

TRAVELLER

REFEREES BRIEFING 2 ANOMALIES AND WONDERS



SCIENCE FICTION ADVENTURE IN THE FAR FUTURE

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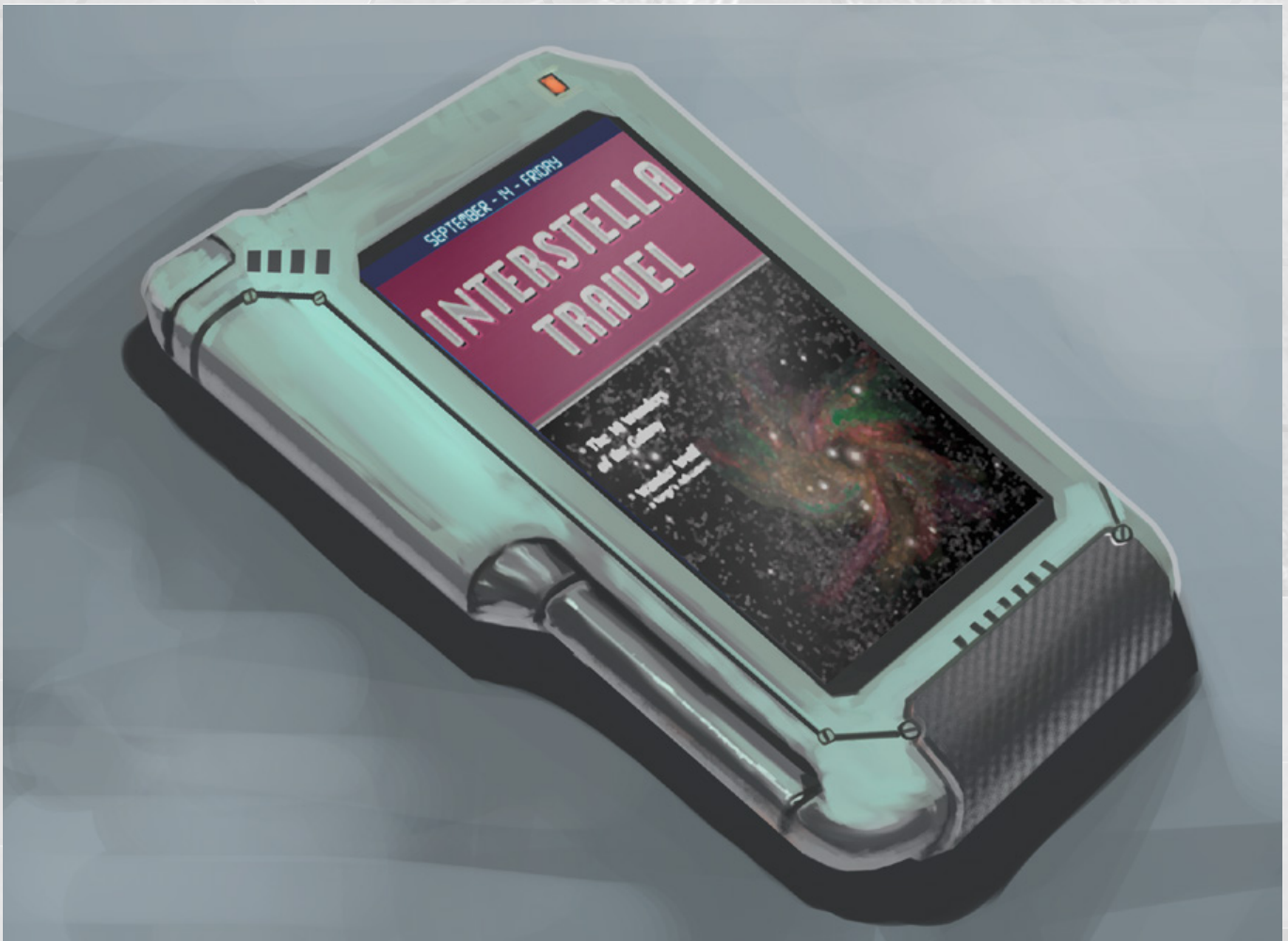
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INTRODUCTION

Much of the time Travellers move from one starport to the next, seeing the shops and the bars and not much else. In between they stare at the same six bulkheads and watch old movies, or sit around in the galley chatting. Some of them have more to talk about than others; tales of adventure and daring that might just possibly be true. And every now and then the conversation turns to the wonders of Charted Space... the amazing places and strange sights that await those who dare to visit them. Some of these anomalies and wonders are mythical, some are known to be real, and some are not quite either of those. Anomalies and Wonders is a guide to some of those wondrous places. It will give Travellers something to talk about for years to come.

The locations and wonders presented in this book can be used in a variety of ways. They might generate rumours that the Travellers overhear, perhaps even prompting them to go looking for the places they have heard of, or they might be the backdrop to an adventure that could have been set somewhere more mundane, adding a level of wonder to the events unfolding around the Travellers. Some of these locations are supposed to have strange powers or to be connected with the Ancients, which might make finding their exact location a mission of its own. In short, these strange and awe-inspiring places are out there, awaiting adventurous spirits to experience their wonders and dangers.



ANOMALIES AND WONDERS

Traveller is, for the most part, a hard-science game, based on real-world science as far as possible. Predicting the future is not a simple business, especially when trying to imagine what technology might look like in four thousand years' time, but we are not really trying to create an accurate prediction – we are creating a plausible imaginary universe where adventures are to be had. A certain amount of inaccuracy is perhaps forgivable so long as the end result is interesting and fun.

We are learning more about our universe all the time, and along the way we frequently discover that what we knew previously was in fact incorrect. Implementing modern knowledge of cosmology or biotechnology can be a tricky business for rules-writers, and a supplement that attempts to explain these things can turn into something more properly termed a textbook. Textbooks are rarely much fun to read, so again it is perhaps forgivable to generalise and simplify in the name of creating a fun game to play.

However, it is necessary to retain the feeling of 'hard science' and to maintain internal consistency. Thus the phenomena and wonders dealt with in this supplement are based in real-world science. Randomly tossing the Gizmo of the Day into a game, or plonking down incredible wonders all over the place makes them rather less wondrous, not to mention becoming a bit implausible. However, once in a while a group of Travellers might raise their eyes above the endless cycle of mortgage payments on their ship or out of the murk of the local criminal underworld.

They might see something truly amazing if they do.

Using These Locations

What follows is a collection of situations, locations and phenomena that can be used to throw the Travellers a curveball or to regain a sense of wonder. Some of them are more wondrous than others, but all are unusual. Each of the locations or situations described can be slotted into a game universe wherever the referee finds it desirable. However, some require fairly specialist conditions. The phenomena described in this book cannot be randomly generated by any currently existing rules system, but they could exist at many points in the Traveller universe if the referee wants to place them. Which is a roundabout way of suggesting that it's okay to put stuff into a star system if you want it there.

The phenomena in this book have been given names for identification, but could easily be renamed if this will make them fit better with the chosen location. As a general rule, so long as the UWP data for a system is not contradicted, anything goes. If the UWP says there are gas giants, then the referee is not breaking any rules by deciding how many and where they orbit. Additional inhabited worlds are possible, though as a rule if there is a more populous world than the current mainworld in the system, there needs to be a reason why it is not the mainworld. That in turn might lead to some adventure ideas...

And finally, let us not forget that tools like the random system generation rules in the Traveller Core Rulebook are just that – tools. They are useful but it is the craftsman who decides how to use them and when to set them aside. If the referee prefers to invent an entire star system without any die rolling at all, there is nothing wrong with that. So long as it is logical and consistent (this is a science-fiction game, after all), and an interesting and a fun place to have adventures, then it does not really matter how the setting was created.

STELLAR AND INTERSTELLAR PHENOMENA

Stellar phenomena are, as the name suggests, mostly stellar objects such as stars, brown dwarf quasi-stellar objects and the like. This section also includes interstellar objects and phenomena that are not associated with a planetary system, such as comets and deep-space objects. These may not appear on the standard starmaps as the latter are geared towards interstellar travel and trade, which typically moves between mainworlds of star systems. Interstellar phenomena generally only appear on specialist charts, if they are known at all.

The Eshraani Protostar

A protostar is a cloud of interstellar gas which is beginning to coalesce into a star. As yet, while the cloud is becoming denser at its centre, it has not yet begun to undergo nuclear fusion in the core, and thus is not luminous. The only real difference between a protostar and a gas cloud is that there is enough mass present that someday the protostar will be a star. Over time the rotating cloud of gas will coalesce into clumps, becoming hotter and denser until thermonuclear fusion begins at its core and a star is born. That day is long distant in the case of the Eshraani Protostar, but there is much to learn from studying this fascinating phenomenon.

The Eshraani Protostar can be located in a rift or other area currently without a star. It is not likely to be detected from one or more parsecs away using normal starship sensors as the gas cloud is not yet very dense and is not luminous. A laboratory ship or a scout vessel with good sensors will pick up the signs that a protostar is present from a few parsecs away, but the typical navigational sensors of a merchant vessel cannot do so. The protostar does not interfere with jump travel in the area as it is not dense enough.

The protostar is of scientific interest, and subject to both long-term and short-term study. Scout and scientific vessels sometimes enter the gas cloud to take readings, though this is the source of some controversy. There are those who believe that this activity might disrupt the formation of the star or influence it in an unpredictable manner. Arguments rage between scientists even on distant worlds, providing the occasional scientific-interest piece (which is commonly rather cheaply wrangled into a human-interest story by provoking an on-air row between rival astrophysicists) after which the public tends to forget about the protostar once again.

The Church of Stellar Divinity, which believes that stars are gods, is sharply divided on the subject of entering the gas cloud. Some of its leaders think the proto-god should be left completely alone, others think it should be worshipped from nearby starships and helped to grow with songs and prayers. Some take a middle ground and say that properly blessed ships can enter the gas cloud for scientific and religious purposes since the proto-god will know they mean no harm, and even claim that such intrusions cannot possibly affect the star's formation because it will welcome them.

The Eshraani Protostar could be part of an adventure as the destination of a scientific mission, or could be nothing more than a passing incident as the Travellers see a science ship being blessed by priests or harassed by true believers. The Travellers might be accosted by earnest young people wanting their support for a campaign to ban research on the protostar, or even to take part in a covert action inspired by the dispute. Perhaps someone wants a prominent scientist scared off or rescued from protestors, or wishes to discredit one side of the dispute by underhand means. The protostar might be the focus of an adventure, or the reason for a situation that leads to one.

Black Hole CX-01Y

Black holes are extremely dangerous phenomena, not merely due to their intense gravitational field. They also emit radiation of various sorts which can be very dangerous. Fortunately, they are quite rare and are mostly very distant from Charted Space. The Black Hole designated CX-01Y has been known for some time but has not been the subject of close study due to the long voyage required to reach it. As Black Holes go, CX-01Y is relatively small and 'quiet' in terms of electromagnetic emissions. Indeed, it does not quite fit the profile of other Black Holes of a similar estimated mass.

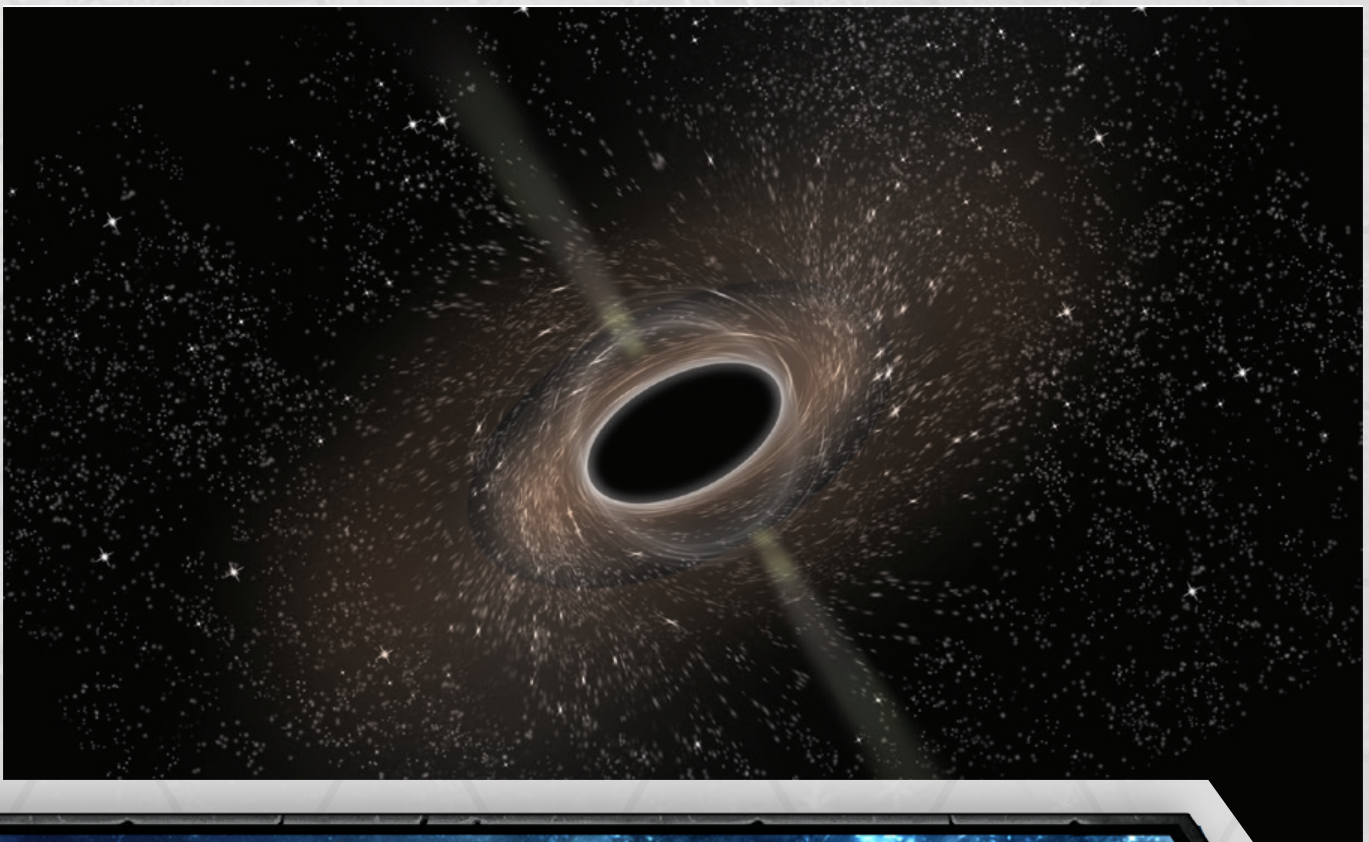
This anomaly has piqued the interest of various interstellar states, resulting in a series of expeditions to study it. Each was a difficult undertaking, with various corporations and states using different approaches. The usual one has been to send a primary scientific craft supported by several logistics vessels which then make the long trip home to bring more supplies. This ties up a lot of ships and personnel to support a small research effort, but it is the only option available to most states.

The Imperial Interstellar Scout Service undertook a mammoth effort to create a more substantial research project using three huge jump-capable tugs to haul a base craft plus supporting equipment all the way out to CX-01Y. The base craft is a converted light carrier which had become surplus to the needs of the navy. Stripped of its jump drives and heavily modified, the vessel was conveyed into proximity with CX-01Y. Its powerful

m-drive enables it to maintain its orbit and change position, acting as a mobile base for smaller manned and unmanned craft to approach the Black Hole itself. The three tugs now ply the long run back and forth with supplies and replacement personnel, with most scientists and Scouts serving for a year or so aboard the base ship before rotating home. Some have been there much longer but the strain of being cooped up in a starship, even a big one, eventually tells on even the most dedicated personnel.

The carrier/base ship is capable of docking and supporting a range of smaller craft, enabling some smaller research operations to extend their time on station considerably. The base ship has also rescued various missions that got into trouble, though sometimes there is no way to save a ship that gets too close or is blasted by an unexpected radiation burst. These distractions from the ship's own mission have been criticised, but leaving fellow spacefarers to die is unpalatable at best, and in most cases there have been benefits in terms of shared research or donations in cash or kind from grateful crews or their backers, who know it is in their best interests to make friends with the group most likely to save their enormously expensive asset if something goes wrong.

CX-01Y has been described as one of the loneliest places in the universe; a cluster of starships orbiting a hostile object in the middle of nowhere. Indeed, a spinoff of the main mission is a psychological research project to investigate the long-term effects of such



isolation. In the meantime, the mission continues to produce more questions than answers, such as why CX-01Y differs from other Black Holes. One idea, which was initially ridiculed but is now beginning to gain some credibility, is that the Black Hole was manufactured by some incredibly advanced race. Whether or not this was the Ancients is one question this raises, but more importantly scientists are starting to wonder how it was done... and why.

Research at CX-01Y has implications for gravitics technology, among other fields, in the more well-frequented areas of Charted Space, and personnel who have done a tour there or on the support ships can be encountered in many areas. A surprisingly large number of Scout Service personnel go on Detached Duty after a tour at CX-01Y. Most will say that they just want to see some places and meet some people after their lonely assignment, but some tell dark tales of their time at the Black Hole research facility. They will claim that there is some malevolent force at work there, and insist that this is not merely the fearsome natural phenomenon they were studying. It was something more, and a few will even go so far as to say something evil.

The Black Hole research project might be a distant thing to the average band of Travellers, though one of them might have been there during prior surface. They might encounter strange technologies developed at remote installations as a spinoff from the project, or scientists who claim they have learned secrets of the universe from their time at CX-01Y. There might even be a project to create an artificial Black Hole, since research at CX-01Y suggests that it might be possible. There is also the possibility that researchers might have found something orbiting the Black Hole; something strange that should not have been there.

GrafeYart

GrafeYart is nothing but a myth, a scare-story told by spacers to frighten impressionable new crewmembers. Yet the myth persists of a 'starship's graveyard' where misjumped ships end up. According to the tales, some Misjumps lead to an area of deep space where hundreds, perhaps thousands, of derelict vessels float endlessly. The gravitational attraction between these wrecks is small, but some of them have been there long enough that they have drifted together to form clumps.

From time to time a new vessel misjumps in to the GrafeYart (the origins of this corruption of 'Graveyard' are lost in antiquity) and slowly dies, its power running out and the crew perishing in the cold of space. Yet there are tales of those who have escaped the GrafeYart by plundering the wrecks of other ships for components and fuel. These few escapees are supposedly the source of the wild tales about this strange place.

According to the survivors, the GrafeYart contains vessels from many races, and some that seem to belong to unknown species. There were bodies aboard the wrecks, not all of which were identifiable as a known race, and some of the ships were very strange indeed. The wilder versions of this already outrageous tale include some kind of robotic devices harvesting components from the derelicts to build a fleet of monstrous hybrid ships.

This variant of the tale would seem completely impossible were it not for the *Impecilia* Incident, which occurred many years ago. The *Impecilia*, a large freightliner operated by a reputable shipping line and with a first-rate captain, encountered a mysterious vessel said to look like 'someone bolted together bits of several vessels'. Analysis of the few images available from the incident match the descriptions of 'GrafeYart Ships' contained in the wilder tales. Some components and hull sections could be identified in terms of the interstellar power that built them; some were of totally unknown origin. One ship was positively identified among the conglomerate; a naval escort that went missing, presumed Misjumped, centuries ago. Those who like to tell tales of the GrafeYart will loudly proclaim that this proves the story is true. Most are skeptical.

The idea that there may be some sort of device that attracts Misjumped ships or even causes them to go astray and end up at the GrafeYart is unsettling, as is the idea that someone or something may be cobbling the wrecks together into new ships and sending them out for purposes unknown. There are also rumours of a Superweapons project based on the Misjump-attractor concept. If this device is real, it could deny an area of space to hostile vessels or be used to scatter an incoming fleet. Naturally, there are those that are certain that it exists and has already been deployed aboard naval vessels or at some secret base or station.

The Rogue

The Rogue was initially thought to be a deep-space comet. Countless such objects exist in the gaps between the stars, though these areas are so enormous that the chances of finding one are very small. With no emissions to detect and no starlight reflected from their surface, interstellar comets can only be detected by advanced instruments unless a ship somehow happens to jump in close to one. The chances of this occurring are vanishingly small, despite the number of vid dramas where a distressed ship manages to find fuel in the form of ice from a handy comet.

Yet somehow, the Rogue did come to the attention of interstellar explorers. This was almost certainly by chance, probably whilst scanning deep space for some entirely different purpose. The object was marked on a chart and forgotten about other than a footnote that its infra-red signature was marginally above what would be expected from such an object. The difference was just slightly more than would normally be accepted for observational or instrumental error, but it was not for some time that a follow-up survey charted the Rogue a second time.

This survey provoked some interest, as the comet was not quite where expected. After tracking it for a while, scientists concurred that its motion was anomalous; the object did not seem to be under power but was following what appeared to be a changing vector. Initially this was assumed to be due to gravitational effects, but a detailed model of the local area made this seem highly unlikely. With so many other projects at hand, many of them of more immediate benefit, it was some time before scientists undertook a mission to visit the object in deep space. The fate of that expedition, and the rescue attempt that followed it, remain unknown.

Jumping into deep space is always risky. Calculating a precise emergence point is never easy, and with no local frame of reference a jump can be out by a sufficient margin that the vessel cannot reach its target. However,

the research ship and the rescue vessel sent after it would certainly have carried enough fuel to make a second jump to safety. Neither returned, and a third mission has so far not materialised.

Various theories have been put forward about the Rogue. It may be under the gravitational influence of some undetected object, and if so is probably nothing more than a big comet. It could be a sublight starship from some long-dead civilisation, making the tiniest of course corrections using the last of its power. Wilder theories include the idea that it is a star-creature or a giant superweapon left over from some ancient war. What is known is that the Rogue's changing course seems to be turning it towards a cluster of heavily inhabited systems. This is more than likely coincidence, and in any case it will be millennia before it reaches any of them unless it begins to accelerate.

According to a recent scientific paper, the object is indeed moving slightly faster than predicted. The change in velocity is just at the outer limit of observational error, and might be nothing more than a figment of long-range instrumentation. But there are those who are adamant that the Rogue is changing course and accelerating towards an inhabited area, and that it has already killed two ships full of people sent to investigate it. Naturally (to them) this proves that the Rogue is a planet-killing superweapon. This seems rather unlikely, but the truth might be even stranger.



PLANETARY PHENOMENA

Planetary phenomena are defined, for our purposes, as large-scale objects within a solar system or on a plane, such as moons and asteroids, as well as actual planets that are unusual in some way. Traveller mapping system is based on the mainworld characteristics, and often does little more than mention that there are gas giants present (or not) in a system. Additional planets and gas giants may be of interest to some starfarers, but are routinely ignored by commercial traffic that plies the routes from one major port to another. Thus many star systems contain areas that have not been more than cursorily mapped, and some bodies in a system might never have been visited even though the mainworld was colonised a thousand years ago.

The Giant Moon of Phreive

Phreive is a gas giant lying in the far outsystem, and thus of little interest to most starfarers. Those who wish to skim fuel tend to use one of the inner giants since the transit times to the mainworld are much shorter. Phreive might occasionally be visited by ships making a long transit using skimmed fuel, but even then an inner gas giant is often preferred since a ship this far out in the system is beyond rescue if something goes wrong. Outsystem giants like Phreive are typically only skimmed by ships making a covert transit or wishing to avoid other traffic. This makes it difficult to estimate how much traffic passes by. The most likely figure is none, or almost none.

Phreive falls into the 'large gas giant' category, but is fairly small by those standards. It has only three moons, of which two are tiny rockballs in highly eccentric orbits. They may be captured comets, or could have been perturbed out of a more normal orbit by their much larger companion. Noted in the starcharts only as Phreive's Moon, the giant moon is officially noted as a hazard to navigation. Its surface gravity is almost 2G, making it impossible for some starships to take off again if they land for whatever reason. A Thrust 2-capable ship would struggle to regain orbit, and would be at risk from the atmospheric conditions as it did so.

Phreive's Moon, unsurprisingly, has a dense atmosphere of methane and other unbreathable gases. It is also highly volcanic, and the combination of heat escaping from the core and a thick blanket of gas ensures that the surface temperature varies from warm to dangerously hot. Given the moon's distance from the system's star this might come as a surprise to unwary Travellers. The high variance in temperature gives rise to violent atmospheric currents and eddies, some of which can become storms that persist for months on end.

There is no official data available on the surface or conditions there, and visual surveys are difficult due to the opaque atmosphere. Radar mapping would work reasonably well, but cannot determine for certain if a landing site is safe. Despite these difficulties, there are rumours that an expedition was launched to Phreive's Moon, returning with strange artefacts that sold for a fortune to collectors. According to those who claim they know for sure, these artefacts were not produced by the Ancients but by a completely different culture and technology. If they were made by a vanished high-gravity dwelling race, it is possible that this species might have evaded discovery simply because humans tend not to visit such worlds.

Whatever the truth of it, Phreive's Moon is a dangerous place to visit or to search for artefacts that may or may not be there. A ship's internal gravity field could maintain a comfortable resting environment, but working outside would be difficult and dangerous. Even small dips and bumps would endanger a vehicle, and getting stuck would be a constant hazard. However, there seem to be those who think it is worth the risk – there are records of several follow-up expeditions after the first, though there are no records of any finds made nor the fate of the expedition.

Anlyx

Anlyx is a Superjovian; an extremely large gas giant planet. Huge as it is, Anlyx is far short of the mass required to become a brown dwarf. It does radiate some heat into space, enough to warm its many moons a little. Anlyx has a very complex moon system, composed of four main groups and some outliers, plus an impressive ring system. The rings are in two bands, a broad inner band and a narrower outer one, separated by two small moons which are designated as the 'midring' moon group. There are also several small moons orbiting closer to Anlyx than its inner ring system. The exact number of moons in this 'inner' moon group varies according to the designation system used. Some of the smallest are counted as part of the ring system by some methods of cataloguing.

Outside the outer ring system are the nine moons of the 'outer' group, which vary from the size of a small planet down to asteroid sized rockballs. There are about a dozen independent moons beyond this group, and finally the 'outlier' cluster which comprises a body named Anlyx-Companion (usually abbreviated to Anlyx-C) and five smaller bodies. Two of these orbit Anlyx-C, two follow it in its orbit, and one seems to be in the process of being ejected or captured by Anlyx and her companion. Which it ends up orbiting, if it is not flung out into deep space first, is a matter for conjecture.

In all, Anlyx has about 30-40 moons, depending on how they are catalogued, and vast numbers of rock and ice fragments within its ring system. It is a spectacular sight as well as being interesting from a scientific viewpoint.

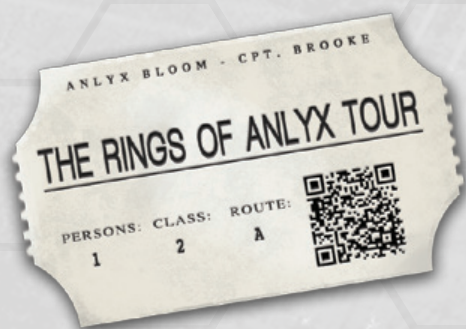


There are scientific outposts on several of the moons as well as mining bases. Some of these exploit the mineral wealth of the moon itself, whilst others are used as a forward base for asteroid-mining operations among the rings. Navigation among the rings and the moon systems is a complex and sometimes hazardous business, so wherever possible operations are kept local rather than sending vessels ranging far out into the rings.

Anlyx-C is inhabited, after a fashion. Its atmosphere is composed mainly of methane, but this is not an especially hazardous environment for sealed settlements or starship operations, and navigation is simple enough this far out from Anlyx itself. Anlyx-C is dotted with mining and industrial settlements, served by a central spaceport which has grown into a sizable city. Originally a manufacturing and recreation centre for the mining communities, Anlyx-C spaceport has developed far beyond expectations as a result of the tourist trade.

Some years ago, a major shipping line began offering cruises to view the spectacular rings of Anlyx, and ships would sometimes stop at the spaceport. Where there is money to be spent, someone will inevitably provide things to spend it on, and eventually the spaceport developed several high-end casinos and similarly upmarket entertainment venues. These are used by highly-paid asteroid miners as well as the tourists, but make their real money when there is a liner in port.

One recent development is the ring-cruise trade, where tourists are taken into the ring system aboard well-protected spacecraft. No liner would risk entering, and some experts say that this practice is an accident waiting to happen. However, in the meantime tourists are granted a breathtaking view of Anlyx' ring system as they dine on fine foods and drink the best wines available. The cruise is an expensive addition to an already extravagant vacation, but those with the money say it is well worth it, and some have visited several times.



The Krenall Effect

It is well known that a massive body such as a star or planet affects Jumpspace emergences within a volume of space around it. This is normally referred to as the '100-diameter limit' though this is a rule of thumb based on average planetary densities rather than a hard-and-fast physical law. Jumping out from within the 100-diameter limit is dangerous; jumping in is impossible. This means that some star systems have quite large regions into which it is not possible to jump, forcing ships to make a long normal-space transit to reach port and to haul back out again to a safe jump distance.

The Krenall Effect, named after the scientist who first quantified it, is a hotly-debated concept. The Krenall Effect is a much larger than predicted 'jump shadow' which extends far out beyond the 100-diameter limit of any known body. The effect is not always uniform; there are sometimes areas that it is safe to jump into or out of within a wider region that is 'shadowed' and impossible to enter. Conditions can also vary over time, creating a window during which normal jump operations are possible.

It has been suggested that large-scale jump shadowing (far beyond the 100-diameter limit) is actually the norm, and that the present situation, in which what is viewed as normal jump conditions prevail, is artificially imposed or maintained in some manner. There is no hard evidence of this, just some questionable mathematical predictions and the widespread belief that 'ancient geniuses left stuff lying around to bamboozle us' which pervades many crank theories and possibly some sound ones too.

Be that as it may, there are a few star systems where the Krenall Effect is active, either constantly or on a semi-predictable time scale. These systems must be navigated in normal space from a jump point in the far outsystem, creating long transit times that make most commercial activity unviable. It is also difficult to patrol such systems with naval vessels, making them ideal places to hide a base or to build an isolationist community. Those systems with a periodic Krenall Effect are essentially cut off from the outside universe for much of the time, and any ship visiting runs the risk of being stranded. Where the period of isolation is short, this is not too much of a problem – waiting a day or two for a jump window is expensive for merchant craft but rarely life-threatening unless there are serious dangers to be fled – but where the period is months or years the system tends to be bypassed wherever possible.

This is one reason for otherwise very habitable worlds to have an extremely low population compared to the rockball mainworld of the next system. Isolation might not matter to some prospective colonists, but interstellar trade is essential to the growth of a viable economy and therefore a technological society. In a system where trade is difficult or dangerous due to the Krenall Effect, establishing a major colony might simply not be worth the effort, and any society that exists there will have difficulty growing beyond a modest size. There may be numerous such systems throughout settled space, affecting patterns of settlement. It is rumoured that there are regions several parsecs across which are constantly or intermittently subject to the Krenall Effect, rendering them highly dangerous or effectively impassable. These regions act as barriers to expansion and exploration, and may contain previously unknown alien races.

The question of why the Krenall Effect occurs has never been answered. Many claim that there is an artificial source, possibly left behind by vanished alien geniuses, but the prevailing scientific opinion is simply that we do not yet fully understand the universe. It follows its own rules, and we do not yet know all of them.

The Cluster

The Cluster is an unusually dense segment of an otherwise fairly typical planetoid belt. Normally, planetoids are sufficiently dispersed (even in what would be described as a 'dense' belt) that transit times between them are quite long and a ship on the surface of one large planetoid would be unlikely to detect one landed on another. The Cluster is a little different; it consists of several dwarf planets and a much greater number of fairly large planetoids, all orbiting close together. 'Close' is of course in astronavigational terms; the distances involved are thousands or tens of thousands of kilometres, but this is a startlingly dense grouping by the usual standards.

The most likely explanation for such a dense cluster of planetoids is the breakup of a larger body or perhaps the not-quite-formation of a planet which left large chunks of rock nearby. Neither of these hypotheses quite fit the orbital mechanics of the Cluster, but there is no better explanation at this time. There are countless slightly-to-incredibly anomalous phenomena throughout explored space and only so many research programmes, so something as minor as The Cluster has thus far received little scientific attention and an explanation is unlikely in the near future.

Those who live and work in The Cluster do not really care about why it is there. Numerous settlements exist, either tunnelled into asteroids or partially above the surface of dwarf planets. Most of these settlements are quite small, and most are not really permanent. There are several mining camps set up by small corporations or independent groups, some of which have coalesced into collectives or alliances whose internal politics can be quite complex.

The larger communities are populated mainly by belters. Some of these are permanent or near-permanent, in that they have been inhabited for decades but ultimately are little more than caverns hollowed out of the rock. If the decision were made to abandon a settlement or move elsewhere, virtually every useful item could be demounted and stowed aboard a starship. However, such a move is unlikely in the case of any given community unless a severe threat were to emerge.

The Cluster has become something of a hotbed of small-scale mining and prospecting activity, though so far the major mining concerns have not yet taken an interest. It seems only to be a matter of time before they do, given the density of resource-bearing planetoids in the region. In the meantime, the amount of ore coming out of The Cluster has attracted prospectors and then scientists from farther afield, creating something of a scientific gold rush. Dozens of independent prospecting vessels have recently descended on The Cluster, followed by scientific ships intending to make a profit from analysing ore and predicting likely concentrations.

These science ships, naturally, are undertaking their own research whilst they are in the system, and a number of conclusions have emerged. Among them is the realisation that perhaps The Cluster was a planet until quite recently – as in, within a few tens or hundreds of thousands of years. The implications of this discovery are being hotly debated; meanwhile, more impulsive science vessel crews are searching for evidence of planet-busting weapon strikes or perhaps the ruins of installations that might have survived the deliberate destruction of a world. There is no hard evidence that such an event occurred, of course, but that does nothing to quell the abundant rumours that one of the belter settlements was constructed atop a treasure-trove of high-technology artefacts.

LOCAL PHENOMENA

Local phenomena are those associated with a world or a region of it. This may or may not be the mainworld of a system. Local phenomena include natural features, usual terrain or weather conditions, and even some kinds of fauna. Some of these phenomena are listed in the starmaps as a point of interest about a world. Others may come as a surprise to Travellers. They might be the destination of or the backdrop to an adventure, or perhaps an interesting backdrop to other events. Whatever else, these places will provide stories for the ship's galley or the starport bar for years to come.

Lost Cities of Old Chorrstyr

Chorrstyr is supposedly the archaic name for a planet located a little off the main spacelanes. Like many such worlds, its inhabitants are largely clustered around the starport, with small settlements scattered over the rest of the planet. These are the current inhabitants, but like many worlds Chorrstyr has evidence of prior habitation. This is not uncommon; there are many worlds with signs of earlier, failed colonies or native intelligence species that died out or collapsed back to barbarism. Chorrstyr is a little different, however.

There are legends dating from the earliest days of colonisation that there were 'other people' on Chorrstyr. Record-keeping tends to be patchy during early settlement of a planet, and there is rarely time for detailed cultural studies of any inhabitants. Thus there are only a few tantalising hints that someone was here before the present inhabitants, and very little data on who they were or what they knew.

The previous inhabitants are referred to as 'The Chorrstyr' in these early records and the legends spun around them. They were, apparently, a more or less humanoid species who built great cities but are not known to be starfarers. They had a technological civilisation which thus far has defied classification. Some of the cities of the Chorrstyr still stand, though there are few artefacts to be found in them.

The Chorrstyr built in natural stone for some reason, but shaped it with advanced equipment whose capabilities matched that of modern fusion cutters. Their buildings were not tall compared with the grand spires of high-tech human cities, but still reached twenty or thirty storeys at times. There is no evidence of elevators within any of these buildings, just stone stairs and walled shafts that might have been used by free-floating gravitic lift platforms. Similarly, there is no evidence of a power distribution network or any power sources, but there are areas of stone that seem different to others and may have been light or heat sources.

These stone cities have withstood the ages well, and some are fairly intact despite their great age. Soil deposits have partially buried some, and others have collapsed for reasons unknown. Archaeological expeditions have uncovered parts of some cities, and have usually found the same thing – the city was abandoned and almost every single thing that could be removed was taken away by... someone. A few artefacts have been found, mostly of shaped stone or ceramic materials. Some are extremely mundane, such as spoons and needles, but are exclusively made from non-metallic materials.

Chorrstyr is not short of metals, which makes their lack of use an enigma. Scientists have concluded that the Chorrstyr did not originate on this world, as they could not have developed a technological society capable of making their advanced ceramic materials without passing through a metal-using stage. However, there is a counter-theory that the Chorrstyr were highly psionic and could shape materials without the need for tools. This does not explain the choice of ceramics rather than metals, unless of course the Chorrstyr's psionic powers were weakened by metal. This is nothing but supposition to support an already shaky theory, however.

What is known for sure is that the Chorrstyr left behind evidence of capabilities perhaps beyond but certainly different from those of the modern inhabitants, and therefore worthy of studies. Most of the easily accessible city-ruins are located in areas later built on and thus obliterated, but those in more remote areas have survived long enough to be examined by modern scientists.

The 'best' sites, i.e. those that have produced the greatest concentration of artefacts or have the most or largest surviving buildings, are the site of scientific expeditions. Some of these sites have several rival groups excavating or competing for – sometimes even fighting over – the best prospects for artefacts. Some ruins located in very remote areas are all but untouched, and there are rumours of cities still awaiting discovery or secretly being excavated by shadowy projects.

The cities of the Chorrstyr have a strange feeling about them. This is not over obvious in those that have a significant number of researchers in them, but a small group or an individual cut off from contact with others will tend to find the cities disturbing and oppressive... and somehow sad. Various explanations have been put forward, mainly revolving around shapes and light patterns as well as the rather obvious psychological effect of an empty, ruined city. Others have more 'fringe' explanations, including the persistent myth that the cities are somehow aware and are lonely since their people died. There is no basis for this theory in observable facts, but nevertheless it has gained popularity in recent years. There is also a gold-rush story associated with the lost cities of old Chorrstyr; the idea that somewhere awaiting discovery is the motherlode of artefacts assembled by the dying people of Chorrstyr. Where reputable scientists painstakingly pick through the debris in search of small items, treasure-hunters have been known to blast their way into a suspected site in the hope of looting it.

People come to the lost cities for three main reasons; treasure-hunting, careful and deliberate science, and to experience or somehow commune with the ancient cities of old Chorrstyr. Clashes between these agendas are inevitable, and were the rumoured motherlode to be found widespread violence might be the result.

The Underwater Caverns of Amboure

Amboure is a very wet world, but not a 'water world' as such. It has a modest amount of land above sea level, and this is where the inhabitants live. There is evidence that sea level was once much lower, perhaps due to extensive glaciation, and during this time several enormous cavern systems were open to the air. As sea levels rose these systems were inundated, leaving air pockets in some sections. With no practical reason for exploration, these caverns were left undisturbed for many years.

The caverns have developed their own closed ecosystems over the millennia which are now attracting scientific interest. In addition, there are those who find the challenge of exploring the caverns irresistible, and these two agendas have coincided with the result that several expeditions have entered the various cavern systems. Only a small section has yet been fully explored however.

The difficulties inherent in exploring an underwater cave system are quite considerable. The entry points to most caverns are underwater, or else high in the roof above a water-filled cavern. Even a dive of about 100m is hazardous with conventional personal equipment, and some transits require several hours including squeezing through narrow areas and negotiating deep sumps. These downward bends can take the diver to dangerous depths and in some cases cannot be passed without specialist equipment.



Some of the largest cave systems have entry points over 500m down, and at present can only be explored by using submarines. Once a shallower area is reached, divers can make a local exploration. In some cases, small base camps have been set up in the largest caverns. Some float on the water surface or are perched on a dry section, others are built underwater. From these camps the explorers make ever-deeper forays into the dark waters of the cave system.

Scientists have discovered numerous new species in the cave systems, including some very exotic life. There are also rumoured to be gem beds accessible only from underwater and natural wonders in the form of caves with glittering crystals in their walls. When divers bring their lights into these places, the scene is spectacular but can be hazardous to those who are not prepared. Being startled in a diving suit is a hazardous experience.

At present only the upper regions of most cavern systems have been explored. The difficulty of entering a cave system underwater then penetrating a deep vertical distance makes such an undertaking very expensive. It may be necessary to use different types of equipment for the parts of the transit, which in turn requires the ability to switch between one and another at a suitable point.

Deeper exploration has been carried out by remotely controlled and autonomous vehicles, though the rate of loss makes this, too expensive. Losses are typically due to difficult conditions and operator error in a tight space, though it is known that at least a few drones have been destroyed by deep-water predators which presumably resented the intrusion into their environment.

Recently, a way has been found for small submarines to enter a large cavern with an air pocket and some above-water areas suitable for a base. This is significant since the cavern is located close to a wide deep-water shaft going down for an unknown distance. Side passages lead off from this central shaft, and are reported as being very extensive. Work has begun on a base to support larger scale exploration of these shafts and passages.

Several exploration and scientific groups have joined forces to penetrate the mysteries of the underwater caverns, though relations between the various groups are not always amicable. The politics going on at base camp can get vigorous, potentially derailing expeditions, and tempers have reportedly frayed on several occasions. Perhaps this is the reason why a small security contingent has been brought in to police the base and protect its equipment. There are, naturally, those who insist that the new security arrangements are defensive in nature, and that there is something hostile in the underwater tunnels.

The Acid Mists of Eight-Eleven

Eight-Eleven gets its nickname from the standard atmosphere designation code – eight signifies a dense atmosphere and eleven represents a corrosive one. Most worlds have only a single code, but Eight-Eleven is thus named because parts of its atmosphere are breathable but dense whilst low-lying areas are subject to a corrosive fog. Habitation is possible on high ground, and it is here that the world's small population dwells. Plants and animals imported from other planets cannot survive below a certain altitude, and as a result Eight-Eleven has essentially two ecosystems.

On the high plateaux, a fairly typical selection of familiar creatures has largely taken over most ecological niches. Life is a struggle for some species since the corrosive elements found at lower altitudes can be lifted up by weather conditions and fall – albeit in highly diluted form – as acid rain. However, the people of Eight-Eleven are able to support themselves through farming and herding, and have built a stable society.

Between the high habitable zone and the lowlands is a region where the soil is increasingly tainted with corrosive compounds and offworld life finds it increasingly difficult to survive. Native plants have the opposite problem, since they require acid conditions that become increasingly sparse at higher altitudes. The transition zone is marked by unhealthy examples of both native and offworld species competing for dominance in an environment hostile to both. This is a useful marker for offworlders; it is safe enough to enter the transition zone but descending much below it risks contamination.

Around sea level, Eight-Eleven's atmosphere contains a suspension of mildly corrosive compounds which render it opaque, shrouding the lowlands in a permanent blanket of greenish fog which billows in the wind and can be lifted up to higher altitudes by wind conditions. A windy day can cause the fog to visibly run up a hillside, causing a phenomenon known locally as acid waves. As altitude increases the fog thins, becoming a haze and finally clearing completely.

The acid mist is unbreathable to humans of course, and would cause fatal damage to the lungs and respiratory system after just a few minutes' exposure. However, it is only mildly corrosive in most regions. It is generally possible to function even at sea level with a simple gas-tight suit and breathing mask, and vehicles such as an ATV will usually resist the corrosive effect for several weeks. Providing it is used for forays of only a day or two into the lowlands, and is thoroughly decontaminated (with the odd component replaced during frequent maintenance) an ATV of similar heavy-duty vehicle could be used almost indefinitely on Eight-Eleven.

Personnel venturing into the upper regions of the transition zone are generally in no danger unless wind or temperature conditions cause a wave of dense fog to roll up particularly high. Further down the risk increases, but in general it does so in a fairly gradual manner. In most cases, a filter mask with eye coverage is sufficient protection from a concentration visible as a thin haze or the brief surge of an acid wave. Exposed skin will blister after a while but there will be no serious long-term effects unless exposure is prolonged for several hours. Venturing deeper into the haze requires full-body protection.

The perpetual fog in low-lying areas and the general hostility of the environment have created what is to a great extent a separate world which the inhabitants of Eight-Eleven know little about. Both plants and animals are tough and hardy, and it is known that there are large and aggressive predators in the misty valleys. The ecosystems of the acid-fogged valleys have not been extensively researched and in many cases there are not even reliable maps of the terrain.

As is usual with such an unknown environment, there are rumours about what is down there. The acid mists have to come from somewhere, though tales about jets of corrosive gas coming out of the rocks seem rather unlikely. Claims that there are acidic lakes from whose surface the corrosive vapour constantly rises seem more plausible. The question of what might live in such a lake has not yet been answered.

Expeditions have been launched to explore the lowland regions or to study the life found there, but data is patchy at best. Poor visibility makes driving a vehicle hazardous even when using radar and other sensors to assist, though the images from these sensors are intriguing. Much has been made of vague shapes outlined on radar or thermal displays, and in all probability they are just rocks or other natural formations. There are other possibilities however, and inevitably there are those who insist that something much more interesting has been found.

The least likely theories claim that these dim shapes in the acid mist are stranger and frightening creatures, some of which will attack unwary explorers. More plausible ideas include the possibility that there might be crashed spacecraft in the lowlands. This concept has some basis in reality; ships do occasionally suffer drive problems on approach or takeoff and could end up downed in a valley. If so, the ship would probably retain the ability to support life for some time but escape or rescue would be a problem. A very old ship, predating the settlement of Eight-Eleven, would be no more than a mangled clump of twisted metal.

There is also the possibility that the acid conditions of the lowlands might have been the natural environment of a race that developed sentience, and that artefacts or ruins still exist. No evidence has ever been discovered, but little of the lowlands has been even cursorily explored. It is an outside possibility that 'fogmen' or 'fog-beasts' of some kind do live in the deep valleys. If so, they would find the environment at higher altitudes entirely unsuitable and possibly fatal, so there would be little chance of encounters between these hypothetical fog-dwellers and the colonists of Eight-Eleven's plateaux.

Mount Awesome

Mount Awesome is one of the tallest mountains (other than seamounts) found on any world with a breathable atmosphere. It stands over 13,000 metres high, making it about 80% taller than Mount Everest on Terra. What makes Mount Awesome even more spectacular is that it is an isolated peak rising from fairly modest foothills. Mount Awesome is not part of a chain as such, but there are several other mountains within 50 km. None of these stands more than 10,000 metres high. They would be spectacularly large on most worlds but are dwarfed by the majesty of Mount Awesome – hence its name.

The mountains form a rough ring, creating an area which is more or less entirely enclosed by their foothills. This area has a distinct weather pattern and a localised climate with glaciers and meltwater lakes interspersed with rugged open areas and taiga forests. It is a forbidding region which is quite difficult to get into by any means – even flying in with a spacecraft can be a problem since good landing sites are rare and hard to identify from above. Entry at ground level means sloggng through the badlands following icy rivers after climbing over the foothills.

This region presents serious challenges for settlement and the creation of a technological society, but is habitable by frontiersmen or primitive people living on a subsistence basis. It is known that small numbers of people have settled within 'the ring' as it is known, and a few of their communities are close enough to the outside to receive the odd visitor. Little is known about conditions deeper in, at least by outsiders.

Mount Awesome itself, and presumably at least some of the other great mountains of the region, was formed by a combination of extreme mountain-building and long-ago volcanic events. One of these caused a wide section of the mountain's side to fall in, creating an enormous crater lake about halfway up. This is surrounded by a high lip whose average altitude is around 9,000 metres

– well above the height humans can operate for any length of time without oxygen supplies. The inside of the crater is much lower, and could be explored by humans without artificial equipment so long as they could get into the crater somehow.

This has been done, on more than one occasion. Not all the expeditions went well, but there are records of ships landing in the crater lake rather than trying to spot a good site around its shores. From there, the isolated environment of the crater has been at least cursorily explored and some of its features documented. Since the crater is effectively cut off from the rest of the planet by a barrier that cannot be crossed without an air supply, it has developed its own ecosystem based around a few species that got in somehow.

The crater lake is quite deep in places, and is home to several species of aquatic creatures, whilst on land the dominant life takes the form of fungi, with a few insect-like species that feed upon it. These are found nowhere else, and are of interest to scientists – though the difficulty of studying them is considerable.

There are old fissures and lava tubes under the crater, some going very deep into the mountain. It is possible to ascend over 1,000 metres – possibly more – above the crater lip by means of the lava tubes, and it may

be that some of the lower ones have exit points much further down the mountainside. There are streams running through some of these lower fissures and one major watercourse which bursts from the mountainside at a point where it is nearly vertical. This causes one of the longest waterfalls in the known universe, though wind conditions can cause the fall to disperse into near-constant rainfall in the region below.

According to one of the more successful expeditions, it is possible to transit into the heart of Mount Awesome through the lava tubes, into an ancient magma chamber of immense size. Tubes and fissures run outward and downward from there, but have not been explored. It has been suggested that Mount Awesome or one of the other mountains nearby may be dormant rather than extinct, and that the area described by the ring of foothills might be some kind of supervolcano. There is no strong evidence of recent volcanic activity, however.

The peak of Mount Awesome stands thousands of metres above the crater lake. Anyone attempting to scale it would require high-tech protective equipment at the very least; it is not known if anyone has ever tried, let alone succeeded. It is possible that parties might have landed close to the peak from spacecraft and ascended from there, but even this would be a hazardous undertaking serving no practical purpose beyond the challenge posed by this awesome mountain.

