

# The Audio Beat

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## Entreq • Grounding Products

*"...food for thought in a general sense, a no-brainer as an audio upgrade."*

by [Roy Gregory](#) | May 16, 2014

When it comes to audio performance, grounding, like room acoustics, is one of the great unmentionables. Everybody knows it is important (at least they say they do), but beyond that, few people take any real steps to ensure a high-quality, clean ground for their systems -- a situation that I find incredibly bizarre given that ground integrity has a significant impact on the system noise floor and thus musical performance. What makes it even more surprising is that in many cases, it is both incredibly simple and cost effective to improve your grounding arrangements -- especially when compared to the cost of some other upgrades.



Prices: Tellus, £750; Silver Tellus, £1550; Minimus, £200; Silver Minimus, £400.  
Warranty: Lifetime.

Entreq  
Ronnetorp  
265 90 S-Astorp  
Sweden  
+46 (0)705 200 500  
[www.entreq.com](http://www.entreq.com)



In my ["Building A Firm Foundation" blog](#), I defined the critical elements as follows:

- The AC supply (and RFI)
- Grounding
- Mechanical interference and component supports
- Room acoustics
- Signal transfer (and the creation of a coherent cable loom)

You'll see grounding there at number two, a reflection of both its importance and the cost/benefit ratio that applies to it. Make no mistake, a proper clean ground is vital to actually realizing the potential performance of all those expensive boxes you've so lovingly (and agonizingly) selected. But it goes deeper than that. It's not just that you need a good ground; you can actually hear the quality of the ground you've got -- not just whether it's good or bad, but its nature. Like everything else to do with audio, and especially cables and connections, what you use matters and how you use it

matters even more.

Of course, on a theoretical level, the benefits of a "high-quality, clean ground" are indisputable. The problems arise because, in stating the principle we fail to define what a "high-quality, clean ground" actually is, especially in this day and age when every household appliance, electrical system and computer is dumping more and more pollution into that one common waste sink. It is no surprise that over the years there have been a number of cables that offer separate floating shields with flying leads designed for connection to a chassis ground. The problem is that relatively few units still offer that once-ubiquitous facility, another victim of the move to simpler, less fiddly installation. So, when Entreq, a small Swedish cable manufacturer that could clearly hear the benefits of such an approach, were presented with the practical difficulties of actually installing such a cable system in any modern setup, they took the radical but obvious step of offering their own solution: a standalone ground box to which their cable drains could be attached.

Which is when the law of unintended consequences stepped in. Not everybody has Entreq cables, but anybody with a system can benefit from a clean ground, and before long the ground boxes were attracting more attention than the cables they were intended to support. What I'm going to look at here is exactly that, the Entreq Tellus and Minimus grounding blocks used in the context of a standard system employing standard cables.

But first, a little background, because in grounding systems can be divided into two categories: those which have a dedicated, clean ground and those that don't. A dedicated ground consists of a ground post, sunk in your yard or garden and connected to either the main ground of the (hopefully dedicated) electrical spur that supplies your system, or better still the ground terminal on your system's distribution block. This arrangement is (in most cases) simple to install and incredibly effective. Even if you get a contractor to supply the hardware and do the job, it shouldn't cost you more than a few hundred dollars. Otherwise, take a trip to Home Depot, buy the necessary cable and ground post and spend an afternoon doing the work yourself. Just make sure that, if you are connecting the ground wire to the household ground (as opposed to the ground terminal on your system's distribution block) you know exactly what you are doing. Nor is this a substitute for the main electrical ground on your system's AC feed. It's an addition, rather like a bypass cap, that improves the ground quality seen by the system rather than replacing the existing arrangement. It is also an essential first step in providing the best possible operating conditions for your system.

However, there are some situations (apartments, houses built well above the water table or in very dry areas) where such an approach is either less effective or physically impossible. If you've got a clean ground, then the Entreq boxes will deliver a worthwhile upgrade on that arrangement. If you haven't, then they represent the audio equivalent of a lifebelt thrown to a man adrift on the high seas. You may not have realized your system was drowning, but if that is all you've ever known. . . .

### Enter the Entreqs

**E**ntreq offer two different ground blocks, each in two different guises, as well as a range of cables to hook them up to your system. Built into waxed wooden cases, styled in what can perhaps be best described as craft fashion, they present a blank face to the world and a terminal or terminals on the rear.

The Minimus is a small unit mainly intended to ground a single component or a pair of components such as a transport and DAC. It stands on three turned wooden feet, each enclosing an M8 nut to allow spiking or the use of other threaded feet. The only feature of note is a single binding post on the rear panel that will accept spades or 4mm banana plugs. Asking price is £200, although there is also a Silver Minimus that is externally similar but will set you back £400, which seems like quite a lot for what looks remarkably like a block of wood with a plank for a front panel. But pick up the Minimus and it all starts to make (at least some sort of) sense. That little box is surprisingly heavy and also very dead to the touch. Give it a shake and you'll hear the loose, granular filling rattle or slide, like large-grain sand. What's in the box? Entreq are close-mouthed about the actual elements, but it is a granular mixture comprising a whole range of different carefully selected compounds and constituents.

Perhaps the easiest way of thinking about this is to literally consider it a box of ground -- as in what makes up your back yard. Sink a grounding post into the earth and the precise make up of your soil, how wet it is and what other elements or pollutants it contains will all impact its effectiveness and nature as an electrical ground. In theory, all ground posts should extend as far as the water table, but not only is that not always possible, the water table itself can rise and drop, especially over a period of years. So, as you can see, it's not quite as simple as hammering a conductive rod into the ground. What Entreq have done is experiment in order to develop the best possible filler for their boxes, a mix that delivers consistent musical results despite its physical isolation from any geographical entity.

The £750 Tellus is literally a bigger version of the Minimus, offering three terminals and designed to handle a whole system. It too is available in a Silver version (externally identical except for a fourth terminal) that costs £1550, while there is also a range of matching Eartha copper or silver ground cables. These are 1.65m long as standard (around 5') and can be configured spade to spade (£50 in copper, £260 in silver) or RCA to spade (£70 in copper, £280 in silver). There is also an XLR-to-spade version of the silver cable, also at £280, and all cables can be ordered in longer lengths if necessary, with a cost increment applying. If you are wondering about the RCA or XLR terminations, these are not quite what they seem, but are used to connect the ground terminal of an unused socket to the Entreq box. You'll also notice the unusual wooden-bodied plugs employed. Like the "coat-hanger" spades at the other end -- I call them that because of their artful construction from a single bit of bent wire -- these are designed to deliver a minimum-impedance connection between the common signal ground and the Entreq box. Even the binding posts are specially manufactured, employing a copper post and a wooden binder, chosen because it micro-locks against the copper threads (without destroying them), thus ensuring a consistent connection that won't loosen over time. Look at the Entreq site and you'll see that they also offer 3.5mm-jack-to-spade ground cables. No, they're not offering a portable grounding system; those are for connecting their shielded signal cables to the Entreq boxes, so unless you invest in the cables you probably don't need them.

By now, you may well have reached the conclusion that there's something slightly fanatical about the Entreq people and products -- and you wouldn't be wrong. The maxim that, if something is worth doing well then it's worth doing to OCD levels of detail, could have been coined for these guys. But in a world like high-end audio, where OCD is almost normal, that should actually be reassuring. They've sweated the details so that you don't have to.

### Getting down and...clean?

Add up all the various combinations and possible configurations and you'll quickly realize that reviewing the Entreq products is a far from straightforward proposition, one that's further complicated by environmental differences in grounding conditions from one location to another and even one day to the next. Add in the fact that the sonic impact of the Entreq blocks isn't immediate but takes time to gradually emerge (normally around 20 minutes or so) and this is a far from simple project.

My system is already equipped with distribution blocks (Quantum QB8s) and clean grounds, so although I've been using the Entreq products for several months in a whole range of different equipment scenarios (and seminars) for the purpose of this review I undertook specific, structured listening, divided into two distinct programs, designed to back up and underpin my overall impressions.

Firstly, I removed the clean ground connections from the system and then listened to the various Entreq boxes and cables, individually and in combination. Secondly, I repeated the exercise with the clean ground reconnected to see whether the additional ground boxes made sense in that context. In order to keep track, I'll list the configurations as I go.

*Minimus connected to preamp input socket, no clean ground (NCG).* With the system connected via the QB8 and relying on the standard AC ground (albeit a dedicated ring), I started by connecting the standard Minimus to an unused input of the preamp, using an Eartha RCA-to-spade cable. Despite the warning above about letting the system settle to hear the full benefits/ramifications of any change, this one was immediately obvious, simply getting better and more refined as time passed. Hooking up the Minimus brought what can only be described as a dramatic drop in grain and the noise floor. Using the Steve Dawson track "Sweet Is the Anchor" (from the CD of the same name [Undertow CD-UMC-028] -- and if ever an album warranted a vinyl release, this is it) the *soto voce* count-in was immediately clearer and more intelligible, separated in space from the opening chords of the electric piano. The voice was more natural, tonality was richer and guitars and drums had more attack, more thud and twang to their sound. The harmony vocal on the chorus, which raises this track from good to near sublime, virtually buried, almost like an echo effect without the Minimus, was now beautifully pure, separated yet connected, a quality that points to the best thing of all; the track took on a new sense of life and flow, a musical urgency and momentum that made it both more engaging and more present as a performance.

Adding the Minimus/Eartha combination to the preamp created a huge lift in quality on this system -- an increase out of all proportion with the modest price of the Entreq products. Of course, the results will be system dependent, but I chose this system with some care. Using the Wadia S7i and the Avantgarde XA/Trio amplifier and speaker combination presents a system that is at once hyper-revealing of ground quality and grain in the signal (110dB sensitivity speakers will do that for you), but also a system that has already taken considerable steps to immunize itself from the impact of AC pollution and poor grounding. The preamp is entirely galvanically isolated by its battery supply, while the power amp is extremely well regulated and filtered. So by connecting a spare input socket on the preamp to the Minimus, I'm only impacting the common signal ground. Yet the results are exceptionally worthwhile and musically satisfying -- definitely food for thought in a general sense, a no-brainer as an audio upgrade.

*Minimus connected to the CD player's analog output jack, NCG.* The obvious question is, if you are only going to connect one unit, what should it be? With that in mind I also shifted the Eartha ground wire to one of the RCA analog outputs of the S7i. After a short while, the results were initially impressive, with even greater clarity, depth and focus as well as increased levels of detail. The separation of count-in and piano was greater and more obvious, with more character to the voice itself. Yet, over time it became apparent that for all the sonic gains, musically speaking the system had definitely lost some of its energy and drive. Reconnecting the Eartha cable to the preamp produced a more condensed sound without the obvious space and separation of the CD player connection, but it was a sound with greater presence, color, life and rhythmic integrity. Each note was more rooted and more precisely placed, giving the music greater purpose, the players an obvious intent.

So what happens if you connect both the preamp and the CD player to the Minimus? You get not the best of both worlds, but like a diminished version of the combined virtues, a sort of lowest common denominator that, while it's better than no Minimus at all, is actually less appealing than either the CD player or preamp connected in isolation. Chalk one up to Entreq; they know how to use their devices and just what their capabilities really are. One box is clearly the happy medium when it comes to the Minimus and used in that way it delivers a remarkable improvement in this NCG scenario.

Another reason to use the Avantgarde XA electronics is the parallel daisy-chain outputs on the power amp, allowing me to make a signal-ground connection here as well; remember, the power amp relies on a standard linear supply, directly connected to the AC mains. But hooking up the Eartha ground wire to the XA Power instead of the XA Pre again robbed the sound of that planted substance and easy pace, the engaging rhythmic integrity that makes the preamp connection so engaging.

*Silver Eartha cable with Minimus, connected to preamp input (NCG).* Having established the benefits of the Entreq

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approach, using the basic examples of each product, it was time to start examining the more exotic options, starting with the Silver Eartha cable. Simply swapping out the copper cable for the silver version brought an instant change in the presentation, with the Silver Eartha bringing greater resolution and focus to proceedings, a further drop in grain and the noise floor. But once again this came at the cost of some loss of presence and energy. This was better hi-fi but not necessarily better music, a result that prompted two immediate actions.

*Copper Eartha cable with Silver Minimus, connected to preamp input (NCG).* Comparing the combination of the copper ground cable connected to the Silver Minimus against the Silver cable and standard Minimus (near cost equivalents) produced a firm preference for the first option -- the copper Eartha feeding the Silver Minimus. The upgraded block seemed to retain all the benefits of the silver cable while the copper cable added its own particular blend of body, weight, presence and color. The combination was another major step in the right direction, with musical results that easily justified the extra cost. The funky bass line on "Love is a Blessing" took on a whole new shape and propulsive quality, while Dawson really hit that Womack groove. The space and attack of "Sweet Is the Anchor" gained even more purpose and the track a greater sense of overall direction. The middle eight took on a new significance, the reverb on the guitar alive with shape and texture, raising the textural bar and sense of real instruments yet another notch.

After which, it seemed only right to try the all-silver setup, with a Silver Eartha feeding the Silver Minimus. This combination was significantly better than the Silver cable feeding the standard Minimus, although for me, in the context of the Avantgarde setup, I feel the copper Eartha feeding the Silver Minimus came out slightly ahead, carried there by its extra sense of presence and color -- at least to start with.

Before you get too excited it's time to revisit the rules of this exercise. Remember that the results will be system and situation dependent. Remember too that they will vary over time. Finally, remember that connection integrity pays a part in this process. Discussing my findings with the distributor brought two suggestions: change the Silver cable for another example of the same type and then leave it in situ for a number of hours. Sure enough, left to its own devices the new cable blossomed and gained serious body and weight when compared to its initial performance (gauged after half an hour or so). Checking back to the standard Minimus under similar conditions showed similar improvements, though here the copper cable/Silver Minimus combination still proved preferable.

So what does all that tell you? First and foremost, RTFB! Entreq's RCA plugs are peculiar in construction and clamp the cable extremely loosely. That means that in practice simply holding the plug body to make connections will, over time and especially if you make and break connections as often as the average reviewer, make it hard to get a positive connection to the RCA socket, the body simply sliding forwards as you try to push it home. Entreq supply a manual that demonstrates the correct procedure, a two-handed operation where you hold both the nose of the plug and the point where the cable enters the rear of the body. Do this and you'll have no problems. Get careless and you can do unsuspected damage.

Secondly, you really do need to make the connections and then leave them in situ. If you want to check back, once they've settled and you are familiar with the sound (because it will be different -- in my experience adding the Entreq blocks or changing their grounding cables/arrangements always changes the sound) disconnect the ground cables from the rear of the block(s), leave the system for five minutes and listen again.

Thirdly, specific systems will evoke specific results. My findings are not general. The fact that I prefer the Silver Minimus/ copper Eartha to the Silver Eartha/standard Minimus and initially, at least, to the all-Silver combination reflects the nature of the Avantgarde system and its own leanings as much as it does the inherent character of the Entreq products. Experimentation is the order of the day, while informed guidance from an experienced individual will prove invaluable.

But the ultimate conclusion is clear: make the time and take the trouble, because the results are going to be worthwhile. Once the Silver Eartha/Silver Minimus combination had bedded in, the missing body and presence was restored, enhanced by the added resolution, transparency and reduced grain. That sense of momentum I liked so much with the copper Eartha in place was back, but with an added sense of subtlety and flow to the music and sophistication in the playing. So -- once again -- chalk one up to Entreq. Follow their advice and you'll find that their products deliver exactly what they suggest they should -- and the Minimus in either guise only scrapes the surface. Enter the Tellus and a far more interesting range of possibilities.

### **Living large -- multi connections for multiple components**

**A**fter the Minimus, the Tellus comes as quite a lump. Bigger and considerably heavier than its little brother, it is literally a Minimus writ large, with bigger casework, more capacity and more terminals -- three on the standard version and, as previously noted, four on the Silver. Now's the time to return to the vexed question of multiple connections; if hooking up both the preamp and CD player simultaneously to the Minimus was a conspicuous failure, that's exactly the scenario the Tellus is designed to embrace. So saying, I stripped out the Silver Minimus/Silver Eartha combination and plumbed in the standard Tellus, hooked up with copper cables, one to the CD player and one to the preamp.

Wow! Initially at least, the sound had lost the finest edge of resolution and transparency compared to the all-Silver Minimus setup, but the gain in sheer body, the planted sense of solidity, of real people playing real instruments, was way more than just a compensation. There's a difference between recognizing a familiar voice and the system producing a believable facsimile of the person you know. That's exactly the sort of difference that the Tellus brought to the proceedings. Suddenly, Steve Dawson was a credible presence in the room. Not shut-your-eyes-and-you'd-think-he-was-there believable, but no longer just identifiable -- now he was absolutely unmistakable. That might seem like a small distinction, but extend it across the instruments and the performance and suddenly the music is far more present, effective and affecting. That's no small difference -- and it's exactly why we all need to take grounding seriously.



Leaving the Tellus and copper Earthas in place allowed the system to settle still further, restoring the lost resolution and transparency, again underlining the risks associated with snap judgments in this context. The drums took on greater weight, character and impact, a real sense of stick on skin, of energy and impact, while the bass guitar on "Love is a Blessing" gained shape to its notes, a bottom to its range, establishing a far more secure temporal base for the track. The longer the system was left alone to settle, the deeper it seemed to dig that groove.

Interestingly, adding a third spade-to-spade Eartha from the XA Power's chassis ground to the Tellus was a step backwards, reducing weight, dynamic range, color and pitch definition, results that were not echoed using an RCA Eartha from the spare outputs on the amp. It seems that mixing signal and chassis grounds almost literally muddies the waters. Given the environmental and situational variations that impact on the results of Entreq installations I wouldn't write off the possibility, but it clearly didn't work in this system and I'd approach it with caution.

**It seems that mixing signal and chassis grounds almost literally muddies the waters.**

The next step was to change up to the Silver Tellus still using the copper Eartha cables. So no surprise that this offers exactly the same benefits as the switch from a standard Minimus to the Silver version, but more so in this instance, because they are grafted onto the superior foundation provided by the Tellus. More detail and texture were immediately apparent, along with a greater sense of immediacy and presence, coupled to a slightly forward tendency. Follow the logic, plumb in the Silver Earthas in place of the copper ground wires and let them settle overnight and that forwardness recedes, with not just another lift in detail and texture, transparency and resolution, but a real increase in dimensionality -- a quality that was to real bloom once I took the final, inevitable step.

Having gotten this far, having learnt the benefits of material consistency across the cables and ground boxes, and consistency within the system's ground planes, the unavoidable question raises its head: is more grounding better? To cut a long story short -- by eliminating the various, less successful configurations through which I dutifully trolled -- adding a Silver Minimus to the all-Silver setup offered a significant benefit, as long as you get the topology right! Through exhaustive and time-consuming experimentation (remember how long it takes for these things to settle and the danger of rushing to judgment) I was able to arrive at the optimum arrangement: I plugged the CD output into the Silver Minimus, the XA Pre and XA Power into the Silver Tellus, using Silver Earthas throughout. But the key to really making this combination sing was tying the Minimus and Tellus together with a spade-to-spade Silver Eartha. This grounding configuration delivered a step change in performance by taking all the various qualities and benefits already described and binding them together into a single coherent and credible whole.

Adding the Silver Minimus produced a noticeable drop in the noise floor and a real increase in resolution and separation. But it was tying the two ground blocks together that pulled the voice back into the soundstage, removed the forward tendency without diminishing the presence or immediacy, creating a single three-dimensional soundfield from this multi-tracked recording. Suddenly all that extra information slotted naturally into place to create a convincing whole, an understandable pattern of instruments and players working together to create the music and the message. It's not that the system wasn't capable of playing a tune before -- although with none of the Entreq products in place it was struggling -- but now the ease with which the performance gelled allowed me to simply sit back and relax. Now the system carried more of the load and all I had to do was enjoy the results. It's an almost subliminal change, but no less fundamental for all that.

### Going off-piste

**B**y now you should have gathered that I'm seriously impressed with the Entreq products. I've been using them for months in a host of different systems and setups and they've quickly become a standard part of the procedure -- so much so that returning to them in isolation and defining their contribution once more came as something of a shock as I was reminded of just how effective they really are.

So far I've described their use as suggested by Entreq. But that doesn't answer two significant questions as regards their capabilities. I've described how well they work in the absence of a conventional clean ground; what happens in a system that already has a clean ground installed? Secondly, is it possible to use the Tellus in conjunction with or in place of a clean ground?

Normally, my system runs on a clean ground consisting of two separate posts, each with a horizontal and vertical element, all strapped together with 30-amp cable and terminated in a pair of terminal boxes adjacent to the dedicated AC sockets. Cables from the terminal boxes to the QB8 distribution strips are also 30-amp, with gold spades on the system end, so it was child's play to add or remove the clean ground to the system.

Comparing the clean ground to the Entreq signal ground was interesting. The clean ground delivers the same rooted solidity and musical integrity that comes with the full Silver Tellus setup, but doesn't have the same transparency or resolution. With the clean ground connected, adding the Entreq components in the same order as laid out above still brings real musical benefits, although the balance tips more towards the detail and resolution side of the plus scale, the solid ground providing the necessary structure to hang the extra information on and make sense of it. So yes, the short answer is that using the Entreq products with an already installed clean ground does make sense and makes differences that might not be quite as obvious but are actually just as important.

But for me, where things get really interesting is when you connect a Tellus to the QB8's ground terminal. This is not something that Entreq recommend, and in fact they offer their own solution for AC distribution that interfaces with the Tellus and Minimus. However, for those who already own a distribution block with a ground terminal -- like those from Quantum, RATA, Isotek, etc. -- the Tellus is an enticing prospect. I should also point out, once again, that using any ground connection in this way is *not* a substitute for the main AC ground but a parallel to it. *Do not* disconnect the main AC ground or you could create a dangerous and quite possibly lethal situation! But using a clean ground,

connected directly to the earth terminal on your distribution block, is a vital contributor to system performance -- and the Tellus can play that role.

With the clean ground disconnected, hooking up the standard Tellus to the QB8 via a copper Eartha produced a pretty dramatic drop in the noise floor, along with the associated gains in transparency, focus, depth and timing. Instruments were more solid and present, with a richer tonal palette as well. This was a seriously worthwhile upgrade, whether the Silver Tellus was being used or not. How serious? Serious enough to demonstrate effectively in our system setup seminars -- which means that it is clearly audible under show conditions in a room full of people. That's a pretty big and very worthwhile change once you get it home. Compared to the clean ground, the Tellus on the QB8 lacked some of the sheer stability and authority that the hard-wired connection offered, but it outperformed it when it came to detail and resolution. Of course, who could resist trying the two together, and yes they work far better in tandem than either does alone. Out of interest, I did try strapping the Silver Tellus on the signal grounds to the standard Tellus on the AC ground and that is definitely to be avoided! The result is cluttered and grainy, losing all the substance and planted, propulsive quality that makes the Entreq products so appealing.

### Forming an orderly queue

**B**y the time I piggyback the Tellus onto the QB8, there's an awful lot of Entreq boxes and cables hanging off of the system. If you are starting from scratch, where should you start and what are the ground rules (if you'll excuse the pun)?

I think the first conclusion is simple: There's no substitute in terms of cost effectiveness or benefit to the installation of a proper clean ground arrangement. Used in conjunction with a dedicated AC spur or ring and a star-grounded distribution block, this is the absolute baseline for optimized system performance. The Entreq products offer you the ability to build on that foundation or, if it's not possible to achieve a genuinely clean ground, they can offer a viable alternative. If you really cannot install a clean ground, then for me, a standard Tellus hooked up to your distribution block should be your first priority. I think you'll be astonished by the results.

If you do have a clean ground on your AC supply, then the system's signal grounds take precedence. The solution adopted will be defined by cost ratio to the system itself, but bear in mind that although the Entreq products do "stack" so that you can add more later without losing your initial investment, they do work best within their material groups. For me, the logical place to start is to bypass the Minimus and go straight to a Tellus. One standard Tellus with two copper Eartha cables is only a little more than a Silver Minimus and Silver cable -- and it's a lot more effective. From there you can add a Minimus and extra cabling at a later date. However, if you have a serious system or you are serious about performance, then you should really head straight for the silver Tellus, ideally with matching cables, and build from there. It might seem like an expensive option for what is essentially an inert lump -- indeed, the more inert the better -- but its benefits are system wide, fundamental in nature and there's no other way of achieving them. (There are some broadly equivalent products available in the Far East -- but these are vastly more expensive!)

Should you use a Silver Tellus on the distribution block? I don't know is the answer to that one. The rest of the wiring in the AC ground is all copper, so maybe that suggests that a standard Tellus and copper Eartha combination offers a certain continuity, and I've certainly felt no need to quibble with the results. Besides which, the Silver Tellus/Silver Minimus are so gainfully employed on the main system that I've felt no inclination to swap it out.

If we think about grounding as part of the system foundation and consider the role it plays, then the performance of the Entreq Tellus, Minimus and Eartha should come as no surprise. I consider them as genuinely vital elements or tools in the process of achieving the best possible performance from your system. Their sonic benefits are obvious enough, but their real value lies in the ease they bring to musical performances, the clarity they bring to the message. I've yet to find a system or situation where they don't work (although the great law of Sod says there'll be one out there somewhere), which makes them that most valuable of audio components: the universal upgrade. In my experience, anybody investing money in audio performance would be foolish to ignore them.

### Promises, promises

**H**aving finally established what might be considered some kind of "strategic overview," it's time to throw a spanner in the works. There's one area of system performance that I haven't covered: analog replay. The critical significance of grounding and residual noise in the performance of record replay systems, as well as the myriad grounding configurations that they embrace, constitutes a whole new vista of opportunity -- one that's so vast that it actually demands separate treatment and additional hardware to really investigate properly, so I'll pencil that in for another day and a later report.

The other fly in the ointment arrives in the form of news from the Entreq camp of yet another development, in this case a better silver ground lead, dubbed the Apollo. They claim significant performance benefits, a claim I'm loath to ignore or discount in the light of my experiences so far. If ever a product range did exactly what it says on the tin, then it's the Entreq line -- especially if you use it exactly as advised. The new Apollo cables are scant on details and availability at present -- due in no small part to a frantic scramble by existing Silver Eartha owners to upgrade to the new product -- but it costs around twice the price of the existing silver lead, so it needs to be good! I'm awaiting their arrival -- with a degree of trepidation rather than bated breath -- but until they get here, any conclusions about or comments on their performance will have to wait until that follow-up piece. Watch this space, as I have a feeling that this particular Swedish saga is going to run and run. ☺

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### Associated Equipment

Analog: VPI Classic 4 turntable with SDS; VPI JMW 12.7 and Tri-Planar Mk VII UII tonearms; Lyra Titan i, Scala, Dorian and Dorian Mono cartridges; Clearaudio Goldfinger Statement cartridge; van den Hul Condor cartridge; Allnic Puritas and Puritas Mono cartridges; Nordost Odin tonearm lead; Connoisseur 4.2PLE phono stage.

Digital: Wadia S7i CD player, dCS Paganini and Vivaldi transports, Metronome Technologie C5 DAC.

Preamps: Aesthetix Janus Signature, Avantgarde XA Pre, Connoisseur 4.2.

Power amps: Aesthetix Atlas Signature Stereo, Avantgarde XA Power, Berning Quadrature Z monoblocks, Jeff Rowland Design Group Continuum S2 integrated amp, Naim NAP 300 stereo amp, VTL MB-185 Signature Series III monoblocks.

Speakers: Avantgarde Trio, Coincident Speaker Technology Pure Reference Extreme, Wilson Benesch Square Five, Raidho C1.1, Focal Scala Utopia V2.

Interconnects and speaker cables: Complete looms of Nordost Odin, Crystal Cable Absolute Dream or Ultra from AC socket to speaker terminals. Power distribution was via Quantum QRT QB8s or Crystal Cable Power Strip Diamonds, with a mix of Quantum Qx2 and Qx4 power purifiers and Qv2 AC harmonizers.

Supports: Racks are Hutter Racktime or Quadraspire SVT Bamboo. These are used with Nordost SortKone equipment couplers throughout. Cables are elevated on Ayre myrtle-wood blocks or HECC Panda Feet. Nordost Sort Füt units were used under the speakers.

Acoustic treatments: As well as the broadband absorption placed behind the listening seat, I employ a combination of the LeadingEdge D Panel and Flat Panel microperforated acoustic devices. These remarkably simple yet incredibly effective acoustic panels have become absolutely indispensable when it comes to hearing what the system is actually doing.

Accessories: Essential accessories include the Feickert protractor, a USB microscope and Aesthetix cartridge demagnetizer, a precision spirit level and laser, a really long tape measure and plenty of masking tape. I also make extensive use of the Furutech anti-static and demagnetizing devices and the VPI Typhoon record-cleaning machine. The Dr. Feikert PlatterSpeed app has to be the best ever case of digital aiding analog.

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