

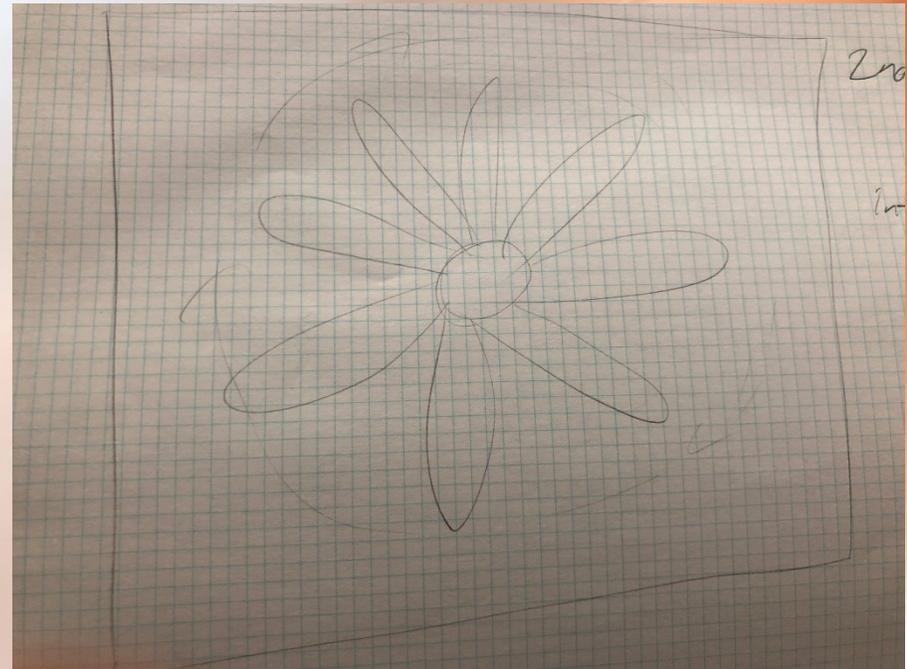
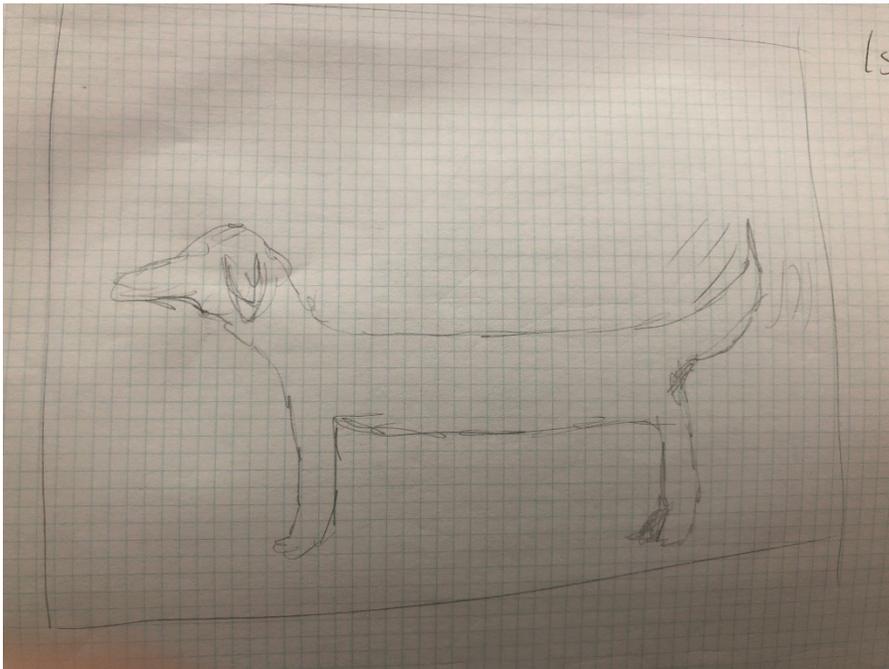


Interactive Time-Based Pattern

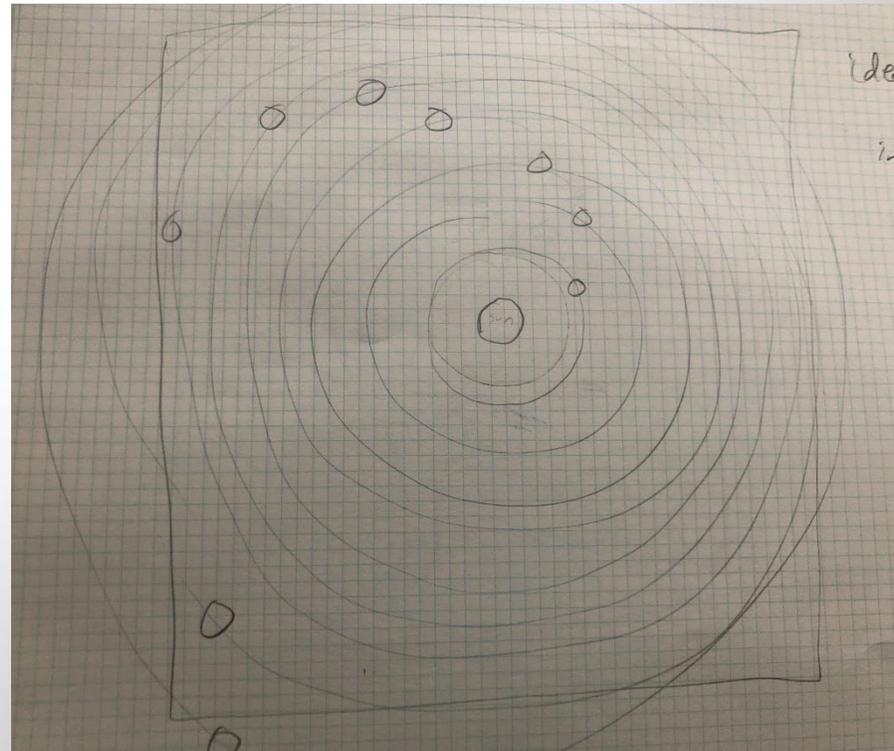
Madeline Walz

It took me a while to figure out what to do for this project. Looking at the examples from previous students made me realize just how many possibilities there are – anything that moves and changes is an option!

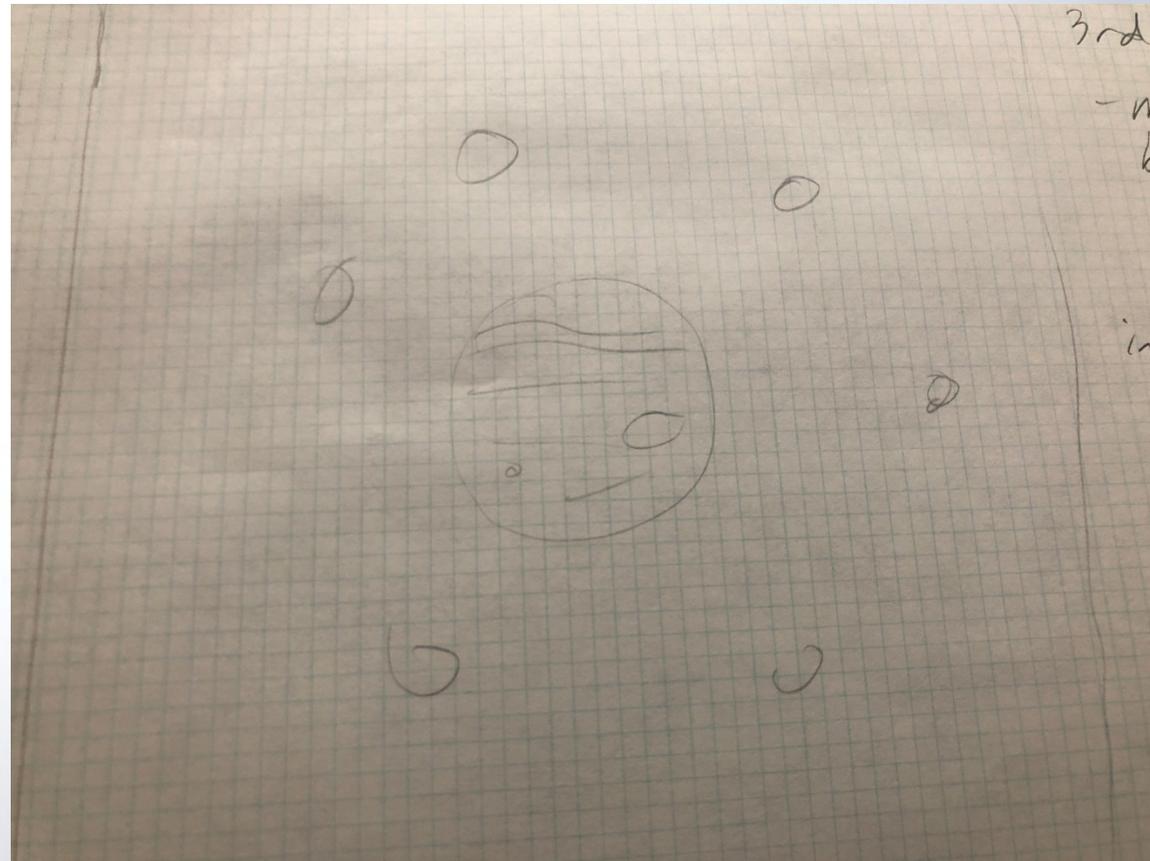
My first thoughts were things I noticed around the house – my dog's tail wagging and the ceiling fan moving:



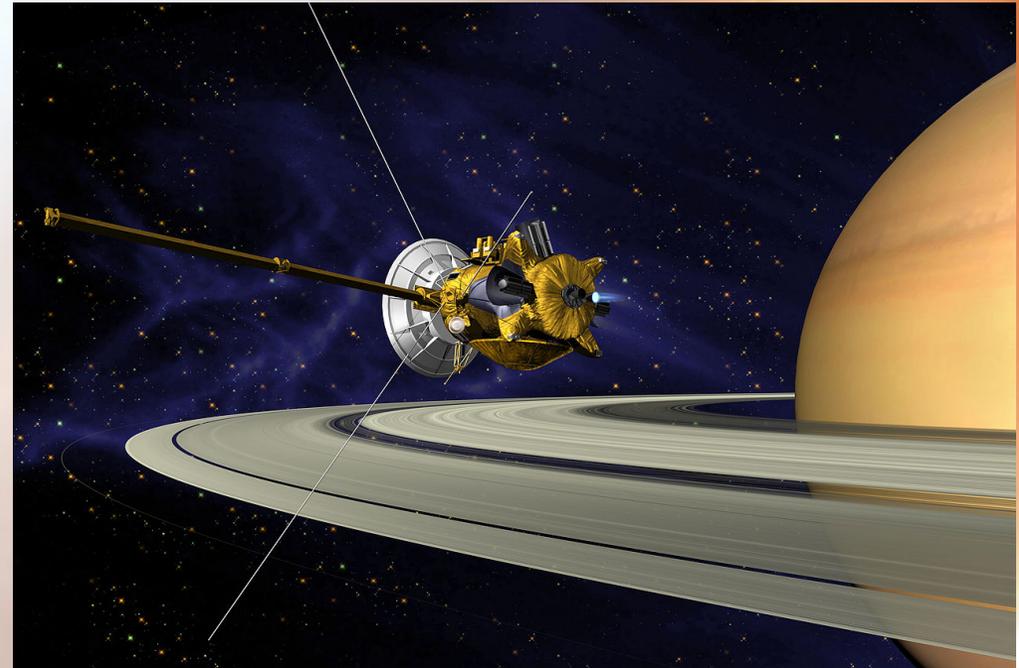
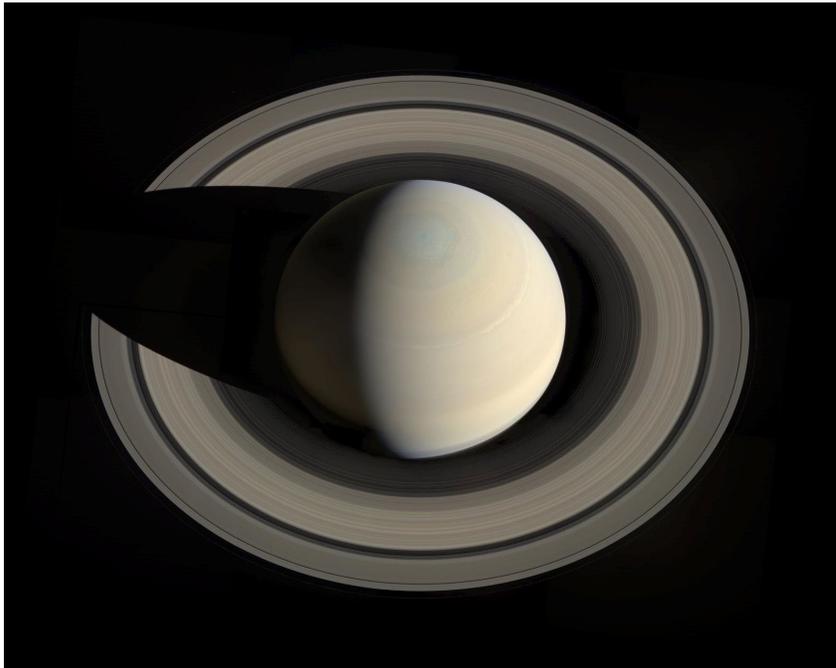
But I didn't really like them. They seemed too basic to me. I thought about things I like that could work and decided to do something with space. I considered the solar system with either comets or solar flares as the animation/interaction part, but couldn't figure out what the curves would be. It was all circles.

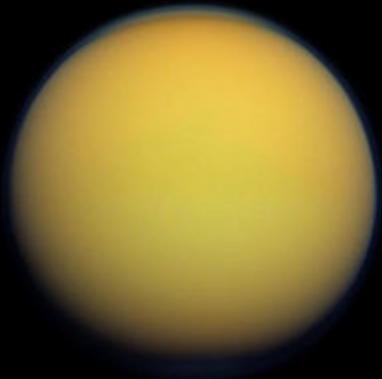


I considered doing Jupiter, with the moons orbiting. But the moons orbit along the z plane, and I don't want to try to figure that out. I also couldn't come up with a good interactive part.



I eventually decided on Saturn. I found an image of Saturn from above that was reconstructed from the Cassini satellite's data and I'm going to use that view. I'll show some of the larger moons orbiting, and have the Cassini satellite be the interactive part. Creating and moving Cassini in Processing will probably be the hardest part!





Titan

2.5x smaller than Earth



Rhea

8.3x smaller than Earth



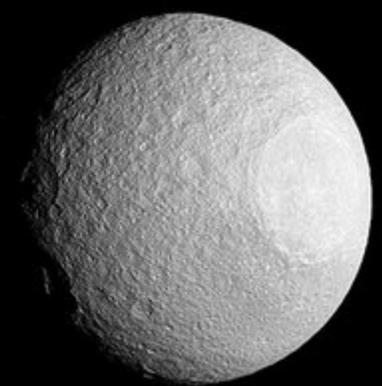
Iapetus

8.7x smaller than Earth



Dione

11.3x smaller than Earth



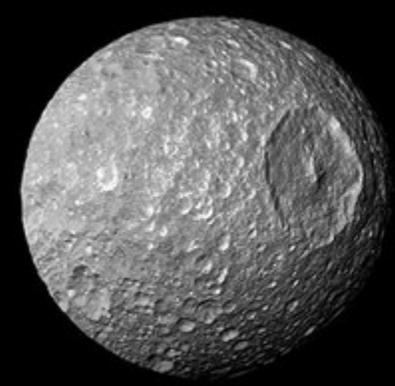
Tethys

12x smaller than Earth



Enceladus

25.3x smaller than Earth



Mimas

32.1x smaller than Earth

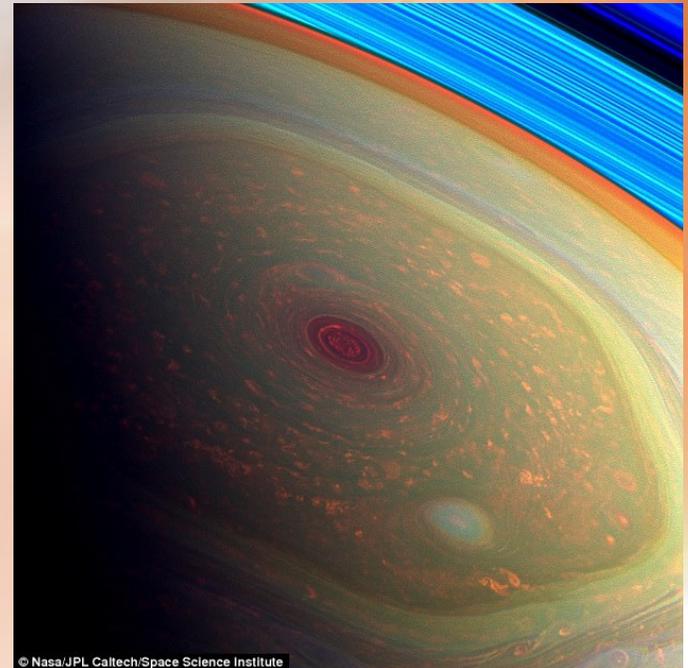
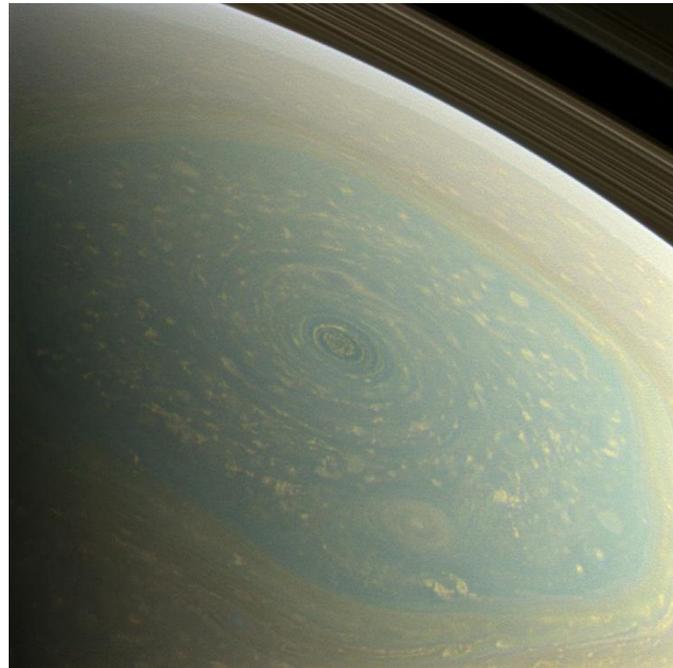


Hyperion

47.2x smaller than Earth

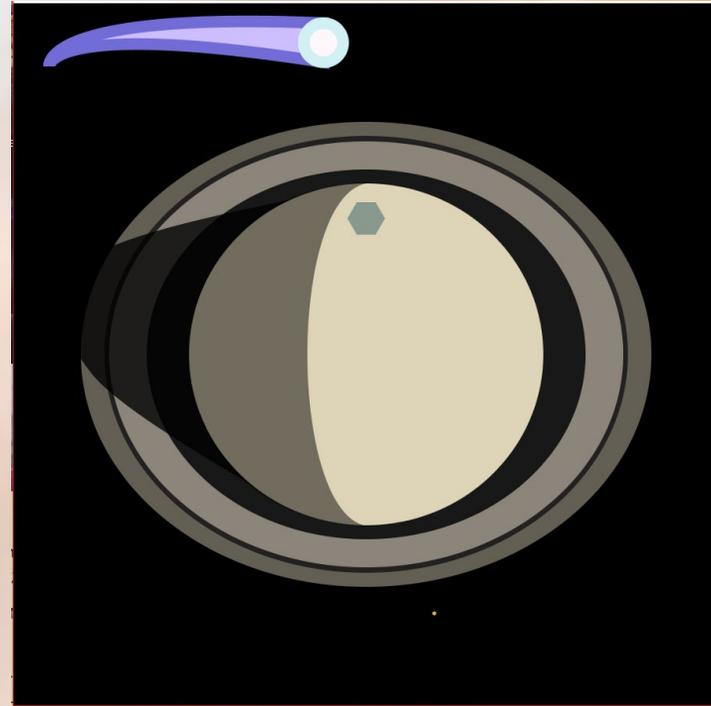
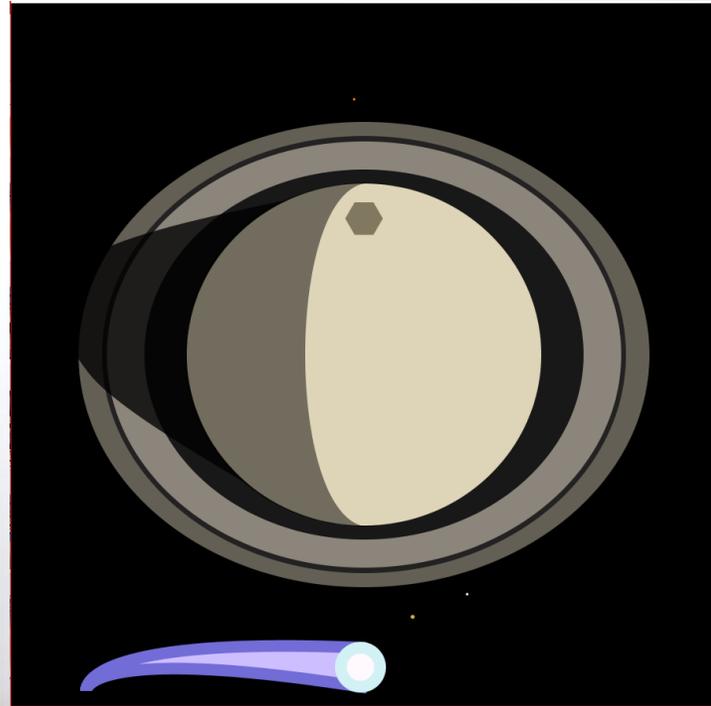
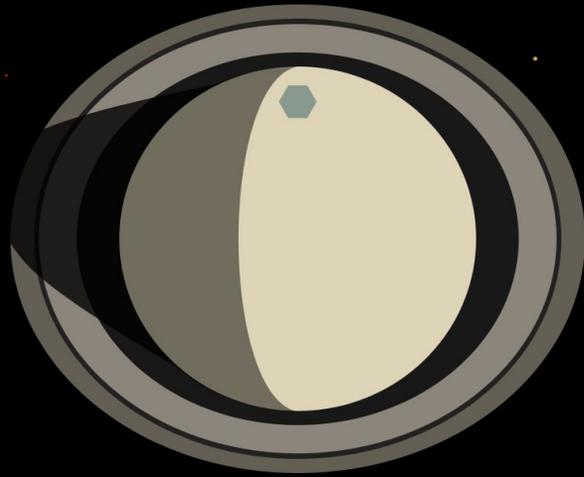
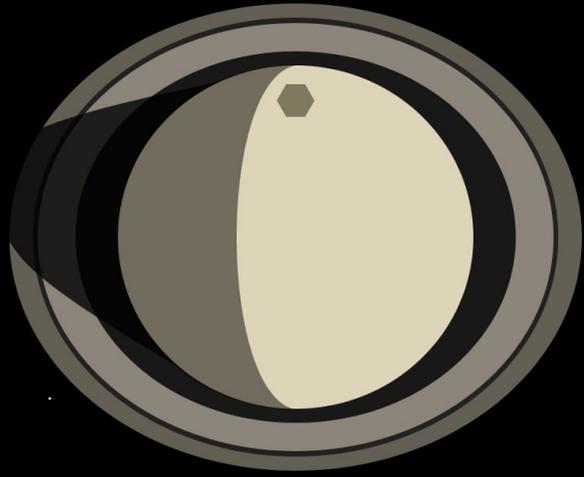
These are the eight largest of Saturn's more than 60 confirmed moons. How many I do depends on how much time I have. They will not be to scale since, compared to Saturn (or even Earth!) they are tiny. They also may not be in the same location around the planet, since some are rather far away or embedded in the rings.

I just thought of another possibility for an interactive part. At Saturn's north pole is a hexagonal cloud formation. In the planet's winter it is turquoise, and it is a "hazy beige-yellow" in the summer. I could have it change with the user's click or mouse movement. As cool as it would be to recreate Cassini's Grand Finale, I don't think I have enough time to do that! Or maybe I could have the light move with the mouse.



Here are a few screenshots of my final project.

The tiny yellow dot in the top left of the first picture is Titan (top right in 2nd, above comet in 3rd, approx. same position in 4th). The other tiny dots are stars. Star position is random. I decided not to do Cassini or moving the shadow. Cassini would be difficult to create and then move as one piece, and I couldn't figure out how to move the shadows correctly. I was going to have text showing what the full-scale distance from Titan to Saturn would be, but the number was way too big for Processing to handle!



curves

curveVertex()
bezierVertex()

Other functions

size() noStroke()
background() strokeWeight()
millis() stroke()
cos() textSize()
sin() text()
fill() random()
beginShape() endShape()
vertex()
sqrt()

2D primitives

ellipse()
point()

Custom functions

drawStars()
drawSaturn()
drawShadow1()
hexagon()
drawShadow2()