

Geoffrey Gordon, Composer
Shock Diamonds (2008; world premiere)

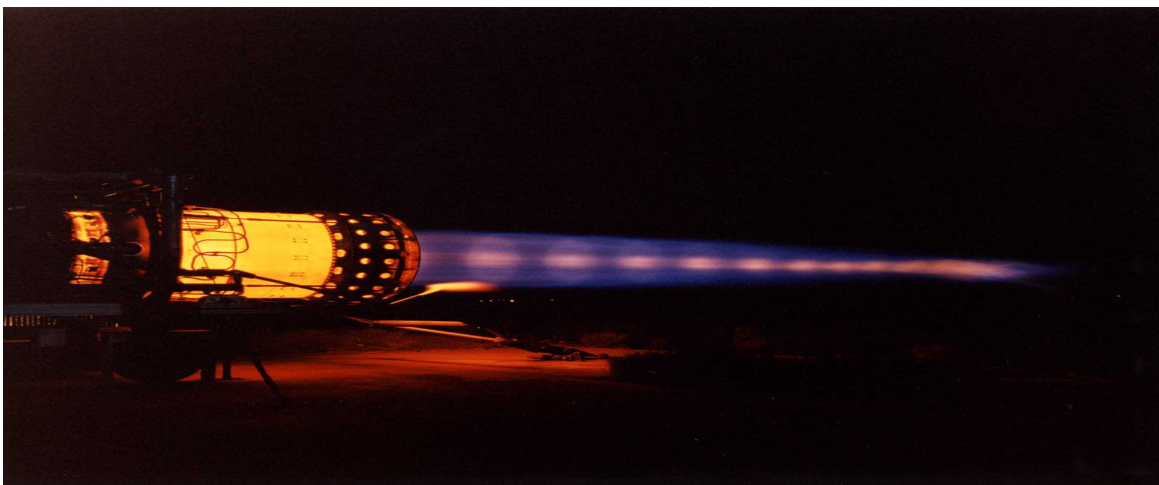
Shock diamonds are a formation of shock waves in the exhaust plume of an aerospace propulsion system, such as a supersonic jet or rocket engine. It is formed when the supersonic exhaust from a nozzle is slightly over- or under-expanded, meaning that the pressure of the gases exiting the nozzle is different from the ambient pressure. A complex flow field results as the shock wave is reflected at the free jet boundary and a visible, gleaming, diamond-shaped pattern is formed which gives the shock diamond its name. Shock diamonds can appear in any supersonic exhaust. The resulting image is a natural phenomenon of startling beauty. Perhaps the most famous photo ever taken of shock diamonds was the picture of Chuck Yeager's X-1 rocket-jet just moments after he reached Mach 1.
—GG

Geoffrey Gordon began his composing life as a songwriter, a genre that ideally requires some sense of synergy of music with subject matter. He has also been a working opera singer, so his relationship to words with music is a rich one, informed by the particular experience of expressing text. It's no surprise, then, that literature has been a strong influence on his work, resulting in settings of Robert Browning, Wallace Stevens, and Ted Hughes. The title of his instrumental *wrecked angels...* references a Yeats poem, while Federico Garcia Lorca is at the root of his *Lorca Musica per cello solo* and the ballet *The House of Bernarda Alba*. In addition to literature, many of his pieces have found impetus in the world of visual arts, or more generally speaking the "seen" world, as evident in the ensemble works *Caravaggio*, *Cool RED Cool* (after an Andy Warhol self-portrait), *Bright White Smooth*, and *Stanza della Segnatura* (after Rafael's frescoes). Gordon also brings specific stylistic materials into his music, including jazz (the hard-bop variety especially) and ancient music. (*Stanza* even goes so far as to employ recorders, harpsichord, and viola da gamba.) Many of his works have a peculiarly tactile quality not unlike that of Varèse's music.

The composer's *lux solis aeterna* combines the literary/religious (the concept of eternal light) with the physical world (the physical properties of light, especially the sun's rays) as its poetic jumping-off points. Gordon's new work *Shock Diamonds*, composed at about the same time, takes a similar approach.

Given this evocative title and Gordon's picturesque description, the listener's prepared imagination might make some of the same kinds of connections that the composer must have made when he first came across this phenomenon: the image of the evenly spaced exhaust "pulses" evoking the metrical pulse of beat or measure, colors and shades of the image suggesting choices of instruments and their combinations, perhaps even the energy of a supersonic jet exhaust linking with consonance or dissonance of harmony (for example). In fact we do find a kind of surging buildup of energy and relaxation throughout the piece, among other things, but the beauty is in the details, which rely solely on the composer's own taste and sensibility. Gordon's orchestration is bright, energetic, brilliant, and virtuosic both for the individual instruments and as a feat of ensemble blend and flow. Held pitches vie with quickly repeated notes in ratcheting up the power of a given moment; quick scalar or arpeggiated flights glint in the larger texture. Although there is propulsion, motion, dynamism, the idea of a narrative is suspended here: what we experience is necessarily more akin to a physical event that has its own inner, pulsing life.

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Two J58s powered the SR-71 Blackbird. Individually, they have more horsepower than the Queen Mary. On a typical flight at Mach 3.2 and 80,000 feet, two engines would burn in excess of 100,000 pounds of fuel in a little over one hour. Note the shock diamonds in the exhaust plume.