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FREE MARS – LET MARS BE INDEPENDENT OF EARTH

In this month's issue, Victor Samuels is banging the drum for Mars independence. Like many of us who have thought about the subject, Victor would like to see a democratic world republic established on Mars. What do you think? Is it realistic for Mars to becoming independent at an early date?

See page 2.

THE TERRIBLE TWINS

Read all about Mars's terrible twins, the planet's s moons *Phobos* and *Deimos* in Peter Roberts' fascinating article. The origins are still a mystery but there is no doubt they will be celebrated as one (or mayve that should be two) of the wonders of Mars. They may well end up prime tourist destinations.

See page 6.

IFT 4 – When exactly?

Speculation might finally be metamorphosing into fact. It seems like there is now a good chance that IFT 4 – the fourth near-orbital test of the Starship rocket system could go ahead in the first half of June.

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The Aresian makes Mars accessible.

HOW SOON COULD MARS BECOME INDEPENDENT?

By Victor Samuels

I am sure a lot of people will say that we should learn to walk before we run and that, likewise, *Aresians* should learn to *survive* before they try and govern themselves. However, this is short-sighted view.

Firstly, a focus on the early creation of an independent world government for Mars could be vital in ensuring the survival of humans on Mars. Most people on Earth (apart perhaps from a few extreme libertarians) that we need governments to create, or at least plan for, and safeguard, the infrastructure of survival on the home planet. We need roads, water supply, sewage systems, ports, electricity, guaranteed food supply, hospitals and so on.

Governments are also essential in ensuring our longer-term survival and prosperity through creating systems that deliver such things as decent housing, an advanced system of education and wide-ranging health care.

So the people of Mars will be no different. They will need good governance.

Many people assume that the Outer Space Treaty rules out the possibility of people establishing their own state on Mars. This is wrong. The Treaty is totally silent on whether or not people on Mars – the people we call *Aresians* – will have the right to self-determination. The UN Charter is quite clear, stating that all peoples have the right to self-determination. Why should the people of Mars be denied that fundamental right just because they live on a different planet?

Owen Louis David has made the argument that the people of Mars could create a world republic on the Red Planet at a very early stage. At the time of its founding, Texas (originally an independent breakaway state from Mexico before it later joined the USA) had a population of around 38,000 when it launched its

war of independence, to break away from Mexico. Of course back then life was a lot simpler. Most inhabitants would have been engaged in agriculture or simple trades. There was an absence of large-scale industry when the Lone-Star State was created.

Most Texans had at their command only their own muscle and brain power and the capabilities of animals such as horses. The Mars experience will of course be very different from that original Texas. The best they could hope for really was a bit of steam power – but that was rare in the early stages of state formation in Texas (not even a railway was built till the 1850s). By contrast the first inhabitants on Mars will have at their command truly huge amounts of energy, technology and so on.

The point I am making here is that a small community of 10,000 on Mars will nevertheless have a very significant effect on *the whole planet*. Just think of NASA's little helicopter *Ingenuity* (part of the 2020 *Perseverance* Rover mission to Mars)

In a community of 10,000 on Mars there might easily be several *thousand* of such helicopters operating across the planet, carrying exploration and mapping missions. There will also be hundreds of Starship landing sites established all over the planet.

Even with a small community of 10,000 there will be numerous bases, research stations and settlements located across the planet dedicated to mining, tourism and scientific research. There will likely be hundreds of such mini-helicopters in use at these various locations, giving the Mars community a huge aerial resource that can be used to map the ground and identify usable resources. This is just one example – this small community will also be using transplanetary Starships and rocket hoppers for transport while at the same time building its industrial potential by using 3D printing technology, industrial robots and automated factory units.

Unlike in the case of Texas we are talking about a small community with

a *global* reach. On Earth we need states to regulate, to "hold the ring", to defend our interests and to plan for the future. It will be no different on Mars, except that on Mars, from the very start, the foundational community will have this planet-wide capability.

So let's break down the arguments for why an independent Mars republic is both necessary and desirable:

1. Legally the only relevant document (The Outer Space Treaty) does not prevent the creation of an independent Mars state.
2. Morally, the UN Charter supports people enjoying self-determination through having their own governments.
3. Even a small community on Mars will have a huge influence on the whole planet owing to the power of technology.
4. The benefits of a worldwide government based on democratic principles are clear. The most obvious benefit would be the absence of war (given all the horrific injuries both actual and metaphorical it inflicts on humanity). Other benefits would include a clear planet-wide legal framework that would then govern future settlement.

So how soon could we see an independent Mars Republic being created?

Well my preference would be for whoever arrives first on Mars to have a self-governance plan in place immediately. This might set a number of stages to be reached. The plan might be framed in terms of target years. So maybe after a period of governorship (maybe 8 years), there would be an elected council that would participate in government. Then after 12 years there would be a legislative assembly with a proportion of the members elected by the community and the rest appointed by the governor. Subsequently, perhaps after 20 years, there might be a fully democratic system of government adopted with a President. These

waymark dates might change dependent on population growth.

Let's not forget that Musk is now talking In terms of creating a million person system within 8 years of first landing. That is clearly *insane* and will never happen! (though happy to be proved wrong). But he is certainly thinking big and so my timeline might appear way too timid and cautious.

Mars must be independent. Only a free Mars can realise the full potential of the Red Planet. Anything less than independence for the people of Mars will create huge administrative conflict between Earth states, the UN, space agencies, private companies and the people of Mars.

Let us trust the people of Mars to create a vibrant democracy. Initially the World Republic might have a tiny population. But let's not forget that UN Member, the Republic of Nauru, has a population not much more than 10,000. It is considered a sovereign state. A Republic representing a whole planet should be recognised as sovereign too.

IFT 4 – Looks like we all set for the next Starship launch.

By the Editorial Team

It now looks certain that the pairing for the IFT (Integrated Flight Test) 4 of the Starship system will be Ship 29 and Booster 11. Let's hope they're lucky numbers.

We could be very close to the flight test. All indications suggest the flight could be greenlighted for early June.

Credit: Space X

5th June 2024 has been mentioned specifically as the launch date target for Space X. If so, and if the Mission is successful it would be a stunning achievement.

The Terrible Twins

By Peter Roberts

The true story of the two moons of Mars, Phobos and Deimos. These fascinating mini-moons may one day be a prime tourist destination for the people of Mars. For now they still harbour many secrets that need to be unlocked.

Earth has one but Mars has two. We're talking moons. The moons that orbit Mars – Phobos and Deimos - are much smaller than our own beloved luna.

The two Moons were discovered by the US astronomer Asaph Hall in 1877 though there had been much speculation about moons around Mars before then (they make an appearance in *Gullivers Travels*)

Their names are the stuff of nightmares: *Phobos* means fear and *Deimos* means dread. The two "potato shaped" bodies are celestial small fry. *Phobos* has a diameter of no more than 13.8 miles – a day's hike you might say. *Deimos* is even smaller – just 7.8 miles across. Phobos has the closer orbit to Mars – around 5,800 miles. Its orbit takes 7.66 hours. Deimos is a good deal further out at something like 14,600 miles and its orbital period is 30. 35 hours.

The origins of the two moons remain a mystery. Were they drawn into Mars's orbit from the asteroid belt, with a little help from Jupiter's gravitational force? Possibly, but their almost circular orbits are not typical of captured bodies. Their density is also atypically low for objects coming from the asteroid belt.

Another strand of scientific opinion holds that they were formed from dust and rock drawn together by gravity – a much more sedate process.

However, other scientists think they had a much more violent birth, the result of a massive impactor hitting Mars, which would then have thrown a huge amount of material into Mars orbit that in turn would have been brought together into compact bodies by gravitational forces. A violent collision of that sort might also have destroyed an existing moon, fragmenting it into a myriad pieces that then, over time, coalesced into the two moons we have today.

A more recent theory being propagated by the Mars Moons Exploration Project (in association with the JAXA, the Japanese Space Agency) has found that Phobos shares a number of characteristics typically found in comets,

including a light side (where exposed to solar radiation and surface porosity). Could it be that Phobos is actually a captured comet.

It's not difficult to imagine both moons becoming tourist destinations once Mars is settled. We might imagine each of them sporting a hotel and leisure complex. Phobos has one object on its surface that has excited a lot of interest – the *Phobos Obelisk*. No doubt this will be the centrepoint of any tourist intinerary. The "Obelisk" is some 85 meters wide and 90 metres tall. This huge monolith is likely a piece of impact ejecta. The Obelisk's bright surface makes it a stand-out feature.

Who knows? – but maybe tourists will be able to climb the Obelisk and pose for a selfie on top!

Of course another huge attraction of the moons for visitors will be the chance to view the surface of Mars from that amazing vantage point.

Veteran skywatcher Joe Rao writes in Space.Com that owing to the proximity of the moons and the planet itself, there are actually parts of Mars where the moons cannot be seen in the sky (owing to Mars's curvature). Phobos cannot be seen from 70 degrees north or south of

Credit: NASA

Phobos, the bigger of Mars's two moons.

the equator. The best views of the two moons would be had in the equatorial region since the two satellites orbit the Red Planet almost parallel with its equator. Another curiosity: Phobos is the only moon in the solar system whose orbit is faster than the rotation of its planet. In fact, as result, we will see Phobos pass over *three* times in one sol and on occasions twice during the hours of darkness.

Thinking about the moons of Mars reminds us that we are talking about a different planetary system with many marvellous quirks that will surprise and please us.

Although Mars's moons are tiny in comparison's with Earth's, because it is

so much closer, Phobos will appear about one third the diameter of Earth's moon. It will also shine brightly, but perhaps less uniformly than our Moon. In fact Isaac Asimov predicted it would yield an inexhaustibly fascinating interplay of light and shadow. I haven't yet seen a photo of Phobos from the surface of Mars that backs that up but the human eye may detect more than those rover images imply. Of one thing I am sure, spotting Phobos for the first time will be one of those thrilling moments for pioneers on Mars, a highly memorable sighting after landing on the Red Planet.

THE LATEST WEATHER ON MARS

Here's your update for the weather on Mars provided by the Curiosity Rover in Gale Crater.

For the nearest Sol to **22 May 2024** we have a *high* of minus 2.8 degrees Celsius (27 degrees Fahrenheit), a lot colder than the figure featured last month. However, its still the sort of figure that hundreds of millions of humans live with across the planet. The low was decidedly chilly at minus 72 Celsius (or minus 92 degrees Farenheit),

There have been some really cold nights in Gale Crater recently with temperatures going as low as minus 98 Celsius (minus 144 degrees Fahrenheit) on a couple of occasions. We can safely assume that the first people on Mars won't be venturing out and about in those temperatures.

PICK OF THE PICS

Credit:NASA

This incredible composite image shows the vista towards the higher regions of Mount Sharp in Gale Crater. The photos were taken some 8 years ago by the Mars Curiosity Rover.

LET US KNOW WHAT YOUR FAVOURITE PIC IS AND WHY! WE ARE ALWAYS INTERESTED IN YOUR COMMENTS.