Black Hole Signatures
Called into Question

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I will be linking you directly to a mainstream paper that contradicts the reading of data identifying candidate black holes, but I wanted to preface it myself. Since it was written for peer review, and of course passed it, you will find it is in a pretty dense language. So I thought it best to include a short gloss of the findings (with my own commentary inserted), pointing you to the most important things here. Some of my readers aren't used to peer review writing, and won't be able to wade through it. The most important points are in the abstract, but even that is a bit dense by our standards.

http://adsabs.harvard.edu/abs/2016MNRAS.462.4038Y

The most important thing to take away here is that not all mainstream physicists are buying the claims from the top of the field, about black holes or anything else. We are told by the online salesmen that mainstream physics is one cohesive group, in basic agreement about "all the important stuff". As I have told you before, that isn't even close to being true. Those who disagree with "the important stuff" are generally sat on, but if we dig we find them making themselves heard nonetheless. We have seen this most spectacularly with the public failures of BICEP2 and other big projects, which could never have failed but for the mostly clandestine influence of thousands of mid-level physicists, who apparently balked. If physics were completely controlled, no project like that would ever fail. Since so many major projects have failed in the past two decades, we may assume there is a mostly silent but widespread revolution going on in the mainstream ranks, though the reports of it are quashed. We see one more sign of that here.

The next thing to notice is the origin of the article: OUP. That means Oxford University Press. That tells us this paper is not from the fringes. As is admitted on the front page, OUP is published on behalf of the Royal Astronomical Society. This is as mainstream as it gets. Also, we have five authors, so this is not one kamikaze gal going down in flames a week before retirement. And since this passed peer review, it draws in more people. Several mainstream physicists had to pass this for publication. Which is a good sign. It means that not only is the data very strong and the authors respected, it means that the reviewers passing this aren't utterly controlled from above. If they were, they wouldn't pass it no matter how strong the data or authors.

Now, to get to the paper you have to click on ArXiv reprint, then click on PDF. The abstract tells us that using the emission lines from the object in X-ray, it was claimed by previous teams that the spin of the black hole can be measured. To do this required reading the data using relativistic broadening proposed in a certain area, but the authors show that this data can be read quite easily and directly *without* the relativistic assumption. If that happens, not only can no spin be measured from the data, but the iron abundance in the emission is shown to be solar. In addition, the density is no longer infinite, but finite. The authors still estimate a mass of 100 million solar masses, but we will come back to that.

We now proceed to the Introduction. Fairall9 isn't in our own galaxy. It is its own galaxy, of a type called Seyfert. This basically means it has a very bright core. And being in another galaxy means it is *very* far away. However, it isn't blocked like many other galaxies, so its emission lines are assumed to be fairly clear.

The first thing you may ask at this point is why we are studying the cores of distant galaxies and not our own. Our own core is much closer, so it seems like we would want to know more about it, and would. It isn't quasar-like, but it is plenty bright, and if Fairall9's core is a black hole, ours probably is, too. Instead, astronomers seem to go for these distant galaxies. Why? Well, in defense of our current authors, they didn't pick it for study, it was picked by those they are countering. But anyway, the reason these distant objects are chosen is that it is far easier to fudge data and manipulations at that distance. Due to the distance, the data set is compressed and therefore—in some ways—simplified. It can be summed over far more easily, and broad assumptions are more difficult to counter. So keep that in mind as we proceed.

I will be told that our galactic core is harder to study because it is blocked from our view by matter in the galaxy. Since we are inside the galaxy, we have a poor perspective. However, I hope you can see how illogical that is. It is true, but it isn't *just* true of our own galaxy. Start by looking toward the galactic core from wherever you happen to be. Then imagine backing out of there in a superfast spacecraft. Say you back out to the distance of Andromeda. Well, whatever stuff was between you and the core is still there, isn't it? You are just further away. These models of distant galaxies ignore that, for the most part. Because the stuff in between is now smaller, it is easier to ignore. And it can't be seen, making it even easier to ignore. This is what I mean by data compression.

Next, our authors admit that all data from Fairall9 has been approached with the assumption it is a giant black hole. That is upside-down to begin with, since the data should have been read in the first instance with no such assumption. The data should lead to the theory, not the reverse. Next, it is assumed that the received X-ray spectrum is from the accretion disk, though there is zero evidence of that. Why can't the spectrum simply be emitted by a huge shining core, without the need for any reflection from an accretion disk? No reason, except that they need to sell these sexy black holes. Our authors don't admit that here, but it seems to be implied.

Next, the authors gloss the source of the data. *XMM-Newton* is the European Space Agency's X-ray telescope that went up in 1999. Although an iron line (FeKα) in the emission is necessary for the black hole spin reading, they point out that *XMM-Newton* claimed seeing the line in 2009, after failing to see it in 2000. Other satellites, including *Swift* and *NuSTAR* also claimed conflicting data. Only *Suzaku* (Japan, 2005, which I like to call Suzie-Q) provided a spectrum that seemed to allow for an easier reading, which is why the authors stick to that data in this paper.

Next we find that various studies have claimed a spin for this black hole over the entire possible range, from 0 to .998. This would be like finding a mass for the black hole from 0 to infinity. In other words, not much use, and not much of a confirmation of the method, math, or theory involved. The authors also point out that some of these spin "measurements" are not consistent with the admitted errors. That means they have been fudged somehow, since they are claiming an accuracy or a value not possible given the data set. That is an important point, and we can expect to see more on it in the body of the paper.

Next, the authors point out that Lohfink et al tried to resolve conflicts in data by adding nine new free parameters to the computer models. With that much wiggle room, you could resolve just about any conflict in the data, including the conflict between yes and no.

The authors then quote Patrick et al, 2011b, who showed that the model dependence here did not rule out zero spin at high confidence in all objects. What that means is that the data was not really strongly indicating anything on its own. This brings in many more mainstream physicists who are questioning this whole line of salesmanship.

The authors next quote Tatum et al 2012 and Hagino et al 2016, who also read the iron line without using relativistic broadening. Both teams made no attempt to drive around the accretion disk altogether, but their simpler reading again brings in several more mainstream physicists who aren't fully on the bandwagon.

Next, we learn the iron-line has a width and a "core". This line core is assigned to matter very distant from the center of the object (tens of thousands of radii). Since this core makes up half or more of the brightness of the line, it must be taken into account in any theory. It has a peak energy at about 6.4 keV, which we should remember for later. This is important, because in all the models that claim to find spin on the black hole, the core line is based on matter with an infinite column density and an infinite size. Since that cannot be the case, the models must be fudged from the first line. As stated in the abstract, the authors show the density is high, but nowhere near infinite.

Before we move into part 2, let me point out something. In the Introduction to the paper we see no explanation of why this X-ray data had to be reflected from an accretion disk at all. That explanation wasn't included because the only answer is "because that is the current black hole model". According to the MYTORUS model that our authors are using, the brightness isn't a direct emission, it is a reflection. But of course that flouts Occam's razor and about fifty other rules of physics and logic. To any objective reader (say a reader from Pluto), it would seem highly irrational to first assume we have an object here that sucks up all matter including light, and then to frost that assumption with a second—contradictory—one: that this same object that is sucking up all matter and light for some reason and by some mechanism sets up a boundary condition that reflects all light. Remember, it isn't just X-rays being bounced here, it is visible light and infrared as well. *The object is unbelievably bright.* So where the black hole used to be dark, it is now superbright. In the history of black hole theory, that switcheroo has never been definitely addressed: it has just been slowly absorbed into the narrative over decades.

Also, it is worth pointing out that if this giant black hole is bouncing all light at the accretion disk or other boundary, it is actually not swallowing much of anything. Its blackness has become pretty much meaningless and moot. Calling a super-bright quasar or Seyfert galaxy core a black hole is little more than a bold and stupid contradiction.

This would be a good time to remind you that black holes were invented and modelled before the dark matter catastrophe. Mainstream physics now admits that 95% of the universe—and therefore 95% of this Seyfert galaxy and proposed black hole—is a big question mark in the equations. It is a total unknown, and can't be included in the equations in any way. Every black hole model is a gravity-only model, and it doesn't include dark matter as a player in celestial mechanics, except in a small squishy way via the cosmological constant. Dark matter certainly doesn't provide 95% of the math or outcome in this model or any other model. How could it, since they don't know what dark matter is or how it works. Nor is the charge field included in the models at a 95% level, as I have shown it must be. Given that, all the black hole models from the beginning up to now are completely falsified. They are worthless, like a carnival slug. The black hole models have to be rewritten from the ground up, and no one has begun to do that except me. Since I am the only one who has done it, I can tell you that it appears very likely that there is no “hole” at all, no sucking in of light, no accretion disk (of that sort), no event horizon, no wormhole, no singularity, and nothing else we have come to love or hate about the black hole.

For instance, has anyone ever modelled one of these bright galactic cores as a sort of super-sun, replacing the accretion disk reflecting light with a corona energizing it? This would explain the bright line core of FeKα, wouldn't it? The Corona is at a distance from the Sun, isn't it, and by a mechanism that also isn't clear to the mainstream, it is the hottest (300x) part. It also contains highly ionized Iron, doesn't it? It also creates X-rays, doesn't it? At what peak energy? According to some sources, **around 6.7 keV in Fe.*** Electrons produced in the Corona also have about that energy.

In my paper on magnetic reconnection, I showed that the Corona is the locus of these effects because they require lower densities. At high energy and lower densities, the photons are able to spin one another up without immediately being spun down again. This explains both the X-rays and the electron production, since both are spun up from smaller photons on the spot. It also explains the heat, since for every photon spun up, one is spun down. The ones spun up become X-rays or electrons, the ones spun down fall to infrared, which is heat. So we see why this has to occur at some distance from the center. Closer in, the matter and charge densities don't allow for the same sort of energy spread, with all energies being pushed toward the middle, or the lower end of visible. I think you can already see how that might help us read data from galactic cores. This is how you import charge theory and math into the equations and theories. When you do that, you don't only include charge as 95% of the field, you also have these real photon spins to work with, which explain a lot very quickly and easily.

But back to the article. The authors are good enough to admit in the first paragraphs of the main part of the paper that the signal from Fairall9 is background dominated, and that

the source count rate may be a small fraction of the background count rate, so the net systemic error in the background-subtracted spectra could be significant.

That is extremely important, not just here but in general. And even here they are hedging, since we should change “may be” and “could be” to “IS”. Astronomers rarely admit that, because it is one of the many dirty secrets of the profession. This ties into what I said about data compression, and it is another reason the more dishonest physicists and astronomers always choose the most distant objects they can. With a blurry and sparse data set and a load of Gaussian filters and other toys, it is much easier to find what you wish. That is why they don't point their satellites at the galactic core of the Milky Way, or better yet at nearer objects. In that case they have *too much* data that is far *too clear*. Most of the top people don't want that sort of data and run from it.

The next part of the paper is difficult to gloss, since it concerns fitting the data using a MYTORUS model. This abstract torus is composed of neutral matter, which only makes sense if the accretion disk is indeed some sort of boundary which would create neutrality. But since, in my opinion, this would not be the case, this neutrality would fall with the accretion disk hypothesis. For instance, although neutral hydrogen has been proposed in the Solar Corona based on color analysis, this analysis takes no account of real photon spins or their reaction in magnetic reconnection. The authors there expect to find redder colors in the Coronal limb, instead finding bluer, concluding this indicates neutral hydrogen. But according to my theory, we would expect the bluer color due to spin-ups. Neither is the Solar Corona any sort of torus, so modeling any area around a galactic core as a torus makes no sense to me. Even an accretion disk or event horizon wouldn't be a torus, so I am not clear on the mechanics of this part of the paper. I will therefore skip it, hoping we can find something beyond that.

Also, neutral hydrogen in the Solar Corona is very illogical. The high temperatures would surely strip any electron, ionizing the hydrogen. An ion is not neutral. Neutrality near a galactic core weighing as much as 100 million Suns is even more illogical.

Basically, the authors show that their model, which is in some ways superior to a "blurred reflection" model, can match the data very well without the assumption of relativistic broadening. Without that, the data no longer contains any way to compute the spin, and it also gives us a finite mass and density in the amount thought to exist. However, I do draw your attention to section 4.7, where the authors amusingly (to me) admit the blurred reflection model has 244 degrees of freedom and the Lohfink model (PEXMON) has 2,095. Given that, the fact that "neither model leaves significant residuals" is sort of a joke. In a good model, each degree of freedom is purposely targeting a residual, so given enough degrees of freedom you can kill most of them. So I almost see the authors laughing at themselves here, and I see this as some indication they don't take this all very seriously. If I didn't know better I would think they were throwing me a bone.

Any model that is this complex is basically worthless, since what we want is a short and sweet explanation of what is happening here. Such complex modelling is really the admission that the astronomers don't have the theoretical or mathematical tools to solve this in any rational way, so they have to resort to this sort of guesswork. Given the compression of data at this distance, that is not really surprising.

In other words, if you really understand how the field works, you don't need a model at all. A model is only necessary to fill holes in the field you can't fill with real mechanics. I never use models like this, since if I come across a problem I can't solve directly, I shelve it. There are plenty of problems to solve nearer at hand without looking for insoluble ones in distant galaxies. You will say my nuclear diagrams are models, which is strictly true. But compared to these sorts of computer models in mainstream astronomy and physics, my nuclear diagrams are shockingly simple and straightforward. They are also induced directly from piles of known data, so they aren't filling holes. By "induced", I mean the diagrams are sort of back-calculated from given data. To create them, I simply compiled and collated all the main numbers of the elements, like electronegativity, conductivity, oxidation states, ionization energies, and (assumed) electron configurations. That was easy to do, since Wikipedia has them all listed in the sidebar for each element. In that way my model wasn't built from nescience, but from firm knowledge. The knowledge of the field was already there, and all I had to do was gather it up and draw it.

To say it another way, I had to do little or no "fitting" with my nuclear models, since they fit the data in the first instance. They were chosen to do so, and I believe they fit so well because they are simply correct. The kind of fitting that is talked about in the mainstream isn't fitting of that sort. It is a pushing rather than a fitting. It is a pushing toward data that *doesn't* fit. There should be no talk of fitting, rigorously, since there is no fleshed-out theory to fit anything to, and not enough firm data to be fit. Mainstream astronomers are usually fitting models to previous models. Since they are missing 95% of the field, and the other 5% is mostly fudge, there is nothing to fit anything to. To be honest, they should call it "wallowing". They just pull the greater part of it from thin air, like the TORUS or PEXMON models, and then start applying multiple filters to it willy-nilly, to make the initial blurs even blurrier.

We must assume the reason they don't model any galaxy or galactic core on something we know better like the Sun is that they really don't know much about the Sun, either. Ironically, the literature and theory of black holes is far more voluminous than the literature and theory of the Sun. Did the most famous physicists get famous for talking about the Sun or about black holes? Einstein and Feynman and Hawking and Penrose and all the rest had almost nothing to say about the Sun, though we live right next to it. Instead, the most feted physicists and astronomers have run off at the mouth about black holes for decades, although our experience of them is zero. You should find that very curious. It is proof of what I have said many times: the most dishonest scientists love to hide out in data holes, where they can say whatever they wish and get famous for nothing.

Ironically, theorizing in the presence of a great amount of data is hard, since all that data has to be matched at the same time. So most scientists run from that. It is much easier to theorize in the presence of very little data, or almost none, so that is where you will find most of these famous people. That is why we have had a model of the first seconds of the universe for decades, but no model of the nucleus. We have many numbers that have to be matched with each element, but no firm numbers for the universe.

For this reason and others, I don't recommend modeling Seyfert galaxies at all. I recommend shelving them until we get our basic fields and math in order. Until we do, all modelling is simply busywork. We would be wise to figure out what is happening in and around the Sun, at which point we can use that knowledge to begin to model larger objects and structures. As it is, everything we do is topsy-turvy.

That is why I have spent so much time in the Solar System, looking hard at nearer objects. And that is why I narrowed my vision even more at most times, looking only at musty old books here on Earth. I could see very quickly we weren't going to get anywhere with the textbook equations and theories we were brought up on. Until those were corrected, all claims in the magazines and journals were just bluster. I have also done a lot of work on light, and now you see why. We can't know anything about galactic cores until we understand the Sun, and we can't understand anything about the Sun until we understand how photons work. Logically, you have to start small and work your way up. In that sense, modern physics and astronomy have always been upside down from the beginning. The famous mainstream guys were claiming to study the first moments of the universe while they understood nothing about the photon. But if you don't understand how the photon travels or interacts, how can you know how anything larger does? You can't.

But to get back to the paper, what you should notice if you get through it is that the most important nuggets are sort of buried, while the bulk of the paper is mostly bombast. All the complicated stuff and diagrams were included to impress and wow the guys in peer review, but the meaningful admissions are in the details, and are purposely not stressed too much. They are there, but you have to want to find them. I have pointed out most of them for you, but you may be able to find a few more yourself.

*See p. 42, fig. 23.