

# Music and astronomy. III. Rock and astronomy under one sky

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**Abstract.** For its 100th anniversary in 2019, the International Astronomical Union selected 22 special projects worldwide. “Rock and astronomy under one sky” (*Rock y astronomía bajo el cielo*) was one of them. On the night of 10 May 2019, in the esplanade in front of the Planetario de Madrid, we organised an astro-musical event, free and for all audiences. “Rock and astronomy under one sky” consisted of an outreach talk accompanied by music, entitled “From Mozart to Lagartija Nick, through Bowie and Vangelis: a musical voyage to Astronomy”; official presentations by the sponsors and organisers; and a concert by professional rock musicians in famous Spanish indie bands (Lagartija Nick, Lori Meyers). The artists played only themes connected to astronomy and space sciences with lyrics in Spanish and English, mostly composed by them (including a new theme dedicated to IAU100), but there were also covers. During the concert, we projected videos and images related to the music themes on the Planetario dome, while on the other side of the esplanade, the public could also look with portable telescopes at the setting Moon and planets, stars and bright deep sky objects. The legacy video is available at <https://bit.ly/31xutgh>.



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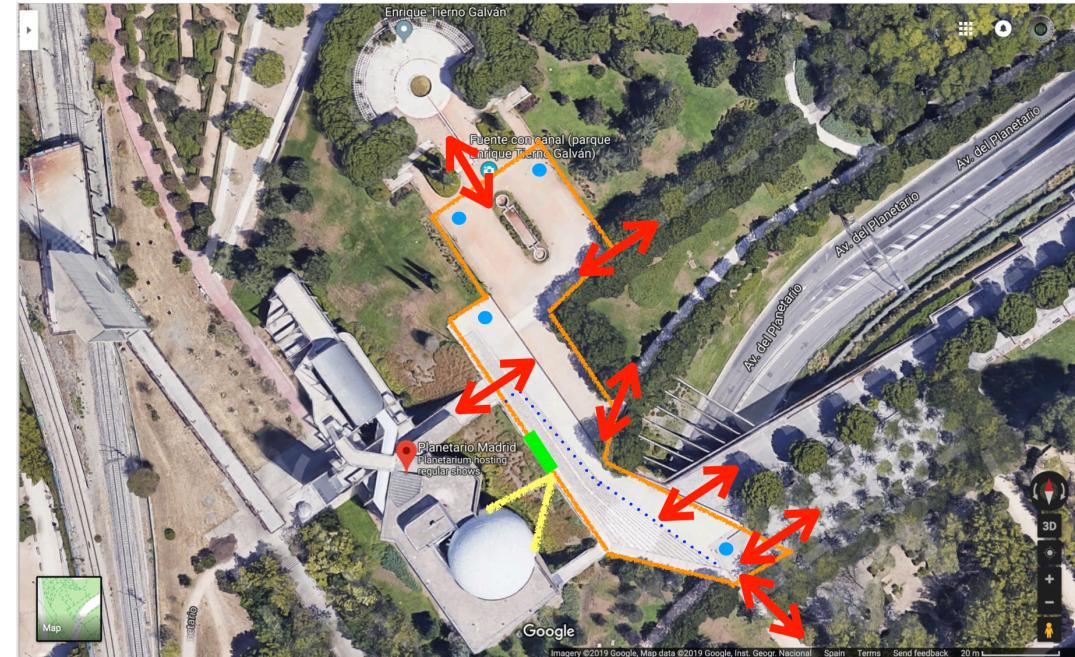


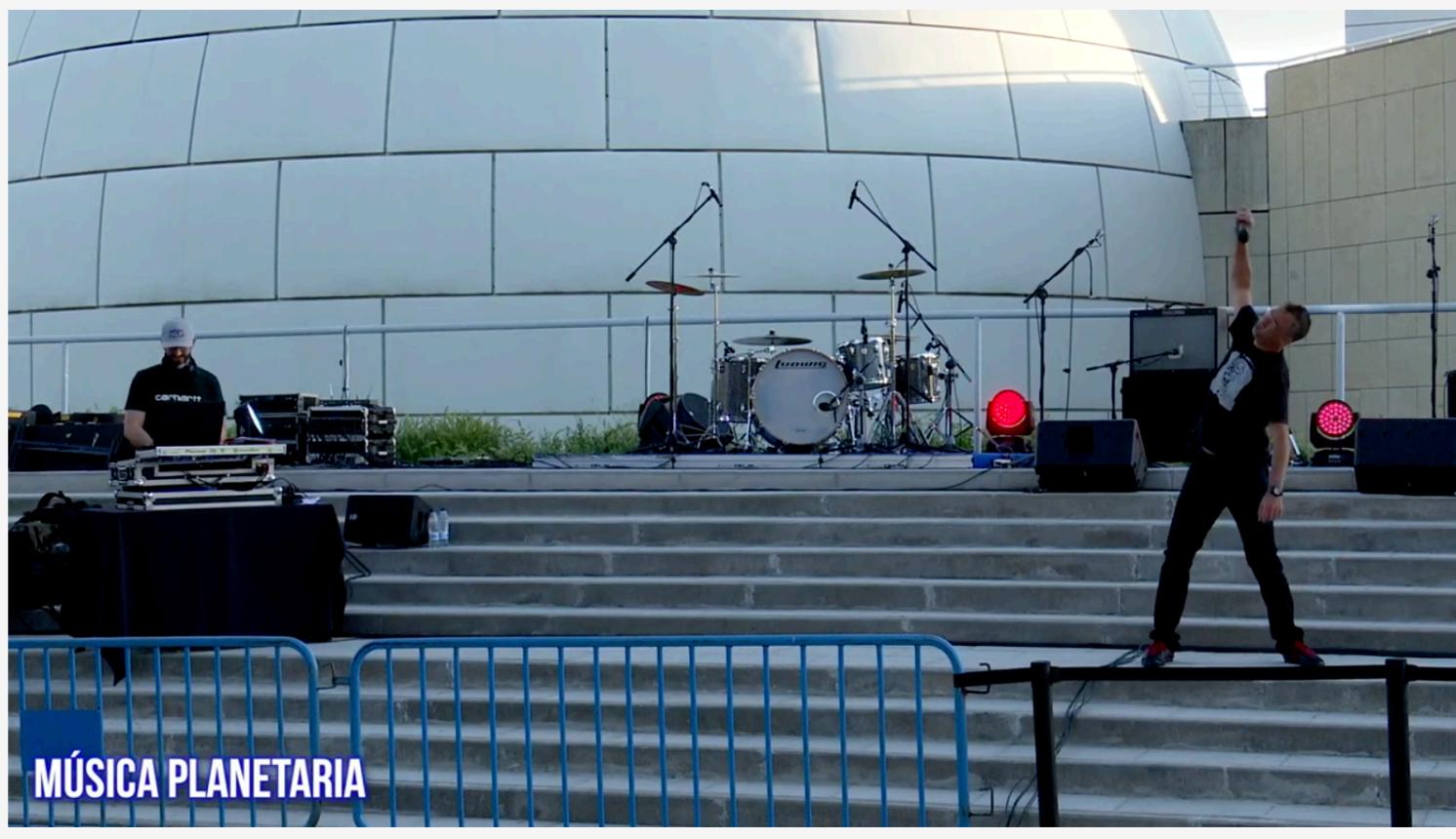
• **unitedsoundsofcosmos**. It is Caballero's personal project for communicating astronomy for the public with music in general and rock in particular. In the last decade in a half, he has been a collaborator for *Longitud de Onda*, the morning program of Radio Clásica on music, science and new technologies; helped creating two LPs and one EP *Multiverso* albums with Antonio Arias and composing soundtracks for CARMENES at Calar Alto (in the images), QUIJOTE at Observatorio del Teide, ESA ESTRACK, *Gaia DR1* and *Cassini-Huygens* together with Antonio Arias and JJ Machuca, and for NASA Voyager 2 with Fario; organised 18 “astro-concerts” with artists of Lagartija Nick, Soleá Morente, Fario, Pájaro Jack, Los Planetas and Lori Meyers; and wrote monthly on examples of musical astronomy and astronomical music for the Spanish magazine *Astronomía*.

**Sponsors and organisers.** “Rock and astronomy under one sky” was sponsored by the International Astronomical Union, European Space Agency and European Space Astronomy Centre Faculty, Sociedad Española de Astronomía, Centro de Astrobiología and Capsule-Tyrell-Weyland-Yutani Corp., and organised by the Planetario de Madrid and Centro de Astrobiología. The Agrupación Astronómica Madrid Sur provided with portable telescopes and staff for the solar and night observations. The three-hour event was part of the Ayuntamiento de Madrid’s Fiestas de San Isidro schedule. It attracted almost two thousand people and key live appearances in the media (Televisión Española, Radio Nacional de España).



INTERNATIONAL  
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**1919 - 2019**





## ***Desde Mozart a Lagartija Nick, pasando por Bowie y Vangelis: un viaje musical por la astronomía***

(Caballero & Benito). Commented astro-music from: Voyager Golden Record (Music of the Spheres), J. S. Bach (2. Brandenburgisches Konzert, BWV 1047), L. van Beethoven (5. Sinfonie, Op. 67), W. A. Mozart (Die Zauberflöte, K620), Georgian S.S.R chorus (Tchakrulo), Mariachi México (El Cascabel), C. Berry (Johnny B. Good), Los Planetas (Segundo premio), El Planeta (Seguiriya), W. A. Mozart (41. Sinfonie "Jupiter", K 551), G. Holst (The Planets: Mars, Jupiter), ESA Huygens (Radar echos from Titan's surface), R. Strauss (Also sprach Zarathustra, Op. 30), J. Strauss II (An der schönen, blauen Donau), G. Lygeti (Atmosphères), M. Giacchino (Star Trek Theme), J. Williams (Star Wars: Main Theme, Cantina Band, Imperial March), H. Zimmer (Interstellar: Stay), L. Armstrong (Melancholy Blues), M. Davies (Orbits), J. Coltrane (A Love Supreme, Equinox)...



... Enrique Morente (La estrella), Los Evangelistas (La estrella), D. Bowie (Space Oddity, Starman, Blackstar), The Beatles (Across The Universe, Here Comes The Sun), Pink Floyd (Brain Damage, Astronomy Domine), The Police (Walking on the Moon), Queen (I Want to Break Free), B. May (New Horizons), F. Battiato (No time, no space), Kraftwerk (Radiosterne), Vangelis (Albedo 0.39, Sword of Orion, Pulstar, Heaven and Hell 3rd Movement), M. Oldfield (Saved by a Bell, Ascension), T. Reznor & A. Ross (JUNO), Metallica (Astronomy, Orion), Placebo (The Bitter End), Muse (Supermassive Black Hole, Exogenesis: Symphony, Knights of Cydonia), Los Planetas (De viaje), Lagartija Nick (Laika), Lori Meyers (Hubble Telescope), M. Rodés (Fui a buscar el Sol), Fario (Viajera 2 Extroversión), Jamiroquai (Cosmic Girl), Beastie Boys (Intergalactic).

7 min summary video at: <https://www.youtube.com/watch?v=x7jGxGQzika>



**Astroconcert.** Antonio Arias (voice, bass guitar), Juan Codorníu (electric guitar), David Fernández (drums) and JJ Machuca (keyboards) played *Desertización*, *Una alfa y tres omegas*, *La física de la inmortalidad*, *Infinito*, *Astronomy Domine* (a cover of The Piper at the Gates of Dawn, Pink Floyd), *Hello Earth* and *Oceans* (with lyrics of Apollo astronaut Al Worden), *Mar de la Tranquilidad* (of Lagartija Nick, on selenography), *El ordenador simula el nacimiento de las estrellas* (Computer simulates the formation of stars), *Desde una estrella enana* (From a dwarf star), *Multiverso*, *Génesis* (on the Big Bang), *La derrota de Bill Gates* (on the effect of a solar coronal mass ejection on the Earth), *QUI Joint Tenerife* (on the polarisation of the cosmic microwave background radiation), *Soleá de la ciencia*, *CARMENES* (the exoplanet hunter), *Celeste* (of Val del Omar, Lagartija Nick) [from Antonio Arias' Multiverso 1, 2, 3 and 4 except when indicated].

See full legacy video at <https://bit.ly/31xutgh>