

UKFall - The UK Fireball Alliance

The UK Fireball Alliance aims to recover freshly-fallen meteorites in the UK. Led by staff of the Open University and London's Natural History Museum, UKFall is a collaboration between the UK's meteor camera networks. www.ukfall.org.uk



Fireball of 28th Feb 2021 - answers to frequently asked questions

2nd March 2021

We've received about 70 e-mails including yours, so have produced this note to answer your questions as comprehensively as possible while still getting an answer to you today. Hopefully your specific question was also addressed in the covering e-mail, but get in touch if you have more questions.

1. How do I report the next bright meteor?

To report future sightings, please use this form: <https://ukmeteornetwork.co.uk/fireball-report/>. It's important to collate as many eyewitness reports as possible, and it's also where you may be the first to see uploaded videos and photos.

To see where your report will end up, have a look at the collated reports from Sunday's event, here: https://fireballs.imo.net/members/imo_view/event/2021/1202

2. What makes you think it flew over Gloucestershire?

There are two really good sources of data. The first is eyewitness reports as discussed above. These are summarised in this picture, where each “person” represents a reported observation, with the red ones facing away from us and the green ones facing towards us.

The arrow shows the average of the reports, and a best-guess of the meteor’s path. In one form or another this sort of analysis has been used for the last 90 years to find meteorites.



The second source is specialised fireball cameras. In this case the analysis below is from five cameras that have the event completely surrounded. The line-of-sight from each camera and the calculated trajectory is below. This sort of analysis can be accurate to ten metres or so.



So, we know exactly where the meteor went, and exactly how fast.

3. I saw it land locally. That doesn't fit with what you're telling me.

Yes! That is exactly what it looked like. And that's exactly what people have reported about really bright fireballs for many years, so you're in good company here.

What's actually going on - meteors move extremely fast, and this one hit the atmosphere at 30,000 miles per hour. Because we're not used to seeing objects travelling this fast (20 times the speed of a bullet) we see them as small and close rather than huge and distant.

When this one stopped glowing, it was actually more than 30km above the Earth. However, it would have looked as though it landed behind the house next door, or behind trees.

So you're not mistaken. You've been incredibly lucky to see a very rare event with your bare eyes, and this illusion is just part of the deal.

4. I have found a meteorite. Maybe it's a meteorite. What should I do with it?

As this one landed in England, let's deal with England. There are different guidelines for Scotland, Wales and Northern Ireland.

If you think it landed on Sunday night and you're somewhere near Cheltenham or further East, then please send us a couple of photos of it, including a photo of it sitting where you found it. Note the location using your phone GPS, don't touch it with a magnet, and, if you can, avoid touching it with your hands. Pick it up in a clean bag or clean aluminium foil if possible.

Then, please send it to Dr Ashley King at the Natural History Museum. Please ensure that your name and phone number is on a label on the plastic bag just to avoid any possibility of error. If it does turn out to be a meteorite, you will get full credit for its recovery.

Ashley's address is:

Dr Ashley King
Department of Earth Sciences
The Natural History Museum
Cromwell Road
London SW7 5BD

If you found the rock before Sunday evening, or if it's from outside Gloucestershire, please send it to:

The Angela Marmont Centre
The Natural History Museum
Cromwell Road
London SW7 5BD

At the moment the NHM is prioritising rocks from Sunday and Gloucestershire, but will get to yours.