship to survive the extreme conditions inside a stellar corona as seen in "Suspicious" in The Next Generation is a good example of a research plot tying into a larger murder mystery.*

GOLD PLOT COMPONENTS

Science department characters may seem out of place at first within situations that focus on action and combat. What will become quickly apparent is that without innovation in tactics or adapting to new technology and situations presented to a crew while in a combat situation, the situation could be lost. Innovation and adaptation through observation of the situation is what science department characters excel at, and can provide critical insight to allow a starship's crew to succeed where it normally would fail.

Use this random table to generate a quick gold plot component to drop into your mission or to generate an idea to develop for your science department characters.

GENERATING GOLD PLOT COMPONENTS

D20 ROLL	GOLD PLOT COMPONENT
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1–5	Defense
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6–9	Escort
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10–12	Espionage
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13–16	Patrol
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17–20	Tactical
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DEFENSE

These plot components can involve the defense of a VIP, the defense of a starship or starbase, or perhaps the defense of a planet, star system, and even the Federation itself. Within this component there are many opportunities for B-plots where a science department character contributes to the defense strategy by analyzing attack patterns, or testing new ideas that could be turned into defensive technologies. It is also possible that the A-plot of the defense plot component is centered on a scientific problem that is necessitating the defense, such as a series of strong solar flares threatening antimatter processing facilities orbiting the star. Another possibility is determining a way to defend against a new weapon system that acts as though Federation shield technology isn't even functioning.

Example: *Determining that rapidly fluctuating the shield harmonics could delay the penetration of a starship's*

defenses in "The Best of Both Worlds" is an excellent example of using scientific observation, theory, and application.

ESCORT

Escort duty has been a part of the duties of Starfleet since before the Federation. Protecting merchants or important vessels as they move between systems, ensuring the safety of important diplomats as they are transported to the location of peace talks, or even away teams providing relief to ground forces under fire by hostile forces and allowing the wounded to evacuate. Each of those possible situations can be made to involve science department characters in roles that will ensure the success of the mission. Examples include: keeping a close eye on sensors to detect incoming threats or adjusting and analyzing data to improve the detection range of sensors for possible threats, acting as diplomats of science by passing along information to friendly governments wishing to keep apprised of new developments, or finding a way around hostile ground forces by analyzing geological data to find a cave system where friendly forces can get to safety.

Example: *The Original Series episode "Journey to Babel" provides a good example of Enterprise acting as an escort, as it brings diplomats to a conference, but with a murder being committed, investigators trained in forensics could be used to find the assassin.*

ESPIONAGE

The act of spying itself is almost indistinguishable from what most scientists do every day in their duties: the collection of data, the analysis of the collected data, and coming to a conclusion based on the evidence that can then be passed along to others. This makes scientists who are trained observers and data crunchers ideal for the task of espionage. Astrocartographers who map and study stars and planets can just as easily turn their sensors towards the task of monitoring ship movements and construction of structures in space around nearby stars. Subspace researchers who improve and maintain the Federation's communication network can also put their skills to use in building a new subspace radio array that can intercept comms chatter. That same comms chatter can be decrypted by computer encryption researchers normally working on ways to better compress and store the masses of data in a starships computer.

Example: *The episodes of Deep Space Nine dealing with the morphogenic virus, and how Section 31 developed it to destroy the Founders is an example of the mixing of science and espionage.*

PATROL

Starships maintain patrols along the Federation borders or along its trade routes is a fairly standard assignment in both times of peace and conflict. With Starfleet's focus

on science and exploration, starships on these patrols are often the first to detect strange new phenomena, are the first to respond, and have the science personnel on board to analyze the phenomena or otherwise ensure that the Federation isn't caught off guard. A patrol plot component may be the arc for a series of smaller assignments, some of which could easily involve science department personnel in central roles. A rogue planet drifting into a trade route could lead to discovering bizarre new lifeforms native to that world. A patrol along the Klingon border might have science department characters be the first to discover a never before seen subspace energy ribbon as it moves into Federation space. Traveling in a sparsely populated sector may be a good opportunity for discovering a newly warp-capable civilization, having to make first contact, and all of the scientific data analysis that goes along with beginning to understand an entire planet history, biology, and technology.

Example: *The development of the tachyon detection grid in The Next Generation episode "Redemption, Part II" shows how scientific development, sensor operations, and quantum theory can be used to detect cloaked vessels during a Starfleet blockade.*

TACTICAL

Conflict and battle is something Starfleet and the Federation tends to avoid at all costs, but sometimes a hostile species may not put the same importance on peace and understanding. When these wars and conflicts occur, science department personnel are integral to the success of Starfleet in each engagement. Economists can analyze ship construction rates of the enemy and determine how many new vessels Starfleet has to commission and of what class to counter the threat. Physicists can analyze weapons fire and hostile vessels' defensive technology to improve their own ship's chances of survival by modifying its own defenses or changing firing patterns. A Gamemaster unsure of how to include a science department character in a tactical plot component should think about how data analysis, understanding an environment the conflict is taking place in, or how friendly or hostile other forces are, may approach the conflict.

Example: *Concluding that something 'has to have a tail pipe' in Star Trek VI led Spock and McCoy to be able to modify a photon torpedo to lock onto an otherwise invisible bird-of-prey, saving the starship and the peace conference occurring on the planet below.*

CHAPTER 05.20

USING THE SCIENCES DIVISION MEDICAL DEPARTMENT STORYLINES

BEYOND THE FINAL FRONTIER

This subchapter builds on the plot component concept presented in Chapter 5.10 and provides brief descriptions of plot components specifically focused on medical and psychology department officers and crew.

RED PLOT COMPONENTS

Medical officers and counselors are perhaps more suited to red plot components than other sciences division personnel as their services are often required in many circumstances to bring a different perspective to a mission or to assist the command division characters in their duties. A Gamemaster can provide interesting storylines and give medical and counselor Player Characters a way to expand their experience past a therapy room or sickbay.

Use this random table to generate a quick red plot component to drop into your mission or to generate an idea to develop for your medical department characters.

GENERATING RED PLOT COMPONENTS

D20 ROLL RED PLOT COMPONENT

1	Conspiracy
2–6	Diplomacy
7–11	First Contact
12–14	Political
15–17	Show the Flag
18–19	Spiritual
20	Starfleet JAG

CONSPIRACY

Many conspiracies are begun and maintained by paranoid individuals. Hiding facts from others, keeping secrets, and lying to friends and crewmates can weigh heavily on a member of Starfleet and could affect their performance. A ship's counselor or a physician could detect these signs of stress and begin to suspect they are hiding something, as treatment doesn't seem to alleviate their symptoms. Mind control, through the use of drugs or alien organisms could easily bring in medical professionals and psychologists to be the center of a task force assigned to determine an effective screening technique against such infiltration in the future.

Example: The Next Generation episode "Conspiracy" directly relates to this plot hook.

DIPLOMACY

Diplomatic negotiations between members of the same species is difficult even when each side understands the other's body language and stress indicators, but when there are two or more species involved, each with their own drives, desires, passions and fears, it becomes clear that a trained sociologist or psychologist who has studied the cultures and species involved could make a critical difference between success or failure. Medical officers can also be vital to these talks when both sides do not trust the other or perhaps the sudden death of a diplomat raises the specter of a possible assassination, threatening to derail the talks if not outright cause a war between the two parties.

Example: Preparing a diplomatic suite for a non-humanoid lifeform such as the Medusan in The Original Series episode "Is There in Truth No Beauty," or ensuring the proper life support equipment is available to the Antedens in The Next Generation episode "Manhunt."

FIRST CONTACT

When making first contact with a new species, a trained sociologist or psychologist is of great benefit to the team. Even prior to first contact being made there will be teams of hidden observers of all fields studying the world, its people and its unique problems and benefits they will bring to the galactic community once they are fully introduced to it. When

contacting a world, a medical officer attached to a team studying its diseases could introduce action and scientific discovery; a new terrible disease could infect other species, or a microbe found on the world could hold the key to curing Rigellian measles.

Example: The Enterprise episode "Dear Doctor" features first contact with a species suffering from a plague that would make them extinct by the 24th century.

POLITICAL

Political plot components can be introduced to medical and counselor officers by having them trained either in the physiology of that species or the treatment of their psychological conditions. Perhaps they received training on the world in question, and have gained

EPISODES FOCUSED ON MEDICAL CHALLENGES

"AFFLICTION AND DIVERGENCE" (ENTERPRISE)

Dr. Phlox is kidnapped and taken to a Klingon colony world where a plague is killing the Klingons, and Phlox must develop a cure before the Klingons orbitally bombard every colony world infected with the plague, so it does not spread further.

"MIRI" (THE ORIGINAL SERIES)

After receiving a distress call, a landing party from Enterprise beams down to a world resembling Earth in every way, except that a plague has killed all adults and made the children live for hundreds of years. Doctor McCoy must now find a cure for the plague before he, and the rest of the landing party die themselves.

"NIGHT TERRORS" (THE NEXT GENERATION)

Enterprise is trapped in a Tyken's Rift and the crew is unable to get REM sleep, leading to the crew becoming more irrational and unable to do their duties, all the while Counselor Troi has strange dreams with odd symbolism that she must interpret to help find a solution.

"THE QUICKENING" (DEEP SPACE NINE)

Doctor Bashir travels to a planet that has been deliberately infected with a plague by the Jem'Hadar that he must find a cure for before the entire population is killed, all without the aid of modern medical equipment.

"PHAGE" (VOYAGER)

A species harvests organs from other sentient beings to replace their own failing and diseased organs, resulting in the removal of Neelix's lungs and making the EMH program struggle to keep him alive.

insight into how it functions, such as an Andorian doctor that trained on Vulcan and has a specialty in treating their former enemies may have particular insight into the functioning of the High Command and the Vulcan Science Academy. Counselors and psychologists also could function the same way in such plot components, but also could be brought in to provide their unique insight into how the species thinks and responds to political pressure of all kinds.

Example: *Finding the cause of Sarek's illness and a way to treat it so he may continue to perform diplomatic tasks during an important mission during The Next Generation episode "Sarek."*

SHOW THE FLAG

One of the clearest ways Starfleet can Show the Flag to would-be allies and to ease tensions with rival neighbors is to solve medical crises that they may suffer from. Natural disasters occur, even on worlds that have weather control systems and terraforming, and a Starfleet medical officer can be a literal lifesaver in a situation where a world is raging against its occupants. Viral outbreaks and new bacterial infections can crop up on the frontiers where new alien species meet and expose each other to their own ecosystems' unique biota. Even counselors could be important setting up social programs or relief agencies after a planetary disaster, helping prove that the Federation isn't only there to help with physical wounds, but emotional ones as well.

Example: *The mission Chief O'Brien and Doctor Bashir undertake in the Deep Space Nine episode "The Storyteller" was initially one of providing medical relief to a Bajoran village before they are embroiled in legend.*

SPIRITUAL

Over the centuries there has been great debate about the role of spirituality in medicine, but Starfleet medical officers will often agree that a strong belief in spiritual or philosophical ideals can allow for a patient to recover faster from injuries or bring them comfort when medical science hasn't been able to solve a patient's life-threatening illness. While religion on Earth isn't seen by its people as important to self-identity, there are many cultures and worlds in the Federation where spirituality and religion are one and the same as medicine for the body or the mind. This plot component can involve physicians and counselors alike as they could be trained in their specialties for species or cultures that rely on spiritualism as a part of their medical practices or their ability to recover from trauma. Even without this specialty knowledge, medical and counselor characters may be exposed to these concepts through their attempts to treat a patient, giving the Gamemaster an excellent opportunity to introduce ideas and concepts into their mission that normally may be overlooked.

Example: *Any Deep Space Nine episode where there are physical effects from the presence or actions of the Prophets are good examples of this, as well as the Voyager episode "Emanations" where understanding the burial rights and spirituality of a species in the rings of a planet can reveal that perhaps they do have an afterlife of sorts.*

STARFLEET JAG

When violent crimes have been committed the first people called are medical professionals to treat the victim or examine the evidence left behind on the victim to help investigators determine the who, what, where, when and how of the crime. Medical facilities on planets and starbases often have specialty personnel for such jobs (referred to as Forensic Pathologists or Biologists), but on Starfleet vessels these tasks fall to the personnel in sickbay, and they help the JAG to prove the innocence or guilt of a suspect. Counselors can also take part as they help victims recover from the trauma of the events that occurred, or even to assist investigators in 'profiling' a suspect for a crime, or attempting to understand the motivations behind the cause or reason of the event.

Example: *An investigation into the cloning and genetic manipulation of the Mariposans in The Next Generation episode "Up the Long Ladder" would involve doctors assisting JAG.*

BLUE PLOT COMPONENTS

Medical and counseling personnel shine in blue plot components. Using these components for medical department characters is a great way to provide the A-plot for a Spotlight or Arc Milestone, allowing for the growth and development of these characters. Effectively using these plot components should help a Gamemaster provide a fun challenge to medical and counselor Player Characters beyond what would be their regular duties.

Use this random table to generate a quick blue plot component to drop into your mission or to generate an idea to develop for your medical department characters.

GENERATING BLUE PLOT COMPONENTS	
D20 ROLL	BLUE PLOT COMPONENT
1-5	Deep Space Exploration
6-7	Evacuation
8-9	Medical Issue
10-14	Near Space Exploration
15-17	Planetary Exploration
18-20	Research



DEEP SPACE EXPLORATION

Deep space exploration assignments will always expose a crew to new wonders and discoveries, but also new threats and challenges. While the use of transporters and their biofilters allows away teams to brush aside most common ailments that they may become infected with on a planet's surface, those same filters only work when they know what they are looking for. On previously unexplored worlds, it is a common occurrence for Starfleet personnel to return to their starship with something that could cause illness in them, or spread to others. Medical personnel are therefore important to away teams, taking samples of the environment and ensuring they find microorganisms and parasitical lifeforms that may infect them. Further dangers lurk in deep space, tumbling rocks from a cliffside, hostile native lifeforms, radiation storms, and EPS conduit explosions to name just a few. A medical officer is integral during these assignments to keep the crew alive and functioning. A ship's counselor is also integral to the medical department; a crewmember may be medically fit, but emotionally they may be suffering some trauma from something they experienced, such as seeing a friend killed in front of them, or going back into the Jefferies tube after suffering from plasma burns.

Example: *The disease first encountered in The Original Series episode "The Deadly Years" and later in The Next Generation episode "Unnatural Selection" is a good example of the need for trained medical personnel being involved in deep space exploration.*

EVACUATION

Any evacuation of a ship, planet, or facility is bound to be due to a disaster or an attack. Even with orderly evacuations ahead of an invasion or disaster, medical personnel are critical to helping those that have been injured, or are injured during the evacuation. A counselor or psychologist may also be needed to help those suffering from the trauma that lead to the evacuation or helping those that are suffering an emotional crisis after, perhaps, leaving everything they know behind. These plot components can be used as part of a greater plot dealing with the disaster itself, and the medical and counselor personnel play a smaller part while command and support staff deal with the events on a political or tactical level. Medical and counseling staff could be key to the entire story as they attempt to find a way to prevent the evacuation from ever needing to take place, working to find a cure for a spreading plague, or providing insight into the mind set of an alien culture attacking a Federation outpost out of their own fear rather than malice. A medical vessel performing rescue operations during the Battle of Wolf 359, or in the numerous battles during the Dominion War are good examples of a Medical-centered evacuation seen on screen.

MEDICAL ISSUE

Of all the blue plot components, this is where medical and counselor Player Characters can shine. Because this component fits directly into their specialty it is recommend that a Gamemaster makes these plots special and unique, so they may stand out for these characters. Perhaps this

plot component makes the medical or counselor character the center of the action, having to make decisions that affect both their own well-being as well as loved ones. This is also an opportunity for the Gamemaster to have the Player of these officers to bring out background or add to the story of their characters, developing an old friend mentioned from Starfleet Medical, or perhaps having to revisit the site of a disaster that affected them deeply enough that they became a psychologist to help others. Any episode with a visit to sickbay is a prime example of this plot hook in action.

NEAR SPACE EXPLORATION

Even inside the already explored and heavily trafficked sectors of Federation space and its nearby allies, there are many opportunities for a Gamemaster to include challenges to medical department personnel. A new designer drug could be spreading through the Federation, causing its users to hallucinate, but these hallucinations make the users see strange figures watching everyone around them. Is this drug tapping into madness or an unknown part of the humanoid brain? Other ideas can include providing medical expertise to passing starships in need of a doctor's specialty, helping mediate trade disputes between two Boomer families that have become insular after decades alone, and helping

investigate the possible suicide of a Federation ambassador to a mining colony. The deployment of *U.S.S. Grissom* to the Genesis planet to study the new lifeforms and possible medical applications that could be found in *Star Trek III* is an example of this.

PLANETARY EXPLORATION

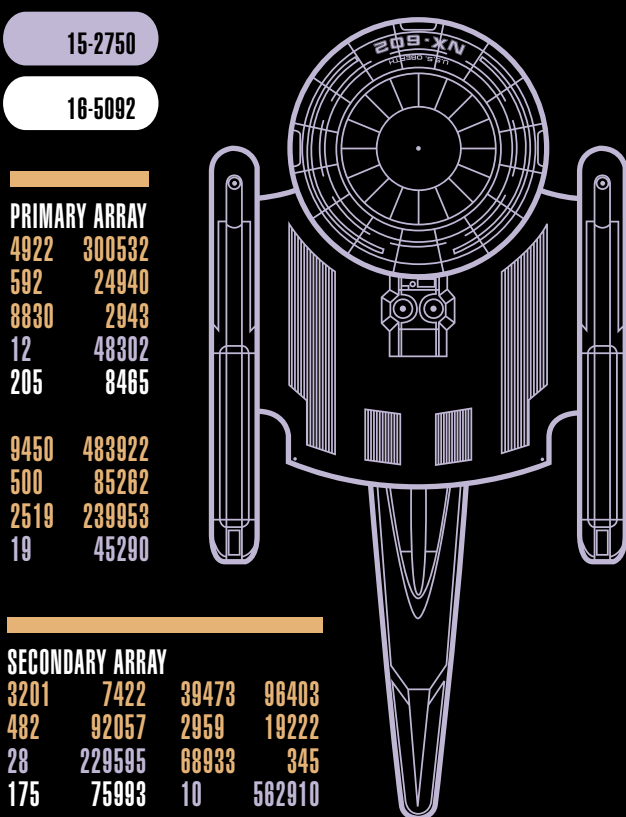
'Strange new worlds' means strange new ecosystems filled with lifeforms that could be beneficial or harmful to the many species of the Federation. Away teams routinely have medical personnel on hand to monitor the life signs of their members and to treat any injuries that may occur. Some physicians may specialize in some forms of animal life, such as plants or reptile analogues that they will wish to study up close. These worlds may also show signs of previous inhabitation, ranging from abandoned or failed colonies to worlds that once harbored billions of sentient beings before wiping themselves out or becoming extinct through some natural disaster. These worlds provide many opportunities for counselors, psychologists, and sociologists to help understand what their cultures were like, how they may have behaved, and what insight might be gained from what was left behind. Understanding the centuries of biological adaptations of the humans transported to the world seen in "The Paradise Syndrome" is a good example of medical planetary exploration.

RESEARCH

The ever-increasing number of member worlds and sentient species being included in the Federation and encountered as the boundaries of exploration are continually pushed back means that medical and psychological research must continually struggle to keep up. Each one of these species brings with it its own diseases, genetic disorders, social mores, and philosophies. All of these issues must be studied to try and improve their own lives as well as the lives of the rest of the Federation. These plot components are a good way to introduce the beginning of an arc that could lead to a milestone for a medical or counselor Player Character as they attempt to solve an issue that is plaguing (literally or otherwise) their field of study. This is also an excellent way to introduce other major players in their field, as often scientists do not work alone. This could be through subspace communications, or at a conference where time is taken to brainstorm the problem and attempt to solve it before they must all go their separate ways. Even with failure, this is an excellent way for any scientist (medical or otherwise) to publish a paper describing their results and begin to improve their knowledge as peers review their findings and provide new insight they may have not had before.

Example: A good example based on an episode is attempting to unravel the biochemical mechanics of how Nancy Hedford was cured of Sakuro's Disease by merging with the Companion in *The Original Series* episode "Metamorphosis."

OBERTH-CLASS SCOUT VESSEL



SENSORY EFFICIENCY ANALYSIS

GOLD PLOT COMPONENTS

Action and combat related plot components may not be the best place for medical department characters, but medical and psychological personnel are indispensable through these conflicts and battles. After the action is complete, physicians and counselors are always needed to pick up the physical and emotional pieces left behind.

Use this random table to generate a quick gold plot component to drop into your mission or to generate an idea to develop for your medical department characters.

GENERATING GOLD PLOT COMPONENTS

D20 ROLL	GOLD PLOT COMPONENT
1–5	Defense
6–9	Escort
10–12	Espionage
13–16	Patrol
17–20	Tactical

DEFENSE

Defending a VIP from an unknown threat may mean ensuring that any viral attacks or poisons are found before they begin to inflict damage. Defending a starship means preparing the crew for possible combat and making sure they are healthy and prepared. Defending a starbase, planet, or a whole star system properly means the redistribution of personnel and supplies on an ever-increasing scale, and the medical needs of these people will need to be met with prepared medical personnel and properly distributed medical supplies. The changes to regular duty schedules and the increased stress involved can also require counselors and personnel experts to determine where the best personnel should transfer to get the most out of the people and material available..

Example: *Developing the neurolytic pathogen that would corrupt the Borg as seen in the Voyager episode “Endgame” is a good example.*

ESCORT

Much like a defense plot component, an escort mission involves preplanning by medical personnel who can ready emergency care facilities and materials in sickbay and elsewhere on board an escorting vessel or one being escorted. Medical personnel may also wish to understand any unique or pressing medical or emotional concerns that may arise while they are escorting a starship or person to where they need to go. Sometimes what is being escorted may be a captured prisoner or reluctant defector, and the listening ear of a counselor may make all the difference in the success of the debriefing or the trial which lays at the end of the journey.

Example: *The use of dedicated hospital ships, or medical research starships such as U.S.S. Pasteur in The Next Generation episode “All Good Things...” would be an excellent example of preplanning the use of medical material and personnel.*

ESPIONAGE

Physicians and mental health professionals both can find themselves integral to the success or failure of an espionage plot component. Physicians may have to analyze captured prisoners from hostile powers to ensure they are both healthy and do not have any hidden weapons inside them. Doctors may perform both cosmetic surgery and install foreign tissue into personnel to change their appearance to be another person or even species to better blend in with an unfriendly population. Counselors and psychologists are also indispensable for debriefings, understanding alien cultures and society to brief agents, and for ‘psyops’ where agents attempt to manipulate a target culture or population to change their beliefs or behaviors or to properly spread disinformation and provide counter-intelligence.

Example: *Changing crew members to look like a native species to better infiltrate or blend in as seen on The Next Generation episodes “Allegiance” or “Unification” are good examples of this.*

PATROL

Patrols can be long and difficult, punctuated by brief periods of extreme action or conflict when you least expect it. Making sure that the crew is both healthy and not falling into complacency is something the medical and counseling staff on board a starship can assist with. Those brief moments of terror that come with unexpected encounters while on patrol are where injuries can occur, or an unprepared crew traumatized. Medical personnel also may be called upon to do their duty even after these brief encounters, treating the wounded of the enemy, or being the first Federation doctor to deal with a strange alien physiology never before encountered.

TACTICAL

The Federation never sees conflict between two interstellar governments as a solution to political or diplomatic disagreements. Starfleet Medical has contingency plans for these conflicts when they occur, attempting to put in place medical personnel, trauma specialists, and vast resources of medicine and equipment to take care of the inevitable wounded that result from even small engagements between starships, let alone the feared planetary invasion, orbital bombardment, or Borg attack. These plot components represent the breakdown of diplomacy, and medical Player Characters may be called upon, along with their starship, to provide relief and support to wounded from all sides of a conflict.

USING THE SCIENCES DIVISION

SPATIAL AND PLANETARY PHENOMENA

The *Star Trek Adventures* core rulebook details many spatial phenomena that characters may encounter (pages 154-156) and the effects they can have on ships. Spatial and planetary anomalies can be much more than a complication for the characters in a given story, they can be the majority of a story if enough planning is done to make them interesting and mysterious. Further detail on these events is given in this section in order for you to have more ideas on how to allow them to be a part of your Players' *Star Trek* experience.

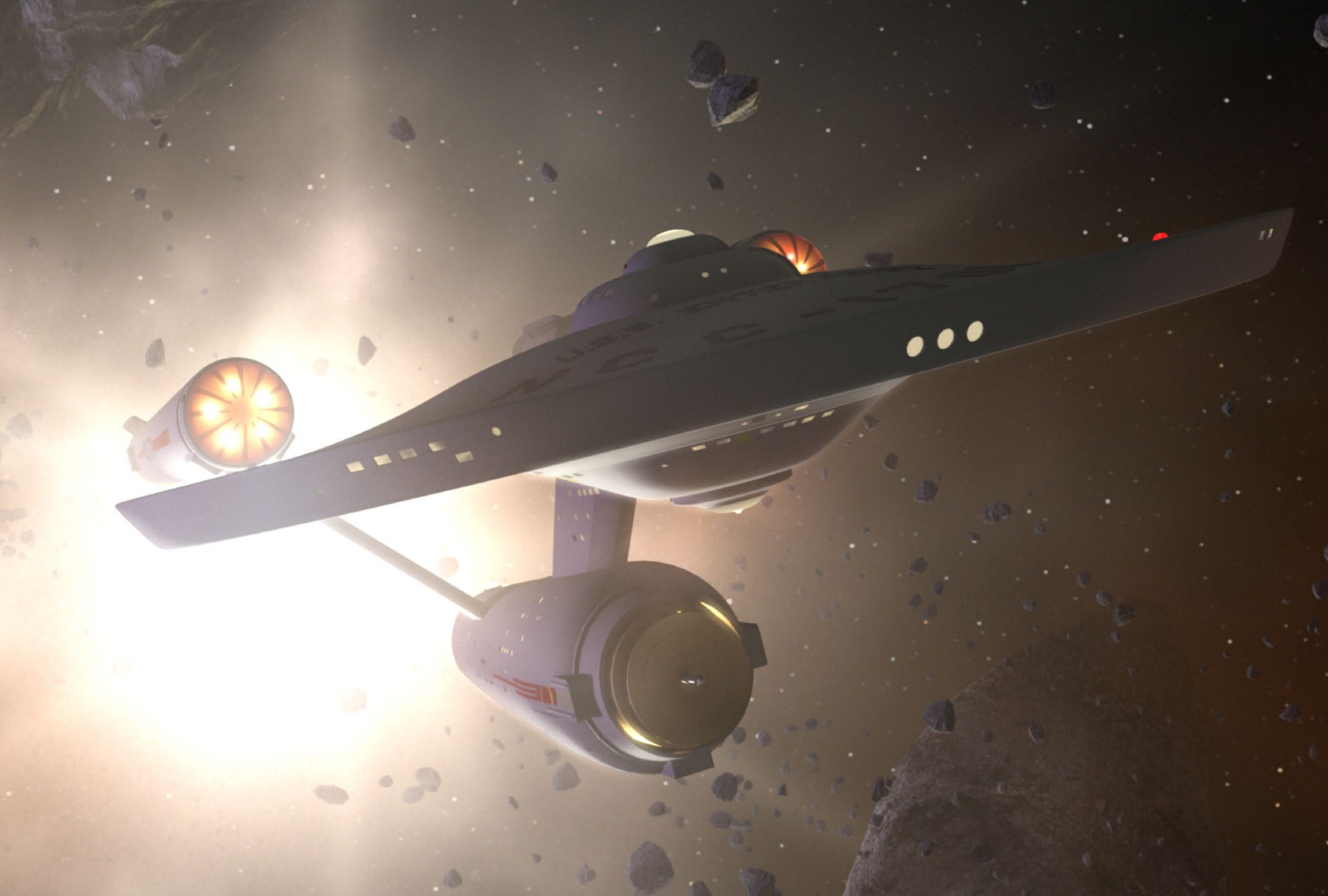
NEBULA

Starfleet has always taken an interest in nebulas. While the vast majority are similar in nature, larger nebulas can hide new-born star systems, rogue planets, or even be the habitat of space borne lifeforms. Some rare nebulas can also have strange new chemical compounds, dangerous natural laser emissions, or even be the hiding spot of groups of pirates or other hostile space-faring civilizations. Many adventures with nebulas will only involve them as the environment the characters find themselves in, or having to navigate around. But, it's possible for a routine nebula survey mission to become immediately life-threatening as an unknown molecule begins dissolving your starships' hull or gravitational eddies inside the gas cloud make getting a location fix impossible and leaves the starship lost in a fog.

Class I and II: Both of these consist primarily of atomic hydrogen with small amounts of helium; a Class I nebula is only slightly denser than the average Interstellar Medium (ISM) and a Class II approximately ten times that of a Class I. This increase in particle density could be due to the passage of a group of stars millions of years previously, or from minor ripples in the underlying fabric of subspace or are the remnants of long past supernovas. These nebulas can be vast, covering hundreds of light-years across. Examples include the majority of the Orion Nebula and the outskirts of the Eta Carinae Nebula.

Class III and IV: These nebulas are found at the cores of larger Class I and II nebulas or can be by themselves. These are the denser areas of a nebula that consist of cooler molecular compounds such as complex carbon molecules, or hot and highly ionized hydrogen gas. The dense molecular cloud type can be thick enough to blot out stars and be as thick as fog, making navigation through them difficult at best. These nebulas are caused by gravitational collapse of sections of a nebula as stars begin to form, or by long term galactic scale gravitational eddies and magnetic fields. Examples include the Coal Sack Nebula, or the Horsehead Nebula in the Orion Complex. Direct exposure to the fine particles in dark molecular clouds could cause problems for equipment or medical emergencies for people that breathe in the nanoparticles and complex molecules. Per the GM's discretion, on top of the increase of Complication ranges suggested in the core rulebook, a character so exposed may be injured with a damage rating of the class rating of the nebula.

Class V: These types of nebula only last for a short amount of time as they are caused by a star being born and its solar wind compacting the surrounding gas, or the dense and hot gaseous areas around a massive body such as a rouge planet or a brown dwarf that is passing through a gas cloud. Deflector arrays can have a difficult time moving the dense gas and particles out of the way, and Bussard ramscoops can become clogged with heavy molecules. Starships moving through these nebula often report 'St. Elmo's Fire' as the starships passage ionizes the gas and makes it glow. Ablation of the hull, pulses of radiation, and the inability for navigational sensors to see further than a few thousand kilometers make these nebulas dangerous at the best of times. Toxic or corrosive gases, complex hydrocarbons, or a dense haze of nano-particles can result in Injury to characters that not only breathe it in, but are exposed at all. Characters coming in physical contact with toxic gases found in Class V nebulas will receive a damage rating of 3, and a damage rating of 5 if they breathe it in. Having a hull breach in a Class V nebula might result in more shipboard casualties than having the same hull breach in a vacuum.



NOVAS AND SUPERNOVAS

As described in the core rulebook, novas and supernovas are destructive high energy events that can damage or reduce the effectiveness of a starships' shields, sensors, and engines. Both events are interesting enough and rare enough that the Federation Science Council and Starfleet's sciences division would assign multiple starships to observation and study. As novas are more common end-of-life events for small and moderately massed main sequence stars, they occur more often than their larger cousins, the supernovas. This makes novas more easily placed into an adventure, the simplest reason being that Starfleet has assigned the character's starship to monitor and record data on the nova for further refinement of the models used to describe stellar evolution and death. Another possibility is a 'ticking clock' adventure where the characters need to accomplish a goal inside the system about to nova and get away before the radiation becomes deadly. If characters find themselves inside a star system with an ongoing nova, the GM is recommended to have characters begin taking radiation damage, beginning at a damage rating of 1 and increasing the damage rating

by 1 for every scene they continue to be 'near' the event. While shields of starships are powerful, the death of a star and the energy released by it dwarf the ability of a single starship to mitigate the damage.

Supernovas are rarer, happening on average once every fifty years across the entire Milky Way. The closest recorded in recent history to Federation space was the event that created the Crab Nebula and observed in Earth's 11th century, over six thousand light-years rimward of Earth. These events are rapid and catastrophic, the shock of gas and plasma erupting from the dying star traveling at a significant portion of the speed of light. Planets in its solar system are either ripped apart, have their atmospheres blown away, or are turned into molten slag. Even after the shock front passes, the stellar remnant that remains like a black hole or a neutron star can cause even more problems to characters attempting to explore what remains. If used in an episode, supernovas are best to be used at a distance, having effects on a nearby planet's ozone layer and the radiation destroying its ecosystem. The expanding radiation front, spawning ion and radiation storms, could be slowly cutting off common trade routes to colony worlds, isolating them if they are surrounded by space claimed by non-Federation worlds. These events

could also draw in both scientifically minded researchers as well as seekers of a spiritual or religious truth, wanting to find meaning in the rare and beautiful destruction the death of a massive star produces.

ION STORMS, RADIATION STORMS, AND SOLAR FLARES

Laymen usually separate out ion and radiation storms into separate events, but they have the same root cause, a star or other high energy object emitting a pulse or wave of energy through a flare event. When it is moving through open space, it's often termed a radiation storm, when it passes through a region of higher density gas it can ionize the material and produce an ion storm, and on a planet's surface it would be seen as a solar flare with a resulting geomagnetic storm, if a magnetic field is present. While Starfleet does not actively seek these events out for study, Federation starships often find themselves encountering them in deep space or around planets that have been assigned to assist through the disaster. These phenomena can be used in many ways to propel your adventure forward or be the basis of an exciting episode. Perhaps an oncoming radiation storm is about to hit a remote Federation research outpost and the characters must rush to evacuate them before it hits. The characters could be in orbit of a new member world of the Federation when a massive solar flare strikes the planet and causes a global blackout and pushes the formerly cooperating nation-states of the world to the brink of war. Perhaps a radiation storm is the catalyst, much like a forest fire from some trees on Earth, for the birth and mating cycle of a previously unknown space-borne lifeform. Is it benign or is it hostile?

Class I and II: These storms typically result from flares from main sequence stars or stronger flares from giant and supergiant stars but have decreased in intensity over time or distance. Inside a dust cloud or nebula, the effects of the resulting ion storm can interfere with ship systems and reduce sensor effectiveness, and the radiation in open space is typically able to be protected against by starship or shuttlecraft hulls. Characters in standard EVA suits do not have the same radiation protection and can suffer from a hazard with a damage rating equal to the class of the ion/radiation storm. Characters on a planet's surface may only experience moderate night-time aurora if a magnetic field is present. Without a magnetic field, characters are considered to be exposed as much as they would be with an EVA suit in open space.

Class III and IV: These storms are generated from some of the strongest flares from a main sequence star like the Sun, or moderate flares from a flare star, giant, or super giant. On a planet with a magnetic field the auroras are bright and intense, and unshielded electronic devices can still experience power surges and primitive planetary power grids can burn out and cause a global blackout. Starships with active shielding can withstand the radiation and charged particles, but will require the starship to succeed in a **Structure + Engineering** Task, Difficulty equal to the class of the hazard. The vessels' Power rating is reduced by 1 for every point the Task fails by for the duration of the storm, i.e. with a Difficulty of 4 and the ship gaining 2 successes, the ship's Power rating is reduced by 2. This represents blown circuits and extra power having to be diverted to shielding. Characters in EVA suits or on a planet's surface without a magnetic field will suffer hazardous levels of radiation and suffer an Injury of a damage rating equal to the class of the storm.

COMBINING SPATIAL PHENOMENA

In some cases, and as mentioned in the core rulebook, spatial and planetary phenomena can be combined, as many of these high energy events can be the cause, or affect the other. It is recommended that the Gamemaster determines the primary stellar phenomena and may include effects of a second phenomenon if the primary is at least a Class III, and a third phenomenon if the primary is a Class V. The additional phenomena should only have the effect of a Class I phenomena, but may be increased to Class II during specific scenes per the GM's judgement. Examples include:

If there are significant currents of gas and dust inside a **nebula**, the particles and atoms can become ionized and produce **ion storm**-like effects with static discharge lighting up the dust and gas like lightning. The **nebula** can also be undergoing gravitational collapse as a star system begins forming, producing minor **gravitational waves**.

A **nova** and the wave front of gas erupting from the star can produce **ion storms** inside densely packed areas of gas close to the star, and could produce localized **gravitational waves** near planets as the gas contracts and swirls onto the body.

Supernovas, **pulsars**, and **black holes** are inevitably linked with **gravitational waves** from the rapid redistribution of mass around them, and **ion storms** from the agitation of gas and dust around them. **Nebulas** are the result of a **supernova** that has occurred in the past, and the accretion disk of a **black hole** can be akin to a **nebula** and an **ion storm**, though starships that find themselves in one will probably be worrying about the impact of thousands of tons a second of gas, dust, and plasma traveling at relativistic speeds.

Class V: Incredibly powerful flare events, colliding white dwarfs or neutron stars, or ruptures in subspace can cause storms of this severity. Even modern planetary power grids with safety breaks can experience blackouts and power surges. Small electronic devices can also malfunction in spectacular ways. Characters in Small Craft should experience radiation sickness and possible Injury with a damage rating of 3. Characters in EVA suits or on a planetary surface without a magnetic field should suffer an Injury with a damage rating of 5 or higher with the expenditure of Complication from the GM. Any starship Task has its Complication range increased by 1 due to the severe interference with its systems, and must make a **Structure + Engineering** Task, Difficulty 5 and have its Power rating reduced by 1 for every point the Task fails by for the duration of the storm.

BLACK HOLES, NEUTRON STARS, AND PULSARS

Each of these objects is incredibly dangerous and clearly labeled on any star chart available in most cultures, but these objects are rare, and few are found inside the boundaries claimed by the Federation. The closest neutron star to Federation space is RX J1856.5-3754 and is located around four hundred light-years coreward of Sol, far past the Breen Confederacy and only briefly explored in the early 24th century by *U.S.S. Indomitable*, an *Excelsior*-class starship outfitted for that specific purpose. Neutron stars are incredibly dense objects with a surface 'crust' of superheated regular matter and unstable high neutron count isotopes that covers a soup of degenerate matter. This extreme mass, and possible rotation of the body, brings up many possibilities for adventures involving neutron stars. The rotation of such a dense mass means the possibility of 'frame-dragging', an effect on space-time where it becomes twisted and bent in such a way as to have an outside observer seem to see an object moving in non-Newtonian ways. Light seems to move faster than it should if it is moving in the direction of the space-time rotation, and slower if it is moving against the rotation. This effect can extend into subspace and cause many kinds of disturbances. A warp field may be unstable or enhanced, and the passage of time inside the warp field may change. The neutron star can put enough strain on the local fabric of subspace to cause bleed through of matter or energy from nearby realms in subspace including parallel universes, and along slightly bent time-like curves originating in the past or future.

Pulsars and magnetars are neutron stars, but with some form of energy-powering beams of radiation emitted from the objects' poles. These sources of energy can be from an in-falling accretion disc like active black holes, a magnetic field produced by the object's rapid rotation, or even stranger physical processes. Pulsars are incredibly dangerous to

approach as the amount of radiation being emitted from the axis of rotation is enough to destroy biological matter at a distance of light-years. Even approaching the object from as far from the jets as possible, the radiation, frame-dragging, and relativistic matter rotating around them makes close study nearly impossible. One way to bring pulsars and magnetars into your game is by having its rotational axis shift and the beam of radiation begins sweeping across a new colony world or across an area of space known for space borne lifeforms. Even dozens of light-years away, the radiation could pose a long-term threat to life and the Federation may ask Starfleet to save as much of the native life of the area as possible before it becomes extinct. Another possibility is for a magnetar to have a strong enough energy field combined with the damage it does to subspace to actually allow localized and temporary 'bridges' between timelines and universes. Nothing could survive the radiation near the star where the bridge would form, but it might be possible for strange physical effects to emanate from the bridge while it lasts. This can include changes in physical constants, or even a draining of energy from local space as a bridge to the far future occurs where the stars have already burnt out and the universe's entropic levels are far higher than in the present.

Black holes could be used far more often in-game than you would expect, with the closest known stellar mass black hole being V616 Monoceros, about 3500 light-years away rimward of Earth. Colliding objects at significant fractions of the speed of light can create black holes artificially, and the Romulan Star Empire has been creating 'artificial singularities' in this way for over a century to produce a power source for their starships. They do this by producing the singularity in a particle accelerator, and then slowly feeding matter into the black hole. Black holes 'evaporate' through Hawking radiation, a quantum effect that means that a black hole will lose mass by giving off energy, but by feeding matter to these microscopic black holes at a faster rate than the energy is lost, Romulan starships have a much more efficient, if not volatile power source at their command. When a Romulan ship is destroyed, it is possible for these singularities to rip loose, often consuming the debris around them and continuing to travel in the direction and with the speed that the vessel previously had. Perhaps a microscopic black hole is now traveling towards another disabled ship and the characters have to figure out a way to deflect the singularity as it gives off enough hard gamma and x-rays to cook nearby worlds. Is that black hole going to collide with a planetary body or a star before it evaporates? Can Starfleet capture one of these rouge singularities for study to better understand Romulan subspace technology? Black holes may be used, just as in many episodes of the television series and even movies, as a means to travel in time and to produce a subspace slingshot effect along with many other stellar mass objects. The fundamental laws of the universe tend to break down around the event horizon of black holes, so as a GM you should be aware of their lethality and use them sparingly.

PLANETARY PHENOMENA

Large-scale events on a planet's surface have had as much of a presence in *Star Trek* as strange spatial phenomena. The easiest to bring into your game are weather events such as storms or extreme temperature snaps. While people think of Class-M worlds as mild and temperate due to climate engineering on settled worlds, less advanced worlds just joining the Federation, or those that are just being discovered have weather that can take people by surprise. An away team lost in thick fog may have to rely on tricorder scans of their surroundings, and may not pick up a danger that would otherwise be obvious. Severe rain or wind storms can be used to damage shuttlecraft, lightning strikes can injure or kill, and extremely powerful storms like tornados or hurricanes can lay waste to large swaths of an area or a continent. Some of the larger events may be easy to predict,

but smaller-scale events like sudden storms may be nearly impossible to predict without a network of weather satellites and knowledge of the local climatology, so surprising Players with a sudden snow storm or brief lightning storm may be a good way to push the adventure into something memorable. A severe lightning storm may cause interference with scanning devices or prevent a transporter lock, heavy rainfall can cause unexpected flooding and cut off away team members from each other, and any severe weather can push characters inside shelter to huddle against temperatures cold enough to freeze carbon dioxide, or hot enough to give a Vulcan cause for concern.

Unlike weather, geological planetary events can be difficult to predict at the best of times without a widespread monitoring system. Earthquakes, more typically referred to as seismic events, are caused by two pieces of crust of the planet shifting against each other in a catastrophic release

TERRAFORMING

EDITED EXCERPT FROM *A MARS STORY. STARFLEET CORPS OF ENGINEERS AND YOU. A PUBLIC OUTREACH EDUCATIONAL HOLOPROGRAM, 2368.*

Class-M worlds aren't common enough for a growing galactic population, and we at the Starfleet Corps of Engineers have spent centuries perfecting the art of opening new worlds to colonization by people from across the Federation. When you look outside your home onto the surface of Mars, you may ask yourself, "How did they accomplish such a feat?" We build better worlds through hard work, technological know-how, and a bit of high-tech wizardry. Let me explain.

A world's temperature can be modified in ways that have been in use since the early 22nd century. Solar shields and solar mirrors can be built in orbit to cool or warm a planet depending on what is needed. In fact, some worlds with extensive solar mirrors have areas on their surfaces that never have a night as there is always a sun in the sky through the reflections. Mars itself has multiple orbiting mirrors, and with the orbital space of Mars being some of the most congested in the Solar system, the Corps of Engineers maintains close contact with both Mars Space Traffic Control and Utopia Planitia Shipyards to ensure no accidents occur.

If it is not found deep in a planet's crust, water can be brought to a world from a star's Oort cloud. The comets that are collected are dropped onto the surface by deorbiting them, often with spectacular results, and we jokingly refer to it as 'kinetic terraforming'. This typically does not occur in more populated and heavily trafficked star systems, and this practice was stopped on Mars just prior to the Earth-Romulan War. In this case, comets are brought to an

orbiting spacedock, melted and recast into dense blocks like big ice cubes, and shipped to the surface for use in the colonies. Less energy efficient is the use of replicators to deconstruct material to use the hydrogen and oxygen atoms to make water, but this has been in use since the early 24th century in certain star systems with little natural water content in comets or on moons that would normally be harvested with much less energy required.

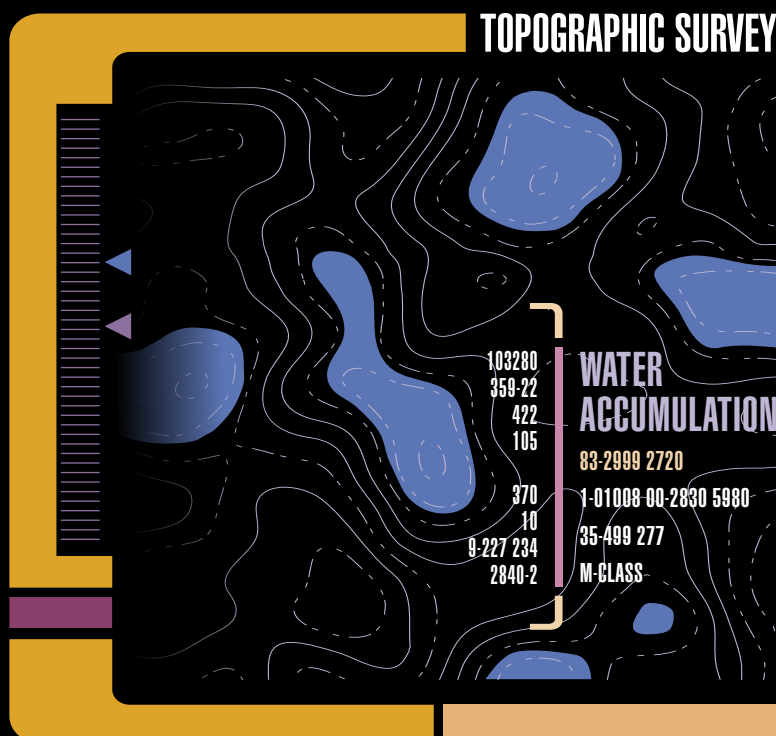
The air you breathe is the most difficult to change as any world worth calling a Class-M has a lot of air. This is why, even after over two centuries of terraforming, you still need a breathing mask when you are out on the surface of Mars. The Corps of Engineers has built giant atmospheric processors that take in the air Mars has, chemically changes it through multiple techniques, and expels breathable air. This is efficient on worlds that already have a dense atmosphere, but takes much longer on worlds that don't, like Mars. With thin-atmosphere worlds, we use those same giant ice cubes that are primarily water, but we look for different types of ices, like ammonia, carbon dioxide, and methane. We can use those ices to help get a greenhouse effect going on colder worlds or nitrogen gas. Things on Mars have been speeding up in the past decade with the introduction of atmospheric replicators, and we currently estimate a full Class-M environment to be declared in the next 30-40 years!

of energy. The resulting waves of energy moving through the crust can be felt for hundreds or thousands of kilometers with the shaking of the planet's surface and collapse of structures. If the seismic event occurs near or under a large body of water the result can be a tsunami, a high-speed wave of water the crest of which builds higher as it moves into shallow water. These waves can often reach heights of three meters, but some have been seen ten times as high, sweeping inland for many kilometers. Volcanos are either the slow and sedate release of low viscosity magma onto the surface as with shield volcanoes, or the rapid release and explosion of thick high viscosity magma in cinder cone and strato volcanos. These explosions can release energy in the low megaton range and higher. As an example, the eruption of Mount St Helens in North America on Earth in 1980 was 24 megatons, or about half the yield of a mid to late 23rd century photon torpedo. A volcanic eruption can also cause a tsunami event in a similar manner as a seismic event, and underwater volcanic eruptions commonly cause small tsunamis.

TERRAFORMING AND EXTINCTION LEVEL EVENTS

The largest events that can occur to a planet are what are referred to as extinction level events. These events have the ability to change a planet's environment in significant and long-lasting ways. These same events, when used on a previously lifeless world by the Starfleet Corps of Engineers are considered to be terraforming processes. The most common of these events is a type of volcanic event called a 'super-volcano' that ejects thousands of square kilometers of rock, dust, and gases that can lay waste to entire continents. The changes in the planetary environment can occur fairly quickly with acid rain and a drop in global temperatures for a year or longer. Extended periods of volcanism and super-volcanic eruptions can lead to longer lasting changes to a planetary environment and have resulted in some of the largest extinction events in Earth's history including the Permian-Triassic extinction event where 96% of all sea life and 70% of land life became extinct. While these events are dangerous and devastating to an already present ecosystem, when used by terraformers they can be beneficial to their needs. These events can release much needed greenhouse gases to help warm a planet, or provide much needed gases and material from deeper in the planet to thicken and transform the atmosphere with further refining. These types of events can be brought into a game by having Starfleet rescue a research team that may be buried under meters of ash, and the atmospheric disturbances make transporter locks impossible to achieve, or a super-volcano threatening eruption could cause the loss of important archaeological sites of a long dead technological civilization and Starfleet needs to assist in saving as much as possible before their being buried under meters of lava.

Small pieces of ice and rock impact every world on a daily basis, but larger impacts occur far less frequently, and when they do the consequences for a world are great. In the early stages of a solar systems formation, these types of large impact events occur often, and are some of the reason why volatile molecules and water are brought to inner planets. After the establishment of a biosphere, these events can range from reducing a whole continent to a lifeless cinder to destroying the whole ecology of a world in a mass extinction similar to the Cretaceous-Tertiary event on Earth. Depending on the size of the impactor and its composition, the atmosphere of a world can be radically changed for centuries, with a nuclear winter type of climate disaster occurring as dust gathers in the upper atmosphere of a world. It would be rare for such an event to take place in a populated star system as modern scanning equipment and tractor beams tend to keep the volume of space around inhabited planets clear of extinction-level impactors, but newly settled systems that haven't been thoroughly surveyed and explored could have a large piece of rock or ice streak in on a high inclination trajectory and impact a populated world that the characters must now rush to save. Additionally, these kinds of events are what the Corps of Engineers would refer to as 'kinetic terraforming', slamming rocks into or shooting them around a planet to transfer momentum, or delivering much needed water and volatiles that a planet might not have to form a hydrosphere or stable atmosphere. Characters may be tasked with seeking out Kuiper belt or Oort cloud objects circling far from the planet being terraformed to find which bodies would work with the task at hand, and many strange mysteries can be found in the dark reaches of even the most populated star systems.



USING THE SCIENCES DIVISION

SHIP'S COUNSELORS

Starfleet's mental health counselors have been a large part of Starfleet's ability to manage trauma amongst the crews of its starships since the Earth-Romulan War reintroduced large-scale warfare to mankind and the psychological problems it can generate. In the beginning of the Federation, these trauma specialists and mental health professionals were assigned to starbases and Starfleet's planetary facilities, as well as common shore leave destinations. Starfleet felt that placing counselors on starships would negate much of the help they could provide as some crewman felt seeing a psychologist showed weakness or an inability to do their job, or would cause their fellow crewmates to see them as weak or flawed. Keeping these services away from duty was seen to be needed to keep morale and confidence in the fleet up.

By the end of the 2260s Starfleet began to re-examine these policies as deep space exploration craft such as *Constitution*-class vessels would return after years away with crews that had far higher than normal rates of suicide, post-traumatic stress, depression, and anxiety. As the Federation expanded and exploration craft spent more and more time away from direct contact with Starfleet, the rates continued to increase until Starfleet saw too many of its highly trained officers and enlisted crew being unable to return to active duty with the same efficiency or skill as they once had.

Starting in 2275, after ramping up its recruitment and training program for people interested in a career in psychology, Starfleet began assigning a trained psychological professional to every ship in the fleet that was considered a cruiser, and smaller vessels at the recommendation of Starfleet Medical and the vessel's commanding officer.

The 'Ship's Counselor Program' began seeing immediate success on many of Starfleet's *Constitution* and *Miranda*-class vessels assigned to deep space duty. The numbers of crew that would have to be fully replaced on each return to a starbase due to psychological trauma lowered by over 70%. While there were still detractors, and with some species having a cultural apprehension towards sharing feelings or trauma, this program became the new standard for Starfleet in the decades to come. A typical ship's counselor begins their career with a graduate degree in psychology, often from a civilian university or other Starfleet accredited institution, and will be expected to work in conjunction with a vessel's chief medical officer to provide clinical care to their crew. Other duties include providing briefings to officers and crew on possible behaviors to keep an eye out for things that represent traumatic stress after away missions or shipboard accidents, monitoring morale aboard the ship, providing insight to the duty officer on which crewmembers may work

SHOULD I USE A SHIP'S COUNSELOR?

While it may seem like a simple idea to provide a crew with a counselor, the reason they are aboard the character's starship is more complex and can bring up many ideas and situations that could be uncomfortable to your Players, let alone their characters. The idea of trauma being used in your game should be brought up with all of the people taking part in a game, and accepted by everyone, as it may be very uncomfortable for some to deal with. In *The Next Generation*, the character of Natasha Yar had a traumatic childhood on Turkana IV where she had to protect her sister and herself from rape gangs and terrible violence on a daily basis. If she was a character in your game and these difficult and painful subjects came up and you hadn't made sure that someone at your table hadn't suffered from such abuse

in the past, or at least is alright with having these subjects explored in context of your game, you may hope that hurt feelings and making an apology is the best outcome.

If you feel as a Gamemaster that introducing the idea of trauma and a ship's counselor may bring up bad feelings at the table, or ruin the flavor of your groups' style of play, don't feel bad about leaving it out. Or perhaps you want a ship's counselor for specific duties such as diplomatic missions, helping with determining crew duty rosters, or assisting the CMO in physical therapy. Like everything in *Star Trek Adventures*, do what you feel is right for your Players.



well and poorly with each other, and ensuring crewmembers that have life events such as marriage, birth of a child, death of a loved one (to name just a few) are given the support or leave time they need to be able to later return to duty.

TRAUMA AND A SHIP'S COUNSELOR

The idea of trauma is something that is fairly common in *Star Trek*. The example of Lieutenant Yar (see previous page) is only one example, with others including the grief of a lost parent/spouse for Beverly and Wesley Crusher, to Admiral Kirk's near breakdown and his later irrational hatred of all Klingons at the murder of his son David. Trauma is something any character can have before your campaign begins or may gain during the events of your campaign. Players should work with their Gamemaster if they wish to have a traumatic experience in their character's past. Many of the career events listed on page 119 of the core rulebook are good gateways into developing a realistic traumatic event. A ship being destroyed would most likely mean the deaths of many close friends and colleagues and perhaps result in survivors' guilt or severe depression or anxiety about being in a situation similar to that original event. The loss of a close friend or family member could make

a character suffer from complicated grief disorder, or the character may become overly protective of another person that resembles their lost loved one. Dealing with a plague or other disaster could result in characters suffering from PTSD, and even first contact situations where the species being contacted is physically unsettling to a character, or their culture holds values antithetical to the character could leave them with anxiety or depression even if the contact was considered successful.

Like past traumatic events, events that occur during gameplay that could result in psychological trauma should be worked out between the Player and the Gamemaster to ensure that the Player is willing to roleplay the trauma respectfully. These traumatic events, or coming to terms with them with the ship's counselor are perfect opportunities for a Gamemaster to plan on a Normal Milestone, Spotlight Milestone, or an Arc Milestone depending on the severity of the trauma, and the meaning it has to the character and their personality. As an example, Lieutenant Reginald Barclay had a trauma in his past, perhaps bullying or abuse that resulted in him being socially awkward, nervous around other people, and being unable to perform his job to the best of his abilities. All of this resulted in him becoming addicted to the holodeck, a place where he could escape and feel like he could be confident and liked. With the events of the

episode “Hollow Pursuits” with both the friendship of Geordi La Forge and the therapy of Deanna Troi, Barclay seemingly overcomes his addiction to the holodeck, representing a Spotlight Milestone.

One way of involving a ship’s counselor or a psychiatric character into the ongoing adventures of your group is to have the possibility of trauma occur to characters that have emotionally distressing events occur to them. This could be something akin to a friend or colleague dying next to them in a shipboard accident, living through a catastrophe, or even after encountering the Borg. Any stressful or dangerous situation could be the trigger for trauma that the character can’t stop thinking about. As before, this should be something that is discussed between the Player and Gamemaster to see if both parties feel that adding this into the campaign will add to the enjoyment of roleplaying the character or take it away. After a traumatic event, the Player must perform a Task that represents the ability of the character to handle emotions and memories with self-discipline, self-determination, and other coping techniques. This Task is a **Control (or Insight) + Command** Task with a Difficulty of between 1 and 4 as determined by the GM based on the intensity of the event. Examples: Seeing a crewmate be badly injured by an exploding plasma conduit, but not killed would be Difficulty 1, or surviving and escaping from the assimilation of your colony world by the Borg after witnessing your family being assimilated would be Difficulty 4. If the Task is failed, the character gains the Trait “Trauma: ‘Event - #’”, where ‘Event’ is the event that caused the trauma and ‘#’ is the number of successes the Task was failed by. In other words, most characters can deal with minor traumatic events, but there are few that would be able to handle nightmarish events that would and should give them nightmares.

Example: *A Player portraying a young James T Kirk is roleplaying him through the events of the massacre of Tarsus IV where Kirk witnessed the genocide of nearly eight thousand people. The Player and the GM decide that this does constitute a traumatic experience, and while even a young Kirk is filled with self-confidence and determination, the Player rolls 2 successes against a Difficulty of 4, giving Kirk the Trait “Trauma: Massacre of Tarsus IV – 2.”*

Like other Traits, these Trauma Traits can be used in advantageous and detrimental ways, but a GM is recommended to limit the positive ways trauma can affect a person, as this would be rare in real life.

Following the example of Kirk above: *If Kirk never received counseling or therapy, working through his trauma with the help of a skilled counselor, during his Five-Year Mission when he encountered the slaughter of the colony on Cestus III, the GM could have the trauma rear up and increase the Difficulty of Command or Presence Tasks by 2, the level of the Trauma Trait. But, as an Advantage, the Gamemaster may choose to lower the Difficulty of Challenges directly involving*

the apprehension and punishment of the former governor of Tarsus IV, Kodos, as Kirk’s determination and drive to see justice done for the victims of the massacre pushes him past his normal capabilities.

THERAPY AND REMOVING THE EFFECT OF PAST TRAUMA

Having a ship’s counselor is primarily a great roleplaying tool, but it is also a way to remove the effects of past trauma on a character. The first step is to figure out the correct treatment. In many ways, this can be left up to a discussion between the Player of the character and the person playing the counselor. A Vulcan suffering from post-traumatic stress disorder will most likely balk at the suggestion of doing group therapy where feelings and emotions are shared, and likewise, an Andorian grieving the loss of a spouse may not find Vulcan meditation techniques to be soothing or helpful. If the Player of the character with trauma doesn’t really know how their character would go about therapy, the counselor may choose a method they are skilled or comfortable with, such as cognitive behavioral therapy, hypnotherapy, meditation, or pharmacotherapy to name just a few examples, or a combination of them.

A character undergoing treatment doesn’t get better overnight, as the trauma they suffered has left deep mental scars. Gamemasters are suggested to have therapy take as many individual episodes or adventures as the severity of the trauma. After this time, the counselor may make an **Insight + Medicine** Task with a Difficulty equal to the severity of the trauma + 1. Counselors and therapists that have the Traits “Empath” or “Telepath” reduce the Difficulty of the Task by 1 as they are able to judge emotional processes easily compared to others. If the Task is successful the character with the Trauma Trait reduces the severity number by 1, representing progress being made in handling the memories and emotions that go with them. If the Trauma Trait is reduced to 0 severity, that represents the character making a breakthrough and being able to feel and act as though the trauma is just a normal part of their experience, putting the emotional baggage behind them as best they can.

Continuing the example of a young James T Kirk: *After Kirk’s rescue from Tarsus IV, he was brought back to a nearby starbase to undergo medical and psychological examinations. Here it was found he was suffering from survivor’s guilt and post-traumatic stress from witnessing the genocide of his friends and their families. He begins group therapy with the other survivors of the Tarsus IV colony, and after a few months (the equivalent of two full adventures) the therapist makes a Therapy Task and gets 3 successes, enough to reduce the trauma severity to 1. The next round of counseling will only require half the time with only needing the passage of a single adventure.*

USING THE SCIENCES DIVISION

CREATING ALIENS

When creating original lifeforms for newly discovered worlds, a Gamemaster should take into account many aspects of the planet itself when considering what a new species, intelligent or otherwise, looks like and how they behave. This section will refer to Chapter 10 of the **Star Trek Adventures** core rulebook often for tables that should be used when wishing to randomly determine some aspects of the world and its life.

THE PRIMARY STAR

The temperature and type of star that the world you wish to populate makes a large difference on the general appearance of the lifeforms that would inhabit it. The beginnings of life on any world are single-celled organisms that produce energy through some process, most likely photo- or chemosynthesis. Chemosynthesis is more common amongst life that evolves deep under the ocean surface near geothermal vents in the planets' crust or perhaps in the oceans under the frozen surface of cold moons circling gas giants. Lifeforms that evolved under these conditions can be of incredibly varied shapes and colors. Life that evolved to use the light from the star its planet circles will generally have traits that help it most efficiently use the energy delivered to it. Planets that circle around dim and cool red Class-M stars may appear black or even deep purple as they evolve to use the majority of incoming light that is red or infrared, but still reflect dangerous ultraviolet radiation that many of these low-mass stars emit during flare events. Stars that are brighter and more massive than the Sun may have plant life that has evolved to reflect away the higher amount of blue and ultra violet radiation by appearing blue themselves, or to more fully utilize the blue spectrum by appearing red and orange, much like the autumn colors of deciduous plants on Earth.

Animals that evolved in these conditions would have coloration and sensory organs that make sense of this light. Creatures that evolved under the ice or at the bottom of temperate oceans may have no use for visual organs at all, or if they do have them they are rudimentary at best and serve only to see creatures that emit light to attract mates

or to lure food. On dim worlds around red dwarfs, animals would be more likely to have their visual spectrum extend far into the infrared, seeing heat sources and possibly even using a natural microwave radar to 'echo locate'. These animals may be able to camouflage themselves using thermal variations on their skin and visually be darkly colored to blend in with the vegetation, patterns only visible in the deep red or infrared parts of the spectrum. Animals from Class-A stars may also see far outside the normal spectrum, using x-rays or ultra violet light to sense danger or prey. Like their counterparts from cooler star systems, these animals may not have patterns or coloration that is visible to humans or other humanoids, only able to be seen using ultraviolet light sources.

Finally, the temperature of the star and what luminosity class it is (core rulebook, page 152-153) can make a large difference in what kinds of life are possible. Single celled life of many kinds seems to quickly appear where conditions are right, but more complex life takes quite some time with the first multicellular lifeforms appearing on Earth around a billion years after it formed. While some worlds may have quicker evolution from the larger amounts of energy being introduced into the environment, stars that only can stay stable on the main sequence for a billion years or less have little chance of naturally evolving complex lifeforms, let alone intelligent life. Dim Class-M stars have different problems, with main sequence lifespans that could reach up to trillions of years, far longer than the universe has been in existence. That means that some Class-M stars formed in a time when atoms more massive than helium were rare and what planets they may have could be limited to gas giants with little that would allow life to form. Class-M stars that formed from the debris of nova and supernova would have these materials, and a stable lifespan long enough to ensure that complex lifeformed. Stars that fall between these two extremes are considered to be the sweet spot for complex life, orange Class-K, yellow Class-G, and yellow-white Class-F stars. Outside of the main sequence ('V' luminosity class), complex life becomes rarer, with it uncommon around sub-dwarf stars (VI), rare around sub-giant stars (IV), and very rare around Super Giant (I), Bright Giant (II), Giant (III), and White Dwarf stars (WD).

BASIC CHEMISTRY

Life found on Class-M and Class-L worlds is chemically usually similar to each other being carbon based and utilizing nitrogen, oxygen and hydrogen (along with trace elements) for survival. There are significant differences that can occur at the molecular level that may not be visually apparent to make one type of carbon-based life incompatible with another. On many worlds in the core of the Federation, including Earth, life evolved using sugar molecules that are 'right-handed' and amino acids that are 'left-handed'. The similarity in this handedness may be due to the activities of an ancient humanoid species seeding life across the Orion Spur, as theorized by Professor Richard Galen. This handedness refers to the geometric properties of the molecules, and these molecules can occur with their handedness being opposite. In fact, the life that evolved on some Class-M worlds may use the opposite geometry from those found on Earth, making a human being stranded on one of these worlds able to starve to death while being surrounded by an abundance of native food stuffs. If the lifeforms developed to use the same sugar or amino acid handedness as typically seen in humanoids, but not both, a human visiting that world may be able to get calories from eating native food, but not vitamins, or vitamins but not calories.

Beyond these basic molecular differences there is the rare occurrence of silicon-based lifeforms such as the Horta. This type of biosphere sometimes evolves on Class-K, Class-Y, and Class-D worlds. Biochemically, these organisms function in many ways the same as carbon-based life, but their use of silicon makes the types of molecules used in bioregulation simpler, as the silicon atoms are larger than carbon atoms, making compact molecules difficult to form. This means it's rare to find silicon-based life more complex than simple multi-cellular life, and intelligent silicon lifeforms exceedingly rare, with few being encountered by Starfleet outside of the Horta, Excalbians, and Tholians. Silicon-based life tends to resemble rocky or crystalline structures, and often use crystal formations as means of energy collection, focusing solar radiation onto chlorophyll-analogue containing cells to make silicon-sugar production more efficient, and lenses to display light-emissions for communications. It's even possible for space-based silicon lifeforms to develop natural laser emission to communicate with other members of their herd or family over thousands of kilometers.

Other types of biochemistry are also possible with Starfleet aware of worlds with single-celled life or simple multicellular life using ammonia as a solvent rather than water. The worlds having such life would be similar to the Solar Systems' small world of Titan, a moon of Saturn. These same worlds could also play host to methane-using lifeforms and those that use even more complex hydrocarbons. Also possible are lifeforms that use hydrogen fluoride, but as this molecule is rare in the universe, finding lifeforms using this as a solvent rather than water would be a significant discovery.

STEP ONE: ORIGINS

The origin of a lifeform will inform everything about it: how it interacts with its environment, how it gets energy, and where and when it can exist and thrive.

LIFEFORM ORIGIN RANDOM TABLE

D20 ROLL	ORIGIN
1-17	Carbon-based
18-19	Exotic-based
20	Non-corporeal

CARBON-BASED LIFE RANDOM TABLE

D6 ROLL	ORIGIN
1-3	Anthropoid
4	Fungal
5-6	Plant

EXOTIC-BASED LIFE RANDOM TABLE

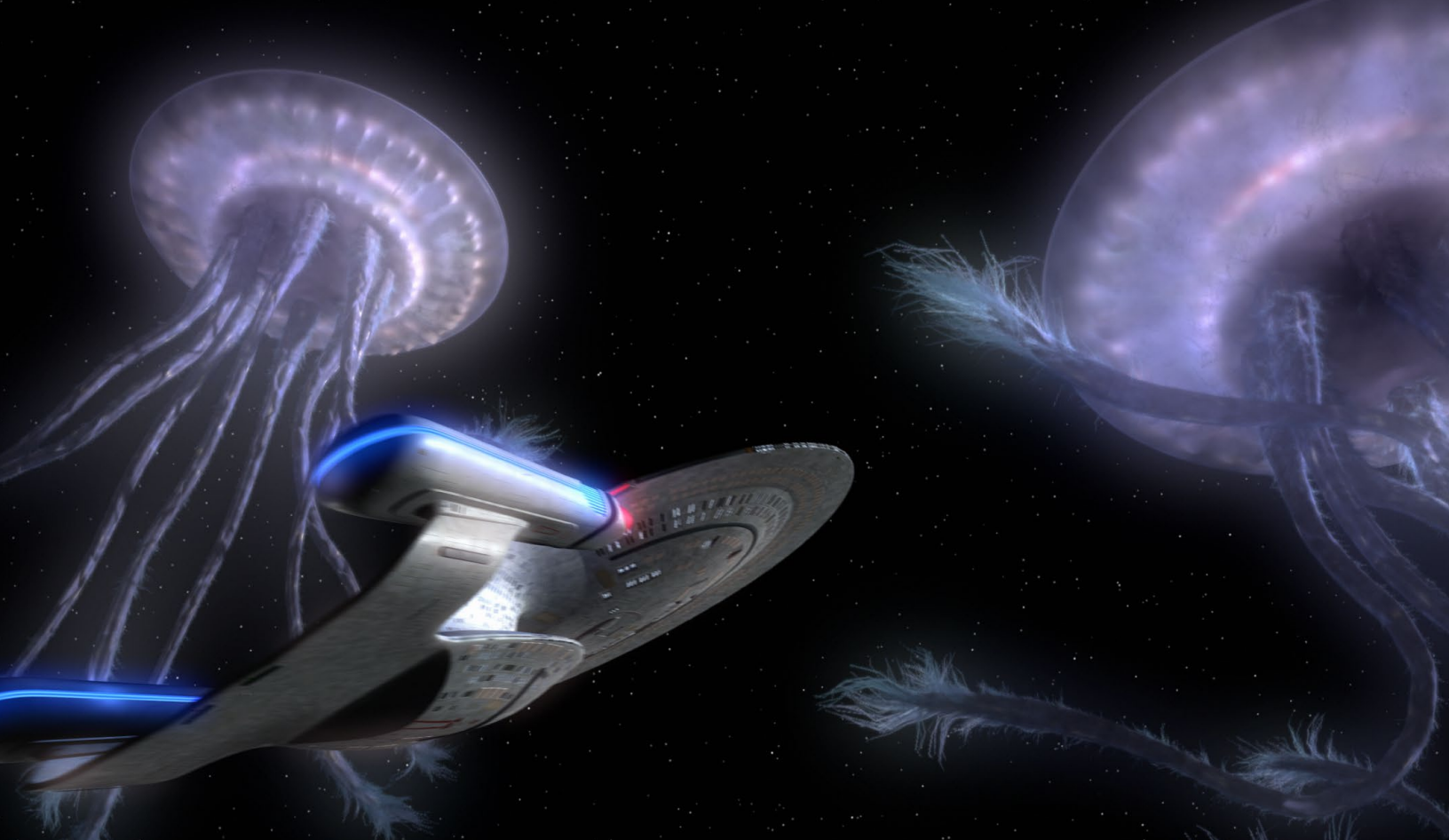
D6 ROLL	ORIGIN
1	Anaphasic lifeform
2	Electromagnetic lifeform
3	Gaseous lifeform
4	Magnetic lifeform
5	Nucleogenic lifeform
6	Neurogenic lifeform

NON-CORPOREAL LIFE RANDOM TABLE

D6 ROLL	ORIGIN
1	Artificial lifeform
2	Biomimetic lifeform
3	Dark matter lifeform
4-5	Silicon-based lifeform
6	Xenon-based lifeform

FORM FOLLOWS FUNCTION

Lifeforms come in an infinite variety of forms, from single-celled photosynthesizers, to kilometers-long space-borne predators. With this in mind the Gamemaster should populate new worlds with animals they feel fit the level of evolutionary development possible and the conditions of the world. For example, Earth of 65 million years ago would be filled with large dinosaurs and lizards, filling most niches in the ecosystem, with mammals only occupying some of the lowest rungs of the food chain. But when the dinosaurs were removed, mammals rose up and filled the empty niches, diversifying in form and



function, from the small rodent-like animals seen during the dinosaur period, to the wide variety of forms seen in the modern era.

Making sentient lifeforms that fit into the *Star Trek* universe needs more detail. Intelligent life doesn't necessarily mean technology-using lifeforms, and there should be as many or more species that either have chosen to never develop along those lines or have an inability to do so when compared to technological beings. Life that evolved in the icy oceans of a world similar to Europa may be intelligent, social, and find communication with other intelligent life rewarding, but the inability to invent fire, see the changing of the stars and seasons, or have access to large amounts of minerals may mean that, even given millions of years of existence, they still may never invent the wheel or consider the possibility of alloys of metals and industrialization. Intelligent life that evolved in the clouds of a gas giant would have even less ability to develop technology or permanent structures to house knowledge or allow the pursuit of science while others hunted and gathered food from drifting sky plankton clouds. This doesn't mean that the Gamemaster should avoid putting these beings into their campaign. Many interesting ideas could stem from these encounters such as characters being on a survey mission at a gas giant to collect samples of airborne carbon and water-based lifeforms when a shuttle they are in is surrounded by massive floating jellyfish-looking creatures flashing and pulsing in a way that the universal translator may later interpret as meaning, "Why are you here

taking our food from us? Do you wish to trade for it with new songs? Why do you not sing with us?"

This being said, the types of intelligent and technologically minded lifeforms that are typically encountered in the region in and around the Federation are humanoid in appearance. This does not mean that they are primates as we know them, like humans, but rather that they have a head, torso, two arms and legs, and stand upright. An easy rule of thumb is that if they could wear a human-shaped spacesuit, consider them humanoid. Many humanoid species have traits associated with non-primates such as the Gorn, Andorians, Tellarites, etc. If you as the Gamemaster do not wish to leave it up to chance, go back to your ideas about what the beings' home world is like. What animals and what traits do they generally have? Is the gravity high or low? Do they require any special gases to survive? After these questions, start sketching out ideas on what they may look like. Strong gravity on their homeworld may make them strong, but shorter than a human. While lighter gravity may make them frail and tall. Do they have sensory organs, besides the typical humanoid eyes that were advantageous for them? One thing you should keep in mind is to not make any new species too powerful that an average Starfleet officer shouldn't feel as though they are not genetically on par with the new species. Every creature has evolved to their particular environment, and may not be suited as well outside of it.

Non-humanoid lifeforms can range across a wide spectrum of body types, colors and patterns, numbers of limbs, etc. Consider the planet the creature lives on; if it doesn't have a solid surface like a massive gas giant, it wouldn't resemble a vaguely upright standing pile of rocks like the Excalbians, nor would a dense amorphous blob of a silicon-based Horta be found boring through ice chunks in a star system's Oort cloud. Keep in mind that intelligent non-humanoid species are possible, but if they have no arms and legs, how would they manipulate tools to build machines? Do they have mandibles that are dexterous? Do they have a mutualistic relationship with a smaller species, or larger species (think Trill symbiotes) that allow them to use tools? How do they communicate? A space-based lifeform may use natural laser light or radio pulses to communicate, where lifeforms similar in structure that live in the depths of an ocean wouldn't use radio and may use sound pulses.

STEP TWO: ENVIRONMENT

The environment a lifeform inhabits will very well depend on the origin of its species, and what molecular structure it is based on. Either choose from the list below, based on Step One: Origins, or roll randomly.

RANDOM ALIEN ENVIRONMENT TABLE

D20 ROLL	ENVIRONMENT
1	Class-D world
2	Class-H world
3	Class-J world
4-5	Class-K world
6-9	Class-L world
10-16	Class-M world
17	Class-T world
18	Class-Y world
19	Anomalous world
20	Deep Space

CLASS-D

Class-D worlds are the most common planetary bodies, essentially barren balls of rock. Exotic lifeforms and non-corporeal lifeforms could have emerged from here due to some anomaly or element present in the rock bed, but no biological life could exist on these planetoids. Species from this location would be *Immune to Vacuum* (see *Special Rules* below) due to the lack of atmosphere.

CLASS-H

These are hot, terrestrial planets. With atmospheres poisonous to biological life, other elements would have to form the origin of life, such as silicon or xenon. Class-H world species would be hardy to hazardous environments of some

form, depending on the planet's atmosphere, and the gravity of the world would influence their strength or physique.

CLASS-J

Class-J worlds are the most common gas giants in the Galaxy, typically between 3 and 15 times the size of Earth. Life here would have definitely formed as either exotic or non-corporeal, perhaps gaseous as the most prominent example. The high gravity would have an effect on the physical force the lifeform could exert, in order to move in its natural environment, giving it an edge in environments with lower Gs and survivability in atmospheres thick in methane or hydrogen.

CLASS-K

Vastly uninhabitable, Class-K worlds are frigid, cold planets with atmospheres of methane and nitrogen. Only the most exotic of lifeforms could call Class-K planets their home.

CLASS-L

Class-L worlds are marginally habitable, and contain limited vegetation and animal life. Aside from Class-M worlds, Class-L worlds are the most likely to support all forms of life. With atmospheres composed of argon, carbon dioxide, and oxygen, these worlds would provide lifeforms an advantage when breathing in hazardous atmospheres or enduring extreme temperatures.

CLASS-M

Class-M worlds are the most common life-bearing planets in the Galaxy, existing in the 'goldilocks zone' of stars; they are easily habitable by carbon-based lifeforms. As a result, the Federation charts and scans all Class-M planets it comes across, so by default your alien life should call one of these planets its home.

CLASS-T

Much larger gas giants make up this category, being up to a dozen times larger than their Class-J counterparts. While the atmospheric composition of these gas giants means that only exotic or non-corporeal life evolves here, the mass of these worlds means that the physique of any life that does is influenced by the 2 to 10 Gs of downward force on it at all times.

CLASS-Y

With dense, corrosive atmospheres, nothing except the most exotic of lifeforms could thrive on these 'demon worlds.' With deadly atmospheres, temperatures, or radiation, any life from here would have an incredibly robust physique or structure, possibly with some immunities.

ANOMALOUS WORLD

While anomalous worlds don't fit into any easy category, the basis for life may be as a direct result of the artificial construction of the planet. Artificial lifeforms would be the most commonly found here, while some carbon-based

flora and fauna would exist purely because they had been placed there in a conservation effort. They may contain any atmosphere from those listed above, and varying biomes based on the planet's purpose.

DEEP SPACE

Lifeforms from deep space would most likely be non-corporeal, able to exist in a vacuum at temperatures of absolute zero. Encounters with these aliens in deep space would most likely involve the entire crew of a starship, as the scale of the aliens would be huge compared to known humanoid species.

STEP THREE: CULTURE

The collective evolution of an entire species takes millennia, but once it comes into contact with another warp-capable species, its unique cultural traits are compared and contrasted. An alien culture is the collective intellectual achievement of its people, as well as their behavioral norms and customs. Choose a culture that is fitting to the alien species or roll randomly on the table.

RANDOM CULTURE TABLE

D6 ROLL	CULTURAL TRAIT
1	Discovery
2	Power
3	Expansion
4	Affluence
5	Purity
6	Supremacy

DISCOVERY

A civilization looking outward, beyond themselves, into the stars has a desire to know and understand the universe and its laws, and to meet other intelligent life. These civilizations endeavor to explore the Galaxy and learn new things about the universe through scientific analysis and first-hand study. Civilizations such as these are driven by a strong ethical framework of improvement of their social and economic conditions through research and development, such as warp drive or matter replication.

Example: *The Federation is an example of a civilization focused on discovery, by sending starships out to explore the Galaxy.*

POWER

Civilizations focused on power look to control their area of space, claiming some or all of their explored space as owned by them by some right. Their social structure will facilitate strong models of dominating others, a chain of command,

or a class/caste structure similar to feudal or prehistoric societies. Their people are loyal to themselves, and may affect their will on other species, effectively annexing them to do their bidding. While the Federation has certainly outlawed slavery, other civilizations might not have, and the Prime Directive largely prevents the Federation from interfering.

Example: *The Cardassian Union is an example of a civilization focused on power, by controlling and enslaving smaller civilizations within their borders.*

EXPANSION

Expansion may be the focus of a civilization that values its survivability and the endurance of its presence in the Galaxy. Civilizations such as these will be quick colonizers and terraformers who seek to change the natural environment in other star systems to match their requirements. Their influence and power comes from their sheer size, broadening their empire as largely as they can in order to gain political recognition or for their continued survival.

Example: *The Borg are an example of a civilization focused on expansion through assimilating other species into their cyborg collective.*

AFFLUENCE

For some, the strength of a civilization is measured in its economic prowess. In the pursuit of profit, an entire civilization can achieve great things through private enterprise. In the extreme, the civilization may not even have a government, in a form of post-liberal anarchy where moral and ethical consequence is secondary to the pursuit of prosperity.

Example: *The Ferengi are an example of a civilization in the pursuit of affluence, forming a legal framework around the Rules of Acquisition.*

PURITY

With chaotic dangers on many planets and out in space too, the clarity of mind can be a safeguarding strategy for many civilizations. Some civilizations, in order to grow during their early historical eras, may have developed tight ethical guidelines and cultural norms that have continued into their post-warp space age. Some civilizations encounter alien species and gain either a sense of superiority, or seek to ensure their own virtues through xenophobia. These species may hold inter-species reproduction in contempt or ostracize aliens from their borders altogether.

Example: *The Vulcans are an example of a civilization dedicated to purity, purging emotion and pursuing logical thought because of their chaotic, war-ridden past.*

SUPREMACY

Even with some advanced cultures, might is right, and the military institutions of the civilization play a crucial role in its governance and ethics. This outlook can often go hand in

hand with domination, but the focus of supremacy can be noble – insomuch as honor amongst warriors, and peace through defensive means are not mutually exclusive from a civilization in pursuit of supremacy.

Example: *The Klingon Empire is an example of a civilization focused on supremacy, with honor and a proficiency in combat marked as the most valued qualities in a person.*

STEP FOUR: FINISHING TOUCHES

All of these qualities inform the species Trait of the alien. While all of the choices or randomly determined results from the above steps give a varied and detailed outline of the alien species, the species Trait will reflect those things in a single word: the name of the species.

TRAIT: The species gains a single Trait; the name of their species.

While a single Trait succinctly describes the alien in-game, and its Trait applies an increase or decrease in Difficulty due to circumstances relating to its form and being, you may want to note its key aspects following the Trait, to keep a note of the things that will affect the Difficulty of Tasks.

Example: *Sam wants to create a unique alien species for his next mission, and he wants it to feel really alien in origin, so for Step One he doesn't roll randomly, but picks Exotic-based. For Step Two, he rolls randomly on the Non-corporeal Life Random Table and gets a 3: Dark matter lifeform. As dark matter doesn't exist in the observable universe, rolling randomly for their environment wouldn't really apply, and Sam chooses Deep Space as an equivalent. He rolls randomly for Step Three: Culture and gets a 6: Supremacy. He takes that as inspiration that they want to exert their force on the material world – and are therefore adversarial to other sentient life. He writes the following:*

TRAIT: *Eizax. Dark matter beings that are very hard to detect. They only interact with and perceive the material Galaxy through their manipulation of gravity. They can change the force of gravity, manipulating gravitons into forms that can communicate with beings in the normal Galaxy, the strongest being able to compress and collapse stars.*

SPECIAL RULES

Certain qualities within the alien's Trait may warrant special rules, such as those in *Chapter 10: Gamemastering* in the core rulebook, p.305.

- **Extraordinary Attribute X:** An automatic success is added to Tasks using the Attribute defined by X. The number of automatic successes can exceed 1; for example, a creature with Extraordinary Reason 2 gains two successes on all Tasks using Reason, in addition to any generated by rolling.
- **Fast Recovery X:** The creature recovers from stress and injury quickly. At the start of each of its turns, the creature regains X Stress, up to its normal maximum. If the creature is Injured at the start of its turn, it may instead spend two Threat in order to remove that Injury.
- **Immune to X:** The creature is unaffected by conditions caused by a Trait present in the scene, such as: cold, disease, fear, heat, pain, poison, vacuum, etc.
- **Invulnerable:** The creature is impervious to harm, and cannot be Injured in any way; attacks can be attempted and damage is rolled as normal, but it cannot suffer Injuries. This may take different forms; see the core rulebook p. 313.
- **Keen Sense X:** Choose one of the following: sight, hearing, or scent. The creature reduces the Difficulty of all Tasks which use that sense to detect or observe.
- **Machine X:** The creature is not a living being, but a machine, or some form of cybernetic organism. It is

SPECIES TRAITS

Not all humanoids are built the same way. With millions of years of evolution there is a huge variation in the biology and anatomy of even the core Federation species, let alone those from other civilizations who have joined the Federation.

Depending on the species, not all hazardous or hostile environments will affect all characters equally and exceptions should be made depending on the species, for example:

- Andorians can resist extremely low temperatures better than their other Starfleet counterparts.
- Denobulans are more vulnerable to radiation.
- Humans have a renowned endurance, with adaptability being a key quality to their survival.
- Tellarites may be more tolerant to toxic chemicals but debilitated more by toxins affecting the eyes due to their keen senses.
- Vulcans are resistant to extreme heat and its dehydrating effects.

highly resistant to environmental conditions, reducing the Difficulty of Tasks to resist extremes of heat and cost by two, and it is immune to the effects of suffocation, starvation, and thirst. Further, the machine's sturdy construction grants it Resistance equal to X.

- **Menacing:** The creature is dangerous, heralding a greater problem for those who confront it. When a creature with this rule enters a scene, immediately add a point to the Threat pool.
- **Night Vision:** The creature has some way of perceiving its environment even in pitch darkness — perceiving infrared or ultraviolet light, echolocation, or some other method. Tasks the creature attempts do not increase in Difficulty as a result of darkness.
- **Threatening:** The creature is powerful and dangerous, with a vitality and drive that allows it to triumph where others might fail. The creature begins each scene with X Threat, that may only be used to benefit itself, and which are not drawn from the general Threat pool.

Example: Sam's alien species is pretty different from most encountered, so he decides to give it several special rules:

- **Immune to Physical Damage:** The creature does not exist in the material Galaxy, and therefore is immune to physical effects.
- **Gravity Sense:** The creature perceives the Galaxy and manipulates matter through altering gravity and detecting the mass of objects. It cannot detect waves or radiation.

Sam's alien will not be created like normal Minor, Notable, or Major NPCs, and instead will not have certain Attributes or Disciplines.

EIZAX [MAJOR NPC]

TRAITS: Eizax. Dark matter beings that are very hard to detect. They only interact with and perceive the material Galaxy through their manipulation of gravity. They can change the force of gravity, manipulating gravitons into forms that can communicate with beings in the normal Galaxy, the strongest being able to compress and collapse stars.

ATTRIBUTES

CONTROL	12	FITNESS	—	PRESENCE	08
DARING	10	INSIGHT	07	REASON	10

DISCIPLINES

COMMAND	03	SECURITY	05	SCIENCE	01
CONN	02	ENGINEERING	02	MEDICINE	—

FOCUSES: Gravity

STRESS: N/A **RESISTANCE:** See Special Rules

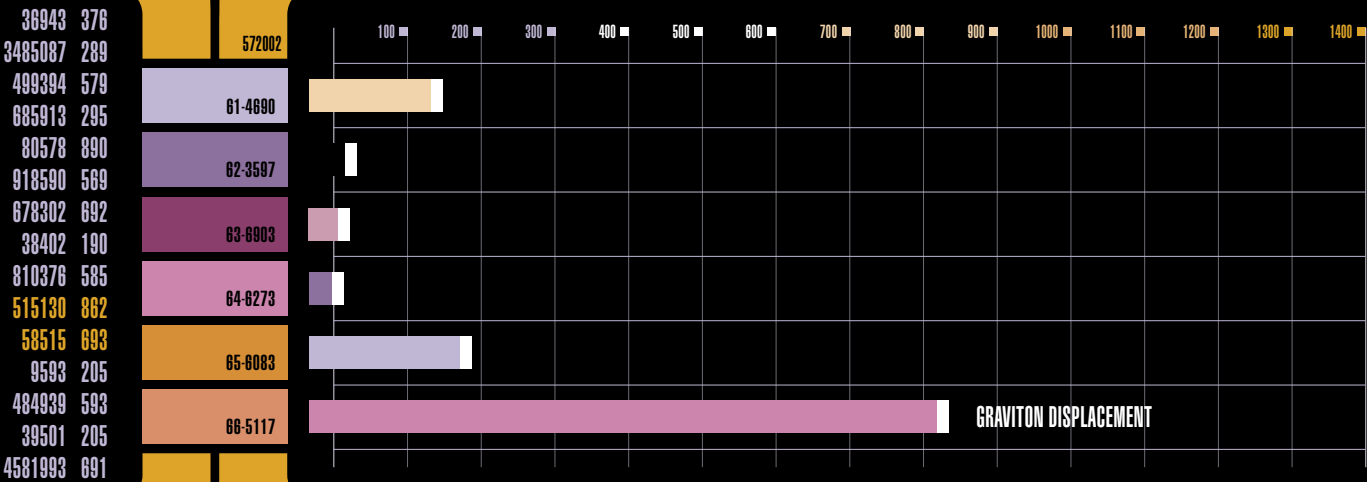
ATTACKS:

- Gravity Crush (Melee, 9▲ Knockdown, Piercing 2)

SPECIAL RULES:

- **Immune to Physical Damage:** The Eizax do not exist in the material Galaxy, so are immune to physical effects.
- **Gravity Sense:** The Eizax perceive the Galaxy and manipulate matter through altering gravity and detecting the mass of objects. They cannot detect energy waves or radiation.

COMPOSITE SENSOR ANALYSIS



USING THE SCIENCES DIVISION

HOSTILE ENVIRONMENTS AND HAZARDS

GOLDBLOCKS

Humanoid life is dependent on the conditions found on Class-M planets throughout the Galaxy. The stable temperatures, and gravity provide these species with the majority of natural habitats found in the Galaxy, with artificial environments replicating these “goldilocks” conditions. Many other environments pose a risk to life. These conditions have been broken down into their component parts: atmospheric conditions, temperature, weather, radiation, and gravity. Each has been categorized with hazardous, hostile, or deadly conditions similar to *Chapter 6: Strange New Worlds* in the core rulebook.

ATMOSPHERIC CONDITIONS

VACUUM (DEADLY ATMOSPHERE)

Negligent or non-existent atmospheres on planets and out in space should be considered a vacuum for the purposes of play. Species traversing Class-D worlds or engaging in Extra-Vehicular Activities require equipment to respire, such as an EV-suit (Opportunity Cost 2). Exposure to a vacuum affects most characters in the following ways:

- **Decompression** carries many dangers including ebullism (where liquids inside the body convert to gas at the lower pressure, resulting in bubbles inside the body), hypoxia (where the body is deprived of oxygen), and hypocapnia (reduced carbon dioxide in the blood affecting a person’s coherency).
- **Freezing** of bodily secretions, like water vapor in exhalation due to evaporative cooling. Lungs and airways collapse as they contract, water vapor freezing inside the cavities.
- **Circulatory Failure** means the heart stops pumping blood around the body.

- **Paralysis** due to circulatory failure and hypoxia, as well as brain and nervous system malfunction.

Being exposed into a vacuum for around 30 seconds results in a **Non-lethal Injury**; at another 60 seconds the character suffers another, this time **Lethal**, Injury. Complications suffered due to vacuum exposure can increase the Difficulty of all Control, Reason, and Fitness-related Tasks or, depending on severity, make them impossible.

TOXIC GASES (HAZARDOUS OR HOSTILE ATMOSPHERES)

Atmospheres containing poisonous gases, such as chlorine, fluorine, phosphine, hydrogen sulfide, or carbon monoxide at high enough levels are acutely toxic to humanoid beings. Class-H, Class-K, Class-L, and particularly Class-Y planets could all include atmospheres, or localized clouds, of these compounds. Breathing in a hostile atmosphere could induce:

- **Breathing issues** as the gas attacks the respiratory system, slowly inhibiting oxygenation of the blood.
- **Eye irritation** that causes difficulty in visible perception and causes the tear ducts to overproduce.
- **Skin irritation** that damages the protective layers of the body, nerves potentially causing chemical burns and open wounds to appear if acute enough.

Exposure to toxic levels of these gases can cause 1▲ to 5▲ damage per minute, depending on the concentration in the atmosphere, and may even have the Debilitating or Vicious 1 Damage Qualities. Injuries relating from these attacks are Non-lethal. As per Damage, Injury and Recovery (core rulebook, p.176) any character Injured by another attack is treated as a Lethal Injury.

- **Low-toxicity Gas** (2▲, Non-lethal)
- **High-toxicity Gas** (5▲ Debilitating, Non-lethal)

Complications from Injuries involving toxic gas could affect Control, Fitness or Insight, and Presence.

PRESSURE (HAZARDOUS OR HOSTILE ATMOSPHERES)

Atmospheric pressure describes the force exerted by the substance relative to the space it occupies. Higher pressures indicate more particles packed into a smaller space, with low pressure indicating fewer particles in an environment overall. Most humanoids can withstand atmospheric pressure up to about 30 atmospheres, provided they are in an EV-suit to protect them from the toxicity of nitrogen and oxygen at pressures above atmospheric norms. Class-J and Class-T gas giants have dense atmospheres, with liquid centers, and are entirely hazardous due to their lack of oxygen and nitrogen. Low air pressure at high altitudes or where concentration of oxygen is low is also an issue for breathing, even on Class-M planets, inducing hypoxia in humanoids. Low or high-pressure environments could cause:

- **Ebullism** where liquid forms into gas inside the body, leading to swelling, blood circulation and breathing impairment, in low pressure environments.
- **Respiratory failure** due to lungs collapsing or vapor inside the cavities liquifying in high pressure environments.
- **Cell damage** in tissue, due to lactic acid build up or low blood flow in limbs, from prolonged or acute exposure to low pressure.

Exposure to differing atmospheric pressures, such as hazardous environments, could cause temporary Complications for Fitness, Insight, or Reason Tasks, or even a single Non-lethal Injury if the Gamemaster feels it's appropriate. Hostile pressure environments could cause 3▲ to 5▲ damage at appropriate time intervals depending on the severity, and any subsequent Non-lethal Injuries could result in a Lethal Injury, requiring immediate first aid. Complications from these Injuries could include an increase in Difficulty for any Tasks attempted by the affected characters.

TEMPERATURE

Generally speaking, humanoids can comfortably exist in temperatures ranging from 10° to 30°C without the help of warming or cooling devices, and environmental controls aboard Federation Starships are set to an agreed temperature for most of the crew to be comfortable, ranging between 15° to 21°C. Temperatures range from 0 Kelvin, or -273.15°C, to 220 million K in the core of a stable star.

- **Hazardous temperatures (-20° to 0°C, or 40° to 80°C)** – Temperatures in this range slowly affect the bodies of the humanoids, causing 1▲ to 3▲ Lethal damage after 1 hour of exposure, depending on the actual temperature. Complications can occur much earlier, as humanoids begin to experience hypo- or hyperthermia, where they cannot control their own body temperature, affecting Control, Fitness, and Reason.

- **Hostile Temperatures (-40° to -20°C, or 80° to 100°C)** – Exposure to hostile temperatures have a quicker effect on the body, causing 3▲ to 5▲ Lethal damage after 10 minutes of exposure, and physical Complications due to those Injuries, affecting all Tasks.
- **Deadly Temperatures (Below -40°C, or above 100°C)** – These temperatures represent the extremes at which rapid temperature change can kill, dealing 5▲ Vicious 1, Lethal damage after a relevant interval of time. These extremes of cold can rid humanoids of fingers, toes, or other appendages, while extremes of heat can cause dangerous burns to the skin and nausea regardless of Injuries.

GRAVITY

Gravity is the force by which all objects in the universe with mass are drawn towards one another, transmitted as a force through graviton particles. It gives things “weight” and much smaller objects gravitate towards larger objects with such force that Humans on Earth can fall towards its surface at a rate of about 195km/h, accounting for air resistance.

Gravity has been codified with the gravitational constant, a formula to measure the force of gravity between two bodies (although the Q have been known to redefine it). Therefore, the larger the mass of a planet, the more g-force is present. Adverse effects on humanoid bodies however, vary greatly depending on their physiology, the magnitude of the g-force, the direction of force, duration, and even the humanoid's posture.

- **Hazardous Gravity** – ranges from 5Gs to 9Gs. Downward g-force in this range proves a hindrance to most humanoids, unless their species originates from a high-G world. While cognitive abilities aren't inhibited, it does prove more difficult physically for people in these environments. *Hazardous Gravity is a Complication for all humanoids, increasing the Difficulty of physical activity by 1.*
- **Hostile Gravity** – ranges from 10Gs to 20Gs. G-force at these levels can be tolerated for very short amounts of time by most living creatures; however, prolonged exposure to these forces begin to affect both cognitive issues and physical activity. *Hostile Gravity Traits of this intensity cause half their Gs, rounded down, in ▲ damage every minute.*
- **Deadly Gravity** – 20Gs or more. A g-force of 20Gs for less than 10 seconds can actually be withstood by most humanoid species, but a prolonged exposure to these forces are by-and-large deadly. *Hostile gravity exerts a Lethal attack of 5▲ to 10▲ Piercing 2, Vicious 1 damage.*

BIOLOGICAL HAZARDS

It stands to reason that with thousands of worlds and spatial phenomena available to explore, there are seemingly countless debilitating or lethal threats to biological beings all across the known Galaxy. These threats include naturally-occurring and manufactured diseases, poisons, toxins, venoms, and viruses that are presented throughout the universe in a myriad of ways. Starship transporters have been programmed to ferret out many forms of hazards, but they can't be designed to account for every biological possibility.

Hazards such as these are often used as the opening to a mission, giving the crew a destination just before the episode's main plot kicks in, or may be used as a 'ticking clock' counting down in the background, adding dramatic tension to a mission. Sometimes investigating, controlling, and eliminating the hazard itself comprises the plot of the mission, such as in the *Deep Space Nine* episode "The Quickening."

Gamemasters are encouraged to review and use the following guidelines to create biological hazards for use in missions to challenge the chief medical officer and other medical department crew members.

HAZARD COMPONENTS

Each biological hazard has a **Vector**, a **Virulence**, an **Incubation**, an **Interval**, and one or more **Symptoms**.

- **VECTOR** is how the hazard is communicated to a target: airborne, blood/fluid contact, ingestion, injection, injury, physical contact, telepathy, etc.
- **VIRULENCE** is the additional Difficulty added to all Tasks related to resisting or curing the hazard, ranging from +1 to +5. In order to expose a character to a hazard, the Gamemaster spends Threat equal to the Virulence.
- **INCUBATION** is the period of time between a Player's exposure to the hazard and the first appearance of Symptoms. When the Incubation period has passed, the infected character must attempt a **Fitness + Medicine** Task with a Difficulty equal to the Virulence. Success means their immune system has fought off the hazard and there is no further effect; failure means they begin to suffer Symptoms.
- **INTERVAL** and **SYMPTOMS** combine to depict the effects of the hazard. Once the character begins to suffer Symptoms, they suffer any effects listed in the Symptoms entry for the duration of the Interval. Then, after a duration equal to the Interval, the character must attempt another

Fitness + Medicine Task or suffer the Symptoms again. A disease may have multiple Symptoms – these should be listed separately, and can often be treated individually.

FATIGUE

A common Symptom that many hazards present is Fatigue, which can also occur as a result of dehydration, extreme heat or cold, sleep deprivation, starvation, strenuous activity, etc. Each point of Fatigue reduces the character's maximum Stress by 1. If a character suffers a point of Fatigue when already at 0 maximum Stress, they suffer a Non-lethal Injury (if already non-lethally Injured, then it becomes Lethal). Fatigue cannot be removed until a character is free from whatever hazard caused the Fatigue.

RESISTING HAZARDS

Hazards are organized into one of three categories: **Acute**, **Chronic**, or **Progressive**. These categories are related to a character's attempt to resist the hazard.

- **Acute X** hazards can be resisted in time. Once a number of Tasks to resist them have been passed equal to X, they are no longer affected by the hazard.
- **Chronic X** hazards cannot be cured completely, but can go into remission. A number of successful Tasks to resist them equal to X puts the hazard into a form of remission, where it is not cured but no longer has an effect on the character. A hazard in remission may return during a subsequent mission; to bring back such a hazard, the Gamemaster spends Threat equal to the hazard's Virulence. In such a case, the afflicted character receives a bonus point of Determination for the duration of that mission.
- A **Progressive X** hazard functions like Chronic hazards, except that its Virulence increases by X for each failed Task to resist it.

TREATING AND CURING HAZARDS

Treating Symptoms of a hazard requires access to appropriate tools and facilities, such as a medical tricorder or a sickbay, and a **Control + Medicine** Task with a Difficulty equal to the hazard's Virulence. Success means that the hazard's Symptoms are suppressed for the remainder of the Interval, plus an additional Interval per Momentum spent.

Curing the hazard itself is more complex: each Medical Task (Difficulty equal to the hazard's Virulence) to treat the hazard counts as one successful Task to resist the hazard, for the

purposes of the disease being cured or sent into remission (a medic or doctor may also assist the patient on their **Fitness + Medicine** Tasks). However, this requires knowledge of a cure and access to the right tools and medications.

- The Gamemaster may require the use of the Scientific Method, an invention, a Challenge, or an Extended Task to discover a cure for a rare or newly-discovered hazard.

SAMPLE BIOLOGICAL HAZARDS

Following is a selection of hazards suitable for use in a *Star Trek Adventures* mission. Gamemasters are encouraged to use them as-is or to modify them as needed.

KALLA-NOHRA SYNDROME

A long-term terminal disease caused by inhaling a mix of toxic gases generally produced as by-products of some forms of mining operations.

VECTOR: Inhalation

VIRULENCE: 3 (Chronic 2)

INCUBATION: 1d20 days

INTERVAL: 1d20 months

SYMPTOMS: Patient suffers one Fatigue. Respiratory complications leading to long-term respiratory failure, and then death.

PSI 2000 INTOXICATION

A potentially fatal affliction caused by polywater molecules encountered in various forms by the crews of both the *Enterprise* NCC-1701, and NCC-1701-D.

VECTOR: Physical touch with perspiration or blood

VIRULENCE: 3 (Progressive 2)

INCUBATION: 30 minutes

INTERVAL: 1 hour

SYMPTOMS: Intoxication-like effects. Patient suffers one Fatigue. Exhaustion, extreme paranoia, psychosis, death.

APHASIA VIRUS

A synthetic virus designed to mimic the effects of aphasia on a target, resulting in loss of cognitive function, coma, and then death.

VECTOR: Physical touch (ingestion)

VIRULENCE: 3 (Progressive 2)

INCUBATION: 10 minutes

INTERVAL: 1 hour

SYMPTOMS: Patient suffers one Fatigue. Confusion, disconnect between words and meaning, causing character to misunderstand words spoken to them and to speak in gibberish. Coma follows a failed resistance Task; after 24 hours, coma results in death barring treatment.

HARVESTERS [BIOMECHANICAL GENE DISRUPTORS]

A lethal synthetic virus highly resistant to most forms of radiation but vulnerable to specific muon frequencies.

VECTOR: Physical touch (absorption)

VIRULENCE: 4 (Progressive 3)

INCUBATION: 2 hours

INTERVAL: 2 hours

SYMPTOMS: Patient suffers one Fatigue. Blurred vision leading to blindness, paralysis, death.

INFECTED WOUND

Any form of physical injury that breaks the skin and is left uncleaned or untreated may result in an infection. While rare among the Federation, infected wounds do occur in situations where medical materials or a sickbay are unavailable.

VECTOR: Injury

VIRULENCE: 1 (Acute 2)

INCUBATION: 1 hour

INTERVAL: 1d20 hours

SYMPTOMS: Patient suffers one Fatigue and has an increase of all resistance tests by +1.

WEATHER

Weather Traits can combine a mixture of atmospheric conditions and temperature. A storm on a gas giant will rage much harder than a storm on a Class-M planet, for example, so scale is a factor in its application. Equally, the chemical substances of a storm will change its effects on humanoids caught up in them.

WIND

Wind, as defined by meteorology, is the flow of air measured by its velocity. On most planets different atmospheric pressures, alongside other factors, produce air currents that travel through its atmosphere. That air can carry different particles, from dust to water vapor in the form of fog. Extreme velocities can bring about storms and hurricanes, with wind speeds above 200km/h damaging even modern Federation buildings and causing destruction to frontier outposts.

Characters out in extreme gale conditions, from 65km/h upwards, have a hard time staying on their feet, may be knocked down, and at extreme densities and speeds, lift a humanoid into the air and move them some distance.

Wind can be represented by a Situation Trait, ranging from “Wind 1” to “Wind 5”, increasing the Difficulty of physical Tasks by the number indicated in the title.

PRECIPITATION

Precipitation on Class-M planets is normally water vapor condensing and falling to the surface. Such rain is harmless, but other precipitation can shower toxic substances onto characters. Combined with wind, rain can provide a hazardous environment, with Non-lethal attacks, or Injuries by spending Threat. Combined with high or low temperatures, the risk of hypo- or hyperthermia becomes present.

Precipitation can be represented by a Situation Trait, increasing the Difficulty of physical Tasks, or gusts can make for one-off Non-lethal attacks, automatically successful and dealing 1▲ to 5▲ Non-lethal damage depending on its velocity.

RADIATION

Radiation is the emission of energy in the form of waves or particles, of which there are 3 types: alpha, beta, and gamma. Each has its own dangers, and severity, inflicting attacks on unprotected creatures.

- **Alpha Radiation (α)** – is the emission of subatomic particles from unstable atoms, consisting of protons and neutrons, at relatively low velocities. Physical contact with alpha radiation is not particularly dangerous as alpha radiation can't pierce the epidermis of humanoids. Ingesting an isotope emitting alpha radiation, however, can cause cell damage and cancer if untreated.

- **Beta Radiation (β)** – is the high-energy, high-speed emission of either an electron or proton from a nucleus where excess neutron particles are converted into the electrons and protons being emitted. Beta radiation can pierce the epidermis of most species and most thin metal alloys, but that doesn't make them safe: by slowing down in solid materials, beta electrons can emit gamma rays that are more penetrating and harmful. An acute exposure to beta radiation can cause a change to the molecular structure of biological matter, causing cancer and death.

- Acute Beta Radiation (3▲ Piercing 1)

- **Gamma Radiation (γ)** – is the emission of ionizing electromagnetic radiation, harmful to life. It can penetrate most physical barriers and unravels DNA molecules, irrevocably damaging living cells.

- Gamma Radiation Burst (3▲ Piercing 2, Vicious 1)

*Harmful radiation can be blocked using EV-suits (Opportunity Cost 2) or Personal Force Fields (Opportunity Cost 1, Escalation 2). Injuries from acute radiation bursts are Lethal attacks. Doctors can formulate and administer inoculations by Creating an Advantage through accomplishing a **Reason + Medicine** Task with a Difficulty of 2 or spending 2 Momentum.*

OTHER SOURCES OF RADIATION

- **Chroniton Radiation** – is a wave associated with time travel and temporal phenomena that moves subjects forward and back in time.
- **Gravimetric Radiation** – is a dangerous by-product of fast-moving gravitons, a subatomic particle that transmits the force of gravity. One common application of gravitons is to create artificial gravity aboard starships.
- **Metaphasic Radiation** – is an experimental energy wave with healthy applications. Exposure can increase the metabolism of most species, helping overall energy levels, and has even been simulated to provide a rejuvenating quality to cells and the aging process.
- **Neurogenic Radiation** – is emitted during medical procedures on brain matter, much like a defibrillator for the heart, that stimulates brain cell activity.
- **Omicron Radiation** – is a toxic radiation emitted from some matter-antimatter reactions. Some antiquated or prototype warp cores still expose beings to mild levels of this radiation, but an inoculation is readily synthesizable.
- **Thalaron Radiation** – is a theoretical electromagnetic radiation that causes severe molecular breakdown of organic cells, with its waveform able to penetrate matter almost perpetually. Its research is banned by the Federation, due to its mass-destructive nature.

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SCIENCES PERSONNEL

LUMINARIES

"YOU SAID YOU LIKED CEREBRAL MEN, AND AT THE RISK OF SOUNDING IMMODEST, I HAVE A TOWERING INTELLECT."

— DR. LEWIS ZIMMERMAN

OVERVIEW

While exploring the Final Frontier, the great minds of the Federation will inevitably become involved in helping push the boundaries of the unknown further away. This interaction can be through them being physically present, their discoveries or legacies influencing the entire Federation's outlook on science or technology, or even through consultation with holographic representations on the ships' holodecks. This section presents a few great minds that Gamemasters can use in their adventures.

DR. RICHARD DAYSTROM [MAJOR NPC]

Richard Daystrom demands attention with his deep baritone voice and his imposing height, but he is able to keep people's attention with his quick wit, incredible intelligence, and his sardonic humor. Daystrom seemed to be destined for greatness as he developed a unique way of computing what he termed 'comptronic circuits' during his time as a graduate student. Then, when he was only 24 years old he invented duotronic computing, a revolutionary new technology that made the older semi-conductor-based computing of the past obsolete. This single discovery swept through the Federation, technology and sensing equipment that once only fit in sickbay or science labs being able to be miniaturized and made into the standard tricorder systems known from the 23rd century onwards. He won the Nobel and Zee-Magness Prize for his work, honors that few have achieved together. His genius came with paranoia, and he felt that his work was mocked or ignored by others in his field. His feelings of persecution continued to drive him to continue his development of duotronics into what he felt was the next step in computing technology, the 'multitronic' M-5 system. Without a doubt, the multitronic concept provided a computer system that wouldn't be rivaled in complexity or processing power

until Dr. Soong's invention of positronic circuitry in the 24th century, but the technology was unstable and resulted in the murder of hundreds of Starfleet personnel during wargames where the M-5 computer was in command of the *Enterprise*. Daystrom's genius was not forgotten even after he was committed to an asylum for rehabilitation, and the Daystrom Institute is the preeminent center of research and development in multiple fields of study for Starfleet and the Federation as a whole.

TRAITS: Human, Legendary Scientist, Mentally III

VALUES:

- You Must Not Die!
- Living Up To My Own Greatness
- Man or Machine? Man and Machine.

ATTRIBUTES

CONTROL	07	FITNESS	09	PRESENCE	10
DARING	07	INSIGHT	11	REASON	12

DISCIPLINES

COMMAND	02	SECURITY	02	SCIENCE	05
CONN	01	ENGINEERING	05	MEDICINE	01

FOCUSES: Micro-scale Engineering, Duotronic Computers, Multitronic Computers, Artificial Intelligence Systems

STRESS: 11

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 3▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Studious (Talent)**
- **Testing a Theory (Talent)**

CHARACTERS IN PLAY

- **Sure of Greatness:** For Daystrom's entire adult life he has been exalted as having one of the greatest minds in the Federation. Any character assisting Daystrom increases their Complication range by 2 (18-20). Any Complication generated by this roll imposes the "Beneath Me" Trait, increasing the Difficulty of that character working with Daystrom again. This same Special Rule applies to the M-5 computer system itself as it uses the memory engrams of Daystrom himself, and will not directly follow commands from crewmembers if they do not fit with its vision of its base programming.

DR. CAROL MARCUS [MAJOR NPC]

Much of Carol Marcus' worldview was formed by being a 'Starfleet Brat', travelling from post to post with her father Admiral Alexander Marcus as she grew up. Seeing alien beings and the almost infinite variety of life on the worlds she visited let her gain a deep interest in knowing about them. After graduating with a doctorate in molecular biology and a M.S. in xenobiology, Doctor Marcus quickly rose to become the preeminent researcher in her field. A string of groundbreaking research papers brought her to the attention of the Daystrom Institute, where she became a permanent fellow. By the early 2270s Doctor Marcus was the lead researcher of Project Genesis, a multi-disciplinary research and development project directly monitored by the Federation Science Council and in cooperation with the Starfleet Corps of Engineers. Although it began as a way to research whether it was possible to artificially create designed lifeforms for biochemical production, or to make new disease-resistant crops, the project became the single most debated scientific discovery and technological breakthrough of the 23rd century, the Genesis Device. The device was capable of scanning an environment, determining what resources weren't present, and then, using an anti-matter powered detonation, it began to reconstruct matter at the atomic level to produce a Class-M environment fully stocked with plant life. After its initial accidental use in the Mutara Nebula made many question her ethics in making something that could so easily be used as a weapon, and after the death of her son on the Genesis Planet, Doctor Marcus withdrew from public life and resigned from her position at the Daystrom Institute. Even after her withdrawal, Carol Marcus' papers on molecular biology and artificial creation of biological matter would help researchers develop replicated foodstuffs and assist in new ways to produce large quantities of algae for terraforming new worlds.

TRAITS: Human, Legendary Scientist, True Believer

VALUES:

- Can I Cook, or Can't I?
- Life from Lifelessness
- Feeling Young as When the World Was New

RICHARD DAYSTROM

As Daystrom was considered a genius at an early age, he felt as though he were under incredible pressure for someone so young. This pressure caused him to become very critical of himself and others, driving him towards greater work, but also pushing everyone else away. A loner at first, Daystrom seemingly perfected the ability to keep others away that he felt were wasting his time or trying to steal his work. He is insulting without being cruel, paranoid without seeming irrational, dismissive of those who do not understand his work, and contemptuous of those that attack him. The combination of his mental prowess and physical presence are enough to cow most people that encounter him, but he never uses his size or strength for violent means, as he is a pacifist at heart. Daystrom is a complex man with mental health issues near the end of his career, but shouldn't be seen as a villain – more of a victim of his own genius and others' expectations of him.

CAROL MARCUS

Before the birth of her son, Doctor Marcus was an energetic idealist, travelling from conference to conference across the Federation when a speaker or topic interested her. She often used Starfleet vessels for these trips as the chief medical officers or biologists on board would clamor to have her ear for the days or weeks the journey would take. The connections she would make at these conferences and in Starfleet would allow her access to the best minds in the Federation when Project Genesis began with her in the lead.

During this time, Doctor Marcus is charming in conversations, but can turn that same charm off and become surprisingly stubborn when a person is being too pushy or rude. She comes across as very open-minded for a scientist, not wanting to discount any theory or idea out of hand as long as there is hard data to back it up.

After the birth of her son, David, and the beginnings of Project Genesis, Doctor Marcus' personality gradually changed. Her outgoing nature disappeared as she became more focused on protecting both her child and her work, cynical and expecting the universe to misuse and mistreat them. She still was an idealist, but expected the worst out of people because they wouldn't understand her work. As she got older she became far more calculating and driven to perfect Genesis, always planning many steps ahead for what the Project would need from the Federation.

After the death of her son and the classification of most of her scientific work at the highest levels, Doctor Marcus is withdrawn and seemingly broken by the feeling that both her children (David and Genesis) were taken from her by events totally outside her control or prediction. Cynical, stubborn, and angry, Doctor Marcus could still be found as a guest speaker at the Daystrom Institute.

ATTRIBUTES

CONTROL	07	FITNESS	09	PRESENCE	10
DARING	07	INSIGHT	11	REASON	12

DISCIPLINES

COMMAND	01	SECURITY	01	SCIENCE	05
CONN	01	ENGINEERING	03	MEDICINE	05

FOCUSES: Molecular Biology, Xeno-Biology, Quantum Physics, Geoengineering

STRESS: 10 **RESISTANCE:** 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Studious (Talent)**
- **Doctor's Orders (Talent)**
- **Starfleet Brat:** Carol Marcus grew up with Starfleet in her blood and she knows the structure of Starfleet better than most civilians (and knows many who currently serve in it). Succeeding a Task involving Starfleet operations or organizational structure, Carol Marcus gains one bonus Momentum that can only be spent to *Obtain Information*. This stacks with Studious (above).

DR. LEWIS ZIMMERMAN [MAJOR NPC]

When Lewis Zimmerman graduated Starfleet Academy in 2342 he began his computers career maintaining the complex isolinear networks on board the starships he served. His studies in isolinear database functionality combined with an interest in holo-engineering, and after a breakthrough he made resulted in more life-like holographic people, Starfleet transferred Doctor Zimmerman to Jupiter Station, the primary research facility for holographic technologies. It was here that he collected the largest database of medical facts and practices in the Federation. He even found personal logs of famous Starfleet medical officers and used them to correlate behavior and ethics into the database.

The end result of this work was the creation of the Emergency Medical Hologram, or EMH1. This holographic matrix was more complex than any program written before it and consisted of multiple layers of databases, ethical subroutines and behavioral patterns giving it the skills and knowledge that most biological physicians could only dream of. Problems quickly became apparent as the behavioral

rouines meant that the EMH typically became contemptuous with patients and had little bedside manner. As the EMH's appearance was modeled after Zimmerman himself, he felt a great humiliation when the programs were transferred off active Starfleet vessels for being faulty. Instead they were assigned to Federation mining facilities processing dilithium. Since that time, Zimmerman has continued his work on Jupiter Station as the research and development lead for the EMH Mk II, III, and IV programs, even while depressed with the failure of his first great creation.

TRAITS: Human, Legendary Scientist, Jerk

VALUES:

- Like Father Like Son
- There's Nothing Worse than a Room Full of Pointy-Eared Blowhards
- At Least One of You is Still Doing What I Designed You to Do

ATTRIBUTES

CONTROL	11	FITNESS	07	PRESENCE	07
DARING	09	INSIGHT	11	REASON	12

DISCIPLINES

COMMAND	01	SECURITY	02	SCIENCE	04
CONN	01	ENGINEERING	05	MEDICINE	03

FOCUSES: Holo-Engineering, Isolinear Computer Systems, Transporter Systems, Neural Networks

STRESS: 9 **RESISTANCE:** 0

ATTACKS:

- Unarmed Strike (Melee, 3▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Studious (Talent)**
- **Computer Expertise (Talent)**
- **Zimmerman Zeal:** More so than most expert holo-engineers, Doctor Zimmerman is able to layer and link multiple levels of programming into each of his creations, sometimes databases or personality traits that may not normally be compatible. Dr. Zimmerman gains an extra dice in Tasks for constructing any holographic being, humanoid or otherwise, but these Tasks also have their Complication range increased by 2. A Complication can provide a strange quirk to the holographic being, causing them to operate outside their normal parameters, perhaps being sarcastic or rude, or even a pet iguana suddenly gaining the ability of speech and repeating embarrassing things to any who will listen.

DR. NOONIAN SOONG [MAJOR NPC]

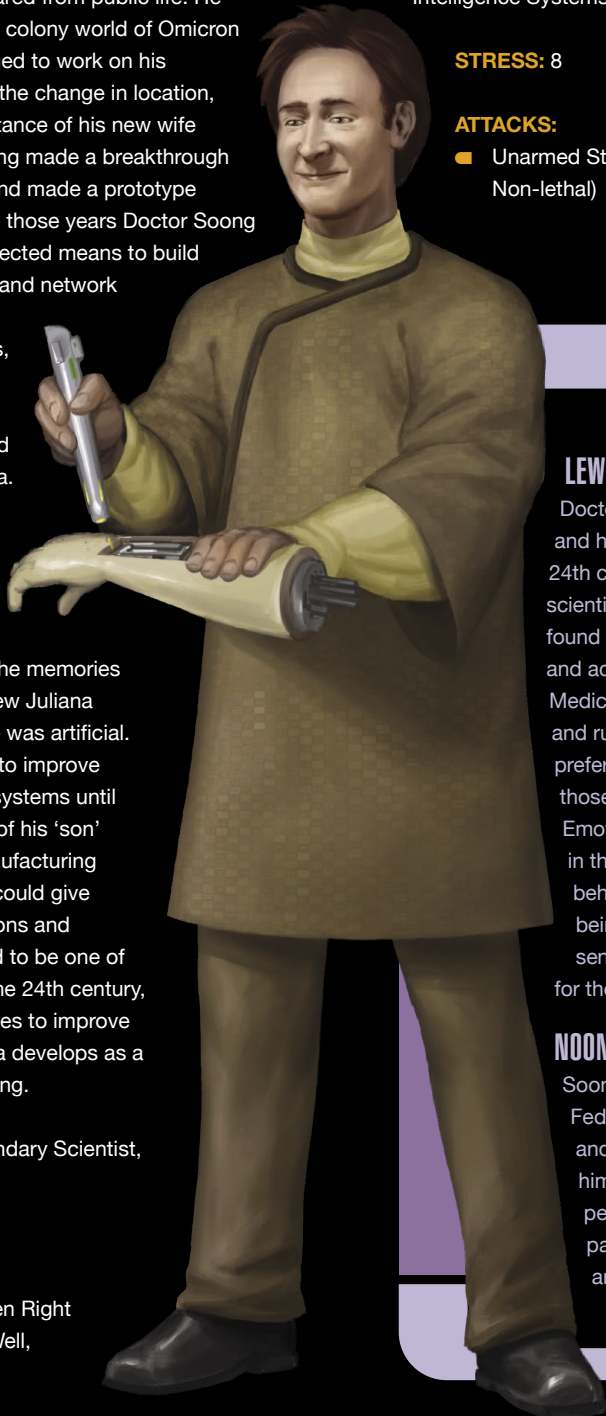
Doctor Soong was a rising star in the Federation for his work on cybernetic interfaces in prosthetics. He began research into a new form of neural networking and artificial intelligence systems that he touted as being ground-breaking during conference presentations. But year after year he was unable to present any real working models of his positronic brain, and his papers began to be rejected by journals and the Daystrom Institute. Humiliated and disgraced after giving a rambling and spiteful presentation to the Federation Science Council, Doctor Soong disappeared from public life. He secretly travelled to the colony world of Omicron Theta where he continued to work on his 'positronic brain'. With the change in location, plus the love and assistance of his new wife Juliana O'Donnell, Soong made a breakthrough in nanoscale circuitry and made a prototype positronic brain. During those years Doctor Soong and Ms. O'Donnell perfected means to build both a positronic brain and network along with advanced cybernetic components, producing a humanoid android named B-4, and two more advanced androids, Lore and Data.

After the attack on Omicron Theta by the Crystalline Entity, Soong made one final android to house the memories of his dying wife, the new Juliana being unaware that she was artificial. Soong would continue to improve upon his positronic AI systems until his death at the hands of his 'son' Lore in 2367, even manufacturing an 'emotion chip' that could give Data human-like emotions and needs. Now considered to be one of the greatest minds of the 24th century, Soong's legacy continues to improve as Lt. Commander Data develops as a recognized sentient being.

TRAITS: Human, Legendary Scientist, Nine Lives

VALUES:

- In My Image
- Often Wrong, Proven Right
- Everybody Dies...Well, Almost Everybody



ATTRIBUTES

CONTROL 09

FITNESS 06

PRESENCE 07

DARING 10

INSIGHT 12

REASON 12

DISCIPLINES

COMMAND 01

SECURITY 02

SCIENCE 05

CONN 01

ENGINEERING 05

MEDICINE 01

FOCUSES: Cybernetics, Positronic Networks, Artificial Intelligence Systems, Nano-scale Engineering

STRESS: 8

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 3▲ Knockdown, Size 1H, Non-lethal)

CHARACTERS IN PLAY

LEWIS ZIMMERMAN

Doctor Zimmerman is active in both the computer sciences and holo-engineering communities during the mid to late 24th century, and can appear in many places where there is a scientific conference or at Starfleet Command. Most likely, he is found at his research facility at Jupiter Station. Already prickly and acerbic before Starfleet decommissioned his Emergency Medical Hologram program, his personality became fully bitter and rude afterwards. Doctor Zimmerman lets few people close, preferring to be alone with his work, insulting and degrading those who persist in bothering him when he does not wish to be. Emotionally unstable, irrational around people, and antisocial in the extreme, the best way to describe him is as a 'jerk.' This behavior is mainly to hide the deep pain he feels at his work being laughed at and discarded, and the EMH1 is a particularly sensitive subject. His antisocial behavior will almost disappear for those that actively help him redeem his work with the EMH1.

NOONIAN SOONG

Soong was one of the most brilliant AI cyberneticists the Federation produced, and he knew it. His arrogant tendency and early difficulties in perfecting his 'positronic brain' earned him the nickname 'Often Wrong Soong'. Despite his abrasive personality, he was a man who felt deep love and tenderness, particularly toward his wife Juliana and his revolutionary android constructions, Lore and Data.

SPECIAL RULES:

- **Studious (Talent)**
- **Computer Expertise (Talent)**
- **Deus ex Machina:** Dr. Soong's creations have stunned the world of science and engineering, and thousands of papers have been published on the subject of the construction of simple positronic brains since his death, but none ever comes close to replicating his techniques or ability to tease out sentience from otherwise lifeless material. Any Task to reproduce Dr. Soong's inventions suffers from an increase in the Difficulty of the Task by 2 and an increase in the Complication range of 1. Any Complication suffered from this Task can give the Gamemaster 4 Threat, instead of the normal 2, if a Complication isn't introduced.

DR. ZEFAM COCHRANE [MAJOR NPC]

Perhaps the most respected scientist and engineer of Earth in the past 300 years, Zefram Cochrane came to represent humanity's hope for a better tomorrow. Cochrane grew up during Earth's Third World War and saw what science and progress had done to the world around him when it was used by people who only wanted to take for themselves. Educated in some of the last functioning universities in North America, Cochrane began using the remnants of cyclotrons to explore possible ways to make a more efficient fusion reactor to help bring electricity back to the millions living in darkness across the continent. His discovery of subspace and his subsequent development of warp theory brought him and some of his followers to an abandoned missile silo in Montana where he began retrofitting an ICBM with what he hoped would be a new propulsion system that would not only allow people to leave Earth for less radioactive and polluted worlds, but also could bring him enough wealth and fame that he could retire to a warm island for the rest of his life. The launch of *Phoenix*, the First Contact with the Vulcans, and his later self-reflection on who and what he was to the planet after his momentous flight made him change his outlook on life and

become the symbol society needed as it rebuilt itself from its near destruction. Through the rest of the 21st and much of the early 22nd centuries, Cochrane continued to develop warp theory against the wishes of the Vulcans, paving the way for his final project, the Warp 5 engine. Cochrane would later disappear on a trip between the Solar System and his shipyards at Proxima Centauri, his fate unknown.

TRAITS:

- Human, Legendary Scientist, Functioning Alcoholic, Survivor

VALUES:

- Don't Be a Great Man, Just Be a Man
- Let's Rock'n'Roll!
- Imagine It, Thousands of Inhabited Planets at Our Fingertips

ATTRIBUTES

CONTROL 08

FITNESS 07

PRESENCE 07

DARING 10

INSIGHT 12

REASON 12

DISCIPLINES

COMMAND 02

SECURITY 02

SCIENCE 05

CONN 02

ENGINEERING 05

MEDICINE 01

FOCUSES: Warp Theory, Subspace Theory, Scavenging, Rocketry, Classical Physics, Aerospace Engineering

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 3▲ Knockdown, Size 1H, Non-lethal)
- Broken Liquor Bottle (Melee, 3▲ Vicious 1, Deadly)

SPECIAL RULES:

- **Jury-Rig (Talent)**
- **Testing a Theory (Talent)**
- **Godspeed:** Cochrane is incredibly skilled at making disparate pieces of technology, scavenged parts, and outdated computer systems work together to form a functioning vehicle and cutting-edge technology. This is often accomplished through brute force, removing safeties, or as Cochrane would put it, "Giving it enough slack to tighten up when it needs to." This means that while a piece of technology built by Doctor Cochrane may look, act, and actually be incredibly dangerous, it tends to work out in the end. Whenever Cochrane has jury-rigged a piece of technology, with the *Jury-Rig* Talent, the Gamemaster may spend 3 Momentum/Threat to have the item work again once more after its useful scenes have expired.

CHARACTERS IN PLAY

ZEFAM COCHRANE

Cochrane was a cantankerous but brilliant engineer, who only later in life accepted his pivotal role in Human history. He comes across as a highly functional alcoholic with a coarse, irreverent, yet humorous demeanor. He carries a lot of doubts about his talents and achievements, but is a daredevil when it comes to putting action to words.

SCIENCES PERSONNEL

SCIENTISTS AND SURGEONS

FEDERATION SCIENCE COUNCILOR [MAJOR NPC]

Members of the Federation Science Council are not appointed based on homeworld or population numbers; rather a Councilor is asked to join based on their field of study and the quality of their work. This means that the Science Council is typically staffed with people who have won the Nobel Prize, Zee-Maganes Prize, and Daystrom Award. These are the people who set the goals of the Federation's major research facilities, redirect resources from industries to universities, and provide direction to Starfleet in specific mission objectives around important scientific matters. When the Science Council asks Starfleet to explore a specific star system, or to keep an eye out for a strange anomaly, it is because the Council has come to the conclusion that there is a lack of understanding or a possibility of making a significant discovery. The Science Council also provides a judicial function of sorts dealing with scientific ethics and philosophical debates about the application of new technologies, and standing in front of a Councilor attempting to justify ethically questionable methods is something no legitimate scientist ever wishes to have happen to them.

TRAITS: Tellarite

VALUES:

- Leading in Discovery

ATTRIBUTES

CONTROL 09	FITNESS 08	PRESENCE 10
DARING 08	INSIGHT 10	REASON 11

DISCIPLINES

COMMAND 03	SECURITY 01	SCIENCE 05
CONN 01	ENGINEERING 02	MEDICINE 03

FOCUSES: Ethics, Xenoanthropology, Xenoarcheology, Xenobiology, The Prime Directive

OVERVIEW

The operation of Starfleet vessels with their primary mission of exploration, discovery, and innovation would be impossible without the scientists and surgeons that contribute to the pool of knowledge used by hundreds of worlds and nearly a trillion sentient beings. This section presents several characters that a Gamemaster can utilize in an adventure to assist the Player Characters in lessening the adversity in making discoveries amongst the stars.

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- Incisive Scrutiny (Talent)**
- Menacing**
- Science on Standby:** At a councilor's discretion, they may increase the amount of Crew Support available for a Starship by 2 for a single mission, but these additional Crew Support points may only be used to introduce Supporting Characters from the science or medicine departments.
- Field of Specialty:** A Science Council member always has a specialty in which they are an undisputed expert, and double their Focus range for one of the listed Focuses, as chosen by the Gamemaster at the beginning of the mission.

42-5499	52	5890	26	2804
42-2675	27	2595	73	3495
43-5088	08	3632	52	6208

SCIENTIFIC SPECIALITIES

Many Notable, Minor, and Supporting NPCs have a Focus called "Scientific Specialty," or "Specific Species Medicine." When an NPC has these Focuses it means that their science knowledge is more focused towards a specific subject beginning in their undergraduate studies or first year of Starfleet Academy. This allows the Player or the Gamemaster to customize the NPC to have a certain background or training, and they may choose from the thousands of possible specialist fields found in modern scientific fields as well as fields of the 22nd century and beyond. These can be Subspace Theory and Cybernetics, or medical specialties such as Vulcan Physiology or Silicon Xenobiology just to name a few examples. Medical personnel will always start with their own species as a Focus, such as an Andorian having "Andorian Medicine" as that is what they would have been trained in on their homeworlds. Additional species Focuses in medicine means the physician is getting detailed and specialist training in that species' specific biochemistry, unique illness and treatments. An example of this is Doctor M'Benga from The Original Series, a human that did his medical internship on Vulcan and gained specialist knowledge for that species.

SUBATOMIC PARTICLE ANALYSIS

41-2758

41-0858

41-5953

43-3895

43-1004

3850-0578	3860	499303	58-878903	2860	418885	1082
2549-2303	49-05783	6902	9472393	503-488	44551	27549
6083-5936	58005	206035	49-185993	8524	96541	941
7930-8020	53491	37750	793	84546	941-825	5148
2960-1494	7032	94892	26-85990	324	4905	852
4834-8911	28-39776	84770	129039	625-440	907208	445
6993-6900	79403	8174	24-583471	71574	17825	1945

STARFLEET RESEARCH SCIENTIST [NOTABLE NPC]

Starfleet R&D has kept the Federation on the cutting edge of technological innovation for centuries. Those that work inside the hangar bays, engineering shops, and research facilities operated by R&D are some of the most forward-thinking and creative people in the Federation. From the outside, they may appear stereotypically bookish or socially awkward, but this is because they think and communicate on a level most don't understand about their passion, the cutting edge of science. Amongst their own, many of these researchers are like test-pilots of 20th century Earth, pushing the envelope of technology or finding new ways to observe and record dangerous phenomena.

TRAITS: Human

VALUES:

■ On the Cutting Edge of Progress

ATTRIBUTES

CONTROL 08

FITNESS 08

PRESENCE 08

DARING 11

INSIGHT 09

REASON 10

DISCIPLINES

COMMAND 01

SECURITY 01

SCIENCE 03

CONN 01

ENGINEERING 02

MEDICINE 01

FOCUSES: Research, Prototyping, Federation Technology

STRESS: 9

RESISTANCE: 0

ATTACKS:

■ Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Scientific Method:** When the Research Scientist assists in a Task related to the scientific method (core rulebook, pp.157-158), they may reroll their d20.
- **Jury-Rig (Talent)**
- **Bench Thumping the Black Box:** A Gamemaster that brings in experimental technology that is far in advance of something normally suggested by the core rulebook (pp.159-160) provides the Advantage 'Cutting Edge' without the associated Opportunity Cost, but any Task performed with the device has its Complication range increased by 4 (16-20).

TERRAFORMER [NOTABLE NPC]

Terraforming specialists are a broad class of academics doing research into furthering the field of terraforming technologies, scientists researching and studying possible worlds for terraforming, as well as the hard-working engineers of Starfleet's Corps of Engineers Terraforming Division. These people are found on worlds across the Federation and beyond, expanding the number of worlds able to be settled and assisting newly admitted worlds to the Federation in fixing any environmental damage they may have. Regardless of what part of the terraforming field they may be in, these scientists and engineers typically have a good understanding of physics, climatology, and space-based engineering. Terraforming specialists can also be found on starbases as they move between new planets or projects, and many larger exploration starships have at least one of these personnel aboard, cataloguing new worlds that could host a colony with some atmospheric adjustments. While terraforming technically refers to making a world more Earth-like, in the Federation the term has come to mean making a world more Class-M-like, and terraformers can be of any species.

TRAITS: Human

VALUES:

- Making the Galaxy a Better Place One World at a Time

ATTRIBUTES

CONTROL 07	FITNESS 07	PRESENCE 09
DARING 09	INSIGHT 11	REASON 11

DISCIPLINES

COMMAND 01	SECURITY —	SCIENCE 02
CONN 01	ENGINEERING 03	MEDICINE 02

FOCUSES: Terraforming Technology, Macro-Engineering

STRESS: 7 **RESISTANCE:** 0

ATTACKS:

- Unarmed Strike (Melee, 1▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **This World is My Oyster:** Due to their dedication and a terraformer's deep insight into the worlds they are reengineering, they can ignore the first Complication generated on a Task related to their terraforming project.

VULCAN SCIENCE ACADEMY PROFESSOR EMERITUS [NOTABLE NPC]

For centuries the Vulcan Science Academy has been known as one of the Federation's best learning institutions, with the strictest standards for admission and no tolerance for anything less than perfection. The demand for perfection and intellectual rigor for its professors is even stronger, and only the best minds on Vulcan can ever claim to have taught at the Academy. These positions, however, are temporary, as the Academy refuses to allow its teaching staff to become stagnant or to lose their curiosity of the universe around them; after a time these professors leave to continue their teaching or research elsewhere. A VSA professor emeritus, one who used to teach at the Academy, is highly sought after in other institutions of higher learning, and many go on to find teaching positions at Starfleet Academy and the Daystrom Institute.

TRAITS: Vulcan

VALUES:

- Logic is the Beginning, Not the End, of Wisdom

ATTRIBUTES

CONTROL 10	FITNESS 09	PRESENCE 09
DARING 07	INSIGHT 08	REASON 11

DISCIPLINES

COMMAND 02	SECURITY —	SCIENCE 04
CONN 01	ENGINEERING 02	MEDICINE 01

FOCUSES: Teaching, Physics, Subspace Theory, Quantum Theory

STRESS: 9 **RESISTANCE:** 0

ATTACKS:

- Unarmed Strike (Melee, 1▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Kolinahr (Talent)**
- **Teacher:** When assisting a character using Science or Command, the professor emeritus may reroll their d20.
- **Using Reason as Our Guide:** A VSA professor emeritus is highly skilled in logic and reason, and during their time teaching and researching at the Vulcan Science Academy, they have become used to determining the validity of ideas based on rationalizing all available data. At the Gamemaster's discretion, once per session the VSA professor emeritus may use their Reason Attribute instead of any other in a Task.

SCIENCES PERSONNEL

STARFLEET PERSONNEL

ASTROCATOGRAPHER [MINOR NPC]

An astrocartographer specializes in the mapping and cataloguing of stars and planets, and any data about those bodies into star charts used by all spacefaring civilizations. An astrocartographer is present on all Starfleet vessels and is integral to maintaining properly updated navigational charts and keeping the onboard science database up to date on all current observations. Astrocartographers in charge of their department are typically lieutenants in rank, and may serve as the single crewmember in their department on smaller ships. On larger vessels there may be multiple astrocartographers of ensign rank and enlisted.

TRAITS: Human

ATTRIBUTES

CONTROL 08

FITNESS 07

PRESENCE 08

DARING 08

INSIGHT 09

REASON 10

DISCIPLINES

COMMAND 01

SECURITY 01

SCIENCE 02

CONN 02

ENGINEERING 01

MEDICINE —

STRESS: 8

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Sector Specialist:** The Gamemaster may choose to make an astrocartographer an expert in a specific sector of space. All Tasks involving the mapping of that sector, location of bodies, navigational hazards, etc. have their Difficulty reduced by 1. But this reliance on their own knowledge makes anything that is different from what they know often go unnoticed as they assume they know better, and the Complication range of these Tasks is increased by 1.

OVERVIEW

The sciences division personnel of a Starfleet vessel will have spent the majority of their adult lives gaining a greater understanding of their field. The characters in this section are professional scientists and physicians that will fill the upper ranks of science departments across Starfleet.

COUNSELOR [MINOR NPC]

Where physicians seek to heal the body, counselors seek to heal the mind and spirit. On board a Starfleet vessel, counselors are typically referred to as 'doctor,' 'counselor,' or more rarely by their rank.

TRAITS: Human

ATTRIBUTES

CONTROL 08

FITNESS 08

PRESENCE 09

DARING 07

INSIGHT 10

REASON 09

DISCIPLINES

COMMAND 01

SECURITY 01

SCIENCE 02

CONN 01

ENGINEERING 01

MEDICINE 03

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)

SPECIAL RULES:

- **Cold Reading:** When the counselor uses their Insight to gain psychological information about someone with whom they are in dialogue, they can reroll a single d20.

EXPLORER [MINOR NPC]

Starfleet doesn't hold a monopoly on those that wish to explore the Galaxy. There are many civilians who have dedicated their lives to being like naturalists of old such as Darwin and Dioscorides. Instead of researching and analyzing, explorers tend to go out into the universe and turn over rocks to gain a better understanding of the world. While these people tend to not be as respected as those that have spent their lives studying and experimenting, many of their observations and discoveries can go on to influence researchers and academia.

TRAITS: Human

ATTRIBUTES

CONTROL 10

FITNESS 07

PRESENCE 07

DARING 08

INSIGHT 10

REASON 09

DISCIPLINES

COMMAND —

SECURITY —

SCIENCE 02

CONN 02

ENGINEERING 01

MEDICINE 01

STRESS: 7

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 1▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 2▲, Size 1H, Charge, Hidden 1)
- **Escalation** Particle Rifle (Ranged, 4▲, Size 2H, Accurate)

SPECIAL RULES:

Specialist Subject: An explorer always has a specialty that they focused on as their interest. Choosing this specialty grants the explorer a single Focus (even though Minor NPCs normally cannot have Focuses) or a Discipline increase. This specialty is chosen from the following list:

- **Exploring Life:** An explorer that chooses this has an interest in Biology and Medicine, but no formal medical training. However, they have a great deal of knowledge about plant and animal species and how they may help or hinder a humanoid. Taking this increases the explorer's Medicine Discipline by 1.
- **Traillblazer:** An explorer can have a wanderlust that drives them to be the first to see a new world, or be the first to explore a new sector of space. This can bring notoriety when they discover a new civilization or the remains of an ancient one, but the dangers of being on your own in the unknown

mean many explorers risk their lives. An explorer with this choice may increase their Conn or Security Discipline by 1.

- **Academic Explorer:** These explorers have been more formerly trained to accurately chart the unknown. Choosing this allows a Focus of one of the following: Stellar Cartography, Planetary Geography, or Geomorphology.

PHYSICIAN [NOTABLE NPC]

Physicians are trained medical personnel that have gone to medical school and have graduated with a doctorate (or its equivalent) in medicine. With the sheer number of lifeforms in the Federation, there is always a need for physicians that are skilled in a particular specialty or species. On a Starfleet vessel, these crewmembers typically are referred to as 'doctor' rather than their rank, but may not be the chief medical officer on board.

TRAITS: Human

VALUES:

- First, Do No Harm

ATTRIBUTES

CONTROL 10

FITNESS 08

PRESENCE 08

DARING 10

INSIGHT 09

REASON 09

DISCIPLINES

COMMAND 02

SECURITY 01

SCIENCE 02

CONN 01

ENGINEERING 01

MEDICINE 03

FOCUS: Emergency Medicine, Virology

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 3▲, Size 1H, Charge, Hidden 1)

SPECIAL RULES:

- **Field Medicine (Talent)**
- **Interspecies Medical Exchange:** The Physician may reroll a single d20 when using Insight during a Task to diagnose an alien Federation species. If the Physician's species Trait has been changed for the purposes of gameplay, then "alien" refers to any Federation species to whom the Physician does not belong.

PROFESSOR [MINOR NPC]

A professor is a catch-all term for a professional scientist or researcher that has completed what would be equivalent to the doctorate program in their field and has many years of experience. A professor can be found teaching at universities across the Federation, leading a team of researchers or even a whole research lab, or as an officer with a rank of lieutenant or lieutenant junior grade in the sciences division.

TRAITS: Human

ATTRIBUTES

CONTROL 08

FITNESS 07

PRESENCE 08

DARING 08

INSIGHT 10

REASON 10

DISCIPLINES

COMMAND 02

SECURITY —

SCIENCE 03

CONN —

ENGINEERING 01

MEDICINE 01

STRESS: 7

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 1▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 2▲, Size 1H, Charge, Hidden 1)

SPECIAL RULES:

Specialist Subject: A professor always has a specialty that they focused on in their graduate work, or have made their mark in through hard work in their post-graduate career. Choosing this specialty grants the professor a single Focus (even though Minor NPCs normally cannot have Focuses). This specialty is chosen from the following list:

- **Hard Science:** The professor gains a Focus based on a single scientific field of study, e.g. Astrophysics, Subspace Theory, Quantum Mechanics.
- **Research Lead:** The professor has a broad background in the sciences and have honed their people skills to be able to lead other researchers in their projects. The professor does not gain a Focus; rather their Command Discipline is increased by 1.
- **Social Scientist:** A social scientist is trained in how intelligent beings interact with the world around them in fields such as Anthropology, Geography, and Linguistics. Like the Hard Science choice above, the choices in Focus should also have a specific world or culture attached to them, e.g. History of Andor, Vulcan Linguistics, or Tellarite Law.

XENO BIOLOGY DEPARTMENT HEAD [NOTABLE NPC]

On a starship, the xenobiology department head is responsible for teams of specialists ranging from microbiologists and molecular biologists to ecologists and biochemists. This person must not only be highly trained in biology, but must also be able to manage large amounts of data about vastly different biochemistries along with ensuring the best person for each new world is assigned where they may best add to the department's efforts. When a new world filled with strange new life is discovered, the xenobiology department head is often seen as the most important and busiest officer onboard an exploratory vessel.

TRAITS: Human

VALUES:

- Strange New Life

ATTRIBUTES

CONTROL 09

FITNESS 08

PRESENCE 09

DARING 07

INSIGHT 11

REASON 10

DISCIPLINES

COMMAND 02

SECURITY 01

SCIENCE 02

CONN 01

ENGINEERING 01

MEDICINE 03

FOCUSES: Xenobiology, Microbiology, Biochemistry

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 3▲, Size 1H, Charge, Hidden 1)

SPECIAL RULES:

- **On the Final Frontier:** Some xenobiology department heads haven't been assigned many deep space missions where they have been able to practice their trade extensively, and instead have become more adept at command tasks and management of their department's personnel and resources. At the Gamemaster's discretion the Xenobiology Department Head has had this sort of background and increases their Command Discipline by 1 and decreases their Medicine Discipline by 1.

SCIENCE OFFICER [NOTABLE NPC]

During the 23rd century, it was common for a single officer to be given the title of science officer. This officer was in charge of the starship's science teams, but also acted as the primary sensor operator and data analyst on the bridge. As starships became larger and more complex in the late 23rd and early 24th centuries, this position became rare as more bridge stations allowed for a more diverse collection of specialists to operate sensor platforms and analyze data. A science officer's rank is typically no less than a lieutenant commander, and often a commander given the amount of responsibility they have over the numerous personnel in the science departments.

TRAITS: Vulcan

VALUES:

■ Fascinating...

ATTRIBUTES

CONTROL 08	FITNESS 07	PRESENCE 09
DARING 08	INSIGHT 10	REASON 11

DISCIPLINES

COMMAND 02	SECURITY 01	SCIENCE 03
CONN 01	ENGINEERING 01	MEDICINE 03

FOCUSES: Scientific Specialty, Sensor Operations

STRESS: 8

RESISTANCE: 0

ATTACKS:

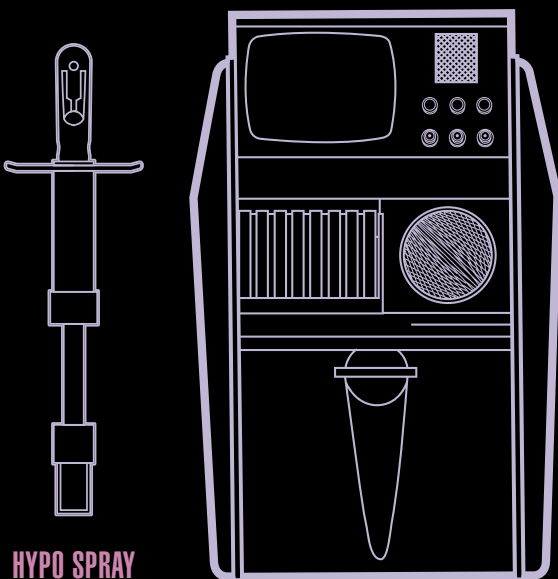
- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 3▲, Size 1H, Charge, Hidden 1)

SPECIAL RULES:

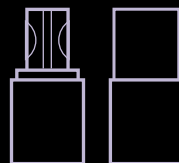
- **Assistant:** When the science officer assists a Task using their Science or Medicine Discipline, they may reroll their d20.



23RD CENTURY MEDICAL EQUIPMENT



MEDICAL
TRICORDER



SCANNERS

EQUIPMENT GUIDE

SCIENCES PERSONNEL

SUPPORTING CHARACTERS

OVERVIEW

This section provides a varied selection of interesting Supporting Characters that can be introduced during an ongoing game, especially those specialized in the Science or Medicine Disciplines. The Supporting Characters are all built using the rules on page 134 of the core rulebook. Each one is accompanied by notes on how that character might be customized when reintroduced in later missions. None of the Supporting Characters include character species Traits. In cases where a different species is needed, add a Trait related to the character's species, and increase the character's Attributes accordingly. The most straightforward option is to use Human as the default character species, adding the Trait "Human", and increasing any three Attributes by +1.

FOCUSES: Geology, Tectonics, Small Craft

STRESS: 10

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 3▲, Size 1H, Charge, Hidden 1)

USE AND DEVELOPMENT

A geologist is useful on most away missions involving exploration of any sort and any planetology surveys.

Species: Besides Humans, all species can be excellent geologists.

Rank: These crewmembers may be enlisted or hold a low officer's rank such as ensign or lieutenant junior grade if there is a large number of planetary scientists serving onboard.

Values: Values that help a geologist understand geomorphology, mineralogy, or seismology are good choices.

Attributes: Reason and Insight are both excellent Attributes to increase as they will often help with Science Tasks. Fitness and Daring are good for consideration as well as a geologist often has to hike through difficult terrain to study their field.

Disciplines: Science is a primary choice for a Discipline, but Engineering and Conn are secondary choices. Engineering to build and maintain field equipment such as seismographs and other sensors, and Conn to assist in navigating on worlds where there aren't satellites or a starship to assist in position fixing.

Focuses: Other geology-related subjects for Focuses would be good choices including Seismology, Volcanology, and Geomorphology.

Talents: *Intense Scrutiny* works well for a geologist.

GEOLOGIST

A geologist is a scientist who studies the surfaces of planets and the components that make it up. Geologists also have knowledge of how that surface can change and the processes that make it occur. This means that a geologist can be very useful on planetary survey away missions or when hidden underground facilities need to be discovered or possible fault lines in the area have to be mapped.

ATTRIBUTES

CONTROL

08

FITNESS

09

PRESENCE

07

DARING

08

INSIGHT

09

REASON

10

DISCIPLINES

COMMAND

01

SECURITY

01

SCIENCE

04

CONN

02

ENGINEERING

03

MEDICINE

02

ANTHROPOLOGIST / HISTORIAN

Both of these fields focus on studying the past, an anthropologist specializing in biological and societal changes in a species history, and a historian specializing in a broader knowledge of a species' history but typically of a specific time. As an example, an anthropologist may be an expert on human cultural evolution through its long history, but a historian may focus on the Soviet Union of the 20th century, progressing to the Eugenics Wars, and World War III. Both of these types of scholars are posted to starships given exploration assignments as comparative anthropology is often useful in assisting with first contact and historians can provide context for discoveries that tie into the history of space exploration or how to interact with lost colony worlds.

ATTRIBUTES

CONTROL	08	FITNESS	07	PRESENCE	09
DARING	09	INSIGHT	10	REASON	08

DISCIPLINES

COMMAND	03	SECURITY	01	SCIENCE	04
CONN	01	ENGINEERING	02	MEDICINE	02

FOCUSES: Field Research, Sociology, Species Specific Cultural History or Specific Historical Time Period

STRESS: 8 **RESISTANCE:** 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 3▲, Size 1H, Charge, Hidden 1)

USE AND DEVELOPMENT

Both of these specialty scholars are useful for exploration vessels as they can help understand other cultures and the pitfalls that they have faced in their development. This context is even more crucial when encountering lost colonies, long-abandoned starships, or even finding anachronistic technology or cultural ideas on worlds that should not be there.

Species: All species work as anthropologists and historians. This specialist's species does not limit them in what planet's history or species culture they are an expert on, but it is more likely that a Tellarite would be an expert on Tellarite anthropology.

Rank: These scholars are enlisted in rank, or if highly regarded in their field, they are given a promotion to the

rank of ensign. They are not referred to as their rank, but as 'doctor' if they have a PhD or 'crewman' otherwise.

Values: Values that can be seen giving these scholars a better insight into the past, or a specific culture.

Attributes: Insight is the primary Attribute to improve, but both Presence and Daring are good secondary Attributes as these scholars speak in public often and may have to visit dangerous places to fully research their field.

Disciplines: Science is a primary choice for a Discipline, but Command is also a good choice as they are public speakers and do quite a bit of talking with people when doing research.

Focuses: Other historical periods or cultures that are related to these scholars' primary expertise can help. As an example, a Vulcan anthropologist may wish to choose Mintakan Anthropology as the two races are very similar.

Talents: *Intense Scrutiny* and *Testing a Theory* are both apt Talents for anthropologists.

GRAD STUDENT

This Supporting Character is studying their field and has yet to graduate from a university with a doctorate, but may already have lower degrees and may also be an ensign or a lieutenant junior grade in Starfleet. They are knowledgeable in their field and may be useful to the head of their department on a starship for research or for away missions when their specialty calls for it.

ATTRIBUTES

CONTROL	07	FITNESS	08	PRESENCE	09
DARING	08	INSIGHT	09	REASON	10

DISCIPLINES

COMMAND	02	SECURITY	01	SCIENCE	04
CONN	01	ENGINEERING	03	MEDICINE	02

FOCUSES: Specialist Field of Science, Research and Development, Research Ethics

STRESS: 9 **RESISTANCE:** 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 3▲, Size 1H, Charge, Hidden 1)

USE AND DEVELOPMENT

A grad student may be useful in support of officers during research or exploration missions. The grad student's specialized training often makes them invaluable to officers when their skills complement the mission profile.

Species: Besides Humans, Vulcans are an easy choice for a grad student, but all species in the Federation and beyond work in this regard as they all have a drive towards understanding the universe.

Rank: These crewmembers may be enlisted or hold a low officers rank such as ensign or lieutenant junior grade.

Values: Values that help a grad student to understand their field of study or push the boundaries of knowledge over all are helpful.

Attributes: Reason and Insight are both excellent Attributes to increase as they will often help with Science or Medicine Tasks.

Disciplines: Science and Medicine are the obvious choices for a grad student to increase. But Engineering may also be a good choice depending on how experimental the grad student wishes to be with testing their theories with technology.

Focuses: Additional Fields of Science are a good choice to make here as it will increase the number of situations where the grad student will be useful to the science department on their starship.

Talents: *Intense Scrutiny* and *In the Nick of Time* both work well for a grad student.

LAB TECH

This Supporting Character is different from a grad student as they are often more focused on testing and analysis of physical objects rather than observational analysis and mathematical simulations. A lab tech is trained in both science and engineering practices to make sure that results found are accurate and repeatable by their peers.

ATTRIBUTES

CONTROL 09

FITNESS 08

PRESENCE 07

DARING 08

INSIGHT 10

REASON 09

DISCIPLINES

COMMAND 01

SECURITY 01

SCIENCE 04

CONN 02

ENGINEERING 03

MEDICINE 02

Focuses: Physics, Chemistry, Laboratory Maintenance

Stress: 9

Resistance: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 3▲, Size 1H, Charge, Hidden 1)

USE AND DEVELOPMENT

A lab tech may be useful in support of officers when there is a specific piece of technology, a rare mineral, or other tangible object to be studied.

Species: Any species will fit into this role well, but like most science-based professions Humans and Vulcans tend to excel.

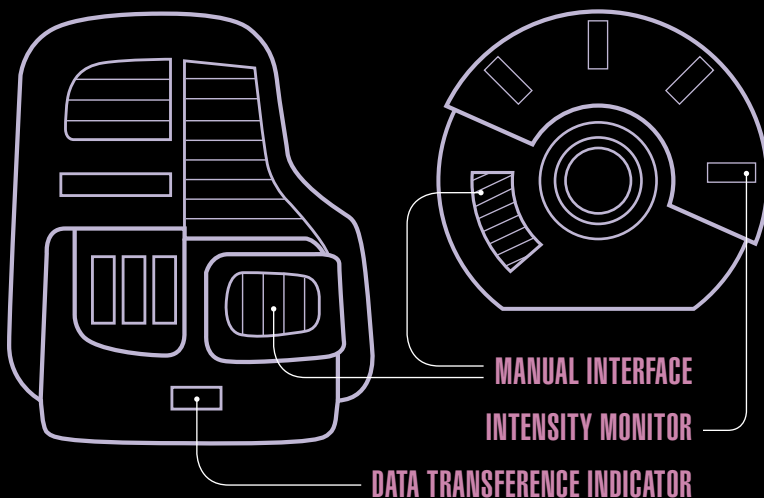
Rank: These crewmembers are often enlisted, with some rising to be ensigns or lieutenant junior grade when acting as the lead lab technician of a starship or in charge of multiple laboratories on a starbase.

Values: Values that help a lab tech either to better maintain equipment or better understand their field of study work well as here.

Attributes: Reason and Insight are both excellent Attributes to increase as they help with Science or Medicine Tasks.

Disciplines: Science and Engineering are both important to a lab tech, but those that focus on more medical testing, biochemistry, or genetics may wish to increase Medicine as well.

CORTICAL STIMULATOR VARIATIONS



EQUIPMENT GUIDE

Focuses: Additional Fields of Science are a good choice to make here as it will increase the number of situations where the lab tech will be useful to the science department on their starship.

Talents: *Jury Rig* is an excellent choice to make testing equipment quickly that will work in adverse situations. *Intense Scrutiny* also works for analysis and understanding the results of a test.

NURSE

This Supporting Character helps bridge the gap between first aid care and a fully trained medical professional. These characters are either currently in training to become a medical doctor, or have gone through training to be a nurse with specialization in patient care, triage, or other supporting medical professions. While doctors typically deal with severe injuries and surgeries, nurses perform much of the day-to-day care of patients, and do basic medical testing.

ATTRIBUTES

CONTROL

07

FITNESS

08

PRESENCE

09

DARING

08

INSIGHT

10

REASON

09

DISCIPLINES

COMMAND

02

SECURITY

01

SCIENCE

03

CONN

01

ENGINEERING

02

MEDICINE

04

FOCUSES: Anesthesia, Pharmacology, Patient Care

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)

USE AND DEVELOPMENT

A nurse may be helpful to many different fields in many situations, be it an away team that wishes to have a member trained in medicine, acting as triage in the aftermath of a battle, or for basic analysis of medical oddities.

Species: Humans, Bolians, and Denobulans are excellent choices for a nurse, but all species have nurses.

Rank: Nurses are usually enlisted crew, only a head nurse of a starship or Starfleet hospital will rise to a rank of ensign, but all will be generally referred to their title of 'nurse' rather than their rank.

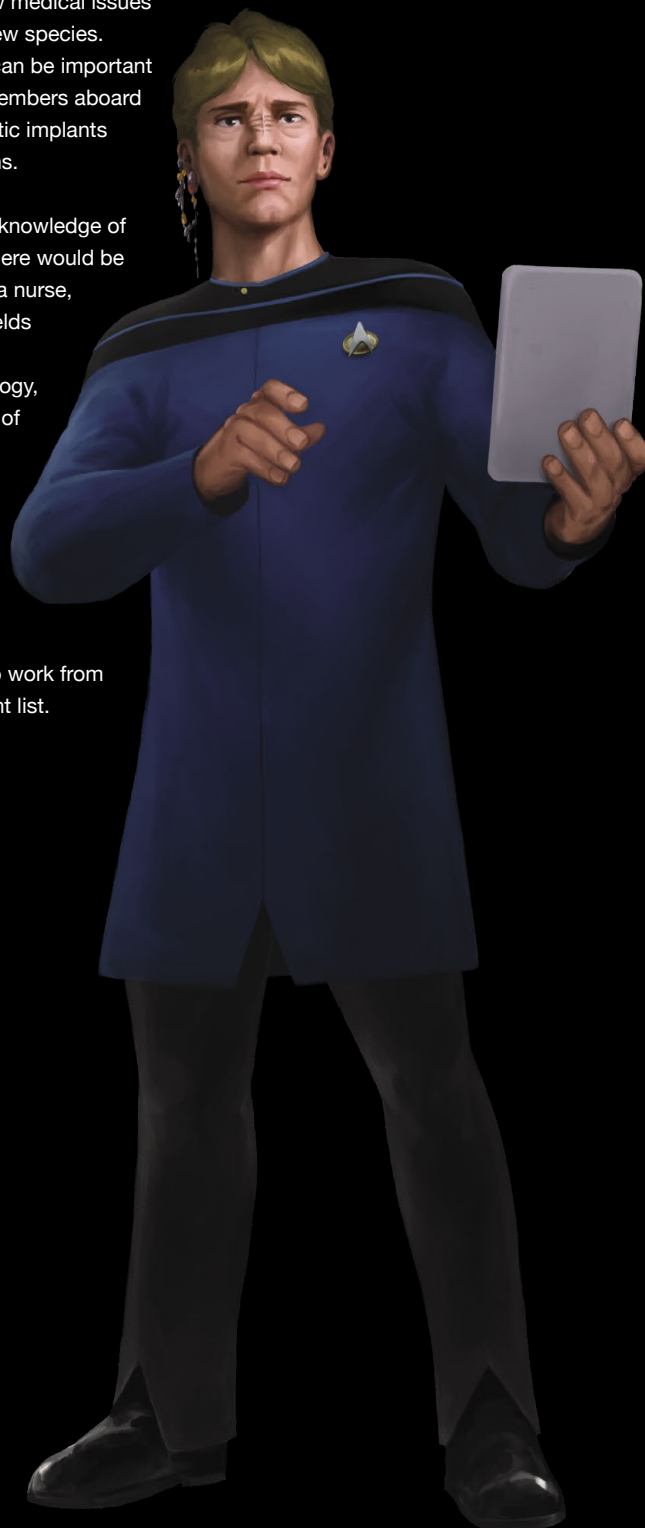
Values: Values that help a nurse empathize, or care about patients, or help in crisis situations would be good choices.

Attributes: Reason and Insight are both excellent Attributes to increase as they will often help with Science or Medicine Tasks.

Disciplines: Medicine is the clear choice here, but Science and Engineering also possible due to attempting to understand new medical issues like diseases or new species. Engineering also can be important if there are crewmembers aboard that have cybernetic implants and artificial organs.

Focuses: Adding knowledge of different species here would be a good choice as a nurse, as well as other fields of study such as Pathology, Toxicology, or other branches of medicine.

Talents: *Healing Hands* and *Quick Study* both are great choices for a nurse, but other Talents would also work from the Medicine Talent list.



TRIAGE NURSE

Triage nurses are trained in providing emergency medical treatments and judging what injuries must be taken care of first in order to save as many lives as possible. A triage nurse is put in charge of a sickbay during times with many casualties coming in as the chief medical officer performs surgeries and other immediate medical procedures. This responsibility means that they often have a reputation for being short with crew suffering from minor injuries while crew with life-threatening injuries are dealt with.

ATTRIBUTES

CONTROL 08

FITNESS 08

PRESENCE 07

DARING 10

INSIGHT 09

REASON 09

DISCIPLINES

COMMAND 03

SECURITY 02

SCIENCE 02

CONN 01

ENGINEERING 01

MEDICINE 04

FOCUSES: Emergency Medicine, Surgery, First Aid

STRESS: 10

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 3▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 4▲, Size 1H, Charge, Hidden 1)

USE AND DEVELOPMENT

A triage nurse may be helpful to many different fields in many situations, sorting through evacuees to find any who are suffering from injuries or exhibiting signs of sickness, quickly stabilizing wounded crew members, or assisting a doctor in surgery.

Species: Humans and Bajorans both are excellent choices for a triage nurse, but any species with increases to Daring and Reason works.

Rank: A triage nurse can be an ensign (if they are currently on the path to get a full medical PhD) or a high-ranked enlisted. Like a standard nurse, they are typically referred to as their title, "nurse" rather than their rank.

Values: Values that help a triage nurse care about patients, or help in crisis situations would be good choices.

Attributes: Reason and Insight are both excellent Attributes to increase as they often help with Science or Medicine Tasks. Control can also be important when in charge of sickbay often.

Disciplines: Medicine is the clear choice here, but Science is a good choice due to attempting to understand new medical issues like diseases or new species. Command also can be important as they are often in charge of multiple nurses during crisis situations.

Focuses: Adding knowledge of different species here would be a good choice as a triage nurse will typically only have a Focus of their own species Medicine.

Talents: *Triage* and *Field Medicine* both are great choices for a triage nurse, but other Talents would also work from the Medicine Talent list.

ANESTHESIOLOGIST

In any kind of medical situation there is a need for personnel trained in both pain management and anesthesia. This becomes far more important during emergencies when there are severe injuries and surgery must take place. An anesthesiologist is a specialist trained to help patients lose an awareness of pain. In Starfleet, this expert is trained across many separate species and is able to provide this specific type of care to any Federation member race, and with the assistance of a PADD, those most commonly encountered near Federation territory.

ATTRIBUTES

CONTROL 07

FITNESS 08

PRESENCE 08

DARING 09

INSIGHT 10

REASON 09

DISCIPLINES

COMMAND 02

SECURITY 01

SCIENCE 03

CONN 01

ENGINEERING 02

MEDICINE 04

FOCUSES: Anesthesia / Pain Management, Pharmacology

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 2▲ Knockdown, Size 1H, Non-lethal)
- Hypospray Anesthetic (Melee, 5▲ Knockdown, Size 1H, Non-lethal)

USE AND DEVELOPMENT

An anesthesiologist may be helpful to many different fields in many situations, from assisting a physician during surgery beyond keeping the patients pain in check, acting as a pharmacist to the chief medical officer, and

providing aftercare for patients that may have a painful time recovering.

Species: Humans or any telepathic/empathic races make excellent anesthesiologists. Telepaths and empaths can sense when a patient is feeling pain even if they are unconscious or in a semi-conscious state.

Rank: Anesthesiologists are specialists, but aren't usually officers. They range in rank from crewman to petty officer depending on length of service. If they complete a full medical degree these personnel are promoted to triage nurse or a full physician. They are addressed not by rank, but as 'nurse'.

Values: Values that help an anesthesiologist sense a patient's discomfort, or increase their charm and bedside manner are excellent ways of improving these personnel.

Attributes: Insight is the primary Attribute as it helps the anesthesiologist better determine how their treatment is affecting the patient and what changes may be made on the fly. Reason is another excellent Attribute as it may help them determine best treatment for a species they have little knowledge of.

Disciplines: Clearly Medicine is the best Discipline to improve upon, but depending on what career path the anesthesiologist wishes to pursue, Command and Science are also good choices.

Focuses: Adding another specialty in medicine is a great choice here if they wish to become a full physician. Additionally, if they wish to continue as a nurse, good Focuses could include Surgical Procedures, Triage Medicine, or Midwife to name just a few examples.

Talents: *Field Medicine* is a great choice for an anesthesiologist, but other Talents would also work from the Medicine Talent list.

EMERGENCY MEDICAL HOLOGRAM MARK II

In 2371, starship sickbays began to be fitted with holographic technology, allowing activation of a program designed to be a competent doctor, and usable by the crew of the Starship in emergency situations. After rolling the program out on several classes, including the *Intrepid* and *Sovereign* classes, Dr Zimmerman designed an updated EMH that he designated Mark II, and was prototyped on the *U.S.S. Prometheus* with holo-emitters enabling it to operate throughout the starship. The improvements to this program were focused on its personality and bedside manner, but retained its medical knowledge and ability at surgical procedures.

TRAITS: Hologram, Mark II

ATTRIBUTES

CONTROL 10

FITNESS 07

PRESENCE 10

DARING 09

INSIGHT 09

REASON 10

DISCIPLINES

COMMAND 01

SECURITY 01

SCIENCE 03

CONN 02

ENGINEERING 02

MEDICINE 04

FOCUSES: Emergency Medicine, Surgery, Xenobiology

USE AND DEVELOPMENT

As a hologram, there is only so much improvement that can be undertaken by the crew to increase the capacity of its programming. With this in mind, any improvement to the EMH Mark II should represent the engineering department of the ship working on the holographic programming. The crew could take up improvements as an Extended Task, as outlined in *Zen and the Art of Warp Core Maintenance* (core rulebook, pp.159-160). Research and development of this nature is on the sensors and computing technology of the ship, with a Work track between 5-10, a Magnitude between 1-3, with a base Difficulty of 3 because of the *Mark II* Trait. Depending on the improvement being attempted, Gamemasters may ask for larger Work tracks or more Breakthroughs; Attribute improvements and Talents will be harder to introduce than Values or Focuses.

EMERGENCY MEDICAL HOLOGRAM MARK II

REQUIREMENTS: 2374 or later

The ship is equipped throughout with holographic emitters and a state-of-the-art holographic doctor, an improvement on the Mark I EMH. The ship has one additional Supporting Character, an Emergency Medical Hologram, using Attributes, Disciplines, and so forth as outlined in this chapter. This Supporting Character does not cost any Crew Support to introduce, and does not automatically improve when introduced. This character cannot go into any location that is not equipped with holographic emitters, but this Talent provides emitters for that purpose throughout the vessel.

PROGRAMMER

This Supporting Character is a catch-all term for crew members and personnel that work on computer systems, develop new technology for Starfleet, and those that bridge the gap between the sciences division and operations division. When there is something wrong with a piece of technology that isn't due to a physical defect, these characters are often the ones called upon to figure out why it is malfunctioning and what can be done to improve it.

ATTRIBUTES

CONTROL 09

FITNESS 07

PRESENCE 08

DARING 08

INSIGHT 09

REASON 10

DISCIPLINES

COMMAND 01

SECURITY 02

SCIENCE 03

CONN 02

ENGINEERING 04

MEDICINE 01

FOCUSES: Computer Technology, Holo-Engineering, Starfleet Programming

STRESS: 9

RESISTANCE: 0

ATTACKS:

- Unarmed Strike (Melee, 3▲ Knockdown, Size 1H, Non-lethal)
- Phaser Type-1 (Ranged, 4▲, Size 1H, Charge, Hidden 1)

USE AND DEVELOPMENT

A programmer can be useful to both science staff and the engineering department. They can troubleshoot problems with coding inside a computer, see faults with logic circuits in tricorders, and even help develop new tools to provide analysis on lab experiments or observational data.

SPECIES: Humans and Vulcans are clear choices, but any species can excel in this job.

RANK: Often enlisted, a programmer will only rise to being an officer when they are the head of their team of coders or if they have been in Starfleet for an extended amount of time.

VALUES: A programmer could benefit from Values that lend to their love of computers and technology.

ATTRIBUTES: Reason is the first choice for a programmer, but both Insight and Control are also good to help with understanding odd data or to help in building and controlling new technology.

DISCIPLINES: Engineering and Science are both ideal candidates for being increased as they both will assist the programmer in repairing code, writing new programs, and building new analytical pieces of equipment.

FOCUSES: Focuses for a programmer could include other computing technologies such as Duotronics and Solid-State Computing, but also the computer technology of different species such as Romulan or even Borg programming.

TALENTS: *Intense Scrutiny* and *Jury Rig* from the Engineering Talents are good choices, but *Computer Expertise* from the Science Talents is probably the best for a first Talent.

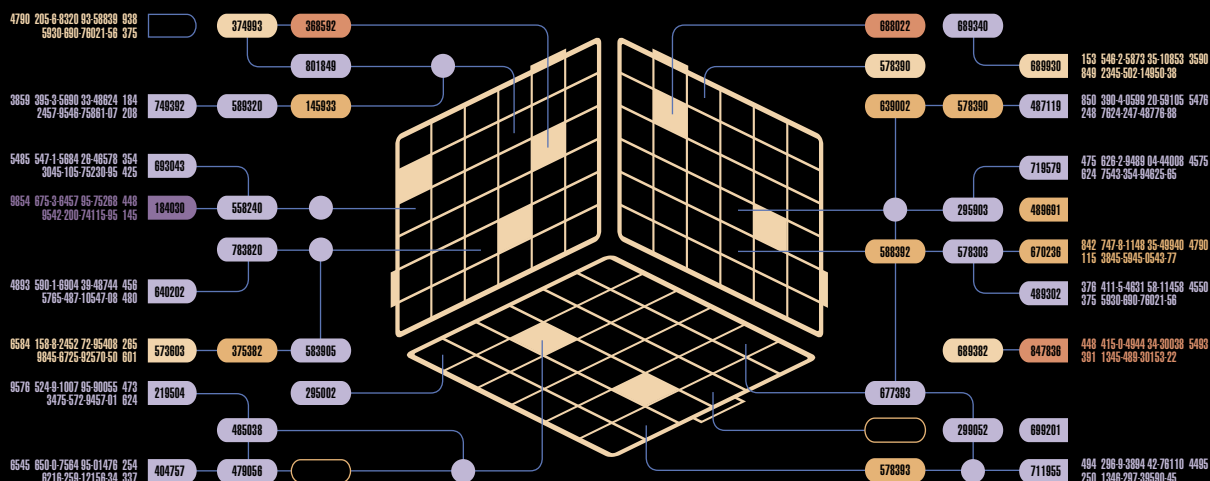
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