

A Day in the Sun

David stood on the podium, took the director's hand in a firm grip. He smiled, accepted the Nobel Prize for Physics in his other hand, turned to the audience and held up the medal. The audience applauded. Finally, they'd recognized and rewarded him for the countless hours of work at the observatory.

Some idiot's cell phone rang. Rude. Didn't have the decency to put it on vibrate before the awards ceremony began. The guy's cell rang again. Why didn't he answer it? Everyone turned to look at the offender, who made no effort to silence the damn thing. Wait. That ring tone, the theme from Star Wars, came from the phone in his pocket.

David woke up, fumbled to retrieve the phone, and answered it. "David Mitchell." He tried to clear the cobwebs, wondered why he was fully dressed. It was dark out.

"Wake up genius. Look outside."

"What? Who is this?" He stumbled toward the window. He'd been working late on his calculations, laid down on the couch to close his eyes at 4:00 am. He opened the curtains, snapped awake, nearly dropped the phone.

"You told us this would never happen." He recognized the voice. It was Tom Keys from the Goddard Space Flight Center, his contact since the sunspot storm started last month.

David couldn't believe what he saw. It was dark but not dark. An eerie kind of dark glow, like a room lit with a black light, filled the sky. He could see the sun but it wasn't putting out much light. People in the street stood in small groups with fingers pointed upward. No one predicted an eclipse today.

"What time is it? How long has this been going on?"

“9:00 AM your time. Started about three hours ago, right when that last comet hit the sun. What are you going to do, smart ass?”

“Don’t call me that. I’m going to get dressed and go back to the lab. Wait, I’m already dressed. I’m on my way.” He stabbed the iPhone, grabbed his keys, raced out the door. He didn’t need to go to his office. His Internet connection at the apartment was more than fast enough to display the images from the new telescope on Maui. What he needed was time to think.

Comets hit the sun all the time. There was no connection between sunspots and all these comets. It shouldn’t matter that they’d noted so many sunspots lately. He’d link to the SDO space telescope first. No, the images from the new solar telescope on Maui would be better.

David hated this part of his job. He served as the resident expert with the National Solar Observatory so the media expected him to have answers. How did you explain something that you and every other solar scientist knew could never happen? The sun was a big thermonuclear ball of plasma that generated light and heat. Only now that ball of plasma had gone dark.

He jumped in his old pickup truck, headed across town to the campus. In the ten minutes it took to get there, the light from the sun increased by at least half. He pulled into the faculty parking lot, found his spot, ran for the lab.

“Looks like you slept in those clothes.” Joe, one of his research assistants already had the link to the SDO on his screen. David slid into a seat next to him. He focused on the screen.

“I did. What’s been happening?”

“Never seen anything like it. Several of those large sunspot groups we’ve been tracking merged a little over three hours ago.”

“What do you mean merged? Joe, we know they can’t do that. You know the polarity of each pair keeps them apart.” Joe was one of his sharper graduate students.

“I know. Tell that to the sun. Once the first group merged, they grew faster.” He brought up recorded SDO video from the time the phenomenon started.

“This is impossible.” David witnessed the history-making science with his own eyes. He watched a comet dive into the sun. A huge coronal mass ejection erupted on the far side. A massive ripple of energy spread like an earthquake across the surface of the sun. At the same time, the sunspots began to merge and grow. Within minutes, the entire face of the sun darkened.

“Bring up the images from the STEREO satellites on the big screen. I want to know how large that CME really was,” David said. A small crowd of graduate students and faculty had joined them. In David’s excitement he didn’t notice his assistant staring at him.

“Are you tracking here or still asleep? You know both the satellites fly behind the sun for a few more weeks. They recorded whatever got blown out in that CME but we can’t get at the data to see it yet. Which is too bad because that’s the first question you’re going to be asked.”

“Damn. Can you bring up the feed from Maui? I want to see those spots up close.”

“Already running in the background. Here it is.”

Even though it was early morning in Hawaii, the images looked sharp and clear. The ATST was the largest solar telescope in the world, online a few months earlier. David felt overwhelmed at the size of the sunspots. He watched while several of them separated and shrank, dissolving before their eyes.

“I’ve never seen anything move that fast. It’s almost as if a force above the surface of the sun pulled the magnetic fields instead of from below. See, look there.” David jumped up, pointed to the projection display. Joe had switched from the small monitors so more people could see.

The swirling vortices at the edges of the sunspots reached up in parallel twisted filaments that stretched far beyond the normal limits of solar prominences. These tornados of massively heated material behaved as if they were solar lightning, electric arcs in parallel.

Joe had several projection monitors going now, each one displaying the image from a different satellite or observatory; SOHO on one, SDO on another, Maui on a third. The crowd was fairly buzzing with excitement now.

“Too bad we couldn’t get Hubble on this when it was dark,” David said.

Joe turned to look at him. “I called Washington. They couldn’t get the telescope away from Dr. de Jong in Potsdam. You know how long it takes to get time on that thing. Besides, the light would destroy the instruments.”

David pulled out his iPhone. “Looks like solar output is almost back to 100%. That took less than four hours.” He checked the time, placed a call to his Washington contact. He got up and walked toward his office. He wanted no one to overhear this conversation.

“Well, genius?” said Tom.

“Well what?” David said.

“What are you going to say?”

“What do you mean ‘what am I going to say?’ I’m going to tell the truth. We have no idea what just happened.”

“You can’t say that.”

“Why not?”

“Do you have any idea what kind of crazies will come out of the woodwork over this one? You tell them we need more time to study the data.”

“Well, duh. That’s obvious. We’ll release the SDO video and the close-ups from Maui.”

“Good.”

“I’ll tell them we’ll have the STEREO images in a few weeks.”

“Don’t tell them that.”

“Why not?”

“Don’t promise those images until we review them.”

“OK. What are we looking for?”

“You just keep checking every day where we told you to look. You’ll know it when you see it. Make sure you’re the first to report it to CBAT. I want your name on that comet.”

“Oh come on. You’re telling me ...”

“Just do it. You’re being paid more than enough. Besides, you’ll be famous.”

“I’m already famous. I’ll be on the news in twenty minutes.”

“Enjoy your day in the sun.”

David smiled to himself and hung up. This was going to be fun.