

```

FTPlot[h_, n_] := Module[{calcPattern, f}, f = Fourier[h];
  calcPattern = Re[f * Conjugate[f]];
  quad1 = Take[calcPattern, {1, Round[n/2]}, {Round[n/2] + 1, n}];
  quad2 = Take[calcPattern, {1, Round[n/2]}, {1, Round[n/2]}];
  quad3 = Take[calcPattern, {Round[n/2] + 1, n}, {1, Round[n/2]}];
  quad4 = Take[calcPattern, {Round[n/2] + 1, n}, {Round[n/2] + 1, n}];
  lM = Join[Flatten[quad4], Flatten[quad1]];
  lftMtrx = Partition[lM, Round[n/2]];
  rM = Join[Flatten[quad3], Flatten[quad2]];
  rghtMtrx = Partition[rM, Round[n/2]];
  calcPattern =
    Partition[Join[Flatten[Transpose[lftMtrx]], Flatten[Transpose[rghtMtrx]]], n];
  ListDensityPlot[calcPattern, Mesh → False, PlotRange → All]

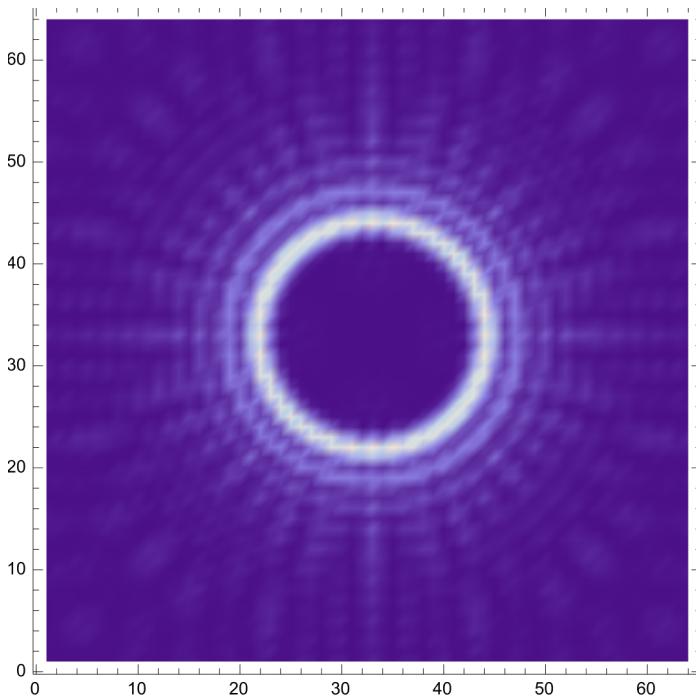
```

```

CircH[n_] :=
  Table[UnitStep[n^2 - x^2 - y^2] * Exp[I 30 Arg[x + I y]], {x, -n + 1, n}, {y, -n + 1, n}]

```

FTPlot[CircH[32], 64]

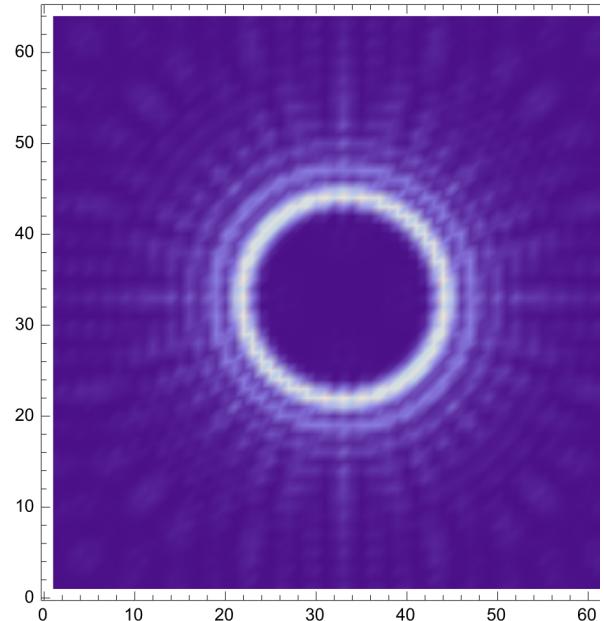
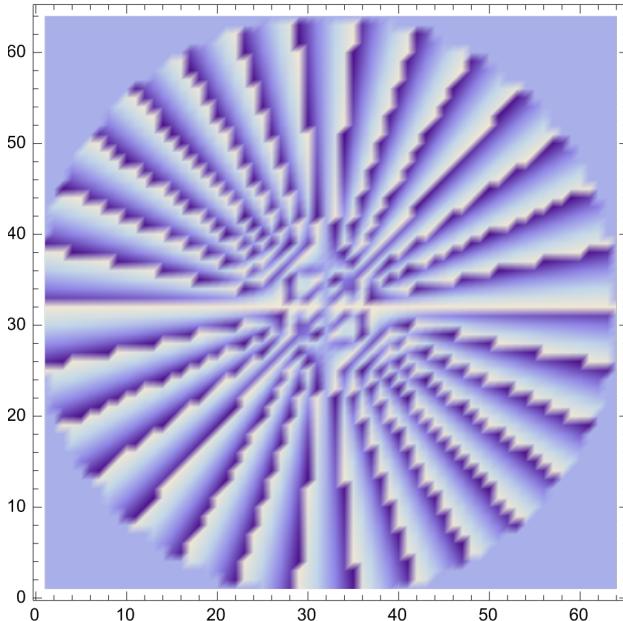


```

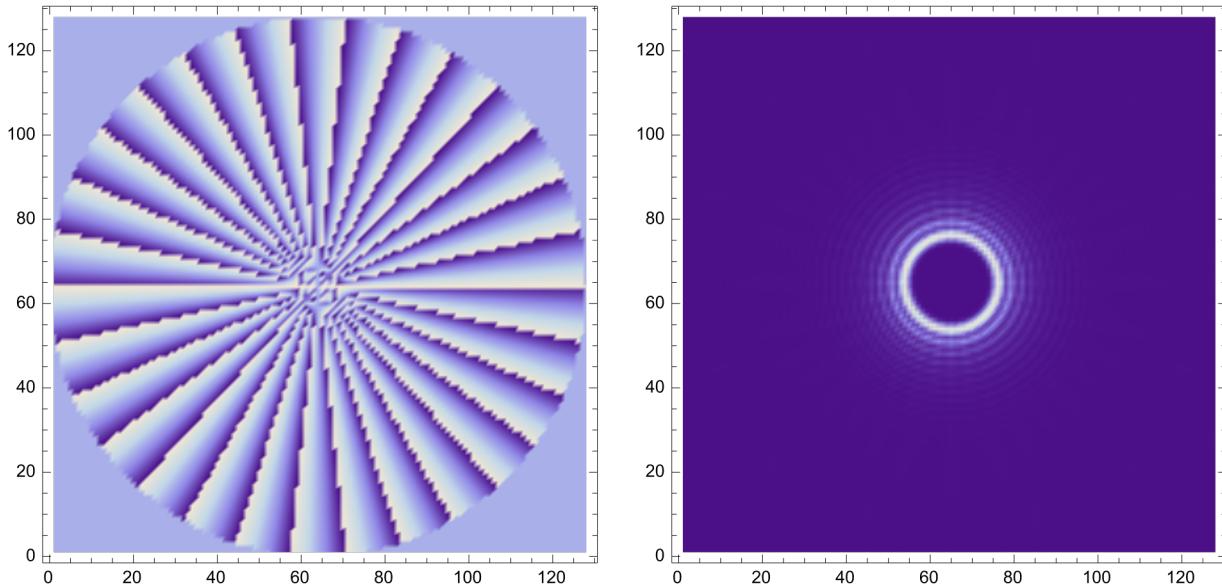
HFTPlot[h_, n_] := Module[{calcPattern, f}, f = Fourier[h];
  calcPattern = Re[f * Conjugate[f]];
  quad1 = Take[calcPattern, {1, Round[n/2]}, {Round[n/2] + 1, n}];
  quad2 = Take[calcPattern, {1, Round[n/2]}, {1, Round[n/2]}];
  quad3 = Take[calcPattern, {Round[n/2] + 1, n}, {1, Round[n/2]}];
  quad4 = Take[calcPattern, {Round[n/2] + 1, n}, {Round[n/2] + 1, n}];
  lM = Join[Flatten[quad4], Flatten[quad1]];
  lftMtrx = Partition[lM, Round[n/2]];
  rM = Join[Flatten[quad3], Flatten[quad2]];
  rghtMtrx = Partition[rM, Round[n/2]];
  calcPattern =
    Partition[Join[Flatten[Transpose[lftMtrx]], Flatten[Transpose[rghtMtrx]]], n];
  Show[GraphicsArray[{{ListDensityPlot[Arg[h], Mesh -> False, PlotRange -> All],
    ListDensityPlot[calcPattern, Mesh -> False, PlotRange -> All]}}}]
]

HFTPlot[CircH[32], 64]

```



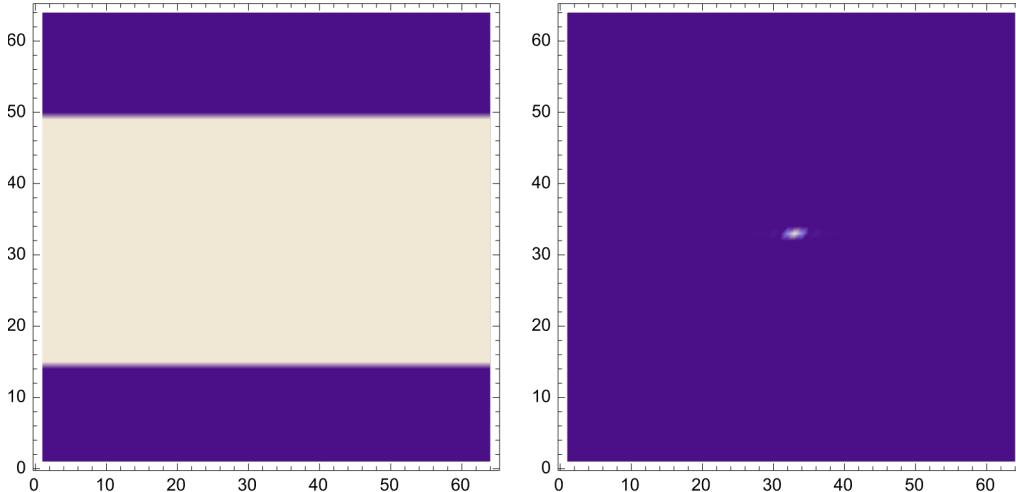
```
HFTPlot[CircH[64], 128]
```



```
sqH[a_, b_, n_] := Table[UnitStep[11 - Abs[(10/(2*a))x + (10/(2*b))y] - Abs[(10/(2*b))y - (10/(2*a))x]], {x, -(n/2) + 1, (n/2)}, {y, -(n/2) + 1, (n/2)}]
```

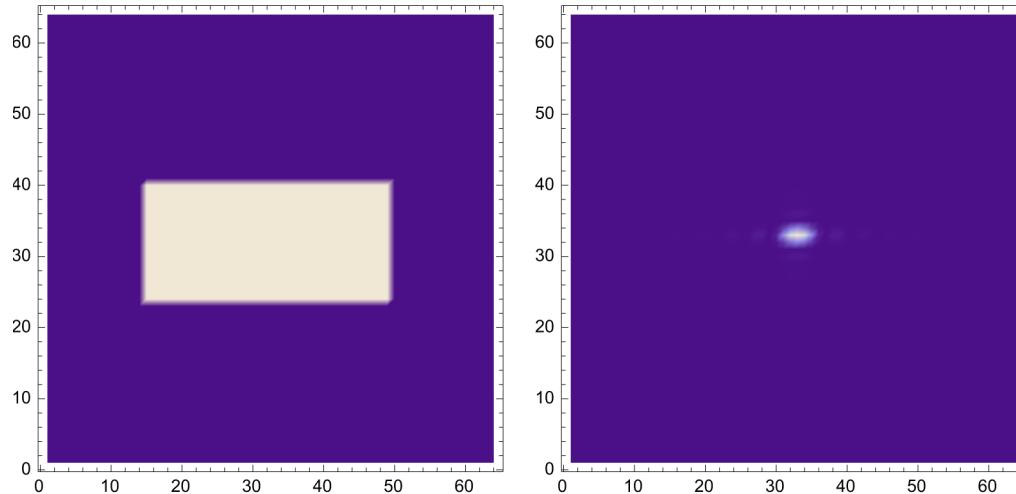
```
sqH[16, 32, 64];
```

```
HFTPlot[sqH[16, 32, 64], 64]
```

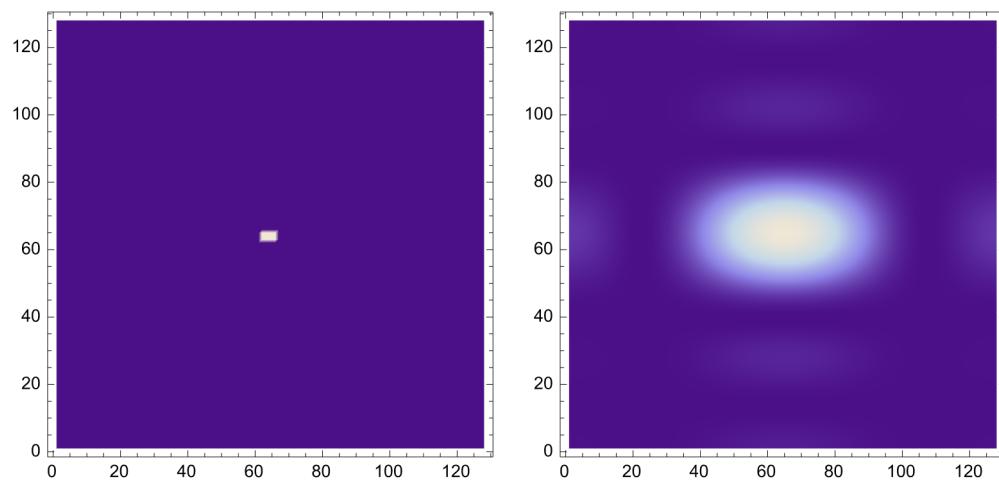


```
sqH[8, 16, 64];
```

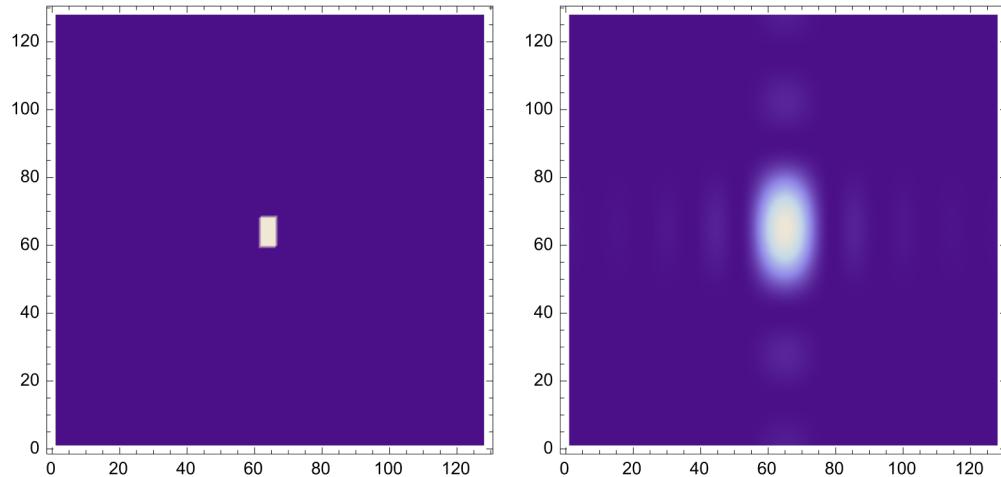
HFTPlot[sqH[8, 16, 64], 64]



HFTPlot[sqH[1, 2, 128], 128]



```
HFTPlot[sqH[4, 2, 128], 128]
```



```
Max[sqH[4, 2, 128]]
```

```
1
```

```
Intensity[f_] := Re[Conjugate[f] * f]
```

```
Table[Max[Intensity[sqH[i, i, 128]]], {i, 1, 25, 2}]
```

```
{1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1}
```

```
Table[Min[Intensity[sqH[i, i, 128]]], {i, 1, 25, 2}]
```

```
{0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0}
```