Fun Facts:

**SATURN**

* **History:**
  + Lots of names:
    - Hindu – *Shawni*, one of the 9 judges of good deeds & bad deeds
    - Chinese & Japanese named it the *“earth”* star, after one of the five elements (that also included fire, wood, metal & water)
    - Greeks – *Chronos*, a mythological creature guarding the farthest known reaches of space
    - Romans – *Saturnus*, god of agriculture
  + Galileo – first spotted the rings in 1611 (just a year after he discovered Jupiter’s moons)
    - He thought the rings were like 3 bodies squished together…he called them “Saturn’s Ears”
  + In 1654, Dutch astronomer Christian Hijens(sp?), discovered that the ears were really rings. Lucky for Galileo, he had died 12 years earlier so he never knew that he was so wrong about the ears.
* **Explorations:**
  + Pioneer 11 was the first to get a good look, passing by the rings on September 1, 1979.
  + Voyager Probes got the next good looks at them
    - Voyager 2 passed by in November 1980
    - Voyager 1 passed by in August 1981
  + Cassini Orbiter been there since 2004, nearing the end of its life, which could end in 2017
    - It will be crashed into Saturn to prevent contaminating any possible life on the moons
* **Facts, Figures & Characteristics:**
  + Orbits the sun at 890 million miles, 10x further than earth
  + Furthest away of the naked eye planets
  + 72,000 miles in diameter, 2nd largest planet (Jupiter is 86,000 miles)
  + Saturn & Jupiter together own 92% of the mass in the solar system outside the Sun
  + The diameter of Saturn is 75,000 miles at its equator; that's about 9.5 times bigger than the diameter of the Earth. The surface area of Saturn is 83 times the area of Earth, and the volume is 764 times the volume of Earth. In other words, you could fit 764 planets the size of Earth inside Saturn.
  + Saturn is the least dense planet. Earth is the most dense. If you could actually stand on Saturn (you can’t), someone who weighs 180 lbs, would weigh about 165 lbs. Saturn would actually float on water.
  + 93% Hydrogen, most of the rest is Helium…may have once wanted to be a star…that’s what stars are made of, but Saturn just wasn’t quite big enough
  + Small, rocky core under immense pressure…so much so that the core temperature is 21,000⁰ Fahrenheit, twice as hot as the surface of the Sun
  + The surface temperature is -300⁰ F
  + The major temperature differences cause massive amounts of wind, regularly up to 340 mph with occasional gusts of 1100 mph
  + Has rapid spin…rotating completely every 11 hours at 6 miles/second
  + Saturn year is 30 earth years
  + Some of the winds will cause rippling all the way around, clearing some clouds and drawing out a white color, almost looking like a string of pearls
  + Strange hexagon at Saturn’s north pole is a bit of a mystery
    - First discovered in 1988
    - Whirlpool like storm, regularly jolted by gusts of wind at lower altitudes, turns round storm into sharp angles…perfect hexagon
* **Rings:**
  + 93% water ice
  + Likely a shattered moon, mixed with space dust
  + 7 different bands, lettered A through G, circling at 7 different distances
  + Innermost edge of innermost band is only 4100 miles above Saturn’s cloud tops
  + Outermost edge of outermost band is 64,000 into space.
  + You can lay 7 Earths side by side and the rings would still be wider
  + They are only 60 feet thick
  + If you gathered all the ice in the entire ring system and packed it into a sphere, you’d have a snowball only 120 miles across
  + If they are a shattered moon, it would be tiny
  + Rings have fine, concentric lines, like the grooves on a vinyl record
  + Some of the lines are more like ripples as different moons’ gravity tugs on them
  + Some of the edges of the rings are scalloped, also because of moons’ gravity
  + Other moons “groom” the rings…Prometheus (62 miles big) & Pandora (56 miles big), operate around the “F” ring, the narrowest band (310 miles across) & keep it well defined
* **Moons:**
  + 62 moons (at least)
  + Titan
    - larger than Mercury
    - Covered with opaque, orange atmosphere
    - Seas & lakes of ethane & methane-290⁰ F
    - Methane is a biological marker…life???
  + Enceladus
    - Covered in water ice
    - Moves along inside the “E” ring & leaves a strange bulge in the ring behind it
    - Stretched & contracted by gravity of Saturn & other moons, which causes it to heat up, producing water geysers that trail behind like a plume of a steam ship
    - 100+ geysers spraying at any one time
    - Water being sprayed is rich in salt, so there are obviously lots of minerals on the surface of a giant sea
    - This salt sea is as big as Lake Michigan…just the kind of place that life might need to take hold

*\*Most of this information is taken from “It’s Your Universe – Episode 8: Saturn” podcast, hosted by Jeffery Kluger.*

*https://soundcloud.com/panoply/episode-8-saturn*