Hi this is Steve Nerlich from Cheap Astronomy www.cheapastro.com and this is *21st century thinking.*

Science fiction does sometimes come true.
Remember those old TV shows – like Towards 2000 or Beyond 2000 - all painting a future full of bright, shiny technological marvels. Well here we are – beyond 2000, in fact 10 years beyond 2000. And look, it's a shame about the wars and the oils spills and the CO_2, but there really are many things to feel good about in the 21st century.

My cell phone is way better than James T Kirk's communicator – I mean he didn't even have a camera in his. And people really do live and work in space, like now – today, even if it is only 300 kilometers up. And whenever STS 133 gets launched, they'll have a robot up there too. And where's my jetpack? Available for purchase in New Zealand, apparently.

More often science fiction can reflect many of our future aspirations.
So OK, it still takes 15 gruelling hours to fly from Sydney to Los Angeles – but you can watch movies or play chess against a computer on a screen built into back of the seat in front of you. And what science fiction writer ever predicted us developing a sense of collective ownership for the clunky looking Hubble space telescope which has connected so many people to 'our' universe. And who would have thought a bunch of ordinary folks would start producing home-made 10 minute digital audio shows on astronomy and space science which get broadcast around the world every single day. I mean who would have thought?

So, I reckon maybe 50% of the stuff science fiction writers think up actually comes true – and the rest of it is comes as a complete surprise to everyone. Transporters and warp drive seem pretty unlikely to come – but, we've got the communicators already and as for doctors diagnosing and fixing injuries using some hand-held thing that goes doodley-doodley? Well, we are half way there already.

If we ever meet the aliens, it is unlikely they will be able to tell any of us apart.
Who knows if we will ever put this to the test, but it's worth considering that the aliens really won't have a clue that any of us are different from each other. We really will just be ugly bags of mostly water who all seem to like and do pretty much the same stuff. We can try explain to them that because this person lives over here, while that person lives over there and that person wears a thing on their head – it makes them a totally different person. But the aliens, even if by chance they do sense information in optical wavelength light, are unlikely to see that a few minor differences in colour and shape have any significance.

And, not meaning to go all tree-hugging hippy on you here – they would be technically correct. A bit like how we supposedly discovered the Earth was a planet when we went to the Moon - we might just discover that we really are Earthlings when we meet the aliens. And on the positive side, the aliens won't think twice about whether or not you happen to be Neil Armstrong – they will give to each of us the respect of being a member of a species that has gone into space. Let's face it - most species never manage it.

A civilisation-destroying meteor could hit Earth at any time - even if 'any time' means ten million years from now. Our sky surveys are getting better, but for now we still need ten to twenty years warning to be able to build anything that might deflect a meteor.

If anyone asks you why you spend all your time listening to podcasts or just gazing up at the sky, you should feel comfortable replying that astronomy really will end up saving all of humanity one day, even if that one day might be another 10 million years from now. Of course, you should also acknowledge the key roles of the geologists and the palaeontologists that drew our attention to the problem – basically, yay science – but it's true the telescopes and the people behind them really did something special here.

It's still just sinking in - but here in the 21st century we are the first humans to live with the reality that all of humanity really could get wiped out in an instant - by the unfortunate trajectory of a random asteroid or comet - while at the same time being the first humans with the technological capacity to actually do something about it. Meaning that from here, we really only have ourselves to blame if it does happen.

I mean sure, the people in the 20th century lived with the risk of nuclear war, but it's still just an internal matter to be avoided by good communication and common sense – just because we are all the same, doesn't mean we all automatically get on with each other.

Steve, I think you're going all tree-hugging hippy again. Oh sorry - so, what's next?

Habitable zones don't last forever.
A vague understanding that the party can't go on indefinitely may well pre-date science. But certainly by the twentieth century, we had developed the knowledge that the Sun was evolving and will go red giant in about 5 billion years – potentially killing everything on Earth, unless a few extremophile bacteria manage to cling on just a bit longer - and that's only if the planet isn't destroyed outright.

More recently though, there's been a realisation that the Sun's luminosity is increasing as it ages – meaning that probably somewhere between half and one billion years from now water will no longer be able to stay in a liquid phase on the Earth's surface. In other words, Earth will no longer be in what we call the solar system's habitable zone. Some technological adjustments might allow us to live underground and cling on just a bit longer, but hopefully well before that we'll have started thinking long term and either move the planet, to keep it in the solar system's evolving habitable zone, or just leave Earth altogether - which we will eventually have to do anyway.

The human species could become almost immortal, even if you can't be.
Now regardless of what religious views you may hold, I think we can all agree that people do visibly die – whatever might happen afterwards. It is technologically feasible that death could be avoided at some point in the future, even if it just involves transplanting your brain into a robot, but that's unlikely to be an option for me or for anyone else listening to this podcast today on the 2nd of December 2010.

But let's say all the stories are true and a few of us do get raised up together at some future nexus. If you died tomorrow and got raised up a thousand years from now – wouldn't you be a little bit interested to find out how everyone that came after you got on? Did we land someone on Mars? Find the Higgs boson? Learn how to transplant our brains into a robot?

And even though you are handed your wings and your harp, wouldn't you be a tiny bit disappointed to find out that the other people sharing your cloud were from a later generation that never quite got around to building the asteroid defence system and just got collectively wiped out one day?

So... I don't know, go buy a cheap telescope, set it up in the backyard and get your neighbours interested. It makes no sense to think that you are somehow not a part of all this. You are as much a part of this as Socrates, Marie Curie and a certain Homo erectus individual - who figured out that the secret really was to bang the rocks together.

Maybe it's someone that you encourage to look through that telescope who will cook the Big Mac that feeds the taxi driver who drives the scientist to the Nobel prize ceremony. It is quite appropriate to think that it is the collective Us that will make the future whatever it will be.

Thanks for listening. This is Steve Nerlich from Cheap Astronomy, www.cheapastro.com. Cheap Astronomy offers an educational website aiming to remind people that we live on a planet. No ads, no profit, just good science. Bye.