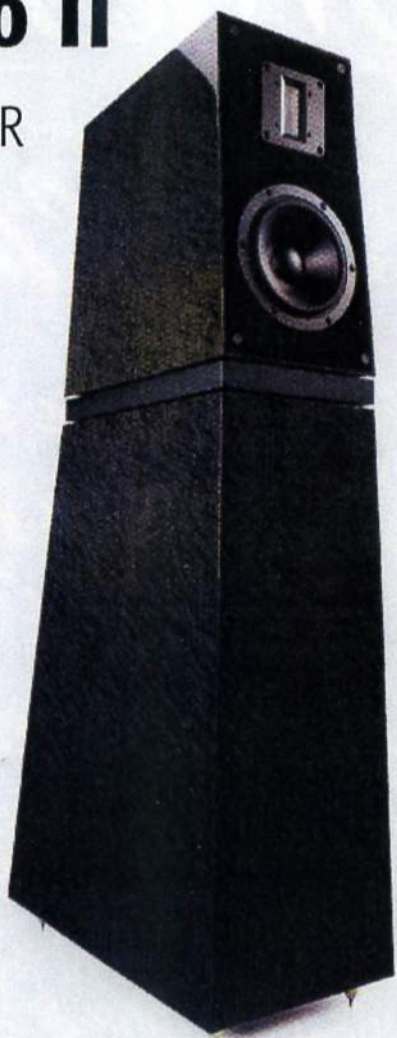


# Verity Audio Sarastro II

FRED KAPLAN

LOUDSPEAKER



Verity Audio Sarastro II loudspeaker

**DESCRIPTION** Three-way, dual-enclosure, floorstanding loudspeaker. Drive-units: 2"-tall aluminum-ribbon tweeter, 6" doped polypropylene-cone midrange, 11" polypropylene-cone woofer. Cross-over frequencies: 150Hz, 5.5kHz. Frequency range: 25Hz-60kHz. Sensitivity: 93dB/2.83V/m. Normal impedance: 8 ohms nominal, 4 ohms minimal.

**DIMENSIONS** 47.5" (1210mm) H by 14" (350mm) W by 20" (505mm) D. Weight: 150 lbs (68kg).

**FINISHES** Italian high-gloss piano-black lacquer; makore, high-gloss silver, quilted big-leaf maple available at extra cost.

**SERIAL NUMBERS OF UNITS**

**REVIEWED** SM 1197, SM 1198.

**PRICE** \$39,995/pair. Approximate number of dealers: 14 of 22.

**MANUFACTURER** Verity Audio, Inc., 1005 Saint-Jean-Baptiste Avenue, Suite 150, Quebec, Quebec G2E 5L1, Canada. Tel: (418) 682-9940. Fax: (418) 682-8644.

Web: [www.verityaudio.com](http://www.verityaudio.com).

US distributor: Tempo Sales & Marketing, P.O. Box 541443, Waltham, MA 02454.

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I've been listening with great pleasure to Verity Audio's Parsifal Ovation loudspeakers the past few years, so I was intrigued to hear the company's step-up model, the Sarastro II. At 150 lbs each and \$39,995/pair, the Sarastro II weighs and costs nearly twice as much as the Ovation. Would it *sound* twice as good?

Though bigger than the Parsifal in every way, the Sarastro II still cuts a relatively trim profile, unless you view it from the side. In that case, the rear of the woofer cabinet slopes out like Darth Vader's gown to accommodate its 11" rear-firing polypropylene driver with its 4" high-power motor. Atop this sits, as in most of Verity's other models, a smaller enclosure, this one containing a 6" polypropylene midrange cone and a tweeter featuring a 2" tall aluminum ribbon. The upper enclosure is separated from the woofer cabinet not by cones, as in many two-story speakers, but rather by a 1/4"-thick plate of damped aluminum, to keep low-frequency rumbles from passing between the cabinets. This plate is reinforced on top and bottom with pads of sticky Sorbothane, to damp vibrations in the mid- to high frequencies.

The cabinets themselves, made of 1"-thick MDF, are very rigid, as are their extensive layers of internal bracing, and are coated with polyester lacquer in a piano-black finish (also available, at extra prices are finishes of high-gloss silver, makore, or quilted big-leaf

maple). The assembly is coupled to the floor by adjustable, tight-locking spikes of solid brass and stainless steel.

The woofer and midrange drivers are custom-built by the Danish firm Audio Technology, but the Sarastro's design and the philosophy behind it come from Verity's proprietors, Bruno Bouchard and Julien Pelchat, music-loving Quebecois engineers who have spent much of their time the past two decades doing research and development into loud-speaker behavior.

The Sarastro II's midrange driver uses an underhung voice-coil—*ie*, a coil that's shorter than the magnet—which is said to maximize linearity. A copper Faraday ring on the coil's formers keeps the magnetic field focused in the gap containing the voice-coil, to prevent variations in the signal from producing variations in the field's intensity. Keeping this driver under control is a delicate task, as it covers an unusually wide bandwidth, from 150Hz to 5.5kHz. The idea is, first, to keep the music's midrange as smooth as

possible, and second, to free the ribbon tweeter from the burden of reproducing fundamental tones (the highest note on a piano sings at about 4.2kHz) and letting it do what it does best: emit high frequencies, which it does across six octaves, all the way up to a claimed 60kHz.

both sets of crossovers, the bracing and air flow inside both cabinets, and all the internal wiring (which is now solid silver with OFC conductors suspended in a Dual Micro Mono-Filament design).

But it's the woofer—11" in diameter, weighing about 35 lbs, with an under-

## IT'S THE SPEAKER'S NEW TWEETER THAT LED VERITY TO UPGRADE THE ORIGINAL SARASTRO.

It's the speaker's new tweeter that led Verity to upgrade the original Sarastro (which Michael Fremer reviewed in the March 2005 *Stereophile*, Vol.28 No.3). The older version was also a ribbon design, but the tweeter in the II is designed and manufactured by Verity. It incorporates a reworked magnet, a wider ribbon element, a suspension that handles power more efficiently, and a redesigned front plate better to match the dispersion of the midrange driver. However, all of these changes required adjustments to

hung 4" voice-coil and a 4" flared port of aluminum—that is the most controversial and potentially problematic element of the Sarastro II. It's rear-mounted. (Verity's smaller Parsifal lets you turn the woofer cabinet in either direction, to fire forward or back, but there's no such flexibility with the Sarastro.) Most speaker designers try to minimize, or simply ignore, the effect of room reflections. But Bouchard and Pelchat have found that almost all rooms boost bass to some degree, so the Sarastro is *designed* to exploit these

## MEASUREMENTS

As Fred Kaplan explains, the primary difference between the Sarastro II and the original Sarastro (reviewed by Michael Fremer in March 2005), is the upgraded tweeter and associated changes to the crossover. In many respects, the new loudspeaker measured very similarly to the earlier version—you can find my measurements of the Sarastro I at [www.stereophile.com/floorloudspeakers/305verity/index5.html](http://www.stereophile.com/floorloudspeakers/305verity/index5.html).

My B-weighted estimate of the Verity's voltage sensitivity on its tweeter axis was identical to that of the Mk.I, at 92.5dB(B)/2.83V/m, which is usefully higher than average. Its impedance (fig.1) is also very similar to that of the original Sarastro, staying above 6 ohms for much of the audioband. The minimum value is 3 ohms at 8kHz, though the electrical phase angle is not quite as severe in the mid-treble as the Mk.I's.

The vibrational behavior of the two enclosures was also similar to the original speaker's. The back panel of the head unit was the liveliest, with fairly strong modes at 430Hz and 512Hz, but as this panel faces away from the listener, the audible effect should be minimal. The front panel of the bass unit had a low-level mode apparent at 310Hz. FK didn't comment on any midrange congestion that might have resulted from this behavior.

Fig.2 shows the responses of the midrange unit (black trace), head-unit port (blue), woofer (red), and bass-unit port (green). The midrange unit has a minimum-motion notch in its output at 54Hz; the head-unit's port actually peaks higher in frequency, in the region where the midrange unit also peaks before starting its rolloff. As with the original Sarastro, the series capacitor in the midrange unit's crossover upsets the driver's reflex tuning. I wonder if this behavior

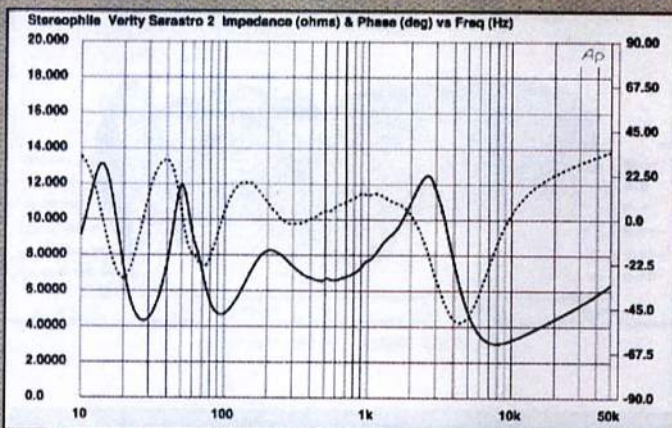


Fig.1 Verity Sarastro II, electrical impedance (solid) and phase (dashed). (2 ohms/vertical div.)

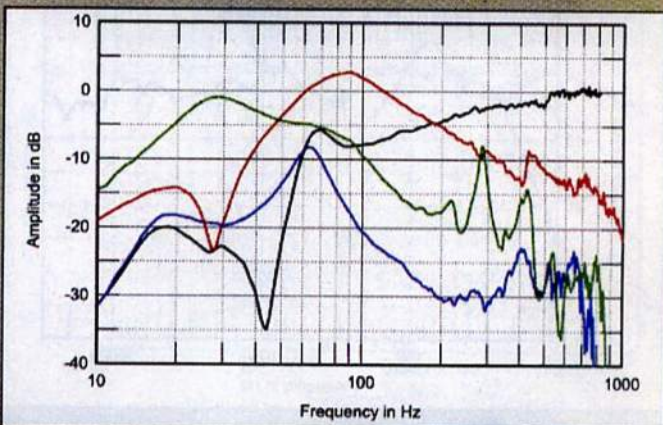


Fig.2 Verity Sarastro II, nearfield responses of midrange unit (black), head-unit port (blue), woofer (red), and bass-unit port (green), scaled in the ratio of the radiating diameters.

effects—"to integrate smoothly and accurately with the room," as Verity's literature states. At the same time, the woofer alignment uses Bessel tuning, which initially rolls off gradually before reaching its eventual 24dB/octave—a gentle curve that supposedly "compensates for" the bass boost that a room provides. With proper speaker placement, Bouchard and Pelchat claim, the Sarastro II's bass can extend flat to below 25Hz.

The key phrase, of course, is "with proper speaker placement." Even more than the Parsifals, which took a whole afternoon of tweaking to set up so they sounded right, the Sarastro IIs were extremely finicky. Place them too close to the front wall, or toe them in too much, and they sounded overripe. Place them too far away from the front wall, or toe them in too slightly, and they sounded thin. I'm talking adjustments of a few inches or a

dozen degrees. Then, of course, you have to balance the bass with considerations of soundstage, imaging, and top-to-bottom coherence. The good news: The Sarastro II's price tag of \$40,000/pair includes a visit to your home by a Verity sales rep or trained dealer, who will set up these heavy, persnickety speakers for you.

**System and Setup**

I drove the Sarastro IIs with Krell's FBI, a 400Wpc integrated amplifier, connected via Nordost CAST interconnects to a Krell Evolution 505 SACD/CD player. Vinyl was spun on VPI's HW-19 Mk.4 turntable with JMW Memorial tonearm and Clearaudio Victory H cartridge. Audible Illusions' Modulus 3a preamplifier was used as a phono section. Analog interconnects and speaker cables were by Nirvana. All electronics but the FBI were plugged into Bybee Technologies' Signa-

ture Power Purifier. Black Diamond Racing Mk.4 Cones were used throughout the system, as were Walker Audio pucks.

Verity's able US sales rep, John Quick, spent a few hours helping me set up the Sarastro IIs. They ended up 4' from the front wall (probably the minimum distance in any room) and toed-in to the point where the drivers were aimed above my shoulders.

It's possible that my listening space—the living room of a Victorian brownstone—might not be ideally suited to the Sarastros. It has 10' high ceilings, it's quite long (20' and connecting to a library and dining room that, together, add another 25'), and there's lots of diffusing asymmetries (an oval window bay, filigree on the ceiling, mahogany trim and shutters, plush furniture, wood bookcases, etc.). But it's also just 12' wide and—even though there's a large

**measurements, continued**

correlates with the "ripeness" FK noted. Certainly, playing the half-step-spaced toneburst track on my *Editor's Choice* CD (Stereophile STPH016-2), I could hear some lower-frequency spurious between 80Hz and 200Hz, though it is fair to note that this signal is very much the worst case for revealing problems like this. The minimum-motion notch in the woofer's output occurs at 27Hz (the center frequency of the saddle in the impedance magnitude trace), with the port's output broadly peaking in the same region. This is a speaker potentially offering extension almost to 20Hz. The port's higher-frequency output, however, has resonant modes apparent at 290Hz and 410Hz, though the fact that this port faces away from the listener will minimize their audibility.

The left-hand side of fig.3 shows how these nearfield responses sum at a nominal farfield measuring point. The coincidence of the peaks in the midrange unit's and head-unit port's outputs results in an excess of mid-bass. Some of this excess will be due to the nearfield measurement technique, but not all of it. This, again, will contribute to

the "ripeness" in the Sarastro II's lower-frequency character. Assessing the lower-midrange behavior of a speaker like this, with multiple radiators active in the same region, is problematic. Even so, it does appear that like its predecessor, the Mk.II Sarastro has suboptimal integration between its midrange and woofer. Higher in frequency, there is the same broad hump at the top of the midrange followed by the same broad depression in the presence region. But the newer ribbon has a somewhat suppressed top octave on-axis compared with the first version.

It is commendable for Verity's design team to use one unit to cover almost the entire range of musical fundamentals, but that means using a drive-unit with a radiating diameter a little too large for optimal treble dispersion. The 6" unit used in the Sarastro becomes quite directional above 2kHz. The Sarastro II's horizontal dispersion (fig.4) lacks energy, therefore, at the top of the midrange unit's passband. On the other hand, the ribbon tweeter puts out more energy to its sides above 20kHz than it does on-axis.

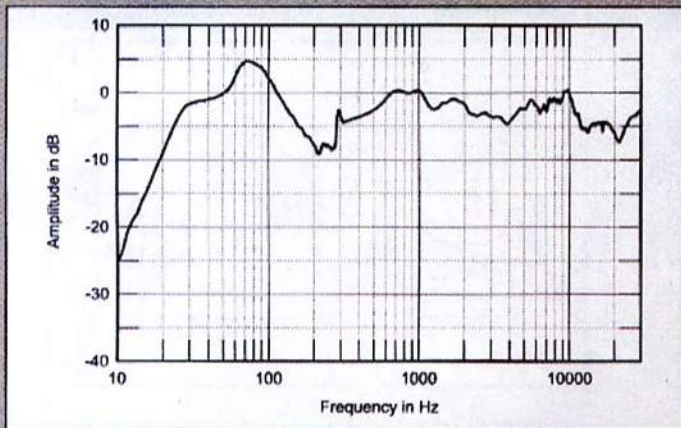


Fig.3 Verity Sarastro II, anechoic response on tweeter axis at 50", averaged across 30° horizontal window and corrected for microphone response, with the complex sum of the nearfield midrange, woofer, and ports responses plotted below 300Hz.

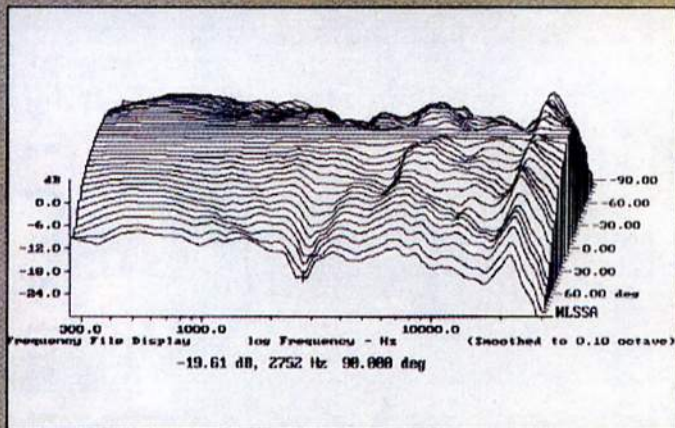


Fig.4 Verity Sarastro II, lateral response family at 50", normalized to response on tweeter axis, from back to front: differences in response 90-5° off axis, reference response, differences in response 5-90° off axis.

opening to a stairway on one side of the room—the woofers would probably welcome another 2–3' feet of breathing space. For this reason, I also auditioned the speakers after they had been set-up by John Quick in John Atkinson's listening room, which measures 24' by 15' with a 7' ceiling. I report briefly on the differences at the end of this review.

**Sound**

Even in my less than ideal space, the Sarastro IIs sounded terrific. Were they twice as good as the Parsifal Ovations? Who can measure such matters? But the Sarastro IIs did take recorded music to a level of refinement, detail, and—what's the phrase . . . oh yes, *high fidelity*—that I hadn't heard in my system before.

The first thing I noticed was how airy and free-flowing the music sounded. When I reviewed the Parsifal Ovations for

*The Absolute Sound* three years ago, I wrote that their 1" soft-dome tweeters sounded so extended that I could have sworn they were ribbons. After hearing the Sarastro II's tweeter, which really is a ribbon, I guess what I'd swear is not to exaggerate from now on. In retrospect, what I found remarkable about the Ovation was, yes,

A brief but pertinent digression: When audiophiles talk about "highs," we're not talking about the higher notes of any particular instrument's range, but rather about harmonic overtones, and the wisps and whispers that distinguish, say, an alto from a tenor sax (even when playing the same pitch), or a violin from

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its extension of the highs, but even more, how smoothly those highs were extended, and how seamlessly they integrated with the midrange. The Sarastro II sounded still more extended, at least as coherent, and—here's where it most differed from the Ovation—fast as lightning (not that the Ovation is a slugard).

a viola, or the ambience of Carnegie Hall from that of another hall of similar but somewhat different acoustic. A speaker, and especially its tweeter, must be extremely fast and agile to reproduce those subtle signals—and at this, the Sarastro II was a champ.

On Bill Evans' *Waltz for Debby* (SACD,

In the vertical plane (fig.5), a suckout appears at 4.4kHz for listening axes even slightly above the center of the tweeter, which is a high 42" from the floor. A less-severe suckout appears 10° below the tweeter, implying that the optimal vertical listening widow is quite narrow.

I performed a spatially averaged in-room response in both Fred Kaplan's listening room and in my own room. Using Fuzzmeasure 2.0 from SMUG Software running on my Macintosh Powerbook in conjunction with a FireWire audio interface from Metric Halo and an Earthworks QTC-40 omnidirectional microphone, I measured the responses of the left and right speakers taken individually in a vertical rectangular grid 36" wide by 18" high, centered on the position of the listener's ears in his listening chair, and in both rooms the speakers toed-in to the listening seat. Fig.6 shows the average of these responses in Fred's room (blue trace) and in my room (red). Despite the very different sizes and furnishings of our rooms, the traces overlap to an extraordinary degree above 300Hz, perhaps because we

both sit approximately the same distance from the speakers (110" in my case, 114" in Fred's). The midrange unit's increased directionality in the presence region does lead to a lack of in-room energy in the same region, which leaves the high treble a little exposed. (I heard a slight exaggeration of the analog tape hiss resulting from this balance.)

There is also insufficient lower-midrange energy in-room, but the primary difference between the two traces in fig.6 lies in the bass. As FK conjectured, the dimensions of his room accentuate the mid-bass, and unfortunately, this coincides with the region where all four of the Sarastro II's low-frequency radiators are active. The result is a considerable exaggeration of the mid-bass (blue trace), which FK described as "a bit of a boom, at around 100Hz," though he did add that this boom didn't obscure detail. In my room (red trace), the balance is more even through the bass region, with my more solid wall construction giving a little more reinforcement in the bottom octave. But the relative lack of energy between 40Hz and 60Hz in my room,

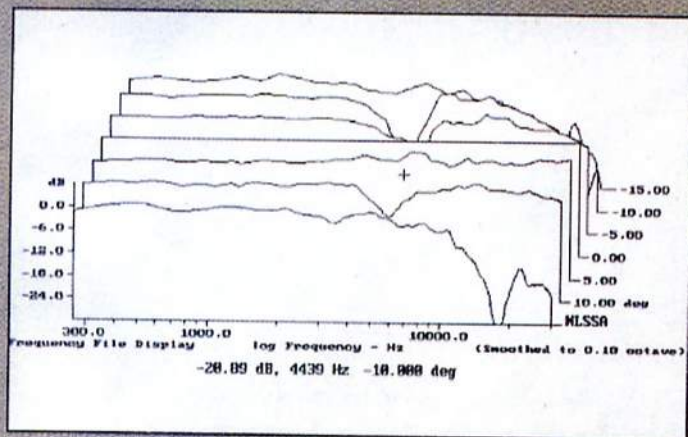


Fig.5 Verity Sarastro II, vertical response family at 50°, normalized to response on tweeter axis, from back to front: differences in response 15–5° above axis, reference response, differences in response 5–15° below axis.

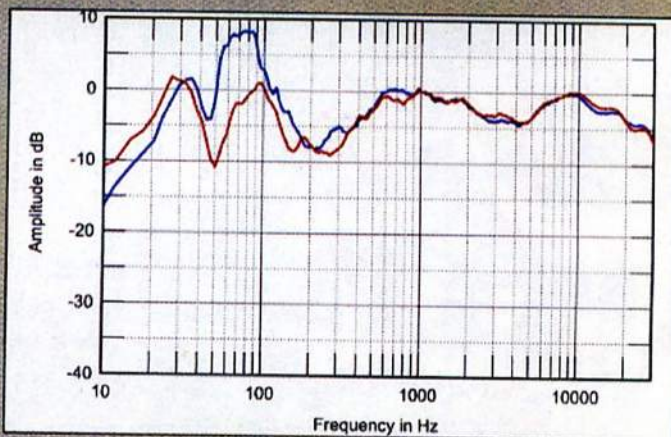


Fig.6 Verity Sarastro II, spatially averaged, 1/2-octave response in FK's listening room (blue) and in JA's listening room (red).

Analogue Productions CAPJ 9399 SA; LP, AAPJ 09), Paul Motian's cymbals sizzled more briskly than I'd heard in the hundreds of times I'd heard this record before; ditto for his crisp brush-work on the snare.

On Gene Bertoncini's *Quiet Now* (SACD, Ambient CD 005), a lovely jazz solo-guitar album, I could hear the most minute fingerwork, the faint slap echo on the wood, the effervescent fizz rising into the air when Bertoncini strums a high note, even a bit of the oval shape of the sounds blooming forth from the acoustic guitar's hole. (For an amazing display of fast acoustic guitar work, check out Paul Brady's energetic solo on "Arthur McBride," from the CD *Andy Irvine/Paul Brady*, Green Linnet GLCD 3006, if you can find it.)

At the start of Duke Ellington's "Mood Indigo," from *Masterpieces by Ellington* (CD, Columbia/Legacy CK 87143), the horns play the melody in unison, and although this album was recorded in mono, I could clearly distinguish

each instrument: clarinet, sax, trumpet. I could do the same with the unison woodwinds, accordion, and wordless vocalizing at the beginning of Maria Schneider's modern stereo recording, *Sky Blue* (CD, ArtistShare AS0065).

These overtones weren't merely suggested; they were captured in their full dynamics. In Paul Simon's "Jonah," from disc 2—the underrated "middle period"—of his 1964–1993 (3 CDs, Warner Bros. 45494-2), someone plays a hand drum way off to the left of the left speaker. I'm impressed when a speaker (or amp, or whatever) can place that drum way to the left and can let me hear a bit of the drumhead's texture. The Sarastro IIs did that—and let me know that the percussionist gave the drum head a real smack. That eye-blinking transient was something I *hadn't* heard before.

From top to bottom, instruments sounded like themselves in tone, timbre, dynamics, and (to the degree the recording captured it) size—even when many different instruments were playing

simultaneously. On Nicholas McGegan and the Philharmonia Baroque Orchestra's rendition of the Concerto in F, RV 569, from *Vivaldi for Diverse Instruments* (CD, Reference RR-77CD), the blurring of the bassoon, the gritty resonance of the harpsichord, the sputtering of the valveless natural horns, the astringent warmth of the gut-strung violins—all were clear, distinct, and enmeshed in a gorgeous acoustic bloom.

The Veritys gave electric rock a good workout too. The crunching at the start of Radiohead's *In Rainbows* (CD, ATO/Red 0001) was, well, extremely crunchy. (What is that sound?) The bass drum made me blink. The guitars screamed. And against all this well-pitched grunge, the voice was clear, upfront, even intelligible.

In his review of the Sarastro I, my friend and colleague Michael Fremer complained that, though the SPL meter said otherwise, the speakers never sounded loud enough. "I was never kicked by a kick drum or scared by squealing . . . guitars," he wrote. MF may have a more

measurements, continued

a consistent feature of my room's acoustics as can be seen from the in-room measurements I have published of other speakers, left the low bass sounding a little disconnected.

In the time domain, the Sarastro's step response in the tweeter axis (fig.7) indicates that the tweeter and midrange unit are both connected with the same positive acoustic polarity. The overshoot of the tweeter's step is smoothly integrated with that of the midrange unit, suggesting that the upper crossover is well-organized. The woofer, too, is connected with positive polarity, and contributes to the rise above the timeline to the right of the 6ms mark in this graph. The Mk.II Sarastro's cumulative spectral decay plot on the tweeter axis (fig.8) is significantly cleaner than that of the original in the region covered by the new Verity tweeter. There is no sign of the ridge of delayed energy at 6.7kHz that affected the earlier version—this is indeed a better-performing ribbon unit.

I note that Fred Kaplan very much liked the sound of the Sarastro IIs in his room, and I, too, enjoyed much of what I heard when the speakers resided in my listening room. But it does have an identifiable character that stems both from the decision to take the fairly large midrange unit up so high in frequency before crossing over to the ribbon unit and from the complex overlap between the midrange unit, the woofer, and their respective ports. As I summed up my thoughts of the original Sarastro, the speaker's "idiosyncratic measured performance suggests . . . that the designer carefully arrived at the speaker's balance by listening rather than go for a clean measured performance and *then* fine-tune the speaker by ear." Nothing about the Sarastro II's measured performance has changed my mind. This Verity has much to offer but prospective owners are advised to audition the Sarastro in their own home if at all possible to see if its positive attributes out-shadow the idiosyncrasies.

—John Atkinson

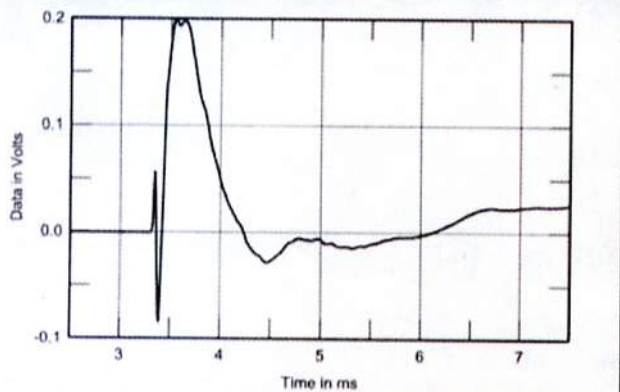


Fig.7 Verity Sarastro II, step response on tweeter axis at 50° (5ms time window, 30kHz bandwidth).

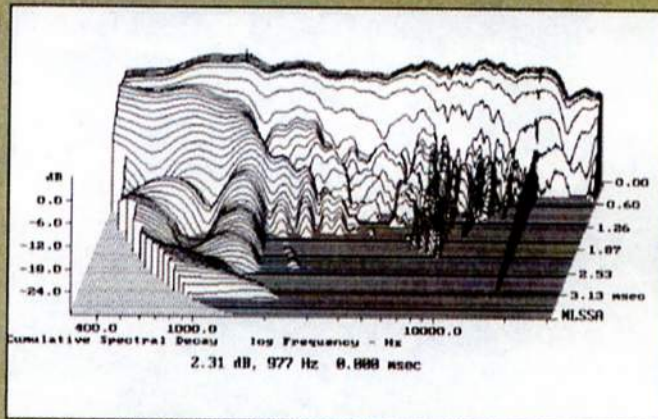


Fig.8 Verity Sarastro II, cumulative spectral-decay plot on tweeter axis at 50° (0.15ms risetime).

