9. Fine dust in a "modified" M&M setup?

Content

9.1. Hard science and all that exists

Finally, we look back to the M&M experiment we mentioned at the beginning of this text. Indeed, it did not demonstrate the existence of a uniformly distributed fine stardust that could serve as a fixed reference point, and to which the motion of the earth, of the sun and of the stars could be related.

Some generalized that with this, therefore, the whole fact of "fine dust" was inconsistent with reality. The numerous testimonies of the many people and cultures who claim that in addition to a biological body, we also have a number of fine bodies, or that there are places that are more highly charged than others, are thus dismissed as non-scientific.

By and large, one can agree with such a viewpoint. A lot of paranormal experiences are too individual and hardly controllable so they cannot be hard science. Nevertheless, some results of paranormal events can be established scientifically. And this also with regard to the existence of fine dust. The assertion of A. Van Heel, (see : 2.4.) that even if one can prove the existence of the ether, it still remains a dubious matter, and that physics should concern itself with more tangible matters, does seem to us a bit radical. If there are indeed serious indications that fine dust can exist, it is difficult to see that it is best not to investigate such things scientifically.

The other point, which we have already addressed, is that science, given its ultra-rigorous information system, does not cover the whole of reality, but only that part that conforms to its axiomatics. And that axiomatics is preferably strictly sensory and materialistic. Consequently, it is only a subset of what is called "the ontology," understand : of all that possibly exists. If science wants to lay claim to the whole field of reality, it must first prove that with its axiomatics all but all reality can be grasped. And until that proof is provided, what it states about that which falls outside its field is an opinion alongside other opinions. At least that is the view of those who think strictly logically. Those who limit reality to the sensory and material simply do not find anything beyond this.

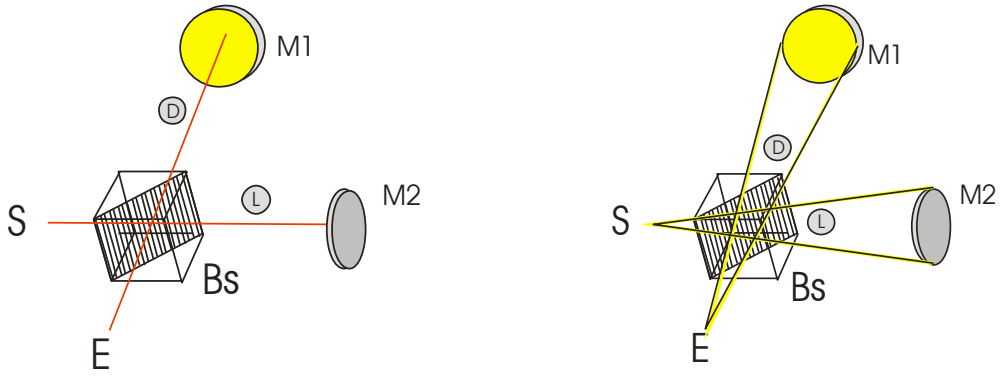
9.2. An M&M setup with hollow mirrors?

After all our optical experiments, let's look back for a moment at the M&M experiment. As far as we know, it was carried out with a light beam split into two sub-beams, each of which reflected on a *flat* mirror and afterwards reunited and interacted with each other.

Thus, no *concave mirror* and no diverging or converging light is involved at all. Neither of the two partial beams *inside* the setup was interfered with. Nor was that the purpose of the experiment. The focus was on what might be *outside* the interferometer : the uniformly assumed fine stardust.

And what so we redo the M&M experiment, but now in a slightly *modified* version. Imagine the experiment as shown in the diagram on the left. A light beam from S is divided in Bs into two equally long partial beams - with minimal or even no difference in path length between them - each reflecting on a plane mirror and interfering with each other in E.

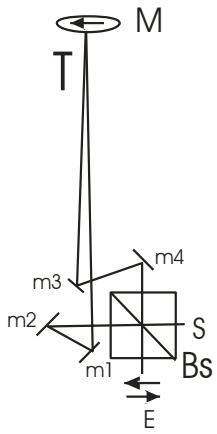
On the right we see an analogous diagram, but now with concave mirrors and diverging and converging light beams. We did not build that arrangement, because the accuracy, required to make the two light paths equally long, and this to a fraction of a wavelength of light, is impossible for us.



But we did achieve something else with our experiments. With our setup with equal light path, we obtained a mirror surface completely filled with a single interference color on the one hand, and destructive interference on the other. And when we disturbed that light path with our hand, we saw fascinating things.

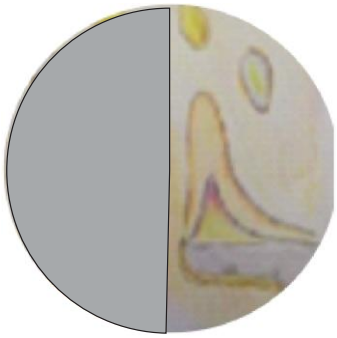
So what if one redid the M&M experiment, but this time with two totally uniform hollow mirrors? If the two partial beams are scrupulously equal in length, i.e. to a fraction of one wavelength, then we can imagine that a single interference color, or even a destructive interference, will show up in them as well. And what accuracy of image can we then expect, if one light path is disturbed in the process, e.g. by holding a hand in front of one of the mirrors, or a head? Or with larger mirrors even a whole person?

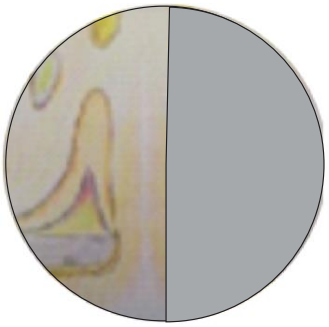
As I said, achieving the accuracy of an M&M setup is totally beyond our capabilities. But here, too, we have achieved something. Think of the reversal interferometer, our reversal setup as we worked out in Chapter 7, under 7.3 and 7.4....



We didn't bring much to it. Only a particularly unstable and vibrating image that showed us a jumble of ever-changing kaleidoscopic colors. When we brought our hand into the light path, the turbulences constantly changed color. It was as if we were in the middle of a storm. Through all these changing images, we tried to draw a kind of “common denominator,” a recurring impression. That gave us the image on the right.

Thinking through this. The interference was the result of two partial bundles : of an image and its left-right reversal. Each partial bundle has an interfered and a non-interfered half.





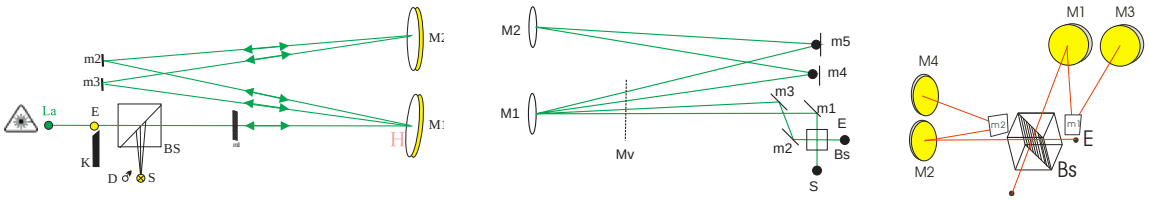
But that is precisely what the M&M arrangement with hollow mirrors will also show us. No, not the image and its reversal, but only the image. So if we put the finger in the light path, we do not have to limit ourselves to one half, no, we can use the whole mirror surface. In E we see the interference of the hand with the undisturbed image of the other mirror. So we are also going to see those turbulences, but better, much more accurate and stable. Or when using larger mirrors, perhaps also a head, or even a whole person? Then the question also suddenly arises whether we will see not only turbulences of hot air rising upward, but whether we might notice something of the human aura.

In addition to the arrangement in daylight, it seems worthwhile to consider here also what will show itself when the light will be dimmed. Recall the image we saw in the chapter 7.4. In the reversal interferometer, we saw our finger together with its mirror image. For analogous reasons as explained above, we can also suppose that a single image of our finger, hand, head or our whole body will show itself in the modified M&M setup.

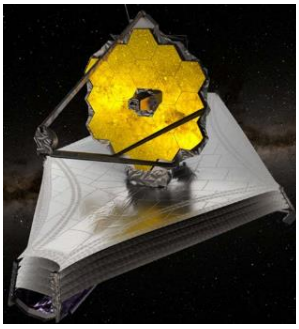
9.3. A multiple perturbation?

Just as we could with the foucault setup (3.5.) or the setup with uneven light path (6.7.), we can have the light repeatedly pass through the obstacle. Something that will amplify the

disturbance. What it could become for the modified M&M arrangement we see in the drawing to the right below.



Should all this indeed be the case, this does seem a curious twist of fate. An experiment that sought to clarify to us that no fine dust - albeit uniformly distributed - is to be found *outside the arrangement*, shows us some one hundred and forty years later, but in a modified form, *inside the arrangement* precisely its existence.



With our largest telescopes, we have explored space to its farthest reaches. And what about the way to ourselves? May we also put man - literally - in the spotlight? And this with materials and a precision that we amateur tinkerers can only dream of. What new information about ourselves could this give us? For the time being, these remain very fascinating and intriguing questions.