

New comet discovered by amateur astronomer

February 14 2012, by Jason Major



Image of Comet C/2012 C2 (Bruenjes) made from ten 60 sec. exposures on Feb. 11, 2012. Credit: Fred Bruenjes

“Friday, February 10th 2012 just felt like the perfect night for a comet to be discovered by an amateur astronomer,” writes Fred Bruenjes on his astronomy blog. And, this past Friday night, that’s exactly what Fred did.

Here's how he did it:

Using custom-written software to operate a 14" Meade LX200GPS telescope in his self-built observatory in Warrensburg, Missouri, Fred set his system up to capture images of the sky on that cold evening, not allowing himself to be chased inside by the low temperatures or the bright, rising moon. After some technical difficulties with his dSLR, Fred managed to acquire some quality images. While making a cursory look through the blink data, Fred was surprised to spot a faint blurry object visible moving across three frames. A check of online databases of known objects brought up no positive hits — **this was something that hadn't been seen before.**

Fred describes the “eureka” moment on his blog:

A check of known objects in the region had a lot of results in the area, but all were moving eastward while my fuzzy was moving westward. Rocks don't make U-turns. This was really getting exciting. I had Jen, my better half, an accomplished astro imager, take a look at the images and before I could point out the faint smudge she exclaimed “That's a [comet!](#)”

Still, Fred notes, “it wasn't a slam-dunk.” The images were faint and there could have been other causes of blurry spots in digital images. But a check of the raw color data revealed a greenish coloration to the object's glow, which is indicative of cyanogen and carbon emission — typical hallmarks of comets. “Very encouraging,” Fred added.

Another night's observation was needed. If it was a comet, it would appear again along its expected trajectory. Of course, with an unidentified comet there would be no known orbit, so Fred had to manually extrapolate its position. When he trained his telescope onto his calculated coordinates the following evening and began taking images, there it was... the same faint, fuzzy green blur from the previous night,

slowly appearing in the darkening sky right where it should be.

“Oh. Wow. It was dead nuts at where it was supposed to be,” Fred writes. “Wow. This thing is for real! It’s at about this time that it begins to sink in that a lifelong quest has just been fulfilled. I just crossed another thing off the bucket list!”



Raw-color discovery image. Credit: Fred Bruenjes

Fred spent the next hour gathering images to send in to the IAU’s Minor Planet Center, in the hopes of having the object cataloged so that others could locate and observe it. He didn’t have to wait long; within five minutes the object was listed on the Near-Earth Object Confirmation Page, and dubbed C/2012 C2 (Bruenjes), in honor of its discoverer.

Now that's just got to feel good.

Comet Bruenjes is an NEO currently about 0.555 AU away from Earth. Its exact size and orbital period isn't known, and it may even be a returning comet or piece from a larger one... the official report isn't out yet. It appears to have a fairly inclined orbit relative to the ecliptic, based on the current diagram created by JPL's Small-Body [Database](#).

The comet's total magnitude is 16.6, so it is dim and not visible to the naked eye. Fred told Universe Today in an email: "it's in the constellation Aries, about six degrees north of Jupiter. Just after sunset in the Northern hemisphere it's high in the southwest, nearly overhead."

Stay tuned for more updated information on this newly-discovered member of our solar system. And congratulations to Fred Bruenjes, comet-hunter extraordinaire!

Read Fred's full story on his astronomy site [here](#).

Source: [Universe Today](#)

Citation: New comet discovered by amateur astronomer (2012, February 14) retrieved 3 May 2024 from <https://phys.org/news/2012-02-comet-amateur-astronomer.html>

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