

Russia Lays Out Plans for A Permanent Lunar Presence

by Marsha Freeman

May 26—Russia will be focusing its space exploration efforts toward a permanent presence on the Moon, Federal Space Agency (Roscosmos) head Vladimir Popovkin stated on May 22, at the Global Space Exploration conference in Washington. This will not be a “replication” of the American Apollo program of the 1960s, or of the unmanned lunar exploration probes of the Soviet Union, but will entail “establishing laboratories on the surface of the Moon, which would be bases, of a certain kind, for doing lunar research.” The near-term Russian program will be vectored toward developing the human capacities and the technologies required to meet that goal.

The magnitude of this effort will require international cooperation, Popovkin said. “We understand that this kind of global research is possible only, of course, in the framework of international cooperation. And here we need to remember our cooperation on the International Space Station (ISS) project, which has displayed such enormous capabilities for international cooperation.”

Popovkin’s clear statement of purpose was in stark contrast to the presentations by other heads of space agencies at the conference. All lamented the impact on space exploration projects of the global financial crisis. In fact, Popovkin said that such financial limitations force you to determine your priorities.

The string of launch failures suffered by Roscosmos last year, capped by the embarrassing loss in Earth orbit of the Phobos-Grunt Mars mission in November, cata-

lyzed a reexamination of the state of Russia’s space industry and the goals of the program. Deputy Prime Minister Dmitri Rogozin tasked the Russian Academy of Sciences with developing a long-range plan, to the year 2030. The draft plan, presented to the government in March, outlined a series of scientific probes to the inner and outer planets, and a modified exploration campaign to study the Moon, culminating in a manned presence.

On April 11, the head of the Academy’s Space Research Institute, Lev Zelyony, proposed that Russia’s Luna-Glob mission will practice soft landing techniques in 2015, and the Luna-Resurs orbital mission will include a rover supplied by India. By 2017, he proposed, a large unmanned research station could touch down on the Moon. The focus will be on the lunar poles, where there are caches of ice.

Also included in the Academy’s recommendations is a 2020 unmanned mission to the near-Earth asteroid Apophis, to study how much of a threat this body is to the Earth. A probe would place sensors on the small body to carefully monitor its irregular orbit, and help determine how close it will come to Earth.

Underscoring the need for such a Strategic Defense of Earth, as the Russians have called it, NASA on May 16 announced that the assessment of observations made by its Wide-field Infrared Survey Explorer (WISE) indicate that potentially hazardous asteroids, coming within 5 million miles of our planet and large enough to pass through the atmosphere, number about 4,700.



LPAC-TV

At the Global Space Exploration Conference, Roscosmos head Vladimir Popovkin (inset) laid out Russia's ambitious plans for space exploration, which, he emphasized, require international cooperation. His presentation was in stark contrast to the doom and gloom of other speakers.



NASA/Carla Cioffi

Laying the Foundation

“In our view, the continued exploitation of the ISS should have somewhat changed priorities, becoming a technological platform for the development of various technological operation for the exploration of other planets,” Popovkin explained. The long, and sometimes bumpy, road of cooperation over the past 20 years, to build and operate the ISS, is, nonetheless, the precedent for how international partners will embark on deep space exploration, all of the heads of the space agencies agreed.

Alexey Krasnov, the head of manned space flight at Roscosmos, described the ISS as having “exceptional capacities.” Although “we have been flying to the same destination for half a century [in Earth orbit], medical science is telling us we’re not there yet” when it comes to deep space exploration. The ISS should be “utilized for exploration, and be technology-driven, to be able to implement missions beyond low Earth orbit.”

In a discussion with *EIR*, Krasnov reported that to complete the Russian segment of the ISS, a multi-purpose research module will be launched to the station by the end of 2013. However, he added, “we are thinking about an additional capability, contingent upon the decision of the partners, to operate the space station further on, beyond 2020.” This would be critical in order to continue the scientific research on the station, he explained, which is a prerequisite to lunar and Mars exploration.

A challenging proposal by Roscosmos is to build upon the research that has been done on the ground through their Mars 500 program, where a small “crew” of volunteers lives for about 500 days in a space-like closed environment. In addition to studying the sociological and psychological interactions of the relatively isolated ground “crew”—under conditions which simulate those on the space station—Krasnov stressed that new technologies for closed-cycle life-support systems, which should be “efficient and autonomous to the maximum [extent] possible,” should be tested on the ISS. Closing the cycle means that consumable resources, such as water, are recycled, rather than being supplied from Earth, which capability is critical for deep space missions.

Roscosmos is also considering an experiment that

In parallel with the Russian lunar program, unmanned missions to Mars should become increasingly sophisticated, through international collaboration, the Academy proposes, starting with joint execution of the European ExoMars missions, to culminate in manned expeditions to the Red Planet. Popovkin reported that while Roscosmos has had a number of future programs under consideration, it has reached the conclusion that the Moon is the best target.

Every other space agency represented at the conference—Europe, Japan, India, Canada—agreed with the Russian perspective on lunar exploration—except the United States. NASA is suffering under the now three-year frontal assault on manned space exploration by the Obama Administration. Some astute observers noted that the Russian lunar development plan sounds a lot like the U.S. Constellation program, which Obama cancelled.

Although the much more difficult, and likely infeasible, manned mission to an asteroid in the 2020s has been put forward as the U.S. goal, it was evident from the conference presentations that saner heads at NASA continue work on lunar exploration missions, perhaps in the hope that political change will bring rationality back to space policy.

would simulate a mission to Mars. Half of the six-man crew “would be launched to orbit, perform their activities [in the microgravity of the ISS], similar to a gravity-free transit to Mars, then return to the Earth.” They would have a period of about a month or two, re-adjusting to Earth’s gravity, similar to what they would face when landing on the surface of Mars, “and then fly again” to orbit, as if they were taking off from Mars, to head back to Earth after their mission. Russia is also pursuing more advanced propulsion technologies, such as nuclear fission (see interview with Popovkin, below) to minimize the trip time and the time a crew spends in microgravity.

There was recognition by Popovkin at the conference that the “liberal” economic policies of the 1990s

that nearly totally destroyed the Russian economy, also nearly destroyed the Russian space program. And steps are being taken to rebuild.

On May 5, Deputy Prime Minister Rogozin announced that a new aerospace university would be created to produce a “broad range of specialists, for aviation, and also the rocket and space industries.” A new class of cosmonauts is being chosen for training. On Cosmonautics Day, April 12, in celebration of Yuri Gagarin’s first human space flight, then President-Elect Vladimir Putin announced that \$1 billion would be spent this year to build the new Cosmodrome Vostochny (“East”), with manned rocket launches to begin toward the end of this decade.

Europe/U.S. BMD: 'The Worst of Both Worlds'

Every review carried out recently by respected and competent U.S. military, scientific, and strategic analysts of the Obama Administration’s Europe-based “Phased Adaptive Approach” (PAA) missile defense program has confirmed what critics have been warning for years: that it will not work, and that it will be a strategic threat to Russia.

The highly respected Defense Science Board completed a report during the second half of last year, concluding that critical technology problems and cost overruns make the goal of intercepting ballistic missiles early in flight unrealistic. The Ballistic Missile Defense (BMD) office has never demonstrated that its sensor and radar systems can distinguish between decoys, missile parts, and real warheads, the report states. In wartime, if the system fired its limited number of interceptors at debris or decoys, when the real missiles hit, the result would be “dramatic and devastating.”

On April 20, the U.S. General Accountability Office, tasked by Congress to produce an annual evaluation of the BMD office’s progress, concluded that under the political pressure to deploy something quickly, the office is deploying systems before they are tested and ready. The manufacturing and production of interceptors already has had to be suspended, while failure review boards figure out why they don’t

work. The program is behind schedule, over budget, and flawed.

And on May 8, Associated Press obtained a letter concerning a nearly completed study of the PAA approach by the National Academy of Sciences, again pointing to the inability of the system to discriminate between warheads and decoys. The Academy recommends *entirely scrapping* Phase IV of the proposed system—which is based on interceptors at velocities that physicists have shown *could* threaten Russia’s ICBMs—because it won’t work.

The danger is that the proposed system will not protect the United States and its allies, while, at the same time, it poses a potential threat to Russia. Dr. Ted Postol from MIT pointed out on May 19, just before the NATO summit in Chicago, that the paradox of the situation “is that even when they don’t work, potential adversaries will treat them as if they do. Thus producing the worst of both worlds—no defense, but build-ups of offensive weapons to deal with those defenses.”

As if to underscore that point, less than a week later, Russia carried out a test of what *Russia Today* described as a “top secret advanced intercontinental ballistic missile. It is designed to counter the American anti-missile shield currently being deployed. . . .” The missile uses a new, improved solid propellant, for a faster boost. This provides little time for it to be intercepted before it releases multiple warheads. Each warhead will have improved maneuvering and targeting capabilities, so rather than following a simple ballistic trajectory, it will be unpredictable.

—Marsha Freeman

In the United States: Privatization

And what is the U.S. doing, while Russia prepares to set up bases on the Moon? The biggest news from the U.S. at the Global Space Exploration conference was that, that morning, a private company, SpaceX, had successfully launched a rocket to low Earth orbit—50 years after it had been done by the Soviet Union and United States.

This privatized policy, which is supposed to lead to putting American astronauts in the hands of space amateurs, has been roundly and passionately denounced by former NASA managers, Apollo astronauts, and Congressional representatives. At the Global Space Exploration conference, former NASA Administrator Mike Griffin, who now heads the American Institute of Aeronautics and Astronautics—a co-sponsor of the conference—took the point.

Delivering commercial cargo to the space station is not a space policy, Griffin stressed. Decade-long, strategic space enterprise will only be done “with government and societal commitment.” Asked what the “strategic enterprise” should be, Griffin responded, “personally, I think General Popovkin’s comments are on target.” We are going to make mistakes, Griffin said; better “to make them closer to home,” on the Moon. “No matter how attractive an asteroid mission would be,” the policy should be based on “engineering and operational reality, and common sense.”

The central purpose of the exploration program, Griffin stressed, is to “move human activity off the surface of the Earth. This is a human goal . . . not a Democratic or Republican goal, and it is not short term. It has to transcend leaders who are in charge of the enterprise for the moment.” Griffin made clear that getting this President out of the White House is a prerequisite to pursuing that goal.

U.S.-Russia Cooperation: The Elephant in the Room

Even were the United States to make a U-turn, and join the rest of the spacefaring nations of the world in a return to the Moon, the critical issue that is wrecking international cooperation between the planet’s two major space and strategic powers, lurked in the background at the conference: Will the U.S. continue to



NASA

The speakers at the Washington conference all stressed that the International Space Station is the model for future missions. In this Dec. 6, 2011 photo, Roscosmos head Vladimir Popovkin (center), and the head of manned space flight for Roscosmos, Alexei Krasnov (third from right), pose with the prime and back-up crews for the 30th expedition to the station. From the left are Don Petit (U.S.), André Kuipers (European Space Agency), Oleg Kononenko (Russia), Yuri Malenchenko (Russia), Suni Williams (NASA), and Aki Hoshide (Japan).

threaten Russia with its non-negotiable and unworkable European Ballistic Missile Defense System (BMDS) or will it take up the Russian offer to jointly develop and deploy a Strategic Defense of Earth, against both extraterrestrial and terrestrial planetary threats? All nations’ space capabilities will be required for such a global project.

Before the NATO summit in Chicago last month, it was reported that NATO would declare that the first phase of the provocative missile defense system had reached operational “interim capability.” And although NATO presented a public united front supporting the program, there was not unanimity. On May 17, Wolfgang Ischinger, former German Ambassador to the U.S. and Britain, and since 2008, chairman of the Munich Security Conference, urged that the U.S. and NATO take “a brief pause.” The original agreement from Europe for the BMDS, he recalled, was a cooperative system with Russia. Until that aspect is settled, the program should be put on hold.

As if to underscore how insane the British/Obama policy can be, the following day the U.S. House of Representatives passed a Department of Defense spending bill, which includes \$100 million for a missile interceptor site on the East Coast, with a system in place by 2016. Military leaders quickly pushed back: “Today’s threats do not require an East Coast” site, countered the

North American Aerospace Defense Command leadership. We don't need it, added the chairman of the Joint Chiefs of Staff.

From the start, with documentation provided by both Russian and American physicists and strategic analysts, the Russian leadership has insisted that the European-based BMDS threatens Russian strategic capabilities. Obama Administration representatives have bent over backwards to repeatedly insist that this is not so—that the system will protect the U.S. and its allies from Iranian and North Korean attack, and could not possibly be used against Russia.

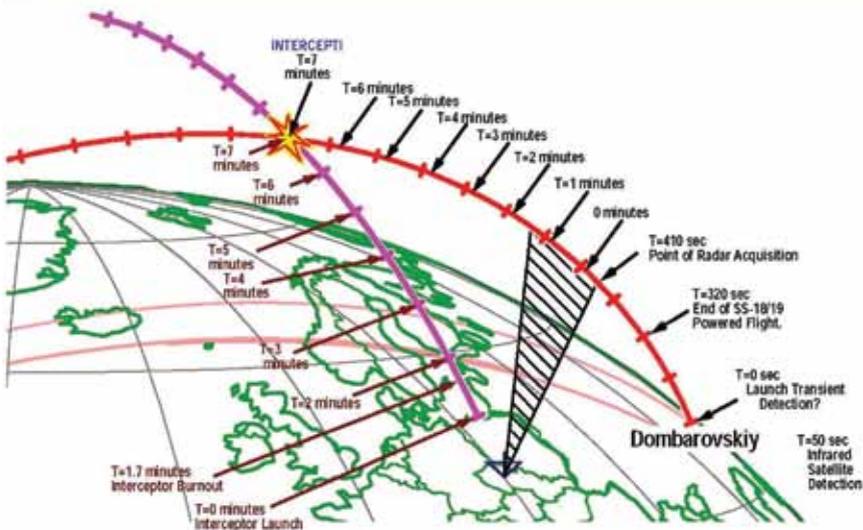
In an op-ed in *The Wall Street Journal* on May 14, Sen. John Kyl (R-Ariz.) let the cat out of the bag. Arguing against providing Moscow the written guarantee it has insisted upon, that the BMDS are not aimed at Russia, Kyl asks: Why “must the United States and NATO justify missile-defense deployments that pose no offensive threat and are intended chiefly against Iran but—depending on future development—might be effective against Russian missiles as well?” (emphasis added). Considering that the Russian response to this provocation is to prepare itself for such a possibility, Senator Kyl and his ilk are skating toward the brink of nuclear war.

A Step Back from the Brink

In an article on May 11 in the *Bulletin of the Atomic Scientists*, titled “Dream Deterred,” Kennette Benedict reviews the issues on the agenda for what was then the upcoming NATO summit. “Just to be perfectly clear,” she writes: NATO is trying to cram down the throats of the Russians an imaginary ballistic missile system that, if it worked—which it doesn't—could be used against Russian intercontinental ballistic missiles. Since NATO is treating the system as if it were a reality, Russia must as well. . . .”

But, Benedict reports, informal discussions have been taking place among engineers and missile defense experts from the United States and Russia, the first held last year between Stanford University's Center for In-

Engagement Event Timeline for Engagement of SS-18/19 from Dombarovskiy with 2-Stage Missile Defense Interceptor



Courtesy of Dr. Theodore Postol

MIT physicist Ted Postol, in a presentation on Capitol Hill in September 2007, demonstrated how the U.S.-designed Ballistic Missile Defense System could intercept Russian intercontinental ballistic missiles. Yet the Obama Administration continues to falsely insist that the system is not aimed at Russia.

ternational Security and Cooperation and the Russian Academy of Sciences' Committee of Sciences for Global Security.

In September 2011, a joint statement was issued setting out four principles for cooperation. These include the need for NATO to take account of the possible impact of missile deployments on Russia, and that cooperation should be founded on transparency and openness. A meeting this past March led to a proposal for American and Russian missile experts to collaborate on research and development that would replace the current, unworkable, phased adaptive approach.

In fact, in testimony before the Senate Appropriations Subcommittee on Defense on April 18, Lt. Gen. Patrick O'Reilly, who directs the U.S. Ballistic Missile Defense Agency, outlined specific areas, such as sensors and radar systems, where the U.S. would benefit from cooperation with Russia.

The Russian proposal for a Strategic Defense of Earth, to prepare to counter the global threats that face mankind, from wayward asteroids, to missile launches, to extreme Earth and space weather, is on the table, as Lyndon LaRouche has emphasized.

The question is whether we will be on the road to war or on the way to the stars.