

NOTES ON COSMIC PLURALISM

MOHAMMADJAVAD VAKILI IN CONVERSATION WITH LUÍS LÁZARO MATOS

APRIL 13: Mohammadjavad Vakili [MV] to Luís Lázaro Matos [LLM]
Hello Luís,

I hope you're enjoying the spring so far. This time of the year is probably the peak blooming time of the tulips. You can actually see the tulip fields in some satellite images. They appear as colorful stripes surrounded by green stripes. There is a satellite called Copernicus which orbits the Earth and takes snapshots of different parts of the planet at different times. Looking at those images really gives you a different perspective on how events unfold.

Cheers,
Mohammadjavad

LLM - MV
Hello Mohammadjavad,

It has been a funny spring beginning. I just came back from Brazil so I had a great Autumn beginning actually. I traveled to the South Pole for the first time. I saw the southern cross constellation for the first time also. I saw the image of a kite!

APR 14: MV - LLM

Nice! That's pretty sweet.
I haven't seen the cross, aka kite, constellation myself. But I've heard because of its bright stars, it is a convenient constellation to spot with naked eyes.

APR 16: LLM - MV

It is very visible yes. That's one of the things I was most looking forward to see before going to Brazil. To look at the natural specificities I'm not used to - there's way more insects and butterflies, the earth is red, the night sky is different. Recently I've been interested in science more than I have ever been. Last year I went out a lot, to parties and bars on my free time but I got somehow a bit tired of the "artists bohemian life". I never had much the habit of watching TV series like people usually do to relax at home, so I would just go out and party a lot. But suddenly and recently I started watching astronomy documentaries. I have been feeling so happy doing it on my own. Astronomy does not give me a massive hangover the next day ahahaha.

1646.

Boekhorststraat 125, 2512 cn, The Hague
The Netherlands

<http://1646.nl> — info@1646.nl

APR 18: MO - LLM

That sounds very impressive. The night sky looks indeed very different once you go to a location with minimal optical pollution. A while ago I happened to be on top of a mountain sufficiently far from civilization. One night I decided to go out and look at the night sky with bare eyes. As your eyes get used to the darkness of the sky all sorts of bright objects start to appear out of nowhere. That's roughly how telescopes and cameras work as well, if you point a telescope to an area of sky for a long time, more photons from the extraterrestrial objects will hit the detectors of the camera and as a result more objects become visible on the final image!

Hahaha! It is interesting that you brought up the subject of hangover. One of the main chemicals in dark alcoholic beverages that causes hangover is methanol. Astronomers have found that methanol is one of the chemical products that can be used to trace the birth of massive stars. So the molecule that causes hangover after a heavy night of drinking is also found in the areas where stars are born.

What aspect of astronomy do you find more awe-inspiring?

LLM - MV

Seems like all the stars are suffering from a massive hangover then!

Well, I was always interested in astronomy, and also science fiction films. I always loved films with aliens also, even the trashy ones. I guess Spielberg ones are my favorite. I saw a UFO at some point in my teenage years but I'm quite skeptical about this thing I saw also. It did not make me yet one of those people that think the American government is hiding something about extraterrestrials under some basement in Nevada ahahah. I've been very interested in documentaries about possibilities of finding life elsewhere. I think what made me come back to this interest was the recent discovery of Oumuamua, the first ever seen interstellar object crossing our solar system. Some scientists apparently do not exclude this thing from being of alien origin, they even speculate if it is a solar sail. Anyway also, this is a great week for astrophysics, the first image of M87's black hole was taken. How did you feel about this?

APR 19: MV - LLM

I also enjoyed the alien movies ... every time I watch a movie about aliens I wonder what they look like. To be honest I have no idea where the artist and movie directors get their impression of alien creatures from. As far as extraterrestrial life concerns the aliens could take a form of anything between tiny bacteria to the monsters that you see in Guillermo Del Toro movies.

Oumuamua is indeed an object to think about.

Everything about its path suggests that it has probably come from another solar system. It's hard to say whether the object is associated with extraterrestrial life or not because we have not seen that many objects ejected from other star systems.

Yes, the first image of the black hole was an incredible achievement for physics and humanity in general. This is the first time we got to observe the accretion disk around the black hole.

APR 24: LLM - MV

Yes, it's a tricky task to invent aliens in movies, I guess, because if you want to tell a story, people somehow need to relate to this extraterrestrial being. I was very disappointed with the aliens in "The Arrival". They look like octopus! But I love the little green men in movies like Encounters of the third kind. I guess, for example, a lot of films use this model of alien that almost looks like a human. I guess these directors like Spielberg kinda used the image of the alien supposedly found on the Roswell UFO crash site. There's a picture of one, although I think it was proved to be a scam. My show at 1646 is called Notes On Cosmic Pluralism. Do you see yourself as a "Cosmic Pluralist"? And what made you become an astronomer?

APR 25: MV - LLM

By cosmic pluralism do you mean plurality of planets that might host life?

I think lots of astronomers would like to find other planets that harbor life.

Out of all the planets discovered so far, only a few have characteristics (period, size, etc) similar to those of our own planet. Detecting the bio signatures however, is a totally different story. I believe that there's probably some planets out there hosting some form of life. That being said, as a scientist I let the observational evidence guide my imagination. Perhaps finding traces of amino-acid or water in an extraterrestrial object could provide a hint. I'm very happy to hear that you're expressing your ideas about extraterrestrial life in the format of art.

I actually ended up becoming an astronomer by accident. I intended to study elementary particles but then I thought I'd switch to theoretical cosmology and study the universe as whole using mathematics. Nowadays, I spend all my time behind computer trying to analyze the data from large telescopes.

You've clearly thought about this a lot.

Life, as we know it, is very fragile and the outer space is not exactly the most hospitable place. On the other hand human curiosity and imagination is limitless. Can you tell me why you consider yourself a cosmic pluralist?

APR 27: LLM - MV

By Cosmic Pluralism I mean the belief in numerous worlds outside earth, something that strikes a lot of

Astronomers. Carl Sagan considered himself a Cosmic Pluralist, otherwise he wouldn't have created SETI. I was reading recently some comments online about SETI, that it's a very useless project, as lot of money is put into it and nothing has been found yet. Do you think it's useless to spend state funds on such project like SETI? For years they have been trying to find artificially made radio signals and nothing has been found.

I actually do see myself as a cosmic pluralist - having a whole universe just for mankind would be in Sagan's words "such a waste of space"! Mankind has already seen life growing in very extreme conditions, I wouldn't be impressed if someone found some sort of life in Titan, Enceladus or Europa. I saw a lecture by the director of missions of NASA that says they think they will find some sort of life elsewhere in the next 15 years. It's strange to guess on something that it's totally dependent on the other 50 percent chance that there isn't. But I really hope he is right.

I wonder a lot what would be our planet's population reaction to it, more on a philosophical level and religious point of view. I'm not including all the MEMES on the subject that would go immediately viral online.

The interesting thing about this project I'm making for 1646 is that I wrote 8 short stories describing each a form of life in a different planet. It was a fun job. I'm gonna send it to you once it's translated into English.

APR 30: MV - LLM

SETI and other similar projects don't receive significant funding from the government so I don't think the allocation of funds to such efforts has been a squander. Scientists at SETI and extra solar planet scientist in general have been trying to build a better picture of how habitable worlds can be found and characterized, how atmospheric conditions of exoplanets could be linked to the plausibility of life, the biochemical make-up of the planets and so on. The more fundamental quest, in my opinion, is the search for the origin of life.

Unlike Carl Sagan, I don't believe that having a vast volume of space that is not capable of harboring life is a waste of space. We humans have a tendency to put ourselves in the center of universe and think of the history of the cosmos as a long journey towards generation of habitable worlds for humans and alike. On the contrary, the diversity and complexity of the physical processes that occur in different corners of the cosmos transcends life and the quest for life.

I wouldn't be surprised if we found a trace of life in Titan or even in comets.

From such a discovery will learn a lot about how life has originated on our own planet or whether we are alone in this world or not. Perhaps at some point we might have to send robots into the lakes of Titan to collect samples for us. We have done that with comets already. The capability of sending an spectrograph

to the orbit and identifying the chemicals on the surface of Titan exists but I think we probably have to actually send a robot to dive in there. Something might be lurking beneath the surface and I'm afraid the chemicals on the surface may not be able to tell us the entire story.

I think our reaction will depend on how advanced the extraterrestrial beings will be. Some humans have an innate tendency to develop a fear of others. Personally I think we will have an easier time living with more primitive species as long as they don't come into contact with us. And the memes! The entire internet will be flooded with alien memes.

That sounds fascinating. I would love to see your stories about the forms of life in different planets. I'd like to know your perception of life on other planets and how you've depicted those planets.

MAY 2: LLM - MV

Going back to the subject we started this conversation with: this thing of creating the alien or creating science fiction. I've always been quite insecure about my writing. I only started writing more last year when I started to write songs. So I have put myself on this new adventure of creating little short stories about aliens. Its unbelievably freeing to conceive other worlds, you can make beings of any form with any behavior. There's no rule of whether they should act in a way or another. You just have to explain and describe well, even if the existence of a certain alien doesn't seem scientifically plausible. This is usually called in literary terms "Suspension of Disbelief" - to make the reader believe that what's being told could in fact exist. I guess that comes from my interest in Calvino, Jorge Luis Borges and Oscar Wilde's stories, or even traditional tale stories. I find it very hard to keep up and concentrate with long books. I always liked short stories because of that.

At some point I thought that if I would continue to describe more planets and more beings I could actually make a book one day. The other interesting thing is that it's impossible to write about an actual alien civilization, we are in a way always talking about ourselves or about what we perceive around us. The other day I was thinking about the way people argue so much over Facebook. So I wrote a short story about an alien civilization where everyone knows what everyone thinks all the time. In this planet aliens communicate telepathically. Therefore these aliens keep arguing because they cannot hide their true opinions about each other. It's really about Facebook or twitter. Everything you write there is subjected to evaluation by others, like or dislike, and in the worst case scenario - punishment.

I made a work for the show which consists on two drawings over space blankets developed by Nasa to protect equipment from Solar radiation. I drew two astronauts arriving in a nineteenth century English landscape, inspired by Constable pastoral paintings.

The famous astronomer Herschel was convinced at the time that the Moon was populated and looked very similar to the English countryside. This might seem ridiculous to us, but the English countryside was probably the imaginative limit that Herschel was able to draw in his mind...

MAY 2: MV - LLM

I too tend to read short stories since I have been finding it increasingly difficult to keep up with long novels.

Your story of the planet void of privacy sounds like a plausible dystopian future for our own planet. Well, I hope we will never go down that path but it's plausible.

It also reminds me of an episode of the animated series "south park". That episode is about a new social media device that broadcasts the thoughts of its users via audio and then sends the thoughts directly to internet. It would be interesting to see a planet resembling the nineteenth century England.

There's a really old Russian movie called "it's hard to be a god" which portrays a planet stuck in the medieval time. You might find it interesting!

Looking forward to see your works...