

## Russia's Reboot of Mars Mission Is 'Matter of Honor'

By Matthew Bodner

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Roscosmos is looking to reverse its fortune by partnering with the ESA.

Despite multiple past failures, Russia is rebooting plans to explore one of the Martian moons, this time in partnership with the European Space Agency (ESA), according to Lev Zeleny, director of the Russian Academy of Science's Space Research Institute.

"The implementation of the previously failed mission to Phobos is a matter of honor," Zeleny was quoted as saying by the TASS news agency on Monday.

The relaunch of the probe, known as the Fobos-Grunt, will not happen before 2024, Zeleny said. However, its launch may come on the back of a two-stage joint project with the ESA known as ExoMars, due to launch to the Red Planet in 2016 and 2018.

For the Russian space program, Mars is a sore subject. After having dominated the exploration of Venus for most of the Cold War space race, the Soviets watched in horror as mission after

mission to Mars and its moons failed. Meanwhile, NASA conducted several successful missions to the Martian surface.

The losing streak continued in 2011 with the launch of Fobos-Grunt, an ambitious mission to land on the Martian moon Phobos and return to Earth with a soil sample. After failing to even leave Earth's orbit, the spacecraft fell from the sky a few months later.

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In 2012, shortly after the failure of Russia's Fobos-Grunt, the ESA was forced to find a new partner for its ExoMars project after NASA pulled out. Russia, seeing an chance to revive its dreams of Mars exploration, stepped up to the task.

Russia is now preparing to deliver scientific equipment for use on the first of two ExoMars missions — an ESA designed orbital probe that will be launched in 2016.

The second mission, set for 2018, will see ESA and Roscosmos sending a rover to Mars to determine whether or not Mars was ever capable of supporting life.

In late August, Interfax reported that Roscosmos had requested \$155 million from the federal budget to finance the completion of the 2018 ExoMars landing vehicle. This vehicle is being designed and built largely by Russia's Lavochkin Design Bureau.

Critics of Russia's participation in Europe's flagship Mars project say that Russia does not have the expertise required for a successful Mars landing — which is notoriously difficult by virtue of the Martian atmosphere's low density and relatively shallow depth.

Regardless, Zeleny says that the Fobos-Grunt mission may be revived in 2024 after the hopefully successful completion of phases one and two of the ExoMars missions. But no funding has yet been allocated for a renewed Fobos-Grunt attempt.

Both ExoMars missions will be launched aboard Russian Proton-M rockets, which saw a series of spectacular launch failures this year and last. These Proton rockets will likely be phased out in the coming years by the brand-new Angara family of rockets, Russia's first post-Soviet rocket design.

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