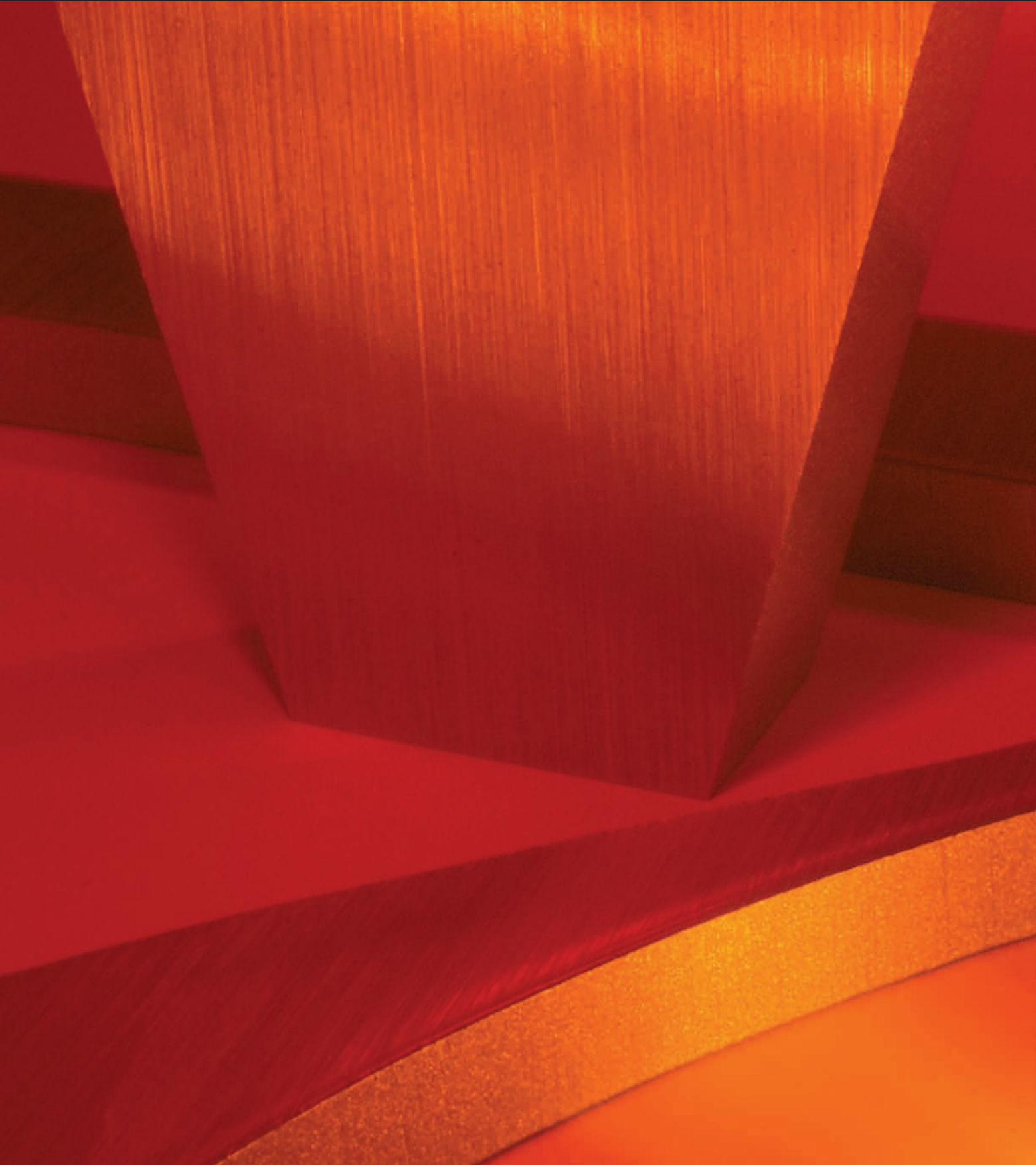


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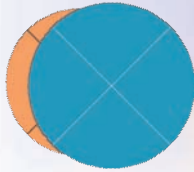
M A G A Z I N E

PUBLISHING, WORKGROUP & ENTERPRISE TECHNOLOGY FOR QUARK USERS



The Shape-Making Power of Union and Difference

BY STEVE GRAY



▲ fig. 1



▲ fig. 2

In the previous issue's *Shortcutting Your Way Through Bézier Drop Caps*, I encouraged readers to use QuarkXPress' Bézier keyboard shortcuts to draw curved items point-by-point and on the fly the way Illustrator jocks do.

This time, the goal will be just the opposite. We'll explore drawing complex Bézier shapes in QuarkXPress without ever touching a Bézier tool, and we'll do it using two rather unassuming commands found under **ITEM ▾ MERGE**.

Even if you've used the **UNION** and **DIFFERENCE** commands in the past, you may not have fully explored every possibility they bring to the table. The fact is, there's a whole bag of tricks to be found in these commands, and I plan to touch on just a few.

Your illustration will be represented by a single QuarkXPress box that's always supremely visible and editable directly inside your favorite application.

What's the Difference?

If you've used QuarkXPress' **MERGE** and **SPLIT** features before, you know that the **UNION** command looks at all the QuarkXPress items you have selected, examines their shapes, and replaces them with a single, unified QuarkXPress Bézier box. If items overlap, they melt into each other, so no inner pathways are preserved. If items are positioned completely apart from each other, union produces a multiple-path Bézier box.

The **DIFFERENCE** command isn't so gentle. It looks at the shape at the very bottom of the stack and decides that a piece of this one can stay; all other paths are going away.

A Cookie-Cutter For Every Occasion

When I first tried the **MERGE** and **SPLIT** commands in a QuarkXPress 4.0 beta version long ago, I must confess I had a torrid one-week love affair with **UNION**. "What could be better than fusing all these shapes into one giant picture box?" I asked myself.



▲ fig. 3

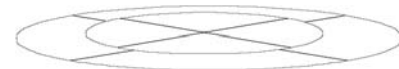
In the end, I married **DIFFERENCE**. While **UNION** can meld pre-existing elements together in a very intuitive way, **DIFFERENCE** is the chisel that cuts into raw marble. You imagine it, and then you *cookie-cut* it. When you combine it with **UNION**, **DIFFERENCE** becomes even more powerful.

For the most basic example, let's suppose I want to draw a crescent moon. I can simply draw two circles like the ones shown in figure 1. I then choose **ITEM ▾ MERGE ▾ DIFFERENCE**, and I'm left with a crescent shape (see figure 2). The larger circle acts as the *cookie cutter*, slicing down through the bottom circle and throwing away the dough.

Big deal? Well, the more you explore this cookie-cutter style of working, the more powerful it becomes. Let's step things up a notch. Instead of the moon, let's move out by a couple planets and visit Saturn.

A Dead Ringer

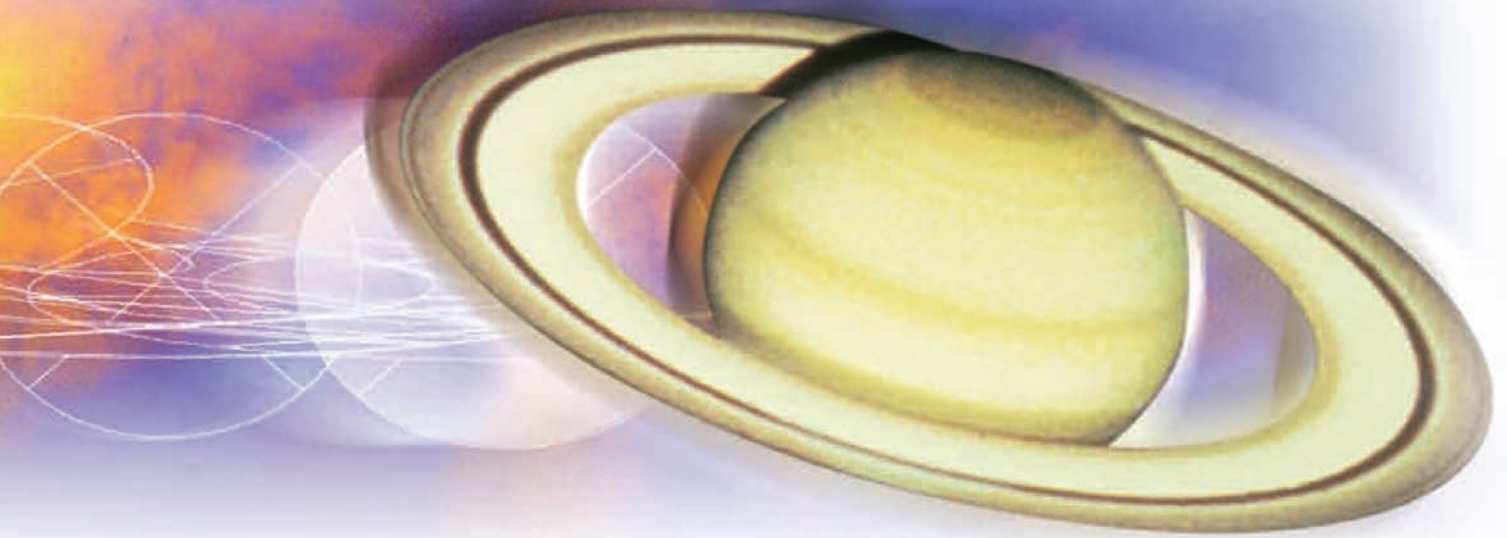
Figure 3 shows the logo for a fictional indie record company named Saturn Records. Up to this point, the logo had existed only as a sketch and a scan. Now it's time to draw it in QuarkXPress and make it a dead ringer for the original. This will be challenging, because a smooth shape appears to wrap around the central circle. Hmmm.



◀ fig. 4

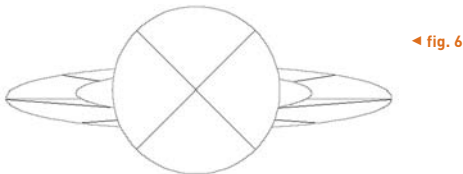
Figure 4 shows how I started. I drew two oval boxes using the oval picture box tool. The one in front was smaller and skinnier than the back one. Its center was also a bit higher than its neighbor, thereby creating an illusion of depth for what would become the rings.

I then shift-clicked each oval so that both were selected, and I chose **ITEM ▾ MERGE ▾ DIFFERENCE** to cookie-cut the hole out of the rings. Figure 5 shows the result.



◀ fig. 5

I was then ready for the planet itself, so I held down the shift key while drawing my next oval, resulting in a perfect circle. Figure 6 shows how that circle looked when positioned over the rings...



◀ fig. 6

...but the rings were not wrapping around the planet! Outer space is such a dangerous place. Luckily, Einstein put some thought into this one.

The Half-Top Sandwich Trick

Imagine a sandwich with its top slice cut in half, but its bottom slice intact. That's the essence of the half-top sandwich trick that I used to solve the problem of Saturn's rings.

The trick relies on the DIFFERENCE command.

I proceeded as follows:

1. I moved the circular planet aside and selected the rings item.
2. I chose ITEM ▾ STEP AND REPEAT, using a REPEAT COUNT of 1 — with HORIZONTAL OFFSET and VERTICAL OFFSET set to 0. Executing this command resulted in a pair of perfectly overlapped twins — the two "bread slices" of my sandwich.
3. I drew a rectangular box atop all this (see figure 7) to act as my cookie cutter.



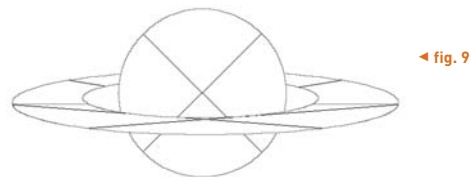
◀ fig. 7

4. I shift-clicked so that both the rectangle and the top-most rings item were selected. Note: I did not marquee-select, as this would have resulted in my hidden duplicate object being selected as well.
5. I chose ITEM ▾ MERGE ▾ DIFFERENCE. The rectangular cookie cutter plunged downward, trashing half of my top rings item (see figure 8).

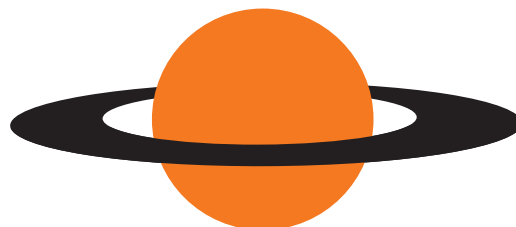


◀ fig. 8

6. Lastly, I repositioned my circular planet. At first, it was the same old disappointment, but after placing it among my ring items, I selected the halved-top ring item and brought it to the front (ITEM ▾ BRING TO FRONT) (see figure 9). The rest of the logo was a simple matter of type treatments, rotation, and color.



◀ fig. 9



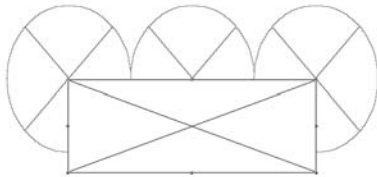
The Bell-Curve Trick

Bell curves can come in handy for a variety of illustrations. To draw the bell in figure 10 using no Bézier tools, I performed the following actions:



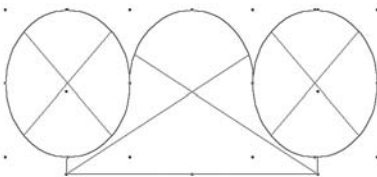
◀ fig. 10

1. I drew an oval, taking note of its exact width.
2. I chose ITEM ▾ STEP AND REPEAT, and in the step and repeat dialog box, I entered a REPEAT COUNT of 2, a HORIZONTAL OFFSET that was exactly equal to the width of my first oval, and a VERTICAL OFFSET of 0.
3. I drew a rectangle that was double the width of my first oval, then moved it to where its upper midpoint would overlap the center of the middle oval (see figure 11).



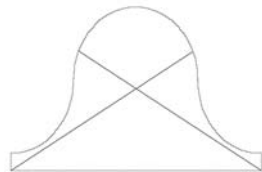
◀ fig. 11

4. I shift-clicked so that the rectangle and the middle oval were both selected, then chose ITEM ▾ MERGE ▾ UNION.
5. With this still selected, I chose ITEM ▾ SEND TO BACK. The shape collection in figure 12 resulted, now ready for the final cookie cut.



◀ fig. 12

6. I selected all three shapes and selected ITEM ▾ MERGE ▾ DIFFERENCE. Figure 13 shows the completed bell shape.

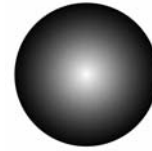


◀ fig. 13

The Movable Blend-Center Trick

How many times have you wished QuarkXPress' COOL BLENDS allowed repositioning the center point of its circular blend style? Thanks to the UNION command, this is actually possible.

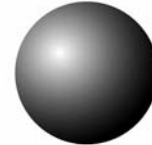
Take a look at figure 14. My goal was to make this look like a three-dimensional ball, but here it looks more like a supernova.



◀ fig. 14

Luckily, QuarkXPress can be tricked into moving the center of the blend. All you have to do is draw a tiny little line above and off to the side of the object, select both the line and the ball, and choose ITEM ▾ MERGE ▾ UNION. QuarkXPress now calculates the center of the object in a skewed way — with the line serving as the uppermost part of the item. Just don't forget to group your new creation with a white box that obscures the location of that little line you drew.

↑
"little line"



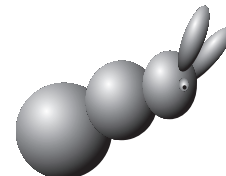
◀ fig. 15

Above and Beyond



◀ fig. 16

The shark in figure 16 shows how far you can go with the crescent-moon and bell-curve techniques. Create a bunch of ovals, position them, rotate some of them, UNION some of them, DIFFERENCE some of them, then UNION and DIFFERENCE a few more. There's no limit to the smooth shapes that can be created in this way. Best of all, when you're done, your illustration will be represented by a single QuarkXPress box that's always supremely visible and editable directly inside your favorite application.



◀ fig. 17

Don't go too far, though, figure 17, "Balloon Bunny," shows what happens when people spend too much time playing around in QuarkXPress and not enough time working in it. ☒