Third physics opera for Philip Glass

Kepler

Landestheater Linz, Austria

Until 9 January 2010. For performance dates, see go.nature.com/nTDSYn.

As a baritone in the role of astronomer Johannes Kepler sings of his thought processes when discovering that the orbits of planets are ellipses rather than egg-shaped, Philip Glass's music becomes almost lyrical. The renowned minimalist composer uses a rather tuneful set of pieces for the hybrid of science and the arts that is his latest opera, *Kepler*.

The opera was commissioned as part of the Linz 2009 European Capital of Culture celebrations by the Landestheater in Linz, Austria, the city where Kepler laboured for many years after moving from Prague in 1612, where he had succeeded Tycho Brahe as court mathematician. We saw the concert version, shown some two months after the opera's Austrian premiere, as part of the Next Wave Festival at New York's Brooklyn Academy of Music.

As Glass explained to us in a personal interview, the opera's commissioning gave him the Austrian librettist Martina Winkel. To provide historical context for Kepler's stay in Linz, she combined phrases from Kepler's extensive writings with jarring lines of poetry written by the seventeenth-century German poet Andreas Gryphius. These chart the death and destruction of the Thirty Years War, which was being waged in Germanic lands at the time.

This is Glass's third opera about a physicist, following on from *Einstein on the Beach* (1976) and *Galileo Galilei* (2002). Here the composer decided not to present Kepler's life but to focus instead on his ideas. As he noted in a public discussion with US physicist Michio Kaku before one performance, Kepler's thoughts advanced from his early geometrical ideas to the less easily visualized calculations that brought his success. That said, the libretto tosses around the term 'equation' perhaps too glibly given what Kepler actually did.

The opera begins with a brief, rousing overture and runs for 115 minutes without an intermission. Kepler's epitaph, "Once I measured the heavens/Now I measure earthly shadows," begins and ends the work. In the concert version, four basses and a dozen cellos provide the only warmth of colour against an otherwise black stage. The energetic music thrusts the action forward as the 38-member chorus, six anonymous soloists and Kepler — sung by Martin Achraimer — perform their parts. Glass has resisted the temptation to

Baritone Martin Achraimer in the role of Johannes Kepler, on stage in Linz, Austria.

assign the six anonymous soloists to each of the six planets known in Kepler's time, or to try to translate the planetary orbital periods directly into the musical notes or harmonies that they imply. Instead, swelling arpeggios in the extensive string section, together with varied use of percussion from a maraca to gongs and drums, make for a stimulating and engrossing work.

Kepler's groundbreaking theory of elliptical orbits from 1605 (published in 1609 in his book *Astronomia Nova*; see page 725) appears only in the last half-hour of the performance. The harmonic law that he found ten years later is not included. Neither are the specific planetary calculations of his Rudolphine Tables or their verification through the observation of a transit of Mercury. We wished that astronomers or historians of astronomy had been consulted at an early stage of writing and been given an opportunity to make suggestions.

Perhaps Glass's opera will succeed in introducing Kepler and his theories on the Solar System to a wider public. Unlike Galileo his contemporary, Kepler is not well known among non-scientists, so the more information

about him that seeps into general culture, the better. After all, who would know today about the malfeasance of Simon Boccanegra as the fourteenth-century Doge of Genoa were it not for his immortalization in Verdi's opera?

It is a shame that celebrations for the International Year of Astronomy have not included

a revival of Glass's *Galileo Galilei* on any major stage, even though 2009 marks the 400th anniversary of Galileo's first recorded use of a

telescope to survey the heavens. Neither has Paul Hindemith's 1957 opera about Kepler, *Die Harmonie der Welt*, had an airing. Kepler fans such as the International Astronomical Union's new working group about Kepler, who feel that the proper 400th anniversary to note this year is that of the publication of *Astronomia Nova*, will be pleased that the occasion is honoured with this opera in his name. ■

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