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(* Copyright March 4, 2006 by Doug Youvan;
doug@youvan.com; www.pseudocolor.com ; www.youvan.com *)
(* blue super bomb; xy mixing chamber  anihililation in 185 frames*)
(* re-centered; draws outline *)
(*black/gold flicker for super-color *)

name = Table[i, {i, 1, 200}];

newsum = .
kerlsum = .
gsum = .

newsum = Table[{x, y}, {x, 1, 130}, {y, 1, 102}];
kerlsum = Table[{x, y}, {x, 1, 130}, {y, 1, 102}];

newsum[[All, All]] = {0., 0., 0.};
kerlsum[[All, All]] = {0., 0., 0.};

(* blue bomb *)
newsum[[42, 30]] = {200, 0., 0.};
kerlsum[[42, 30]] = {200, 0., 0.};

newsum[[88, 30]] = {0., 200, 0.};
kerlsum[[88, 30]] = {0., 200, 0.};

newsum[[65, 70]] = {0., 0., 100000};
kerlsum[[65, 70]] = {0., 0., 100000};

(* draw box *) (*rows: 40, 90; columns: 28, 74; barrier: 63-66,50-51 *)

(* bottom *) For[i = 39, i ≤ 40, i++, For[j = 28, j ≤ 75, j++,
newsum[[i, j]] = {1, 1, 1}]];
(* top *) For[i = 90, i ≤ 91, i++, For[j = 28, j ≤ 75, j++,
newsum[[i, j]] = {1, 1, 1}]];
(* left *) For[i = 39, i ≤ 91, i++, For[j = 27, j ≤ 28, j++,
newsum[[i, j]] = {1, 1, 1}]];
(* right *) For[i = 39, i ≤ 91, i++, For[j = 74, j ≤ 75, j++,
newsum[[i, j]] = {1, 1, 1}]];

(* mixer values i=63,i≤66, j=50,j≤51 *)

(* barrier bottom *) For[i = 40, i ≤ 62, i++, For[j = 50, j ≤ 51, j++,
newsum[[i, j]] = {1, 1, 1}]];
(* barrier top *) For[i = 67, i ≤ 90, i++, For[j = 50, j ≤ 51, j++,
newsum[[i, j]] = {1, 1, 1}]];

gsum = Graphics[RasterArray[Apply[RGBColor, newsum, {2}]],
AspectRatio → error, ImageSize → {520, 408}];

Show[gsum];

Export[
"C:\\Documents and Settings\\Doug\\Desktop\\Mathematica\\BlueBombShell\\0.gif",

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gsum, "GIF", ImageSize → {520, 408}];

(* reload *)

newsum[[All, All]] = {0., 0., 0.};
kerlsum[[All, All]] = {0., 0., 0.};

(* blue bomb *)
newsum[[42, 30]] = {200, 0., 0.};
kerlsum[[42, 30]] = {200, 0., 0.};

newsum[[88, 30]] = {0., 200, 0.};
kerlsum[[88, 30]] = {0., 200, 0.};

newsum[[65, 70]] = {0., 0., 100000};
kerlsum[[65, 70]] = {0., 0., 100000};

(* evaluate entire image for real color *)
For[
loop = 1, loop ≤ 200, loop++,
If[EvenQ[loop],
For[i = 1, i ≤ 130, i++, For[j = 1, j ≤ 102, j++,
If[((0. > newsum[[i, j, 1]]) || (newsum[[i, j, 1]] > 1.) ||
(0. > newsum[[i, j, 2]]) || (newsum[[i, j, 2]] > 1.) ||
(0. > newsum[[i, j, 3]]) || (newsum[[i, j, 3]] > 1.)),
(newsum[[i, j, 1]] = 0.25; newsum[[i, j, 2]] = 0.25; newsum[[i, j, 3]] = 0)]],
For[i = 1, i ≤ 130, i++, For[j = 1, j ≤ 102, j++,
If[((0. > newsum[[i, j, 1]]) || (newsum[[i, j, 1]] > 1.) ||
(0. > newsum[[i, j, 2]]) || (newsum[[i, j, 2]] > 1.) ||
(0. > newsum[[i, j, 3]]) || (newsum[[i, j, 3]] > 1.)),
(newsum[[i, j, 1]] = 0; newsum[[i, j, 2]] = 0; newsum[[i, j, 3]] = 0)] ]];

(* set super-color to pale yellow for this particular example *)

gsum = Graphics[RasterArray[Apply[RGBColor, newsum, {2}]],
AspectRatio → error, ImageSize → {520, 408}];
Show[gsum];

Export[
"C:\\Documents and Settings\\Doug\\Desktop\\Mathematica\\BlueBombShell\\" <>
ToString[name[[loop]]] <> ".gif", gsum, "GIF", ImageSize → {520, 408}];

newsum = kerlsum;

sumr = 0.;
sumg = 0.;
sumb = 0.;

(* color separation *)
sumr = newsum[[All, All, 1]];
sumg = newsum[[All, All, 2]];
sumb = newsum[[All, All, 3]];

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```
(* 2x2 averaging left = rows 40+0 or 1 to 88+0 or 1,
columns 28+0 or 1 to 48+0 or 1*)
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For[i = 20, i ≤ 44, i++,
For[j = 14, j ≤ 24, j++, row = 2*i; col = 2*j; summat = 0; summat =
sumr[[row, col]] + sumr[[row, col + 1]] + sumr[[row + 1, col]] + sumr[[row + 1, col + 1]].
sumr[[row, col]] = sumr[[row, col + 1]] =
sumr[[row + 1, col]] = sumr[[row + 1, col + 1]] = summat / 4;

summat = 0; summat =
sumg[[row, col]] + sumg[[row, col + 1]] + sumg[[row + 1, col]] + sumg[[row + 1, col + 1]].
sumg[[row, col]] = sumg[[row, col + 1]] =
sumg[[row + 1, col]] = sumg[[row + 1, col + 1]] = summat / 4;

summat = 0; summat =
sumb[[row, col]] + sumb[[row, col + 1]] + sumb[[row + 1, col]] + sumb[[row + 1, col + 1]].
sumb[[row, col]] = sumb[[row, col + 1]] =
sumb[[row + 1, col]] = sumb[[row + 1, col + 1]] = summat / 4;
]];

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(* staggered 2 x 2 left= rows 40+1 or2 to 88+1 or2, columns 28+1 or2 to 48+1 or2*)
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```
For[i = 20, i ≤ 44, i++, For[j = 14, j ≤ 24, j++, row = 2*i; col = 2*j;
summat = 0; summat =
sumr[[row + 1, col + 1]] + sumr[[row + 1, col + 2]] +
sumr[[row + 2, col + 1]] + sumr[[row + 2, col + 2]];
sumr[[row + 1, col + 1]] = sumr[[row + 1, col + 2]] =
sumr[[row + 2, col + 1]] = sumr[[row + 2, col + 2]] = summat / 4;

summat = 0; summat =
sumg[[row + 1, col + 1]] + sumg[[row + 1, col + 2]] +
sumg[[row + 2, col + 1]] + sumg[[row + 2, col + 2]];
sumg[[row + 1, col + 1]] = sumg[[row + 1, col + 2]] =
sumg[[row + 2, col + 1]] = sumg[[row + 2, col + 2]] = summat / 4;

summat = 0; summat =
sumb[[row + 1, col + 1]] + sumb[[row + 1, col + 2]] +
sumb[[row + 2, col + 1]] + sumb[[row + 2, col + 2]];
sumb[[row + 1, col + 1]] = sumb[[row + 1, col + 2]] =
sumb[[row + 2, col + 1]] = sumb[[row + 2, col + 2]] = summat / 4;
]];

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(* 2x2 averaging right= rows 40+0 or1 to 88+0 or1,
columns 52+0 or1 to 72+0 or1 *)
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For[i = 20, i ≤ 44, i++,
For[j = 26, j ≤ 36, j++, row = 2*i; col = 2*j; summat = 0; summat =
sumr[[row, col]] + sumr[[row, col + 1]] + sumr[[row + 1, col]] + sumr[[row + 1, col + 1]].
sumr[[row, col]] = sumr[[row, col + 1]] =
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    sumr[[row + 1, col]] = sumr[[row + 1, col + 1]] = summat / 4;

summat = 0; summat =
  sumg[[row, col]] + sumg[[row, col + 1]] + sumg[[row + 1, col]] + sumg[[row + 1, col + 1]].
sumg[[row, col]] = sumg[[row, col + 1]] =
  sumg[[row + 1, col]] = sumg[[row + 1, col + 1]] = summat / 4;

summat = 0; summat =
  sumb[[row, col]] + sumb[[row, col + 1]] + sumb[[row + 1, col]] + sumb[[row + 1, col + 1]].
sumb[[row, col]] = sumb[[row, col + 1]] =
  sumb[[row + 1, col]] = sumb[[row + 1, col + 1]] = summat / 4;
]];

(* staggered 2 x 2 right= rows 40+1 or2 to 88+1 or2,
columns 50+1 or2 to 72+1 or2 *)

For[i = 20, i ≤ 44, i++, For[j = 25, j ≤ 36, j++, row = 2 * i; col = 2 * j;
  summat = 0; summat =
    sumr[[row + 1, col + 1]] + sumr[[row + 1, col + 2]] +
    sumr[[row + 2, col + 1]] + sumr[[row + 2, col + 2]];
  sumr[[row + 1, col + 1]] = sumr[[row + 1, col + 2]] =
    sumr[[row + 2, col + 1]] = sumr[[row + 2, col + 2]] = summat / 4;

  summat = 0; summat =
    sumg[[row + 1, col + 1]] + sumg[[row + 1, col + 2]] +
    sumg[[row + 2, col + 1]] + sumg[[row + 2, col + 2]];
  sumg[[row + 1, col + 1]] = sumg[[row + 1, col + 2]] =
    sumg[[row + 2, col + 1]] = sumg[[row + 2, col + 2]] = summat / 4;

  summat = 0; summat =
    sumb[[row + 1, col + 1]] + sumb[[row + 1, col + 2]] +
    sumb[[row + 2, col + 1]] + sumb[[row + 2, col + 2]];
  sumb[[row + 1, col + 1]] = sumb[[row + 1, col + 2]] =
    sumb[[row + 2, col + 1]] = sumb[[row + 2, col + 2]] = summat / 4;

]];

(* 2x2 averaging left = rows 40+0 or 1 to 88+0 or 1,
columns 28+0 or 1 to 48+0 or 1 *)
(* staggered 2 x 2 left= rows 40+1 or2 to 88+1 or2,
columns 28+1 or2 to 48+1 or2 *)
(* 2x2 averaging right= rows 40+0 or1 to 88+0 or1,
columns 52+0 or1 to 72+0 or1 *)
(* staggered 2 x 2 right= rows 40+1 or2 to 88+1 or2,
columns 50+1 or2 to 72+1 or2 *)
(*90-40=50; 74-28=46; 50 x 46 = 2300;
230 seed should yield equilibrium of gray=0.1 *)

(*rows: 40, 90; columns: 28, 74; barrier: 50.5; aperature: 63-66,50-51 *)

(* left columns end at 48,49,50 ; right columns end at 51,
52,53; averages per row 3 pixels on left and 3 pixels on right
for 8 rows individually to achieve bi-directional flow *)

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(* This works with no inter-row averaging of color:

For[i=61,i≤68,i++,
  sumr[[i,48]]=sumr[[i,49]]=sumr[[i,50]]=sumr[[i,51]]=
    sumr[[i,52]]=sumr[[i,53]]=sumr[[i,48]]/6 + sumr[[i,49]]/6 +
      sumr[[i,50]]/6+ sumr[[i,51]]/6 +sumr[[i,52]]/6 + sumr[[i,53]]/6];

For[i=61,i≤68,i++,
  sumg[[i,48]]=sumg[[i,49]]=sumg[[i,50]]=
    sumg[[i,51]]=sumg[[i,52]]=sumg[[i,53]]=sumg[[i,48]]/6 + sumg[[i,49]]/6 +
      sumg[[i,50]]/6+ sumg[[i,51]]/6 +sumg[[i,52]]/6 + sumg[[i,53]]/6];

For[i=61,i≤68,i++,
  sumb[[i,48]]=sumb[[i,49]]=sumb[[i,50]]=
    sumb[[i,51]]=sumb[[i,52]]=sumb[[i,53]]=sumb[[i,48]]/6 + sumb[[i,49]]/6 +
      sumb[[i,50]]/6+ sumb[[i,51]]/6 +sumb[[i,52]]/6 + sumb[[i,53]]/6]; *)

(* x,y mixing chamber

sumrall=0; sumgall=0;sumball=0;
For[i=61,i≤68, i++,For[j=48,j≤53,j++, sumrall=sumrall+sumr[[i,j]]/48;
  sumgall=sumgall+sumg[[i,j]]/48; sumball=sumball+sumb[[i,j]]/48];

For[i=61,i≤68, i++,For[j=48,j≤53,j++,
  sumr[[i,j]]=sumrall;sumg[[i,j]]= sumgall; sumb[[i,j]]=sumball]]; *)

(* for color bombs, 2 x4 mixer *)

sumrall = 0; sumgall = 0; sumball = 0;
For[i = 63, i ≤ 66, i++, For[j = 50, j ≤ 51, j++, sumrall = sumrall + sumr[[i, j]] / 8;
  sumgall = sumgall + sumg[[i, j]] / 8; sumball = sumball + sumb[[i, j]] / 8]];

For[i = 63, i ≤ 66, i++, For[j = 50, j ≤ 51, j++,
  sumr[[i, j]] = sumrall; sumg[[i, j]] = sumgall; sumb[[i, j]] = sumball]];

For[i = 1, i ≤ 130, i++, For[j = 1, j ≤ 102, j++,
  newsum[[i, j]] = {sumr[[i, j]], sumg[[i, j]], sumb[[i, j]]}]];

kerlsum = newsum;

](* end of big loop *)

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