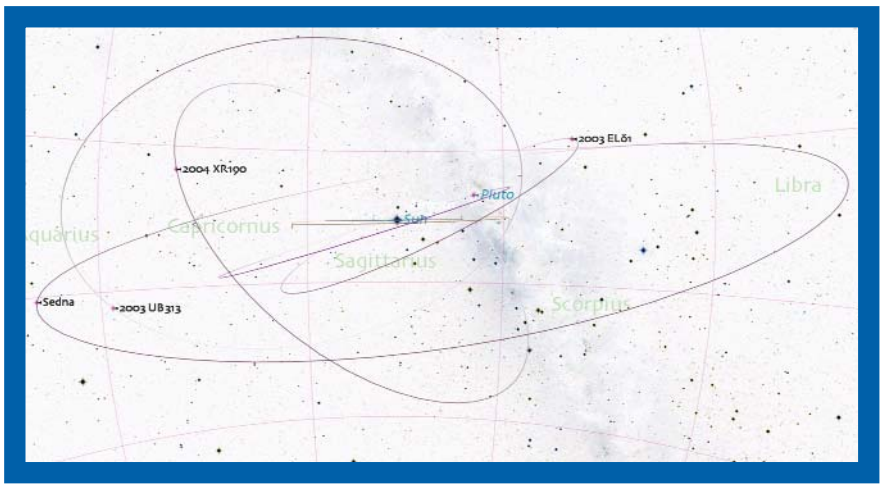
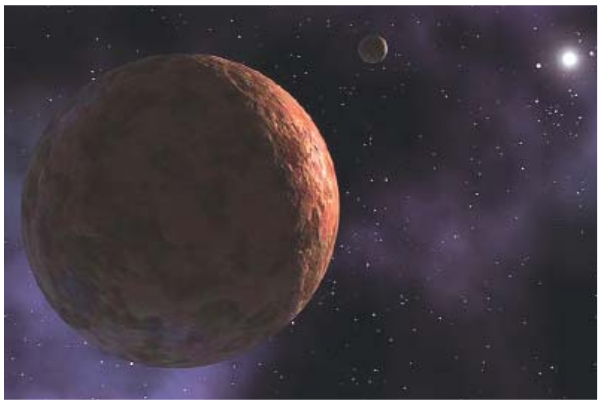
FISHER SCIENCE EDUCATION

HEADLINE DISCOVERIES

MAKING SCIENCE MATTER™



The orbits of these newly discovered planets vary greatly from the main plane of our solar system



Dwarf Planet Sedna

ON BEYOND PLUTO, REPORT #2

Since we explored the Kuiper Belt region of the Solar System together (Headline Discoveries: Fall 2005), new and exciting discoveries have come to light. And "light" really is the key. All we know of these deep-frozen worlds comes to us through vanishingly tiny amounts of sunlight reflected back to our telescopes. In the case of Planet "Xena" (a.k.a.: 2003 UB313—still no word on her official name), is that dim light has run a 26-hour marathon since it left the sun.

We now see Xena to be 3000 km (1,864 mi.) in diameter—very nearly as big as Earth's moon. And we've learned Xena has a moon of her own, 250 km (155 mi.) wide, called (for now at least) "Gabrielle" (Xena's TV pal). Observers have now calculated that a year on Xena is 560 Earth years long. You'd have to fly 9 billion miles—three times Pluto's current distance—to visit her today.

Closer in—but climbing even higher in orbital inclination (at 47°)—astronomers have spotted "Buffy" (2004 XR190). She's just a bit smaller than Pluto and rides a strangely circular orbit almost two times Neptune's distance from the sun. That's 58 times Earth's distance.

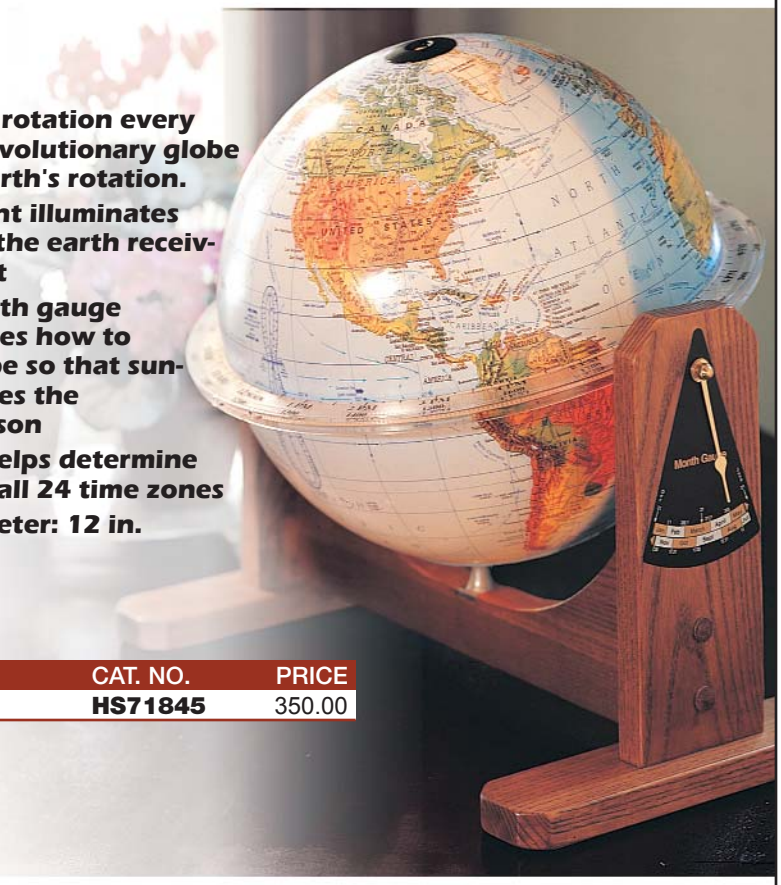
Hungry? Imagine a "sub" or "hoagie" shaped world, about a third the mass of Pluto, with a moon—maybe two—made of delicately flavored ice. That's the object known only as 2003 EL61. She was probably involved in a crash in her youth which scrunched her shape and blasted off the vapor that later coalesced into one or more satellites.

And Sedna, the farthest dwarf planet yet seen (76 times Earth's distance), has researchers completely in the dark. Nothing in our current understanding of Solar System formation predicts a Sedna. She may be trying to tell us that another star was involved in her birth.

Will Pluto still be listed as a planet 10 years from now, when NASA's New Horizons mission—the fastest spacecraft ever launched—streaks by for science operations lasting less than one Earth day? We can't say. But what we'll learn there is likely to re-write the book on the origin of our entire Solar System.

Planet Xena (a.k.a.: 2003 UB313)

MOTORIZED GLOBE DISTINGUISHES BETWEEN DAY AND NIGHT



Completing one rotation every 24 hours, this revolutionary globe simulates the Earth's rotation.

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