

From Earth to the Universe: Greetings, Sounds and Music

How do you present yourself to others for the first time?

Those who sent Voyager I and II probes into space in 1977 seemed to be very clear on how to present themselves to space dwellers in an adventure of discovery and communication. It was NASA(National Aeronautics and Space Administration), that is, the national aeronautics and space administration. They chose the famous researcher and scientific disseminator Carl Sagan to coordinate the presentation of humans on earth before the universe.

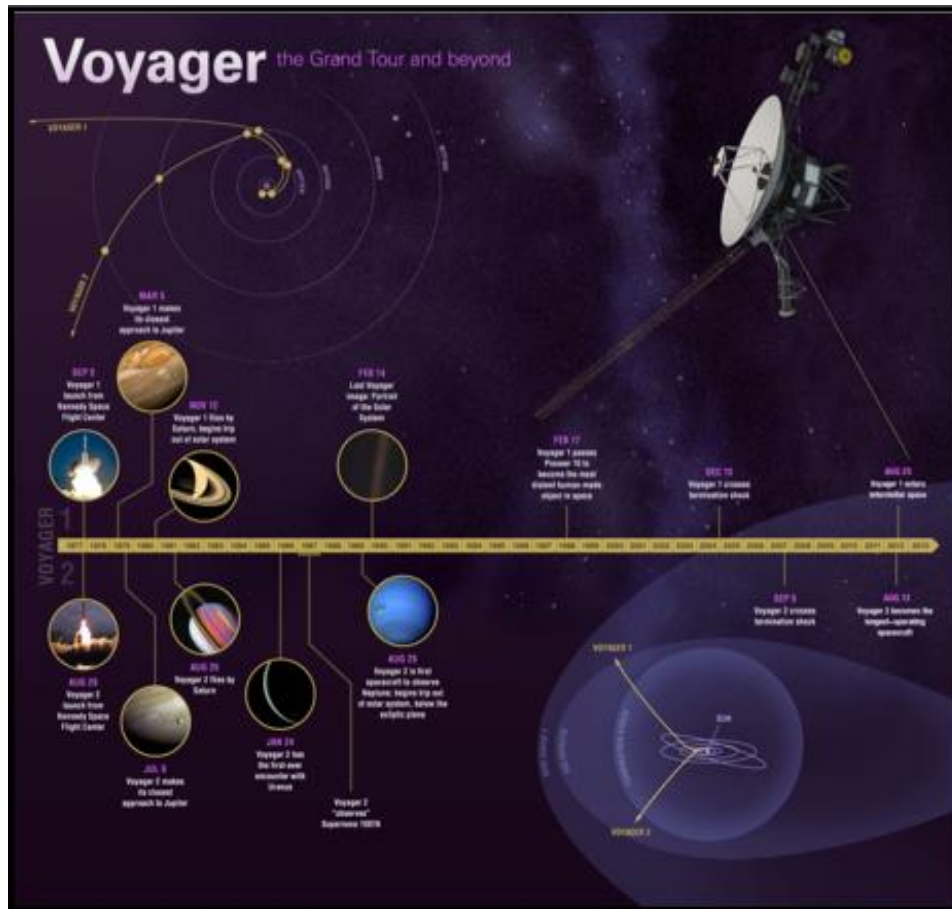
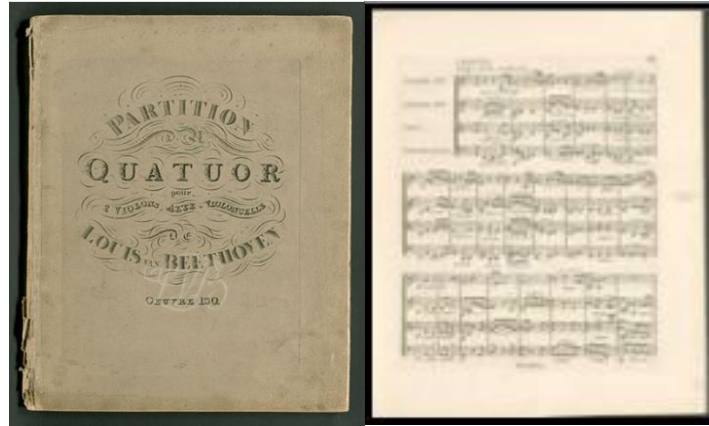


Figure 1.Voyager I and II probe path: The great journey and beyond. Image source: NASA, Jet Propeller Laboratory, California Institute of Technology. Link to the image (free transfer): <<https://voyager.jpl.nasa.gov/downloads/>>

Carl Sagan's team organized its announcement to the universe of the presence of humanity in different sections: images, greetings, sounds and music.



Figures 2 and 3. Beethoven's piece was recorded and sent on Voyager I and II probes, as well as the image on the first page of one of his works, along with a violin. The score is the beginning of his "Cavatina" of the String Quartet no. 13 in B flat, opus 103. They were part of the representation of humanity before the universe. Link to the score in IMSLP(public domain): <<http://ks.imslp.net/files/imglnks/usimg/2/2b/IMSLP51355-PMLP05119-Op.130.pdf>>

Greetings, Sounds and Music: recording for a journey through space

Polite greetings, sounds, melodies, and diverse rhythms were recorded and presented in a certain order. We see it below.

First, greetings in fifty-five languages. Choose your own presentation

The interstellar message should be plural, encompassing as many languages as possible. Thus, they looked for people who spoke languages such as Armenian, Cantonese, Quechua, Mandarin, Nguni (Zulu), Persian or Sumerian. All the messages coincided in the desire for peace and harmony. Each of them was done in a particular way. Here you can read some examples of the greetings sent:

- Spanish and French: "Hello everyone".
- Hebrew: "Peace".
- Min Nan dialect, South China: "Friends of space, how are you all? Already have you eaten? Come visit us if you have time".
- English: "Hello from the children of planet earth".

In the following table you can add greetings in the language of your choice.

Tanti auguri e saluti
Shalom
Hello from the children of planet Earth
οἷτινες ποτ' ἔστε, χαίρετε. εἰρηνικῶς πρὸς φίλους ἐληλύθαμεν φίλοι ("Greetings, whoever you are. We are coming as friends for those who are friends")
Hola y saludos a todos
Salve tequicum queestis; bonam ergo vos voluntatem habemus, et pacem per astraferimus ("Greetings to you, whoever you are; we have good will towards you and we cross the space to bring peace")
Bonjour ,tout le monde

Table 1. Messages sent on Voyager I and II probes.

You can listen to all the messages at the following NASA link:
<<https://voyager.jpl.nasa.gov/golden-record/whats-on-the-record/greetings>>.

What do you think if you prepare your presentation? What would be your message? You present yourself to the universe as a member of humanity on earth, and also as an independent and unrepeatable being. Choose a good phrase that can be the start of a possible interstellar conversation.

MY PHRASE IS:

After the courtesy, sounds of the land: Sounds cape.

The sound of a kiss, a mother and her son, the song of the birds, an elephant's belly, the wind, the rain, the enjoyment of surfing, crickets, frogs, steps, the beat of a heart, a tractor, a horse, a volcano,

thunder, or an earth quake. They are just some of the sounds recorded and sent to space. Thus, the sounds cape was motley. The link to the list and reproduction of the sent sounds is as follows: <https://voyager.jpl.nasa.gov/golden-record/whats-on-the-record/sounds>>.

Add those sounds and noises that you consider essential to know humanity. Try to have examples of nature, your environment and your daily life. Choose the sound that seems most representative to you, and also, the sound that you consider most beautiful.

I CHOOSE A SOUND OF NATURE:
I CHOOSE A SOUND FROM MY ENVIRONMENT:
I CHOOSE THE MOST BEAUTIFUL SOUND:

Table 2. Sounds to include in your interstellar travel project.

You can prepare a short recording with your options. It will be shared on the next interstellar trip.

Musical Selection. Voyager I and II recordings

The decision to choose music would not turn out to be an easy one. The chosen musical pieces should represent humanity as a whole, and at the same time, provide an image of the importance of the human being who inhabits the earth. Big responsibility.

NASA's musical selection included twenty-seven miscellaneous pieces. Music called classical, traditional and modern, different styles and forms. In the didactic unit you will find the complete list of musical works, their interpreters and basic references, as well as a link to listen to each of them. The list highlights a German composer, Juan Sebastian Bach, with three works .Also found in it are, of course, Ludwig van Beethoven, with two, and Wolfgang Amadeus Mozart and Igor Stravinsky, with a work respectively. Fragments of concerts, symphonies, dances and operas were the chosen pieces.

Why do you think Bach is the composer with the most pieces included in the essential list?
Is there a Spanish-speaking composition?
Is any female composer among the pieces with known authorship?

How many pieces are instrumental?



Figures 4 and 5. Bach and Beethoven are the composers with the greatest presence in the recording of Voyager I and II probes. Image information: Elias Got lob Haussmann. Johann Sebastian Bach. 1748, copy of the original made in 1746, oil on canvas, 30, 7 x 24 cm., Leipzig City Museum, Archive-Bach, no. XII / 48 Link to the image in Wikimedia Commons (public domain). https://upload.wikimedia.org/wikipedia/commons/6/6a/Johann_Sebastian_Bach.jpg; Christian Horne Mann, 1803. Portrait of Ludwig van Beethoven. Cologne, Switzerland, Bodmerian Library, oil on ivory. Link to the image in Wikimedia Commons (public domain): https://upload.wikimedia.org/wikipedia/commons/0/0e/Beethoven_Hornemann.jpg

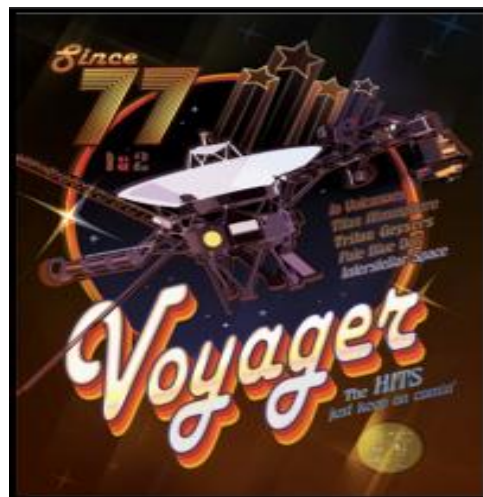


Figure 6. Image commemorating the launch of the Voyager I and II probes: "Since 1977. Voyager. SUCCESSES keep on coming "[Since 77.Voyager.The HITS are keep on coming"]]. The recording included relevant music up to that date. As the NASA motto indicates, the musical pieces continue their journey. Image source: NASA, Jet Propeller Laboratory, California Institute of Technology (free transfer).Their link is as follows: <https://voyager.jpl.nasa.gov/downloads/#gallery-posters-4>

The discs sent into space contain recordings of modern music classics, such as Chuck Berry and Louis Armstrong. Berry performed the song Johnny B. Goode in 1958, which was a success.

Armstrong, meanwhile, is a classic figure in the history of American jazz and popular music.

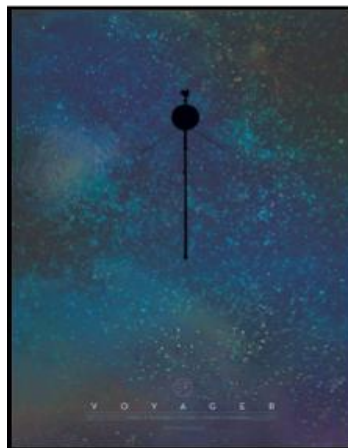
Traditional music is represented by Navajo songs, melodies from Australian Aboriginal culture, Java and Senegal percussion, a Peruvian wedding song, Japanese music, Bulgarian songs or Indonesian flutes, among others.

1. Johann Sebastian Bach, Brandenburg Concerto No. 2 in F. First Movement, Munich Bach Orchestra, Karl Richter, conductor. 4:40
2. Java, court gamelan, "Kinds of Flowers", recorded by Robert Brown. 4:43
3. Senegal, percussion, recorded by Charles Duvelle. 2:08
4. Zaire, Pygmy girls' initiation song, recorded by Colin Turnbull. 0:56
5. Australia, Aborigine songs, "Morning Star" and "Devil Bird", recorded by Sandra LeBrun Holmes. 1:26
6. Mexico, "El Cascabel", performed by Lorenzo Barcelata and the Mariachi México. 3:14
7. "Johnny B. Goode", written and performed by Chuck Berry. 2:38
8. New Guinea, men's house song, recorded by Robert MacLennan. 1:20
9. Japan, shakuhachi, "Tsuru No Sugomori" ("Crane's Nest") performed by Goro Yamaguchi. 4:51
10. Johann Sebastian Bach, "Gavotte en rondeaux" from the Partita No. 3 in E major for Violin, performed by Arthur Grumiaux. 2:55
11. Wolfgang Amadeus Mozart, "Queen of the Night" aria, The Magic Flute, no. 14. Edda Moser, soprano. Bavarian State Opera, Munich, Wolfgang Sawallisch, conductor. 2:55
12. Georgian S.S.R. [nowadays Georgia], chorus, "Tchakrulo", collected by Radio Moscow. 2:18
13. Peru, panpipes and drum, collected by Casa de la Cultura, Lima. 0:52
14. "Melancholy Blues", performed by Louis Armstrong and his Hot Seven. 3:05
15. Azerbaijan S.S.R. [nowadays Azerbaijan], bagpipes, recorded by Radio Moscow. 2:30
16. Igor Stravinsky, "Sacrificial Dance", Rite of Spring, Columbia Symphony Orchestra, Igor Stravinsky, conductor. 4:35
17. Johann Sebastian Bach, The Well-Tempered Clavier, Book 2, Prelude and Fugue in C,

- No.1. Glenn Gould, piano. 4:48
18. Ludwig van Beethoven, Fifth Symphony, First Movement, the Philharmonic Orchestra, Otto Klemperer, conductor. 7:20
 19. Bulgaria, "Izlelje Delyo Hagdutin", sung by Valya Balkanska. 4:59
 20. Navajo Indians, Night Chant, recorded by Willard Rhodes. 0:57
 21. Anthony Holborne, Paveans, Galliards, Almains and Other Short Airs, "The Fairie Round", performed by David Munrow and the Early Music Consort of London. 1:17
 22. Solomon Islands, panpipes, collected by the Solomon Islands Broadcasting Service. 1:12
 23. Peru, wedding song, recorded by John Cohen. 0:38
 24. China, ch'in, "Flowing Streams", performed by Kuan P'ing-hu. 7:37
 25. India, raga, "aat Kahan Ho", sung by Surshri Kesar Bai Kerkar. 3:30
 26. "Dark Was the Night", written and performed by Blind Willie Johnson. 3:15
 27. Ludwig van Beethoven, String Quartet No. 13 in B flat, Opus 130, Cavatina, performed by Budapest String Quartet. 6:37

As we can see, they tried to show a global knowledge of artistic production on earth. Of course, twenty-seven recordings cannot (how could they?) Represent all of human art and talent in the history of the planet. Furthermore, this attempt at communication occurred more than forty years ago. What would be your updated music list?

It is your opportunity to select a renewed sample of the musical talent of the human being.



Project: To the Moon and back

Figure 7. Commemorative image published by NASA on the Voyager project, which turned forty in 2017. Source of the image: NASA, Jet Propulsion Laboratory, California Institute of Technology (free transfer).Their link is as follows: <<https://voyager.jpl.nasa.gov/downloads/#gallery-posters-3>>

Project: My Universal Music List

You will decide which melodies, rhythms and lyrics will travel to space.This work requires responsibility, investigation and teamwork. If you want your selection to be chosen, you should plan a good promotional campaign.

The final list will be exclusively of three musical pieces. It will be made up of the following options:

1. A musical piece chosen by the small work group of which you will be part.
2. A second piece chosen by you.
3. A third piece chosen by the class by vote.

Let's see the process.

Divided into groups (4 people maximum), choose THREE musical pieces with the following parameters:

AMUSICAL PIECE THAT REPRESENTS HUMANITY BEFORE THE UNIVERSE

There must be consensus in the small group of which you are a part. Defend your option, and at the same time, listen and weigh the possibilities of your peers. Together you can create an unbeatable list.

MUSIC OF OUR PLANET. My choice is: _____

Each piece will be accompanied by a brief reference to its qualities. Some of the possibilities would be the following: Composition / performance quality; originality; text-music relationship (if it were a vocal piece);relevance due to its context (period in which it was composed; audience for which it was intended; and extra-musical value assigned to it, etc).

Discuss the reason for your interest in the piece of music.

Next, TWO finalists will be chosen in the group of which you are a part. You may agree with both, but they can also be works chosen from the respect of the group's criteria.The first finalist will be the musical work presented to the entire class.

The selection of finalists is as follows:

Piece 1: _____

Piece 2: _____

APIECE THAT REPRESENTS YOU TO THE WORLD

Choose you with complete freedom.

MUSIC FOR MY PERSON. My chosen piece is: _____

If you want, you can indicate the reason for your choice.

MY REASONS ARE: _____

FINALLY, ONE PIECE ADVERTISED BY YOUR GROUP TO THE ENTIRE CLASS

This is the piece considered essential, that is, the first of your short list of finalists. Keep in mind that you can choose the first two, but the third will be voted by your class in competition with the different proposals.

Plan a campaign for your choice. Do you think you will agree on musical styles?

In your presentation you will be able to present your selection criteria. Try to be brief and direct.

In your campaign you will highlight the following points:

The best piece of music, in our opinion, is as follows:

Our reasons for being voted the best musical option:

Our motto to present the piece to choose is as follows:

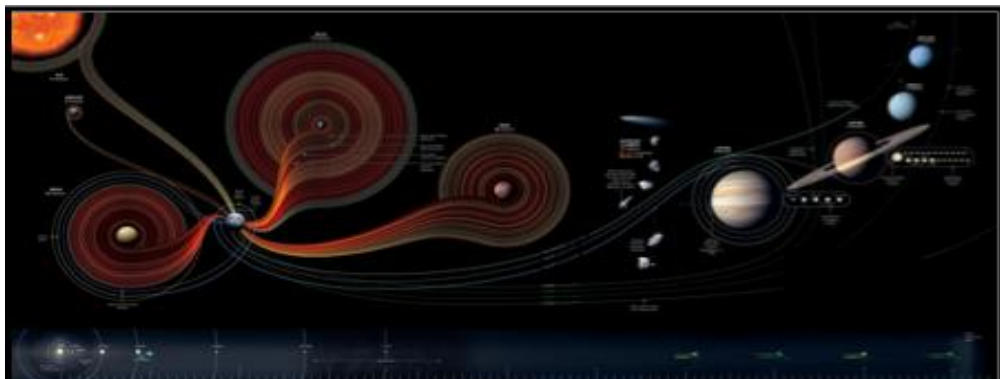


Figure 8. Missions paths. Commemorative image published by NASA about their projects. Image source: NASA, Jet Propeller Laboratory, California Institute of Technology (free transfer). Their link is as follows: <https://voyager.jpl.nasa.gov/downloads/#gallery-infographics-2>

Conclusion

Now you have a list, undoubtedly diverse, of musical pieces to send to space. Among them will be some of your chosen ones, along with the criteria of your companions. Your peers also have their reasons for choosing other works. Together, I hope they represent who we are and who you are.

A musical welcome for those who can understand.

THE MUSICAL LIST OF THE CLASS

The selection of essential musical pieces will be included in a list in the order obtained according to the number of votes of the class. You should write them down, since it is the product of collaboration between all.

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

Table 3. List of musical pieces chosen by the class. The order corresponds to the number of votes obtained.

MY INTERSTELLAR TRAVEL PROJECT

Include here your musical selection, following the chosen order. In it is an example for each of the forms of musical choice.

Project: To the moon and back

Piece 1 (your finalist of the small group):
Piece 2 (your personal choice):
Piece 3 (the choice of the whole class):

Table 4. List of pieces to include in your interstellar travel project.

We have our music list. Now we must know the way of sending to space. It will be the next step, the search for optimal technical support. Technological advances will allow you to send your music with higher quality. Prepare your design for sound and music recordings destined for the universe. A cover, the editing of your message and the recordings or transcriptions of sounds and music will be the best combination, without a doubt. !! Congratulations!!

From Earth to the Universe: Greetings, Sounds and Music
Questionnaire-Summary of activities

Student file, student file

Name:

Course and Group:

The activities and reflections included throughout the Didactic Unit are grouped together, as a record of the student

Introduce yourself to the universe

What do you think if you prepare your presentation? What would be your message?

You present yourself to the universe as a member of humanity on earth, and also as an independent and unrepeatable being. Choose a good phrase that can be the start of a possible interstellar conversation.

MYPHRASE IS:	
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Sounds of the land: Soundscape

Add those sounds and noises that you consider essential to know humanity. Try to have examples of nature, your environment and your daily life. Choose the sound that seems most representative to you, and also, the sound that you consider most beautiful.

I CHOOSE A SOUND OF NATURE:

I CHOOSE A SOUND FROM MY ENVIRONMENT:
--

I CHOOSE THE MOST BEAUTIFUL SOUND:

PROJECT: MY UNIVERSAL MUSIC LIST

The final list will be exclusively of three musical pieces. It will be made up of the following options:

1. A musical piece chosen by the small work group of which you will be part.

2. A second piece chosen by you.
3. A third piece chosen by the class by vote.

AMUSICAL PIECE THAT REPRESENTS HUMANITY BEFORE THE UNIVERSE

There must be consensus in the small group of which you are a part. Defend your option, and at the same time, listen and weigh the possibilities of your peers. Together you can create an unbeatable list.

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<hr/>						

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The selection of finalists is as follows:

Piece 1: <hr/>
Piece 2: <hr/>

A PIECE THAT REPRESENTS YOU TO THE WORLD

Choose yours with complete freedom.

MUSIC FOR MY PERSON. My chosen piece is: <hr/>

If you want, you can indicate the reason for your choice.

MY REASONS ARE: <hr/>

FINALLY, ONE PIECE ADVERTISED BY YOUR GROUP TO THE ENTIRE CLASS

In your campaign you will highlight the following points:

The best piece of music, in our opinion, is as follows:

Our reasons for being voted the best musical option:

Our motto to present the piece to choose is as follows:

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

MY INTERSTELLAR TRAVEL PROJECT

Include here your musical selection, following the chosen order. In it is an example for each of the forms of musical choice. Project: To the moon and back

Piece 1 (your finalist of the small group): _____

Piece 2 (your personal choice): _____

Piece 3 (the choice of the whole class): _____

From Earth to the Universe: Greetings, Sounds and Music

Solver and orientations

Musical Selection. Voyager I and II recordings

NASA's musical selection included twenty-seven miscellaneous pieces.

Why do you think Bach is the composer with the most pieces included in the essential list?

Free answer. Reflection on the predominance of the established musical canon.

Is there a Spanish-speaking composition?

There are three:

- Number 6 (Mexico, "El cascabel")
- Number 13 (Peru, flutes and percussion)
- Number 23 (Peru, wedding song).

Is any female composer among the pieces with known authorship?

No authorship referring to a female composer is cited. Reflection on the assignment of genre to musical pieces of unknown authorship, regularly classified as belonging to an "anonymous author".

How many pieces are instrumental?

There are 15 pieces: 1, 3, 8, 9, 10, 13, 14, 15, 16, 17, 18, 21, 22, 24 and 27. A few remarks about the instrumental selection:

- Instrumentals are three pieces by Bach and two by Beethoven.
- The selection includes a variety of musical forms.
- The timbre is also varied, from a string quartet to a symphony orchestra, jazz band or percussion.

What's your opinion about these selection? Free response.