

Hi this is Steve Nerlich from Cheap Astronomy www.cheapastro.com and this is *The ups and downs of space advocacy*.

We are all going to die. Really. Your best shot at immortality is to get yourself cloned and teach that clone every piece of knowledge and experience that you have ever known – or even bring it up from babyhood in a virtual Matrix-like reality that exactly copies every single event of your life – so that the clone really is in all essential respects you.

It is worth getting philosophical for a moment – to think through just why you don't find it completely satisfying to know that that other identical you is going to continue after you're gone – probably re-cloning itself and doing the whole baby-in-the-Matrix thing again – because, after all, that's what you did.

This is science fiction of course, but it's not really that different to hoping that in ten years from now you will still be alive – and hopefully well and happy – but probably a slightly different person from who you are now – a person who can look back on the same life you've led, but with an extra ten years of experience and probably with a slightly different outlook on life as a consequence.

All of this is intended to get you thinking that even though you are going to die – and you really are – maybe you can achieve something like immortality just by ensuring that the human race continues. It's statistically likely that at some time in the future there will be a child who grows up with a roughly similar life to yours, spending it's time doing similar things to what you do and looking on the world in much the same way that you do.

So look, if none of this is making any sense, I suggest skipping to the next podcast – which should be a really interesting one about the Constellation project. If you are still listening, then hopefully you are getting the idea that space advocacy is all about the future of the human race – and hopefully you also think that ensuring the human race has a future is, on balance, a good thing.

If we stay here on the surface of Earth, just living day by day, we could chalk up another few thousands, maybe even a few hundreds of thousands of years, but eventually we will all die just like the dinosaurs died – perhaps when that asteroid with our name on it crashes down and changes the face of planet Earth forever.

If the human race has a long term future its going to have to include a significant extension of ourselves out into space – even if it's just with robots and even if it's just through building a planetary defence system. Either we do it or we will all die – and if we do do it that will be really something and will mean that we really have taken a full step ahead of the dinosaurs – and we'll all get to keep our internet-access too.

Of course in another half a billion years all the oceans will evaporate, so then we will have to either shift the planet or otherwise evacuate it – but even that starts sounding achievable if we are actually smart enough and capable enough to build a robot-based planetary defence system. And it will be a system that not only protects us, but also the pandas and whales and polar bears and tigers that many of us are quite fond of. This is about conservation in the truest sense of the word.

For Cheap Astronomy it's this that is the stuff of space advocacy – not spouting off rote-learned constellation names and not being able to teach someone to line up an equatorial mount at their latitude. Space advocacy means getting people to realise that all this stuff we are learning from astronomy could help to keep the human race alive – in this high risk, forgiving universe in which we live.

Not to suggest that anyone is doing a bad job here. It's 2009 the International Year of Astronomy and here in Australia it's National Science Week. These are very good things and the result of huge efforts by passionate space and science advocates.

But then there's this. Big news – we are going to use the full technological sophistication of the Deep Space Network to send a message to the aliens. And this time, we are not doing anything frivolous like sending a Beatles song to Polaris.

No. This time we are going to send a message to Gliese 581d – which is an exoplanet about eight times the mass of Earth in the habitable zone (meaning where water could exist in liquid form) of the star system Gliese 581 – which is about 20 light years away.

So this time when we send our message, there really could be someone there to hear it – and following in the footsteps of cosmos visionaries like Carl Sagan and using the technological wonders available to us in the 21st century, what are we going to do? We are going to send them text messages – in English.

Much seems to be made of the fact that the messages are going to be sent in binary code – but really it's just binary-coded English, you know, like an SMS or an email. Are we seriously thinking that the aliens can read... and read a 26 character set that encodes a somewhat arcane verbal language that is in all essential respects anthropomorphic? Even if they are hyper-intelligent trans-dimensional beings, it's unlikely the messages are going to mean anything to them. And more to the point are they going to think that we are intelligent for having done this?

And this is not just being picky. There are kids in schools, who's initial curiosity is being engaged here with the thought of communicating with aliens and no doubt it starts them thinking about what to say to an alien, but then – because kids are pretty smart – they stop and think, hang on it's in English...

So, what the heck, just go along with it. It gets people talking about space, gets some media coverage and it's a bit of a laugh. But couldn't we have made it real? Couldn't we get the kids in the schools thinking about there really being aliens who really won't understand English, who won't get any kind of spoken or written language for that matter. This is when it starts getting really interesting, trying to figure out just how we could communicate meaningfully with an alien intelligence. We gain the respect of our kids and of the aliens by taking all this to the next level.

Anyway, Cheap Astronomy sent in its domain name, you know www.cheapastro.com with an invitation to the aliens to come and listen to some science podcasts – but the good people at Hello from Earth knocked it back – probably because they figured the aliens don't have internet access. Oh yeah.

Given the chance, Cheap Astronomy would have liked to have adapted Frank Drake's code set from the Arecibo message – and sent something like this: take 75% hydrogen and 25% helium, add gravity, supernova on high, let cool for 4 billion years and here we are.

See, everyone in the universe will get that. OK, maybe they won't be rolling around on the floor laughing at the sheer genius of it, but they will get the fact that we are drawing on some substantial common universal knowledge of how things come to be and putting it out there with a smile. It's about finding common ground and making real communication – rather than just blasting out some unintelligible noise at full volume because we can.

But hey, happy National Science Week Australia – and a continuing happy IYA 2009 to everyone else.

Thanks for listening. This is Steve Nerlich from Cheap Astronomy, www.cheapastro.com. Cheap Astronomy offers an educational website where life is cheap, so why buy an expensive telescope. No ads, no profit, just good science. Bye.