return to updates

# The White Rainbow


*by Miles Mathis*

The white rainbow is currently categorized as a fog bow, and is explained by smaller water droplets. I will show that this explanation is false. I will then show that the white rainbow is confirmation of my new theory of rainbow production, presented last year in a two-part series.

The picture above was taken recently by Sam Dobson in an expedition to the North Pole. Here is another from the same event.

We can already see the current theory failing, since there is no fog present. There is a small patch of cloud ahead of the photographer, and the rainbow appears to be caused by that patch, and to inhabit it. This is a problem for current theory, because clouds cause color bows all the time. Besides that, there is no real difference between fog and cloud, regarding size of droplet. The current explanation leads you to think that fogs always have smaller droplets than clouds or something, but that isn't true. Fogs are defined not by droplet size, but by location and density. In general, if it is low lying, it is called fog, not cloud, but the definitions are loose. And fogs are differentiated from mists by density as well, not droplet size. Fogs are denser, and cause a more reduced visibility. This density is determined by the *number* of droplets per area, not by the size of the droplets.

To see what I mean, ask yourself this: "Whenever they find a white rainbow, do they test the 'fog' for droplet size? Have they *ever* tested a fog for droplet size, to test the theory? Have they ever produced fogs of different droplet sizes, and proved the theory that way?" If the theory is true, smaller droplets should never produce color and larger droplets always should. I found no indication these tests had ever been run, and my guess is they haven't. If they had, they would disprove the theory, so there is no reason for the theorists to run them. It is better to just state the theory and then quit.

I will be told that current theory is telling us that fogs have smaller droplets than *rain*, not than clouds. The average size of water droplets in clouds, mist, and fog is on the order of 1-100 microns. Cloud droplets are 10 to 1,000 times smaller than raindrops. It is this size differential that the theory of fog bows is pointing to, I will be told. However, once again, that doesn't work, because we know that clouds, mists, and fog often create color bows. The pictures at Niagara prove that.

No rain there, just mist. In fact, most of the pictures from my first paper on rainbows show color production without rain present in the area of the bow.

Given the current theory of rainbow production, a smaller droplet size should never have caused a loss of color, so I don't know where this theory came from to start with. It is a non-starter. It fills a hole and that is about all that can be said for it. It gives people who ask the question something to repeat. But it makes no sense. Using the curved droplet model that goes all the way back to Descartes in the 17th

century (and that is still current), a small droplet would work just like a slightly larger one. It is known that light does not stop expressing wavelength variations below a certain size, for example. It certainly doesn't stop expressing wavelength at or around 100 microns. Remember, the current theory uses rain not as a diffraction grating, but as a source of *curvature*. The back of the raindrop is curved, and the light is actually reflected back to the eye. Different reflection angles create a color split. If so, it is photons that must be reflected, and photons are so tiny relative to the droplet that the size of the droplet is unimportant. The droplet would only stop sorting photons by the current method if the droplet approached the size of the photon. But we are about $10^{18}$ too large for that here.

Also consider that if the current theory of fog bows were correct, not only the color but the bow itself should disappear. If the droplet were too small to split light into colors, it would be because the wavelength was larger than the drop. That is what we are led to believe, right?—that the tiny fog drop can't sort the colors because it is beneath the size of the wavelengths? Well, if that were true, then how could the droplets produce the white curved band nonetheless? Remember, we are told the width of the band indicates the width of color separation. But now we have no color separation. So what does the width of the band indicate? Without a color split, why is there any width, or any band? Why is white being spread across that width? If the tiny droplet is no longer sorting either photons or waves, what is it doing to create the white bow?

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Clearly, the current theory is useless. The white cannot be caused by a smaller droplet. We can discover the real cause simply by studying more closely the two pictures from the North Pole above. In my previous papers, I have proved that the rainbow is really an image of the Sun's corona cast on the atmosphere. But it is not a reflected image—as from the back of a raindrop. It is a rear-projected image. In other words, the sunlight is being reflected by some distant source on the far horizon. In the case of the Niagara image, the source is much nearer, but it is still behind the rainbow.

Now we simply apply this logic to the white rainbow. We see that there is no bright reflection point in these North Pole photos, at least not one on the far horizon. There is no white cloudbank back there, no white mountain, nothing but blue sky. Seems like a problem at first for my theory, until we look more closely. For we *do* see very white patches behind the rainbow and the nearer patch of cloud. They are caused by the snow and ice on the ground, of course. And, interestingly, the bright patches seem to center themselves on the center of the rainbow. And where the patches are whitest, the rainbow is also whitest. I would say this is especially clear in the second image.

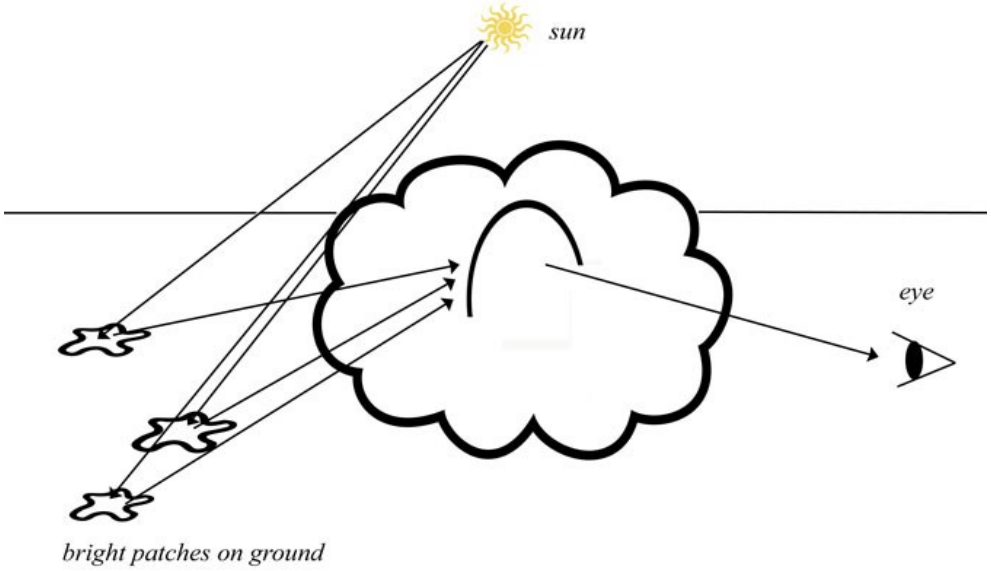
It is the fact that these patches are multiple and dispersed, rather than single and focused, that creates the white-out of the rainbow. For what we have here is many color rainbows superimposed. The eye or camera is receiving light reflected from all those very white ground sources. Each one is reflecting an image of the Sun's corona, giving us a curved band and its bandwidth. And if we were receiving only one (if our image was coming from one general area on the horizon or ground), we would see a colored bow. But because we are receiving many, the eye or camera reads that as white.

Remember, white light is just a combination of colored light. If you receive many colors from the same place, you see white instead of the colors. Well, that is what we are seeing here. We are seeing many stacked rainbows, but because no two rainbows are color-matched, they white each other out.

You will say, “What do you mean, not color-matched? How can rainbows not be color-matched?” What I mean is that each white area on the ground behind the rainbow is creating a separate bow. But

because these areas are not equal distances from the bow they are creating, they don't create the same bow for our eyes. Yes, they split with red above and so on, but the unequal distances create unequal angles of refraction at the point of bow creation. The many rainbows created aren't completely coherent, in other words, so although they stack in the same general area, creating one bow, they don't *precisely* overlap in terms of color. The many bows are very slightly out-of-phase—caused again by the unequal distances from sources—and this prevents them from being read as one bow. Rather than see a supersaturated bow, you see a white bow.

I will repeat and vary the explanation, for good measure. The patch of cloud that the white rainbow is inhabiting acts both as a screen for the image and as a refracting medium. Because the image requires a screen on which to appear, all the images created by various bright spots must converge on that screen. If they don't, they simply don't appear. But images can be reflected onto that screen from behind in any number of ways. Let us go to the side of the event, to look at it from there:




Because some of the patches are nearer the cloud than others, the images produced on the screen will be out of phase. They won't be coherent enough to be read as color by the eye or camera. Instead, they will be read as white.

You will say, “Shouldn't the image just be blurred out or something? Why would a slight offsetting of images cause loss of color?” Because it isn't an “offset” of images that is causing the phenomenon. It is an offset of the *angle* at which the images are produced. Since it is precisely this angle that is read as a certain color rather than another (it is all about the refracting angle with color, remember), the shifted angles will produce shifted colors. As we stack the light from all these shifted images, we lose color coherence. The eye or camera can't tell which color it is supposed to be receiving. It is receiving many from the same place, and this is read as white.

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These pictures also provide more proof of my new theory in another way. Notice that in the picture under title we have not only a white bow, but a black bow just inside it. Current theory cannot easily account for that, but I can. Since this is an image of the Sun's corona, we only have to look there for an

explanation. Between the Sun itself and the hottest band of its corona we find a much cooler band. This is the chromosphere, which has a minimum temperature of only 3800K compared to over 1 million K for the corona. That dark band is simply a direct image of the chromosphere.

This also explains the brightness inside the white bow. We see the same phenomenon with colored bows. Currently that is explained with all sorts of tortured reflections and refractions, but in my theory that is just an image of the body of the Sun.