



THE PLANETS: AN HD ODDESSY

The Michelin Children's Concert  
Presented by  
The Greenville Symphony Orchestra

TEACHER RESOURCE GUIDE

## **Introduction: How to Use this Guide**

This Guide is designed to help teachers prepare students for the concert experience. It contains several worksheets and “ready made” activities that can be read aloud to the students. These sections are often in a different font with various colors indicating key words.

The Composer biography section is a basic outline: It is recommended that these biographies be used as a departure point for group discussions. The worksheets provided will aid in the assessment of this content.

While there are many cross-disciplinary applications for this concert, especially in the fields of Social Studies, and Language Arts, the content in this guide was conceived and designed to meet the following South Carolina Music Standards:

### **I. ANALYZING.** Listening to, analyzing, and describing music.

Students will

- A. Identify examples of music forms including **motive to phrase**, 4-bar **phrase**, **canon**, **rondo**, **AABA**, 12-bar blues, and **theme and variation**.
- B. Demonstrate perceptual skills by moving, answering questions, and describing selections representing diverse musical **styles**.
- C. Use appropriate terminology to explain **pitch**, **notation**, **meter**, **chords**, voices, instruments, and performances.
- D. Explain music using the appropriate terminology for **pitch**, **notation**, **meter**, **chords**, voices, instruments, and performances.
- E. Identify by sight and sound a variety of instruments including orchestral, band, multicultural, and digital.
- F. Demonstrate movement and emotional response to prominent music characteristics while listening.
- G. Identify music in pentatonic, major, and minor tonalities.

### **II. EVALUATING.** Evaluating music and music performances.

Students will

- A. Devise criteria for evaluating performances and compositions based upon musical concepts, ideas, and values.
- B. Use appropriate music terminology to explain their personal preferences for specific musical works and **styles**.
- C. Apply music concepts when judging the quality of their own performances and those of others and when offering constructive suggestions for improvement.

**III. MAKING CONNECTIONS.** Understanding relationships between music, the other arts, and disciplines outside the arts.

Students will

- A. Explain the role of music in life experiences, celebrations, community functions, and special events.
- B. Identify similarities and differences in the meanings of common terms used in the various arts disciplines (e.g., “**texture**,” “**color**,” “**form**”).
- C. Explain how the principles and subject matter of disciplines outside the arts interrelate with those of music.

**IV. RELATING TO HISTORY AND CULTURE.** Understanding music in relation to history and culture.

Students will

- A. Listen to examples of music from various historical periods and world cultures and identify the pieces by **genre** or **style**.
- B. Describe how elements of music are used in music examples from various cultures of the world.
- C. Identify various uses of music in daily experiences and describe the characteristics that make a particular type of music suitable for each use.
- D. Identify and describe the roles of musicians in various settings and world cultures.
- E. Demonstrate audience behavior appropriate for the context and **style** of music being performed.

This year, the concert contains a special emphasis on interdisciplinary learning for Mythology and Science. We’ve also included some creative writing exercises and a drawing exercise, but all have a musical focus.

For your convenience, the exercises and discussion questions are separated into an appendix at the end of the text.

Also, to avoid embarrassment and sniggering, my research has turned up a pronunciation of Uranus that astronomers have deemed perfectly acceptable: you-RAN-us.

# The 2012 Michelin Children's Concert: The Planets: An HD Odyssey

*This section may be read aloud or adapted freely into the classroom. The Learning Goals are preparing children to listen to longer excerpts of unfamiliar music and presenting a way to listen to music called **Active Listening**. This section also acts as a summary of the whole concert experience. **Please do not skip or omit this section.***

Space...The Final Frontier. Those very famous words describe our concert this year perfectly! This year, we're blasting off into outer space for a tour of each of the planets in our solar system. We're going to show you an amazing film, specially produced for the music you will hear. But the most amazing thing about our music and the film is this: during the concert, you'll add your imagination, and visit some astounding places--including some that are impossible for humans to visit (at least for now)!

And who knows? Perhaps you'll be the one who discovers a way to take us there one day...but that journey begins with my absolute favorite thing about music: Imagination. See, music can tell a story without using words, paint a picture without using paint, and it can take you places without you leaving your chair. How? Like I said, your Imagination.

When you listen to music and see our images from space (some actually taken in space by NASA) you'll be able to IMAGINE yourself as an interstellar explorer, watching the sunrise on Mars, flying through the rings of Saturn, and dodging one of its SIXTY THREE moons (seriously. 63. Look it up), it might surprise you to learn who will be the captain of the spaceship on our journey:

You.

See, music isn't like words. If we say "Jupiter", or "Earth" or "Space", we probably (and almost instantly) have an image in our mind associated with that word.

But if we say C sharp, A flat, or D Natural, this might not mean much. We could say it is like a picture without a frame, but that still does not quite explain things fully. Believe it or not, this is good news: this is what makes music special. The story it tells, the feelings, the action, the meaning, or putting it another way, what music is *about* – that's entirely up to you.

## How to *LISTEN* to Music

Ok, this can be weird...no one needs to learn HOW to listen to music, right? You just do it!

Well, no.

Music is like an onion or a pie or lasagna: it has layers. If you just look at the outside, you'll miss the great stuff on the inside. When you listen to music, there are two ways to do it: active and passive.

Passive listening happens all the time. Your ears are marvelous things, and they work all the time without you telling them to. Take 30 seconds and just listen right now. You might hear a car, the air conditioner or heater, birds, the television or radio...all kinds of things. You might have noticed that these sounds were happening for a long time, but you only noticed them once you paid attention to them. When we listen without noticing, that's passive listening.

*Active listening* is what happens when we're paying attention to what we're going to hear next. What if I said I had been cooking all day for you, and I had made you a big tasty bowl of...and then stopped? Wouldn't you be curious as to what I was going to say next? What if someone said "I have a surprise for you, and it is a..." Same thing, right? And now, imagine how crazy it would be if I said I had made a big tasty bowl of laundry detergent? Or your surprise was a rusty part of a rocket ship (ok, that might be kind of cool)?

It might not make sense at all, and you'd have questions for me, I'm sure. At the very least, you might want to listen to what I was going to say next, because you'd want me to explain what I meant. When we're paying close attention to everything we hear and trying to predict what we will hear next, that's active listening!

## **ACTIVE LISTENING EXERCISE** **(to be done before the concert):**

Take 30 seconds, and list every sound you hear right now. I'll bet you'll see you have a very long list! Now, make up a story using that list. Better yet, listen again, and make up the story as you listen.

Remember how we talked about the person who supplies the story in music is you?

This is the best way to enjoy the music of the Greenville Symphony: Use active listening and your imagination. Even if the music is something you've never heard before, I think you'll still have fun.

# What if I *don't like* the music?

This happens all the time, and now I'll tell you all a secret. Not everyone in the Greenville Symphony Orchestra likes all of the music we play all of the time. Sometimes, some music is just not for everyone! But like **Green Eggs and Ham**, you should try it. Use all of your **active listening skills** and your **imagination**. Try to find at least 5 things you **DO** like. Find your favorite instrument onstage, and watch and listen to just that group.

In other words, don't take the easy way out and sort of zone out...it is much more fun to like things than to not like things.

After all that, if you still just don't like what you've heard, it is OK. If you've tried as hard as you can, and you're just not interested, don't worry about it.

But there is so much cool stuff onstage, in the music, and in the plays, I'll bet you'll find something you like.

## Exercise 2: Ask Edvard!

Ask Edvard returns this year-this is YOUR chance to ask our Maestro anything about the GSO...anything! The more creative the question, the better! This is a great time to encourage your class to be very inquisitive about the symphony, the musicians, the instruments, and our maestro. And we have a very cool prize if you submit Edvard's favorite question.

This year, Maestro Tchivzhel will only be able to select one question to answer from the stage. We will recognize the winning school and class that submitted our winning question.

This class will receive a pizza party with Edvard, courtesy of the GSO.

To be a part of *Ask Edvard*, here is what you do:

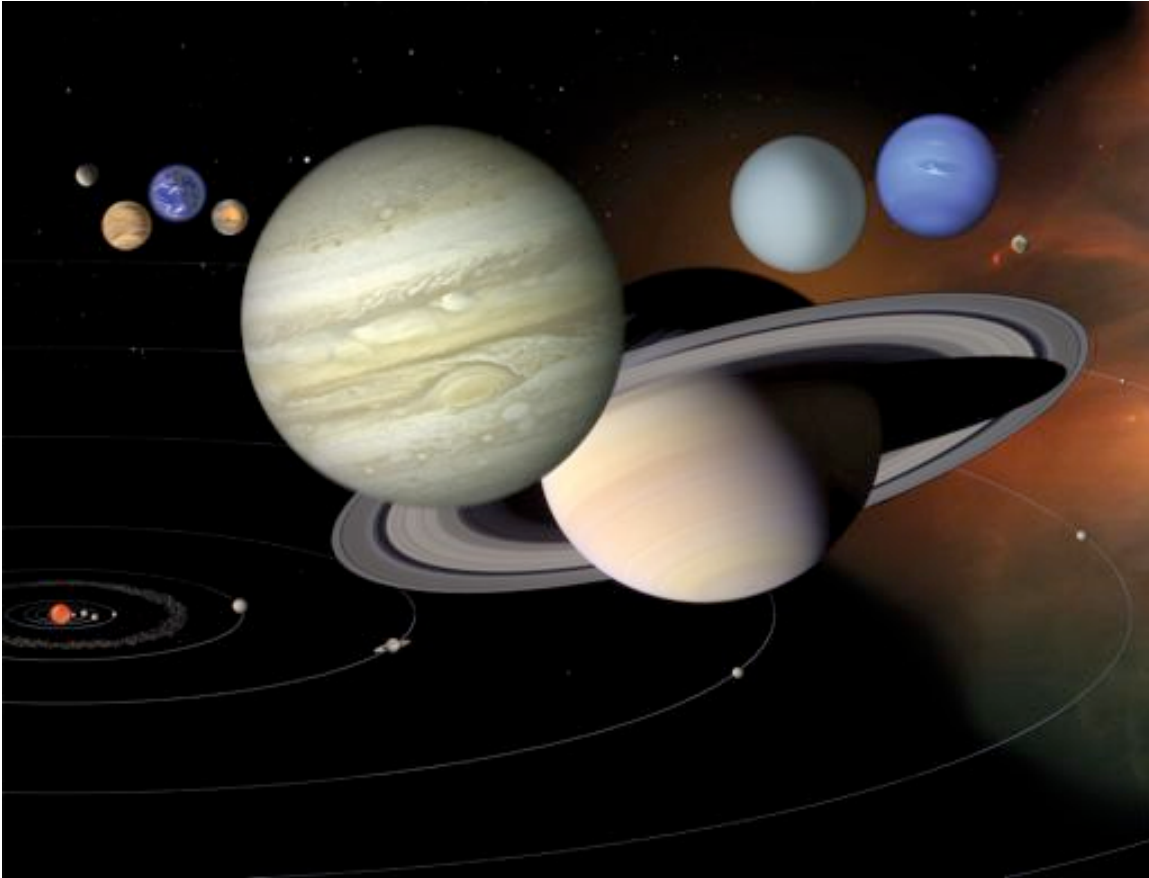
- 1) Have the kids brainstorm a list of questions during music class. This can be a great way to prepare for the concert.
- 2) Submit your question *as a class*. We envision this as a collaborative activity, with your children working together. Email your submission to Braxton Ballew, Education Director (braxton@greenvillesymphony.org).
- 3) Submission Example:

Dear Maestro (or Edvard),  
What's the difference between a fiddle and violin?  
Sincerely,  
Mrs. Jones's 4<sup>th</sup> Grade Class  
(Use the classroom teacher's name, not your music teacher)  
Example Elementary School

4) For homeschoolers: when possible, please submit your question as a co-op. We won't do separate categories for homeschool and public/private schools. We're taking one winner (per each concert).

5) I may be able to send each class that submits a question a small surprise, courtesy of Maestro Tchivzhel and the GSO.

# THE PLANETS: AN HD ODDYSSEY



*A collage of our solar system, showing the location and relative size of each planet. Earth is the blue planet on the left.*

There are three basic concepts that are essential to understanding the performance of Gustav Holst's *The Planets*: **Mythology**, **Astronomy**, and **Program Music**.

This year, the guide is divided into different sections that discuss each movement/planet. Within each section you'll find a description of the following: the mythological origins of the planet's namesake, what to listen for in the music, and finally, the scientific aspects of each planet with notes on the film presentation.

While Holst focused on the mythological symbolism of each planet, the film presentation focuses on astronomy, so we've included some fast facts about each planet. This list is by no means exhaustive, and it is possible to greatly expand on this information with a dedicated science unit. Finally, we know more about the planets closer to Earth than we do about the Gas Giants, so the images and information will gradually get less detailed as we move further away from home (the footage for Saturn, for example, is mostly focused on the rings).

## KEY LEARNING CONCEPTS:

**Mythology** is a collection of stories explaining how the world is and how it came to be. Many different cultures have their own mythology, and we will be focusing primarily on ancient Roman mythology. Since the Romans took a large portion of their myths from the Greeks, we will touch on Greek Mythology as well.

**Astronomy** is the scientific study of celestial (that is, in the sky) objects, like planets, stars, galaxies, comets, asteroids, and other phenomena outside of the Earth's atmosphere. The subject is very, very old, and ancient Greeks and Egyptians were known to have practiced Astronomy. Astronomy is not to be confused with *Astrology*, which is the belief that the stars and planets have direct influence on human events, past, present and future. I will touch on astrology very briefly in some sections of this guide, as astrological principals influenced Holst's conception of *The Planets*.

**Program music** is music that tells a direct story, or has a direct narrative. *The Planets* is a suite made up of seven movements (Holst thought of them as mood pictures) that depict the mythological personality of each planet.

Therefore, you need to know Venus was the goddess of beauty and love to understand why Holst wrote the music he did to depict this planet. Holst carefully considered the *character* of each planet, and his imagination reflects his thoughts on each of the concepts each planet represents.

The titles of each movement give us a clue as to how each movement sounds:

Mars, The Bringer of War  
Venus, The Bringer of Peace  
Mercury, The Winged Messenger  
Jupiter, The Bringer of Jollity  
Saturn, The Bringer of Old Age  
Uranus, The Magician  
Neptune, The Mystic

## **\*\*THERE WILL BE VERY LITTLE NARRATION DURING THIS YEAR'S CHILDREN'S CONCERT. \*\***

### **A Basic overview of the Solar System:**

There are eight planets making up our solar system. Each planet orbits (circles around) the sun, which is the star at the center of our solar system. The planets are called Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune (arranged closest from furthest from the Sun).

Mercury, Venus, Earth and Mars are called terrestrial planets, because they are made up mostly of rock. Jupiter, Saturn, Uranus, and Neptune are called the gas giants, because they are huge balls of gas around a rocky core.

*The Planets* is an **Orchestral Suite**. You say the word "suite" just like the word "sweet". So what does that mean? Well, it means the work isn't a **symphony**, so it will have more movements. The movements might or might not be related to each other, musically (in symphonies, we expect four movements with at least some obvious musical relationships). A long time ago, in the **baroque** era (this was in the 1600's-well before there was an America!) suites were collections of pieces meant for dancing.

In fact, you could even think of a suite as an iTunes playlist that you might make where each song goes together somehow.

That's exactly how *The Planets* works. Each movement, or section (or you might think of it as a song. They aren't songs. They don't have words, they don't have different sections, and they are all too long to be what a classical composer would call a song) represents a different planet.

Well, to be exact, each movement represents the personality of each planet.

Huh?

You see, each of our planets is named after a figure from Roman or Greek **mythology**. When we named the planets, we tried to match the names up with what we thought each planet was like. Jupiter is biggest planet, so we named it after the King of the Gods. Mercury is the messenger god, quick and fast, so named the closest planet to the sun after the fastest planet. Venus, also known as the morning star, the brightest and one of the most beautiful objects in the sky, so it made sense to name the planet after the goddess of beauty. There is a red, angry looking planet near Venus, and to contrast with Venus's beauty, we named this planet Mars, after the god of war.

In the 19<sup>th</sup> century and early 20<sup>th</sup> century, we discovered more planets. Further past Jupiter is Saturn, almost as large and recognizable by its rings. Saturn is Jupiter's father in mythology, so astronomers decided that the ringed planet would make a good "father" to Jupiter. Further past Saturn is Uranus, (you-RAN-us. If you've pronounced it correctly, anatomy or bodily functions should not come to mind), who was Saturn's father in mythology and astronomers decided that the father formula could work here, too.

Finally, we have the bright blue giant planet of Neptune. Neptune is Roman god of the sea, and the color of Neptune through a telescope reminded astronomers of the bright blue ocean.

Some of you may remember that Pluto used to be a planet. Well, Pluto hadn't been discovered in Holst's time, so he didn't write a movement for it. It seems he was right after all: Pluto was re-classified as a dwarf planet in 2007. If you have younger students, there's a great children's book called *Poor Pluto*, written by a 3<sup>rd</sup> grade class in California. You can find out more about it here:

But what about the Earth? Why didn't Holst write an Earth movement? While the Romans did have a goddess of the earth (Ceres), music scholars know Holst left out Earth because he was focusing on both the mythological and astrological personality of each planet, and the Earth isn't used in astrology.

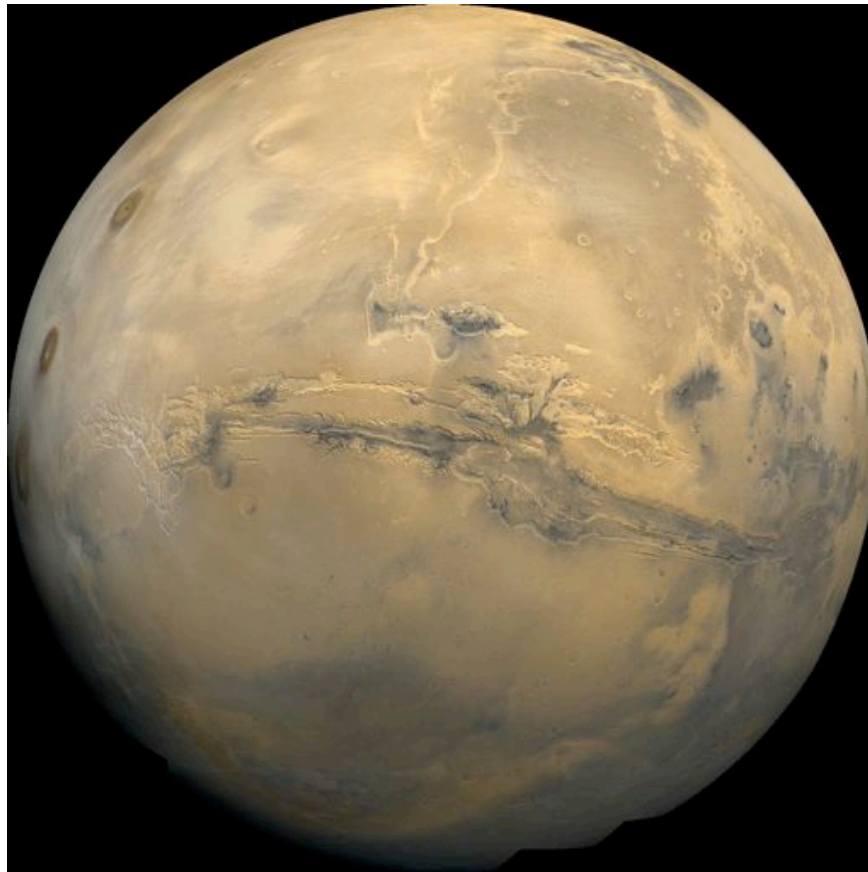
Holst composed *The Planets* in 1914 and 1916. It calls for a very big orchestra, so you'll see the Greenville Symphony Orchestra at it's largest! Holst's favorite movement was Saturn.

*The Planets* was a very successful piece, but Holst felt it overshadowed the other music he wanted to write. People liked *The Planets* so much, they thought everything Holst wrote should sound like the same, but he didn't.

It bothered him so much, he stopped signing autographs for people. Instead, he had many cards printed up with this simple message:

I do not hand out my autograph.

# MARS, THE BRINGER OF WAR:



In Roman mythology, Mars is a noble God of War, and arguably the most important god to the Romans, even above and beyond Jupiter.

To the ancient Greeks, War had two aspects: bravery and sacrifice on the one hand, brutality and needless death on the other. Their goddess Athena represented the noble half. Ares, their god of war, represented the second half. Ares was generally looked at with disgust.

The Romans adopted Mars as being more like Athena, and celebrated him as noble and triumphant. However, for Holst, war was a very ugly thing, and he composed his thoughts accordingly.

The music starts very quietly and ominously-if you watch closely, you'll see the string sections tapping their strings with their bows. This is called *col legno*, and it simply means with the wood (of the bow).

The music suggests the distant sound of war drums, but soon the Mars brings the war ever closer, and you'll soon hear some of the loudest, most grotesque music ever composed for orchestra.

How do we know it's grotesque and violent? Well, for starters, instead of writing the piece in *march tempo, or 4/4 (four beats to a bar)*, Holst chooses *5/4 (5 beats to the bar)*. Mars lurches toward us, he doesn't stride confidently. The music gets louder and louder, and then eventually, you'll hear the sounds of war trumpets through the sounds of battle. Mars ends with loud, discordant slabs of orchestra sound-it may sound familiar, as John Williams uses a similar idea to depict the Death Star explosion in Star Wars.

The planet Mars is the second closest planet to Earth. It is slightly smaller than our planet. Scientists have evidence that Mars used to have water, possibly very similar to Earth (there are canyons cut in Mars that are similar to Earth, and we know rivers cut these channels over time). However, Mars is now very, very cold (this might be hard to imagine) and looks like a vast, barren desert. Mars also is home to the tallest mountain in the solar system, the Olympus Mons. It's three times taller than Mount Everest, and you can fit the entire state of Hawai'i on it!

Our images start with Mars rising slowly out the blackness of space. Using CGI, radar, and some actual footage from NASA's Mars missions, we will experience a virtual aerial tour of the Martian landscape.

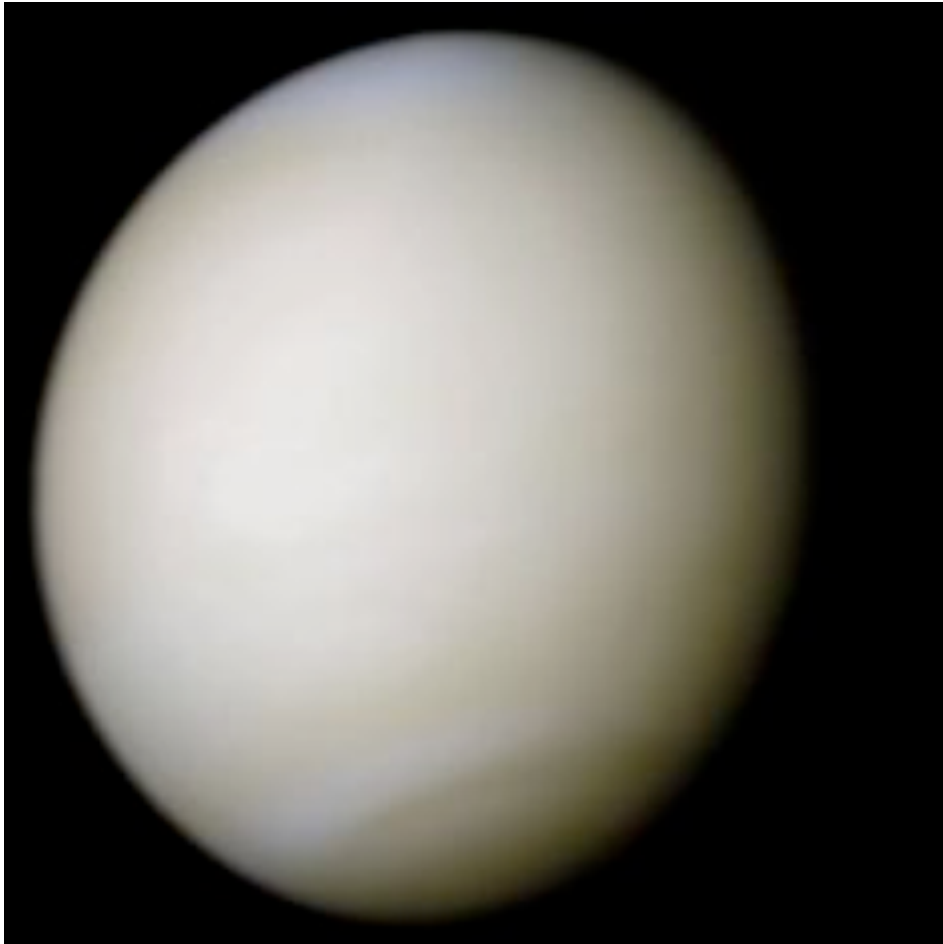
The end of the sequence is quite clever. In pop culture, Mars usually invades Earth. Using images from Spirit and Spirit 2, the tables are turned. We see a lone spacecraft, streaking across the sky and landing on the surface. The "invasion" force is revealed, and we will see actual images from the Spirit Rover of Mars's surface, including the Sun coming up on a different planet.

A day on Mars lasts about 40 minutes longer than it does on Earth, but a Martian year (how long it takes Mars to orbit, or circle the sun) lasts almost two years.

Here is a picture of Mars next to our planet, Earth.



## Venus, The Bringer of Peace



**Venus, The Bringer of Peace:** Venus stands in stark contrast to Mars. Where the previous movement's music is loud and bombastic, Venus is soft and tranquil. Holst paired these movements together to illustrate contrasts: loud and soft, brutal and gentle, dissonant and consonant, war and peace.

In Roman mythology, Venus is the goddess of love and beauty. She doesn't have quite the convoluted history that Mars has; the Romans pretty much lifted her intact from the Greeks.

Venus is meant to be soft, beautiful, and peaceful. Listen for which instruments team up to show the tranquility of the section: do you hear lots of percussion? Loud Brass? Why or why not?

One interesting thing about this movement is that this is how we know Holst is writing about each planet's mythology, and not each planet's scientific characteristics. We know this because he got Venus *completely* wrong!

Venus is the closest planet to Earth, and the brightest object in the sky is always Venus. (Yes, you can see Venus without a telescope. How cool is that?) But even though Venus is so close, it is deadly to humans and because of that, we haven't been able to explore the planet very much.

Why? Venus is hot. In fact, scientists think that Venus used to have oceans similar to Earth's, but the atmospheric temperature evaporated them. The atmosphere is full of sulfuric acid and other poisons. The pressure on the planet surface is enough to crush all but the strongest materials. Only four probes have ever made it to the surface of Venus, and they lasted less than two hours before being destroyed.

Our images use all kinds of technology to illustrate Venus and give you a pretty good idea of what the planet is like. You'll see infrared images, heat images, CGI reconstructions of topographical maps we've managed to generate (using math), and other features based on what data there is available about Venus.

The result is that this is the closest anyone who isn't an astronaut can come to exploring Venus. It's hot, it's poisonous, and the pressure can crush anything made on Earth: yep, Holst didn't quite get this one right!

Here's a comparison picture of Earth and Venus



Since Venus is closer to the Sun than the Earth, a year on Venus only lasts 224 days. Now, this next bit of information is truly weird: Venus rotates so slowly, a day lasts 116 years, so a Venusian year is only about 2 days long!

## *Mercury, The Winged Messenger*

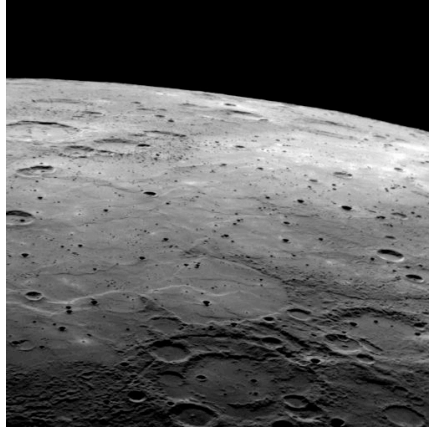


Mercury is the messenger of the gods. He's also responsible for trade, and the ancients believed he was responsible for bring dreams to those asleep and transporting people to the afterlife when they died.

So Mercury gained a reputation of being the fastest being in the universe. You may be familiar with his symbols: Mercury's winged helmet and winged feet show how fast he is, and many business (FTD) and even superheroes (The Flash) use Mercury as their symbol.

When you see the images of Mercury, you might think “Hey-Mercury looks a lot like the Moon!”

And you would be correct. Mercury is very similar to Earth’s moon, both in size and its makeup. Like the moon, Mercury has many craters and spaces of open plains.



*Looks like the moon, right? It’s actually Mercury!*

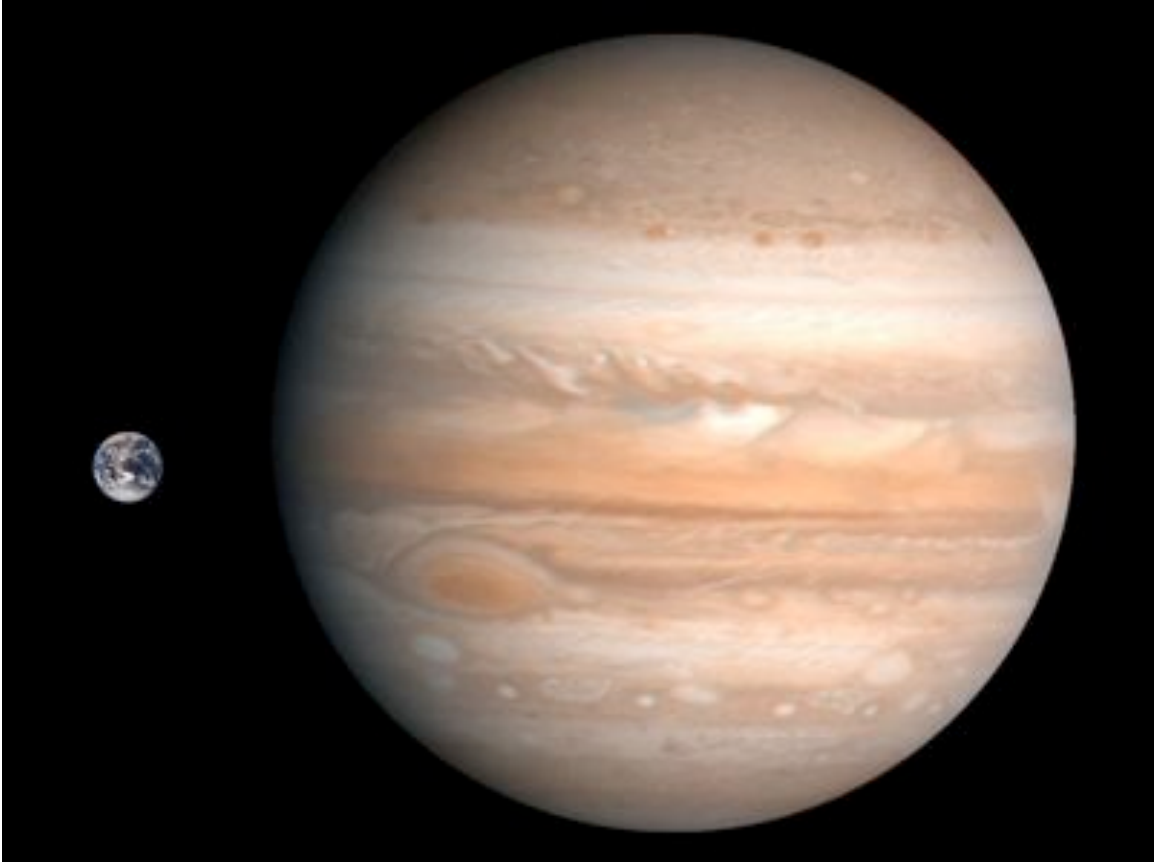
Mercury, however, is the closest planet to the Sun. This means that the weather on Mercury is extreme! The hottest temperature on Mercury is over 800 degrees Fahrenheit, but the coldest temperatures are well below -280 degrees! Even though Mercury is the closest planet to the sun, it may have ice on it! Mercury is the smallest planet in the solar system. Mercury orbits the sun every 88 days, but also orbits rather slowly: a day on Mercury lasts 176 Earth days.

Holst was inspired by Mercury’s speed. Listen for quick, light, and speedy music. Notice which instruments we use to achieve that effect: do you hear smaller, higher pitched instruments or the bigger, lower pitched instruments? What are some other ways Holst uses music to depict a fast, speedy messenger?

Here’s Earth next to tiny Mercury



# Jupiter, The Bringer of Jollity



*Jupiter is really, really big. See that tiny blue dot on the left? That's Earth!*

In mythology, Jupiter was the King of the gods. This is why we named the largest planet in our Solar System after him!

Jupiter, as king of the god was also the god of the sky, thunder, lightning, and laws. The Romans believed he was also responsible for justice. In fact, you may have heard (perhaps in an old fashioned movie) the expression "by Jove!"

Jove is another name for Jupiter, and when people said By Jove, it was an ancient way of swearing to be honest. Also, the word "jovial" comes from Jupiter's name-it means someone who is happy, bouncy, jolly, and someone who sees the bright side of a situation.

And this is how Holst saw Jupiter. He composed music that is bouncy, happy, and optimistic (this is a word that means looking on the bright side). Let's look at how he did that.

The first thing you'll hear is the rushing sounds of the strings, imitating the exhilarating feeling of rushing through the air (remember, Jupiter was a sky god). Then you'll hear a loud, triumphant brass fanfare, signaling the arrival of the king!

You'll notice that for the light and bouncy sounds, Holst uses instruments that sound in the high register, just like he does in Mercury. So, to make something sound big, full, and let's say, epic, he uses the lower sounding instruments.

Listen for the sounds of bells and the horn section describing the majesty and stature of Jupiter! What you'll hear next is a solemn English Hymn. By coming these aspects, Holst describes all the different roles Jupiter performed in his stories: he's the king of the sky (rushing wind), he's the king of the gods (brass fanfare) he's happy and jolly (horn section, bells, and woodwinds), and he's also the serious lord of the law (solemn English Hymn).

The planet Jupiter is the largest in our Solar System, and is one of the Gas Giants (a gas giant is a planet that is mostly –you guessed it–gas, as opposed to rock or other solid matter The Earth, as you'll remember, is made up of rock).

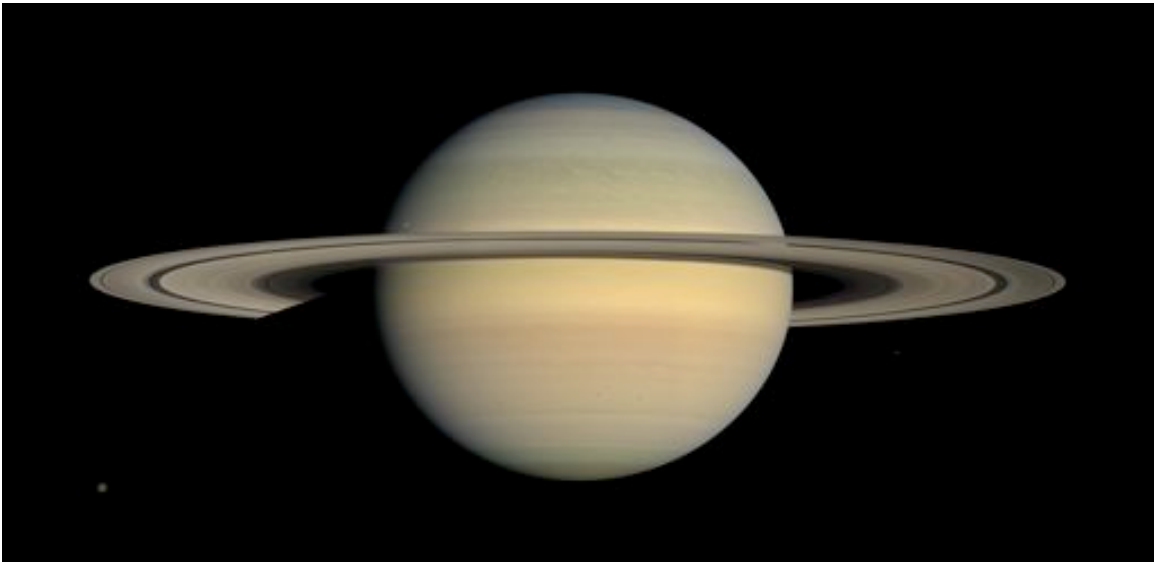
Jupiter is so big, it has moons that are bigger than Mercury. In fact...Jupiter has SIXTY-FOUR moons! You'll see many images of Jupiter's moons during the film. The film features many shots of Jupiter's gaseous bands. The most famous visual feature of Jupiter is the famous "Giant Red Spot", a cyclone that has been raging since at least 1831.



*This is the Giant red Spot...you'll see a much bigger picture at our concert!*

You'll watch the planet "dance" -the filmmakers used a technique called time lapse to make the gas bands move much faster than they would in reality. A day on Jupiter lasts on 10 hours; Jupiter spins the fastest of any planet in the solar system. A year on Jupiter is lasts over 11 Earth Years.

# SATURN, THE BRINGER OF OLD AGE



Saturn is one of the most famous planets because of its giant rings. I'll bet you've seen many pictures of a planet with what looks like a disc wrapped around it-that's Saturn.

In mythology, Saturn was Jupiter's father, and the god of farming and strength. His symbol was the sickle, which is a curved farm tool used for cutting wheat. Saturn and Jupiter did not get along, and the Romans believed they fought a war over who would rule the sky. Saturn was seen as dark and tyrannical (meaning he liked to tell other people what they to do, and they had to do it or else). Because of this, people in the middle ages came to believe that Saturn was the bringer of old age and death.

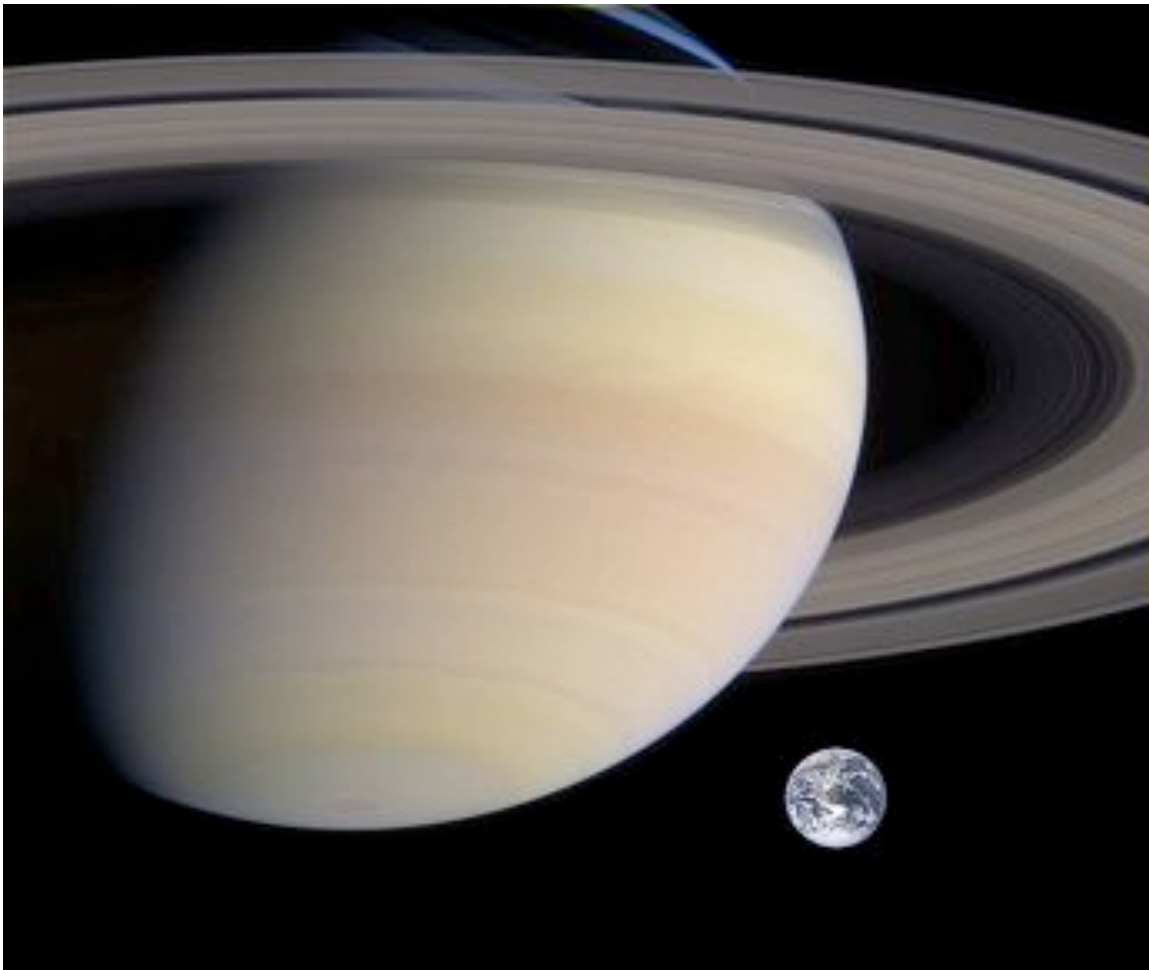
And this is how Holst composed the music. He saw Saturn as time marching on, bringing old age ever closer. You'll hear the double basses introduce gloomy Saturn, and notice how the music turns into a slow march.

Also, notice how the music starts softer and gets gradually louder and louder. This is called a crescendo, and it related to what we call **dynamics**. **Dynamics** indicate how quietly or loudly each musician on stage is required to play, and music sounds more interesting when you play it with different dynamics. Notice which instrument play with the quietest or softest dynamics, and look at the rest of the orchestra. Are they playing, or resting? When the orchestra gets loud, notice how many people are playing, and see if you can tell a difference in how the musicians are all moving together, and if Maestro Tchivzhel changes how he conducts (I'll bet you notice some big differences!).

Our film is going to focus on Saturn's most famous feature: the rings. You'll notice two things based on what scientists know about Saturn: the rings are almost invisible from certain angles, and they are made up of millions of particles-some the size of a small rock, others the size of a car. The rings are mostly made of ice.

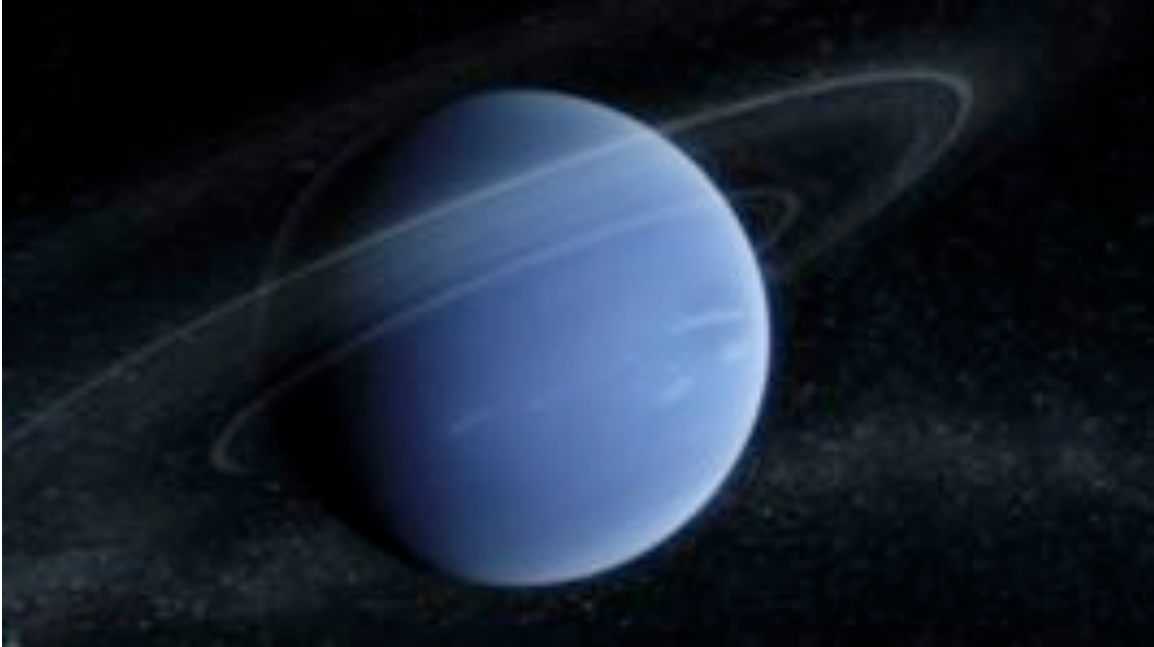
You'll notice mysterious moons moving in and out of the shots. Saturn has 63 moons. One of them, Enceladus, may even have a salt-water ocean, similar to Earth. In fact, Scientists from NASA think that Enceladus might be the most habitable place in the solar System for life as we know it.

But that's based on what little we know about Saturn, which honestly, isn't much. We think a day on Saturn lasts only about 10 hours, but we've never been close enough to check. Saturn orbits the Sun once every 29 years.



*Saturn next to the Earth-wow, pretty big, huh?*

# URANUS, THE MAGICIAN



Uranus is the magician planet. Now, I'm repeating this, but according to scientists, here's how you say the name of this planet: you-RAN-us. Uranus was the first planet discovered with a telescope! Also, Uranus is the only planet named using the Greek name. All the other planets are named after Roman gods. Uranus was the original god of the sky, and it Jupiter's grandfather (you may have noticed that Jupiter is the biggest planet, then Saturn, then Uranus—astronomers are clever!).

In mythology, the Greeks and Romans believed that Uranus was the night sky. Because of this, Holst chose to portray Uranus as a clever magician. You'll hear four loud crashing chords to introduce our sorcerer. In fact, this movement has always reminded me of Dukas' *The Sorcerer's Apprentice*, which you may have seen in *Fantasia*.

Well, this is definitely not the *Apprentice*! Our Magician is a master of magic! Listen for the timpani solo towards the end of the movement. You also get a great opportunity to hear the contrabassoon, which the GSO doesn't always use. The contrabassoon is a bigger, lower version of the bassoon. In fact, listen for all the low voices of the orchestra as they help portray the magician.

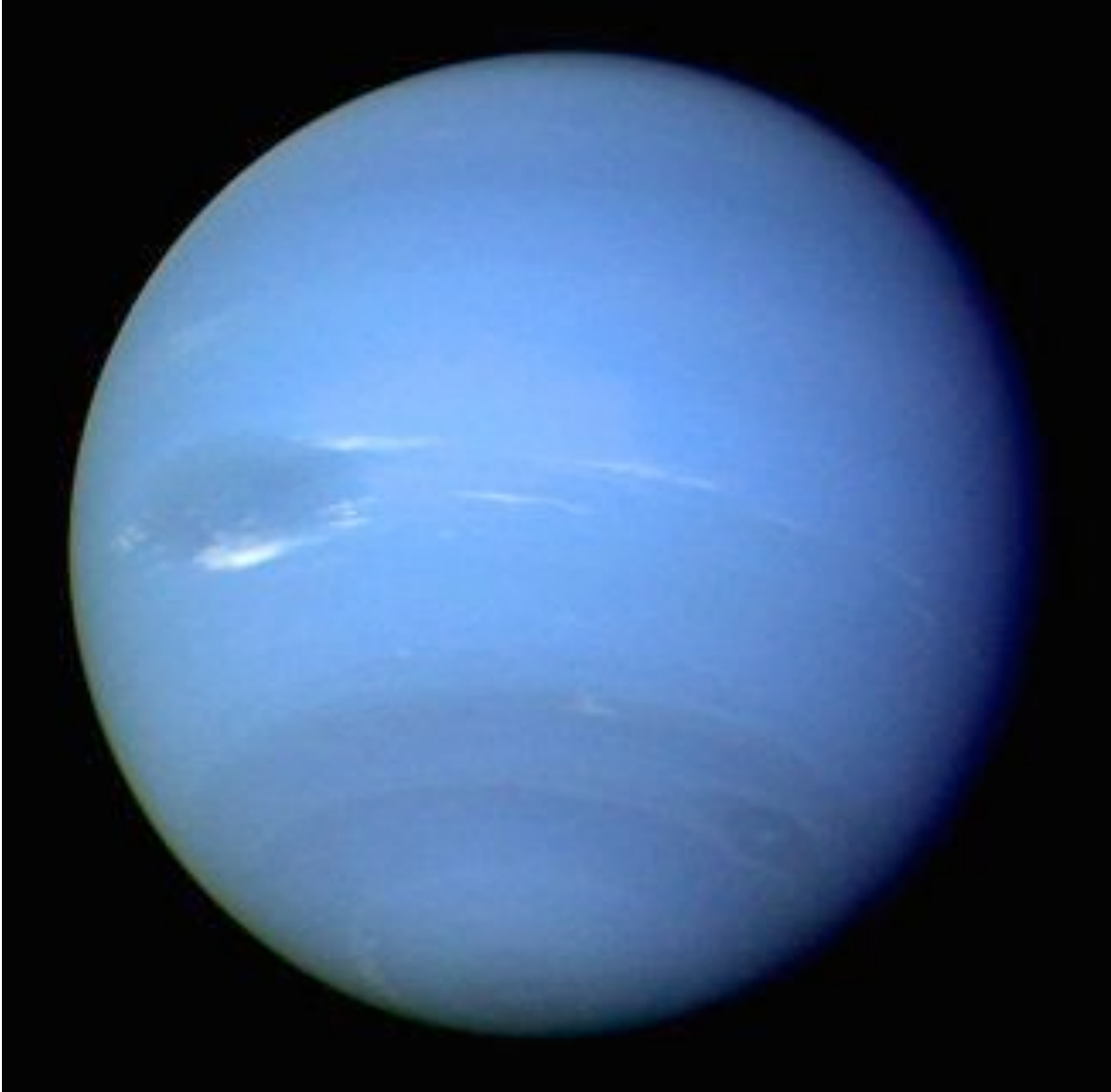
For our visual tour of Uranus, you'll notice that Saturn isn't the only planet with rings! Uranus has its own set of rings, but they are much smaller. Like the outer planets, Uranus has many moons, but not as many as Saturn: Uranus only has 27. Uranus is also the coldest planet in the solar system, with a low temperature of 49 Kelvin, or -371 degrees Fahrenheit!

Scientists don't know much about Uranus. We do know that one Uranian year is equal to 84 Earth Years, but a day on Uranus is only 17 hours long. There has only been one flyby by a space probe: NASA's Voyager 2 in 1986. No other visits are planned, leaving our mysterious magician to work his magic in deep space.

Uranus and Earth, side by side.



# NEPTUNE, THE MYSTIC



Our final planet is the mysterious Neptune. In Roman mythology, Neptune was the god of the sea, and Jupiter's brother. I've always found interesting that he was also the god of horses in Greek mythology. Much of their art depicts the sea as a stampede of raging horses. The Romans had a separate god for horses, and Neptune becomes the god of all water: river, seas, lakes, and streams.

Past that, he wasn't as important as say, Jupiter or Mars.

Neptune was very influential on Holst's creative idea to write music about the planets and their personalities. In fact, the book that inspired him also calls Neptune the "mystic".

A mystic is someone-well, there isn't a great way to explain what a mystic is. Think of a mystic as like a monk, someone who devotes their life to studies and teaching about the great mysteries of the universe and existence (I think Yoda is a great and familiar example of a popular culture mystic).

Holst composed music that is meant to sound very mysterious and remind us of another world. There's a surprise sound near the end of the piece...see if you can identify what or who it is...As the last movement of *The Planets*, you'll notice that whole piece, which starts very quietly from silence, then fades away into silence. (finally, there may be another surprise or two at the concert, and at the end of the concert, but we're still working on those).

Neptune was discovered by using math to predict its position (See? Told you math was important) making the first planet to be discovered by prediction rather than observation. A famous astronomer named Galileo first observed Neptune way back in 1612; only he didn't know he was looking at a new planet!

Astronomers discovered Neptune in 1846. A Frenchman named le Verrier predicted Neptune's position within one degree. You can only see Neptune with binoculars or a telescope.

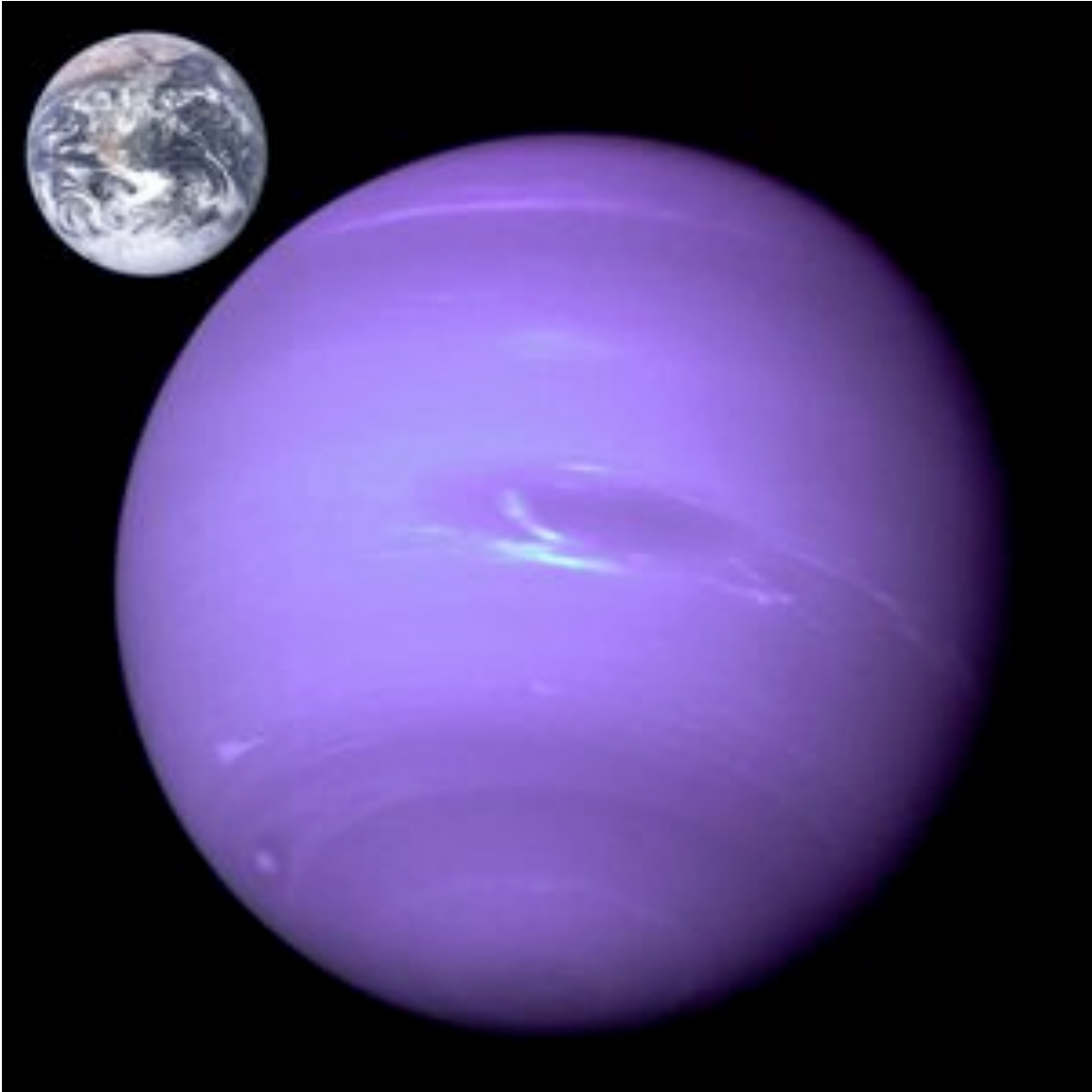
We still don't know that much about Neptune. We know its atmosphere is more active than Uranus. We know there's a huge anti-cyclone on Neptune that scientists call "the Great Dark Spot" a cloud group Scientist call Scooter, and another smaller storm scientist call The Small Dark Spot



*The Great Dark Spot is at the top, Scooter is the white smudge in the middle, and the Small Dark spot is at the bottom*

You'll see this and many other pictures of Neptune, mostly based on computer animation and simulations...the longest mankind has ever gotten close to Neptune was only for 2 hours!

Neptune's orbit is 165 years long, and seasons can last as long as 40 years on Neptune. However, a day on Neptune lasts only 16 hours!



Here's Neptune next to our planet, Earth.

### **Exercise 3: Pre Concert Discussion Questions.**

- 1. Jupiter is big, Mercury is small: what are some ways you think a composer can show size through music?**
- 2. As you watch the concert, you'll see the planets as they actually are, instead of how they were depicted in mythology. If Holst could see the video, do you think he would have composed his music differently?**
- 3. What are some sounds you would use if you were trying to describe outer space?**
- 4. Think of some movies that take place in space...do they use special music to let you know the action is in space?**
- 5. If so, what does that music sound like? Do you think Holst's music will sound similar or different?**

## **Exercise 4: PLANET CREATOR 5000:**

**Step One:** Think about the personality of each planet. Pick your favorite planet.

**Step Two:** Now, think of five and ONLY five words to describe your planet, and avoid the word in the title (in other words, don't use "warlike" for Mars)

**Step Three:** Think of 3-5 colors that make you think of your planet.

**Step Four:** Draw a picture of your planet, using the colors you named and write 2-3 sentences using the words you picked!

**Step Five:** Do this BEFORE and AFTER the concert. Are your words different? How about the pictures? How does hearing the music and seeing the actual music change your mind?

**Example:** My favorite Planet is (at the moment, it changes) Neptune. Neptune is hazy, glowing, enchanting, murmuring and distant. I would draw a picture of a forest, viewed from far way, using green, dark blue, silver, grey, and (maybe oddly), pink: I'd imagine something out of a fairy tale.

I've heard and played Neptune so many times, it's impossible for me to do Step 5. Hearing an amazing piece of music for the first time only happens once, so enjoy it!

## Exercise 5: Instrument Engineer

There's been a malfunction at the music factory, and we need your help. You have to compose a movement of The Planets, but you can use only ONE section of the orchestra! Write a short paragraph about ONE section of the orchestra (violin, viola, cello, bass, flute, oboe, clarinet, bassoon, horn, trumpet, trombone, tuba, or percussion) that describes your music.

**Example:** (the easy way out would be for me write about my own instrument, the double bass. I'll write about the horn section as Mercury, the Winged Messenger).

Mercury should sound fast and speedy, above all else. I'd use my horn section to sound a heroic introduction fanfare to introduce the Messenger, like he's just arriving with a message! Then, I'd have some of the horns play a fast, single note rhythm to portray Mercury speeding away with a new message. I'd like to combine the introduction with this rhythmic pulse (or ostinato: vocabulary word time!) with the introduction, so you all know it's about Mercury. Then, it might be fun to vary the rhythm and see if the horn can make different sounds to show that sometimes people try to trick or delay Mercury on his way. In the end, though, Mercury always delivers his message, and I'd end with the fanfare as Mercury's way of saying goodbye.

*Teachers: It is possible to do this with more familiar music, or have the whole class do this together or in small groups. The objective is to assist students with State Standards 2-4 and engage them fully with the orchestra. I would encourage, as a language learning tool, to steer the students away from musical jargon at first: I think if they can begin to describe sounds they hear and then label them, a deeper connection will result.*

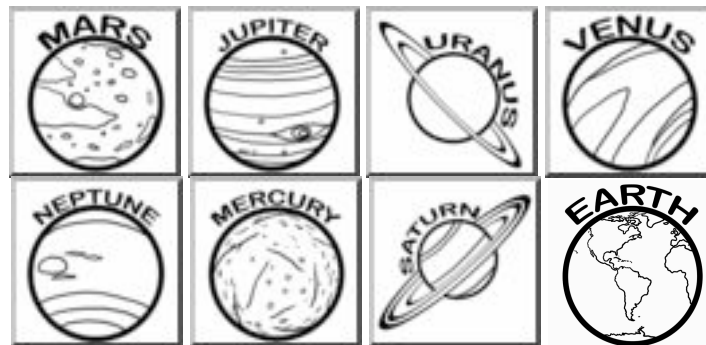
## Exercise 6: Worksheet...Who am I?

1. I'm the biggest planet in the galaxy. I'm so big, I've got moons bigger than some planets out there.
2. NASA just landed the Spirit Rover on me...and to think you Earthlings used to be afraid of ME invading you!
3. Rings around your Planet? Bah-I've got them, too y'know.
4. I don't know why Holst didn't write a movement about *me*-he just lived on me, after all!
5. I'm the brightest object in the night sky...and I'm not a star, I'm a planet!
6. I'm the smallest planet, and I'm closest to the Sun. Yet I've got ice!
7. My rings (which are better than number 3's) make me the most famous planet...I mean, look at all those pictures!
8. I'm the furthest away from the Sun, and somehow, I ended up with a storm named Scooter. And I'm the last on this worksheet. Sheesh.

## Exercise 7: Where in the Solar System?

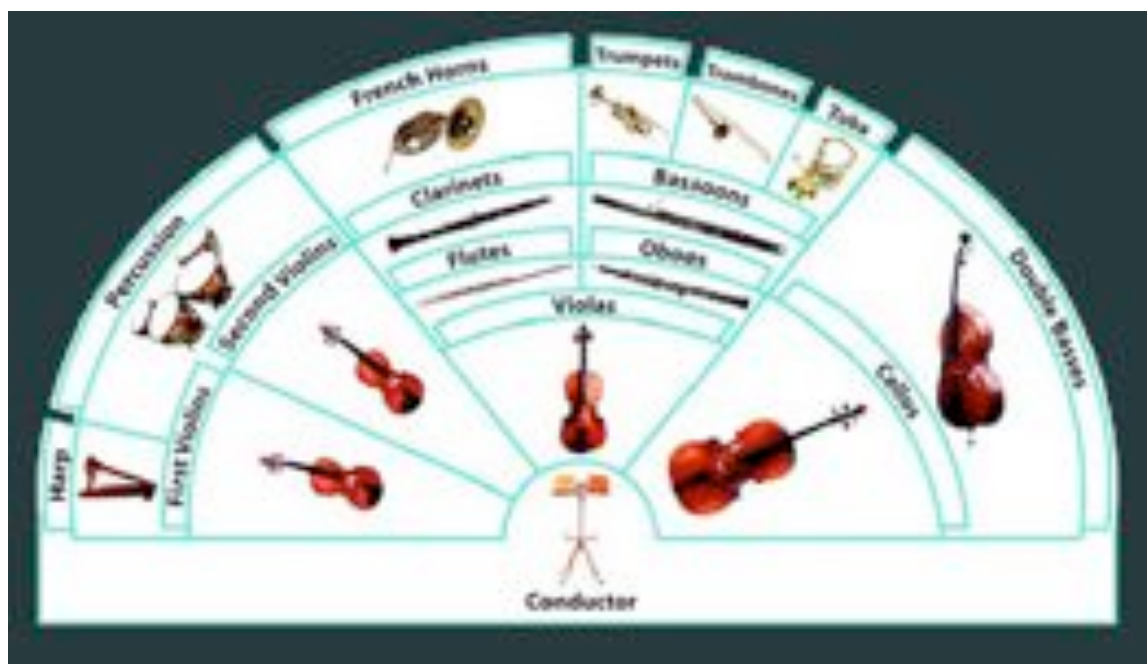
The Planets in our Solar System have been mixed up! Put all the Planets back in order, From the one closest to the sun to the Furthest!

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.



# All About the Greenville Symphony Orchestra





Here is a map of the Greenville Symphony. It shows where each group of musicians is sitting on the stage. Our set up looks a bit different from the map – You’ll notice that the percussion section is lined up all along the back of the orchestra. The name of the big copper drums is Timpani (you’ll see them behind the tuba). Here is a brief description of the instruments and some of the people you’ll see at the concert.

First, let’s start with the conductor of the GSO, Maestro Edvard Tchivzhel (say CHIV – gel. The “G” is pronounced like the g in general, not like the g in go). Maestro Tchivzhel comes from the city of St. Petersburg in Russia – but he lived there when it was the *Soviet Union*. St. Petersburg used to be called Leningrad. He graduated from the Leningrad Conservatory with the highest distinction in the areas of piano and conducting. Tchivzhel scored a remarkable success by winning the Third Soviet Conductor's Competition in Moscow while still a student. In 1973, Tchivzhel became music director and principal conductor of the Karelian Symphony Orchestra of National Television and Radio, a position he held until 1991.

In February 1991, Tchivzhel was enthusiastically received during a tour of the State Russian Symphony Orchestra in the United States. Following this tour, he defected to the U.S. Tchivzhel returned to Russia In April 2003 (for the first time since his defection) to once again conduct the St. Petersburg Philharmonic in a performance of Mahler's Fifth Symphony.

On July 3, 2004, Indiana Congressman Mark Souder presented Tchivzhel with the Congressional Johnny Appleseed Award in recognition of his contributions to and commitment to the public in planting seeds of goodwill for generations to come.

Before the conductor comes out on stage, you'll meet another person: The Concertmaster. The concertmaster is the first violinist in the orchestra. He (or she, but in our case, it is a he) is considered to be the second most important person in the orchestra, after the conductor. He sits the closest to the conductor. You'll see him come on stage before the conductor, and give the signal to tune the orchestra. The orchestra tunes to the pitch "A", played by the Principal Oboe (this is so the entire orchestra can hear the pitch).

The Concertmaster of the Greenville Symphony Orchestra is Xiaoqing Yu. Just in case Xiaoqing – pronounced "Schow Sching" (say a soft *ch*, not like the *ch* in cherry or chomp, but like the *sch* in Schubert) – cannot make it to this concert, he has an assistant. This should tell you how important the job of Concertmaster is. The Assistant Concertmaster of the GSO is Mary Lee Kinosian. So, yes, sometimes it IS a she, and then you call the person a *concertmistress*).

Now let's meet each family of instruments in the orchestra. You may have already seen them up close in one of the GSO EdReach concerts. If you have, you may know that we group instruments together by how each one makes sound, NOT by the material the instrument is made of. For example, some drums, the clarinet, and the viola are all made of wood. Only one of them is a woodwind instrument.

**The String Section** is the largest section of the orchestra. There are four types of string instruments, divided into five groups. This does not include special pieces where the orchestra uses harps, guitars or mandolins. The strings sit in front of the stage. The difference between the orchestral strings and the other instruments is the bow: you pluck harps, guitars, and mandolins; you play the other string instruments primarily with a bow (this is called **arco**, an Italian word). When orchestral strings pluck, it is called **pizzicato** (pits-uh-ca-toe).



In this picture, from left to right we have the viola, the cello, two violins, and the bass.

As you look at the stage (and on the enclosed map), from left to right, and smallest size instrument to largest, we have:

### **Violins**

This is the biggest group of the orchestra. In fact, we divide the violins into two groups, Violin 1 and Violin 2. This is done primarily to give composers more choices when they are writing for strings, and to enhance the texture of the string section. Playing in either section is equally challenging (don't get the idea that second violinists are not as good as first violinists) because they play two different parts. Violins are the smallest members of the string family.

### **Violas**

These musicians sit kind of in the middle of to the right of the conductor; either way, they are right next to the cello section. Violas are slightly larger than violins. They sound very different than the violin, because they are lower in pitch, even though they are held the same. The four strings are tuned to different pitches as well. They are considered the middle voice of the string section.

### **Cello**

The full name is violoncello, but almost everyone these days shortens it to cello. These instruments are bigger than the violin and viola. They have a long metal rod called an **endpin** that anchors the cello to the floor. This way, cellists don't have to hold their instruments up with their legs (like they did in the 1600's). The cello section members all sit in normal sized chairs, and are considered the tenor voice of the string section.

### **Bass**

The bass section is on the far right of the stage, behind the cellos. Bases are really, really big – so big, you'll see most of the bass section sitting on tall stools to play. They provide the power of the orchestra, and play the lowest notes in the string section. The bass has many names – sometimes double bass, contrabass, and string bass, even (can you believe it?) the Bull Fiddle.

**Woodwinds\*** sit behind the string section. There are fewer woodwinds than strings in the orchestra. Almost all wind instruments use some sort of wooden reed on the mouthpiece of their instrument; the vibrating reed is how woodwind instruments make sounds (the exception? The Flute).



**The Flute** is long and silver. Flutes sit directly behind the string section. Flutes are very old, and have been made out of a variety of material. For orchestral music, the flute was made out of wood for a very long time (this is why it is a woodwind). Toward the end of the 19<sup>th</sup> Century, flutes started being made out of silver. Sound is made on a flute the same way you make sound when you blow air across the opening of a bottle.

**The Oboe** is one of the first instruments you'll hear as the principal oboe (Ginny Metzger) plays a long tone for the orchestra to tune to. The oboe is a double reed instrument—it has two small reeds that vibrate against each other when you blow between them. This reed is usually made out of bamboo cane. The oboe is also very old...it can trace its heritage all the way back to Ancient Egypt.

**The Clarinet** is found in many other ensembles, including jazz, marching, and concert bands. The Clarinet looks like the Oboe: both are long cylinders made out of ebony, but the Clarinet is slightly larger. The Clarinet only has one reed—it is attached to the mouthpiece by a small silver object called a *ligature*.

**The Bassoon** sits next to the clarinet and behind the flutes and oboes. Like the oboe, it is a double reed instrument. Unlike the oboe, the bassoon is very large. It is so big that bassoons come folded in half (at the bottom, there is a U shaped joint, similar to the pipes under your sink at home). The bassoon has a very deep and rich sound.

*\*Look VERY closely at this picture...are ALL the instruments woodwinds?*

**The Brass** section sits along the back row of the orchestra. While most brass instruments are made of metal, it is the way you make sound on them that groups them together – you must “buzz” your lips against a special mouthpiece. This is when you press your lips together and blow air through them. Your lips then vibrate together, making the sound of a brass instrument. The sound is similar to a bumblebee.



**The Trumpet** is the smallest member of the brass family. Trumpets are also very old; an ancestor of the modern trumpet was found in King Tut’s tomb. Trumpets can play very loud, and can play very high notes – maybe this is why they are used for fanfare for kings and other nobility throughout history. Trumpets are also used in jazz bands.

The **French Horn** is next. If you want to get very technical, you should just call it a Horn; the International Horn Society has been recommending since 1971 that we just not say French Horn. The horn has been around for a long time. When it was older, the horn did not have valves (the metal tubing parts in the middle). These were added later to allow the horn players (or hornists) to play more notes.

Hornists place their hands in the bell (the opening part) for all kinds of reasons, such as changing the tone of the notes they play and adjusting the pitch of the instrument.

**The Trombone** is different from all the other brass instruments in the orchestra. Trombone players use a slide to change the pitch of the instrument, rather than valves. The trombone has been in use since the Middle Ages. It was called the sackbut, because it looked like a type of lance used in jousts between knights (this lance had a hook at the end, and was called a *saquebute*, a French word).

**The Tuba** is the biggest and lowest member of the brass family. The Tuba is a newer addition to the brass family, having been introduced in the 19<sup>th</sup> century. Before that, the lowest brass instrument was called an *Ophecleide*. The tuba is very versatile, with a very nimble and mellow high register that can sound like the French Horn.

If you were uncurl all the tubing of each brass instrument, you would get:

Trumpet 4.5 feet of tubing

Horn: 12 feet of tubing

Trombone: 18 feet of tubing

Tuba: 25 feet of tubing.

**Exercise: Using a tape measure, have two students stand each respective distance to observe all the different lengths of our brass instruments.**

The **Percussion Section** is located along the back of the orchestra. There are many, many instruments that the percussion section uses – if you can hit, scrape, rub, hammer, bow, pull, or crash it, a percussionist probably has played it. Percussion instruments are some of the oldest instruments; early civilizations of almost every culture have some sort of drum in their heritage. Here is a brief description of some of the instruments the Greenville Symphony Percussion sections uses:



**Snare Drum:** a short, shallow drum. What makes the snare drum a snare drum is a series of wires, or snares, that stretch across the bottom of the drum. Snare drums are about 13 inches in diameter.

**Bass Drum:** Bigger, deeper, and played on a stand, the bass drum does not have snares stretched across the heads (this is the white or clear part you actually hit on a drum).

**Timpani:** There are usually four these drums. They are the very big copper drums on the right side of the orchestra. Sometimes they are called kettledrums. Timpani are capable of playing many different pitches. The timpani player (Sherwood Mobley) changes the pitch with a foot pedal located on each drum. Sometimes, you'll see him lean down close to the drums to listen to them; he's changing the pitches for the next section of the piece, and he has to do that quietly.

**Cymbals:** These are made of brass and come in all kinds of sizes. You can crash them together, scrape them, brush them, or play a roll on them using drum sticks. The smallest cymbals are called finger cymbals, and you can actually wear them on your finger to play them; the largest cymbals are gongs and tam-tams, which can be up to three feet in diameter. The difference between gongs and tam-tams is that gongs are pitched while tam-tams are not.

## About the Composer



Meet **Gustavus Theodore von Holst**, the man who composed our featured work this year. He was born on September 21, 1874 and died on May 25, 1934.

*The GSO will be performing his most well known and beloved work, a symphonic suite called *The Planets*.*

Holst was born on 21 September 1874 in Gloucestershire, England. His family was very musical, and encouraged his early music career. He attended the Royal College of Music on a scholarship, where he studied composition with Charles Villiers Stanford and in 1895, he met fellow student Ralph Vaughan Williams, who would also become a famous composer. The two were to become lifelong friends.

Holst hoped to become a pianist, but nerve damage in his hands meant he had to pick another instrument. He became a professional trombone player. Holst married Emily Isobel Harrison, on 22 June 1901. Emily Isobel bore him a daughter, Imogen, on 12 April 1907; their only child. Holst also became a very successful and well-known music educator.

Holst was an avid walker-! He walked extensively in Italy, France and England. He also travelled outside the bounds of Europe, heading to Algeria in 1908. His travels in Arab and Berber lands, including an extensive cycling tour of the Algerian Sahara, inspired the suite *Beni Mora*, written upon his return.

During the years 1920–1923, Holst's popularity grew through the success of *The Planets* and *The Hymn of Jesus* (1917) and the publication of a new opera, *The Perfect Fool*. Holst became something of "an anomaly, a famous English composer" but he hated publicity; he often refused to answer questions posed by the press and when asked for his autograph, handed out prepared cards that read, "I do not hand out my autograph".

Holst had a lifetime of poor health, which worsened due to a concussion during a backward fall from the conductor's podium, from which he never fully recovered. In his final four years, Holst grew ill with stomach problems. One of his last compositions, the *Brook Green Suite*, named after the land on which St Paul's Girls' School was built, was performed for the first time a few months before his death. Holst died on 25 May 1934.

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Exercise 1:

## **ACTIVE LISTENING EXERCISE (to be done before the concert):**

Take 30 seconds, and list every sound you hear right now. I'll bet you'll see you have a very long list! Now, make up a story using that list. Better yet, listen again, and make up the story as you listen.

Remember how we talked about the person who supplies the story in music is you?

This is the best way to enjoy the music of the Greenville Symphony: Use active listening and your imagination. Even if the music is something you've never heard before, I think you'll still have fun.

## Exercise 2:

# Ask Edvard!

This year, each music class will get to ask Edvard anything about the GSO...anything! The more creative the question, the better! This is a great time to encourage your class to be very inquisitive about the symphony, the musicians, the instruments, and our maestro. And, we have a very cool prize for submitting a question.

Before the Children's Concert, Edvard will select One (1) question to answer from the stage. The class with the best overall question will receive a pizza party with Edvard, courtesy of the GSO.

To be a part of *Ask Edvard*, here is what you do:

- 1) Have the kids brainstorm a list of questions during music class. This can be a great way to prepare for the concert.
- 2) Submit your question **as a class**. We envision this as a collaborative activity, with your children working together. Email your submission to Braxton Ballew, Education Director ([braxton@greenvillesymphony.org](mailto:braxton@greenvillesymphony.org)).
- 3) Submission Example:

Dear Maestro (or Edvard),  
Why do you have two different violin sections?  
Sincerely,  
Mrs. Jones's 4<sup>th</sup> Grade Class  
(Use the classroom teacher's name, not your music teacher)  
Example Elementary School

- 4) For homeschoolers: when possible, please submit your question as a co-op. We won't do separate categories for homeschool and public/private schools. We're taking one winner (per each concert).

### **Exercise 3: Pre Concert Discussion Questions.**

- 1. Jupiter is big, Mercury is small: what are some ways you think a composer can show size through music?**
- 2. As you watch the concert, you'll see the planets as they actually are, instead of how they were depicted in mythology. If Holst could see the video, do you think he would have composed his music differently?**
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8. I'm the furthest away from the Sun, and somehow, I ended up with a storm named Scooter. And I'm the last on this worksheet. Sheesh.

## Exercise 7: Where in the Solar System?

The Solar System has been mixed up like a bunch of gumballs! Put all the Planets back in order, From the one closest to the sun to the furthest!

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.



## **EXERCISE 8: Post Concert Discussion Questions.**

Based on the music you heard, which planet would you most like to visit? Which one would you least like to visit?

Think back to question 5 of the pre-concert questions...did *The Planets* remind you of any movie music? Did any of it seem familiar?

Many people think *The Planets* describe space perfectly...how? What are some ways Holst used the orchestra to depict outer space?

### **Everyone's a Critic: Writing Exercise**

Imagine you're a composer: your job is to write a suite about *The Planets*...what would you do differently than Gustav Holst?

### **Music without Frontiers: Writing Exercise**

Think of your favorite kind of music: hip-hop, rock, country, etc. Now, imagine one of your favorite songs, but without any words – is there anything you hear that tells the story without the words? Think back to the GSO's classical music. Are there many differences? Are they the same in any way?