

AQUA TERRAQUE

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Our family is now quite big and our kids are coming on well. They were swimming from birth of course, but more encouraging, as a scientist myself, is that several are learning to propel themselves on the very few and small dry regions of our planet, Aqua! They are indeed so enthusiastic to be out of water that we have to nag them to ensure that they always have, "to fin" (actually it's tentacle, but fin sounds more fun!), the necessary apparatus for what is, one has to acknowledge, an alien and dangerous environment - however stimulating it seems to us.

Anyway, I am currently writing a history and progress report on our planet's considerable achievements in the realm of astronomy. We are of course primarily hoping to find other planets which support intelligent life, an enterprise which was greatly facilitated when our technologists managed to combine telescopes with periscopes which projected out of the water into one instrument for the study of the heavens. This is our exciting SEAI (Search for Extra-Aquarial Intelligence) project, which is several centuries old and has at last come up trumps, as you will see in my later paragraphs. Incidentally, we alternatively call the project SEAL (Search for Extra-Aquarial Life) as seals are a species on our planet!

To put you in the picture about us and our work, we believe that most habitable planets are probably like our own, but we have so far been unable to ascertain how far life forms have developed on any of these watery worlds. It seems unlikely that there could be intelligent life in non-aqueous worlds. For one thing, and this is what makes our excursions to the dry upper regions of Aqua so dangerous (quite apart from the atmosphere there), the temperatures and other things like wind speed vary so much and so rapidly in comparison to those under the sea. Here in our cosy home, in contrast, we have everything we need to survive and to develop in the way we have. We have retained a degree of telepathic communication for which we thank the relatively primitive life forms like corals, from whom we may have evolved. We use bio-electrolysis of water in order to produce the oxygen we need to breathe, and we use thermal vents under the seabed to provide heat and even electricity; it is this which has allowed us to use the metals we find on the seabed. We have abundant oil under the seabed, which again can provide us with energy and synthetic materials. We use rocks to make records, though there are other means of doing this. Eventually we discovered how to use radio waves in order to communicate, and we benefit from the fact that sound travels faster underwater than atmospheres; this has enabled us to develop sonar for detecting the objects around us. We get around using tubes filled with water and driven by pumps which accelerate that water around our various cities and other centres. And of course our crowning achievements are our optical and radio telescopes, mounted, as I said before, on a huge

periscope arrangement so that we can view the heavens from our own comfortable world of water!

We have no great desire to travel beyond our little world (actually it is not that little, which helps to explain why it is almost entirely covered in water). This is because we are a prudent species which still suffers occasionally from several predatory species, one of which, the Markoles, are almost as intelligent as us Aquarrix, as we call ourselves: we therefore have no wish to travel to another planet only to be destroyed by its hostile inhabitants! The struggle against the Markoles on our own world was indeed one of the most important parts of our history as a species, since both we Aquarrix and the Markoles seem to have developed high intelligence levels at around the same time; however, conflict was avoided for many centuries since the two species lived in different regions of our large and water-filled planet. But sadly the Markoles apparently quite enjoyed the taste of us Aquarrix! This was clearly a problem for peaceful coexistence between us and them when the two intelligent species eventually and inevitably came into conflict, but we were technologically quite far ahead of them - far enough in fact to teach them the hard way that we were not tasty dishes but their superiors! So today the Markoles, most of them anyway, are more or less our acquiescent servants; being larger than us, and also more amphibious, they are very useful for doing heavy moving and lifting jobs, especially during the construction of complicated structures on the dry surface zones of the planet.

So that's us, the Aquarrix, proud inhabitants and rulers of quite a large planet whose flatness, itself the effect of our high planetary gravity - since this prevents the formation of very large landforms - seems to have been the cause of its being almost completely covered by water. The fact that our star, Domus, is a red dwarf may also have played its part in our success, since its longevity has allowed us time to have evolved in the way we have. Incidentally, we are the only planet in the Domus system which could support life, and that is why we have to look further afield.

Anyway, having achieved comfortable domination of Aqua, we are, as I say, mainly nowadays interested simply in learning about the Universe in which we live, and in searching the heavens for intelligent life away from Aqua. In recent decades our SEAI progress has been aided enormously when we discovered that the orbits of many planets cross that of their stars, since our optical telescopes can detect planets indirectly using this "transit" method. A transit occurs each time a planet crosses the line-of-sight between its parent star that it is orbiting and the observer, and when this happens the planet blocks some of the light from its star, resulting in a periodic dimming; this periodic signature lets us detect the planet and determine its size and its orbit. Three transits of a star provide an effective method of detecting and confirming a planet, and using the measured orbit of the planet and the known properties of its parent star, our scientists can determine if each planet discovered is in the habitable zone, which is the distance from its star at which liquid water could exist on the

surface of the planet. We await the results of our latest searches and techniques with great excitement.

Exciting update! One of our latest and maybe greatest discoveries using our SEAI apparatus is a new planet, which we call Terra, in the solar system of the fairly nearby star we call Sol. We are currently, using the Transit method, trying to determine its nature, and in particular whether it is, as we expect, a water-covered world like ours.

Later update. Great news! One of our signals has just shown that Terra is indeed habitable! We know that it is habitable because of the light reflected by its atmosphere: this indicates that Terra contains algae of some sort, since these affect the signals which the planet sends into space as a result of reflected sunshine from Sol. And the question now is whether there could be a bit of dry land on Terra - something tells me this is so, despite what I said earlier about life on dry land, and this is why we are calling our new world Terra. So has intelligent life evolved on land as well as in the sea? And if has done so, is it peaceful like us or aggressive like our former enemies, the Markoles? Will we ever find out?