

THE ENVRI OPEN SCIENCE TREK, THE BEGINNING

A short Star trek inspired story by Wouter Los

This story is part of the Open Science Trek campaign discussing key issues concerning Open data and Open science in Geosciences.

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IN THE NEAR FUTURE, IN THE GALAXY NOT FAR AWAY

'They are fools' snorted Captain Kirk while looking outside to the apparently slow-moving star ship against the background of the universe. 'They won't find a living creature on the planet below'.

'Well, they did so on the previous planet we discovered' noticed operations officer Spock. 'That was easy', said Kirk, 'there was a kind of intelligent race there, with those Klingons and they did foul play to get things done'.

Spock: 'Anyway they managed to settle a colony on that planet and even took a group of Klingons on their star ship'.

Kirk: 'We'll see if that helps when they have to decide to put another group of colonists on the planet below. I am not certain anymore whether it was wise to travel with them through the universe. It was for safety reasons, but it seems that they take advantage of us and are not doing anything in return'.

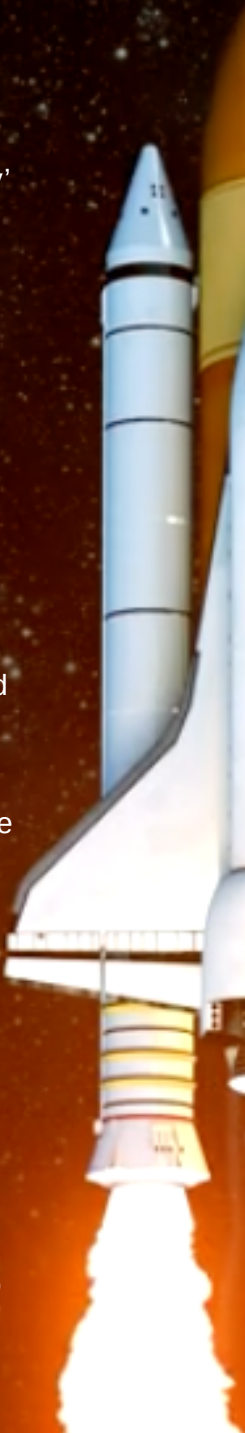
Spock: 'We will see, this planet is a challenge. At first sight with our distant observational data it appears to be interesting, but is it so?'

We have to prepare for investigating what are the surprises below. Is it Eden or Hell?

'Kirk: 'Indeed, call the officers in'.

The Starfleet left planet Earth a long time ago, but time is irrelevant in space. The purpose of the fleet was to find safe, sustainable and 'healthy' planets. A group of colonists would then be left on the planet to start a hopeful new flourishing community. The Starfleet would then continue exploring the universe and leave colonists where considered appropriate. While scientific preparations progressed, the public developed a different opinion. Not only about the question whether it would be right to occupy – some said conquer – other planets, but supporters also had very different opinions about the methods to decide about habitable planets. It ended up in three star ships leaving Earth and flying in formation to the unknown. One star ship regrettably exploded soon, so only two progressed.'

The officers entered the meeting room. Kirk noticed with dismay that some officers, even female, were no longer dressed properly according to



their status. He made a thought note to address this at a proper time.

'Officers, as you have noticed we slowed down to study the planet below. From this distance, the first spectral data indicate that a few basic parameters are right. We have to sort out if it would make sense to spend time on collecting additional data'. As always, the technician Carry was the first one to jump in: 'We all know that we rely on the heritage of the Earth research infrastructures in ENVRI community. They identified the essential variables to measure or to observe, they developed the instruments that operate in different extreme environments, and they put analysing methods in place. That is what we brought with us. Why talking, let's start working with this'.

Nonsense mylady' broke in the geologist Maxim, 'that works on Earth; this is a very different planet. Look at the first data about heights and slopes. I want to leave to prepare for seismic measurements.'

Mike, the biologist, could not resist adding: 'I think that we have to start determining the chemical composition of the planetary layers. Can we deduce if there is a living driver for a stable environment, and is it carbon based?'

Captain Kirk stopped the emerging discussion: 'You all are repeating the arguments we had back on Earth. Sure, we will benefit from what ENVRI developed, but now I want each of you experts to sort out what are the crucial

things to do. There is a competing star ship outside, and at this time I want to be the first one to decide on settling a colony, or leaving directly'. So, what do we have to know about the planet? Obviously our planet below should have the right range of characteristics and fluctuations for gravity, atmosphere, soil, and if possible carbon-based life. What else?

And then, which data to assemble, and which data at least that could be informative? How to collect these data remotely, or in what way by discrete sampling in situ? So, which instruments to calibrate now? Finally, how do we want to use the collected data. As you know, we in this star ship agreed to model the planet and incorporate into the model the human species with its symbionts, and compute the system stability. Do we have any clue to model for which period in future?'

'OK, go up to your quarters'.

'What's up or down in space' Carry dared to say.

The officers left and collected their respective scientists and technicians. Captain Kirk and Spock remained in the meeting room. 'They know what to do' said Spock, 'the ENVRI devices, data management, and interoperability protocols are clear. But will it work for this unknown environment?'

'It must', remarked Kirk, 'we don't have other options, and it is too risky to just send down a few persons to explore the real conditions.'

A few hours later, the officers returned. Maxim reported the initial details. Indeed the ENVRI devices and systems worked properly to showcase that the planet could have the right characteristics for further in situ exploration. 'Mike, can you explain our remaining concern?'

The biologist Mike continued: 'We observed an anomaly in the atmospheric data that might be a serious concern. The spectral data indicate high levels of carbon, while this is not apparent at soil level'.

Maxim added; 'I believed that this might be an result of stratification in relation to local weather conditions'.

Mike: 'It is not pure carbon or simple carbon molecules in the atmosphere. It looks like complicated molecules, comparable with the carbohydrates, fatty compounds, or even proteins as we know'.

'So what' said Captain Kirk, 'what's the problem?'

'I think I understand' noticed Spock. 'Such molecules indicate life, but apparently restricted to the atmosphere'.

Mike: 'Indeed, and the alarming thing is that any life is restricted to the atmosphere. It reminds me of the viruses that sometimes dwarf on aerosols back on Earth. We don't know the genetic composition here, but even not harmful, it could represent collectively a sapient and even dangerous intelligence'.

Spock, 'Did you observe or measure the aerosol particle distribution and flows that might suggest intelligent life?'

'That is our problem' said Carry. She raised from her chair and shouted: 'I always said that it was not wise to make a selection of the monitoring devices, and now we don't have the aerosol device on board. And, I know that in the other star ship they have one, and exactly the one we could use very well now'.

'Calm down' warned Kirk, 'that is not proper behaviour. We always have to make choices in our payload, and it is as it is. Are there any alternatives?'. The room was silent, until Spock remarked: 'Well, let us ask their data'.

'Never' said Kirk, 'and they will not share their data'.

Spock: 'In my opinion the case is simple, we offer to share data. We all know that we can have better predictions in our analysis and modeling with larger data sets. We offer them to share data, and get their aerosol data as a bonus'.

Maxim: 'Yes, that is the way to go. It's not the data that are important, but the knowledge to analyse and model the data for decision-making. Wouldn't we be better in this?'

Brilliant' said the Captain, 'Spock please communicate them this proposal'.

The officers waited for things to come. All gasped when the officer in charge of the other star ship came in view, it was a Klingon. 'Please hurry up' he said, 'I am about to leave for landing on the planet'. Another surprise, are those Klingons not careful?

Kirk: 'Before you leave, I propose that we share the data that we and probably also you folks collected on the planet's environment'. 'No problem' answered the Klingon directly, 'I am not interested in this planet, just want to check out to be sure'. By the way, I also want to share each one's software code, that is also data isn't it?'

Spock whispered: 'That's our asset, but I think that he is right. Apparently he will leave the planet anyway'.

'OK', said Kirk, 'Let us establish a common data marketplace'.

'But than we have to continue flying in formation' responded the Klingon.

The biologist Mike handed Kirk a written notice: 'We can analyse their aerosol data rapidly and than decide to leave a group of colonists here'. He knew that the modeling simulation revealed that the planet's ecosystem would be stable with a human settlement.

Two days later the star ship formation left for further explorations.

Spock said drily: 'Cooperating in this open way together is better for all. The decisions based on data interpretation may be different, and clearly also a cultural issue'.

'Let it be', said Kirk.

The saga goes on....