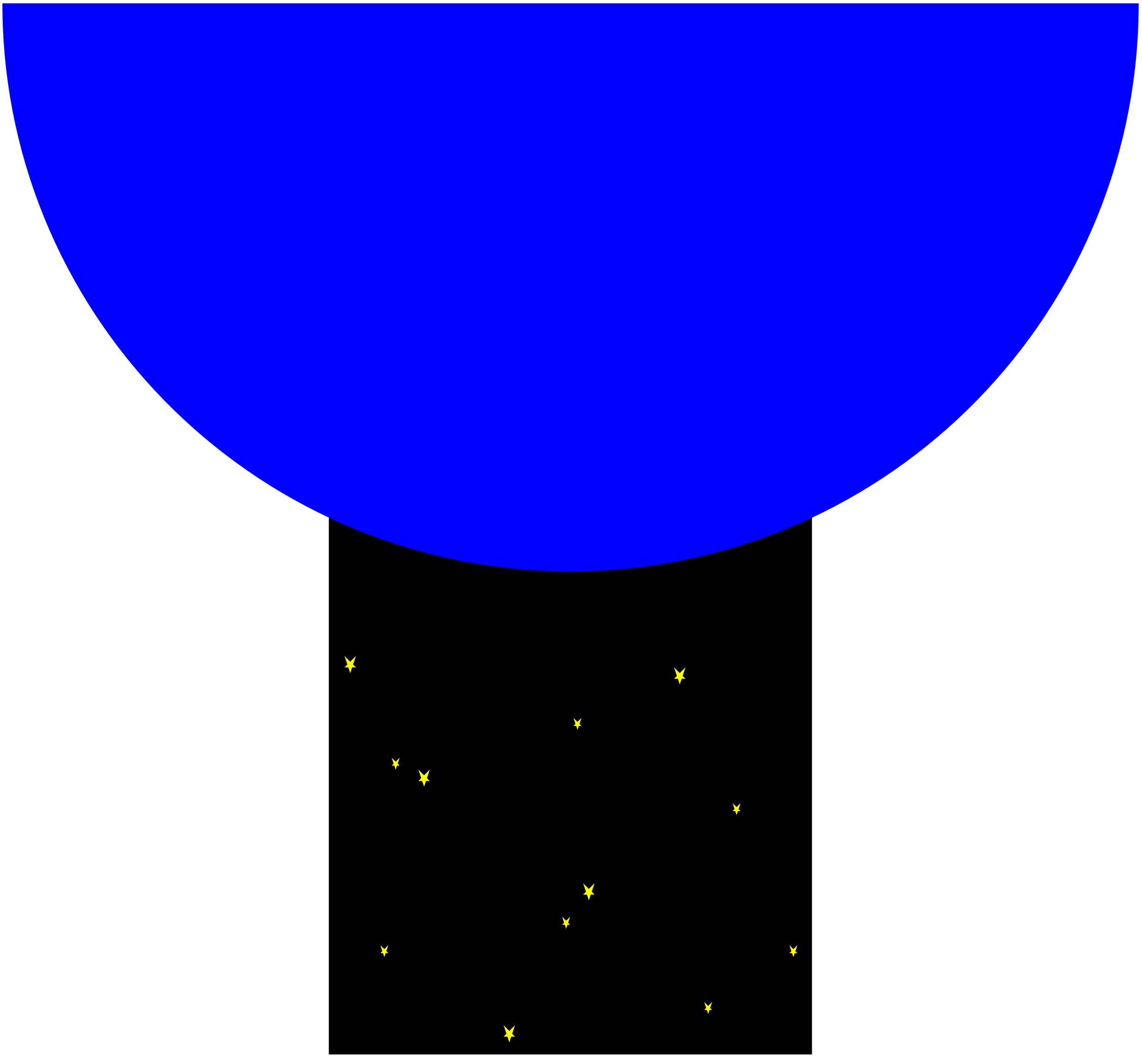
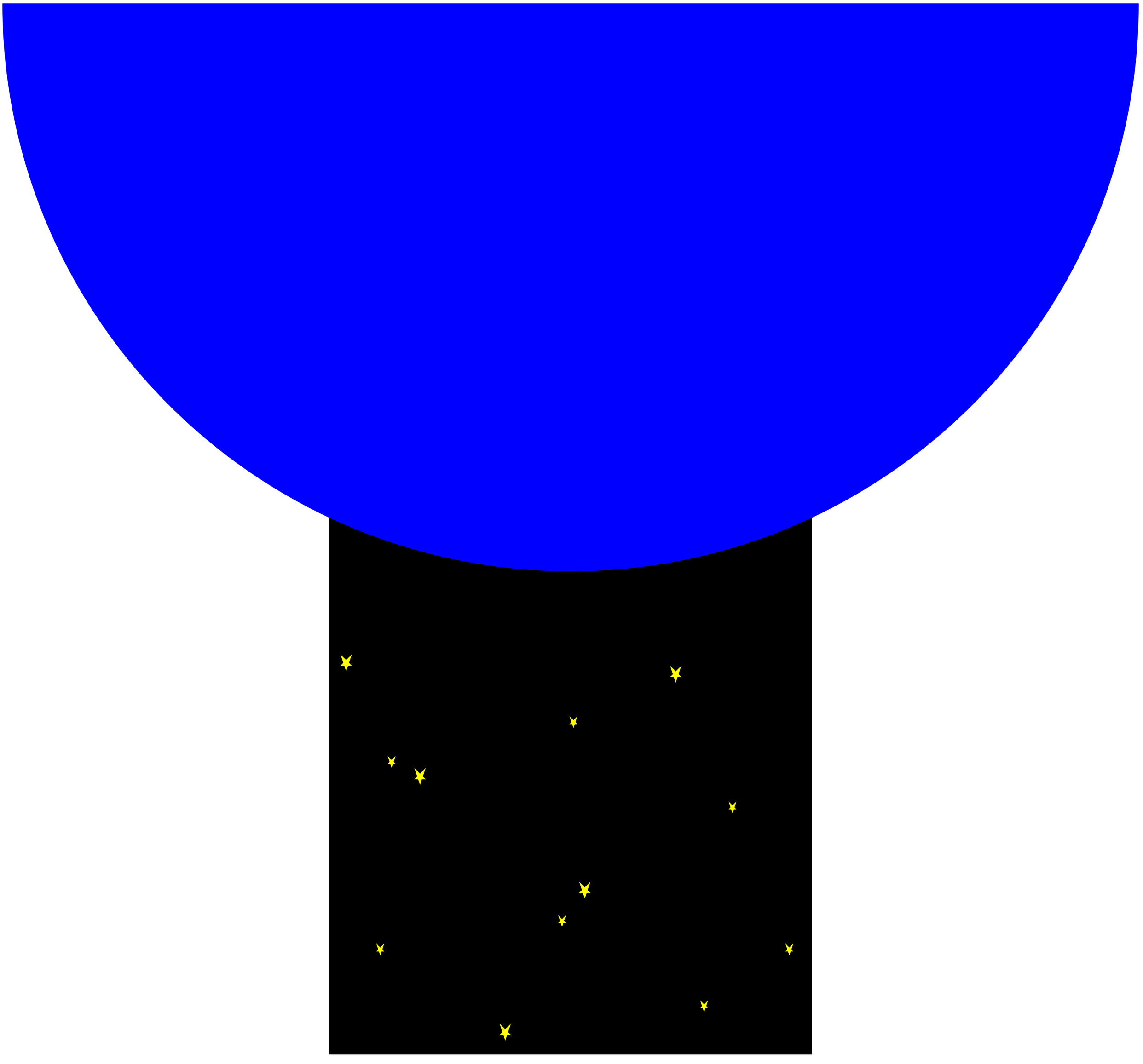
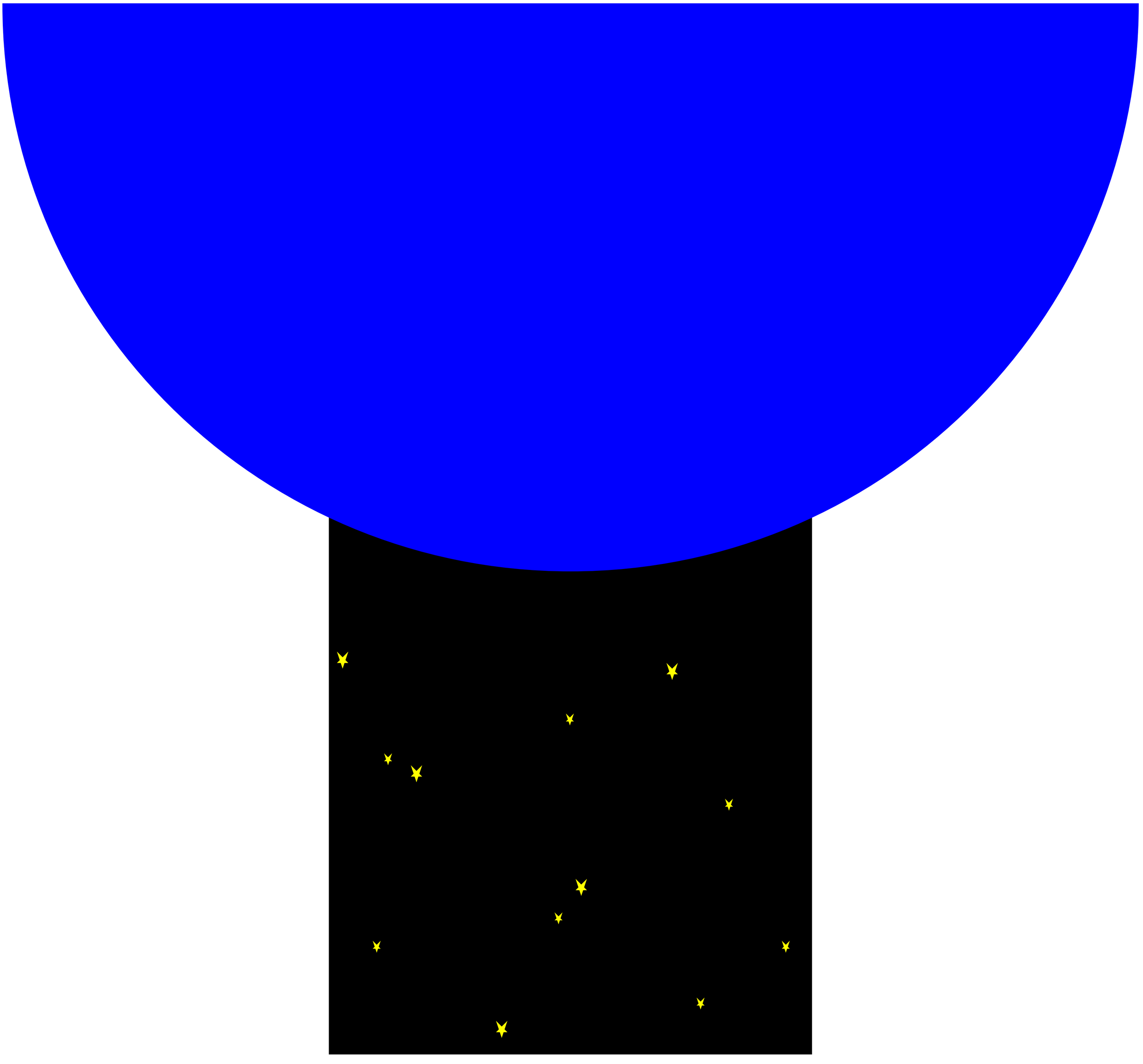
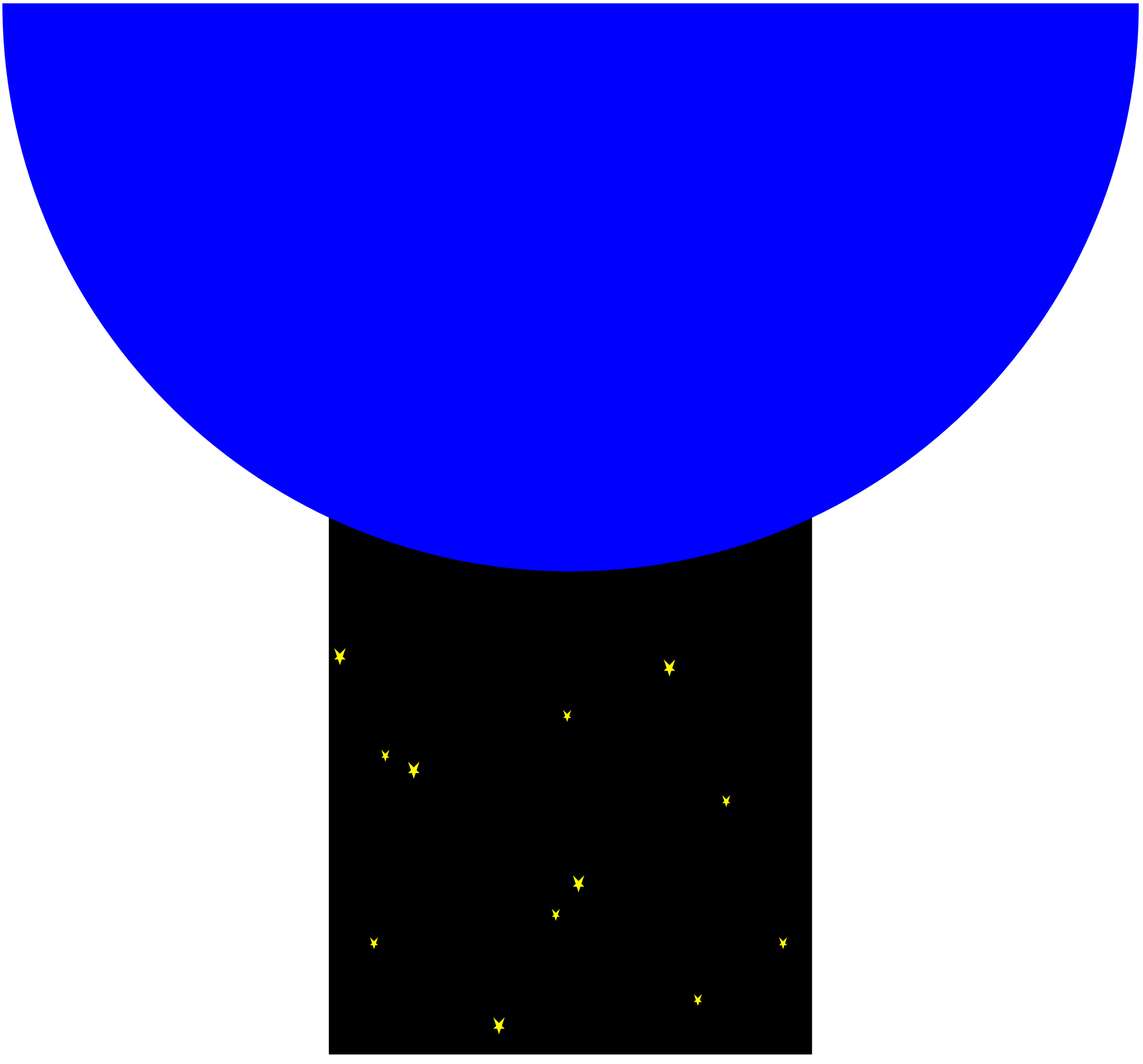
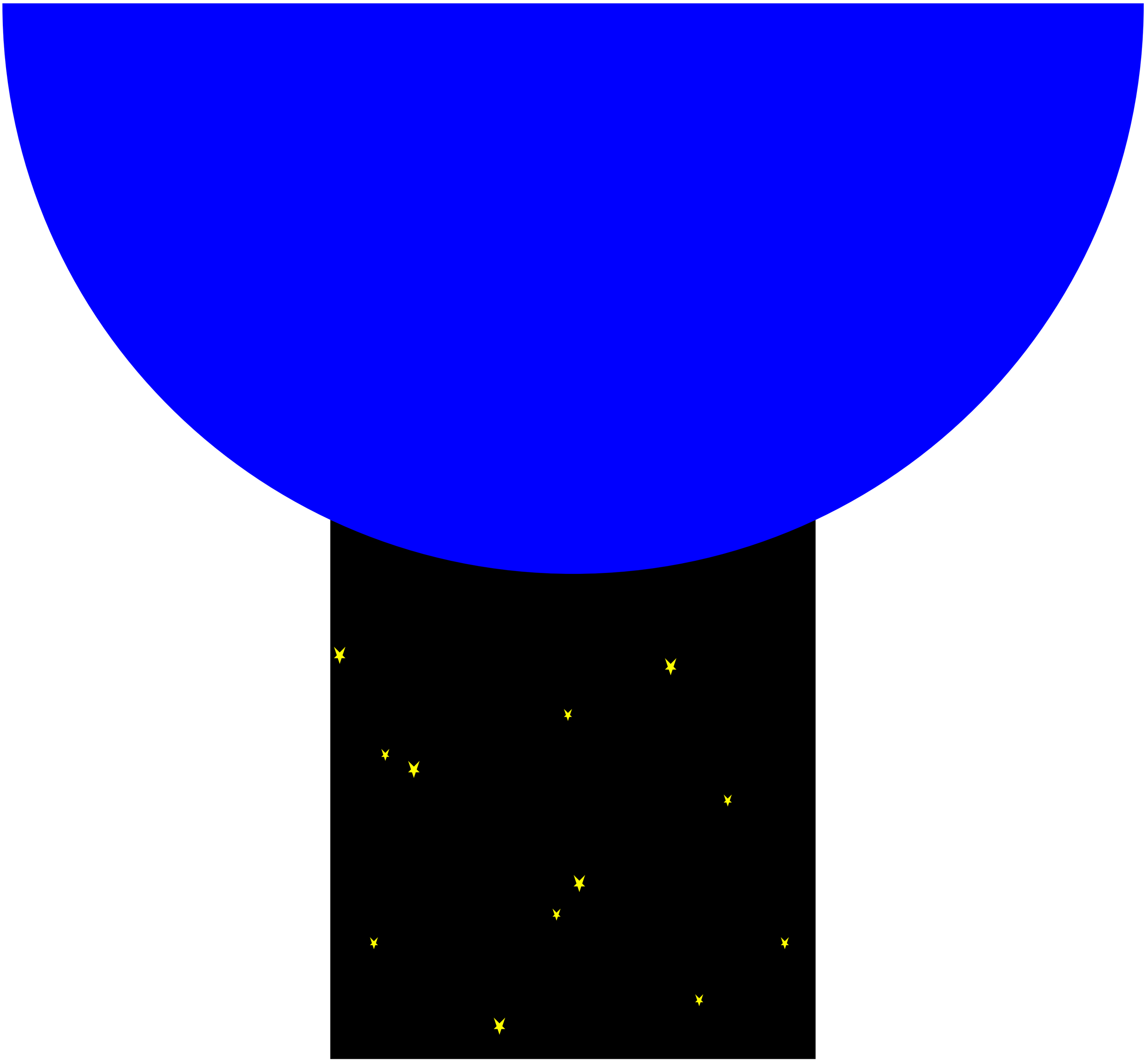
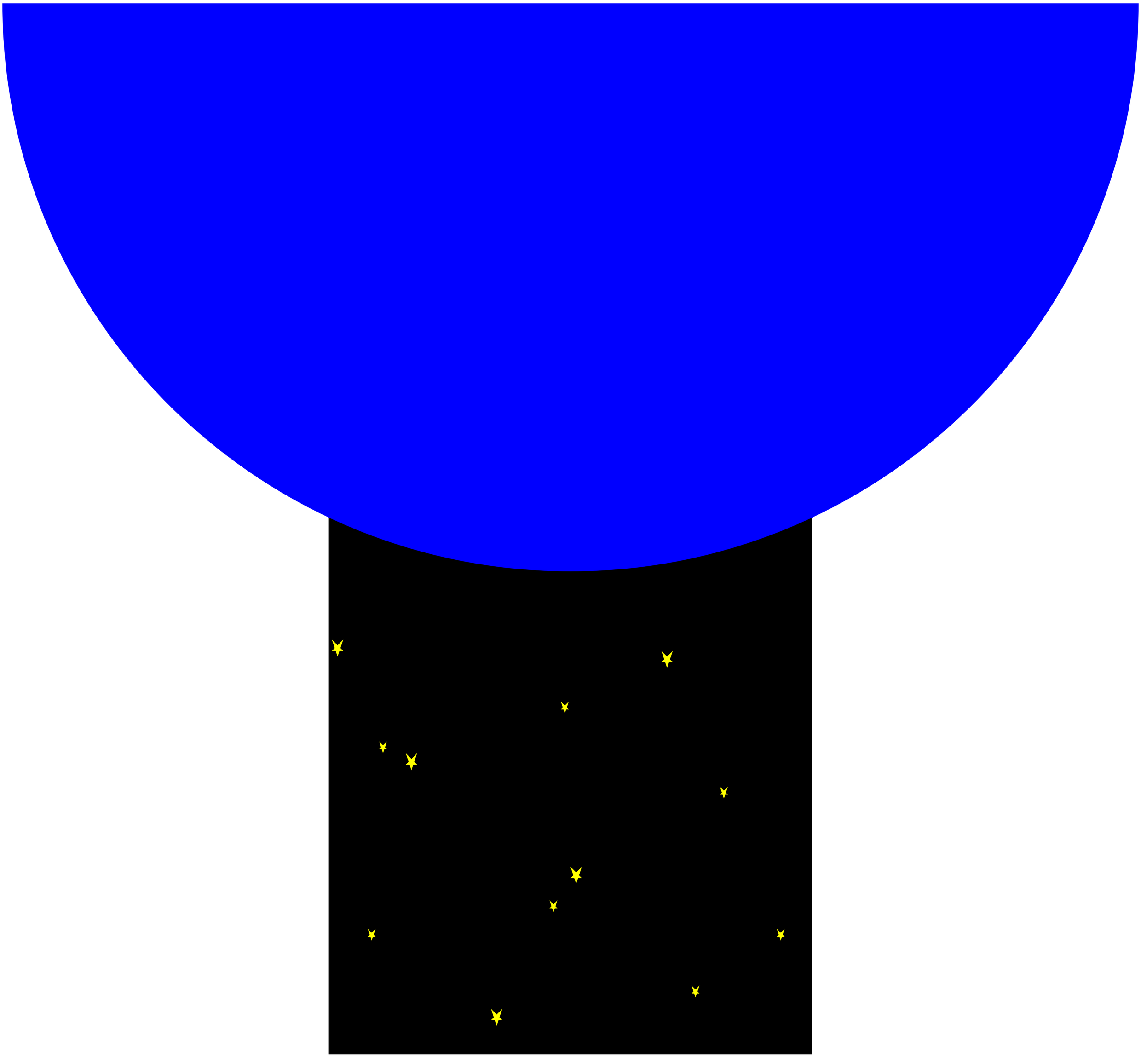


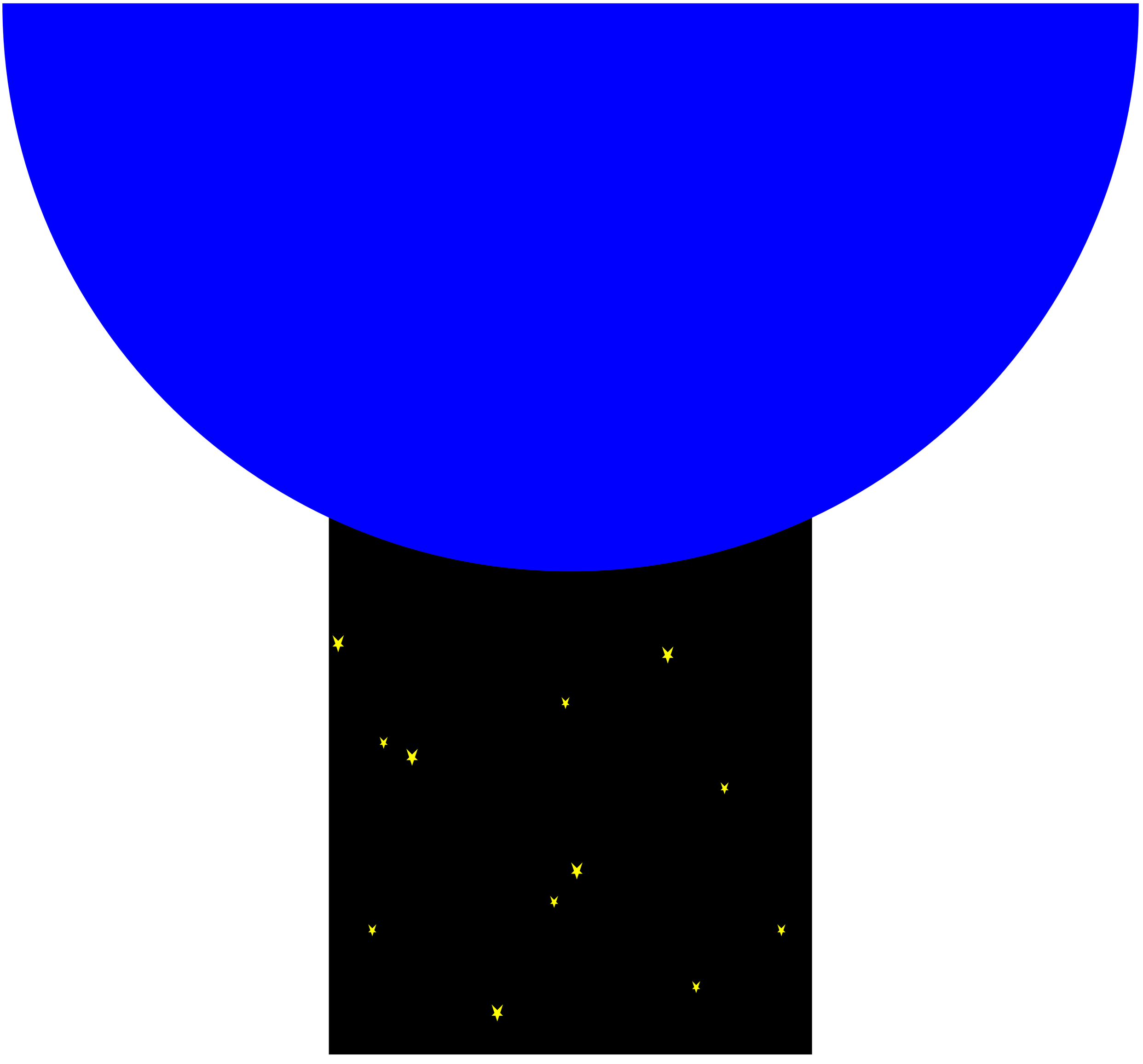


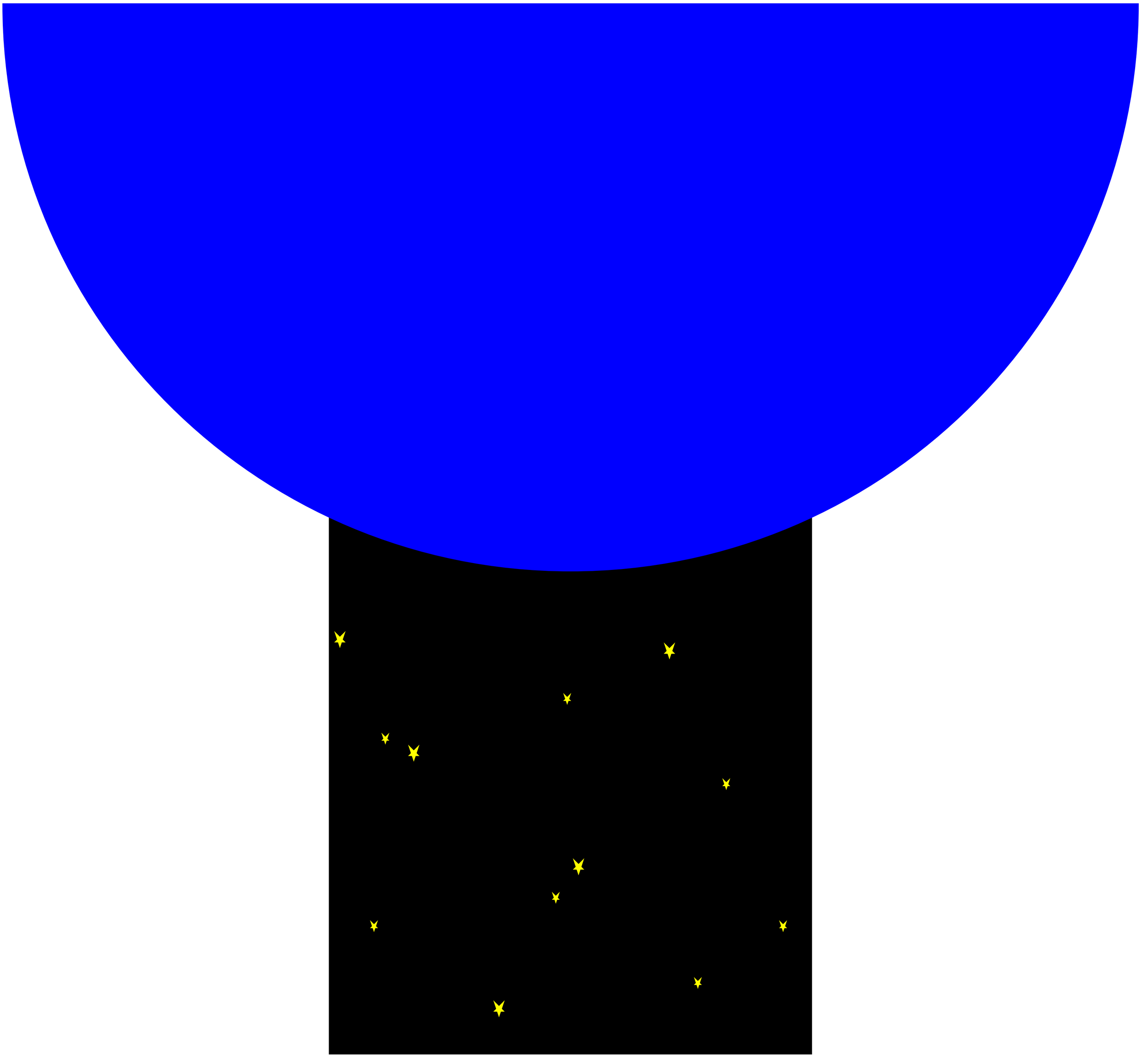


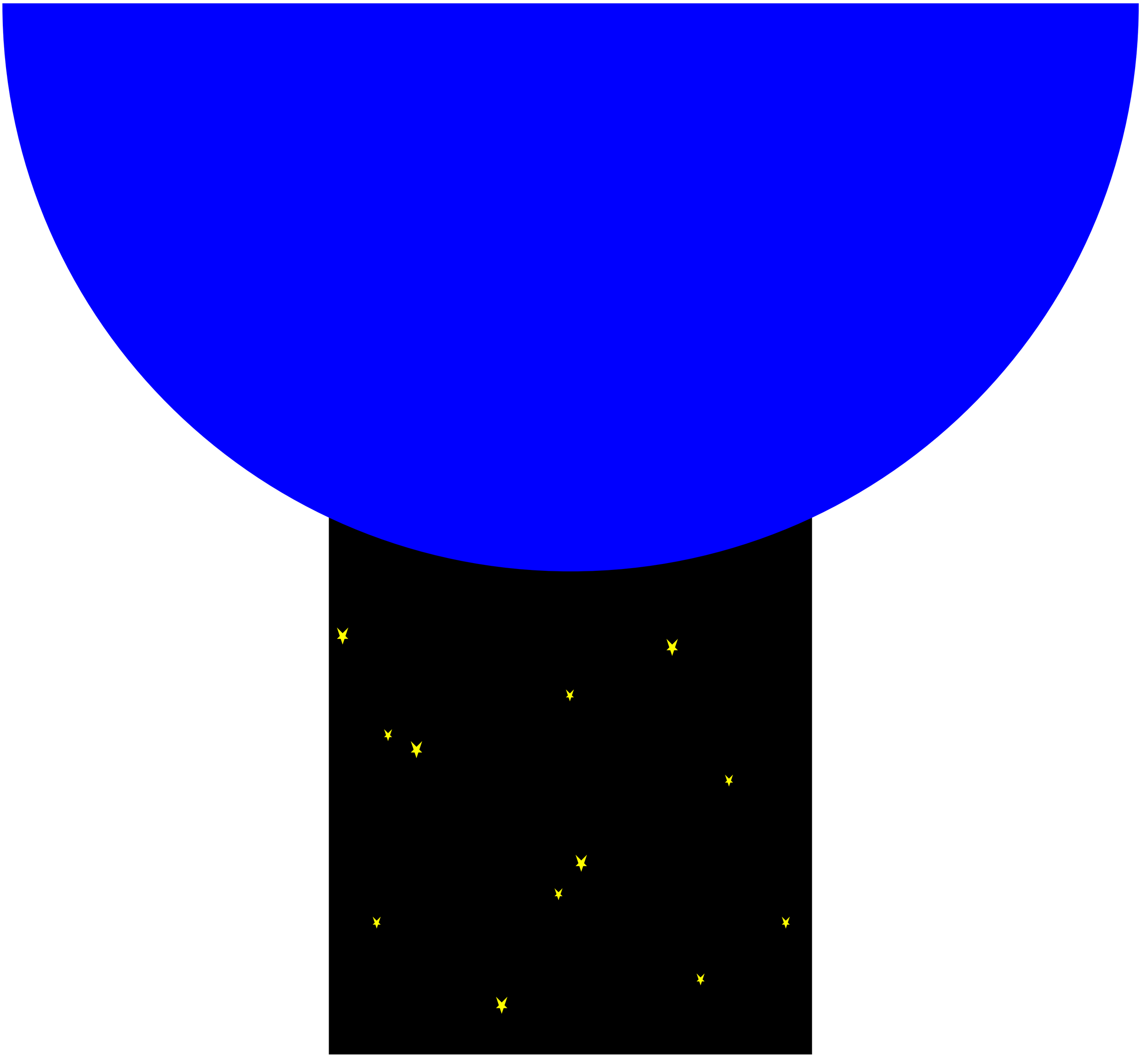


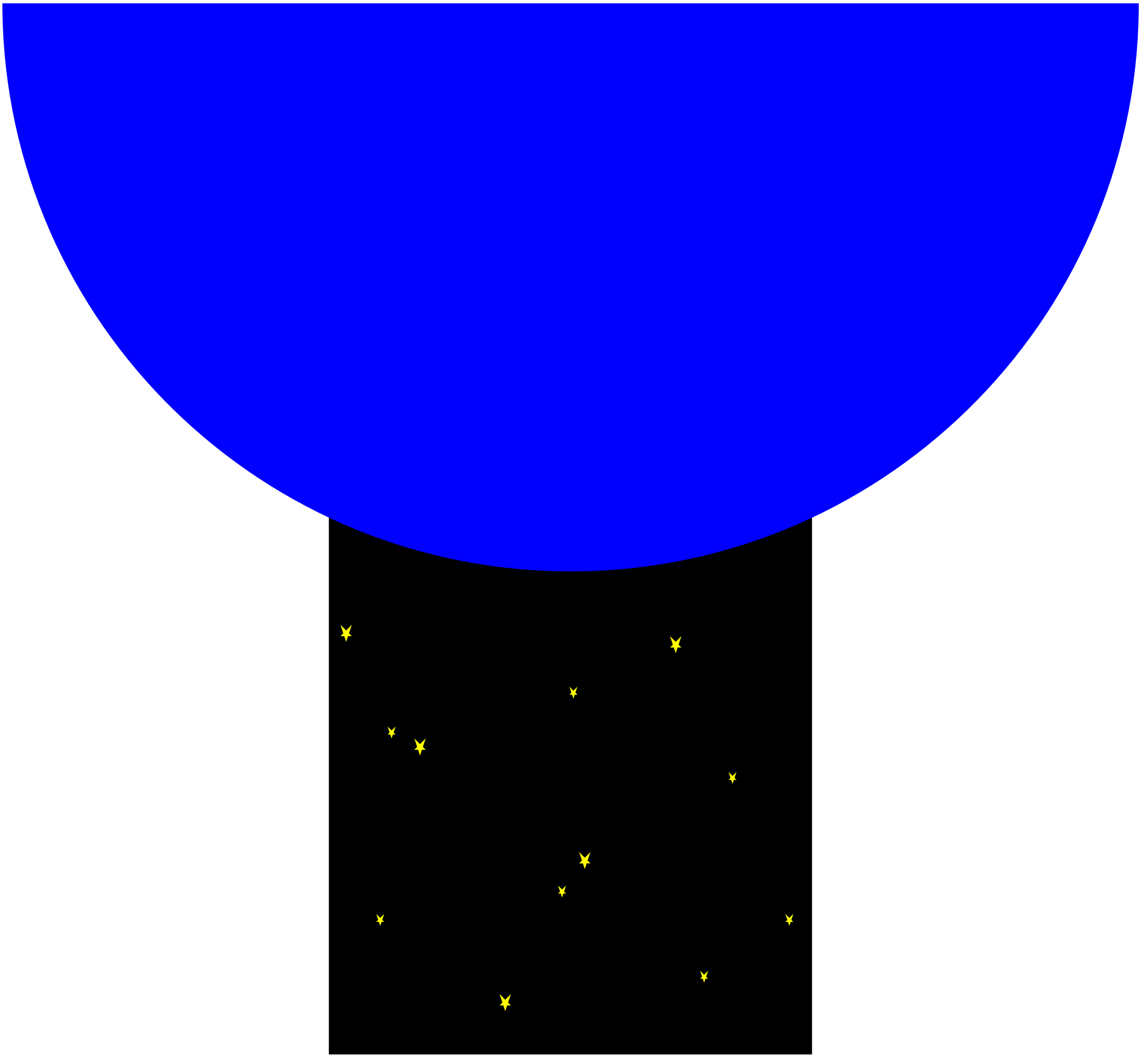


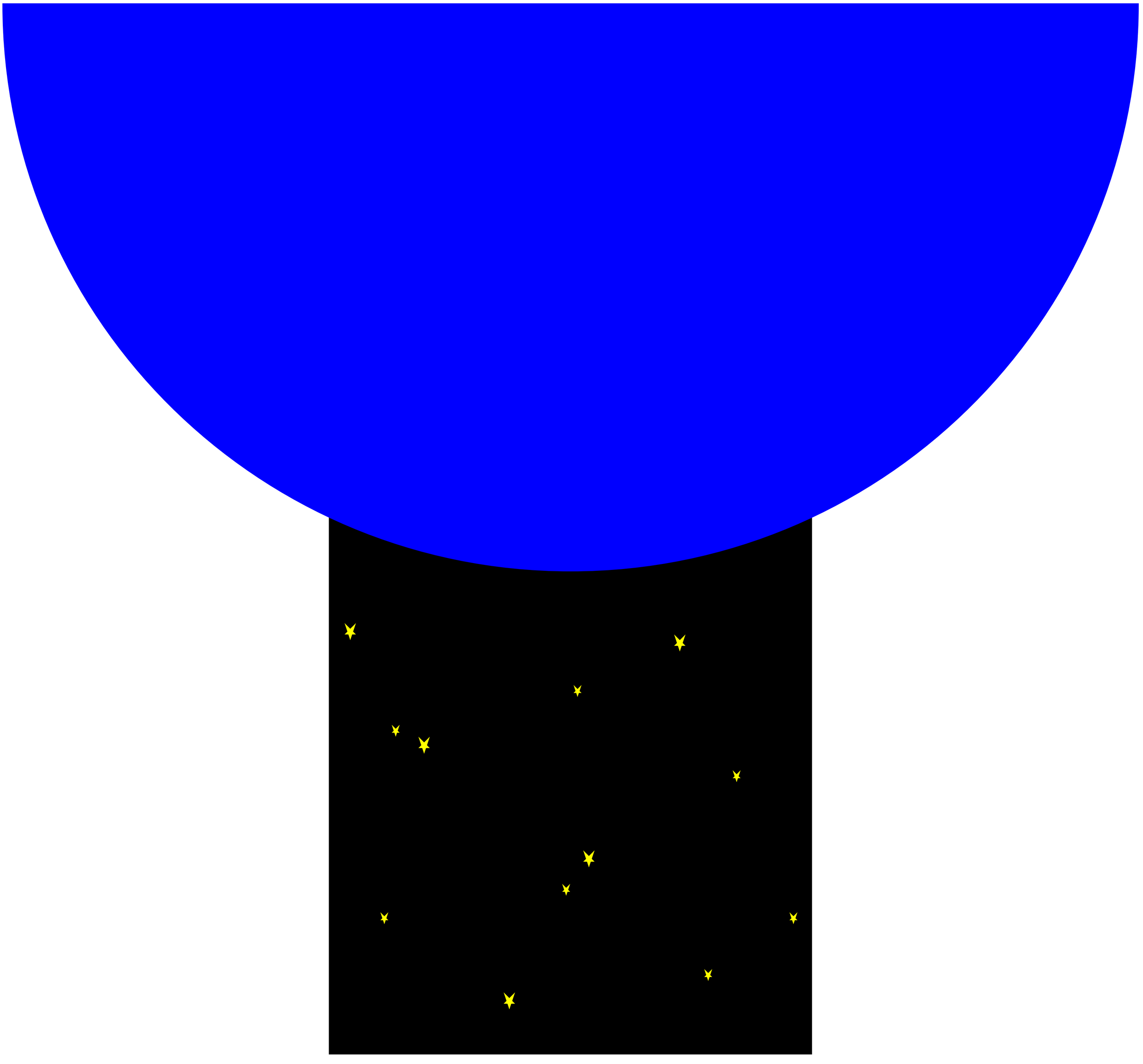


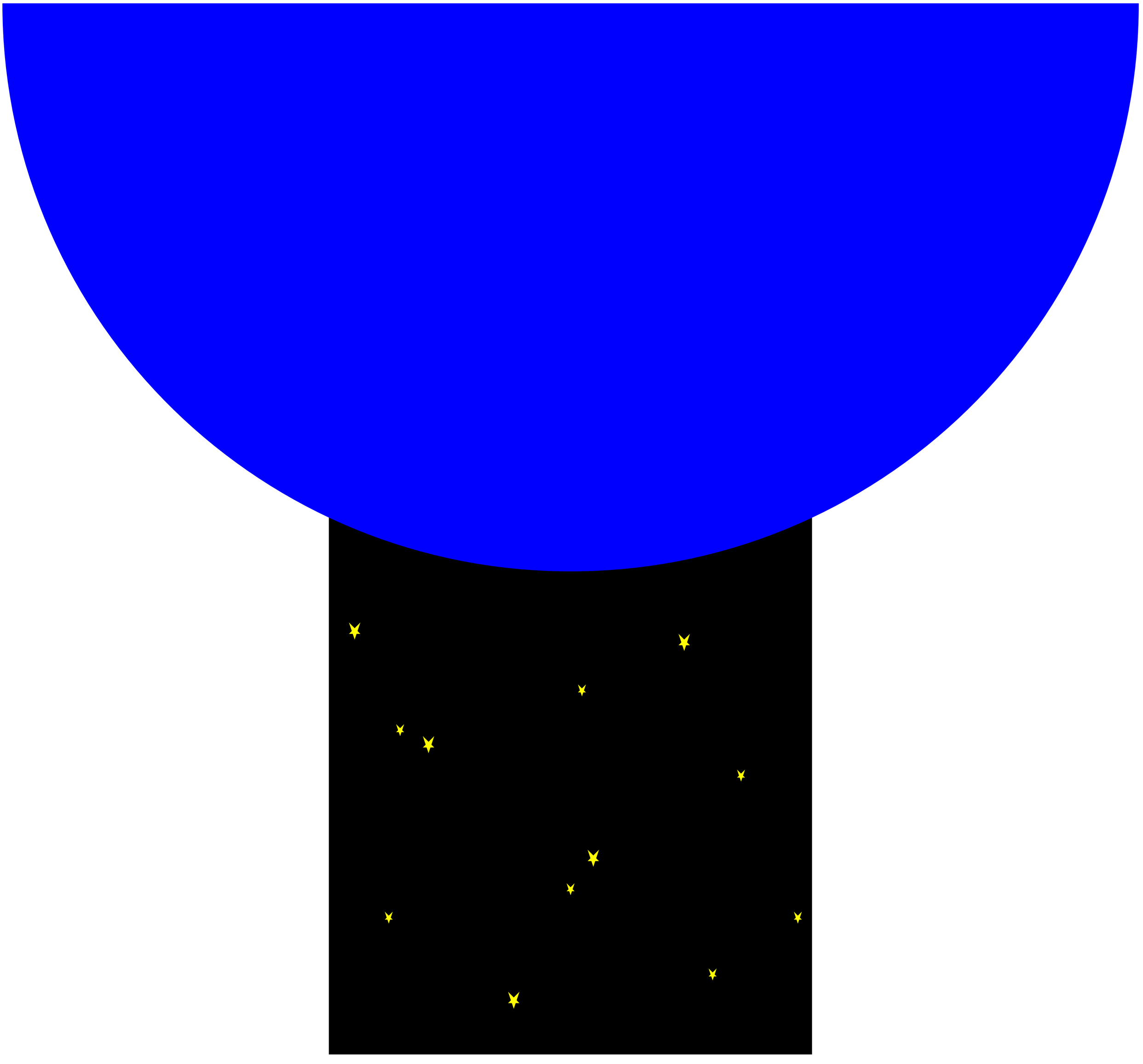


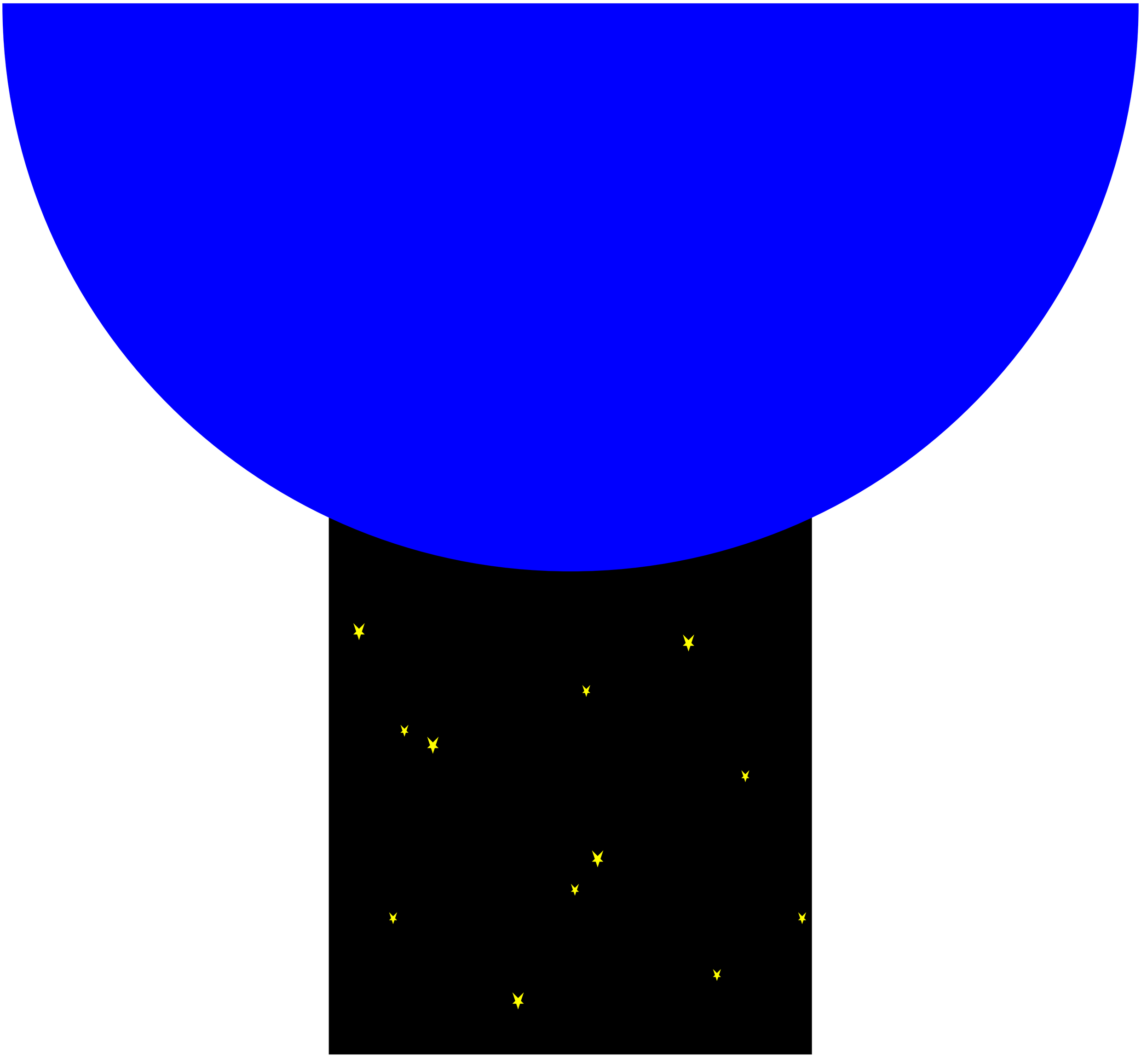


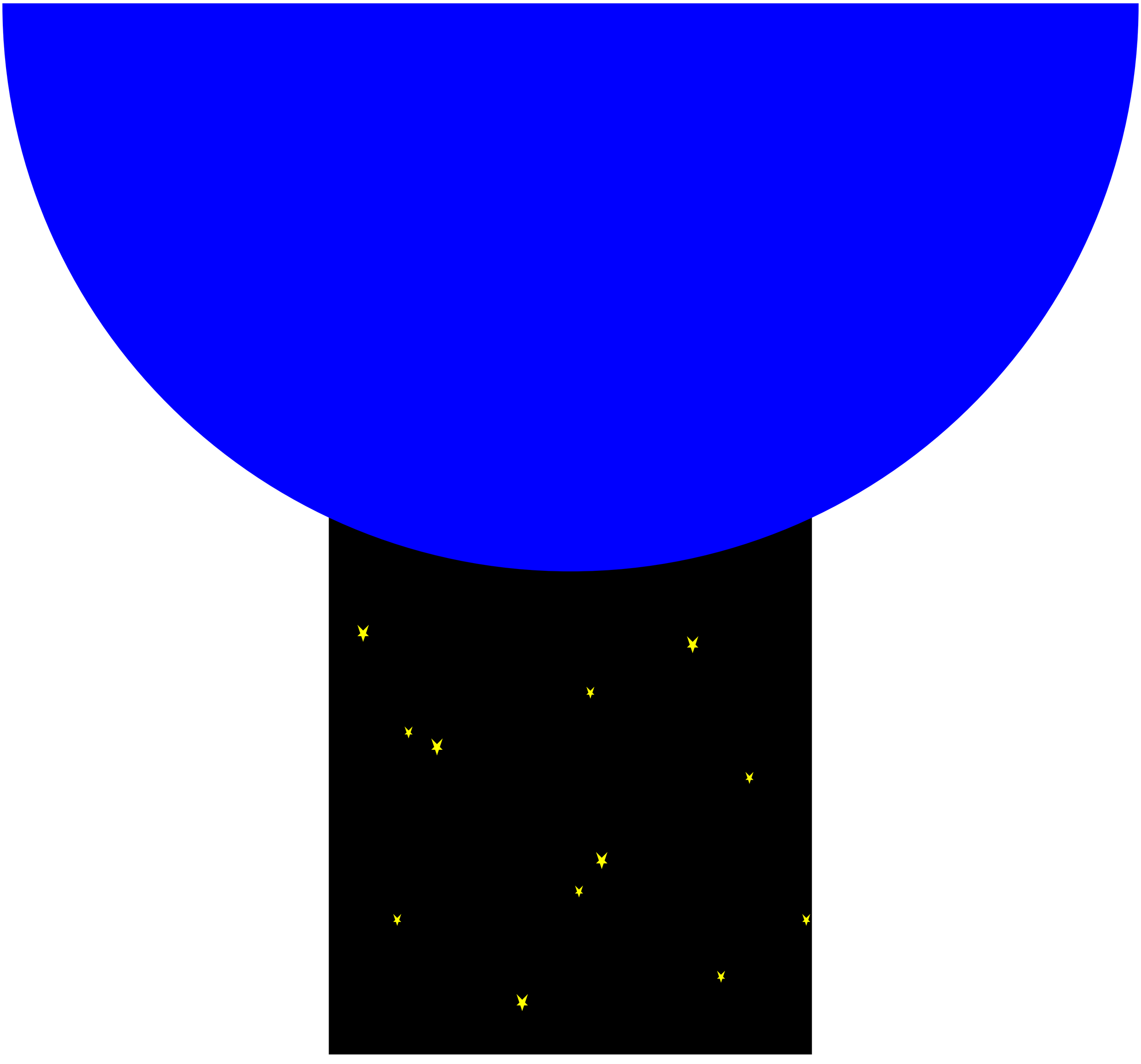


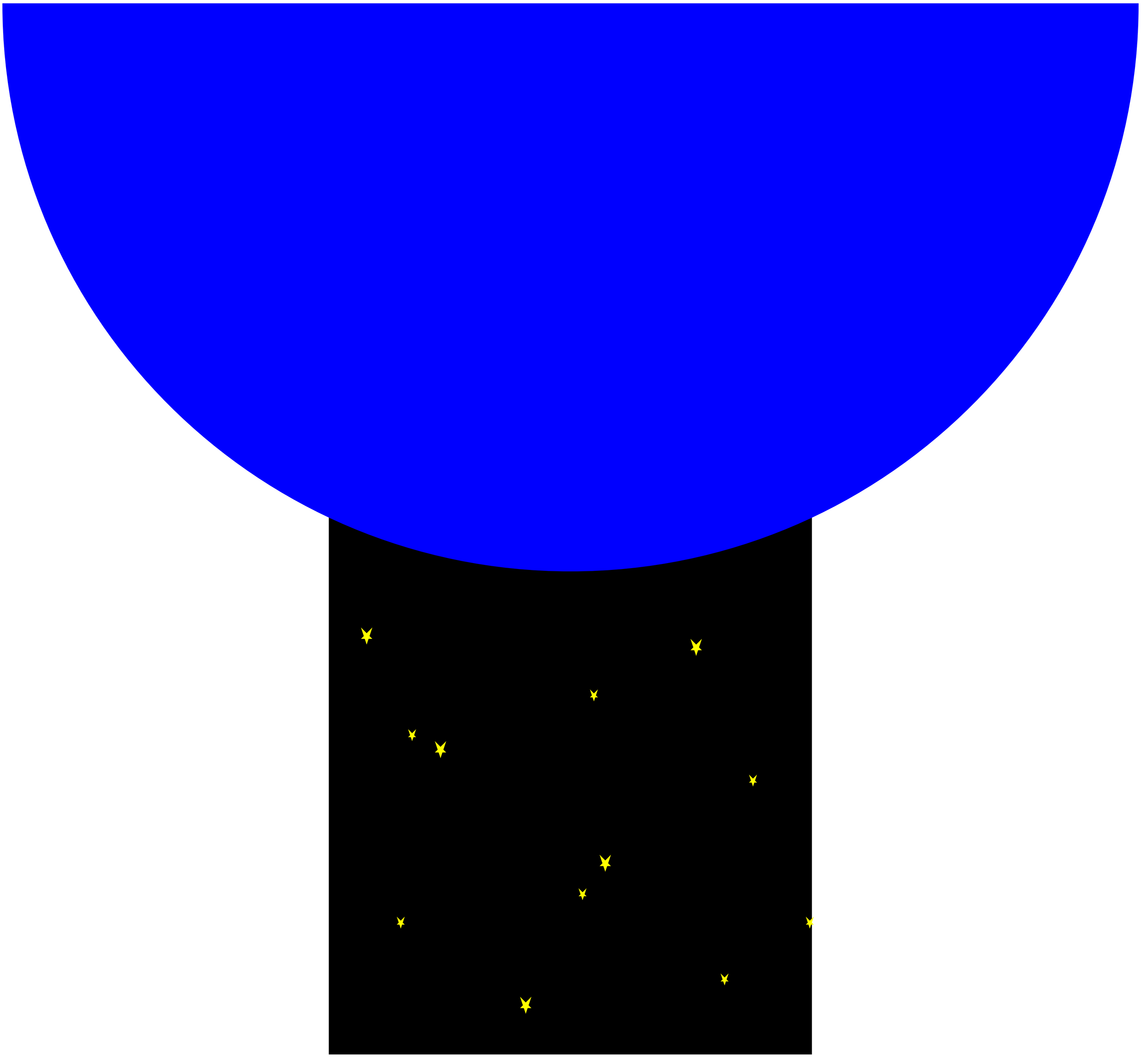


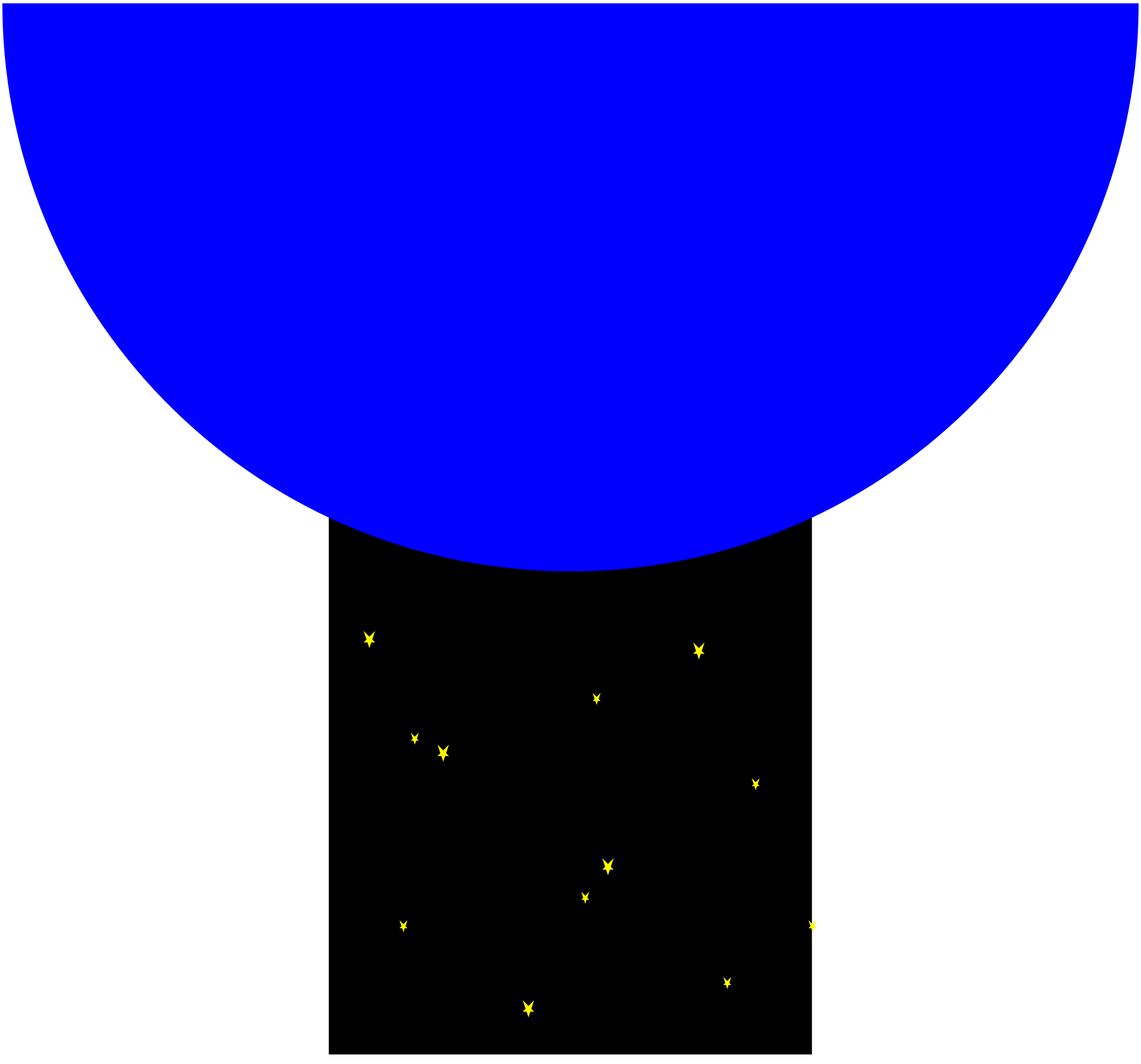


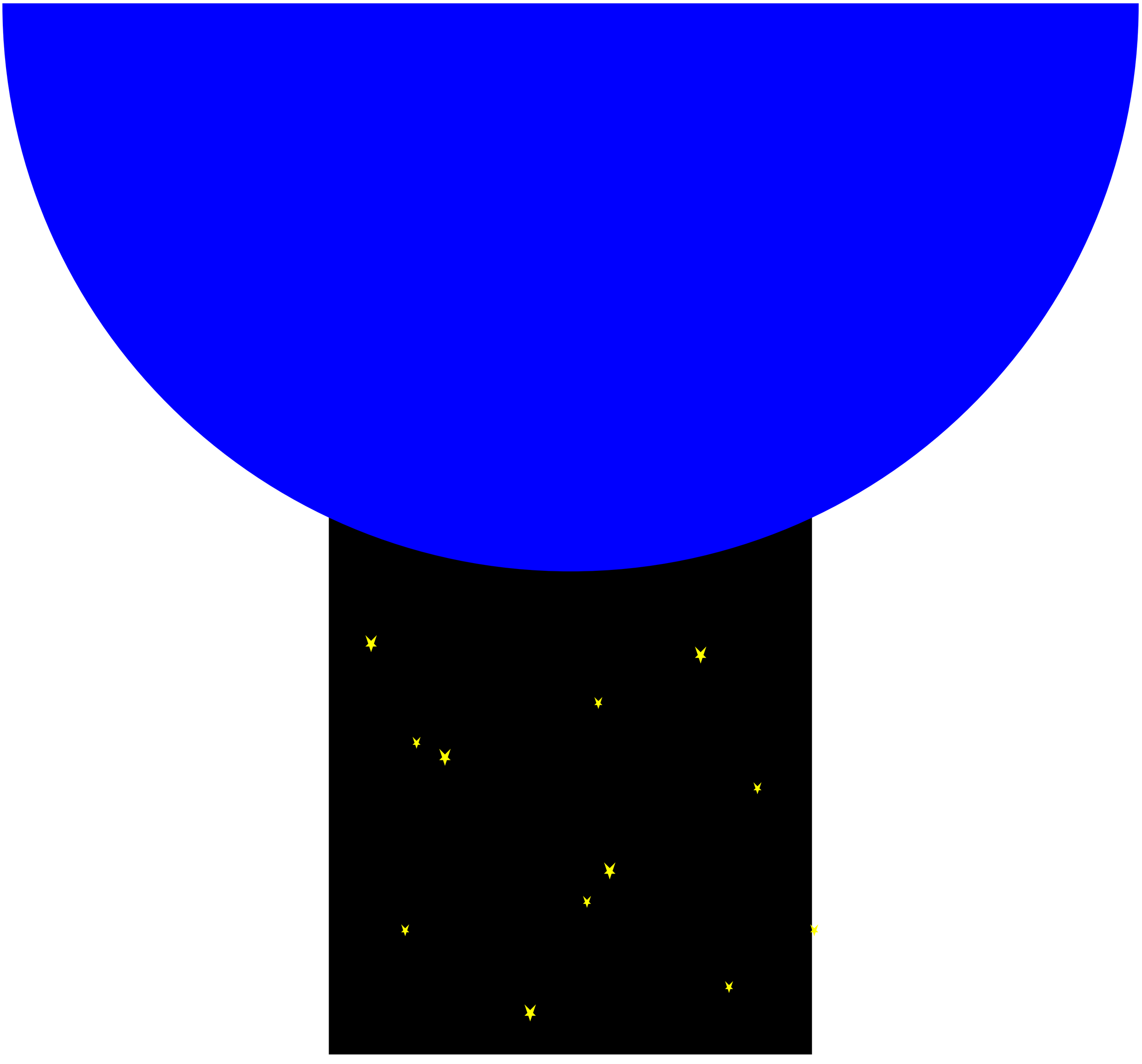


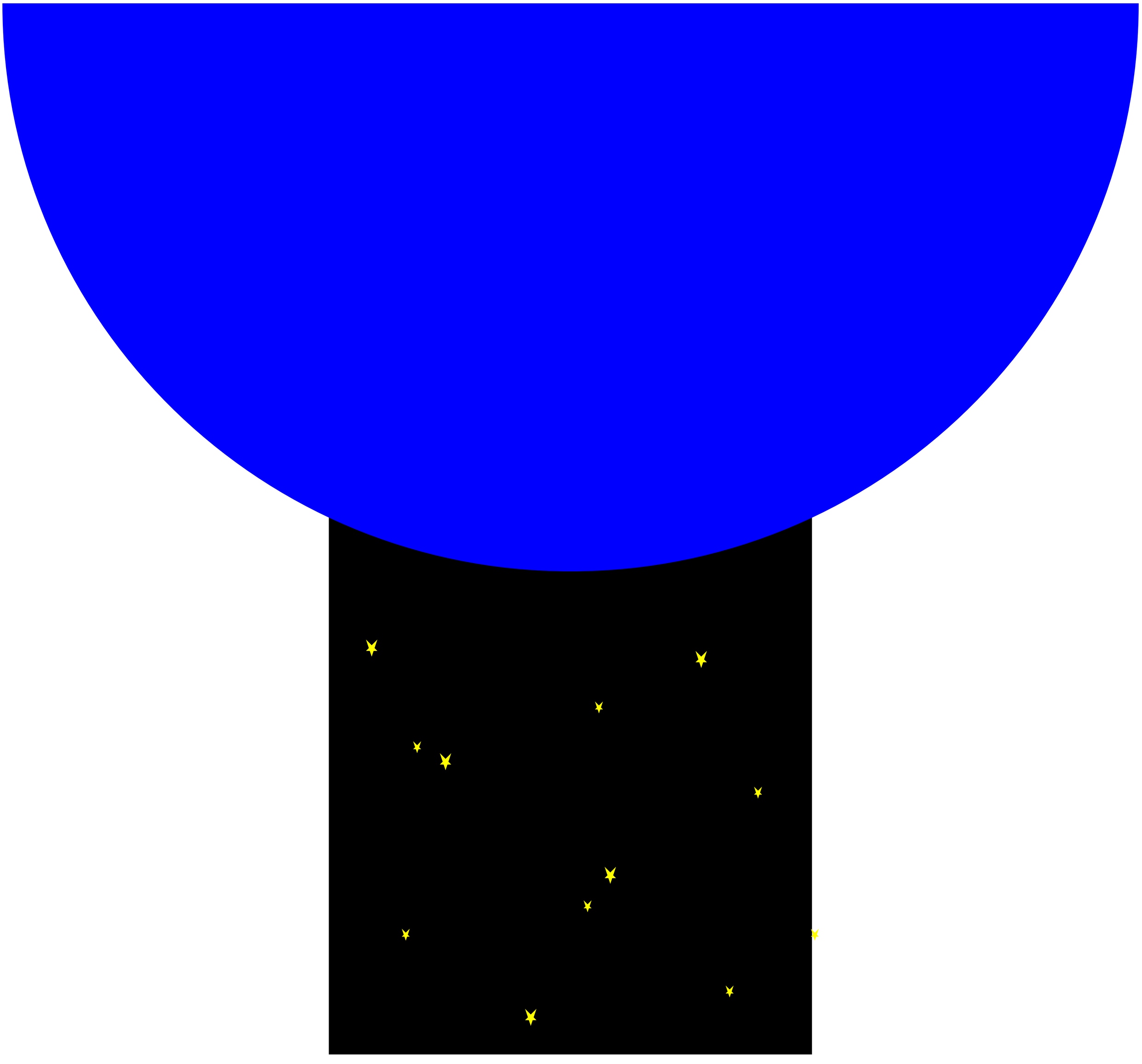


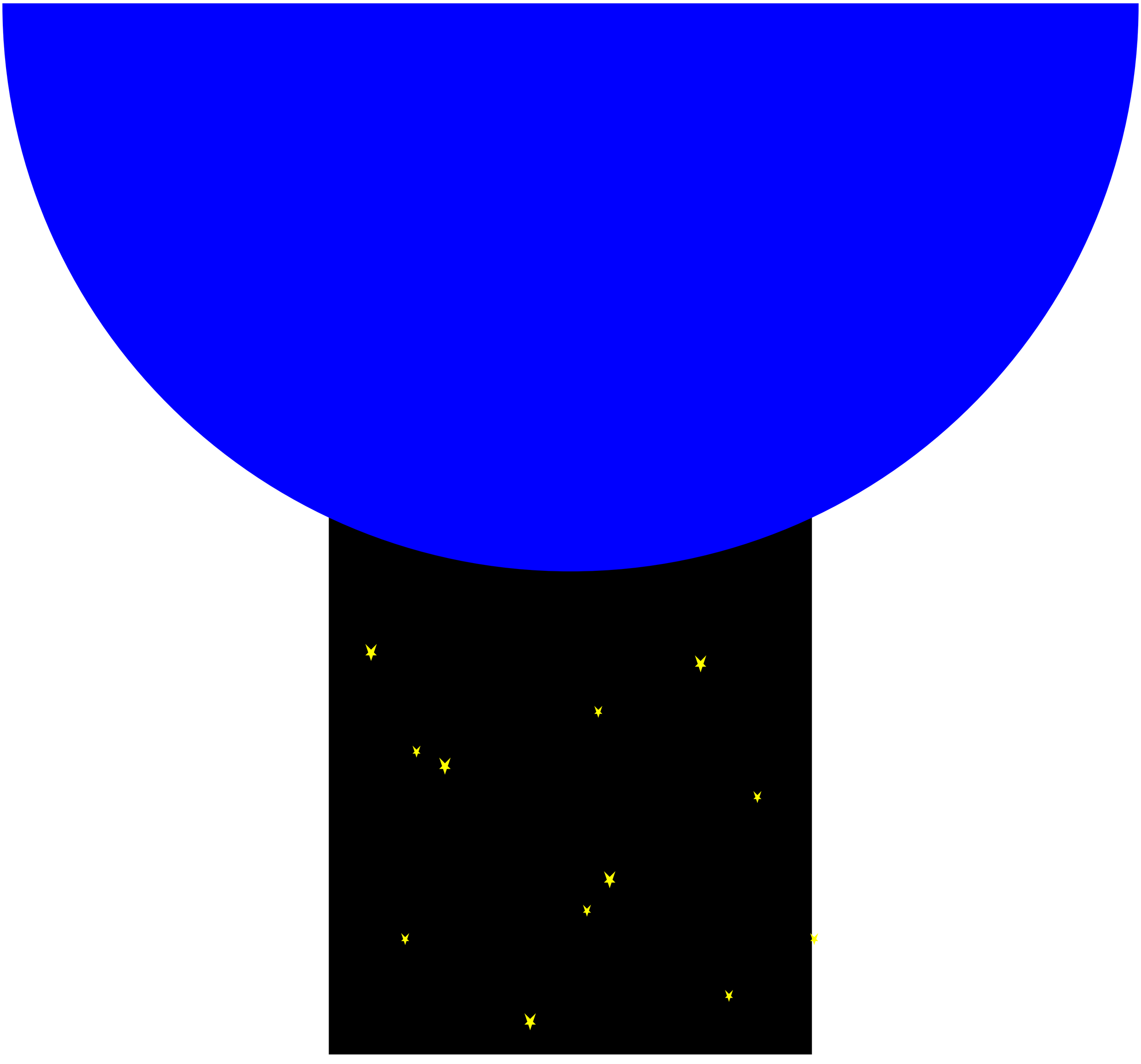


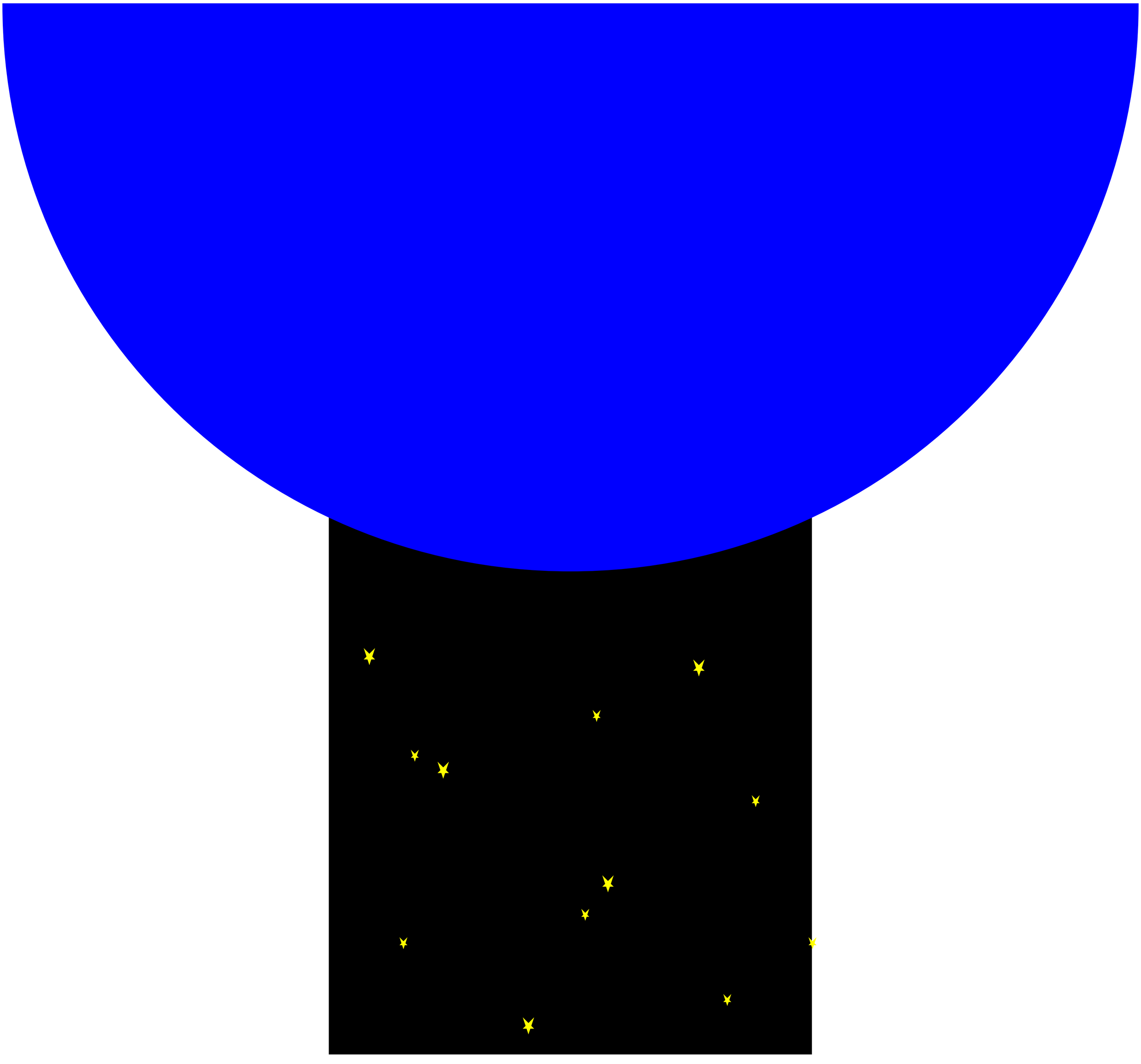


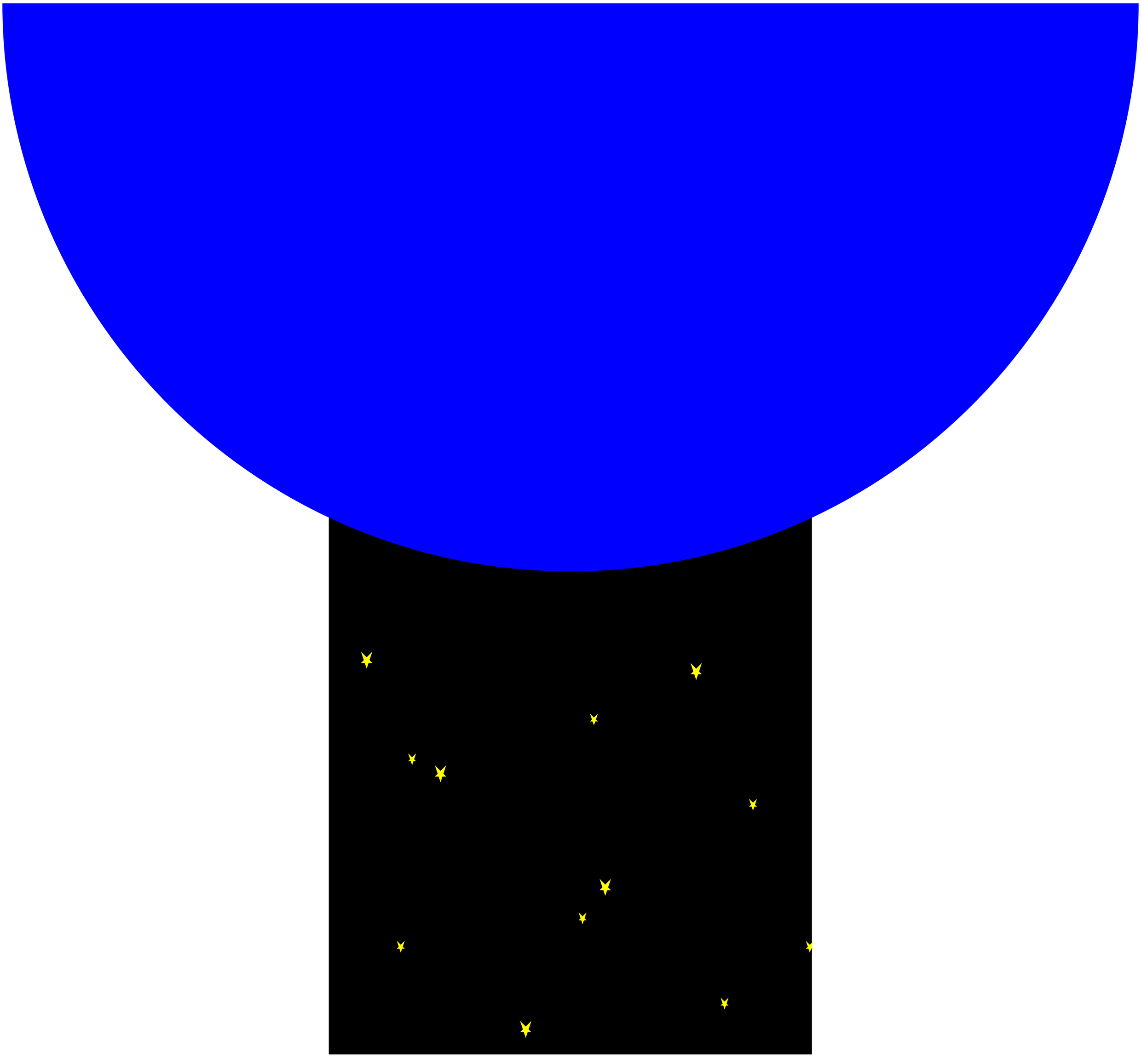


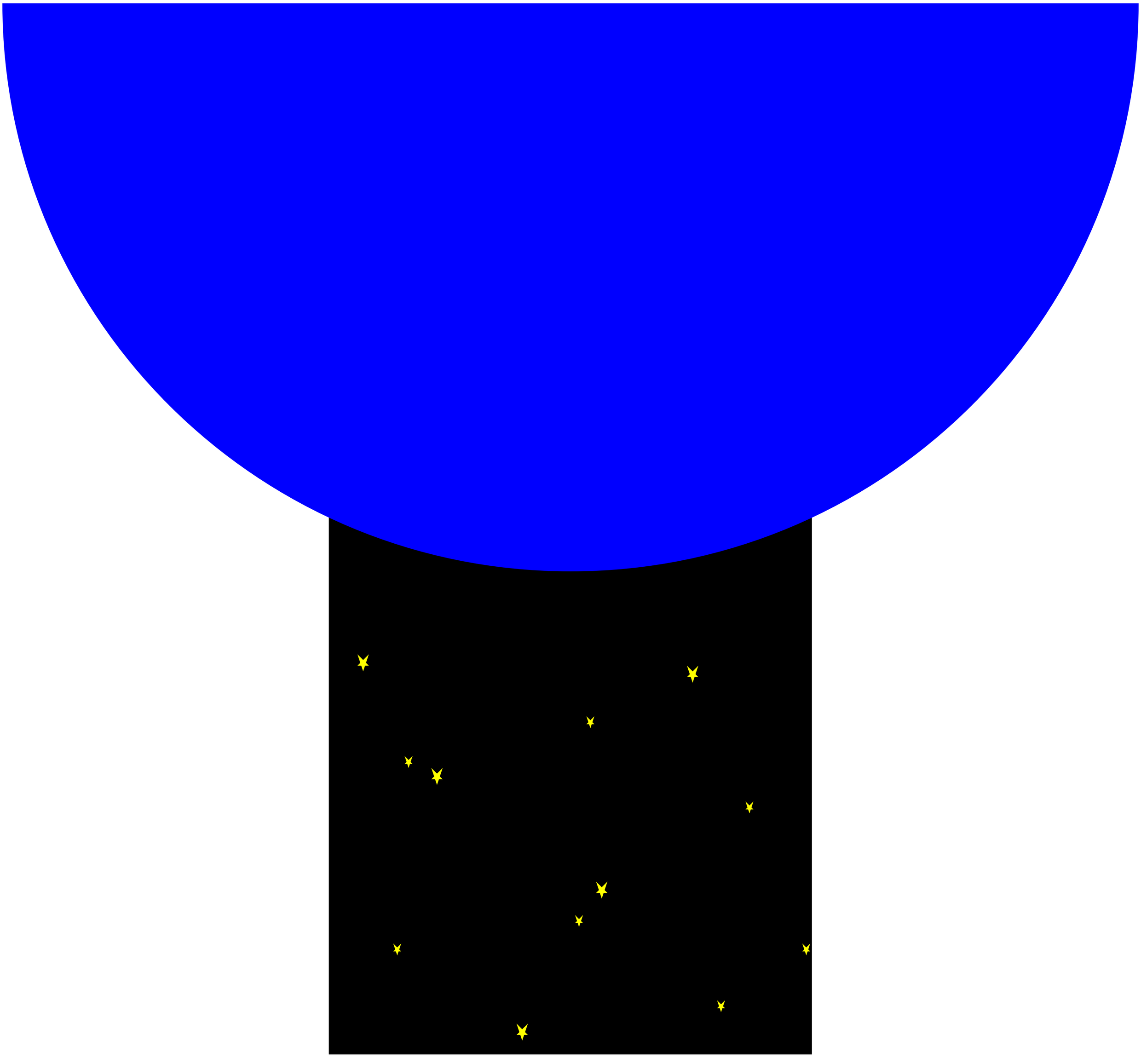


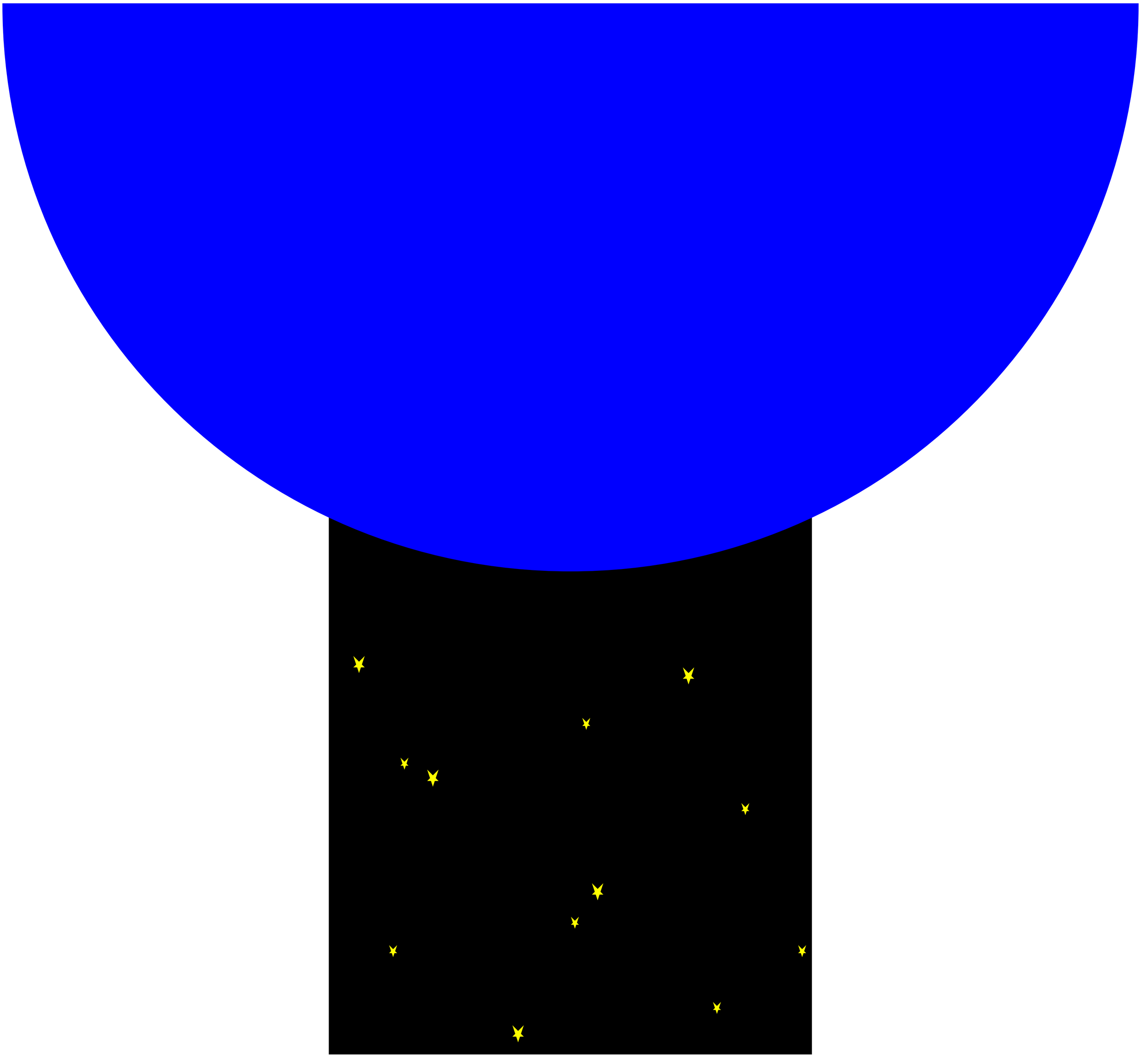


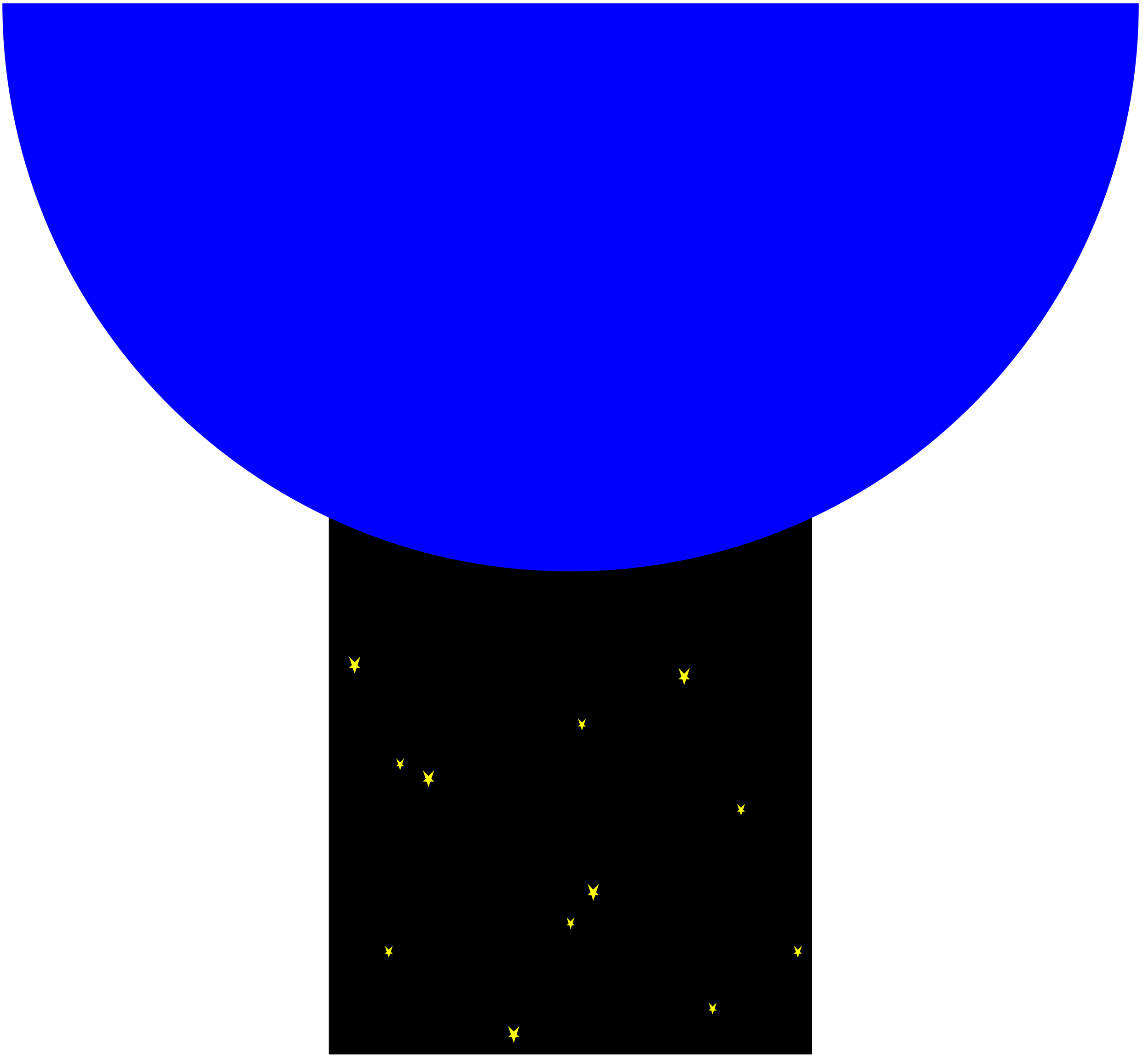




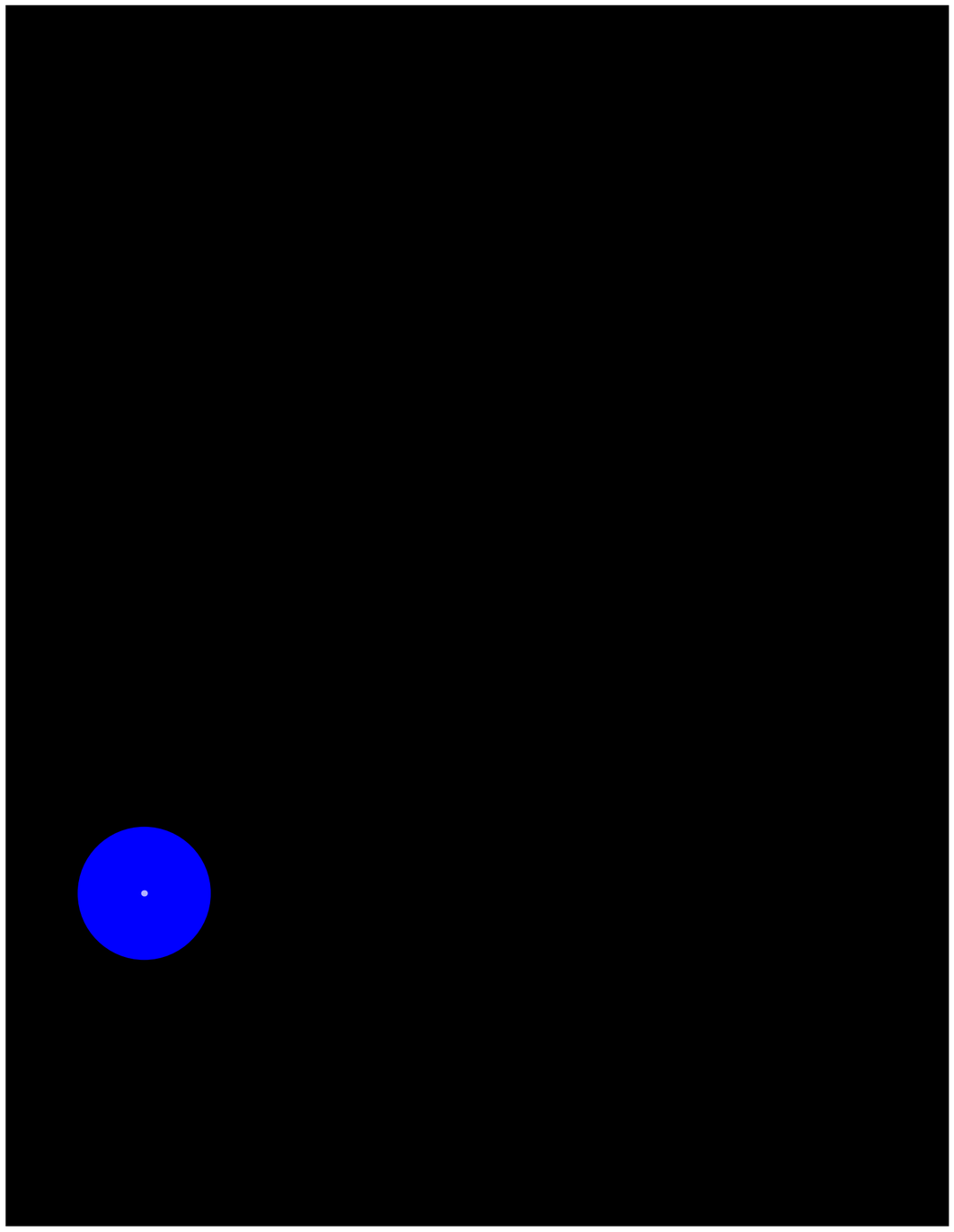


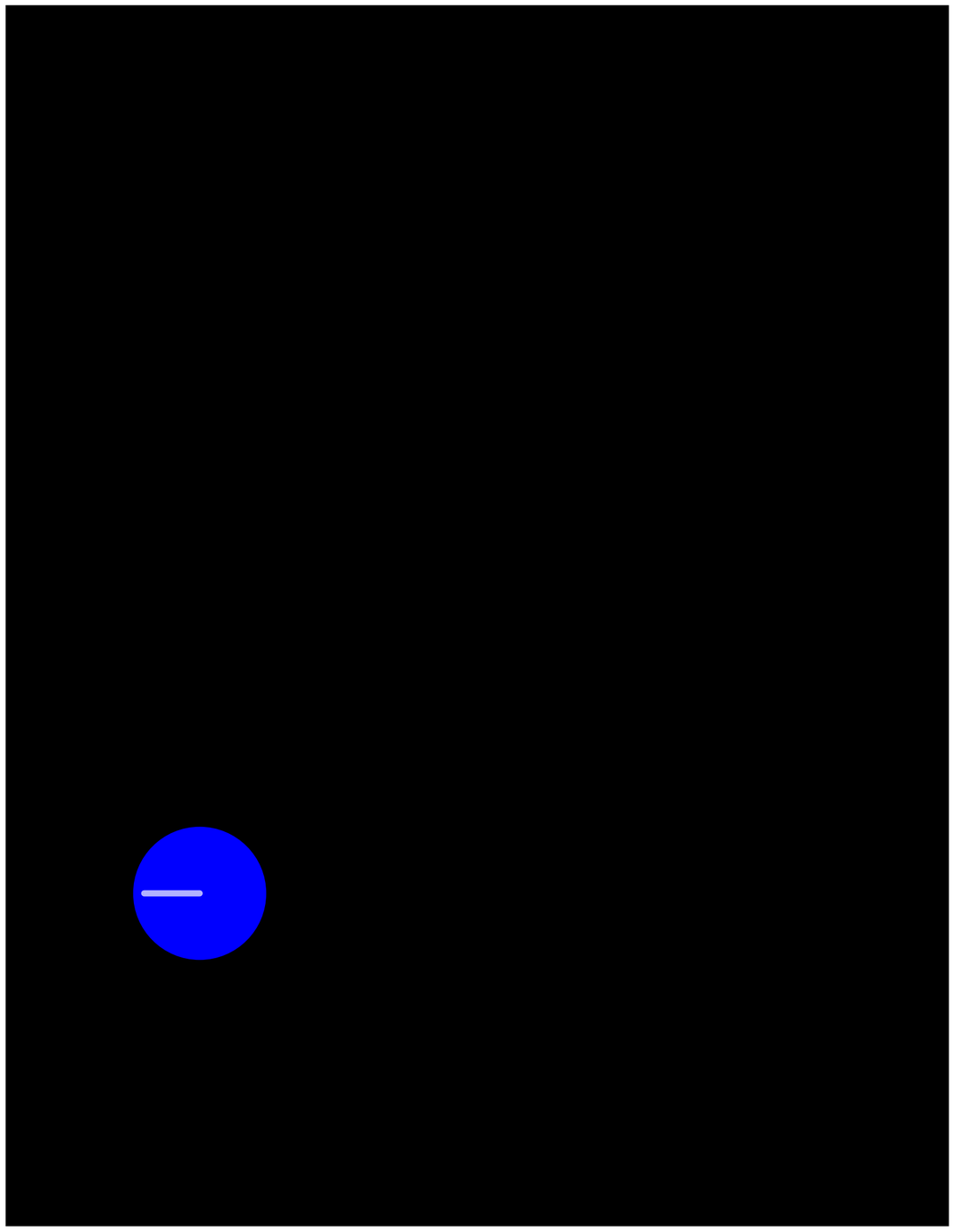


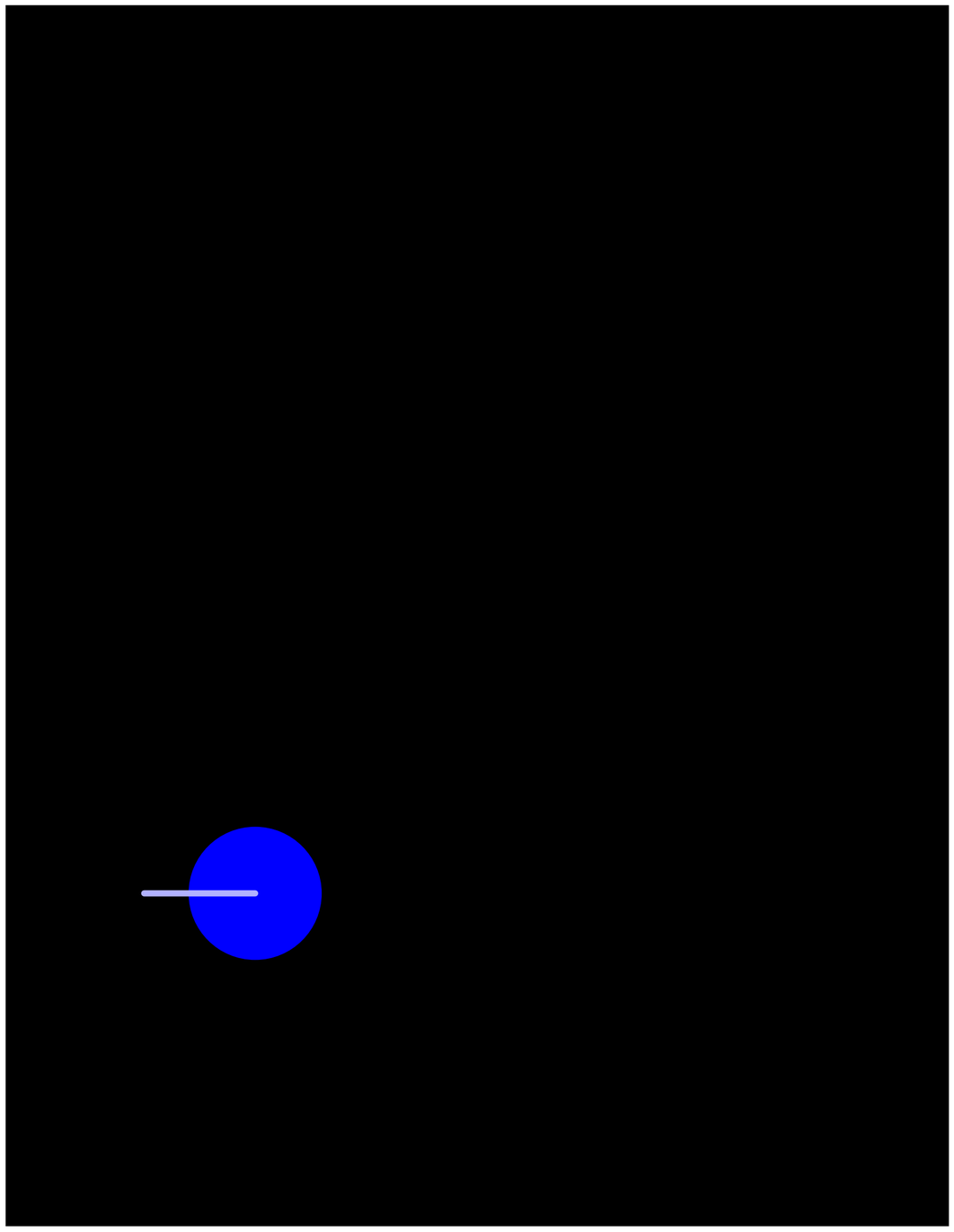


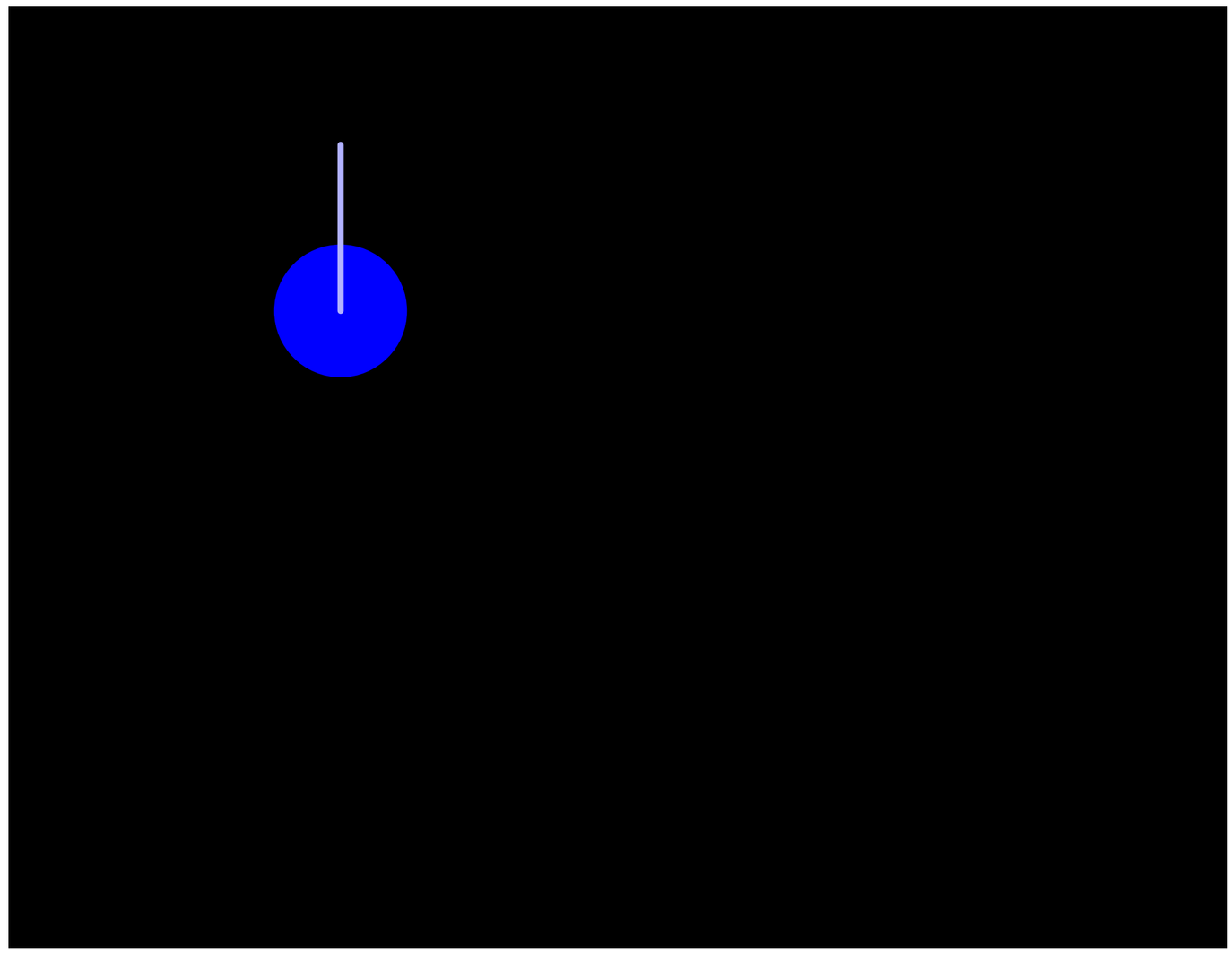


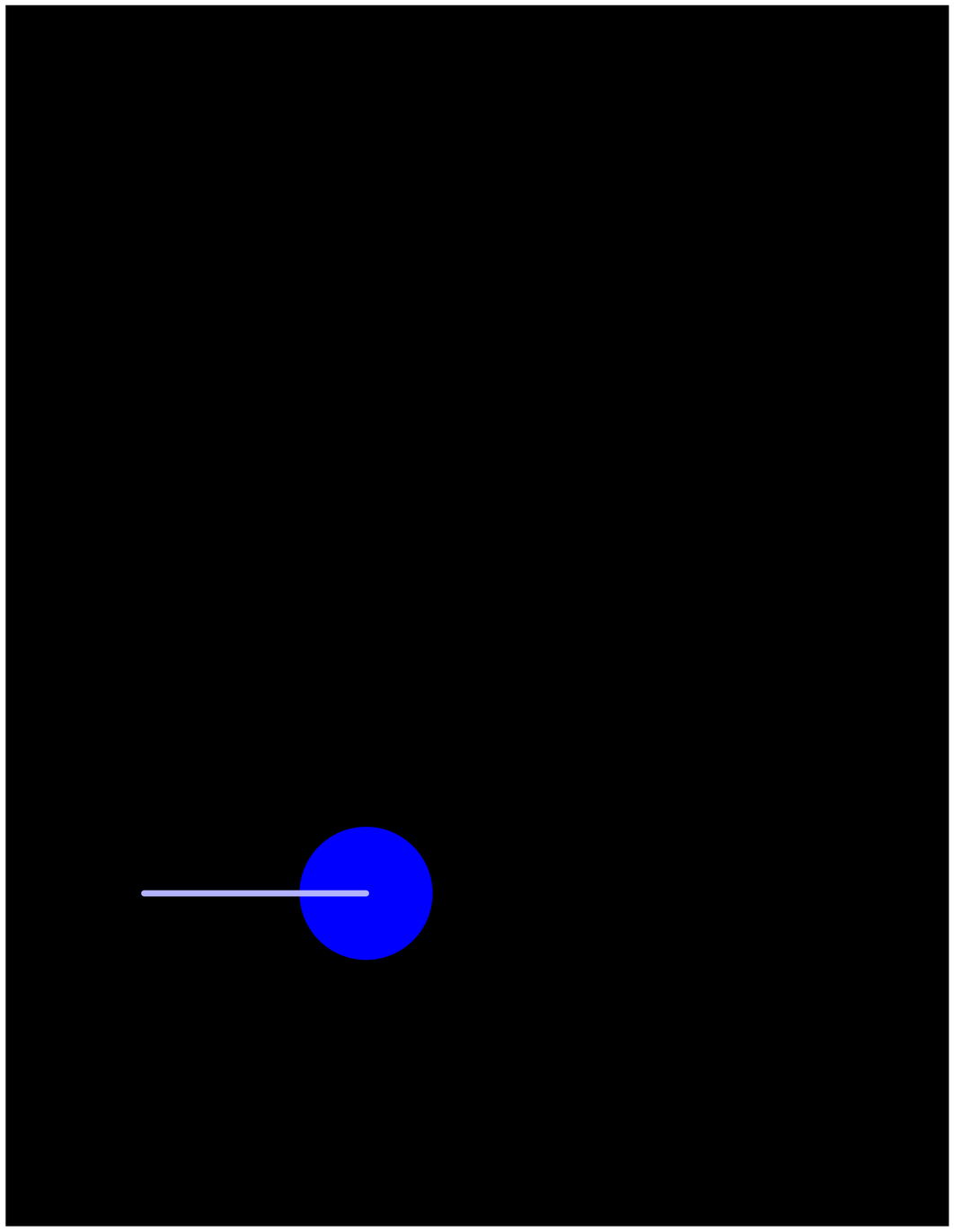
So Why Do Stars Move in a Circular Pattern Throughout The Year?

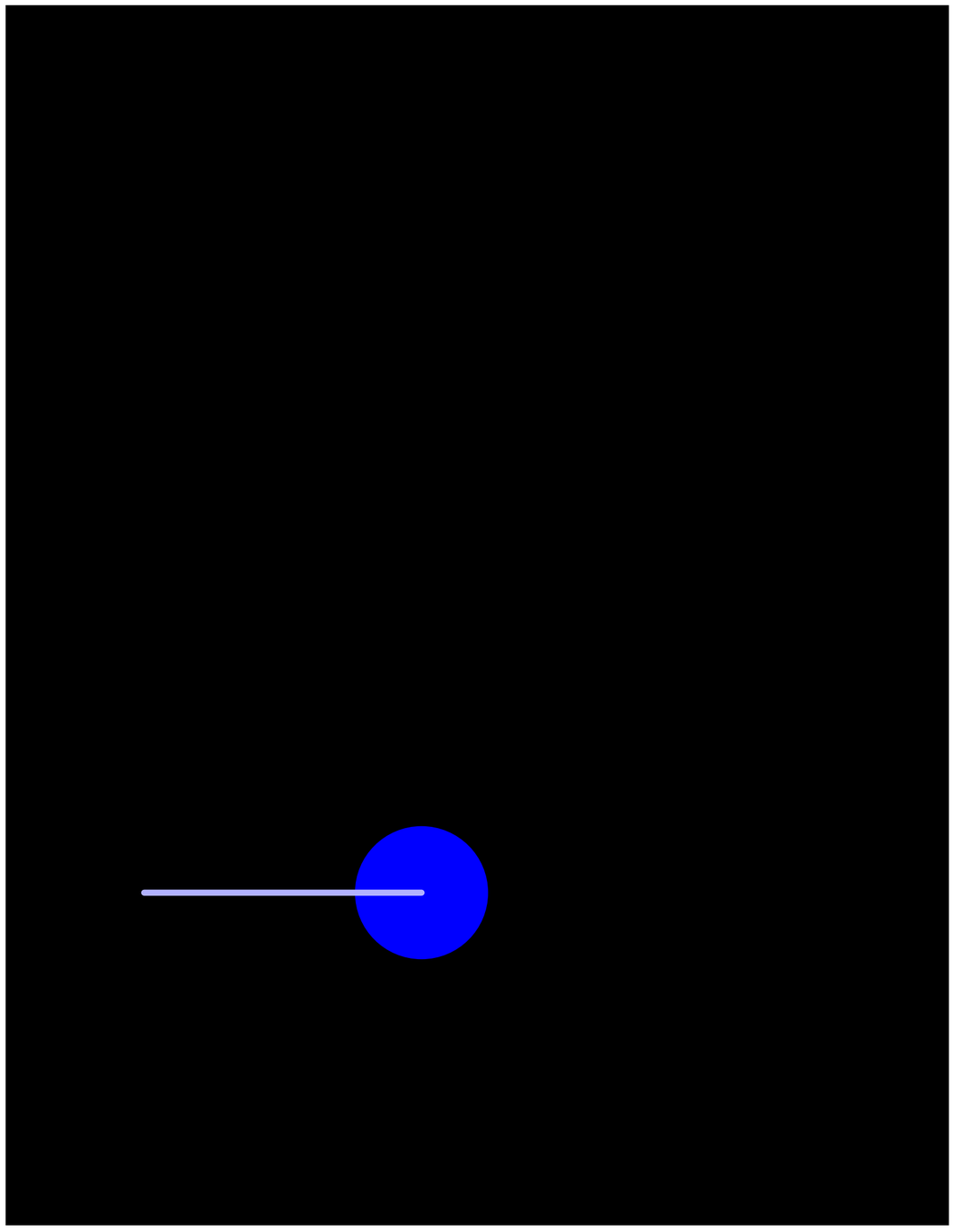


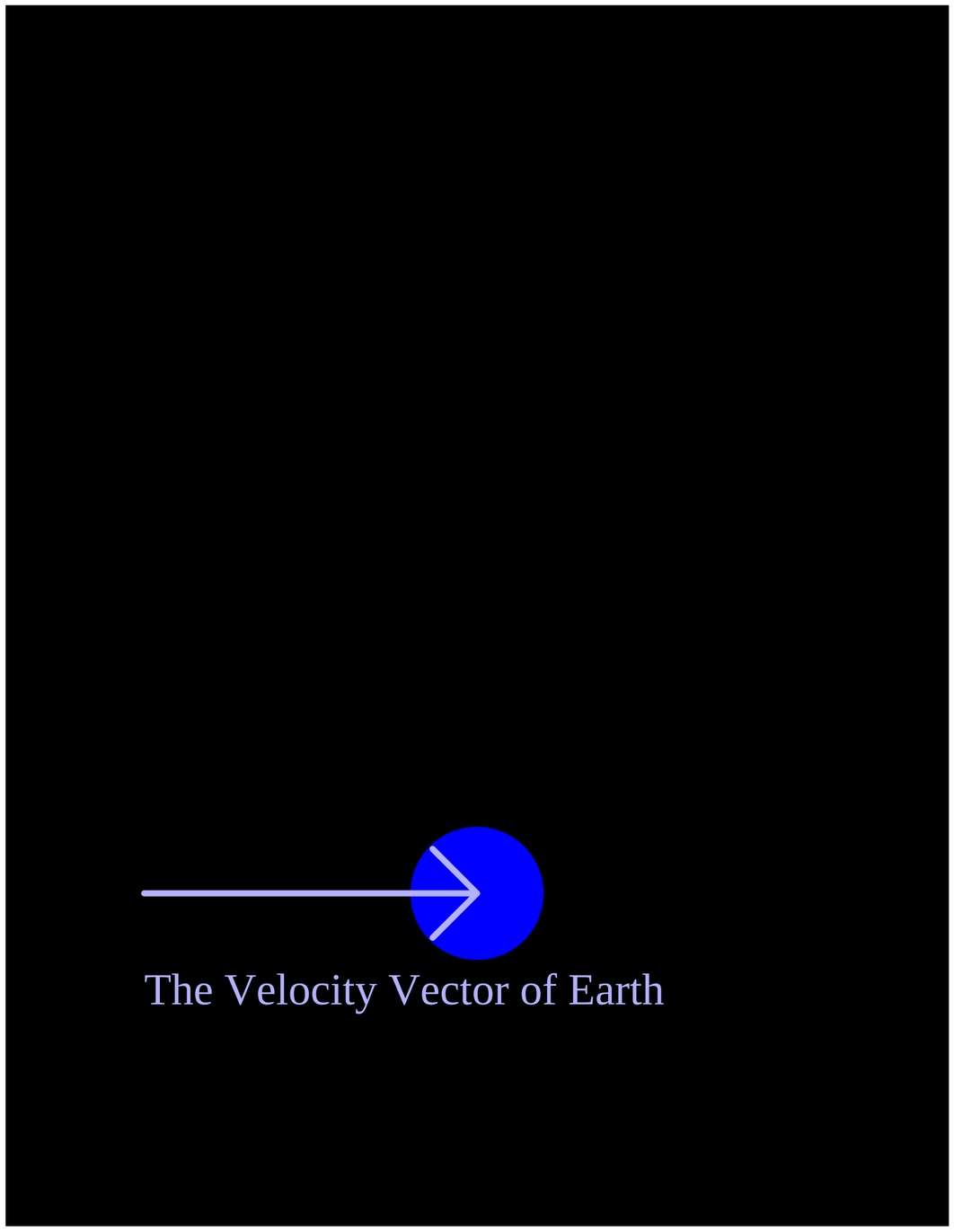


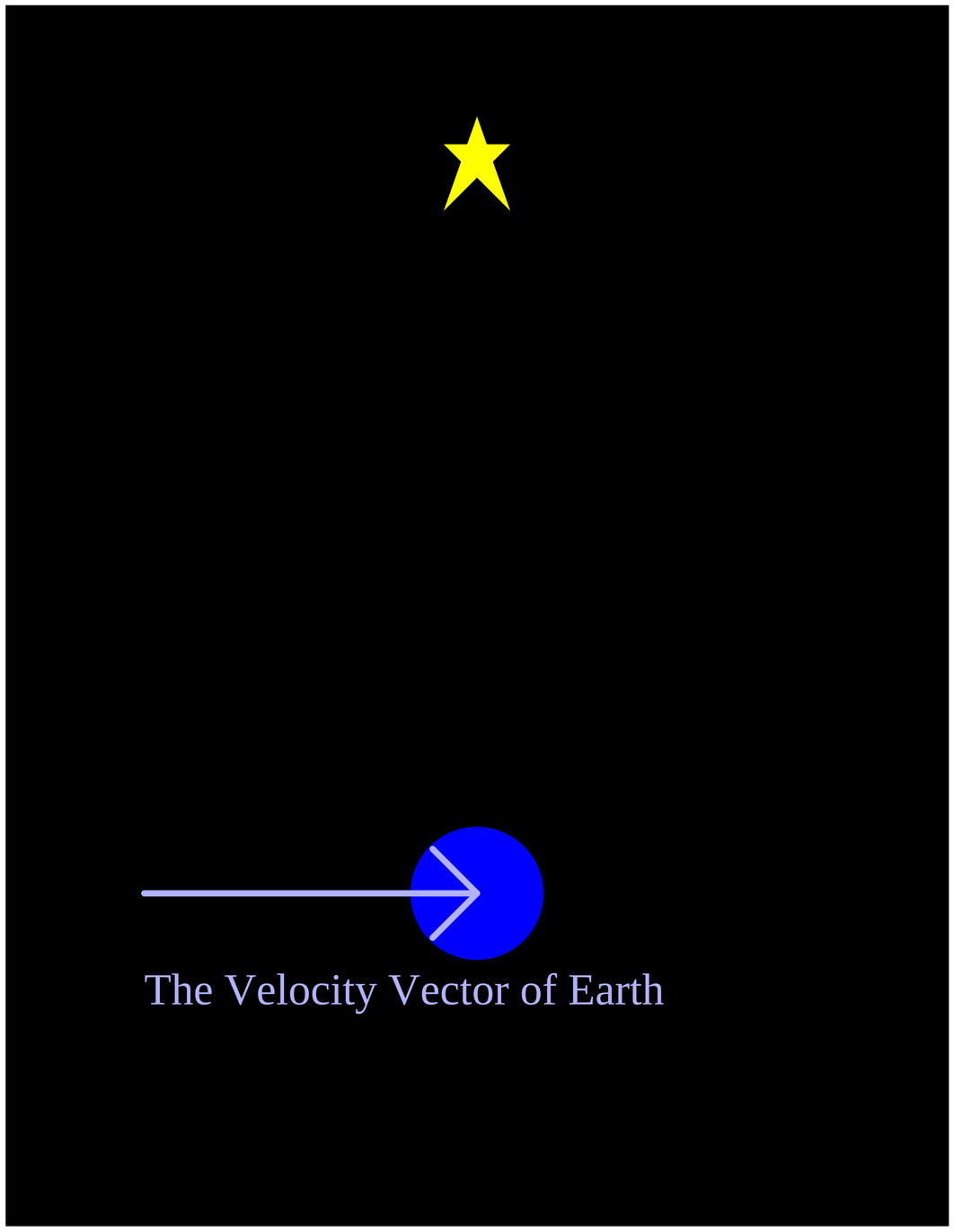


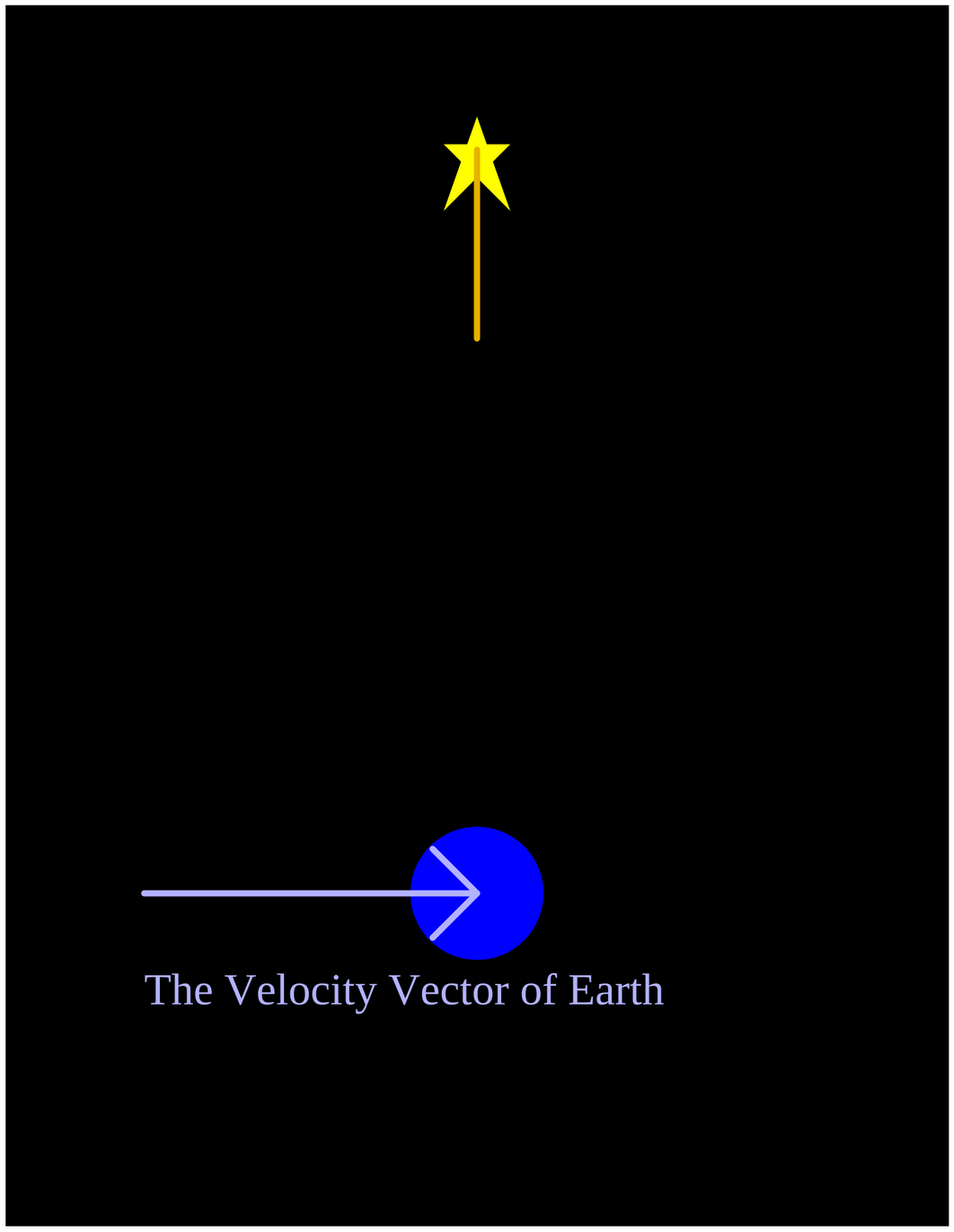


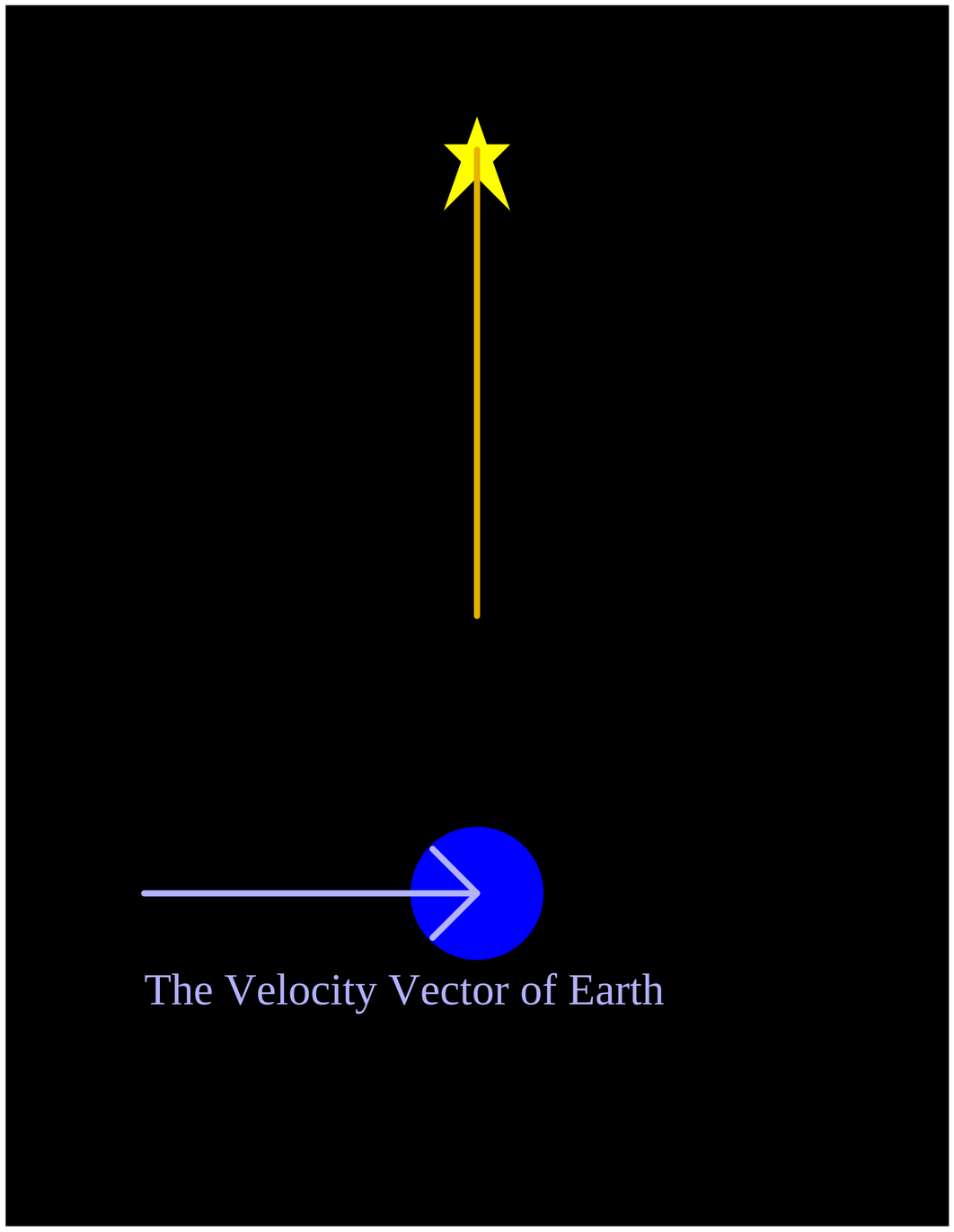


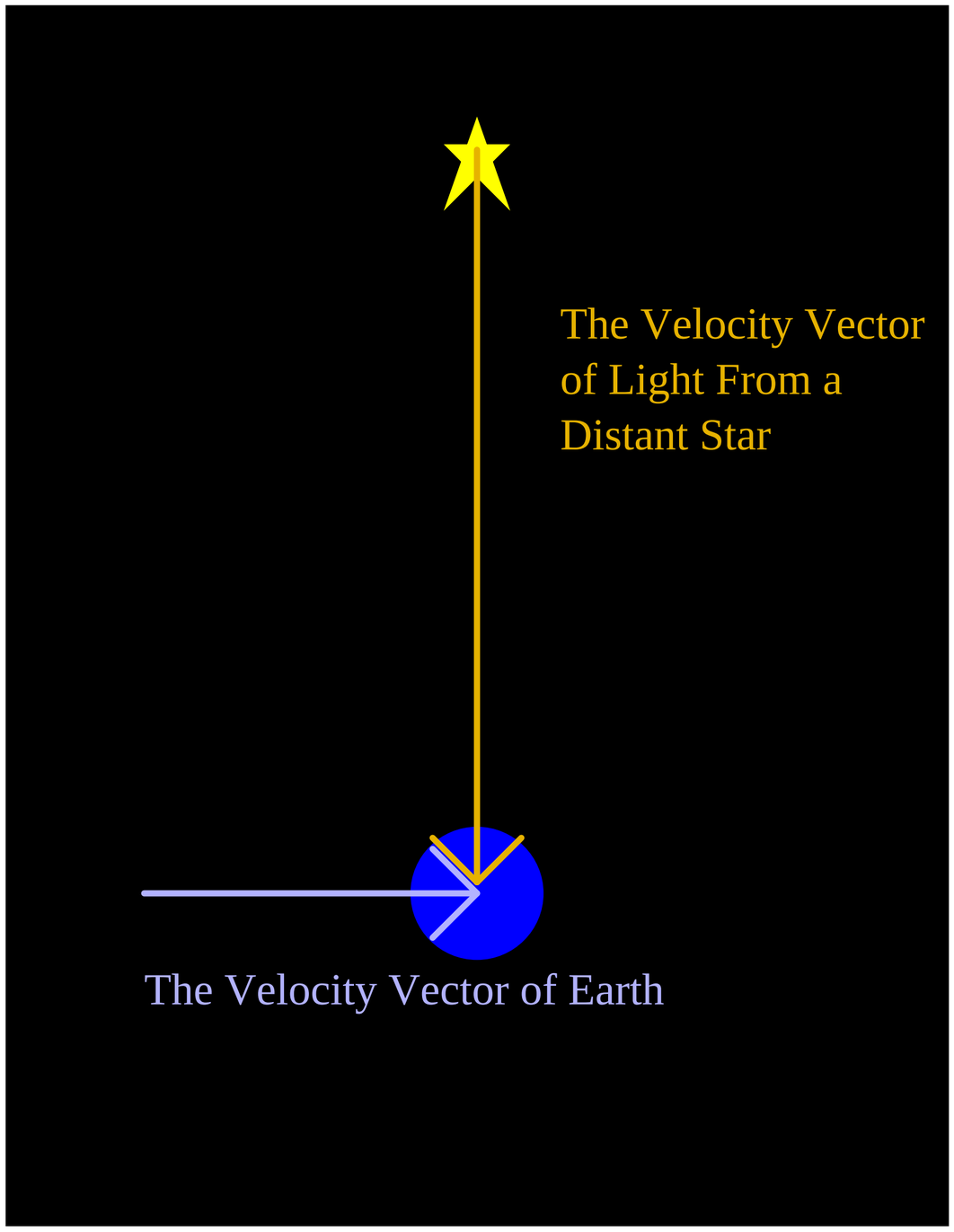


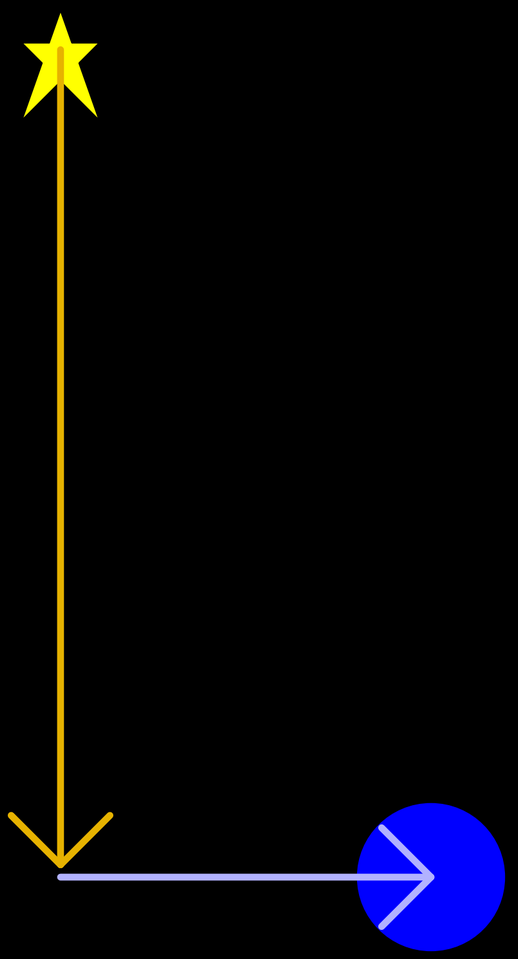

The Velocity Vector of Earth


The Velocity Vector of Earth

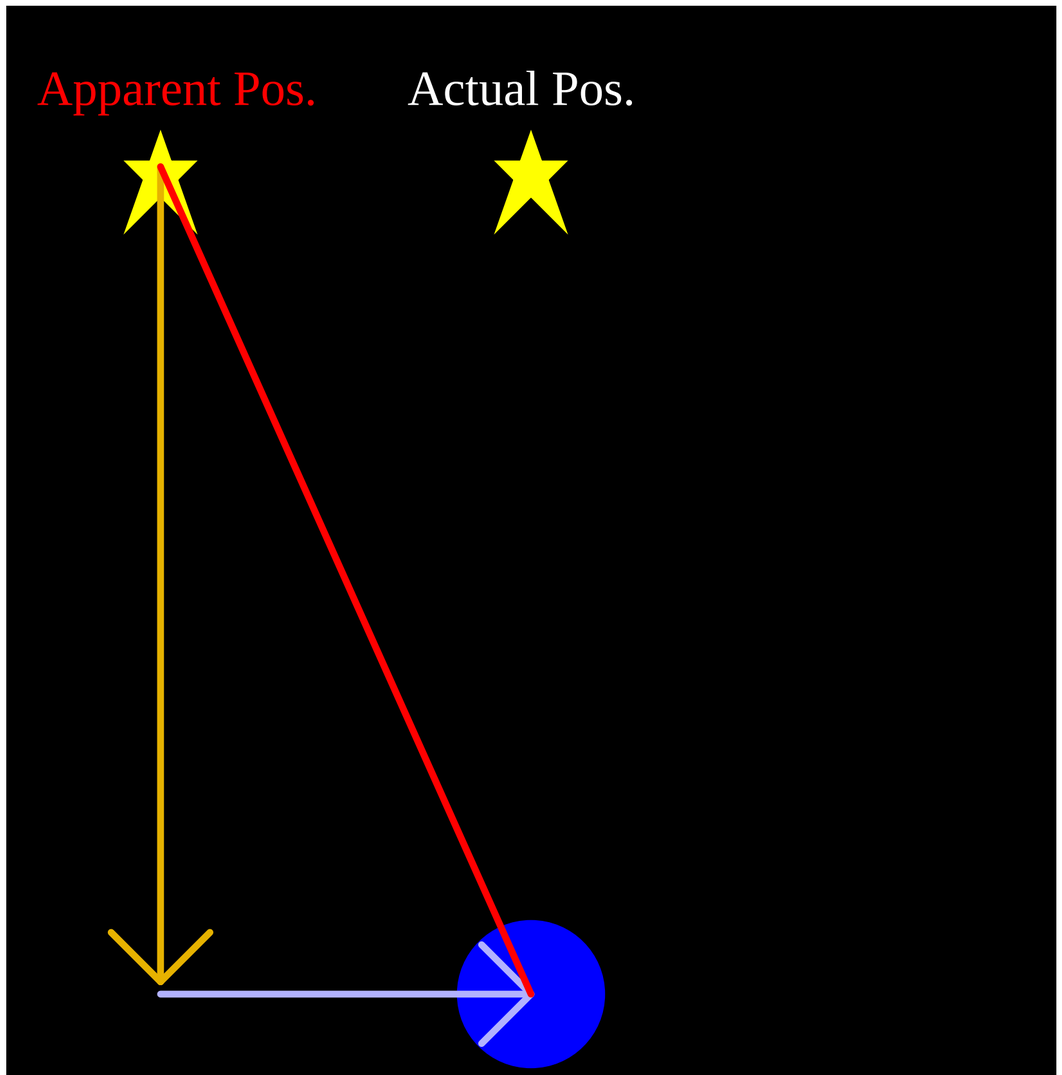

The Velocity Vector of Earth


The Velocity Vector of Earth


The Velocity Vector
of Light From a
Distant Star
The Velocity Vector of Earth

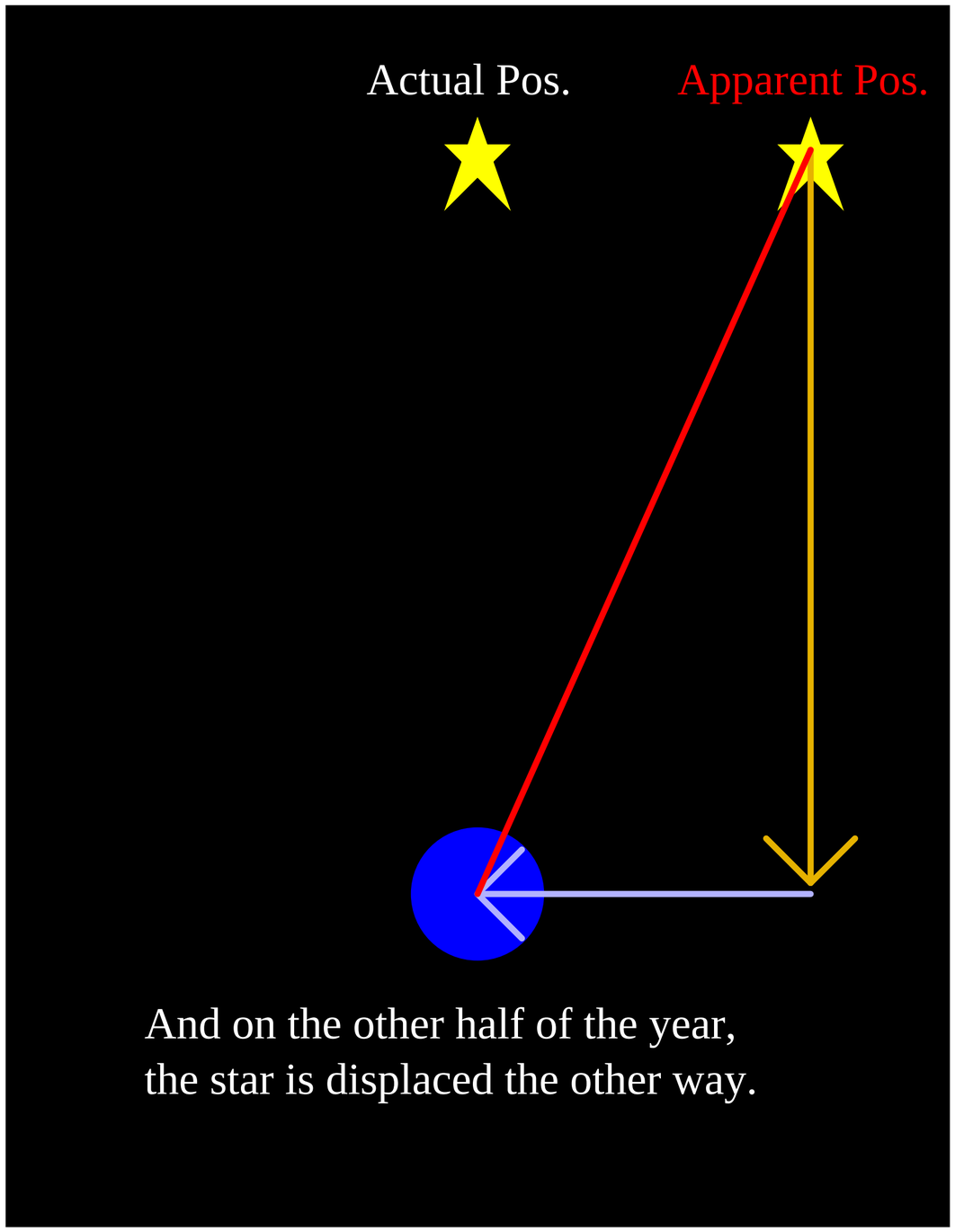


Using Vector Addition,
The Star appears to originate from another part of the sky



The Cause: Stellar Aberration

The Apparent position of the star differs from the actual position

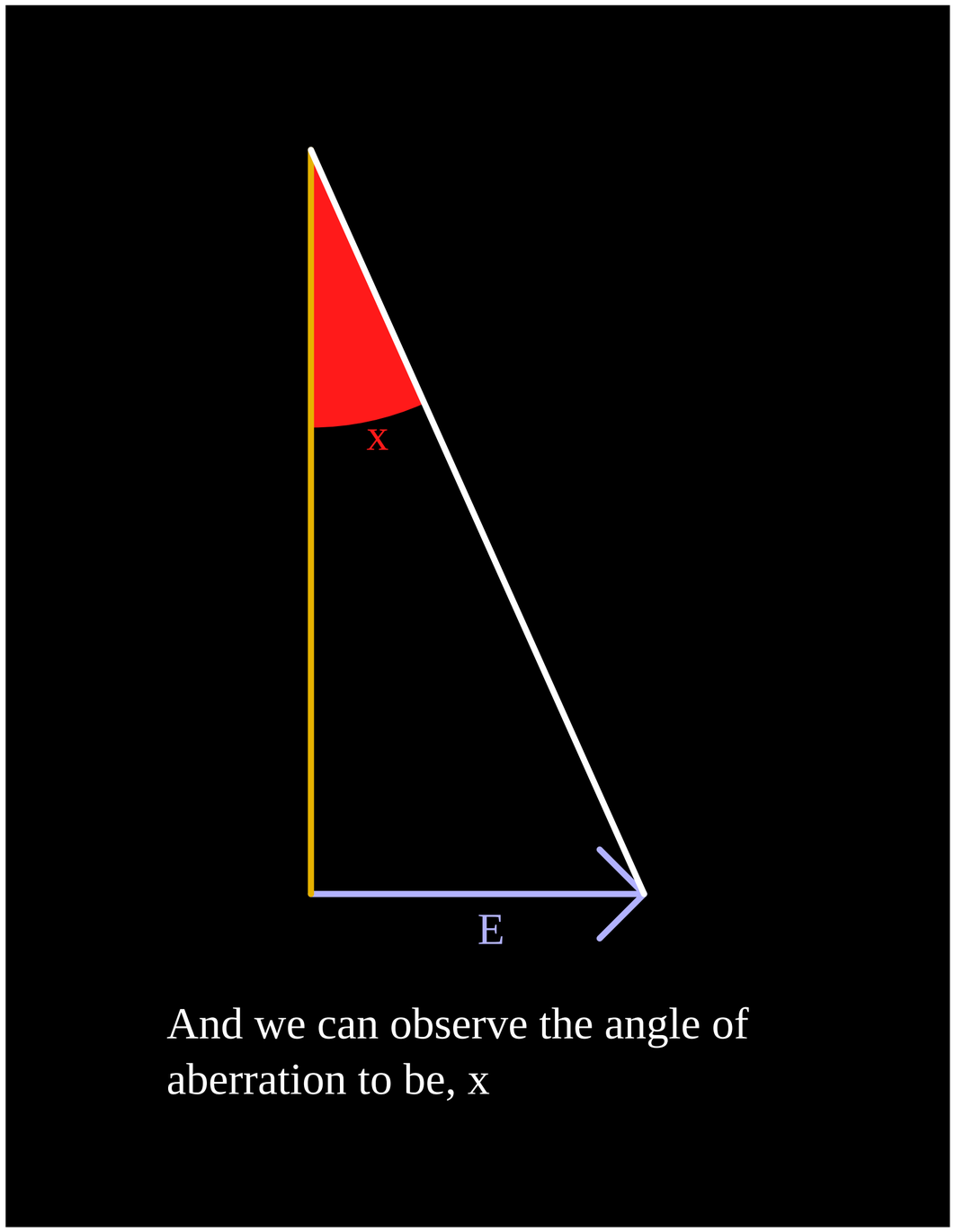

Actual Pos.
Apparent Pos.
And on the other half of the year,
the star is displaced the other way.

So back in 1728...

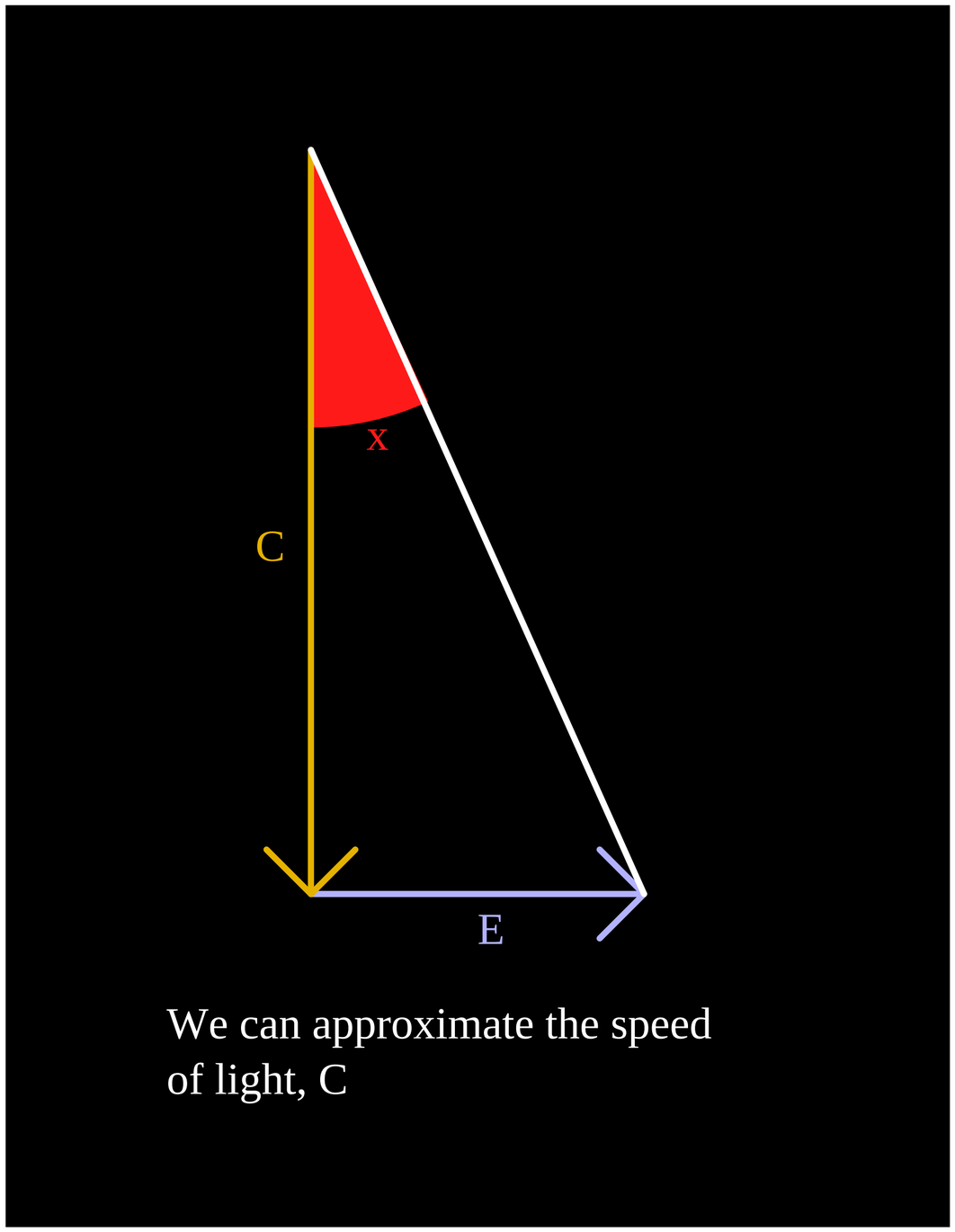
James Bradley

Wondered...

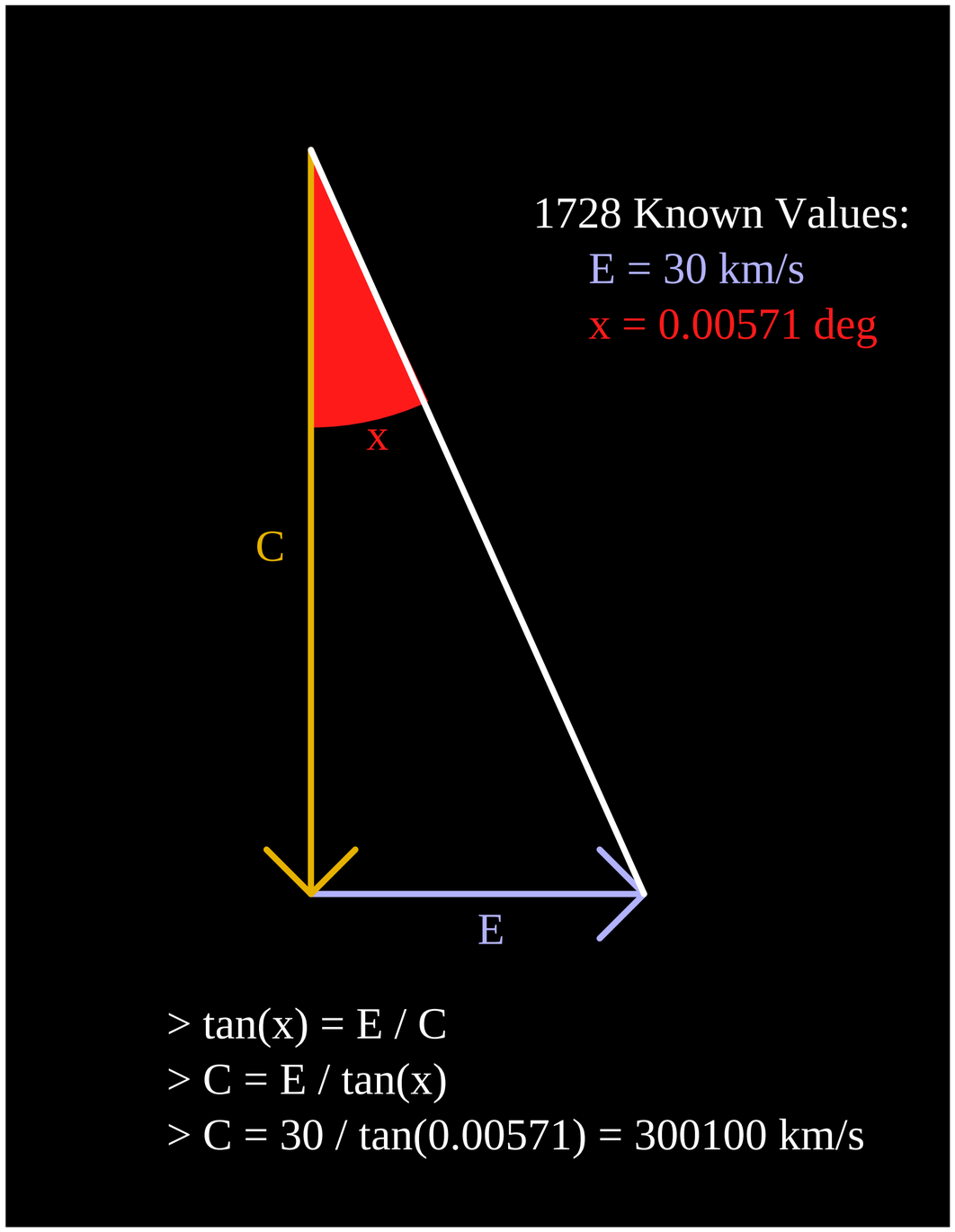
If we have the velocity of Earth, E

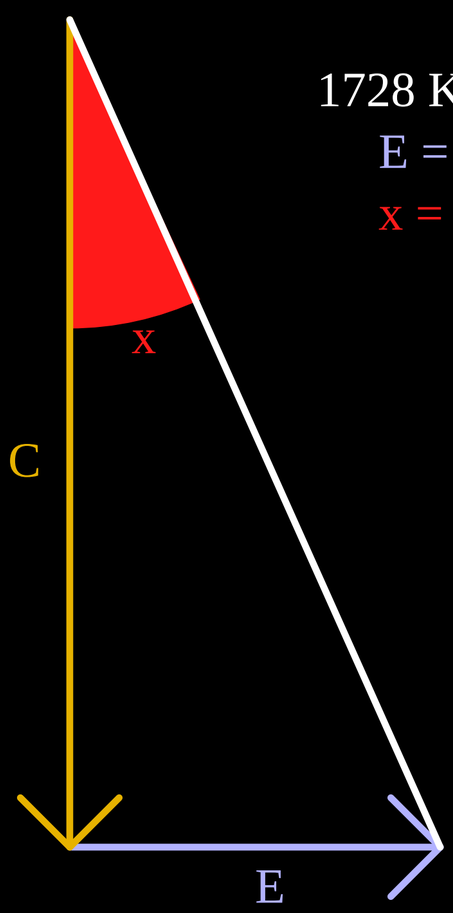


And we can observe the angle of aberration to be, x



We can approximate the speed of light, C


1728 Known Values:
E = 30 km/s
x = 0.00571 deg
x
C
E
> tan(x) = E / C
> C = E / tan(x)
> C = 30 / tan(0.00571) = 300100 km/s



1728 Known Values:

E = 30 km/s

x = 0.00571 deg

Thanks to Steller Aberrations

Bradley’s Calculation of C = 300100 km/s

Present Day Calculation of C =299792 km/s