

# Apollo in Retrograde

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## April 1970

Folded newspapers marched like soldiers in military precision across the conference table in Deke Slayton's corner office. Headlines blared, "PARALYZED APOLLO 13 SPLASHES DOWN," "INJURED ASTRONAUT HOSPITALIZED," and "APOLLO IN RETROGRADE."

On this stiflingly humid spring day, all the astronauts except Natalya Orlova studiously avoided as much as a glance at the dismal pronouncements spelling out how seriously her adopted country had stumbled. *Everybody thought the U.S. won the "Space Race" five months ago, she mused, when Pete Conrad and I became the first people to land on the Moon.* The triumph was soon eclipsed by the near-fatal *Apollo 13* accident. The world watched that ill-fated spaceship limp home like a wounded three-legged dog with its tail between its legs. Today, the astronaut cadre, Natalya included, greeted two of its three crew members with heartfelt relief and sympathy. Having come so close, Lovell gave her a wry look while Swigert bottled his emotions. They had to ache for another chance to reach the Moon. So did Armstrong, Aldrin, and Bean after their aborted launch last year. *Pete and I are the fortunate ones, and every day I itch to set foot on the Moon again.*

Deke Slayton favored the room full of astronauts with a disgruntled scowl. "Let's get down to business. Jacqueline will join us shortly."

Huh? Deke never started an all-hands meeting of NASA's astronauts without his co-administrator Jacqueline Kennedy. Rumor had it that her brother-in-law, President Bobby Kennedy, would soon nominate her for a prominent position in his cabinet. *I need to accept that I'll soon lose my mentor.*

"First," Deke began, "the good news. We expect Fred Haise to be released from the hospital today or tomorrow. The doctors see no lasting damage." This was greeted with cheers. The astronaut cadre had followed the mishap closely. Soon after *Apollo 13's* crew commenced stirring the cryo tanks on the approach to lunar orbit, a bang had rocked the ship. Swigert was strapped in, and Lovell floated freely in the CM. But in the confines of the tunnel leading to the CM, Haise smashed his head and briefly lost consciousness. While Swigert radioed Houston to alert them, Lovell maneuvered the disoriented Haise to his couch, where he vomited. The press and the public fixated

on the concussion, even while Haise was recovering. Pundits predicted the imminent end of Apollo.

Deke moved on. “Next, I want to introduce the newest member of our Astronaut Corps: Jerrie Cobb. Many of you know about her three world records in aviation while still in her twenties. Plus her consulting work for NASA. She’s also made numerous solo flights over the Andes and the Amazon jungle to bring supplies and medicine to isolated villages.”

Tradition called for a round of applause. Instead, silence ensued as many of the rocket-boys eyed Cobb warily, taking their cue from John Glenn’s impassive face. *They did the same to me six years ago*, Natalya recalled. *Glenn still remains steadfastly opposed to women astronauts. Supposedly because we are barred from being military test pilots. He made an exception for me seeing as I trained as a cosmonaut before risking my life to flee Soviet tyranny. But as for Jerrie—she was the one who opposed Glenn’s views years ago in that Congressional hearing where she had the audacity to put forward sound medical and scientific reasons for sending women into space.*

The moment of uncertainty stretched. At least Wally Schirra and Alan Bean, who had been the first to welcome Natalya as one of their own, shifted uncomfortably and had the decency to look embarrassed. *The fact that I proved my worth aboard Apollos 7 and 12 does Jerrie no good.*

Swallowing her indignation on Jerrie’s behalf, Natalya rose and extended her hand. “Speaking for all my colleagues, let me welcome you to our ranks.”

Jerrie Cobb’s grip was firm and her manner easy. “Thank you. It’s an honor and a privilege to be here. I look forward to working with each of you.”

“Moving on,” said Deke, “we all know the Soviets pulled off fifty-seven days for their cosmonauts in low Earth orbit. Not to mention their manned Moon landing. I’m as dismayed as any of you about *Salyut 1* blowing most of our records out of the sky. On top of which, we have the indignity of watching the Reds’ self-propelled lunar vehicles make months’ worth of tracks in the Sea of Rains.”

*Ab, the Lunokhods, they’re all Tomas’s doing!* Natalya repressed a smile, hiding her pride and the comfort she took in the astonishing traverses and the hundreds of photos transmitted to Earth from the sturdy six-wheeled Soviet rovers. *They mean my ex is still developing engineering marvels for Chief Designer Comrade Korolev.* In the years since her former husband had denounced her shortly after Natalya escaped to the West, she had received no word from or about him. She bore Tomas no ill will for doing so. *We’re both beyond the days when love dictates foolish decisions.* Nevertheless, tomorrow’s early meeting with her CIA handlers probably meant she’d wake at 0300 hours with her brain full of dreadful imaginings as to what U.S. intelligence agencies might be concealing from her.

Deke’s voice brought her back to the present. “—convened a blue-ribbon commission to get to the bottom of the accident. I’ve given Congress our assurances the panel will have 100 percent cooperation from everyone here at NASA. In the press conference at the top of the hour, I will announce a temporary pause for Apollos 14, 15, and beyond. This will last until the accident’s root causes are identified and satisfactory solutions put in place.”

Groans rose from all quarters, despite general agreement with Commander Lovell’s candid remark while guiding the damaged spacecraft toward home. He’d said he thought it would be the last moon flight for a long time. Natalya stole a glance at Wally Schirra’s wistful face. *He wore that same expression when I reentered Apollo 7, fresh from my first spacewalk. I still bear him saying, “It leaves you always wanting more.”*

“What about SKYLAB?” someone asked.

“SKYLAB is on hold too.” More groans.

As the astronauts—Natalya included—glanced at one another, absorbing the news, Deke went on. “I’ll be blunt. It would be a mistake for any of you to give up your dreams right now. You don’t see me doing that.”

*Well that sounds encouraging*, Natalya thought. *Except we all know Deke was forced to abandon his dream years ago when the doctors detected his heart condition.*

Conrad asked the next question. “Best guess as to how long we’re in a holding pattern?”

“Six months. A year maybe,” Deke replied. “Could stretch longer. Or not. Our geologists won’t run out of samples to study, what with all the Moon rocks you and Natalya collected.”

*Wish we’d had time to pick up more.* The scientists craved rocks from other craters to shed light on the formation of the Moon, the Earth, and the Solar System. Natalya suppressed a sigh. *How long before people talk seriously again about using the Moon as a staging ground for an expedition to Mars?*

“Meanwhile,” Conrad said, “we hear the Soviets are moving forward with plans for a permanent base in Le Monnier Crater. Seems like we’ve forgotten JFK challenging us to go forth into the next frontier.” He enjoyed a level of candor not afforded to others. “To be bold—”

“Not one of you remembers my dear husband’s challenge like I do.” Jacqueline Kennedy stood in the doorway, arms crossed and brown eyes commanding the attention of the whole room. Conrad shifted uncomfortably. Nobody could mistake her for a figurehead, not after she’d ably served as ambassador to France, before heading up the Peace Corps and moving on to NASA.

Jacqueline continued, “Let me assure you, if Jack were here today, he would support a forthright evaluation of the mishap. He placed his faith in our technological superiority. He believed it springs from the underlying superiority of America’s democratic free-market system over the Communist ideology. Bobby thinks the same. We *will* get back on track. When we do, we’ll be well positioned to embark upon a new decade of scientific and technological advances. With support from our friends in Congress, I see us setting out to investigate the whole Solar System. And beyond, eventually. Every one of you here has the ability to participate in more ambitious missions. You are the ones who will inspire the peoples of the world to come along on our journey to that next frontier.”

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As the meeting broke up and the astronauts filed out, conversations turned to racecars. The rocket-boys, almost to a man, shared a passion for souped-up vehicles and frowned on Natalya’s disinterest in them. She got nowhere by claiming with a laugh that she was married to rockets. Truth was, auto racing had been unheard of growing up in Ukraine. Later when she reached Star City, the past-time would have been dismissed as bourgeois Capitalism. Then too, frivolities like pricey speedsters were at odds with her temperament. Besides, automobiles mostly fell within Tomas’s purview.

Wally Schirra caught her eye and made a hand motion as though shifting up through the gears to overdrive. “Got time for a short road rally later? My co-driver had to bag out.”

Unlike speed racing, Western road rallies had appealed to her immediately, owing to their emphasis on teamwork, precision, and *ad hoc* mental calculations, which often penalized cutting corners. “Maybe you scared him away, Lead-foot?” she said with a grin.

He returned it. “Vroom, vroom.”

“Vroom,” Natalya echoed, smiling at the sudden memory of Pasha giggling when he’d uttered that word. How her dear little son would have adored a road rally. She pictured him bouncing in his chair, toy car clutched in his little fist. Her smile faltered. *We’ve been like brother and sister since I first came here, and yet I’ve never found the right time to tell Schirra about Pasha.*

Turning, she followed NASA’s co-administrators, Jim Lovell, Jack Swigert, and Jerrie Cobb to the press room, where a swarm of reporters and flashbulbs greeted them. Deke opened by paying tribute to the bravery and dedication of all those who worked through the crisis, especially the crew aboard *Apollo 13*. This drew a round of applause, followed by a second one when he broke the news that Haise would soon be released. A reporter said, “Commander Lovell, what are your thoughts about going up again? Or does Marilyn . . .” Jim Lovell’s wife. The unfinished question hung in the air in the press room.

Lovell had his answer at the ready. “Speaking for my crew as well as myself, we’re very disappointed we couldn’t complete the mission. That said, I have to keep in mind other talented aviators deserve to fly.” With a glance at Deke and Jacqueline, “If NASA decides to tap me for another crack at it, I’m certainly willing to go back.”

“Which brings us,” said Deke, “to my next announcement.” With that, he told them about the hiatus for the duration of the accident investigation. A reporter responded with, “Why keep

throwing money into the black void of outer space? It costs twelve dollars a day to feed an astronaut when we could feed a starving child for eight. Shouldn't America get back to the serious work here on Earth of feeding the hungry and combating poverty?"

Despite six years of living in the U.S., Natalya was still surprised by her adopted country's focus on the "price tag." Something that didn't surprise her, however, was the scarcity of proposals to reallocate some funds to feeding people instead of stockpiling more nuclear weapons.

"It's not an either/or proposition," Jacqueline countered. "As the leader of the free world, we should take on both challenges. What we learn through Apollo will be put to good use here at home and around the globe."

The reporter followed up with, "NASA loves to tout the spin-offs. Don't you think you've gotten all the mileage you can out of that strange orange 'drink of the astronauts'?"

Deke waited until the snickers died down. "The juice is worth the squeeze." He launched into a litany of medical advances, including small, portable, reliable, lower-cost machines that concentrated oxygen from the air, thereby eliminating cumbersome, over-sized tanks requiring refills on a strict schedule. "In short, we can and should continue our space ventures as soon as we ascertain how to make them safer."

Another reporter wondered if the inescapable strain on resources such as food, water, and oxygen meant NASA ought to give preference to women astronauts, or smaller, lighter men. Less weight translated into less fuel and more margin for error.

Deke shot her an impatient look. "Not at all. We will continue to rely on a battery of tests to select an elite roster for each mission. The best of the best."

*He means that when the time comes—I have to believe it will—Jerrrie and I need to out-score those Air Force test pilots and Naval aviators awaiting their turns. The problem is the "non-quantitative factors." Since my early days in Star City, I've had to contend with similar nonsense. Or worse.*

Unlike John Glenn, Wally Schirra, Jim Lovell, and the other Mercury and Gemini astronauts, Natalya had never enjoyed the luxury of letting her accomplishments speak for themselves. Not even after proving her worth aboard *Apollo 7* by becoming the first woman to perform an EVA. Not after successfully landing *Apollo 12* in the misnamed Sea of Tranquility, which was filled with boulders dwarfing their fragile lunar module, the *Eagle*. Her trailblazing was scant help these days for Jerrrie Cobb.

The next question was for Jerrrie. "What does your induction into the ranks of the astronauts mean for Natalya Orlova?"

*There it is, the insinuation that Jerrrie ought to replace me. No matter that I wore the U.S. flag on my arm as I walked in space, as I planted my boots on the Moon. I'm so tired of this never-ending conviction that I usurped a slot "belonging to" an American-born rocket-boy. I'm the one who went to the effort to become a U.S. citizen.*

Thankfully, Jerrrie didn't miss a beat. "It means nothing whatsoever. If the premise underlying your question is that there can only be one woman astronaut, I suggest you rethink it."

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The next morning, Natalya knocked on the door to Deke Slayton's executive conference room where he waited with her CIA handlers, Oscar Bradley and Theodore M. Anderson. She had privately named them Onion Breath and Too Much Aftershave. OB and TMA for short. Deke's face lost its amiable expression, and the other two weren't big on smiling. Deke said, "Have a seat, Natalya."

Which meant she'd be the only one sitting. She stayed standing and crossed her arms to keep from making any nervous gestures. "Whatever this is about, tell me straight."

OB gave her a challenging frown. "Soviet agents in the U. S. are spreading rumors to discredit you."

Natalya gripped the top edge of the chair, her indignation outweighing alarm. "They tried before."

"This time, they've infiltrated extremist right-wing groups. They claim you are a Russian spy, a 'KGB mole' who duped the CIA."

“Russian spy? What an ignorant, insulting notion. Do they not know how much Ukrainians like me suffered at the hands of Stalin and the Russians? Besides, I hardly have to remind you that I upended my life to come to the West. I gave you every iota of information gleaned during my time in Star City and at the Baikonur Cosmodrome.” She forced herself to loosen her grip on the chair hoping neither of them had noticed her white knuckles.

“Cut to the chase,” said Deke.

TMA obliged. “We hear persistent assertions that Ms. Orlova sabotaged *Apollo 13*.”

After enduring six years of investigations into the smallest details of her life, she gaped at the blatantly false charge.

“That’s absurd,” Deke protested. “She was never aboard *Apollo 13*. She was out of the country taking her world-wide victory lap with Conrad and Bean.”

OB ignored him. “Which brings me to next month’s trip to Moscow and Star City. The State Department is very pleased that Cosmonaut Valentina Tereshkova herself will escort Pete Conrad, Alan Bean, and Jacqueline Kennedy. However, the Kremlin’s invitation to the *Apollo 12* astronauts excludes Ms. Orlova.”

Deke threw up his hands. “Those petty, small-minded—”

“We have determined that her presence would be needlessly provocative.”

Natalya gulped, mindful of one of the Kremlin’s favorite tactics. “Yes. I could be in danger from someone they call a ‘patriot’ supposedly acting on his own. Tomas might also be a target. Even though he’s always enjoyed First Secretary Brezhnev’s favor.”

Neither CIA man gave any hint as to their assessment of her scenario. Instead, TMA said, “History teaches us it’s foolhardy to risk riling up someone like Kosygin.”

“People here think all Russian leaders are as bad as Stalin. Premier Kosygin is no Stalin.” Having grown up in Soviet Ukraine, Natalya well remembered how her village suffered during Stalin’s Holodomor and then post-war drought and famine. So did Tomas, and doubtless Brezhnev. Those scars ran deep.

“I grant you Kosygin does not inflict mass starvation upon the citizens of Ukraine. But if he deemed certain Ukrainians to be inconvenient, there’s little Brezhnev can do.”

Deke cut off further discussion. “See here. NASA asks our astronauts to take enough risks as it is. I won’t subject Natalya—or any one else—to unnecessary danger in a foreign land for the sake of PR.”

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## January 1971

After too many months of uncertainty, a gold-orange-brilliantly-white pillow of fire ballooned out, blasting *Apollo 14* upward. Watching the launch took Natalya’s breath away, as it had when she’d willed *Vostok 5* and *Vostok 6* to fight gravity. And later when she’d witnessed *Apollo 4*.

Standing next to her, Pete Conrad bellowed, “Godspeed, John Glenn, Alan Shepard, Ed Mitchell!”

A second later the sound waves swept over them, drowning out Alan Bean and Wally Schirra’s cheers. *Look how excited they are! So am I!* The first stage separated precisely on time. As did the second.

“Yes! We’re back on track, baby.” Alan Bean slapped the men’s backs while Natalya and Jerrie hugged each other.

The astronauts’ relief was palpable, not only because of the tense period while the Cortright Commission studied *Apollo 13*’s near catastrophe, methodically scrutinizing all systems and determining that the failures involved damaged insulation, a fused thermostat, a thermometer pegged too low, and an explosion in an oxygen tank. The remedies for the design and engineering flaws had been hammered out and thoroughly tested. If *Apollo 14* had to be aborted, it likely would have meant the end of Apollo program and ceding the Moon to the Kremlin.

“Come on,” said Schirra, “let’s celebrate.”

They trooped over to their usual bar, where Conrad began with, “Bets as to who gets tapped for *Apollo 15*?”

Heads swiveled toward Alan Bean, who’d been nothing but gracious as he circled the Moon

while Pete and Natalya lapped up the glory of the first landing. “Who knows,” he said. “Could be Jerrie. Could be one of the newer men.”

“One of the English or West German pilots?” Natalya ventured. Their governments had been eager to join the U.S. as charter members of ISPA. It hadn’t even been two years since Natalya and Jacqueline Kennedy had traveled the world inviting U.S. allies to join the soon-to-be-formed International Space and Planetary Agency. They’d had such high hopes for ISPA.

“Doubtful,” said Bean. “I hear those countries are balking at coughing up their shares of the start-up money.”

“ISPA,” Conrad snorted. “Jacqueline’s pet project flamed out before it even got to the launchpad.”

“Huh?” Natalya looked at him, then Jerrie. “Doesn’t being named Secretary of State make her a stronger advocate for ISPA than ever?”

“If only.” Jerrie swigged her beer. “She has bigger fish to fry.” Taking in Natalya’s dismay, she added, “It’s hard to say whether ISPA has more hurdles at home or abroad.”

That drew nods around the table. The talk moved on to speculation about who among the astronauts was being wooed by government contractors and might jump ship.

Jerrie shook her head. “Trust me. Consulting can be tedious and frustrating.” She’d done her share of it, Natalya knew, before gaining admittance to the astronaut corps.

Natalya said, “Yeah, I don’t suppose it compares to blasting off atop a Saturn V.”

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#### April 1971

Onion Breath and Too Much Aftershave wore the grimmest expressions Natalya had ever seen on their faces. Worse yet, Deke Slayton’s frown rivaled theirs. She fought to quell any outward signs of apprehension as she gave a curt hello and took a seat across the table from them. *They can’t still be fixated on those rumors I sabotaged Apollo 13, can they?*

“Ms. Orlova,” OB began, “Let’s talk about your husband.”

Tomas! Those words stabbed her belly like a dagger. She barely managed to ask, “Is he in trouble? Was he detained?” *Or worse?* She stopped, terrified. *Our marriage shattered when we buried our little boy. But even back then, I would never have made my solo jump to freedom if I thought it endangered Tomas. Comrade Korolev always saw my ex for what he was—brilliant, driven, and indispensable. It’s why First Secretary Brezhnev has kept him safe all this time. It’s why I could pursue my dreams here. Except, now . . .*

“We obtained a note,” OB said. In an unhurried manner—a deliberate tactic that rattled Natalya further—he placed his briefcase on the conference table and took from it a slim manila folder. Opening the folder a bare finger’s width, he drew forth a single sheet of paper. “Do you recognize the handwriting?”

The penmanship was unmistakably her ex-husband’s, but the Cyrillic words had been formed with weak, shaky strokes, as though pressing more firmly was too much effort. The bottom of the page was adorned with a hastily sketched eagle head, which Tomas habitually substituted for his signature. Her mouth went dry. The date was a few weeks ago. After all these years of hoping and believing, but having nothing definitive. She forced herself to utter his name. “Tomas.”

“You are certain?”

She barely got out, “‘Orlov’ means ‘eagle.’”

“Read it to us,” the agent commanded.

*What sort of game is this, she wondered. What do they expect to learn by having me read a letter they’ve analyzed to pieces already?*

“One moment,” Deke interrupted. Slowly, he poured a glass of water, not so full that she’d spill it. His expression as he handed it to her seemed to say, “Take your time.”

She took a sip, then another, and reclaimed her voice. “My darling Natasha, I’ve hung onto Pasha’s toy car in hopes of sending it along to you one day, knowing how you value what little of his is left. Maybe soon this will be possible.”

The small gray car. Her voice left her as she remembered how Pasha had scratched his initial in the paint on the driver’s side door soon after he learned Cyrillic. How he’d loved playing with

that toy, endlessly fascinated with its six over-sized wire-mesh wheels that spun. When she'd left to do intensive training for a Vostok mission, subsequently reassigned to Valentina Vladimirovna Tereshkova, Pasha had begged her, "Take me with you, all the way to the Moon."

She had laughed that day as she smoothed his hair, saying, "It's too far, my darling."

"Vroom, vroom." Pasha swiped the car across their kitchen table and up along the rim of his plate, then down to plow through the layer of grated beets on top of the schuba she'd made for the holiday. "I'm driving Papa's car on the Moon! Here's the crater."

That was her last happy memory of their son before the chest infection took hold and she could do nothing. Now, Natalya felt herself reeling, her mouth bone dry, again. Deke nudged the water pitcher closer to her. With a shaking hand, she clutched her glass like a life preserver.

TMA motioned for her to finish reading the letter.

"Natasha, my brave eagle, you have soared higher and farther than I imagined possible. Nonetheless, even the strongest flyer must exercise caution in the face of gale-force winds." She steeled herself as she returned the gazes of both operatives scrutinizing her. "Neither of you gentlemen had the least doubt he wrote it. Tell me what more you know. How much trouble . . . er . . . what have they . . ."

OB let the folder fall open. Inside lay a black-and-white photo, not an original.

Natalya drew it across the table for a closer look.

Tomas. His soulful eyes pierced her. His nose, once perfectly straight, had a bump and skewed to the side. In six years, his dark hair had thinned so much. The first gray hairs in his beard had multiplied. There was even some gray in his eyebrows. If only it were bad lighting. But no, her flight training forced her to confront reality. They'd posed him seated at a desk, clutching a pen. His little finger was crooked and his ring finger missing.

On the desk near his maimed hand sat something else—she could scarcely believe it—the little gray car. Pasha's seemingly innocuous plaything. Despite everything Tomas had endured, he'd clung to the favorite toy, perhaps his only tangible reminder of the joy his son once brought him. Pasha would have turned twelve this year and undoubtedly would have been car-crazy, especially for Western ones. Perhaps he would have been growing handsome like his father was when she first met him as a young engineer.

Through wet eyes, Natalya looked closer. One of the car's six wire-mesh wheels bore a gash it had not possessed when forging over the beets atop his schuba. How had it taken damage? Her gaze flicked between the tire tread and Tomas's right hand.

After a couple of tries, she found her voice. "When was this done to him?"

"We don't know. 1966 maybe."

"Five years ago. You tell me *now!* How long have you kept this from me?" *If I had known . . .*

Deke broke in. "Careful, Natalya. Our CIA colleagues must protect their sources."

"Deke, for years these two led me to believe Tomas was carrying on his work designing the automated Lunokhods. Practically single-handedly. He always complained about the poorly-educated junior engineers who weren't up to the task. Those rovers could never withstand the unrelenting lunar conditions if not for Tomas." She rubbed her aching forehead. "I can't understand how Comrade Korolev could permit this to be done."

"Korolev almost died on the operating table in 1966." OB delivered this without a gram of emotion. "He had a long convalescence before assuming his duties once more. That's partly why we got humans on the Moon first."

*Almost died.* The Chief Designer's years enduring the Kolyma Gulag must have taken a bigger toll than he'd ever let on. She looked again at Tomas's prematurely-aged face and maimed hand. *What was I thinking? Thank goodness Comrade Korolev could take charge of the space program again after his recuperation, even though that man did give me false hope about my own prospects.* "There must be more you can tell me."

"Korolev is said to be ailing again." OB spoke like a gambler dispassionately evaluating the cards and weighing the odds.

"Even if Comrade Korolev is ill," she said, "Premier Kosygin knows better than to hurt Tomas if he wants to keep winning the space race. First Secretary Brezhnev does too."

“To the best of our knowledge, Major Tomas Orlov remains the principal engineer on the Lunokhod rovers. For the time being.”

Natalya said nothing, having learned that silence makes many Westerners uncomfortable and thus prone to supply words they might not have spoken otherwise. These two let the silence stretch until at last she said, “That’s all you will tell me?”

TMA spread his hands. “We are pursuing various avenues. If we learn something we can divulge, we will. Ms. Orlova, we *might*—I’m not making any promises—have better success if you were to quell the rumors about your interest in a second Moon shot.”

*Rumors!* “It’s hardly a secret.”

“Now stop right there,” Deke scowled at TMA. “Nobody—and I do mean *nobody*—in your line of work has any business trying to dictate to me staffing decisions for any mission. That goes triple for Moon landings.”

“Ms. Orlova, you need to fully understand the ramifications of certain actions.” TMA sounded like he judged her a slow-witted child. “It is our considered opinion there will come a point when Kosygin has had enough of you embarrassing his regime on the world stage. You are, after all, beyond the age when many male astronauts step away from active flight duty. Cosmonauts, too. Even Valentina Tereshkova—”

“Because they denied her any more space missions!” Natalya said.

He ignored the interruption. “Ms. Orlova, I ask you to consider: numerous government contractors will be happy to open their doors for you. They do vital work. These are your peak earning years.”

*For what? A ridiculously big house complete with a garage full of ridiculously speedy racecars. After I walked in space? After I walked across the surface of the Moon? It leaves you always wanting more. Besides, with Jacqueline’s departure, NASA has only two high-profile women left. And nobody to advocate for Jerrine or me. John Glenn and his rocket boys would be happy to see space exploration go back to being the exclusive domain of men.*

Face flushed, Deke rose and put his hands on his hips. “I said stop. If there is nothing further . . .”

Scowling, OB plucked the photo from Natalya’s hand.

“Wait,” she protested as he slipped it back into his briefcase along with the letter. “Why can’t I keep his picture?” *You bastards!*

As they strode to the door, TMA said, “Think about what’s in your best interest.”

The instant they were gone, Natalya sat rigid, furious at them and terrified of what they might be hiding. She took a shaky breath. “Those two hardly consider my ‘best interest’ a priority.”

Deke shook his head. “Your welfare might be higher on their list than you suppose. Don’t look so surprised.”

“If I had allowed men like them take charge of my welfare, I’d never have flown a turbo-prop, let alone anything faster.”

“Yeah, I get it, Natalya. Sure wish I had a nickel for every time someone pulled me aside to say it was in my best interest to avoid over-stressing my heart. And I’ll be damned if I’ll let them dictate how I staff Apollo missions.”

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The next morning, after a night of fitful sleep punctuated by alarming dreams, Natalya glared at her bathroom mirror, hating how it mocked the dark circles beneath her eyes. She put on a neutral expression and rehearsed the few, painful sentences she had to say: “Deke, I’m taking myself out of the running for *Apollo 15*. Please hear me out. I let my resentment take over, yesterday. On reflection, it’s time for me to do what appears to be least problematic for Tomas.”

*Direct, short, and as much as I can manage. It will have to do.*

When she entered Deke’s office, however, he led off with, “Natalya, tomorrow I’m posting the duty roster for *Apollo 15*. I want to give you a heads-up. You won’t be on it.”

“What? After you stood up to those CIA men yesterday? You really will let them dictate your staffing decisions?”

“No,” he snapped. “Not at all. Here’s my thinking. Quite frankly, you’d be hard-pressed to perform at your best with your mind on your ex’s situation.”

He rushed on, his welter of words pelting her like buckshot. She struggled to steel herself against them and to keep her hands from forming fists. *I wish Jacqueline were here. She would* ... At last, she managed, "Deke, I came here to say—"

"Look, I got passed over for lots of missions. The disappointment stings. Every damned time. When my heart palpitations took me out of the running, it felt like the worst thing in the world." He paused to run a hand through his sparse hair. "An astronaut can never entirely give up hope."

"I get it. You don't have to justify—"

"Alan Bean will have his turn to make the landing."

"Good for him." She meant it.

"You should know Jerrie Cobb will be Command Module Pilot."

"Jerrie." Natalya hadn't been surprised when Jerrie received top scores on several physical endurance and psychological aptitude tests. Nor when Jerrie captured the public's imagination, much as Natalya had done before her.

"She's a thoroughgoing professional who deserves to fly."

"Deke, I agree."

"Also, the Soviets sent Alina Lukina to Le Monnier Crater. NASA doesn't need the blow-back it would get by reverting to an all-male crew."

"What? Are you telling me there's a hard limit of one woman per mission? Not to expect more?" *Good grief. Deke makes Comrade Korolev look like a feminist, what with his preliminary plan to launch four women cosmonauts at once. That scheme didn't last long.*

"We both know you had your heart set—"

"You don't understand. When I walked in the door . . . Wait . . . You don't deny one woman is the limit?"

His expression darkened. "A word of advice, Natalya. Greed is never a good look."

"Greed! Was it 'greed' when John Glenn angled for a Moon landing, after all he had achieved?"

He held up a hand. "There comes a time to rest on your laurels. That's all."

*No, that isn't all.* "Should I have rested on my laurels once I became the first woman to walk in space?"

"Don't go twisting my words."

"Shouldn't Alan Bean have rested on his laurels?"

"Enough!" He slapped his desk with his open palm. "Do you really think this country is ready for women to outnumber men in a space ship?"

"Two women shouldn't be unthinkable!"

\* \* \*

By the time Natalya climbed into Wally Schirra's rally car for the road rally that afternoon, the white heat of her resentment had turned to ice. Good. This American pastime required all her concentration in order to call out what lay on the road ahead. But they had to be flexible; the unexpected might await them around the next bend. Both luck and teamwork were essential.

"Vroom?" Schirra asked tentatively.

"Vroom, vroom." She tried for a light-hearted tone, despite everything. *Let this road rally be for Pasha. I doubt I could have summoned the resolve to escape to the West if my boy had lived.* She shivered at the memory of the biting wind as the tiny coffin containing her no-longer high-spirited son was lowered into the ground. Neither priest nor prayers were allowed. *Then and there my marriage to Tomas frayed and broke. He had his Lunokhods. He didn't need me. I had nothing—not my Pasha, not a husband, and not the promise of space unless I risked everything. Which I did.*

The chance to reclaim her dream had come during the Paris Air Show at 0300 hours while her official monitor lay snoring. Natalya stuffed Pasha's picture into her coat and crept over dark cobblestoned streets with a hastily-memorized map of Paris—a journey of a few kilometers and as hazardous as any rocket launch. Her pulse hammered hard as she darted to the door of the U.S. Embassy where she uttered her first six words of English: "Help me, please. I seek asylum."

Schirra gave her a bitter smile. "Has anyone ever told you that you put on a good front?"

"A good front?"

“Look, if we don’t both have our heads in the game, that’s how accidents happen. Like when I shattered my windshield. That was before I knew you.”

“What a way to wash out of a race,” she said.

“Wash out? Heck no. I removed the rear window and duct taped it to the hood. Point is, I kept going. Same as today. I refuse to brood about being passed over.”

“You, too? That’s crummy.”

“I’m guessing Deke gave you the same song and dance he gave me. The one about how the disappointment stings every damned time and it’s the worst thing in the world.”

*Looks like Deke bestows his high-handed attitude upon at least two of us.* “He did,” she replied.

Schirra’s lips twisted. “I felt for him when he got pulled from Mercury-Atlas 7. Did you know I was his backup? Last thing I expected was for them to slot in Scott Carpenter and keep me as backup. I thought my future crashed and burned.”

*This happened years ago. After three launches, he still hasn’t let go of his bitterness.* “Oh Wal-ly—”

“A piece of advice, Natalya? If I may? It’s worse than useless to let Deke get to you.”

She shook her head. “Until today I never second-guessed my decision to secretly learn English and stay alert for the chance to slip away. And now . . .”

Schirra said, “There is life after NASA.”

“So I’m told.”

“You’d be surprised at the breaks astronauts get. Once John Glenn retires from NASA later this year, he’ll have his pick of offers.”

“Hmmm, that must have made it easier for Deke to tap Jerrie.”

“Maybe Glenn will make a run for Senate at some point. Washington needs more men who understand the space program.”

“Sounds like what you call ‘a golden opportunity.’ For a man born and raised in Ohio. As for a Ukrainian woman . . . a naturalized citizen . . .”

“Opportunities are out there for every one of us. For some time, I’ve been considering de-camping for private industry.”

“Really? Well, I wish you all the best. And if you do leave, I’ll miss our road rallies.”

“Thanks. I will, too.” After a pause: “You reached the Moon, Natalya. Don’t sell yourself short. Look into our aerospace partners. Or farther afield. Lots of Fortune 500 companies would be excited to have you.”

“I have great respect for the work NASA’s contractors do. Some of it is inspired. But joining one of them . . . like you told me, walking in space leaves us always wanting more.”

\* \* \*

## February 1972

“Woo hoo, how about that for a splash down?” Conrad exclaimed as he, Alan Bean, and Wally Schirra tore their eyes from the TV over the bar to clink beer glasses. Across the table in their favorite watering hole, Jerrie Cobb joined in. Natalya did too in an attempt to shake her gloomy mood. *We’re the only ones in this dive who care enough to watch this snippet of Apollo 16 on the CBS Evening News. Maybe we’re the last in the whole country if you don’t count NASA employees and contractors. Just like Apollo 15. Who would have thought public interest in the Moon marathon could fizzle so fast?*

Natalya barely heard Walter Cronkite’s baritone recapping the “Moon buggy” jaunt taken by astronauts whose names were largely unknown. All too soon, Cronkite moved to another topic. “Next, we bring you a special report, an exclusive interview with two Soviet officials overseeing their space program.”

“What?” Conrad began. “Tell us about the MiG.”

A few days earlier, a Soviet pilot had flown a top-secret MiG to Hokkaido. The Kremlin demanded its immediate return, including the pilot. Instead, Japan permitted the United States to take charge of both. The next day, Secretary of State Jacqueline Kennedy announced the U.S. had granted asylum to the aviator. Most of the rocket-boys thought the Soviet demand for the aircraft

should be rebuffed.

"Shush," said Natalya, "that's Chief Designer Korolev." A Soviet military officer led him into a spartan room where a TV reporter waited. An extraordinary medal was affixed to Korolev's uniform. She gasped at the gleaming gold star dangling below the crimson ribbon. To be named a Hero of the Soviet Union, the U.S.S.R.'s highest honor! Both Kosygin and Brezhnev must have agreed to it.

Another officer escorted Tomas in next. *Tomas!* His face was more ravaged than she had dared imagine and his maimed hand in his pocket. Natalya found herself on her feet, dimly aware of beer sloshing. He moved with the trace of a limp, as though assessing each step before committing to it. She drew closer to the flickering TV. His big, soulful eyes, caught in a fishnet of fine lines, gripped her like nothing else ever had. Or ever could. Nothing except Pasha's voice and the eyes he'd inherited from Tomas.

Once the Chief Designer and Tomas took their seats, Korolev recited a short statement, speaking through an interpreter. First he touted recent success in sending an unmanned orbiter around Mercury, which met with glum silence in the Houston bar. Next, he boasted of their progress on another key project, namely the completion of Zvezda, their base near the southwestern edge of Le Monnier Crater.

"Base," Pete Conrad scoffed. "It's nothing but a glorified, barely habitable encampment."

Natalya shushed him. The Chief Designer found ways to accomplish so much with so little. So did Tomas.

"Lastly," Korolev proclaimed, "by the end of the decade, we shall send Luna landers to touch down on the far side of the Moon and at its South Pole."

Natalya clenched her jaw in frustration. *Of course they will.* While the United States lets itself be seduced by a plethora of distractions, the Kremlin holds its dedication to the space race as firmly as its adherence to Communist principles. No wonder our foreign allies put off making good on their financial obligations for the International Space and Planetary Agency. They recognize our lack of commitment to ISPA. What's worse, it looked increasingly like *Apollo 17* could be the last time NASA astronauts would visit the Moon for who knows how long.

Then came Tomas's turn to say a few words. "I had the opportunity to visit the Paris Air Show last year. I was excited to see many new aircraft and *Apollo 8*." He gave a shy smile. "They fill me with ideas for how to improve my designs for the glory of the Soviet Socialist Republics."

Turning to the reporter, the ranking military officer said, "You may ask a few questions."

"Comrade Orlov, how do you feel about playing second fiddle while your wife basks in the lion's share of the glory in the West?"

As the interpreter repeated the question in Russian, Natalya stepped closer, taking in how Tomas's eyes flashed with apprehension. *When I left, he had to denounce me. It's not something he can ever take back.*

Tomas said, "I see the pictures and film and I think, 'look how smart and capable she is.' The beautiful mother of my son." He swallowed a touch of sadness. "My Natasha was always the best pilot because she had the best training in the Soviet Air Force and after that in Star City as a cosmonaut. I am proud of her. She did well in the West because of all she learned in Soviet Ukraine and Soviet Russia. She could have done so much more for her homeland."

Evidently not getting the response he'd hoped for, the reporter tried another angle. "Why didn't the Kremlin select her to go to outer space?"

This time, a flash of irritation crossed Tomas's face. Korolev answered. "Such lies these Capitalists tell. Of course she would have had her turn. It would have come quickly."

"That's not true," Natalya yelled at the television. *You picked Valentina Vladimirovna Tereshkova because she was malleable and I never was.*

The Soviet official interceded. "Comrade Chief Designer Sergei Pavlovich Korolev and Comrade Major Tomas Dmitrievich Orlov will take no more questions." The segment cut off.

Wally Schirra had come to stand beside her, and Jerrie too. Natalya couldn't hear whatever they were saying over the roar of her own pulse in her ears. *Tomas gave the Soviets all the credit for my accomplishments, not just my past ones but anything I might yet do!* Excitement

surged through her, pushing her to jump and pump her fists overhead. *If I do go back to the Moon, they won't hurt him!* It was one thing to ache for her next launch, and quite another to find out it was possible. *It'll be up to Deke, not the CIA. I'll increase my exercise regimen and keep sharp. I'll demonstrate I'm as capable as ever.*

\* \* \*

## July 1972

Months later, Deke Slayton called everyone together to announce the fortunate three crew members for *Apollo 17*. Natalya could hardly bear to look at him. *Yes, she thought, he did acknowledge I am in the running. Problem is, if I made the cut, he would have given me a heads up.*

The silence of anticipation filled the room as the rocket boys stole glances at one another, their tight-set mouths betraying uncharacteristic glumness. Last week a rumor raced faster than any test pilot from the Cape to Huntsville and Houston. *If only Deke can somehow keep alive the dream of space for us all.* Word was *Apollo 17* would be the last spacecraft NASA sent to the Moon. People said President Bobby Kennedy's reelection prospects in November rested upon an ambitious, costly push to feed, house, and educate the poor. The money had to come from somewhere.

Deke cleared his throat. "Before I get to the roster, let me address NASA's prospects. It's never my practice to fret over unfounded scenarios or let them distract from the work at hand. That said, the situation has coalesced quickly in recent weeks. Barring something out of the blue, we will not draw up plans for Moon missions beyond *Apollo 17*." Nobody spoke. "I know how hard you've all worked and how disappointing this is. I won't keep you in suspense any longer as to our last duty roster."

*Hmm, she wondered, why doesn't anybody here seem confident?*

"First up: I've tapped Jerrie Cobb to be LM pilot."

Over the applause and congratulations, Jerrie blurted out, "What? You mean it? LM pilot?" *Jerrie! Good for her. But hey, she's astonished. Why didn't Deke tell her beforehand? And damn, her selection sure takes me out of the running. Two other talented pilots will get their well-deserved shots.*

Deke held up a hand for silence. "I will serve as command module pilot."

After a heartbeat or two of stunned silence, the applause began. Natalya joined in. As it died away, Pete Conrad all but smirked. "You picked *yourself*?"

Natalya glanced around. *Count on Conrad to say what we're all thinking. Only one slot left.*

Deke's sharp eyes swept the room, taking in lots of raised eyebrows. "If you people could see your faces."

"At a minimum," Conrad said, "there are sure to be questions about an astronaut with a disqualifying heart condition suddenly being more fit to fly than when he was a decade younger."

"I expect so. Let me fill you in. During Mercury and Gemini, I was grounded due to an irregular heartbeat. Medicine marches on. NASA's new team of physicians come armed with improved coronary tests and the latest studies on atrial fibrillation. They cleared me to return to the active-duty roster."

*This opportunity means as much to him as mine did to me that night during the '65 Paris Air Show when I crept out and upended my life.*

"This brings me to the third position. Commander. The most crucial assignment. Looking at recent test scores, track records, and intangibles, I'm confident I have an outstanding selection. Natalya Orlova will serve as commander."

*Me? Did he say my name? Commander!* Natalya gulped, momentarily speechless. *The first woman commander—incredible.* Everyone stared at her and clapped.

"Don't look so surprised," said Deke. "You earned it, Natalya."

She found her voice. "I'm deeply honored, Sir. I couldn't ask for a better crew than you and Jerrie Cobb."

Something else hit her: two women astronauts will walk on the Moon. Another first! *I will do everything I can to make this Moon mission a bright spot. I won't dwell on it being the last.*

**August 1972**

As the press conference began, Natalya squared her shoulders and assumed an air of confidence, anticipating subtle or blatant challenges to her ability to command *Apollo 17*. Even after her successes aboard *Apollo 7* and *Apollo 12*, NASA still received letters of outrage over her taking the place of “red-blooded American men” who’d served as fighter pilots during wartime.

The first question for Deke Slayton raised a familiar misconception: “Is the decision to put two women on the Moon driven by anything other than their lower weight and need for less oxygen?” Several male reporters smirked at the time-worn insinuation that physical factors lent her and Jerrie an unfair advantage over male astronauts.

Deke Slayton burst into a loud guffaw. “What does it take for a top performer who walked in space and on the Moon to prove herself? Or an aviator who flew solo for thousands of miles over the Andes and trackless jungles?”

*Did Deke really say this—our blunt, demanding Air-Force-test-pilot-turned-Mercury-7-astronaut-turned-NASA-administrator? He’s come a long way.*

“Tell us about the range of the improved Moon buggy. What’s its top speed? Any chance you’ll pay a visit to the Soviet Moon base and say ‘howdy’ to the cosmonauts?”

Jerrie Cobb wasn’t about to disclose classified figures. She went with, “We intend to keep our distance. We’ll stay south of them in the Littrow Valley. The massifs in that region are more geologically interesting than the flat crater.” The landing site for *Apollo 17*, which NASA selected a few years earlier, made it harder for the U.S.S.R. to claim a vast swath of territory for itself. “As for our vehicle’s range, we’ll keep well within our margin of safety.” This was a dig aimed at the Soviets, a reminder of the well-founded belief in the West that the Kremlin had less regard for the cosmonauts’ lives than NASA did for its astronauts. “Its top speed is in the double digits, maybe as high as fifteen or seventeen miles per hour downhill. We won’t have the advantage of a tail wind.”

Chuckles filled the press room before the questioning circled around to Natalya. “Ms. Orlova, a female cosmonaut currently holds the record for the longest length of time a woman has stayed on the Moon. Are you out to recapture the record?”

“She is Major Alina Petrova Lukina and I cheer for her.” At the reporters’ surprised reactions, Natalya added, “Yes, I mean it. Records such as these are temporary. The important task is to keep pushing upward and outward—faster, farther, longer.”

“Deke, any regrets about deciding to stay in orbit while the women get the fun and glory driving around the Moon?”

“Alan Bean put it best when asked a similar question. He said he was thrilled with the seat he had on *Apollo 12*. He felt honored to bring his brave friends to the Moon and safely home.”

**October 1972**

*Apollo 17* was eighteen hours out from lunar orbit when Mission Control relayed the news of Brezhnev’s fatal heart attack. Deke and Jerrie looked to Natalya for her reaction. Even as her brain clamored to know how badly his demise will harm Chief Designer Korolev and Tomas, she kept her tone matter-of-fact. “It’s too soon to tell what this means for their space program or ours.” *If Brezhnev had died before we launched, Deke might well have swapped in my backup. That’s understandable. I owe it to Jerrie and Deke to keep my mind on the tasks at hand.*

The next hitch came an hour after Jerrie gently placed the lunar module a mere nine inches from target in the Littrow Valley. Clomping down the ladder in her bulky suit, Natalya gazed at the magnificent desolation; its stark contrast between brilliant sunlight and darkness stretched to the foreshortened horizon. She paused on the bottom rung before planting her foot. *Eight years ago I walked upon the Sea of Tranquility. Oh how it left me always wanting more!*

ORLOVA: I’m taking my first step. Looks like another doozie!

When she had become the first woman to walk in space, her off-hand words were, “The first step is a doozie.” Her little boy would have giggled at the silly American expression. Because the

press had loved her remark, NASA insisted she reprise the memorable line today. She could have wished that they had scheduled some personal time during these few days to trace Pasha's name in the lunar dust, as she had done at Tranquility Base.

WALTER CRONKITE: Look at that! Natalya Orlova makes history again. She's the only person to land and step on the Moon's surface twice. Now Jerrie Cobb is coming through the hatch.

Jerrie descended smoothly, pausing half way down to give Natalya the biggest grin she had ever seen on Jerrie's face.

COBB: Natalya, I thought you were exaggerating when you told me how beautiful the Moon is.

WALTER CRONKITE: Ladies and gentlemen, we have another first. Two American women have set foot on the Moon. Look at them prepare to erect the American flag.

As Natalya and Jerrie did so, word came from Houston via Deke to switch to the nonpublic channel. This meant trouble.

MISSION CONTROL: There's been a serious mishap inside the Soviet habitat Zvezda. We're told one cosmonaut may be dead. No word yet on the other two.

SLAYTON: Copy that. On behalf of NASA and *Apollo 17*, I extend heartfelt condolences and good wishes to our Soviet counterparts. Keep us posted.

MISSION CONTROL: Roger.

The astronauts turned to the next task, unlatching and lowering the folded-up Lunar Roving Vehicle. As they unfolded the LRV's wheels and settled it onto the surface, Cronkite admired the faster, lighter, and sturdier "Moon buggy." Natalya scarcely listened, intent upon the update coming from Houston about the Zvezda disaster. Colonel Sarafanov and Major Alina Petrova Lukina had died. The last cosmonaut, Major Roman Antonovich Belski, was injured and had taken shelter in Luna 27. Deke was quick to point out that this measure was temporary. No Soviet orbiter circled the Moon and none were on the way. Even if Luna 27 ascended, it was not capable of docking with *Apollo 17*. Nor was it possible for a cosmonaut to make an EVA to *Apollo 17*'s CM.

ORLOVA: Jerrie can finish prepping our rover for operation. I'm going to take a close look at the maps of the area north of us for a potential route to Zvezda.

SLAYTON: Roger that. I share your concern, but don't get your hopes up.

She understood. The Soviet habitat lay roughly twenty-five miles away, although an excursion would doubtless be longer, given the rolling terrain and obstacles along the rille leading down into Le Monnier Crater. Their LRV's traction had never been tested to its limits in the Moon's minimal gravity where loose gravel, sharp stones, and plumes of unforgiving powder would take their toll during the descent. The return trip would require the vehicle to muscle up a couple of challenging inclines. She made some rough calculations and didn't especially like results.

ORLOVA: It'll take a good three hours each way.

MISSION CONTROL: No LRV has ever completed a traverse half that far.

ORLOVA: Because you limit motorized excursions to the distance astronauts can walk. If we strip out the sampling equipment and corers, the LRV will weigh less.

COBB: She's right. NASA treats every LRV like a glorified golf cart instead of a sporty two-seater. Our vehicle should be capable of making it to Zvezda and back to Friendship Base. Deke, we're the only ticket home that cosmonaut has.

Friendship Base! They hadn't yet officially named their outpost. Trust Jerrie to pick a name that emphasized a helping hand, a name Houston couldn't override—a fitting name for would-be rescuers.

SLAYTON: Hold on. I share your eagerness to save our fellow explorer. But before we ditch our scientific objectives, is this realistic? What's the operational status of the LRV?

COBB: The LRV's frame, gyros, and wheels are fully functional. Testing the brakes, now. I'll check out the parasol and the LCRU next.

The rover's high-gain antenna, nicknamed "the parasol," provided the communication link between the portable Lunar Communications Relay Unit and Houston. Communication from the LCRU to either the LM or the CM was necessarily routed via Houston.

SLAYTON: Can the LM lift off if we trade the weight of the rock samples for the weight of another passenger? Any issues with seating a cosmonaut in an auxiliary couch for splashdown?

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The CM's life support system was built to handle the added draw during the trip home. Two auxiliary crew couches had been installed beneath the usual trio. They were intended eventually to facilitate an emergency evacuation from SKYLAB if that ever became necessary, but until now they had never been used.

MISSION CONTROL: We'll run everything by the back room, Deke. They'll triple check ascent figures, mass distribution, and such.

SLAYTON: Natalya, what can you tell us about the cosmonauts?

ORLOVA: Colonel Sarafanov was a well-respected and capable leader. It's no surprise he was the base commander. I didn't overlap with Major Lukina. Star City has never made it easy for women cosmonauts. She must have had great skill and determination to get to space. Even more to become the second woman to reach the Moon. Major Belski always struck me as dedicated, resourceful, and by-the-book. He didn't approve of women becoming cosmonauts. Neither did most of his male compatriots.

*Did Belski remember our three children playing together with the toy car and how challenging they found it to share the plaything?*

COBB: Imagine that.

SLAYTON: Houston, what's your best guess as to the Kremlin's willingness to accept our help?

MISSION CONTROL: We're working on it.

COBB: They can't risk word leaking out if they condemn their first Moon colonists after we offer our help.

SLAYTON: Will they see it that way?

ORLOVA: Maybe. Don't expect them to officially thank the United States.

SLAYTON: A successful rescue could revitalize popular support for NASA.

COBB: In other countries, too. A vivid reminder of our peaceful, scientific objectives.

ORLOVA: Sir, I volunteer to drive to Zvezda and bring them back.

COBB: I volunteer, too. The rocks will still be here next time. The cosmonaut won't be.

SLAYTON: Can't say I'm at all surprised you both want to make the run. It won't exactly be a joy ride down the highway.

COBB: I'm well aware. On the descent, I got an eyeful of blocks and boulders bigger than the LM not to mention the steep gradient down the rille into the crater.

ORLOVA: The gravel and lunar dust will be tricky, too, but the LRV should withstand the stresses.

While they talked, Natalya and Jerrie worked to complete setting up the LRV.

SLAYTON: Let's not get ahead of ourselves. Nobody on Earth has agreed—

COBB: Understood, but consider: you've seen I have the navigation chops. From my years as a bush pilot, I know a few things about going alone to help disaster survivors.

ORLOVA: Deke, the first task is locating the safest and sanest route on the fly. Rather like finding the correct route in road rallies. I've done that for years. I know how to work within the limits of the resources at hand. I'm good at tracking landmarks, evaluating abrupt changes in terrain.

SLAYTON: Can't argue with that, Natalya. Houston, pending a quick—and I do mean quick—feasibility check, we intend to proceed. Go ahead and loop in the State Department and the White House. Tell them NASA doesn't put rocks ahead of people. Not on my watch. Not when there's a chance of bringing a wounded cosmonaut to Friendship Base. And back to Earth.

MISSION CONTROL: Roger that.

While they waited a seeming eternity for word from Moscow, Natalya and Jerrie took the LRV for its initial test drive. Everything checked out. Deke relayed that to Houston as Jerrie and Natalya poured over their maps, refining the most plausible route. Natalya committed as much of the maps to memory as possible, a habit that served her well in road rallies.

MISSION CONTROL: We have Kremlin consent to the rescue attempt on condition that we say not one word for now. They insist on simultaneous statements afterward by Kosygin and Kennedy announcing our two nations have successfully carried out a pre-planned lunar rendezvous. That is, if it comes off.

SLAYTON: Let them have their fig leaf.

MISSION CONTROL: They're supplying us with detailed topographical data for the area surrounding Zvezda. But they warn us they don't have an adequate map of the terrain from the crater floor up into the Littrow Valley. Neither do we. We're sending you instructions for stripping weight from the LM and CM.

COBB: Wish we could strip out international politics.

MISSION CONTROL: We also have word that Belski speaks no English.

SLAYTON: That makes the lag time for translation a consideration. Natalya, how rusty is your Russian?

She pictured his eyes scrutinizing her. It was her second tongue after Ukrainian. Deke must not know she'd helped tutor Jerrie in Russian.

ORLOVA: I remember it well.

SLAYTON: And yours, Jerrie?

COBB: Adequate.

MISSION CONTROL: We've finished working the problem. We can confirm the feasibility of all aspects of the operation. We're ready to green-light a rescue mission.

SLAYTON: Roger, Houston. Natalya, you make the traverse. Jerrie, you prep the LM for an added passenger. I'll do the same for the CM.

ORLOVA: Aye, sir.

COBB: Roger.

MISSION CONTROL: Jerrie, here are the necessary adjustments to the LM. It'll be a tight squeeze, but the three of you will fit inside for ascent.

COBB: Does this include breathing?

SLAYTON: Exhaling is fine. Can't say I recommend everyone inhale simultaneously.

With that, the team transitioned to implementation. Jerrie stripped the LM of excess weight, what precious little there was to begin with, while Natalya worked out the finer details of the route to the crater rim and then downward, including pit stops to brush sticky lunar dust from the machinery. Previous missions had learned the hard way that the fine, abrasive dust might look like powdery black snow, but stuck to everything, scratching helmet visors, causing heat buildup and electrical malfunctions.

After Houston weighed in with refinements to the route, Natalya and Jerrie scrutinized the maps again. Once Natalya climbed into the LRV, Jerrie extended a gloved hand to her. "God-speed." Natalya strove to keep her expression impassive as they touched fingertips.

MISSION CONTROL: Natalya, we're relaying a message to you from Wally Schirra. He says, "Vroom, vroom."

ORLOVA: Copy that, Houston.

With confidence and apprehension, she set out across the airless, unmarked surface of the Moon. Venturing into the dazzling wasteland had little in common with a road rally and much in common with crossing a choppy sea. Try as she might, steering this way and that while skirting geologically-enticing formations, there was no rhythm to her movement. The hilly foreshortened horizon meant losing sight of Friendship Base before she was ready to give up the comforting sight of the LM gleaming like the beacon of home that it was.

As Natalya passed from blinding sunlight to shadows darker than any on Earth and the seconds ticked away, the fine lunar dust rose like a rooster plume of micro-needles behind the vehicle, threatening to invade the works. She chafed at the time lost to brushing the incessant, abrasive powder from the rover and her spacesuit.

Her son had never cared about dirt while playing with toy cars. She giggled at Pasha's likely reaction if he could be here: "Vroom. Go faster!" *If Jerrie can name our outpost Friendship Base, I can name this LRV "Vroom Vroom."*

When she'd practiced maneuvering the rover on Earth she'd grown irritated at Houston's backseat driving every tenth of a kilometer. Now, she would welcome a break from the lengthy silences. Solitude didn't bother her, not considering how many people at NASA and its contractors were doing what they could to help *Apollo 17* perform its reconfigured mission. Nevertheless, she recognized that unlike last time, millions weren't watching her follow in Pete Conrad's

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footsteps and become the second person on the Moon.

The next time Houston contacted her, it wasn't good.

MISSION CONTROL: We have an update from Moscow. Major Belski remains alive but unresponsive.

ORLOVA: I copy.

*What did they tell his children? They'd barely be teenagers now, too young to lose their father. They won't, not if I can help it.*

MISSION CONTROL: Natalya, the readouts on a couple of your vitals just jumped, provoking a discussion here.

ORLOVA: Houston, that may be due to the ride in this LRV. It feels like a bucking bronco in an amusement park. The low gee makes it fishtail if I steer into a turn at more than a whopping nine miles an hour.

MISSION CONTROL: Don't look for it to settle into a natural rhythm. You want to resist the temptation to be a lead foot on the downhills. That's your best bet for minimizing the dust spray.

*"Best bet." There's an American expression frequently coupled with "no guarantee."* The terrain had grown more rolling than anticipated. Vroom Vroom could handle it, but not as quickly as she wanted. *How long can he bang on?* Every stop to brush away Moon dust clinging to essential equipment took time and cut into Vroom Vroom's remaining battery life.

\* \* \*

Two hours later, nineteen miles out from Friendship Base, the trouble began. With a curse, Natalya stared at the boulder field stretching upward on both sides of her and twisting down the valley. Somewhere ahead lay Zvezda. Vroom Vroom was well beyond the range of its ground link with Friendship Base, although the parasol maintained direct contact with Mission Control. This necessitated relaying communications through Houston to either Deke in the orbiter or Jerrie at the LM. Natalya relied on the parasol as sparingly as possible because it ran off Vroom Vroom's battery, having only a small portable backup communications unit. Navigation via gyroscopes and triangulation grew increasingly challenging.

ORLOVA: I'm not seeing an obvious path through the boulder field.

MISSION CONTROL: We don't have sufficient granularity to determine a sure-fire route, either.

ORLOVA: I'll try veering three degrees to my right where the rocks look smaller and then work my way back.

After a pause, Houston concurred. Her progress through the maze went well. But not for long. As she maneuvered over loose gravel between two boulders, the back end slewed sideways. Whump! Natalya twisted her head. Her helmet prevented her from discerning what had happened to the rear wheel. Cautiously, she kept going. Right away, a terrible stream of dust came hurtling from behind over her head. It pelted her console, the front of the LRV and the ground in front of her. She stopped and hopped off. Dammit! A third of the fender lay on the ground by the boulder. There was no spare. The dust would wreak havoc with the thermal systems, as well as her suit, helmet, and visor. Without an intact fender, she'd be unlikely to make it even halfway back to Friendship Base.

ORLOVA: Houston, I've had a problem. Part of my right rear fender tore off. Sending you a picture. Can you advise how to reattach it? I'm eyeing the utility clamps.

MISSION CONTROL: The clamps are too small. Or rather, the fender is too thick for the clamps. We'll commence working the problem right away.

ORLOVA: Sure would hate to make Deke and Jerrie fly home alone.

MISSION CONTROL: Nobody here would be too crazy about that either.

ORLOVA: I can try overlapping the broken piece with the part of the fender that's still intact. Maybe I can duct tape them together.

MISSION CONTROL: Give it a shot. There might be too much powdery dust on both parts for the duct tape to adhere.

She brushed as much dust away as possible and made several attempts only to determine they were right. Meanwhile, Houston explored other solutions. Lovell had told her about the excruciating wait—over twenty-four hours—while the back room worked out a makeshift carbon-dioxide

scrubber for his *Apollo 13* crew to assemble from what was at hand. She didn't have that kind of time.

Growing up in Ukraine under Stalin did supply her with long experience at cobbling together basic necessities. Hmm . . . the laminated map pages in the case were stiff enough and dust-free, seeing as she had been relying on her memory of the route combined with several notable landmarks. If she duct-taped the four pages together to form a single sheet, she could bend it like the rest of the fender. Then clamp it on. If there were a better solution, it escaped her.

ORLOVA: Houston, I have a workaround for a makeshift fender. I can construct it from the maps.

MISSION CONTROL: Say again, *Apollo 17*. I thought I heard "maps."

ORLOVA: You heard right. Let me explain.

In due course, she reported back that it wasn't the prettiest fix but it worked.

MISSION CONTROL: Copy that. Now, find a place to turn around and head back to Friendship Base.

ORLOVA: What? I'm almost to Zvezda. I think the lower end of the boulder field is just up ahead. The crater floor should be rather flat.

MISSION CONTROL: Negative, Natalya. Too risky.

Her heart raced as fast as it had twelve years ago when she'd slipped past her official minder and fled down cobblestone streets terrified of forgetting those six English words she'd silently rehearsed.

ORLOVA: Let me go another hundred meters and evaluate how the repair holds up. I've come too far to give up on Belski, now.

*He's the father of my Pasha's little friends. If Kosygin blames me for not saving Belski, what happens to Tomas?*

MISSION CONTROL: The most prudent option is to abort now.

ORLOVA: I think I can make it to Zvezda.

MISSION CONTROL: Prolonging the traverse increases the likelihood of another mishap.

ORLOVA: I've gotten a better feel for how the LRV handles.

Her words were greeted with a good three minutes of silence. *Why are they taking this long to order me to abort?*

MISSION CONTROL: Natalya, we consulted Deke. He says, and I quote, "This needs to be Natalya's call. Sounds like she's determined it's an acceptable risk."

ORLOVA: That's correct. It is an acceptable risk.

MISSION CONTROL: Carry on.

She let out a silent sigh of relief. *Deke just granted me the same measure of autonomy he'd give one of his Mercury 7 cohorts!*

Fifteen minutes later, with the duck-taped maps serving as an ersatz fender, Natalya spotted two curved parallel lines twisting around boulders and heading downward. Tire tracks! Her excitement mounted as she grew closer. Stamped in the regolith was the same offset pattern made by tread strips that Pasha once created when rolling his toy across the creamy beet schuba. Korolev must be using Tomas's tire design for the full-sized Lunokhod rovers. *All I have to do is follow the trail.* "Come on, Vroom Vroom," she murmured, "you can do it."

MISSION CONTROL: What's your status, Natalya? Your pulse and respiration took a jump.

ORLOVA: I can follow the tread pattern on top of the schuba.

MISSION CONTROL: Say again?

ORLOVA: I located Lunokhod tracks. They lead around a house-sized boulder. I'm at the crater floor, I think.

MISSION CONTROL: Good to hear. Last time you went to the Moon, you made a bunch of our guys turn blue while you scouted out a landing spot. Until today, I never thought you'd have us turning blue again.

ORLOVA: I promise not to make a habit of it.

MISSION CONTROL: Copy that.

After she hopped out to brush away Moon dust, Natalya pressed on, considerably relieved. *If I*

*succeed, might they let me see Tomas again? After all these years, what could I say to him?*

She kept as wide a berth as she could while skirting obstacles. There was the crater floor! She stopped and gazed carefully, almost overlooking the Soviet Moon base. The habitat's regolith-coated mounds blended almost perfectly into the landscape. Viewing the triple-domed habitat, her eyes fixed on the curve of the large dome, which cut off abruptly. The two smaller domes were reduced to heaps of rubble. A single lander appeared intact. She gasped at the realization that the twisting wreckage near the destroyed habitat must be the second lander. The power station, situated beyond the disaster zone, appeared operational. Even with her Geiger counter quiescent, she'd better keep her distance from it.

MISSION CONTROL: How ya doing there, Natalya? Your biometrics took another jump.

ORLOVA: Not surprised. I have visual sighting of Zvezda—what's left of it. Looks like the main habitat experienced an explosive decompression. The reactor appears to be functioning. Only one lunar lander is intact. Sending you images. I'll attempt contact.

MISSION CONTROL: Roger that. We will advise our counterparts. You are go for initiating contact.

*This wreckage of Zvezda is as close as I'll ever come to setting foot on Soviet territory again.* She drew closer, circling around jagged hunks of blast debris that could easily puncture or rip a spacesuit. The inert body of a cosmonaut in a torn spacesuit coated with the cursed gray dust lay amid the destruction. Shaken, Natalya steered toward the more distant lander.

Parked next to it was a six-wheeled Lunokhod. To behold it in the airless wilds! Her breath caught. Tomas had done it. All that effort for his brainchild to come to fruition. The product of over a decade of engineering, imagination, experimentation, sweat, and persistence.

After one more update before cutting contact with Mission Control, she switched to the Soviet's radio channel. *Sure hope I can make contact.* In Russian, she said, "Greetings, Comrade Major Belski. I am Astronaut Natalya Ivanovna Orlova." The silence lasted seemingly forever, but was doubtless only a couple of minutes. She tried again. "It's been years, Roman Antonovich, since we saw each other. I'm approaching Luna 27 now. Are you in there? . . . Do you see me? . . . Can you speak? . . . Please understand, I've come to help you."

The silence grew while she parked beside the Lunokhod and shook weariness from her stiff legs. "I am climbing the ladder to the hatch." Still no response. Reaching what NASA called "the porch," she noted the hatch wasn't sealed. "You have my condolences, Roman Antonovich, on the loss of your comrades. I have brought emergency supplies."

She wiped the dust-coated hatch window. The interior was brightly lit. A lone helmet-clad figure lay slumped, his pale, sweaty face turned toward her and his eyes closed. She recognized those harsh features and bushy black eyebrows that nearly met. The cosmonaut's arm patch on his suit confirmed it: Belski. His chest rose and fell with fast, shallow breaths.

Natalya all but shouted, "Comrade Major Belski, I've come to help you."

The man stirred, his eyes fluttering. He moaned.

"Don't move, Comrade. I'm right outside the hatch. Are you in pain?"

"Ankle . . . hurts." Belski struggled to shift it and abandoned the effort with a grimace. No bone pierced the lower leg of his spacesuit, but he could have suffered a break or incapacitating sprain.

"Stay still until I stabilize it. How's your oxygen?"

He glanced at a wrist gauge. "Yellow."

Not yet critical. A display by the hatch indicated no oxygen inside the lander, which meant he was dependent on what was left in the tank on his back until she could hook up his life-support hoses.

"Did you take a pain reliever?" In her day, cosmonauts' suits had been equipped with several emergency medications, including a strong narcotic. Doubtless they still were. As she spoke, she cast around for something to serve as a splint.

"Da."

"Right after the accident?"

"Da."

That was several hours ago. "Take the next one. It's time. With a couple sips of water." She pulled open the hatch with a smooth motion she last practiced during her cosmonaut training. "Not too much water until I reconnect your life-support." His mouth worked inside his helmet, finding a tube. "That's it." Natalya stepped through the entryway to where Belski lay. "Where else does it hurt?"

"My knees. When I ran in here, the lander shook, and I fell sideways. My foot flexed and twisted." He gestured.

"Stay still while I check your vital signs. . . . They are acceptable. Now let's get your ankle splinted. Then I'll top off your oxygen and water and bring you to safety."

He looked puzzled. "Safety where?"

"Friendship Base. Up in the Littrow Valley."

His eyes fixed on the American flag partially visible beneath a smear of gray Moon dust. He must have been too out of it to comprehend her initial greeting. "I'm Astronaut Natalya Ivanovna Orlova. It's been years since your children and my boy played at—"

A frown drew his eyebrows together. If they weren't wearing helmets, he might have spat in her face. "Orlova! Defector. Traitor."

Natalya clenched her jaw. *Damned Russian. Eager to revile me forever. Tomas bears the brunt of hatred from men like him.* She let out a breath. "That is between our countries, Roman Antonovich, not between you and me. I've got enough to do to get you back to Earth."

"Earth? I'll never see my wife and children again. They know the risks as well as I do."

"You think about your reunion with your family. I'll keep working." She checked the life-support hoses, having no patience for his scowl. "No apparent damage." She fumbled with her clumsy gloves to hook up the first connector.

"You do a lot for a man who is going to die."

"A broken or sprained ankle isn't a death sentence."

"What happens if you do bring me to the Capitalists' outpost?"

*Here it is. Can I put to rest his cynicism?* "Listen. My government supported my desire to come all this way to save you. From Friendship Base we will go home."

"Am I to become a trophy in a Western prison camp?"

"No." At his suspicious scowl, she added, "The Soviet pilot who flew that MiG to Hokkaido isn't in prison."

"Your country refused to turn him over to us."

"That's true." *He sought asylum, like me.* "See here, either we work together to get you back to Earth or we don't."

Belski let out a breath and looked her full in the face. "I suppose I have no better choice than to act as though you mean this." With a gloved hand, he steadied the first connector. She hooked it up. Silently, they did the same for the rest.

Nothing inside the lander proved suitable for a splint. With a sigh of relief, Natalya ducked outside to survey the detritus. A couple of dented aluminum rods and duct tape would have to suffice.

By the time she went back inside, Belski's color, breathing, and pulse had improved. She set about stabilizing his ankle. They got through the task with a minimum of cursing.

"Now we need to get you out to the rover. Can't say I like the idea of you climbing down the ladder. Not to mention crawling on hands and knees through that dust dragging your foot."

"There is a three-wheeled stretcher in the large dome. It has a pulley for you to hoist me up at an angle. A single person can maneuver the stretcher." He described where it was situated.

"Don't you move. I'll have a look." She hurried out to the semi-intact dome. Sure enough, strapped to one wall was what looked like a cross between a tripod and a three-wheeled hand truck. Those steel mesh tires spoke of Tomas's ingenuity. The U.S. had nothing like this. Soon enough she had Belski strapped onto it and lowered via pulley to the surface. She wheeled him over to the two roving vehicles.

Now came a crucial decision: whether to rely on the Lunokhod or Vroom Vroom for the daunting uphill traverse to Friendship Base. The Lunokhod had longer battery life, thus a greater

range. It was also in better condition, with no jerry-rigged fender threatening to fall off, thereby inviting the ubiquitous dust to cause mischief.

Natalya said, "I've never driven a Lunokhod, but I have confidence in my husband's design." Belski's scowl had crept back.

"What am I missing?"

"The Kremlin will condemn me if I let you have a working Lunokhod, Orlova."

"I'm here to bring *you* to Earth, not your transport."

"Have you any idea of the Kremlin's response when our Air Force generals let the capitalists get hold of the technology in that MiG?"

"The U.S. government gave the plane back."

"Disassembled. In crates. With parts missing."

"I give you my word, Roman Antonovich, not one piece of this Lunokhod will leave the Moon aboard *Apollo 17*. Not one."

He favored her with a long, searching stare before saying, "Let me explain how to attach the stretcher to the vehicle."

Before getting him situated, Natalya switched radio frequencies and contacted Houston for the go-ahead to use the Lunokhod for the return trip. She met double-barreled resistance. The engineers' opposition stemmed from their lack of familiarity with the Lunokhod's technological capabilities. Capcom hated the prospect of abandoning the parasol's high-gain capability and with it, direct voice communication to Earth. The Lunokhod's antenna produced a much weaker signal, useful for barely more than beaming black-and-white low-res photos. However, Jerrie sided with Natalya. A career spent flying whatever she could get her hands on undoubtedly reinforced her penchant for adaptability and pragmatism. Deke broke the impasse by supporting Jerrie and Natalya. He coolly informed Houston that the back room was welcome to keep on assessing the capabilities of the Soviet vehicle right up until "the odd couple in the Lunokhod rolls into Friendship Base."

With that, Natalya bid Houston a temporary goodbye and switched back to Belski's radio frequency. Reduced gravity helped her settle his stretcher into the Lunokhod, half-folded so he could sit up facing forward with his legs straight out. The last task before they set off was to hook up full air tanks. As with other Soviet and American equipment, these were not interchangeable, but the six-wheeled vehicle had sufficient storage capacity for a lot of spares.

Retracing Vroom Vroom's tracks proved easy enough until half way up the boulder-strewn ascent. There, the grade became too steep for the vehicle to manage with two passengers. Belski was in no condition to walk or drive. Worse yet, after seven switchbacks, they'd lost the LRV's tracks. They could keep going even though the area didn't look familiar to Natalya. Belski had never come up here. She groaned. The NASA maps were not sufficiently granular to be of much use and neither were Belski's. Better to backtrack and see if they could find the LRV's tire tread.

Natalya turned around and searched. "C'mon Vroom Vroom," she muttered in Russian, "your tracks must be here somewhere."

"Vroom vroom?"

"I named my vehicle 'Vroom Vroom' . . . in honor of my Pasha. Tomas gave him a toy car. I can still see him rolling it around, saying, 'Vroom, vroom.'"

Belski grimaced and stayed silent for some minutes as they descended. At last, he said, "My Anya and Mikhail were heartbroken when I had to tell them their little friend was very sick . . . Later when they could see him no more, they sobbed inconsolably."

"The way children do." *The way Tomas and I did.* "Mikhail and Anya must be thirteen or fourteen by now. How are they?"

"My son wants to be a cosmonaut and my daughter an engineer."

"You must be very proud." *What path would Pasha have wanted to take?*

He gestured toward Zvezda. "My photo of them was destroyed in the mishap."

"I promise you I will do all I can to make it possible for you to have new pictures of your family together."

More of his stiffness eased up. "I . . . thank you."

They'd come a good way down the rille when Belski spotted the track curving away from them. They followed it, soon chugging upward once more, making smaller zigzags where necessary. It took longer, but at last they reached the upland. Natalya stopped to brush lunar dust off the Lunokhod's radiators, with Belski giving her tips for doing so as efficiently as possible.

That done, she came around to his side of the Lunokhod to stow the brush and survey the barren terrain.

He surprised her by saying, "When you visited the Sea of Tranquility . . . it was said you traced Pasha's name in the regolith. Did you?"

"He used to beg me to fly him to the Moon. Every time, I shook my head. He looked so sad when I told him it was too far and he was too little. So in the Sea of Tranquility, I picked a sheltered spot between two rocks and wrote his name in the dust. In Cyrillic and below it in English. That was the least I could do for my son."

As she spoke, Belski blinked and pressed his lips together. "I inscribed Anya's and Mikhail's names where I hoped they would last a long time. That place lies covered with rubble." His injury made it inadvisable for him to attempt doing so again.

Picking up a sharp rock Natalya said, "Here, I will write your children's names in the lunar soil."

His head jerked to fully face her. "I would be grateful . . . Natalya Ivanovna." It was the first time he had not addressed her rudely by her surname.

She took a photograph of her handiwork before they set off again. Tomas's engineering creation proved reliable, even if the ride felt like a stiff ocean chop. Thankfully, the Lunokhod wasn't as prone to fishtailing as Vroom Vroom. After several more stops, they glimpsed Friendship Base glittering around the curve of a hill. Her breath caught at the brilliant sunlight gleaming off the LM.

Soon, Jerrie Cobb came moonwalking as fast as physically possible toward them. The LM's camera captured the rendezvous, complete with the Lunokhod and American flag planted nearby. Mercifully, the soon-to-be iconic photograph concealed Natalya's exhaustion and Belski's pain.

ORLOVA: Houston, I'm reporting from Friendship Base. Major Belski and I completed our traverse.

MISSION CONTROL: Looking good, Natalya. Major Belski, on behalf of the United States, welcome to Friendship Base.

COBB: Let me add, that's one skilled buggy ride for a woman . . . one giant Lunar road trip for all humanity.

\* \* \*

## January 1973

Her mittened hands curled inside her coat pockets as Natalya scrunched her face against the bracing cold that conjured frozen memories of the bleak Kazakh Steppe. From her place at the U.S. Capitol between grinning Jerrie Cobb and proud Deke Slayton, she had a fine view of President Bobby Kennedy as he delivered his second inaugural address to an enthusiastic crowd stretching clear to the Washington Monument and beyond. A breeze ruffled his thatch of hair, partly revealing an ugly scar, the legacy of the assassin's bullet that grazed his skull in 1968. *I can hardly believe those pundits who credit me—ME!—for his reelection in November. It's been barely three months since splashdown, and I still feel like I'm riding atop a rocket fueled by glee every time I catch sight of another giddy headline.* They'd proclaimed: GREAT LUNAR ROAD TRIP! MOON RESCUE IS ANOTHER DOOZIE, and ORLOVA HAS THE RIGHT STUFF.

"Listen," Jerrie's voice nudged her back to the present.

"—future in space lies not in competition, but in cooperation," said the president. "I share with Premier Kosygin the joy of witnessing an American astronaut and a Soviet cosmonaut traveling together across the Moon. We are even happier they came home side by side aboard *Apollo 17*. I commend Commander Natalya Orlova, NASA Administrator Deke Slayton, Pilot Jerrie Cobb, and Major Roman Antonovich Belski. You showed the world how to work together, overcome distrust, and do great things. Let nobody doubt that our planet is big enough for us to live in peace. To cement a new era of detente, our great nations have resolved to dock an Apollo spaceship

with a Soyuz spaceship in orbit above the Earth.”

The crowd erupted into cheers, forcing Natalya to blink back tears. *I wish Roman Antonovich could be here to see this.* Last week she had accompanied Jacqueline, Deke, Jerrie, and State Department diplomats who escorted him to the Soviet embassy. Inside the imposing stone building, with lofty words of diplomacy echoing around a luxuriously ornate chamber, it was time for farewells. Despite his crutches and a cast, courtesy of what doctors termed a “high ankle sprain” separating tibia from fibula, the two of them managed a careful embrace. “Come visit America again,” she said. “When you are healed, Roman Antonovich, I will take you on a road rally.”

The corners of his mouth twitched upward, as did his nicely groomed mustache. “They do serve as valuable training, I see.”

“I can always use a reliable navigator. We make a pretty good team.”

He gave her a big grin. “That we do, Natalya Ivanovna.”

Jerrie nudged her again.

“—only the beginning, my friends. Through the International Space and Planetary Agency—ISPA for short—let us open new worlds of opportunity and human understanding. Let us create a permanent outpost on the Moon with an orbiter to circle it. Let us work toward the day when our descendants look upon us as the founders of a shining city on the Moon—a city from which they may go forth to follow their dreams to distant stars.”

The president’s enthusiasm swept through the crowd.

\* \* \*

## June 1973

The 1973 Paris Air Show was bigger and ought to have impressed Natalya more than the only other one she ever attended. Maybe it would have if the 1965 expo hadn’t changed her life. Or if recent aerospace advances weren’t overshadowed by the Kremlin’s promise to permit her a brief, unofficial visit with Tomas.

For the fifth time in six minutes, Natalya glanced at her watch. Onion Breath and Too Much Aftershave eyed her impassively, no doubt mindful of the miniaturized cameras and bugs the Soviets had hidden in this cramped and austere hotel meeting room. Miniaturization—yet another spin off from the space race. *How much longer will the Kremlin string me along? If there’s anything I’ve perfected living in one soviet socialist republic after another, it’s holding onto hope beyond the point when those in charge count on me giving up. There’s nothing to do now but steel myself against disappointment or it will pierce me.*

Sitting in the unyielding metal chair, she drew her sweaty hands across her slacks and debated which was more unexpected—that Tomas would consent to see her, despite the risk, or that his official handlers and Kosygin himself would permit it. Her brain whirled. *I don’t dare ask his forgiveness, no matter how much my defection caused the hurts he suffered. An apology would give Kosygin’s people an opening to twist my words against me, against the U.S., against women who yearn for the opportunities afforded me. Besides, Tomas must know I would make the same decision again if given the chance. All I want is to show him my only picture of Pasha, the one I took to the Moon and back twice.*

She scrutinized her CIA handlers again. *Which Soviet faction passed them Tomas’s photo and letter?* At first, she’d supposed it was Brezhnev’s people in their zeal to remove her from the public eye, thereby reducing the likelihood of further reprisals against Korolev and Tomas. But it could have as easily been Kosygin’s cronies who would have loved to get credit for squelching her after she eclipsed Tereshkova’s firsts. *I may never find out. I still don’t know why OB and TMA showed me the picture and letter. Were they unsure of my loyalties even after six years? What did they learn from my responses? Did I pass a hidden loyalty test? Is this why they permit me to meet Tomas today?*

After another eternity, the door opened. In strode two imposing monitors clad in military uniforms. Tomas followed, his eyes big, his mouth open in wonder. Her own mouth hung open too. *Neither of us can believe it.* A soft cry escaped Natalya’s lips. Wordlessly, he opened his arms. She flowed into them and pressed her face against his cheek, burying her nose in his hair, which hung longer than it once did. It still smelled of him.

They stood clutching each other, swaying, not letting go for anything while precious minutes sped by and still they said nothing.

He drew back first, holding her at arms' length. "All these years, Natasha. Over and over, I imagined this. It kept me going."

She'd never—not once—envisioned a moment like this. No, this wasn't something she could tell him.

"Let me look at you." His hands clung to hers.

She became acutely aware of the gap where his missing finger should be. And the broken one next to it that hadn't been set properly. *I must not show discomfort or draw his attention to his maimed hand.* Except that she already had.

"Tomas," she began, "if certain things could have—"

With a sad half smile, he said, "I've learned to live with it." The look in his eyes convinced her he meant this.

"The price you paid for my freedom."

"It could have been more costly." What anger may have once burned within him had dwindled to embers and was now nothing but ash. Tomas withdrew his intact fingers from her hand to thrust them into his pocket and pull something out. Pasha's car—gray and battered but with the boy's initial scratched in the paint. One back wheel was gone. The other five bore the same tread pattern she'd followed in her dreams night after night for months.

"This is what got me through . . . uncertain times, Natasha, when our Chief Designer was gravely ill. Now, I think wherever you go, whatever you do, you take it with you." He held it out to her.

*Uncertain times.* They'd likely consigned Tomas to an insane asylum—an updated incarnation of Stalin's gulags. She didn't need to glance at the monitors standing behind him to know how little he could reveal.

He went on, uttering words that sounded forced. "I am thankful Soviet surgeons saved Comrade Korolev when he was near death."

*It wouldn't surprise me if Korolev's doctors almost killed him with their incompetence.* "Ukrainians are survivors," she ventured.

"After he recovered, I was honored to resume my work for him. Last year, Chairman Brezhnev had the Chief Designer officially recognized as a Hero of the Soviet Union." Tomas glanced at the car, then into her eyes. "The whole world knows how my sturdy Lunokhod held up when you drove it across the desolation of the Moon."

"I searched for longer than was wise for Roman Antonovich. I couldn't give up. When I spotted your tread pattern in the regolith, my heart sped up. You made it possible for me to drive him all that way to Friendship Base." She hardly dared touch the little car he'd given their boy. "Do you remember how gleefully Pasha shouted, 'Vroom, vroom?'"

"He startled me, pushing the toy into his schuba like that. It got me thinking about better tire material, optimal tread configuration, improved fenders."

Silently, Tomas offered it to her again. Natalya hesitated.

The door opened to admit a third broad-shouldered monitor. "Time's up."

"I brought you something, too." Natalya took out the fading photo of Pasha. To allow Tomas nothing except a single look at this—*it's my only copy*—felt cruel.

His big eyes filled with tears. He stretched out trembling fingers as if afraid to touch it. "Pasha."

"I said time's up," the third monitor barked.

"Not quite," OB said.

"I carried his picture with me to the Moon. Now go on, take it."

Instead, Tomas drew his hand back. "You need to keep it, Natasha, for when you face uncertain times."

No. She shuddered inwardly. *The United States will never do to me what Kosygin did to you.* "I have another copy," she lied.

After a moment's hesitation, he reached for it. The tips of two intact fingers barely brushed hers when he took the photo. The monitors made no protest as he tucked the picture in his pocket. For a third time, Tomas held the toy Lunokhod out to her.

## ANALOG

“Your rover brought me back to safety.” Keeping her eyes on him, she took it and put it in her purse. “You know, if I drive one on the Moon again, it could use . . .”

His expression stopped her. “Always wanting more, Natasha.”

The monitors led him away, but not roughly.

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