



Russia and Europe Want a Moon Colony— Why Is NASA So Focused on Mars?

BY SARAH SCOLES ON NOV 25, 2015 | FEATURED, SCIENCE, SPACE

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Only 12 people—all Americans—have put their boots on the Moon. Today, however, NASA has no plans to send humans back to our pockmarked satellite. Instead, its space pioneers will shoot straight to Mars (and wave to the Moon as they pass it by).

Other countries, though, would like a chance to leave some dusty footprints on the Moon. And although some think another Moon mission represents a step back, solid reasons exist (beyond footprints) to do a lunar sojourn or two before heading for the Red Planet.



One of the first footprints on the Moon.

In October, Russia announced it wants to build a base on the Moon.

They are sending a rover there in 2020 to check out the South Pole Aitken Basin, where water-ice caps the ground. This mission, called [Luna 27](#), will hunt for resources and suss out the site as a potential home for the colony.

To build that colony, Russia has asked, "Hey, do any other nations want to team up?" After all, space is expensive, and space is also not a country—it's a place where borders don't exist (at least not yet)—so global collaboration breeds goodwill and makes a mission more likely to actually happen.

The European Space Agency (ESA) plans to take Russia up on their request, a decision that they'll ratify in early 2016. They'll contribute Pilot, an instrument to guide the lander to the ground using lasers; a drill that will whirl into two meters of rock and ice; and the pocket-sized lab that Luna 27 will carry to analyze material the sampler scoops up.

And it seems likely ESA would team up with Russia after the recon mission to spool up that Moon colony.



Concept sketch of multi-dome, inflatable Moon base covered in 3D printed lunar regolith.

At the National Space Symposium in April, the agency's chief, Johann-Dietrich Wörner said, "It seems to be appropriate to propose a permanent Moon station as the successor of ISS." He proposed that, like the space station, the Moon station also be international, with countries contributing people, talent, and resources according to their abilities.

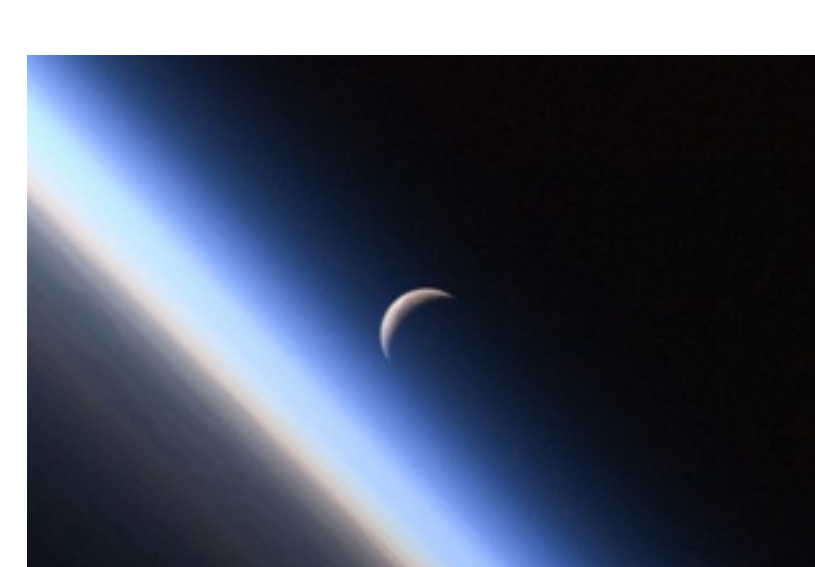
China has its own designs. In 2013, it launched [Chang'e 3](#), complete with lander and orbiter, and plans to launch a lander called [Chang'e 5](#) in 2017. It will bring back two kilograms of samples (a puppy's mass of material).

The US hasn't expressed desire to join Team Moon, and it likely won't: With a limited space-exploration budget, and a stated goal of going to Mars, NASA doesn't have resources left for other projects (in fact, it may not even have enough for Mars). And it is actually forbidden, by [an old law](#), from dealing with China in space-based endeavors.

But aside from money matters, going to the Moon doesn't mean not going to Mars.

Europe, Russia, and China all plan to visit the Red Planet's canyons and dunes sometime in the future. But going to the Moon is faster—in terms of trip planning and the number of times the crew asks "Are we there yet?" before arrival—and, because of that, cheaper.

Further, because the timescales and the budget numbers are both smaller, the missions are more likely to happen (maybe even on time). Also, going to the Moon is a stepping stone to Mars. Launches to Mars could actually take place from the Moon—a lower-energy feat relative to Earth launches due to the Moon's lesser gravity—after the colony turns industrial (which is, admittedly, a ways off). And astronauts and engineers can learn how to build a long-term space settlement, which (turns out) no one has ever done before.



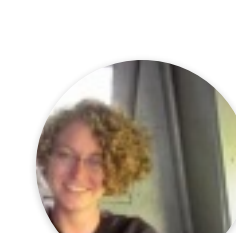
However, the more resources agencies invest in getting to the Moon (and staying there for long periods of time), the fewer they have left to allocate for a future trip to Mars, an expensive endeavor. And the general American attitude of "been there, done that" has something to it. We have been there. We may not have done all of that, but we could go try to do it somewhere else, farther away: on a new frontier.

That kind of novel, dreamy goal inspires people, and not without reason. We have the technological capability to figure out how to make a human Mars mission work.

So, perhaps all together, in a global collaboration of building blocks, brains, brawn, and bitcoins, humans could accomplish both of their lofty space-travel goals and, in the coming decades, live on three spheres in the solar system.

Image Credit: NASA/Dennis M. Davidson (banner); NASA; ESA/Foster + Partners (Moon base concept sketch)

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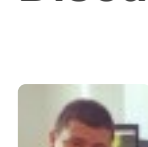
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Sarah Scoles is a science writer based in Berkeley, California, who is fascinated by the intersection of science, space, tech, and culture.

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Discussion — 2 Responses



genidma · 2 days ago

So there are a bunch of ways of looking at this.

Plan A:

The enablement of mechanism by which enablement of resources ought to happen and then the distribution of resources is a mechanism that imho is highly inefficient.

For the past couple of months, I have tried to shed a bit more light on this phenomenon, by trying to look at the situation from a variety of different angles. As well, help provide some ideas that could form components of the solution. Whatever the solution happens to be.

Right now, because of the inefficiencies highlighted above, the whole thing is basically a motley of frustrations.

1. The need for more #innovation is very clear <https://twitter.com/adeelkhan/status/669659586505277440>
2. Humans architect systems and then expect these systems to conjure all solutions to know problems. We basically expect our governments and our institutions to bend space time and then some more. Meanwhile, the mechanisms by which we have architected our systems gives us a yield of 1% of all research turned into commercialized products and service. <https://twitter.com/adeelkhan/status/669647608088891392>
3. We could flip the models and architect systems and networks in a way, by which more innovation can be had. Basically turning more of that research into products and services of use. <https://twitter.com/adeelkhan/status/669648087355273219>
4. If 100% of our energy needs can be met via solar, Then what is the point in placing limits on our growth? (By virtue of the designs of how our institutions function). <http://bit.ly/1I9mMPH>
5. Hence, logic would entail that we need a mind shift and that the focus again should be a) To architect society in a way, whereby there isn't a reliance on part of the government, beyond the 'primary functions' that a government is supposed to perform b) To architect our systems in such a way so that much more innovation can be had. (Three primary functions for a government – According to Milton Friedman <http://bit.ly/1N8ulBH>)
6. While we do that, let us not Some confusing the act of copying designs with true innovation. <https://twitter.com/adeelkhan/status/669655548854341633>
7. Let's think about growth in a sense that is good for most, if not all. <https://twitter.com/adeelkhan/status/669655001036271616>
8. Let us not get stuck in cycles. Let us be mindful of the huge need for enabling new institutions and networks of all types. <https://twitter.com/adeelkhan/status/669648678517272576>
9. Let's embrace the system in order to help bring about systems change. https://www.youtube.com/watch?v=p-irhANg8_s
10. Let's re-architect the financial system with the help of the Government and other parties. Let's fix the tax system. Let's help create a reality whereby unlimited opportunities can be provided to those willing to do big and bold things.

Plan B:

- Enable a giant mining rig for bitcoin with help from a couple of key individuals.
- Turn energy into money.
- Apply capital to big projects and not worry about funding from government/other sources.

Let's think of more ways so that larger projects can be performed 100% by leveraging forces within the market and without a reliance on the government.

Right now, some very limited co-operation on part of the government may be needed, specially if the big projects need to be funded. But if the estimates are right (Oxford University, Bank of American report, Churchill club talk) 30 to 40 years out, with all the jobs automated, the role that a governments will play will be very limited at best <https://www.youtube.com/watch?v=1CLmFZiQLrA>

I'd say a reform of the financial industry is an urgent need. I say this because the opening up of the frontier is not the only grand challenge that we are facing.

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nikola.tesla · 2 days ago

Clap, clap, clap Sarah!
Interesting article, very well written, and funny.

10/10

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