

## Seismic Intensity of 6 in Nagaoka

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On Saturday evening, I left the laboratory little earlier than usual and was steering my car as usual along a road among rice paddies that had already been harvested. The clear sky was darkening and stars were beginning to come out. Ten minutes into the 30-minute ride to my home, the car suddenly swerved violently from side to side as if the wheels were caught in a large rut. In the instant that I was puzzling over why my wheels were in a rut on a smooth paved road, I saw sparks flying from overhead cables in the distance and the lights in surrounding houses went out.

It took a few seconds to realize that the shock was an earthquake. I trembled slightly and grabbed the steering wheel tightly. I was eager to get home, but the car in front of me was moving forward cautiously. I remembered the car radio and turned it on. Reports were coming in of an earthquake with a seismic intensity of Upper 6 with a hypocenter in the Chuetsu region in Niigata Prefecture occurred. Seismic intensities around the earthquake center were being recited.

The traffic was not heavy, but traffic lights at intersections were out of action and cars were slow moving. I felt the second shock as I was crossing a bridge over the Shinano River. Although the bridge was replaced a few years ago and should present a low risk of collapse, I was reminded of the outside possibility and felt uneasy until reached the other side. Then I received an email from my wife with the single phrase "I'm alive." I didn't think this was a matter to joke about and replied that I would be home before long.

I felt the third shock as I was passing under the Joetsu shinkansen line. The car ahead of me stopped. I imagined being crushed if the arch bridge came down and desperately steered clear of the car ahead and got through the bridge. At the exact moment I arrived at home and stopped the car, I felt the fourth shock. The car rolled though it was at a standstill. The neighbors all came out of their homes and screams arose from far and near. My wife was outside, squatting on the ground.

I stepped out of the car, helped her to her feet and we went to the nearby park. It took one hour to return to my home from the park where it normally takes 30 minutes. In the growing darkness, it was difficult to know what was going on. The neighbors had gathered and a portable TV was broadcasting news of the earthquake, telling us that its center was in Ojiya city neighboring Nagaoka. My wife sent an email to our daughter and son in Tokyo using a mobile phone to say that we were safe. A casual look at the night sky showed a startlingly white moon. On benches in the dim park, people gathered and chatted. There were screams each a new shock was felt.

It was becoming colder as time went on and my wife said she wanted blankets. I went home and when I opened the door I could hardly get inside because a shoe cupboard had overturned in the entrance. As I was stepping in, I felt another aftershock and immediately rushed out again. When I finally entered the house between aftershocks, I felt around for a couple of blankets and left immediately. We were warmer with blankets wrapped around us.

My wife told me that, when the earthquake occurred, she huddled under the grand piano. As the violent shaking forced her to cling onto a piano leg, a cupboard overturned before her very eyes, tableware was flung out and there were crashing noises. The entire house emitted a rasping sound. She heard a bookshelf and drawers overturn and glass breaking on the second floor. She felt more

dead than alive and dashed out of the house. Being in the house, the sense of fear was quite different from that in a seismically isolated car.

Because we had no electricity and were unable to get into the house, which was in a complete mess, we walked to an evacuation center in a school gym. Eventually, we spent two nights in the gym with only the barest essentials.

When I returned to my office at the university on Monday the 25th, the electricity had not yet been restored and I was unable to send or receive any information. I made the rounds of the university buildings and found no noticeable damage. My office was littered with books and documents, as shown in Photo 1. A sharp-tongued colleague noted that my mountain of papers had turned into a sea of papers, but the state of untidiness was exactly the same as before! Filing cabinet drawers had slid out and documents were scattered everywhere. Bookshelves that were screwed to the wall and a personal computer on a rack with casters that functioned as a seismic isolator were safe. Later, after another major aftershock with a seismic intensity of 5, I made sure that the students and faculty members were all safe. In the end I resumed classes on November 1, nine days after the earthquake.



Photo 1 Documents and books scattered about the office