



FANTASIA APOCALYPTICA

JANUARY 10, 2018

COMPOSED 2012-2017 BY DONALD E. KNUTH

PERFORMED BY JAN OVERDUIN

WORLD PREMIÈRE AT STUDIO ACUSTICUM

AND LULEÅ UNIVERSITY OF TECHNOLOGY

ON THE OCCASION OF THE COMPOSER'S 80TH BIRTHDAY

PITEÅ, SWEDEN



WELCOME AND HYMN SING

Now the Silence by Carl Flentge Schalk (1929–), Jaroslav Jan Vajda (1919–2008)

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 Overduin earned the Master of Music degree in organ at the University of Western Ontario, studying with Peter Hurford. After further studies with Marie-Claire Alain and Jean Langlais, he can proudly claim to be a student of J. S. Bach, via the chain Langlais–Dupré–Guilmant–Lemmens–Hesse–Rinck–Kittel–Bach.

He won the Healey Willan Prize in 1963; the Festival of Flanders International Organ Competition in Belgium (1970), finals; and he shared the main prize, finals in improvisation, and the audience prize at the St. Alban's International Festival (1978). He has given numerous concerts throughout the world, including more than 15 European tours and one in Taiwan. He recorded an album of Baroque organ music on the historic Riepp organ in Ottobeuren, Germany; with Erik Schultz he has also recorded eight albums of music for organ and trumpet.

Overduin has published many technical and expository articles, in addition to his books *Making Music: Improvisation for Organists* (1998) and *Johann Sebastian Bach's Die Kunst der Fuge* (2001). He has also been active as a choral conductor, having founded the Niagara Chamber Choir, and conducted the Menno Singers and the Mennonite Mass Choir for many years.

He retired as Chair of the Organ and Church Music Department at Wilfrid Laurier University in Waterloo, Ontario, in 2003, having served there since 1978. He retired in 2006 as Director of Music at First United Church, Waterloo, where he had supervised the installation of a 44-stop mechanical action organ built by Gabriel Kney. In 2005 he received the Lifetime Achievement award from AAWR (Arts Awards Waterloo Region).

Jan and Margaret are the parents of five children, and grandparents of five boys and four girls. They look forward eagerly to celebrating their 55th wedding anniversary later this year.

ABOUT THE INSTRUMENT

Organ Acusticum, inaugurated in 2012, is the largest of many magnificent instruments crafted by master organbuilder Gerald Woehl of Marburg, Germany. Often called the “organ of the future (zukünftige Orgel),” it was specifically designed to be ideal for 21st-century music as well as for the traditional repertoire from all of the classic traditions. Woehl, who founded his Orgelbauwerkstatt in 1966, has had considerable experience with organs in both French and German styles. To play this instrument, with its 91 stops and with 208 toggle switches at the console, is like having two or three world-class organs simultaneously at one's toes and fingertips.

Woehl's instrument comprises 6,342 pipes attached to fifteen windchests, deployed in six divisions: (1) The Hauptwerk, controlled by the lowest of four keyboards, occupies the front and center of the visible pipework. (2) The Positiv, controlled by the second keyboard, features timbres of middle German provenance. It sits

above the Hauptwerk and is enclosed, so that its pipes can be heard either at full volume or subdued, or anything in between. (3) The Récit, controlled by the third keyboard, features French sonorities. It too is enclosed, and sits behind the Hauptwerk. (4) The Solo, controlled by the top keyboard, is partially enclosed and partially visible in the façade. It includes percussion effects as well as pipes. (5) The Cornetwerk, which adds harmonics, is incorporated appropriately within the pipes that belong to all four keyboards. (6) The Pedalwerk, at the left and right, contains the largest pipes, which produce the lowest notes, and is controlled by the pedalboard at the organist's feet.

The longest pipe (32 feet tall) is part of the Groß Posaune rank in the Pedalwerk; the note that it plays is four octaves below middle C. The shortest pipe (1/3 inch tall) is part of the None rank in the Récit; the note that it plays is more than six octaves above middle C, hence only young people (and dogs) can hear it.

The organ can be customized for each concert by presetting many combinations of voices. (For example, *Fantasia Apocalyptica* needs about 600 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 about 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 at Art Center 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

Thanks to the LTU professor of organ, Gary Verkade, for invaluable assistance with concert arrangements, and to Lars Johansson for his technical and logistical expertise. Kari Engesnes, Don Knuth, and Gary Verkade controlled the video screens, keeping them in time with the music. Thanks also to Jim Puls for leading the hymn singing.

ABOUT THE COMPOSER

Donald E. 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 17-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.")

The presence of an organ at home led naturally to an interest in music that was written for two players at the same organ. Don began to correspond with Jan Overduin in the 1990s, after having read Jan's article about organ duets in the AGO magazine. In October of 2000, when Don had been invited to give lectures at the University of Waterloo, he and Jan gave a joint organ recital that featured a dozen works written for four hands and three or four feet.

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 2000 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.

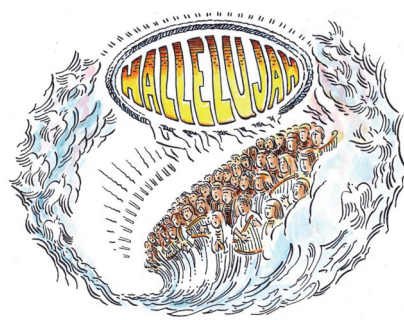
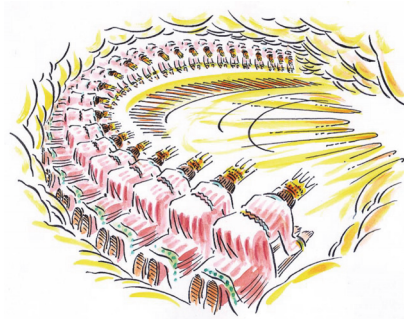
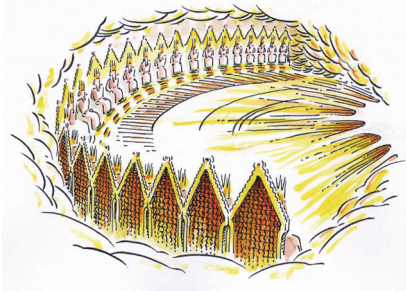
Some of the motifs are melodic; for example, 'God' is the three-note theme 'sol, mi, do'. Some are rhythmic; for example, a double-dotted rhythm represents royalty. Some are harmonic: 'man' is a Tristan chord, 'servant' is a Petroushka chord. Some are musical idioms: 'angel' is an arpeggio, 'grace' is 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.

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; changeringing; 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 also 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
