Solarium is a generative patch made as a part of my composition “Investitional Clizmatology” (can be heard/performed simultaneously or separate), dedicated to sixth President of Ukraine Vladimir Zelenski and based on solar spectrum that is processed by four pairs of FFT- and FM-modules, stochastically playing music in "chained" modes generated from the pressure data. The structure of time sequence is identical to the structure of composition - 127 rehearsal marks, each of which corresponds to one day of meteorological observations for Belize, Cyprus, Italy and New Jersey (countries, in whose economic our president is investing foresightly), from the date of launch of the site Pandemic Media Space (pandemic-media-space.com) to the end of that demonic year (27.08.2020-31.12.2020). During first 15 marks the mode and the control parameters changes synchronously every eight measures, the next 14 - every seven, and so on. However, most of parameters do not depends on meteorological indicators, but on graphical submatrices extracted from images - black&white wind map and RGB-ccolor temperature map.

NOTA BENE: *Normally the site engine gives data for last 127 days before request, so you can refresh databases, downloading new data files from site (DATA>[enter country names: Belize, Cyprus, Italy and New Jersey]>Download Data>Download All Data About [country] in TXT-format), then replace all folders in directory Weather.*

The concept of processing sound from graphic matrices was ingeniously described by Slovenian composer and media artist Taddej Droljc in his dissertation "Composing with isomorphic audiovisual gestalts" (http://eprints.hud.ac.uk/id/eprint/34924/1/Droljc%20THESIS.pdf). As I think, it is a future of audiovisual art and the main problem in the art in general. But in his paper Droljc write generally about resynthesis, here I propose a simpler but more evident matter - star spectra. It is presented as a one-dimension matrix, at first sight not impressive, but that is the universal language of nature, each substance in the world have its proper profile, his face, expressed by spectra.

Solar spectra was taken from SORCE (Solar Radiation & Climate Experiment, lasp.colorado.edu/home/sorce) - is the project of Colorado University that give access to daily observation data of our star. Normally spectral data changes are not so fast to be noticeable by human, than I decided to make very naive and rough modelling of the far future of our star when he will became a red supergiant - simply by interpolation with Betelgeuse spectra, taken from NASA project SpeX (irtfweb.ifa.hawaii.edu/~spex).

Solarium processes these spectra by two ways: properly as spectra, i.e. by using Fast Fourier Transform method, and as waveform, using FM-synthesis. Hence in left part of module interface you have an access to controls for a spectral (vertical, harmonic) part of sound, in right part - for FM-part (horizontal, rhythmic), in left bottom corner you have two gain sliders for each component and two toggles on/off (you can turn on/off all modules at once on the top right corner of patch window).

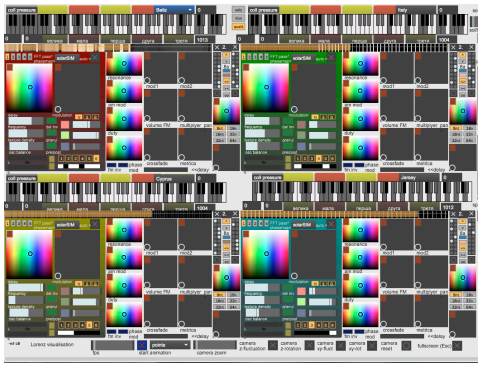
Fragments of spectrum for FFT can be extracted by user or randomly, through the same algorithm of drunk sailor, the phase map and delay distortion map generates by Lorentz attractor, that can be visualised (initial conditions of equation are set by main FFT-modulation parameters - the big black square). All controls can be controlled by user or, if the automatisation parameters are activated, by meteorological data. For example, Wind Degree controls frequency factor for FFT-window, Clouds are responsible for phase map intensity, Weather - for AM parameters combination, and so on. Throughout all musical form will increase FM modulation intensity, also increase a spreading of matrices on weather maps and interpolate spectrum of two our stars (or rather, two faces of one our star).

Installation notes:

Solarium is made in Max/MSP/Jitter, so if you want try it, first you should download that environment from cycling74.com. Then unarchive please a content, go to the folder and start the file Solarium-1.4.maxpat. When the patch will opened, turn on sound by three yellow toggles and

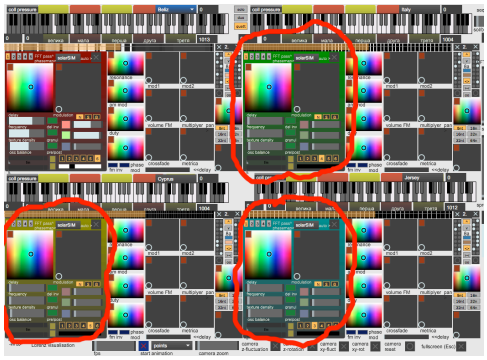
activate all toggles at the automatisation block. Then start a sequence. If you want make a record, first click red button “open”, choose a filename, then activate a record toggle, and a sequence will start and finish automatically. If you want refresh datafiles from Pandemic Media Space, you can replace the subdirectories *[country]-txt-data* or create a new directory anywhere were you want, unpack archives into your folder and simply drag&drop it into red bordered rectangle at top right corner of interface.

IMPORTANT! The patch have a problem with initialization when it start from different directories. A properly loaded patch should look like this:



If you see something like this

or like this



- please, reload the patch.

OR, if nothing not happens, chose another country in menu at top left corner of window: