Biophoton imaging around and between plant parts: are “auras” real?

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Abstract: Long-exposure images of plant parts in total darkness using a highly-sensitive, low-noise, cooled CCD imaging array reveal halo-like patterns of metabolically-related biophoton emission around and between plant parts that falls off with distance. ©2005 Optical Society of America

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Biophoton emission has been proposed as one possible mechanism responsible for intra- and intercellular communication as well as for regulation of biological and biochemical functions within cells and living systems[1,2]. Here we show high-resolution images of biophoton emission from many different types of plant parts in total darkness using a Princeton Instruments VersArray 1300B CCD imaging array[3]. Close inspection of the areas around the edges and between plant parts reveals “halo-like” patterns that diminish with distance.

Figure 1(A) shows a two-hour biophoton image of geranium leaves with the grey scale scaled as a photograph. The leaves on the left side of the image are on non-fluorescing white paper to enhance the light around and between the leaves while those on the right side of the image are on black paper. The white paper reflects and scatters the biophotons emitted from the leaves so we can more easily see what is in the areas around and between the leaves. Figure 1(B) was enhanced in software by stretching the grey scale. This enables seeing areas between and around the leaves more clearly. This scaling shows that more light can be seen in the areas between and around the leaves on the white paper than those on the black paper. Figure 1(C) is an enlargement of the lower left quadrant of the middle image. Close inspection of this image shows a “halo-like” pattern around the leaves (i.e. an “aura”).

Fig. 1. (A): Biophoton image of geranium leaves taken as a two-hour exposure in total darkness inside a light-tight chamber. Leaves on the left side of the image are on non-fluorescing white paper and those on the right are on black paper. (B): Same biophoton image rescaled in software to enhance the area between the leaves. (C): Enlargement of lower left quadrant of (B).

References