

# IPACO expert report

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<i>Type</i> <b>IFO</b>	<i>Class</i> <b>A</b>	<i>Explanation</i> Dusts, pollens or bugs	<i>Complement</i> Flash fired + de-focusing in the « orb zone »
<i>Document</i> Photo	<i>Imaging location</i> Trout Lake, Washington, USA.	<i>Imaging date</i> August 18, 2006, 10:02'34" Local time	



## I. Imaging circumstances

This photo comes from the main [Eceti](#) site with the following comments:

*“Ultradimensional Contact during the skywatch at the 2006 Science, Spirit and World Transformation Conference.*

*Many miracle healings occurred to campers in the field that night.”*

## II. Camera settings

The camera model that was used is a Canon Powershot SD500 Digital ELPH which technical characteristics can be seen [here](#).



## III. Data examination

Close examination of the EXIF data with [EXIFTool](#) tells us that the exposure time during the image capture was of 1/60s and that the flash was fired.

These data are also consistent with those of other photographs taken with the same camera, no apparent file modification there is visible.

Visual examination of the photograph reveals the presence of numerous circular areas more or less clear and large, commonly known as "orbs", sometimes overlapping and present in the whole photography.

These "orbs" are due to the presence of tiny particles invisible to the naked eye and suspended in the ambient atmosphere. It may include dust, pollen, water droplets, etc...

Their look more or less circular and bright is fully explained in the chapter below **“V. Technical Explanation”**.

## IV. Conclusion

Given the objective data provided by the examination of the photographic document, we can conclude that all the objects present in this document are only very small particles suspended in ambient air, both de-focused by the camera and lightened by the flash.

## V. Technical explanation

There is a huge amount of variety of orbs, including colored, moving, partials, etc... I'll not detail here how each of them are created, however you'll find thorough explanations [here](#) with lots of examples [here](#) as well.

### **The "orb zone"**

When an object is too close to a lens to be in focus, it looks fuzzy. However, it becomes fuzzy in a quite specific way. It turns into a series of overlapping circular blobs of light that depends of the value of the '[circle of confusion](#)'.

In optics, a circle of confusion is an optical spot caused by a cone of light rays from a lens not coming to a perfect focus when imaging a point source

These can appear quite sharp but they are actually a representation of a single tiny point (a highlight) on the complete object (which, overall, then looks fuzzy and out of focus).

You can often see this 'orbing' effect in pictures where there is a portion (particularly in the foreground) that is badly out of focus.

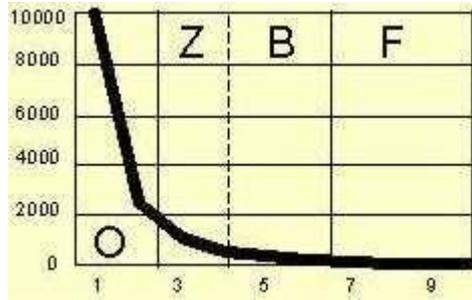
Very small objects, dust particles or small water droplets for example, produce a single circle of confusion (or orb). This effect can occur anywhere but is often only noticed when it occurs at somewhere significant, like in a so-called haunted house.

Digital cameras have lenses with a much greater depth of field than film cameras. This means that the nearest point to the camera that is in focus is a lot closer. It also brings the 'just out of focus' area ('orb zone', "Z" in the graph below) closer as well.

The 'orb zone' is so close that it is intensely illuminated by the flash. According to an inverse square law, the intensity of the flash increases with decreasing distance.

Indeed, if the subject of your photograph is at a distance of 5m, a particle of dust at 5cm from the camera receives approximately 10,000 times greater light intensity!

This creates an 'orb zone' in digital cameras where the light intensity is sufficient to illuminate the faint out-of-focus bits of dust, which appear as circles of confusion (or 'orbs').



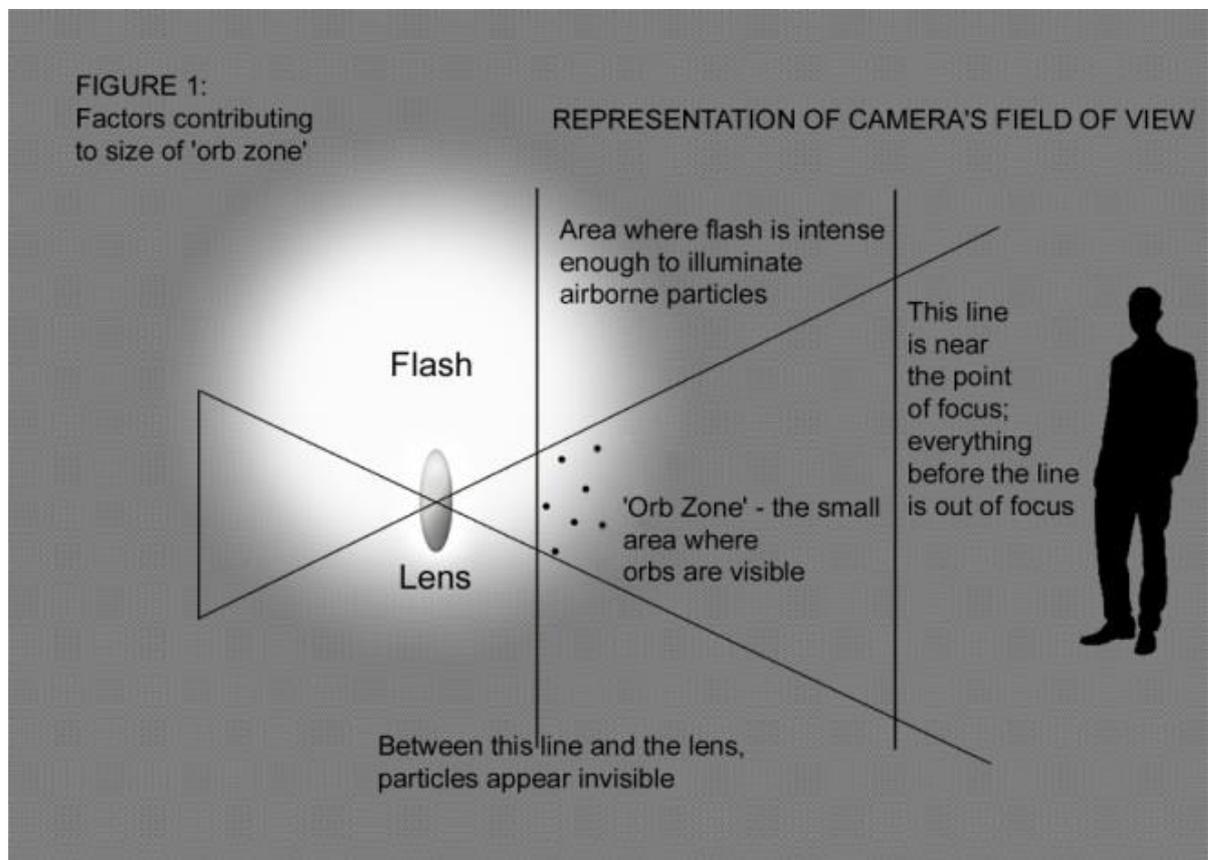
The graph shows flash illumination diminishing with distance (to right).

O = too out of focus to be visible even with flash

Z = (orb zone) out of focus but visible due to high flash intensity

B = out of focus but invisible because flash not intense enough

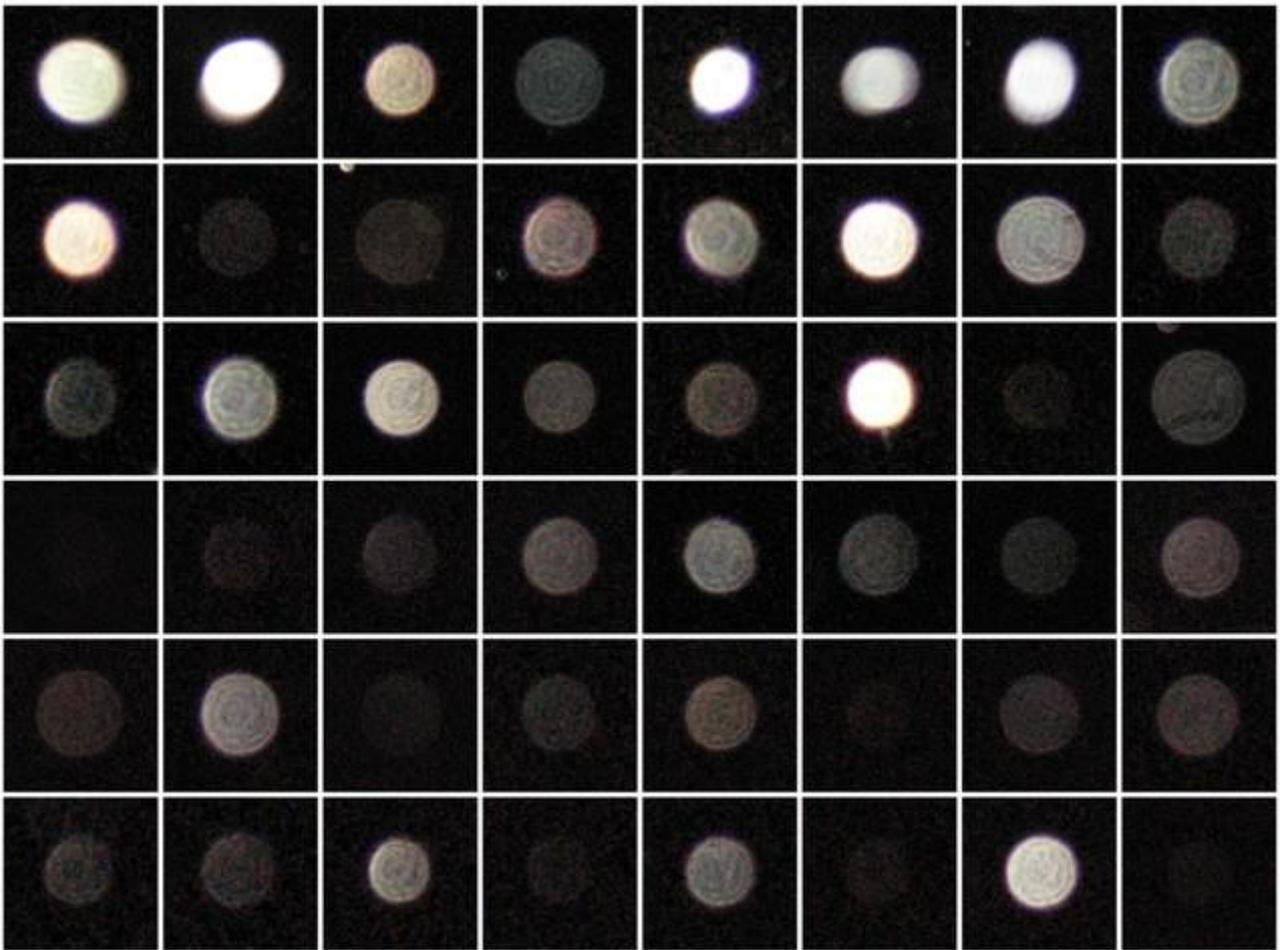
F = in focus and visible



In a film camera, all the zones move further out and the 'orb zone' generally vanishes because there is insufficient flash intensity at the increased distance.

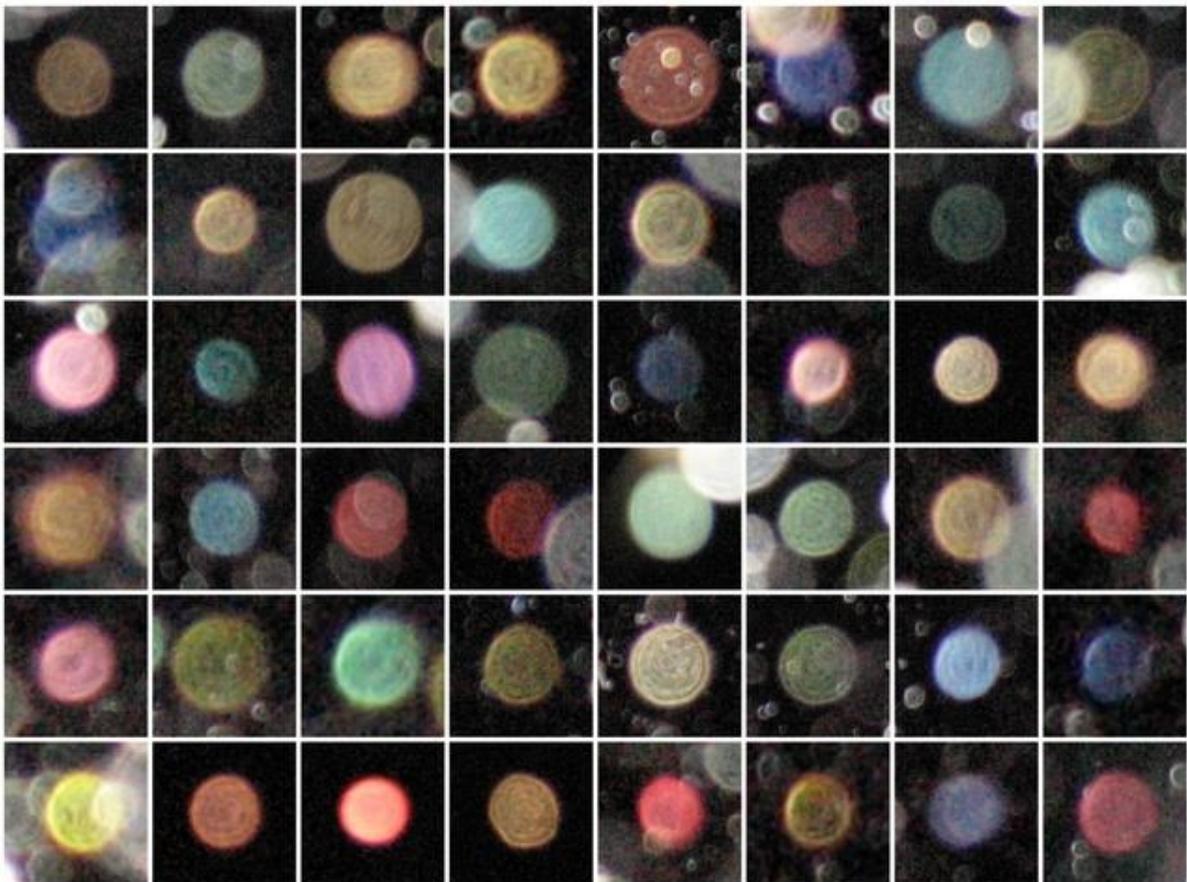
As digital cameras get larger CCDs (not just megapixels but physically), their lenses get decreasing depth of field. This means that the problems of orbs and strange mists should gradually vanish.

[Source](#)



(1)

*Orbs with various shades of grey*



(1)

*Various colored orbs*



(2)

*Experimentation: talc powder thrown in front of the camera while taking the shot with flash fired.*

## VI. Sources – Photo credits

Both photography and comments come from the main [Eceti](#) site.

(1) [Midnite Walkers](#)

(2) Personal album

Lots of other examples and explanations are available at this site: [ASSAP Orb gallery](#).