



# DAY TWO

## Washington, DC | The White House Situation Room

White House Chief of Staff Pat Heffernan sat at the head of the conference table and looked at the four experts arrayed on either side of the table. “Let’s get to this,” he said. “It is”—he checked his watch—“six thirty in the a.m., I have a briefing with the president in exactly half an hour, and because we all know he doesn’t bother to read the daily intelligence briefing, it will fall to me to explain what the hell is going on. So explain it to me. Use small words on me so I can use smaller words on him. Somebody start.”

Nobody wanted to start.

“The news is that good,” Heffernan said, wryly, and pointed to Dr. Debra Dixon, from NASA. “You. Begin.”

“Uh, at approximately five p.m. yesterday Eastern time, NASA became aware that several Apollo-era lunar-based retroreflectors—”

“And you’ve already lost me,” Heffernan said.

Dixon cleared her throat and tried again. “We have a bunch of mirrors on the moon.” She paused to make sure this was understood. “We shoot lasers at them for science. Yesterday afternoon the mirrors stopped working.”

“Why did they stop working?”

“It wasn’t clear at the time. We had mirrors at three sites, and there are three other sets of mirrors, two from the Soviet era and one from the Indian moon landing in 2023. Those stopped working as well.”

“We asked the Russians and Indians about this?” Heffernan asked.

“No, we shot lasers at those mirrors, too.” Dixon said. “Or where we knew they were supposed to be. We didn’t need their permission to do that. They’re mirrors. They reflect for anyone.”

“Okay, so mirrors are missing on the moon. So what?”

“After we lost contact one of our stations involved in the International Laser Ranging Service—”

“The what?”

“It’s a service that allows us to track satellites and other objects in near space to millimeter accuracy,” said Alan Glover, who was in the meeting for the National Security Agency. “It also provides data on the location of the moon.”

Heffernan grunted at this. Dixon continued. “Since we couldn’t use the mirrors, one of our stations ranged the moon using an older method called EME, or a ‘moon bounce,’ in which we reflect radio waves directly off the surface of the moon. That’s when we discovered another issue.”

“What was the issue?”

“Uh.” Dixon looked around the table. “The bounce returned earlier than expected, sir.”

Heffernan looked annoyed, and was opening his mouth to remind Dixon about making things simple, when Colonel Glenn Axel of the Space Force spoke up. “It means the surface of the moon is closer to Earth than it used to be.”

This got Heffernan’s attention. “How much closer?”

“About three hundred miles,” Dixon said.

“How did the moon suddenly move three hundred miles closer to Earth?”

“It didn’t,” Dixon said.

“But—” Heffernan stopped. “It’s beginning to feel like ‘Who’s on First’ in here,” he said. He looked around the table and saw blank expressions, and realized how much older he was than all the other people at the table. “Forget it. Explain to me how the

moon is three hundred miles closer and yet somehow *not* three hundred miles closer. Small words.”

“It grew.”

Heffernan blinked at this. “The moon is rock. Rocks don’t grow.”

Dixon paused for a moment, and Heffernan imagined her brain filled with examples of how rocks could, in fact, grow. If that was indeed what she was thinking, she said none of it. “We’re looking into it now, sir. The point is that the moon is exactly where it should be in its orbit, and also, its surface is three hundred miles closer to us. Which means that the diameter of the moon is roughly six hundred miles wider than it was before roughly five p.m. Eastern time yesterday.”

“How is that possible?” Heffernan asked.

“It’s not,” Colonel Axel said. “There is no logical or scientific explanation for the moon instantly gaining six hundred miles in diameter. It is literally impossible.”

“It’s impossible but it happened,” Heffernan said.

“Yes,” Axel replied.

Heffernan rubbed his forehead. “So now I have to go up and tell a president—*this* president—that in an *instant*, the moon somehow accreted six hundred miles of rock.”

Almost inaudibly, Dixon squeaked.

“I heard that,” Heffernan said, and pointed once more to Dixon. “Explain that squeak.”

“Oh, I *really* don’t want to,” Dixon said, to the room. “Someone else do this one, please.”

“I’ll answer this,” said Dr. Miriam Golden, from the National Science Foundation. Eyes turned to her. “The moon’s diameter is six hundred miles wider than it was yesterday, but its mass is the same as far as we can tell. If it wasn’t we’d already be seeing evidence of it. Higher tides, for a start. If the moon is physically larger and has the same mass, then whatever it is made of is less

dense than the basalt and other material that made up the moon as we knew it.”

“All right,” Heffernan said. “What is the new, mysterious substance that the moon is made out of again.”

Another nearly inaudible squeak from Dixon.

“Stop that,” Heffernan snapped at her. He looked back to Golden. “Do you know?”

“It’s being looked into,” Golden said. “There’s nothing we can confirm yet. But yesterday, around the same time as the moon mirrors went missing, Space Center Houston reported a problem with their store of lunar samples. We first thought it was theft, but then other places in the US that have or store moon rocks reported the exact issue at the exact same time. In all cases the moon rocks were gone and replaced with objects made from another substance entirely.”

“What substance?” Heffernan asked.

Golden looked directly at the White House chief of staff and answered calmly and evenly. “Cheese,” she said.

Dixon squeaked again.

Heffernan burst out laughing, went on for a good long time, and then stopped when he realized no one else at the table had even cracked a smile. “This is a joke,” he said. “It *has* to be a joke.”

No one responded.

“You have to be fucking kidding me,” Heffernan said, to the room. “I have here representatives from both our science and intelligence community, and all of you are telling me the moon—the *whole fucking* moon—has been turned to goddamn *cheese*.”

“That’s right,” Golden said. She at no time had taken her eyes off the chief of staff.

“Bullshit!” Heffernan said. “It’s not possible.”

“It’s not possible,” Axel agreed. “It’s also our best guess at the moment.”

“How the hell is *that* your ‘best guess?’”

“We *checked* it,” Dixon said, speaking up. “We tested the cheese that replaced our lunar sample. We determined its mass and density. Then we applied those figures to the moon. They match.”

“What does that mean, ‘they match’?”

“It means they match!” Dixon said. “If you had a moon made of this specific cheese, with the same mass as our previous moon, it would have the diameter it now has. Almost exactly.” She put her head in her hands and stared at the conference table.

Heffernan considered this for a minute. Then he said, “What kind of cheese?”

“It’s not *just* that it’s cheese,” Dixon burst out, raising her head again. “It’s that it’s *undifferentiated* cheese.”

“Is that . . . a type of cheese?” Heffernan asked.

“She means that it’s the same all the way through,” Axel said. “The moon and the earth have different layers to them. Rocky crust on the surface, molten or partially molten rock further down, and then a solid core. This new moon doesn’t have layers. We can tell that from the diameter and the lunar samples we have here on the planet. It’s cheese of the same density and consistency all the way through.”

“For now,” Dixon muttered, darkly.

“For *now*,” Heffernan repeated, question implied.

“She means that a mass of cheese sixteen hundred miles in diameter isn’t likely to be stable,” Golden said. “It’s going to start collapsing on itself soon.”

“Is that a threat?”

“We don’t know yet,” Golden said. “We have to model it.” She looked over to Dixon, who was now resolutely staring at the conference table again. “And we still have to confirm that the moon is made of what we think it is. All the evidence we have right now checks out, but it’s still just a hypothesis. We’ll need to get more data.”

“When will we have it?” Heffernan asked.

“We’re already working on it.”

“Who is working on it?”

“We’re *all* working on it,” Axel said. “It obviously has scientific and security issues.”

Heffernan considered this and then looked at Dixon. “What does this mean for the moon landings?” NASA had been promising to go back to the moon for decades, and had finally scheduled crewed landings. Test flights, from NASA and from private parties in other places, were already scheduled; an uncrewed flight from PanGlobal Aerospace, designed to test the soundness of the lunar lander NASA had commissioned them to construct, was going to be launched from Ecuador in a week.

“It’s difficult to land on cheese,” Dixon said.

“If it is cheese,” Golden said to Dixon.

Dixon nodded. “Whatever it is, we’re not likely to risk landing on it until we know it’s safe. It’s not my decision, but I wouldn’t be surprised if landings are delayed indefinitely.”

Heffernan grimaced at this. The president had famously wanted to be an astronaut growing up, and fervently wanted a moon landing during his administration. He would be unhappy with any delay. He put this out of his mind for the moment, and turned to Alan Glover of the NSA. “Who knows about this?”

“About there being something going on with the moon?” Glover asked. “Literally everyone on the planet. The moon is up in the sky, close to the sun. Cheese or not cheese, whatever the moon is made of right now is a lot brighter than moon rock was. The sun is up now. We could go outside and look at it ourselves.”

“Does any of the chatter you’ve picked up suggest anyone else knows the . . . cheese connection?” Heffernan asked.

“Nothing specific,” Glover said. “We have public and secure chatter about the moon, obviously. Scientists are talking openly about it on social media. Even without the benefit of *samples*”—Glover motioned toward Dixon—“they’ll have already figured out diameter, mass and density. That’s just math.”