

Occultation by TNO (523700) 2014 GM54 on 2024 June 2 at 7:38 UT

This occultation was added to OW on April 13, apparently by Steve Messner since it's from the "NALowMag" feed. Joan noticed it in her OW list, which she filtered by only events visible from our home when they were in the 1-sigma zone, but accepting low-rank events since she wanted lots of possibilities for testing. A few days before, she noticed the predicted long duration (8.5s) of this event, relative to the many short duration events we usually get, and then also noticed the large errors, and asked me about it. When I noticed it was a TNO event, I said yes, we should certainly try it, and noticed quite a few others already signed up for it. I'm sorry I didn't immediately send a message to IOTAoccultations at the time, but I was busy with other matters, and assumed from the others signed up that the event was well-known, although I didn't remember getting any messages about it. We certainly should do a better job of alerting observers to TNO events like this at least a week in advance. Normally that's done for Lucky Star TNO occultations, but this event was not picked up by Lucky Star. Shortly before the event, I reviewed the OW list, and noticed the absence of several observers who I would expect would try such an event, or at least would be interested in it, so . .

I wrote to selected observers the night of June 1-2:

In just under 2 hours, this 126km TNO occultation will occur somewhere across the USA, including possibly AZ. You probably overlooked it because the rank is only 5, but its valuable if anyone gets a hit, makes it worth trying, to pin down the orbit for future occultations. Several others are trying it, but many with poor weather; the OW cloud link is

<https://cloud.occultwatcher.net/event/1248-523700-287207-649078-U128539#> .

RECON prediction watch list:

<https://www.boulder.swri.edu/~buie/recon/reconwatch.html> and specifically for this event, https://www.boulder.swri.edu/~buie/recon/events/523700_240602_2089503.html

After the occultation, I wrote:

I found this event on the RECON watchlist

at https://www.boulder.swri.edu/~buie/recon/events/523700_240602_2089503.html with a 27% chance for an event somewhere in the RECON network, but no RECON campaign was issued for the event, and it was not promoted to the "best events" RECON TNO Events list at <https://www.boulder.swri.edu/~buie/recon/reconlist.html> - that page notes that it includes events with at least a 30% chance of a RECON success, so **last night's** event just barely missed being on it and possibly more noticed.

The RECON path is far north of the OW cloud prediction based on the JPL orbit. The event is not in Steve Preston's 2024 TNO/Centaur Occult input file (TNO-2024-raw.xml); perhaps the (523700) orbit was improved since Steve created his file last summer. The event on OW was not tagged as a Lucky Star event, and it's not on their prediction Web site at <https://lesia.obspm.fr/lucky-star/predictions.php> .

We obtained a good recording of the star from Fountain Hills, AZ but weren't sure of that at the time because we were using a flakey monitor, and we spent a lot of time fruitlessly changing connectors and rebooting SharpCap trying to improve the display. Due to that, we had an interruption of a minute or two in the 20-minute recording we made for the event. OW shows that Mike Skrutskie in Colo. and Vince Sempronio, farther south in Arizona, also observed and reported misses. A few others reported no observation.

David