Report on Xandar 3

To the High Council of Antharkees

Universal Stellar Date: 538.456 UD

Xandar 3 is a planet in orbit around a yellow dwarf star in the Gni-Po segment of the Barandine cluster – Galactic coordinates 1053.46, 978.51, 2100.03 – being 78.3 light-years from Antharkees. Physically, Xandar 3 is very similar to our own planet. It has 1.07 times the mass of our planet. The Xandarian year is 14 percent longer than our own, and the Xandarian day is only slightly shorter than our own. Xandar 3 is tilted on its axis, and so experiences seasonal variations similar to those of our own planet. Also, like our own planet, the majority of the surface is covered with liquid water, and there is a thin layer of atmosphere, upon which all lifeforms depend.

Xandar 3 has a high diversity of biological lifeforms, all carbon-based like our own. Our scientists have estimated that Xandar 3 could easily have twice as many lifeforms as our own planet. This is due to a high diversity of environmental conditions. This diversity, however, is rapidly diminishing due to the effects of the one intelligent species inhabiting the planet, a bipedal species which refers to themselves as *Homo sapiens*, or humans. These humans have spread over the planet and altered environmental conditions to suit their own purposes, with little regard for the needs of other species or the long term effects of their actions. Indeed, this is one of the principal problems on the planet.

The humans refer to their planet as "Earth".

The humans are in an early proto-buctoscopic stage of their development. They have mastered many aspects of early scientific disciplines. They have knowledge of microorganisms and subatomic structure, as well as a general awareness of the size and nature of the universe. They have gained a significant amount of technological expertise, which they have used to spread out over the entire land base, with the exception of the one continent that is covered with ice, have developed various forms of artificial energy, including nuclear energy, and have cured many diseases.

Much of the development of the humans in the last 100 to 150 years has been based on the development and use of a substance called petroleum. This is a carbon-based substance which is produced under high pressure inside the planet from former organic matter which existed hundreds of millions of years ago. The use of petroleum has given the humans both advantages and problems that our species did not have. Its use has greatly increased development and has allowed humans to adapt more effectively to environmental conditions, as well as to power transportation and help to grow more food. Its use has come with various costs, though, including pollution to both water and land and air, including a buildup of the levels of carbon dioxide in their atmosphere which is leading to unpredictable environmental changes, which they may or may not be able to adapt to. Even if they are able to adapt, it is clear that a great number of less adaptable species will be lost in the process.

However, the main problem with the use of petroleum is that, because humans have had this easily accessible source of energy, they have failed to develop other cleaner and more beneficial forms of energy. Humans do not seem to appreciate the fact that it has taken millions of years to produce this resource, and are rapidly using it up in a matter of a few generations. It has been estimated by many of the human scientists, and our scientists tend to concur, that perhaps one half of all petroleum reserves in the planet have been extracted and used. Whereas both the population of the planet, as well as the uses to which petroleum is used, have been increasing dramatically, it is likely that these reserves will

last less than another hundred years, and the reserves that the humans will be able to efficiently extract perhaps no more than 50 years. Other forms of energy are being explored, but the pace of development is slow, and it is unclear whether humans will develop sufficient technology to supply their needs by the time the petroleum reserves are exhausted.

Humans have already discovered nuclear energy, much earlier in their stage of development than did our species, and it has caused many problems in their development. The first use of this energy was to create weapons that they immediately used in limited manner in a great war that engulfed much of the planet. Since then humans have lived under the threat of potentially more use of such weapons. This threat was somewhat reduced when one of the two major military powers on the planet dissolved, leaving only one major military power on the planet. This reduced the likelihood of either an accidental or intentional exchange of nuclear weapons, with the resultant radioactive damage, between two major powers, but the likelihood of further use of such weapons persists, either by use of smaller powers or by individual actors who might develop or access such weapons, or by the use of the one major power which has demonstrated its clear willingness to use military power to its own ends. War is still prevalent among the humans. This is particularly unsettling, given the development of these nuclear weapons.

The humans have also relied on nuclear power to a significant extent for energy. This has resulted in several accidental releases of radiation into the environment, as well as the buildup of radioactive wastes, for which the humans have no clear idea for treatment or disposal. This demonstrates a dangerous propensity among the human species to do what they feel benefits them now, with little regard for unintended or long-term results. The main problem with nuclear energy is that the humans discovered this source of power before solving many of the problems facing their species, such as war, hunger and environmental degradation, and it is unclear whether they will survive the development. The humans have shown no sign of discovering or developing dualistic differential energy.

The humans have developed primitive space travel, and have traveled to the single moon orbiting the planet, as well as sending probes to the other planets in their solar system. It appears unlikely that they will develop the energy and other technology necessary for deeper space travel before they destroy their resource base, as they are rapidly doing.

In spite of their significant development of scientific knowledge, much of the human population still relies on ancient belief systems and traditions. They believe in either one or several super intelligent beings, called "God" or "gods", which they believe either created the universe or guide their lives, or both. This includes worshiping these perceived gods, who are often depicted as very capricious, violent or whimsical. While many of the superstitious belief systems have been discarded, there are still a large number that persist, some of them with many millions of adherents, and in some cases among the most developed societies. This is a puzzling phenomenon to our experts, such superstitious beliefs having been discarded early in our history upon the discovery of scientific principles. More research will be required to determine why such beliefs contrary to the clear evidence of science, and to the ethical precepts that modern humans have adopted, have persisted.

The population of humans has been increasing at an alarming rate. This is due in large part to the fact that humans have made advances in science and medicine and have found ways to grow and distribute food more effectively, and have found cures for many diseases that previously killed many of their species early in their lives. It also appears that the level of violence among humans has decreased over time. These developments have allowed a greater percentage of humans to live to the point of reproducing. Although the humans have developed some primitive means of trying to prevent the

resulting increase in population, they have not given it great priority, and the population has already increased to unsustainable levels. Particularly if and when the petroleum energy reserves previously mentioned are exhausted, and if suitable replacements are not developed, or are not developed quickly enough, catastrophic results, including potential mass starvation, are almost inevitable.

Humans engage in numerous enigmatic and inexplicable behaviors. One of these behaviors which researchers have found quite puzzling is the practice of burning various plant substances and inhaling the smoke. The most common substance use for this purpose is one called "tobacco". They do this in spite of the obvious detrimental effects to their bodies. Our experts have failed to find any reasonable explanation for this behavior. It does not seem to confer any evolutionary or other advantage to those who use it. Indeed, it has been found to lead to the deaths of many of the humans. Further research will be required to determine if there is some as yet unseen advantage to this practice.

The most peculiar practice among the humans, however, is that of killing their own offspring. While we have encountered species on other planets with various groups that might engage in violent actions, including killing, against members of other groups among their own species, the humans are unique in that they will frequently kill their own offspring. At first it was thought that this might be a primitive means of population control, but this does not seem to be the main purpose. Our experts also thought that it might be prevalent among those with little resources, and therefore little ability to take care of their offspring, but the practice appears to be common and accepted among those with ample resources, as well. Humans are typically, but not exclusively, monogamous, meaning that a human will usually engage in procreational activity with only one other human. This monogamous relationship is generally codified by a tradition or contract referred to as "marriage". There is a tendency for the killing of offspring to take place among humans who have not undergone this ritual of marriage, so it seems that offspring that arise outside of this contract are not valued. However, it is with significant frequency that offspring are killed by those in such relationships, and also that those who are not in such relationships refrain from killing their offspring, so this does not seem to adequately explain or predict human behavior.

It is thought that this phenomenon may have to do in part with the manner by which humans reproduce. Humans are one of various species referred to on the planet as "mammals". These are animals which, among other things, have the interesting characteristic of carrying their developing offspring inside their bodies for a significant period of time. This provides a high level of protection for the developing offspring, as well as a dependable source of nutrition for development, which is, no doubt, the basis behind the evolutionary development of this characteristic. The humans are divided into two categories, distinguished by what is referred to as "sex". One sex, referred to as "female", is the group which carries the offspring during this initial developmental period. The other sex, "male", is necessary for procreation, but does not carry the offspring. When ready to reproduce, the male and the female engage in activity in which the male contributes some of its genetic material to that which is contained within the female. (The genetic material is referred to as "DNA", similar to the Pi-ODA in our own species, except that it is nitrogen-based.) When the genetic material mixes inside the female, a new human being is created. The female then carries the offspring for approximately three-quarters of a year before the new human is exuded from the female's body in a process referred to as "birth". (It is customary among humans to state the age of a human as being from the time of birth, rather than the actual age of the organism. This is presumably due to the fact that the point of birth is clearly known, whereas the point of creation is often not precisely known. Humans are known to engage in sexual activity with some frequency, and there is nothing that signals that the creation has taken place inside the female's body.) There appears to be some mystical understanding attached to this birth process; it

is rather universally considered unacceptable to kill the offspring after the point of exudation, but often is acceptable before that point. It is appears that the humans, in spite of their relatively high knowledge of early biological development, have some sort of mystical belief that the offspring somehow "becomes human" at the point of birth.

Apparently, this practice has been going on since prehistoric times. (The recorded history of the humans extends back approximately 5000 years.) It is understandable that, prior to the scientific development of the knowledge of the means of procreation, humans may have undergone this practice with the mistaken impression that they were simply preventing a human being from being created, or for some other biological purpose. Now, however, that humans have developed an ample understanding of their biological development, it remains unclear why they would engage in killing their own in this manner. There are other ways in which humans engage in killing their own, including wars, or simply individual acts of human killing, referred to as "homicide", but it is extremely rare that any of these would result in the killing of one's own offspring. Since it appears to be an inherent quality among all sentient species to protect one's own offspring, this is a subject that requires further research to be understood.

The future for the planet Xandar 3 and its inhabitants, and particularly the humans, is unclear. Although our experts are not predicting the absolute extinction of the species within the foreseeable future, it is doubtful that they will be able to continue to exist for another hundred years in the manner in which they now exist. Unless serious changes are made in the way in which resources, especially energy, are procured and distributed and the population is brought under control, their future does not look promising, and widespread suffering and death appear inevitable.

Humans could benefit immensely from intervention by our species, particularly in helping them deal with energy resources and controlling population growth. However, humans, in spite of having made some progress, are still a relatively violent species. They also persist in relying on superstition, rather than on the scientific knowledge that they have. This makes them a dangerous and unpredictable species. When they are willing to act in violence against even their own offspring, it is unclear how damaging to our own species our contact with them would be. If the Antharkeen High Council decides affirmatively on making contact with the humans, we recommend that it be made with extreme caution.

Resepectfully submitted,
Xandar 3 Scientific Research Delegation