



LUX underground this week

On Wednesday the LUX dark-matter detector will begin its complicated two-day journey to the Davis Campus 4,850 feet underground, but work remains to be done.

Today, LUX researchers in the surface lab were preparing for the move—securing detector parts with sturdy plastic ties and wrapping delicate instruments in bubble wrap. The detector itself, enclosed in its double-walled titanium cryostat, was wrapped in pink foam.

The core of the LUX experiment consists of two devices: the detector itself and the “break-out cart,” which allows the detector to communicate data to the outside world. The detector and cart are connected by thick, flexible conduits, which must remain connected, even during the move.

That complicates the process. Tomorrow, for example, the detector and cart will be gently hoisted so LUX researchers can remove small wheels from the bottom. The experiment will be lowered onto a wheeled truck that will be used to roll it to a forklift outside the lab.

On Wednesday, the forklift will gently carry the experiment about 800 feet to the Yates Shaft headframe, where it will stay overnight. On Thursday, the experiment will be moved into the Yates cage on “Air

Skates.” These devices will allow the 6500-pound experiment to ride on a cushion of compressed air.

The ride down the Yates Shaft to the 4850 Level takes scientists 11 minutes. The LUX experiment, lowered at an ultra-slow rate, will take two hours to make the trip. Once on the 4850 Level, the LUX experiment will ride Air Skates about 500 feet to the Davis Cavern.

The arrival of LUX at the Davis Cavern, where Ray Davis earned his Nobel Prize, will be a historic occasion for the Sanford Lab. The event will be celebrated twice later this week. On Friday, the South Dakota Public Radio program “Innovations” will broadcast live from the Davis Cavern. ([Listen live](#) on the Web.) On Saturday, during our Neutrino Day science festival, LUX researchers underground will talk live with visitors on the surface via high-definition videoconference.



Photo by Matt Kapust



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Above: The LUX detector, pretty in pink foam wrap, prepared for a move. Below left: Physicist Vick Gehman of Berkeley Lab inspects the detector cart, which is connected to the LUX detector by the silver flexible conduits.

Safety



Don't look directly at the sun

Today's Deep Thoughts safety tip: Don't look directly at the sun, come to Neutrino Day instead.

Neutrino Day is Saturday, 8 a.m. to 2 p.m., and this year Badlands National Park is bringing

its solar telescope. The scope will allow visitors to view sun spots and solar flares without damaging their eyes. That's just one of nearly 20 activities for scientists of all ages.

[Download a flyer here.](#)