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KNOWLEDGE ABOVE ALL

AREA 51 MYTH

BY SHREEYESH S.

What exactly goes on inside of Area 51 has led to decades of wild speculation. There are, of course, the alien conspiracies that galactic visitors are tucked away somewhere inside. One of the more colorful rumors insists the infamous 1947 Roswell crash was actually a Soviet aircraft piloted by mutated midgets and the wreckage remains on the grounds of Area 51. Some even believe that the U.S. government filmed the 1969 moon landing in one of the base's hangars. For all the myths and legends, what's true is that Area 51 is real and still very active. There may not be aliens or a moon landing movie set inside those fences, but something is going on and only a select few are privy to what's happening further down that closely-monitored wind-swept Nevada road.

The beginning of Area 51 is directly related to the development of the U-2 reconnaissance aircraft. After World War II, the Soviet Union lowered the Iron Curtain around themselves and the rest of the Eastern bloc, creating a near intelligence blackout to the rest of the world. When the Soviets backed North Korea's invasion of South Korea in June 1950, it became increasingly clear that the Kremlin would aggressively expand its influence. America worried about the USSR's technology, intentions, and ability to launch a surprise attack—only a decade removed from the Japanese attack on Pearl Harbor.

Many of these sightings were observed by commercial airline pilots who had never seen an aircraft fly at such high altitudes as the U-2. Whereas today's airliners can soar as high as 45,000 feet, in the mid-1950s airlines flew at altitudes between 10,000 and 20,000 feet. Known military aircraft could get to 40,000 feet, and some believed manned flight couldn't go any higher than that. The U-2, flying at altitudes in excess of 60,000 feet, would've looked completely alien.

As for what's happening these days in America's most secretive military base, few know for sure. Merlin has some educated guesses, including improved stealth technology, advanced weapons, electronic warfare systems and, in particular, unmanned aerial vehicles. Chris Pocock, noted U-2 historian and author of several books about the matter, told that he thinks classified aircraft, more exotic forms of radio communication, directed energy weapons, and lasers are currently under development at the base.

However, one should be careful when planning a trek to Area 51. It's the desert, after all, so bring plenty of water, snacks, and have proper weather gear—for the hot days *and* the cold nights. Phone service and GPS probably won't work, so have printouts and actual maps. Gas stations are few and far in between, so carry spare fuel and tires.

Also, remember the government doesn't really want you peering into Area 51. Both Merlin and Pocock confirmed that they have been closely observed or even intimidated by guards and security (including an F-16 fly-by). Do *not* trespass under any circumstances or arrests and heavy fines await you.



THIS COMPANY BUILT A GIGANTIC CENTRIFUGE TO FLING ROCKETS INTO SPACE

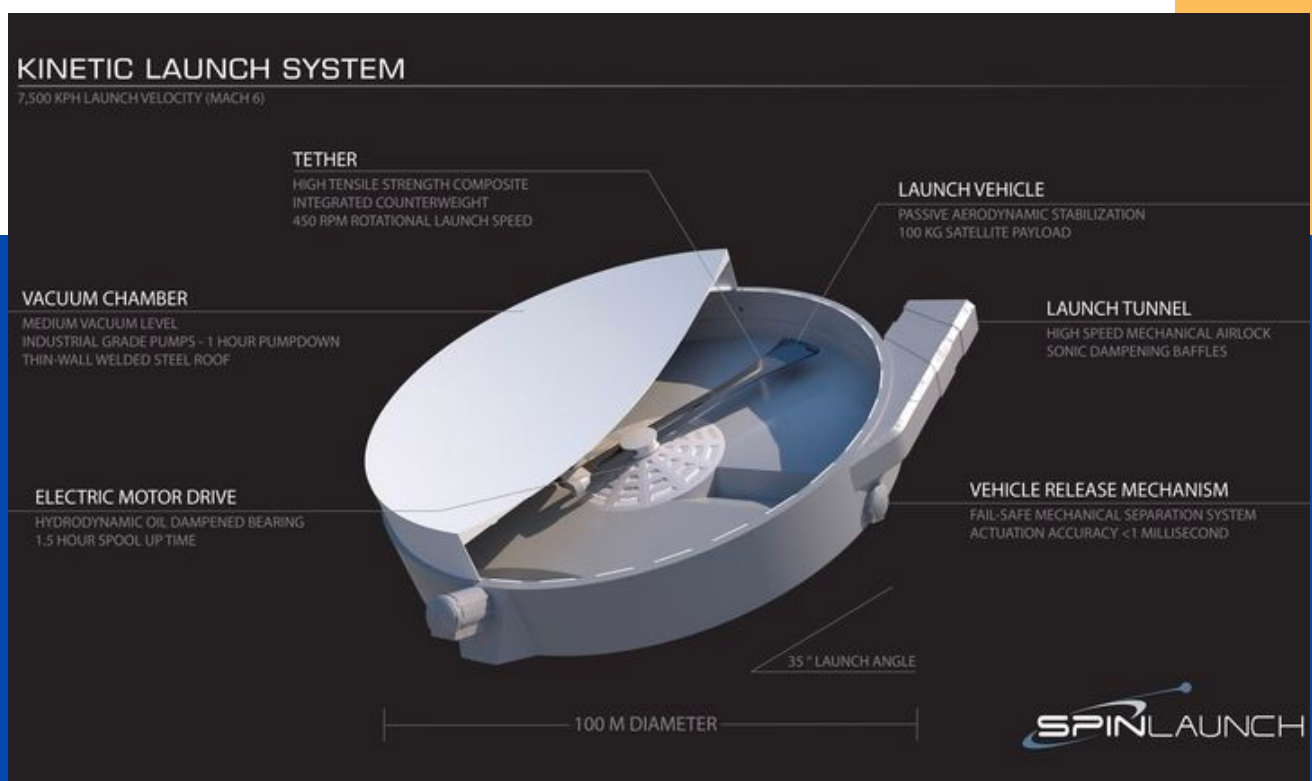
SHIRGAONKAR ANIKET
STUDENT

In some biology classes, teachers will place vials of spit into a funny looking contraption and let it spin around the samples until the stringy DNA separates from the rest of the saliva. It's a pretty rudimentary experiment, but it quickly gets to the heart of not only your own genetic material, but also how centrifugal force works: Spinning *really* fast in a circle creates a force strong enough to push a moving object out and away from the center of its path.

But what happens when that moving object is a rocket that weighs thousands of pounds? We might find out as soon as this year, when a cryptic startup called SpinLaunch starts suborbital test flights of a rocket that is launched using an enormous centrifuge.

Here's the gist: A centrifuge the size of a football field will spin a rocket around in circles for about an hour until its speed eventually exceeds 5,000 miles per hour. At that point, the rocket and its payload will feel forces 10,000 times stronger than gravity. When the centrifuge finally releases the rocket at launch speed, it should, practically speaking, fly through the stratosphere until it fires its engines at the periphery of our atmosphere.

So far, SpinLaunch has not made it anywhere near the cosmos, but instead has been working toward its first suborbital launch at a new test site in New Mexico, slated for this winter. Until then, we'll maintain a healthy dose of skepticism.



GAGANYAAN ASTRONAUTS' TRAINING AND CHANDRAYAAN 3 DOMINATE ISRO'S 2020 PLANS

SHIUDKAR AKSHAY,
STUDENT

ISRO's plans for the new year include a possible launch for the Chandrayaan 3 mission and test flights for Gaganyaan, the country's first manned space mission. Apart from these big ticket projects, ISRO is looking at more than 25 missions for 2020, the organisation's chairman K. Sivan said. However, the chairman as saying the launch may only occur in 2021. His announcement came a day after Union minister Jitendra Singh said Chandrayaan 3 would be launched in 2020.

Speaking at a press conference in Bengaluru, Sivan said all activities related to the third lunar mission were going on smoothly. "It will also have a lander, rover and a propulsion module like its predecessor," he said.

Speaking about the Gaganyaan mission, Sivan said "a lot of design work has been completed" and that several tests will be conducted during the year. He said Gaganyaan's first unmanned flight would also be targeted for this year.

Gaganyaan is a crewed orbital spacecraft that will send astronauts to space for at least seven days by 2022. It is a part of the Indian human spaceflight programme. Meanwhile, the organisation has also identified four Indian Air Force personnel who will be trained as astronauts for the Gaganyaan mission.

As *The Wire* has previously reported, the Indian Air Force in September subjected test pilots to extensive physical exercise tests, laboratory investigations, radiological examinations, clinical probes and psychological evaluations.

In December, it shortlisted 12 persons as 'Gagan yatri', or 'space journeyers', for the project, of which seven were sent to Russia for training. The rest will receive training after the first batch returns.



IIT GUWAHATI STUDENTS DEVELOP DRONE TO SANITISE LARGE AREAS

PRIYANK VARTAK

A group of students at the Indian Institute of Technology (IIT), Guwahati, has developed a drone with an automated sprayer to sanitise large areas including roads, parks, and footpaths. The student group, which has a start-up called "Racerfly", has approached the Assam and Uttarakhand governments with their sprayer system which they claim can accomplish the task in less than 15 minutes which would otherwise take a person 1.5 days of work.

According to Anant Mittal, a Civil engineering student at IIT Guwahati, the sprayer system can be deployed and operated by just one operator sitting and monitoring at one spot, eliminating the need for many cleaners manually spray disinfectants. Also, these drones can be used to record videos as well.

"The drone will help in sanitising large areas by just one person spraying and monitoring using a mobile app, hence eliminating the need for more cleaners who use manual spraying disinfectant. This will help in following social distancing guidelines issued by the World Health Organisation (WHO). The drone which is crash-proof is equipped to adjust itself to terrain height and avoid obstacles," Mittal said.

"The roads and areas can be selected on Google maps and the drone can be automated to perform the task within a signal range of 3 km. A drone can cover more than 1.2 hectares in one flight and more than 60 hectares in a day," he added.

According to the five-member team, the drone can spray two to four litres of disinfectant per minute and can be filled twice for one charge.

"A single drone can replace around 20 workers, which can be really helpful in the current situation. Once we get a go-ahead, we can make 15 drones within 15-20 days and next 50 by the end of this month," Mittal said.

