

# The Millennium Plaza Park UFOs

## An Oregon MUFON Case Study

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### Abstract

Keywords: Balloons—Cluster UFOs—Daylight Sighting—Photography

<b>UFO Description</b>	Daylight sighting of two small, dark, balloon-like, “drifting” UFOs with fighter jets chasing(?) them.
<b>Witnesses</b>	One person (Keith Rowell) to UFOs; two people (Keith Rowell and wife) to fighter jets.
<b>Time and Date</b>	About 10 AM PST; March 9, 2002.
<b>Place</b>	Wizer’s Oswego Foods parking lot near Millennium Plaza Park in Lake Oswego, Oregon.
<b>Weather</b>	Solid overcast; not raining; wind from ESE at 19.6, gusts to 26.5 mph; 10 miles visibility; temperature 46° F.
<b>Duration</b>	Total duration for both UFOs: About 2 minutes and 30 seconds. Total duration for both jets: About 15 seconds.

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# INTRODUCTION

This case is actually a sighting by me—the author of this case study. Since beginning my UFO studies in the mid 1970s, I have actually seen in the 1990s and 2000s some of these things that I've been studying most of my adult life. In ufology, what separates the men from the boys, so to speak, is the witnessing of the actual phenomenon that you are studying. Since at this time UFOs are a transient phenomenon, you cannot study the actual phenomenon entirely at will. You must wait for the phenomenon to happen to you. While this may not be entirely a matter of random good luck, for the most part, it seems that way for most people.

Seeing and photographing the Millennium Plaza Park UFOs was (apparently) an entirely fortuitous occurrence for me. (For a previous UFO sighting of mine that may not have been entirely fortuitous, see [oregonmufon.com](http://oregonmufon.com) under *Oregon Stories, The S.E. Division Street Scintillating UFO.*)

On the day in question, I happened to decide to accompany my wife to her usual Jazzercise appointment. And, I happened to look up and outside my car while I was sitting in the parking lot as I was waiting for my wife to finish up. I also happened to have one of my cameras with me that day. I usually did not in those days. (My other main avocation is serious amateur photography.)

The evidence and analysis of this case is illustrative of how much you can know and not know about UFOs. Even though they seem very real many times to the experimenter, capturing that reality in the web of physical evidence is difficult. This case shows that the physical evidence can usually take us only to “preponderance of the evidence” certainty but sometimes if we are lucky to “clear and convincing evidence” or even “beyond a reasonable doubt” certainty. Unfortunately, “beyond a scientific doubt” with individual cases is out of the question essentially for evidence and testimony from ordinary citizens.

## Hierarchy of Proof

So, this leads to the question: What does it take to prove something is true in our society? When does something become a truth that virtually everyone in our society takes for granted? It turns out there are various levels of proof for ideas and “facts” in our society (and all modern societies). Here is a suggested hierarchy of proof for UFOs from weakest to strongest:

- (1) Proof for UFO enthusiasts who don't know much about the academic enterprise and are willing to believe just about anything.
- (2) The personal proof of seeing something strange you cannot deny. Powerful for you, but meaningful possibly only also to close friends and relatives.
- (3) The kind of proof that most UFO investigators like me are able to muster by trying their best to do the job of real scientists.
- (4) Proof by real scientists and scholars associated formally with ufology (like the consultants for MUFON) making their best efforts as individual, maverick scientists and scholars unsupported by their mainstream colleagues.
- (5) The proof offered by the accumulation of UFO testimony and academic study currently existing in ufology, that is, consensus proof in 21st century ufology.
- (6) Proof for individual *mainstream* scientists and scholars doing research related to UFOs. These (very few) people are part of mainstream academia, but not part of ufology so presumably they are not biased by needing to maintain reputations within ufology. (There has been some toleration of this by the academic establishment, but by and large the extreme prejudice of the academic community is a strong discouragement to individual mainstream academics, of course.)
- (7) Proof afforded by an officially convened panel of scientists and scholars charged with producing a definitive study of the phenomenon. (This happened in the Condon report of 1969, but the study was rigged like many government commissions are on controversial subjects. However, the French COMETA report and the Peter Sturrock scientific panel are good examples of this. So far, these panels have been essentially ignored by mainstream media and academia unless their conclusions are negative as in the Condon report.)

- (8) Proof associated with an official (U.S.) government acknowledgement of the UFO complete with open access to (mostly U.S.) government evidence for the world's academic community. (This is the goal and desire of many UFO groups. It would be the UFO "disclosure" event.)
- (9) Scientific and academic proof from long-term, open, honest, "normal" academic study of the UFO over decades.

So, even a single UFO case with impeccable scientific evidence gathered by establishment scientists and technicians would fall short of "beyond a scientific doubt." That level of certainty would only come from years of aboveboard, open and honest, long-term scientific examination. Only then would the society as a whole be ready to accept UFO reality as a certainty like other scientific truths.

All of the cases on Oregon MUFON's website only rise to the level of (3) in the list above. But for me in this case, I'm 98% convinced that what I saw and photographed were UFOs—especially now as I'm finishing up this report finally almost ten years after the events, and I have even more experience with other people's UFO cases in Oregon and elsewhere.

## SIGHTING DESCRIPTION

On Saturday, March 9, 2002, I left my house in West Linn, Oregon, with my wife at about 8:50 AM to accompany her to one of her Jazzercise sessions. I dropped her off at the Lake Oswego Jazzercise place at Wizer's Oswego Foods shopping center at A Street and First Avenue in downtown Lake Oswego. See *Figure 1, Parking Lot of Wizer's Oswego Foods*. I was thinking about walking around the area and taking photos with my Canon G1 digital camera as I had done in the past. But when I dropped her off, I decided instead to visit the Lake Oswego Public Library a few blocks away. I stayed in the library till about 9:45 AM and left to park back in the Wizer's Oswego Foods parking lot about 9:50 AM.



Source: Keith Rowell

### **Figure 1. Parking Lot of Wizer's Oswego Foods**

*I stood next to my car in approximately the position of this photo and photographed UFO #1 and UFO #2 as they traveled west (to the right) after first appearing over the Douglas Fir trees in the center. We are looking south. The line of hills in the background is across the lake of Lake Oswego to the south of "downtown" Lake Oswego.*

## The First Object

As I was sitting in my car waiting for my wife to finish her Jazzercise session at 10:00, I looked out toward the south over some Douglas Fir trees in Millennium Plaza Park about 200 feet away. My eye was drawn quickly to a dark spot in the solid overcast but not raining sky. I first thought the dark spot might be a large bird. (We have Great Blue herons in the area.) But I saw no flapping of wings after a continuous gaze of five seconds or so. After about 10 to 30 seconds, I thought, "Hmmm, might be a UFO or at least something interestingly unusual if later identified. I've got a camera with me! Start shooting photos!" See *Figure 2, Full Frame UFO Photo #1-1*.



Source: Keith Rowell

**Figure 2. Full Frame UFO Photo #1-1**

*UFO #1 shows as a small dark speck in the middle of this full frame photo. The Canon G1 camera's zoom lens is at its farthest zoomed in extent, which is equivalent to approximately a 100 mm lens on a standard 35 mm camera. (The photo is lightened for visibility. Otherwise, it is not manipulated.)*

I got out of the car and quickly got the Canon G1 out of its case and turned it on. (It takes about one to two seconds or so to go through its turn on sequence.) I checked to make sure it was in Program mode, put its viewfinder to my eye, and began taking photos continuously pretty much as fast as I could till the object moved out of sight. See *Figure 3, Blowup of UFO Photo #1-1 Showing UFO*.



Source: Keith Rowell

### **Figure 3. Blowup of UFO Photo #1-1 Showing UFO**

*This is a blowup of UFO #1 from Figure 2, Full Frame UFO Photo #1.1. Note the obvious dark color and lobed or bulbous appearance of the UFO. (The blowup is 100% in Photoshop, which means that one pixel in the photo is rendered as one pixel on the screen. This eliminates scale artifacts as much as possible. The photo is lightened for visibility. Otherwise, it is not manipulated.)*

When I first saw the object, it was above the gap in the prominent Douglas Fir trees and then traveled in the sky from east to west. I guessed that the speed of travel was about 10 to 15 mph. I had my eye to the viewfinder during almost the entire time I saw this UFO. I was not aware of any movement of the UFO except for a smooth traveling from east to west. In other words, there were no erratic movements of any kind and no particular movement of the object itself around its axis or anything like that.

### **Difficult to Interpret**

The look of the object when I first saw it before I started photographing was of a “lumpy” completely black object. And it was about the angular size of a commercial jet high in the sky—not at 35,000 feet, but my impression was more like 15,000 or 20,000 feet, but not really low like under 5000 feet. It was difficult to get any real impression of its size or distance since the sky was solid overcast and the clouds were pretty far away, and I couldn’t interpret the object as any “normal” object. However, I was certain it did not behave like a bird of any kind after the first five seconds or so. And I was sure it was not something very close like an insect.

I finished photographing the sequence and quit because I could no longer see the object in the viewfinder or outside the viewfinder. I got the impression that the object either got too small to see or perhaps had disappeared in the high, solid overcast cloud cover. I was thinking that I hoped the Canon G1 got the photos OK because when you take a lot of photos quickly the G1 has to process and JPG compress the photo data and can start filling up its working memory before it can store the photos permanently in its CompactFlash memory. When the photo processing fills up the working memory, the photo taking slows down.

### **The Second Object**

As I was checking my G1 to put it away, I looked back up in the southern sky and was very surprised to see another object, very similar to the first one, in virtually the same place that I first saw the first object! See *Figure 4, Full Frame UFO Photo #2-1*, and *Figure 5, Blowup of UFO Photo #2-1 Showing UFO*. I said “wow” to myself and started taking another sequence of photos as this object moved in almost the same path. The paths were very similar. And the object looked pretty much the same. How weird?! It’s almost like they were twins. Or was it the same object?! So I finished up taking another sequence with the sequence ending when I could no longer see the object anymore. Whew! When it rains, it pours!



Source: Keith Rowell

**Figure 4. Full Frame UFO Photo #2-1**

*UFO #2 shows as a small dark speck in the middle of this full frame photo. The Canon G1 camera's zoom lens is at its farthest zoomed in extent, which is equivalent to approximately a 100 mm lens on a standard 35 mm camera. (The photo is lightened for visibility. Otherwise, it is not manipulated.)*



Source: Keith Rowell

**Figure 5. Blowup of UFO Photo #2-1 Showing UFO**

*This is a blowup of UFO #2 is from Figure 4, Full Frame UFO Photo #2-1. Note the obvious dark color and lobed or bulbous appearance of the UFO. (The blowup is 100% in Photoshop, which means that one pixel in the photo is rendered as one pixel on the screen. This eliminates scale artifacts as much as possible. The photo is lightened for visibility. Otherwise, it is not manipulated.)*

At about this point, my wife arrived at the car and since I had just finished photographing the second object, I greeted her and said I had just photographed two strange objects in the sky. I showed her where in the sky the second one had just disappeared and said, "I don't think you'll be able to see anything now." She looked briefly and saw nothing.

## The Jets

We were getting in the car when we heard the beginning of the roar of low-flying fighter jets, and, sure enough, we saw two fighter jets sweeping in from the east and head to the west in virtually the same area of the sky that I had just seen the two UFOs. See *Figure 6, Fighter Jets Photo #1*, and *Figure 7, Blowup from Fighter Jets Photo #1*. The jets were together on the same course and about two or three degrees apart I estimated. I said "wow" to myself once again, got my G1 ready, and managed to take three photos of the two jets as they cruised from out of the east going west and turning to head north. The jets disappeared behind some trees and the Wizer's Oswego Foods building. I did not try to take any more photos of the jets. That was enough for one day! (I did take four more photos of the environment: the Wizer's Oswego Foods parking lot.) We left the area and headed back home.



Source: Keith Rowell

**Figure 6. Fighter Jets Photo #1**

*The roof line of Wizer's Oswego Foods shows below the two jets moving from left to right (south to north) as they swept through the general area of the UFOs. The jets appear to be F-15s, probably from the Oregon Air National Guard station at Portland International Airport about 12 miles away. (The photo is lightened for visibility. Otherwise, it is not manipulated.)*



Source: Keith Rowell

### **Figure 7. Blowup from Fighter Jets Photo #1**

*This is a blowup of the two jets in Figure 6, Fighter Jets Photo #1. (The blowup is 100% in Photoshop, which means that one pixel in the photo is rendered as one pixel on the screen. This eliminates scale artifacts as much as possible. The photo is lightened for visibility. Otherwise, it is not manipulated.)*

## **Later Discovery of UFOs in Jets Shot**

After I got home, I retrieved the photos from my G1 and began to examine all the photos closely. I was not surprised by the photos of the UFOs, of course, but I was surprised by what I discovered in the photos of the jets. I discovered apparent images of two UFOs above and behind the military jets in Photo #1 of the jets! See *Figure 8, Blowup Showing Jets and UFOs Together*, I had not expected that at all because I had stopped photographing the UFOs when they were too small to be seen in the G1 viewfinder. Actually, now in retrospect, ten years later, I know that very small UFOs can easily appear in photos of the sky.

Many people have sent in photos to Oregon MUFON where (obviously large) UFO-looking images appear in their photos when they saw nothing. I've come to believe that UFOs are flitting around in our skies much more than commonly believed. Sometime people catch them accidentally in their photos. (People generally don't minutely examine their photos, thankfully, because Oregon MUFON would be overwhelmed with people claiming UFOs that are actually birds, bugs, plant debris, etc. Although by now I've examined minutely plenty of possible UFO photos so that I can usually tell the difference between these IFOs and the occasional tiny UFO.)



Source: Keith Rowell

### **Figure 8. Blowup Showing Jets and UFOs Together**

*This blowup from Figure 6, Fighter Jets Photo #1, shows what is almost certainly UFOs #1 and #2 behind and above the jets at this point. No other "suspicious specks" show up in the sky. The specks are only about 3 or 4 pixel across, however, and are too small to be "identified." But in view of the events that transpired, the specks are probably UFOs #1 and #2. (The photo is lightened for visibility. Otherwise, it is not manipulated.)*

## **ENVIRONMENT**

For a full assessment of most UFO sightings, the general environment should be described. This is too often omitted in many UFO cases. The environment is important here because perfectly ordinary terrestrial circumstances *could* account for these UFO sightings.

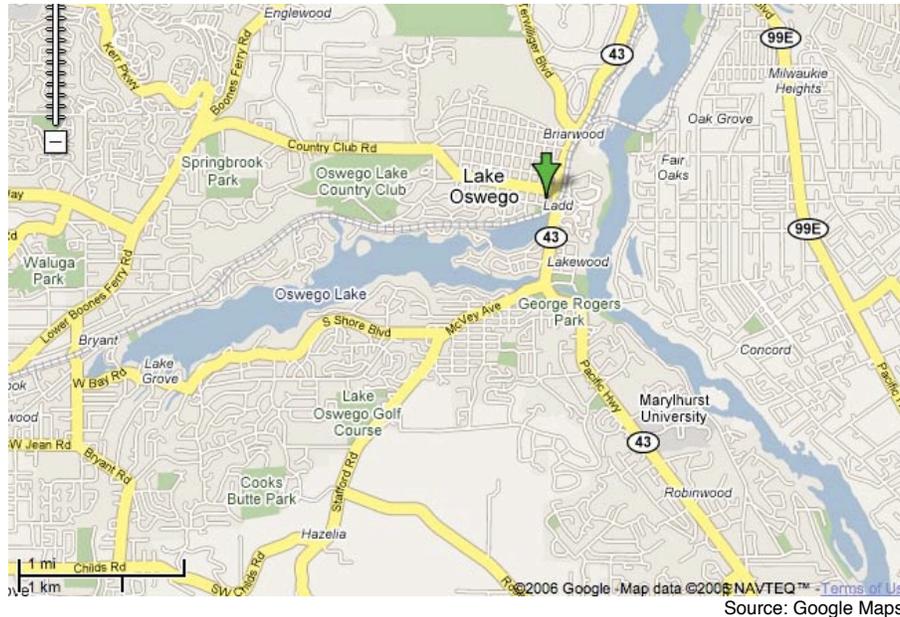
### **Neighborhood**

The sightings took place from the parking lot of Wizer's Oswego Foods, which is at 330 First St., Lake Oswego, Oregon. I was waiting for my wife to emerge from her Jazzercise session in the building complex owned by Wizer's Oswego Foods. Millennium Plaza Park is a hundred feet south of the parking lot. The green arrow in *Figure 9, The Sighting Environs*, and *Figure 10, The Sighting Neighborhood*, almost pinpoints the Wizer's Oswego Foods parking lot.

The greater neighborhood within a mile or so consists of the following:

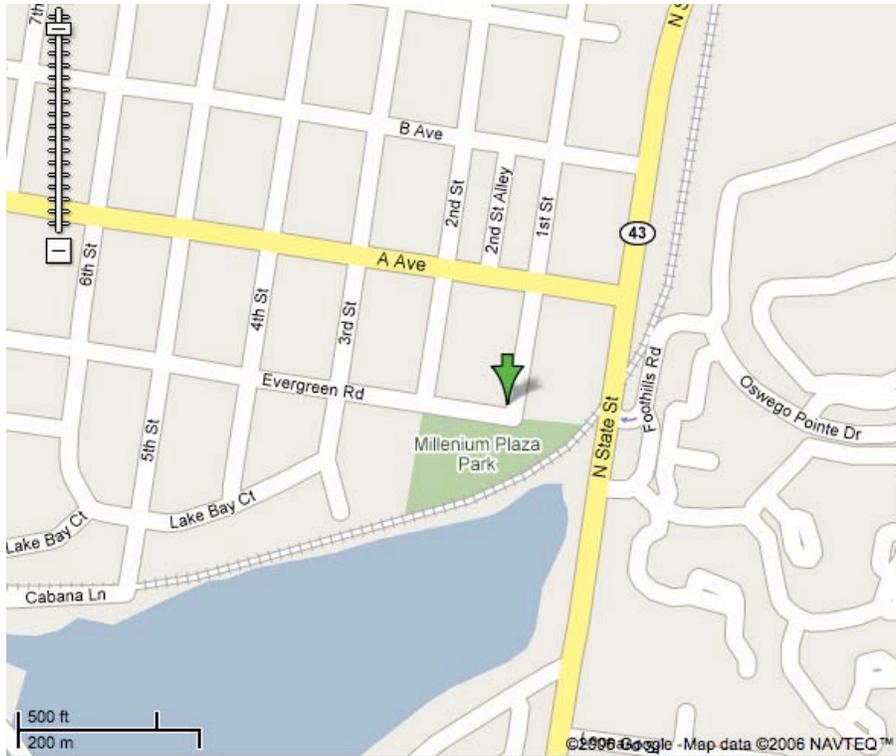
- To the north is a residential neighborhood, then Tryon Creek, and the Dunthorpe area of high income homes.
- To the east is some residential neighborhood and light industry, then the Willamette River and more residential areas in Milwaukie. Possibly significant is McLoughlin Boulevard (99E), where lots of auto dealers have sales lots. They sometimes use clusters of balloons to attract attention to their cars. The balloons tend not to be black, however. McLoughlin Boulevard is about a mile to the east, but the car dealerships are toward the southeast, perhaps the bulk of them two miles away.

- To the south is an extension of the lake of Lake Oswego and then more residential neighborhood rising into the hills of south Lake Oswego city.
- To the west is the lake of Lake Oswego and more residential neighborhood and a little retail business. The Lake Oswego Country Club golf course is to the west also.



**Figure 9. The Sighting Environs**

*For a larger scale map of the immediate neighborhood, see Figure 10, The Sighting Neighborhood. This shows the streets and Millennium Plaza Park. Note also that a railroad travels between the extension of the lake of Lake Oswego and Millennium Plaza Park. The green arrow shows almost the exact spot in the Wisner's Oswego Foods parking lot that I sighted the UFOs and jets from.*



Source: Google Maps

**Figure 10. The Sighting Neighborhood**

## Weather

See the details in *Table 1, Weather on Sighting Day*, for the weather on the day of the UFO sighting: March 9, 2002 at 10 AM. The prevailing winds in this sighting could be a factor in identifying this UFO because the UFO did travel in the direction of the winds from east to west. For a full discussion of all the relevant evidence, see *EVIDENCE, ANALYSIS, and CONCLUSION* later.

**Table 1. Weather on Sighting Day**

Event Date	Event Time	Temp (F)	Visibility (miles)	Wind Direction	Wind Speed (mph)	Conditions
3/9/02	10 AM	45.0°	10	ESE	19.6	Overcast

## EVIDENCE

The evidence in this case consists essentially of my own testimony and fifteen Canon G1 digital “prosumer” camera photos in JPG format. This case study has been compiled from the following sources of information:

- The 15 digital photos of the UFOs.
- The three fighter jets digital photos.
- Four additional environmental photos taken the day of the event. Many more photos taken of the environment in the days and months after the event, some of which are used in this case study.
- My testimony.

- Later evidence gathered in the form of photos taken of the area, and measurements made on the scene and from various maps and aerial photos of the area.

This is the only evidence for this UFO event.

## Digital Cameras

Professional digital cameras, and “prosumer” cameras like the Canon PowerShot G1 that I used, include lots of operational data with every photograph they take. This EXIF (Exchangeable Image File) data is included in JPEG (and original TIFF) digital photos. The information consists of camera settings and scene data such as aperture, shutter speed, metering pattern, zoom setting (focal length), and a lot of other data. See Appendix D, Camera Data, for more on EXIF data.

Some of this data is analyzed in this case study to, perhaps, throw a little more light on what the identity of the two UFOs might be.

## Summary of UFO Attributes

The attributes generally common to both of the UFOs are the following:

- The “drifting” movement.
- The very dark black appearance.
- The east to west movement.
- The generally compact and “bumpy,” (bulbous?) appearance.
- The disappearance to the distant west.

## The Jets

The two jets were photographed in three separate consecutive photos (Jets #1, Jets #2, and Jets #3) as they swept through the same basic airspace that the UFOs traveled, although the UFOs seemingly traveled at a lower level. The faraway jet silhouettes in the photos are most like F-15 Eagles. As it happens, F-15s are flown out of the Oregon Air National Guard station located adjacent to the Portland International Airport, which is next to the Columbia River in northeast Portland. This is about 12 miles from Lake Oswego. See *Figure 7, Blowup from Fighter Jets Photo #1*, *Figure 8, Blowup Showing Jets and UFOs Together*, and *Figure 12, Fighter Jet Paths*.

## The Moon

The following facts about the moon are also used in this case study in the analysis and calculations section later. See *Figure 11, Jet with Contrails and Moon*.

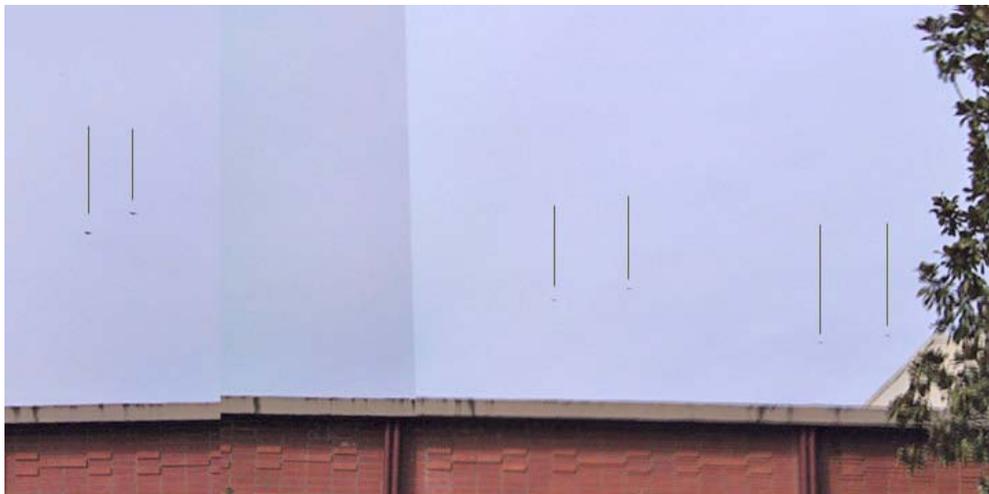
- The diameter of the full moon is very close to 0.5° angular size.
- The pixel diameter of the full moon taken with the same camera (Canon G1) at the same focal length as the UFOs and jets is about 55 pixels.



Source: Keith Rowell

**Figure 11. Jet With Contrails and Moon**

*The moon and a high flying large jet with contrails shows in this photo. The moon is about 0.5° angular size. This fact can be used to estimate an angular size of UFOs in photos when the same camera and lens settings are used to later take a photo of the moon.*



Source: Keith Rowell

**Figure 12. Fighter Jet Paths**

*This photo illustrates the path of the jets as they traveled at this point from south to north. The jets are at the lower end of the vertical black lines. (The photo is put together (composited) from the three photos of the jets—Jets #1, Jets #2, and Jet #3. The photos were lined up by hand by trying to make a “best fit” match of the roof lines.)*

## Detailed Chronology of Observations

This UFO sighting event is especially interesting because of the precise time-stamping of the events due to the EXIF metadata preserved with each photo taken. This allows a precise reconstruction of the events. The following tables show the important parameters pertaining to each photo and fill in gaps in the entire timeline of events.

The Canon G1 camera preserves date, time to the second, aperture, shutter speed, ASA (=50), focal length (=21mm for most of the UFO photos), and a lot of other technical information and stores it permanently with each photo it takes in the EXIF metadata. (Here at least is one great thing about digital cameras: they all keep some form of EXIF metadata, which aids considerably analysis of the photo.)

### Overall Timeline of Events

*Table 2, Overall Timeline of UFOs and Jets*, presents together the EXIF time metadata so that we can understand how the events unfolded. Some important ideas from examining the data in the table are the following:

- **Duration of First UFO Event.** The elapsed time for the seven photo sequence of UFO #1 was 63 seconds. This was a little over a minute. The UFO was pretty much gone to the naked eye in a minute's time. It was too small to see in the viewfinder and by the naked eye, so I quit taking photos.
- **Time Between UFOs.** The time between UFO #1 and UFO #2 was 13 seconds. So, almost when I stopped taking photos of UFO #1, there was another one to take photos of that did almost the same thing: it drifted along in the sky till it was no longer visible.
- **Duration of Second UFO Event.** The elapsed time for the eight photo sequence of UFO #2 was 87 seconds. This was almost a minute and a half—roughly the same amount of time for the first UFO event. UFO #2 first appeared in virtually the same place (see below), traveled the same basic path, and disappeared to the camera viewfinder and naked eye.
- **Time Between Second UFO and Jets.** The time between UFO #2 and the jets was 86 seconds. So, almost a minute and a half occurred after I thought I was all done photographing anything unusual and when I took the first photo of the jets. Maybe ten or 20 seconds before the first photo of the jets, I started hearing the roar of the jets and decided to photograph those.
- **Duration of Jets Event.** The elapsed time for the jets was 14 seconds. Thus, I took the three jets photos (Jets #1, Jets #2, and Jets #3) in 14 seconds. The total time the jets were in the vicinity was around 30 to 40 seconds as they swept through the airspace.
- **Duration for Both UFOs.** The total time both UFOs were visible was 150 seconds. The total elapsed time was 163 seconds. So, it was all over for the UFOs in a little over two and a half minutes.
- **Duration of Entire Event: UFOs Plus Jets.** The total elapsed time for both UFOs and jets was 261 seconds, or 4 minutes and 21 seconds. Within five minutes, the whole series of events was completed.

**Table 2. Overall Timeline of UFOs and Jets**

	UFO #1	First Interval	UFO #2	Second Interval	Jets
<b>Start Time (AM)</b>	9:56:26	9:57:29	9:57:42	9:59:09	10:00:35
<b>End Time (AM)</b>	9:57:29	9:57:42	9:59:09	10:00:35	10:00:49
<b>Elapsed Time to Start of Event</b>	0:00	1:03	1:16	2:43	4:09

	UFO #1	First Interval	UFO #2	Second Interval	Jets
Duration (sec)	63	13	87	86	14

## UFO Photo Sequences

Table 3, *Timeline of UFO #1 Sequence* and Table 4, *Timeline of UFO #2 Sequence* show cropped images of the UFOs in each sequence. Note the elapsed time. The Canon G1 was the first camera in Canon's new Powershot line of "prosumer" cameras. Compared to their digital SLR models the G1's operation was very slow. So part of the time of many seconds between shots was the very slow operation of the camera, but part of it was me, I believe. But essentially I was taking photos about as fast as the camera could operate.

Note especially the blank image in Photo #2-7, where a UFO image should be. This image could be interpreted in two ways:

- (1) I moved the camera so that I simply missed photographing the UFO for that photograph. The UFO was there I just failed to photograph it.
- (2) However, it was not my intent at all to miss any shots of the UFO, of course, and the fact that Photo #2-8 has the UFO centered again as if nothing was amiss argues against that interpretation. So, did the UFO just disappear for one photo? We'll never know the answer to that one!

**Table 3. Timeline of UFO #1 Sequence**

Photo No.	Photo	Time (AM)	Elapsed Time (sec)	Comment
UFO #1-1		9:56:26	0	At maximum lens (telephoto) extent.
UFO #1-2		9:56:34	8	At maximum lens (telephoto) extent.
UFO #1-3		9:56:46	20	At maximum lens (telephoto) extent.
UFO #1-4		9:57:00	34	At maximum lens (telephoto) extent.
UFO #1-5		9:57:09	43	At maximum lens (telephoto) extent.

Photo No.	Photo	Time (AM)	Elapsed Time (sec)	Comment
UFO #1-6		9:57:20	54	At maximum lens (telephoto) extent.
UFO #1-7		9:57:29	63	NOT at maximum lens (telephoto) extent. This is why the UFO is smaller. Not because it accelerated away!

**Table 4. Timeline of UFO #2 Sequence**

Photo No.	Photo	Time (AM)	Elapsed Time (sec)	Comment
UFO #2-1		9:57:42	0	At maximum lens (telephoto) extent.
UFO #2-2		9:57:50	8	At maximum lens (telephoto) extent.
UFO #2-3		9:58:00	18	At maximum lens (telephoto) extent.
UFO #2-4		9:58:15	33	At maximum lens (telephoto) extent.
UFO #2-5		9:58:28	46	At maximum lens (telephoto) extent.
UFO #2-6		9:58:38	56	At maximum lens (telephoto) extent.

Photo No.	Photo	Time (AM)	Elapsed Time (sec)	Comment
UFO #2-7		9:58:49	67	At maximum lens (telephoto) extent. Note that no UFO appears in the photo. I cannot be absolutely certain, but since I fully intended to take photos of the UFO as long as I could and the fact that it appears in the last photo in this sequence and because the UFOs also seem to appear in the photos of the jets taken later, there is the possibility that the UFO disappeared momentarily and then reappeared. However, of course, I could have just missed photographing the UFO in this photo by inadvertently pointing it just away from the UFO. We'll never know the answer to this one. But it is suspicious there is not UFO in this one.
UFO #2-8		9:59:09	87	At maximum lens (telephoto) extent.

## ANALYSIS

Since we have digital photos in this case, we have not only the photographic image data, but also the EXIF metadata for technical analysis. It turns out that we can calculate a probable speed for the UFOs, which will rule out, pretty well, the identification of the UFOs as party balloon clusters—the primary identification candidate for the UFOs.

Some of the “hard” numbers we have as exact values, or easily measured values, are the following:

- Pixel width and size for all the UFOs.
- Exact time taken to the second for each photo.
- Focal length of the lens for each photo.

Note that the photos used for the speed calculation were taken at the same focal length, which means that we can directly compare the UFO pixel width for each photo. If this had *not* been the case, then we would have to figure the focal length into the calculations to get an accurate pixel width comparison between the two photos we compare below.

### UFO Shape and Color

The UFO shape of UFO #1 and UFO #2 is very similar but not the same. Both UFOs show the following shape and color characteristics:

- Very dark gray to black color.
- Lobed appearance.
- Variability in lobe orientation as the UFOs moved along in the sky.
- On Photoshop close inspection, there is more than a hint of red in the center.

*Figure 13, Comparison of UFO #1*, shows the UFO diminishing in size as time moves on from left to right. (Note that the smallest UFO image on the right—UFO #1-7—was not taken at the same 21 mm zoomed in focal length as all the others. It was taken at 9.3 mm.) Note that the configuration of the lobes

changes as the photos are taken one after the other. This might mean that the UFO is a static shape that is tumbling as it moves along, or it could mean that the UFO lobes are moving around within itself as it moves along. (See my *Appaloosa Way UFO* case study up on [oregonmufon.com](http://oregonmufon.com) for a videotaped UFO that seems to be tumbling and reconfiguring as it moves along in the sky.)



Source: Keith Rowell

### **Figure 13. Comparison of UFO #1**

*This composite illustration shows the UFOs from UFO #1-1 through UFO #1-7 in chronological order left to right. Thus, the first photo taken is the leftmost one, next is the next photo taken, etc. The UFO seemed to be “drifting” way. So if it stayed the same size, then naturally it would get smaller and smaller as it “drifted” away. Note the change in configuration as the UFO gets farther and farther away. (The smallest UFO image on the right was not taken at the same magnification as the others!)*

*Figure 14, Comparison of UFO #2, shows virtually the same thing as Figure 13, Comparison of UFO #1. The primary difference is the lack of a UFO in photo UFO #2-7—the second to the last photo in the series. To the best of my knowledge, I did not point the camera away from where the UFO should have been in the sky at the time that I took the photo. The idea that I somehow missed getting the UFO in the frame is made less like by the fact that I got photo UFO #2-8. UFO #2 is quite evident in all the other frames, but does not appear anywhere in photo UFO #2-7. (A close inspection in Photoshop shows no suspicious dark specks that might be the UFO if I had zoomed back out and taken the photo at lower magnification. Besides, if I had done that, we would very likely see some portion of the ground—trees, buildings, etc.)*

The UFO is in the upper center area of each of the other photos. I was aware that if possible you should always try to get known objects in UFO photos along with the UFO, and I was trying to get some ground if possible but also get the largest image I could with the greatest magnification (zoomed in extent). The fact of the missing UFO in photo UFO #2-7 is curious, but because of a lack of known, structured objects (trees, buildings, etc.) in the frame of photo UFO #2-7, I cannot prove that I did not accidentally miss getting the UFO in the frame. Such are the vagaries of obtaining UFO evidence!

So, I cannot prove my suspicion that the UFO in Sequence #2 may have “mysteriously disappeared” for just one photo in the sequence.



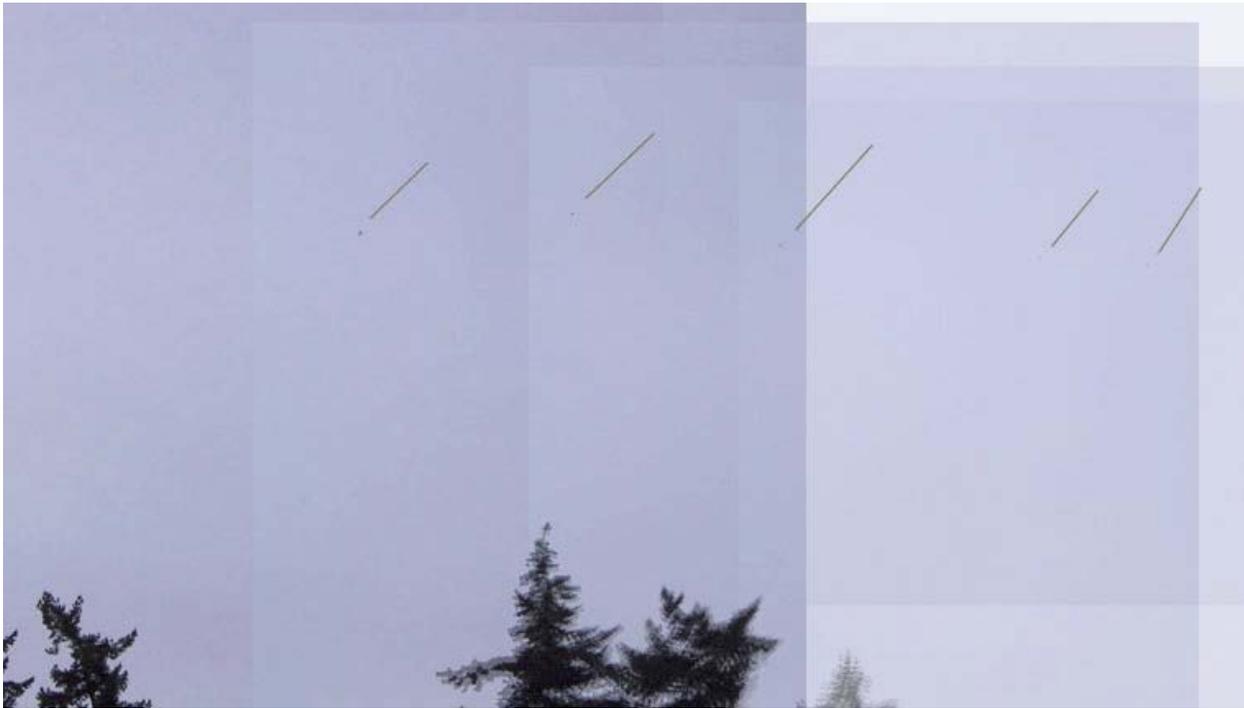
Source: Keith Rowell

### **Figure 14. Comparison of UFO #2**

*This is the same kind of composite illustration as Figure 13, Comparison of UFO #1, above except that is for UFO #2. This composite illustration shows the UFOs from UFO #2-1 through UFO #2-8 in chronological order left to right. Thus, the first photo taken is the leftmost one, next is the next photo taken, etc. The UFO seemed to be “drifting” way. So if it stayed the same size, then naturally it would get smaller and smaller as it “drifted” away. Note the change in configuration as the UFO gets farther and farther away. Note that the UFO #2-7 photo shows no UFO. See the text for a discussion of this.*

## **UFO Path**

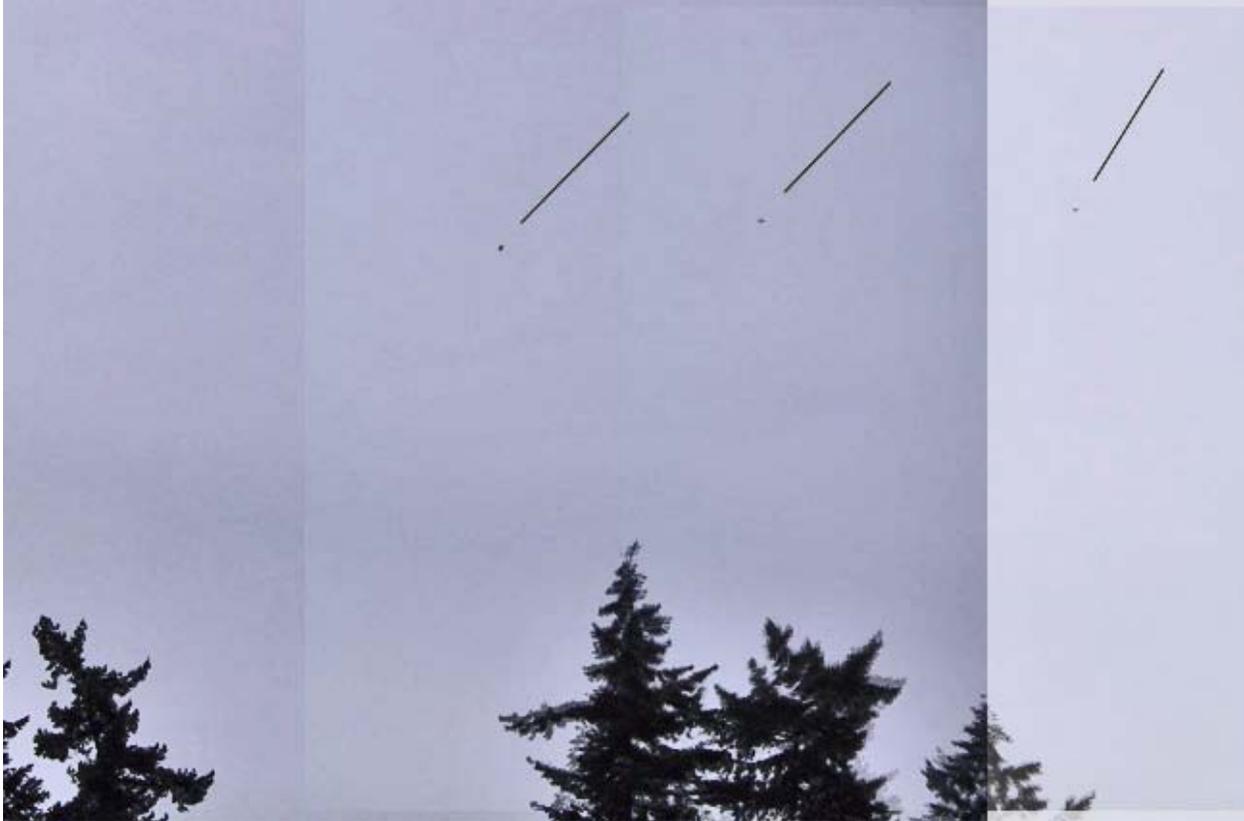
The UFO paths for UFO Sequence #1 and #2 can be shown for the first few photos in each sequence because the stationary trees at the bottoms of the photos can be aligned. It appears that in both cases the UFOs traveled a more or less level flight path as they moved along. See *Figure 15, Composite Showing Path of UFO #1* and *Figure 16, Composite Showing Path of UFO #2*.



Source: Keith Rowell

**Figure 15. Composite Showing Path of UFO #1**

*This composite image is made up of the first five photos of UFO #1—UFO #1-1, UFO #1-2, UFO #1-3, UFO #1-4, and UFO #1-5. The photos were lined up by superimposing the shapes of the tops of the Douglas Fir trees. This shows that the path of the UFO in the sky as it traveled from left to right (east to west) was more or less straight and level. The UFOs are barely visible as specks at the lower ends of the angled black indicator lines.*



Source: Keith Rowell

### **Figure 16. Composite Showing Path of UFO #2**

*This composite image is made up of the first three photos of UFO #2—UFO #2-1, UFO #2-2, and UFO #2-3. The photos were lined up by superimposing the shapes of the tops of the Douglas Fir trees. This shows that the path of the UFO in the sky as it traveled from left to right (east to west) was more or less straight and level.*

### **Initial UFO Positions**

It seems a bit unlikely that the two UFOs would appear in virtually the same place when I first saw them. I certainly did a double-take when I saw the second similar-appearing UFO in virtually the same position as the first one. So, I decided to check just how close the positions were. I compared them in a composite constructed in Photoshop of a moon photo and UFOs #1-1 and #2-1. See *Figure 17, Composite with Moons and UFO #1-1 and UFO #2-1*.

As we can see from the figure, the first UFO positions of both UFOs are quite close—about 1.5° apart. This is just a curiosity and is documented here just for interest and completeness. Is it coincidence or something else? We'll never know.



Source: Keith Rowell

### **Figure 17. Composite with Moons and UFO #1 and UFO #2**

*This composite image consists of the photos UFO #1-1 and UFO #2-1 superimposed and lined up by making a “best fit” with the Douglas Fir trees below. The UFOs are the specks above and between the two main tree top “clumps” on the left and right sides. Above the UFOs is a straight line of half moon images lined up side by side so that we can see that the UFOs are about 1.5° angular separation apart. It is interesting that the initial photos of both UFOs were seen and photographed in such close proximity.*

## **UFO Size and Distance**

As is usual with most UFO sightings, there is not usually enough evidence-derived data to measure or even calculate an absolute (or real) UFO size or distance. Ordinary citizens usually have only cameras and camcorders at most, and these devices don’t directly measure size or distance. But, if we are lucky enough to have photo or video evidence, which we do in this case, the camera and video evidence and data do give us enough to know what is called the *angular* sizes of things imaged in the photo or video evidence.

### **Angular Size Calculation**

But we can find angular size a couple of ways:

- By comparing the angular size of the UFO with the angular size of an image of the moon taken with the same camera at the same lens focal length.
- By calculating the angular size by comparing the pixel dimensions of the UFO image and the total photo image pixel dimensions and then comparing this with the angle of view of the focal length of the camera lens.

We use the moon method here.

The following measurements are noted:

- The pixel diameter of the Moon at the same camera lens focal length of the UFO photos (100 mm) is about 58 pixels.

- The pixel size of the UFO in Photo #1-1 (the first in Sequence #1) is 12 pixels and the size in Photo #1-7 (the last in Sequence #1) is 4 pixels.
- The pixel size of the UFO in Photo #2-1 (the first in Sequence #2) is 12 pixels and the size in Photo #2-8 (the last in Sequence #2) is 7 pixels.
- The angular size of the Moon is 0.5°.

With these values, let's calculate the angular size of the UFO in Photos #1-1 and #1-7. Using the following equation,

$$\frac{0.5}{58} = \frac{x}{12} \Rightarrow \frac{12(0.5)}{58} = 0.1^\circ$$

For the UFO in Photo #1-1, get an angular size of about 0.1°. But this is not the real size of the UFO. How do we get that? It turns out that we can't from the information that we have.

However, all is not lost. We can work backward, so to speak, and show plausibly that our UFO is not the closest reasonable thing that it could be, which is a cluster of party balloons.

### **Might Party Balloon Clusters Be Our UFOs?**

So, if we now switch gears and work on the assumption that our UFO is really a cluster of party balloons, we can obtain a real size and a real distance for plausible party balloons and then we can prove beyond a reasonable doubt by comparing the actual speed of the wind that day with the calculated speed that a cluster of party balloons must be drifting along at given all the UFO evidence we have gathered.

### **Size of Party Balloon Cluster**

This is an easy one. We actually bought a cluster of four black with one red party balloons and it measured about four feet in size.

### **Party Balloon Cluster Distance Away**

Using the four foot cluster size with the angular size of the UFO in Photo #1-1 (supposing it is a party balloon cluster for the moment), we can calculate the distance away with the following trigonometry equation:

$$\tan(0.1) = \frac{4}{x} \Rightarrow x = \frac{4}{\tan(0.1)} = 2300 \text{ ft}$$

So the hypothesized balloon cluster was about 2300 feet south of my position when I first saw and photographed it.

### **UFO Speed**

Velocity (speed) is distance the object traveled divided by the time it takes to go the distance. Because the UFOs were photographed with a digital camera and because the camera includes EXIF metadata for each photo, we do in fact have the time traveled to the second from the first photo to the last photo (and for the photos in between, too, of course). See *APPENDIX A, UFOs and Jets Photo Data*.

We know that the maximum sustained speed of the UFOs if they were balloons would be the maximum gust speed recorded at PDX (26.5 mph), which should not vary much from PDX since Lake Oswego is only about ten miles away. The average speed was actually 19 mph, but we'll choose the higher speed for the best case scenario for the balloon cluster hypothesis.

### **Need Second Distance Away for Speed Calculation**

To calculate the speed of the supposed party balloon cluster, we need a second distance, so instead of using the data from UFO #1-1, we use the data from UFO #1-6 after the UFO has travel farther away from me.

For UFO #1-6, we have an angular size of 0.06° and doing the second calculation again, we have a distance away from me of about 3800 feet.

So, we have two distances calculated now:

- The distance from me to the UFO in Photo #1-1 is 2300 feet.
- The distance from me to the UFO in Photo #1-6 is 3800 feet.

### Distance UFO Traveled

Assuming that the hypothesized balloon cluster traveled parallel to me as it went farther away toward the west, we can use a right triangle and the Pythagorean theorem to calculate a distance traveled for the UFO (as balloons). Using the following equation, we get a distance of about 3000 feet.

$$h^2 = x^2 + y^2 \Rightarrow x = \sqrt{h^2 - y^2} = \sqrt{(3800)^2 - (2300)^2} = 3000 \text{ ft}$$

### Finally, the UFO Speed

The following measurement for time is used:

- The time elapsed from Photo #1-1 to Photo #1-6 is 54 seconds.

We know that the maximum speed of the wind at the time was 26.5 mph, which is 39 feet per second, so by the speed equation, we have the following:

$$v = \frac{d}{t} \Rightarrow d = v \cdot t = 39 \frac{\text{ft}}{\text{sec}} \cdot 54 \text{ sec} = 2100 \text{ ft}$$

This means that a four-foot sized balloon cluster could not travel the 3000 feet distance that it should have if it really were a balloon cluster given the maximum wind speed available at the day and hour in question. *So, perhaps the "balloon cluster UFO" is actually just a genuine UFO and not some balloons.*

### Comparison of UFO #1 and UFO #2

See *Table 5, Speed Comparison of UFO Sequences #1 and #2*, for a comparison of the two UFO sequences with the balloon hypothesis. Note that the bolded values are calculated. The two UFO sequences turn out not to differ in distance traveled (3000 feet) because the two sequences start and end with the same angular sizes (0.1° and 0.06°).

But their time of travel is different (54 and 87 seconds). So, the UFO in sequence #1 traveled faster than the UFO in Sequence #2. The Sequence #1 UFO traveled faster than the highest measured gust speed of 26.5 mph, but the Sequence #2 traveled slightly slower than the highest measured gust speed. But both traveled faster than the average speed of 19 mph. So, the balloon hypothesis fails.

Just on speed of travel alone, both UFO #1 and UFO #2 are probably not clusters of party balloons.

**Table 5. Speed Comparison of UFO Sequences #1 and #2**

	Pixel Diameter	Angular Size (degrees)	Distance Traveled (ft)	Time Elapsed (sec)	Speed (mph)
UFO #1	--	--	3000	54	38
UFO #2	--	--	3000	87	23
Balloons in UFO #1 Scenario	--	--	2100	54	19 ave.; 26.5 max gust
Balloons in UFO #2 Scenario	--	--	3400	87	19 ave.; 26.5 max gust
Moon	58	0.5	--	--	--
Photo #1-1	12	0.1	--	--	--
Photo #1-6	7	0.06	--	--	--
Photo #2-1	12	0.1	--	--	--
Photo #2-8	7	0.06	--	--	--

## CONCLUSION

The UFO observations in this case were made by one person—Keith Rowell while his wife was witness to the fighter jets immediately after the UFOs appeared. A number of photos were taken of two separate UFOs and two military jets as they swept through the general region of the UFOs.

### Identification Candidates

The candidates for identification for these two balloon-like UFOs are the following:

- **Secret U.S. military or foreign power aircraft.** This explanation, of course, can never be completely ruled out by anyone except for the very few within the bowels of our deep black military and corporate contractor world who would also have access to all the on-going projects. This list of people is exceedingly small (perhaps only 100?!) because of the “need to know” and compartmentation of military secrets. However, verified reports of this kind of object over populated areas in the U.S. are far fewer than “standard” UFOs. It strains credulity that human-designed, “conventional” secret aircraft would be tested at only a few thousand feet or so altitude inside a small metropolitan area. (We assume that secret military aircraft buffs could adequately “verify” this kind of report, but the documented record of reports of secret military aircraft appearing over populated areas—which are always only at very high altitudes!—is very scant, indeed.) The objects photographed in this case do not in any way resemble any kind of military aircraft including UAVs. *Thus, this identification candidate is rejected.*

- **Police surveillance UAV.** No city police or county sheriff's departments in the Portland metro area have any operational police surveillance UAVs, much less any that fit the description of these UFOs. *Thus, this identification candidate is rejected.*
- **Aircraft.** No conventional aircraft, military or civilian, looks like this UFO. *Thus, this identification candidate is rejected.*
- **Helicopter.** No helicopter, military or civilian, looks like this UFO. *Thus, this identification candidate is rejected.*
- **Blimp.** No blimp, military or civilian, looks like this UFO. Also, we think the UFOs are at most ten feet in size and probably smaller. *Thus, this identification candidate is rejected.*
- **Ultralight.** No ultralight looks like this UFO. *Thus, this identification candidate is rejected.*
- **Remote-controlled model aircraft.** No RC model aircraft looks like this UFO. *Thus, this identification candidate is rejected.*
- **Kite.** These UFOs do not resemble a kite, and they sustained their more or less level flight path for at least a minute or so. Also, kites need to be tethered to maintain altitude for very long and these UFOs traveled away from me and disappeared to sight. *Thus, this identification candidate is rejected.*

- **Party Balloons.** This is the most viable ID candidate of them all. Here are the pros and cons.

On the evidential side for this candidate are the following:

- The UFOs look somewhat like a cluster of black party balloons.
- The UFOs seemed to drift along with the prevailing wind.

On the evidential side for genuine, perhaps "balloon mimic," UFOs are the following:

- The UFOs were calculated to travel at a faster speed than the prevailing wind and one even traveled faster than the maximum gust speed.
- The appearance of a second UFO in virtually the identical spot where the first one appeared is odd, but certainly two party balloon clusters could possibly have been seen first in the same place.
- The distance of 2300 feet to the south of my position if the UFOs were party balloons most likely puts the point of origin for a supposed prankster—floating two similar party balloon clusters—out over the east end of the lake "Oswego Lake". Possible, but unlikely.
- The fact that two military jets roared through the same general air space within minutes of the balloons seems highly suspicious if these UFOs were just two party balloons. However, we should remember that the UFOs appeared over Lake Oswego only about six months after the twin towers tragedy of September 11, 2001. So, the military was on extra alert. But we hope that a cluster of party balloons was not enough to trigger a \$10,000 "red alert" sortie!
- The fact that Photo #2-7 shows no UFO when my full intent was to keep photographing the UFO as long as I could is highly suspicious. There is no reason that I suddenly moved the camera to exclude the UFO and then moved back to center the UFO in Photo #2-8. Photos #2-6 and #2-8 show centered UFOs as do both series for UFOs #1 and #2.
- The calculated speeds of the two UFOs were significantly different (UFO #1 at 38 mph and UFO #2 at 23 mph). This shouldn't be true for two balloon clusters only a few minutes apart.

So, the party balloon hypothesis fails, though I am only convinced to the level of clear and convincing evidence of the failure of this hypothesis. This case seems to be another "balloon mimic" UFO judging from my 2011 perspective now after photographing so many more of my own UFOs after this one so long ago and documenting many other people's "balloon mimic" UFOs also. *Thus, this identification candidate is rejected.*

***Since the identification candidates fail for the reasons stated, this UFO observation is classified as a true UFO, a MUFON UAV.***

# APPENDIX A: UFOs and Jets Photo Data

Table A-1, *UFOs and Jets EXIF Metadata*, shows selected EXIF metadata that the Canon G1 camera stores with each photo that is taken. Note that the Timeline column data has been calculated and added for convenience.

**Table A-1. UFOs and Jets EXIF Metadata**

Timeline (sec)	File Name	Time	Date	Shutter Speed	Aperture	Focal Length
0	123-2384_IMG.JPG	9:56:26 AM	3/9/02	1/1000	8.0	21.0 mm
8	123-2385_IMG.JPG	9:56:34 AM	3/9/02	1/1000	8.0	21.0 mm
20	123-2386_IMG.JPG	9:56:46 AM	3/9/02	1/800	8.0	21.0 mm
34	123-2387_IMG.JPG	9:57:00 AM	3/9/02	1/800	8.0	21.0 mm
43	123-2388_IMG.JPG	9:57:09 AM	3/9/02	1/1000	8.0	21.0 mm
54	123-2389_IMG.JPG	9:57:20 AM	3/9/02	1/1000	8.0	21.0 mm
63	123-2390_IMG.JPG	9:57:29 AM	3/9/02	1/800	8.0	9.3 mm
76	123-2391_IMG.JPG	9:57:42 AM	3/9/02	1/1000	8.0	21.0 mm
84	123-2392_IMG.JPG	9:57:50 AM	3/9/02	1/800	8.0	21.0 mm
94	123-2393_IMG.JPG	9:58:00 AM	3/9/02	1/800	8.0	21.0 mm
109	123-2394_IMG.JPG	9:58:15 AM	3/9/02	1/1000	8.0	21.0 mm
122	123-2395_IMG.JPG	9:58:28 AM	3/9/02	1/1000	8.0	21.0 mm
132	123-2396_IMG.JPG	9:58:38 AM	3/9/02	1/1000	8.0	21.0 mm
143	123-2397_IMG.JPG	9:58:49 AM	3/9/02	1/1000	8.0	21.0 mm
163	123-2398_IMG.JPG	9:59:09 AM	3/9/02	1/800	8.0	21.0 mm
249	123-2399_IMG.JPG	10:00:35 AM	3/9/02	1/640	8.0	21.0 mm
257	123-2400_IMG.JPG	10:00:43 AM	3/9/02	1/640	8.0	21.0 mm
263	124-2401_IMG.JPG	10:00:49 AM	3/9/02	1/500	8.0	21.0 mm
636	124-2402_IMG.JPG	10:07:02 AM	3/9/02	1/500	4.5	7.0 mm
645	124-2403_IMG.JPG	10:07:11 AM	3/9/02	1/500	5.0	7.0 mm
651	124-2404_IMG.JPG	10:07:17 AM	3/9/02	1/500	5.6	7.0 mm
657	124-2405_IMG.JPG	10:07:23 AM	3/9/02	1/400	4.0	7.0 mm

## APPENDIX B: Portland Weather Data

Table B-1, *Portland Weather Data: March 9, 2002*, shows the surface observation weather data at Portland, Oregon, on March 9, 2002. This would be at Portland International Airport about 12 miles away from Lake Oswego. The pertinent data for the UFOs sighting event documented in this case study is 09:55 (AM).

**Table B-1. Portland Weather Data: March 9, 2002**

Time	Temp (°F)	Dew point (°F)	Humidity (%)	Pressure (in.)	Visibility (mi.)	Wind Speed (mph)	Gust (mph)	Speeds (mph)	Precipitation	Events/ Conditions
00:55	37.4	33.8	87	30.15	10.0	12.7	N/A	N/A		Overcast
01:55	37.4	33.8	87	30.12	10.0	10.4	N/A	N/A		Mostly Cloudy
02:55	37.4	33.8	87	30.09	10.0	9.2	N/A	N/A		Mostly Cloudy
03:55	37.4	32.0	81	30.06	10.0	10.4	N/A	N/A		Mostly Cloudy
04:55	37.4	30.2	75	30.04	10.0	8.1	N/A	N/A		Mostly Cloudy
05:55	37.4	30.2	75	30.01	10.0	9.2	N/A	N/A		Mostly Cloudy
06:55	37.4	30.2	75	29.98	10.0	11.5	N/A	N/A		Partly Cloudy
07:55	39.2	30.2	70	29.95	10.0	11.5	N/A	N/A		Partly Cloudy
08:55	42.8	28.4	57	29.92	10.0	16.1	N/A	N/A		Partly Cloudy
09:55	44.6	28.4	53	29.89	10.0	19.6	N/A	N/A		Scattered Clouds
10:55	46.4	30.2	53	29.86	10.0	19.6	26.5	N/A		Partly Cloudy
11:55	46.4	30.2	53	29.86	10.0	16.1	N/A	N/A		Scattered Clouds
12:55	48.2	32.0	54	29.80	10.0	12.7	N/A	N/A		Partly Cloudy
13:55	48.2	32.0	54	29.83	10.0	11.5	N/A	N/A		Partly Cloudy
14:55	48.2	33.8	58	29.86	10.0	11.5	N/A	N/A	Rain	Light Rain
15:55	48.2	35.6	62	29.86	10.0	21.9	29.9	N/A	Rain	Light Rain
16:55	46.4	39.2	76	29.86	10.0	8.1	N/A	N/A	Rain	Light Rain

Time	Temp (°F)	Dew point (°F)	Humidity (%)	Pressure (in.)	Visibility (mi.)	Wind Speed (mph)	Gust (mph)	Speeds (mph)	Precipitation	Events/ Conditions
17:55	44.6	39.2	81	29.89	10.0	9.2	N/A	N/A		Mostly Cloudy
18:55	44.6	39.2	81	29.89	10.0	11.5	N/A	N/A		Scattered Clouds
19:55	46.4	41.0	81	29.89	10.0	15.0	N/A	N/A	Rain	Light Rain
20:55	46.4	39.2	76	29.92	10.0	17.3	20.7	N/A		Mostly Cloudy
21:14	46.4	39.2	76	29.92	10.0	13.8	N/A	N/A	Rain	Light Rain
21:55	46.4	41.0	81	29.95	10.0	9.2	N/A	N/A	Rain	Light Rain
22:55	44.6	41.0	87	29.98	7.0	12.7	21.9	N/A	Rain	Rain
23:55	42.8	41.0	93	29.98	10.0	9.2	N/A	N/A	Rain	Light Rain

## APPENDIX C: Camera Data

All modern digital cameras record EXIF metadata and store this in the JPEG and TIFF photos files they produce. This is very useful for analyzing UFO photos. Here is an example of the kinds of data available. As an example, *Table C-1, Example of Canon G1 EXIF Metadata*, shows the EXIF data from the second photo in the sequence of photos for UFO #1 (photo "UFO #1-2").

**Table C-1. Example of Canon G1 EXIF Metadata**

Parameter	Value
File Name	123-2385_IMG.JPG
Camera Model Name	Canon PowerShot G1
Shooting Date/Time	3/9/02 9:56:34 AM
Shooting Mode	Program AE
Tv (Shutter Speed)	1/1000
Av (Aperture Value)	8.0
Metering Mode	Center-weighted averaging
Exposure Compensation	0
ISO Speed	50
Lens	7.0 - 21.0 mm
Focal Length	21.0 mm
Digital Zoom	None
Image Size	2048x1536
Image Quality	Super Fine
Flash	Off
White Balance	Auto
AF mode	Single
Contrast	Normal
Sharpness	Normal
Color Saturation	Normal
File Size	1288KByte
Serial Number	123-2385
Drive Mode	Single-frame shooting

Parameter	Value
Macro	Off