



FANTASIA APOCALYPTICA (2012–2017)

OCTOBER 11, 2019 AT 7 P.M.

COMPOSED BY DONALD E. KNUTH

PERFORMED BY JAN ROTREKL (ORGAN)

Czech première

Jesuit Church of the Assumption of the Virgin Mary in Brno, Czechia

The concert is organized and held on the occasion of the 25th anniversary of the Faculty of Informatics, Masaryk University

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FANTASIA APOCALYPTICA

A TRANSLATION OF THE GREEK TEXT OF THE REVELATION OF
SAINT JOHN THE DIVINE

Chapter 1: Introduction

Chapter 2: Letters to Ephesus, Smyrna, Pergamum, Thyatira

Chapter 3: Letters to Sardis, Philadelphia, Laodicea

Chapter 4: The heavenly throne

Chapter 5: The scroll and the Lamb

Chapter 6: Four horsemen; open seals

Chapter 7: Saints marching in

Chapter 8: Four trumpets

Chapter 9: Trumpets and woes

Chapter 10: The sweet and sour little scroll

Chapter 11: Seventh trumpet; open temple

Chapter 12: The woman and the dragon

Chapter 13: The blasphemous beast; 666

Chapter 14: God's harvest

Chapter 15: Preparing seven plagues

Chapter 16: Bowls of wrath; Armageddon

Chapter 17: The prostitute

Chapter 18: Babylon is fallen

Chapter 19: Hallelujah! Hallelujah!

Chapter 20: The thousand years

Chapter 21: The new Jerusalem

Chapter 22: The coming Messiah

ABOUT THE ORGANIST

Jan Rotrekl was born in 1986. He obtained his first education in organ playing in Prague under Irena Chřibková. He continued his study in France under Éric Lebrun at the Conservatoire à Rayonnement Régional de Saint-Maur-des-Fossés. From the year 2010 to 2014, he studied in Vienna at the University of Music and Performing Arts in the class of Martin Haselböck. He has completed several masterclasses with e.g., Martin Sander, Luigi Tagliavini, and Pier Damiano Peretti. Besides the Czech Republic, he has given concerts in Slovakia, Germany, Austria, France, Finland, and Russia, as a soloist as well as with other ensembles. His repertoire covers musical literature from the renaissance to the 21st century, with an accent on contemporary music. In recent years he also organizes concerts of early music in the church of St. Bartholomew in Prague, where he is active as an organist.

In parallel with the music, Jan Rotrekl has studied chemistry. In 2012 he obtained a master's degree with honors in physical chemistry at the University of Chemistry and Technology in Prague and this year he earned a Ph.D. in the same field at the Institute of Chemical Process Fundamentals of the Czech Academy of Sciences in Prague.

ABOUT THE INSTRUMENT

The Jesuit church in Brno has a new pipe organ by Hermann Mathis since 2014. The church was built at the turn of the 17th century, but severely damaged in 1944 (when its fine Baroque organ, built by Thomas Schwarz in 1743 was destroyed), then restored in the post-war years, and provided with an interim organ. The new organ bears the name of the English martyr St. Edmund Campion (1540–1581), who joined the Jesuit Order in 1573 and completed his novitiate in Brno. It was tonally and architecturally designed in a deliberately modern style but is oriented in terms of design and proportions on the former Schwarz organ. Its 48 registers are distributed over three manuals and a pedal, and the action is purely mechanical with additional setters (double tracture – electro-mechanical). In addition to accompanying the liturgy, the Edmundus Campianus organ also plays an important role in the musical life of the city: in solo concerts and as a part of large orchestras, as well as graduate concerts and competitions of the Conservatory and the Janáček Academy of Music and Performing Arts. The organ can be customized for each musical performance by presetting many combinations of voices. (For example, *Fantasia Apocalyptica* needs around 300 such presets.) The organist

sequences through those combinations by pushing special buttons, which are located below the keys and above the pedals.

ABOUT THE ARTIST

Duane R. Bibby has been creating substantial drawings ever since making a mural of ducks on Tule Lake, with the help of an overhead projector, as a third-grader in the farming community where he grew up. Some of his first major publications, in *CARtoons* magazine, appeared during his three-year stint in the army. He went on to study art at Arizona State University and ArtCenter College of Design in Los Angeles, but left college to become a freelance artist/designer/illustrator/cartoonist.

He has illustrated numerous books in many genres, including elementary school texts as well as training manuals for factory machines, as well as botanical drawings in *The Herb Quarterly*. He is perhaps best known for the engaging illustrations that he created for *The T_EXbook* (1984) and *The METAFONTbook* (1986) by Donald Knuth, after which other computer scientists began to ask him to illustrate their own works.

Duane and his wife Jeannette Ahlgren (also an artist) live in Fortuna, California, where they love to play with their pets and tinker with automobiles.

ACKNOWLEDGMENTS

Jiří Zlatuška originated the idea of performing Fantasia Apocalyptica in Brno. Don Knuth, Vít Novotný, and Tomáš Szaniszlo control the video screens, keeping them in time with the music, while Slavomír Kvasňovský plays the percussion instruments. Thanks to Vojtěch Suchý, Jan Martin Bejček, Josef Gerbrich, and Petr Sojka for invaluable assistance with concert arrangements, and Pavel Šiler and AV Media company for the video projection.

ABOUT THE COMPOSER

Donald Ervin Knuth is Professor Emeritus of The Art of Computer Programming at Stanford University, where he joined the faculty in 1968. But music has been his lifelong avocation.

His father, Ervin Knuth, was a lifelong educator and organist, having played as a young man at the Chicago World's Fair in 1934. Don studied organ briefly when he was a twelve-year-old piano student; then, he accidentally became a church organist in 1965, when his congregation's regular music

director suddenly became ill. He joined the American Guild of Organists in that year, having fallen in love with the instrument. During sabbatical years, he was subsequently able to take advanced lessons from Mary Krimmel at Westminster Choir College in 1968, and from Scott Turkington at Boston's Church of the Covenant in 1986.

Don and his wife Jill commissioned the firm of Abbott and Sieker to build a pipe organ for their campus home at Stanford. (That 16-rank instrument, dedicated in 1975, is mentioned indirectly in Don's book *Sorting and Searching*, where one of the entries in the index is "Royalties, use of, 407.")

Don is self-taught as a composer, having read many books on the subject since his high school days (especially the classic texts by Piston, Stainer, Schoenberg, and Hindemith), and having played piano transcriptions of hundreds of wonderful classical compositions. He discovered with pleasure that his main life's work, as a writer of books about computer programming, actually has much in common with the writing of music.

ABOUT THE COMPOSITION

The Biblical book of Revelation, also known as Apocalypse (Uncovering), is a mystical work that is filled with symbols. It consists chiefly of a dream that was recorded in the first century A.D. by Saint John the Divine. The dramatic events in this famous dream run the gamut of human emotions, as they highlight crucial aspects of life, death, and spirituality.

During the early 60s, Donald Knuth became fascinated with the ways in which the author of Revelation emphasized many different numbers (2, 3, 3.5, 4, 7, 12, 24, ...) and gave them symbolic significance. Knuth soon began to wonder about the possibility of creating a pleasing musical work that would incorporate Revelation's numbers and other mystical symbols in essentially their original order. In 2011 he noted that such a project "may be crazy, but a 'muse' has been encouraging me to embark upon it for more than 40 years. ... I'm intrigued by the fact that so many artists and writers have been inspired by [Revelation], for nearly 2,000 years by now; thus I can't resist the thought that perhaps I too might be led by these ancient words to create something that might be newly meaningful to people of the 21st century."

The Greek text of Revelation, which contains almost exactly 10,000 words, has therefore been closely followed as the source of this composition. Knuth identified more than 100 principal motifs in that text and assigned a musical

equivalent to each of them. One hears these motifs repeatedly building on each other, as they eventually become familiar.

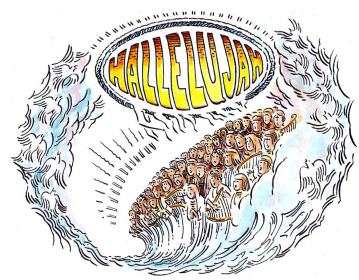
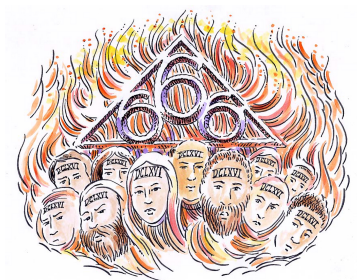
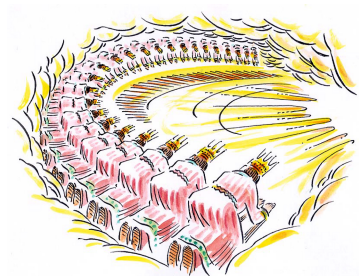
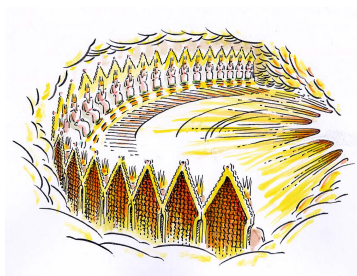
Some of the motifs are melodic; for example, 'God' is the three-note theme 'sol, mi, do'. Some are rhythmic; for example, a double-dotted rhythm represents royalty. Some are harmonic: 'man' is a Tristan chord, 'servant' is a Petroushka chord. Some are musical idioms: 'angel' is an arpeggio, 'grace' is a grace note. Some are musical basics: 'woe' is a blues scale, 'elders' are a chromatic scale, 'lion' is an octatonic scale; 'sweet' and 'sour' are major and minor, 'prophet' is contrary motion, 'sun' is a palindrome, 'gold' is close harmony, 'blood' corresponds to notes that are clotted together. Some come from trigrams of the I Ching: 'earth' is down-down-down, 'heaven' is up-up-up, 'fire' is up-down-up, 'water' is down-up-down. Some come from nature: 'lamb' is a bleating sound, 'horse' is a whinny.

Some motifs are effects attainable only on a pipe organ: 'star' is a Zimbelstern, 'name' is a pedal point; 'open' and 'close' are represented by opening and closing the boxes that surround the pipes.

Some motifs in this translation invoke the styles of great composers: 'seal' alludes to Alain, 'truth' alludes to Bach, 'mighty' alludes to Beethoven, 'voice' alludes to Borodin, 'throne' alludes to Brubeck, 'cloud' alludes to Debussy, 'word' alludes to Franck, 'temple' alludes to Gershwin, 'book' alludes to Hindemith, 'worship' alludes to Messiaen, 'blasphemy' alludes to Schoenberg. The influence of one of the greatest Czechs Antonín Dvořák, whose Symphony No. 9 echoes in the motif of the New Jerusalem, is also significant.

Since the book of Revelation encompasses a huge variety of different events and emotions, no one style can appropriately represent the whole story. Therefore *Fantasia Apocalyptica* is an eclectic mix of many styles: Ancient Greek music; medieval chants; traditional British change ringing; Baroque counterpoint; near-Eastern folk music; shape-note singing; spirituals; calypso; Romantic symphonies, chorales, and combinatorial patterns; atonal music; jazz and Broadway; rock and rap. The music of contemporary ring tones is also present. All of these styles work together as parts of a unified whole, thanks to the versatility of a pipe organ.

Fantasia Apocalyptica pays homage to dozens of choral compositions that have been based on Revelation. Sometimes the settings of the same text by different composers from different eras are found to fit together extremely well.



Duane R. Bibby



“The eternal silence of these infinite spaces frightens me.”
Blaise Pascal (Pensées)

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