for amplified contrabass clarinet & modular synthesizer + tape

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Notes for performance

PSR B1957+20 is an eclipsing "black widow" binary pulsar located in the Milky Way — a rapidly spinning neutron star - or pulsar - , with very tight orbits, slowly consuming its companion star, the later being literally evaporated by the powerful outflows of high-energy particles. The cloud of material vaporized from this companion absorbs most of the radio wave emissions from the pulsar and makes its signal almost invisible to radio telescopes — in fact, B1957+20 was discovered by the Chandra X-ray Spacecraft-Observatory in 1988.

Form

BURSTS — short blocs of electromagnetic radiations / searching for radio waves
ORBIT (a) — pulsar & companion circling around each other / dense tail of material [low pass]
ECLIPSE — radio emissions of the pulsar disappear / outflowing material hiding the pulsar
LOW FREQUENCY — variations in density & dispersion / infra-vibrations
ORBIT (b) — pulsar & companion circling around each other / dense tail of material [inharmonic]
OUTFLOWS — companion is being destroyed by the strong winds of high-energy particles

Abbreviations

CBCL = Contrabass Clarinet MS = Modular Synthesizer

General Comments

- the score must be taken as a point of departure
- notation and live electronics should stay flexible
- $\boldsymbol{\cdot}$ interact & be creative with the fixed media part
- the piece <u>must</u> be played with a 2.1 sound system

Transposition

The CBCL sounds in 6 two octaves and a major second lower than written, in 9: one octave and a major lower second lower than written.



Artist illustration of a black widow millisecond pulsar and its low-mass companion. Due to the close proximity to the pulsar's powerful radiation, the companion is slowly evaporated away. Credit: Guizhou Normal University.



Looking down from above the orbital plane on a pulsar system - as the companion orbits the pulsar, the radiation from the pulsar slowly evaporates it, leaving behind a cometary tail of material in orbit. Credit: NASA Goddard Spaceflight Centre/C. deWilde.

Tech Rider

Contrabass Clarinet

Leblanc Bb contrabass clarinet w/ keywork to low C (paperclip model) Hypercardiod DPA & Hypercardiod Condenser + 2x short XLR Cable + Microphone Stand Mini Mixer [i.e. Mackie 402VLZ4] w/ Power Cable Red Panda - Particles v2 + [1] short 2x 6,3mm TS Jack (m) to 6,3mm TRS Jack (m) + [O] short 6,3mm TS Jack cable + Expression Pedal [i.e. Boss FV-500-H] w/ 6,3 mm TRS Jack (m)

Power Strip

Electronics

Modular Synthesizer

+ Make Noise - Mimeophon, Noise Engineering - Desmodus Versio, etc...
Small Mixer [i.e. Mackie 802VLZ4] w/ Power Cable
2.1 Soundsystem (Loudspeakers L+R & Subwoofer)
Table ca. L 100 cm - W 60 cm - H 70 cm
Power Strip

Signal Chain from CBCL to Loudspeakers

- > Hypercardiod DPA microphone attached at the bell of the instrument
- > Hypercardiod microphone pointed in the direction of left hand & performer's mouth
- >> Mixer (very small, 2 XLR Inputs, w/ +48v) [i.e. Mackie 402VLZ4)
- >>> pedal chain [Red Panda Particle v.2 + Boss RV-6]
- >>>> Befaco Instrument Interface
- >>>>> Make Noise Mimeophon > Noise Engineering Desmodus Versio >>> Befaco Out
- >>>>> Mixer (small, x2 Stereo 6,3 mm Jack Inputs) [i.e. Mackie 802 VLZ4]
- >>>>>> 2.1. Soundsystem [Subwoofer > x2 Loudspeakers]

Set-Up w/ 2.1 Soundsystem



Dynamic

The performer is asked to take into consideration that the written dynamics aren't absolute. Rather, it's a relative dynamic in relation to sonic events of the electronics. Therefore the musician is asked not only to perform the part - but to listen & react actively to the electronics in order to merge into a unitary sound-world.

Notation

- "woodblock" slap (ppp <> f)
 - = dry percussive sound w/ variations in sound color (pitch & timbre)
- ★ keyclicks([ppp] <> [ff])
 - = dry percussive sound w/ variations in sound color (pitch & timbre)
- ✓ air sound in cresc. ([ppp] <> [ff])
 - = 'windlike' w/ variations in sound color (pitch & timbre)
- normal tone or fingered multiphonic taken from Richard Haynes'
 'Introduction to multiphonics for Leblanc contralto & contrabass clarinets'
- \diamond

spectral multiphonic

PSR B1957+20 (Black Widow) for Hyunjung Kim





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'breathing-like' gesture, pushing forward -, vary the color of the swells w/ $\rm LG$ and $\rm LPF$















